

Appendix A
SWMU Status Table

Corrective/ Remedial Action Release Unit #	Corrective/Remedial Action Unit Description	RRS Closure	Closure Date	ICM/ Remedial Action	Institutional Control Required	LTM Groundwater Required?	Inspection/ Maintenance Required?
AOC 4	Asbestos Installation (Plant-wide)	Admin Closure	2003	N	N	N	N
AOC 9	Site-Wide, Underground Storage Tanks	Admin Closure	2003	N	N	N	N
SWMU 100	Waste Accumulation Area, (Bldg 12-42)	Admin Closure	2003	N	N	N	N
SWMU 101	Waste Accumulation Area, Bldg 12-59	Admin Closure	2003	D&D	N	N	N
SWMU 102	Bldg 12-68 Batch Master, Northeast Corner	Admin Closure	1997, 2003	N	N	N	N
SWMU 104	Waste Accumulation Area, (Bldg 12-82)	Admin Closure	2003	N	N	N	N
SWMU 105	Waste Accumulation Area, (Bldg 12-84)	Admin Closure	2003	N	N	N	N
SWMU 107	Bldg 16-5, Flammable Liquid Storage	Admin Closure	2003	N	N	N	N
SWMU 111	Bldg 11-36 Solvent Tanks	Admin Closure	2001	N	N	N	N
SWMU 112	Bldg 11-36 Solvent Tanks	Admin Closure	2001	N	N	N	N
SWMU 114	Bldg 11-36 Scrubber System	Admin Closure	2001	D&D	N	N	N
SWMU 115	Bldg 11-36 Carbon Filter	Admin Closure	2001	D&D	N	N	N
SWMU 116	Bldg 11-36 Sludge Filters	Admin Closure	2001	D&D	N	N	N
SWMU 124	Bldg 11-50 Waste water Treatment System	Admin Closure	2001	N	N	N	N
SWMU 125	Bldg 12-43 HE Contaminated Charcoal Boxes	Admin Closure	2001	N	N	N	N
SWMU 126	Miscellaneous HE Contaminated Waste Dumpsters	Admin Closure	2001	N	N	N	N

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SWMU 127	Miscellaneous Non-hazardous Waste Dumpsters	Admin Closure	2001	N	N	N	N
SWMU 128	Portable HE Waste water Tanks	Admin Closure	2001	N	N	N	N
SWMU 129a	HE Contaminated Sludge Containers, Bldg 11-44	Admin Closure	2001	N	N	N	N
SWMU 129b	HE Contaminated Sludge Containers Bldg 12-43	Admin Closure	2001	N	N	N	N
SWMU 131	Portable Waste Oil Storage Tanks (Bldg 12-35)	Admin Closure	2001	N	N	N	N
SWMU 132	Vacuum Guzzlers	Admin Closure	2001	N	N	N	N
SWMU 134	Bldg 11-29 Silver Recovery	Admin Closure	2001	N	N	N	N
SWMU 137	Bldg 12-41, Paint Shop Waste water Tank	Admin Closure	2003	N	N	N	N
SWMU 138	Zone 12 Paint Shop Sandblaster Collection Cone	Admin Closure	2001	N	N	N	N
SWMU 141	Classified Waste Incinerator	Admin Closure	2001	N	N	N	N
SWMU 142	Miscellaneous Hood and Filter Systems, 24 Bldgs	Admin Closure	2001	N	N	N	N
SWMU 59	Landfill East of Pad 11-13 (Duplicate of SVS 5)	Admin Closure	2003	N	N	N	N
SWMU 62	Landfill 11	Admin Closure	2004	N	N	N	N
SWMU 65	Landfill 14 (Duplicate of SVS 6)	Admin Closure	2003	N	N	N	N
SWMU 76	Firing Site 18	Admin Closure	2001	N	N	N	N
SWMU 77	Firing Site 23, Filter/Exhaust System	Admin Closure	9/19/2001	N	N	N	N

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SWMU 83	Bldg 4-8, Container Storage Bldg, Asbestos Staging Area	Admin Closure	2001	N	N	N	N
SWMU 85	MOCA Waste Accumulation Area, Bldg 12-16	Admin Closure	2001	N	N	N	N
SWMU 88	11-41 Compressor Bldg Waste Accumulation	Admin Closure	2003	N	N	N	N
SWMU 89	Waste Accumulation Area, Bldg 12-2 North Hall	Admin Closure	2003	N	N	N	N
SWMU 90	Waste Accumulation Area, Bldg 12-9	Admin Closure	2003	N	N	N	N
SWMU 91	Waste Accumulation Area, Bldg 12-9 Solvent Storage Shed	Admin Closure	2003	N	N	N	N
SWMU 92	Waste Accumulation Area, Bldg 12-9 (outside)	Admin Closure	2003	N	N	N	N
SWMU 93	Waste Accumulation Area, Bldg 12-111 Paint Shop	Admin Closure	2003	N	N	N	N
SWMU 94	Waste Accumulation Area, Bldg 12-R-13 (outside)	Admin Closure	2003	N	N	N	N
SWMU 95	Waste Accumulation Area, Bldg 12-18 (outside)	Admin Closure	2003	N	N	N	N
SWMU 96	Waste Accumulation Area, Bldg 12-21	Admin Closure	2001	N	N	N	N
SWMU 98	Bldg 12-38 Solvent Storage	Admin Closure	2003	N	N	N	N
SWMU 99	Waste Accumulation Area, Bldg 12-41	Admin Closure	2003	N	N	N	N
Unassigned	Unlined Landfill/Landfill 10 North of Firing Site 1	Admin Closure	2004	N	N	N	N
Permitted Unit 53	Igloo 4-72 Storage	Active		N	N	N	N
SVS 4	Old Pistol Range	Active		N	N	N	N
SWMU 28	Active Burn Tray	Active		NA	N	N	N
SWMU 29	Active Burn Tray	Active		NA	N	N	N

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SWMU 30	Active Burn Tray	Active		NA	N	N	N
SWMU 31	Active Burn Tray	Active		NA	N	N	N
SWMU 32	Active Burn Tray	Active		NA	N	N	N
SWMU 33	Active Burn Tray	Active		NA	N	N	N
SWMU 34	Active Burn Tray	Active		NA	N	N	N
SWMU 35	Active Burn Tray	Active		NA	N	N	N
SWMU 36	Active Burn Tray	Active		NA	N	N	N
SWMU 69	Firing Site 4	Active		N	N	N	N
SWMU 72	Firing Site 10	Active		N	N	N	N
SWMU 74	Firing Site 21	Active		N	N	N	N
SWMU 75	Firing Site 22	Active		N	N	N	N
SWMU 78	Firing Site 24, Concrete Sump	Active		N	N	N	N
AOC 1	Transformer Leak (Bldg 11-14A)	3		Excavation	Y	Y	N
AOC 10a	Bldg 12-43A Pesticide Rinse Area	3		Excavation	Y	Y	N
AOC 10b	Bldg 12-51 Pesticide Rinse Area	3		N	Y	Y	N
AOC 11	Fire Training Area Burn Pits	3		Excavation	Y	Y	N
AOC 12	Paint Shop/ Solvent Pit (Bldg 12-5D)	3		N	Y	Y	N
AOC 13a	Former Cooling Tower in Zone 12 (Pad)	3		Excavation	Y	Y	N
AOC 13b	Former Cooling Tower in Zone 12 (Piping/Soil)	3		Excavation	Y	Y	N
AOC 14	Battery Storage Area (Bldg 12-18)	3		N	Y	Y	N
AOC 15	DDT Release (Bldg 12-35)	3		Excavation	Y	Y	N
AOC 3a	Former Boiler House Areas	3		N	Y	Y	N
AOC 3b	Zone 11 Former Boiler House Areas	3		N	Y	Y	N
AOC 5	Electrical Equipment Bone Yard Near Bldg 12-5	3		N	Y	Y	N
AOC 7a	Bldg 11-36 Sulfuric Acid Spills	3		N	Y	Y	N
AOC 7c	Bldg 12-64 Sulfuric Acid Spills	3		Excavation	Y	Y	N
AOC 8a	Pad 11-12 Solvent Leaks	3		N	Y	Y	N
AOC 8b	Pad 11-13 Solvent Leaks	3		N	Y	Y	N
AOC 8c	Bldg 11-17 Solvent Leaks	3		N	Y	Y	N
AOC 8d	Pad 11-22 Solvent Leaks	3		N	Y	Y	N

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AOC 8e	Bldg 11-36 Solvent Leaks	3		N	Y	Y	N
SVS 2	Parallel Depressions Bldg 11-26	3		N	Y	Y	N
SVS 3 (SWMU 67)	Carbon Black Burial Area near Bldg 10-7	3		N	Y	Y	N
SVS 5	Landfill East of Pad 11-13	3		N	Y	Y	Y
SVS 6	Unnumbered Zone 7 Landfills	3		N	Y	Y	Y
SVS 7a&b	Magazine Demolition Debris Landfills (Zones 4 & 5)	3		N	Y	Y	Y
SVS 8	Abandoned Zone 10 Landfill	3		Excavation	Y	Y	Y
SWMU 1	Drainage Ditch (Bldg 12-17)	3		Excavation	Y	Y	N
SWMU 10	Pantex Lake	3		N	Y	Y	N
SWMU 103	Former Battery Storage Area, (Bldg 12-81)	3		N	Y	Y	N
SWMU 113	Overflows from Bldg 11-36 Collection System/Sump	3		D&D /	Y	Y	N
SWMU 117	High Explosives Settling Tank	3		D&D / Excavation	Y	Y	N
SWMU 118	Equalization Basin	3		D&D / Excavation	Y	Y	N
SWMU 119a	High Explosives Filters	3		D&D	Y	Y	N
SWMU 119b	High Explosives Filters	3		D&D	Y	Y	N
SWMU 12	Drainage Ditch Near Former 11-14 Pond	3		Excavation	Y	Y	N
SWMU 120a	Carbon Filters	3		D&D	Y	Y	N
SWMU 120b	Carbon Filters	3		D&D	Y	Y	N
SWMU 121	High Explosives Settling Tank	3		D&D / Excavation	Y	Y	N
SWMU 122a	Equalization Basin	3		D&D / Excavation	Y	Y	N
SWMU 122b	Bldg 12-24N & Bldg 12-43 Upland Soil	3		Excavation / In Situ Treatment	Y	Y	N
SWMU 123	Concrete Sump & Waste water Treatment Unit	3		D&D	Y	Y	N
SWMU 13	Former Solar Evaporation Pond (Bldg 11-51)	3		N	Y	Y	N
SWMU 135	Leaching Bed (Bldg 12-44E)	3		N	Y	Y	N
SWMU 136	Subsurface Leaching Bed (Bldg 12-59)	3		D&D	Y	Y	N

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SWMU 14*	Explosive Burn Pad 1 (including ash disposal trench)	3		Soil Cover	Y	Y	Y
SWMU 143a	Former Waste Drum Storage Areas (Bldg 10-9)	3		N	Y	Y	N
SWMU 143b	Former Waste Drum Storage Areas (Bldg 10-7)	3		N	Y	Y	N
SWMU 144	Zone 10 TNT Settling Pit (Bldg 10-13)	3		Excavation	Y	Y	N
SWMU 145	Zone 10 TNT Settling Pit (Bldg 10-17)	3		Excavation	Y	Y	N
SWMU 146	Zone 10 TNT Settling Pit (Bldg 10-26)	3		Excavation	Y	Y	N
SWMU 147	Bldg 11-13 TNT Settling Pit	3		Excavation	Y	Y	N
SWMU 148	Bldg 11-17 TNT Settling Pits	3		Excavation	Y	Y	N
SWMU 149	Bldg 11-26 TNT Settling Pit	3		N	Y	Y	N
SWMU 15*	Explosive Burn Pad 2 (including ash disposal trench)	3		Soil Cover	Y	Y	Y
SWMU 150	Bldg 11-12 TNT Settling Pit	3		Excavation	Y	Y	N
SWMU 16*	Explosive Burn Pad 3 (including ash disposal trench)	3		Soil Cover	Y	Y	Y
SWMU 17*	Explosive Burn Pad 4 (including ash disposal trench)	3		Soil Cover	Y	Y	Y
SWMU 18*	Explosive Burn Pad 5 (including ash disposal trench)	3		Soil Cover	Y	Y	Y
SWMU 19*	Explosive Burn Pad 6 (including ash disposal trench)	3		Soil Cover	Y	Y	Y
SWMU 2	Drainage Ditch (Bldg 12-43)	3		Ditch Lining	Y	Y	Y
SWMU 20*	Explosive Burn Pad 7 (including ash disposal trench)	3		Soil Cover	Y	Y	Y
SWMU 21*	Explosive Burn Pad 7A (including ash disposal trench)	3		Soil Cover	Y	Y	Y
SWMU 22*	Explosive Burn Pad 8 (including ash disposal trench)	3		Soil Cover	Y	Y	Y
SWMU 23*	Explosive Burn Pad 9 (including ash disposal trench)	3		Soil Cover	Y	Y	Y

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SWMU 24*	Explosive Burn Pad 10 (including ash disposal trench)	3		Soil Cover	Y	Y	Y
SWMU 25*	Explosive Burn Pad 11 (Including Wash Rack)	3		Soil Cover	Y	Y	N
SWMU 26*	Explosive Burn Pad 12	3		Soil Cover	Y	Y	N
SWMU 27*	Explosive Burn Pad 13	3		Excavation	Y	Y	N
SWMU 3	Drainage Ditch (Bldg 11-44)	3		Excavation	Y	Y	N
SWMU 37	Burning Ground Landfill 1	3		Engineered Cover	Y	Y	Y
SWMU 38	Burning Ground Landfill 2	3		Engineered Cover	Y	Y	Y
SWMU 39	Burning Ground Landfill 3	3		Engineered Cover	Y	Y	Y
SWMU 4	Drainage Ditch (Bldg 11-50)	3		N	Y	Y	N
SWMU 40	Burning Ground Landfill 4	3		Engineered Cover	Y	Y	Y
SWMU 41	Burning Ground Landfill 5	3		Engineered Cover	Y	Y	Y
SWMU 42	Burning Ground Landfill 6	3		Engineered Cover	Y	Y	Y
SWMU 43	Burning Ground Landfill 7	3		Engineered Cover	Y	Y	Y
SWMU 44	Burning Ground Landfill 8	3		Engineered Cover	Y	Y	Y
SWMU 45	Explosive Burn Cage	3		D&D / Excavation	Y	Y	N
SWMU 46	Explosive Burn Cage	3		D&D	Y	Y	N
SWMU 47	Chemical Burn / Evaporation Pits	3		SVE System	Y	Y	N
SWMU 48	Burning Ground Solvent Evap. Pans	3		D&D	Y	Y	N
SWMU 49	Burning Ground Solvent Evap. Pans	3		D&D	Y	Y	N
SWMU 50	Burning Ground Solvent Evap. Pans	3		D&D	Y	Y	N
SWMU 5-01a	Drainage Ditch(es) (Bldg 12-5)	3		Excavation	Y	Y	N
SWMU 5-01b	Drainage Ditch(es) (Bldg 12-5B)	3		Excavation	Y	Y	N
SWMU 5-02a	Drainage Ditch (Bldg 12-51)	3		N	Y	Y	N
SWMU 5-02b	Drainage Ditch (Bldg 12-67)	3		Excavation	Y	Y	N
SWMU 5-02c	Drainage Ditch (Bldg 12-110)	3		N	Y	Y	N
SWMU 5-04a	Bldg 12-19 Drainage Ditches	3		Excavation	Y	Y	N
SWMU 5-04b	Bldg 12-73 Drainage Ditches	3		Excavation	Y	Y	N
SWMU 5-05	Drainage Ditch (Bldgs 12-21 & 12-24)	3		Ditch Lining	Y	Y	Y
SWMU 5-06a	Drainage Ditch (Bldg 12-44E)	3		Excavation	Y	Y	N
SWMU 5-06b	Drainage Ditch (Bldg 12-81)	3		Excavation	Y	Y	N

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SWMU 5-07	Bldg 12-41 Drainage Ditch	3		Excavation	Y	Y	N
SWMU 5-08	Drainage Ditch (Bldg 11-36)	3		Excavation	Y	Y	N
SWMU 5-09a	Drainage Ditch (Bldg 11-17)	3		N	Y	Y	N
SWMU 5-09b	Drainage Ditch (Bldg 11-20)	3		N	Y	Y	N
SWMU 51	Burning Ground Solvent Evap. Pans	3		D&D	Y	Y	N
SWMU 5-11	Main Perimeter Ditch	3		N	Y	Y	N
SWMU 5-12a	Main Perimeter Ditch	3		Excavation	Y	Y	N
SWMU 5-12b	Perimeter Drainage Ditch from Zone 12 to SWMU 5-15	3		N	Y	Y	N
SWMU 5-13a,b,c	Drainage Ditches to Playa 1	3		Excavation	Y	Y	N
SWMU 5-15a&b	Drainage Ditch to Playa 4	3		N	Y	Y	N
SWMU 52	Burn Racks and Flashing Pits	3		D&D / Excavation	Y	Y	N
SWMU 54	Landfill 3	3		Excavation/ Engineered Cover	Y	Y	Y
SWMU 55	Landfill 4	3		N	Y	Y	Y
SWMU 56	Landfill 5	3		N	Y	Y	Y
SWMU 57	Landfill 6	3		Excavation	Y	Y	Y
SWMU 58	Landfill 7	3		N	Y	Y	Y
SWMU 6	Playa 1	3		N	Y	Y	N
SWMU 60	Landfill 9	3		N	Y	Y	Y
SWMU 61	Landfill 10	3		N	Y	Y	Y
SWMU 64	Landfill 13	3		Administrative Soil Cover	Y	Y	Y
SWMU 66	Landfill 15	3		N	Y	Y	Y
SWMU 68a	Original Landfill	3		N	Y	Y	Y
SWMU 68b	Landfill 1	3		Administrative Soil Cover	Y	Y	Y
SWMU 68c	Landfill 2	3		Administrative Soil Cover	Y	Y	Y
SWMU 68d	Sanitary Landfill	3		N	Y	Y	Y

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SWMU 7	Playa 2	3		N	Y	Y	N
SWMU 8	Playa 3	3		N	Y	Y	N
SWMU 82	Nuclear Weapon Accident Residue Storage	3		Excavation	Y	Y	N
SWMU 84	Scrap, Salvage, and Storage Yard (Bldg 10-9)	3		Excavation	Y	Y	N
SWMU 86	11-14 Solvent Storage Shed	3		N	Y	Y	N
SWMU 87	Bldg 11-20 Solvent Storage Shed	3		N	Y	Y	N
SWMU 9	Playa 4	3		N	Y	Y	N
Unassigned	Demonstration Facilities	3		Excavation	Y	Y	N
Unassigned	Former 11-15 Pond	3		N	Y	Y	N
Unassigned	Former Leaching Bed North of Bldg 11-50 and West of Bldg 11-36	3		Excavation	Y	Y	N
Unassigned	Concrete Sump (near Bldg 12-5B)	3		N	Y	Y	N
Unassigned AOC	Zone 10 Landfills West and Southwest of SWMU 84 Scrap and Salvage Yard	3		N	Y	Y	Y
Unassigned SWMU	Zone 10 Berms	3		N	Y	Y	N
Unassigned SWMU	Evaporation Pit East of Bay 3 (Bldg 11-20)	3		Excavation	Y	Y	N
Unassigned SWMU	Evaporation Pit South of Bay 11/West of Bay 6 (Bldg 11-20)	3		Backfill/Cover	Y	Y	N
Unassigned SWMU	SWMU Capacitor Bank Rupture	3		N	Y	Y	N
AOC 7b	Bldg 12-4 Sulfuric Acid Spill	2	2004	N	Y	N	N
Permitted Unit 1	Container Storage 11-7N Pad	2	2005	N	Y	N	N
SVS 1	Denuded Area near Playa 1	2	2005	N	Y	N	N
SWMU 106	Waste Accumulation Site at Bldg 16-1	2	2005	Excavation	Y	N	N
SWMU 109	Concrete Sump (Bldg 12-68)	2	2004	Sump removal/Excavation	Y	N	N
SWMU 11	Surface Impoundment in Zone 5 (Bldg FS-16)	2	2005	D&D	Y	N	N

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SWMU 110	Bldg 12-68 Electroplating Waste Retention Basin (Moat)	2	1997	N	Y	N	N
SWMU 139	Photo Processing Leaching Bed (Bldg FS-10)	2	2005	N	Y	N	N
SWMU 140	Old Sewage Treatment Plant/Sludge Beds	2	2005	D&D / Excavation	Y	N	N
SWMU 5-03a	Drainage Ditches (Bldg 12-68)	2	2004	Excavation	Y	N	N
SWMU 5-03b	Drainage Ditches (Bldg 12-18)	2	2004	N	Y	N	N
SWMU 5-03c	Drainage Ditches (Bldg 12-9)	2	2004	N	Y	N	N
SWMU 5-03d	Drainage Ditch (Bldg 12-10)	2	2004	N	Y	N	N
SWMU 5-10	Drainage Ditches near the Old Sewage Treatment Plant	2	2005	Excavation	Y	N	N
SWMU 5-14	Drainage Ditch from Zone 11 to Playa 2	2	2005	N	Y	N	N
SWMU 53	Temporary High Explosives Burning Ground	2	2005	Excavation	Y	N	N
SWMU 63	Landfill 12	2	2005	Administrative Soil Cover	Y	N	Y
SWMU 70	Firing Site 5	2	1999	D&D / Excavation, Fence	Y	N	Y
SWMU 71	Firing Site 6	2	2000	N	Y	N	N
SWMU 73	Firing Site 15	2	2000	N	Y	N	N
SWMU 97	Waste Accumulation Area, Bldg 12-34	2	1999	N	Y	N	N
Unassigned	Dumpster Area near FS-11	2	2005	N	Y	N	N
Unassigned AOC	Bldg 12-1 Laundry Sump	2	2004	Decontamination	Y	N	N
Unassigned SWMU	FS-22 Container Gun Barrel	2	1999	D&D	Y	N	N
Unassigned SWMU	11-14 Hypalon Pond and Waste water Line	2	1995	Backfill/Cover	Y	N	N
AOC 2	Main Electrical Substation (4-28)	1	1993	N	N	N	N
AOC 6a	Gasoline Leaks at Bldgs 12-35	1	1999	Tank Removal / Excavation	N	N	N
AOC 6b	Gasoline Leak at Bldg 16-1	1	1999	N	N	N	N
Permitted Unit 10	Container Storage Area (Conex WM7)	1	2001	N	N	N	N

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Permitted Unit 11	Container Storage Area (Conex WM8)	1	2001	N	N	N	N
Permitted Unit 36	Bldgs 11-9 Tank	1	1999	N	N	N	N
Permitted Unit 37	Bldg 11-9 Tank	1	1999	N	N	N	N
Permitted Unit 38	Bldg 11-15a Tank	1	1999	N	N	N	N
Permitted Unit 39	Bldg 11-15a Tank	1	1999	N	N	N	N
Permitted Unit 40	Bldg 11-9 Container Storage Area	1	2002	D&D	N	N	N
Permitted Unit 46	Container Storage Area (Conex WM1-A)	1	1998	N	N	N	N
Permitted Unit 47	Container Storage Area (Conex WM1-B)	1	1998	N	N	N	N
Permitted Unit 48	Container Storage Area (Conex WM3-A)	1	1998	N	N	N	N
Permitted Unit 49	Container Storage Area (Conex WM5-A)	1	1998	N	N	N	N
Permitted Unit 50	Container Storage Area (Conex WM5-B)	1	1998	N	N	N	N
Permitted Unit 52	Igloo 4-46 Storage	1	1998	N	N	N	N
Permitted Unit 54	Igloo 4-74 Storage	1	1998	N	N	N	N
Permitted Unit 8	Container Storage Area (Conex WM5)	1	2001	N	N	N	N
Permitted Unit 9	Container Storage Area (Conex WM6)	1	2001	N	N	N	N
SWMU 108	Bldg 12-68 Batch Master	1	1997	D&D	N	N	N
SWMU 130	Portable Waste Solvent Tanks	1	2001	Excavation	N	N	N
SWMU 133	UST #30, Waste Oil Tank at Bldg 16-1	1	1999	N	N	N	N

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SWMU 79a	11-7A (Unit 41) Container	1	2005	N	N	N	N
SWMU 79b	11-7B Pad (Unit 42) Container	1	2005	N	N	N	N
SWMU 80	Container Storage Area Conex 1 (Permitted Unit 4) in Zone 4	1	2000	N	N	N	N
SWMU 80	Container Storage Area Conex 2 (Permitted Unit 5) in Zone 4	1	2000	N	N	N	N
SWMU 80	Container Storage Area Conex 3 (Permitted Unit 6) in Zone 4	1	2000	N	N	N	N
SWMU 80	Container Storage Area Conex 4 (Permitted Unit 7) in Zone 4	1	2000	N	N	N	N
SWMU 81	Mixed Waste Storage, Magazine 4-19	1	1993	N	N	N	N
Unassigned	UST #9 Bldg 12-17E	1	2004	Tank Removal / Excavation	N	N	N
Unassigned	UST #7 Bldg 12-5B	1	1999	Tank Removal / Excavation	N	N	N
Unassigned	UST #38 Bldg 12-98	1	1999	Tank Removal / Excavation	N	N	N
Unassigned	UST #39 North of Bldg 12-84A	1	1999	Tank Removal / Excavation	N	N	N

*SWMUs 14-27 at the Burning Ground consist of old burn pads that were carried through investigation and cleanup. Also included with those burn pads is an ash disposal trench that resulted from the disposal of ash from the burn pads. The final remedy for SWMUs 14-27 was a soil cover over the trench that must be inspected and maintained as necessary.

Administrative Closure – These sites were identified as potential release sites as part of the RCRA Facility Assessment. No evidence of release could be found upon further investigation, so these sites were not considered as a solid waste management unit and were closed.

RRS 1 – The sites were investigated and determined that all wastes and media were within background concentrations or below the PQL. These sites were closed with no further controls required.

RRS 2 – All wastes and contaminated media were remediated to health-based cleanup levels. Additionally, an ecological risk evaluation determined these sites posed no risk to the environment. These sites do not require post-closure care; however, deed recordation of the contaminated area was completed and the sites were restricted to industrial use.

RRS 3 - These sites required a human health and ecological risk assessment to determine the areas that required remedial action. All sites required deed recordation of the contamination, restriction of property use to industrial, and appropriate institutional controls to prevent contaminated groundwater usage and cross-contamination from perched groundwater to the drinking water aquifer. Some of these sites also require post-closure care such as maintenance of soil covers, fencing, and ditch liners.

Active – These sites are still in use for their intended purpose. These sites will undergo a full investigation and cleanup process once the site is no longer used by Pantex.

Appendix B

Extraction Well Flow Data

B. Extraction Well Flow Calculations

The flows included here have been calculated from information obtained from each pump and treat system at Pantex.

The P1PTS data acquisition system recorded hourly flow rates and well operation time. This was used to calculate the total flow from each well by month. The system also records total influent flow rates and total volume each day. 2017 SEPTS flow data was recorded in the I-Historian software and average hourly flow rates were downloaded from the I-Historian database. The total flow discussed in Chapter 2 is based on the influent flow volume which is easily calibrated and closely tracked. Because flow rates and operational status of the well is recorded hourly rather than each minute, there will be some inconsistencies between the total calculated flow from the wells vs. the influent flow into the system. These well flow calculations provide a basis for understanding the flow rate for each well, the amount of downtime, and allows for tracking of pumping rates for the wells. Changes in these rates can trigger maintenance at the wells.

B.1. P1PTS Flow Volumes

The P1PTS system was in its eighth full year of operation.

Table 1 presents a summary of well operation downtime by month. This shows the number of days a well pumped all or part of the day.

Table 2 presents the downtime contributors. Pumping was affected by system downtime due to the WWTF and irrigation system being unable to receive water during maintenance and repairs or due to upgrades.

Table 1. Days Operated per Month for P1PTS Wells

Well	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	2017 Well % Operation
PTX06-EW-69	16	15	24	27	31	19	8	24	31	31	23	31	280	77%
PTX06-EW-70	16	15	24	27	31	19	8	24	31	31	23	31	280	77%
PTX06-EW-71	16	15	24	27	31	19	8	24	31	11	23	0	229	63%
PTX06-EW-72	16	15	24	27	31	19	8	25	31	31	2	31	260	71%
PTX06-EW-73	16	15	24	27	31	19	8	25	31	31	23	31	281	77%
PTX06-EW-74	16	15	24	27	31	19	8	25	31	31	23	31	281	77%
PTX06-EW-75	16	15	24	27	31	19	8	18	24	31	23	31	267	77%
PTX06-EW-78A	14	15	24	27	31	19	8	17	0	26	21	31	233	64%
PTX06-EW-79	16	15	24	27	31	19	8	24	31	31	23	31	280	77%
PTX06-EW-80	0	0	0	21	31	19	8	20	31	31	23	31	215	59%
PTX06-EW-81	0	0	0	0	0	18	8	25	31	5	3	0	90	25%

Table 2. P1PTS Well Downtime Contributors

Month	Operational Contributor	Well Contributions	# Wells Affected
January	WWTF	Communication Issues	2
February	WWTF	Communication Issues	2
March	Carbon Exchange, WWTF	Communication Issues	2
April	none	Communication Issues	1
May	none	Flow control	1
June	Irrigation System Break, WWTF	none	0
July	Irrigation System Break, WWTF	none	0
August	WWTF	On/off due to issues with the paging system	0
September	WWTF	Flow control	1
October	WWTF	Flow control	0
November	WWTF	Flow control	0
December	WWTF	Flow control	2

LOTO= Lockout/Tagout

B.2. SEPTS Flow Volumes

The SEPTS has been operating since 1995 when it started as a treatability study. It has been expanded to become a corrective action for the southeastern portion of the perched groundwater plumes. Table 3 presents a summary of well operation time by month and the pumping priority for the well.

Operation of the system was affected by restricted flow to the WWTF during the year and shut down of lines of wells that could be impacted by the trenching of lines for the new Administrative Site Complex (ASC) that has been built south of Pantex Plant. Well were shut down and lines evacuated to prevent a potential release while the construction company was excavating for new lines. Well operation time has also been impacted by various electrical and control problems, but the primary impact for the operation of many wells is due to the prioritization of pumping from the well field. As discussed in Chapter 2, the SEPTS, as designed, can treat up to 300 gpm, although the system slightly exceeded 300 gpm at times. Since the system well field capacity exceeds 300 gpm, pumping priorities were established for extraction well operation (see Figure 2-9 in Chapter 2).

Table 4 provides a summary of well downtime contributions by month. Review of system logs indicates that the largest contributors to well downtime were various operational issues with individual wells, controls, power losses, and well prioritization. Although repairs are needed at some wells, the well field is still capable of reaching the 90% throughput goal. Note that water levels in PTX06-EW-6 and PTX06-EW-21 have fallen below the bottom of the screen, so the well can no longer be pumped. PTX06-EW-58 had experienced problems with pumping. A well video indicated that the well casing has stress cracks from about 8 ft bgs to 168 ft bgs. This well repair is complex and Pantex has been evaluating options to allow continued use of the well. If a viable option is not identified, Pantex will

replace the well. Currently, this well is not required to operate due to its low priority and continued low flows at the SEPTS. Many low priority wells are not operating due to low flow operation of the system while injection occurs. Injection was started in July after the break at the filter bank and is expected to continue into 2019 due to the complexity of the repairs. Pantex is evaluating other options for release of the treated water.

Table 3. Days Operated per Month for SEPTS Wells

Well	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	2017 Well % Operation	Priority
PTX06-EW-01	6	14	23	27	31	6	2	2	0	0	0	0	111	30%	7
PTX06-EW-02	6	14	23	27	31	11	14	31	28	25	18	12	240	66%	7
PTX06-EW-03	6	14	23	27	31	11	8	31	28	11	0	0	190	52%	7
PTX06-EW-04	5	0	0	0	0	0	0	1	0	0	0	27	33	9%	1
PTX06-EW-06	0	0	0	0	0	0	1	0	0	0	0	0	1	0%	7
PTX06-EW-07	0	0	0	0	0	0	0	0	0	0	0	0	0	0%	1
PTX06-EW-09	6	14	23	27	17	10	17	31	29	31	30	31	266	73%	4
PTX06-EW-10	6	14	23	27	17	10	17	31	30	31	30	31	267	73%	2
PTX06-EW-12	0	0	0	0	0	0	0	0	0	0	0	0	0	0%	1
PTX06-EW-15	6	14	23	27	17	5	2	4	2	9	30	31	170	47%	6
PTX06-EW-16	5	0	0	0	0	0	0	0	0	13	30	31	79	22%	1
PTX06-EW-17	0	0	0	0	0	0	0	0	0	0	0	0	0	0%	1
PTX06-EW-18	5	0	0	0	0	0	0	0	0	14	0	0	19	5%	1
PTX06-EW-19	0	0	0	0	0	0	0	0	0	0	0	0	0	0%	1
PTX06-EW-20	5	14	23	27	31	5	0	0	0	0	0	0	105	29%	7
PTX06-EW-21	0	0	0	0	0	0	0	0	0	0	0	0	0	0%	7
PTX06-EW-22	6	14	0	0	14	4	1	2	0	0	0	0	41	11%	7
PTX06-EW-23	5	0	0	0	14	4	6	2	22	22	30	31	136	37%	5
PTX06-EW-24	2	0	0	0	0	4	0	1	0	0	0	0	7	2%	7
PTX06-EW-25	5	0	0	0	14	4	1	2	0	0	0	0	26	7%	7
PTX06-EW-26	3	0	0	0	0	9	8	9	29	31	30	31	150	41%	5
PTX06-EW-27	0	0	0	0	0	0	0	0	0	0	0	0	0	0%	1
PTX06-EW-28	6	14	23	27	17	5	2	10	2	0	0	31	137	38%	6
PTX06-EW-29	6	14	23	19	17	11	7	5	8	0	0	0	110	30%	7
PTX06-EW-30	5	0	0	0	14	10	10	23	27	30	30	31	180	49%	5
PTX06-EW-31	5	0	0	0	14	10	11	23	28	31	30	31	183	50%	5
PTX06-EW-32	5	0	0	0	14	10	17	31	28	31	30	31	197	54%	3
PTX06-EW-33	5	0	0	0	14	10	17	31	28	31	30	31	197	54%	3
PTX06-EW-34	3	0	0	0	14	10	16	31	28	31	30	31	194	53%	3
PTX06-EW-35	5	0	0	0	14	10	17	25	30	26	30	31	188	52%	1

Well	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	2017 Well %		Priority
													Total	Operation	
PTX06-EW-36	6	14	23	10	17	10	17	31	29	31	30	31	249	68%	3
PTX06-EW-37	6	14	23	27	17	10	17	31	29	31	30	31	266	73%	4
PTX06-EW-38	6	14	23	27	17	10	17	31	29	31	30	31	266	73%	4
PTX06-EW-39	4	14	23	27	17	10	14	31	29	31	30	31	261	72%	4
PTX06-EW-40	6	14	23	19	17	10	17	31	7	21	0	16	181	50%	4
PTX06-EW-41	6	14	23	19	17	10	8	31	29	31	30	31	249	68%	5
PTX06-EW-42	3	14	23	19	17	10	17	31	24	0	0	0	158	43%	3
PTX06-EW-43	6	14	23	19	17	10	17	30	16	14	30	11	207	57%	3
PTX06-EW-44	6	14	23	19	17	10	17	31	10	23	0	31	201	55%	3
PTX06-EW-45	0	0	0	0	0	0	0	0	0	0	5	0	5	1%	3
PTX06-EW-46	5	0	0	0	0	9	17	31	30	31	30	31	184	50%	3
PTX06-EW-48	0	0	0	0	0	0	0	0	0	5	0	0	5	1%	3
PTX06-EW-49	6	0	23	19	17	10	1	0	17	0	0	0	93	25%	7
PTX06-EW-50	5	0	0	0	0	0	0	1	10	11	30	31	88	24%	1
PTX06-EW-51	0	0	12	27	17	10	17	29	29	31	30	31	233	64%	2
PTX06-EW-53	3	0	0	0	14	10	17	27	30	15	30	31	177	48%	1
PTX06-EW-54	4	14	23	27	31	10	15	28	25	31	30	31	269	74%	1
PTX06-EW-55	6	14	23	27	31	10	15	8	30	31	30	31	256	70%	1
PTX06-EW-56	4	14	23	27	31	10	15	25	30	31	30	0	240	66%	1
PTX06-EW-57	6	14	23	27	31	10	15	8	30	31	30	31	256	70%	1
PTX06-EW-58	5	0	0	0	0	0	0	0	0	0	0	0	5	1%	7
PTX06-EW-59	5	0	0	0	0	5	0	0	1	0	0	0	11	3%	7
PTX06-EW-60	3	14	23	8	14	5	0	0	1	0	0	0	68	19%	7
PTX06-EW-61	1	14	23	27	31	6	0	0	1	0	0	0	103	28%	7
PTX06-EW-62	1	14	23	27	31	6	0	0	1	0	0	0	103	28%	7
PTX06-EW-63	5	14	23	27	17	6	0	0	1	0	0	0	93	25%	7
PTX06-EW-64	5	14	23	27	17	6	0	0	1	0	0	0	93	25%	7
PTX06-EW-65	4	14	23	27	31	5	0	0	0	2	0	0	106	29%	7
PTX06-EW-66	3	14	23	27	31	5	4	0	0	0	0	0	107	29%	7
PTX06-EW-67	6	14	23	27	17	10	16	15	29	31	30	31	249	68%	2
PTX06-EW-68	6	14	23	27	17	10	16	15	29	31	30	31	249	68%	2

Table 4. SEPTS Well Downtime Contributors

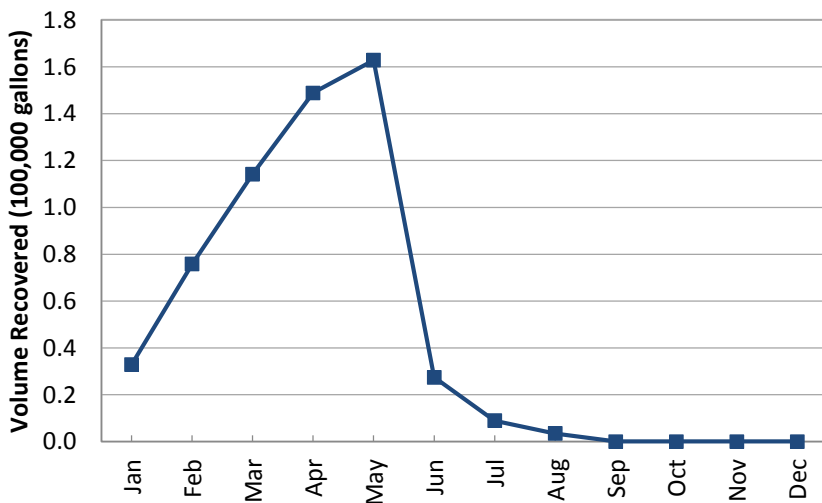
Month	Operational Contributor	Well Contributions	# Wells Affected
Jan	Maintenance	Dry well, power issues, pump and motor issues	3
Feb	Maintenance, WWTF	Dry well, power issues, pump and motor issues	27
Mar	Maintenance, WWTF	Dry well, power issues, pump and motor issues	26
Apr	Maintenance, WWTF	Dry well, power issues, pump and motor issues, shutdown and emptied lines for ASC trenching	27
May	Maintenance, WWTF	Dry well, power issues, pump and motor issues, shutdown and emptied lines for ASC trenching	15
Jun	Carbon Exchange, Maintenance, WWTF	Dry well, power issues, pump and motor issues, shutdown and emptied lines for ASC trenching	10
Jul	Maintenance	Dry well, power issues, shutdown and emptied lines for ASC trenching	18
Aug	Maintenance	Dry well, power issues, shutdown and emptied lines for ASC trenching	18
Sep	Maintenance	Dry well, pump and motor replacement, shutdown and emptied lines for ASC trenching	16
Oct	Maintenance	Dry well, casing damage, pump and motor replacement, power issues	20
Nov	Maintenance, WWTF	Dry well, casing damage, pump and motor replacement, power issues	28
Dec	Maintenance, WWTF	Dry well, casing damage, pump and motor replacement, power issues	21

WWTF = Wastewater treatment facility

ASC = Administrative Site Complex

Southeast Pump and Treat System
PTX06-EW-1

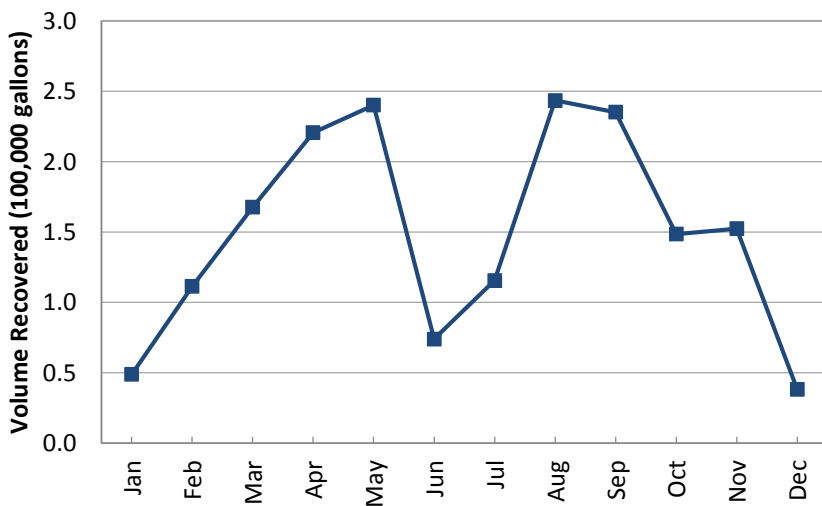
2017 Monthly Groundwater Flow Rate



Month	Volume Recovered (gallons)
Jan	32,897
Feb	75,793
Mar	114,214
Apr	148,829
May	162,825
Jun	27,450
Jul	8,949
Aug	3,540
Sep	0
Oct	0
Nov	0
Dec	0
Total	574,497

PTX06-EW-2

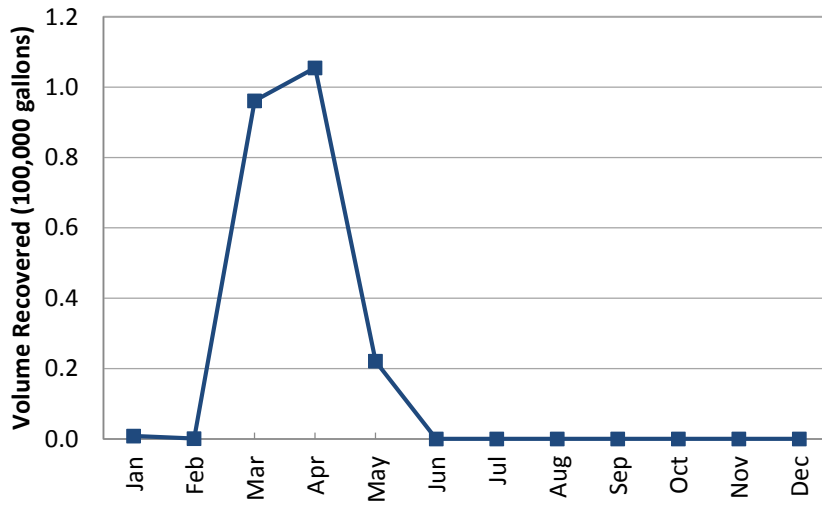
2017 Monthly Groundwater Flow Rate



Month	Volume Recovered (gallons)
Jan	48,848
Feb	111,292
Mar	167,761
Apr	220,653
May	240,287
Jun	73,911
Jul	115,586
Aug	243,519
Sep	235,200
Oct	148,595
Nov	152,477
Dec	38,302
Total	1,796,431

PTX06-EW-3

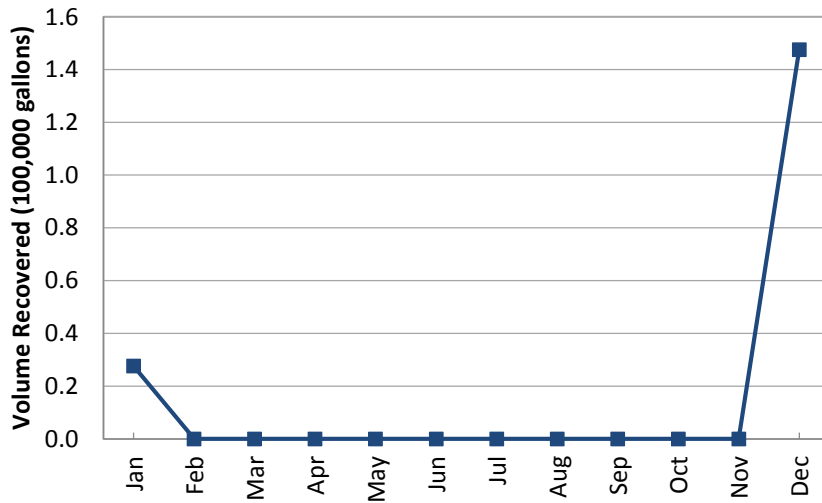
2017 Monthly Groundwater Flow Rate



Volume Recovered (gallons)	
Month	
Jan	853
Feb	100
Mar	96,161
Apr	105,494
May	22,072
Jun	0
Jul	0
Aug	0
Sep	0
Oct	0
Nov	0
Dec	0
Total	224,680

PTX06-EW-4

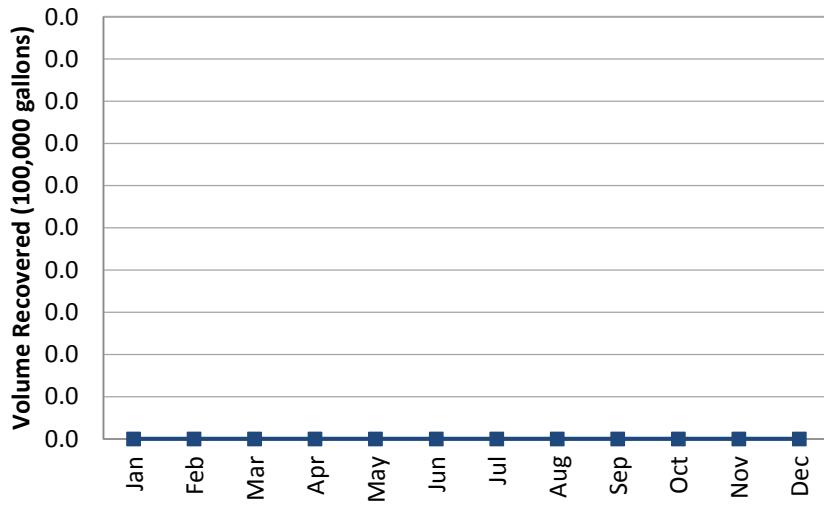
2017 Monthly Groundwater Flow Rate



Volume Recovered (gallons)	
Month	
Jan	27,638
Feb	0
Mar	0
Apr	0
May	0
Jun	0
Jul	0
Aug	0
Sep	0
Oct	0
Nov	0
Dec	147,529
Total	175,167

PTX06-EW-6

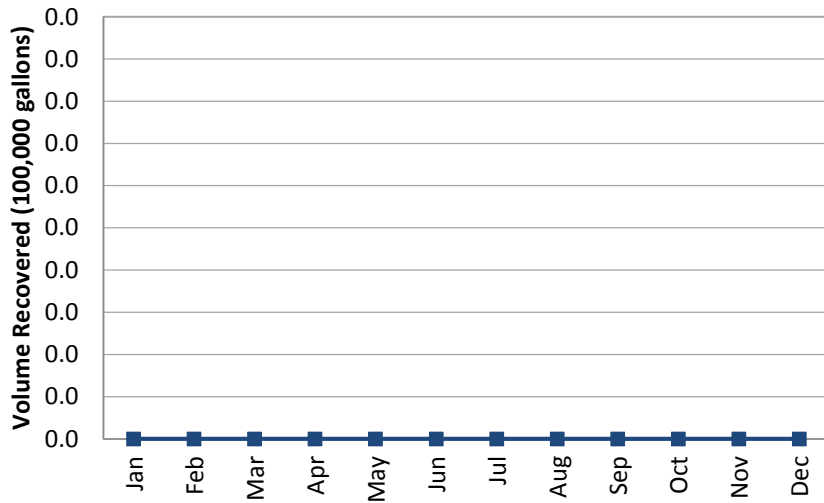
2017 Monthly Groundwater Flow Rate



Volume Recovered (gallons)	
Month	
Jan	0
Feb	0
Mar	0
Apr	0
May	0
Jun	0
Jul	0
Aug	0
Sep	0
Oct	0
Nov	0
Dec	0
Total	0

PTX06-EW-7

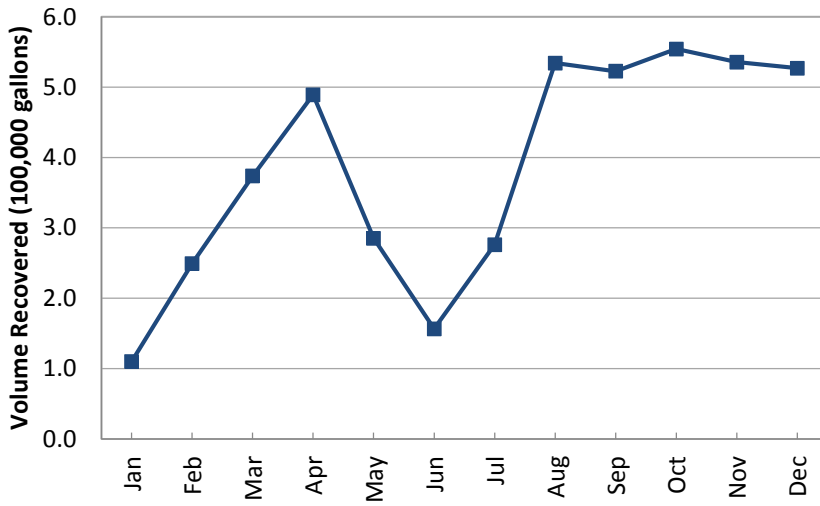
2017 Monthly Groundwater Flow Rate



Volume Recovered (gallons)	
Month	
Jan	0
Feb	0
Mar	0
Apr	0
May	0
Jun	0
Jul	0
Aug	0
Sep	0
Oct	0
Nov	0
Dec	0
Total	0

PTX06-EW-9

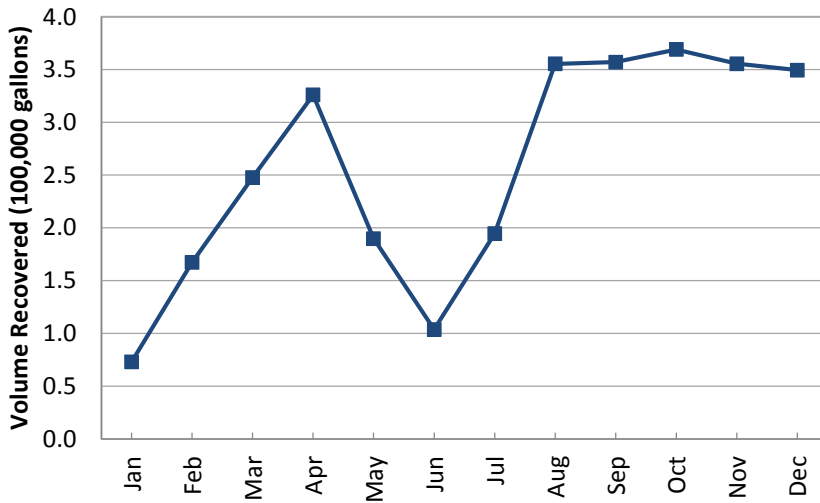
2017 Monthly Groundwater Flow Rate



Volume Recovered (gallons)	
Month	
Jan	110,037
Feb	249,372
Mar	373,571
Apr	489,295
May	285,133
Jun	156,550
Jul	276,186
Aug	534,284
Sep	522,735
Oct	554,332
Nov	535,789
Dec	527,138
Total	4,614,422

PTX06-EW-10

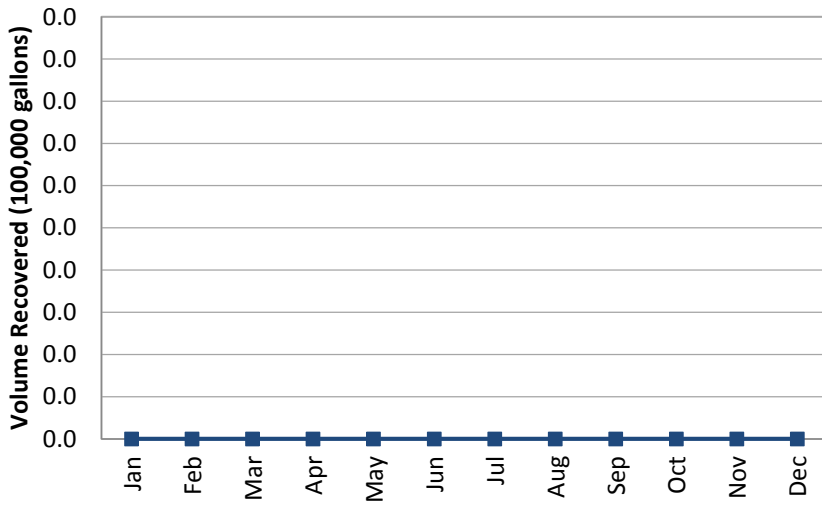
2017 Monthly Groundwater Flow Rate



Volume Recovered (gallons)	
Month	
Jan	73,123
Feb	167,391
Mar	247,689
Apr	326,165
May	189,792
Jun	103,701
Jul	194,603
Aug	355,451
Sep	357,221
Oct	369,110
Nov	355,721
Dec	349,636
Total	3,089,603

PTX06-EW-12

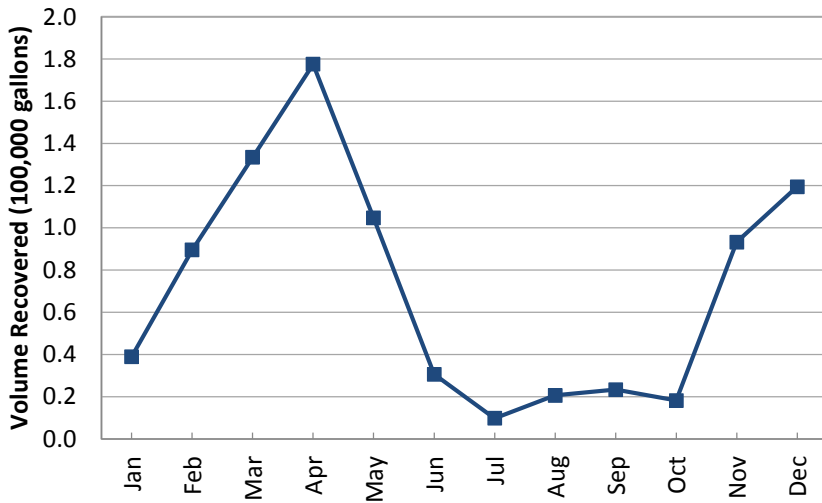
2017 Monthly Groundwater Flow Rate



Volume Recovered (gallons)	
Month	
Jan	0
Feb	0
Mar	0
Apr	0
May	0
Jun	0
Jul	0
Aug	0
Sep	0
Oct	0
Nov	0
Dec	0
Total	0

PTX06-EW-15

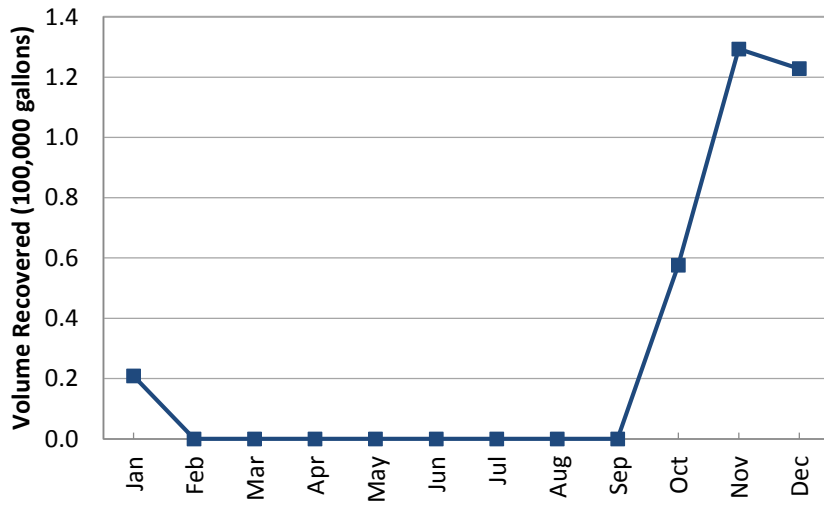
2017 Monthly Groundwater Flow Rate



Volume Recovered (gallons)	
Month	
Jan	38,997
Feb	89,567
Mar	133,468
Apr	177,567
May	104,695
Jun	30,684
Jul	9,820
Aug	20,668
Sep	23,348
Oct	18,193
Nov	93,263
Dec	119,491
Total	859,761

PTX06-EW-16

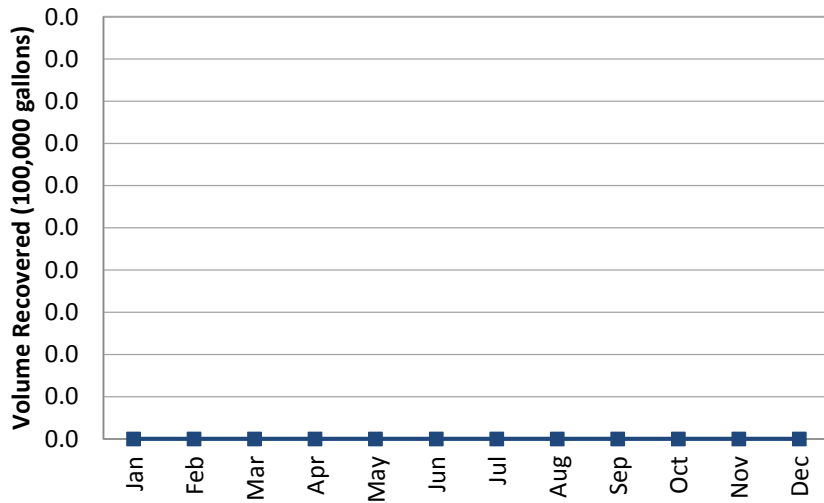
2017 Monthly Groundwater Flow Rate



Volume Recovered (gallons)	
Month	
Jan	20,855
Feb	0
Mar	0
Apr	0
May	0
Jun	0
Jul	0
Aug	0
Sep	0
Oct	57,603
Nov	129,373
Dec	122,815
Total	330,646

PTX06-EW-17

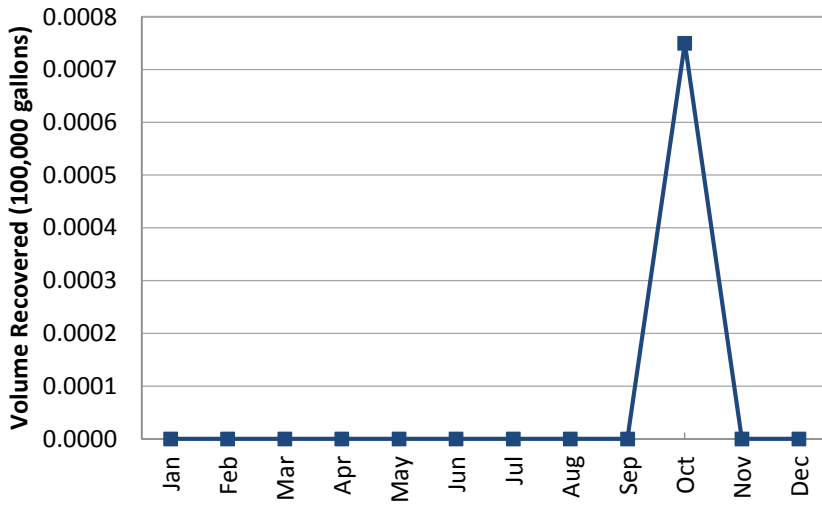
2017 Monthly Groundwater Flow Rate



Volume Recovered (gallons)	
Month	
Jan	0
Feb	0
Mar	0
Apr	0
May	0
Jun	0
Jul	0
Aug	0
Sep	0
Oct	0
Nov	0
Dec	0
Total	0

PTX06-EW-18

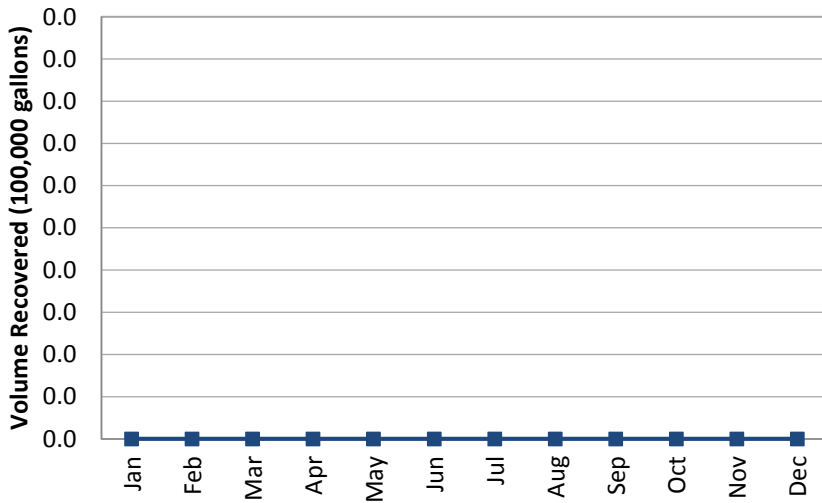
2017 Monthly Groundwater Flow Rate



Volume Recovered (gallons)	
Month	
Jan	0
Feb	0
Mar	0
Apr	0
May	0
Jun	0
Jul	0
Aug	0
Sep	0
Oct	75
Nov	0
Dec	0
Total	75

PTX06-EW-19

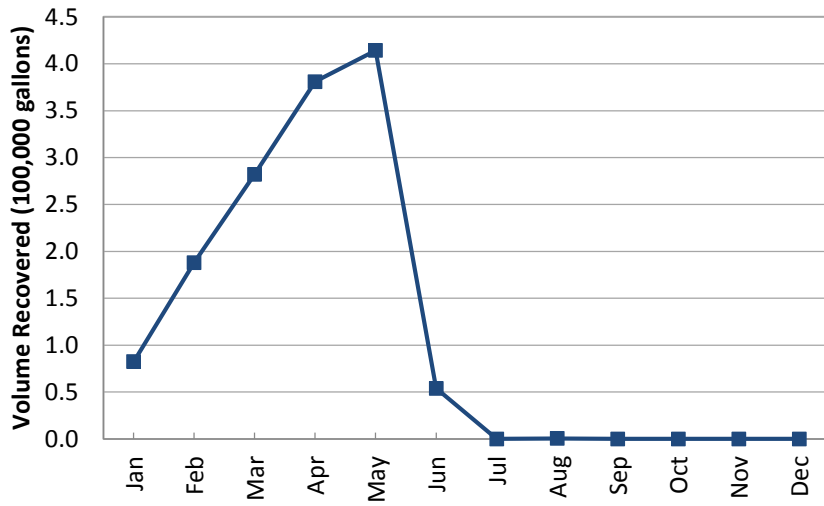
2017 Monthly Groundwater Flow Rate



Volume Recovered (gallons)	
Month	
Jan	0
Feb	0
Mar	0
Apr	0
May	0
Jun	0
Jul	0
Aug	0
Sep	0
Oct	0
Nov	0
Dec	0
Total	0

PTX06-EW-20

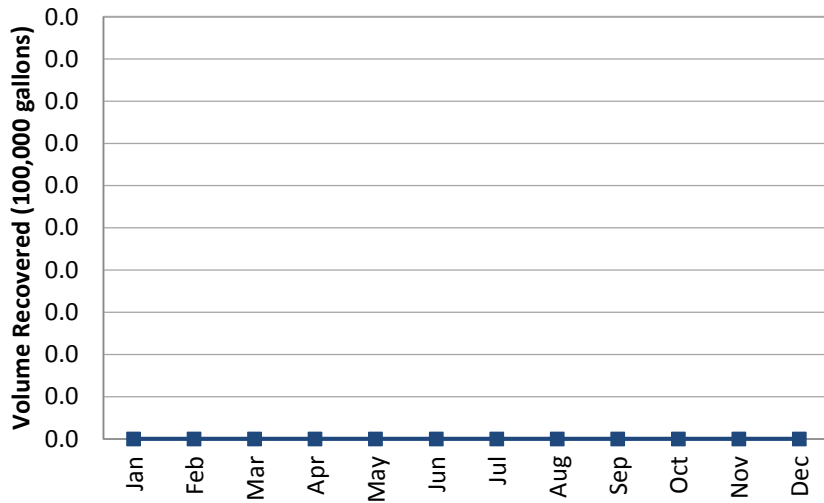
2017 Monthly Groundwater Flow Rate



Volume Recovered (gallons)	
Month	
Jan	82,384
Feb	187,940
Mar	282,105
Apr	381,048
May	414,281
Jun	54,030
Jul	117
Aug	589
Sep	0
Oct	0
Nov	0
Dec	0
Total	1,402,494

PTX06-EW-21

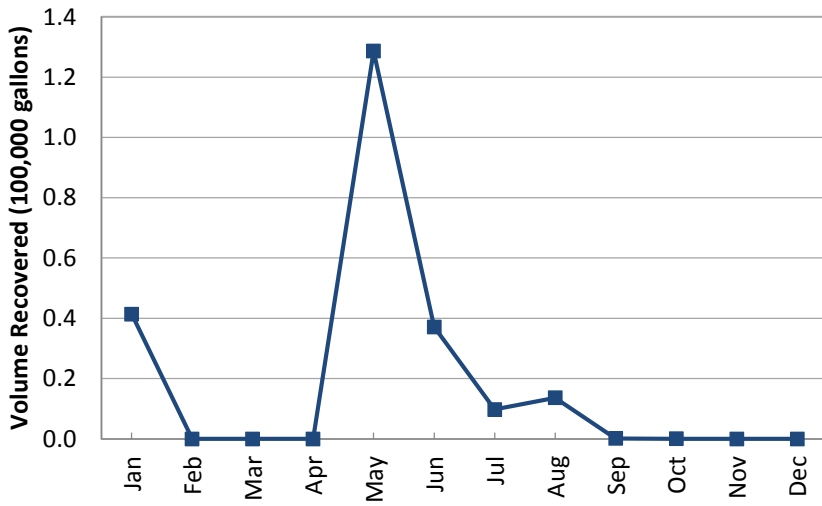
2017 Monthly Groundwater Flow Rate



Volume Recovered (gallons)	
Month	
Jan	0
Feb	0
Mar	0
Apr	0
May	0
Jun	0
Jul	0
Aug	0
Sep	0
Oct	0
Nov	0
Dec	0
Total	0

PTX06-EW-22

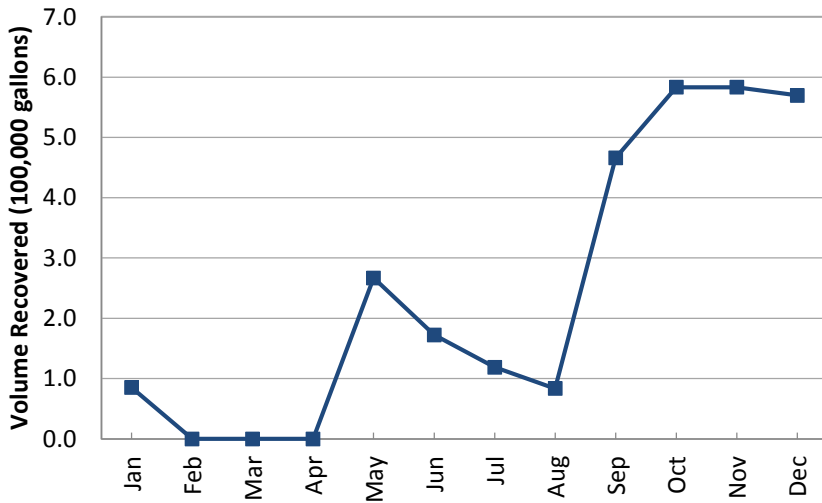
2017 Monthly Groundwater Flow Rate



Volume Recovered (gallons)	
Month	
Jan	41,401
Feb	0
Mar	0
Apr	0
May	128,691
Jun	37,147
Jul	9,809
Aug	13,643
Sep	182
Oct	84
Nov	0
Dec	0
Total	230,957

PTX06-EW-23

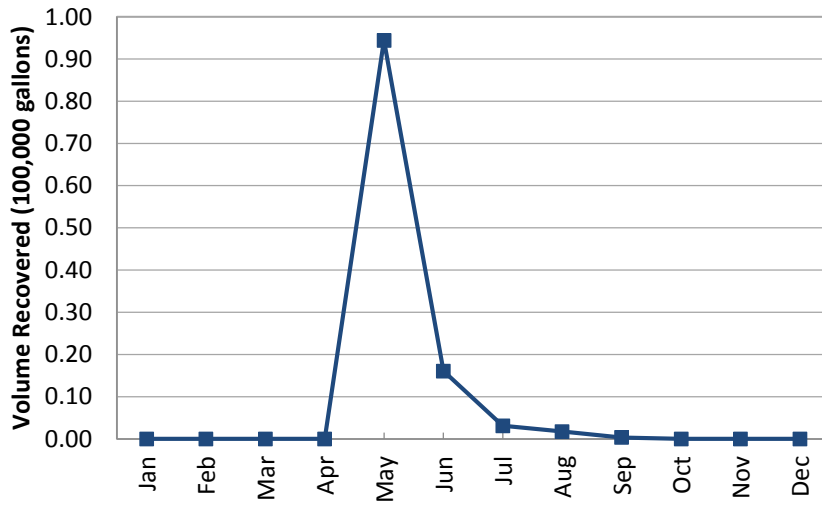
2017 Monthly Groundwater Flow Rate



Volume Recovered (gallons)	
Month	
Jan	85,142
Feb	0
Mar	0
Apr	0
May	267,004
Jun	172,619
Jul	118,887
Aug	83,771
Sep	466,248
Oct	583,470
Nov	583,414
Dec	569,788
Total	2,930,343

PTX06-EW-24

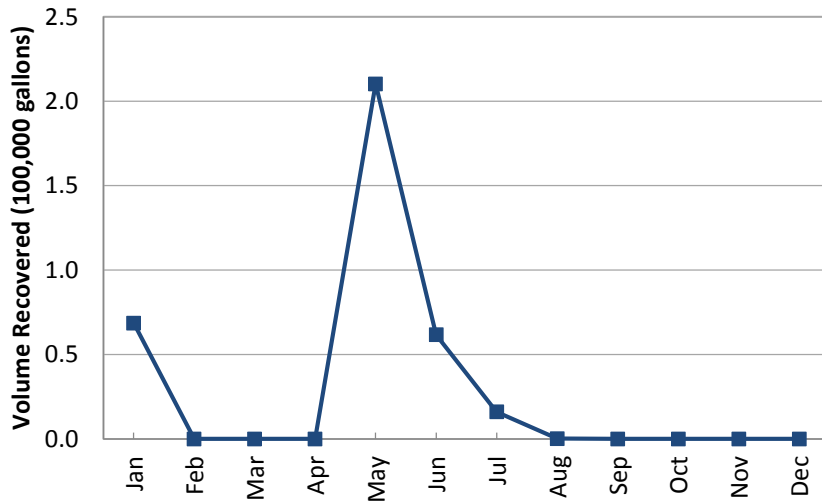
2017 Monthly Groundwater Flow Rate



Volume Recovered (gallons)	
Month	
Jan	0
Feb	0
Mar	0
Apr	0
May	94,439
Jun	16,076
Jul	3,107
Aug	1,756
Sep	376
Oct	0
Nov	0
Dec	0
Total	115,754

PTX06-EW-25

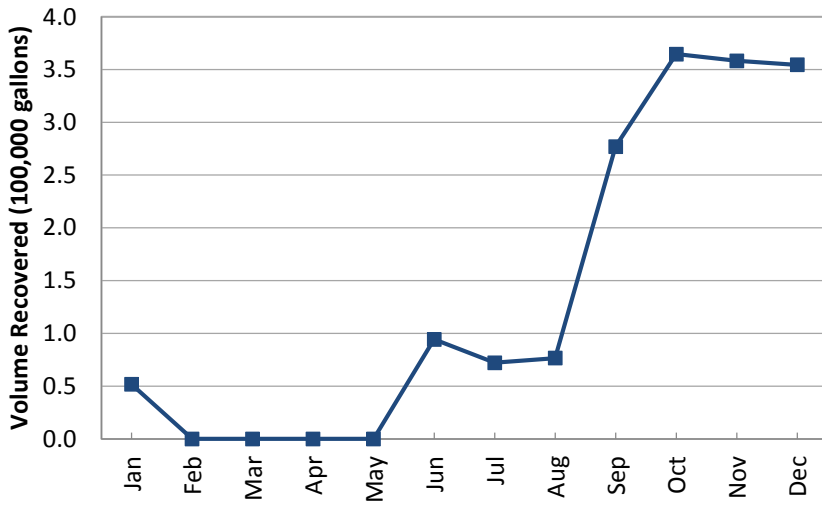
2017 Monthly Groundwater Flow Rate



Volume Recovered (gallons)	
Month	
Jan	68,671
Feb	0
Mar	0
Apr	0
May	210,384
Jun	61,680
Jul	16,079
Aug	213
Sep	0
Oct	0
Nov	0
Dec	0
Total	357,027

PTX06-EW-26

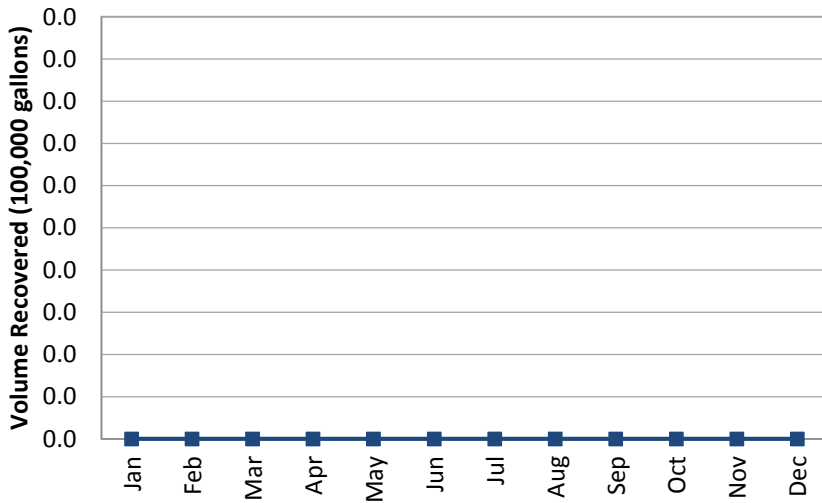
2017 Monthly Groundwater Flow Rate



Volume Recovered (gallons)	
Month	
Jan	51,809
Feb	0
Mar	0
Apr	0
May	0
Jun	94,355
Jul	72,255
Aug	76,626
Sep	277,201
Oct	364,800
Nov	358,425
Dec	354,532
Total	1,650,003

PTX06-EW-27

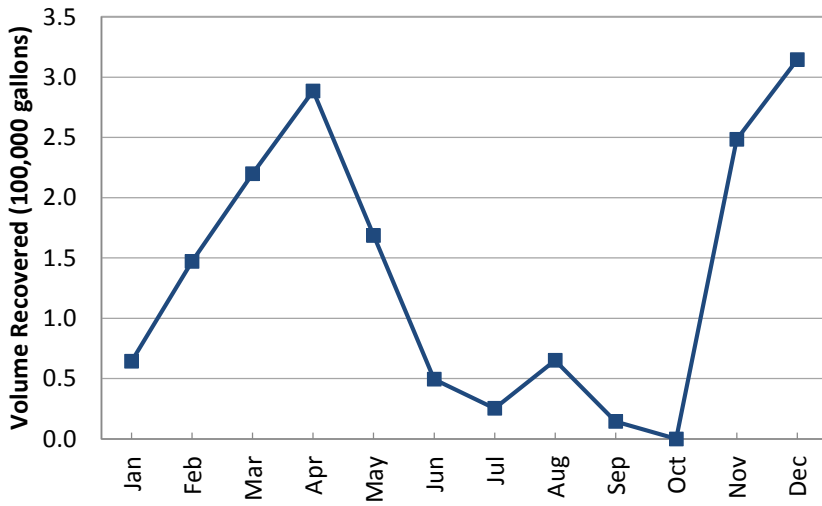
2017 Monthly Groundwater Flow Rate



Volume Recovered (gallons)	
Month	
Jan	0
Feb	0
Mar	0
Apr	0
May	0
Jun	0
Jul	0
Aug	0
Sep	0
Oct	0
Nov	0
Dec	0
Total	0

PTX06-EW-28

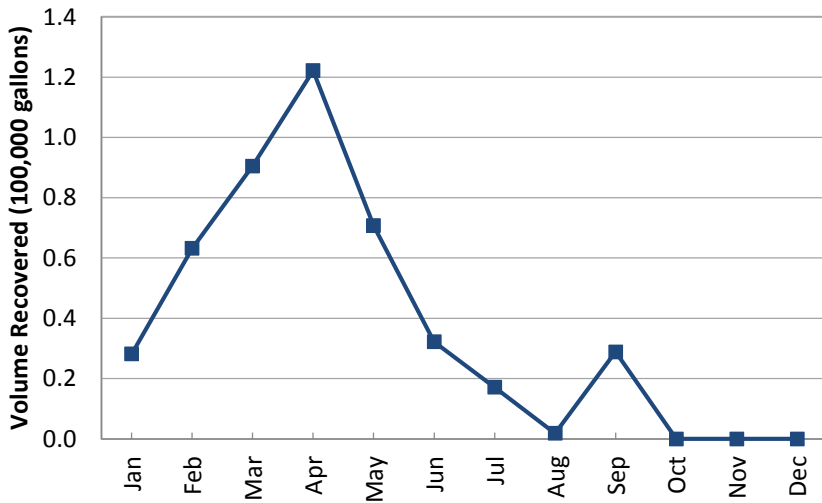
2017 Monthly Groundwater Flow Rate



Volume Recovered (gallons)	
Month	
Jan	64,565
Feb	147,275
Mar	219,978
Apr	288,631
May	168,730
Jun	49,553
Jul	25,408
Aug	65,175
Sep	14,482
Oct	0
Nov	248,489
Dec	314,531
Total	1,606,817

PTX06-EW-29

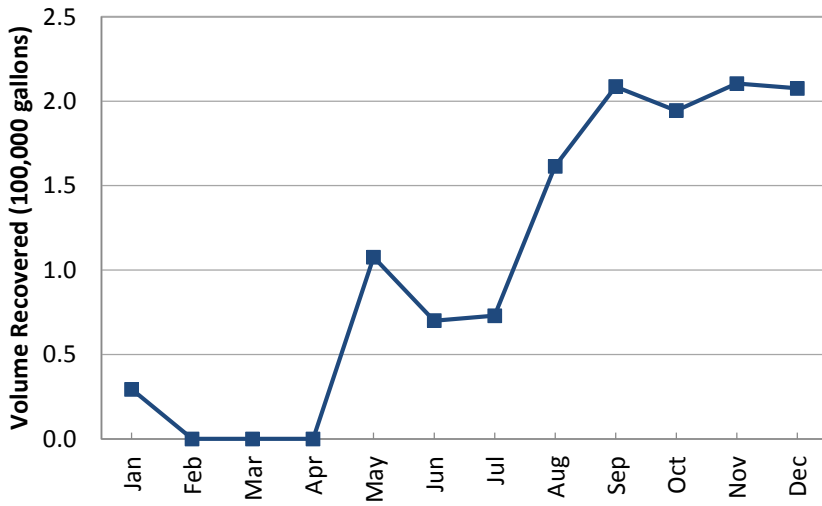
2017 Monthly Groundwater Flow Rate



Volume Recovered (gallons)	
Month	
Jan	28,188
Feb	63,184
Mar	90,541
Apr	122,174
May	70,726
Jun	32,249
Jul	17,178
Aug	1,881
Sep	28,876
Oct	0
Nov	0
Dec	0
Total	454,997

PTX06-EW-30

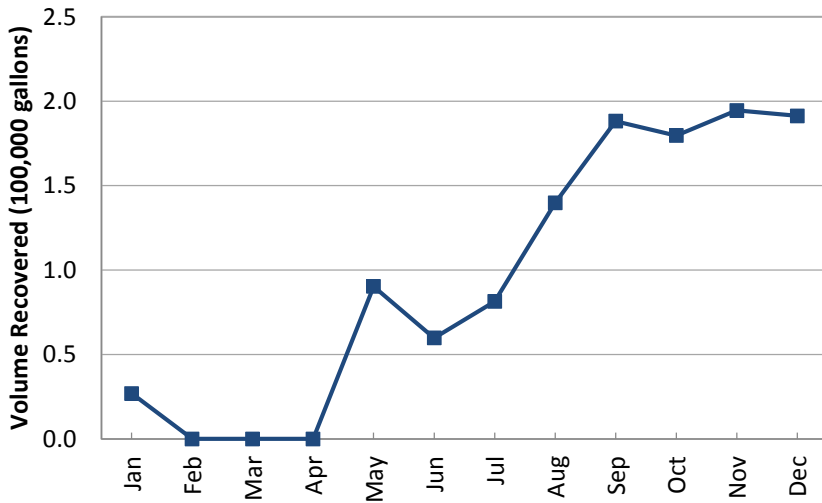
2017 Monthly Groundwater Flow Rate



Month	Volume Recovered (gallons)
Jan	29,426
Feb	0
Mar	0
Apr	0
May	107,691
Jun	70,015
Jul	73,008
Aug	161,426
Sep	208,764
Oct	194,498
Nov	210,551
Dec	207,684
Total	1,263,063

PTX06-EW-31

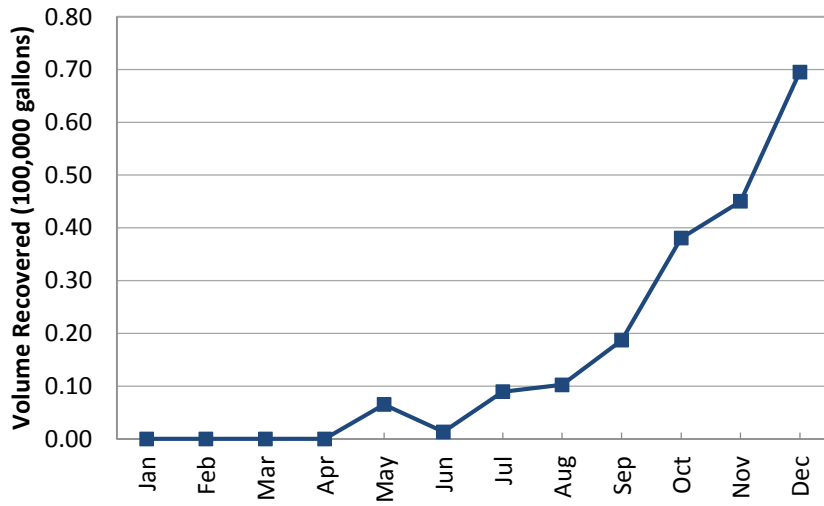
2017 Monthly Groundwater Flow Rate



Month	Volume Recovered (gallons)
Jan	26,965
Feb	0
Mar	0
Apr	0
May	90,337
Jun	59,805
Jul	81,378
Aug	139,780
Sep	188,298
Oct	179,766
Nov	194,618
Dec	191,428
Total	1,152,375

PTX06-EW-32

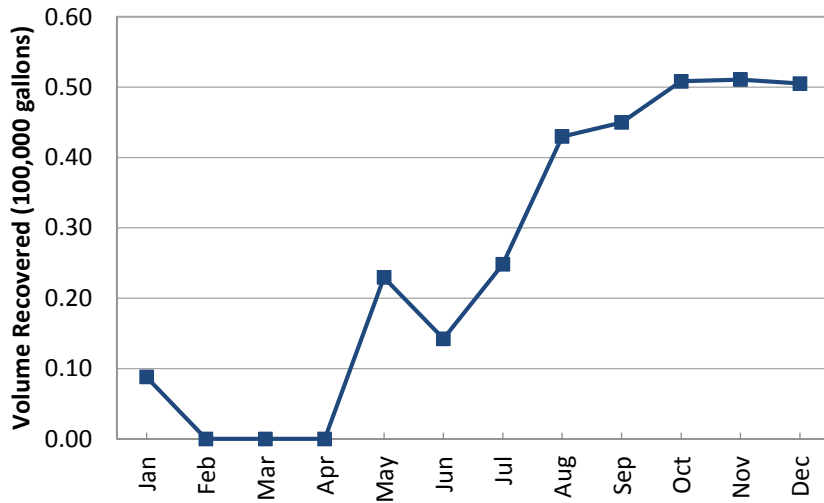
2017 Monthly Groundwater Flow Rate



Volume Recovered (gallons)	
Month	
Jan	0
Feb	0
Mar	0
Apr	0
May	6,544
Jun	1,359
Jul	8,950
Aug	10,254
Sep	18,731
Oct	38,072
Nov	45,032
Dec	69,539
Total	198,481

PTX06-EW-33

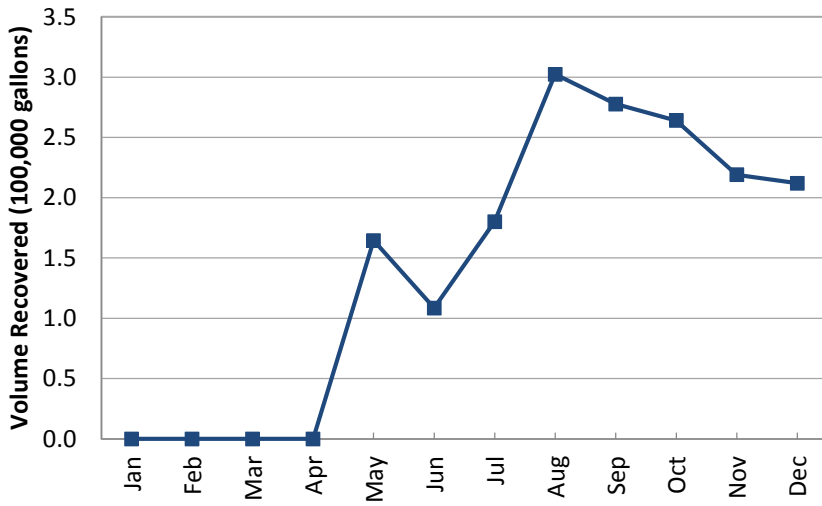
2017 Monthly Groundwater Flow Rate



Volume Recovered (gallons)	
Month	
Jan	8,806
Feb	0
Mar	0
Apr	0
May	22,953
Jun	14,241
Jul	24,819
Aug	42,994
Sep	45,012
Oct	50,842
Nov	51,103
Dec	50,519
Total	311,289

PTX06-EW-34

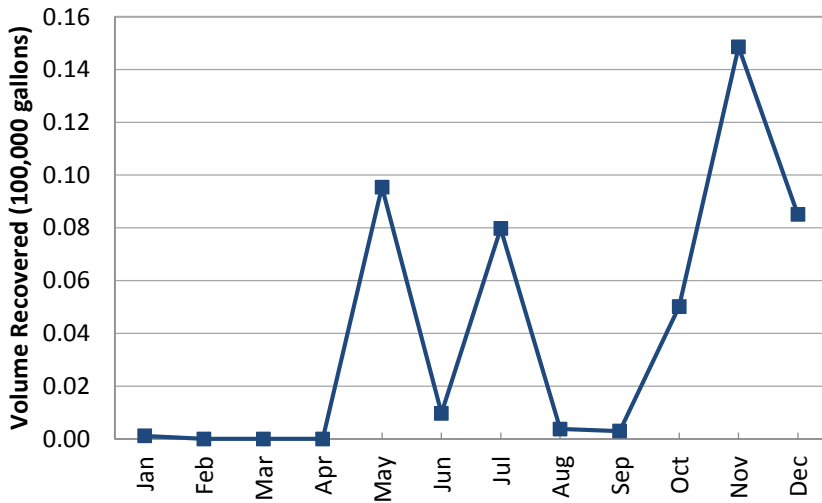
2017 Monthly Groundwater Flow Rate



Month	Volume Recovered (gallons)
Jan	0
Feb	0
Mar	0
Apr	0
May	164,577
Jun	108,610
Jul	180,177
Aug	302,381
Sep	277,713
Oct	264,165
Nov	218,978
Dec	211,963
Total	1,728,564

PTX06-EW-35

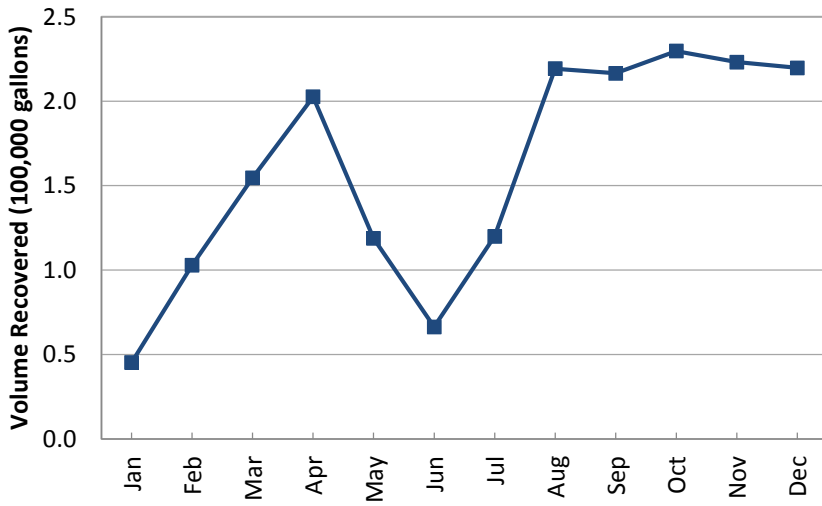
2017 Monthly Groundwater Flow Rate



Month	Volume Recovered (gallons)
Jan	119
Feb	0
Mar	0
Apr	0
May	9,544
Jun	975
Jul	7,974
Aug	379
Sep	298
Oct	5,018
Nov	14,862
Dec	8,511
Total	47,680

PTX06-EW-36

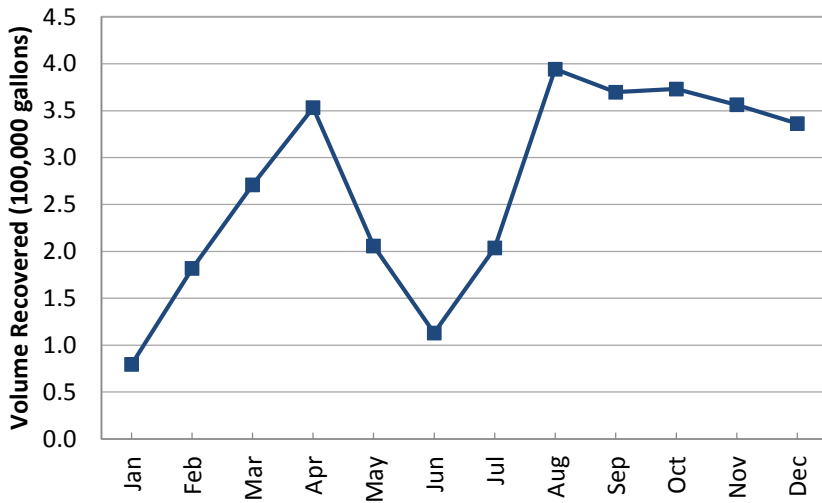
2017 Monthly Groundwater Flow Rate



Volume Recovered (gallons)	
Month	
Jan	45,284
Feb	102,878
Mar	154,651
Apr	202,630
May	118,708
Jun	66,366
Jul	119,940
Aug	219,358
Sep	216,606
Oct	229,747
Nov	223,246
Dec	219,795
Total	1,919,209

PTX06-EW-37

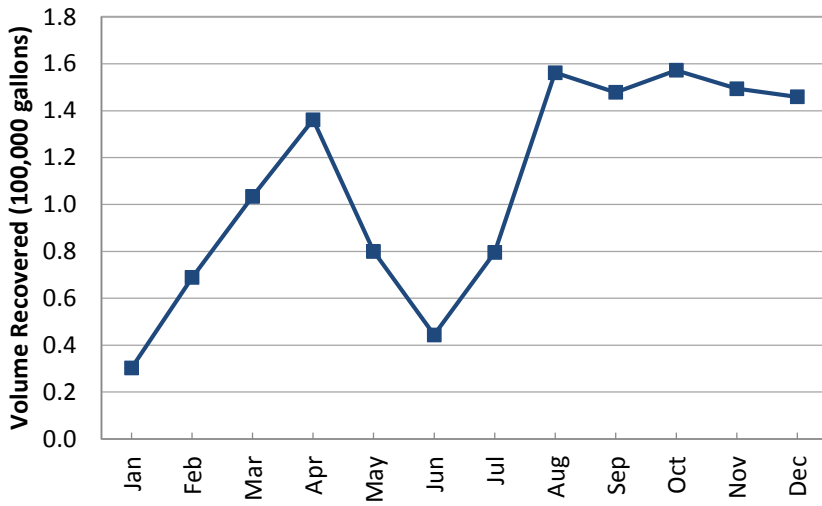
2017 Monthly Groundwater Flow Rate



Volume Recovered (gallons)	
Month	
Jan	79,463
Feb	181,741
Mar	270,931
Apr	353,287
May	205,697
Jun	112,962
Jul	203,487
Aug	394,294
Sep	369,746
Oct	373,168
Nov	356,234
Dec	336,256
Total	3,237,266

PTX06-EW-38

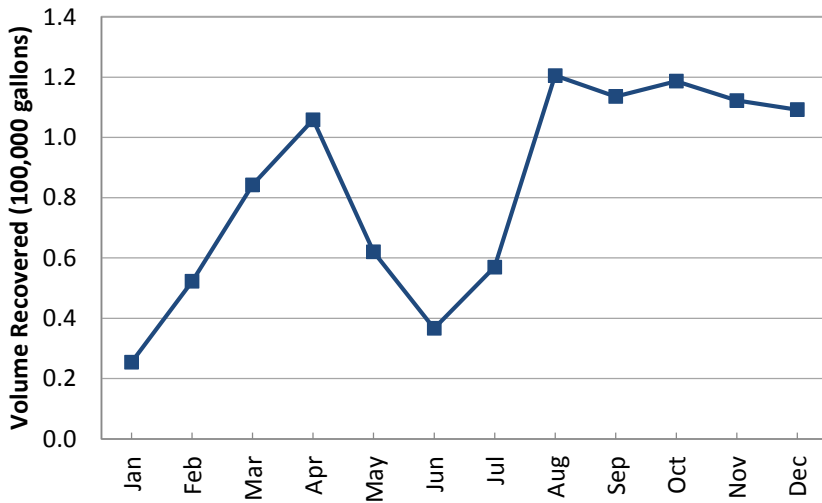
2017 Monthly Groundwater Flow Rate



Month	Volume Recovered (gallons)
Jan	30,310
Feb	68,868
Mar	103,409
Apr	136,190
May	79,949
Jun	44,357
Jul	79,476
Aug	156,218
Sep	147,847
Oct	157,244
Nov	149,368
Dec	145,909
Total	1,299,145

PTX06-EW-39

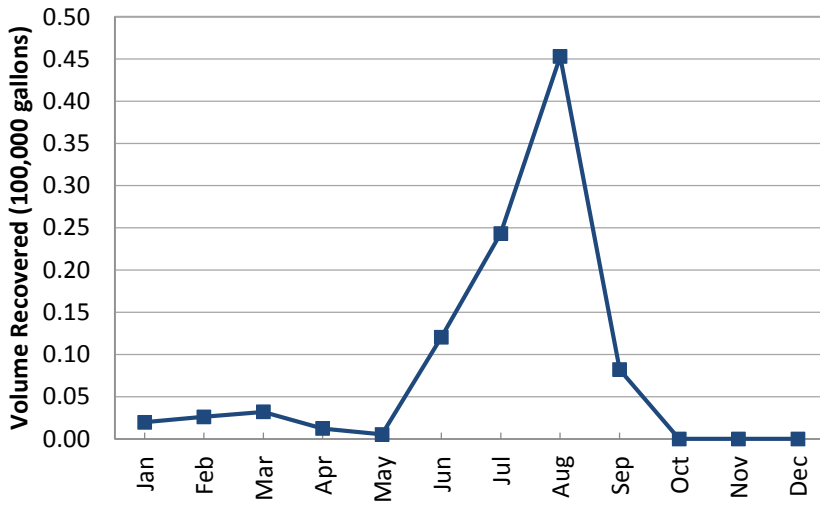
2017 Monthly Groundwater Flow Rate



Month	Volume Recovered (gallons)
Jan	25,504
Feb	52,302
Mar	84,285
Apr	105,920
May	62,028
Jun	36,664
Jul	57,025
Aug	120,530
Sep	113,594
Oct	118,690
Nov	112,286
Dec	109,275
Total	998,103

PTX06-EW-40

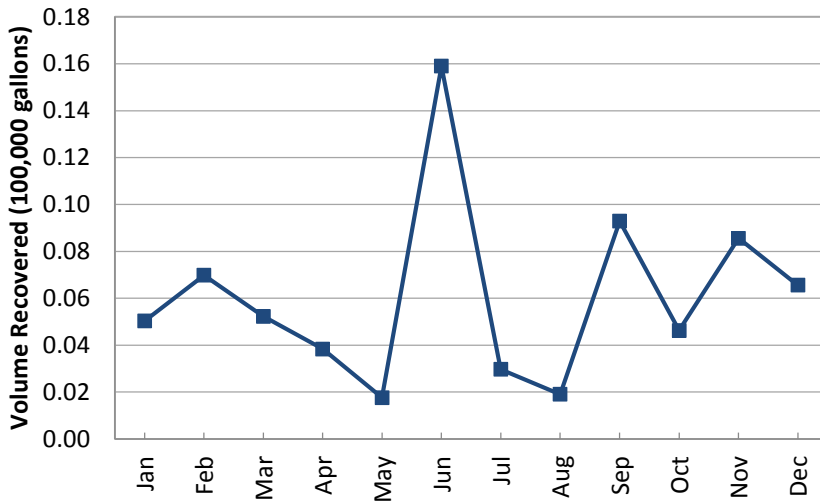
2017 Monthly Groundwater Flow Rate



Month	Volume Recovered (gallons)
Jan	1,984
Feb	2,621
Mar	3,220
Apr	1,247
May	548
Jun	12,053
Jul	24,335
Aug	45,312
Sep	8,205
Oct	0
Nov	0
Dec	0
Total	99,525

PTX06-EW-41

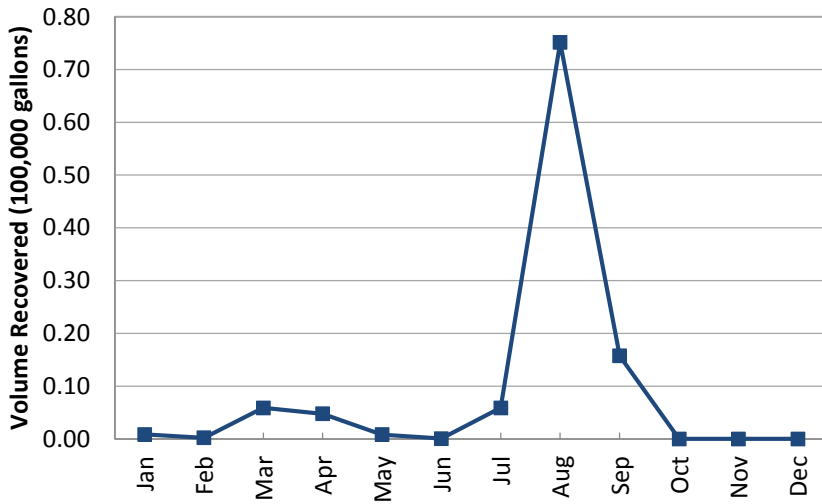
2017 Monthly Groundwater Flow Rate



Month	Volume Recovered (gallons)
Jan	5,028
Feb	6,979
Mar	5,229
Apr	3,837
May	1,760
Jun	15,901
Jul	2,969
Aug	1,908
Sep	9,285
Oct	4,628
Nov	8,558
Dec	6,561
Total	72,643

PTX06-EW-42

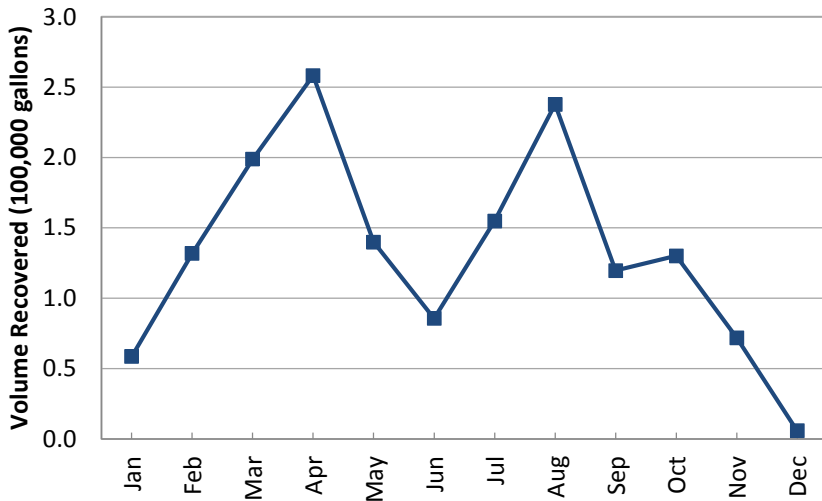
2017 Monthly Groundwater Flow Rate



Month	Volume Recovered (gallons)
Jan	869
Feb	235
Mar	5,897
Apr	4,772
May	822
Jun	68
Jul	5,892
Aug	75,170
Sep	15,735
Oct	0
Nov	0
Dec	0
Total	109,460

PTX06-EW-43

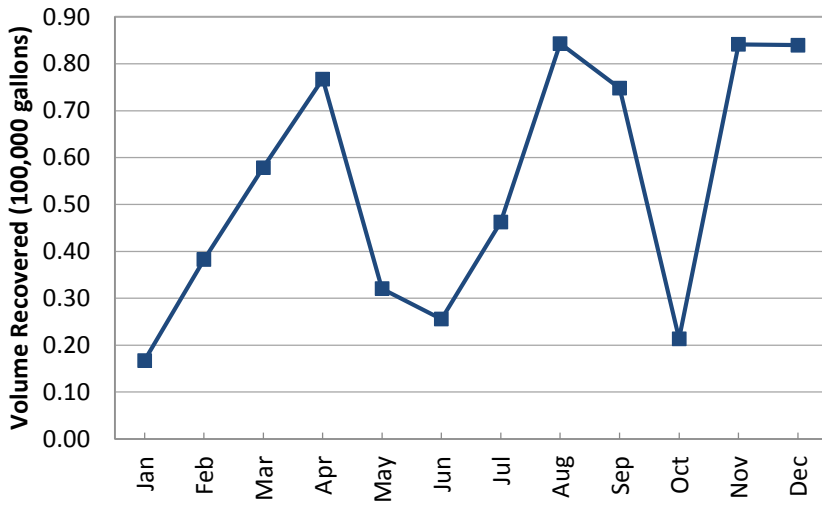
2017 Monthly Groundwater Flow Rate



Month	Volume Recovered (gallons)
Jan	58,542
Feb	131,818
Mar	198,857
Apr	258,281
May	139,916
Jun	85,687
Jul	154,878
Aug	237,809
Sep	119,652
Oct	130,099
Nov	71,928
Dec	5,851
Total	1,593,318

PTX06-EW-44

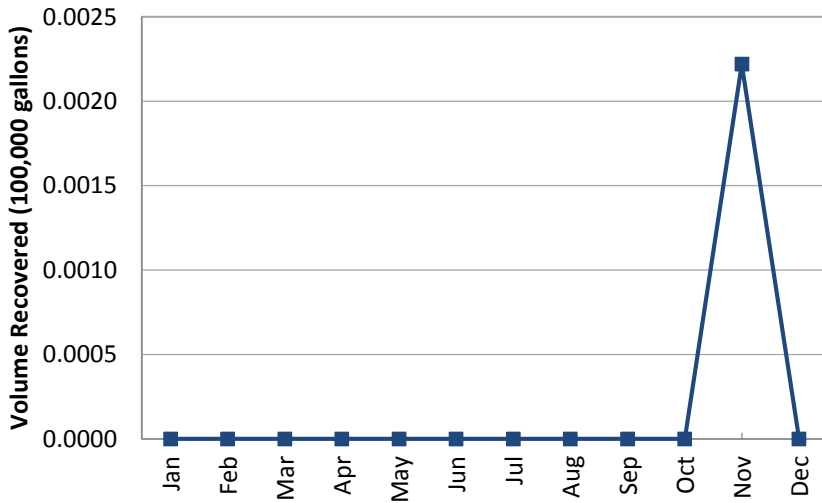
2017 Monthly Groundwater Flow Rate



Volume Recovered (gallons)	
Month	
Jan	16,719
Feb	38,243
Mar	57,865
Apr	76,730
May	32,051
Jun	25,561
Jul	46,215
Aug	84,328
Sep	74,798
Oct	21,360
Nov	84,132
Dec	83,977
Total	641,979

PTX06-EW-45

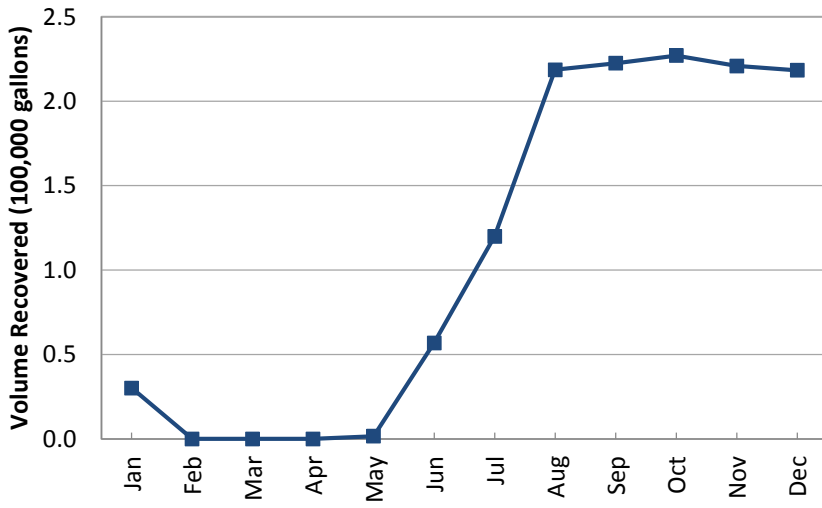
2017 Monthly Groundwater Flow Rate



Volume Recovered (gallons)	
Month	
Jan	0
Feb	0
Mar	0
Apr	0
May	0
Jun	0
Jul	0
Aug	0
Sep	0
Oct	0
Nov	222
Dec	0
Total	222

PTX06-EW-46

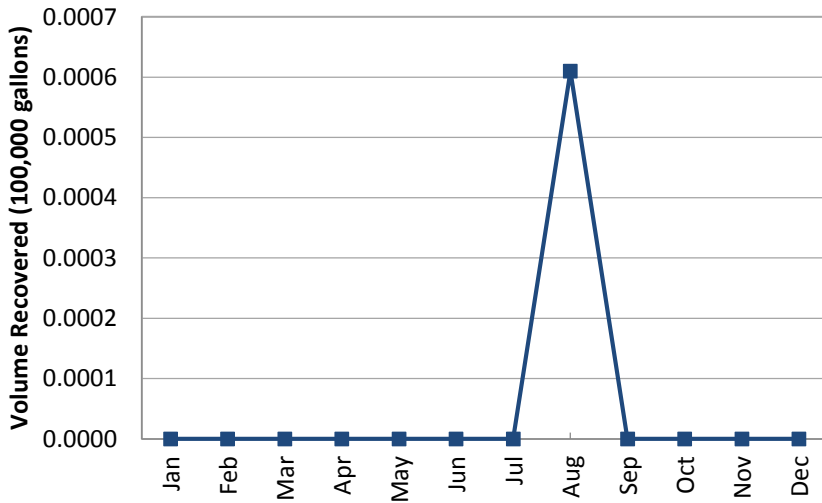
2017 Monthly Groundwater Flow Rate



Volume Recovered (gallons)	
Month	
Jan	30,194
Feb	0
Mar	0
Apr	0
May	1,640
Jun	56,858
Jul	120,013
Aug	218,710
Sep	222,597
Oct	227,109
Nov	220,931
Dec	218,434
Total	1,316,486

PTX06-EW-48

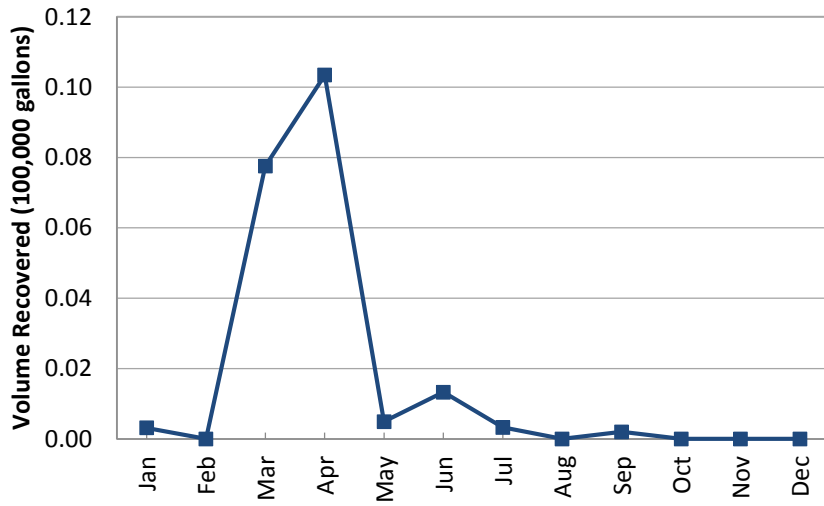
2017 Monthly Groundwater Flow Rate



Volume Recovered (gallons)	
Month	
Jan	0
Feb	0
Mar	0
Apr	0
May	0
Jun	0
Jul	0
Aug	61
Sep	0
Oct	0
Nov	0
Dec	0
Total	61

PTX06-EW-49

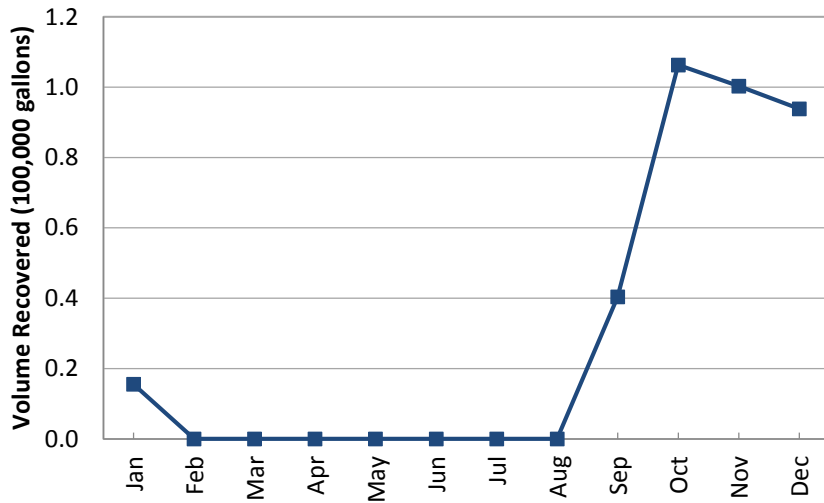
2017 Monthly Groundwater Flow Rate



Volume Recovered (gallons)	
Month	
Jan	318
Feb	0
Mar	7,753
Apr	10,346
May	495
Jun	1,332
Jul	331
Aug	0
Sep	200
Oct	0
Nov	0
Dec	0
Total	20,775

PTX06-EW-50

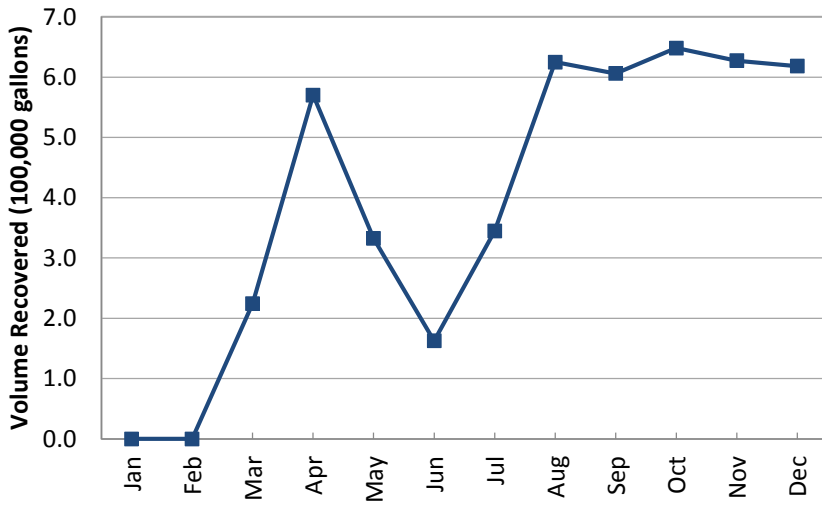
2017 Monthly Groundwater Flow Rate



Volume Recovered (gallons)	
Month	
Jan	15,531
Feb	0
Mar	0
Apr	0
May	0
Jun	0
Jul	0
Aug	0
Sep	40,369
Oct	106,308
Nov	100,331
Dec	93,851
Total	356,390

PTX06-EW-51

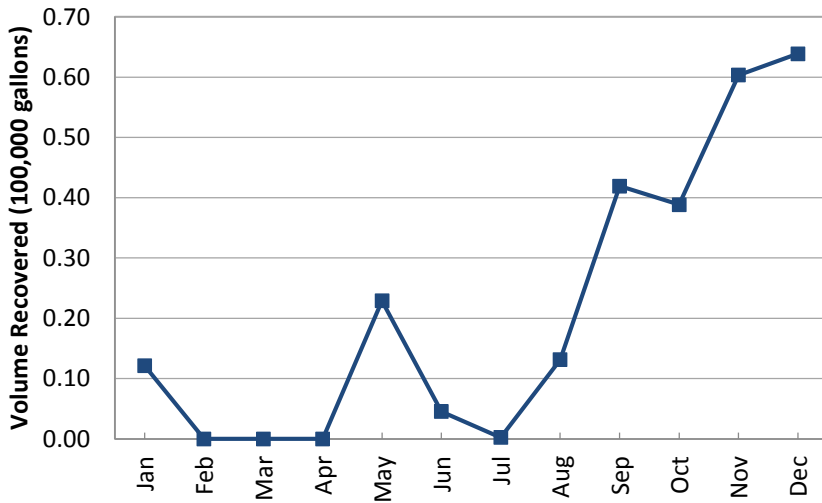
2017 Monthly Groundwater Flow Rate



Month	Volume Recovered (gallons)
Jan	0
Feb	0
Mar	224,599
Apr	570,468
May	332,452
Jun	162,781
Jul	344,689
Aug	625,100
Sep	606,174
Oct	648,464
Nov	627,450
Dec	618,388
Total	4,760,565

PTX06-EW-53

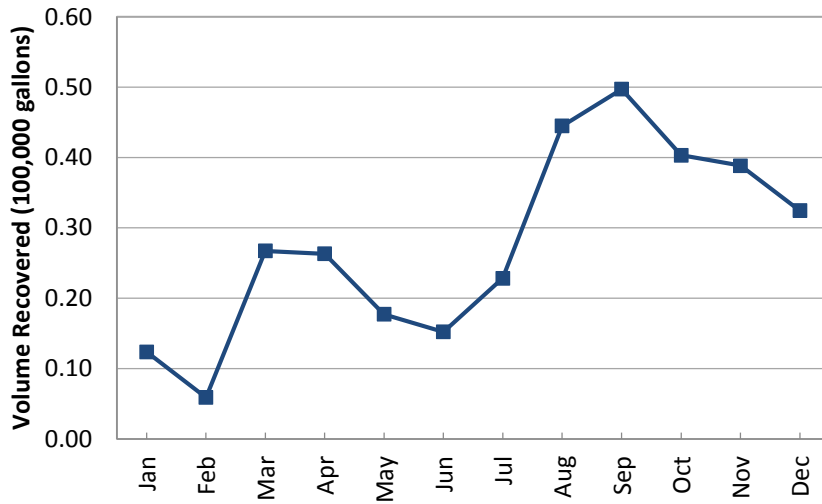
2017 Monthly Groundwater Flow Rate



Month	Volume Recovered (gallons)
Jan	12,149
Feb	0
Mar	0
Apr	0
May	22,902
Jun	4,554
Jul	250
Aug	13,129
Sep	41,912
Oct	38,840
Nov	60,366
Dec	63,881
Total	257,983

PTX06-EW-54

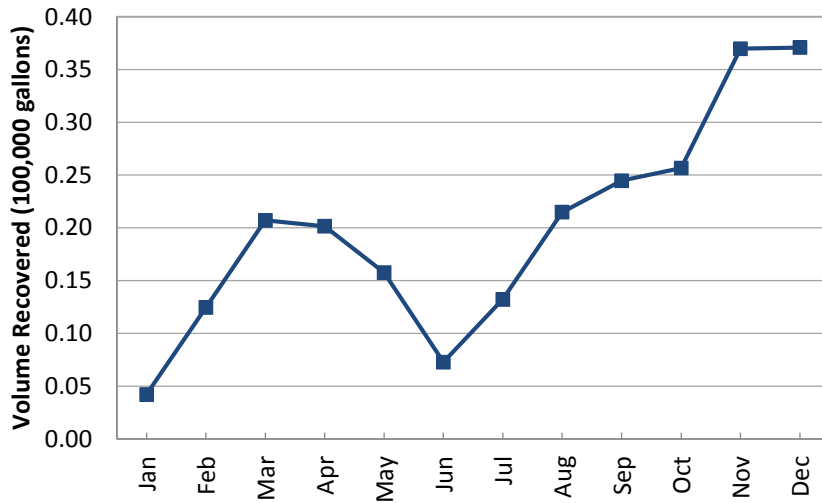
2017 Monthly Groundwater Flow Rate



Volume Recovered (gallons)	
Month	
Jan	12,372
Feb	5,888
Mar	26,735
Apr	26,310
May	17,732
Jun	15,212
Jul	22,848
Aug	44,494
Sep	49,731
Oct	40,350
Nov	38,843
Dec	32,444
Total	332,959

PTX06-EW-55

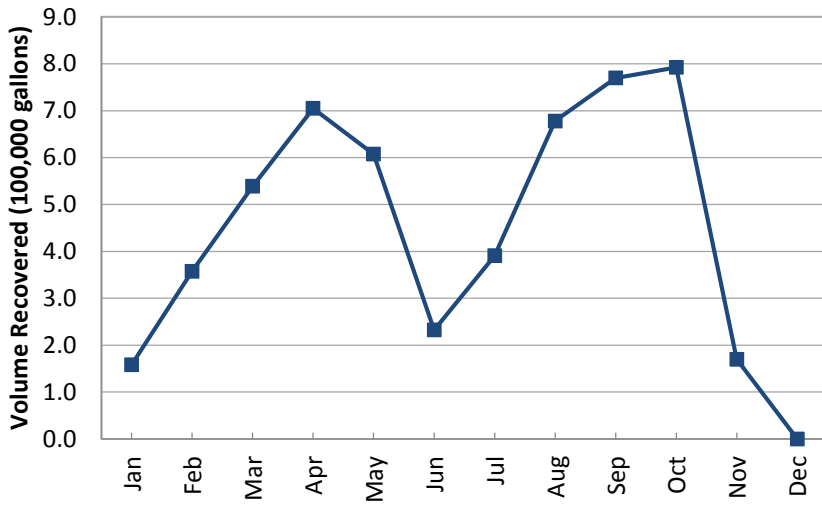
2017 Monthly Groundwater Flow Rate



Volume Recovered (gallons)	
Month	
Jan	4,223
Feb	12,466
Mar	20,713
Apr	20,148
May	15,772
Jun	7,281
Jul	13,219
Aug	21,480
Sep	24,470
Oct	25,666
Nov	36,987
Dec	37,093
Total	239,518

PTX06-EW-56

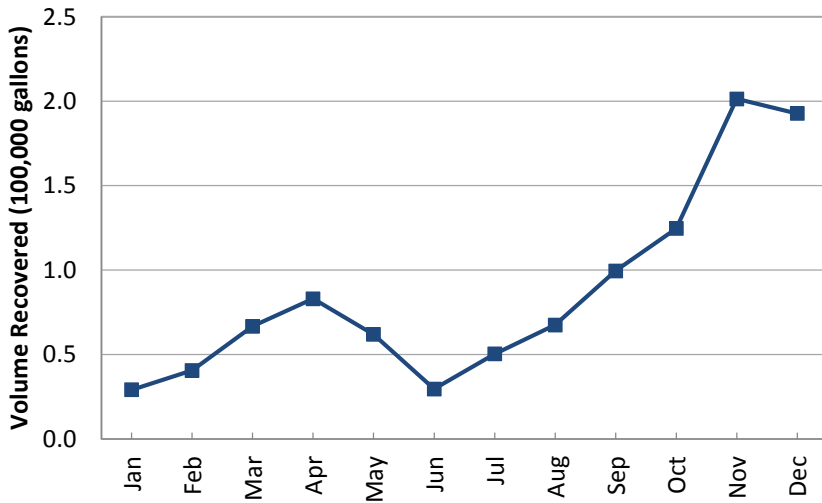
2017 Monthly Groundwater Flow Rate



Volume Recovered (gallons)	
Month	
Jan	158,235
Feb	357,504
Mar	538,690
Apr	704,979
May	607,491
Jun	232,551
Jul	390,518
Aug	678,117
Sep	769,735
Oct	792,388
Nov	170,054
Dec	0
Total	5,400,262

PTX06-EW-57

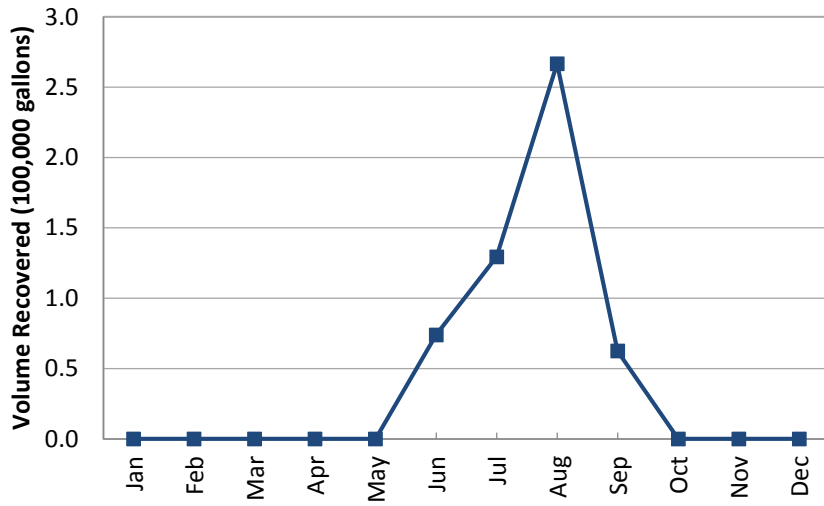
2017 Monthly Groundwater Flow Rate



Volume Recovered (gallons)	
Month	
Jan	29,094
Feb	40,635
Mar	66,735
Apr	83,020
May	61,861
Jun	29,627
Jul	50,318
Aug	67,510
Sep	99,540
Oct	124,586
Nov	201,431
Dec	192,835
Total	1,047,192

PTX06-EW-58

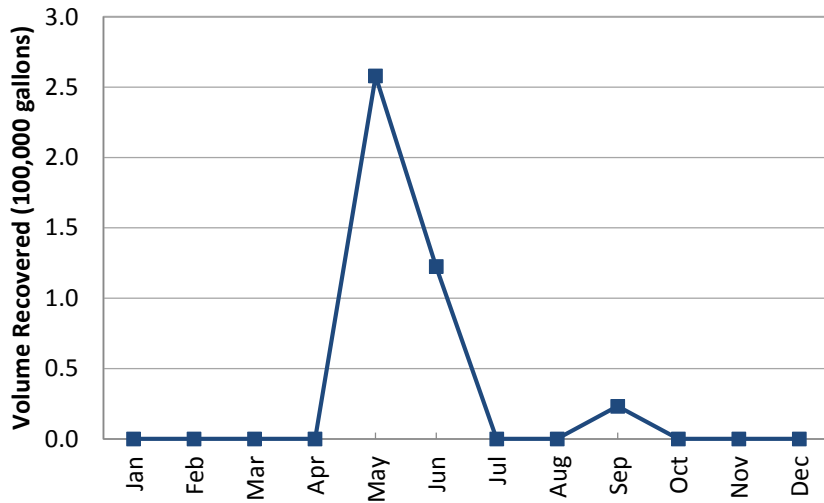
2017 Monthly Groundwater Flow Rate



Month	Volume Recovered (gallons)
Jan	0
Feb	0
Mar	0
Apr	0
May	0
Jun	73,965
Jul	129,432
Aug	266,687
Sep	62,431
Oct	0
Nov	0
Dec	0
Total	532,515

PTX06-EW-59

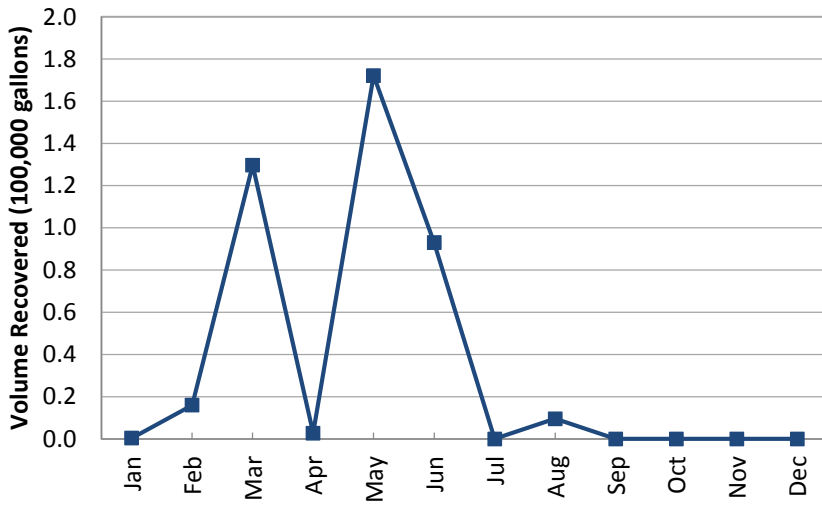
2017 Monthly Groundwater Flow Rate



Month	Volume Recovered (gallons)
Jan	0
Feb	0
Mar	0
Apr	0
May	257,988
Jun	122,438
Jul	0
Aug	0
Sep	23,282
Oct	0
Nov	0
Dec	0
Total	403,708

PTX06-EW-60

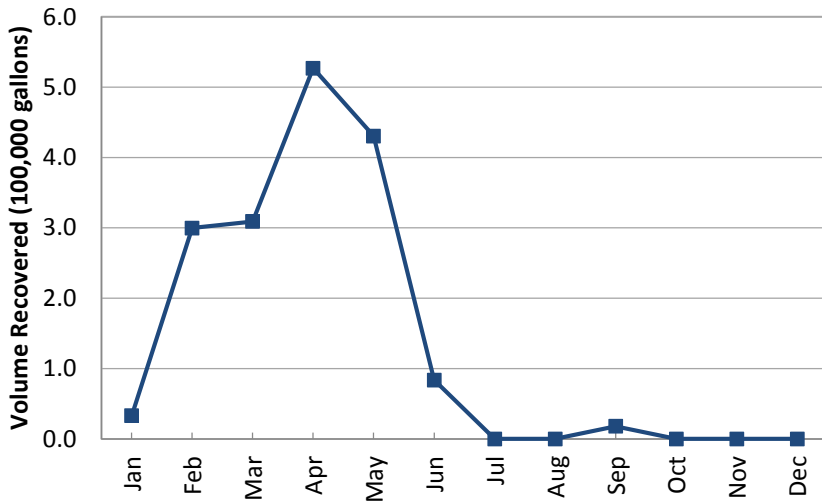
2017 Monthly Groundwater Flow Rate



Month	Volume Recovered (gallons)
Jan	433
Feb	16,051
Mar	129,721
Apr	2,774
May	172,207
Jun	93,024
Jul	0
Aug	9,614
Sep	0
Oct	0
Nov	0
Dec	0
Total	423,824

PTX06-EW-61

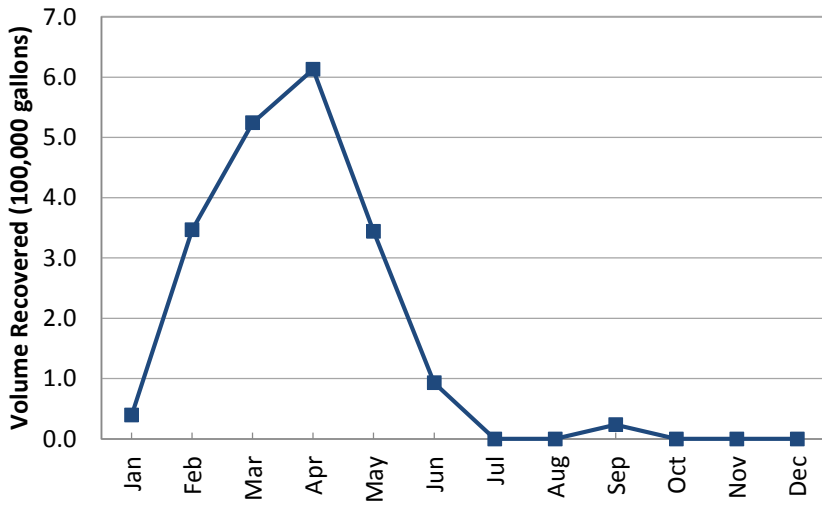
2017 Monthly Groundwater Flow Rate



Month	Volume Recovered (gallons)
Jan	33,062
Feb	299,685
Mar	309,120
Apr	527,010
May	430,716
Jun	83,870
Jul	0
Aug	0
Sep	18,125
Oct	0
Nov	0
Dec	0
Total	1,701,588

PTX06-EW-62

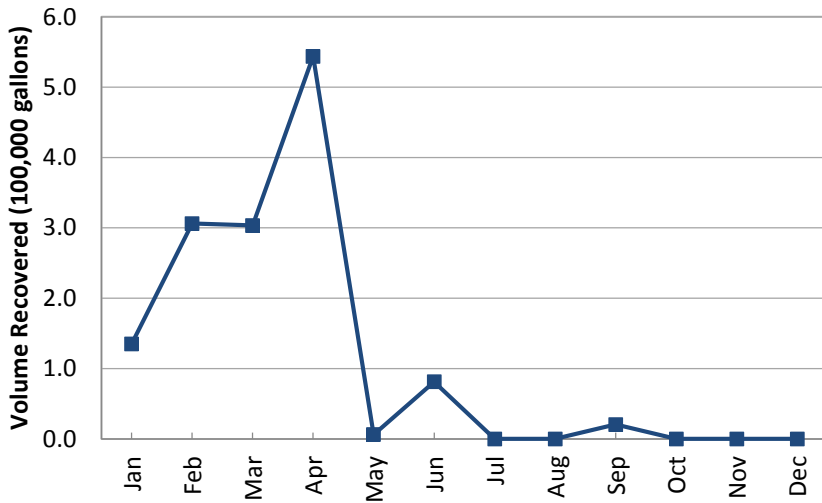
2017 Monthly Groundwater Flow Rate



Volume Recovered (gallons)	
Month	
Jan	39,597
Feb	346,879
Mar	524,543
Apr	613,082
May	344,172
Jun	93,239
Jul	0
Aug	0
Sep	23,677
Oct	0
Nov	75
Dec	0
Total	1,985,264

PTX06-EW-63

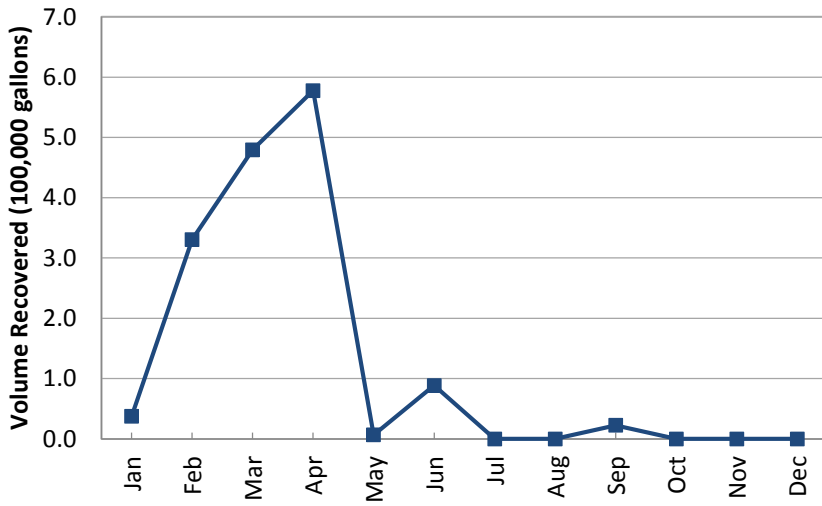
2017 Monthly Groundwater Flow Rate



Volume Recovered (gallons)	
Month	
Jan	135,143
Feb	306,119
Mar	303,484
Apr	543,888
May	6,145
Jun	81,183
Jul	0
Aug	0
Sep	20,576
Oct	0
Nov	64
Dec	0
Total	1,396,602

PTX06-EW-64

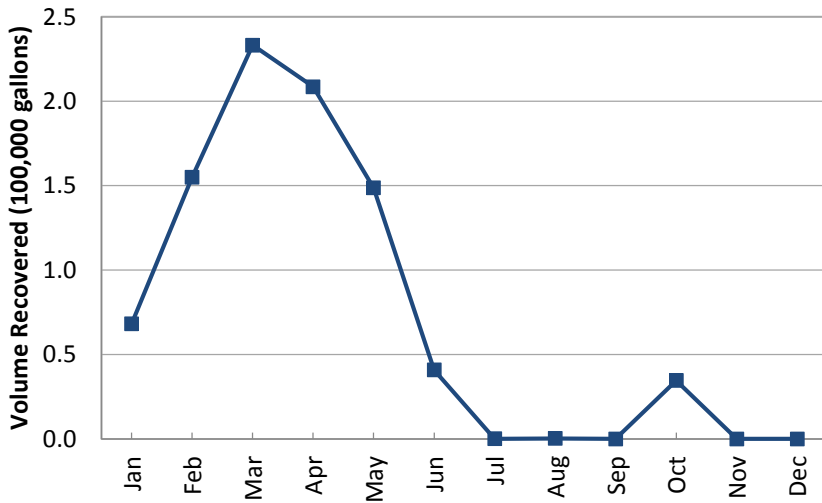
2017 Monthly Groundwater Flow Rate



Month	Volume Recovered (gallons)
Jan	37,694
Feb	330,582
Mar	479,782
Apr	577,873
May	6,640
Jun	88,639
Jul	0
Aug	0
Sep	22,664
Oct	0
Nov	71
Dec	0
Total	1,543,945

PTX06-EW-65

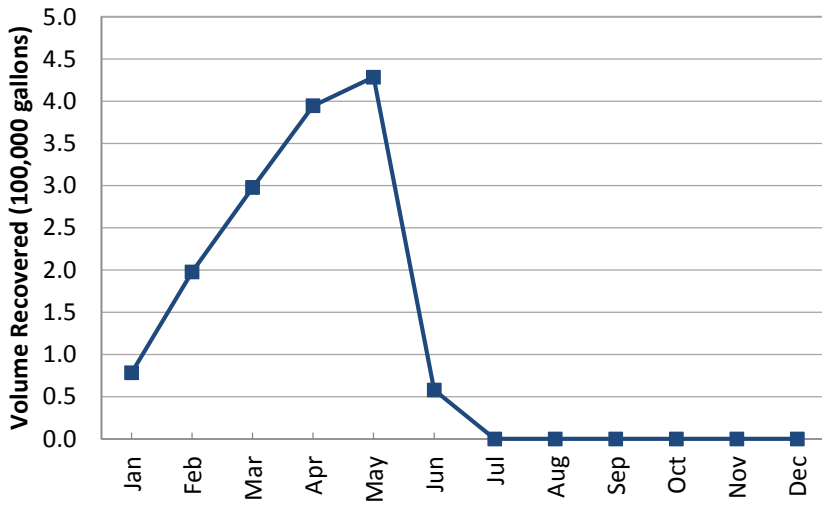
2017 Monthly Groundwater Flow Rate



Month	Volume Recovered (gallons)
Jan	68,245
Feb	155,023
Mar	233,227
Apr	208,648
May	148,667
Jun	40,843
Jul	104
Aug	352
Sep	0
Oct	34,648
Nov	0
Dec	0
Total	889,757

PTX06-EW-66

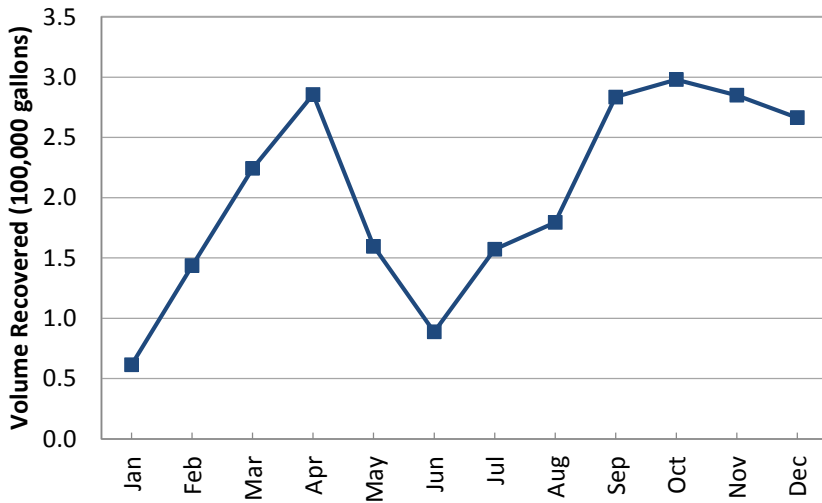
2017 Monthly Groundwater Flow Rate



Volume Recovered (gallons)	
Month	
Jan	78,478
Feb	197,912
Mar	297,700
Apr	394,747
May	428,655
Jun	58,031
Jul	0
Aug	0
Sep	0
Oct	0
Nov	0
Dec	0
Total	1,455,523

PTX06-EW-67

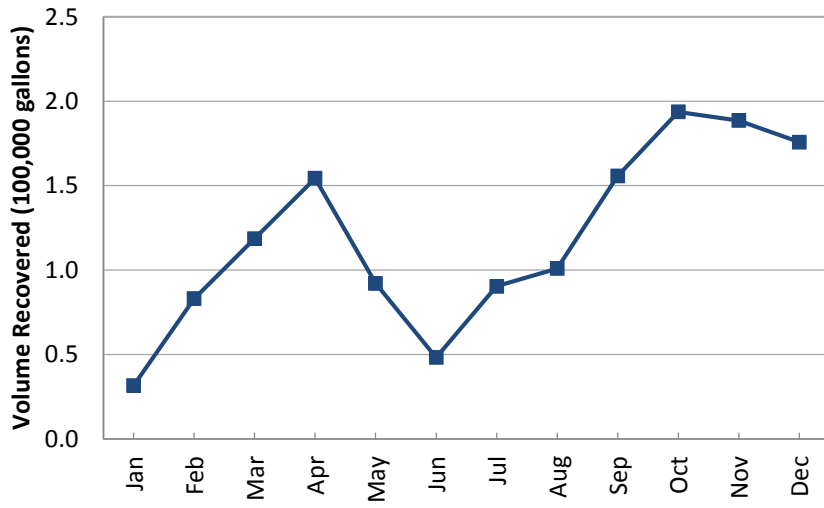
2017 Monthly Groundwater Flow Rate



Volume Recovered (gallons)	
Month	
Jan	61,546
Feb	143,670
Mar	224,272
Apr	285,769
May	159,737
Jun	88,832
Jul	157,153
Aug	179,516
Sep	283,613
Oct	298,097
Nov	285,022
Dec	266,450
Total	2,433,677

PTX06-EW-68

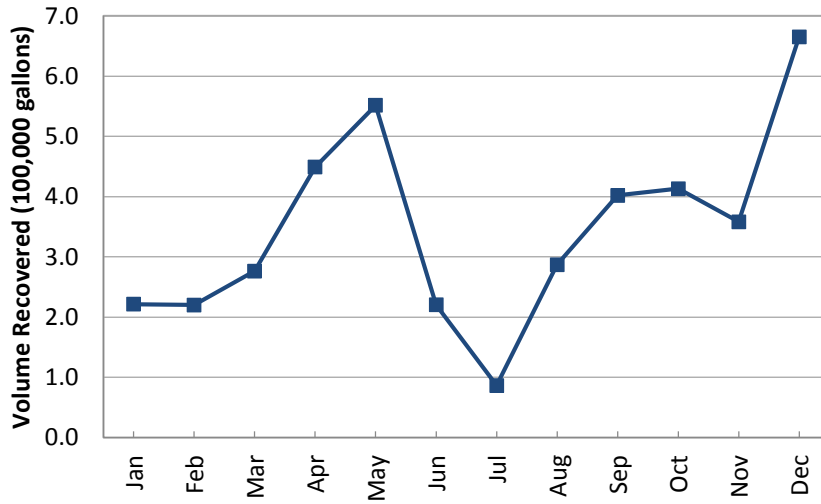
2017 Monthly Groundwater Flow Rate



Month	Volume Recovered (gallons)
Jan	31,728
Feb	83,163
Mar	118,617
Apr	154,344
May	92,142
Jun	48,233
Jul	90,376
Aug	100,892
Sep	155,719
Oct	193,735
Nov	188,679
Dec	175,861
Total	1,433,489

Playa 1 Pump and Treat System
PTX06-EW-69

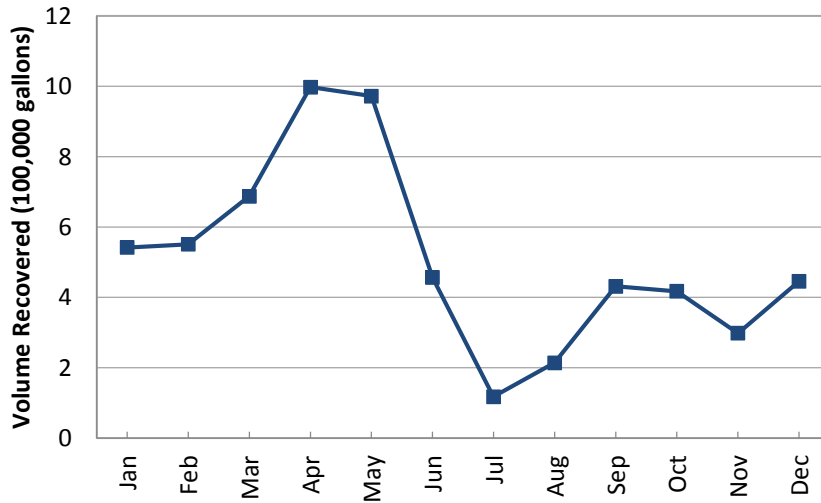
2017 Monthly Groundwater Flow Rate



Month	Volume Recovered (gallons)
Jan	221,670
Feb	220,398
Mar	276,567
Apr	449,247
May	551,671
Jun	220,526
Jul	86,672
Aug	287,101
Sep	402,235
Oct	413,390
Nov	358,131
Dec	665,266
Total	4,152,874

PTX06-EW-70

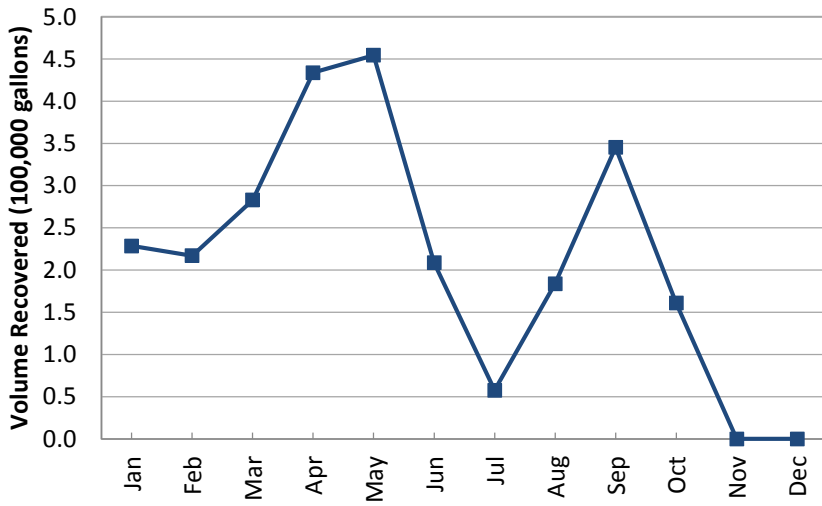
2017 Monthly Groundwater Flow Rate



Month	Volume Recovered (gallons)
Jan	541,862
Feb	550,690
Mar	687,724
Apr	997,773
May	972,488
Jun	456,101
Jul	117,560
Aug	213,928
Sep	431,464
Oct	417,122
Nov	297,887
Dec	445,683
Total	6,130,282

PTX06-EW-71

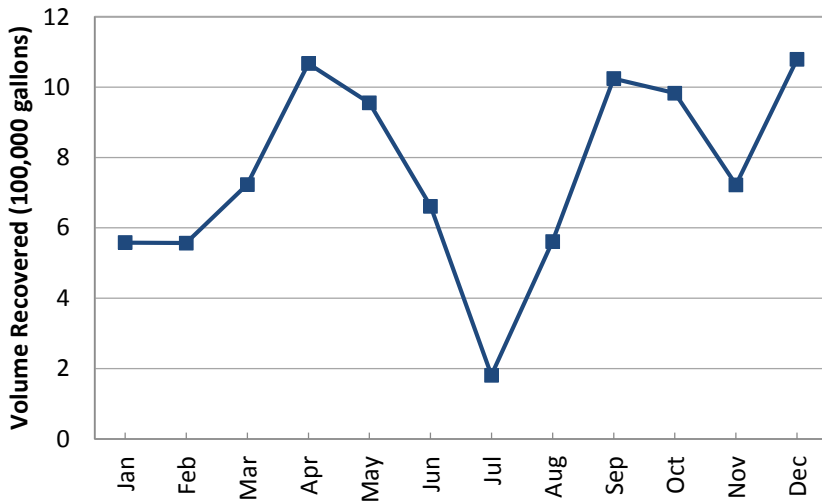
2017 Monthly Groundwater Flow Rate



Volume Recovered (gallons)	
Month	
Jan	228,493
Feb	217,082
Mar	282,877
Apr	433,875
May	454,598
Jun	208,651
Jul	57,734
Aug	183,820
Sep	345,429
Oct	160,898
Nov	0
Dec	0
Total	2,573,457

PTX06-EW-72

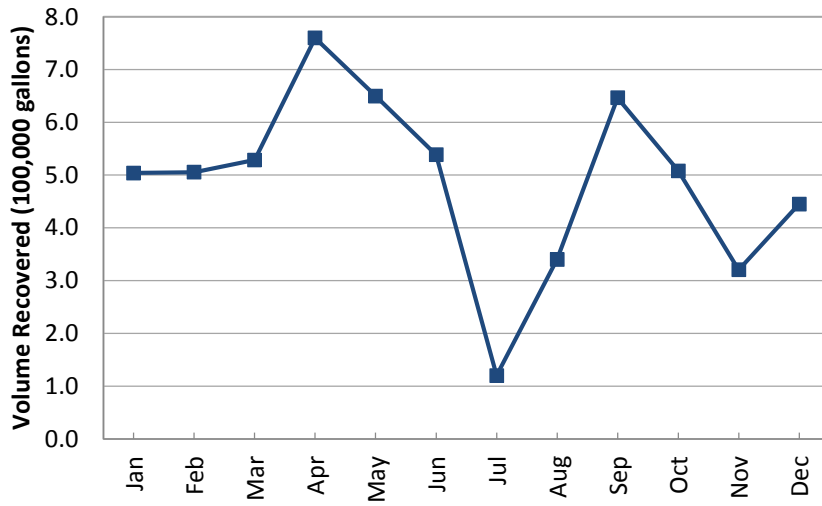
2017 Monthly Groundwater Flow Rate



Volume Recovered (gallons)	
Month	
Jan	558,006
Feb	556,894
Mar	722,990
Apr	1,067,624
May	955,631
Jun	661,354
Jul	181,334
Aug	561,260
Sep	1,024,749
Oct	983,252
Nov	722,427
Dec	1,079,617
Total	9,075,138

PTX06-EW-73

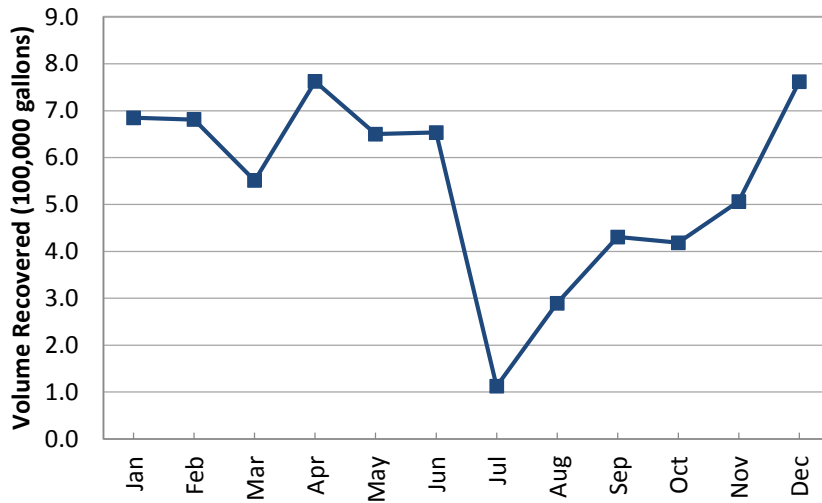
2017 Monthly Groundwater Flow Rate



Volume Recovered (gallons)	
Month	
Jan	504,071
Feb	505,409
Mar	528,957
Apr	760,127
May	650,133
Jun	538,899
Jul	120,220
Aug	340,256
Sep	646,626
Oct	508,278
Nov	320,503
Dec	445,104
Total	5,868,583

PTX06-EW-74

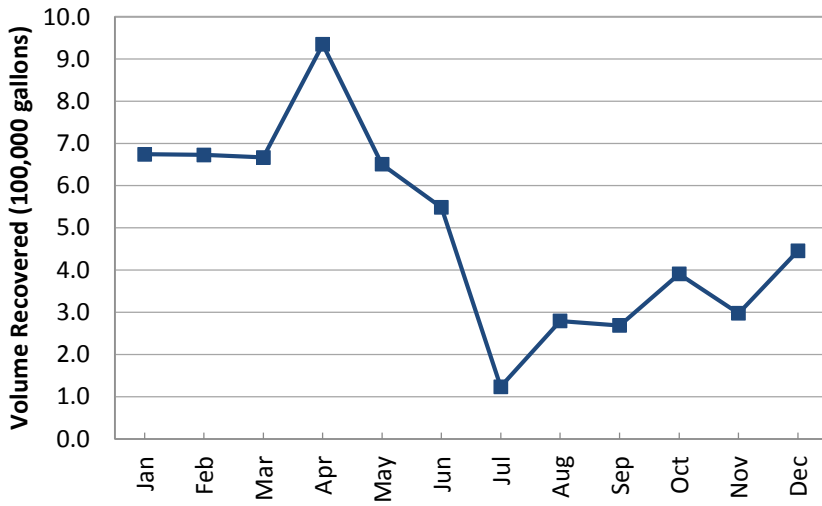
2017 Monthly Groundwater Flow Rate



Volume Recovered (gallons)	
Month	
Jan	684,840
Feb	681,360
Mar	550,785
Apr	762,270
May	650,116
Jun	653,500
Jul	112,221
Aug	289,357
Sep	430,698
Oct	418,198
Nov	506,091
Dec	761,659
Total	6,501,095

PTX06-EW-75

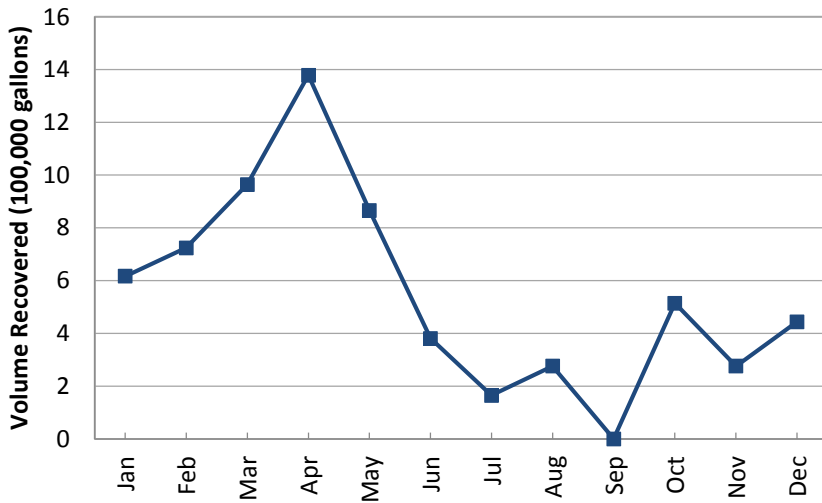
2017 Monthly Groundwater Flow Rate



Month	Volume Recovered (gallons)
Jan	674,493
Feb	673,146
Mar	666,915
Apr	934,848
May	650,714
Jun	548,570
Jul	123,567
Aug	279,575
Sep	268,777
Oct	390,926
Nov	297,738
Dec	445,552
Total	5,954,821

PTX06-EW-78A

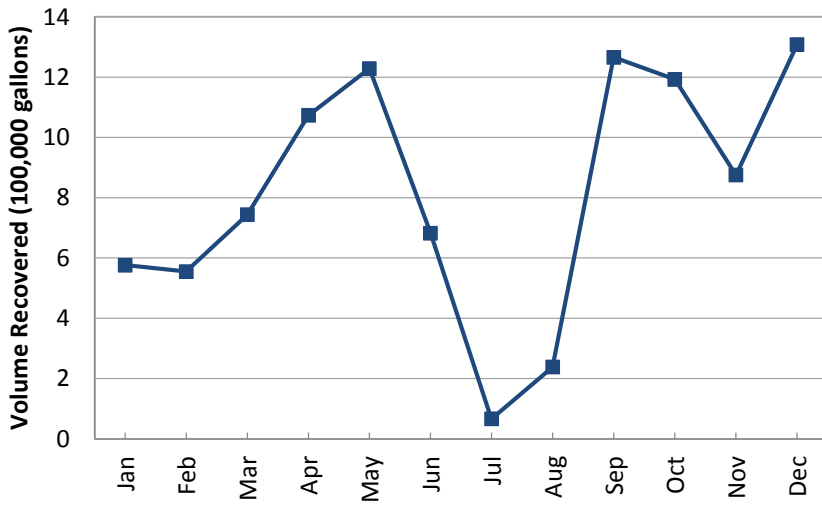
2017 Monthly Groundwater Flow Rate



Month	Volume Recovered (gallons)
Jan	617,002
Feb	723,873
Mar	964,230
Apr	1,378,928
May	865,758
Jun	381,019
Jul	165,026
Aug	276,216
Sep	0
Oct	514,659
Nov	275,971
Dec	444,283
Total	6,606,965

PTX06-EW-79

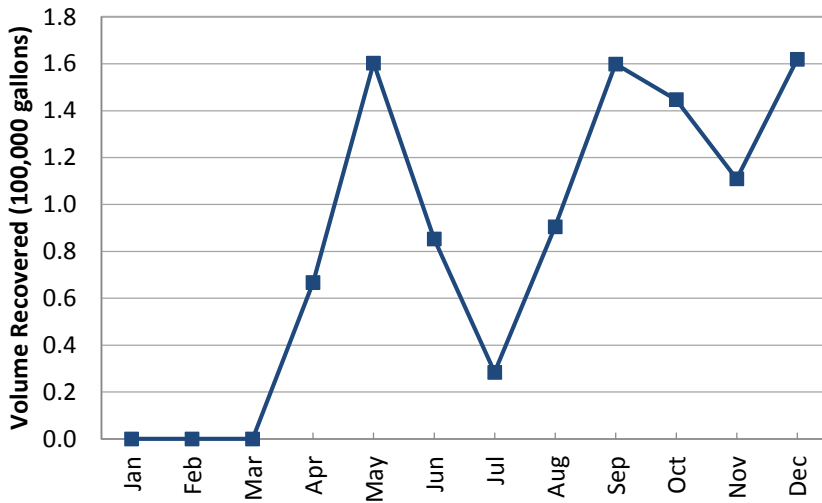
2017 Monthly Groundwater Flow Rate



Month	Volume Recovered (gallons)
Jan	576,226
Feb	555,367
Mar	743,376
Apr	1,073,230
May	1,228,606
Jun	682,505
Jul	66,633
Aug	238,603
Sep	1,266,148
Oct	1,192,665
Nov	874,997
Dec	1,308,198
Total	9,806,554

PTX06-EW-80

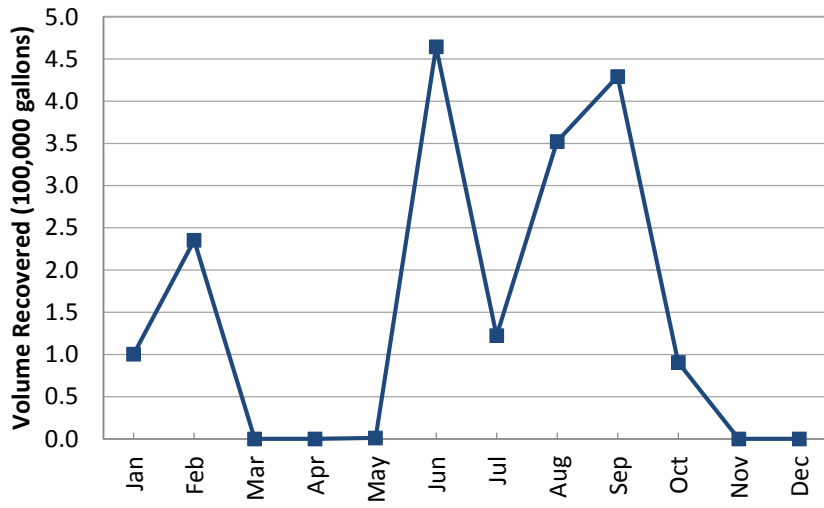
2017 Monthly Groundwater Flow Rate



Month	Volume Recovered (gallons)
Jan	0
Feb	66
Mar	0
Apr	66,742
May	160,342
Jun	85,290
Jul	28,397
Aug	90,483
Sep	159,914
Oct	144,695
Nov	110,862
Dec	161,905
Total	1,008,696

PTX06-EW-81

2017 Monthly Groundwater Flow Rate



Month	Volume Recovered (gallons)
Jan	100,528
Feb	235,148
Mar	0
Apr	0
May	1,306
Jun	464,400
Jul	122,370
Aug	352,571
Sep	429,370
Oct	90,658
Nov	0
Dec	0
Total	1,796,351

Appendix C

Well Information

Table C-1. Well Maintenance Table

Location	Work Date	Activity	Water Level Measurement (ft. bloc)	Total Depth Measurement (ft. bloc)	Tubing bundle length (ft)	Drop tube length (ft)	Intake Depth	Purge Water	Purge Volume (gals)	Comments
PTX06-ISB120	12/21/2017	Well Video	281.00	286						Performed well video, TD and top of water measurements for well acceptance purposes on new ISB well. This well has 4" stainless steel casing and screened section. The top of screen is at 275' bloc. The filter pack is visible outside the screen. The sump is clean with a small amount of sand on bottom. The well pad completion is good.
PTX06-ISB122	12/21/2017	Well Video	281.70	290						Performed well video, TD and top of water measurements for well acceptance purposes on new ISB well. This well has 4" stainless steel casing and screened section. The top of screen is at 279' bloc. The filter pack is visible outside the screen. The sump is clean with a small amount of sand on bottom. The well pad completion is good.
PTX06-ISB126	12/21/2017	Well Video	282.10	291						Performed well video, TD and top of water measurements for well acceptance purposes on new ISB well. This well has 4" stainless steel casing and screened section. The top of screen is at 282.1' bloc. The filter pack is visible outside the screen. The sump is clean with a small amount of sand on bottom. The well pad completion is good.
PTX06-ISB124	12/21/2017	Well Video	281.80	292						Performed well video, TD and top of water measurements for well acceptance purposes on new ISB well. This well has 4" stainless steel casing and screened section. The top of screen is at 281.5' bloc. The filter pack is visible outside the screen. The sump is clean with a small amount of sand on bottom. The well pad completion is good.
PTX06-ISB119	12/20/2017	Well Video	280.60	283						Performed well video, TD and top of water measurements for well acceptance purposes on new ISB well. This well has 4" stainless steel casing and screened section. The top of screen is at 274.5' bloc. The filter pack is visible outside the screen. The sump is clean with a small amount of sand on bottom. The well pad completion is good.

Location	Work Date	Activity	Water Level Measurement (ft. bloc)	Total Depth Measurement (ft. bloc)	Tubing bundle length (ft)	Drop tube length (ft)	Intake Depth	Purge Water	Purge Volume (gals)	Comments
PTX06-ISB127	12/20/2017	Well Video	282.10	293						Performed well video, TD and top of water measurements for well acceptance purposes on new ISB well. This well has 4" stainless steel casing and screened section. The top of screen is at 282' bloc. The filter pack is visible outside the screen. The sump is clean with a small amount of sand on bottom. The well pad completion is good.
PTX06-ISB129	12/20/2017	Well Video	282.40	291						Performed well video, TD and top of water measurements for well acceptance purposes on new ISB well. This well has 4" stainless steel casing and screened section. The top of screen is at 279.8' bloc. The filter pack is visible outside the screen. The sump is clean with a small amount of sand on bottom. The well pad completion is good.
PTX06-ISB130	12/20/2017	Well Video	282.60	291						Performed well video, TD and top of water measurements for well acceptance purposes on new ISB well. This well has 4" stainless steel casing and screened section. The top of screen is at 280' bloc. The filter pack is visible outside the screen. Observed an extreme amount of sand buildup bottom 1' of screen. The sump is full of sand. The well pad completion is good.
PTX06-ISB108	12/20/2017	GPS of well casing and brass tag								Obtained GPS brass tag and top of casing elevations with northing and eastings at PTX06-1158, PTX06-1190, and ISB wells PTX06-ISB108 through PTX06-ISB131. Information was downloaded and sent to Michelle Jarrett and Eric Sandifer.
PTX06-ISB121	12/20/2017	Well Video	281.60	290						Performed well video, TD and top of water measurements for well acceptance purposes on new ISB well. This well has 4" stainless steel casing and screened section. The top of screen is at 278.3' bloc. The filter pack is visible outside the screen. The sump is clean with a small amount of sand on bottom. The well pad completion is good.
PTX06-ISB116	12/20/2017	Well Video	279.80	286						Performed well video, TD and top of water measurements for well acceptance purposes on new ISB well. This well has 4" stainless steel casing and screened section. The top of screen is at 274.5' bloc. The filter pack is visible outside the screen. The sump is clean with a small amount of sand on bottom. The well pad completion is good.

Location	Work Date	Activity	Water Level Measurement (ft. btoc)	Total Depth Measurement (ft. btoc)	Tubing bundle length (ft)	Drop tube length (ft)	Intake Depth	Purge Water	Purge Volume (gals)	Comments
PTX06-ISB123	12/18/2017	Well Video	281.90	299						Performed well video, TD and top of water measurements for well acceptance purposes on new ISB well. This well has 4" stainless steel casing and screened section. The top of screen is at 287.3' btoc. The filter pack is visible outside the screen. The sump is clean with a small amount of sand on bottom. The well pad completion is good.
PTX06-ISB131	12/18/2017	Well Video	283.10	296						Performed well video, TD and top of water measurements for well acceptance purposes on new ISB well. This well has 4" stainless steel casing and screened section. The top of screen is at 284.8' btoc. The filter pack is visible outside the screen. The screen has light sand deposits in it. The sump is clean with a small amount of sand on bottom. The well pad completion is good.
PTX06-ISB128	12/18/2017	Well Video	282.50	294						Performed well video, TD and top of water measurements for well acceptance purposes on new ISB well. This well has 4" stainless steel casing and screened section. The top of screen is at 283' btoc. The filter pack is visible outside the screen. The screen has light sand deposits in it. The sump is clean with a small amount of sand on bottom. The well pad completion is good.
PTX06-ISB125	12/18/2017	Well Video	282.10	293						Performed well video, TD and top of water measurements for well acceptance purposes on new ISB well. This well has 4" stainless steel casing and screened section. The top of screen is at 282' btoc. The filter pack is visible outside the screen. The screen has light to moderate sand deposits in it, especially heavy near bottom of the screen. The sump is half full of sand . The well pad completion is good.
PTX06-1190	12/18/2017	Well Video	282.00	290						Performed well video, TD and top of water measurements for well acceptance purposes on new ISB well. This well has 4" pvc casing and screened section. The top of screen is at 278.4' btoc. The screen has light sand deposits in it. The sump is clean with a small amount of sand on bottom. The well pad completion is good.
PTX06-1183	12/13/2017	Installed new pump and tubing bundle						16-28 P&T	3	Pulled submersible pump and tubing out of the well. Installed dedicated tubing bundle, Bennett pump and drop tube. Pumped 3 gallons of water, pumping good. Moved all equipment off location to complete WMR activities.

Location	Work Date	Activity	Water Level Measurement (ft. bloc)	Total Depth Measurement (ft. bloc)	Tubing bundle length (ft)	Drop tube length (ft)	Intake Depth	Purge Water	Purge Volume (gals)	Comments
PTX06-1183	12/12/2017	Pump Test	280.30	290				16-28 P&T	3000	Conducted 12 hour continuous flow pump test per WMR. Began pump test at 0750 hrs. Set flow rate at 4 gpm. The flow rate and water level drawdown were monitored throughout the pump test at regular intervals. The flow rate remained steady at 4 gpm throughout the test. The maximum water level drawdown was 1.8' to 282.1' below top of casing. Water column was 9.2' at start of the test and 7.4' at end of test. Total amount of water pumped during the pump test was 3,000 gallons and all water pumped was disposed of at 16-28 pump and treat building.
PTX06-1183	12/11/2017	Removed equipment to prepare for pump test	280.20	290						Prep for pump test per WMR. Pulled dedicated tubing bundle, Bennett pump and drop tube out of the well. Staged related equipment at the location and installed 14 joints of 1 1/4" X 20' pvc joints, 1 - 1 1/4" X 2.5' pvc sub, submersible pump and sub with check valve on top of the pump sub length 6.5'. Bottom of pump is set at 289' bloc. The pump intake is set at 287.4' bloc. Pumped water to top of tubing and shut pump down. Ready for pump test to begin.
PTX06-1030	12/7/2017	Well inspection	289.00	290						Pulled dedicated tubing bundle, Bennett pump and drop tube out of the well. Performed well video per WMR. This well has 4" stainless steel casing and screened section. The casing is in fair condition. The screened section has some light to moderate iron bacteria and sand infiltration. Observed some deterioration in the connection between the screen and the sump and some staining or buildup in the sump at or below the top of water. No conclusive evidence observed as to why the water has left the sump.
PTX06-1059	11/27/2017	Installed new pump and tubing bundle	418.50	537				Ditch	3	Installed dedicated tubing bundle, Bennett pump and drop tube in well. Unable to get any pumping action. Pulled tubing bundle out of the well and tested pump on top. Pump action is good. Purged all water out of the tubing bundle water line. Installed tubing bundle, Bennett pump and drop tube in well. Pumped 3 gallons of water from the well. Pumping good.
PTX06-1129	11/21/2017	Well Video	233.00	243						Performed well video per WMR and for well inspection purposes. This well has 6" pvc casing and 6" stainless steel screen. Casing is in good condition. Observed moderate amounts of iron bacteria and sand in the screen. The 3' sump is clean.

Location	Work Date	Activity	Water Level Measurement (ft bloc)	Total Depth Measurement (ft bloc)	Tubing bundle length (ft)	Drop tube length (ft)	Intake Depth	Purge Water	Purge Volume (gals)	Comments
PTX06-1128	11/21/2017	Well Video	229.30	243						Performed well video per WMR and for well inspection purposes. This well has 6" pvc casing and 6" stainless steel screen. Casing is in good condition. Observed moderate to heavy amounts of iron bacteria and sand in the screen. The 3' sump is clean.
PTX06-1152	11/9/2017	Well Video								Conducted well video per WMR. Began well video. Observed indications that amendment had previously been injected in this well. Stopped video at 140' below top of casing. Discussed with Michelle Jarrett and Neil Mock. The decision was made to remove this well from the WMR.
PTX06-1001A	11/9/2017	Well Video	259.70	267						Conducted well video per WMR. This well has 4" stainless steel casing and screened section. The casing is in good condition. The screened section has extremely heavy iron bacteria both above and below top of water. The sump is clean. Due to the extreme amount of iron bacteria formed in the screened section, the possibility of screen damage will require caution during redevelopment of this well.
PTX06-INJ/BIO-009A	11/9/2017	Well Video	278.90	291						Conducted well video per WMR at PTX06-INJ/BIO 009. The name on the recording only says INJ/BIO but the correct on screen title should read PTX06-INJ/BIO 9 This well has 4" pvc casing and 4" stainless steel screened section. Observed some pitting in the pvc casing around 268' below top of casing. Observed substantial red sandy buildup in the screened section. No evidence of iron bacteria was observed in the screen. The sump is ~ half full of sand.
PTX06-1117	11/9/2017	Well Video	239.20	264						Well video per WMR. This well added to the WMR per Michelle Jarrett. This well has 6" pvc casing and 6" stainless steel screened section. The casing is in good condition. Observed moderate to heavy iron bacteria in the screened section both above and below top of water. The water was turbid and cloudy, too turbid to see the sump.
PTX01-1013	11/1/2017	Removed equipment to prepare for redevelopment	512.50	867						Pulled dedicated tubing bundle, Bennett pump and 5' drop tube with lower diverter attached to the pump. Today's activities done in prep for well redevelopment per WMP.

Location	Work Date	Activity	Water Level Measurement (ft bloc)	Total Depth Measurement (ft bloc)	Tubing bundle length (ft)	Drop tube length (ft)	Intake Depth	Purge Water	Purge Volume (gals)	Comments
PTX06-1059	11/1/2017	Well Video								Conducted well video for post redevelopment purposes. This video is of the screened section only. Observed sand in screen. The sump is still full of sand into the screen.
PTX06-1059	10/30/2017	Re-development					Ditch		150	Conducted tailgate safety briefing and daily rig/location checks. Rigged up and bailing sand off bottom with 3 1/2" X 15' stainless steel bailer. Cleaned out ~ 1' of sand in the sump.
PTX06-1068	10/26/2017	Maintain pump	525.50	801			Ditch		5	Techs were unable to sample this well due to a pumping issue. Pulled dedicated tubing bundle, Bennett pump and drop tube. Discovered the water line was disconnected from the pump at the water line fitting. Checked and tightened all fittings. Reinstalled tubing bundle, pump and drop tube in the well. Pumped 5 gallons of water from the well. Pumping good.
PTX06-1059	10/24/2017	Well Video	419.10	537						Conducted well video for well inspection and post redevelopment purposes. This well has 4" stainless steel casing and screen. The casing and screen are in good condition. This well produces significant amounts of fine sand which is visible throughout the screened section. The sump is full of sand into the bottom of the screen. We will continue bailing to remove more sand out of the sump.
PTX06-1059	10/19/2017	Re-development	419.10	537			16-28 P&T		120	Conducted tailgate safety briefing and daily rig/location checks. Rigged up and began surging/brushing and bailing red colored water. Getting light amounts of sand off bottom.
PTX06-1059	10/18/2017	Re-development	419.10	537			16-28 P&T		110	Conducted tailgate safety briefing and daily rig/location checks. Rigged up and began surging/brushing and bailing top 50' of screened section below top of water. Observed red,sandy mud on the surge tool after surging well. Bailing red colored water from top of water column. Bailing light amounts of sand and light red colored water from bottom of the well.
PTX06-1059	10/16/2017	Removed equipment to prepare for redevelopment	419.10	537						Pulled dedicated tubing bundle, Bennett pump and drop tube out of well in prep for well redevelopment per WMP. Pump is in good condition with no rust or corrosion noted.
PTX01-1001	10/11/2017	Installed new pump and tubing bundle	288.20	301						Installed dedicated tubing bundle, Bennett pump and drop tube in well. Pumped 3 gallons of water out of the well. Pump is good.

Location	Work Date	Activity	Water Level Measurement (ft. bloc)	Total Depth Measurement (ft. bloc)	Tubing bundle length (ft)	Drop tube length (ft)	Intake Depth	Purge Water	Purge Volume (gals)	Comments
PTX01-1001	9/22/2017	Well Video	288.30	301						Performed well video for well inspection and post redevelopment purposes per WMP. This well has 4" stainless steel casing and screened section. Observed grout intrusion in casing joints at 44' bloc, 143.9' bloc, and 183.9' bloc. In each spot, the grout traveled down the casing a few feet. There was no indication the grout ever reached the screened section. The screen and sump are clean and in good condition.
PTX01-1001	9/21/2017	Re-development	288.50	301				16-28 P&T	100	Conducted tailgate safety briefing and daily rig/location checks. Rigged up and surged/brushed screened section. This well has 12.5' of water with a 3' sump. Bailing light amount of sand off bottom. Water is light red and cloudy. Water cleaned up quickly.
PTX06-EW-21	9/19/2017	Extraction well service								Verified LOTO and air gap in place. Locks placed on LOTO box. Pulled 14 joints of 1 1/4" X 20' pvc tubing, 1 - 1 1/4" X 5' sub and submersible pump. This well is being taken out of service so the equipment will not be reinstalled. P&T techs assisting.
PTX06-EW-40	9/14/2017	Extraction well service								Verified LOTO and air gap in place. Conducted tailgate safety briefing and daily rig/location checks. Rig up and install 14 joints of 1 1/4" X 20' pvc tubing and submersible pump. P&T techs assisting.
PTX06-EW-6	9/13/2017	Well Video	279.50	285						Well video for well inspection purposes. This well has 6" stainless steel casing and screen. The casing and screen in good condition. Top of water is at top of sump. The 5' sump is clean.
PTX06-EW-40	9/13/2017	Well Video	273.10	293						Well video for well inspection purposes. This well has 6" pvc casing and 6" stainless steel screen. Casing and screen in good condition. The sump is half full of sand.
PTX06-EW-58	9/13/2017	Well Video	269.40	287						Well video for well inspection purposes. This well has 6" pvc casing and 6" stainless steel screen. Observed busted and cracked casing joints at 7.5', 47.5', 67.5', 107.5', and 168' bloc. This well has no sump.
PTX06-EW-6	9/11/2017	Extraction well service								Verified LOTO/Air gap in place. LOTO locks placed on lockbox. Rigged up and pulled 1 - 1 1/4" X 16' pvc sub, 13 joints of 1" X 20' pvc tubing and submersible pump. Assisted by P&T techs.

Location	Work Date	Activity	Water Level Measurement (ft bloc)	Total Depth Measurement (ft bloc)	Tubing bundle length (ft)	Drop tube length (ft)	Intake Depth	Purge Water	Purge Volume (gals)	Comments
PTX06-EW-58	9/11/2017	Extraction well service								Verified LOTO/Air gap in place. LOTO locks placed on lockbox. Rigged up and pulled 13 joints of 1 1/4" X 20' pvc tubing, 1 - 1 1/4" X 18' pvc sub and submersible pump. Assisted by P&T techs.
PTX06-EW-40	9/11/2017	Extraction well service								Verified LOTO/Air gap in place. LOTO locks placed on lockbox. Rigged up and pulled 14 joints of 1 1/4" X 20' pvc tubing and submersible pump. Assisted by P&T techs.
PTX06-PRB16	8/28/2017	Obtain water measurements	282.10	283						Obtained top of water and total depth measurements per WMR to determine water level for passive flux meter deployment in this well.
PTX06-1181	8/22/2017	Portable bennet installation	274.70	299						Provide well maintenance support for GW sampling activities. Installed portable Bennett tubing bundle and pump in well for SRS samples to be collected. Removed tubing bundle from well after sampling completed.
PTX01-1001	7/28/2017	Removed equipment to prepare for redevelopment	288.50	301						Pulled dedicated tubing bundle, Bennett pump and drop tube in prep for well redevelopment per WMP.

Location	Work Date	Activity	Water Level Measurement (ft. bloc)	Total Depth Measurement (ft. bloc)	Tubing bundle length (ft)	Drop tube length (ft)	Intake Depth	Purge Water	Purge Volume (gals)	Comments
PTX06-1033	7/26/2017	Well Video	452.00	553						Performed well video for well inspection purposes per WMP. This well has 4" stainless steel casing and screened section. This video is in two parts due to camera blackout at 400.6' bloc. Following is the comments for each video part. Part 1: There is a temporary video blackout at 229.7' bloc which recovered and video continued. Observed inward bulging in the casing at 143.6' bloc. Observed grout leaking into the casing at a joint section at 229.7' bloc. I reviewed the video of this well taken on 10/2/2015 and confirmed that there was no grout leaking into the casing at that time, indicating the problem has occurred within the last two years. The video blacked out at 400.6' bloc on the video and did not recover. Part 1 video terminated at this point and Part 2 video began. Part 2: Observed joints in screened section not threaded up properly at 429' and 449' bloc. This issue did exist in 2015 and has been this way through life of the well. Observed light to moderate iron bacteria in the screened section below top of water. The sump is clean.
PTX06-1127	7/25/2017	Pump removal and re-development	265.10	289				16-28 P&T	200	Video taken using Camera 1 Pulled dedicated tubing bundle, Bennett pump and 10' drop tube in prep for well redevelopment. Conducted tailgate safety briefing and rig/location checks. Rigged up and bailing sand off bottom of the well. Cleaned out ~ 1' of sand off bottom. Ran surge block to surge/brush screened section. Bailing light brown water with light amounts of sand. The water and sand cleaned up quickly. Installed dedicated tubing bundle, Bennett pump and drop tube in well. Pumped 3 gallons of water, pumping good.
PTX06-1033	7/24/2017	Re-development	451.70	553				16-28 P&T	70	Conducted tailgate safety briefing and daily rig/location checks. Rigged up and began bailing from bottom of the well. Bailing light amount of sand and red colored water. Bailing clean water from top of the water column in.

Location	Work Date	Activity	Water Level Measurement (ft. bloc)	Total Depth Measurement (ft. bloc)	Tubing bundle length (ft)	Drop tube length (ft)	Intake Depth	Purge Water	Purge Volume (gals)	Comments
PTX06-1033	7/20/2017	Re-development	451.70	553				16-28 P&T	150	Conducted tailgate safety briefing and daily rig/location checks. Rigged up and began surging ~50' of screened section below top of water. Bailing light brown colored water. Repeated surging and bailing.
PTX01-1010	7/18/2017	Installed pump and tubing bundle	510.80	847	515		515.0	Ditch	5	Installed dedicated tubing bundle, and Bennett pump with lower diverter attached to the pump. The diverter is set at 570' bloc. Pumped 5 gallons of water from the well. Pumping good.
PTX06-1033	7/18/2017	Removed equipment to prepare for redevelopment	451.70	553						Pulled dedicated tubing bundle and Bennett pump in prep for well redevelopment per WMP.
PTX01-1010	7/17/2017	Well Video	510.80	847						Performed well video for well inspection and post redevelopment purposes per WMP. This well has 4" stainless steel casing and screen. The casing and screen are in good condition with the sample interval clean. Observed sand behind the screen lower in the well with heavy sand infiltration in the bottom ~ 10' of screen. The sump is clean.
PTX01-1010	7/12/2017	Re-development						16-28 P&T	120	Conducted tailgate safety briefing and daily rig/location checks. Rigged up and began bailing light sand off bottom. After cleaning up the bottom began bailing clean water in top 50' of the water column.
PTX01-1010	7/11/2017	Re-development	510.80	847				16-28 P&T	140	Well redevelopment on the three year maintenance schedule per WMP. Conducted tailgate safety briefing and daily rig/location checks. Rigged up and began redeveloping the well. Surged/brushed top ~ 50' of screen below top of water. Bailing light red in color water from top of the water column. Repeated surging/brushing 2 times. Bailing moderate amounts of sand and red water off bottom of well.

Location	Work Date	Activity	Water Level Measurement (ft bloc)	Total Depth Measurement (ft bloc)	Tubing bundle length (ft)	Drop tube length (ft)	Intake Depth	Purge Water	Purge Volume (gals)	Comments
PTX06-1184	7/10/2017	Support for sampling	273.80	275						Today's rig activities are to provide Smeal support for GW Sampling per SRS. Conducted tailgate safety briefing and daily rig/location checks. Rigged up Smeal and prepared to sample. This well has 1.2' of water in it which is not enough to sample with a Bennett sample pump. Sampling will be accomplished using a 3" X 5' stainless steel bailer. Collected sufficient water for S&A GW-HE sample and TCEQ HE co-sample. All pertinent information regarding the sampling event are recorded in the EIS M logbook, logbook page 1618.
PTX08-1002	6/30/2017	Misc maintenance								Completed sand installation between inner casing and protector casing.
PTX08-1002	6/29/2017	Misc maintenance								Installed 4' of filter sand between inner casing and protector casing. Still need to install another 1.5' of sand after more is ordered and received.
PTX06-1184	6/20/2017	Well Video	273.80	275						Performed second baseline well acceptance video for better side views of the screened section. This well has 4" stainless steel casing and screen. Casing and screen are in good condition. The sump clean. NOTE: The video depth counter is not working therefore no depths are displayed on the video.
PTX06-1188	6/20/2017	Well Video	0.00	282						Performed baseline well acceptance video with top of water and TD measurements per WMR. This well has 4" stainless steel casing and screen. Casing and screen are in good condition. The sump clean. The well is dry. NOTE: The video depth counter is not working therefore no depths are displayed on the video.
PTX06-1189	6/20/2017	Well Video	0.00	277						Performed baseline well acceptance video with top of water and TD measurements per WMR. This well has 4" pvc casing and screen. Casing and screen are in good condition. The sump is full of sand. The well dry. NOTE: The video depth counter is not working therefore no depths are displayed on the video.
PTX06-1185	6/19/2017	Well Video	279.70	286						Performed baseline well acceptance video with top of water and TD measurements per WMR. This well has 4" stainless steel casing and screen. Casing and screen are in good condition. The sump clean. The well has 5.8' of water. NOTE: The video depth counter is not working therefore no depths are displayed on the video.

Location	Work Date	Activity	Water Level Measurement (ft. bloc)	Total Depth Measurement (ft. bloc)	Tubing bundle length (ft)	Drop tube length (ft)	Intake Depth	Purge Water	Purge Volume (gals)	Comments
PTX06-1186	6/19/2017	Well Video	277.30	285						Performed baseline well acceptance video with top of water and TD measurements per WMR. This well has 4" pvc casing and screen. Casing and screen are in good condition. The sump is full of sand but the sand is not up into the screen slots. The well has 7.7' of water. NOTE: The video depth counter is not working therefore no depths are displayed on the video.
PTX06-1184	6/19/2017	Well Video	273.80	275						Performed baseline well acceptance video with top of water and TD measurements per WMR. This well has 4" pvc casing and screen. Casing and screen are in good condition. The sump is full of sand but the sand is not up into the screen slots. The well has 1.2' of water. NOTE: The video depth counter is not working therefore no depths are displayed on the video.
PTX06-1139	6/12/2017	GPS of well casing and brass tag								Collected GPS coordinates for brass medallion and top of casing for wells PTX06-1139, PTX06-1100, PTX06-1184, PTX06-1185, PTX06-1186, PTX06-1188 and PTX06-1189 per WMR 2017-011. Data found in K/Kilgore/EP Programs/2017/2017GPS/wmr 2017-11
PTX06-1100	6/2/2017	Well Video	280.20	287						Per WMR - videoed well to confirm if there is silting above the sump. Video shows silt at bottom of sump at 287'.
PTX06-1139	6/2/2017	Well video and installation of pump			20.0			Ditch	1	Per MWR - Videoed top of casing that was repaired by contractor. A PVC sleeve was glued to the siltless casing. M. Jarrett old video and to reinstall tubing bundle. Installed bundle, pump and 20' drop tube. Tested good.
PTX06-1100	5/16/2017	Measurements collected	279.30	287						Drove to well and took total depth measurement per WMR. Also took top of water measurement. A well video will be performed to assess amount of silt in well.
PTX06-1033	5/9/2017	Installed pump and tubing bundle						16-28 P&T	3	Reinstalled tubing bundle and pump. Top of inner casing broken.
PTX06-1139	5/4/2017	Removed pump and tubing bundle for well repair								Removed the sample pump, bundle and 22 drop-tube so Stoller can repair a hole in the stainless steel casing just below ground surface. Stoller will also re-construct the surface completion of the wellhead. Drianed bundle of water in field. Labeled and stored pump and bundle in garage area and drop-tube in the conex.

Location	Work Date	Activity	Water Level Measurement (ft. bloc)	Total Depth Measurement (ft. bloc)	Tubing bundle length (ft)	Drop tube length (ft)	Intake Depth	Purge Water	Purge Volume (gals)	Comments
PTX06-ISB079	4/17/2017	Installed pump and tubing bundle			259	11.0	270.0			Installed dedicated tubing bundle, Bennett pump and new drop tube in well. Cut off 17' in length on the tubing bundle. This tubing bundle was previously installed in PTX06-1123. Pumped 1 gallon of water from the well. Pumping good.
PTX06-1123	4/17/2017	Removed pump and tubing bundle								Pulled dedicated tubing bundle, Bennett pump and drop tube out of well. This tubing bundle is being moved to PTX06-ISB079.
PTX06-1010	4/11/2017	Installed pump and tubing bundle	258.80	286	259	12.0	271.0	16-28 P&T	5	Pulled dedicated tubing bundle, pump and drop tube. Pump # 1808-190 was installed in this well and was discolored and rust stained. Installed new replacement dedicated tubing bundle, rebuilt pump and drop tube. Pumped 5 gallons of water. Pumping good.
PTX06-1013	4/11/2017	Installed new pump and tubing bundle	249.20	262	249	6.0	255.0	16-28 P&T	5	Installed new dedicated tubing bundle, pump and drop tube. Pumped 5 gallons of water. Pumping good.
PTX06-1182	4/10/2017	Installed new pump and tubing bundle	277.40	285	277	6.0	283.0	16-28 P&T	5	Installed new dedicated tubing bundle, Bennett pump and drop tube in well. Pumped 5 gallons of water to test pump. Pumping good.
PTX06-1013	4/10/2017	Removed pump and tubing bundle	249.20	262						Pulled dedicated tubing bundle, Bennett pump and drop tube in prep for installation of new replacement tubing bundle.
PTX06-1183	4/10/2017	Installed new pump and tubing bundle	280.30	290	279	6.0	285.0	16-28 P&T	5	Installed new dedicated tubing bundle, Bennett pump and drop tube in well. Pumped 5 gallons of water to test pump. Pumping good.
PTX06-EW-81	4/6/2017	Extraction well service								Verified LOTO/air gap in place. LOTO locks placed on LOTO box. Conducted taggate safety briefing and daily rig/location checks. Rigged up Smead and installed well seal on well tubing. Assisted by P&T techs.

Location	Work Date	Activity	Water Level Measurement (ft. bloc)	Total Depth Measurement (ft. bloc)	Tubing bundle length (ft)	Drop tube length (ft)	Intake Depth	Purge Water	Purge Volume (gals)	Comments
PTX06-EW-81	4/4/2017	Extraction well service								Verified LOTO and air gap in place. LOTO locks placed on LOTO box. Conducted tailgate safety briefing and daily rig/location checks. Rig up Smed and lifted tubing for well seal repairs. Discovered that the well seal that was installed was the wrong size. While getting a replacement well seal ready, lightning warnings were initiated and it began raining. Rigged down and moved off location.
PTX01-1010	3/27/2017	Removed pump and tubing bundle for repair								Pulled dedicated tubing bundle, Bennett pump with drop tube attached, and lower diverter. The tubing bundle will be delivered to Bennett Sample Pumps for repair. The cable attaching the diverter to the pump needs replaced.
PTX06-1053	3/22/2017	Well video	249.00	259	5.0				1	Performed well video for well inspection purposes. Pulled bundle and drop tube. Video: This well has 6" pvc casing and screen. The casing is in good condition. The water is cloudy making the downview difficult. (clears up toward bottom) The screen has light amounts of deposits. The sump appears to be full of sand. Reinstalled tubing bundle and test pump. Pump is strong.
PTX06-1107	3/22/2017	Well video	0.00	282						Performed well video for well inspection purposes. This well has 4" pvc casing and stainless steel screen. The casing is in good condition. The screen is heavy with deposits. Less than 1' of water. Considered dry. Sump appears about half full of sand.
PTX06-1104	3/22/2017	Well video	0.00	284						Performed well video for well inspection purposes. This well has 4" pvc casing and stainless steel screen. The casing is in good condition. The screen is heavy with deposits. Less than .5' of water. Considered dry. Sump appears about half full of sand.
PTX06-1106	3/22/2017	Well video	282.30	284						Performed well video for well inspection purposes. This well has 4" pvc casing and stainless steel screen. The casing is in good condition. The screen is fairly clean. Less than 2' of water. Sump appears clear.

Location	Work Date	Activity	Water Level Measurement (ft. bloc)	Total Depth Measurement (ft. bloc)	Tubing bundle length (ft)	Drop tube length (ft)	Intake Depth	Purge Water	Purge Volume (gals)	Comments
PTX06-1127	3/21/2017	Removed pump and tubing bundle and performed well inspection	265.10	287		11.0			1	Performed well video for well inspection purposes. Pulled bundle and drop tube. Video: This well has 6" pvc casing and 6" stainless steel screen. The casing is in good condition. The screen has light to heavy amounts of iron bacteria and deposits, with the heaviest amount toward the bottom of the screen. The sump appears to be full of sand and not visible. Reinstalled tubing bundle and test pump. Pump is strong. No stencil on casing.
PTX06-EW-80	3/14/2017	Extraction well service								Verified LOTO and air gap in place. LOTO locks placed on LOTO box. Conducted tailgate safety briefing and daily rig/location checks. Rigged up Smeal and installed 1 1/4" tubing and submersible pump in well. P&T techs assist.
PTX06-EW-80	3/13/2017	Well video	233.70	263						Verified LOTO and air gap in place. LOTO locks placed on LOTO box. Performed well video per WMR and for well inspection purposes. This well has 6" pvc casing and 6" stainless steel screen. The casing is in good condition. Observed light to moderate iron bacteria in the screened section with heaviest amounts toward bottom of the screen. The sump is clean.
PTX06-EW-51	3/9/2017	Extraction well service								Verified LOTO and air gap in place. Locks were placed on the LOTO box. Conducted tailgate safety briefing and daily rig/location checks. Rigged up Smeal and pulled 14 joints of 1 1/4" pvc tubing, 1 - 1 1/4" X 9' pvc sub and submersible pump. P&T techs wired up new pump. Installed tubing and pump in well.
PTX06-EW-80	3/8/2017	Re-development						16-28 P&T	150	Verified LOTO and air gap in place. Locks placed on LOTO box. Conducted tailgate safety briefing and daily rig/location checks. Rigged up Smeal and ran surge block to surge/brush well screened section. Bailing light red colored water which cleaned up fairly quickly. Ran surge block again to surge/brush well screened section. Bailing water with red tint and cloudy. The water cleaned up within a few bailers.

Location	Work Date	Activity	Water Level Measurement (ft bloc)	Total Depth Measurement (ft bloc)	Tubing bundle length (ft)	Drop tube length (ft)	Intake Depth	Purge Water	Purge Volume (gals)	Comments
PTX06-EW-34	3/7/2017	Extraction well service								Verified LOTO and air gap in place. Placed locks on LOTO box. Conducted tailgate safety briefing and daily rig/location checks. Rigged up Smeal and installed 14 joints of 1 1/4" X 20' pvc tubing, 1 - 1 1/4" X 1 1/2' pvc sub and submersible pump. Assisted by P&T techs.
PTX06-EW-59	3/7/2017	Extraction well service	272.60	295						The water level measurement recorded was taken in June 2016. Verified LOTO and air gap in place. Conducted location checks. Rigged up Smeal and pulled 14 joints of 1 1/4" X 20' pvc tubing, 1 - 1 1/4" X 10' sub and submersible pump. P&T techs wired up new pump. Re-installed pump and tubing in well.
PTX06-EW-12	3/7/2017	Extraction well service	273.70	282						Verified LOTO and air gap in place. Conducted tailgate safety briefing and daily rig/location checks. Rigged up Smeal and pulled 13 joints of 1 1/4" X 20' pvc tubing, 1 - 1 1/4" X 137" sub and submersible pump. The pump had unscrewed from the tubing and was hanging by the safety cable. P&T techs wired up new pump. Re-installed pump and tubing in well.
PTX06-EW-34	3/2/2017	Well video	274.20	285						Performed well video for well inspection purposes. This well has 6" pvc casing and 6" stainless steel screen. The casing is in good condition. The screen has light amounts of iron bacteria visible, with the heaviest amount at the screen/sump transition. The sump appears to be half full of fill.
PTX06-PRB16	3/2/2017	Well video	282.10	283						Performed well video per WMR. This well has 4" pvc casing and 4" stainless steel screen. This video is of the screened section only. The screen is in 2 - 10' sections with a blank pipe section between. The top section is coated with a white substance. The bottom section is fairly clean. The well has 0.9' of water in it. We were unable to get a clear view of the sump bottom due to floating debris in the minimal amount of water. No screen or sump damage was noted from what we could see. This WMR also requested brass tag and TOC elevation data. This data was collected by VLR 7005 on 3/1/2017 and is entered in the EIS Well Survey logbook.

Location	Work Date	Activity	Water Level Measurement (ft. bloc)	Total Depth Measurement (ft. bloc)	Tubing bundle length (ft)	Drop tube length (ft)	Intake Depth	Purge Water	Purge Volume (gals)	Comments
PTX06-EW-80	3/1/2017	Extraction well service						16-28 P&T	75	Verified LOTO and air gap in place. Locks placed on LOTO box. Conducted tailgate safety briefing and daily rig/location checks. Riggged up Smeal and pulled 12 joints of 1 1/4" X 20' pvc tubing, 1 - 1 1/4" X 10' pvc sub and 1 - 2" X 20" pvc sub and submersible pump. Began bailing heavy red mud off bottom of the well. Bailed until the mud thinned up. Surged/brushed screened section then bailing red water and red mud off bottom of the well.
PTX06-EW-34	2/27/2017	Extraction well service								Verified LOTO and placed locks on LOTO box. Conducted tailgate safety briefing and daily rig/location checks. Riggged up Smeal and pulled 14 joints of 1 1/4" X 20' pvc tubing, 1 - 1 1/4" X 1 1/2' pvc sub and submersible pump. S&A assisted by P&T techs.
PTX01-1010	2/10/2017	Removed pump and tubing bundle	503.00	847				Ditch	2	S&A techs were unable to pump water at this location during recent GW sampling activities. Pulled dedicated tubing bundle, Bennett pump with lower diverter attached and drop tube out of well. Tested pump above ground, pumping good. Evacuated the water out of the tubing and reinstalled the bundle in the well. The issue is that the pump is losing suction through the drop tube with the tubing full of water. After the well is sampled, we will pull the tubing bundle and have Bennett pumps add 20' in length to the bundle to put the pump below top of water and eliminate the drop tube. The diverter hangs up while being installed in the well.
PTX06-EW-82	2/8/2017	Collected measurements								Obtained top of water and total depth measurements per WMR at PTX06-EW-82 through PTX06-EW-88. All depths were recorded in the M1 logbook per Michelle Jarrett. Related sample ID numbers are 20170208M12934 through 20170208M12940.

Location	Work Date	Activity	Water Level Measurement (ft. btoc)	Total Depth Measurement (ft. btoc)	Tubing bundle length (ft)	Drop tube length (ft)	Intake Depth	Purge Water	Purge Volume (gals)	Comments
PTX06-1082	2/1/2017	Removed pump and tubing bundle for well inspection	174.60	184		15.0				Well inspection/video. Pulled bundle ,pump and 15' drop tube. Video: 4" PVC casing and screen. Joints in good condition. Screen starts approx 156' and water is at 174.6. Screen is in good condition. The water is very cloudy downhole making it difficult to see. Sump has some sand in the bottom. Reinstalled pump and tested. Pump is very strong.
PTX06-1127	1/31/2017	Removed pump and tubing bundle and re-development	265.00	288			16-28 P&T		350	Note: use Camera #1 - video stopped about 2' from bottom and made two video clips. Did not make another video due to cloudy condition of water. Conducted tailgate safety and daily rig/location checks. Rigged up Smeal and began bailing. The water was light brown but cleaned up quickly. Bailed 350 gallons. Installed dedicated tubing bundle, Bennett pump and drop tube in well. Pumped 5 gallons of water. Pumping good.
PTX06-1033	1/31/2017	Removed pump and tubing bundle for inspection	451.00	553						This well is on the 2 year redevelopment and inspection list in the WMP. Pulled dedicated tubing bundle and Bennett pump in prep for well redevelopment.
PTX06-1127	1/30/2017	Removed pump and tubing bundle and re-development	265.00	288			16-28 P&T		400	Pulled dedicated tubing bundle, Bennett pump and drop tube in prep for well redevelopment. Conducted tailgate safety briefing and daily rig/location checks. Rigged up Smeal and ran surge block in well. Surged/brushed screened section then began bailing. Getting brown mud off bottom, water is light brown in color. Repeated surging and bailing 3 times.
PTX06-1157	1/12/2017	Installed pump and tubing bundle					Ditch		2	Halted redevelopment activities due to the upcoming sampling schedule which this well is part of. Installed dedicated tubing bundle, Bennett pump and drop tube with lower diverter installed. Pumped 2 gallons of water. Pumping good.

btoc – below top of casing

¹Water level and total depth measurements are required only once during a well maintenance event, although daily measurements were collected during some maintenance activities. Total well depths are only required when all equipment is removed from the well.

²Pump intake depth measurements are necessary only when the depths are reset.

⁴Purge water is only released to ditches from clean Ogallala wells. All other water is manager through the pump and treat systems or properly disposed of.

Table C-2. Depth to Water, Total Depth Measurements, and Groundwater Elevations

Location	Aquifer	Sample Date	Depth to Water ft btoc	GW Elevation ft amsl	Total Well Depth ft btoc	Total Depth Elevation ft amsl
PTX06-1030	Perched	1/3/2017	283.20	3249.22		
PTX06-1031	Perched	1/3/2017	283.00	3246.41		
PTX06-1034	Perched	1/3/2017	282.90	3242.02		
PTX06-1147	Perched	1/3/2017	283.70	3246.05		
OW-WR-38	Perched	1/4/2017	222.30	3299.64		
PTX06-1146	Perched	1/4/2017	275.60	3260.49		
PTX07-1P02	Perched	1/10/2017	242.70	3292.19		
PTX08-1001	Perched	1/10/2017	229.30	3289.56		
PTX06-1002A	Perched	1/11/2017	261.70	3279.68		
PTX06-1005	Perched	1/11/2017	280.50	3257.41		
PTX06-1072	Ogallala	1/11/2017	418.30	3133.50		
PTX08-1002	Perched	1/11/2017	229.50	3287.51		
PTX06-1011	Perched	1/12/2017	276.50	3268.87		
PTX06-1088	Perched	1/12/2017	277.90	3266.01		
PTX07-1Q03	Perched	1/12/2017	265.60	3271.51		
PTX06-ISB014	Perched	1/18/2017	286.15	3244.40		
PTX06-ISB019	Perched	1/18/2017	289.25	3240.42		
PTX06-ISB024	Perched	1/18/2017	277.95	3250.99		
PTX06- ISB030B	Perched	1/23/2017	283.48	3247.30		
PTX06-ISB042	Perched	1/23/2017	279.65	3249.16		
PTX06-1015	Perched	1/24/2017	284.30	3245.80		
PTX06-ISB038	Perched	1/24/2017	279.12	3249.71		
PTX06-1050	Perched	1/30/2017	260.70	3293.68		
PTX06-1086	Perched	1/30/2017	251.20	3274.76		
PTX06-1046	Perched	1/31/2017	282.10	3245.69		
PTX06-1182	Perched	1/31/2017	277.20	3240.12	286.00	3231.32
PTX06-1182	Perched	1/31/2017	277.20	3240.12		
PTX06-ISB046	Perched	1/31/2017	278.95	3249.53		
PTX06-ISB048	Perched	1/31/2017	279.30	3249.23		
PTX06-1180	Perched	2/1/2017	275.20	3272.17		
PTX01-1012	Ogallala	2/6/2017	513.80	3060.96		
PTX01-1013	Ogallala	2/6/2017	510.10	3074.20		
PTX06-1037	Perched	2/6/2017	280.02	3248.33		
PTX06-1043	Ogallala	2/6/2017	449.70	3074.94		
PTX06-1153	Perched	2/6/2017	280.55	3248.74		
PTX06-1154	Perched	2/6/2017	279.11	3249.03		

Location	Aquifer	Sample Date	Depth to Water ft btoc	GW Elevation ft amsl	Total Well Depth ft btoc	Total Depth Elevation ft amsl
PTX06-1012	Perched	2/7/2017	269.43	3271.43		
PTX06-1056	Ogallala	2/7/2017	398.90	3134.06		
PTX06-1139	Ogallala	2/7/2017	440.50	3091.23		
PTX06-1155	Perched	2/7/2017	269.25	3272.67		
PTX06-1156	Perched	2/7/2017	256.83	3272.59		
PTX06-1157	Ogallala	2/7/2017	397.80	3128.15		
PTX06-1064	Ogallala	2/8/2017	514.00	3050.63		
PTX06-1137A	Ogallala	2/8/2017	472.70	3056.91		
PTX06-1141	Ogallala	2/8/2017	480.00	3082.73		
PTX06-1173	Perched	2/8/2017	271.17	3271.80		
PTX06-1174	Perched	2/8/2017	272.49	3271.80		
PTX06-EW-83	Perched	2/8/2017	283.80	3246.35		
PTX06-EW-84	Perched	2/8/2017	283.70	3246.31		
PTX06-EW-85	Perched	2/8/2017	283.60	3246.24		
PTX06-EW-86	Perched	2/8/2017	283.40	3246.26		
PTX06-EW-87	Perched	2/8/2017	283.60	3246.11		
PTX06-EW-88	Perched	2/8/2017	283.30	3246.12		
PTX-BEG2	Ogallala	2/8/2017	392.30	3152.05		
PTX01-1011	Ogallala	2/9/2017	500.00	3075.07		
PTX06-1062A	Ogallala	2/9/2017	507.90	3066.06		
PTX06-1072	Ogallala	2/9/2017	418.80	3133.00		
PTX06-1118	Perched	2/9/2017		DRY		
PTX06-1123	Perched	2/9/2017		DRY		
PTX06-1148	Perched	2/9/2017	254.69	3271.43		
PTX06-1149	Perched	2/9/2017	259.25	3272.20		
PTX06-1150	Perched	2/9/2017	261.57	3272.42		
PTX01-1010	Ogallala	2/13/2017	503.00	3073.15		
PTX06-1035	Perched	2/13/2017	271.20	3270.49		
PTX06-1160	Perched	2/13/2017	274.50	3272.09		
PTX06-1170	Perched	2/15/2017	270.40	3272.34		
PTX06-1SB075	Perched	2/15/2017	269.10	3273.04		
PTX06-1038	Perched	2/20/2017	266.40	3275.89		
PTX06-1042	Perched	2/20/2017	278.90	3256.47		
PTX06-1159	Perched	2/20/2017	270.20	3271.67		
PTX06-1176	Perched	2/20/2017	272.19	3271.96		
PTX06-1SB079	Perched	2/20/2017	259.40	3272.23		
PTX06-1SB082	Perched	2/20/2017	258.37	3272.03		
PTX06-1034	Perched	2/21/2017	282.80	3242.12		

Location	Aquifer	Sample Date	Depth to Water ft btoc	GW Elevation ft amsl	Total Well Depth ft btoc	Total Depth Elevation ft amsl
PTX06-1146	Perched	2/21/2017	275.80	3260.29		
PTX06-1166	Perched	2/21/2017	281.30	3252.16		
PTX06-1175	Perched	2/21/2017	273.84	3271.45		
PTX06-1002A	Perched	2/23/2017	261.70	3279.68		
PTX06-1005	Perched	2/23/2017	281.10	3256.81		
PTX06-1023	Perched	2/23/2017	246.70	3297.73		
PTX07-1002	Perched	2/23/2017	256.70	3294.63		
PTX06-1039A	Perched	2/27/2017	274.60	3266.11		
PTX06-1040	Perched	2/27/2017	280.60	3259.06		
PTX06-1041	Perched	2/27/2017	279.90	3258.86		
PTX06-1095A	Perched	2/27/2017	278.20	3257.53		
PTX06-1164	Perched	2/27/2017	272.98	3272.40		
PTX06-1177	Perched	2/27/2017	272.90	3271.84		
PTX06-1015	Perched	2/28/2017	285.00	3245.10		
PTX06-1052	Perched	2/28/2017	277.60	3259.40		
PTX06-1103	Perched	2/28/2017			282.00	3248.83
PTX06-1103	Perched	2/28/2017		DRY		
PTX06-1130	Perched	2/28/2017		DRY		
PTX06-1167	Perched	2/28/2017			282.50	3247.32
PTX06-1167	Perched	2/28/2017		DRY		
PTX06-ISB055	Perched	2/28/2017	261.00	3273.02		
PTX06-ISB059	Perched	2/28/2017	261.22	3272.45		
PTX06-1045	Perched	3/1/2017		DRY		
PTX06-1046	Perched	3/1/2017	282.50	3245.29		
PTX06-1047A	Perched	3/1/2017	280.50	3245.97		
PTX06-1151	Perched	3/6/2017	273.80	3272.88		
PTX06-ISB063	Perched	3/6/2017	262.40	3273.49		
PTX06- ISB069A	Perched	3/6/2017	264.67	3273.45		
PTX08-1005	Perched	3/6/2017	271.60	3275.13		
PTX08-1006	Perched	3/6/2017	271.80	3273.96		
PTX06-ISB071	Perched	3/7/2017	268.30	3272.39		
PTX06-ISB073	Perched	3/7/2017	269.30	3273.32		
PTX06-ISB077	Perched	3/8/2017	267.25	3272.74		
PTX06-1060	Ogallala	4/17/2017	359.30	3213.46		
PTX06-1061	Ogallala	4/17/2017	505.60	3086.34		
PTX06-1074	Ogallala	4/17/2017	426.90	3151.53		
PTX06-1137A	Ogallala	4/18/2017	472.80	3056.81		
PTX06-1138	Ogallala	4/18/2017	466.40	3070.30		

Location	Aquifer	Sample Date	Depth to Water ft btoc	GW Elevation ft amsl	Total Well Depth ft btoc	Total Depth Elevation ft amsl
PTX06-1140	Ogallala	4/18/2017	490.70	3038.69		
PTX06-ISB014	Perched	4/18/2017	285.58	3244.97		
PTX06-ISB019	Perched	4/18/2017	289.20	3240.47		
PTX06-ISB024	Perched	4/18/2017	278.29	3250.65		
PTX06- ISB030B	Perched	4/18/2017	283.50	3247.28		
PTX06-1056	Ogallala	4/19/2017	399.10	3133.86		
PTX06-1057A	Ogallala	4/19/2017	471.30	3095.80		
PTX06-1076	Ogallala	4/19/2017	347.20	3183.16		
PTX06-ISB038	Perched	4/19/2017	279.30	3249.53		
PTX06-ISB042	Perched	4/19/2017	285.50	3243.31		
PTX06-1064	Ogallala	4/20/2017	514.40	3050.23		
PTX06-1143	Ogallala	4/20/2017	496.70	3051.24		
PTX06-1144	Ogallala	4/20/2017	494.00	3034.58		
PTX06-1085	Perched	4/24/2017	258.50	3275.30		
PTX06-1086	Perched	4/24/2017	250.20	3275.76		
PTX06-1131	Perched	4/24/2017	280.40	3268.97		
PTX06-ISB046	Perched	4/24/2017	279.10	3249.38		
PTX06-ISB048	Perched	4/24/2017	279.45	3249.08		
PTX06-1013	Perched	4/25/2017	249.10	3295.14		
PTX06-1037	Perched	4/25/2017	280.15	3248.20		
PTX06-1048A	Perched	4/25/2017	237.50	3303.04		
PTX06-1098	Perched	4/25/2017	278.95	3255.44		
PTX06-1118	Perched	4/25/2017		DRY		
PTX06-1123	Perched	4/25/2017	279.71	3249.32		
PTX06-1153	Perched	4/25/2017	280.65	3248.64		
PTX06-1154	Perched	4/25/2017	279.33	3248.81		
PTX06-1182	Perched	4/25/2017	277.20	3240.12		
PTX06-ISB055	Perched	5/2/2017	261.17	3272.85		
PTX06-ISB059	Perched	5/2/2017	261.50	3272.17		
PTX06-ISB063	Perched	5/3/2017	262.60	3273.29		
PTX06- ISB069A	Perched	5/3/2017	264.80	3273.32		
PTX06-1126	Perched	5/4/2017	268.90	3273.55		
PTX06-1127	Perched	5/4/2017	265.30	3273.30		
PTX06-ISB071	Perched	5/4/2017	268.67	3272.02		
PTX06-1053	Perched	5/8/2017	249.60	3270.24		
PTX06-1135	Perched	5/8/2017	273.30	3262.23		
PTX06-1183	Perched	5/8/2017	280.20	3254.12		

Location	Aquifer	Sample Date	Depth to Water ft btoc	GW Elevation ft amsl	Total Well Depth ft btoc	Total Depth Elevation ft amsl
PTX06-ISB073	Perched	5/8/2017	269.28	3273.34		
PTX06-ISB077	Perched	5/8/2017	266.25	3273.74		
PTX01-1001	Perched	5/9/2017	288.80	3280.36		
PTX06-1049	Perched	5/9/2017	275.00	3281.58		
PTX06-1050	Perched	5/9/2017	260.80	3293.58		
PTX06-1136	Perched	5/9/2017		DRY		
PTX06-ISB075	Perched	5/9/2017	269.04	3273.10		
PTX06-ISB082	Perched	5/9/2017	258.46	3271.94		
PTX06-1030	Perched	5/15/2017	283.30	3249.12		
PTX06-1031	Perched	5/15/2017	283.00	3246.41		
PTX06-1133A	Perched	5/15/2017	276.60	3244.05		
PTX06-1147	Perched	5/15/2017	283.60	3246.15		
PTX06-1158	Perched	5/15/2017			285.50	3234.71
PTX06-1158	Perched	5/15/2017		DRY		
PTX06-1170	Perched	5/15/2017	270.26	3272.48		
PTX06-1176	Perched	5/15/2017	272.00	3272.15		
PTX06-1033	Ogallala	5/16/2017	451.10	3090.18		
PTX06-1044	Ogallala	5/16/2017	496.30	3048.21		
PTX06-1068	Ogallala	5/16/2017	523.40	3015.31		
PTX06-1164	Perched	5/16/2017	272.91	3272.47		
PTX06-1177	Perched	5/16/2017	272.79	3271.95		
PTX06-ISB079	Perched	5/16/2017	259.71	3271.92		
PTX07-1P02	Perched	5/17/2017	242.80	3292.09		
PTX07-1P05	Perched	5/17/2017	250.90	3294.42		
PTX08-1001	Perched	5/17/2017	230.80	3288.06		
PTX08-1002	Perched	5/17/2017	231.80	3285.21		
OW-WR-38	Perched	5/18/2017	222.90	3299.04		
PTX08-1008	Perched	5/18/2017	269.10	3269.37		
PTX08-1009	Perched	5/18/2017	275.20	3264.00		
1114-MW4	Perched	5/22/2017	274.40	3276.33		
PTX06-1073A	Perched	5/22/2017	278.10	3272.45		
PTX06-1173	Perched	5/22/2017	271.05	3271.92		
PTX06-1174	Perched	5/22/2017	272.32	3271.97		
PTX06-1175	Perched	5/22/2017	273.68	3271.61		
PTX08-1003	Perched	5/22/2017	276.70	3276.79		
PTX01-1008	Perched	5/23/2017	274.00	3296.78		
PTX06-1007	Perched	5/23/2017	270.30	3276.40		
PTX06-1008	Perched	5/23/2017	270.20	3278.98		

Location	Aquifer	Sample Date	Depth to Water ft btoc	GW Elevation ft amsl	Total Well Depth ft btoc	Total Depth Elevation ft amsl
PTX06-1012	Perched	5/23/2017	269.50	3271.36		
PTX06-1155	Perched	5/23/2017	269.35	3272.57		
PTX06-1156	Perched	5/23/2017	256.95	3272.47		
PTX10-1014	Perched	5/23/2017	261.70	3282.49		
PTX06-1010	Perched	5/24/2017	258.70	3287.46		
PTX06-1011	Perched	5/24/2017	276.40	3268.97		
PTX06-1088	Perched	5/24/2017	277.80	3266.11		
PTX06-1148	Perched	5/24/2017	254.64	3271.48		
PTX06-1149	Perched	5/24/2017	259.14	3272.31		
PTX06-1150	Perched	5/24/2017	261.47	3272.52		
PTX08-1007	Perched	5/24/2017	272.40	3276.41		
PTX06-1134	Perched	5/30/2017	267.10	3271.09		
PTX06-1006	Perched	5/31/2017	269.90	3275.02		
PTX06-1045	Perched	6/1/2017		DRY		
PTX06-1120	Perched	6/1/2017	280.20	3247.38		
PTX06-1121	Perched	6/1/2017			280.00	3246.53
PTX06-1121	Perched	6/1/2017		DRY		
PTX07-1R01	Ogallala	6/5/2017	456.60	3115.27		
PTX06-1169	Perched	6/7/2017	267.40	3272.32		
PTX06-1170	Perched	6/7/2017	270.37	3272.37		
PTX06-1SB075	Perched	6/7/2017	269.15	3272.99		
PTX06-1137A	Ogallala	6/13/2017	472.80	3056.81		
PTX06-1037	Perched	6/16/2017	280.18	3248.17		
PTX06-1037	Perched	6/16/2017	280.18	3248.17		
PTX06-1098	Perched	6/16/2017	279.83	3254.56		
PTX06-1098	Perched	6/16/2017	279.83	3254.56		
PTX06-1154	Perched	6/16/2017	279.31	3248.83		
PTX06-1154	Perched	6/16/2017	279.31	3248.83		
1114-MW4	Perched	6/19/2017	274.40	3276.33		
PTX01-1001	Perched	6/19/2017	288.70	3280.46		
PTX01-1004	Perched	6/19/2017		DRY		
PTX01-1006	Perched	6/19/2017		DRY		
PTX01-1007	Perched	6/19/2017		DRY		
PTX01-1008	Perched	6/19/2017	274.00	3296.78		
PTX01-1009	Perched	6/19/2017		DRY		
PTX01-1010	Ogallala	6/19/2017	510.80	3065.35		
PTX01-1011	Ogallala	6/19/2017	501.00	3074.07		
PTX01-1012	Ogallala	6/19/2017	524.70	3050.06		

Location	Aquifer	Sample Date	Depth to Water ft btoc	GW Elevation ft amsl	Total Well Depth ft btoc	Total Depth Elevation ft amsl
PTX01-1013	Ogallala	6/19/2017	517.00	3067.30		
PTX01-1014A	Perched	6/19/2017			DRY	
PTX06-1007	Perched	6/19/2017	270.50	3276.20		
PTX06-1012	Perched	6/19/2017	269.47	3271.39		
PTX06-1030	Perched	6/19/2017	283.50	3248.92		
PTX06-1031	Perched	6/19/2017	283.10	3246.31		
PTX06-1034	Perched	6/19/2017	282.80	3242.12		
PTX06-1049	Perched	6/19/2017	275.20	3281.38		
PTX06-1055	Perched	6/19/2017			DRY	
PTX06-1057A	Ogallala	6/19/2017	471.50	3095.60		
PTX06-1060	Ogallala	6/19/2017	359.20	3213.56		
PTX06-1061	Ogallala	6/19/2017	507.80	3084.14		
PTX06-1062A	Ogallala	6/19/2017	510.10	3063.86		
PTX06-1064	Ogallala	6/19/2017	515.80	3048.83		
PTX06-1069	Perched	6/19/2017	253.00	3280.01		
PTX06-1072	Ogallala	6/19/2017	418.60	3133.20		
PTX06-1073A	Perched	6/19/2017	278.00	3272.55		
PTX06-1074	Ogallala	6/19/2017	427.40	3151.03		
PTX06-1077A	Perched	6/19/2017	270.50	3278.95		
PTX06-1082	Perched	6/19/2017	174.60	3294.31		
PTX06-1083	Perched	6/19/2017	179.90	3288.29		
PTX06-1084	Perched	6/19/2017	209.30	3270.37		
PTX06-1090	Perched	6/19/2017			DRY	
PTX06-1091	Perched	6/19/2017			DRY	
PTX06-1096A	Perched	6/19/2017			DRY	
PTX06-1097	Perched	6/19/2017			DRY	
PTX06-1133A	Perched	6/19/2017	276.70	3243.95		
PTX06-1136	Perched	6/19/2017			DRY	
PTX06-1137A	Ogallala	6/19/2017	473.10	3056.51		
PTX06-1139	Ogallala	6/19/2017	440.90	3090.83		
PTX06-1140	Ogallala	6/19/2017	491.30	3038.09		
PTX06-1141	Ogallala	6/19/2017	480.70	3082.03		
PTX06-1146	Perched	6/19/2017	276.00	3260.09		
PTX06-1147	Perched	6/19/2017	283.80	3245.95		
PTX06-1151	Perched	6/19/2017	273.90	3272.78		
PTX06-1155	Perched	6/19/2017	269.34	3272.58		
PTX06-1156	Perched	6/19/2017	256.91	3272.51		
PTX06-1157	Ogallala	6/19/2017	398.10	3127.85		

Location	Aquifer	Sample Date	Depth to Water ft btoc	GW Elevation ft amsl	Total Well Depth ft btoc	Total Depth Elevation ft amsl
PTX06-1158	Perched	6/19/2017		DRY		
PTX06-1164	Perched	6/19/2017	273.03	3272.35		
PTX06-1170	Perched	6/19/2017	270.36	3272.38		
PTX06-1173	Perched	6/19/2017	271.12	3271.85		
PTX06-1174	Perched	6/19/2017	272.40	3271.89		
PTX06-1175	Perched	6/19/2017	273.71	3271.58		
PTX06-1176	Perched	6/19/2017	272.10	3272.05		
PTX06-1177	Perched	6/19/2017	272.90	3271.84		
PTX06-1182	Perched	6/19/2017	277.40	3239.92		
PTX06-ISB055	Perched	6/19/2017	261.56	3272.46		
PTX06-ISB059	Perched	6/19/2017	261.40	3272.27		
PTX06-ISB063	Perched	6/19/2017	262.90	3272.99		
PTX06- ISB069A	Perched	6/19/2017	265.25	3272.87		
PTX06-ISB071	Perched	6/19/2017	268.93	3271.76		
PTX06-ISB073	Perched	6/19/2017	269.44	3273.18		
PTX06-ISB075	Perched	6/19/2017	269.10	3273.04		
PTX06-ISB077	Perched	6/19/2017	268.00	3271.99		
PTX06-ISB079	Perched	6/19/2017	259.87	3271.76		
PTX06-ISB082	Perched	6/19/2017	258.51	3271.89		
PTX07-1P03	Perched	6/19/2017	255.10	3291.70		
PTX07-1R01	Ogallala	6/19/2017	456.60	3115.27		
PTX07-1R03	Perched	6/19/2017	253.60	3319.90		
PTX08-1003	Perched	6/19/2017	276.70	3276.79		
PTX08-1006	Perched	6/19/2017	271.70	3274.06		
PTX08-1011A	Ogallala	6/19/2017	408.20	3168.38		
PTX10-1008	Perched	6/19/2017	267.10	3276.98		
OW-WR-45	Perched	6/20/2017	266.20	3280.90		
PTX04-1001	Perched	6/20/2017	220.50	3307.28		
PTX04-1002	Perched	6/20/2017	224.20	3307.05		
PTX06-1008	Perched	6/20/2017	270.20	3278.98		
PTX06-1009	Perched	6/20/2017		DRY		
PTX06-1010	Perched	6/20/2017	258.70	3287.46		
PTX06-1011	Perched	6/20/2017	276.40	3268.97		
PTX06-1013	Perched	6/20/2017	249.20	3295.04		
PTX06-1023	Perched	6/20/2017	246.90	3297.53		
PTX06-1044	Ogallala	6/20/2017	497.20	3047.31		
PTX06-1048A	Perched	6/20/2017	237.70	3302.84		
PTX06-1058	Ogallala	6/20/2017	403.40	3165.15		

Location	Aquifer	Sample Date	Depth to Water ft btoc	GW Elevation ft amsl	Total Well Depth ft btoc	Total Depth Elevation ft amsl
PTX06-1059	Ogallala	6/20/2017	418.30	3129.73		
PTX06-1068	Ogallala	6/20/2017	524.70	3014.01		
PTX06-1071	Perched	6/20/2017	223.80	3307.35		
PTX06-1078	Perched	6/20/2017			DRY	
PTX06-1085	Perched	6/20/2017	259.10	3274.70		
PTX06-1086	Perched	6/20/2017	250.80	3275.16		
PTX06-1087	Perched	6/20/2017	254.10	3279.96		
PTX06-1088	Perched	6/20/2017	277.80	3266.11		
PTX06-1089	Perched	6/20/2017	272.30	3263.16		
PTX06-1093	Perched	6/20/2017			DRY	
PTX06-1100	Perched	6/20/2017	279.45	3255.18		
PTX06-1101	Perched	6/20/2017	278.68	3254.87		
PTX06-1104	Perched	6/20/2017			DRY	
PTX06-1105	Perched	6/20/2017	281.95	3251.00		
PTX06-1106	Perched	6/20/2017	282.45	3250.13		
PTX06-1107	Perched	6/20/2017			DRY	
PTX06-1118	Perched	6/20/2017			DRY	
PTX06-1123	Perched	6/20/2017	279.78	3249.25		
PTX06-1130	Perched	6/20/2017			DRY	
PTX06-1138	Ogallala	6/20/2017	466.80	3069.90		
PTX06-1148	Perched	6/20/2017	254.74	3271.38		
PTX06-1149	Perched	6/20/2017	259.33	3272.12		
PTX06-1150	Perched	6/20/2017	261.68	3272.31		
PTX06-1153	Perched	6/20/2017	280.81	3248.48		
PTX06- ISB014	Perched	6/20/2017	285.52	3245.03		
PTX06- ISB019	Perched	6/20/2017	289.19	3240.48		
PTX06- ISB024	Perched	6/20/2017	279.60	3249.34		
PTX06- ISB030B	Perched	6/20/2017	283.73	3247.05		
PTX06- ISB038	Perched	6/20/2017	279.59	3249.24		
PTX06- ISB042	Perched	6/20/2017	285.50	3243.31		
PTX06- ISB046	Perched	6/20/2017	279.43	3249.05		
PTX06- ISB048	Perched	6/20/2017	279.68	3248.85		
PTX06- PZ01	Perched	6/20/2017	261.20	3280.83		
PTX06- PZ02	Perched	6/20/2017	260.30	3281.89		
PTX06- PZ03	Perched	6/20/2017	262.10	3280.20		
PTX08-1005	Perched	6/20/2017	271.60	3275.13		
PTX08-1007	Perched	6/20/2017	272.50	3276.31		
PTX08-1008	Perched	6/20/2017	269.10	3269.37		

Location	Aquifer	Sample Date	Depth to Water ft btoc	GW Elevation ft amsl	Total Well Depth ft btoc	Total Depth Elevation ft amsl
PTX08-1010	Perched	6/20/2017	216.80	3307.92		
PTX10-1014	Perched	6/20/2017	261.80	3282.39		
OW-WR-38	Perched	6/21/2017	222.90	3299.04		
PTX06-1001A	Perched	6/21/2017	259.80	3282.06		
PTX06-1002A	Perched	6/21/2017	261.90	3279.48		
PTX06-1003	Perched	6/21/2017		DRY		
PTX06-1005	Perched	6/21/2017	280.40	3257.51		
PTX06-1006	Perched	6/21/2017	269.80	3275.12		
PTX06-1014	Perched	6/21/2017	278.50	3254.64		
PTX06-1015	Perched	6/21/2017	284.40	3245.70		
PTX06-1017	Perched	6/21/2017		DRY		
PTX06-1033	Ogallala	6/21/2017	451.30	3089.98		
PTX06-1035	Perched	6/21/2017	271.00	3270.69		
PTX06-1036	Perched	6/21/2017	285.10	3249.51		
PTX06-1038	Perched	6/21/2017	266.30	3275.99		
PTX06-1039A	Perched	6/21/2017	273.60	3267.11		
PTX06-1040	Perched	6/21/2017	280.10	3259.56		
PTX06-1041	Perched	6/21/2017	279.50	3259.26		
PTX06-1042	Perched	6/21/2017	278.90	3256.47		
PTX06-1043	Ogallala	6/21/2017	451.00	3073.64		
PTX06-1045	Perched	6/21/2017		DRY		
PTX06-1046	Perched	6/21/2017	282.20	3245.59		
PTX06-1047A	Perched	6/21/2017	280.50	3245.97		
PTX06-1050	Perched	6/21/2017	260.80	3293.58		
PTX06-1051	Perched	6/21/2017	292.90	3239.39		
PTX06-1052	Perched	6/21/2017	277.70	3259.30		
PTX06-1053	Perched	6/21/2017	249.60	3270.24		
PTX06-1056	Ogallala	6/21/2017	399.30	3133.66		
PTX06-1075	Ogallala	6/21/2017	352.40	3196.06		
PTX06-1076	Ogallala	6/21/2017	347.30	3183.06		
PTX06-1079	Perched	6/21/2017		DRY		
PTX06-1080	Perched	6/21/2017	272.50	3263.74		
PTX06-1081	Perched	6/21/2017	227.20	3306.25		
PTX06-1094	Perched	6/21/2017		DRY		
PTX06-1095A	Perched	6/21/2017	278.10	3257.63		
PTX06-1102	Perched	6/21/2017	287.90	3247.02		
PTX06-1103	Perched	6/21/2017		DRY		
PTX06-1109	Perched	6/21/2017	233.80	3285.52		

Location	Aquifer	Sample Date	Depth to Water ft btoc	GW Elevation ft amsl	Total Well Depth ft btoc	Total Depth Elevation ft amsl
PTX06-1110	Perched	6/21/2017	237.10	3284.43		
PTX06-1112	Perched	6/21/2017	250.30	3293.17		
PTX06-1113	Perched	6/21/2017	253.50	3291.97		
PTX06-1115	Perched	6/21/2017	237.80	3291.38		
PTX06-1116	Perched	6/21/2017	239.30	3290.86		
PTX06-1119	Perched	6/21/2017		DRY		
PTX06-1120	Perched	6/21/2017	280.30	3247.28		
PTX06-1121	Perched	6/21/2017		DRY		
PTX06-1122	Perched	6/21/2017		DRY		
PTX06-1125	Perched	6/21/2017		DRY		
PTX06-1126	Perched	6/21/2017	268.80	3273.65		
PTX06-1127	Perched	6/21/2017	265.10	3273.50		
PTX06-1128	Perched	6/21/2017	229.30	3292.66		
PTX06-1129	Perched	6/21/2017	232.00	3290.54		
PTX06-1131	Perched	6/21/2017	280.60	3268.77		
PTX06-1134	Perched	6/21/2017	267.00	3271.19		
PTX06-1135	Perched	6/21/2017	273.30	3262.23		
PTX06-1143	Ogallala	6/21/2017	497.10	3050.84		
PTX06-1144	Ogallala	6/21/2017	495.60	3032.98		
PTX06-1159	Perched	6/21/2017	270.00	3271.87		
PTX06-1160	Perched	6/21/2017	274.10	3272.49		
PTX06-1166	Perched	6/21/2017	281.30	3252.16		
PTX06-1167	Perched	6/21/2017		DRY		
PTX06-1168	Perched	6/21/2017	278.30	3255.39		
PTX06-1171	Perched	6/21/2017	271.50	3273.04		
PTX06-1183	Perched	6/21/2017	280.00	3254.32		
PTX06-PZ05	Perched	6/21/2017	267.60	3274.07		
PTX06-PZ06	Perched	6/21/2017		DRY		
PTX07-1001	Perched	6/21/2017	258.50	3293.95		
PTX07-1002	Perched	6/21/2017	259.70	3291.63		
PTX07-1003	Perched	6/21/2017	253.60	3296.91		
PTX07-1004	Perched	6/21/2017	258.80	3293.71		
PTX07-1005	Perched	6/21/2017	257.10	3295.20		
PTX07-1006	Perched	6/21/2017		DRY		
PTX07-1P01	Perched	6/21/2017	248.50	3295.35		
PTX07-1P02	Perched	6/21/2017	242.80	3292.09		
PTX07-1P04	Perched	6/21/2017		DRY		
PTX07-1P05	Perched	6/21/2017	251.00	3294.32		

Location	Aquifer	Sample Date	Depth to Water ft btoc	GW Elevation ft amsl	Total Well Depth ft btoc	Total Depth Elevation ft amsl
PTX07-1P06	Perched	6/21/2017	255.60	3289.90		
PTX07-1Q01	Perched	6/21/2017	277.60	3269.95		
PTX07-1Q02	Perched	6/21/2017	282.20	3269.87		
PTX07-1Q03	Perched	6/21/2017	265.10	3272.01		
PTX08-1001	Perched	6/21/2017	231.00	3287.86		
PTX08-1002	Perched	6/21/2017	232.20	3284.81		
PTX08-1009	Perched	6/21/2017	274.80	3264.40		
PTX-BEG2	Ogallala	6/21/2017	392.60	3151.75		
PTX06-1184	Perched	7/10/2017	273.80	3242.37	275.00	3241.17
PTX06-1184	Perched	7/10/2017	273.80	3242.37		
PTX06-1185	Perched	7/10/2017	279.70	3237.67	286.00	3231.37
PTX06-1185	Perched	7/10/2017	279.70	3237.67		
PTX06- ISB107 (PTX06-1186)	Perched	7/10/2017	277.20	3238.81	285.00	3231.01
PTX06-1058	Ogallala	7/11/2017	403.50	3165.05		
PTX06-1059	Ogallala	7/11/2017	418.40	3129.63		
PTX06-1075	Ogallala	7/11/2017	352.50	3195.96		
PTX04-1001	Perched	7/12/2017	220.60	3307.18		
PTX04-1002	Perched	7/12/2017	224.30	3306.95		
PTX06-1081	Perched	7/12/2017	227.20	3306.25		
PTX07-1006	Perched	7/12/2017		DRY		
PTX07-1Q01	Perched	7/13/2017	277.80	3269.75		
PTX07-1Q02	Perched	7/13/2017	282.40	3269.67		
PTX07-1Q03	Perched	7/13/2017	265.30	3271.81		
PTX06-1012	Perched	7/17/2017	269.50	3271.36		
PTX06-1014	Perched	7/17/2017	278.50	3254.64		
PTX06-1069	Perched	7/17/2017	252.90	3280.11		
PTX06-1155	Perched	7/17/2017	269.34	3272.58		
PTX06-1156	Perched	7/17/2017	256.92	3272.50		
PTX06-1036	Perched	7/18/2017	285.00	3249.61		
PTX06-1056	Ogallala	7/18/2017	399.40	3133.56		
PTX06-1035	Perched	7/19/2017	271.20	3270.49		
PTX06-1077A	Perched	7/19/2017	270.50	3278.95		
PTX06-1160	Perched	7/19/2017	274.20	3272.39		
PTX06-1173	Perched	7/19/2017	271.15	3271.82		
PTX06-1174	Perched	7/19/2017	272.41	3271.88		
PTX06-1175	Perched	7/19/2017	273.70	3271.59		
PTX06-1038	Perched	7/24/2017	266.30	3275.99		
PTX06-1039A	Perched	7/24/2017	273.70	3267.01		

Location	Aquifer	Sample Date	Depth to Water ft btoc	GW Elevation ft amsl	Total Well Depth ft btoc	Total Depth Elevation ft amsl
PTX06-1040	Perched	7/24/2017	280.00	3259.66		
PTX06-1041	Perched	7/24/2017	279.30	3259.46		
PTX06-1042	Perched	7/24/2017	279.00	3256.37		
PTX01-1010	Ogallala	7/25/2017	507.80	3068.35		
PTX01-1011	Ogallala	7/25/2017	502.20	3072.87		
PTX01-1012	Ogallala	7/25/2017	528.90	3045.86		
PTX01-1013	Ogallala	7/25/2017	519.80	3064.50		
PTX06-1062A	Ogallala	7/25/2017	511.50	3062.46		
PTX06-ISB075	Perched	7/25/2017	269.06	3273.08		
PTX06-ISB079	Perched	7/25/2017	259.83	3271.80		
PTX06-ISB082	Perched	7/25/2017	258.49	3271.91		
PTX06-1043	Ogallala	7/26/2017	451.30	3073.34		
PTX06-1072	Ogallala	7/26/2017	419.00	3132.80		
PTX06-1139	Ogallala	7/26/2017	441.10	3090.63		
PTX06-1157	Ogallala	7/26/2017	398.10	3127.85		
PTX06-1170	Perched	7/26/2017	270.33	3272.41		
PTX06-1176	Perched	7/26/2017	272.07	3272.08		
PTX06-1001A	Perched	7/27/2017	259.80	3282.06		
PTX06-1034	Perched	7/27/2017	282.80	3242.12		
PTX06-1130	Perched	7/27/2017		DRY		
PTX06-1141	Ogallala	7/27/2017	481.50	3081.23		
PTX06-1146	Perched	7/27/2017	276.10	3259.99		
PTX06-1164	Perched	7/27/2017	273.03	3272.35		
PTX06-1177	Perched	7/27/2017	272.91	3271.83		
PTX08-1008	Perched	7/27/2017	269.00	3269.47		
PTX-BEG2	Ogallala	7/27/2017	392.80	3151.55		
PTX06-ISB055	Perched	8/1/2017	261.18	3272.84		
PTX06-ISB059	Perched	8/1/2017	261.12	3272.55		
PTX06-ISB063	Perched	8/2/2017	262.63	3273.26		
PTX06- ISB069A	Perched	8/2/2017	264.75	3273.37		
PTX06-1002A	Perched	8/7/2017	262.10	3279.28		
PTX06-1003	Perched	8/7/2017			265.00	3304.92
PTX06-1003	Perched	8/7/2017		DRY		
PTX06-1005	Perched	8/7/2017	280.20	3257.71		
PTX06-1095A	Perched	8/7/2017	277.80	3257.93		
PTX06-1159	Perched	8/8/2017	270.20	3271.67		
PTX06-1171	Perched	8/8/2017	271.80	3272.74		
PTX06-ISB071	Perched	8/8/2017	268.11	3272.58		

Location	Aquifer	Sample Date	Depth to Water ft btoc	GW Elevation ft amsl	Total Well Depth ft btoc	Total Depth Elevation ft amsl
PTX06- ISB073	Perched	8/8/2017	269.30	3273.32		
PTX06- ISB077	Perched	8/9/2017	267.50	3272.49		
PTX06- 1151	Perched	8/22/2017	273.90	3272.78		
PTX06- 1180	Perched	8/22/2017	274.90	3272.47		
PTX06- 1181	Perched	8/22/2017	274.70	3272.71	299.00	3248.41
PTX06- 1181	Perched	8/22/2017	274.70	3272.71		
PTX06- ISB024	Perched	8/22/2017	279.86	3249.08		
PTX06- ISB030B	Perched	8/22/2017	283.57	3247.21		
PTX08- 1005	Perched	8/22/2017	271.80	3274.93		
PTX06- ISB038	Perched	8/23/2017	279.58	3249.25		
PTX06- ISB048	Perched	8/23/2017	279.67	3248.86		
PTX06- 1015	Perched	8/28/2017	284.90	3245.20		
PTX06- 1045	Perched	8/28/2017		DRY		
PTX06- 1052	Perched	8/28/2017	278.10	3258.90		
PTX06- 1102	Perched	8/28/2017	287.90	3247.02		
PTX06- 1103	Perched	8/28/2017			283.00	3247.83
PTX06- 1103	Perched	8/28/2017		DRY		
PTX06- 1118	Perched	8/28/2017		DRY		
PTX06- 1123	Perched	8/28/2017	279.95	3249.08		
PTX06- 1166	Perched	8/28/2017	281.40	3252.06		
PTX06- 1167	Perched	8/28/2017			282.50	3247.32
PTX06- 1167	Perched	8/28/2017		DRY		
PTX06- ISB014	Perched	8/28/2017	285.94	3244.61		
PTX06- ISB019	Perched	8/28/2017	289.23	3240.44		
PTX06- ISB042	Perched	8/28/2017	285.52	3243.29		
PTX06- 1023	Perched	8/29/2017	247.00	3297.43		
PTX06- ISB046	Perched	8/29/2017	279.37	3249.11		
PTX07- 1002	Perched	8/29/2017	260.30	3291.03		
PTX08- 1006	Perched	8/29/2017	272.00	3273.76		
PTX06- 1035	Perched	8/30/2017	271.10	3270.59		
PTX06- 1134	Perched	8/30/2017	267.00	3271.19		
PTX07- 1001	Perched	8/30/2017	258.70	3293.75		
PTX07- 1003	Perched	8/30/2017	253.90	3296.61		
PTX06- 1037	Perched	9/5/2017	280.35	3248.00		
PTX06- 1153	Perched	9/5/2017	280.91	3248.38		
PTX06- 1154	Perched	9/5/2017	279.53	3248.61		
PTX06- 1100	Perched	9/6/2017	279.35	3255.28		
PTX06- 1101	Perched	9/6/2017	278.70	3254.85		

Location	Aquifer	Sample Date	Depth to Water ft btoc	GW Elevation ft amsl	Total Well Depth ft btoc	Total Depth Elevation ft amsl
PTX06-1148	Perched	9/7/2017	254.77	3271.35		
PTX06-1149	Perched	9/7/2017	259.31	3272.14		
PTX06-1150	Perched	9/7/2017	261.61	3272.38		
PTX06-ISB055	Perched	10/2/2017	260.97	3273.05		
PTX06-ISB059	Perched	10/2/2017	261.02	3272.65		
PTX06-1085	Perched	10/3/2017	259.30	3274.50		
PTX06-1085	Perched	10/3/2017	259.30	3274.50		
PTX06-ISB063	Perched	10/3/2017	262.62	3273.27		
PTX07-1P02	Perched	10/3/2017	243.30	3291.59		
PTX07-1P02	Perched	10/3/2017	243.30	3291.59		
PTX06- ISB069A	Perched	10/10/2017	264.63	3273.49		
PTX06-ISB071	Perched	10/10/2017	268.12	3272.57		
PTX06-ISB073	Perched	10/11/2017	269.16	3273.46		
PTX06-ISB077	Perched	10/11/2017	267.55	3272.44		
PTX06-1170	Perched	10/16/2017	270.41	3272.33		
PTX06-1176	Perched	10/16/2017	272.14	3272.01		
PTX06-1164	Perched	10/17/2017	272.95	3272.43		
PTX06-1177	Perched	10/17/2017	272.82	3271.92		
PTX06-ISB075	Perched	10/18/2017	268.95	3273.19		
PTX06-ISB079	Perched	10/18/2017	259.77	3271.86		
PTX06-ISB082	Perched	10/18/2017	258.48	3271.92		
PTX06-1012	Perched	10/19/2017	269.46	3271.40		
PTX06-1155	Perched	10/19/2017	269.30	3272.62		
PTX06-1156	Perched	10/19/2017	256.94	3272.48		
PTX06-1056	Ogallala	10/23/2017	399.40	3133.56		
PTX06-1076	Ogallala	10/23/2017	347.40	3182.96		
PTX06-1153	Perched	10/23/2017	280.90	3248.39		
PTX06-1153	Perched	10/23/2017	280.90	3248.39		
PTX06-1044	Ogallala	10/24/2017	498.50	3046.01		
PTX06-1143	Ogallala	10/24/2017	498.30	3049.64		
PTX06-1144	Ogallala	10/24/2017	496.10	3032.48		
PTX06-1173	Perched	10/24/2017	271.30	3271.67		
PTX06-1174	Perched	10/24/2017	272.55	3271.74		
PTX06-1175	Perched	10/24/2017	273.83	3271.46		
PTX06-1137A	Ogallala	10/25/2017	473.80	3055.81		
PTX06-1138	Ogallala	10/25/2017	467.30	3069.40		
PTX06-1140	Ogallala	10/25/2017	492.20	3037.19		
PTX06-1133A	Perched	10/30/2017	276.70	3243.95		

Location	Aquifer	Sample Date	Depth to Water ft btoc	GW Elevation ft amsl	Total Well Depth ft btoc	Total Depth Elevation ft amsl
PTX06-1148	Perched	10/30/2017	254.90	3271.22		
PTX06-1149	Perched	10/30/2017	259.52	3271.93		
PTX06-1150	Perched	10/30/2017	261.86	3272.13		
PTX06-1182	Perched	10/30/2017	277.50	3239.82		
PTX08-1002	Perched	10/30/2017	231.20	3285.81		
PTX06-1068	Ogallala	10/31/2017	525.50	3013.21		
PTX06-1118	Perched	10/31/2017		DRY		
PTX06-1123	Perched	10/31/2017	280.05	3248.98		
PTX06-ISB014	Perched	10/31/2017	286.45	3244.10		
PTX06-ISB019	Perched	10/31/2017	289.25	3240.42		
PTX06-ISB024	Perched	10/31/2017	280.02	3248.92		
PTX06-ISB042	Perched	10/31/2017	285.57	3243.24		
PTX07-1R01	Ogallala	10/31/2017	457.20	3114.67		
PTX06-1037	Perched	11/1/2017	280.33	3248.02		
PTX06-1053	Perched	11/1/2017	249.60	3270.24		
PTX06-1134	Perched	11/1/2017	266.90	3271.29		
PTX06-1135	Perched	11/1/2017	273.50	3262.03		
PTX06-1154	Perched	11/1/2017	279.40	3248.74		
PTX06-1183	Perched	11/1/2017	280.10	3254.22		
PTX01-1001	Perched	11/2/2017	288.40	3280.76		
PTX01-1008	Perched	11/2/2017	273.90	3296.88		
PTX06-1049	Perched	11/2/2017	274.80	3281.78		
PTX06-1098	Perched	11/2/2017	279.06	3255.33		
PTX06-1153	Perched	11/2/2017	281.00	3248.29		
1114-MW4	Perched	11/6/2017	274.50	3276.23		
PTX06-1031	Perched	11/6/2017	283.40	3246.01		
PTX06-1073A	Perched	11/6/2017	278.30	3272.25		
PTX06-1147	Perched	11/6/2017	284.00	3245.75		
PTX06-ISB046	Perched	11/6/2017	279.37	3249.11		
PTX06-ISB048	Perched	11/6/2017	279.60	3248.93		
PTX06-1126	Perched	11/7/2017	269.00	3273.45		
PTX06-1127	Perched	11/7/2017	265.30	3273.30		
PTX06-1151	Perched	11/7/2017	274.10	3272.58		
PTX06- ISB030B	Perched	11/7/2017	283.70	3247.08		
PTX06-ISB038	Perched	11/7/2017	279.50	3249.33		
PTX06-1045	Perched	11/8/2017		DRY		
PTX06-1064	Ogallala	11/8/2017	516.20	3048.43		
PTX06-	Perched	11/13/2017	278.80	3253.32		

Location	Aquifer	Sample Date	Depth to Water ft btoc	GW Elevation ft amsl	Total Well Depth ft btoc	Total Depth Elevation ft amsl
INJ/BIO-001						
PTX07-1P02	Perched	11/13/2017	243.20	3291.69		
PTX08-1008	Perched	11/13/2017	269.10	3269.37		
PTX08-1009	Perched	11/13/2017	275.20	3264.00		
PTX06-1010	Perched	11/14/2017	259.30	3286.86		
PTX06-1088	Perched	11/14/2017	276.50	3267.41		
PTX06- INJ/BIO-003	Perched	11/14/2017	278.62	3253.47		
PTX06- INJ/BIO-004	Perched	11/14/2017	279.55	3253.34		
PTX06-1158	Perched	11/15/2017			285.00	3235.21
PTX06-1158	Perched	11/15/2017		DRY		
PTX06- INJ/BIO-005	Perched	11/15/2017	279.18	3253.13		
PTX06- INJ/BIO-006	Perched	11/15/2017	282.91	3248.94		
PTX06-1045	Perched	11/29/2017		DRY		
PTX06-1046	Perched	11/29/2017	282.50	3245.29		
PTX06-1046	Perched	11/29/2017	282.50	3245.29		
PTX06-1047A	Perched	11/29/2017	284.00	3242.47		
PTX06-1047A	Perched	11/29/2017	284.00	3242.47		
PTX06-1094	Perched	11/29/2017		DRY		
PTX06-1119	Perched	11/29/2017		DRY		
PTX06-1120	Perched	11/29/2017		DRY		
PTX06-1121	Perched	11/29/2017			281.00	3245.53
PTX06-1121	Perched	11/29/2017		DRY		
PTX06-1121	Perched	11/29/2017		DRY		
PTX06-1125	Perched	11/29/2017		DRY		
PTX06-1030	Perched	11/30/2017	289.00	3243.42		
1114-MW4	Perched	12/4/2017	274.00	3276.73		
OW-WR-38	Perched	12/4/2017	223.30	3298.64		
OW-WR-45	Perched	12/4/2017	266.00	3281.10		
PTX01-1001	Perched	12/4/2017	288.30	3280.86		
PTX01-1004	Perched	12/4/2017		DRY		
PTX01-1006	Perched	12/4/2017		DRY		
PTX01-1007	Perched	12/4/2017		DRY		
PTX01-1008	Perched	12/4/2017	273.90	3296.88		
PTX01-1009	Perched	12/4/2017		DRY		
PTX01-1010	Ogallala	12/4/2017	504.40	3071.75		

Location	Aquifer	Sample Date	Depth to Water ft btoc	GW Elevation ft amsl	Total Well Depth ft btoc	Total Depth Elevation ft amsl
PTX01-1011	Ogallala	12/4/2017	501.30	3073.77		
PTX01-1012	Ogallala	12/4/2017	515.90	3058.86		
PTX01-1013	Ogallala	12/4/2017	512.10	3072.20		
PTX01-1014A	Perched	12/4/2017		DRY		
PTX04-1001	Perched	12/4/2017	220.50	3307.28		
PTX04-1002	Perched	12/4/2017	224.20	3307.05		
PTX06-1007	Perched	12/4/2017	270.40	3276.30		
PTX06-1008	Perched	12/4/2017	270.10	3279.08		
PTX06-1012	Perched	12/4/2017	269.36	3271.50		
PTX06-1013	Perched	12/4/2017	249.20	3295.04		
PTX06-1023	Perched	12/4/2017	246.90	3297.53		
PTX06-1030	Perched	12/4/2017	289.00	3243.42		
PTX06-1031	Perched	12/4/2017	283.40	3246.01		
PTX06-1034	Perched	12/4/2017	282.90	3242.02		
PTX06-1037	Perched	12/4/2017	280.37	3247.98		
PTX06-1043	Ogallala	12/4/2017	452.70	3071.94		
PTX06-1044	Ogallala	12/4/2017	497.90	3046.61		
PTX06-1048A	Perched	12/4/2017	237.50	3303.04		
PTX06-1049	Perched	12/4/2017	274.80	3281.78		
PTX06-1050	Perched	12/4/2017	260.90	3293.48		
PTX06-1055	Perched	12/4/2017		DRY		
PTX06-1057A	Ogallala	12/4/2017	471.90	3095.20		
PTX06-1058	Ogallala	12/4/2017	403.40	3165.15		
PTX06-1059	Ogallala	12/4/2017	418.30	3129.73		
PTX06-1060	Ogallala	12/4/2017	358.70	3214.06		
PTX06-1061	Ogallala	12/4/2017	507.00	3084.94		
PTX06-1062A	Ogallala	12/4/2017	509.10	3064.86		
PTX06-1064	Ogallala	12/4/2017	515.90	3048.73		
PTX06-1068	Ogallala	12/4/2017	524.60	3014.11		
PTX06-1069	Perched	12/4/2017	252.70	3280.31		
PTX06-1071	Perched	12/4/2017	223.70	3307.45		
PTX06-1072	Ogallala	12/4/2017	419.00	3132.80		
PTX06-1073A	Perched	12/4/2017	278.40	3272.15		
PTX06-1074	Ogallala	12/4/2017	427.20	3151.23		
PTX06-1077A	Perched	12/4/2017	270.60	3278.85		
PTX06-1078	Perched	12/4/2017		DRY		
PTX06-1079	Perched	12/4/2017		DRY		
PTX06-1080	Perched	12/4/2017	272.70	3263.54		

Location	Aquifer	Sample Date	Depth to Water ft btoc	GW Elevation ft amsl	Total Well Depth ft btoc	Total Depth Elevation ft amsl
PTX06-1081	Perched	12/4/2017	226.70	3306.75		
PTX06-1082	Perched	12/4/2017	174.70	3294.21		
PTX06-1083	Perched	12/4/2017	179.80	3288.39		
PTX06-1084	Perched	12/4/2017	206.30	3273.37		
PTX06-1085	Perched	12/4/2017	258.40	3275.40		
PTX06-1086	Perched	12/4/2017	250.20	3275.76		
PTX06-1087	Perched	12/4/2017	252.10	3281.96		
PTX06-1089	Perched	12/4/2017	272.30	3263.16		
PTX06-1090	Perched	12/4/2017		DRY		
PTX06-1091	Perched	12/4/2017		DRY		
PTX06-1093	Perched	12/4/2017		DRY		
PTX06-1096A	Perched	12/4/2017		DRY		
PTX06-1097	Perched	12/4/2017		DRY		
PTX06-1098	Perched	12/4/2017	279.00	3255.39		
PTX06-1100	Perched	12/4/2017	279.60	3255.03		
PTX06-1101	Perched	12/4/2017	278.80	3254.75		
PTX06-1104	Perched	12/4/2017		DRY		
PTX06-1105	Perched	12/4/2017	282.00	3250.95		
PTX06-1106	Perched	12/4/2017	282.63	3249.95		
PTX06-1107	Perched	12/4/2017		DRY		
PTX06-1109	Perched	12/4/2017	231.40	3287.92		
PTX06-1110	Perched	12/4/2017	234.40	3287.13		
PTX06-1112	Perched	12/4/2017	241.60	3301.87		
PTX06-1113	Perched	12/4/2017	244.90	3300.57		
PTX06-1115	Perched	12/4/2017	236.40	3292.78		
PTX06-1116	Perched	12/4/2017	238.80	3291.36		
PTX06-1118	Perched	12/4/2017		DRY		
PTX06-1123	Perched	12/4/2017	279.92	3249.11		
PTX06-1128	Perched	12/4/2017	229.30	3292.66		
PTX06-1129	Perched	12/4/2017	232.90	3289.64		
PTX06-1130	Perched	12/4/2017		DRY		
PTX06-1133A	Perched	12/4/2017	276.30	3244.35		
PTX06-1136	Perched	12/4/2017		DRY		
PTX06-1137A	Ogallala	12/4/2017	473.50	3056.11		
PTX06-1138	Ogallala	12/4/2017	467.10	3069.60		
PTX06-1139	Ogallala	12/4/2017	441.10	3090.63		
PTX06-1140	Ogallala	12/4/2017	431.90	3097.49		
PTX06-1141	Ogallala	12/4/2017	481.00	3081.73		

Location	Aquifer	Sample Date	Depth to Water ft btoc	GW Elevation ft amsl	Total Well Depth ft btoc	Total Depth Elevation ft amsl
PTX06-1143	Ogallala	12/4/2017	497.90	3050.04		
PTX06-1144	Ogallala	12/4/2017	496.00	3032.58		
PTX06-1146	Perched	12/4/2017	276.30	3259.79		
PTX06-1147	Perched	12/4/2017	283.90	3245.85		
PTX06-1148	Perched	12/4/2017	254.77	3271.35		
PTX06-1149	Perched	12/4/2017	259.29	3272.16		
PTX06-1150	Perched	12/4/2017	261.63	3272.36		
PTX06-1151	Perched	12/4/2017	273.90	3272.78		
PTX06-1153	Perched	12/4/2017	280.97	3248.32		
PTX06-1154	Perched	12/4/2017	279.43	3248.71		
PTX06-1155	Perched	12/4/2017	269.25	3272.67		
PTX06-1156	Perched	12/4/2017	256.85	3272.57		
PTX06-1157	Ogallala	12/4/2017	398.00	3127.95		
PTX06-1158	Perched	12/4/2017		DRY		
PTX06-1164	Perched	12/4/2017	272.94	3272.44		
PTX06-1170	Perched	12/4/2017	270.21	3272.53		
PTX06-1173	Perched	12/4/2017	271.00	3271.97		
PTX06-1174	Perched	12/4/2017	272.24	3272.05		
PTX06-1175	Perched	12/4/2017	273.65	3271.64		
PTX06-1176	Perched	12/4/2017	271.97	3272.18		
PTX06-1177	Perched	12/4/2017	272.80	3271.94		
PTX06-1182	Perched	12/4/2017	277.40	3239.92		
PTX06-ISB010	Perched	12/4/2017	284.57	3246.67		
PTX06-ISB011	Perched	12/4/2017	285.18	3245.53		
PTX06-ISB012	Perched	12/4/2017	284.97	3246.22		
PTX06-ISB013	Perched	12/4/2017	284.87	3245.69		
PTX06-ISB014	Perched	12/4/2017	286.82	3243.73		
PTX06-ISB015	Perched	12/4/2017	285.50	3244.70		
PTX06-ISB016	Perched	12/4/2017	281.32	3248.60		
PTX06-ISB017	Perched	12/4/2017		DRY		
PTX06-ISB018	Perched	12/4/2017	285.54	3243.95		
PTX06-ISB055	Perched	12/4/2017	261.28	3272.74		
PTX06-ISB059	Perched	12/4/2017	261.17	3272.50		
PTX06-ISB063	Perched	12/4/2017	262.70	3273.19		
PTX06-ISB071	Perched	12/4/2017	268.20	3272.49		
PTX06-ISB075	Perched	12/4/2017	268.95	3273.19		
PTX06-ISB077	Perched	12/4/2017	267.81	3272.18		
PTX06-ISB079	Perched	12/4/2017	259.73	3271.90		

Location	Aquifer	Sample Date	Depth to Water ft btoc	GW Elevation ft amsl	Total Well Depth ft btoc	Total Depth Elevation ft amsl
PTX06-ISB082	Perched	12/4/2017	258.36	3272.04		
PTX06-PZ01	Perched	12/4/2017	261.40	3280.63		
PTX06-PZ02	Perched	12/4/2017	260.40	3281.79		
PTX06-PZ03	Perched	12/4/2017	262.20	3280.10		
PTX07-1001	Perched	12/4/2017	258.80	3293.65		
PTX07-1002	Perched	12/4/2017	259.10	3292.23		
PTX07-1003	Perched	12/4/2017	253.90	3296.61		
PTX07-1004	Perched	12/4/2017	259.00	3293.51		
PTX07-1005	Perched	12/4/2017	257.10	3295.20		
PTX07-1006	Perched	12/4/2017		DRY		
PTX07-1P01	Perched	12/4/2017	248.60	3295.25		
PTX07-1P02	Perched	12/4/2017	243.00	3291.89		
PTX07-1P03	Perched	12/4/2017	255.30	3291.50		
PTX07-1P04	Perched	12/4/2017		DRY		
PTX07-1P05	Perched	12/4/2017	251.00	3294.32		
PTX07-1P06	Perched	12/4/2017	255.50	3290.00		
PTX07-1R01	Ogallala	12/4/2017	456.90	3114.97		
PTX07-1R03	Perched	12/4/2017	253.70	3319.80		
PTX08-1001	Perched	12/4/2017	228.70	3290.16		
PTX08-1002	Perched	12/4/2017	230.20	3286.81		
PTX08-1006	Perched	12/4/2017	272.00	3273.76		
PTX08-1010	Perched	12/4/2017	216.70	3308.02		
PTX08-1011A	Ogallala	12/4/2017	408.20	3168.38		
PTX10-1008	Perched	12/4/2017	267.90	3276.18		
PTX10-1014	Perched	12/4/2017	261.60	3282.59		
PTX06-1001A	Perched	12/5/2017	259.80	3282.06		
PTX06-1002A	Perched	12/5/2017	262.00	3279.38		
PTX06-1003	Perched	12/5/2017		DRY		
PTX06-1005	Perched	12/5/2017	279.40	3258.51		
PTX06-1009	Perched	12/5/2017	266.00	3280.61		
PTX06-1014	Perched	12/5/2017	278.80	3254.34		
PTX06-1015	Perched	12/5/2017	284.80	3245.30		
PTX06-1017	Perched	12/5/2017	279.90	3253.76		
PTX06-1035	Perched	12/5/2017	271.30	3270.39		
PTX06-1036	Perched	12/5/2017	284.40	3250.21		
PTX06-1038	Perched	12/5/2017	266.50	3275.79		
PTX06-1039A	Perched	12/5/2017	274.20	3266.51		
PTX06-1040	Perched	12/5/2017	280.00	3259.66		

Location	Aquifer	Sample Date	Depth to Water ft btoc	GW Elevation ft amsl	Total Well Depth ft btoc	Total Depth Elevation ft amsl
PTX06-1041	Perched	12/5/2017	279.50	3259.26		
PTX06-1042	Perched	12/5/2017	279.20	3256.17		
PTX06-1051	Perched	12/5/2017	292.90	3239.39		
PTX06-1052	Perched	12/5/2017	278.60	3258.40		
PTX06-1053	Perched	12/5/2017	250.00	3269.84		
PTX06-1056	Ogallala	12/5/2017	399.60	3133.36		
PTX06-1075	Ogallala	12/5/2017	352.80	3195.66		
PTX06-1076	Ogallala	12/5/2017	347.60	3182.76		
PTX06-1095A	Perched	12/5/2017	277.60	3258.13		
PTX06-1102	Perched	12/5/2017		DRY		
PTX06-1103	Perched	12/5/2017		DRY		
PTX06-1122	Perched	12/5/2017		DRY		
PTX06-1126	Perched	12/5/2017	269.00	3273.45		
PTX06-1127	Perched	12/5/2017	265.30	3273.30		
PTX06-1131	Perched	12/5/2017	280.80	3268.57		
PTX06-1134	Perched	12/5/2017	267.20	3270.99		
PTX06-1135	Perched	12/5/2017	273.60	3261.93		
PTX06-1159	Perched	12/5/2017	270.20	3271.67		
PTX06-1160	Perched	12/5/2017	274.30	3272.29		
PTX06-1166	Perched	12/5/2017	281.60	3251.86		
PTX06-1167	Perched	12/5/2017		DRY		
PTX06-1168	Perched	12/5/2017	279.00	3254.69		
PTX06-1171	Perched	12/5/2017	271.80	3272.74		
PTX06-1183	Perched	12/5/2017	280.60	3253.72		
PTX06- ISB019	Perched	12/5/2017	289.25	3240.42		
PTX06- ISB020	Perched	12/5/2017	279.35	3249.20		
PTX06- ISB021	Perched	12/5/2017	280.00	3249.26		
PTX06- ISB022	Perched	12/5/2017	285.21	3243.69		
PTX06- ISB023A	Perched	12/5/2017	287.68	3241.59		
PTX06- ISB024	Perched	12/5/2017	280.05	3248.89		
PTX06- ISB025	Perched	12/5/2017	285.34	3243.65		
PTX06- ISB026	Perched	12/5/2017	283.87	3245.00		
PTX06- ISB027	Perched	12/5/2017	281.30	3247.28		
PTX06- ISB028	Perched	12/5/2017		DRY		
PTX06- ISB029A	Perched	12/5/2017	289.17	3241.55		
PTX06- ISB030B	Perched	12/5/2017	283.87	3246.91		

Location	Aquifer	Sample Date	Depth to Water ft btoc	GW Elevation ft amsl	Total Well Depth ft btoc	Total Depth Elevation ft amsl
PTX06-ISB031	Perched	12/5/2017				DRY
PTX06-ISB032	Perched	12/5/2017	282.80	3247.48		
PTX06-ISB033	Perched	12/5/2017	283.10	3246.80		
PTX06-ISB034	Perched	12/5/2017	290.15	3239.45		
PTX06-ISB035	Perched	12/5/2017	283.57	3245.62		
PTX06-ISB036	Perched	12/5/2017	279.95	3248.74		
PTX06-ISB037	Perched	12/5/2017	280.60	3248.05		
PTX06-ISB038	Perched	12/5/2017	279.50	3249.33		
PTX06-ISB039	Perched	12/5/2017	279.87	3249.02		
PTX06-ISB040	Perched	12/5/2017	279.55	3249.04		
PTX06-ISB041	Perched	12/5/2017	279.87	3248.79		
PTX06-ISB042	Perched	12/5/2017	285.55	3243.26		
PTX06-ISB043	Perched	12/5/2017	285.20	3243.53		
PTX06- ISB044A	Perched	12/5/2017	280.40	3248.79		
PTX06-ISB045	Perched	12/5/2017	280.96	3247.46		
PTX06-ISB046	Perched	12/5/2017	279.57	3248.91		
PTX06-ISB047	Perched	12/5/2017	279.61	3248.79		
PTX06-ISB048	Perched	12/5/2017	279.78	3248.75		
PTX06-ISB049	Perched	12/5/2017	286.67	3241.98		
PTX06-ISB050	Perched	12/5/2017	288.00	3240.38		
PTX06-ISB051	Perched	12/5/2017				DRY
PTX06-PZ05	Perched	12/5/2017	268.40	3273.27		
PTX06-PZ06	Perched	12/5/2017	278.50	3258.52		
PTX07-1Q01	Perched	12/5/2017	277.90	3269.65		
PTX07-1Q02	Perched	12/5/2017	282.40	3269.67		
PTX07-1Q03	Perched	12/5/2017	265.40	3271.71		
PTX08-1005	Perched	12/5/2017	272.00	3274.73		
PTX08-1008	Perched	12/5/2017	269.30	3269.17		
PTX08-1009	Perched	12/5/2017	275.50	3263.70		
PTX-BEG2	Ogallala	12/5/2017	393.20	3151.15		
PTX06-1006	Perched	12/6/2017	270.00	3274.92		
PTX06-1010	Perched	12/6/2017	259.60	3286.56		
PTX06-1011	Perched	12/6/2017	276.10	3269.27		
PTX06-1088	Perched	12/6/2017	276.60	3267.31		
PTX08-1007	Perched	12/6/2017	272.60	3276.21		
PTX08-1003	Perched	12/7/2017	277.00	3276.49		
PTX06-ISB071	Perched	12/18/2017	267.90	3272.79		
PTX06-ISB073	Perched	12/18/2017	269.49	3273.13		

Location	Aquifer	Sample Date	Depth to Water ft btoc	GW Elevation ft amsl	Total Well Depth ft btoc	Total Depth Elevation ft amsl
PTX06-<i>ISB077</i>	Perched	12/18/2017	267.54	3272.45		

btoc – below top of casing

amsl – above mean sea level

Appendix D
Data Evaluation Table
and Electronic Data

Table D-1. Monitoring Well Data Exceeding GWPS

Well ID	Designation	Sample Date	Analyte	Measured Value (ug/L)	Detection Limit (ug/L)	Lab Qualifier	PTX Qualifier	Turbidity	GWPS
1114-MW4		5/22/2017	Trichloroethene	7.34	1		J	6.82	5
1114-MW4		5/22/2017	Trichloroethene	7.18	1		J		5
1114-MW4		5/22/2017	Perchlorate	115	60			6.82	26
1114-MW4		5/22/2017	Perchlorate	117	60				26
1114-MW4		11/6/2017	Perchlorate	117	60			9.3	26
1114-MW4		11/6/2017	Trichloroethene	5.9	1			9.3	5
OW-WR-38		5/18/2017	RDX	3.42	0.278			2.63	2
PTX06-1002A		2/23/2017	RDX	9.71	0.265			0.35	2
PTX06-1002A		2/23/2017	RDX	6.24	0.276				2
PTX06-1002A		2/23/2017	TNX	2.39	0.265			0.35	2
PTX06-1002A		8/7/2017	RDX	4.28	0.26			0.35	2
PTX06-1005		2/23/2017	RDX	28.8	6.79			2.9	2
PTX06-1005		2/23/2017	1,3,5-Trinitrobenzene	326	13.6			2.9	220
PTX06-1005		2/23/2017	Trichloroethene	33.2	1			2.9	5
PTX06-1005		8/7/2017	1,3,5-Trinitrobenzene	284	13		J-	0.71	220
PTX06-1005		8/7/2017	2-Amino-4,6-Dinitrotoluene	1.63	0.26			0.71	1.2
PTX06-1005		8/7/2017	RDX	34.3	2.6			0.71	2
PTX06-1005		8/7/2017	Tetrachloroethene	5.64	1			0.71	5
PTX06-1005		8/7/2017	Trichloroethene	32.3	1			0.71	5
PTX06-1006		5/31/2017	4-Amino-2,6-Dinitrotoluene	4.14	0.278			1.64	1.2
PTX06-1006		5/31/2017	Perchlorate	156	60			1.64	26
PTX06-1007		5/23/2017	4-Amino-2,6-Dinitrotoluene	48.5	2.81			3.31	1.2
PTX06-1007		5/23/2017	RDX	5.31	0.281			3.31	2
PTX06-1007		5/23/2017	Perchlorate	135	60			3.31	26
PTX06-1008		5/23/2017	1,2-Dichloroethane	60.5	1		J	1.55	5
PTX06-1010		5/24/2017	Chromium, Hexavalent	2301.905	15		J	1.24	100
PTX06-1010		5/24/2017	Chromium, Total	2780	500			1.24	100
PTX06-1010		11/14/2017	Chromium, Total	1980	200		J	1.7	100
PTX06-1010		11/14/2017	Chromium, Hexavalent	1638	20	I	J	1.7	100
PTX06-1010		11/14/2017	RDX	2.08	0.26			1.7	2
PTX06-1011		5/24/2017	Trichloroethene	8.16	1		J	3.06	5
PTX06-1012		2/7/2017	1,4-Dioxane	16	5			0.79	7.7
PTX06-1012		5/23/2017	cis-1,2-Dichloroethene	74	5			1.87	70
PTX06-1012		5/23/2017	1,4-Dioxane	19	5			1.87	7.7

Well ID	Designation	Sample Date	Analyte	Measured Value (ug/L)	Detection Limit (ug/L)	Lab Qualifier	PTX Qualifier	Turbidity	GWPS
PTX06-1012		7/17/2017	cis-1,2-Dichloroethene	77	5			2.7	70
PTX06-1012		7/17/2017	1,4-Dioxane	18	5			2.7	7.7
PTX06-1012		10/19/2017	1,4-Dioxane	16	5			2.62	7.7
PTX06-1013		4/25/2017	RDX	5.64	0.272		J	1.84	2
PTX06-1014		7/17/2017	2,4-Dinitrotoluene	5.39	0.258			0.85	1
PTX06-1014		7/17/2017	2-Amino-4,6-Dinitrotoluene	1.5	0.258			0.85	1.2
PTX06-1014		7/17/2017	4-Amino-2,6-Dinitrotoluene	3.41	0.258			0.85	1.2
PTX06-1014		7/17/2017	RDX	549	32.2			0.85	2
PTX06-1014		7/17/2017	TNX	25.7	6.44			0.85	2
PTX06-1015		2/28/2017	RDX	969	66.5		J	3.7	2
PTX06-1015		2/28/2017	TNX	47.4	3.32		J	3.7	2
PTX06-1015		2/28/2017	2-Amino-4,6-Dinitrotoluene	3.5	0.266			3.7	1.2
PTX06-1015		2/28/2017	4-Amino-2,6-Dinitrotoluene	3.33	0.266			3.7	1.2
PTX06-1015		8/28/2017	RDX	932	26.6		J	7.97	2
PTX06-1015		8/28/2017	TNX	56.6	2.66		J	7.97	2
PTX06-1015		8/28/2017	2-Amino-4,6-Dinitrotoluene	3.3	0.266			7.97	1.2
PTX06-1015		8/28/2017	4-Amino-2,6-Dinitrotoluene	3.16	0.266			7.97	1.2
PTX06-1031	Compliance	5/15/2017	4-Amino-2,6-Dinitrotoluene	2.49	0.281			3.32	1.2
PTX06-1031	Compliance	5/15/2017	RDX	523	28.1			3.32	2
PTX06-1031	Compliance	5/15/2017	TNX	9.26	0.281			3.32	2
PTX06-1031	Compliance	11/6/2017	RDX	536	65.1		J	7.2	2
PTX06-1031	Compliance	11/6/2017	TNX	12.3	6.51		J	7.2	2
PTX06-1031	Compliance	11/6/2017	4-Amino-2,6-Dinitrotoluene	2.65	0.26			7.2	1.2
PTX06-1034	Compliance	2/21/2017	RDX	4030	65.1		J-	1.1	2
PTX06-1034	Compliance	2/21/2017	4-Amino-2,6-Dinitrotoluene	5.1	0.26			1.1	1.2
PTX06-1034	Compliance	2/21/2017	TNX	52.7	6.51			1.1	2
PTX06-1034	Compliance	7/27/2017	RDX	911	65.1		J	0.53	2
PTX06-1034	Compliance	7/27/2017	TNX	45.9	6.51		J	0.53	2
PTX06-1034	Compliance	7/27/2017	4-Amino-2,6-Dinitrotoluene	5.98	0.26			0.53	1.2
PTX06-1035		2/13/2017	Perchlorate	99.1	12			0.75	26
PTX06-1035		7/19/2017	Perchlorate	107	24			0.74	26
PTX06-1037		2/6/2017	Barium	2200	5		J	4.07	2000
PTX06-1037		2/6/2017	Arsenic	43	13			4.07	12
PTX06-1037		2/6/2017	Manganese	1900	5			4.07	1715.5
PTX06-1037		4/25/2017	Arsenic	81	5		J-	1.03	12
PTX06-1037		4/25/2017	Barium	2400	2			1.03	2000

Well ID	Designation	Sample Date	Analyte	Measured Value (ug/L)	Detection Limit (ug/L)	Lab Qualifier	PTX Qualifier	Turbidity	GWPS
PTX06-1037		4/25/2017	Manganese	1900	2			1.03	1715.5
PTX06-1037		9/5/2017	Barium	2600	2		J	3.01	2000
PTX06-1037		9/5/2017	Arsenic	220	5			3.01	12
PTX06-1037		9/5/2017	Manganese	1800	2			3.01	1715.5
PTX06-1037		11/1/2017	Arsenic	70	5			3.21	12
PTX06-1037		11/1/2017	Barium	2100	2			3.21	2000
PTX06-1038		2/20/2017	RDX	109	3.32		J	0.8	2
PTX06-1038		2/20/2017	TNX	5.84	0.266		J	0.8	2
PTX06-1038		2/20/2017	TNT (2,4,6-Trinitrotoluene)	12.4	3.32		J-	0.8	3.6
PTX06-1038		2/20/2017	2-Amino-4,6-Dinitrotoluene	4.64	0.266			0.8	1.2
PTX06-1038		2/20/2017	4-Amino-2,6-Dinitrotoluene	8.18	0.266			0.8	1.2
PTX06-1038		7/24/2017	RDX	117	3.32		J	1.95	2
PTX06-1038		7/24/2017	TNX	4.79	0.266		J	1.95	2
PTX06-1038		7/24/2017	2-Amino-4,6-Dinitrotoluene	4.03	0.266		J-	1.95	1.2
PTX06-1038		7/24/2017	4-Amino-2,6-Dinitrotoluene	7.38	0.266		J-	1.95	1.2
PTX06-1038		7/24/2017	TNT (2,4,6-Trinitrotoluene)	11.3	3.32			1.95	3.6
PTX06-1039A		2/27/2017	RDX	1140	67.9		J	0.9	2
PTX06-1039A		2/27/2017	TNX	86	3.4		J	0.9	2
PTX06-1039A		2/27/2017	2-Amino-4,6-Dinitrotoluene	6.8	0.272			0.9	1.2
PTX06-1039A		2/27/2017	4-Amino-2,6-Dinitrotoluene	11.4	3.4			0.9	1.2
PTX06-1039A		2/27/2017	DNX	20.2	3.4			0.9	2
PTX06-1039A	2/27/2017	2/27/2017	MNX	6.88	0.272			0.9	2
PTX06-1039A		2/27/2017	TNT (2,4,6-Trinitrotoluene)	43.1	3.4			0.9	3.6
PTX06-1039A		7/24/2017	RDX	492	65.8		J	0.67	2
PTX06-1039A		7/24/2017	TNX	50.2	6.58		J	0.67	2
PTX06-1039A		7/24/2017	2-Amino-4,6-Dinitrotoluene	5.45	0.263		J-	0.67	1.2
PTX06-1039A		7/24/2017	4-Amino-2,6-Dinitrotoluene	18.2	6.58			0.67	1.2
PTX06-1039A		7/24/2017	DNX	13.5	6.58			0.67	2
PTX06-1039A		7/24/2017	MNX	4.2	0.263			0.67	2
PTX06-1039A		7/24/2017	TNT (2,4,6-Trinitrotoluene)	38.1	6.58			0.67	3.6
PTX06-1040		2/27/2017	RDX	1190	67.2		J	0.45	2
PTX06-1040		2/27/2017	TNX	90.6	3.36		J	0.45	2
PTX06-1040		2/27/2017	2-Amino-4,6-Dinitrotoluene	5.75	0.269			0.45	1.2
PTX06-1040		2/27/2017	4-Amino-2,6-Dinitrotoluene	12.5	3.36			0.45	1.2
PTX06-1040		2/27/2017	DNX	11.9	3.36			0.45	2
PTX06-1040		2/27/2017	MNX	2.96	0.269			0.45	2

Well ID	Designation	Sample Date	Analyte	Measured Value (ug/L)	Detection Limit (ug/L)	Lab Qualifier	PTX Qualifier	Turbidity	GWPS
PTX06-1040		2/27/2017	TNT (2,4,6-Trinitrotoluene)	77.4	3.36			0.45	3.6
PTX06-1040		7/24/2017	RDX	817	65.1		J	0.96	2
PTX06-1040		7/24/2017	TNX	74.9	6.51		J	0.96	2
PTX06-1040		7/24/2017	2-Amino-4,6-Dinitrotoluene	4.38	0.26			0.96	1.2
PTX06-1040		7/24/2017	4-Amino-2,6-Dinitrotoluene	21.4	6.51			0.96	1.2
PTX06-1040		7/24/2017	DNX	8.94	0.26			0.96	2
PTX06-1040		7/24/2017	MNX	2.34	0.26			0.96	2
PTX06-1040		7/24/2017	TNT (2,4,6-Trinitrotoluene)	64.2	6.51			0.96	3.6
PTX06-1041		2/27/2017	RDX	1290	66.5		J	4.3	2
PTX06-1041		2/27/2017	TNX	36.2	3.32		J	4.3	2
PTX06-1041		2/27/2017	2-Amino-4,6-Dinitrotoluene	4.61	0.266			4.3	1.2
PTX06-1041		2/27/2017	4-Amino-2,6-Dinitrotoluene	18.1	3.32			4.3	P.2
PTX06-1041		2/27/2017	DNX	2.26	0.266			4.3	2
PTX06-1041		2/27/2017	TNT (2,4,6-Trinitrotoluene)	4.21	0.266			4.3	3.6
PTX06-1041		7/24/2017	RDX	821	65.1		J	2.17	2
PTX06-1041		7/24/2017	TNX	24.7	6.51		J	2.17	2
PTX06-1041		7/24/2017	2-Amino-4,6-Dinitrotoluene	3.59	0.26		J-	2.17	1.2
PTX06-1041		7/24/2017	TNT (2,4,6-Trinitrotoluene)	3.81	0.26		J-	2.17	3.6
PTX06-1041		7/24/2017	4-Amino-2,6-Dinitrotoluene	17.2	6.51			2.17	1.2
PTX06-1042	Compliance	2/20/2017	RDX	475	66.5		J	0.3	2
PTX06-1042	Compliance	2/20/2017	TNX	9.73	0.266		J	0.3	2
PTX06-1042	Compliance	2/20/2017	4-Amino-2,6-Dinitrotoluene	6.06	0.266			0.3	1.2
PTX06-1042	Compliance	2/20/2017	MNX	3.49	0.266			0.3	2
PTX06-1042	Compliance	7/24/2017	RDX	307	65.1		J	0.48	2
PTX06-1042	Compliance	7/24/2017	TNX	5.68	6.51	J	J	0.48	2
PTX06-1042	Compliance	7/24/2017	MNX	3.02	0.26		J-	0.48	2
PTX06-1042	Compliance	7/24/2017	4-Amino-2,6-Dinitrotoluene	5.32	0.26			0.48	1.2
PTX06-1046	Compliance	3/1/2017	RDX	1470	67.9		J	0.6	2
PTX06-1046	Compliance	3/1/2017	TNX	107	6.79		J	0.6	2
PTX06-1046	Compliance	3/1/2017	2-Amino-4,6-Dinitrotoluene	2.01	0.272			0.6	1.2
PTX06-1046	Compliance	3/1/2017	4-Amino-2,6-Dinitrotoluene	5.27	0.272			0.6	1.2
PTX06-1046	Compliance	11/29/2017	RDX	1240	65.1		J	1.05	2
PTX06-1046	Compliance	11/29/2017	TNX	92	65.1		J	1.05	2
PTX06-1046	Compliance	11/29/2017	4-Amino-2,6-Dinitrotoluene	4.54	0.26		J+	1.05	1.2
PTX06-1046	Compliance	11/29/2017	2-Amino-4,6-Dinitrotoluene	1.58	0.26			1.05	1.2
PTX06-1047A		3/1/2017	RDX	24.7	1.37		J	2	2

Well ID	Designation	Sample Date	Analyte	Measured Value (ug/L)	Detection Limit (ug/L)	Lab Qualifier	PTX Qualifier	Turbidity	GWPS
PTX06-1047A		3/1/2017	TNX	2.26	0.275		J	2	2
PTX06-1049		5/9/2017	4-Amino-2,6-Dinitrotoluene	1.23	0.278			1.17	1.2
PTX06-1050	Compliance	5/9/2017	4-Amino-2,6-Dinitrotoluene	6.59	0.278			7.53	1.2
PTX06-1050	Compliance	5/9/2017	RDX	137	13.9			7.53	2
PTX06-1050	Compliance	5/9/2017	TNX	7	0.278			7.53	2
PTX06-1050	Compliance	11/14/2017	TNX	6.19	0.275		J	5.8	2
PTX06-1050	Compliance	11/14/2017	4-Amino-2,6-Dinitrotoluene	5.97	0.275			5.8	1.2
PTX06-1050	Compliance	11/14/2017	RDX	140	6.87			5.8	2
PTX06-1052	Compliance	2/28/2017	Chromium, Total	439	10			1.8	100
PTX06-1052	Compliance	2/28/2017	Chromium, Hexavalent	556.4726	20	I		1.8	100
PTX06-1052	Compliance	8/28/2017	Chromium, Hexavalent	627.3938	20		J	1.21	100
PTX06-1052	Compliance	8/28/2017	Chromium, Total	609	10			1.21	100
PTX06-1053		5/8/2017	2-Amino-4,6-Dinitrotoluene	1.29	0.275			0.66	1.2
PTX06-1053		11/1/2017	2-Amino-4,6-Dinitrotoluene	1.29	0.258			1.6	1.2
PTX06-1088		5/24/2017	Tetrachloroethene	7.15	1		J	1.88	5
PTX06-1088		5/24/2017	Trichloroethene	6.59	1		J	1.88	5
PTX06-1088		5/24/2017	RDX	10.1	0.272			1.88	2
PTX06-1088		11/14/2017	Tetrachloroethene	5.23	1		J	2.7	5
PTX06-1088		11/14/2017	Trichloroethene	9.9	1		J	2.7	5
PTX06-1088		11/14/2017	RDX	6.69	0.26			2.7	2
PTX06-1095A		2/27/2017	HMX	396	67.9		J	9.9	360
PTX06-1095A		2/27/2017	RDX	618	67.9		J	ell 2	2
PTX06-1095A		2/27/2017	2-Amino-4,6-Dinitrotoluene	5.68	0.272			9.9	1.2
PTX06-1095A		2/27/2017	4-Amino-2,6-Dinitrotoluene	1.6	0.272			9.9	1.2
PTX06-1095A		2/27/2017	Tetrachloroethene	5.37	1			9.9	5
PTX06-1095A		2/27/2017	Trichloroethene	22.3	1			9.9	5
PTX06-1095A		8/7/2017	RDX	153	6.51		J-	2.71	2
PTX06-1095A		8/7/2017	2-Amino-4,6-Dinitrotoluene	3.36	0.26			2.71	1.2
PTX06-1095A		8/7/2017	4-Amino-2,6-Dinitrotoluene	1.39	0.26			2.71	1.2
PTX06-1095A		8/7/2017	Tetrachloroethene	5.91	1			2.71	5
PTX06-1095A		8/7/2017	Trichloroethene	25.9	1			2.71	5
PTX06-1098		4/25/2017	Arsenic	49	5		J-	5.42	12
PTX06-1098		4/25/2017	Barium	4200	2			5.42	2000
PTX06-1098		11/2/2017	Arsenic	46	5			5.86	12
PTX06-1098		11/2/2017	Barium	4100	5			5.86	2000
PTX06-1100		9/6/2017	Barium	6000	2		J	1.75	2000

Well ID	Designation	Sample Date	Analyte	Measured Value (ug/L)	Detection Limit (ug/L)	Lab Qualifier	PTX Qualifier	Turbidity	GWPS
PTX06-1100		9/6/2017	Trichloroethene	5.2	3		J+	1.75	5
PTX06-1100		9/6/2017	Arsenic	13	5			1.75	12
PTX06-1101		9/6/2017	Barium	2600	2		J	6.77	2000
PTX06-1101		9/6/2017	Trichloroethene	10	3		J+	6.77	5
PTX06-1101		9/6/2017	RDX	26.6	1.4			6.77	2
PTX06-1120		6/1/2017	2-Amino-4,6-Dinitrotoluene	3.29	0.281			1.78	1.2
PTX06-1120		6/1/2017	4-Amino-2,6-Dinitrotoluene	8.15	0.281			1.78	1.2
PTX06-1120		6/1/2017	RDX	2850	281			1.78	2
PTX06-1120		6/1/2017	TNX	217	28.1	Q		1.78	2
PTX06-1126	Compliance	5/4/2017	RDX	13.8	1.36		J	1.81	2
PTX06-1126	Compliance	5/4/2017	RDX	15.1	1.37		J		2
PTX06-1126	Compliance	5/4/2017	TNX	11.8	1.36		J	1.81	2
PTX06-1126	Compliance	5/4/2017	TNX	9.76	1.37		J		2
PTX06-1126	Compliance	5/4/2017	1,4-Dioxane	18.3	2		J	1.81	7.7
PTX06-1126	Compliance	5/4/2017	1,4-Dioxane	19	3		J		7.7
PTX06-1126	Compliance	5/4/2017	Trichloroethene	187	5		J	1.81	5
PTX06-1126	Compliance	5/4/2017	Trichloroethene	241	5		J		5
PTX06-1126	Compliance	5/4/2017	4-Amino-2,6-Dinitrotoluene	18.7	1.36			1.81	1.2
PTX06-1126	Compliance	5/4/2017	4-Amino-2,6-Dinitrotoluene	20.8	1.37				1.2
PTX06-1126	Compliance	5/4/2017	Perchlorate	139	60			1.81	26
PTX06-1126	Compliance	5/4/2017	Perchlorate	140	60				26
PTX06-1126	Compliance	11/7/2017	RDX	169	6.51		J	2.9	2
PTX06-1126	Compliance	11/7/2017	TNX	47.8	6.51		J	2.9	2
PTX06-1126	Compliance	11/7/2017	1,4-Dioxane	16.7	3		J	2.9	7.7
PTX06-1126	Compliance	11/7/2017	Tetrachloroethene	5.8	5		J	2.9	5
PTX06-1126	Compliance	11/7/2017	4-Amino-2,6-Dinitrotoluene	35.8	6.51		J-	2.9	1.2
PTX06-1126	Compliance	11/7/2017	Perchlorate	64.6	12			2.9	26
PTX06-1126	Compliance	11/7/2017	Trichloroethene	455	5			2.9	5
PTX06-1127	Compliance	5/4/2017	RDX	6.54	0.278		J	0.88	2
PTX06-1127	Compliance	5/4/2017	TNX	2.05	0.278		J	0.88	2
PTX06-1127	Compliance	5/4/2017	1,4-Dioxane	49.1	10		J	0.88	7.7
PTX06-1127	Compliance	5/4/2017	Trichloroethene	79	1		J	0.88	5
PTX06-1127	Compliance	5/4/2017	Tetrachloroethene	7.37	1		J-	0.88	5
PTX06-1127	Compliance	5/4/2017	4-Amino-2,6-Dinitrotoluene	16.4	1.39			0.88	1.2
PTX06-1127	Compliance	5/4/2017	Perchlorate	488	120			0.88	26
PTX06-1127	Compliance	5/4/2017	1,2-Dichloroethane	5.54	1			0.88	5

Well ID	Designation	Sample Date	Analyte	Measured Value (ug/L)	Detection Limit (ug/L)	Lab Qualifier	PTX Qualifier	Turbidity	GWPS
PTX06-1127	Compliance	11/7/2017	RDX	18.6	1.33		J	2.1	2
PTX06-1127	Compliance	11/7/2017	TNX	2.97	0.266		J	2.1	2
PTX06-1127	Compliance	11/7/2017	1,4-Dioxane	70	20		J	2.1	7.7
PTX06-1127	Compliance	11/7/2017	4-Amino-2,6-Dinitrotoluene	18.3	1.33		J-	2.1	1.2
PTX06-1127	Compliance	11/7/2017	Perchlorate	460	120			2.1	26
PTX06-1127	Compliance	11/7/2017	Trichloroethene	43.4	1			2.1	5
PTX06-1133A		10/30/2017	Chromium, Total	237	50			9.6	100
PTX06-1134		5/30/2017	Trichloroethene	6.72	1		J	40.8	5
PTX06-1134		5/30/2017	Perchlorate	58.9	12			40.8	26
PTX06-1134		11/1/2017	Perchlorate	54.7	12			55	26
PTX06-1134		11/1/2017	Trichloroethene	5.25	1			55	5
PTX06-1146	Compliance	2/21/2017	RDX	1040	67.9		J-	0.2	2
PTX06-1146	Compliance	2/21/2017	2-Amino-4,6-Dinitrotoluene	1.46	0.272			0.2	1.2
PTX06-1146	Compliance	2/21/2017	4-Amino-2,6-Dinitrotoluene	20.1	6.79			0.2	1.2
PTX06-1146	Compliance	2/21/2017	TNX	20.2	6.79			0.2	2
PTX06-1146	Compliance	7/27/2017	RDX	1120	65.8		J	0.41	2
PTX06-1146	Compliance	7/27/2017	TNX	17.3	6.58		J	0.41	2
PTX06-1146	Compliance	7/27/2017	2-Amino-4,6-Dinitrotoluene	1.62	0.263			0.41	1.2
PTX06-1146	Compliance	7/27/2017	4-Amino-2,6-Dinitrotoluene	22	6.58			0.41	1.2
PTX06-1147		5/15/2017	4-Amino-2,6-Dinitrotoluene	2.92	0.281			14.4	1.2
PTX06-1147		5/15/2017	MNX	2.32	0.281			14.4	2
PTX06-1147		5/15/2017	RDX	626	28.1			14.4	2
PTX06-1147		5/15/2017	TNX	36.1	2.81			14.4	2
PTX06-1147		11/6/2017	RDX	705	32.6		J	17	2
PTX06-1147		11/6/2017	TNX	36.8	3.26		J	17	2
PTX06-1147		11/6/2017	4-Amino-2,6-Dinitrotoluene	3.23	0.26		J-	17	1.2
PTX06-1148		2/9/2017	Perchlorate	370	60			102.6	26
PTX06-1148		5/24/2017	Perchlorate	340	60		J-	27.8	26
PTX06-1148		9/7/2017	Perchlorate	410	120			13.2	26
PTX06-1148		10/30/2017	Perchlorate	380	60			19.2	26
PTX06-1149		2/9/2017	Arsenic	42	5			1.66	12
PTX06-1149		2/9/2017	Manganese	2100	2			1.66	1715.5
PTX06-1149		5/24/2017	Arsenic	31	13			2.32	12
PTX06-1149		5/24/2017	Manganese	1900	5			2.32	1715.5
PTX06-1149		9/7/2017	Arsenic	24	5			1.58	12
PTX06-1149		10/30/2017	Arsenic	32	5			2.32	12

Well ID	Designation	Sample Date	Analyte	Measured Value (ug/L)	Detection Limit (ug/L)	Lab Qualifier	PTX Qualifier	Turbidity	GWPS
PTX06-1150		2/9/2017	Perchlorate	41	12			20.5	26
PTX06-1150		2/9/2017	Trichloroethene	6	3			20.5	5
PTX06-1150		5/24/2017	Trichloroethene	6.4	3			8.31	5
PTX06-1150		9/7/2017	Perchlorate	37	12			5.39	26
PTX06-1150		9/7/2017	Trichloroethene	5.1	3			5.39	5
PTX06-1150		10/30/2017	Perchlorate	31	12			2.77	26
PTX06-1150		10/30/2017	Trichloroethene	5.4	3			2.77	5
PTX06-1151		3/6/2017	RDX	8.9	0.266		J	3.1	2
PTX06-1151		3/6/2017	Perchlorate	97.5	24			3.1	26
PTX06-1151		3/6/2017	1,2-Dichloroethane	10.3	2			3.1	5
PTX06-1151		3/6/2017	1,4-Dioxane	11.9	2			3.1	7.7
PTX06-1151		3/6/2017	Trichloroethene	139	2			3.1	5
PTX06-1151		8/22/2017	RDX	8.76	0.258			0.49	2
PTX06-1151		8/22/2017	Perchlorate	96.8	24			0.49	26
PTX06-1151		8/22/2017	1,2-Dichloroethane	9.45	1			0.49	5
PTX06-1151		8/22/2017	1,4-Dioxane	11	2			0.49	7.7
PTX06-1151		8/22/2017	Trichloroethene	109	2			0.49	5
PTX06-1151		11/7/2017	Perchlorate	96	12			0.45	26
PTX06-1153	Compliance	2/6/2017	2-Amino-4,6-Dinitrotoluene	1.6	0.26			4.09	1.2
PTX06-1153	Compliance	2/6/2017	DNX	2.89	0.26			4.09	2
PTX06-1153	Compliance	2/6/2017	MNX	4.56	0.26			4.09	2
PTX06-1153	Compliance	2/6/2017	RDX	213	13			4.09	2
PTX06-1153	Compliance	2/6/2017	TNX	6.78	0.26			4.09	2
PTX06-1153	Compliance	4/25/2017	DNX	3.96	0.269		J	9.62	2
PTX06-1153	Compliance	4/25/2017	MNX	5.76	0.269		J	9.62	2
PTX06-1153	Compliance	4/25/2017	RDX	205	6.72		J	9.62	2
PTX06-1153	Compliance	4/25/2017	TNX	9.58	0.269		J	9.62	2
PTX06-1153	Compliance	4/25/2017	2-Amino-4,6-Dinitrotoluene	1.34	0.269			9.62	1.2
PTX06-1153	Compliance	4/25/2017	4-Amino-2,6-Dinitrotoluene	1.42	0.269			9.62	1.2
PTX06-1153	Compliance	9/5/2017	RDX	244	26.6		J	4.67	2
PTX06-1153	Compliance	9/5/2017	TNX	10.2	0.266		J	4.67	2
PTX06-1153	Compliance	9/5/2017	2-Amino-4,6-Dinitrotoluene	1.54	0.266		J-	4.67	1.2
PTX06-1153	Compliance	9/5/2017	4-Amino-2,6-Dinitrotoluene	1.21	0.266		J-	4.67	1.2
PTX06-1153	Compliance	9/5/2017	DNX	5.56	0.266		J-	4.67	2
PTX06-1153	Compliance	9/5/2017	MNX	7.26	0.266		J-	4.67	2
PTX06-1153	Compliance	10/23/2017	DNX	3.8	1.1		J	1.32	2

Well ID	Designation	Sample Date	Analyte	Measured Value (ug/L)	Detection Limit (ug/L)	Lab Qualifier	PTX Qualifier	Turbidity	GWPS
PTX06-1153	Compliance	10/23/2017	MNX	5.6	1.1		J	1.32	2
PTX06-1153	Compliance	10/23/2017	RDX	200	55		J	1.32	2
PTX06-1153	Compliance	10/23/2017	TNX	6.1	1.1		J	1.32	2
PTX06-1153	Compliance	10/23/2017	2-Amino-4,6-Dinitrotoluene	2.1	1.1	F1	J-	1.32	1.2
PTX06-1153	Compliance	10/23/2017	4-Amino-2,6-Dinitrotoluene	1.6	0.11	F1	J-	1.32	1.2
PTX06-1153	Compliance	10/23/2017	2-Amino-4,6-Dinitrotoluene	1.73	0.26			1.32	1.2
PTX06-1153	Compliance	10/23/2017	4-Amino-2,6-Dinitrotoluene	1.3	0.26			1.32	1.2
PTX06-1153	Compliance	10/23/2017	DNX	4.8	0.26			1.32	2
PTX06-1153	Compliance	10/23/2017	MNX	6.45	0.26			1.32	2
PTX06-1153	Compliance	10/23/2017	RDX	176	6.51			1.32	2
PTX06-1153	Compliance	10/23/2017	TNX	8.21	0.26			1.32	2
PTX06-1153	Compliance	11/2/2017	2-Amino-4,6-Dinitrotoluene	1.93	0.275			4.06	1.2
PTX06-1153	Compliance	11/2/2017	4-Amino-2,6-Dinitrotoluene	1.41	0.275			4.06	1.2
PTX06-1153	Compliance	11/2/2017	DNX	5.45	0.275			4.06	2
PTX06-1153	Compliance	11/2/2017	MNX	8.89	0.275			4.06	2
PTX06-1153	Compliance	11/2/2017	RDX	252	13.7			4.06	2
PTX06-1153	Compliance	11/2/2017	TNX	8.97	1.37			4.06	2
PTX06-1154	Compliance	2/6/2017	Barium	15000	5		J	10.11	2000
PTX06-1154	Compliance	2/6/2017	Arsenic	73	13			10.11	12
PTX06-1154	Compliance	4/25/2017	Arsenic	86	5		J-	6.1	12
PTX06-1154	Compliance	4/25/2017	Barium	16000	5			6.1	2000
PTX06-1154	Compliance	9/5/2017	Barium	15000	5		J	3.39	2000
PTX06-1154	Compliance	9/5/2017	Arsenic	100	5			3.39	12
PTX06-1154	Compliance	11/1/2017	Arsenic	56	5			13.9	12
PTX06-1154	Compliance	11/1/2017	Barium	21000	20			13.9	2000
PTX06-1155	Compliance	2/7/2017	Arsenic	62	5			0.91	12
PTX06-1155	Compliance	2/7/2017	cis-1,2-Dichloroethene	120	5			0.91	70
PTX06-1155	Compliance	2/7/2017	1,4-Dioxane	10	5			0.91	7.7
PTX06-1155	Compliance	5/23/2017	Nitrate As N	11748.8	700	I	J	9.68	10000
PTX06-1155	Compliance	5/23/2017	Arsenic	48	13			9.68	12
PTX06-1155	Compliance	5/23/2017	cis-1,2-Dichloroethene	100	5			9.68	70
PTX06-1155	Compliance	5/23/2017	1,4-Dioxane	13	5			9.68	7.7
PTX06-1155	Compliance	7/17/2017	Arsenic	66	5			1.84	12
PTX06-1155	Compliance	7/17/2017	Manganese	2000	2			1.84	1715.5
PTX06-1155	Compliance	7/17/2017	cis-1,2-Dichloroethene	78	5			1.84	70
PTX06-1155	Compliance	7/17/2017	1,4-Dioxane	12	5			1.84	7.7

Well ID	Designation	Sample Date	Analyte	Measured Value (ug/L)	Detection Limit (ug/L)	Lab Qualifier	PTX Qualifier	Turbidity	GWPS
PTX06-1155	Compliance	10/19/2017	cis-1,2-Dichloroethene	85	5		J	2.18	70
PTX06-1155	Compliance	10/19/2017	1,4-Dioxane	12	5	H	J-	2.18	7.7
PTX06-1155	Compliance	10/19/2017	Arsenic	52	5			2.18	12
PTX06-1156	Compliance	2/7/2017	Arsenic	49	5			1.04	12
PTX06-1156	Compliance	2/7/2017	Barium	3600	2	^		1.04	2000
PTX06-1156	Compliance	5/23/2017	Nitrate As N	12224.1	700	I	J	2.15	10000
PTX06-1156	Compliance	5/23/2017	Arsenic	59	13			2.15	12
PTX06-1156	Compliance	5/23/2017	Barium	4400	5			2.15	2000
PTX06-1156	Compliance	5/23/2017	Manganese	2000	5			2.15	1715.5
PTX06-1156	Compliance	7/17/2017	Arsenic	45	5			4.28	12
PTX06-1156	Compliance	7/17/2017	Barium	4100	2			4.28	2000
PTX06-1156	Compliance	10/19/2017	Arsenic	42	5			2.35	12
PTX06-1156	Compliance	10/19/2017	Barium	4300	2			2.35	2000
PTX06-1159		2/20/2017	Perchlorate	409	120		J	1.1	26
PTX06-1159		2/20/2017	1,2-Dichloroethane	9.08	4		J	1.1	5
PTX06-1159		2/20/2017	Trichloroethene	344	5		J	1.1	5
PTX06-1159		2/20/2017	4-Amino-2,6-Dinitrotoluene	2.78	0.266			1.1	1.2
PTX06-1159		8/8/2017	4-Amino-2,6-Dinitrotoluene	3.24	0.263			1.83	1.2
PTX06-1159		8/8/2017	4-Amino-2,6-Dinitrotoluene	3.26	0.266				1.2
PTX06-1159		8/8/2017	Perchlorate	516	240			1.83	26
PTX06-1159		8/8/2017	Perchlorate	516	240			1.83	26
PTX06-1159		8/8/2017	Perchlorate	529	240				26
PTX06-1159		8/8/2017	Perchlorate	529	240				26
PTX06-1159		8/8/2017	1,2-Dichloroethane	8.28	1			1.83	5
PTX06-1159		8/8/2017	1,2-Dichloroethane	8.48	1				5
PTX06-1159		8/8/2017	Trichloroethene	364	5			1.83	5
PTX06-1159		8/8/2017	Trichloroethene	349	5				5
PTX06-1164		2/27/2017	Hexanoic Acid	4100	2000		J	1.81	2336
PTX06-1164		2/27/2017	Trichloroethene	130	3	F1	J-	1.81	5
PTX06-1164		2/27/2017	Perchlorate	110	12			1.81	26
PTX06-1164		5/16/2017	Perchlorate	110	12			2.25	26
PTX06-1164		5/16/2017	Trichloroethene	140	3			2.25	5
PTX06-1164		7/27/2017	Trichloroethene	120	3	B	J-	3.34	5
PTX06-1164		7/27/2017	Perchlorate	98	12			3.34	26
PTX06-1164		10/17/2017	Perchlorate	86	12			2.09	26
PTX06-1164		10/17/2017	Trichloroethene	180	3			2.09	5

Well ID	Designation	Sample Date	Analyte	Measured Value (ug/L)	Detection Limit (ug/L)	Lab Qualifier	PTX Qualifier	Turbidity	GWPS
PTX06-1166		2/21/2017	RDX	11.8	0.665		J-	1.7	2
PTX06-1166		2/21/2017	Trichloroethene	7.01	1			1.7	5
PTX06-1166		8/28/2017	RDX	13.7	0.658		J	6.68	2
PTX06-1166		8/28/2017	Trichloroethene	5.41	1			6.68	5
PTX06-1169		6/7/2017	cis-1,2-Dichloroethene	140	5		J	3.2	70
PTX06-1169		6/7/2017	Arsenic	70	5			3.2	12
PTX06-1169		6/7/2017	1,2-Dichloroethane	10	3			3.2	5
PTX06-1169		6/7/2017	1,4-Dioxane	21	5			3.2	7.7
PTX06-1170		2/15/2017	Arsenic	24	5			3.69	12
PTX06-1170		2/15/2017	cis-1,2-Dichloroethene	390	13			3.69	70
PTX06-1170		2/15/2017	Trichloroethene	26	3			3.69	5
PTX06-1170		5/15/2017	Arsenic	41	5	F1	J-	6.69	12
PTX06-1170		5/15/2017	Trichloroethene	170	3		J-	6.69	5
PTX06-1170		5/15/2017	cis-1,2-Dichloroethene	340	10			6.69	70
PTX06-1170		6/7/2017	cis-1,2-Dichloroethene	290	10			9.99	70
PTX06-1170		6/7/2017	1,4-Dioxane	50	5			9.99	7.7
PTX06-1170		6/7/2017	Trichloroethene	250	6			9.99	5
PTX06-1170		7/26/2017	Arsenic	32	5			8.52	12
PTX06-1170		7/26/2017	cis-1,2-Dichloroethene	210	10			8.52	70
PTX06-1170		7/26/2017	Trichloroethene	260	6	B		8.52	5
PTX06-1170		10/16/2017	cis-1,2-Dichloroethene	210	10		J	2.73	70
PTX06-1170		10/16/2017	Arsenic	38	5			2.73	12
PTX06-1170		10/16/2017	Trichloroethene	290	6			2.73	5
PTX06-1171		8/8/2017	4-Amino-2,6-Dinitrotoluene	1.71	0.26			5.66	1.2
PTX06-1171		8/8/2017	RDX	6.34	0.26			5.66	2
PTX06-1171		8/8/2017	Perchlorate	63.8	12			5.66	26
PTX06-1171		8/8/2017	1,2-Dichloroethane	6.73	1			5.66	5
PTX06-1171		8/8/2017	Trichloroethene	347	5			5.66	5
PTX06-1173		2/8/2017	Arsenic	30	5			3.5	12
PTX06-1173		2/8/2017	Barium	2600	2	^		3.5	2000
PTX06-1173		2/8/2017	Manganese	6800	2	^		3.5	1715.5
PTX06-1173		2/8/2017	cis-1,2-Dichloroethene	96	5			3.5	70
PTX06-1173		2/8/2017	1,4-Dioxane	15	5			3.5	7.7
PTX06-1173		2/8/2017	Propionic Acid	100000	10000			3.5	18250
PTX06-1173		5/22/2017	Nitrate As N	14000.1	700	I	J	5.54	10000
PTX06-1173		5/22/2017	1,4-Dioxane	14	5	H	J-	5.54	7.7

Well ID	Designation	Sample Date	Analyte	Measured Value (ug/L)	Detection Limit (ug/L)	Lab Qualifier	PTX Qualifier	Turbidity	GWPS
PTX06-1173		5/22/2017	Arsenic	59	13			5.54	12
PTX06-1173		5/22/2017	Barium	3900	5			5.54	2000
PTX06-1173		5/22/2017	Manganese	5400	5			5.54	1715.5
PTX06-1173		7/19/2017	1,4-Dioxane	15	5		J	4.93	7.7
PTX06-1173		7/19/2017	Arsenic	50	5			4.93	12
PTX06-1173		7/19/2017	Barium	2400	2			4.93	2000
PTX06-1173		7/19/2017	Manganese	2500	2			4.93	1715.5
PTX06-1173		10/24/2017	Arsenic	60	5			3.68	12
PTX06-1173		10/24/2017	Manganese	1800	2			3.68	1715.5
PTX06-1173		10/24/2017	cis-1,2-Dichloroethene	79	5			3.68	70
PTX06-1173		10/24/2017	1,4-Dioxane	15	5			3.68	7.7
PTX06-1174		2/8/2017	Arsenic	55	5			3.35	12
PTX06-1174		2/8/2017	Barium	2800	2	^		3.35	2000
PTX06-1174		2/8/2017	Manganese	9400	2	^		3.35	1715.5
PTX06-1174		2/8/2017	Propionic Acid	240000	10000			3.35	18250
PTX06-1174		5/22/2017	Nitrate As N	15444.8	700	I	J	15.1	10000
PTX06-1174		5/22/2017	Arsenic	73	13			15.1	12
PTX06-1174		5/22/2017	Barium	3400	5			15.1	2000
PTX06-1174		5/22/2017	Manganese	6800	5			15.1	1715.5
PTX06-1174		7/19/2017	Arsenic	57	5			4.16	12
PTX06-1174		7/19/2017	Barium	2100	2			4.16	2000
PTX06-1174		7/19/2017	Manganese	2700	2			4.16	1715.5
PTX06-1174		10/24/2017	Arsenic	68	5			2.87	12
PTX06-1174		10/24/2017	Manganese	1800	2			2.87	1715.5
PTX06-1175		2/21/2017	RDX	22.5	0.679		J-	1.24	2
PTX06-1175		2/21/2017	Trichloroethene	140	3	F1	J-	1.24	5
PTX06-1175		2/21/2017	4-Amino-2,6-Dinitrotoluene	2.75	0.272			1.24	1.2
PTX06-1175		2/21/2017	Perchlorate	300	60			1.24	26
PTX06-1175		5/22/2017	Perchlorate	290	60	F1	J-	1.99	26
PTX06-1175		5/22/2017	RDX	14.8	0.679		J+	1.99	2
PTX06-1175		5/22/2017	4-Amino-2,6-Dinitrotoluene	3.23	0.272			1.99	1.2
PTX06-1175		5/22/2017	Trichloroethene	150	3			1.99	5
PTX06-1175		7/19/2017	Perchlorate	230	24		J	1.19	26
PTX06-1175		7/19/2017	Trichloroethene	140	3		J	1.19	5
PTX06-1175		7/19/2017	4-Amino-2,6-Dinitrotoluene	3.23	0.258			1.19	1.2
PTX06-1175		7/19/2017	RDX	18.1	0.644			1.19	2

Well ID	Designation	Sample Date	Analyte	Measured Value (ug/L)	Detection Limit (ug/L)	Lab Qualifier	PTX Qualifier	Turbidity	GWPS
PTX06-1175		10/24/2017	Trichloroethene	130	3	F1	J-	1.7	5
PTX06-1175		10/24/2017	4-Amino-2,6-Dinitrotoluene	3.01	0.26			1.7	1.2
PTX06-1175		10/24/2017	RDX	18.4	0.651			1.7	2
PTX06-1175		10/24/2017	Perchlorate	190	12			1.7	26
PTX06-1176		2/20/2017	Perchlorate	38	12			0.99	26
PTX06-1176		2/20/2017	cis-1,2-Dichloroethene	92	5			0.99	70
PTX06-1176		2/20/2017	Trichloroethene	74	3			0.99	5
PTX06-1176		5/15/2017	Trichloroethene	62	3	F1	J-	2.3	5
PTX06-1176		5/15/2017	Perchlorate	38	12			2.3	26
PTX06-1176		5/15/2017	1,2-Dichloroethane	5.1	3			2.3	5
PTX06-1176		5/15/2017	cis-1,2-Dichloroethene	97	5			2.3	70
PTX06-1176		7/26/2017	Perchlorate	31	12		J-	2.24	26
PTX06-1176		7/26/2017	Trichloroethene	45	3	B		2.24	5
PTX06-1176		10/16/2017	Arsenic	14	5			2.05	12
PTX06-1176		10/16/2017	Trichloroethene	18	3			2.05	5
PTX06-1177		2/27/2017	Arsenic	47	5			1.66	12
PTX06-1177		2/27/2017	Manganese	6000	2			1.66	1715.5
PTX06-1177		2/27/2017	cis-1,2-Dichloroethene	79	5			1.66	70
PTX06-1177		5/16/2017	Arsenic	34	5		J-	6.47	12
PTX06-1177		5/16/2017	Manganese	3200	2			6.47	1715.5
PTX06-1177		5/16/2017	cis-1,2-Dichloroethene	77	5			6.47	70
PTX06-1177		7/27/2017	cis-1,2-Dichloroethene	86	5		J	35.3	70
PTX06-1177		7/27/2017	cis-1,2-Dichloroethene	87	5		J		70
PTX06-1177		7/27/2017	Arsenic	24	5			35.3	12
PTX06-1177		7/27/2017	Arsenic	25	5				12
PTX06-1177		7/27/2017	Manganese	2700	2			35.3	1715.5
PTX06-1177		7/27/2017	Manganese	2800	2				1715.5
PTX06-1177		10/17/2017	cis-1,2-Dichloroethene	96	5	F1	J+	16.6	70
PTX06-1177		10/17/2017	Arsenic	20	5			16.6	12
PTX06-1177		10/17/2017	Manganese	2200	2			16.6	1715.5
PTX06-1180		2/1/2017	Trichloroethene	382	10			3.87	5
PTX06-1180		8/22/2017	Trichloroethene	349	4			2.89	5
PTX06-1182		4/25/2017	RDX	23	1.34		J	1.06	2
PTX06-1182		4/25/2017	4-Amino-2,6-Dinitrotoluene	7.87	0.269			1.06	1.2
PTX06-1182		10/30/2017	RDX	23.1	1.3		J	0.7	2
PTX06-1182		10/30/2017	4-Amino-2,6-Dinitrotoluene	6.4	0.26			0.7	1.2

Well ID	Designation	Sample Date	Analyte	Measured Value (ug/L)	Detection Limit (ug/L)	Lab Qualifier	PTX Qualifier	Turbidity	GWPS
PTX06-1183		5/8/2017	Chromium, Total	1770	200		J	0.24	100
PTX06-1183		5/8/2017	Chromium, Hexavalent	1557.373	15		J	0.24	100
PTX06-1183		11/1/2017	Chromium, Total	997	10			0.7	100
PTX06-1183		11/1/2017	Chromium, Hexavalent	1077	20	I		0.7	100
PTX06-1185		7/10/2017	RDX	649	65.1		J	1.88	2
PTX06-1185		7/10/2017	TNX	3.67	0.26		J	1.88	2
PTX06-1185		7/10/2017	4-Amino-2,6-Dinitrotoluene	4.08	0.26			1.88	1.2
PTX06-EW-1		5/16/2017	Chromium, Hexavalent	288.9124	150	I	J		100
PTX06-EW-1		5/16/2017	2-Amino-4,6-Dinitrotoluene	4.43	0.275		J-		1.2
PTX06-EW-1		5/16/2017	4-Amino-2,6-Dinitrotoluene	4.6	0.275		J-		1.2
PTX06-EW-1		5/16/2017	RDX	121	0.275		J-		2
PTX06-EW-1		5/16/2017	TNX	26.3	0.275				2
PTX06-EW-1		5/16/2017	Chromium, Total	279	10				100
PTX06-EW-10		9/13/2017	Chromium, Total	388	50		J		100
PTX06-EW-10		9/13/2017	Chromium, Hexavalent	360.0537	2	I	J		100
PTX06-EW-12		5/22/2017	4-Amino-2,6-Dinitrotoluene	16.2	2.78		J+		1.2
PTX06-EW-12		5/22/2017	RDX	792	27.8		J+		2
PTX06-EW-12		5/22/2017	TNX	12.2	2.78		J+		2
PTX06-EW-12		5/22/2017	2-Amino-4,6-Dinitrotoluene	2.85	0.278				1.2
PTX06-EW-15		9/13/2017	RDX	2.39	0.266				2
PTX06-EW-16		10/23/2017	2-Amino-4,6-Dinitrotoluene	2.37	0.272				1.2
PTX06-EW-16		10/23/2017	4-Amino-2,6-Dinitrotoluene	16.9	3.4				1.2
PTX06-EW-16		10/23/2017	RDX	226	13.6				2
PTX06-EW-16		10/23/2017	TNT (2,4,6-Trinitrotoluene)	24.7	3.4				3.6
PTX06-EW-16		10/23/2017	TNX	9.82	0.272				2
PTX06-EW-19		10/23/2017	2-Amino-4,6-Dinitrotoluene	6.96	0.263				1.2
PTX06-EW-19		10/23/2017	4-Amino-2,6-Dinitrotoluene	5.65	0.263				1.2
PTX06-EW-19		10/23/2017	RDX	87	3.29				2
PTX06-EW-19		10/23/2017	TNX	4.96	0.263				2
PTX06-EW-2		5/16/2017	Chromium, Hexavalent	332.5791	150	I	J		100
PTX06-EW-2		5/16/2017	RDX	139	0.275		J-		2
PTX06-EW-2		5/16/2017	TNX	23.4	0.275		J-		2
PTX06-EW-2		5/16/2017	2-Amino-4,6-Dinitrotoluene	5.15	0.275				1.2
PTX06-EW-2		5/16/2017	4-Amino-2,6-Dinitrotoluene	5.61	0.275				1.2
PTX06-EW-2		5/16/2017	TNT (2,4,6-Trinitrotoluene)	5.31	0.275				3.6
PTX06-EW-2		5/16/2017	Chromium, Total	310	10				100

Well ID	Designation	Sample Date	Analyte	Measured Value (ug/L)	Detection Limit (ug/L)	Lab Qualifier	PTX Qualifier	Turbidity	GWPS
PTX06-EW-20		6/13/2017	RDX	12.5	1.36				2
PTX06-EW-22A		6/13/2017	RDX	78.2	2.6				2
PTX06-EW-22A		6/13/2017	TNT (2,4,6-Trinitrotoluene)	4.96	0.26				3.6
PTX06-EW-22A		6/13/2017	TNX	4.25	0.26				2
PTX06-EW-23A		10/18/2017	4-Amino-2,6-Dinitrotoluene	6.31	0.272		J		1.2
PTX06-EW-23A		10/18/2017	RDX	237	6.79		J		2
PTX06-EW-23A		10/18/2017	TNT (2,4,6-Trinitrotoluene)	16.7	6.79		J		3.6
PTX06-EW-23A		10/18/2017	TNX	14	6.79		J		2
PTX06-EW-23A		10/18/2017	2-Amino-4,6-Dinitrotoluene	1.5	0.272				1.2
PTX06-EW-24		9/12/2017	RDX	147	34.7		J		2
PTX06-EW-24		9/12/2017	1,3,5-Trinitrobenzene	589	34.7		J		220
PTX06-EW-24		9/12/2017	TNX	4.35	0.278		J		2
PTX06-EW-24		9/12/2017	TNT (2,4,6-Trinitrotoluene)	5.72	0.278		J-		3.6
PTX06-EW-24		9/12/2017	2-Amino-4,6-Dinitrotoluene	3.87	0.278				1.2
PTX06-EW-24		9/12/2017	4-Amino-2,6-Dinitrotoluene	2.28	0.278				1.2
PTX06-EW-25		5/22/2017	RDX	40.1	7.02		J+		2
PTX06-EW-25		5/22/2017	4-Amino-2,6-Dinitrotoluene	1.95	0.281				1.2
PTX06-EW-25		5/22/2017	TNX	7.8	0.281				2
PTX06-EW-26		10/18/2017	4-Amino-2,6-Dinitrotoluene	3.31	0.281		J		1.2
PTX06-EW-26		10/18/2017	RDX	257	7.02		J		2
PTX06-EW-26		10/18/2017	TNT (2,4,6-Trinitrotoluene)	7.44	7.02		J		3.6
PTX06-EW-26		10/18/2017	TNX	11	7.02		J		2
PTX06-EW-26		10/18/2017	2-Amino-4,6-Dinitrotoluene	1.45	0.281				1.2
PTX06-EW-27		9/12/2017	RDX	967	68.7		J		2
PTX06-EW-27		9/12/2017	TNX	13.9	6.87		J		2
PTX06-EW-27		9/12/2017	TNT (2,4,6-Trinitrotoluene)	7.4	0.275		J-		3.6
PTX06-EW-27		9/12/2017	4-Amino-2,6-Dinitrotoluene	12.7	6.87				1.2
PTX06-EW-28		9/13/2017	RDX	14.5	3.4				2
PTX06-EW-28		9/13/2017	TNT (2,4,6-Trinitrotoluene)	3.92	0.272				3.6
PTX06-EW-29		9/18/2017	2-Amino-4,6-Dinitrotoluene	4.21	0.278				1.2
PTX06-EW-29		9/18/2017	4-Amino-2,6-Dinitrotoluene	1.9	0.278				1.2
PTX06-EW-29		9/18/2017	RDX	514	34.7				2
PTX06-EW-29		9/18/2017	1,3,5-Trinitrobenzene	251	6.94				220
PTX06-EW-29		9/18/2017	TNX	3.51	0.278				2
PTX06-EW-3		5/16/2017	Chromium, Hexavalent	331.2145	150	I	J		100
PTX06-EW-3		5/16/2017	2-Amino-4,6-Dinitrotoluene	1.8	0.278				1.2

Well ID	Designation	Sample Date	Analyte	Measured Value (ug/L)	Detection Limit (ug/L)	Lab Qualifier	PTX Qualifier	Turbidity	GWPS
PTX06-EW-3		5/16/2017	4-Amino-2,6-Dinitrotoluene	3.51	0.278				1.2
PTX06-EW-3		5/16/2017	RDX	205	27.8				2
PTX06-EW-3		5/16/2017	1,3,5-Trinitrobenzene	506	27.8				220
PTX06-EW-3		5/16/2017	TNX	9.26	0.278				2
PTX06-EW-3		5/16/2017	Chromium, Total	319	10				100
PTX06-EW-30		5/23/2017	2-Amino-4,6-Dinitrotoluene	3.57	0.269				1.2
PTX06-EW-30		5/23/2017	4-Amino-2,6-Dinitrotoluene	2.79	0.269				1.2
PTX06-EW-30		5/23/2017	RDX	416	26.9				2
PTX06-EW-30		5/23/2017	TNT (2,4,6-Trinitrotoluene)	9.38	0.269				3.6
PTX06-EW-30		5/23/2017	TNX	26.9	2.69				2
PTX06-EW-31		5/24/2017	RDX	124	27.5		J-		2
PTX06-EW-31		5/24/2017	2-Amino-4,6-Dinitrotoluene	2.29	0.281				1.2
PTX06-EW-31		5/24/2017	2-Amino-4,6-Dinitrotoluene	2.12	0.275				1.2
PTX06-EW-31		5/24/2017	4-Amino-2,6-Dinitrotoluene	2.46	0.281				1.2
PTX06-EW-31		5/24/2017	4-Amino-2,6-Dinitrotoluene	2.51	0.275				1.2
PTX06-EW-31		5/24/2017	RDX	131	28.1				2
PTX06-EW-31		5/24/2017	TNT (2,4,6-Trinitrotoluene)	12.8	2.81				3.6
PTX06-EW-31		5/24/2017	TNT (2,4,6-Trinitrotoluene)	13.1	2.75				3.6
PTX06-EW-31		5/24/2017	TNX	7.61	0.281				2
PTX06-EW-31		5/24/2017	TNX	7.6	0.275				2
PTX06-EW-32		5/23/2017	2-Amino-4,6-Dinitrotoluene	6.92	0.269				1.2
PTX06-EW-32		5/23/2017	4-Amino-2,6-Dinitrotoluene	1.5	0.269				1.2
PTX06-EW-32		5/23/2017	RDX	159	26.9				2
PTX06-EW-32		5/23/2017	TNX	10.4	2.69				2
PTX06-EW-33		5/23/2017	2-Amino-4,6-Dinitrotoluene	1.98	0.298				1.2
PTX06-EW-33		5/23/2017	4-Amino-2,6-Dinitrotoluene	2.22	0.298				1.2
PTX06-EW-33		5/23/2017	RDX	281	29.8				2
PTX06-EW-33		5/23/2017	TNT (2,4,6-Trinitrotoluene)	5.97	0.298				3.6
PTX06-EW-33		5/23/2017	TNX	9.69	0.298				2
PTX06-EW-34		5/23/2017	2-Amino-4,6-Dinitrotoluene	6.88	0.269				1.2
PTX06-EW-34		5/23/2017	4-Amino-2,6-Dinitrotoluene	4.29	0.269				1.2
PTX06-EW-34		5/23/2017	RDX	611	26.9				2
PTX06-EW-34		5/23/2017	TNT (2,4,6-Trinitrotoluene)	7.09	0.269				3.6
PTX06-EW-34		5/23/2017	TNX	30.9	2.69				2
PTX06-EW-35		9/12/2017	RDX	1070	67.9		J		2
PTX06-EW-35		9/12/2017	TNX	10.4	6.79		J		2

Well ID	Designation	Sample Date	Analyte	Measured Value (ug/L)	Detection Limit (ug/L)	Lab Qualifier	PTX Qualifier	Turbidity	GWPS
PTX06-EW-35		9/12/2017	4-Amino-2,6-Dinitrotoluene	17.8	6.79		J-		1.2
PTX06-EW-36		8/7/2017	RDX	844	65.1		J		2
PTX06-EW-36		8/7/2017	1,3,5-Trinitrobenzene	277	65.1		J		220
PTX06-EW-36		8/7/2017	TNX	4.78	0.26		J		2
PTX06-EW-36		8/7/2017	2-Amino-4,6-Dinitrotoluene	5.16	0.26				1.2
PTX06-EW-36		8/7/2017	4-Amino-2,6-Dinitrotoluene	2.85	0.26				1.2
PTX06-EW-37		8/7/2017	RDX	2.15	0.26		J		2
PTX06-EW-38C		8/7/2017	RDX	7.81	0.275		J		2
PTX06-EW-39		8/7/2017	RDX	40.6	1.34		J		2
PTX06-EW-4		12/20/2017	2-Amino-4,6-Dinitrotoluene	3.3	0.263				1.2
PTX06-EW-4		12/20/2017	4-Amino-2,6-Dinitrotoluene	12.4	3.29				1.2
PTX06-EW-4		12/20/2017	RDX	823	32.9				2
PTX06-EW-4		12/20/2017	TNX	20.2	3.29				2
PTX06-EW-40		8/7/2017	RDX	75.1	3.47		J		2
PTX06-EW-40		8/7/2017	2-Amino-4,6-Dinitrotoluene	1.45	0.278				1.2
PTX06-EW-40		8/7/2017	4-Amino-2,6-Dinitrotoluene	2.55	0.278				1.2
PTX06-EW-40		8/7/2017	TNT (2,4,6-Trinitrotoluene)	9.68	0.278				3.6
PTX06-EW-40		8/7/2017	Chromium, Total	103	50				100
PTX06-EW-40		8/7/2017	Chromium, Hexavalent	100.364	2	I			100
PTX06-EW-41		8/7/2017	RDX	79.7	3.43		J		2
PTX06-EW-41		8/7/2017	2-Amino-4,6-Dinitrotoluene	1.66	0.275				1.2
PTX06-EW-41		8/7/2017	4-Amino-2,6-Dinitrotoluene	2.83	0.275				1.2
PTX06-EW-41		8/7/2017	TNT (2,4,6-Trinitrotoluene)	9.93	0.275				3.6
PTX06-EW-41		8/7/2017	Chromium, Total	104	50				100
PTX06-EW-42A		8/7/2017	RDX	232	28.7		J		2
PTX06-EW-42A		8/7/2017	TNT (2,4,6-Trinitrotoluene)	16.2	2.87		J-		3.6
PTX06-EW-42A		8/7/2017	2-Amino-4,6-Dinitrotoluene	3.12	0.287				1.2
PTX06-EW-42A		8/7/2017	4-Amino-2,6-Dinitrotoluene	4.9	0.287				1.2
PTX06-EW-43		8/7/2017	RDX	151	28.1		J	A2	2
PTX06-EW-43		8/7/2017	TNT (2,4,6-Trinitrotoluene)	11.7	2.81		J-		3.6
PTX06-EW-43		8/7/2017	2-Amino-4,6-Dinitrotoluene	2.01	0.281				1.2
PTX06-EW-43		8/7/2017	4-Amino-2,6-Dinitrotoluene	3.18	0.281				1.2
PTX06-EW-44		8/7/2017	RDX	649	65.8		J		2
PTX06-EW-44		8/7/2017	TNX	11.4	6.58		J		2
PTX06-EW-44		8/7/2017	Chromium, Hexavalent	249.7339	2	I	J		100
PTX06-EW-44		8/7/2017	2-Amino-4,6-Dinitrotoluene	4.29	0.263				1.2

Well ID	Designation	Sample Date	Analyte	Measured Value (ug/L)	Detection Limit (ug/L)	Lab Qualifier	PTX Qualifier	Turbidity	GWPS
PTX06-EW-44		8/7/2017	4-Amino-2,6-Dinitrotoluene	8.53	0.263				1.2
PTX06-EW-44		8/7/2017	TNT (2,4,6-Trinitrotoluene)	24.2	6.58				3.6
PTX06-EW-44		8/7/2017	Chromium, Total	282	100				100
PTX06-EW-45		8/7/2017	RDX	1410	67.9		J		2
PTX06-EW-45		8/7/2017	TNX	26.5	6.79		J		2
PTX06-EW-45		8/7/2017	2-Amino-4,6-Dinitrotoluene	3.57	0.272				1.2
PTX06-EW-45		8/7/2017	4-Amino-2,6-Dinitrotoluene	8.4	0.272				1.2
PTX06-EW-45		8/7/2017	TNT (2,4,6-Trinitrotoluene)	24.1	6.79				3.6
PTX06-EW-46		8/7/2017	RDX	1690	67.2		J		2
PTX06-EW-46		8/7/2017	TNX	45.7	6.72		J		2
PTX06-EW-46		8/7/2017	2-Amino-4,6-Dinitrotoluene	3.99	0.269				1.2
PTX06-EW-46		8/7/2017	4-Amino-2,6-Dinitrotoluene	6.26	0.269				1.2
PTX06-EW-46		8/7/2017	TNT (2,4,6-Trinitrotoluene)	8.67	6.72				3.6
PTX06-EW-48		5/23/2017	2-Amino-4,6-Dinitrotoluene	5.9	0.281				1.2
PTX06-EW-48		5/23/2017	4-Amino-2,6-Dinitrotoluene	4.17	0.281				1.2
PTX06-EW-48		5/23/2017	RDX	509	28.1				2
PTX06-EW-48		5/23/2017	TNT (2,4,6-Trinitrotoluene)	6.39	0.281				3.6
PTX06-EW-48		5/23/2017	TNX	29.1	2.81				2
PTX06-EW-49		9/18/2017	2-Amino-4,6-Dinitrotoluene	4.44	0.266				1.2
PTX06-EW-49		9/18/2017	4-Amino-2,6-Dinitrotoluene	2.13	0.266				1.2
PTX06-EW-49		9/18/2017	RDX	471	33.2				2
PTX06-EW-49		9/18/2017	TNX	21.3	3.32				2
PTX06-EW-50		10/18/2017	4-Amino-2,6-Dinitrotoluene	21.1	3.22		J		1.2
PTX06-EW-50		10/18/2017	DNX	16.1	3.22		J		2
PTX06-EW-50		10/18/2017	MNX	5.89	0.258		J		2
PTX06-EW-50		10/18/2017	RDX	869	32.2		J		2
PTX06-EW-50		10/18/2017	TNT (2,4,6-Trinitrotoluene)	37.4	3.22		J		3.6
PTX06-EW-50		10/18/2017	TNX	84.6	3.22		J		2
PTX06-EW-50		10/18/2017	2-Amino-4,6-Dinitrotoluene	4.39	0.258				1.2
PTX06-EW-51		9/18/2017	Chromium, Total	573	100		J		100
PTX06-EW-51		9/18/2017	Chromium, Hexavalent	546.86	20	I	J		100
PTX06-EW-53		5/22/2017	RDX	747	27.5		J+		2
PTX06-EW-53		5/22/2017	TNX	24.3	2.75		J+		2
PTX06-EW-53		5/22/2017	2-Amino-4,6-Dinitrotoluene	2.51	0.275				1.2
PTX06-EW-53		5/22/2017	4-Amino-2,6-Dinitrotoluene	5.09	0.275				1.2
PTX06-EW-54		9/12/2017	RDX	726	69.4		J		2

Well ID	Designation	Sample Date	Analyte	Measured Value (ug/L)	Detection Limit (ug/L)	Lab Qualifier	PTX Qualifier	Turbidity	GWPS
PTX06-EW-54		9/12/2017	TNX	35.6	6.94		J		2
PTX06-EW-54		9/12/2017	4-Amino-2,6-Dinitrotoluene	19.2	6.94		J-		1.2
PTX06-EW-54		9/12/2017	DNX	5.88	0.278		J-		2
PTX06-EW-54		9/12/2017	MNX	2.11	0.278		J-		2
PTX06-EW-54		9/12/2017	TNT (2,4,6-Trinitrotoluene)	46.7	6.94		J-		3.6
PTX06-EW-55		9/12/2017	RDX	751	67.2		J		2
PTX06-EW-55		9/12/2017	TNX	45.1	6.72		J		2
PTX06-EW-55		9/12/2017	DNX	6.87	0.269		J-		2
PTX06-EW-55		9/12/2017	TNT (2,4,6-Trinitrotoluene)	48	6.72		J-		3.6
PTX06-EW-55		9/12/2017	4-Amino-2,6-Dinitrotoluene	18.1	6.72				1.2
PTX06-EW-56		9/12/2017	RDX	921	67.2		J		2
PTX06-EW-56		9/12/2017	TNX	32.4	6.72		J		2
PTX06-EW-56		9/12/2017	2-Amino-4,6-Dinitrotoluene	7.3	0.269		J-		1.2
PTX06-EW-56		9/12/2017	4-Amino-2,6-Dinitrotoluene	14.4	6.72		J-		1.2
PTX06-EW-56		9/12/2017	DNX	3.54	0.269		J-		2
PTX06-EW-56		9/12/2017	TNT (2,4,6-Trinitrotoluene)	16.3	6.72		J-		3.6
PTX06-EW-57		9/12/2017	RDX	973	65.8		J		2
PTX06-EW-57		9/12/2017	TNX	15.8	6.58		J		2
PTX06-EW-57		9/12/2017	4-Amino-2,6-Dinitrotoluene	16.7	6.58		J-		1.2
PTX06-EW-57		9/12/2017	TNT (2,4,6-Trinitrotoluene)	16.6	6.58		J-		3.6
PTX06-EW-59		9/13/2017	DNX	4.64	0.281		J-		2
PTX06-EW-59		9/13/2017	2-Amino-4,6-Dinitrotoluene	8.95	0.281				1.2
PTX06-EW-59		9/13/2017	4-Amino-2,6-Dinitrotoluene	17	3.51				1.2
PTX06-EW-59		9/13/2017	RDX	566	35.1				2
PTX06-EW-59		9/13/2017	TNT (2,4,6-Trinitrotoluene)	29	3.51				3.6
PTX06-EW-59		9/13/2017	TNX	27.1	3.51				2
PTX06-EW-60		9/13/2017	2-Amino-4,6-Dinitrotoluene	6.93	0.278				1.2
PTX06-EW-60		9/13/2017	4-Amino-2,6-Dinitrotoluene	17.6	3.47				1.2
PTX06-EW-60		9/13/2017	DNX	4.05	0.278				2
PTX06-EW-60		9/13/2017	RDX	811	34.7				2
PTX06-EW-60		9/13/2017	TNT (2,4,6-Trinitrotoluene)	22.1	3.47				3.6
PTX06-EW-60		9/13/2017	TNX	33.3	3.47				2
PTX06-EW-61		9/13/2017	RDX	68.3	3.32		J+		2
PTX06-EW-61		9/13/2017	TNX	7.53	0.266				2
PTX06-EW-62		9/13/2017	4-Amino-2,6-Dinitrotoluene	2.3	0.275				1.2
PTX06-EW-62		9/13/2017	RDX	31.7	1.37				2

Well ID	Designation	Sample Date	Analyte	Measured Value (ug/L)	Detection Limit (ug/L)	Lab Qualifier	PTX Qualifier	Turbidity	GWPS
PTX06-EW-62		9/13/2017	TNT (2,4,6-Trinitrotoluene)	8.74	0.275				3.6
PTX06-EW-62		9/13/2017	TNX	3.24	0.275				2
PTX06-EW-63		9/13/2017	4-Amino-2,6-Dinitrotoluene	3.65	0.266		J-		1.2
PTX06-EW-63		9/13/2017	TNX	4.3	0.266		J-		2
PTX06-EW-63		9/13/2017	RDX	125	6.65				2
PTX06-EW-63		9/13/2017	TNT (2,4,6-Trinitrotoluene)	17.9	6.65				3.6
PTX06-EW-64		9/13/2017	4-Amino-2,6-Dinitrotoluene	2.12	0.269				1.2
PTX06-EW-64		9/13/2017	RDX	69.5	3.36				2
PTX06-EW-64		9/13/2017	TNT (2,4,6-Trinitrotoluene)	7.47	0.269				3.6
PTX06-EW-64		9/13/2017	TNX	5.19	0.269				2
PTX06-EW-65		5/16/2017	Chromium, Hexavalent	172.9226	150	I	J		100
PTX06-EW-65		5/16/2017	2-Amino-4,6-Dinitrotoluene	6.57	0.272				1.2
PTX06-EW-65		5/16/2017	4-Amino-2,6-Dinitrotoluene	4.82	0.272				1.2
PTX06-EW-65		5/16/2017	RDX	646	27.2				2
PTX06-EW-65		5/16/2017	1,3,5-Trinitrobenzene	981	27.2				220
PTX06-EW-65		5/16/2017	TNT (2,4,6-Trinitrotoluene)	3.74	0.272				3.6
PTX06-EW-65		5/16/2017	TNX	23.3	2.72				2
PTX06-EW-65		5/16/2017	Chromium, Total	161	10				100
PTX06-EW-66		5/16/2017	2-Amino-4,6-Dinitrotoluene	5.65	0.278				1.2
PTX06-EW-66		5/16/2017	4-Amino-2,6-Dinitrotoluene	2.06	0.278				1.2
PTX06-EW-66		5/16/2017	RDX	690	27.8				2
PTX06-EW-66		5/16/2017	1,3,5-Trinitrobenzene	241	27.8				220
PTX06-EW-66		5/16/2017	TNX	5.04	0.278				2
PTX06-EW-67		9/18/2017	Chromium, Total	455	50		J		100
PTX06-EW-67		9/18/2017	Chromium, Hexavalent	375.4401	20	I	J		100
PTX06-EW-68		9/18/2017	Chromium, Total	499	50		J		100
PTX06-EW-68		9/18/2017	Chromium, Hexavalent	443.8591	20	I	J		100
PTX06-EW-69		5/15/2017	RDX	6.82	0.281				2
PTX06-EW-7		12/20/2017	2-Amino-4,6-Dinitrotoluene	2.14	0.263		J-		1.2
PTX06-EW-7		12/20/2017	4-Amino-2,6-Dinitrotoluene	14.5	3.29				1.2
PTX06-EW-7		12/20/2017	RDX	1110	32.9				2
PTX06-EW-7		12/20/2017	TNX	20.7	3.29				2
PTX06-EW-70		5/15/2017	RDX	40.2	3.43				2
PTX06-EW-71		5/15/2017	RDX	40.5	3.59		J-		2
PTX06-EW-71		5/15/2017	TNX	2.6	0.287				2
PTX06-EW-72		5/15/2017	RDX	5.41	0.266				2

Well ID	Designation	Sample Date	Analyte	Measured Value (ug/L)	Detection Limit (ug/L)	Lab Qualifier	PTX Qualifier	Turbidity	GWPS
PTX06-EW-73		5/15/2017	RDX	4.02	0.263				2
PTX06-EW-74		5/15/2017	RDX	3.32	0.266				2
PTX06-EW-75		5/15/2017	DNX	3.3	0.266		J-		2
PTX06-EW-75		5/15/2017	MNX	2.65	0.266		J-		2
PTX06-EW-75		5/15/2017	TNX	7.67	0.266		J-		2
PTX06-EW-75		5/15/2017	4-Amino-2,6-Dinitrotoluene	1.62	0.266				1.2
PTX06-EW-75		5/15/2017	RDX	43.6	3.32				2
PTX06-EW-78A		5/15/2017	RDX	2.87	0.275				2
PTX06-EW-79		5/15/2017	2-Amino-4,6-Dinitrotoluene	1.91	0.278				1.2
PTX06-EW-79		5/15/2017	4-Amino-2,6-Dinitrotoluene	4.14	0.278				1.2
PTX06-EW-79		5/15/2017	DNX	3.72	0.278				2
PTX06-EW-79		5/15/2017	MNX	2.29	0.278				2
PTX06-EW-79		5/15/2017	RDX	102	6.94				2
PTX06-EW-79		5/15/2017	TNX	12.7	6.94				2
PTX06-EW-80		5/15/2017	2-Amino-4,6-Dinitrotoluene	2.41	0.281				1.2
PTX06-EW-80		5/15/2017	4-Amino-2,6-Dinitrotoluene	4.23	0.281				1.2
PTX06-EW-80		5/15/2017	DNX	2.4	0.281				2
PTX06-EW-80		5/15/2017	RDX	88.9	7.02				2
PTX06-EW-80		5/15/2017	TNT (2,4,6-Trinitrotoluene)	10	0.281				3.6
PTX06-EW-80		5/15/2017	TNX	6.59	0.281				2
PTX06-EW-88		12/12/2017	RDX	339	65.1		J		2
PTX06-EW-88		12/12/2017	4-Amino-2,6-Dinitrotoluene	4.54	0.26				1.2
PTX06-EW-9		9/18/2017	Chromium, Total	178	50		J		100
PTX06-EW-9		9/18/2017	Chromium, Hexavalent	147.5178	2	I	J		100
PTX06-INJ/BIO-001		11/13/2017	Arsenic	22	5			60.8	12
PTX06-INJ/BIO-003		11/14/2017	Arsenic	24	5			5.3	12
PTX06-INJ/BIO-005		11/15/2017	Barium	3000	2	B	J	20.3	2000
PTX06-INJ/BIO-006		11/15/2017	Barium	3500	2	B	J	6.27	2000
PTX06-ISB024		1/18/2017	Arsenic	24	5			220	12
PTX06-ISB024		4/18/2017	Arsenic	32	5	F1	J-	10	12
PTX06-ISB030B		1/23/2017	Arsenic	42	5			127	12
PTX06-ISB030B		1/23/2017	Propionic Acid	180000	10000			127	18250
PTX06-ISB030B		4/18/2017	Arsenic	66	5		J-	85.2	12
PTX06-ISB030B		8/22/2017	Arsenic	59	5			26.2	12
PTX06-ISB030B		11/7/2017	Arsenic	52	5			19.8	12
PTX06-ISB038		1/24/2017	Arsenic	39	5			40.3	12

Well ID	Designation	Sample Date	Analyte	Measured Value (ug/L)	Detection Limit (ug/L)	Lab Qualifier	PTX Qualifier	Turbidity	GWPS
PTX06-ISB038		1/24/2017	Arsenic	37	5				12
PTX06-ISB038		4/19/2017	Arsenic	49	5	F1	J-	26.5	12
PTX06-ISB038		8/23/2017	Arsenic	35	5		J	50	12
PTX06-ISB038		11/7/2017	Arsenic	43	5			26	12
PTX06-ISB038		11/7/2017	Arsenic	45	5				12
PTX06-ISB042		1/23/2017	Arsenic	16	5			4.14	12
PTX06-ISB046		1/31/2017	Arsenic	48	5		J	173	12
PTX06-ISB046		4/24/2017	Arsenic	78	5		J-	78.6	12
PTX06-ISB046		4/24/2017	Arsenic	81	5		J-		12
PTX06-ISB046		8/29/2017	Arsenic	86	5			35.9	12
PTX06-ISB046		8/29/2017	Arsenic	84	5				12
PTX06-ISB046		11/6/2017	Arsenic	64	5			30.9	12
PTX06-ISB048		1/31/2017	Arsenic	110	5		J	209	12
PTX06-ISB048		4/24/2017	Arsenic	110	5	F1	J-	185	12
PTX06-ISB048		8/23/2017	Arsenic	77	5			77	12
PTX06-ISB048		11/6/2017	Arsenic	55	5			56.9	12
PTX06-ISB069A		3/6/2017	Arsenic	29	13				12
PTX06-ISB069A		5/3/2017	Arsenic	30	25				12
PTX06-ISB069A		8/2/2017	Arsenic	16	5				12
PTX06-ISB069A		10/10/2017	Arsenic	14	5			393	12
PTX06-ISB071		5/4/2017	Arsenic	13	5	F1	J-	87.3	12
PTX06-ISB071		8/8/2017	Arsenic	13	5			45.2	12
PTX06-ISB071		10/10/2017	Arsenic	14	5			47.4	12
PTX06-ISB073		3/7/2017	Arsenic	39	25				12
PTX06-ISB073		5/8/2017	Arsenic	36	25		J-		12
PTX06-ISB073		8/8/2017	Arsenic	22	25	J			12
PTX06-ISB073		10/11/2017	Arsenic	18	5				12
PTX06-ISB075		2/15/2017	Arsenic	130	5			4.62	12
PTX06-ISB075		2/15/2017	Arsenic	130	5				12
PTX06-ISB075		2/15/2017	cis-1,2-Dichloroethene	180	5			4.62	70
PTX06-ISB075		2/15/2017	cis-1,2-Dichloroethene	190	5				70
PTX06-ISB075		5/9/2017	Arsenic	210	5		J-	4.03	12
PTX06-ISB075		5/9/2017	cis-1,2-Dichloroethene	170	5	F1	J-	4.03	70
PTX06-ISB075		6/7/2017	cis-1,2-Dichloroethene	180	5		J	4.16	70
PTX06-ISB075		6/7/2017	Trichloroethene	5.4	3		J	4.16	5
PTX06-ISB075		6/7/2017	1,4-Dioxane	34	5			4.16	7.7

Well ID	Designation	Sample Date	Analyte	Measured Value (ug/L)	Detection Limit (ug/L)	Lab Qualifier	PTX Qualifier	Turbidity	GWPS
PTX06-ISB075		7/25/2017	Arsenic	180	5		J	2.51	12
PTX06-ISB075		7/25/2017	cis-1,2-Dichloroethene	190	5		J	2.51	70
PTX06-ISB075		7/25/2017	Trichloroethene	31	3	B	J	2.51	5
PTX06-ISB075		7/25/2017	Vinyl Chloride	2.3	1		J	2.51	2
PTX06-ISB075		10/18/2017	Arsenic	190	5		J	4.99	12
PTX06-ISB075		10/18/2017	cis-1,2-Dichloroethene	200	5	E	J	4.99	70
PTX06-ISB075		10/18/2017	Trichloroethene	35	3			4.99	5
PTX06-ISB075		10/18/2017	Vinyl Chloride	4.6	1			4.99	2
PTX06-ISB079		2/20/2017	Arsenic	15	5			112	12
PTX06-ISB079		7/25/2017	Arsenic	16	5		J	43.3	12
PTX06-ISB082		2/20/2017	Arsenic	31	5			51.3	12
PTX06-ISB082		5/9/2017	Arsenic	35	5		J-	59.2	12
PTX06-ISB082		7/25/2017	Arsenic	33	5		J	50.3	12
PTX06-ISB082		10/18/2017	Arsenic	34	5		J	44.4	12
PTX07-1O03		8/30/2017	RDX	45.5	1.32			1.34	2
PTX07-1O03		8/30/2017	TNX	4.14	0.263			1.34	2
PTX07-1P02	Compliance	10/3/2017	RDX	2.6	0.42		J	3.7	2
PTX07-1P02	Compliance	10/3/2017	RDX	2.76	0.26			3.7	2
PTX07-1P02	Compliance	11/13/2017	RDX	3.44	0.263			3.9	2
PTX08-1001		5/17/2017	RDX	12	0.543			8.42	2
PTX08-1001		5/17/2017	TNX	2.25	0.272			8.42	2
PTX08-1002		5/17/2017	4-Amino-2,6-Dinitrotoluene	2.08	0.269			5.42	1.2
PTX08-1002		5/17/2017	RDX	21.1	0.672			5.42	2
PTX08-1002		5/17/2017	TNT (2,4,6-Trinitrotoluene)	7.5	0.269			5.42	3.6
PTX08-1002		10/30/2017	RDX	13	0.658		J	9.8	2
PTX08-1002		10/30/2017	4-Amino-2,6-Dinitrotoluene	1.53	0.263			9.8	1.2
PTX08-1002		10/30/2017	TNT (2,4,6-Trinitrotoluene)	6.22	0.263			9.8	3.6
PTX08-1005		3/6/2017	Trichloroethene	28.7	1			1.1	5
PTX08-1005		8/22/2017	Trichloroethene	30.7	1			1.88	5
PTX08-1006		3/6/2017	RDX	52.1	3.36		J	1.5	2
PTX08-1006		3/6/2017	TNX	3.14	0.269		J	1.5	2
PTX08-1006		3/6/2017	4-Amino-2,6-Dinitrotoluene	4.28	0.269			1.5	1.2
PTX08-1006		3/6/2017	Perchlorate	261	60			1.5	26
PTX08-1006		3/6/2017	Trichloroethene	37.4	1			1.5	5
PTX08-1006		8/29/2017	4-Amino-2,6-Dinitrotoluene	2.83	0.26			0.49	1.2
PTX08-1006		8/29/2017	RDX	42.2	1.3			0.49	2

Well ID	Designation	Sample Date	Analyte	Measured Value (ug/L)	Detection Limit (ug/L)	Lab Qualifier	PTX Qualifier	Turbidity	GWPS
PTX08-1006		8/29/2017	TNX	2.11	0.26			0.49	2
PTX08-1006		8/29/2017	Perchlorate	174	60			0.49	26
PTX08-1006		8/29/2017	Trichloroethene	31.6	1			0.49	5
PTX08-1007		5/24/2017	1,2-Dichloroethane	8.27	1		J	0.71	5
PTX08-1007		5/24/2017	Trichloroethene	15.5	1		J	0.71	5
PTX08-1007		5/24/2017	RDX	3.37	0.272			0.71	2
PTX08-1008		5/18/2017	Chromium, Total	135	50			6.33	100
PTX08-1008		5/18/2017	Perchlorate	367	120			6.33	26
PTX08-1008		6/20/2017	Chromium, Hexavalent	110.917	2	I	J	1.6	100
PTX08-1008		11/13/2017	Chromium, Total	147	10			5.1	100
PTX08-1008		11/13/2017	Chromium, Hexavalent	136	2	IH		5.1	100
PTX08-1008		11/13/2017	Perchlorate	362	120			5.1	26
PTX10-1014		5/23/2017	Trichloroethene	9.88	1		J	107.3	5

*Arsenic, barium, and manganese are elevated in the ISPM wells because there is evidence that the treatment zone is extending beyond the ISB, pilot study, and PRB treatment systems. Volatile fatty acids, DO, and ORP have also been affected in these wells (please refer to the electronic data CD in this appendix for data). The volatile fatty acids will be consumed by bacteria with conditions returning to background over time.

Table D-2. Detected Results in Group 1 Ogallala Aquifer Uncertainty Management/Early Detection Wells

Well ID	Sample ID	Sample Date	Sample Type	Analyte	Measured Value (ug or pCi/L)	Detection Limit (ug/L)	Lab Qualifier	PTX Qualifier	Background (ug or pCi/L)	< Background?	Lab PQL (ug/L)	>Lab PQL?	GWPS (ug or pCi/L)	>GWPS?	Expected Condition?	Explanation
PTX06-1033	20170516M00475	5/16/2017	N	Chromium, Hexavalent	7.3308	15	J	J		NA	15	N	100	N	Y	Inaccurate elevated detection near the MDL and possible corrosion.
PTX06-1033	20170516M00475	5/16/2017	N	Manganese	42.3	5			16	Y	5	NA	1715.5	N	Y	Possible corrosion.
PTX06-1033	20170516M00475	5/16/2017	N	Nickel	47.3	2			15	Y	2	NA	730	N	Y	Possible corrosion.
PTX06-1056	20170207M00379	2/7/2017	N	4-Amino-2,6-Dinitrotoluene	0.329	0.269				NA	0.269	Y	1.2	N	N	Unexpected condition.
PTX06-1056	20170207M00379	2/7/2017	N	1,2-Dichloroethane	0.75	1	J	J+		NA	1	N	5	N	N	Unexpected condition.
PTX06-1056	20170419M00439	4/19/2017	N	4-Amino-2,6-Dinitrotoluene	0.334	0.272				NA	0.272	Y	1.2	N	N	Unexpected condition.
PTX06-1056	20170419M00439	4/19/2017	N	1,2-Dichloroethane	0.54	1	J			NA	1	N	5	N	N	Unexpected condition.
PTX06-1056	20170718M00534	7/18/2017	N	4-Amino-2,6-Dinitrotoluene	0.306	0.263				NA	0.263	Y	1.2	N	N	Unexpected condition.
PTX06-1056	20170718M00534	7/18/2017	N	1,2-Dichloroethane	0.58	1	J			NA	1	N	5	N	N	Unexpected condition.
PTX06-1056	20171023M00603	10/23/2017	N	4-Amino-2,6-Dinitrotoluene	0.344	0.258				NA	0.258	Y	1.2	N	N	Unexpected condition.
PTX06-1056	20171023M00603	10/23/2017	N	1,2-Dichloroethane	0.62	1	J	J		NA	1	N	5	N	N	Unexpected condition.
PTX06-1068	20171031M00619	10/31/2017	N	1,4-Dioxane	1.05	1				NA	1	Y	7.7	N	N	False positive or possible laboratory contamination. Non-detect in resample.
PTX06-1157	20170207M00377	2/7/2017	N	Chromium, Hexavalent	3.658	0.4	I	J-	3.2	Y	0.4	Y	100	N	Y	Likely background variability.
PTX06-1157	20170726M00555	7/26/2017	N	Chromium, Hexavalent	3.6081	0.02			3.2	Y	0.02	Y	100	N	Y	Likely background variability.
PTX07-1R01	20171031M00618	10/31/2017	N	1,4-Dioxane	0.897	1	J			NA	1	N	7.7	N	N	False positive or possible laboratory contamination.

Table D-3. Detected Boron Results in Group 1 Ogallala Aquifer Wells

Well ID	Sample ID	Sample Date	Sample Type	Measured Value (ug or pCi/L)	Detection Limit (ug/L)	Lab Qualifier	PTX Qualifier	Background (ug or pCi/L)	> Background?	Lab PQL (ug/L)	>Lab PQL?	GWPS (ug or pCi/L)	>GWPS?	Expected Condition?	Mann-Kendall Trends		Explanation
															Long-Term	Short-Term	
PTX06-1043	20170206M00375	2/6/2017	N	200	15			193.9	Y	15	NA	7300	N	Y	No Trend	Decreasing	This concentration likely represents natural variability in background.
PTX06-1056	20170207M00379	2/7/2017	N	208	75			193.9	Y	75	NA	7300	N	Y	Decreasing	No Trend	This concentration likely represents natural variability in background.
PTX06-1056	20170718M00534	7/18/2017	N	245	150			193.9	Y	150	NA	7300	N	Y	Decreasing	No Trend	This concentration likely represents natural variability in background.
PTX06-1062A	20170209M00388	2/9/2017	N	203	75			193.9	Y	75	NA	7300	N	Y	No Trend	Stable	This concentration likely represents natural variability in background.
PTX06-1139	20170207M00378	2/7/2017	N	203	75			193.9	Y	75	NA	7300	N	Y	No Trend	Decreasing	This concentration likely represents natural variability in background.
PTX06-1157	20170207M00377	2/7/2017	N	227	75			193.9	Y	75	NA	7300	N	Y	Probably Increasing	No Trend	This concentration likely represents natural variability in background.
PTX06-1157	20170726M00555	7/26/2017	N	196	150			193.9	Y	150	NA	7300	N	Y	Probably Increasing	No Trend	This concentration likely represents natural variability in background.

Table D-4. COC Trends vs. Expected Conditions, Group 2 Wells

Well ID	COC Expected Condition - LTM Design	COC>GWPS	Mann-Kendall Trends - SSRA											
			RDX	TNT	DNT24	DNT26	TNB135	PERC	TCE	PCE	CR-6	DIOXANE14	TCLME	
1114-MW4	Long-term decreasing trend	PERC, TCE	N/A	ND	ND	ND	ND	ND	Increasing	Decreasing	Decreasing	NT	Probably Increasing	Decreasing
OW-WR-38	Long-term stabilization of concentrations	RDX, HMX	No Trend	ND	ND	ND	ND	ND	NT	Probably Increasing	ND	NT	NT	ND
PTX06-1002A	Long-term stabilization of concentrations	RDX, TNX, HMX	Decreasing	ND	ND	ND	N/A	NT	No Trend	N/A	Decreasing	NT	NT	ND
PTX06-1003	Long-term stabilization of concentrations	RDX, TNX	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
PTX06-1005	Long-term stabilization of concentrations	DNT24, DNT2A, DNT4A, RDX, TNB135, TNX, TCE	Decreasing	No Trend	Decreasing	No Trend	Decreasing	NT	Increasing	Increasing	No Trend	Decreasing	Increasing	Increasing
PTX06-1007	Long-term decreasing trend	PERC	No Trend	ND	ND	Decreasing	ND	No Trend	Decreasing	ND	NT	No Trend	ND	ND
PTX06-1008	Long-term decreasing trend	DCA12, CR	ND	ND	ND	ND	ND	N/A	Decreasing	ND	Decreasing	N/A	No Trend	No Trend
PTX06-1010	Long-term decreasing trend	CR, CR6, RDX	Decreasing	N/A	ND	ND	ND	NT	Increasing	Decreasing	Decreasing	NT	Increasing	Increasing
PTX06-1011	Stable or decreasing trend below GWPS	NONE	No Trend	ND	N/A	ND	N/A	No Trend	No Trend	Decreasing	Increasing	Decreasing	Decreasing	No Trend
PTX06-1050	Long-term stabilization of concentrations	RDX, TNX	Decreasing	ND	ND	ND	ND	NT	ND	ND	NT	NT	NT	ND
PTX06-1053	Stable or decreasing trend below GWPS	NONE	No Trend	ND	ND	ND	ND	ND	ND	ND	N/A	N/A	N/A	ND
PTX06-1077A	Stable or decreasing trend below GWPS	TCE	Decreasing	ND	ND	ND	ND	Probably Increasing	Decreasing	N/A	NT	N/A	N/A	ND
PTX06-1088	Long-term stabilization of concentrations	TNT, TCE, CR, CR-6, RDX, DNT24, DNT2A, DNT4A, TNB135	Decreasing	Decreasing	Decreasing	Decreasing	Decreasing	Decreasing	NT	Decreasing	Increasing	Decreasing	NT	Decreasing
PTX06-1095A	Long-term stabilization of concentrations	RDX, TNX, TCE	Increasing	Probably Increasing	ND	Decreasing	Increasing	NT	Increasing	Increasing	No Trend	NT	Increasing	Increasing
PTX06-1126	Long-term decreasing trend	TCE, PERC, DIOXANE14	Increasing	ND	ND	N/A	ND	Decreasing	Decreasing	Increasing	Decreasing	Decreasing	Decreasing	Increasing
PTX06-1127	Long-term decreasing trend	TCE, PERC, DIOXANE14, DCA12	Increasing	ND	ND	ND	ND	Decreasing	No Trend	Increasing	Decreasing	No Trend	Increasing	Increasing
PTX07-1001	Long-term decreasing trend	RDX	Dry*	Dry*	Dry*	Dry*	Dry*	Dry*	Dry*	Dry*	Dry*	Dry*	Dry*	Dry*
PTX07-1002	Long-term decreasing trend	NONE	Dry*	Dry*	Dry*	Dry*	Dry*	Dry*	Dry*	Dry*	Dry*	Dry*	Dry*	Dry*
PTX07-1003	Long-term decreasing trend	RDX, HMX	Increasing	ND	ND	ND	ND	NT	Probably Increasing	ND	NT	NT	NT	ND
PTX07-1006	Stable or decreasing trend below GWPS	NONE	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
PTX07-1P02	Stable or decreasing trend below GWPS	NONE	Increasing	ND	ND	ND	ND	N/A	ND	ND	NT	Decreasing	ND	ND

Well ID	COC Expected Condition - LTM Design	COC>GWPS	Mann-Kendall Trends - SSRA											
			RDX	TNT	DNT24	DNT26	TNB135	PERC	TCE	PCE	CR-6	DIOXANE14	TCLME	
PTX07-1P05	Stable or decreasing trend below GWPS	RDX, TNX	Dry*	Dry*	Dry*	Dry*	Dry*	Dry*	Dry*	Dry*	Dry*	Dry*	Dry*	Dry*
PTX08-1001	Long-term stabilization of concentrations	RDX, TNX	No Trend	ND	ND	ND	ND	ND	Decreasing	ND	ND	NT	N/A	ND
PTX08-1002	Long-term stabilization of concentrations	RDX, MNX, DNX, TNX, DNT2A	Decreasing	Probably Increasing	Increasing	N/A	Probably Increasing	NT	ND	ND	ND	N/A	NT	ND
PTX08-1005	Long-term decreasing trend	TCE, DCA12, DIOXANE14, PERC	Decreasing	ND	ND	ND	ND	Decreasing	Decreasing	Decreasing	Decreasing	Decreasing	Decreasing	Decreasing
PTX08-1006	Long-term decreasing trend	RDX, TNX, PERC, DNT4A, TCE, PCE, DIOXANE14, DCA12	Decreasing	ND	ND	Decreasing	N/A	Decreasing	Increasing	Decreasing	NT	Decreasing	Decreasing	Decreasing
PTX08-1007	Long-term decreasing trend	TCE, RDX, CR, CR-6	No Trend	ND	ND	ND	ND	Decreasing	Decreasing	Decreasing	Decreasing	No Trend	Probably Increasing	Probably Increasing
PTX08-1008	Long-term stabilization of concentrations	CR, CR-6	N/A	ND	ND	ND	ND	Increasing	N/A	ND	Decreasing	Probably Increasing	Probably Increasing	Probably Increasing
PTX08-1009	Long-term stabilization of concentrations	NONE	Decreasing	ND	ND	ND	ND	NT	N/A	ND	Increasing	NT	Decreasing	Decreasing
PTX10-1014	Long-term decreasing trend	TCE	Decreasing	ND	ND	ND	ND	No Trend	Decreasing	Decreasing	Decreasing	Decreasing	N/A	Decreasing

Dry* - water level measured in sump
 N/A = not enough detections

ND = non-detect
 NT = not tested

Table D-5. Group 2 Well Detections of Non-Indicator Parameters

Well ID	Sample ID	Sample Date	Sample Type	Analyte	Measured Value (ug or pCi/L)	Detection Limit (ug/L)	Lab Qualifier	PTX Qualifier	Background (ug or pCi/L)	>Background?	PQL (ug/L)	>PQL?	GWPS (ug or pCi/L)	>GWPS?	Expected Condition?	Explanation
PTX06-1095A	20170227M00414	2/27/2017	N	Manganese	53.7	5			16	Y	5	NA	1715.5	N	N	Likely screen corrosion
PTX10-1014	20170523M00495	5/23/2017	N	Nickel	49.2	2		J	15	Y	2	NA	730	N	N	Likely screen corrosion

Appendix E
Water Level Trends and Hydrographs
Expected Conditions Evaluation
and Analyte Concentration Trends

Perched Aquifer Water Level Trends and Hydrographs

Perched Water Level Trending Results Vs. Expected Conditions

Well ID	Indicator Area	LTM Objectives	Progress Report Metrics	WL Expected Condition - LTM Design	Historic WL Trend	Recent WL Trend
1114-MW4	Zone 11	UM	Trend/Compare to GWPS			
OW-WR-38	North	UM, RAE	Water Level, Trend/Compare to GWPS	Decreasing water levels	Decreasing	Decreasing
PTX01-1001	Burning Ground	UM	Trend/Compare to GWPS			
PTX01-1002	Burning Ground	UM	Compare to GWPS			
PTX01-1004	Burning Ground	PS	Dry	Remain dry	Dry	Dry
PTX01-1008	Burning Ground	UM	Compare to GWPS			
PTX01-1009	Burning Ground	PS	Dry	Remain dry	Dry	Dry
PTX04-1001	Miscellaneous	UM	Trend/Compare to GWPS			
PTX04-1002	Miscellaneous	UM	Trend/Compare to GWPS			
PTX06-1002A	Southeast	UM, RAE	Water Level, Trend/Compare to GWPS	Decreasing water levels	Decreasing	No Trend
PTX06-1003	Southeast	UM, RAE	Water Level, Trend/Compare to GWPS	Decreasing water levels	Decreasing	No Trend
PTX06-1005	Southeast	UM, RAE	Water Level, Trend/Compare to GWPS	Decreasing water levels	Decreasing	No Trend
PTX06-1006	Zone 11	PS	Trend/Compare to GWPS			
PTX06-1007	Zone 11	UM	Trend/Compare to GWPS			
PTX06-1008	Southeast, Zone 11	UM	Trend/Compare to GWPS			
PTX06-1010	Southeast	UM	Trend/Compare to GWPS			
PTX06-1011	Southeast, Zone 11	UM	Trend/Compare to GWPS			
PTX06-1012	Zone 11	PS, RAE	Trend/Compare to GWPS			
PTX06-1013	Southeast	RAE	Water Level, Trend/Compare to GWPS	Decreasing water levels	Decreasing	Decreasing
PTX06-1014	Southeast	RAE	Water Level, Trend/Compare to GWPS	Decreasing water levels	Decreasing	Decreasing
PTX06-1015	Southeast	RAE	Water Level, Trend/Compare to GWPS	Decreasing water levels	Decreasing	Decreasing
PTX06-1023	Southeast	RAE	Water Level, Trend/Compare to GWPS	Decreasing water levels	Decreasing	Decreasing
PTX06-1030	Southeast	RAE	Trend/Compare to GWPS			
PTX06-1031	Southeast	RAE	Trend/Compare to GWPS			
PTX06-1034	Southeast	RAE	Trend/Compare to GWPS			
PTX06-1035	Zone 11	PS	Trend/Compare to GWPS			
PTX06-1036	Southeast	PS	Trend/Compare to GWPS			
PTX06-1037	Southeast	RAE	Trend/Compare to GWPS			
PTX06-1038	Southeast	RAE	Water Level, Trend/Compare to GWPS	Decreasing water levels	Decreasing	No Trend
PTX06-1039A	Southeast	RAE	Water Level, Trend/Compare to GWPS	Decreasing water levels	Decreasing	Decreasing
PTX06-1040	Southeast	RAE	Water Level, Trend/Compare to GWPS	Decreasing water levels	Decreasing	Decreasing
PTX06-1041	Southeast	RAE	Water Level, Trend/Compare to GWPS	Decreasing water levels	Decreasing	Decreasing
PTX06-1042	Southeast	RAE	Water Level, Trend/Compare to GWPS	Decreasing water levels	Decreasing	Decreasing
PTX06-1045	Southeast	RAE	Trend/Compare to GWPS	Limited Water	Decreasing	Dry
PTX06-1046	Southeast	RAE	Water Level, Trend/Compare to GWPS	Decreasing water levels	Decreasing	Decreasing
PTX06-1047A	Southeast	RAE	Water Level, Trend/Compare to GWPS	Decreasing water levels	Decreasing	Decreasing
PTX06-1048A	North	PS, RAE	Trend/Compare to GWPS			
PTX06-1049	Miscellaneous	PS, UM	Compare to GWPS			
PTX06-1050	North	UM, RAE	Water Level, Trend/Compare to GWPS	Decreasing water levels	Decreasing	Decreasing

Perched Water Level Trending Results Vs. Expected Conditions

Well ID	Indicator Area	LTM Objectives	Progress Report Metrics	WL Expected Condition - LTM Design	Historic WL Trend	Recent WL Trend
PTX06-1051	Southeast	PS	Dry	Remain dry	Increasing	Increasing
PTX06-1052	Southeast	RAE	Water Level, Trend/Compare to GWPS	Decreasing water levels	Decreasing	Decreasing
PTX06-1053	Southeast, Zone 11	PS, UM	Trend/Compare to GWPS			
PTX06-1055	Miscellaneous	PS	Dry	Remain dry	Dry	Dry
PTX06-1069	Southeast	PS	Trend/Compare to GWPS			
PTX06-1071	Miscellaneous	UM	Compare to GWPS			
PTX06-1073A	Zone 11	PS	Water Level, Trend/Compare to GWPS	Limited Water	Decreasing	Decreasing
PTX06-1077A	Zone 11	UM	Trend/Compare to GWPS			
PTX06-1080	Miscellaneous	UM	Compare to GWPS			
PTX06-1081	Miscellaneous	UM	Trend/Compare to GWPS			
PTX06-1082	Miscellaneous	UM	Compare to GWPS			
PTX06-1083	Miscellaneous	UM	Trend/Compare to GWPS			
PTX06-1085	Miscellaneous	UM	Compare to GWPS			
PTX06-1086	Miscellaneous	UM	Compare to GWPS			
PTX06-1088	Southeast	UM, RAE	Water Level, Trend/Compare to GWPS	Decreasing water levels	Decreasing	Increasing
PTX06-1089	Southeast	PS	Dry	Remain dry	No Trend	No Trend
PTX06-1090	Southeast	PS	Dry	Remain dry	Dry	Dry
PTX06-1091	Southeast	PS	Dry	Remain dry	Dry	Dry
PTX06-1093	Southeast	PS	Dry	Remain dry	Dry	Dry
PTX06-1094	Southeast	PS	Dry	Limited Water	Dry	Dry
PTX06-1095A	Southeast	UM, RAE	Water Level, Trend/Compare to GWPS	Decreasing water levels	Decreasing	No Trend
PTX06-1096A	Miscellaneous	PS, UM	Dry	Remain dry	Dry	Dry
PTX06-1097	Miscellaneous	PS, UM	Dry	Remain dry	Dry	Dry
PTX06-1098	Southeast	RAE	Water Level, Trend/Compare to GWPS			
PTX06-1100	Southeast	RAE	Water Level, Trend/Compare to GWPS			
PTX06-1101	Southeast	RAE	Water Level, Trend/Compare to GWPS			
PTX06-1102	Southeast	RAE	Water Level, Trend/Compare to GWPS	Decreasing water levels	Decreasing	Decreasing
PTX06-1103	Southeast	RAE	Water Level, Trend/Compare to GWPS	Limited Water	Decreasing	Dry
PTX06-1118	Southeast	RAE	Trend/Compare to GWPS	Limited Water	Decreasing	Dry
PTX06-1119	Southeast	PS	Dry	Remain dry	Dry	Dry
PTX06-1120	Southeast	PS	Water Level, Trend/Compare to GWPS	Limited Water	Decreasing	Decreasing
PTX06-1121	Southeast	PS	Water Level, Trend/Compare to GWPS	Limited Water	Decreasing	Decreasing
PTX06-1122	Southeast	PS	Dry	Remain dry	Dry	Dry
PTX06-1123	Southeast	RAE	Trend/Compare to GWPS			
PTX06-1124	Southeast	PS	Dry	Remain dry	Dry	Dry
PTX06-1125	Southeast	PS	Dry	Remain dry	Dry	Dry
PTX06-1126	Zone 11	PS, UM	Trend/Compare to GWPS			
PTX06-1127	Zone 11	PS, UM	Trend/Compare to GWPS			
PTX06-1130	Southeast	RAE	Water Level, Trend/Compare to GWPS	Decreasing water levels	Decreasing	Dry

Perched Water Level Trending Results Vs. Expected Conditions

Well ID	Indicator Area	LTM Objectives	Progress Report Metrics	WL Expected Condition - LTM Design	Historic WL Trend	Recent WL Trend
PTX06-1131	Miscellaneous	UM	Compare to GWPS			
PTX06-1133A	Southeast	PS	Water Level, Trend/Compare to GWPS	Limited Water	No Trend	Increasing
PTX06-1134	Zone 11	PS	Trend/Compare to GWPS			
PTX06-1135	Southeast	PS	Trend/Compare to GWPS			
PTX06-1136	North	PS	Trend/Compare to GWPS			
PTX06-1146	Southeast	PS	Trend/Compare to GWPS			
PTX06-1147	Southeast	PS	Trend/Compare to GWPS			
PTX06-1148	Zone 11	PS, RAE	Trend/Compare to GWPS			
PTX06-1149	Zone 11	PS	Trend/Compare to GWPS			
PTX06-1150	Zone 11	PS, RAE	Trend/Compare to GWPS			
PTX06-1151	Zone 11	PS	Trend/Compare to GWPS			
PTX06-1153	Southeast	RAE	Trend/Compare to GWPS			
PTX06-1154	Southeast	RAE	Trend/Compare to GWPS			
PTX06-1155	Zone 11	RAE	Trend/Compare to GWPS			
PTX06-1156	Zone 11	RAE	Trend/Compare to GWPS			
PTX06-1158	Southeast	PS	Water Level, Trend/Compare to GWPS	Limited Water	Dry	Dry
PTX06-1159	Zone 11	PS, RAE	Trend/Compare to GWPS			
PTX06-1160	Zone 11	PS	Trend/Compare to GWPS			
PTX06-1166	Southeast	PS	Trend/Compare to GWPS			
PTX06-1167	Southeast	RAE	Trend/Compare to GWPS			
PTX07-1O01	North	PS, UM, RAE	Trend/Compare to GWPS			
PTX07-1O02	North	PS, UM, RAE	Trend/Compare to GWPS			
PTX07-1O03	North	PS, UM, RAE	Trend/Compare to GWPS			
PTX07-1O06	North	PS, UM, RAE	Trend/Compare to GWPS			
PTX07-1P02	Zone 11	UM	Trend/Compare to GWPS			
PTX07-1P05	Zone 11	UM	Trend/Compare to GWPS			
PTX07-1Q01	Miscellaneous	UM	Compare to GWPS			
PTX07-1Q02	Miscellaneous	UM	Compare to GWPS			
PTX07-1Q03	Miscellaneous	UM	Compare to GWPS			
PTX07-1R03	Miscellaneous	UM	Compare to GWPS			
PTX08-1001	Zone 11	UM, RAE	Water Level, Trend/Compare to GWPS	Decreasing water levels	Decreasing	Decreasing
PTX08-1002	Southeast	UM, RAE	Water Level, Trend/Compare to GWPS	Decreasing water levels	Decreasing	Decreasing
PTX08-1003	Zone 11	PS	Trend/Compare to GWPS			
PTX08-1005	Zone 11	UM	Trend/Compare to GWPS			
PTX08-1006	Zone 11	UM	Trend/Compare to GWPS			
PTX08-1007	Southeast, Zone 11	UM	Trend/Compare to GWPS			
PTX08-1008	Southeast, Zone 11	UM, RAE	Water Level, Trend/Compare to GWPS	Decreasing water levels	Decreasing	Decreasing
PTX08-1009	Southeast	UM, RAE	Water Level, Trend/Compare to GWPS	Decreasing water levels	Decreasing	Decreasing
PTX08-1010	Miscellaneous	UM	Trend/Compare to GWPS			

Perched Water Level Trending Results Vs. Expected Conditions

Well ID	Indicator Area	LTM Objectives	Progress Report Metrics	WL Expected Condition - LTM Design	Historic WL Trend	Recent WL Trend
PTX10-1014	Southeast, Zone 11	UM	Trend/Compare to GWPS			

UM = Uncertainty management
 PS = Plume stability
 RAE = Response action effectiveness
 Dry* - water level measured in sump

Perched Water Level Summary Trends

Well	Easting	Northing	Num_AD	Slope_AD	Trend_AD	Change_AD	Num_L2Y	Slope_L2Y	Trend_L2Y	Change_L2Y	Num_SSRA	Slope_SSRA	Trend_SSRA	Change_SSRA	Num_5YRP	Slope_5YRP	Trend_5YRP	Change_5YRP
1114-MW4	636151.93	3757809.40	69	0.04	No Trend	1.24	8	0.10	No Trend	0.2	33	-0.32	Decreasing	-1.85	20	-0.40	Decreasing	-1.56
OW-WR-38	640649.01	3765214.16	90	-0.76	Decreasing	-13.35	7	-2.20	Decreasing	-3.4	26	-0.59	Decreasing	-4.46	14	0.51	Increasing	-0.41
OW-WR-45	639452.38	3759812.49	48	-0.42	Decreasing	-8.46	4	0.08	No Trend	0.1	17	-0.86	Decreasing	-6.27	10	-0.85	Decreasing	-3.62
PTX01-1001	630592.95	3769641.90	95	0.40	Increasing	6.8	8	0.57	Increasing	1	34	0.04	No Trend	1.15	20	-0.09	No Trend	0.17
PTX01-1004	630729.82	3770768.71	0	0.00	(No Measurement)	-999	0	0.00	(No Measurement)	-999	0	0.00	(No Measurement)	-999	0	0.00	(No Measurement)	-999
PTX01-1006	631056.66	3770526.50	0	0.00	(No Measurement)	-999	0	0.00	(No Measurement)	-999	0	0.00	(No Measurement)	-999	0	0.00	(No Measurement)	-999
PTX01-1007	630918.03	3771315.45	1	0.00	(<3 Measurement)	0	0	0.00	(No Measurement)	-999	1	0.00	(<3 Measurement)	0	1	0.00	(<3 Measurement)	0
PTX01-1008	629942.97	3770782.89	65	0.01	No Trend	1.52	8	1.56	Increasing	2.4	35	0.19	Increasing	2.14	21	0.09	No Trend	1.73
PTX01-1009	630594.67	3769018.50	0	0.00	(No Measurement)	-999	0	0.00	(No Measurement)	-999	0	0.00	(No Measurement)	-999	0	0.00	(No Measurement)	-999
PTX01-1014A	629343.00	3769206.80	7	-0.02	No Trend	-0.13	0	0.00	(No Measurement)	-999	0	0.00	(No Measurement)	-999	0	0.00	(No Measurement)	-999
PTX04-1001	641458.10	3772334.66	44	-0.04	No Trend	-0.07	6	0.02	No Trend	0.1	21	0.00	No Trend	-0.16	11	0.14	Increasing	0.5
PTX04-1002	641818.01	3772165.27	62	-0.04	No Trend	-0.06	6	0.01	No Trend	0.1	25	-0.01	No Trend	-0.12	15	0.09	No Trend	0.55
PTX06-1001A	640464.65	3760332.00	41	-0.69	Decreasing	-12.29	4	1.98	Increasing	2.6	17	-1.16	Decreasing	-7.98	9	-1.76	Decreasing	-7.13
PTX06-1002A	641161.56	3759984.00	69	-0.62	Decreasing	-10.99	9	0.08	No Trend	0.4	35	-1.04	Decreasing	-7.94	20	-0.98	Decreasing	-3.8
PTX06-1003	641498.93	3758711.05	48	-0.42	Decreasing	-7.13	1	0.00	No Trend	0	19	-1.24	Decreasing	-6.15	10	-0.75	Decreasing	-2.79
PTX06-1005	640545.44	3756139.87	70	-0.49	Decreasing	-8.19	10	-0.04	No Trend	0.5	36	-1.19	Decreasing	-6.16	21	-1.25	Decreasing	-7.32
PTX06-1006	637450.19	3757599.75	53	-0.05	No Trend	-0.99	6	-0.28	Decreasing	-0.4	26	-0.41	Decreasing	-2.99	15	-0.42	Decreasing	-1.89
PTX06-1007	637679.37	3759513.00	53	-0.09	No Trend	-1.41	6	-0.23	Decreasing	-0.3	26	-0.49	Decreasing	-3.96	15	-0.52	Decreasing	-1.58
PTX06-1008	639441.93	3759325.25	50	-0.40	Decreasing	-5.46	6	0.40	Increasing	0.5	26	-0.59	Decreasing	-4.52	15	-0.61	Decreasing	-2.55
PTX06-1009	639878.05	3758698.67	22	-0.13	Decreasing	-0.75	1	0.00	(<3 Measurement)	0	9	-0.12	Decreasing	-0.79	5	-0.13	Decreasing	-0.34
PTX06-1010	639886.62	3758067.00	63	0.25	Increasing	4.95	8	0.07	No Trend	-0.3	35	0.00	No Trend	0.29	20	-0.10	Decreasing	-1.04
PTX06-1011	639178.93	3757219.75	55	-0.26	Decreasing	-4.29	7	-0.24	Decreasing	-0.3	27	-0.70	Decreasing	-4.38	15	-0.79	Decreasing	-4.05
PTX06-1012	634640.91	3755068.80	88	0.17	Increasing	3.87	12	0.03	No Trend	0.24	48	0.10	Increasing	1.54	30	0.08	No Trend	0.5
PTX06-1013	643710.38	3764075.09	64	-0.09	No Trend	-0.23	6	-0.15	Decreasing	-0.2	30	-0.21	Decreasing	-1.57	17	-0.17	Decreasing	-0.69
PTX06-1014	643758.88	3755125.71	59	-0.38	Decreasing	-6.53	8	-0.73	Decreasing	-1.5	26	-0.62	Decreasing	-4.55	16	-0.70	Decreasing	-2.62
PTX06-1015	643765.00	3753617.00	75	-0.13	Decreasing	-2.35	9	-0.49	Decreasing	-0.8	35	-0.39	Decreasing	-3.09	20	-0.42	Decreasing	-1.87
PTX06-1023	642773.84	3764603.10	70	-0.28	Decreasing	-4.76	8	-0.15	Decreasing	-0.2	35	-0.32	Decreasing	-2.38	21	-0.30	Decreasing	-1.24
PTX06-1030	644670.42	3755008.03	75	-0.35	Decreasing	-11.08	9	-3.81	Decreasing	-6.2	36	-0.77	Decreasing	-9.75	21	-0.65	Decreasing	-2.88
PTX06-1031	644674.92	3753348.03	74	-0.13	Decreasing	-2.87	9	-0.56	Decreasing	-1	35	-0.47	Decreasing	-3.65	20	-0.56	Decreasing	-2.64
PTX06-1034	646555.62	3752434.98	73	0.00	No Trend	0.36	9	-0.17	Decreasing	-0.2	37	-0.15	Decreasing	-1.12	22	-0.24	Decreasing	-0.75
PTX06-1035	633027.45	3755092.64	68	0.27	Increasing	6.74	9	0.47	Increasing	0.2	35	0.19	Increasing	1.44	20	0.08	No Trend	0.97
PTX06-1036	638615.43	3752455.56	59	-0.16	Decreasing	-2.17	6	-0.95	Decreasing	-0.9	25	-0.41	Decreasing	-2.93	15	-0.40	Decreasing	-3.3
PTX06-1037	641549.25	3752194.06	74	-0.02	No Trend	-0.21	12	-0.15	Decreasing	-0.5	48	-0.26	Decreasing	-1.63	30	-0.37	Decreasing	-1.19
PTX06-1038	643802.04	3760426.35	73	-0.44	Decreasing	-7.45	9	0.10	No Trend	-0.2	38	-0.60	Decreasing	-4.7	24	-0.57	Decreasing	-2.7
PTX06-1039A	643807.47	3759272.56	68	-0.73	Decreasing	-11.33	9	-0.36	Decreasing	-0.8	38	-0.98	Decreasing	-7.75	23	-0.89	Decreasing	-4.79
PTX06-1040	643811.23	3758262.93	73	-0.94	Decreasing	-14.54	8	-0.77	Decreasing	-1.3	37	-1.41	Decreasing	-11.85	22	-1.40	Decreasing	-7.32
PTX06-1041	643803.61	3757622.78	66	-1.02	Decreasing	-14.64	9	-0.42	Decreasing	-0.8	37	-1.35	Decreasing	-10.4	22	-1.40	Decreasing	-7.63
PTX06-1042	643812.20	3755779.88	69	-0.58	Decreasing	-8.76	9	-0.51	Decreasing	-0.9	35	-0.87	Decreasing	-6.76	21	-0.85	Decreasing	-4.46
PTX06-1045	642697.65	3752300.00	36	-0.10	No Trend	-1.21	0	0.00	(No Measurement)	-999	9	-0.43	Decreasing	-1.05	0	0.00	(No Measurement)	-999
PTX06-1046	643802.63	3752292.55	70	-0.13	Decreasing	-2.33	8	-0.44	Decreasing	-0.8	36	-0.43	Decreasing	-3.35	22	-0.51	Decreasing	-2.27
PTX06-1047A	643817.46	3752004.39	64	-0.12	Decreasing	-5.5	7	-1.94	Decreasing	-4.3	35	-0.46	Decreasing	-6.49	22	-0.43	Decreasing	-2.12
PTX06-1048A	642103.43	3766957.63	57	-0.23	Decreasing	-3.52	7	-0.04	No Trend	0	26	-0.23	Decreasing	-1.7	16	-0.24	Decreasing	-1.05
PTX06-1049	633343.53	3763376.96	57	0.26	Increasing	5.59	8	0.11	Increasing	0.4	34	-0.10	Decreasing	-0.29	21	-0.15	Decreasing	-0.34
PTX06-1050	636746.04	3766622.06	60	-0.60	Decreasing	-9.02	8	-0.11	Decreasing	-0.2	34	-0.79	Decreasing	-5.38	21	-0.92	Decreasing	-3.87
PTX06-1051	640325.13	3752259.66	4	1.43	Increasing	2.1	4	1.43	Increasing	2.1	4	1.43	Increasing	2.1	2	0.00	(<3 Measurement)	1.4
PTX06-1052	639100.91	3753957.66	69	-0.31	Decreasing	-4.55	8	-0.24	Decreasing	-0.5	35	-0.37	Decreasing	-3.31	21	-0.37	Decreasing	-2.23
PTX06-1053	636576.74	3753672.06	67	-0.05	No Trend	-0.52	8	-0.47	Decreasing	-1	34	-0.11	Decreasing	-1.17	20	-0.01	No Trend	-0.26
PTX06-1055	633521.90	3767254.87	0	0.00	(No Measurement)	-999	0	0.00	(No Measurement)	-999	0	0.00	(No Measurement)	-999	0	0.00	(No Measurement)	-999
PTX06-1069	646317.00	3762879.60	56	0.01	No Trend	0.68	6	0.01	No Trend	0.1	25	0.03	No Trend	0.35	15	0.05	No Trend	0.46
PTX06-1071	642605.58	3773227.97	39	-0.10	Decreasing	-0.69	5	-0.04	No Trend	-0.1	19	-0.04	No Trend	-0.4	10	0.09	No Trend	0.48
PTX06-1073A	634963.34	3758072.00	32	-0.26	Decreasing	-3.88	8	-0.33	Decreasing	-0.6	23	-0.24	Decreasing	-0.6	15	-1.45	Decreasing	-6.18
PTX06-1077A	637201.80	3760689.50	49	-0.24	Decreasing	-3.03	6	-0.19	Decreasing	-0.3	27	-0.45	Decreasing	-3.61	16	-0.49	Decreasing	-2.3
PTX06-1078	641970.98	3769605.98	0	0.00	(No Measurement)	-999	0	0.00	(No Measurement)	-999	0	0.00	(No Measurement)	-999	0	0.00	(No Measurement)	-999
PTX06-1079	639813.24	3770913.67	0	0.00	(No Measurement)	-999	0	0.00	(No Measurement)	-999	0	0.00	(No Measurement)	-999	0	0.00	(No Measurement)	-999
PTX06-1080	638901.00	3772643.95	48	-0.32	Decreasing	-4.49	5	-0.44	Decreasing	-0.7	19	-0.58	Decreasing	-4.49	11	-0.61	Decreasing	-2.55
PTX06-1081	641222.41	3770912.33	54	0.15	Increasing	3.23	6	1.04	Increasing	1.5	25	0.28	Increasing	2.14	15	0.35	Increasing	1.85
PTX06-1082	653856.27	3780321.59	42	-0.16	Decreasing	-1.84	6	0.31	Increasing	0.4	21	0.05	No Trend	0.85	12	0.30	Increasing	0.88
PTX06-1083	658643.46	3779777.76	42	-0.35	Decreasing	-4.29	6	0.15	Increasing	0.2	21	-0.28	Decreasing	-1.95	12	-0.27	Decreasing	-0.89
PTX06-1084	659419.37	3782470.36	23	0.36	Increasing	8.27	4	7.26	Increasing	10.6	12	1.09	Increasing	12.82	9	-0.55	Decreasing	0.9
PTX06-1085	629059.82	3760418.31	44	0.53	Increasing	7.95	7	-0.50	Decreasing	-0.3	27	0.63	Increasing	5.55	15	0.79	Increasing	3.06
PTX06-1086	631411.81	3759843.32	48	0.45	Increasing	8.27	7	-0.08	No Trend	0	27	0.45	Increasing	4.02	15	0.49	Increasing	2
PTX06-1087	630732.20	3762042.29	34	0.62	Increasing	10.38	4	0.34	Increasing	0.8	17	0.83	Increasing	8.28	10	1.13	Increasing	4.09
PTX06-1088	639902.10	3757059.42	59	-0.74	Decreasing	-8.29	9	0.24	Increasing	0.4	35	-1.02	Decreasing	-5.64	20	-1.16	Decreasing	-5.95
PTX06-1089	646637.32	3760258.95	13	-0.01	No Trend	-0.1	4	0.00	No Trend	0	13	-0.01	No Trend	-0.1	8	-0.02	No Trend	-0.1
PTX06-1090	647727.51	3757684.39	0	0.00	(No Measurement)	-999	0	0.00	(No Measurement)	-999	0	0.00	(No Measurement)	-999	0	0.00	(No Measurement)	-999

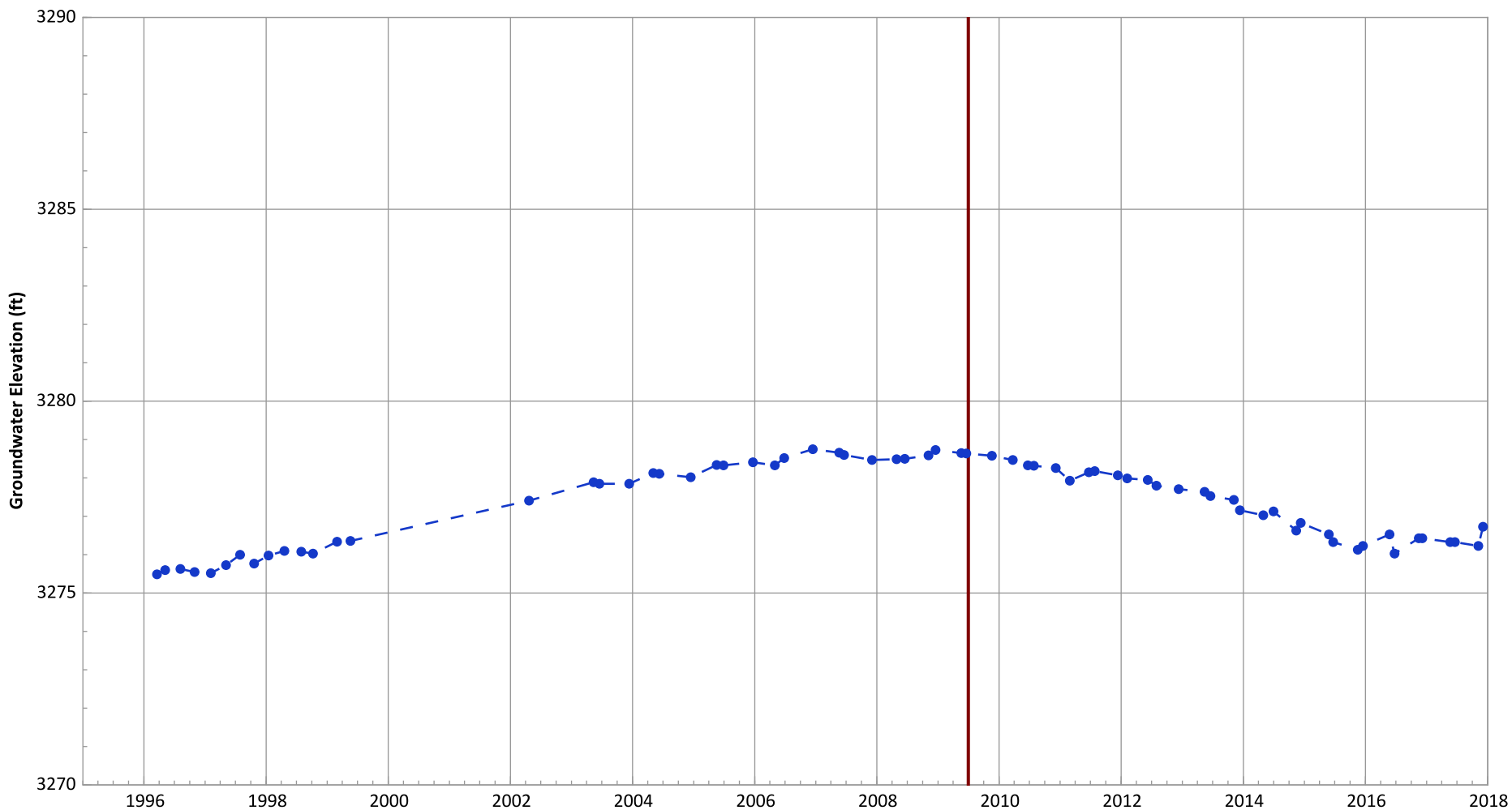
Perched Water Level Summary Trends

Well	Easting	Northing	Num_AD	Slope_AD	Trend_AD	Change_AD	Num_L2Y	Slope_L2Y	Trend_L2Y	Change_L2Y	Num_SSRA	Slope_SSRA	Trend_SSRA	Change_SSRA	Num_5YRP	Slope_5YRP	Trend_5YRP	Change_5YRP
PTX06-1091	646554.01	3756363.40	0	0.00	(No Measurement)	-999	0	0.00	(No Measurement)	-999	0	0.00	(No Measurement)	-999	0	0.00	(No Measurement)	-999
PTX06-1093	645529.01	3755922.32	0	0.00	(No Measurement)	-999	0	0.00	(No Measurement)	-999	0	0.00	(No Measurement)	-999	0	0.00	(No Measurement)	-999
PTX06-1094	643813.77	3751494.55	0	0.00	(No Measurement)	-999	0	0.00	(No Measurement)	-999	0	0.00	(No Measurement)	-999	0	0.00	(No Measurement)	-999
PTX06-1095A	640634.87	3755598.65	46	-0.91	Decreasing	-8.2	9	0.00	No Trend	-0.1	35	-1.00	Decreasing	-6.2	21	-1.21	Decreasing	-6.59
PTX06-1096A	630823.57	3766548.35	0	0.00	(No Measurement)	-999	0	0.00	(No Measurement)	-999	0	0.00	(No Measurement)	-999	0	0.00	(No Measurement)	-999
PTX06-1097	633104.35	3765068.63	0	0.00	(No Measurement)	-999	0	0.00	(No Measurement)	-999	0	0.00	(No Measurement)	-999	0	0.00	(No Measurement)	-999
PTX06-1098	640266.14	3753628.43	34	-0.31	Decreasing	-3.65	8	-0.38	Decreasing	-0.4	33	-0.29	Decreasing	-1.55	20	-0.32	Decreasing	-1.62
PTX06-1100	640285.97	3753579.52	30	-0.35	Decreasing	-3.96	6	-0.32	Decreasing	-0.41	26	-0.34	Decreasing	-2.02	15	-0.43	Decreasing	-2.03
PTX06-1101	640383.57	3753437.09	27	-0.34	Decreasing	-3.53	6	-0.29	Decreasing	-0.4	26	-0.33	Decreasing	-1.82	15	-0.38	Decreasing	-1.76
PTX06-1102	642751.09	3754532.94	45	-0.73	Decreasing	-9.74	4	-0.18	Decreasing	-0.2	25	-1.30	Decreasing	-8.19	15	-1.21	Decreasing	-7.5
PTX06-1103	641222.64	3752963.37	9	-7.90	Decreasing	-22.6	0	0.00	(No Measurement)	-999	3	-27.43	Decreasing	-10.19	0	0.00	(No Measurement)	-999
PTX06-1104	641796.58	3753542.79	20	-0.40	Decreasing	-3.07	0	0.00	(No Measurement)	-999	16	-0.45	Decreasing	-2.82	8	-0.70	Decreasing	-2.48
PTX06-1105	641933.58	3753629.39	23	-0.43	Decreasing	-3.7	3	-0.46	Decreasing	-0.63	19	-0.47	Decreasing	-3.4	10	-0.62	Decreasing	-2.8
PTX06-1106	641867.59	3753464.82	25	-0.46	Decreasing	-4.72	4	-0.75	Decreasing	-1.05	20	-0.51	Decreasing	-4.13	10	-0.68	Decreasing	-3
PTX06-1107	641988.18	3753551.01	22	-0.42	Decreasing	-3.44	2	-0.70	Decreasing	-0.31	18	-0.46	Decreasing	-3.12	10	-0.66	Decreasing	-2.95
PTX06-1117	638183.43	3763280.80	19	-1.61	Decreasing	-9.25	1	0.00	(<3 Measurement)	0	14	-1.55	Decreasing	-5.34	9	-0.93	Decreasing	-2.2
PTX06-1118	641644.92	3752736.07	32	-0.64	Decreasing	-4.95	0	0.00	(No Measurement)	-999	24	-0.32	Decreasing	-2.22	14	-0.13	Decreasing	0.21
PTX06-1119	642646.10	3752739.01	0	0.00	(No Measurement)	-999	0	0.00	(No Measurement)	-999	0	0.00	(No Measurement)	-999	0	0.00	(No Measurement)	-999
PTX06-1120	643152.43	3752735.03	33	-0.36	Decreasing	-2.88	6	-0.40	Decreasing	-0.5	30	-0.39	Decreasing	-2.62	20	-0.47	Decreasing	-1.87
PTX06-1121	643645.57	3752750.09	32	-0.32	Decreasing	-2.45	4	-0.24	Decreasing	-0.2	29	-0.35	Decreasing	-2.21	21	-0.38	Decreasing	-1.64
PTX06-1122	640677.35	3752308.74	0	0.00	(No Measurement)	-999	0	0.00	(No Measurement)	-999	0	0.00	(No Measurement)	-999	0	0.00	(No Measurement)	-999
PTX06-1123	642051.96	3752319.94	58	-0.24	Decreasing	-3.47	11	-0.15	Decreasing	-0.24	50	-0.30	Decreasing	-1.96	32	-0.46	Decreasing	-1.41
PTX06-1125	643377.53	3752331.14	0	0.00	(No Measurement)	-999	0	0.00	(No Measurement)	-999	0	0.00	(No Measurement)	-999	0	0.00	(No Measurement)	-999
PTX06-1126	635034.72	3755562.85	46	0.06	No Trend	0.49	8	-0.03	No Trend	-0.1	36	0.07	No Trend	0.27	22	0.16	Increasing	0.76
PTX06-1127	635901.90	3755432.03	44	-0.07	No Trend	-0.68	8	-0.22	Decreasing	-0.3	34	-0.07	No Trend	-0.81	20	0.00	No Trend	0.15
PTX06-1128	641330.75	3763667.42	22	-1.03	Decreasing	-8.51	4	0.06	No Trend	0.1	17	-0.80	Decreasing	-5.83	10	-0.60	Decreasing	-2.87
PTX06-1129	641514.86	3762986.22	22	-1.00	Decreasing	-9.36	4	0.39	Increasing	0.3	17	-0.53	Decreasing	-4.9	10	-0.43	Decreasing	-1.63
PTX06-1130	644270.36	3759745.02	26	-1.74	Decreasing	-18.86	0	0.00	(No Measurement)	-999	24	-1.82	Decreasing	-17.79	15	-2.50	Decreasing	-14.9
PTX06-1131	629371.68	3754232.91	33	0.32	Increasing	2.33	6	-0.08	No Trend	-0.3	31	0.32	Increasing	2.16	17	0.33	Increasing	1.49
PTX06-1133A	645287.37	3751315.73	26	-0.06	No Trend	-0.56	8	0.27	Increasing	0.4	26	-0.06	No Trend	-0.56	20	-0.23	Decreasing	-0.55
PTX06-1134	633520.06	3754409.17	36	0.17	Increasing	1.06	9	0.26	Increasing	0.2	35	0.17	Increasing	1.26	20	0.08	No Trend	0.58
PTX06-1135	638343.76	3753631.93	36	-0.28	Decreasing	-2.86	8	-0.18	Decreasing	-0.5	34	-0.27	Decreasing	-2.42	20	-0.28	Decreasing	-1.34
PTX06-1136	634860.83	3766771.76	29	-2.80	Decreasing	-16.82	3	-0.33	Decreasing	-0.1	27	-2.99	Decreasing	-16.74	18	-3.74	Decreasing	-15.72
PTX06-1146	645978.91	3757691.87	37	-0.78	Decreasing	-6.35	9	-0.42	Decreasing	-0.4	35	-0.80	Decreasing	-6.28	20	-0.84	Decreasing	-3.42
PTX06-1147	645431.85	3753953.21	37	-0.39	Decreasing	-3.4	9	-0.57	Decreasing	-0.9	35	-0.39	Decreasing	-3.36	20	-0.47	Decreasing	-2.33
PTX06-1148	636467.02	3754719.67	43	-0.16	Decreasing	-1.56	12	-0.17	Decreasing	-0.09	42	-0.15	Decreasing	-1.21	26	-0.10	Decreasing	-0.34
PTX06-1149	635864.13	3754717.64	42	-0.06	No Trend	-0.81	12	-0.11	Decreasing	0.02	41	-0.05	No Trend	-0.47	25	0.02	No Trend	0.31
PTX06-1150	635233.98	3754718.24	43	0.02	No Trend	-0.12	12	-0.02	No Trend	0.12	42	0.03	No Trend	0.21	26	0.05	No Trend	0.52
PTX06-1151	633935.95	3756123.62	40	0.18	Increasing	1.52	9	0.33	Increasing	1	37	0.18	Increasing	1.51	22	0.17	Increasing	1.01
PTX06-1153	641184.13	3752089.44	51	-0.25	Decreasing	-1.97	13	-0.16	Decreasing	-0.47	51	-0.25	Decreasing	-1.97	30	-0.34	Decreasing	-1.09
PTX06-1154	641870.52	3752278.90	51	-0.28	Decreasing	-1.9	12	-0.11	Decreasing	-0.36	51	-0.28	Decreasing	-1.9	31	-0.40	Decreasing	-1.19
PTX06-1155	634603.74	3755215.62	50	0.09	No Trend	0.95	12	0.00	No Trend	0.24	50	0.09	No Trend	0.95	30	0.10	Increasing	0.62
PTX06-1156	636378.92	3755076.47	50	-0.16	Decreasing	-0.96	12	-0.13	Decreasing	-0.02	50	-0.16	Decreasing	-0.96	30	-0.15	Decreasing	-0.68
PTX06-1158	648137.99	3752025.93	0	0.00	(No Measurement)	-999	0	0.00	(No Measurement)	-999	0	0.00	(No Measurement)	-999	0	0.00	(No Measurement)	-999
PTX06-1159	634015.04	3754843.47	21	0.11	Increasing	0.47	8	0.34	Increasing	0.5	21	0.11	Increasing	0.47	17	0.07	No Trend	0.67
PTX06-1160	632835.73	3756274.13	21	0.20	Increasing	0.88	8	0.49	Increasing	0.9	21	0.20	Increasing	0.88	17	0.14	Increasing	1.08
PTX06-1162	635229.63	3756305.08	0	0.00	(No Measurement)	-999	0	0.00	(No Measurement)	-999	0	0.00	(No Measurement)	-999	0	0.00	(No Measurement)	-999
PTX06-1166	639750.34	3752799.74	21	-0.29	Decreasing	-1.91	8	-0.27	Decreasing	-0.6	21	-0.29	Decreasing	-1.91	17	-0.31	Decreasing	-1.61
PTX06-1167	640913.72	3752653.00	2	0.00	(<3 Measurement)	-0.1	0	0.00	(No Measurement)	-999	2	0.00	(<3 Measurement)	-0.1	2	0.00	(<3 Measurement)	-0.1
PTX06-1171	634373.95	3755715.08	8	0.14	Increasing	0.4	7	-0.05	No Trend	-0.1	8	0.14	Increasing	0.4	5	0.66	Increasing	1.3
PTX06-1172	634098.63	3755837.77	0	0.00	(No Measurement)	-999	0	0.00	(No Measurement)	-999	0	0.00	(No Measurement)	-999	0	0.00	(No Measurement)	-999
PTX06-1173	634197.62	3755312.40	7	-0.03	No Trend	0.08	7	0.08	No Trend	0.08	7	-0.03	No Trend	0.08	1	0.00	(<3 Measurement)	0
PTX06-1174	633904.63	3755489.15	7	0.06	No Trend	0.21	7	0.06	No Trend	0.21	7	0.06	No Trend	0.21	1	0.00	(<3 Measurement)	0
PTX06-1175	633416.97	3755651.06	7	0.17	Increasing	0.3	7	0.17	Increasing	0.3	7	0.17	Increasing	0.3	1	0.00	(<3 Measurement)	0
PTX06-1180	633474.07	3756487.93	3	0.34	Increasing	0.6	2	0.00	(<3 Measurement)	0.3	3	0.34	Increasing	0.6	1	0.00	(<3 Measurement)	0
PTX06-1181	633357.69	3756752.68	2	0.00	(<3 Measurement)	0.2	2	0.00	(<3 Measurement)	0.2	2	0.00	(<3 Measurement)	0.2	1	0.00	(<3 Measurement)	0
PTX06-1182	647140.17	3751088.49	7	-0.25	Decreasing	-0.2	7	-0.25	Decreasing	-0.2	7	-0.25	Decreasing	-0.2	2	0.00	(<3 Measurement)	0
PTX06-1183	639765.77	3753350.43	5	-0.57	Decreasing	-0.8	5	-0.57	Decreasing	-0.8	5	-0.57	Decreasing	-0.8	1	0.00	(<3 Measurement)	0
PTX06-1184	646625.06	3750638.25	0	0.00	(No Measurement)	-999	0	0.00	(No Measurement)	-999	0	0.00	(No Measurement)	-999	0	0.00	(No Measurement)	-999
PTX06-1185	647878.41	3751139.83	0	0.00	(No Measurement)	-999	0	0.00	(No Measurement)	-999	0	0.00	(No Measurement)	-999	0	0.00	(No Measurement)	-999
PTX06-1186	647400.94	3750677.17	0	0.00	(No Measurement)	-999	0	0.00	(No Measurement)	-999	0	0.00	(No Measurement)	-999	0	0.00	(No Measurement)	-999
PTX07-1001	638532.53	3767695.22	62	-0.32	Decreasing	-6.06	6	0.15	Increasing	0.2	30	-0.70	Decreasing	-4.68	17	-0.92	Decreasing	-3.45
PTX07-1002	639106.56	3768117.46	64	-0.31	Decreasing	-8.69	8	-2.75	Decreasing	-3.5	35	-0.96	Decreasing	-8.06	21	-1.13	Decreasing	-4.62
PTX07-1003	639046.64	3767462.56	56	-0.33	Decreasing	-5.89	6	-0.25	Decreasing	-0.3	26	-0.59	Decreasing	-4.08	15	-0.65	Decreasing	-2.33
PTX07-1004	638749.15	3767983.84	38	-0.39	Decreasing	-6.92	4	-0.12	Decreasing	-0.2	17	-0.62	Decreasing	-4.38	10	-0.78	Decreasing	-3.18

Perched Water Level Summary Trends

Well	Easting	Northing	Num_AD	Slope_AD	Trend_AD	Change_AD	Num_L2Y	Slope_L2Y	Trend_L2Y	Change_L2Y	Num_SSRA	Slope_SSRA	Trend_SSRA	Change_SSRA	Num_5YRP	Slope_5YRP	Trend_5YRP	Change_5YRP
PTX07-1O05	638880.17	3768126.29	35	-0.36	Decreasing	-5.65	4	-0.16	Decreasing	-0.3	17	-0.29	Decreasing	-2.6	11	-0.22	Decreasing	-1.47
PTX07-1O06	638814.40	3768536.81	44	-0.45	Decreasing	-7.4	0	0.00	(No Measurement)	-999	20	-0.24	Decreasing	-0.75	12	-0.48	Decreasing	-1.82
PTX07-1P01	637221.95	3762763.60	39	-0.26	Decreasing	-4.49	4	-0.04	No Trend	-0.1	17	-0.15	Decreasing	-1.5	10	-0.08	No Trend	-0.4
PTX07-1P02	637817.70	3763019.08	62	-0.76	Decreasing	-12.45	10	-0.57	Decreasing	-0.5	36	-0.92	Decreasing	-6.29	20	-0.84	Decreasing	-3.3
PTX07-1P03	636938.46	3762755.25	39	-0.36	Decreasing	-6.45	4	-0.22	Decreasing	-0.4	16	-0.42	Decreasing	-3.39	10	-0.46	Decreasing	-2.15
PTX07-1P04	637236.90	3763011.47	9	-0.61	Decreasing	-3.17	0	0.00	(No Measurement)	-999	0	0.00	(No Measurement)	-999	0	0.00	(No Measurement)	-999
PTX07-1P05	637136.13	3762886.83	42	-0.50	Decreasing	-8.22	6	0.05	No Trend	0.1	25	-0.49	Decreasing	-3.77	14	-0.40	Decreasing	-2.01
PTX07-1P06	637197.39	3762509.81	40	-0.54	Decreasing	-9	4	-0.15	Decreasing	-0.1	17	-0.44	Decreasing	-3.59	10	-0.44	Decreasing	-1.65
PTX07-1Q01	629274.83	3755836.12	50	0.32	Increasing	6.89	6	0.75	Increasing	0.4	27	0.27	Increasing	2.3	15	0.14	Increasing	1.02
PTX07-1Q02	628876.97	3756408.66	55	0.33	Increasing	7.51	6	0.93	Increasing	1.5	28	0.31	Increasing	2.53	15	0.18	Increasing	1.89
PTX07-1Q03	630542.61	3757408.87	53	0.35	Increasing	7.01	7	0.93	Increasing	2	28	0.31	Increasing	2.63	15	0.20	Increasing	1.94
PTX07-1R03	627664.39	3764501.80	41	-0.04	No Trend	-0.06	5	-0.59	Decreasing	-0.8	20	0.17	Increasing	0.66	11	0.50	Increasing	2
PTX08-1001	638941.45	3762976.26	87	-1.02	Decreasing	-16.93	7	-1.32	Decreasing	-1	27	-1.19	Decreasing	-6.72	15	-0.61	Decreasing	-3.67
PTX08-1002	640859.00	3763003.22	103	-1.17	Decreasing	-19.08	9	-0.14	Decreasing	0.2	34	-1.12	Decreasing	-5.97	20	-1.01	Decreasing	-4.32
PTX08-1003	635385.36	3760136.56	58	0.12	Increasing	2.8	6	-0.12	Decreasing	-0.4	27	-0.29	Decreasing	-2.15	16	-0.34	Decreasing	-1.04
PTX08-1005	635316.66	3756346.19	66	0.14	Increasing	3.29	8	-0.30	Decreasing	-0.6	35	0.16	Increasing	0.58	21	0.38	Increasing	1.59
PTX08-1006	636400.41	3756761.86	69	0.02	No Trend	0.71	8	0.18	Increasing	0.5	34	-0.25	Decreasing	-1.84	20	-0.27	Decreasing	-1.59
PTX08-1007	638900.04	3758440.46	52	-0.08	No Trend	-1.95	6	-0.59	Decreasing	-0.9	26	-0.39	Decreasing	-2.85	15	-0.59	Decreasing	-2.76
PTX08-1008	637485.10	3755695.51	74	-0.08	No Trend	-1.64	9	-0.23	Decreasing	-0.5	36	-0.35	Decreasing	-2.79	21	-0.38	Decreasing	-1.52
PTX08-1009	638866.95	3755275.01	67	-0.25	Decreasing	-3.24	8	-0.41	Decreasing	-1.1	34	-0.54	Decreasing	-4.13	20	-0.54	Decreasing	-2.94
PTX08-1010	641401.47	3773206.74	55	-0.07	No Trend	-0.3	5	0.26	Increasing	0.1	19	0.03	No Trend	0.1	11	0.24	Increasing	0.83
PTX10-1008	633458.45	3760876.41	45	0.34	Increasing	6.88	4	-0.30	Decreasing	-0.6	17	0.11	Increasing	0.81	10	0.03	No Trend	0.38
PTX10-1014	639701.73	3759769.72	49	-0.55	Decreasing	-9.28	6	0.53	Increasing	0.7	26	-0.95	Decreasing	-6.36	16	-1.07	Decreasing	-4.58

1114-MW4 Hydrograph in Perched Aquifer USDOE/NNSA Pantex Plant

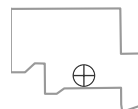


Notes:

1. Top of screen elevation is 3280.32 ft msl.
 2. The bottom of screen elevation is 3260.32 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

—●— Groundwater Elevation
 — Start of Remedial Action

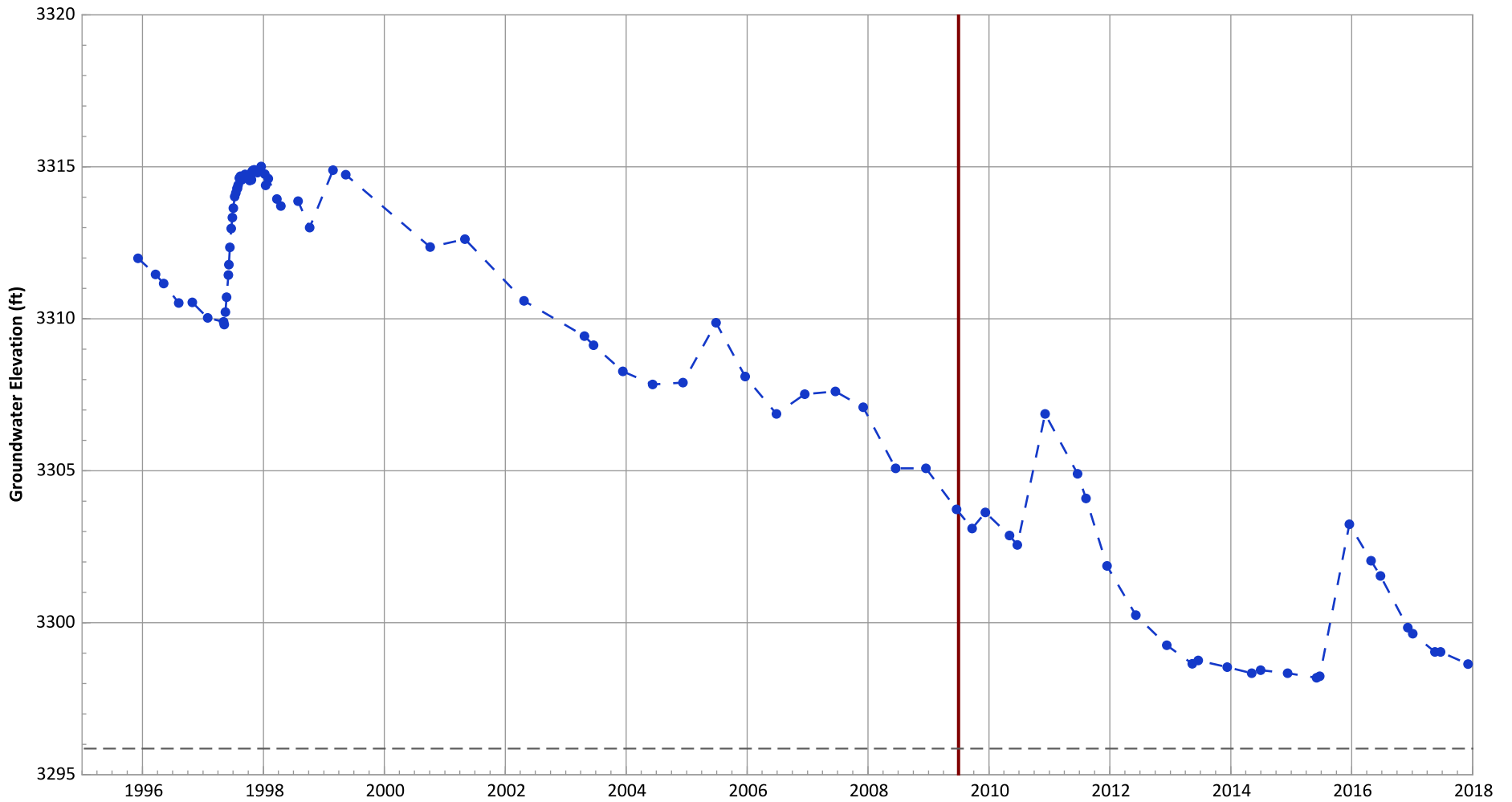
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: No Trend
 Data (1/2012 - 1/2016): Decreasing at 0.4 ft/yr

**OW-WR-38 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

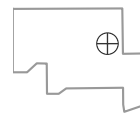


Notes:

1. Top of screen elevation is 3310.86 ft msl.
 2. The bottom of screen elevation is 3295.86 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- Start of Remedial Action

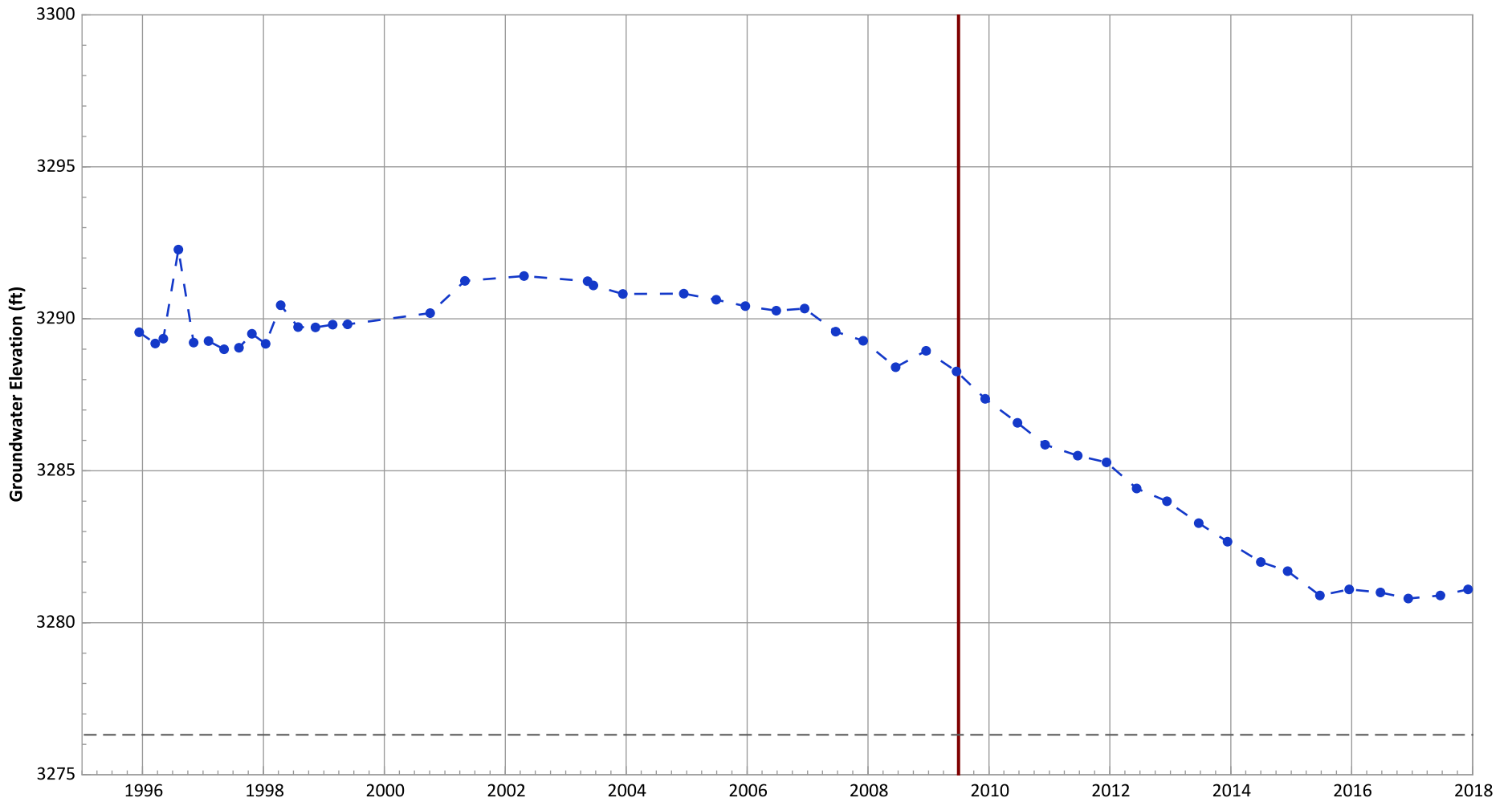
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: Decreasing at 0.76 ft/yr
 Data (1/2012 - 1/2016): Increasing at 0.51 ft/yr

**OW-WR-45 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

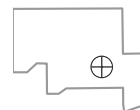


Notes:

1. Top of screen elevation is 3296.31 ft msl.
 2. The bottom of screen elevation is 3276.31 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements. Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- Start of Remedial Action

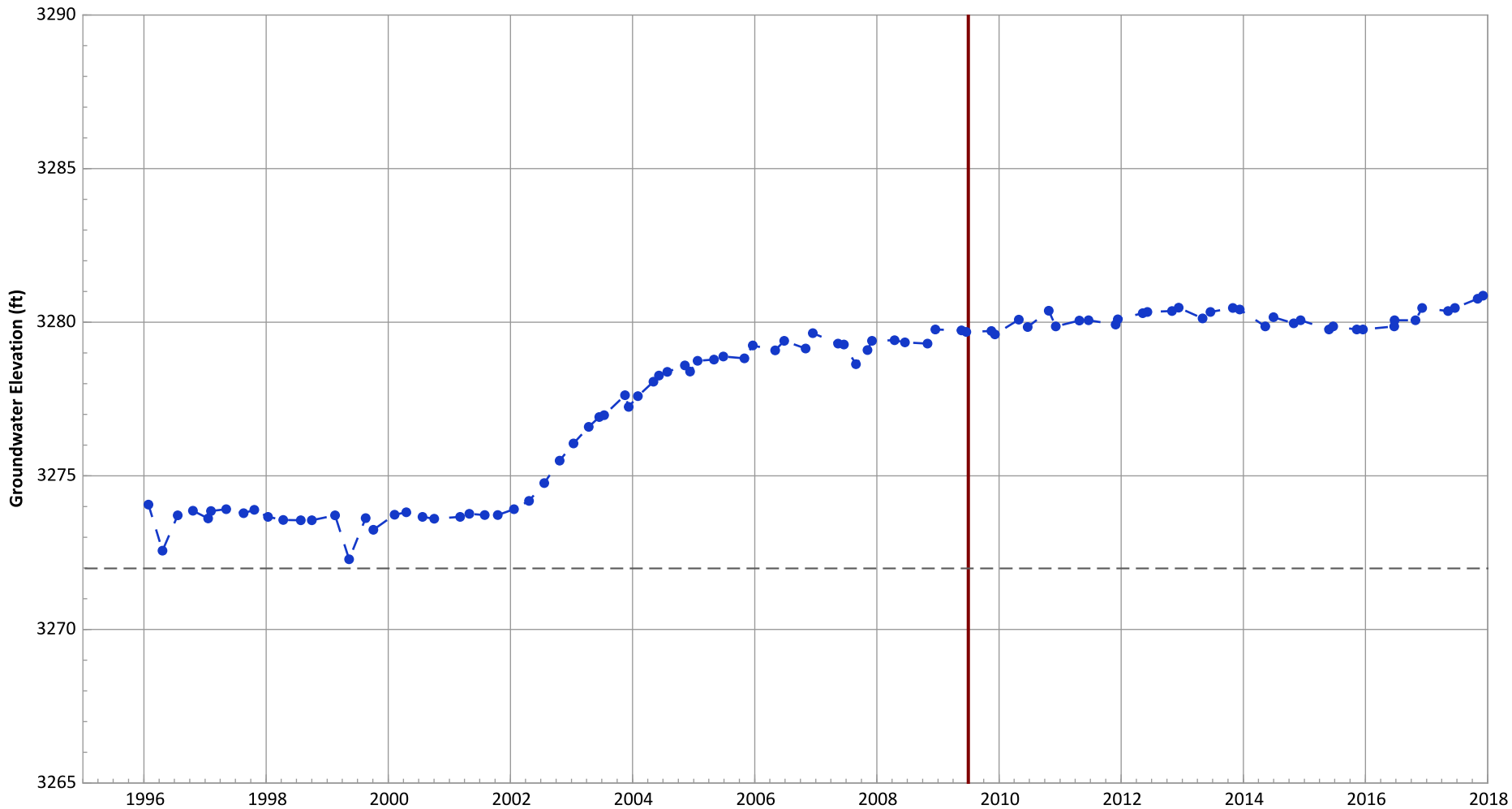
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: Decreasing at 0.42 ft/yr
 Data (1/2012 - 1/2016): Decreasing at 0.85 ft/yr

**PTX01-1001 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

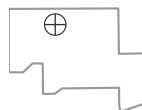


Notes:

1. Top of screen elevation is 3286.99 ft msl.
 2. The bottom of screen elevation is 3271.99 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- Start of Remedial Action

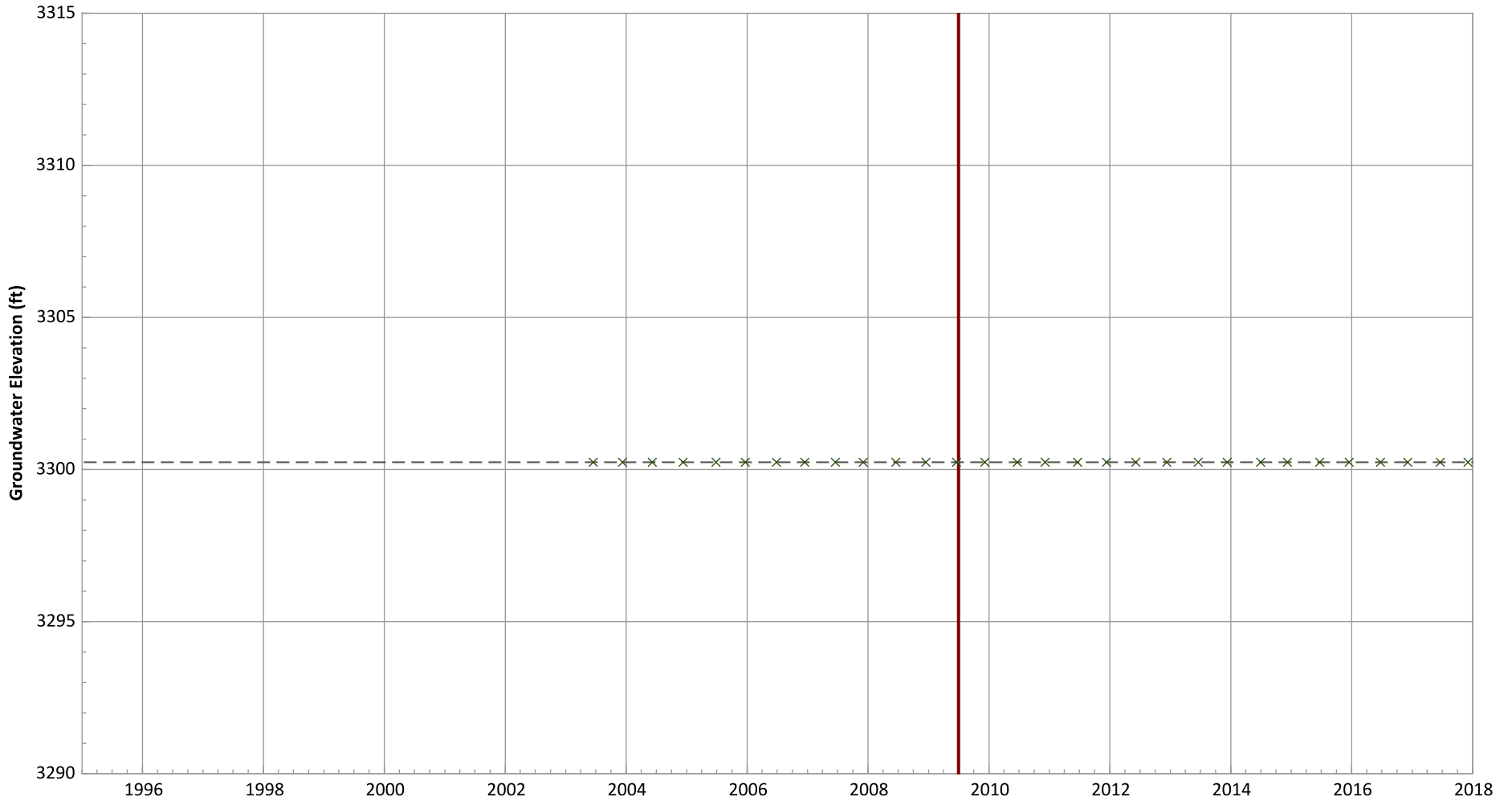
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
All Data: Increasing at 0.4 ft/yr
Data (1/2012 - 1/2016): No Trend

**PTX01-1004 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**



Notes:
 1. Top of screen elevation is 3320.24 ft msl.
 2. The bottom of screen elevation is 3300.24 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements. Actual groundwater elevations between measurements may be different than shown.
 Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- × No Water Detected
- Start of Remedial Action



Hydrograph Trend
 (MAROS Linear Regression Method)
 All Data: N/A (No Measurements)
 Data (1/2012 - 1/2016): N/A (No Measurements)

**PTX01-1006 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

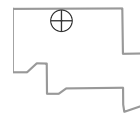


Notes:

1. Top of screen elevation is 3313.76 ft msl.
 2. The bottom of screen elevation is 3283.76 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- × No Water Detected
- Start of Remedial Action

Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
All Data: N/A (No Measurements)
Data (1/2012 - 1/2016): N/A (No Measurements)

**PTX01-1007 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

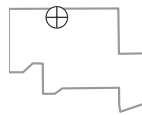


Notes:

1. Top of screen elevation is 3334.34 ft msl.
 2. The bottom of screen elevation is 3314.34 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- × No Water Detected
- Start of Remedial Action

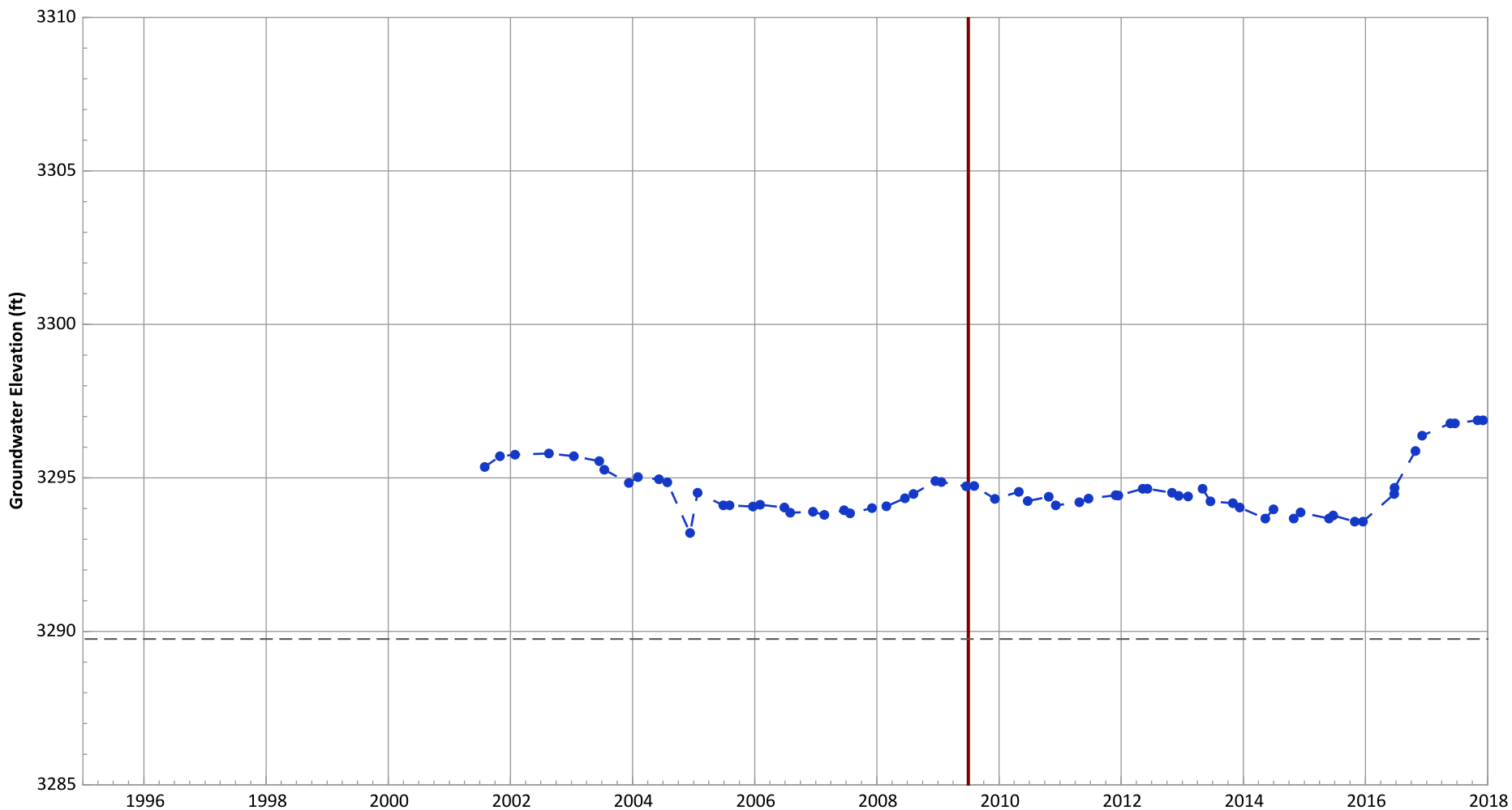
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
All Data: N/A (<3 Measurements)
Data (1/2012 - 1/2016): N/A (<3 Measurements)

**PTX01-1008 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

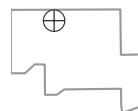


Notes:

1. Top of screen elevation is 3309.75 ft msl.
 2. The bottom of screen elevation is 3289.75 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- Start of Remedial Action

Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
All Data: No Trend
Data (1/2012 - 1/2016): No Trend

**PTX01-1009 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

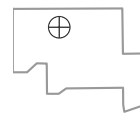


Notes:

1. Top of screen elevation is 3300.68 ft msl.
 2. The bottom of screen elevation is 3280.68 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements. Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- × No Water Detected
- Start of Remedial Action

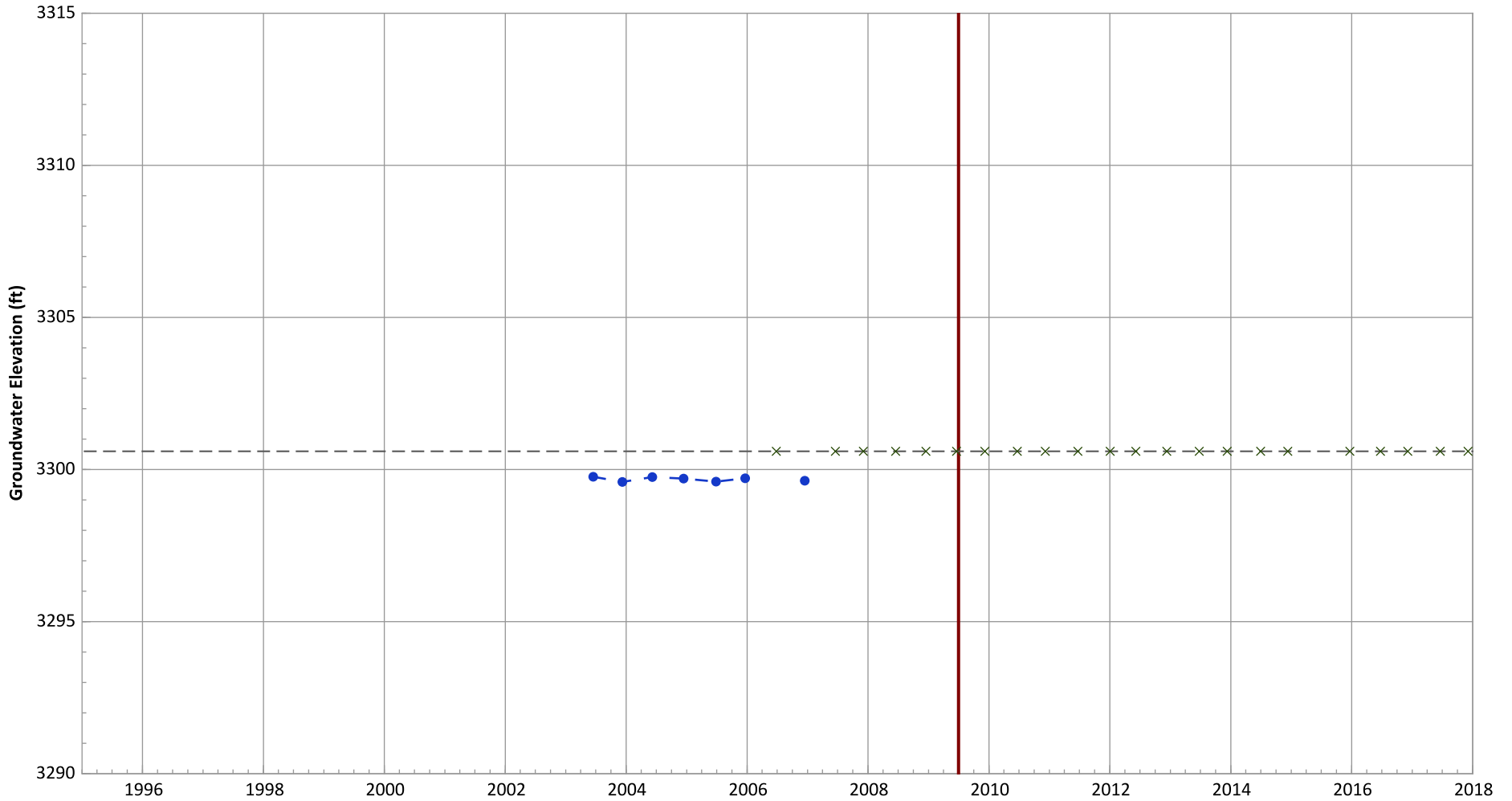
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: N/A (No Measurements)
 Data (1/2012 - 1/2016): N/A (No Measurements)

**PTX01-1014A Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

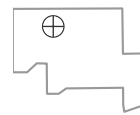


Notes:

1. Top of screen elevation is 3325.6 ft msl.
 2. The bottom of screen elevation is 3300.6 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements. Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- × No Water Detected
- Start of Remedial Action

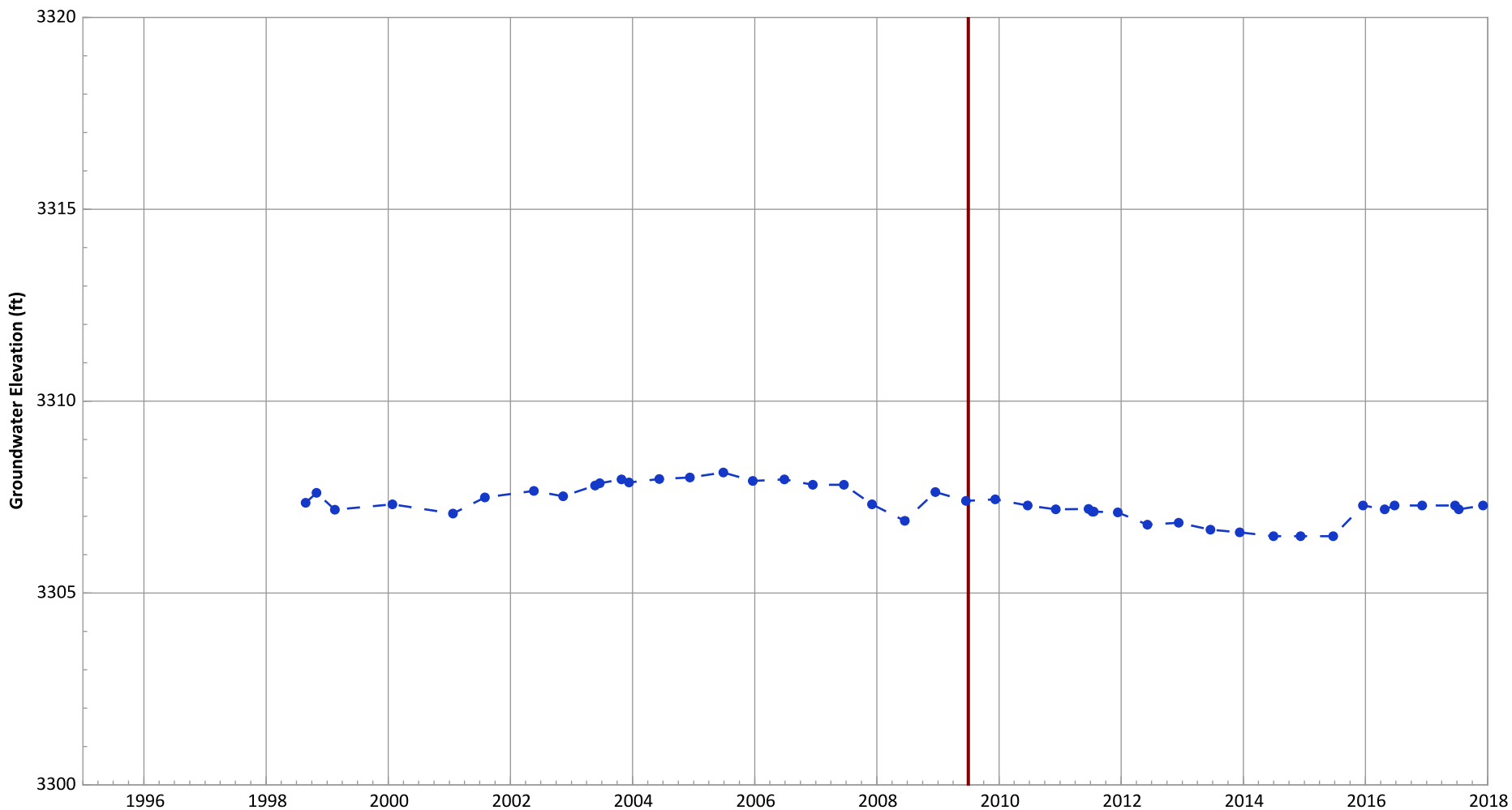
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: No Trend
 Data (1/2012 - 1/2016): N/A (No Measurements)

**PTX04-1001 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**



Notes:

1. Top of screen elevation is 3307.77 ft msl.
 2. The bottom of screen elevation is 3289.07 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

—●— Groundwater Elevation
 — Start of Remedial Action

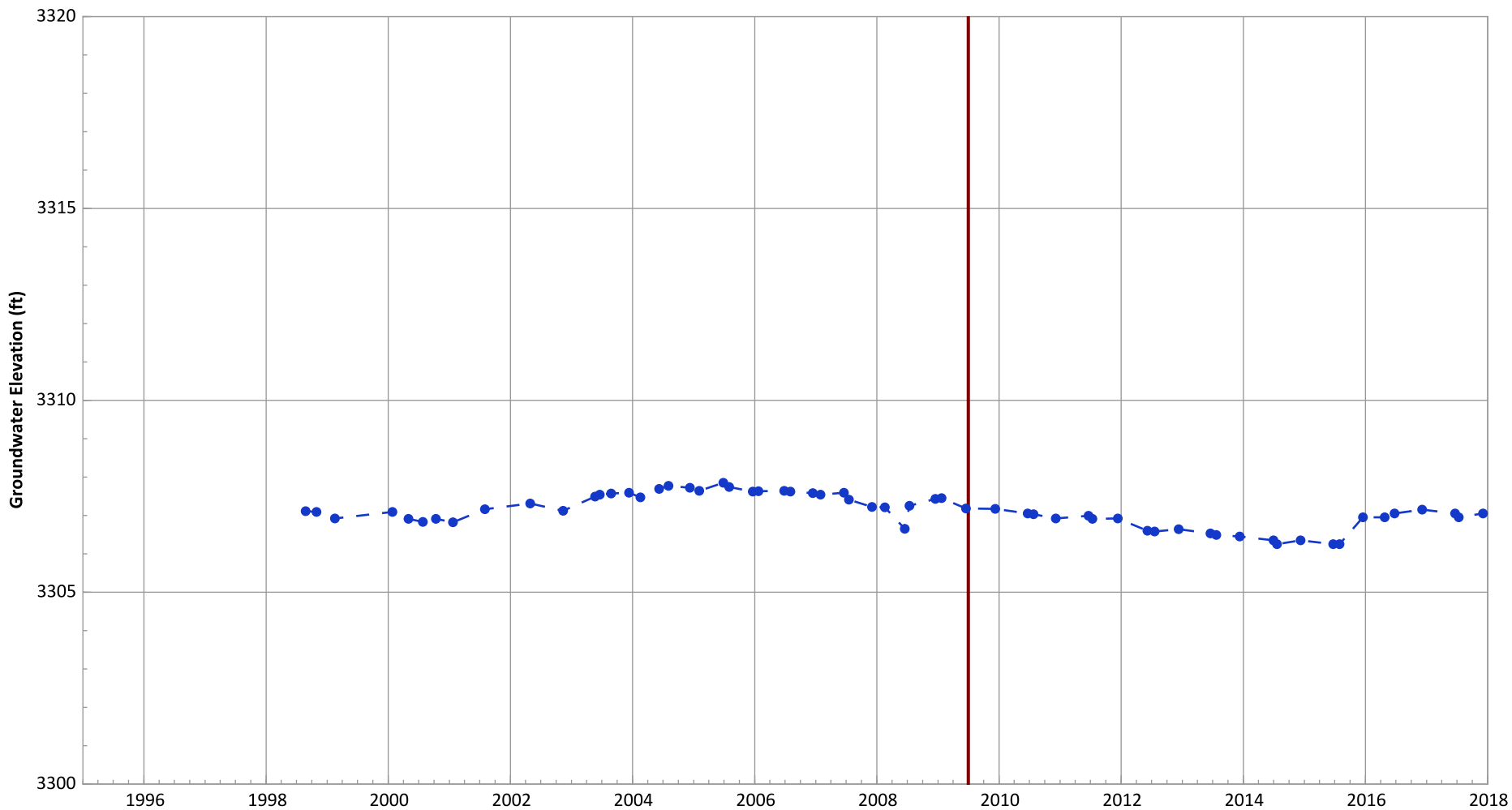
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: No Trend
 Data (1/2012 - 1/2016): Increasing at 0.14 ft/yr

**PTX04-1002 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

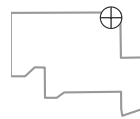


Notes:

1. Top of screen elevation is 3312.63 ft msl.
 2. The bottom of screen elevation is 3288.83 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements. Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

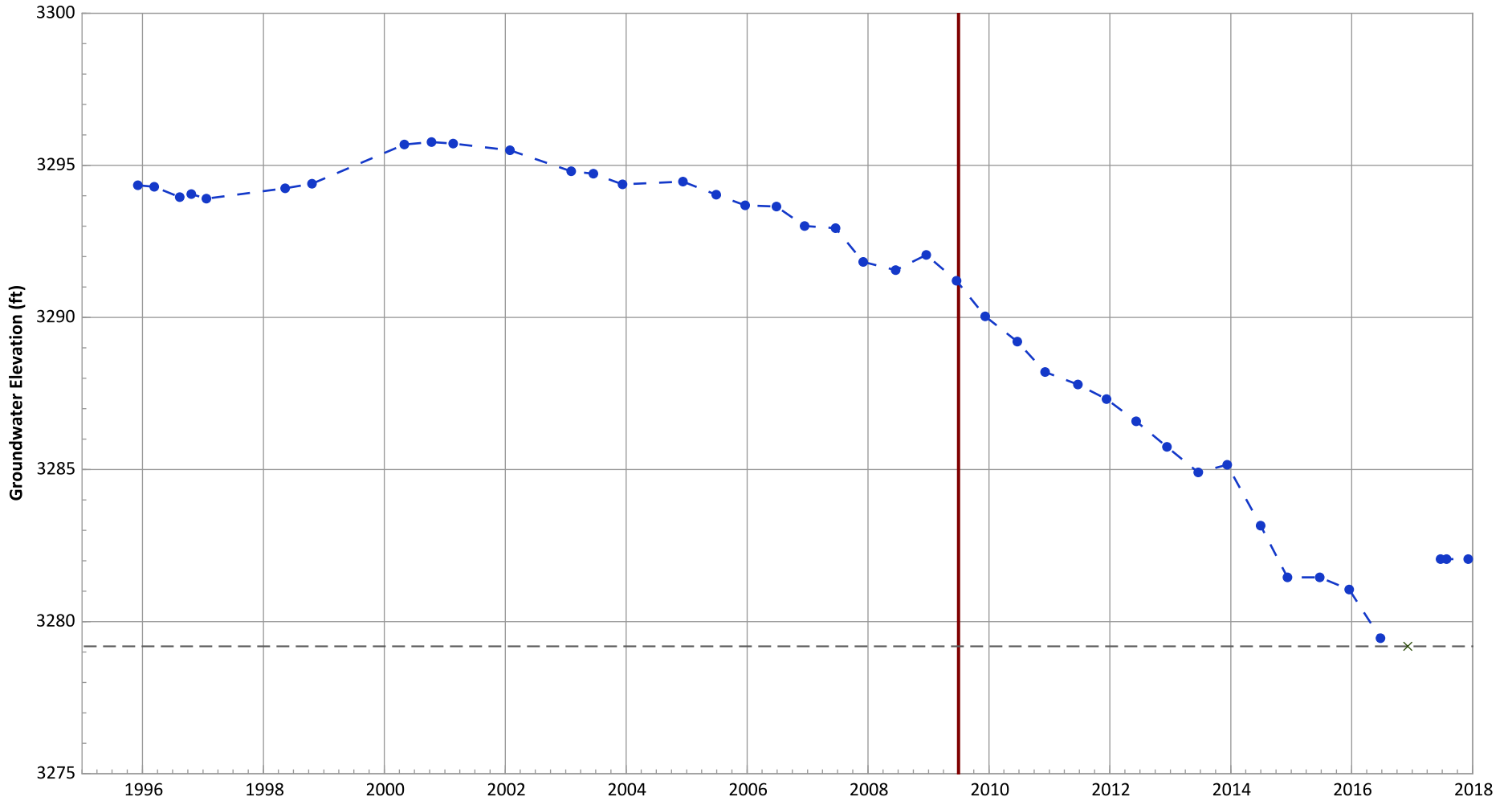
—●— Groundwater Elevation
 — Start of Remedial Action

Well Location



Hydrograph Trend
 (MAROS Linear Regression Method)
 All Data: No Trend
 Data (1/2012 - 1/2016): No Trend

**PTX06-1001A Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

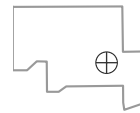


Notes:

1. Top of screen elevation is 3304.19 ft msl.
 2. The bottom of screen elevation is 3279.19 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements. Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- × No Water Detected
- Start of Remedial Action

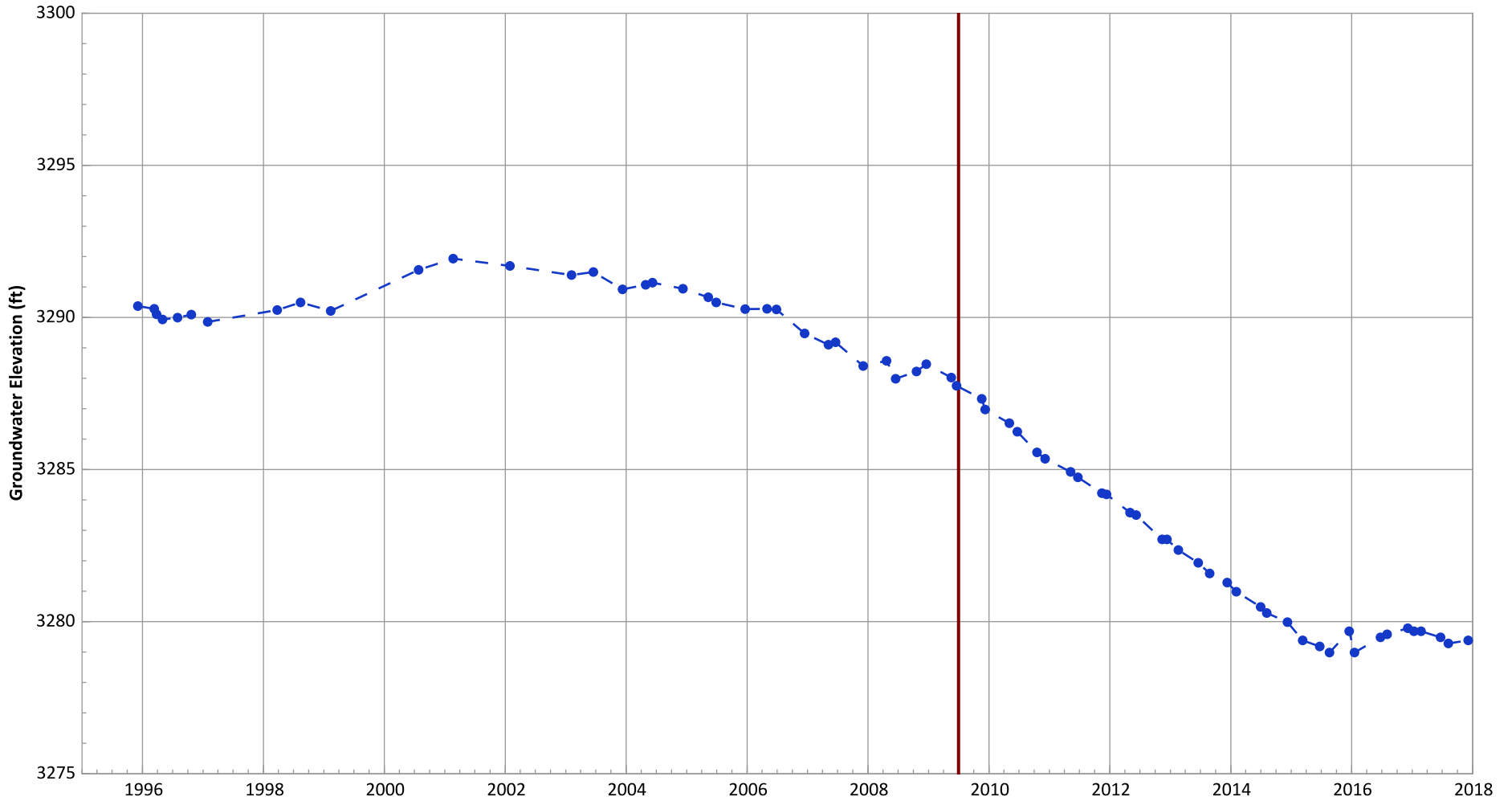
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: Decreasing at 0.69 ft/yr
 Data (1/2012 - 1/2016): Decreasing at 1.76 ft/yr

**PTX06-1002A Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

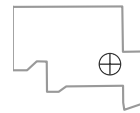


Notes:

1. Top of screen elevation is 3300.17 ft msl.
 2. The bottom of screen elevation is 3270.67 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- Start of Remedial Action

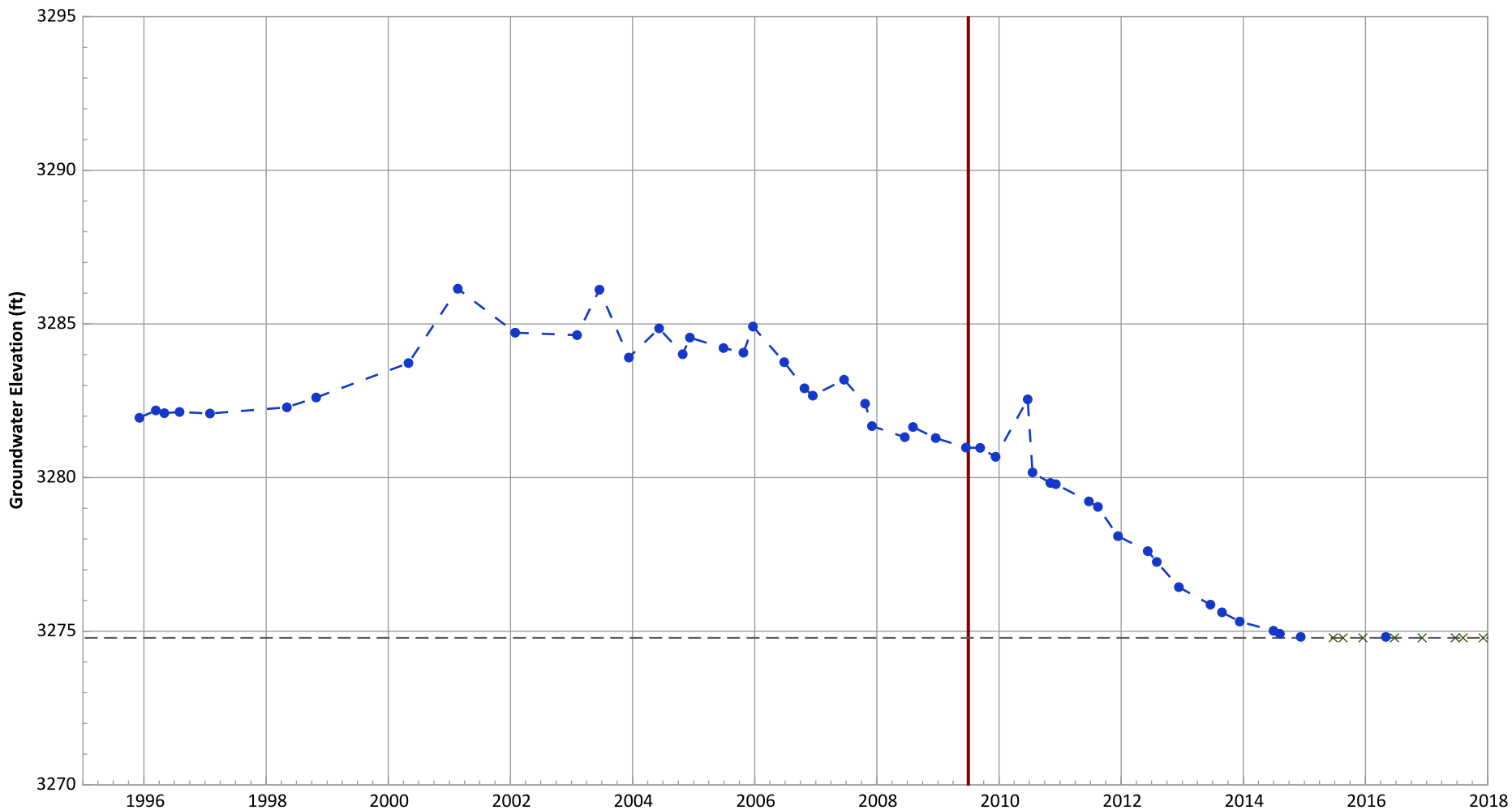
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: Decreasing at 0.62 ft/yr
 Data (1/2012 - 1/2016): Decreasing at 0.98 ft/yr

**PTX06-1003 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

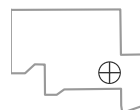


Notes:

1. Top of screen elevation is 3294.78 ft msl.
 2. The bottom of screen elevation is 3274.78 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements. Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- × No Water Detected
- Start of Remedial Action

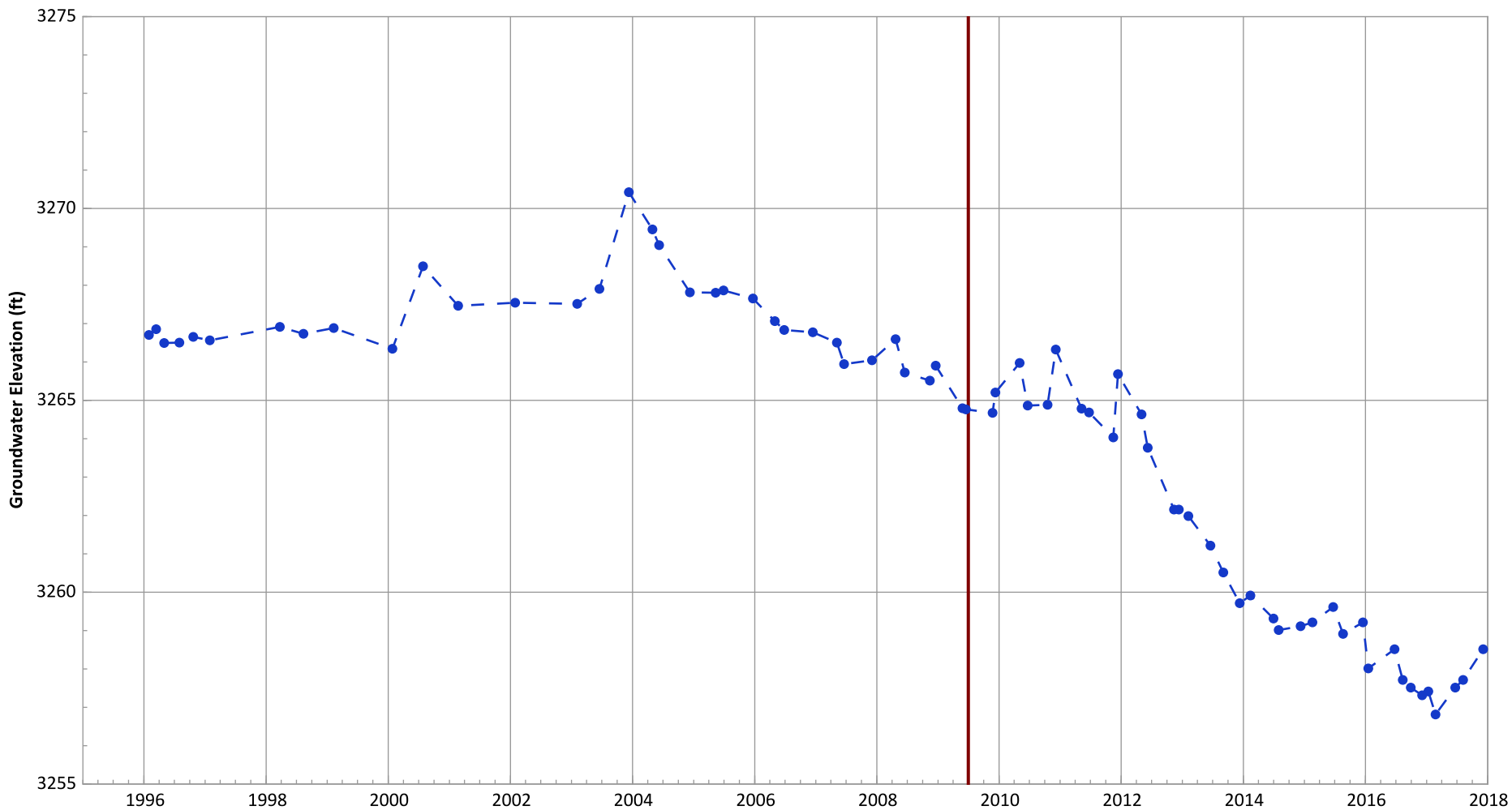
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: Decreasing at 0.42 ft/yr
 Data (1/2012 - 1/2016): Decreasing at 0.75 ft/yr

PTX06-1005 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant

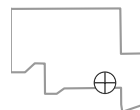


Notes:

1. Top of screen elevation is 3274.81 ft msl.
 2. The bottom of screen elevation is 3244.81 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements. Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

—●— Groundwater Elevation
— Start of Remedial Action

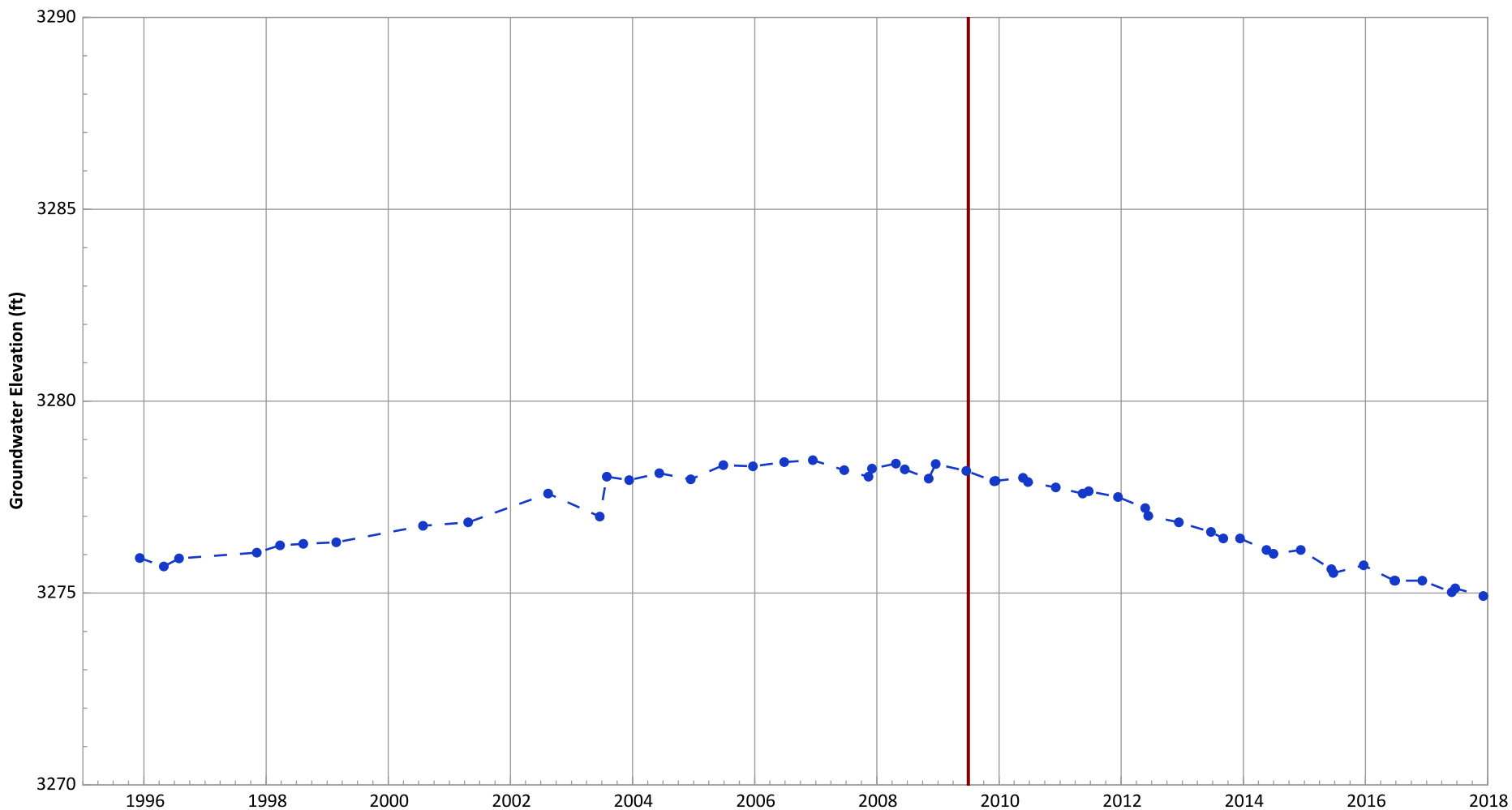
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
All Data: Decreasing at 0.49 ft/yr
Data (1/2012 - 1/2016): Decreasing at 1.25 ft/yr

**PTX06-1006 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

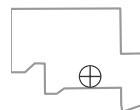


Notes:

1. Top of screen elevation is 3282.54 ft msl.
 2. The bottom of screen elevation is 3252.54 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

—●— Groundwater Elevation
 — Start of Remedial Action

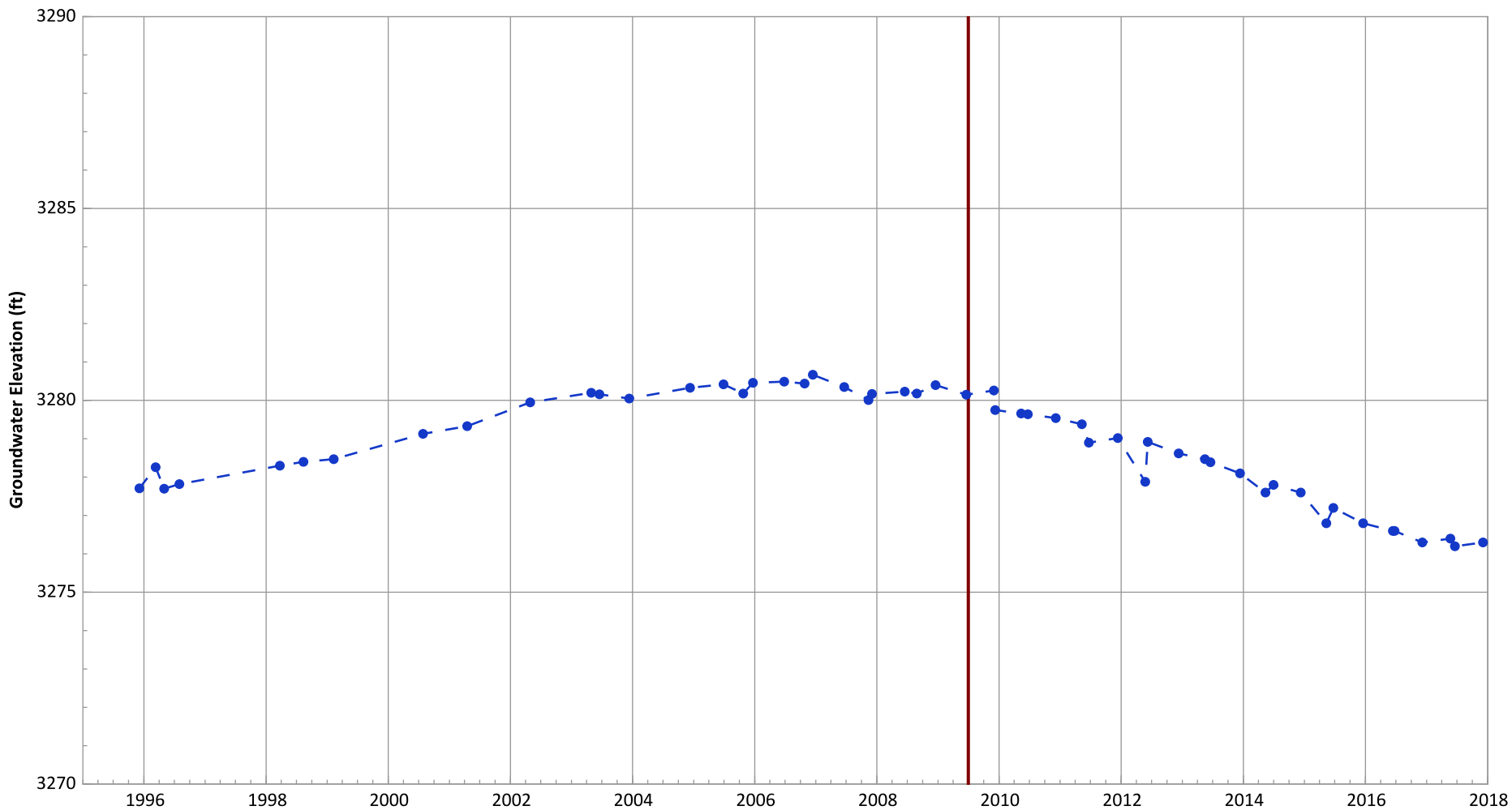
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: No Trend
 Data (1/2012 - 1/2016): Decreasing at 0.42 ft/yr

PTX06-1007 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant

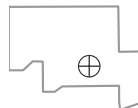


Notes:

1. Top of screen elevation is 3286.53 ft msl.
 2. The bottom of screen elevation is 3256.53 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements. Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

—●— Groundwater Elevation
— Start of Remedial Action

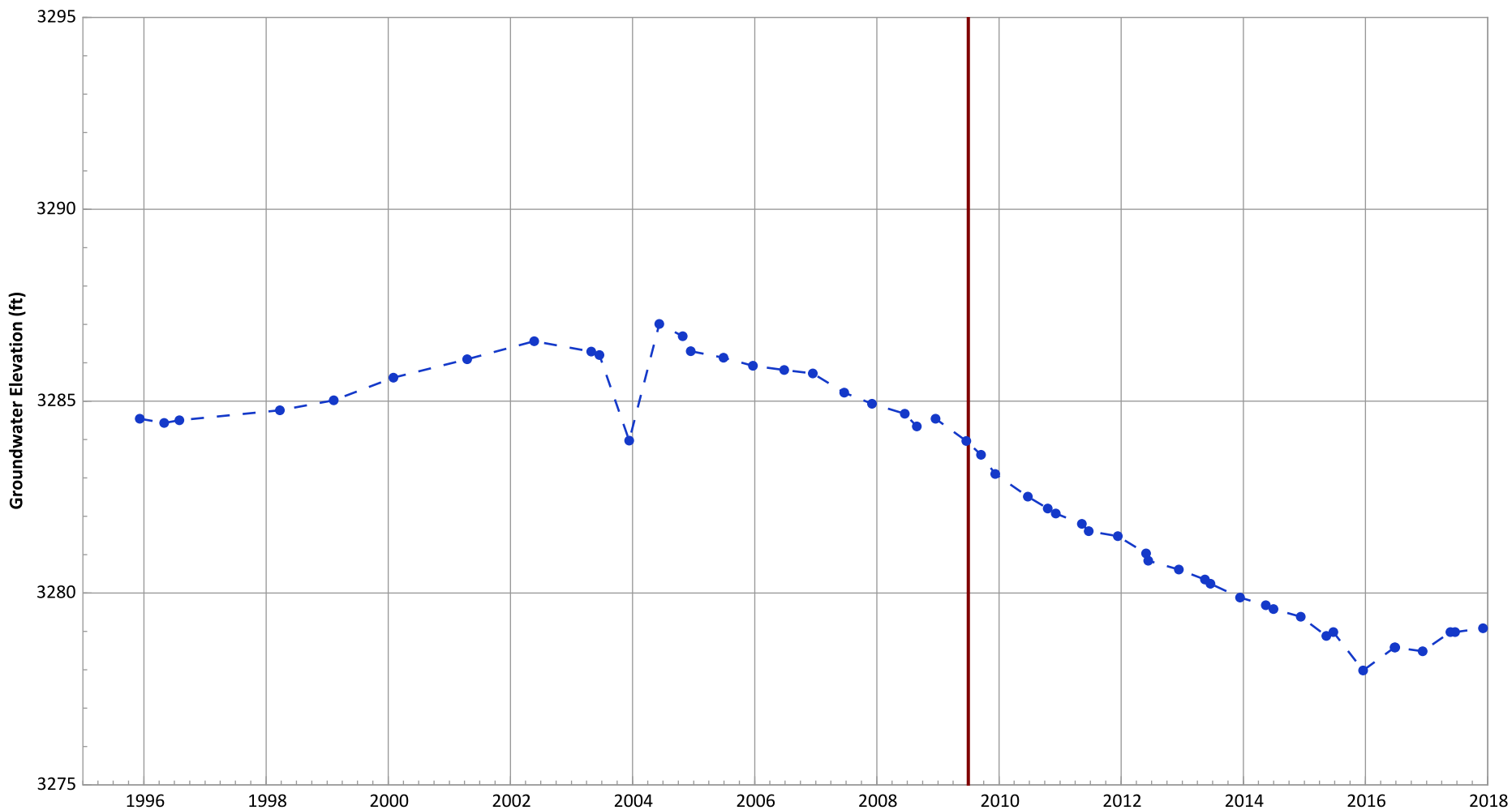
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
All Data: No Trend
Data (1/2012 - 1/2016): Decreasing at 0.52 ft/yr

PTX06-1008 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant

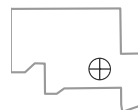


Notes:

1. Top of screen elevation is 3297.61 ft msl.
 2. The bottom of screen elevation is 3272.61 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- Start of Remedial Action

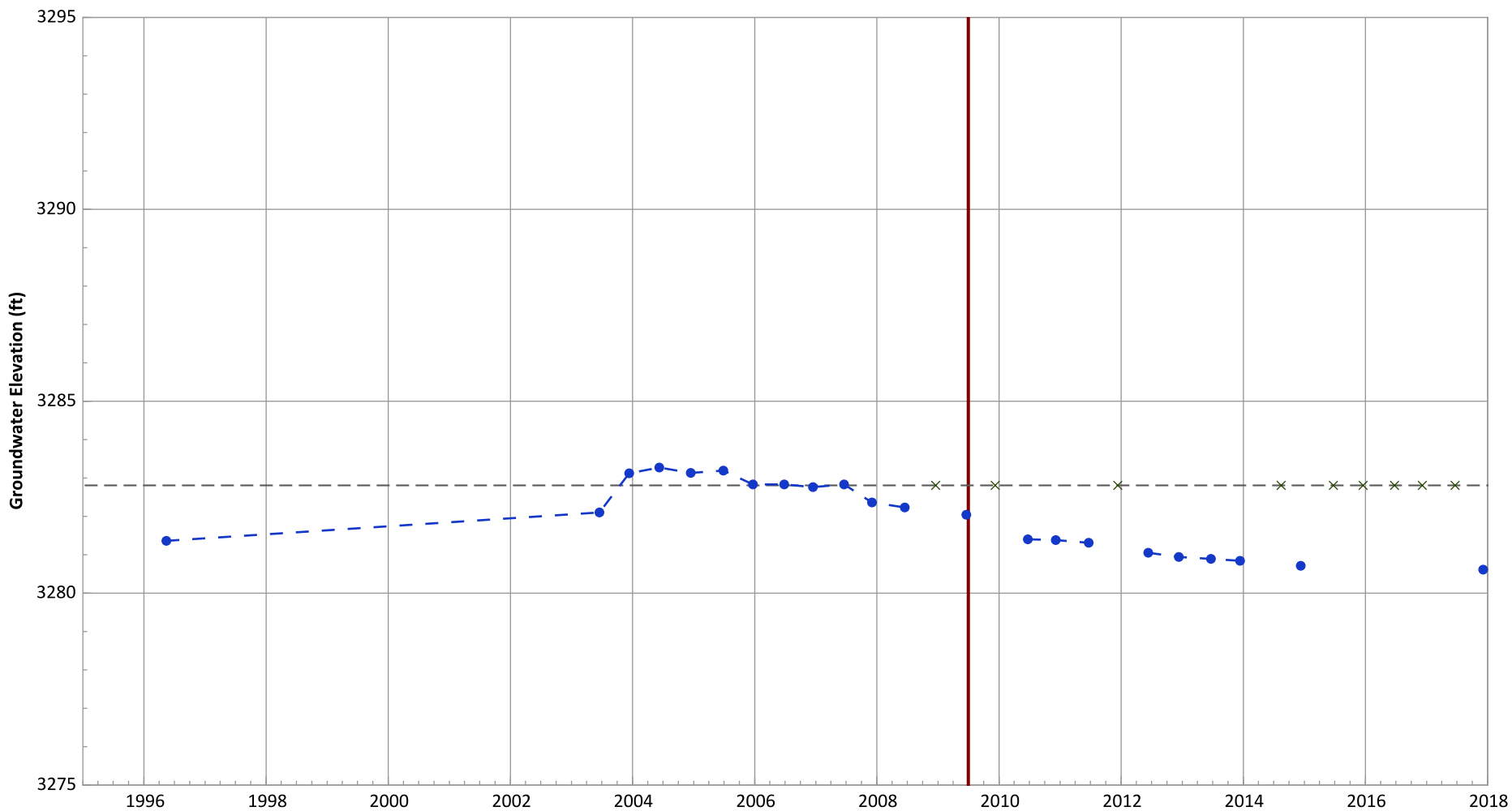
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
All Data: Decreasing at 0.4 ft/yr
Data (1/2012 - 1/2016): Decreasing at 0.61 ft/yr

PTX06-1009 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant

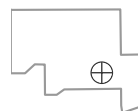


Notes:

1. Top of screen elevation is 3312.81 ft msl.
 2. The bottom of screen elevation is 3282.81 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements. Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- × No Water Detected
- Start of Remedial Action

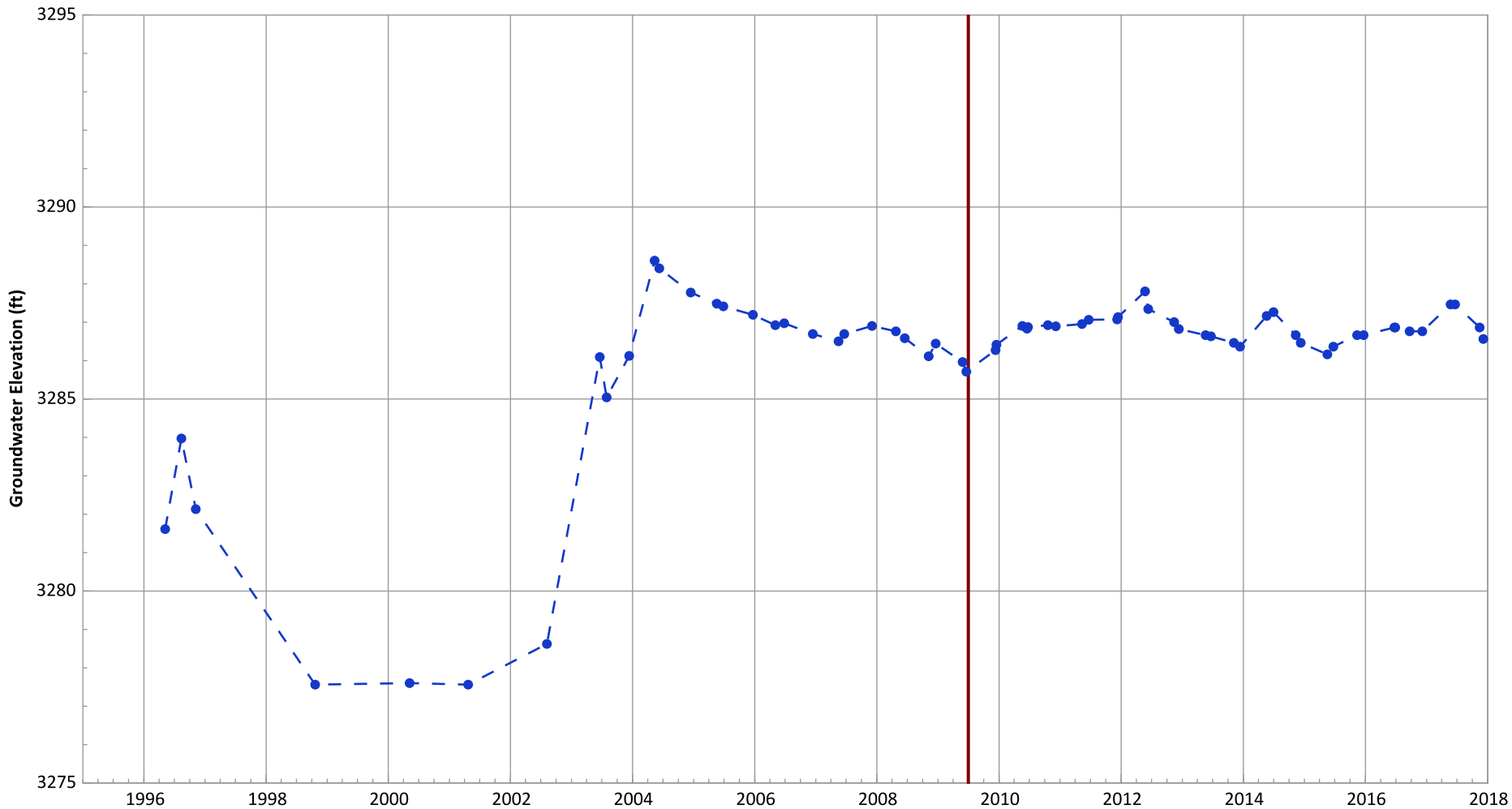
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
All Data: Decreasing at 0.13 ft/yr
Data (1/2012 - 1/2016): Decreasing at 0.13 ft/yr

PTX06-1010 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant

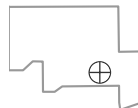


Notes:

1. Top of screen elevation is 3294.04 ft msl.
 2. The bottom of screen elevation is 3264.04 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements. Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

—●— Groundwater Elevation
— Start of Remedial Action

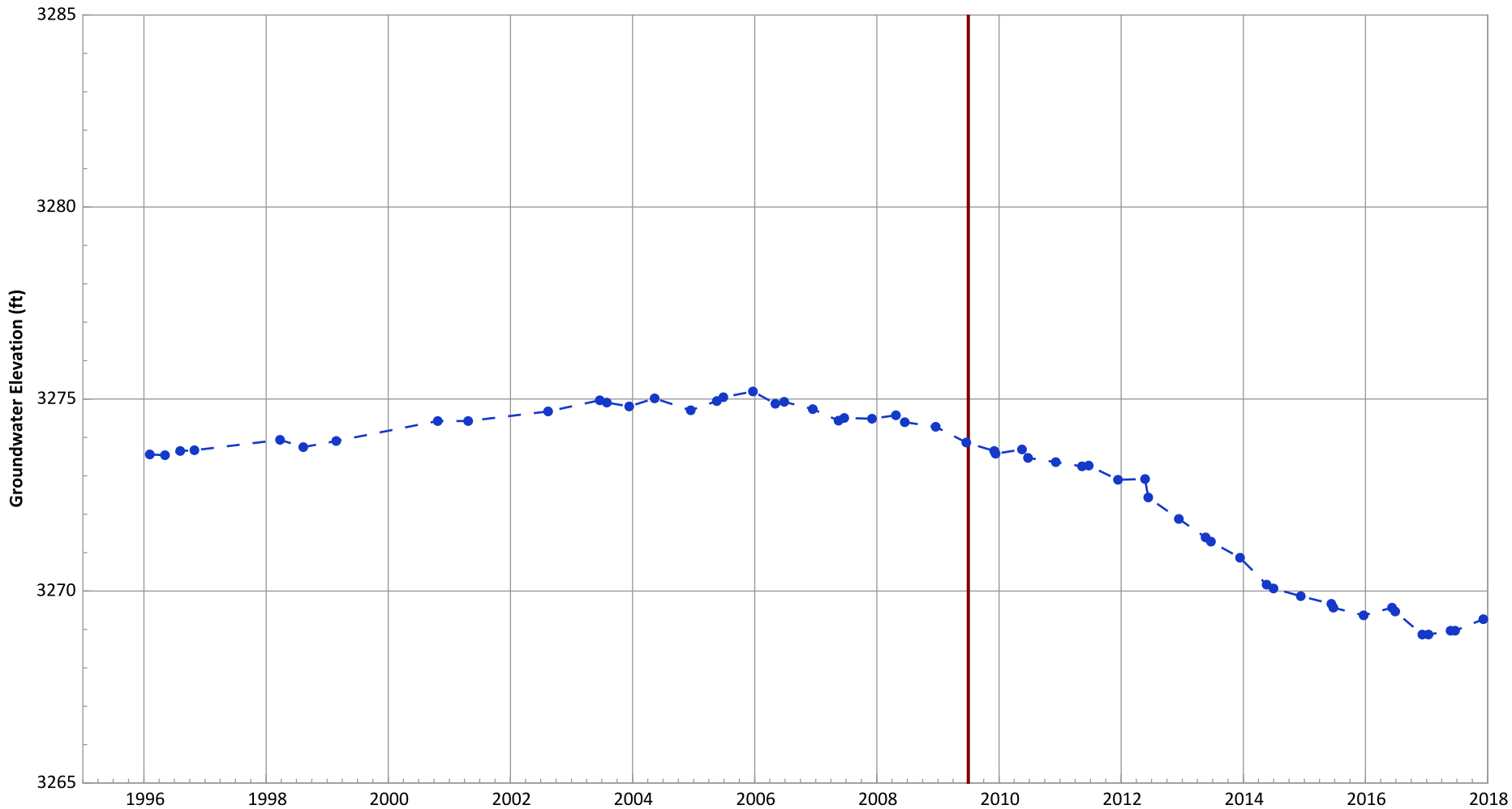
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
All Data: Increasing at 0.25 ft/yr
Data (1/2012 - 1/2016): Decreasing at 0.1 ft/yr

PTX06-1011 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant

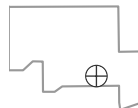


Notes:

1. Top of screen elevation is 3282.59 ft msl.
 2. The bottom of screen elevation is 3252.59 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements. Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

—●— Groundwater Elevation
— Start of Remedial Action

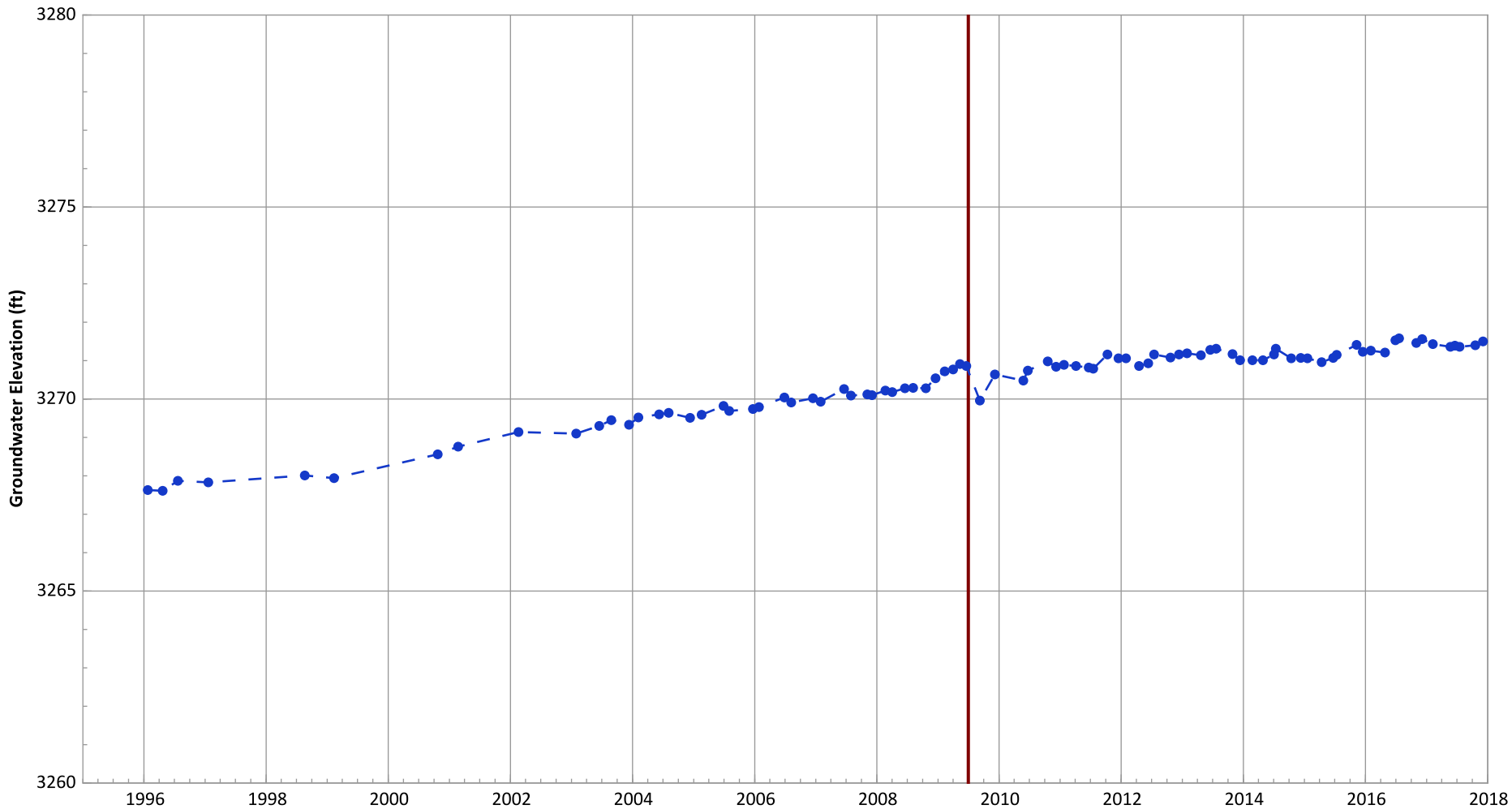
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
All Data: Decreasing at 0.26 ft/yr
Data (1/2012 - 1/2016): Decreasing at 0.79 ft/yr

**PTX06-1012 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

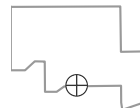


Notes:

1. Top of screen elevation is 3276.19 ft msl.
 2. The bottom of screen elevation is 3256.19 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- Start of Remedial Action

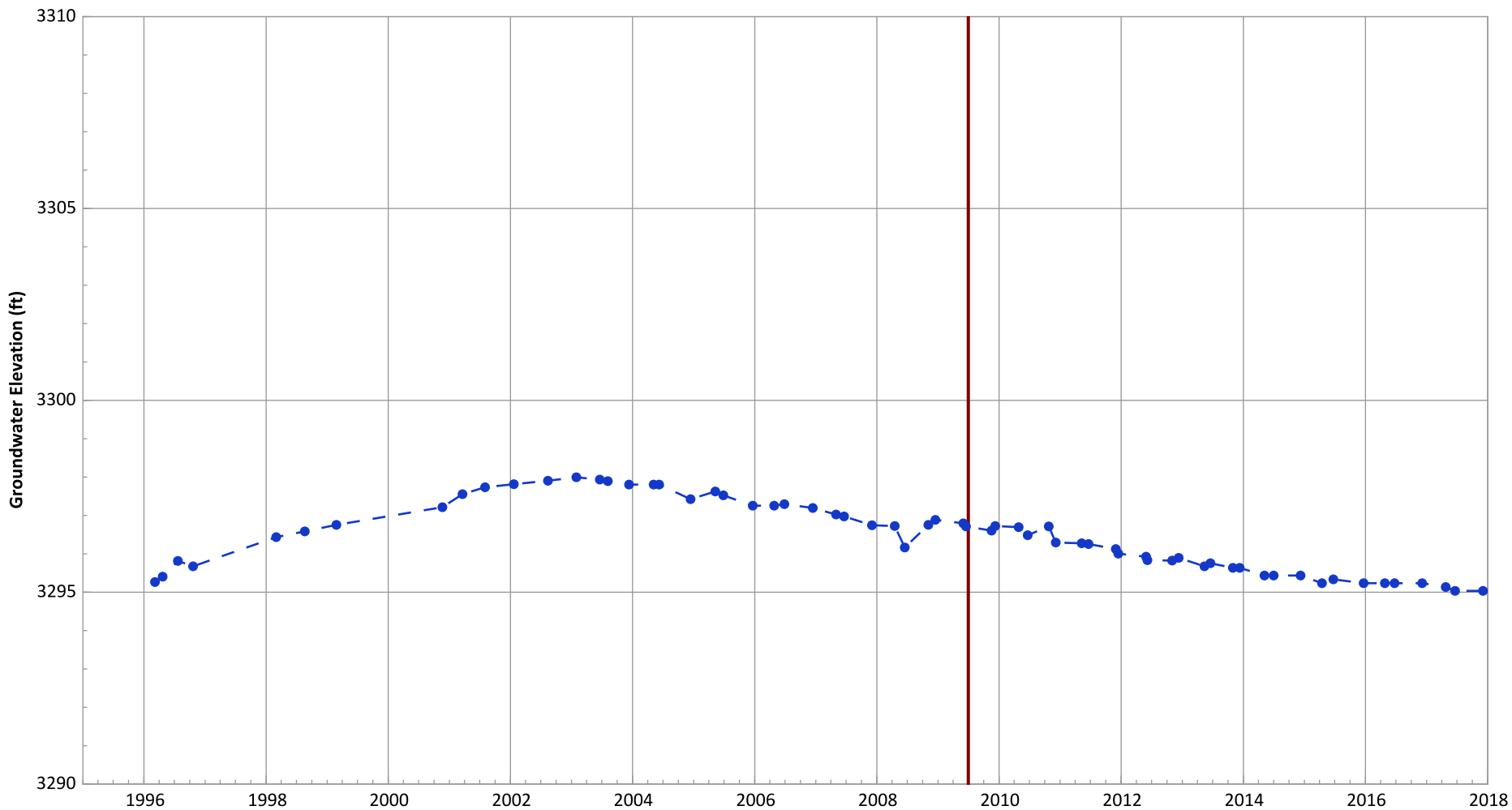
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
All Data: Increasing at 0.17 ft/yr
Data (1/2012 - 1/2016): No Trend

**PTX06-1013 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

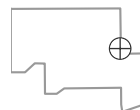


Notes:

1. Top of screen elevation is 3306.24 ft msl.
 2. The bottom of screen elevation is 3286.24 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- Start of Remedial Action

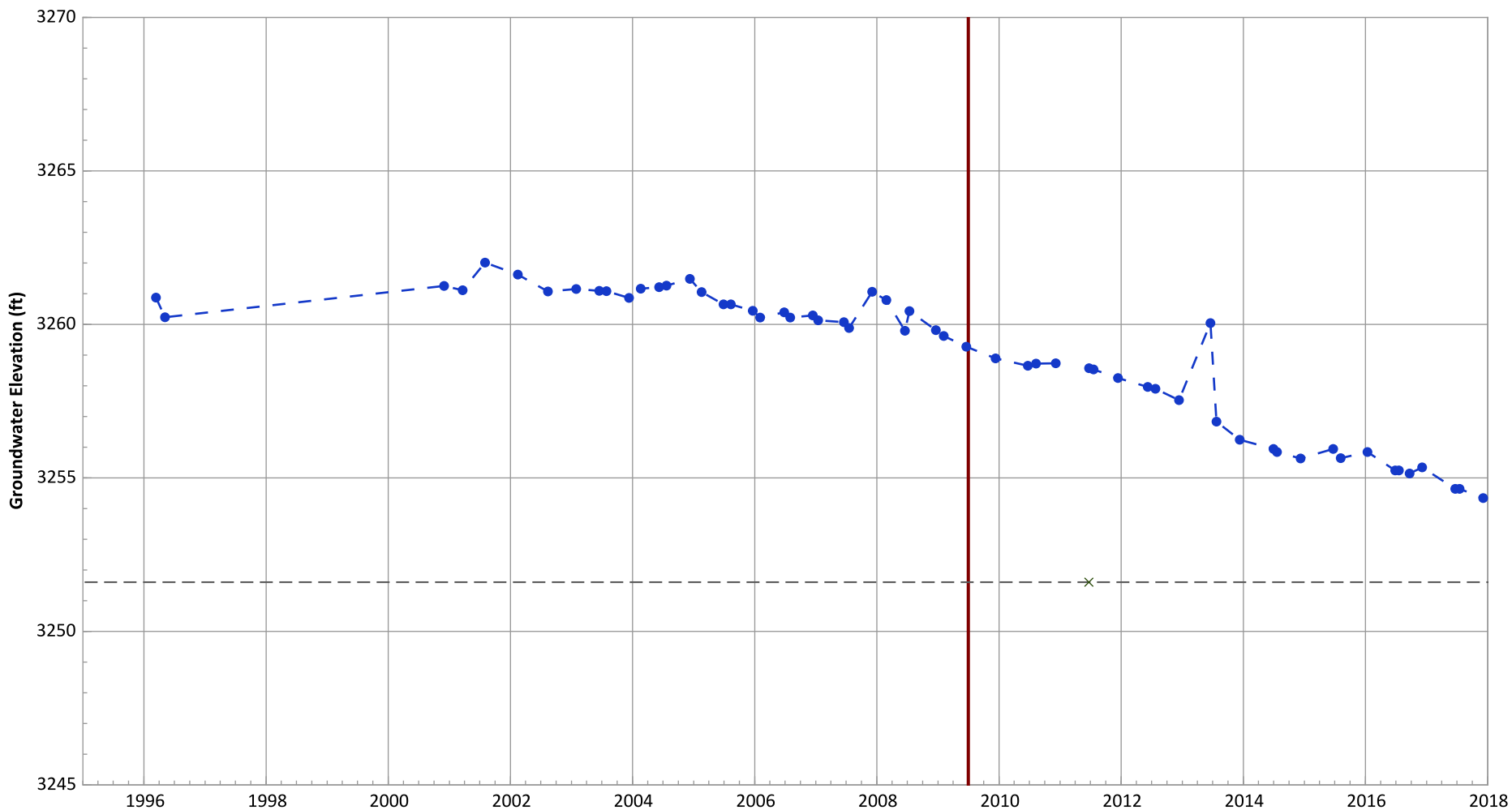
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
All Data: No Trend
Data (1/2012 - 1/2016): Decreasing at 0.17 ft/yr

**PTX06-1014 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

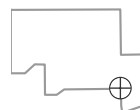


Notes:

1. Top of screen elevation is 3271.6 ft msl.
 2. The bottom of screen elevation is 3251.6 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements. Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- × No Water Detected
- Start of Remedial Action

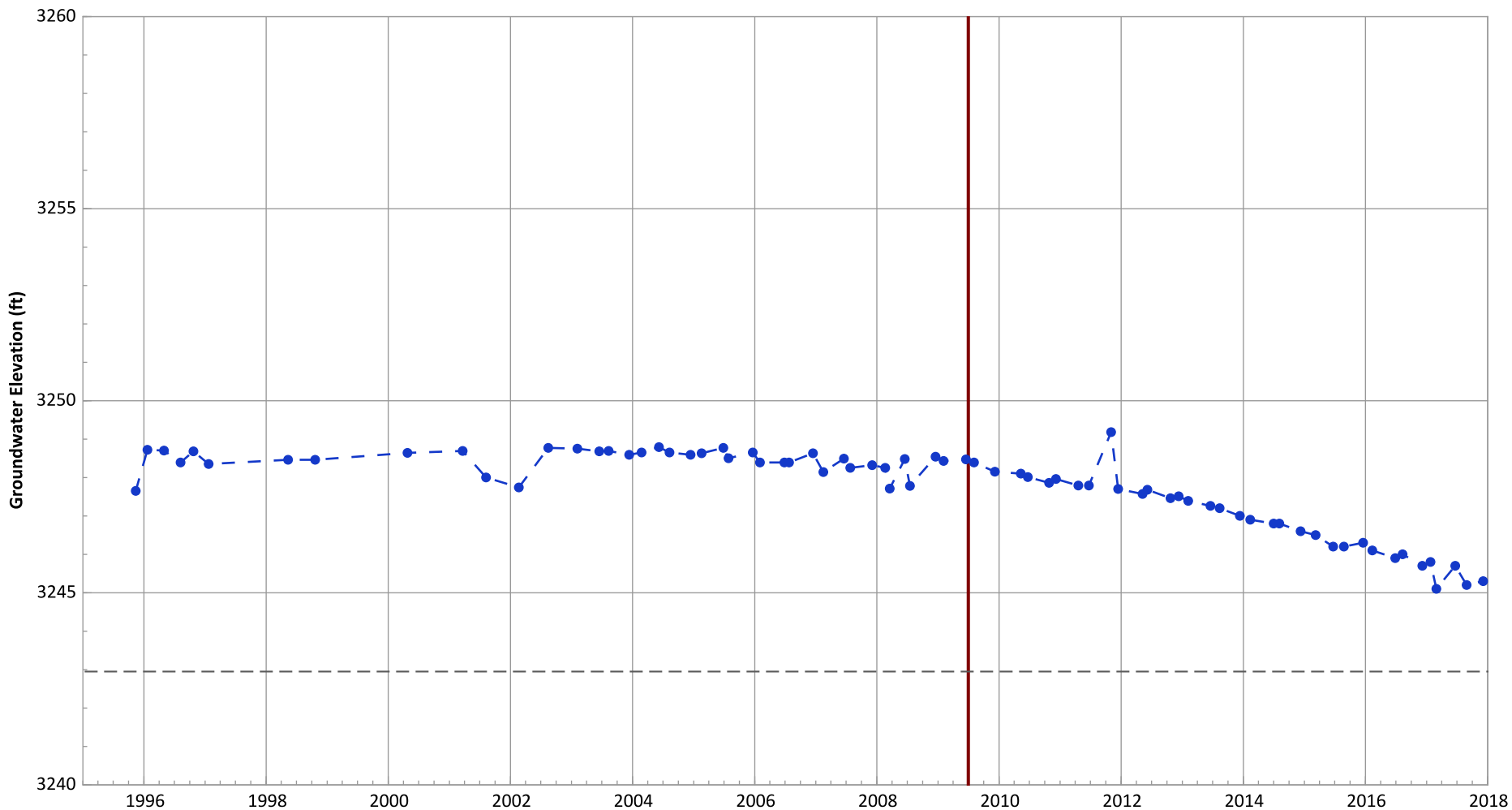
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: Decreasing at 0.38 ft/yr
 Data (1/2012 - 1/2016): Decreasing at 0.7 ft/yr

**PTX06-1015 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

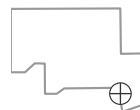


Notes:

1. Top of screen elevation is 3252.95 ft msl.
 2. The bottom of screen elevation is 3242.95 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- Start of Remedial Action

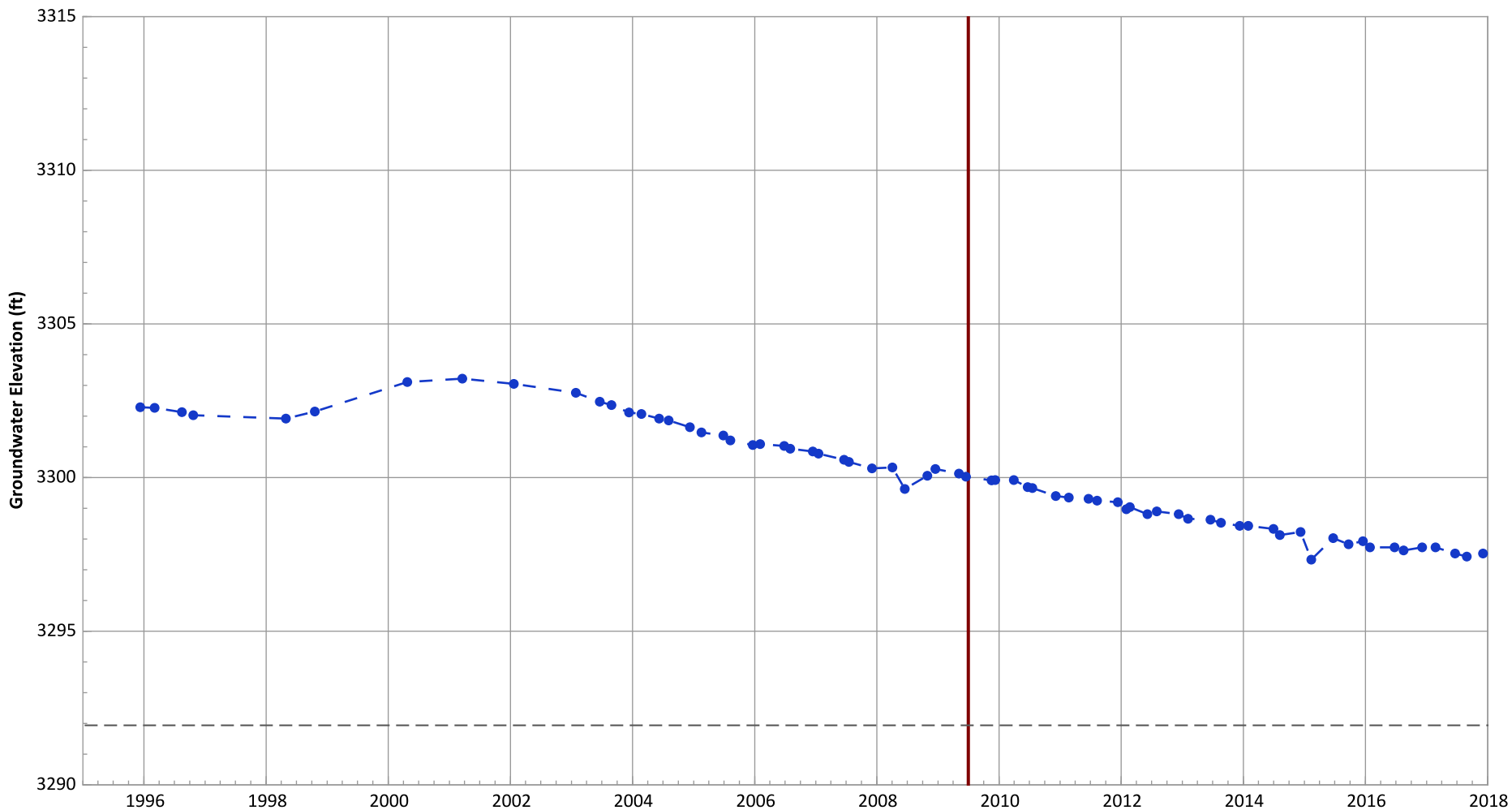
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: Decreasing at 0.13 ft/yr
 Data (1/2012 - 1/2016): Decreasing at 0.42 ft/yr

**PTX06-1023 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**



Notes:

1. Top of screen elevation is 3306.94 ft msl.
 2. The bottom of screen elevation is 3291.94 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements. Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- Start of Remedial Action

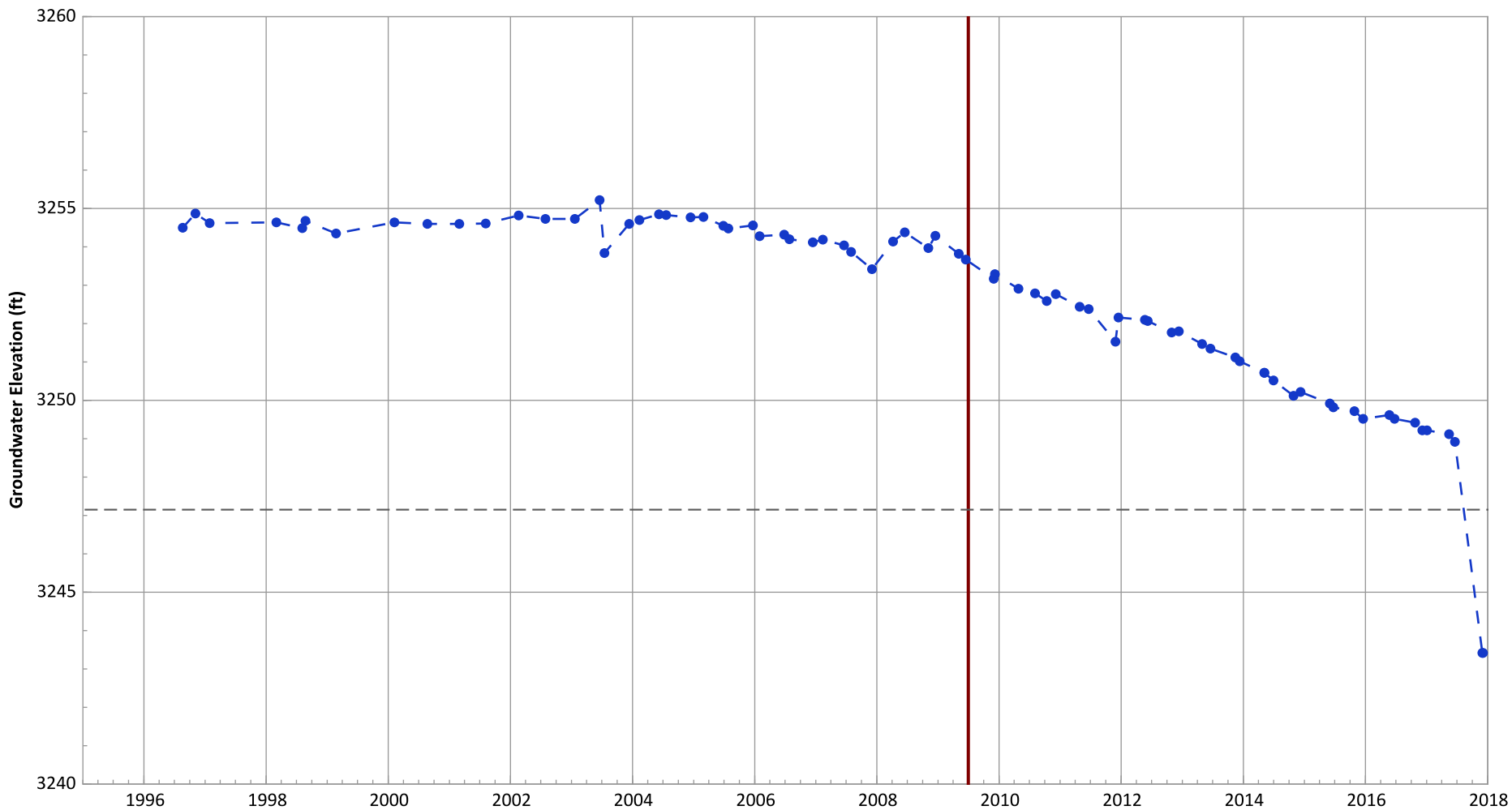
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: Decreasing at 0.28 ft/yr
 Data (1/2012 - 1/2016): Decreasing at 0.3 ft/yr

**PTX06-1030 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

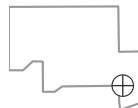


Notes:

1. Top of screen elevation is 3267.15 ft msl.
 2. The bottom of screen elevation is 3247.15 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- Start of Remedial Action

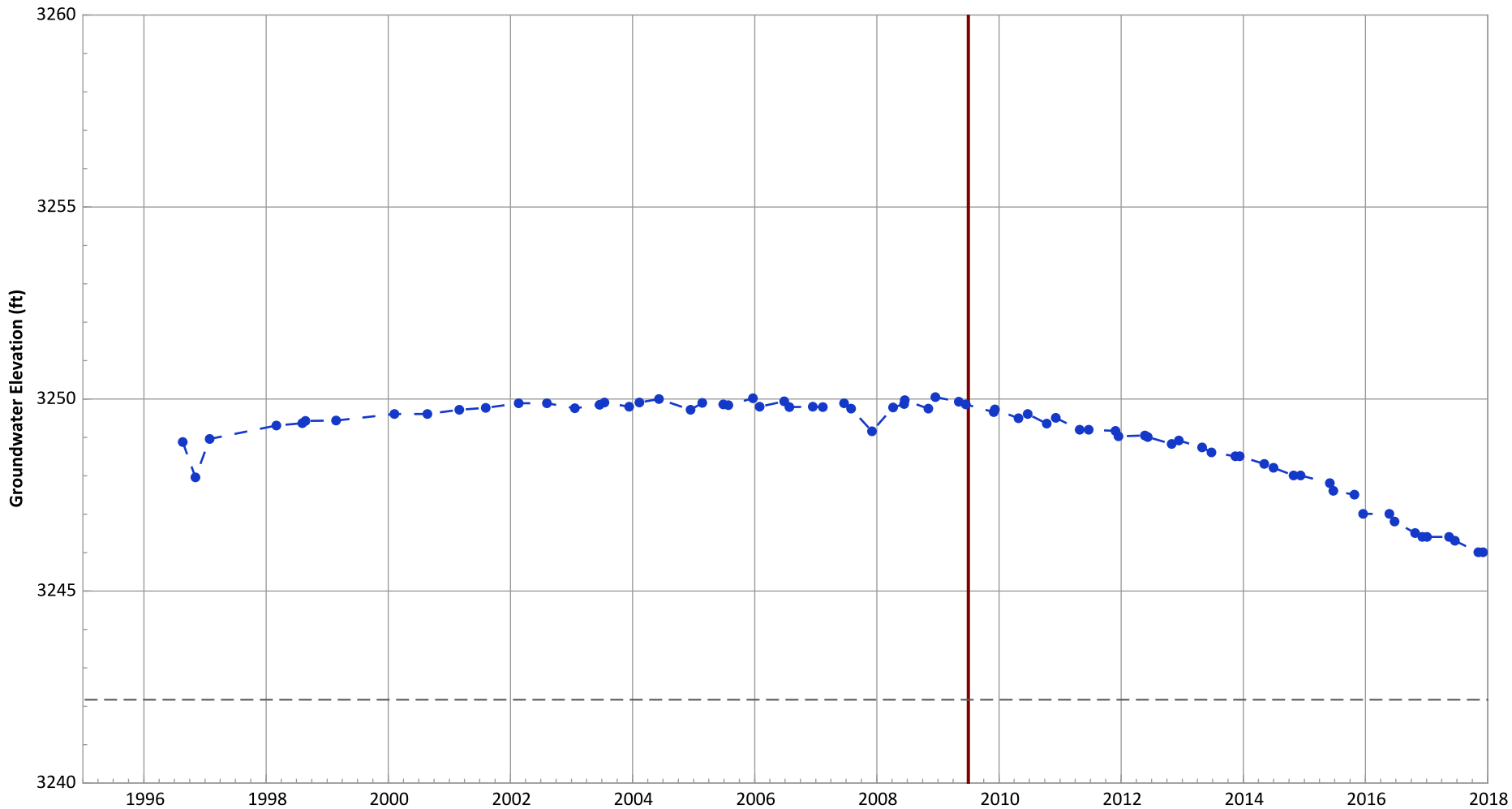
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: Decreasing at 0.35 ft/yr
 Data (1/2012 - 1/2016): Decreasing at 0.65 ft/yr

**PTX06-1031 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

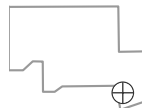


Notes:

1. Top of screen elevation is 3262.17 ft msl.
 2. The bottom of screen elevation is 3242.17 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- Start of Remedial Action

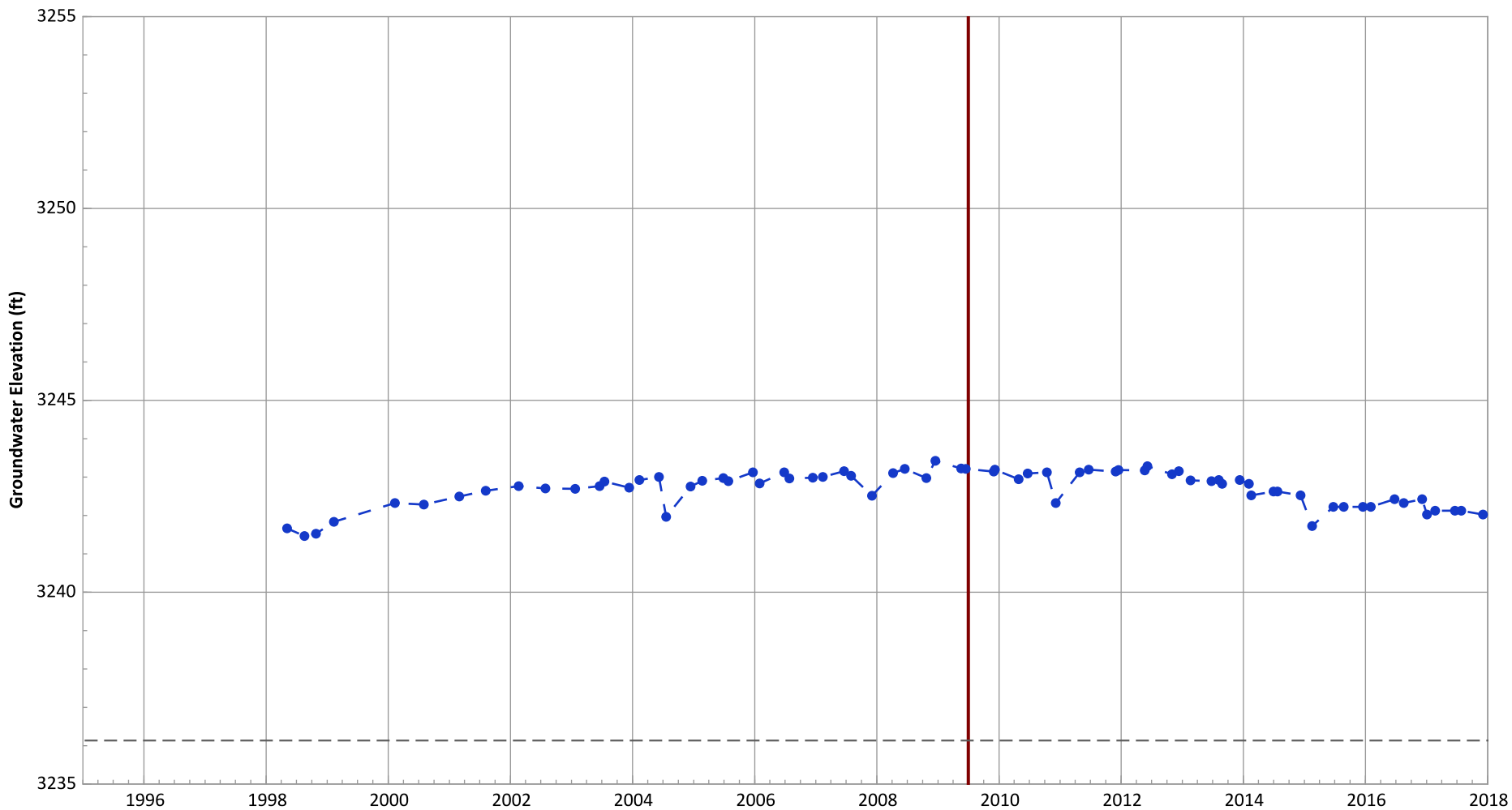
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: Decreasing at 0.13 ft/yr
 Data (1/2012 - 1/2016): Decreasing at 0.56 ft/yr

**PTX06-1034 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**



Notes:

1. Top of screen elevation is 3249.84 ft msl.
 2. The bottom of screen elevation is 3236.14 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- Start of Remedial Action

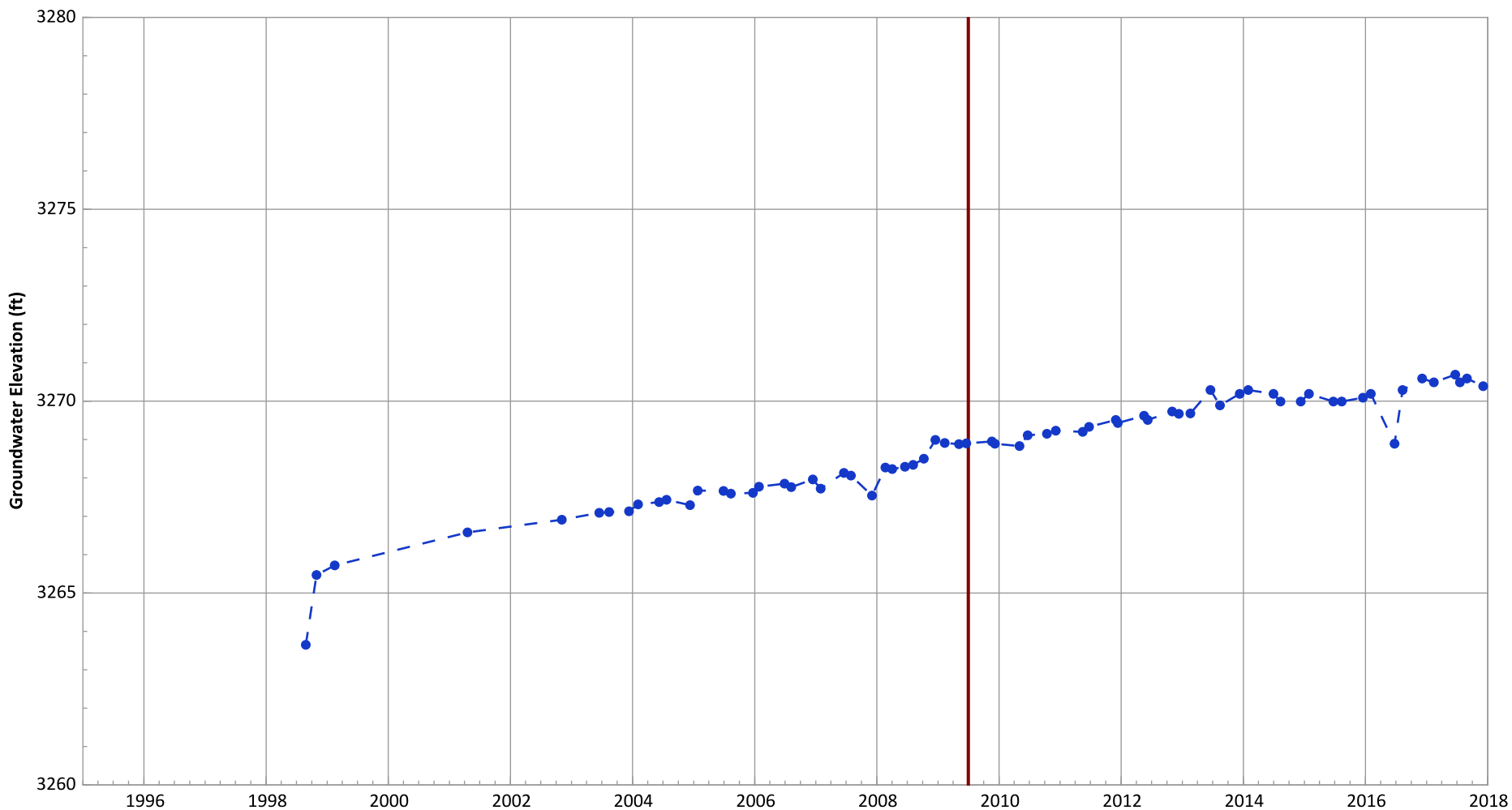
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
All Data: No Trend
Data (1/2012 - 1/2016): Decreasing at 0.24 ft/yr

PTX06-1035 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant

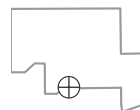


Notes:

1. Top of screen elevation is 3269.88 ft msl.
 2. The bottom of screen elevation is 3256.18 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- Bottom of Screen Elevation
- Start of Remedial Action

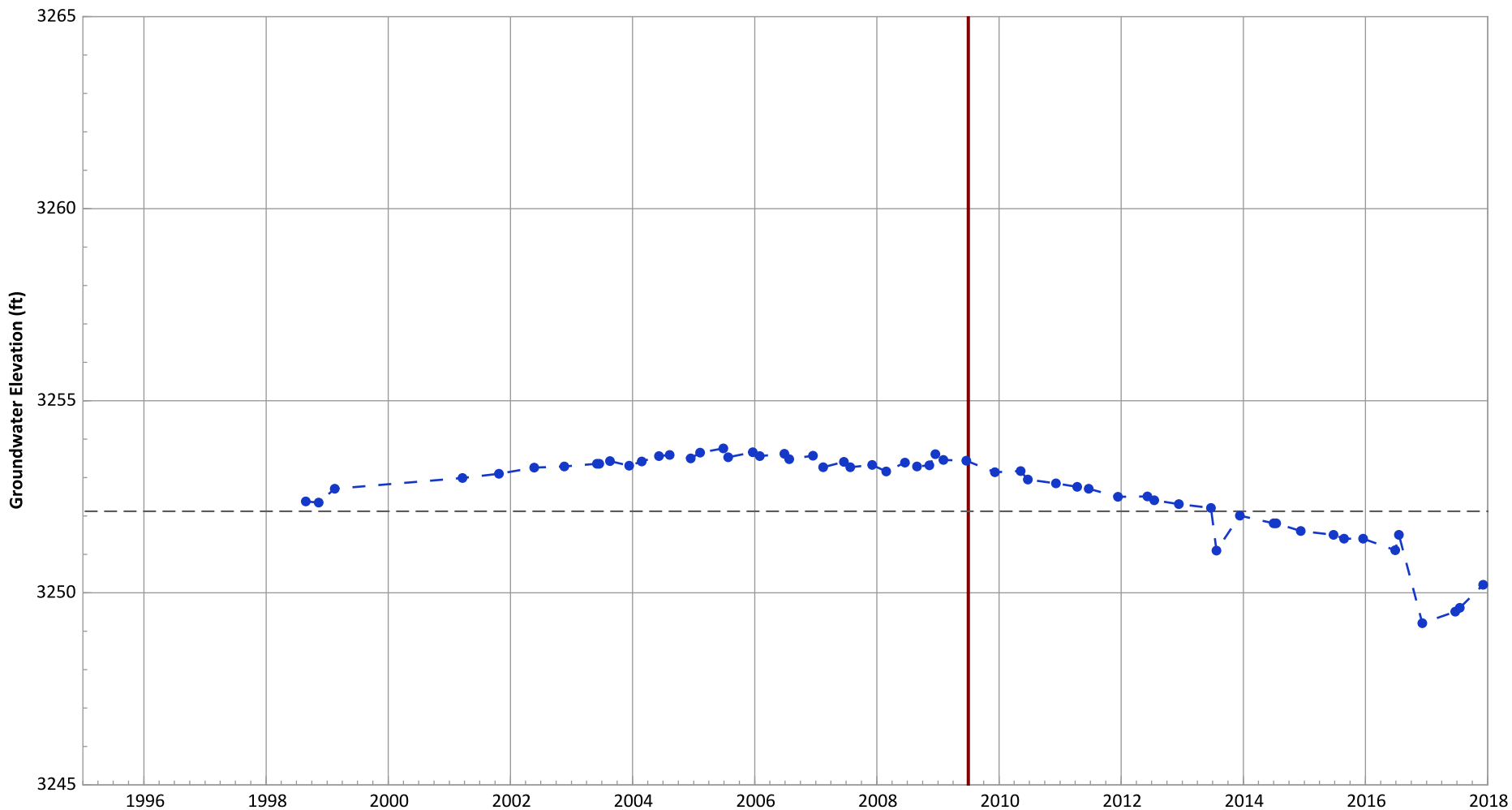
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
All Data: Increasing at 0.27 ft/yr
Data (1/2012 - 1/2016): No Trend

**PTX06-1036 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

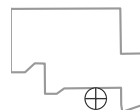


Notes:

1. Top of screen elevation is 3265.72 ft msl.
 2. The bottom of screen elevation is 3252.12 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- Start of Remedial Action

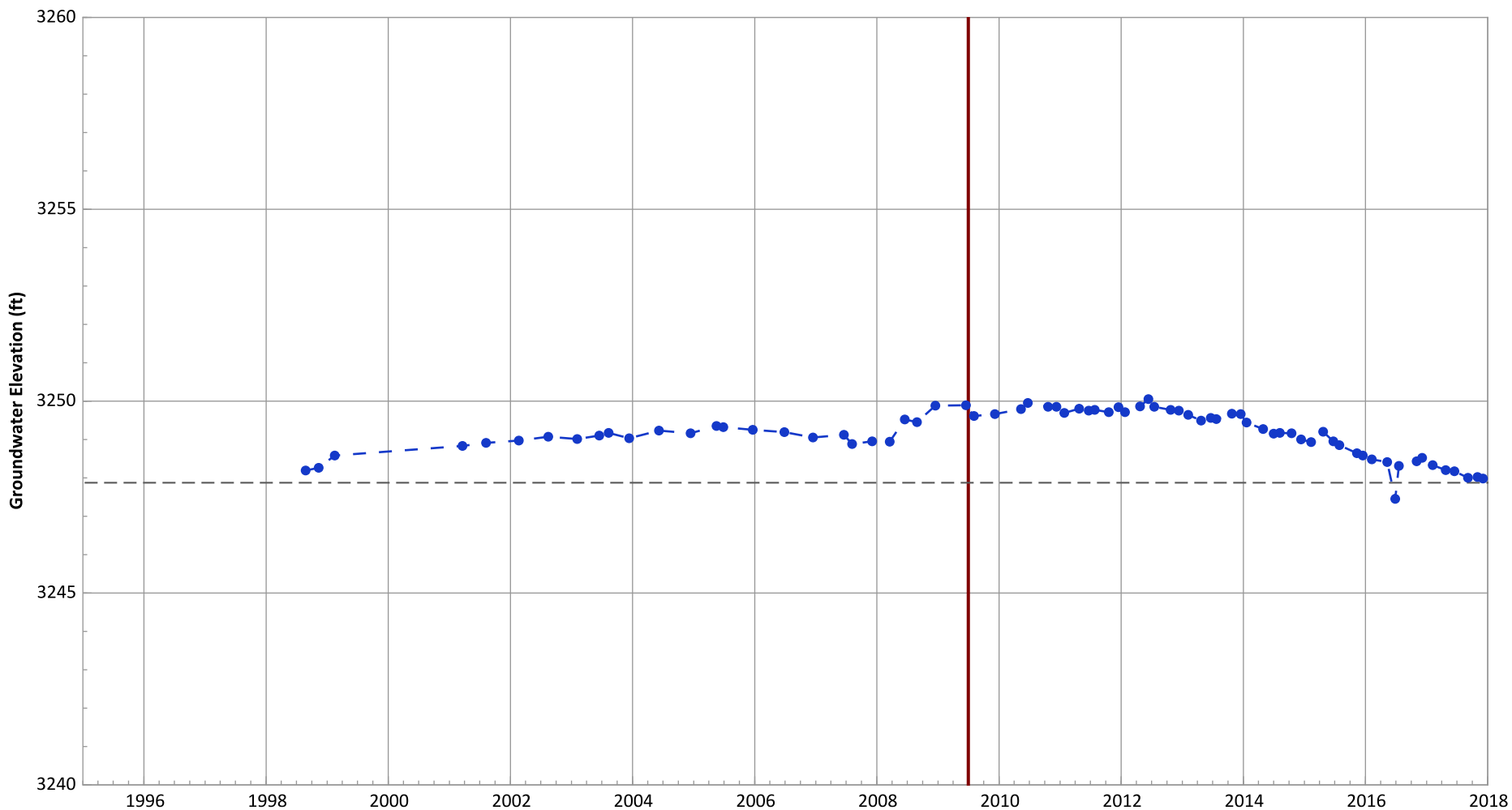
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: Decreasing at 0.16 ft/yr
 Data (1/2012 - 1/2016): Decreasing at 0.4 ft/yr

**PTX06-1037 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

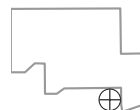


Notes:

1. Top of screen elevation is 3261.47 ft msl.
 2. The bottom of screen elevation is 3247.87 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- Start of Remedial Action

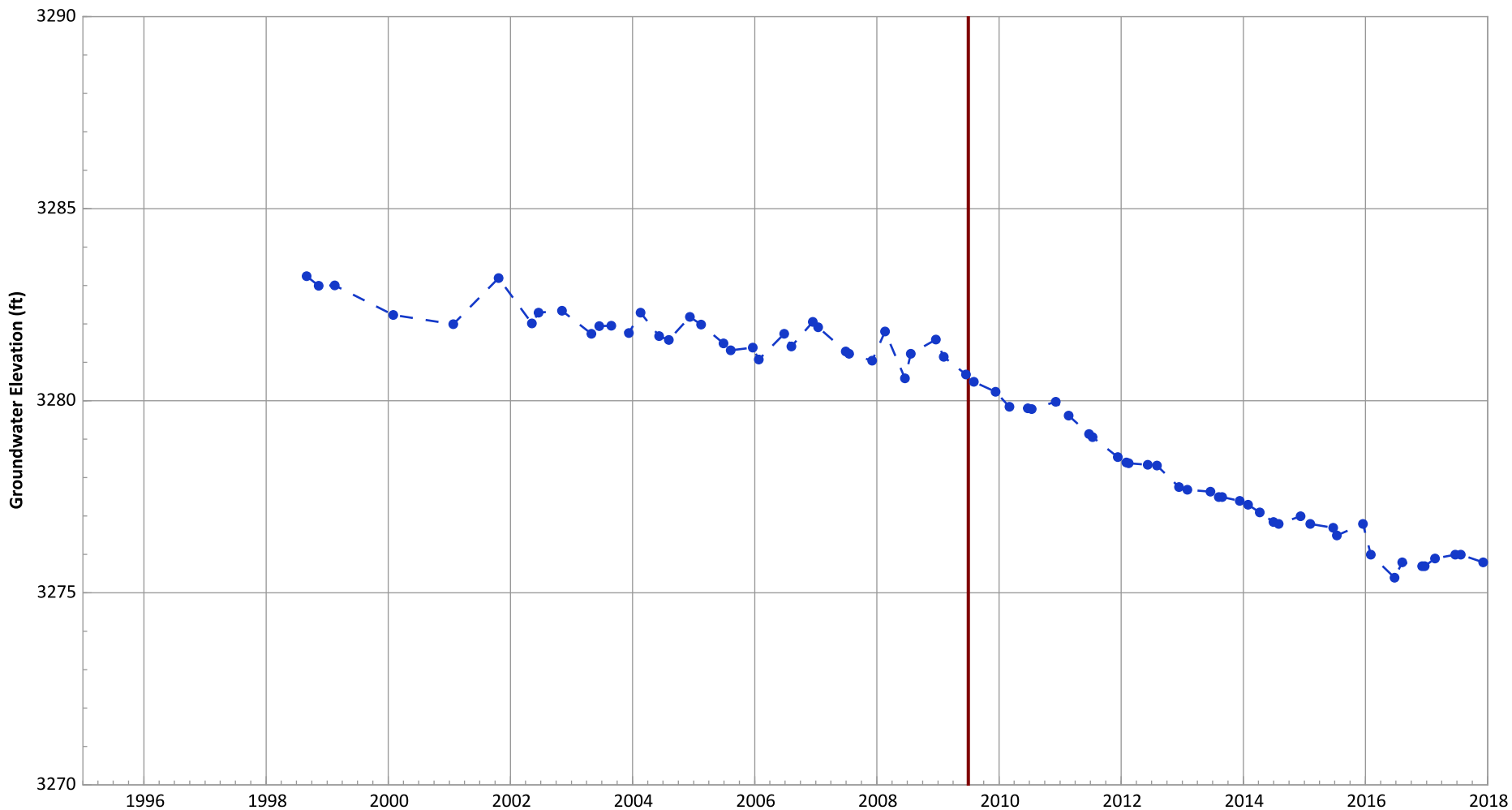
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
All Data: No Trend
Data (1/2012 - 1/2016): Decreasing at 0.37 ft/yr

**PTX06-1038 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

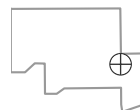


Notes:

1. Top of screen elevation is 3284.33 ft msl.
 2. The bottom of screen elevation is 3260.73 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

—●— Groundwater Elevation
 — Start of Remedial Action

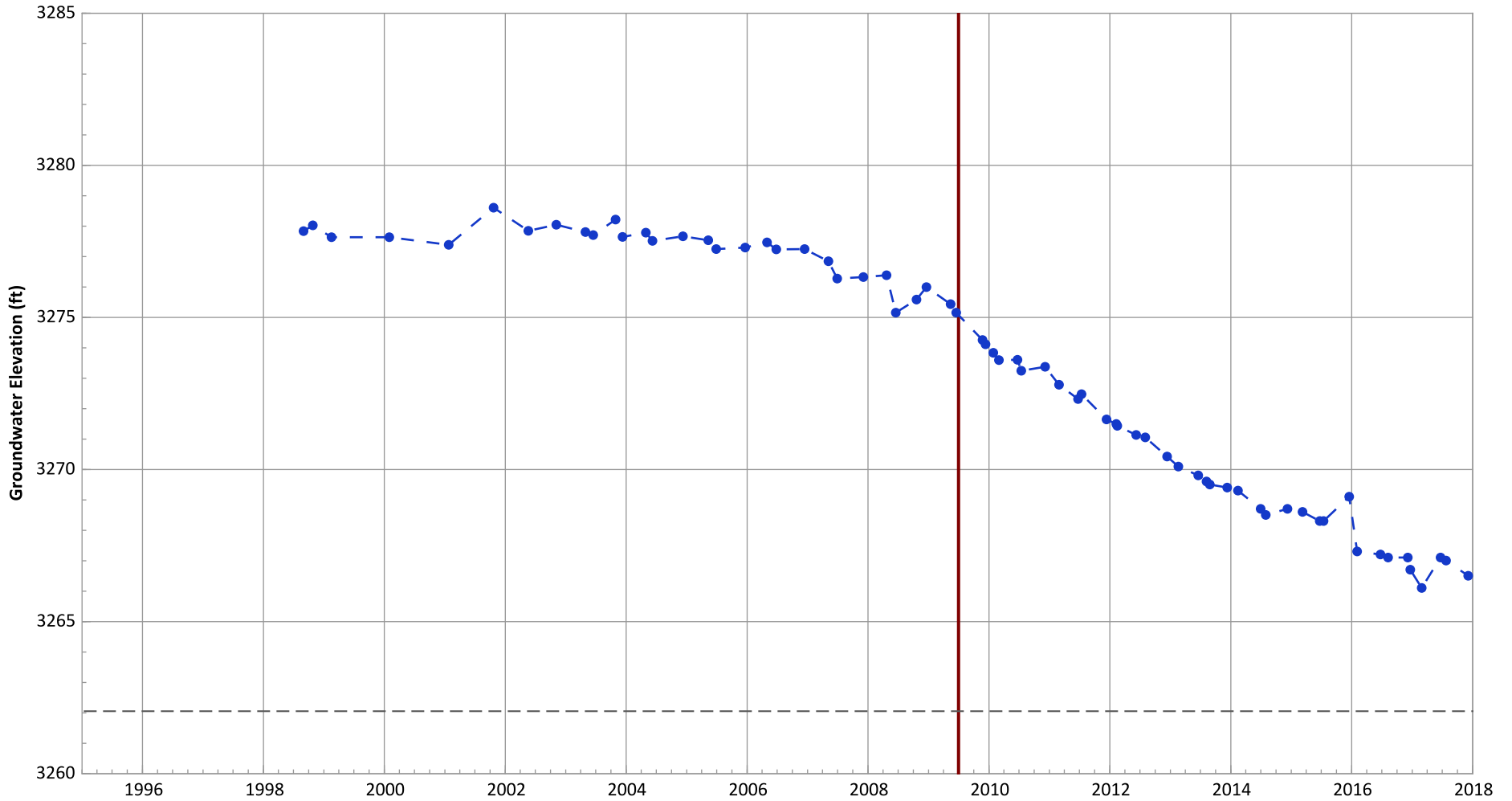
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: Decreasing at 0.44 ft/yr
 Data (1/2012 - 1/2016): Decreasing at 0.57 ft/yr

**PTX06-1039A Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

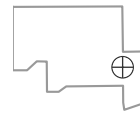


Notes:

1. Top of screen elevation is 3285.76 ft msl.
 2. The bottom of screen elevation is 3262.05 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- Start of Remedial Action

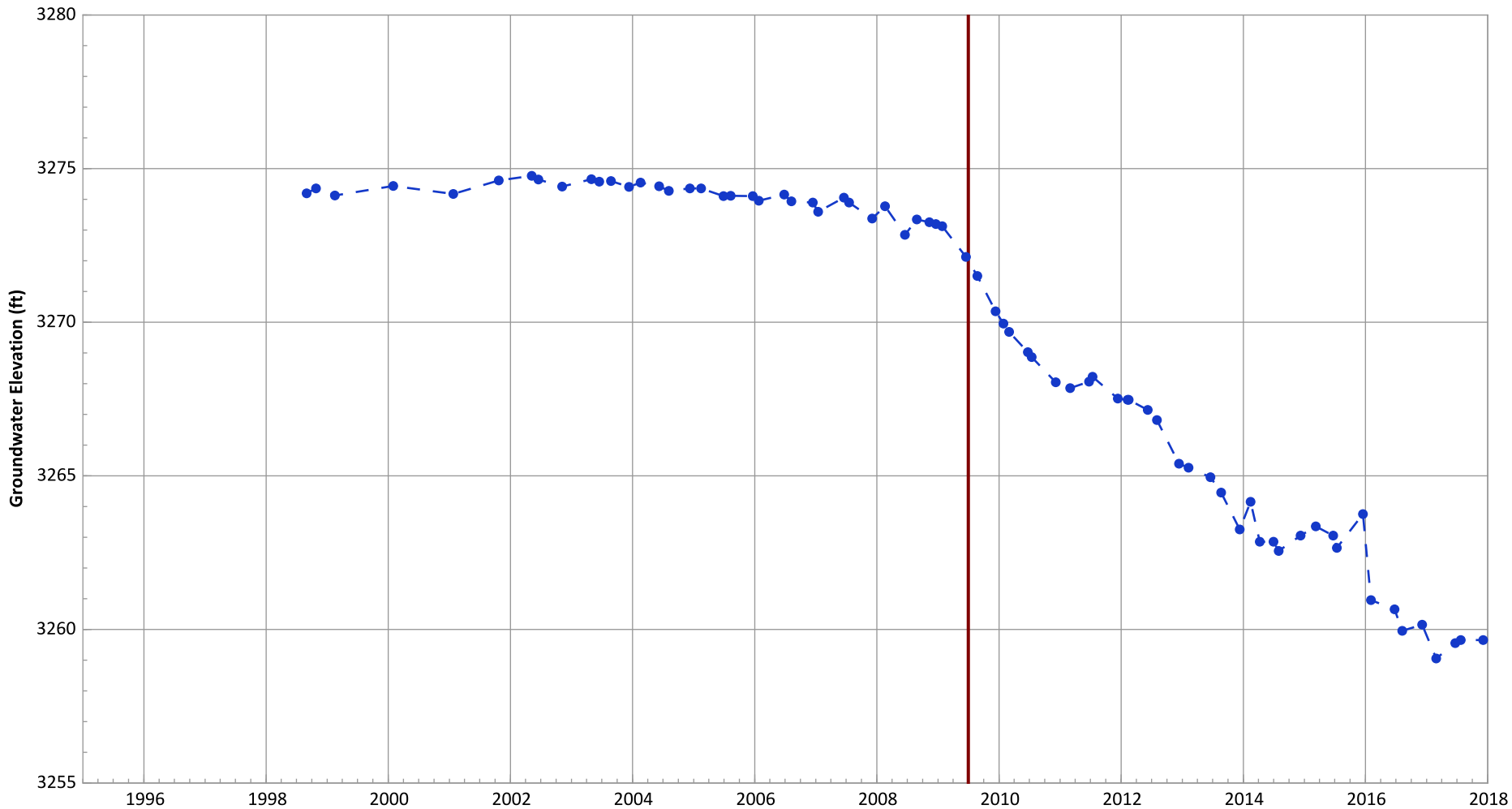
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: Decreasing at 0.73 ft/yr
 Data (1/2012 - 1/2016): Decreasing at 0.89 ft/yr

**PTX06-1040 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

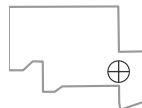


Notes:

1. Top of screen elevation is 3295.32 ft msl.
 2. The bottom of screen elevation is 3254.52 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- Start of Remedial Action

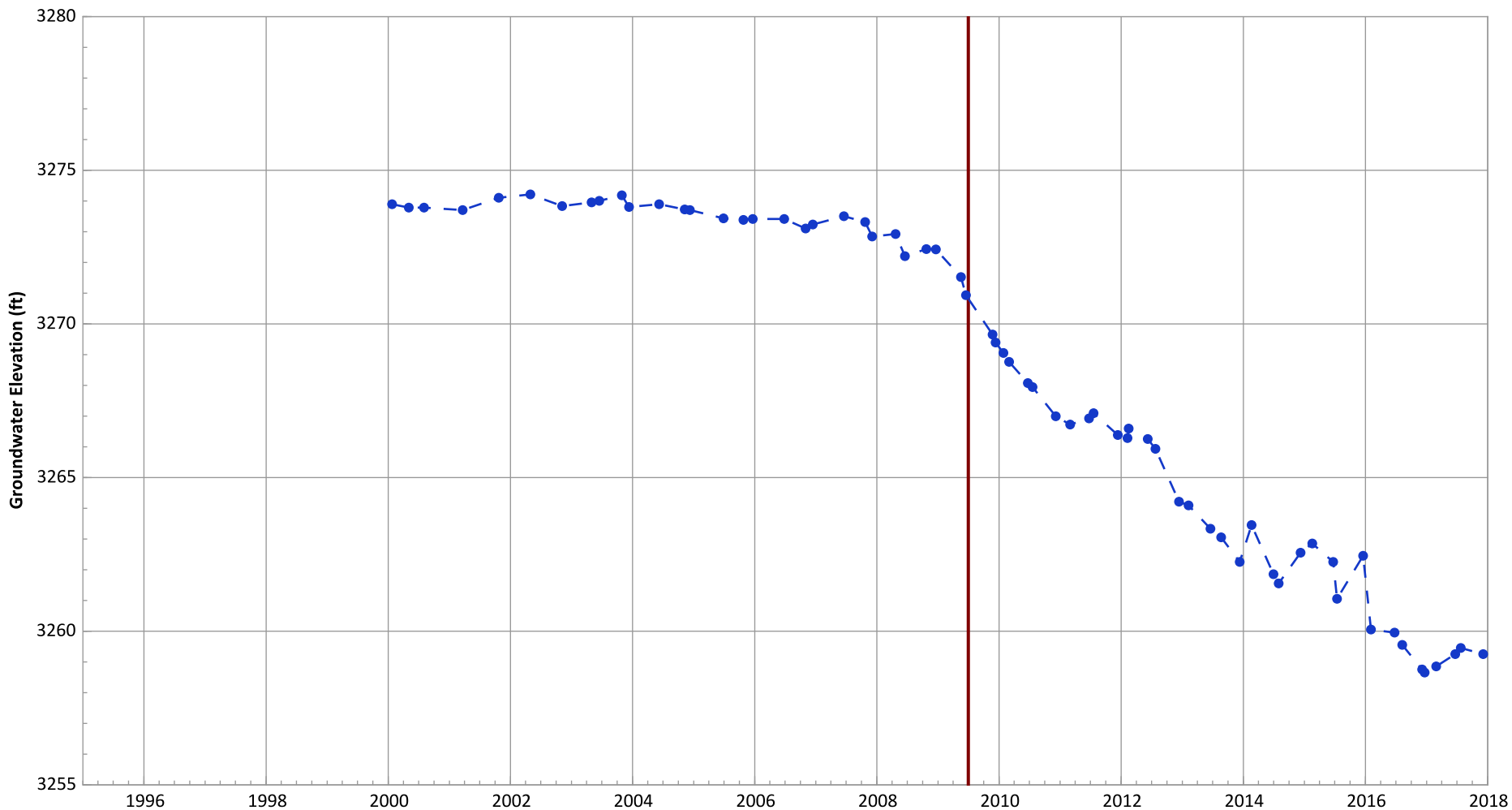
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: Decreasing at 0.94 ft/yr
 Data (1/2012 - 1/2016): Decreasing at 1.4 ft/yr

PTX06-1041 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant

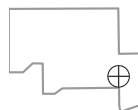


Notes:

1. Top of screen elevation is 3279.61 ft msl.
 2. The bottom of screen elevation is 3239.61 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements. Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

—●— Groundwater Elevation
— Start of Remedial Action

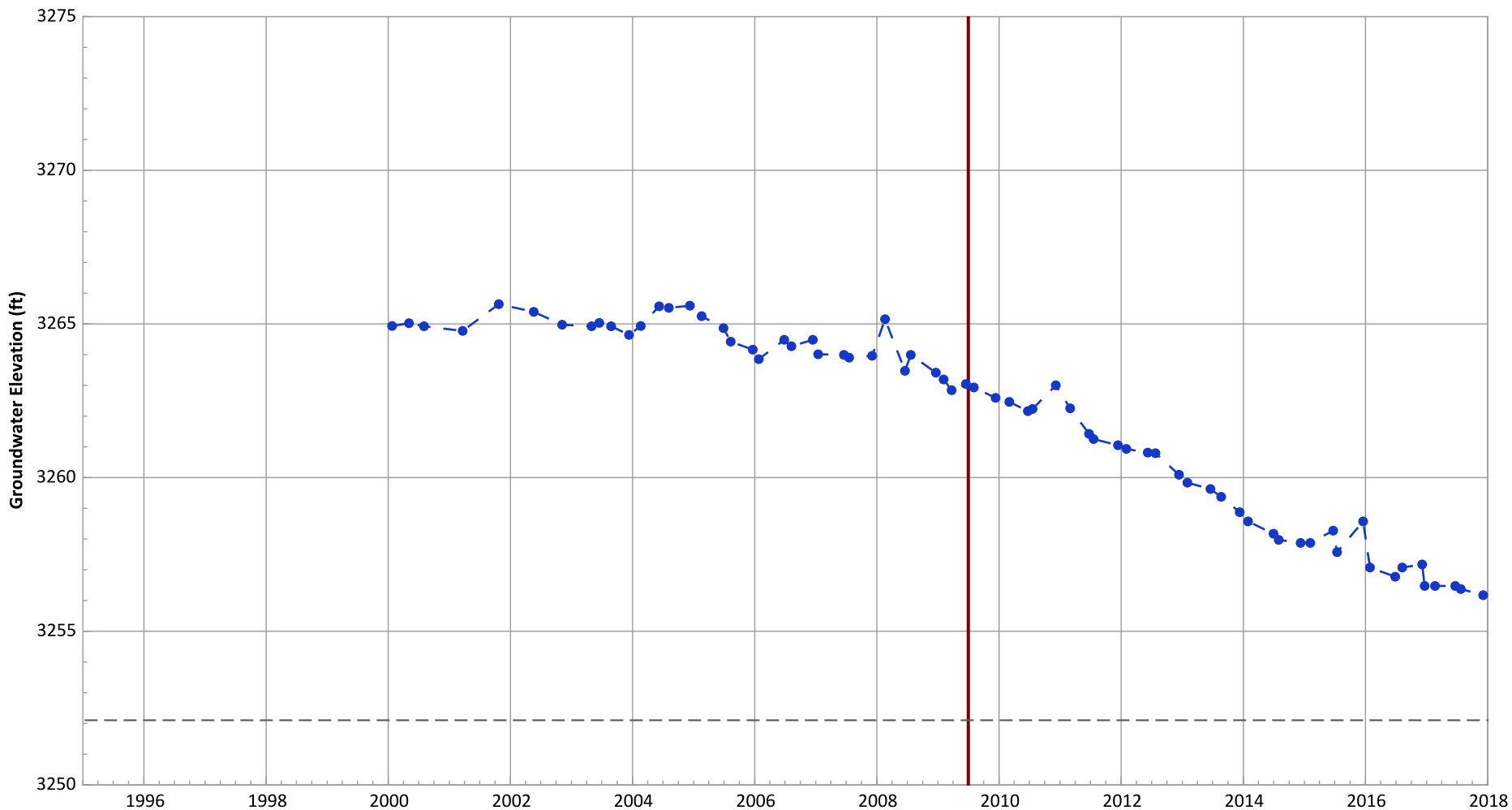
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
All Data: Decreasing at 1.02 ft/yr
Data (1/2012 - 1/2016): Decreasing at 1.4 ft/yr

**PTX06-1042 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

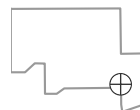


Notes:

1. Top of screen elevation is 3272.1 ft msl.
 2. The bottom of screen elevation is 3252.1 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- Start of Remedial Action

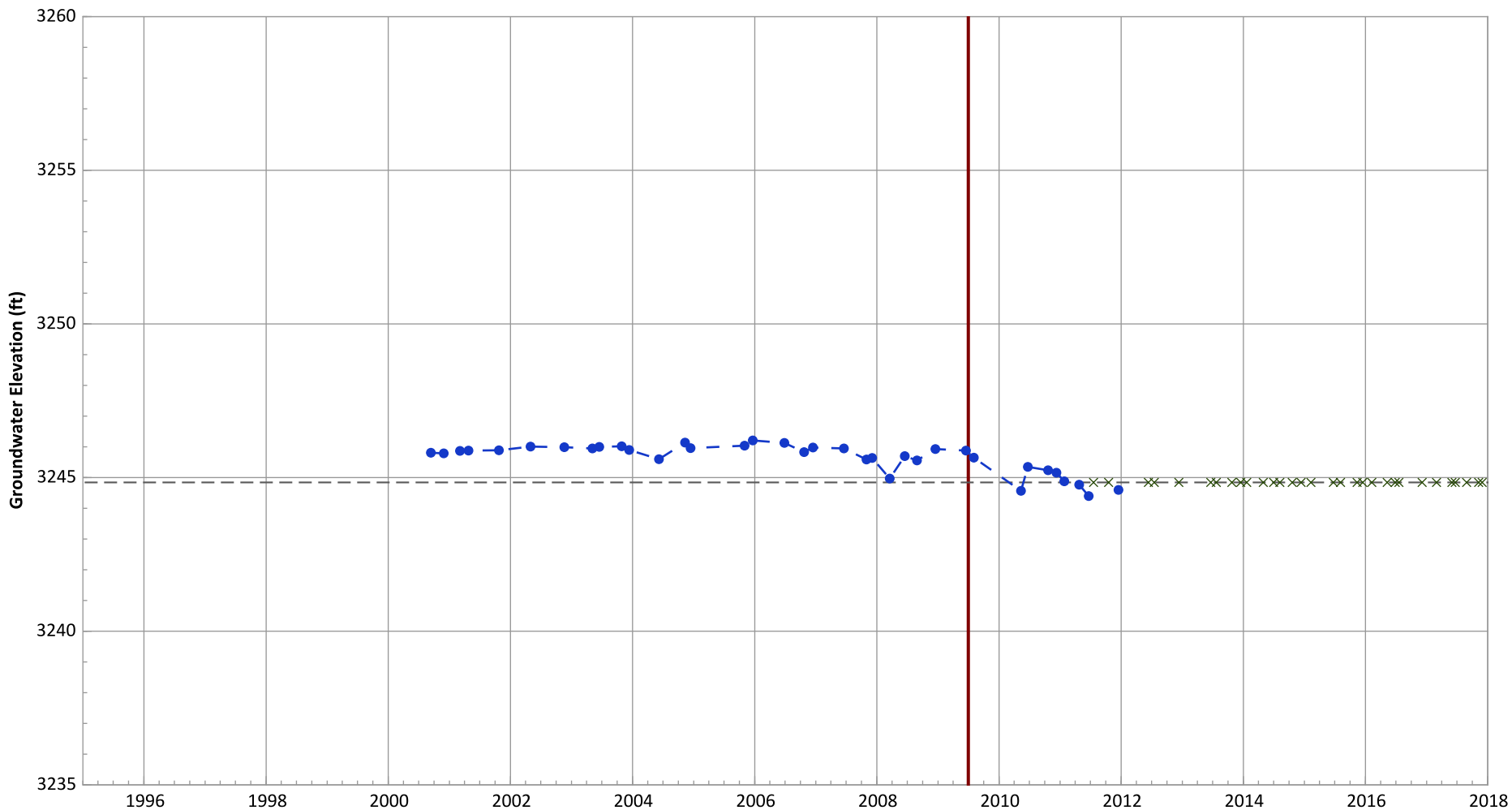
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: Decreasing at 0.58 ft/yr
 Data (1/2012 - 1/2016): Decreasing at 0.85 ft/yr

**PTX06-1045 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

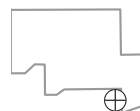


Notes:

1. Top of screen elevation is 3264.84 ft msl.
 2. The bottom of screen elevation is 3244.84 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements. Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- × No Water Detected
- Start of Remedial Action

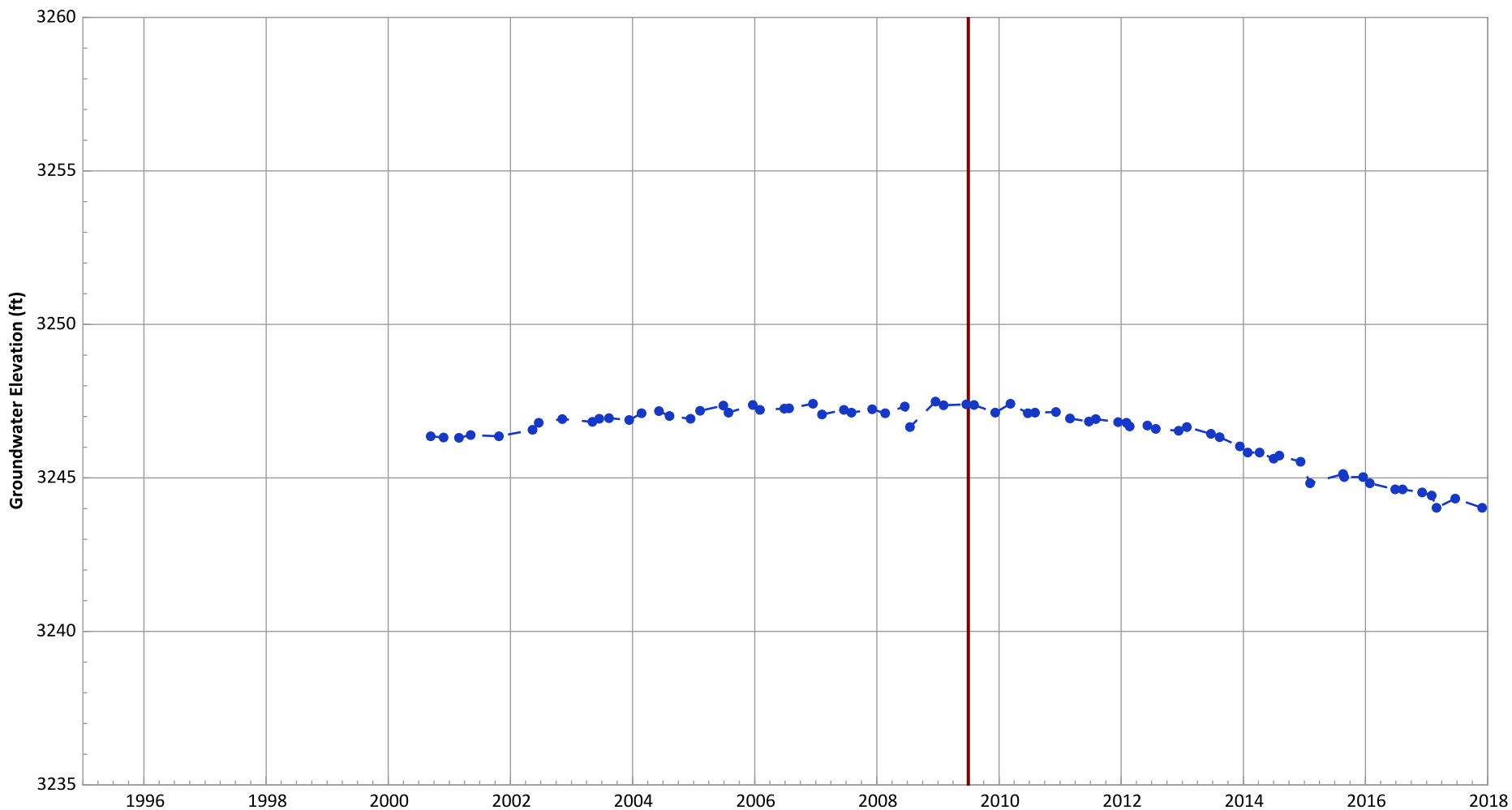
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: No Trend
 Data (1/2012 - 1/2016): N/A (No Measurements)

**PTX06-1046 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

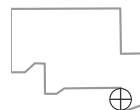


Notes:

1. Top of screen elevation is 3253.04 ft msl.
 2. The bottom of screen elevation is 3233.04 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- Start of Remedial Action

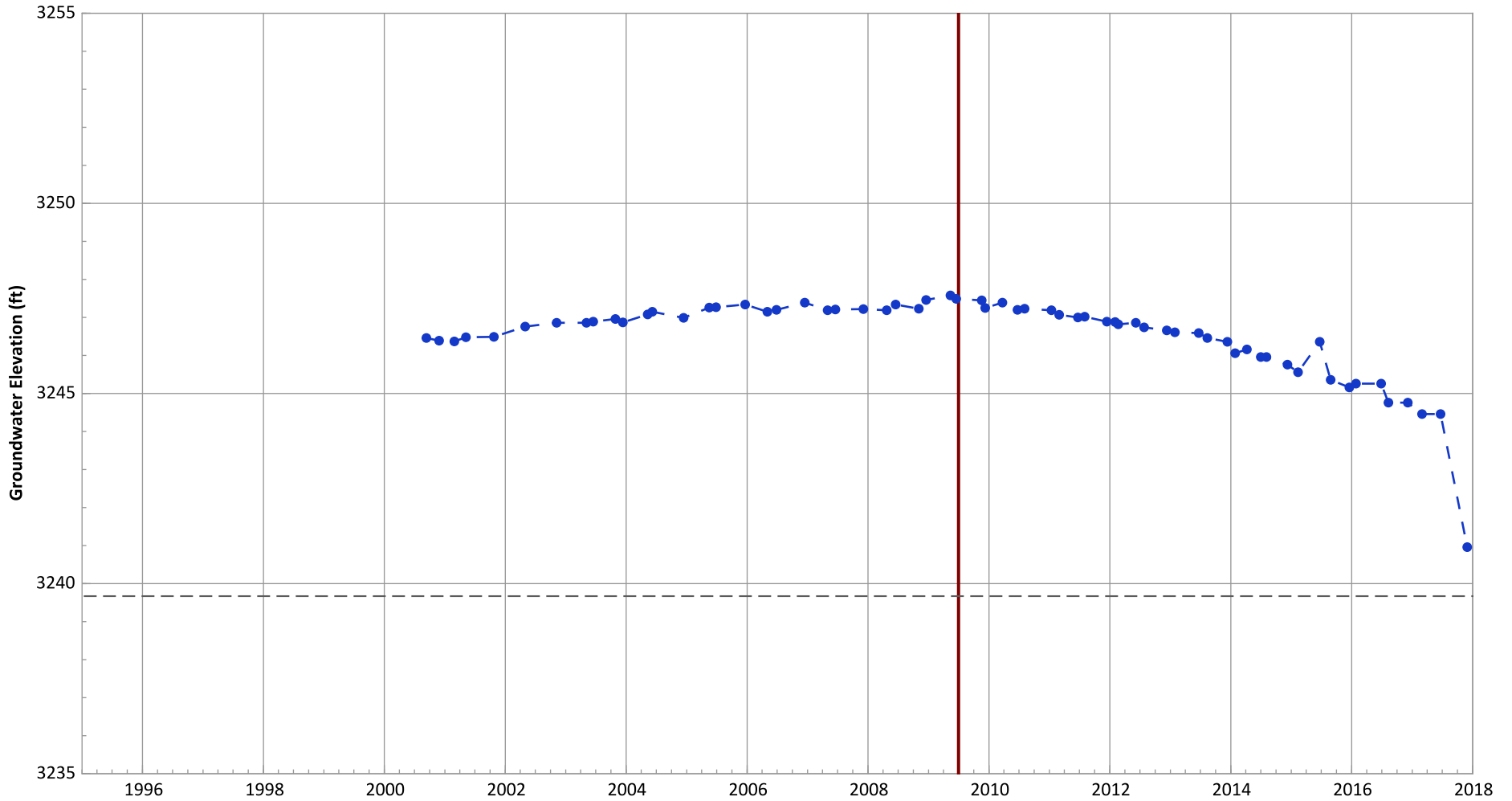
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: Decreasing at 0.13 ft/yr
 Data (1/2012 - 1/2016): Decreasing at 0.51 ft/yr

**PTX06-1047A Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

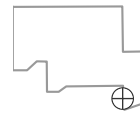


Notes:

1. Top of screen elevation is 3259.67 ft msl.
 2. The bottom of screen elevation is 3239.67 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- Start of Remedial Action

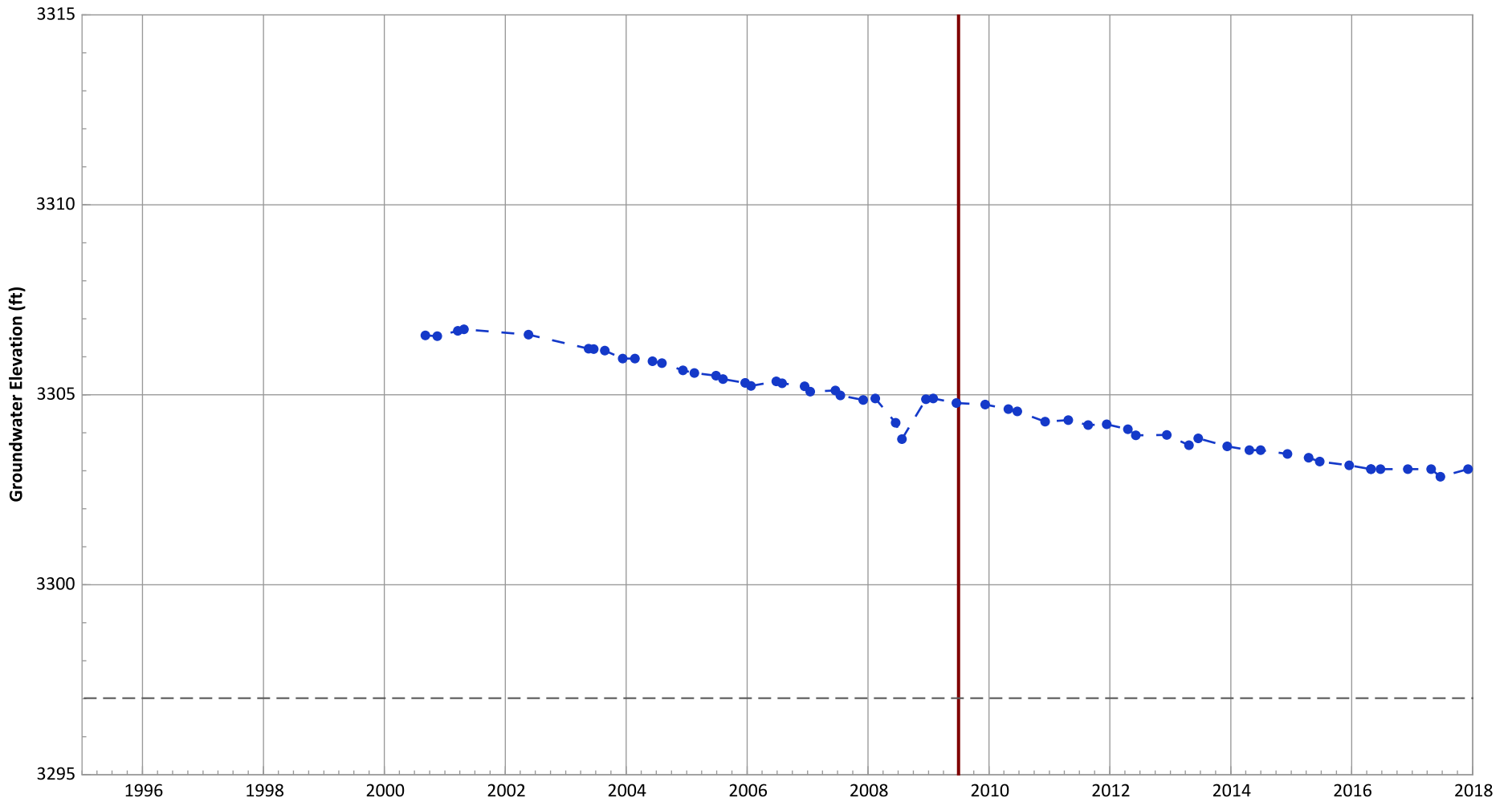
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: Decreasing at 0.12 ft/yr
 Data (1/2012 - 1/2016): Decreasing at 0.43 ft/yr

**PTX06-1048A Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

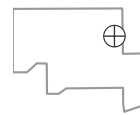


Notes:

1. Top of screen elevation is 3317.01 ft msl.
 2. The bottom of screen elevation is 3297.01 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- Start of Remedial Action

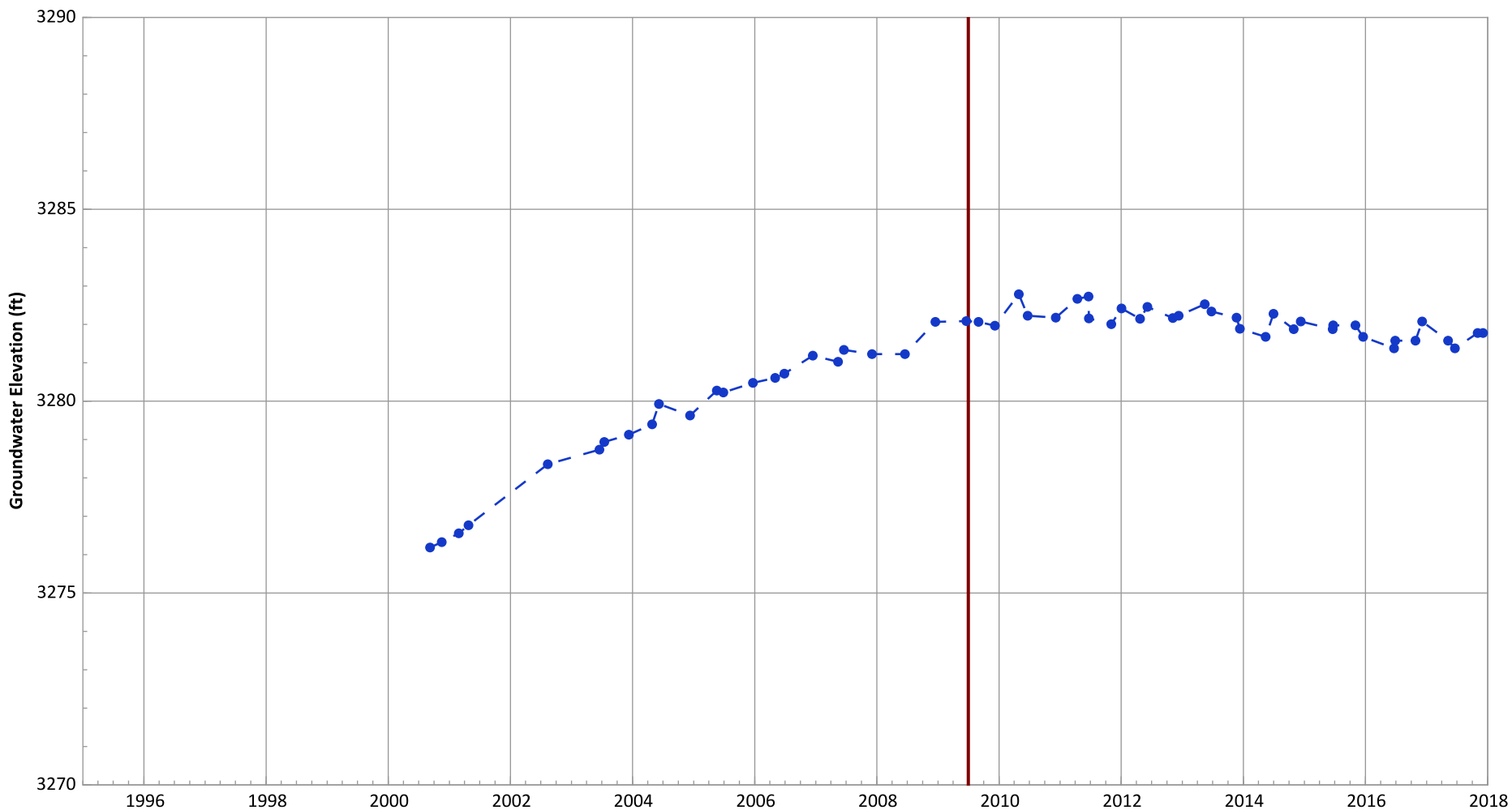
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: Decreasing at 0.23 ft/yr
 Data (1/2012 - 1/2016): Decreasing at 0.24 ft/yr

PTX06-1049 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant

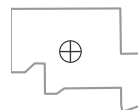


Notes:

1. Top of screen elevation is 3283.38 ft msl.
 2. The bottom of screen elevation is 3243.38 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

—●— Groundwater Elevation
— Start of Remedial Action

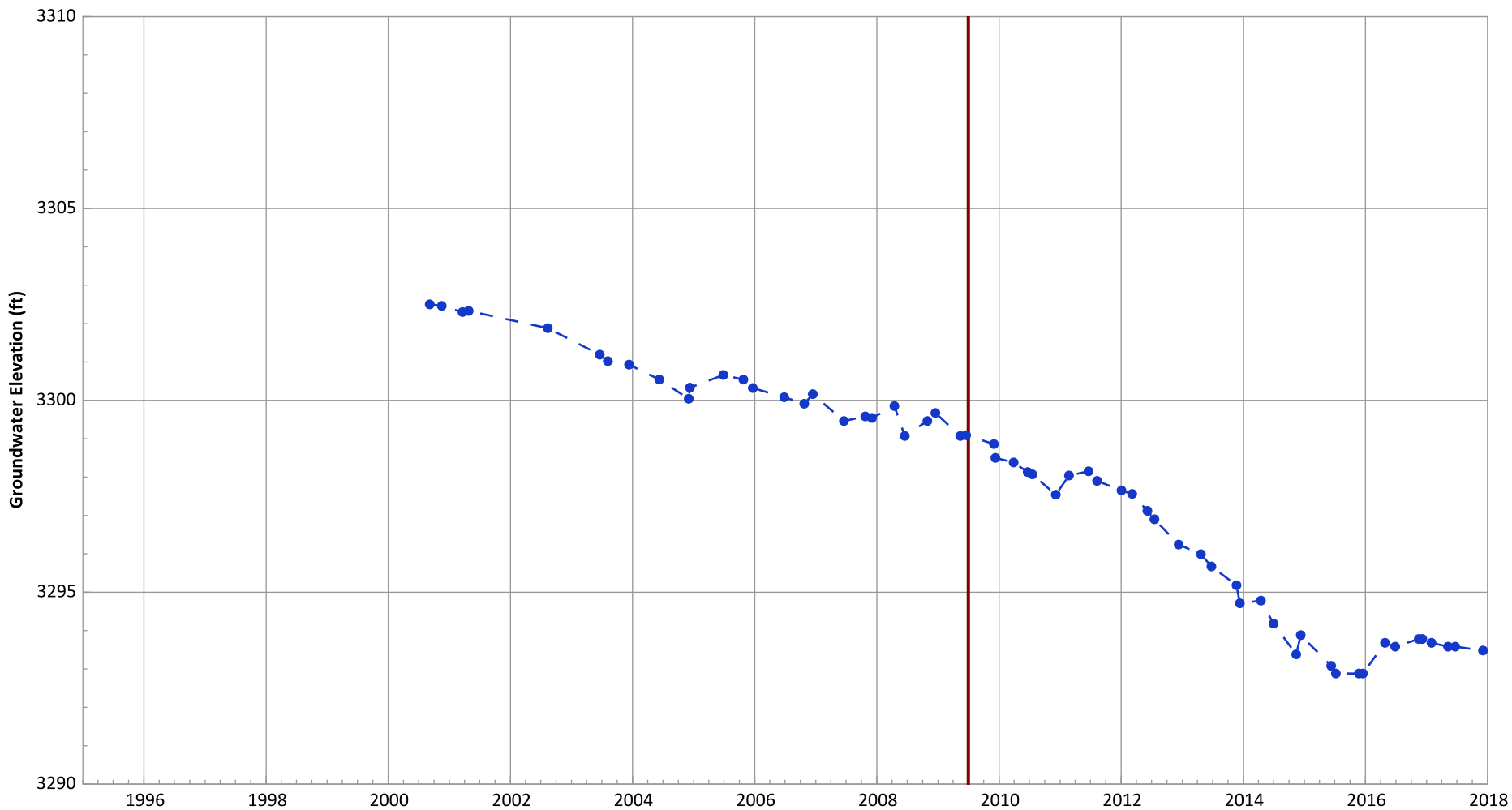
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
All Data: Increasing at 0.26 ft/yr
Data (1/2012 - 1/2016): Decreasing at 0.15 ft/yr

PTX06-1050 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant

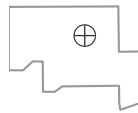


Notes:

1. Top of screen elevation is 3294.96 ft msl.
 2. The bottom of screen elevation is 3264.96 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements. Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

—●— Groundwater Elevation
— Start of Remedial Action

Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
All Data: Decreasing at 0.6 ft/yr
Data (1/2012 - 1/2016): Decreasing at 0.92 ft/yr

**PTX06-1051 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

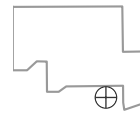


Notes:

1. Top of screen elevation is 3249.24 ft msl.
 2. The bottom of screen elevation is 3239.24 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements. Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- × No Water Detected
- Start of Remedial Action

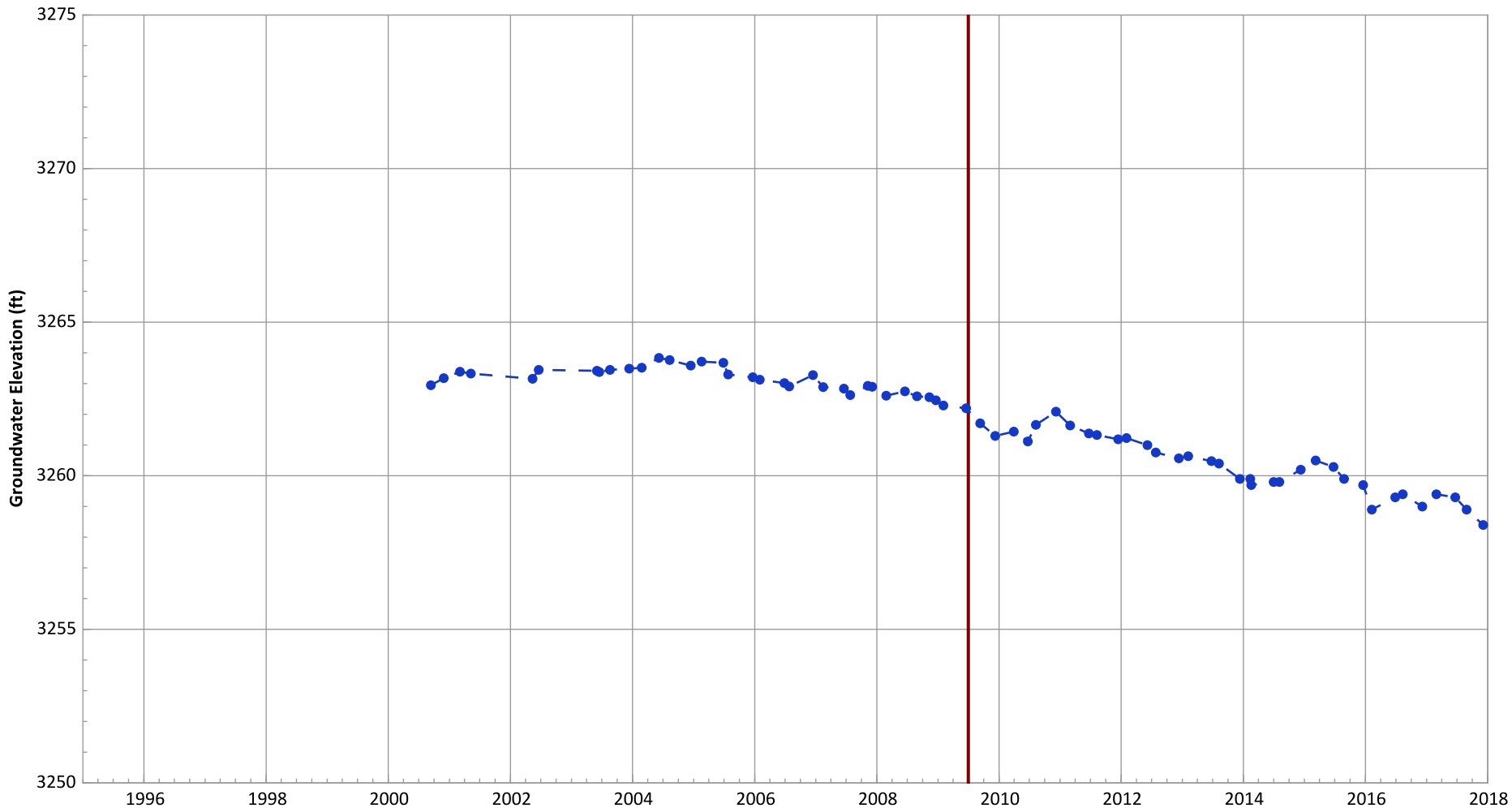
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: Increasing at 1.43 ft/yr
 Data (1/2012 - 1/2016): N/A (<3 Measurements)

**PTX06-1052 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**



Notes:

1. Top of screen elevation is 3266.45 ft msl.
 2. The bottom of screen elevation is 3246.45 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- Start of Remedial Action

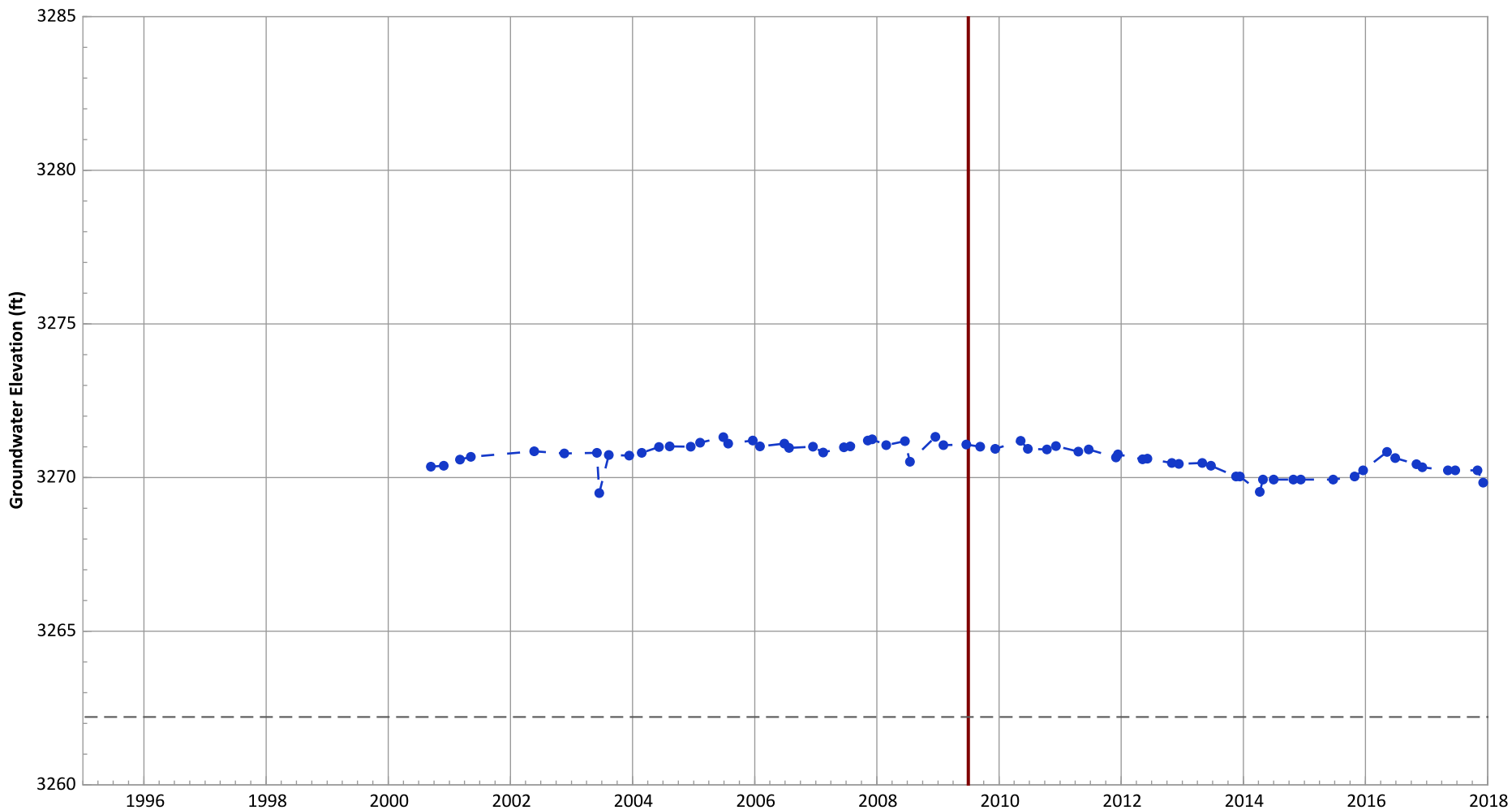
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: Decreasing at 0.31 ft/yr
 Data (1/2012 - 1/2016): Decreasing at 0.37 ft/yr

**PTX06-1053 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

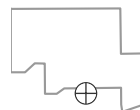


Notes:

1. Top of screen elevation is 3277.21 ft msl.
 2. The bottom of screen elevation is 3262.21 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- Start of Remedial Action

Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
All Data: No Trend
Data (1/2012 - 1/2016): No Trend

**PTX06-1055 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

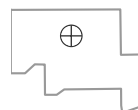


Notes:

1. Top of screen elevation is 3303.88 ft msl.
 2. The bottom of screen elevation is 3273.88 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements. Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- × No Water Detected
- Start of Remedial Action

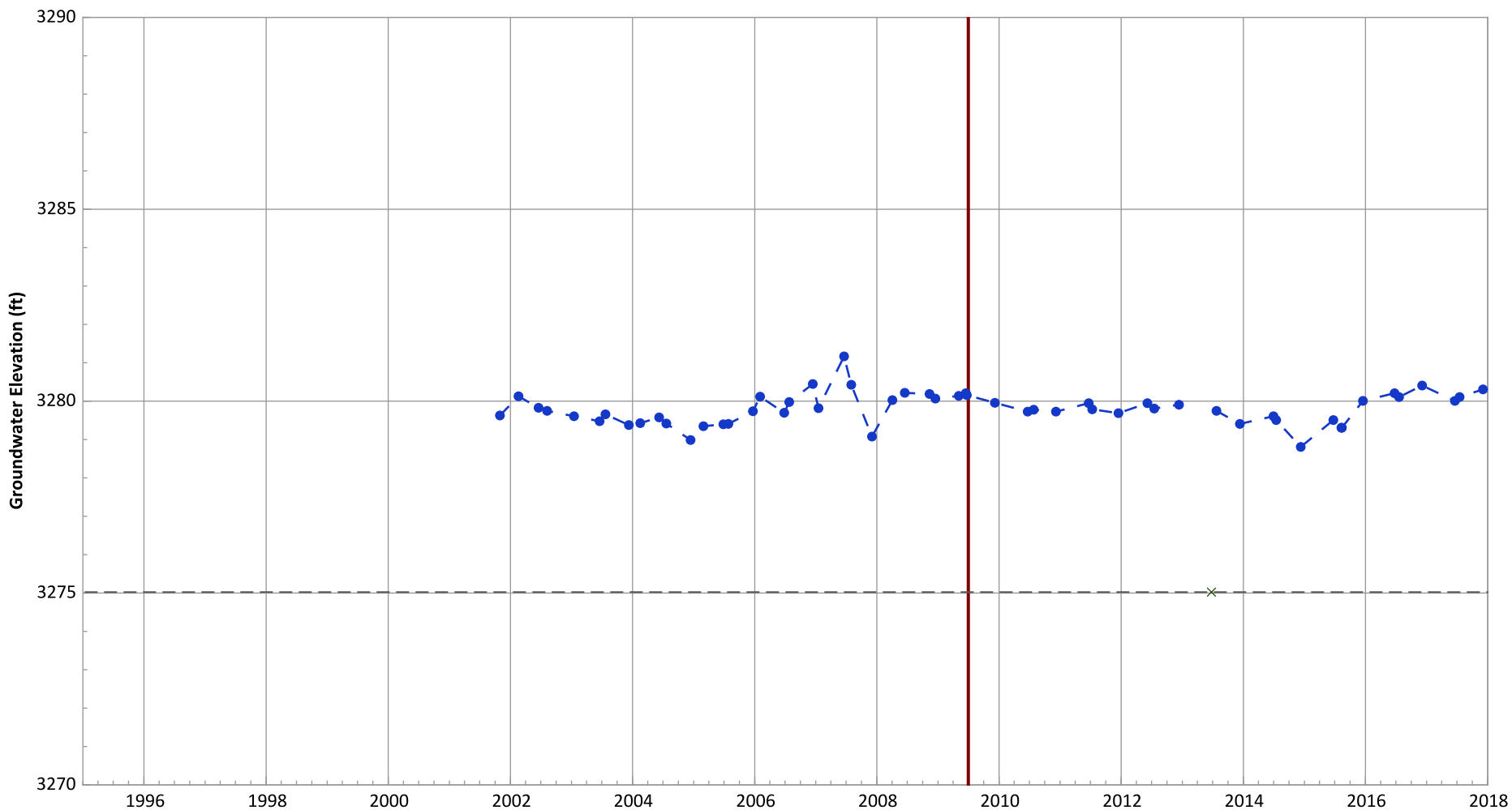
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: N/A (No Measurements)
 Data (1/2012 - 1/2016): N/A (No Measurements)

**PTX06-1069 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**



Notes:

1. Top of screen elevation is 3295.02 ft msl.
 2. The bottom of screen elevation is 3275.02 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements. Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- × No Water Detected
- Start of Remedial Action

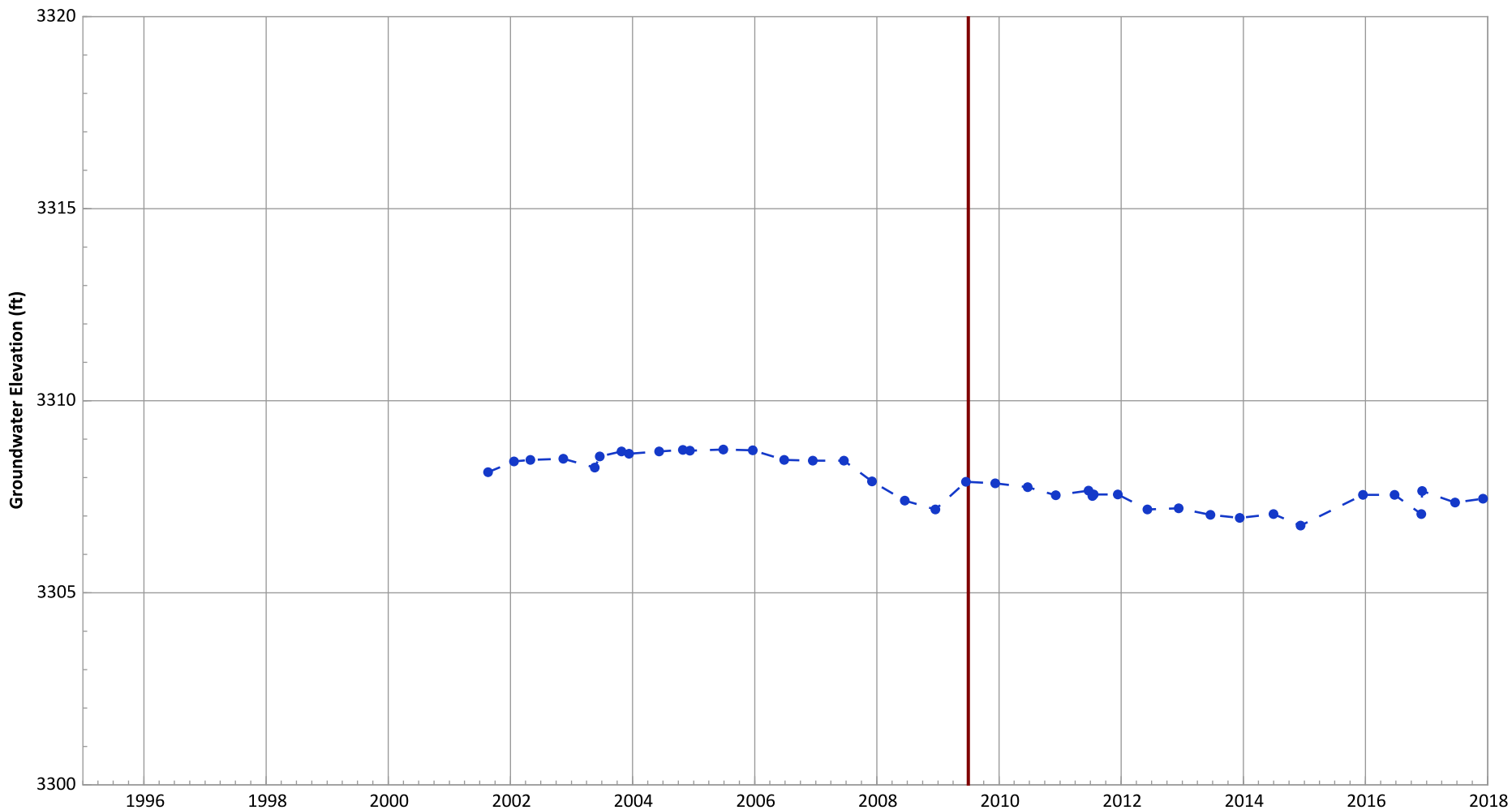
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: No Trend
 Data (1/2012 - 1/2016): No Trend

**PTX06-1071 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**



Notes:

1. Top of screen elevation is 3289.16 ft msl.
 2. The bottom of screen elevation is 3279.16 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

—●— Groundwater Elevation
 — Start of Remedial Action

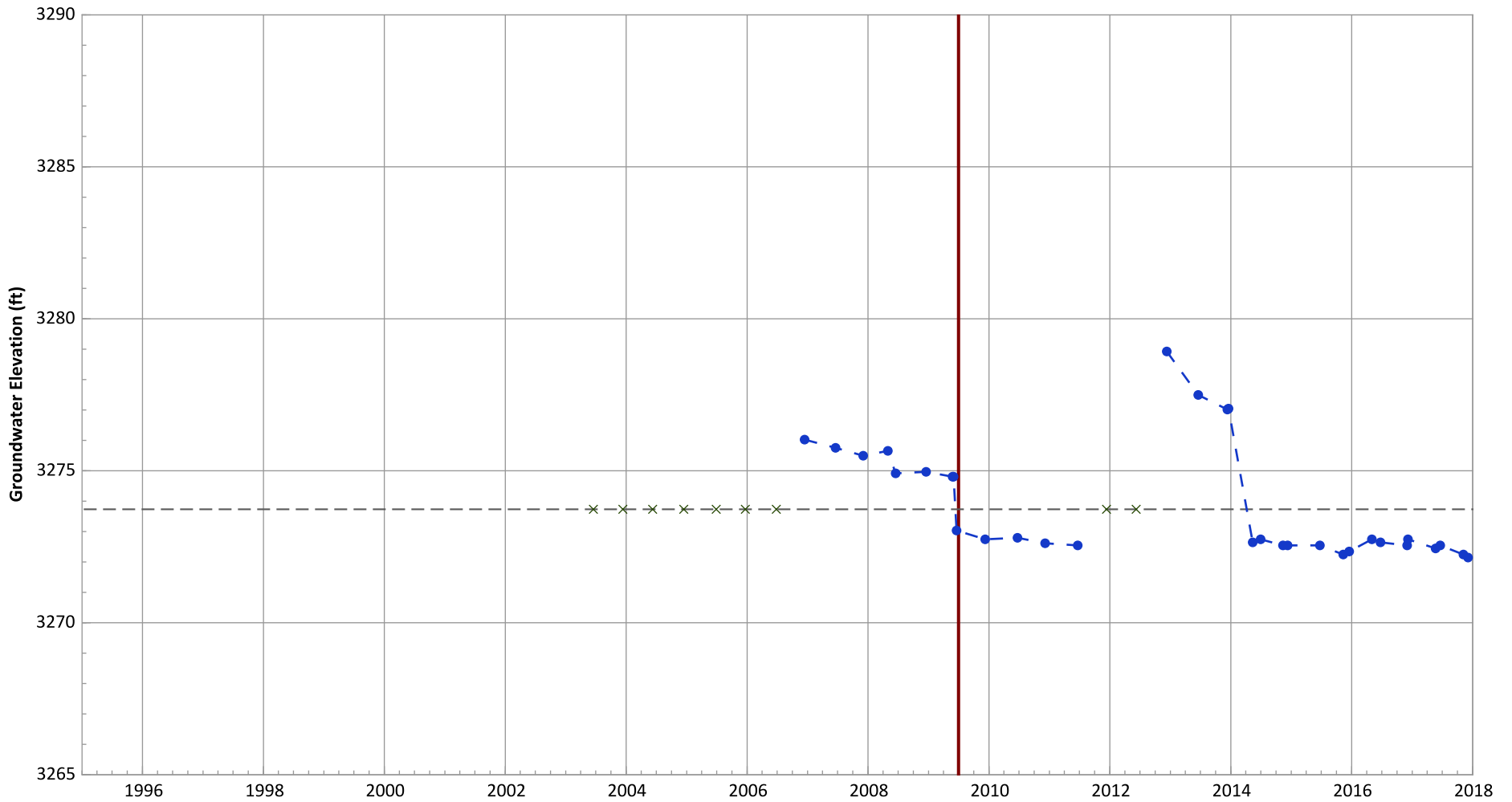
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: Decreasing at 0.1 ft/yr
 Data (1/2012 - 1/2016): No Trend

**PTX06-1073A Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**



Notes:

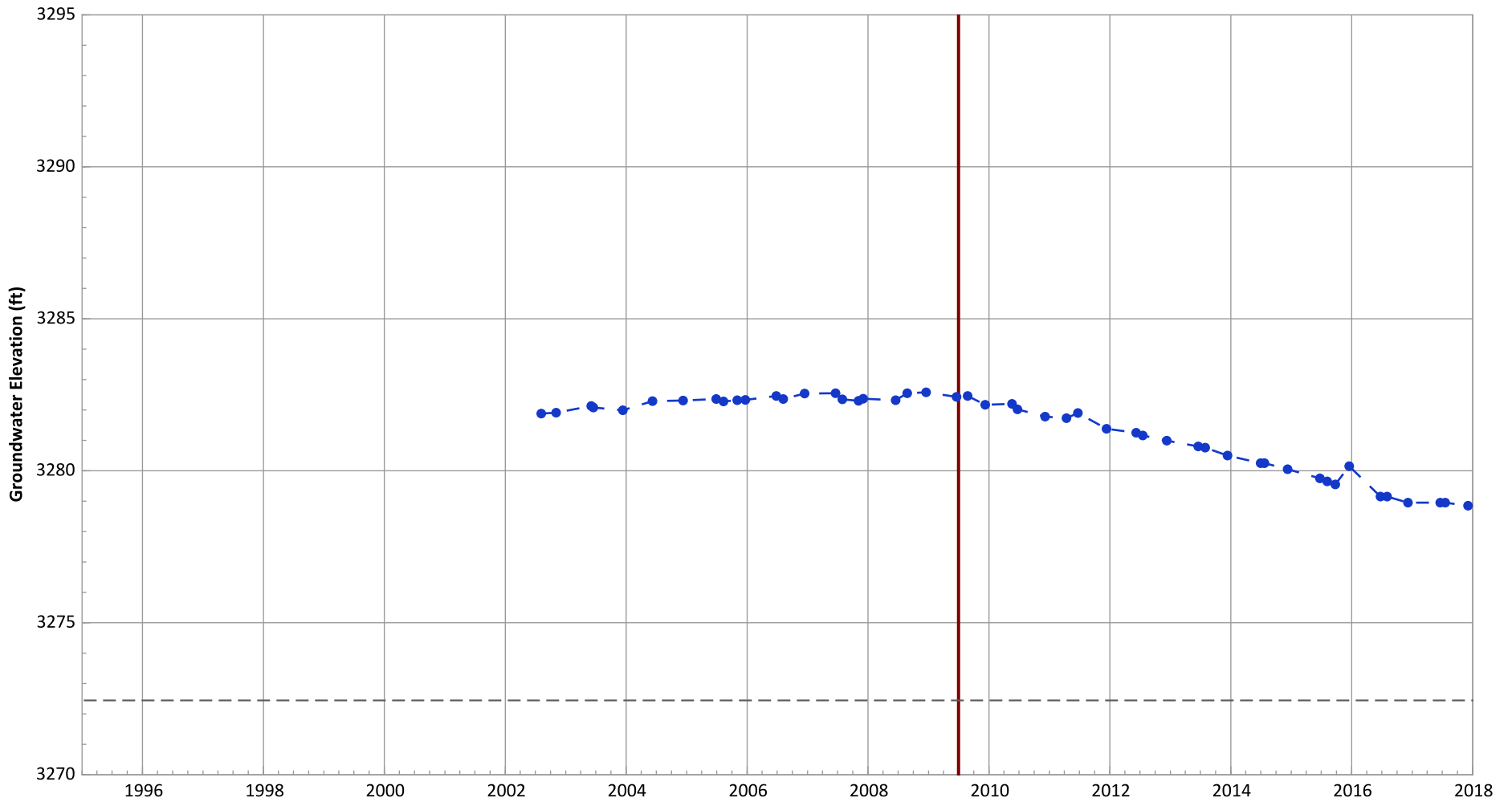
1. Top of screen elevation is 3303.73 ft msl.
 2. The bottom of screen elevation is 3273.73 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements. Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- × No Water Detected
- Start of Remedial Action



Hydrograph Trend
(MAROS Linear Regression Method)
All Data: Decreasing at 0.26 ft/yr
Data (1/2012 - 1/2016): Decreasing at 1.45 ft/yr

**PTX06-1077A Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

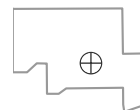


Notes:

1. Top of screen elevation is 3297.45 ft msl.
 2. The bottom of screen elevation is 3272.45 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- Start of Remedial Action

Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: Decreasing at 0.24 ft/yr
 Data (1/2012 - 1/2016): Decreasing at 0.49 ft/yr

**PTX06-1078 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

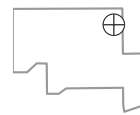


Notes:

1. Top of screen elevation is 3293.94 ft msl.
 2. The bottom of screen elevation is 3278.94 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- × No Water Detected
- Start of Remedial Action

Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
All Data: N/A (No Measurements)
Data (1/2012 - 1/2016): N/A (No Measurements)

**PTX06-1079 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**



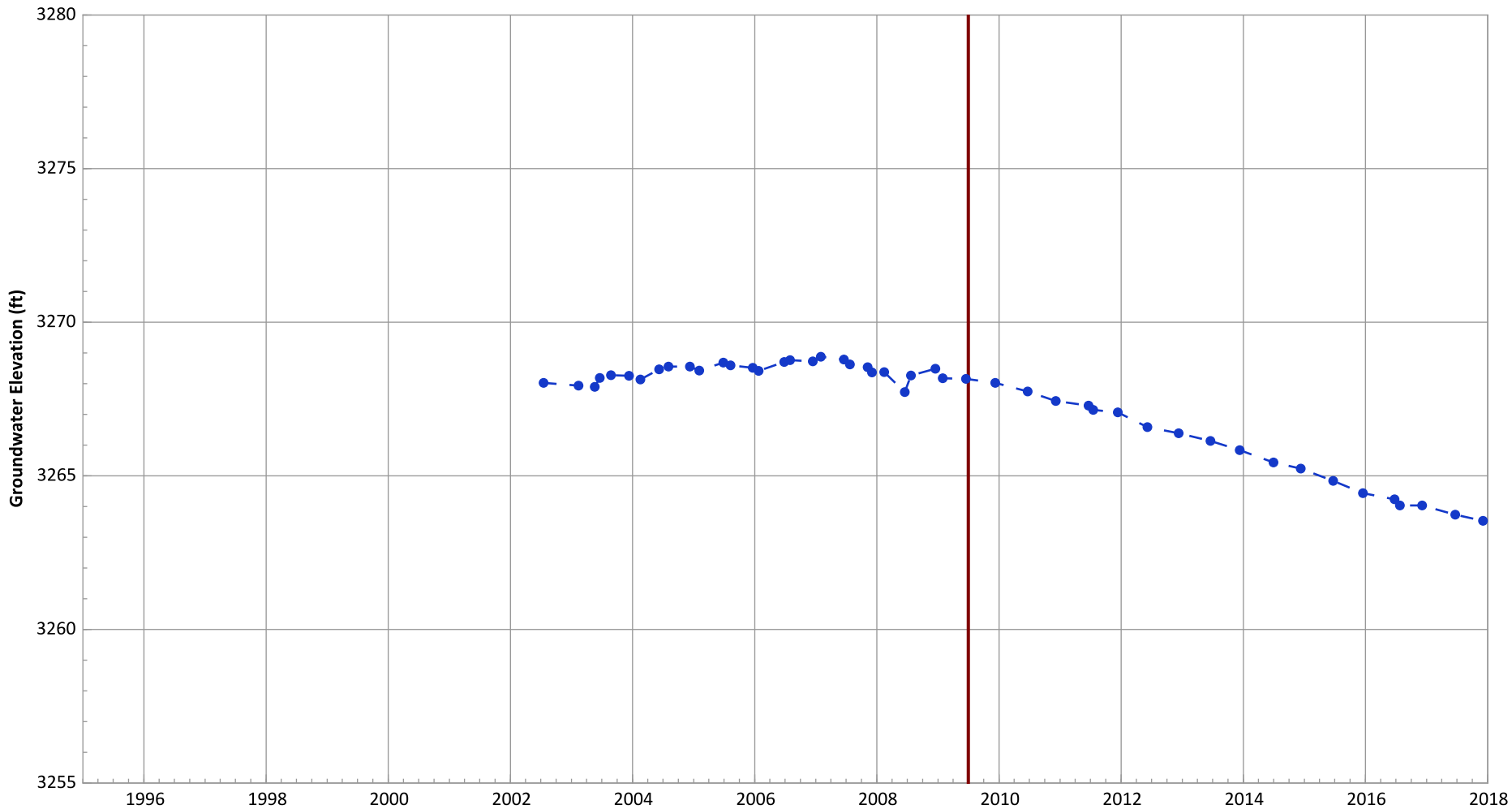
Notes:
 1. Top of screen elevation is 3296.98 ft msl.
 2. The bottom of screen elevation is 3266.98 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements. Actual groundwater elevations between measurements may be different than shown.
 Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- × No Water Detected
- Start of Remedial Action



Hydrograph Trend
 (MAROS Linear Regression Method)
 All Data: N/A (No Measurements)
 Data (1/2012 - 1/2016): N/A (No Measurements)

**PTX06-1080 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

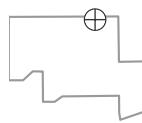


Notes:

1. Top of screen elevation is 3280.12 ft msl.
 2. The bottom of screen elevation is 3250.12 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

—●— Groundwater Elevation
 — Start of Remedial Action

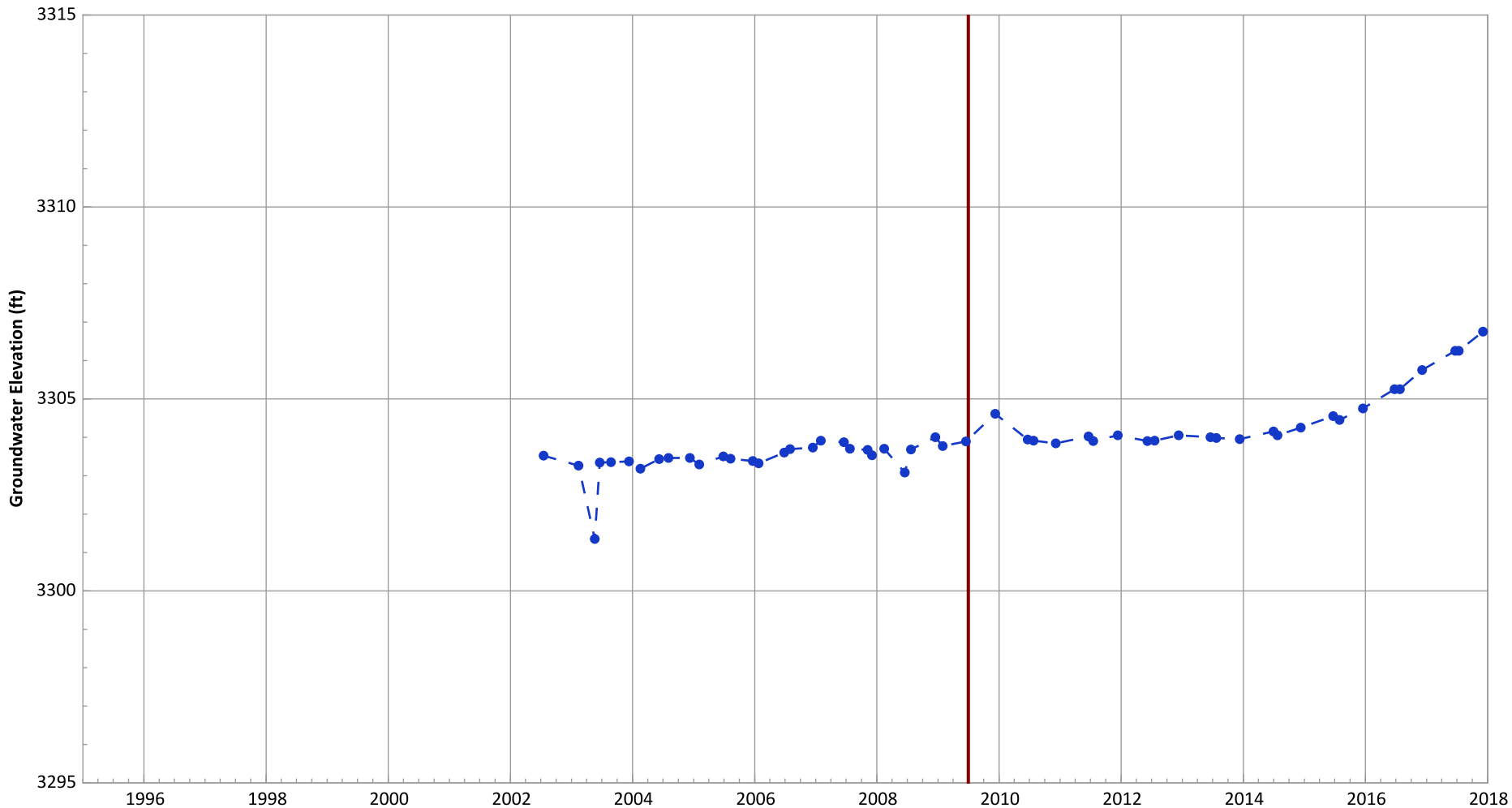
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: Decreasing at 0.32 ft/yr
 Data (1/2012 - 1/2016): Decreasing at 0.61 ft/yr

**PTX06-1081 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**



Notes:

1. Top of screen elevation is 3316.5 ft msl.
 2. The bottom of screen elevation is 3286.5 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
- Actual groundwater elevations between measurements may be different than shown.
Analysis Date: 02/15/2018

—●— Groundwater Elevation
 — Start of Remedial Action

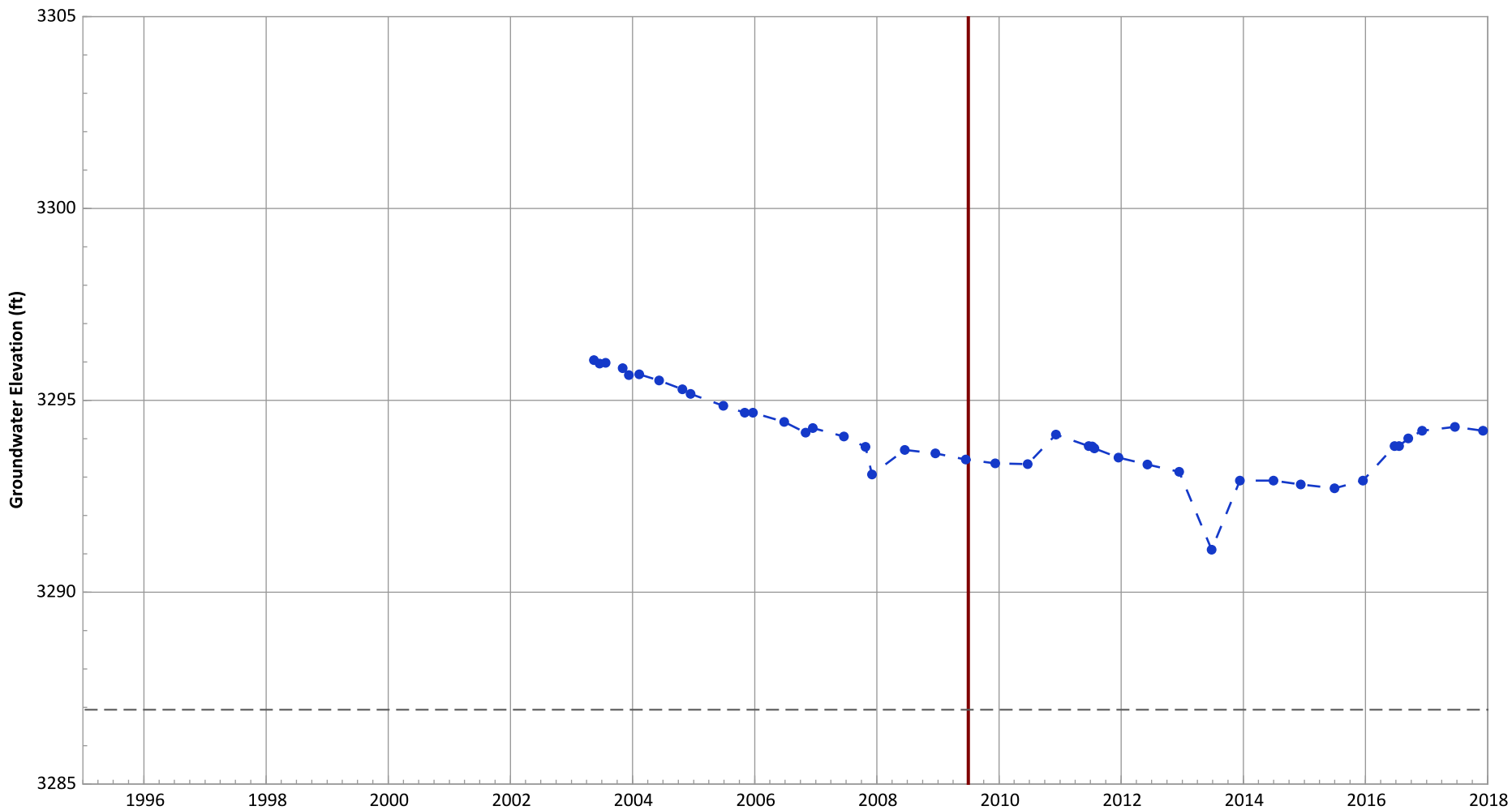
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: Increasing at 0.15 ft/yr
 Data (1/2012 - 1/2016): Increasing at 0.35 ft/yr

PTX06-1082 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant



Notes:

1. Top of screen elevation is 3311.94 ft msl.
 2. The bottom of screen elevation is 3286.94 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements. Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- Start of Remedial Action

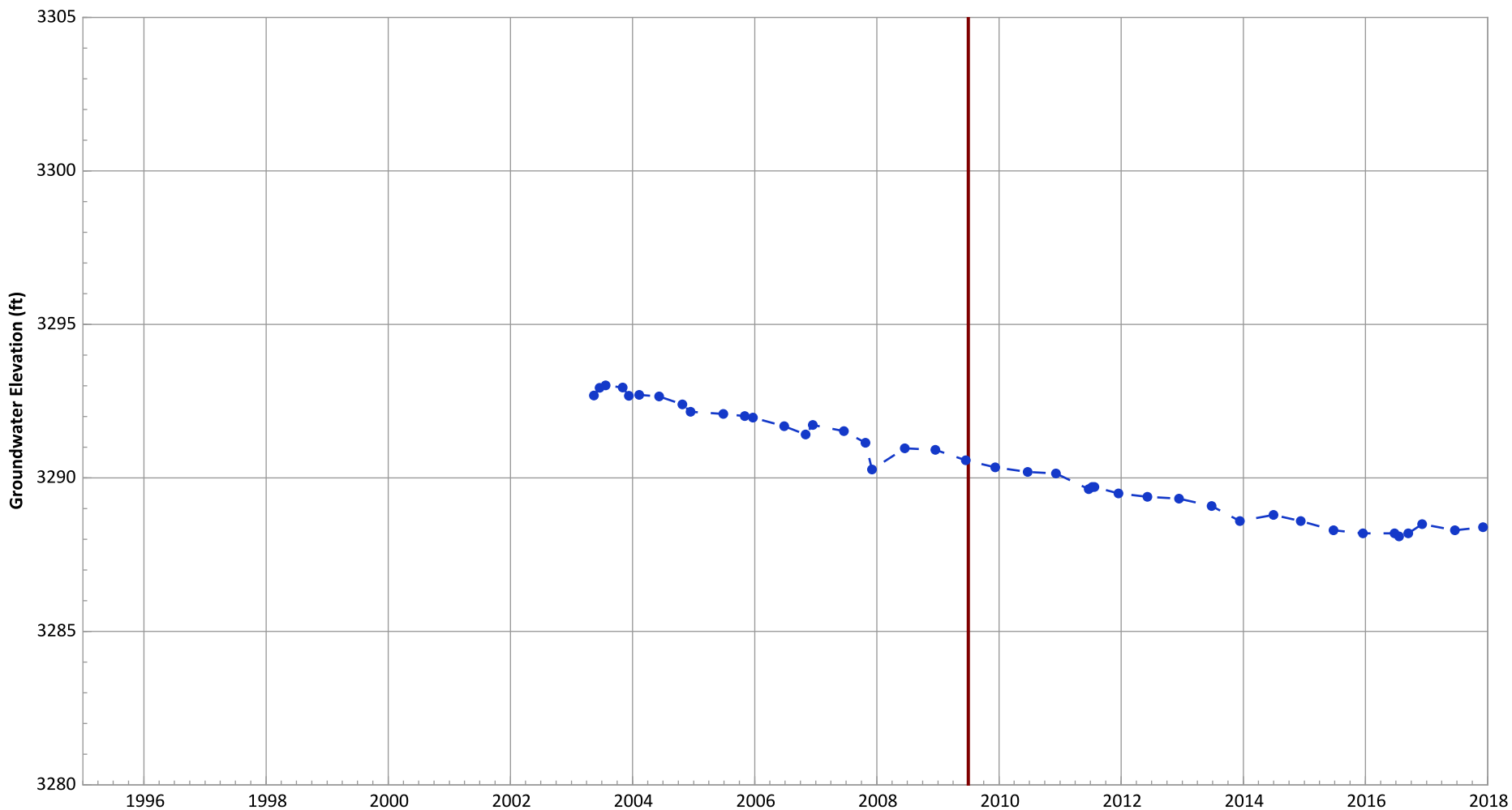
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
All Data: Decreasing at 0.16 ft/yr
Data (1/2012 - 1/2016): Increasing at 0.3 ft/yr

**PTX06-1083 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**



Notes:

1. Top of screen elevation is 3299.91 ft msl.
 2. The bottom of screen elevation is 3269.91 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

—●— Groundwater Elevation
 — Start of Remedial Action

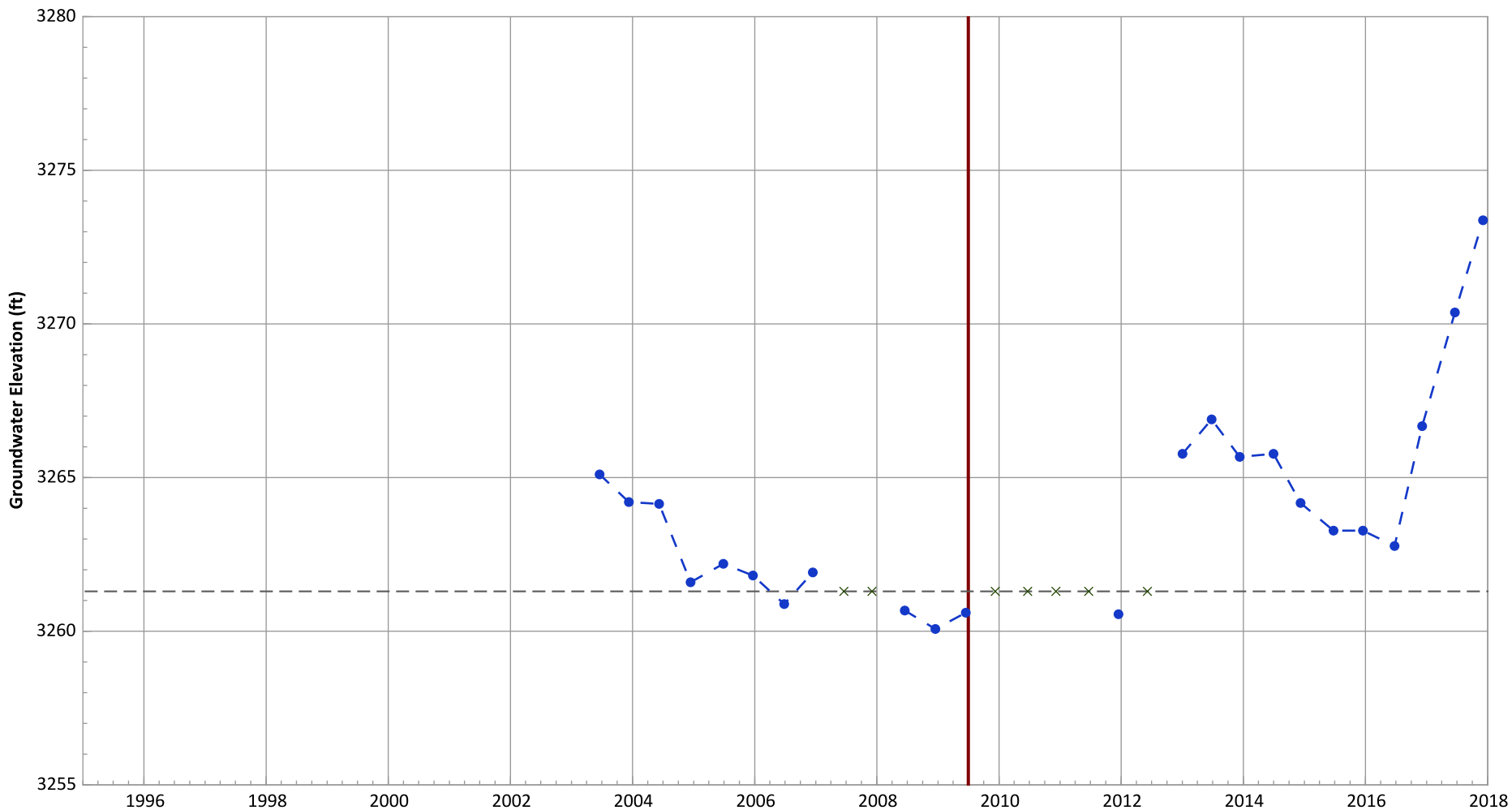
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: Decreasing at 0.35 ft/yr
 Data (1/2012 - 1/2016): Decreasing at 0.27 ft/yr

**PTX06-1084 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**



Notes:

1. Top of screen elevation is 3281.3 ft msl.
 2. The bottom of screen elevation is 3261.3 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements. Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- × No Water Detected
- Start of Remedial Action

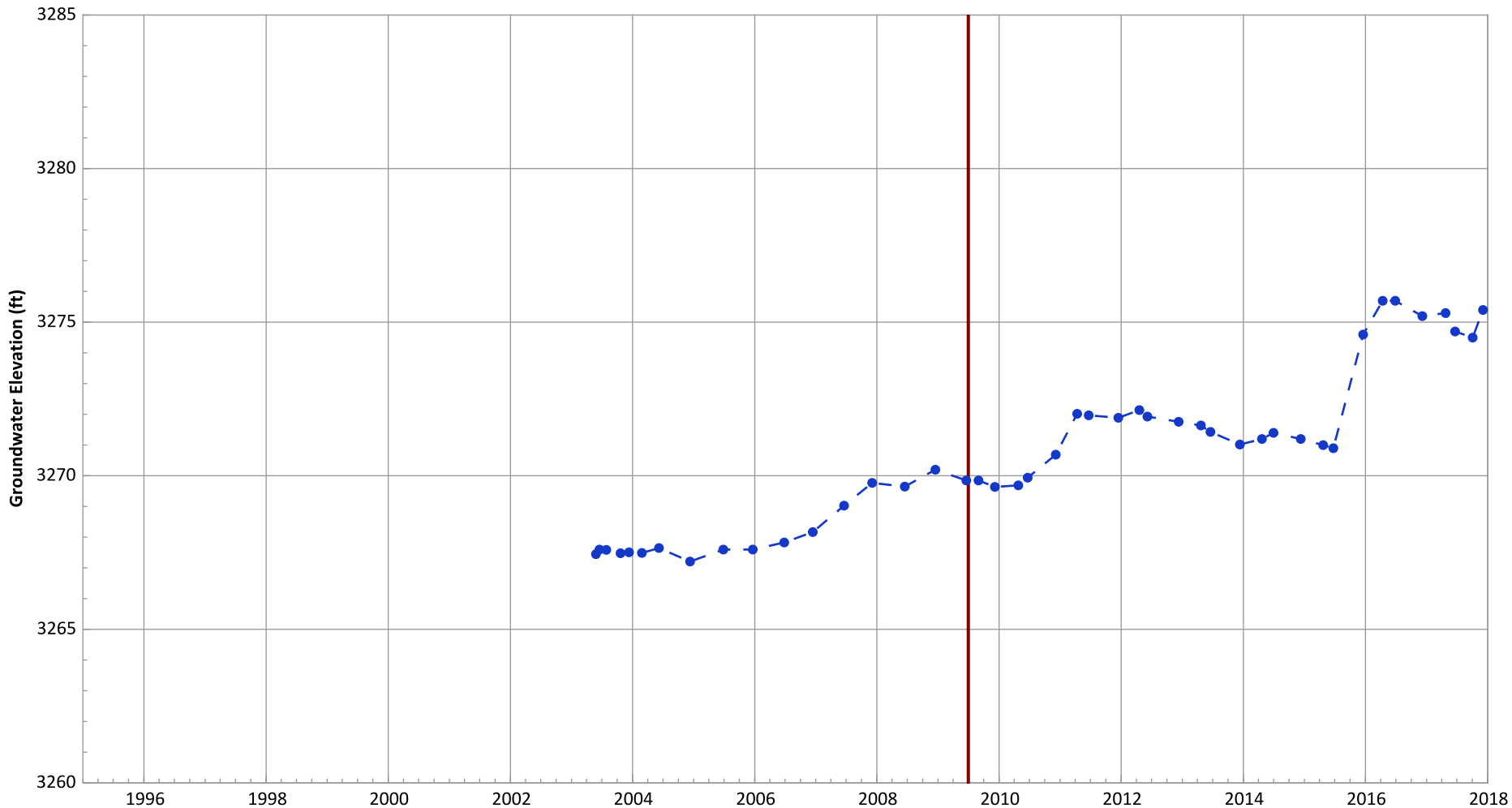
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: Increasing at 0.36 ft/yr
 Data (1/2012 - 1/2016): Decreasing at 0.55 ft/yr

**PTX06-1085 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**



Notes:

1. Top of screen elevation is 3271.52 ft msl.
 2. The bottom of screen elevation is 3246.52 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

—●— Groundwater Elevation
 — Start of Remedial Action

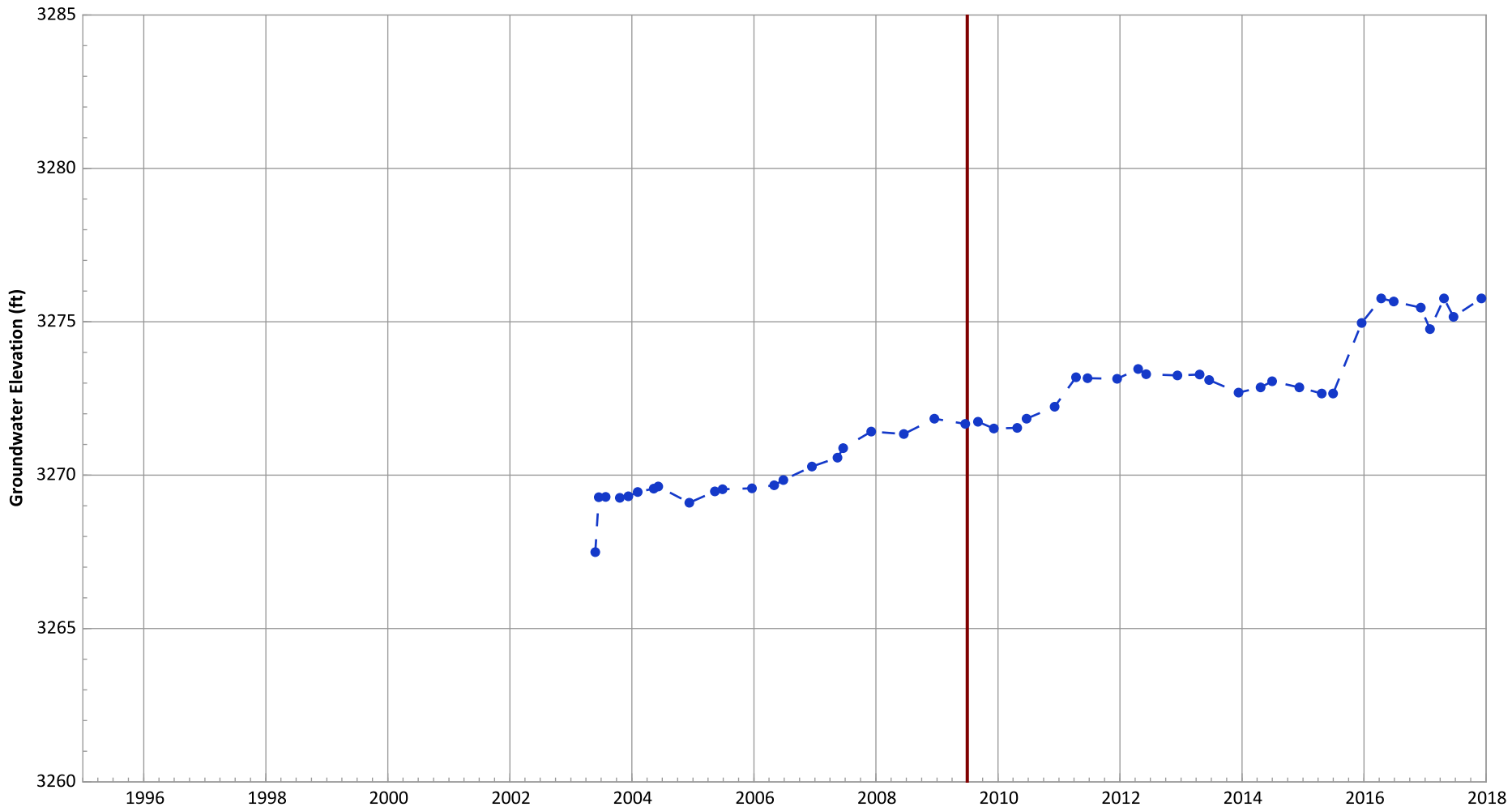
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: Increasing at 0.53 ft/yr
 Data (1/2012 - 1/2016): Increasing at 0.79 ft/yr

**PTX06-1086 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

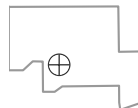


Notes:

1. Top of screen elevation is 3270.72 ft msl.
 2. The bottom of screen elevation is 3225.72 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

—●— Groundwater Elevation
 — Start of Remedial Action

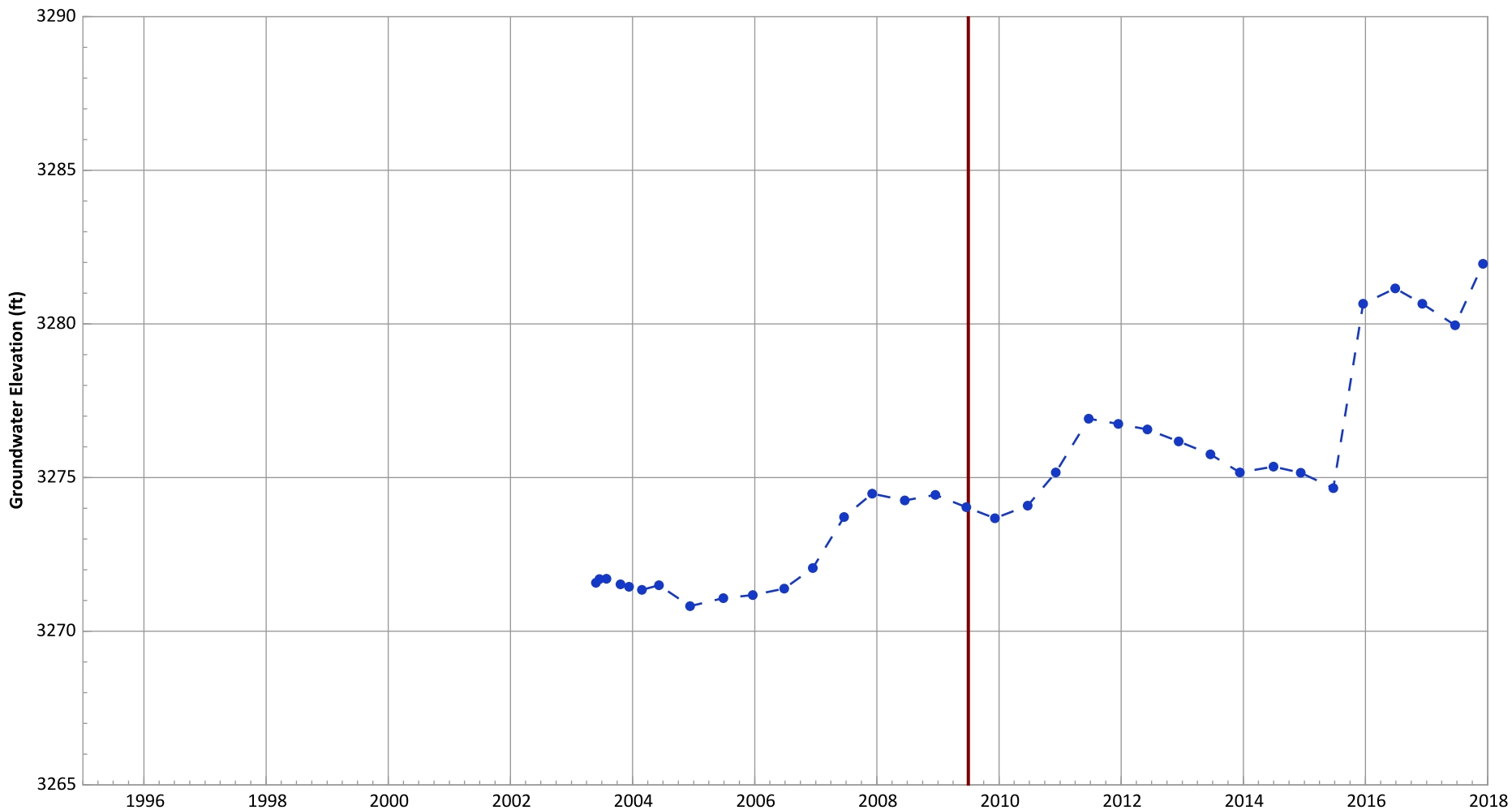
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: Increasing at 0.45 ft/yr
 Data (1/2012 - 1/2016): Increasing at 0.49 ft/yr

**PTX06-1087 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

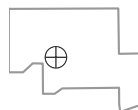


Notes:

1. Top of screen elevation is 3273.68 ft msl.
 2. The bottom of screen elevation is 3243.68 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

—●— Groundwater Elevation
 — Start of Remedial Action

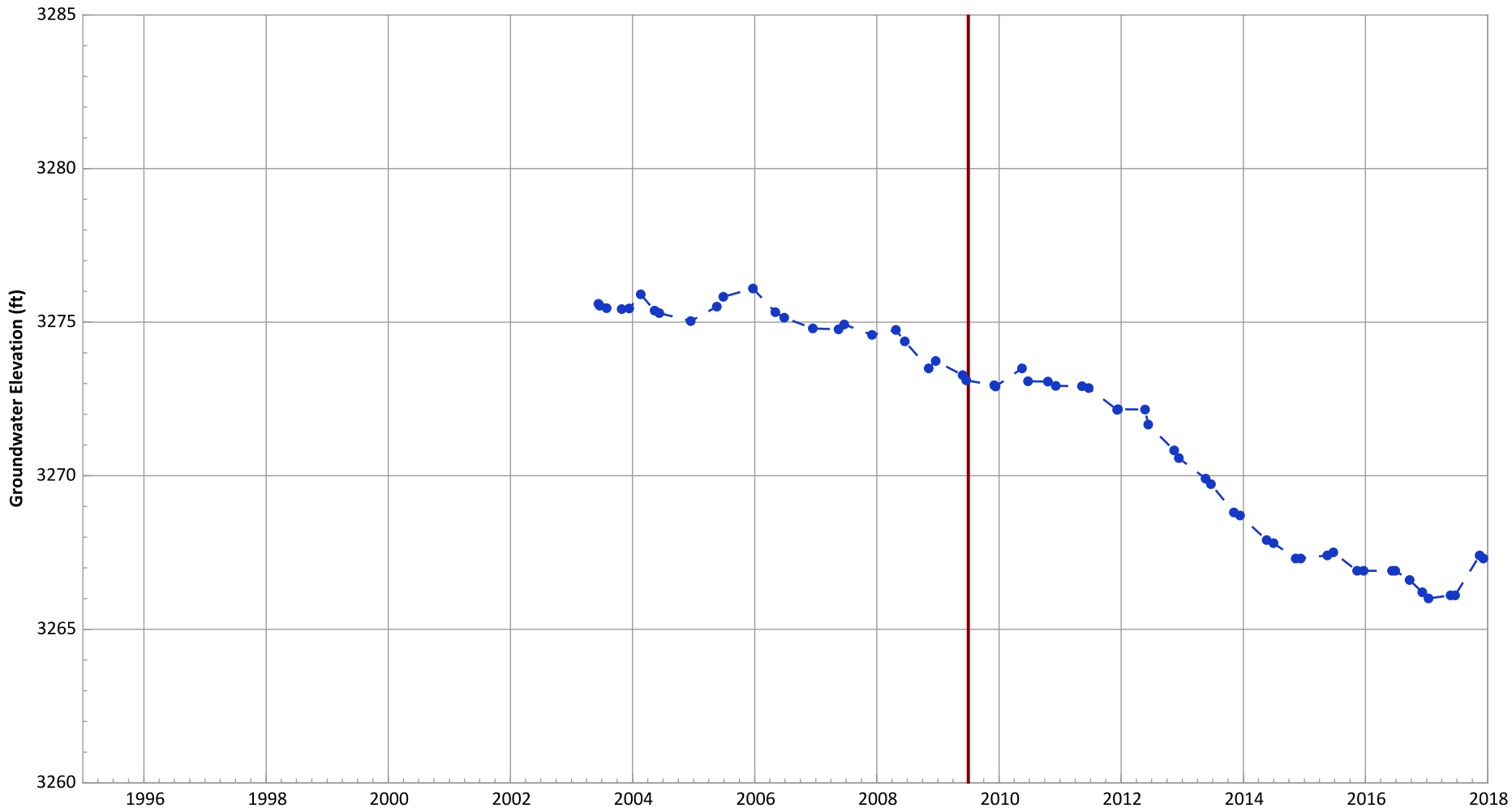
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: Increasing at 0.62 ft/yr
 Data (1/2012 - 1/2016): Increasing at 1.13 ft/yr

**PTX06-1088 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**



Notes:

1. Top of screen elevation is 3282.54 ft msl.
 2. The bottom of screen elevation is 3247.54 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

—●— Groundwater Elevation
 — Start of Remedial Action

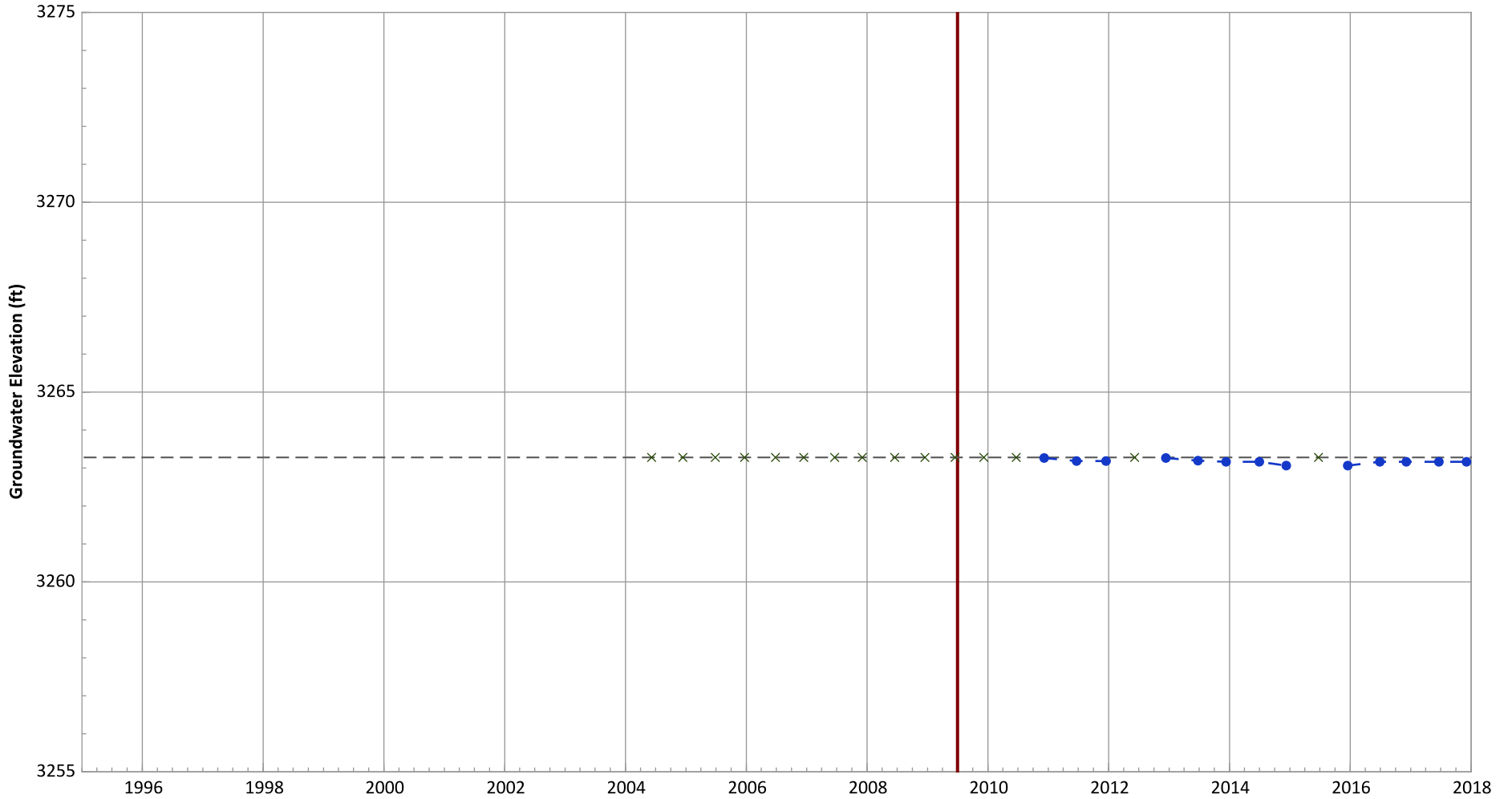
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: Decreasing at 0.74 ft/yr
 Data (1/2012 - 1/2016): Decreasing at 1.16 ft/yr

**PTX06-1089 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**



Notes:

1. Top of screen elevation is 3278.28 ft msl.
2. The bottom of screen elevation is 3263.28 ft msl.
3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements. Actual groundwater elevations between measurements may be different than shown.

Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- × No Water Detected
- Start of Remedial Action

Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
All Data: No Trend
Data (1/2012 - 1/2016): No Trend

**PTX06-1090 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**



Notes:

1. Top of screen elevation is 3269.83 ft msl.
2. The bottom of screen elevation is 3254.83 ft msl.
3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.

Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- × No Water Detected
- Start of Remedial Action

Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
All Data: N/A (No Measurements)
Data (1/2012 - 1/2016): N/A (No Measurements)

**PTX06-1091 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**



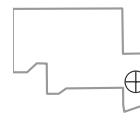
Notes:

1. Top of screen elevation is 3271.29 ft msl.
 2. The bottom of screen elevation is 3261.29 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
- Actual groundwater elevations between measurements may be different than shown.

Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- × No Water Detected
- Start of Remedial Action

Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: N/A (No Measurements)
 Data (1/2012 - 1/2016): N/A (No Measurements)

**PTX06-1093 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

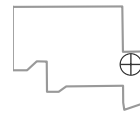


Notes:

1. Top of screen elevation is 3284.59 ft msl.
 2. The bottom of screen elevation is 3274.59 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements. Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- × No Water Detected
- Start of Remedial Action

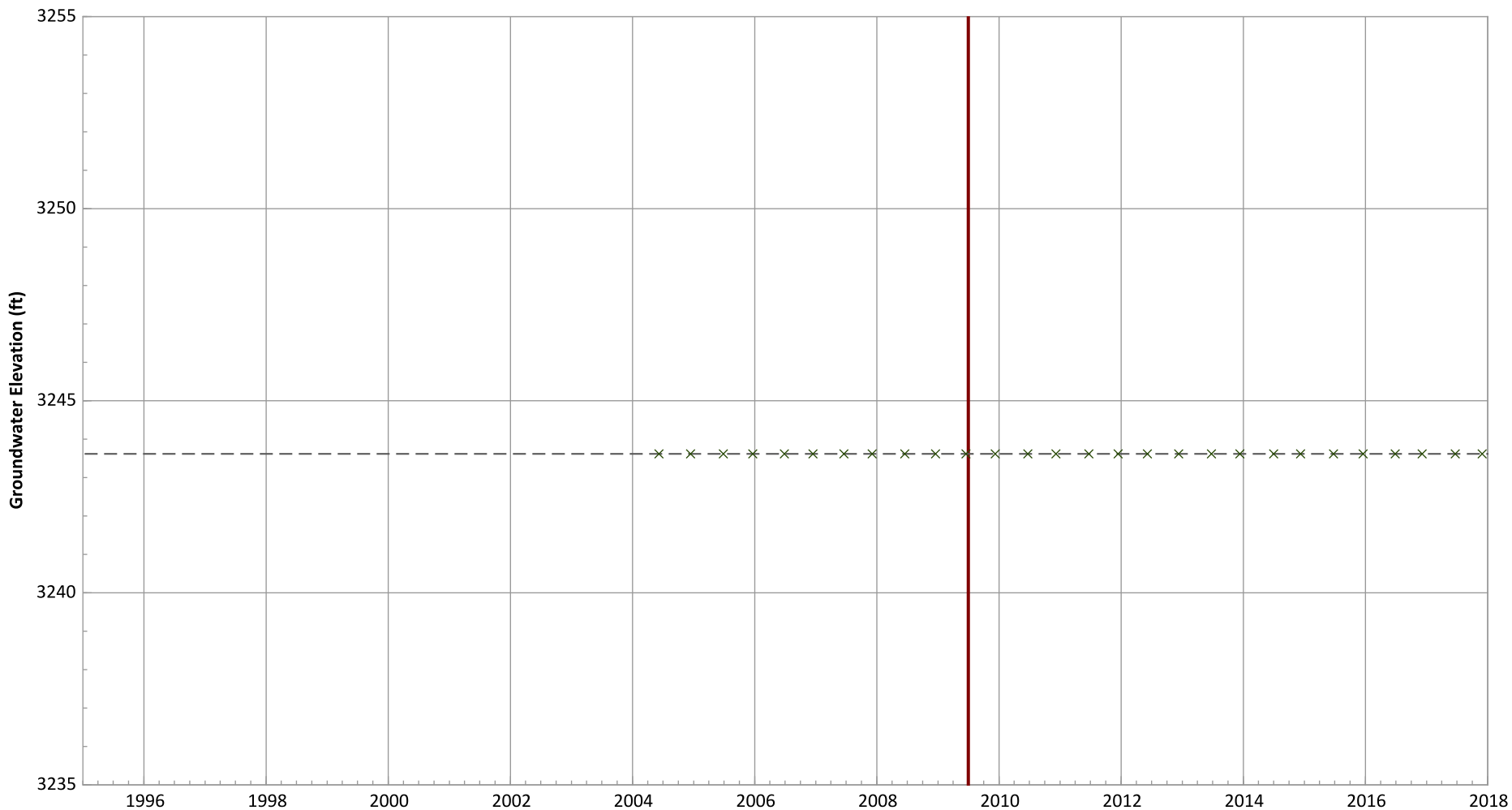
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: N/A (No Measurements)
 Data (1/2012 - 1/2016): N/A (No Measurements)

**PTX06-1094 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

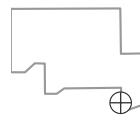


Notes:

1. Top of screen elevation is 3253.62 ft msl.
 2. The bottom of screen elevation is 3243.62 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements. Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- × No Water Detected
- Start of Remedial Action

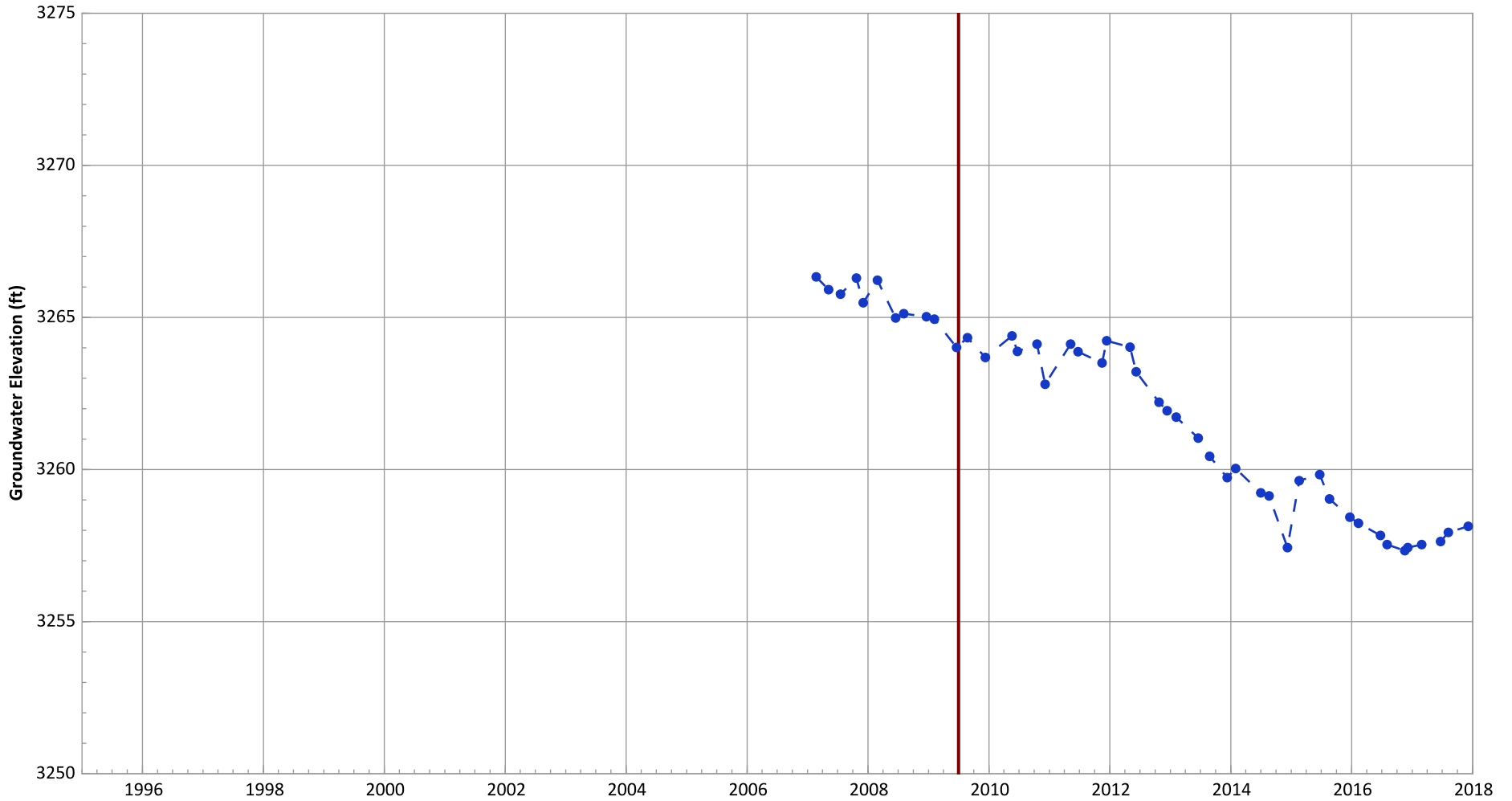
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: N/A (No Measurements)
 Data (1/2012 - 1/2016): N/A (No Measurements)

**PTX06-1095A Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

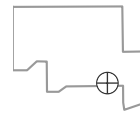


Notes:

1. Top of screen elevation is 3271.23 ft msl.
 2. The bottom of screen elevation is 3246.23 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- Start of Remedial Action

Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: Decreasing at 0.91 ft/yr
 Data (1/2012 - 1/2016): Decreasing at 1.21 ft/yr

**PTX06-1096A Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

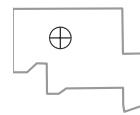


Notes:

1. Top of screen elevation is 3317.99 ft msl.
 2. The bottom of screen elevation is 3302.99 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements. Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- × No Water Detected
- Start of Remedial Action

Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: N/A (No Measurements)
 Data (1/2012 - 1/2016): N/A (No Measurements)

**PTX06-1097 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**



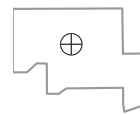
Notes:

1. Top of screen elevation is 3283.73 ft msl.
2. The bottom of screen elevation is 3268.73 ft msl.
3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements. Actual groundwater elevations between measurements may be different than shown.

Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- × No Water Detected
- Start of Remedial Action

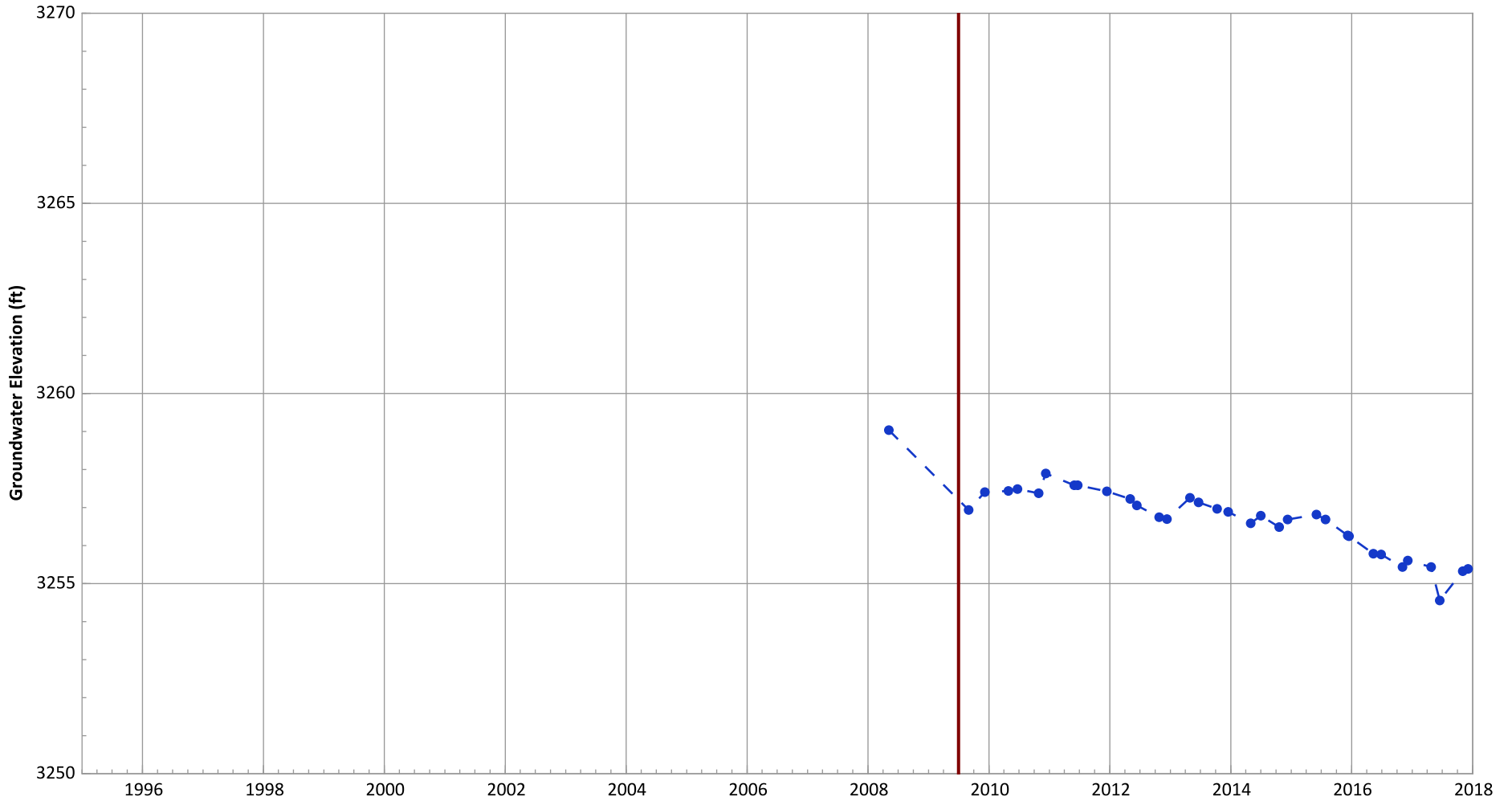
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: N/A (No Measurements)
 Data (1/2012 - 1/2016): N/A (No Measurements)

**PTX06-1098 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

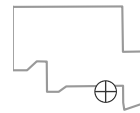


Notes:

1. Top of screen elevation is 3276.74 ft msl.
 2. The bottom of screen elevation is 3241.74 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

—●— Groundwater Elevation
 — Start of Remedial Action

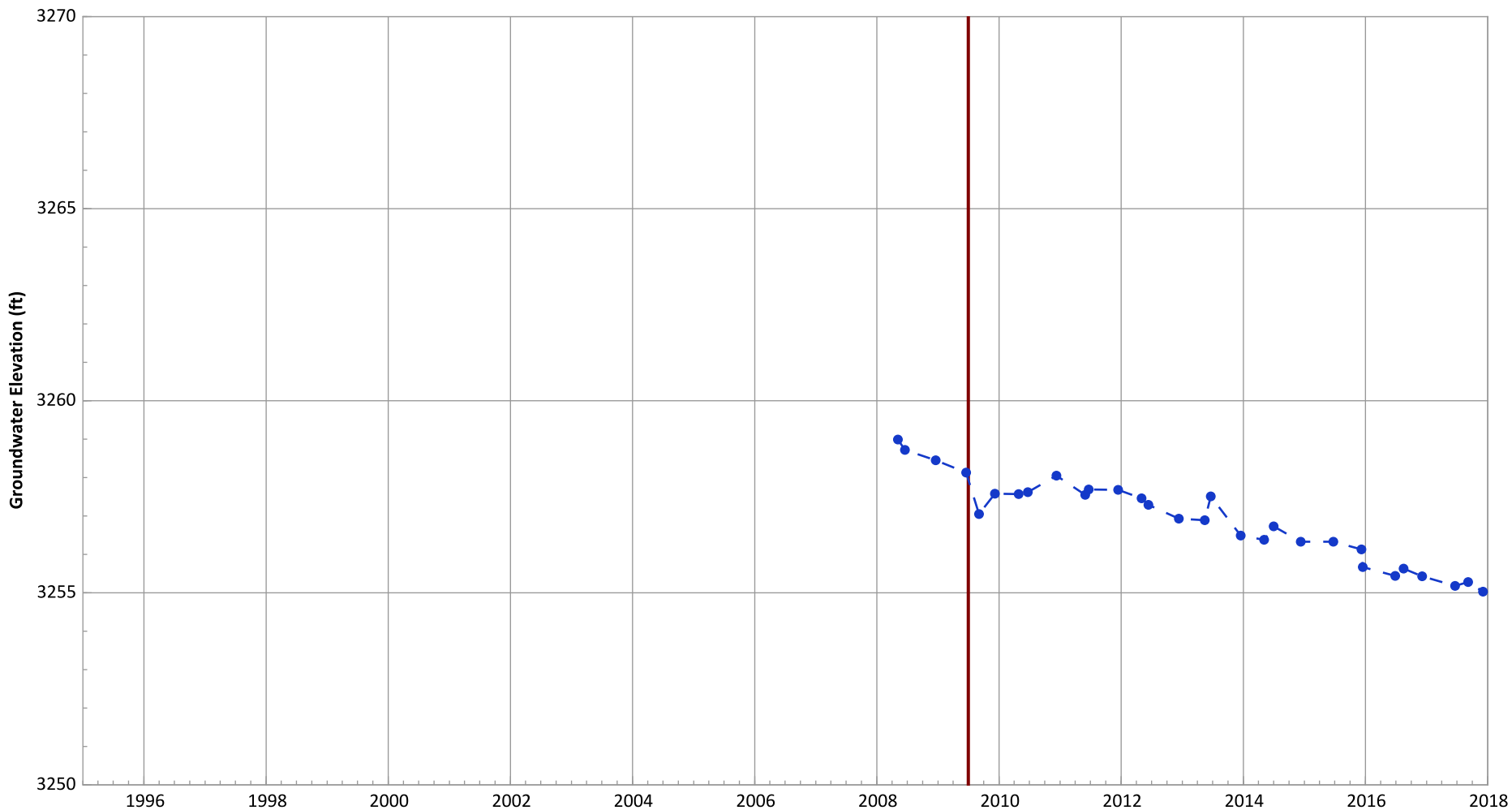
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: Decreasing at 0.31 ft/yr
 Data (1/2012 - 1/2016): Decreasing at 0.32 ft/yr

**PTX06-1100 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

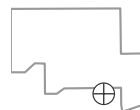


Notes:

1. Top of screen elevation is 3259.7 ft msl.
 2. The bottom of screen elevation is 3244.7 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- Start of Remedial Action

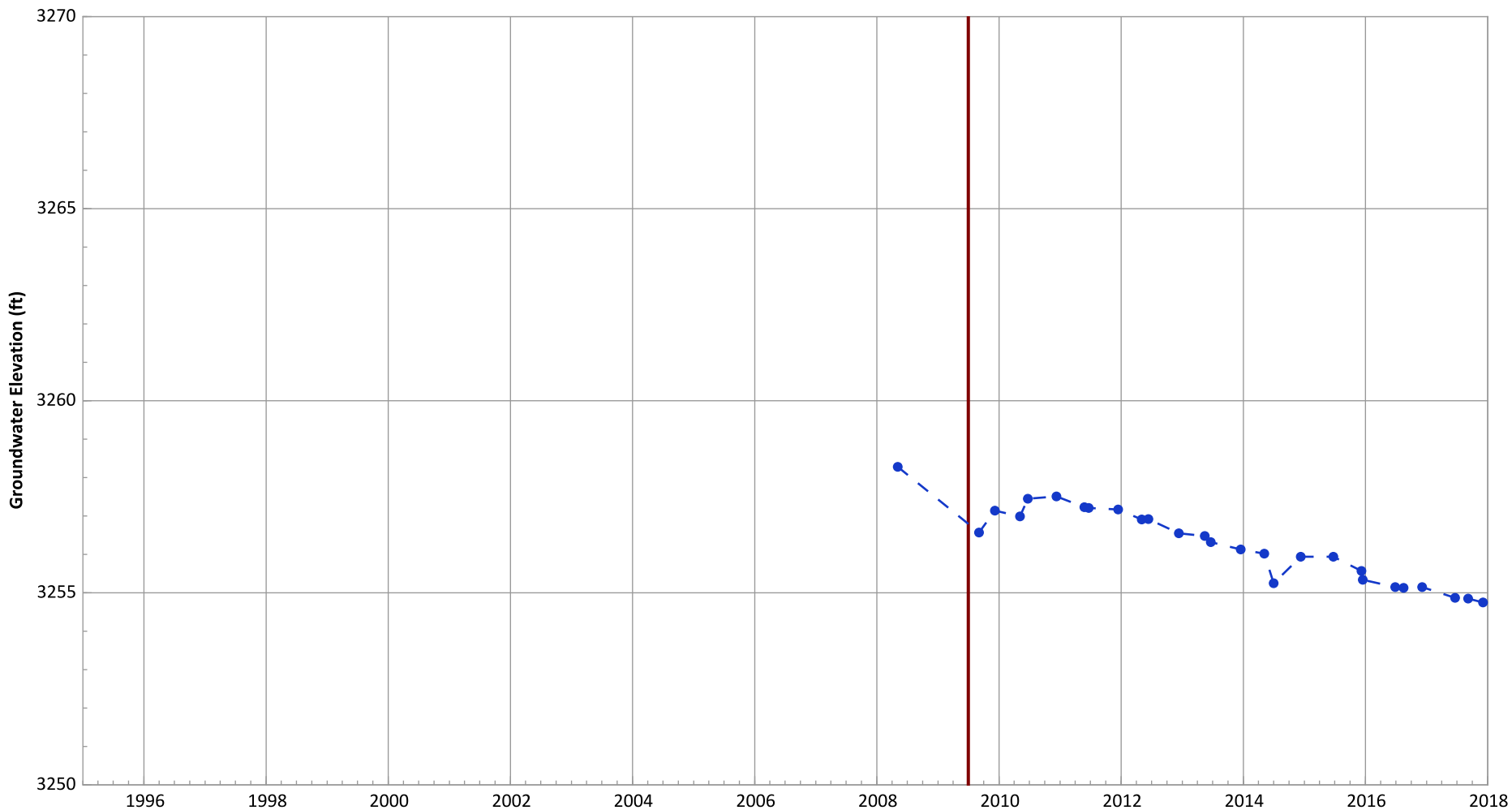
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: Decreasing at 0.35 ft/yr
 Data (1/2012 - 1/2016): Decreasing at 0.43 ft/yr

**PTX06-1101 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

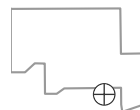


Notes:

1. Top of screen elevation is 3258.8 ft msl.
 2. The bottom of screen elevation is 3243.8 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- Start of Remedial Action

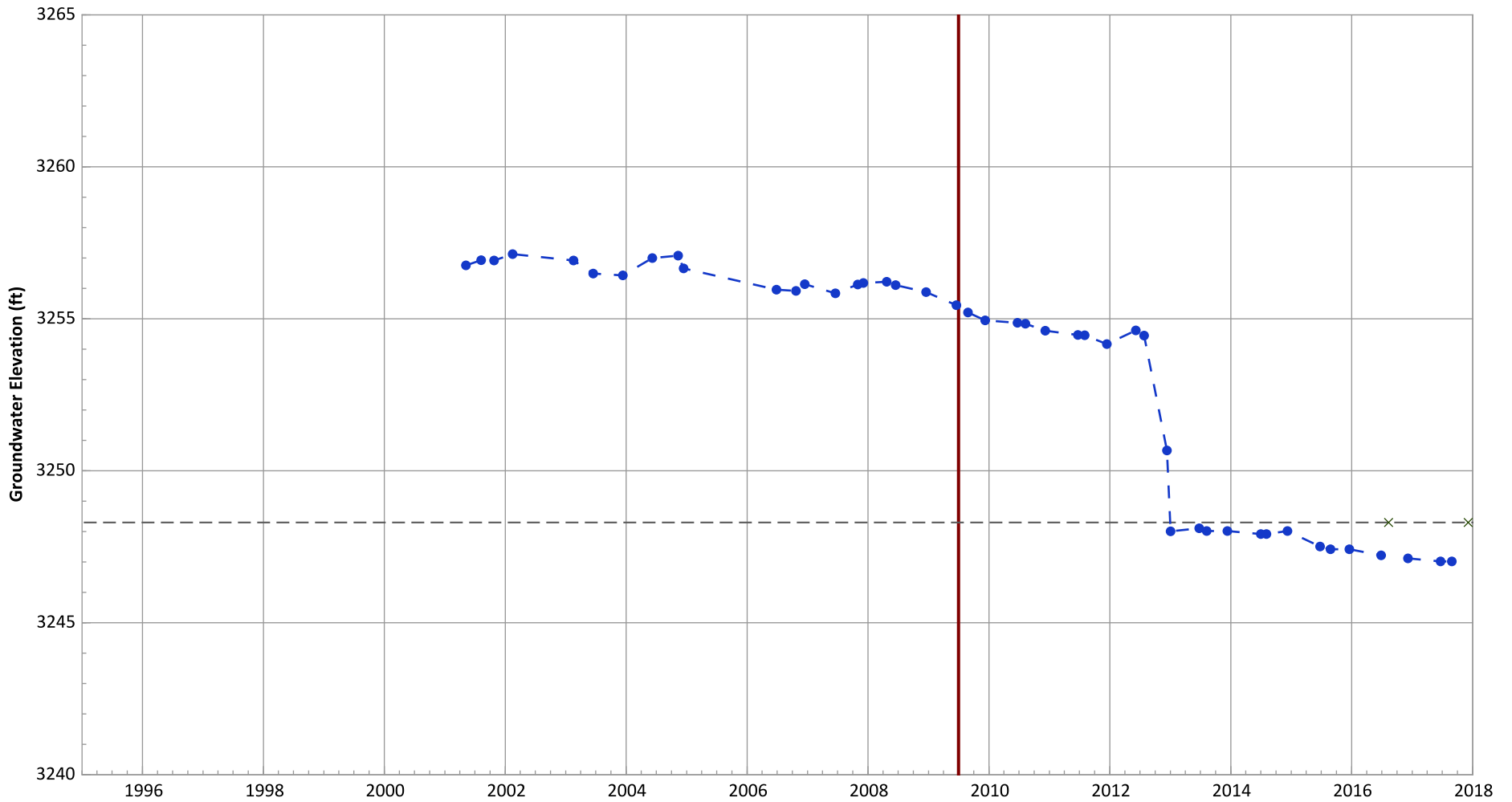
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: Decreasing at 0.34 ft/yr
 Data (1/2012 - 1/2016): Decreasing at 0.38 ft/yr

**PTX06-1102 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

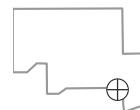


Notes:

1. Top of screen elevation is 3288.3 ft msl.
 2. The bottom of screen elevation is 3248.3 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements. Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- × No Water Detected
- Start of Remedial Action

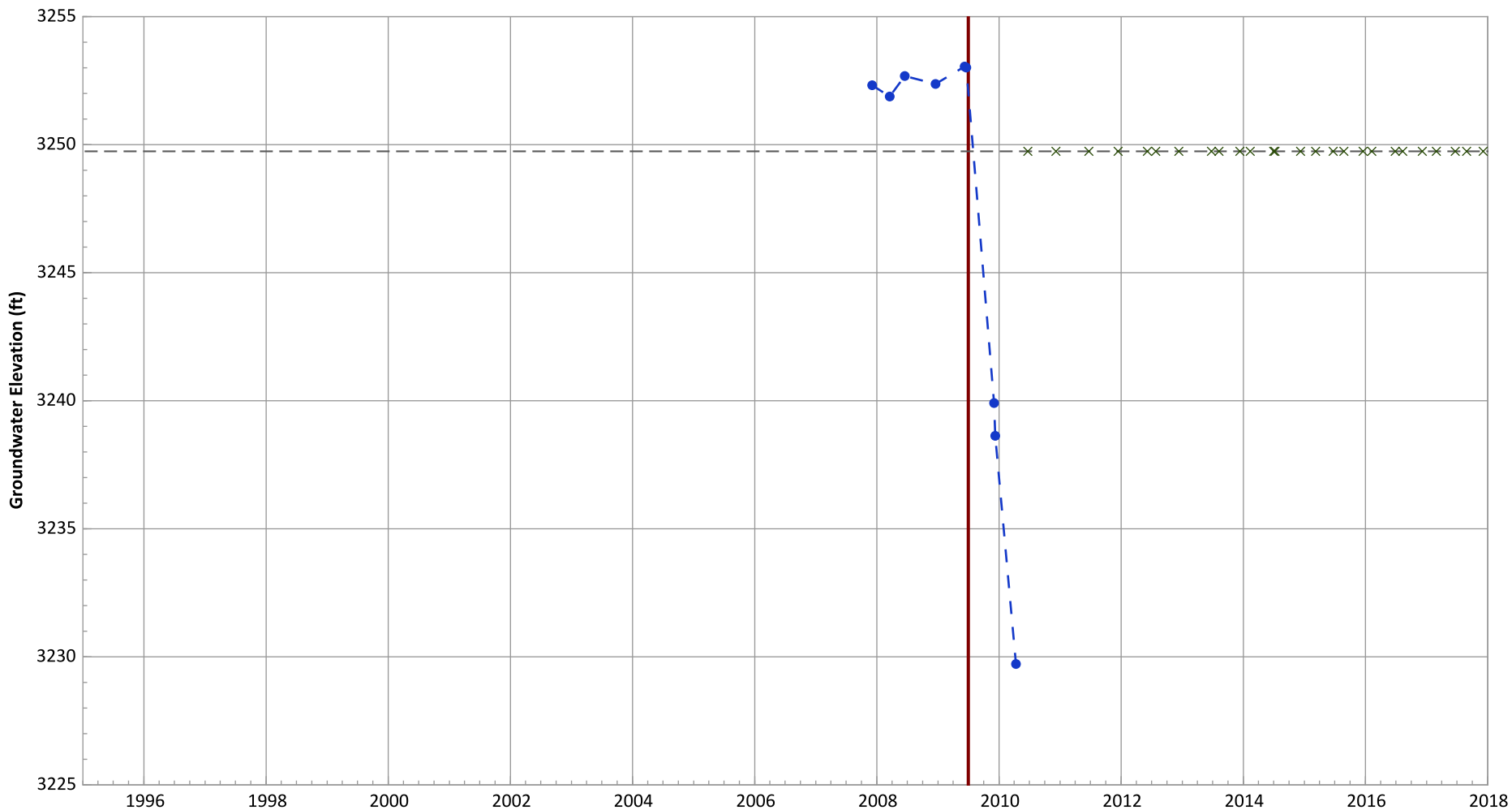
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: Decreasing at 0.73 ft/yr
 Data (1/2012 - 1/2016): Decreasing at 1.21 ft/yr

**PTX06-1103 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**



Notes:

1. Top of screen elevation is 3259.74 ft msl.
 2. The bottom of screen elevation is 3249.74 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements. Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- × No Water Detected
- Start of Remedial Action

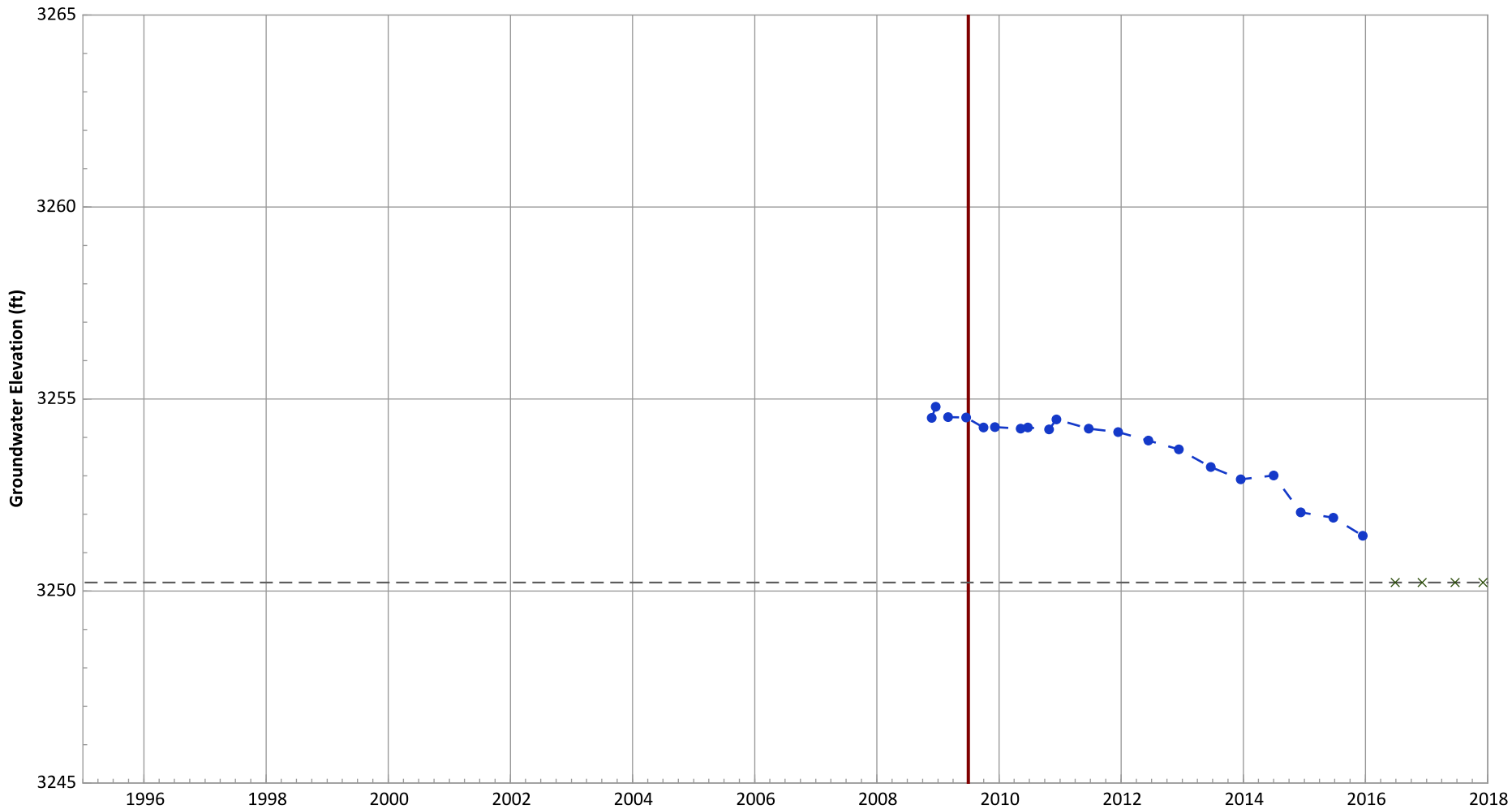
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: Decreasing at 7.9 ft/yr
 Data (1/2012 - 1/2016): N/A (No Measurements)

**PTX06-1104 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

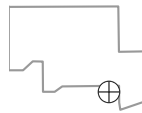


Notes:

1. Top of screen elevation is 3265.22 ft msl.
 2. The bottom of screen elevation is 3250.22 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- × No Water Detected
- Start of Remedial Action

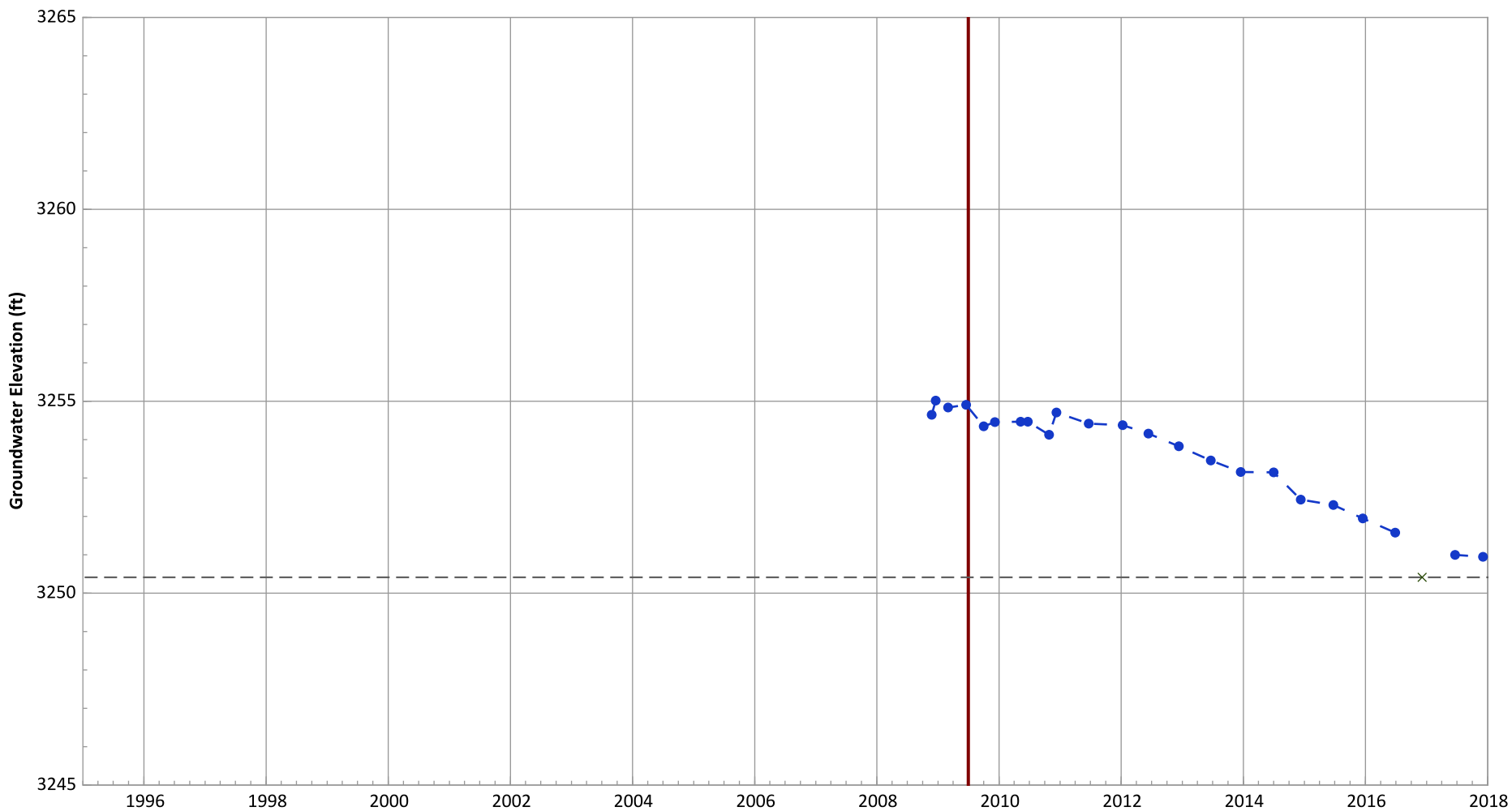
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
All Data: Decreasing at 0.4 ft/yr
Data (1/2012 - 1/2016): Decreasing at 0.7 ft/yr

**PTX06-1105 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**



Notes:

1. Top of screen elevation is 3265.41 ft msl.
 2. The bottom of screen elevation is 3250.41 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements. Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- × No Water Detected
- Start of Remedial Action

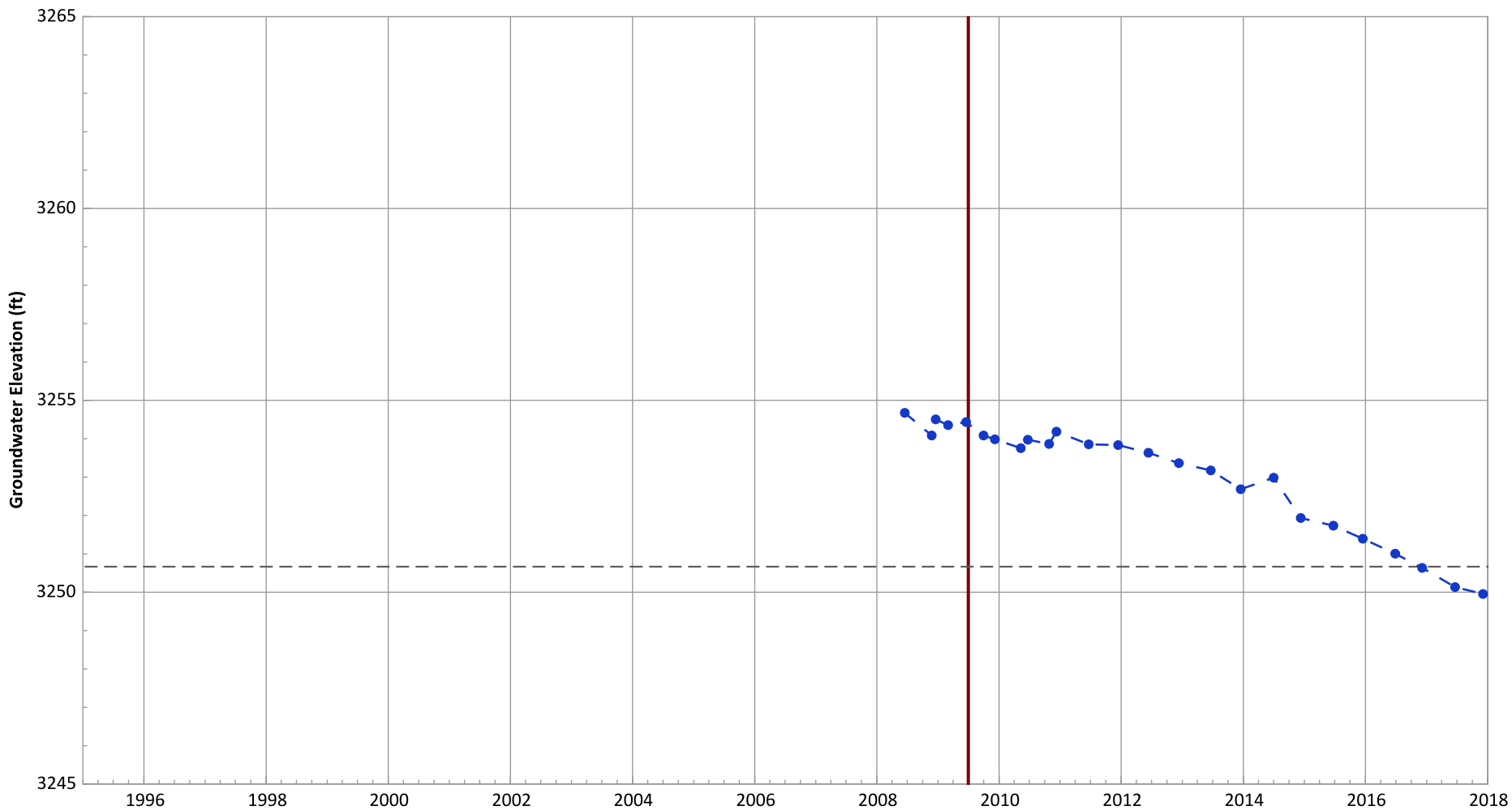
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: Decreasing at 0.43 ft/yr
 Data (1/2012 - 1/2016): Decreasing at 0.62 ft/yr

**PTX06-1106 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

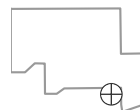


Notes:

1. Top of screen elevation is 3265.67 ft msl.
 2. The bottom of screen elevation is 3250.67 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- Start of Remedial Action

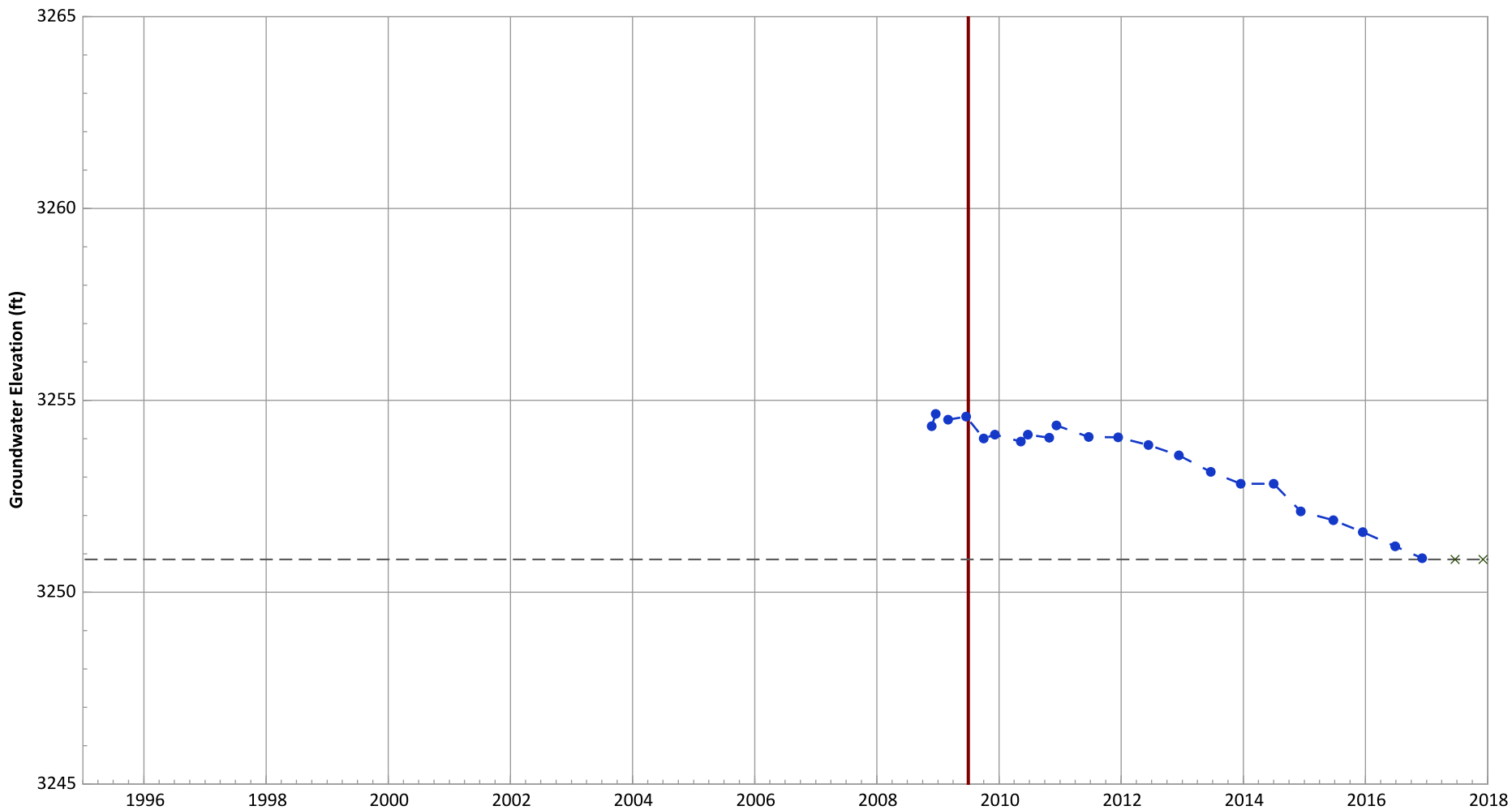
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: Decreasing at 0.46 ft/yr
 Data (1/2012 - 1/2016): Decreasing at 0.68 ft/yr

**PTX06-1107 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

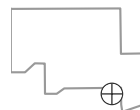


Notes:

1. Top of screen elevation is 3262.85 ft msl.
 2. The bottom of screen elevation is 3250.85 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements. Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- × No Water Detected
- Start of Remedial Action

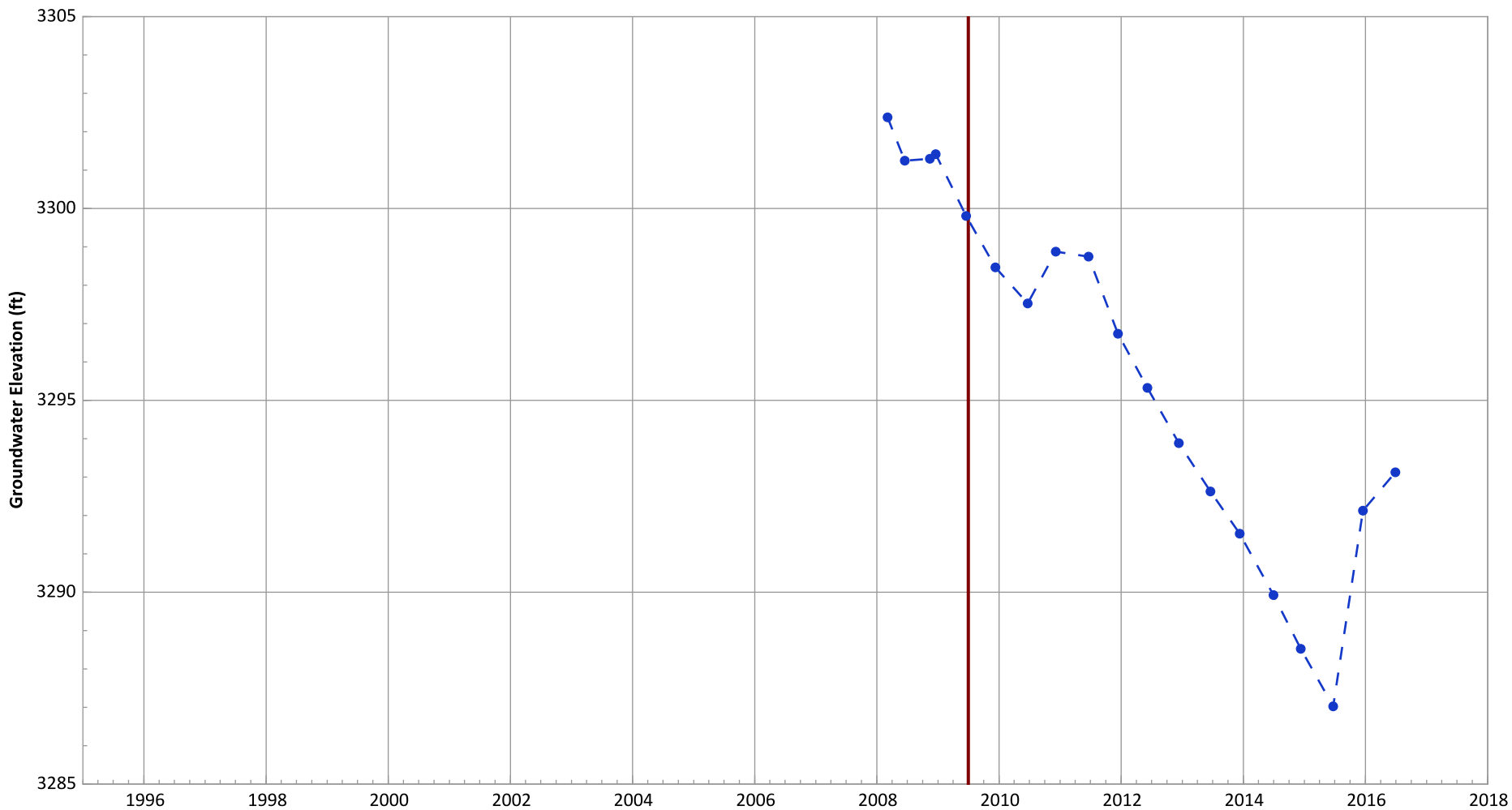
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: Decreasing at 0.42 ft/yr
 Data (1/2012 - 1/2016): Decreasing at 0.66 ft/yr

**PTX06-1117 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**



Notes:

1. Top of screen elevation is 3317.97 ft msl.
 2. The bottom of screen elevation is 3267.97 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

—●— Groundwater Elevation
 — Start of Remedial Action

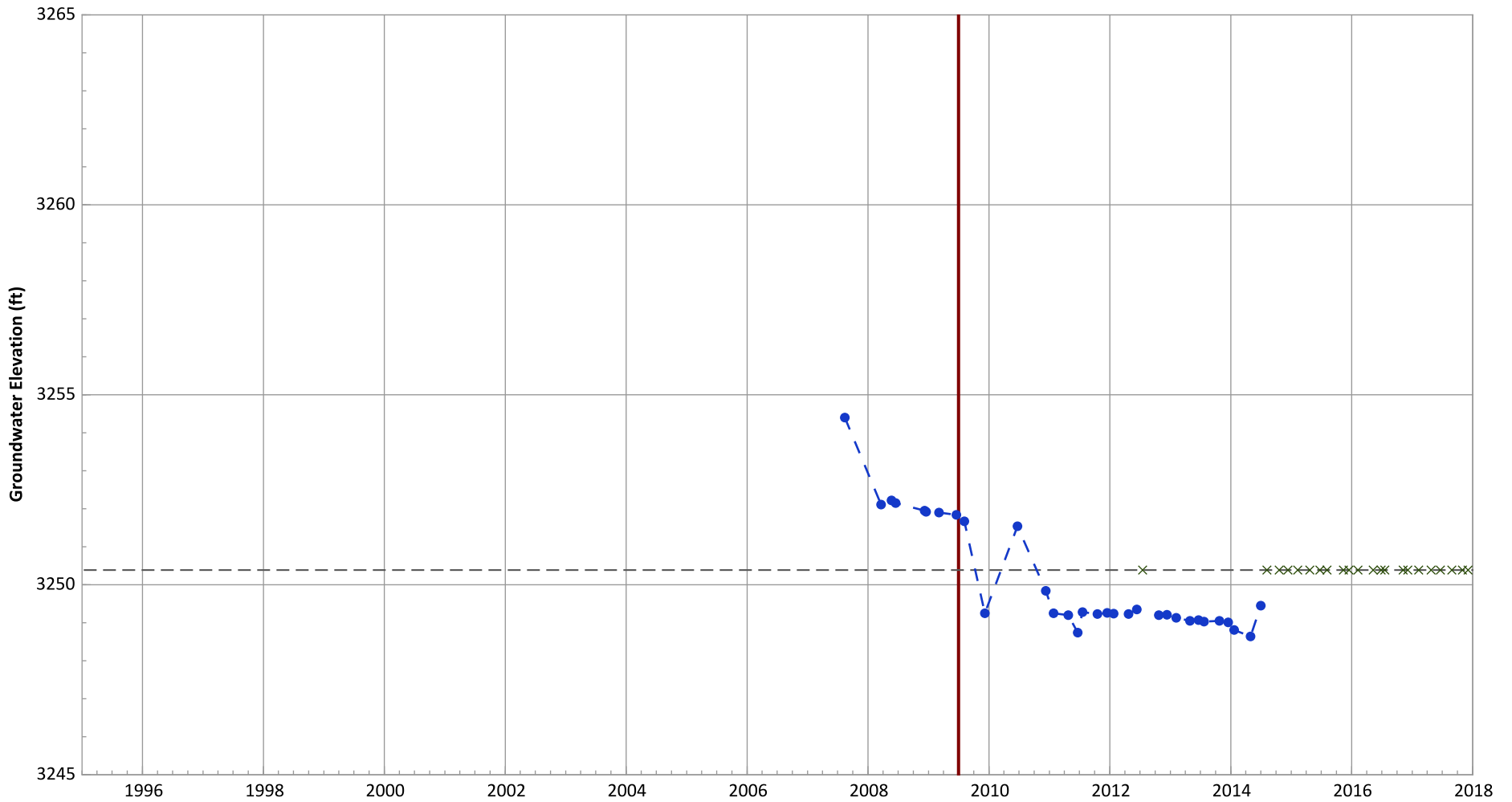
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: Decreasing at 1.61 ft/yr
 Data (1/2012 - 1/2016): Decreasing at 0.93 ft/yr

**PTX06-1118 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**



Notes:
 1. Top of screen elevation is 3260.39 ft msl.
 2. The bottom of screen elevation is 3250.39 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements. Actual groundwater elevations between measurements may be different than shown.
 Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- × No Water Detected
- Start of Remedial Action



Hydrograph Trend
 (MAROS Linear Regression Method)
 All Data: Decreasing at 0.64 ft/yr
 Data (1/2012 - 1/2016): Decreasing at 0.13 ft/yr

**PTX06-1119 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

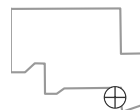


Notes:

1. Top of screen elevation is 3261.31 ft msl.
 2. The bottom of screen elevation is 3251.31 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- × No Water Detected
- Start of Remedial Action

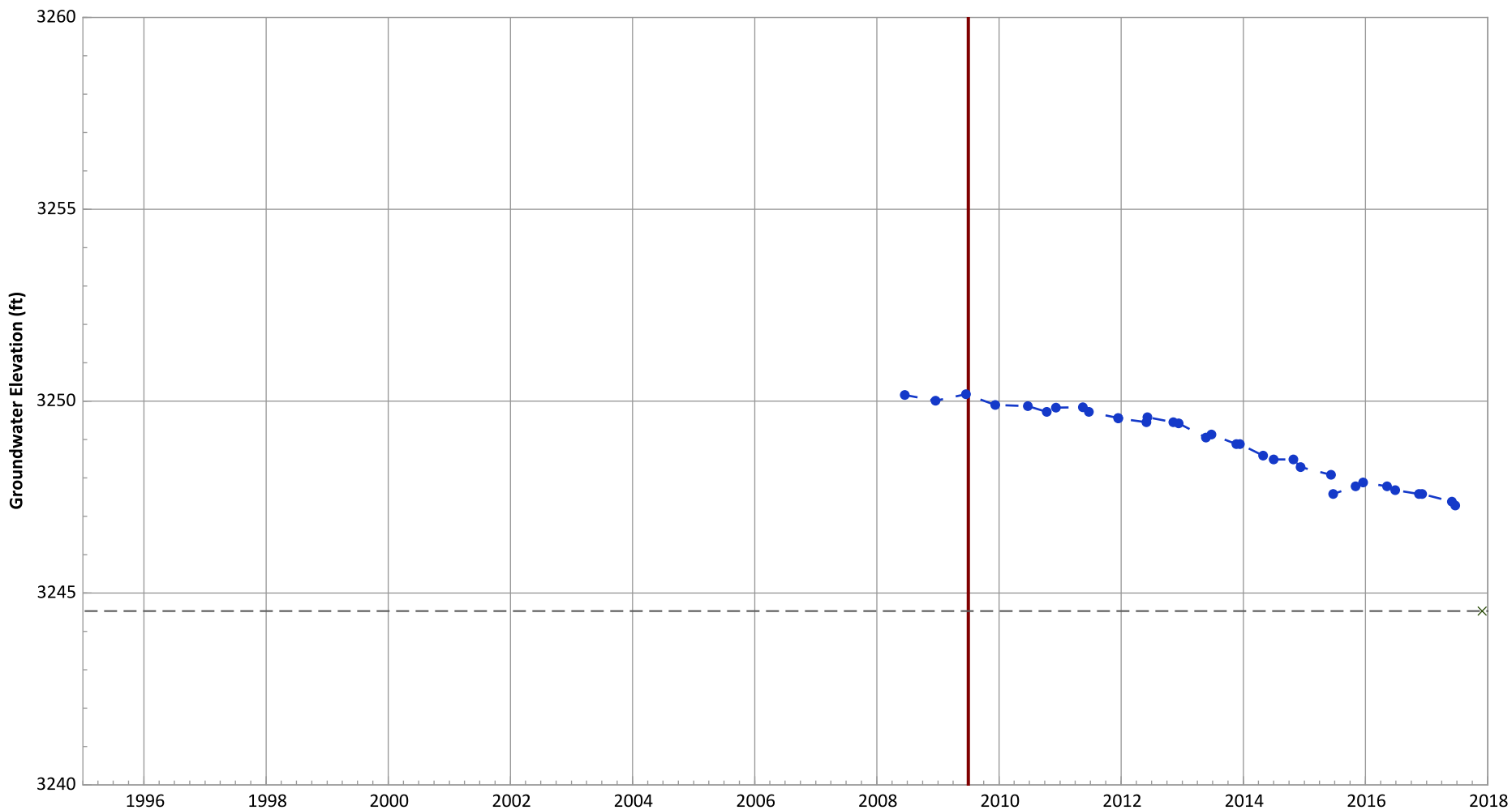
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
All Data: N/A (No Measurements)
Data (1/2012 - 1/2016): N/A (No Measurements)

**PTX06-1120 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

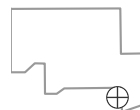


Notes:

1. Top of screen elevation is 3259.53 ft msl.
 2. The bottom of screen elevation is 3244.53 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements. Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- × No Water Detected
- Start of Remedial Action

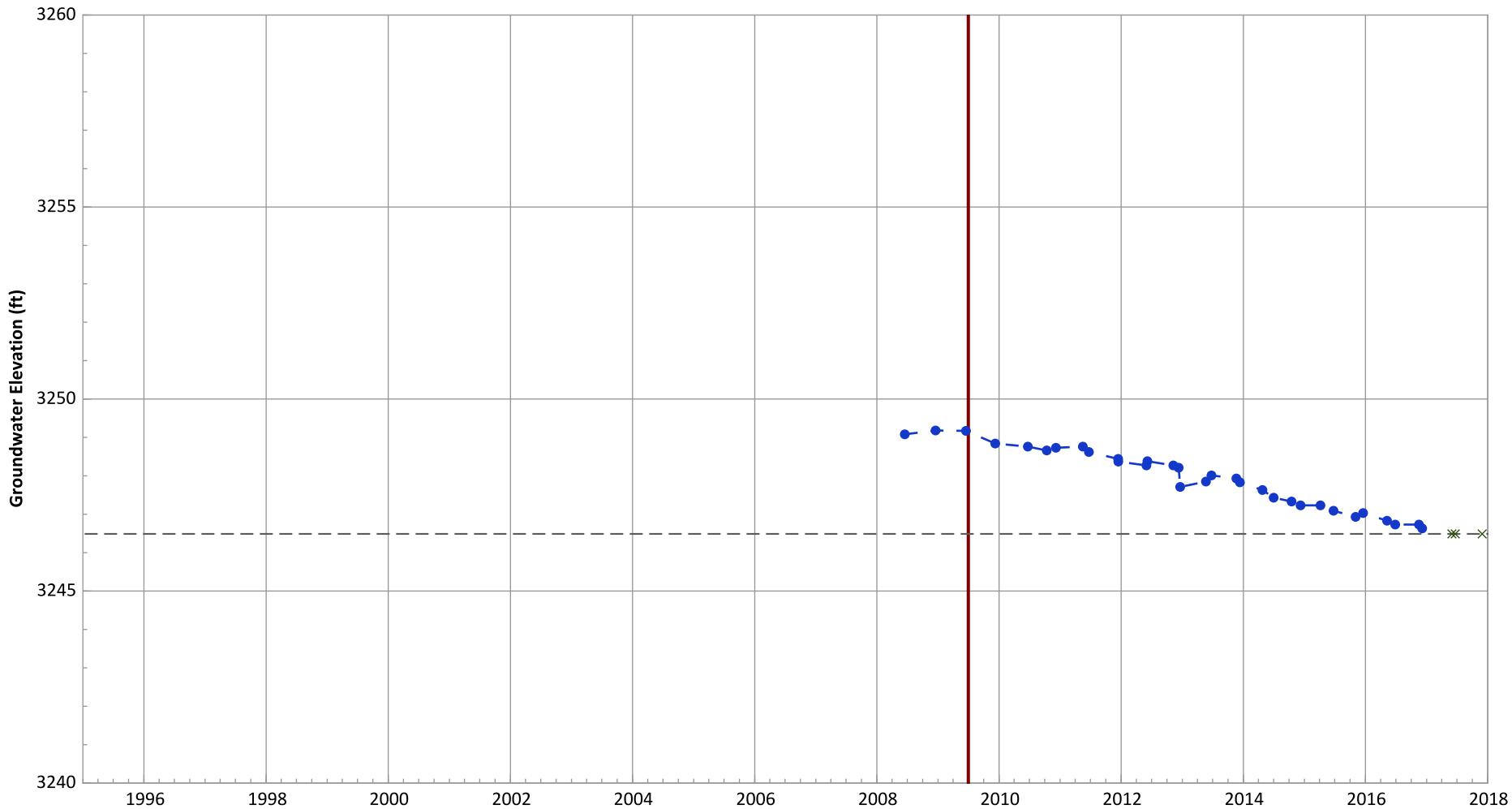
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: Decreasing at 0.36 ft/yr
 Data (1/2012 - 1/2016): Decreasing at 0.47 ft/yr

**PTX06-1121 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

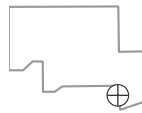


Notes:

1. Top of screen elevation is 3256.49 ft msl.
 2. The bottom of screen elevation is 3246.49 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- × No Water Detected
- Start of Remedial Action

Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: Decreasing at 0.32 ft/yr
 Data (1/2012 - 1/2016): Decreasing at 0.38 ft/yr

**PTX06-1122 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**



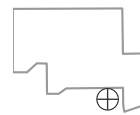
Notes:

1. Top of screen elevation is 3261.5 ft msl.
2. The bottom of screen elevation is 3251.5 ft msl.
3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements. Actual groundwater elevations between measurements may be different than shown.

Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- × No Water Detected
- Start of Remedial Action

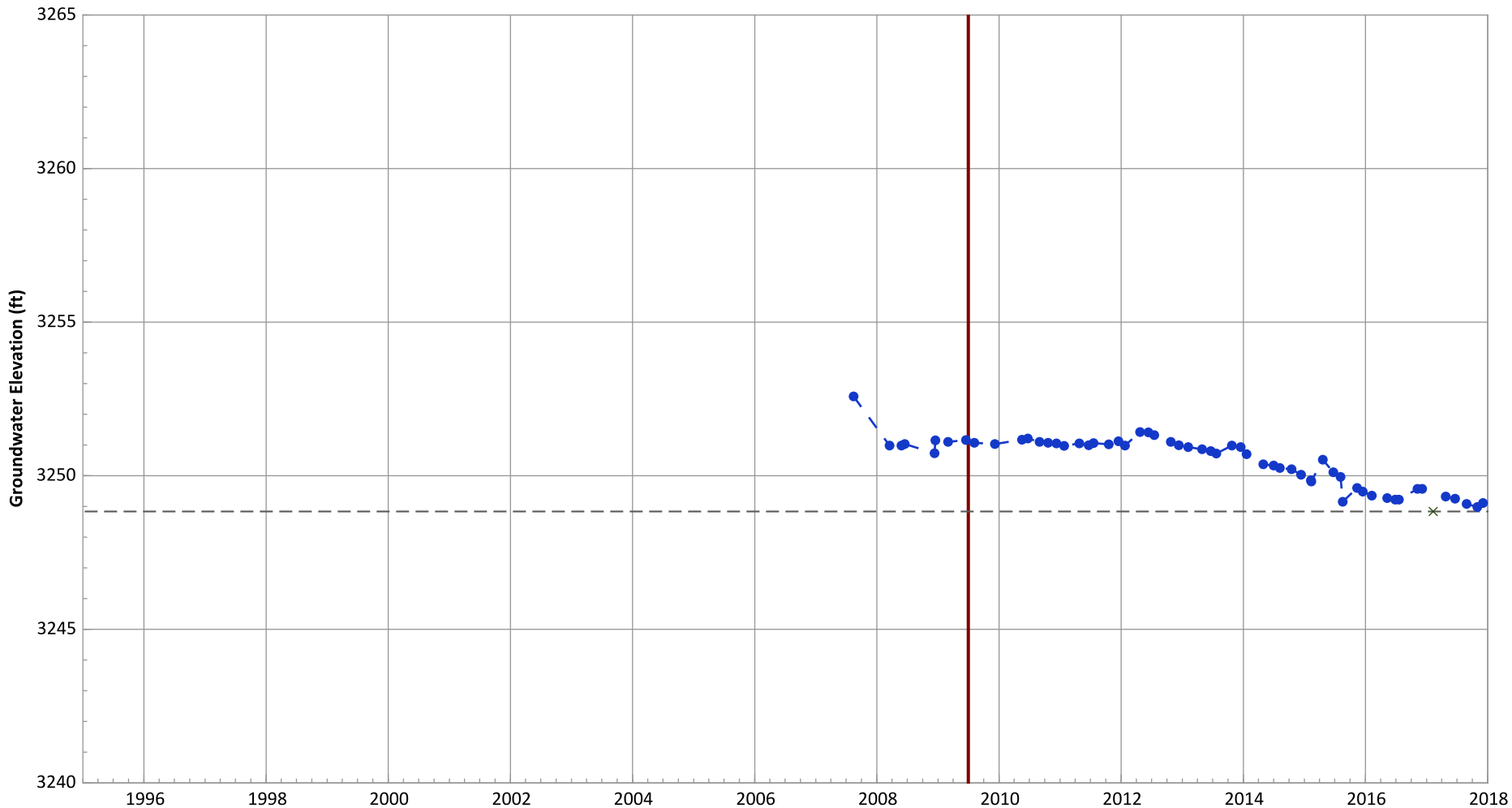
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: N/A (No Measurements)
 Data (1/2012 - 1/2016): N/A (No Measurements)

**PTX06-1123 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

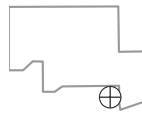


Notes:

1. Top of screen elevation is 3258.84 ft msl.
 2. The bottom of screen elevation is 3248.84 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements. Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- × No Water Detected
- Start of Remedial Action

Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: Decreasing at 0.24 ft/yr
 Data (1/2012 - 1/2016): Decreasing at 0.46 ft/yr

**PTX06-1125 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

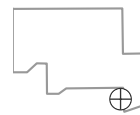


Notes:

1. Top of screen elevation is 3255.34 ft msl.
 2. The bottom of screen elevation is 3245.34 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements. Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- × No Water Detected
- Start of Remedial Action

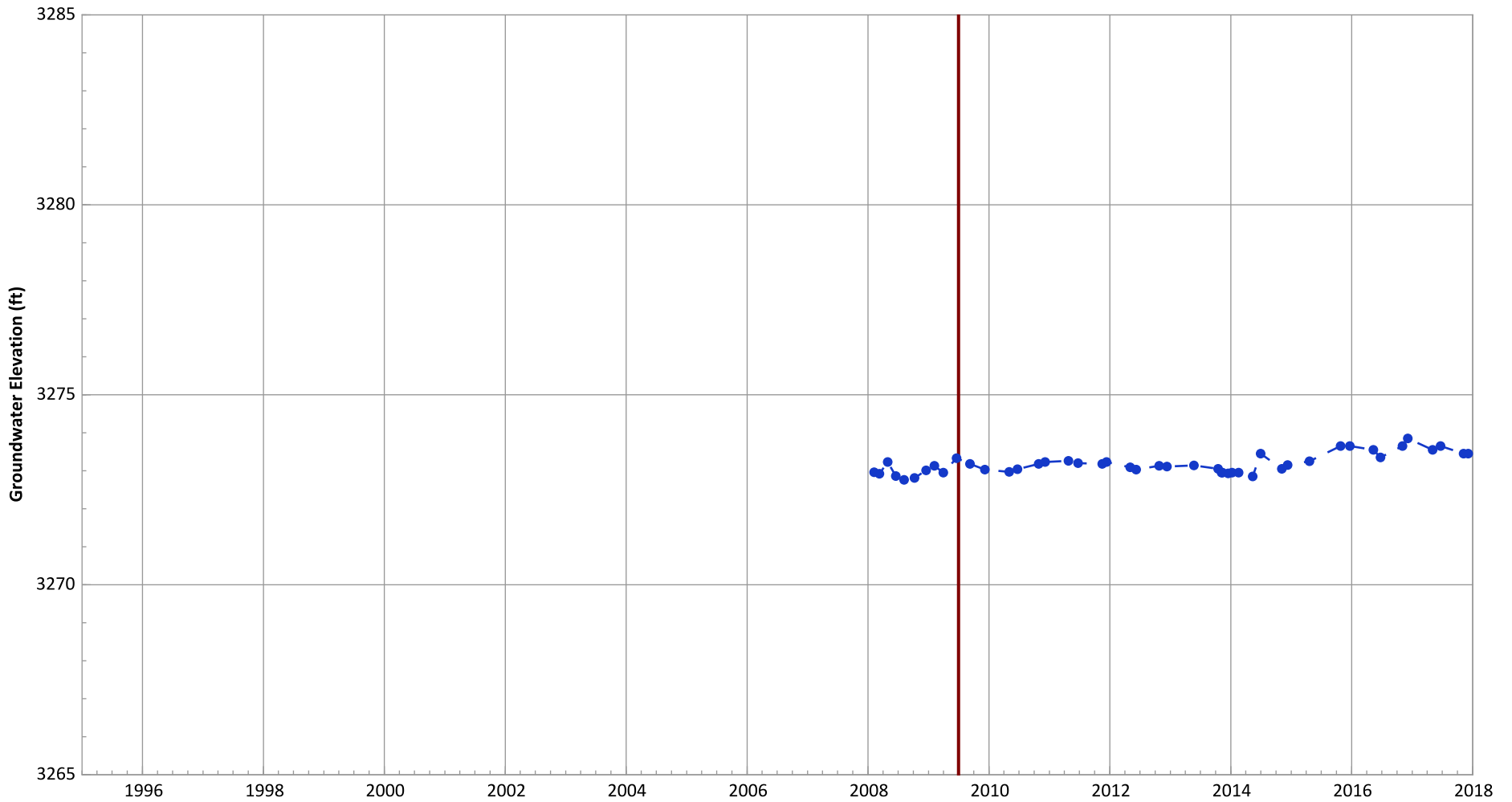
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: N/A (No Measurements)
 Data (1/2012 - 1/2016): N/A (No Measurements)

**PTX06-1126 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

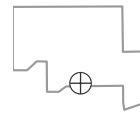


Notes:

1. Top of screen elevation is 3282.55 ft msl.
 2. The bottom of screen elevation is 3252.55 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

—●— Groundwater Elevation
 — Start of Remedial Action

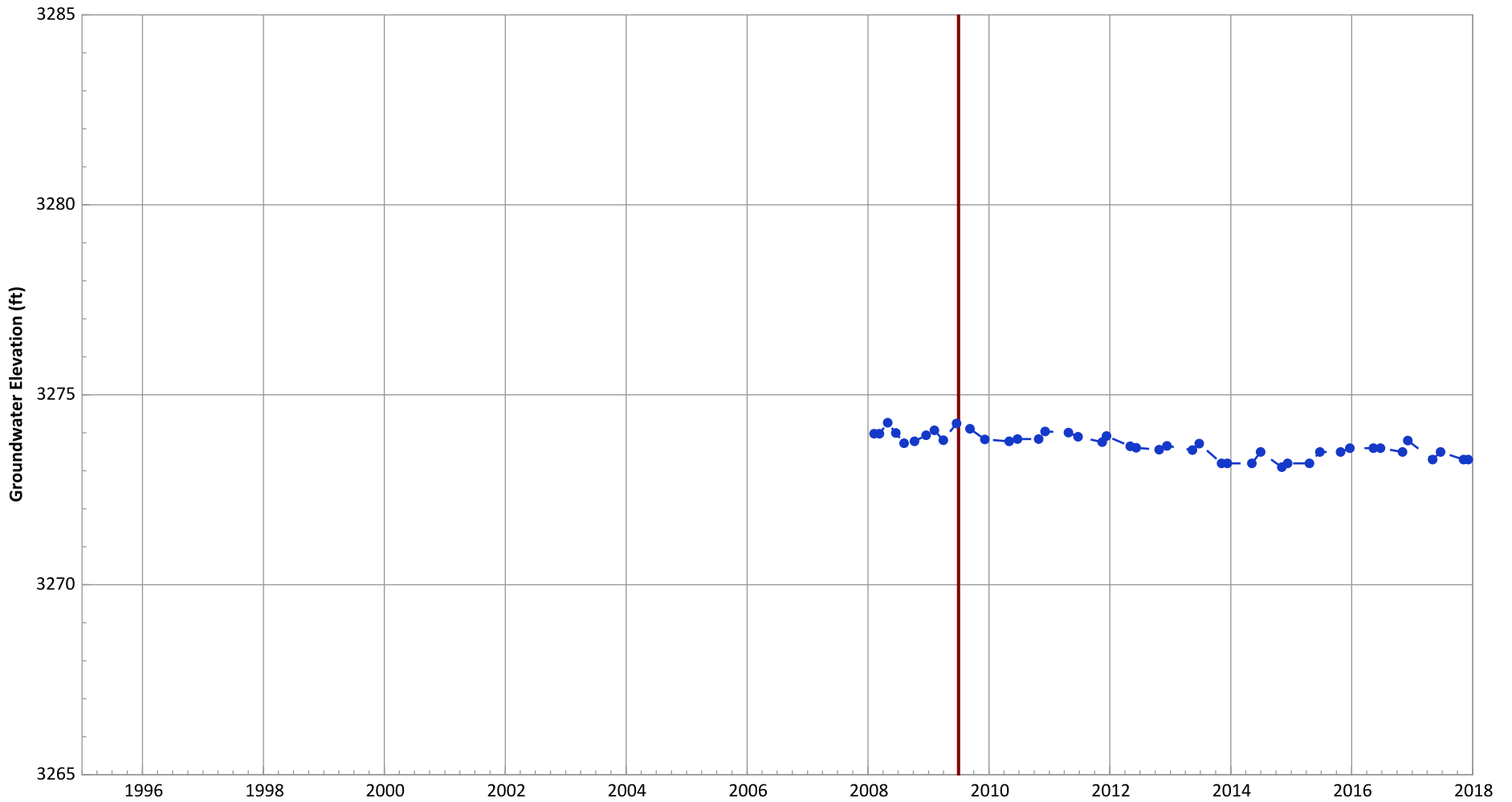
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: No Trend
 Data (1/2012 - 1/2016): Increasing at 0.16 ft/yr

**PTX06-1127 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

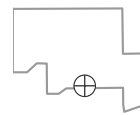


Notes:

1. Top of screen elevation is 3278.57 ft msl.
 2. The bottom of screen elevation is 3248.57 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

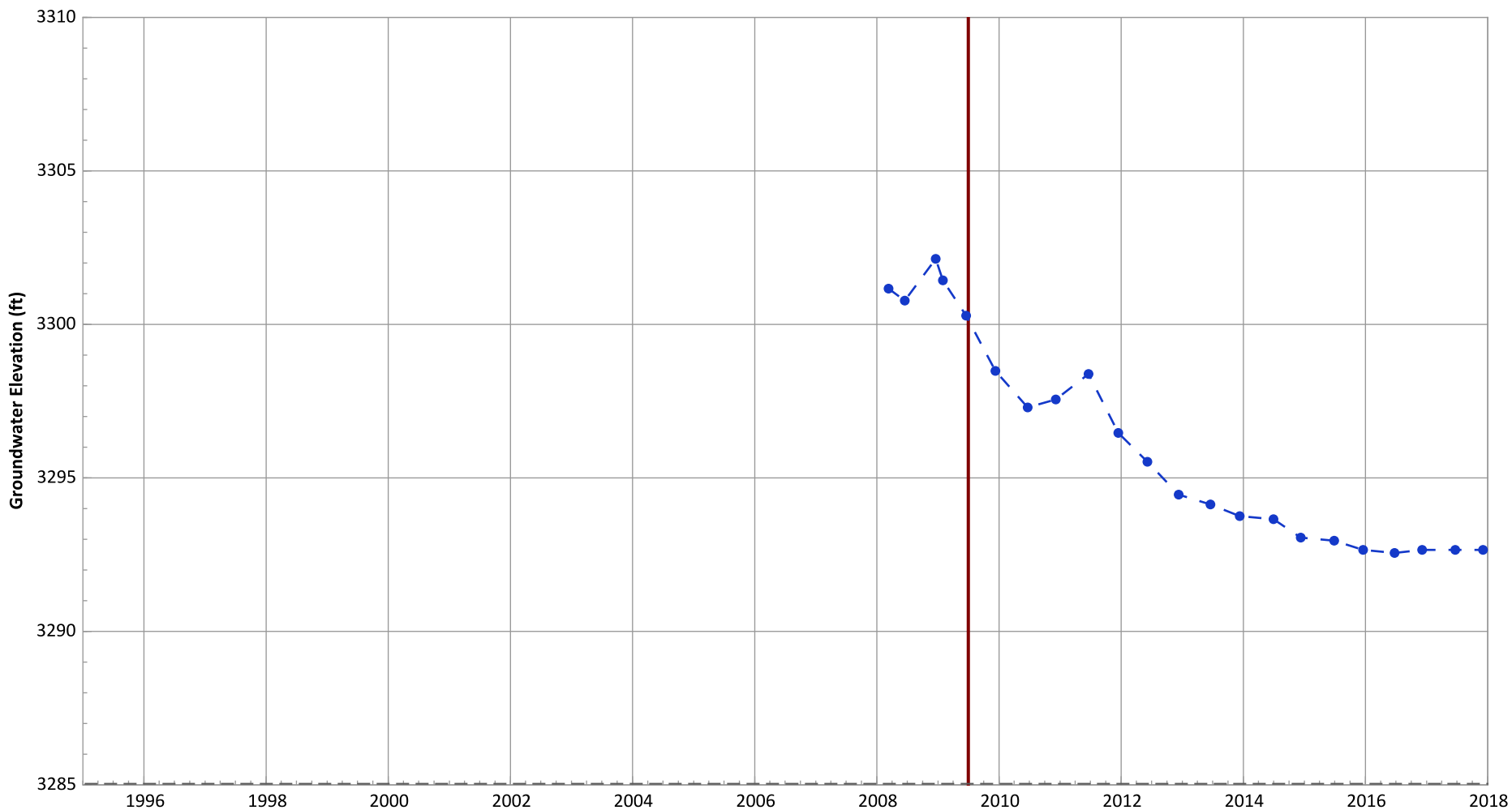
—●— Groundwater Elevation
 — Start of Remedial Action

Well Location



Hydrograph Trend
 (MAROS Linear Regression Method)
 All Data: No Trend
 Data (1/2012 - 1/2016): No Trend

**PTX06-1128 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

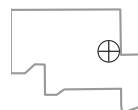


Notes:

1. Top of screen elevation is 3325.04 ft msl.
 2. The bottom of screen elevation is 3285.04 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- Start of Remedial Action

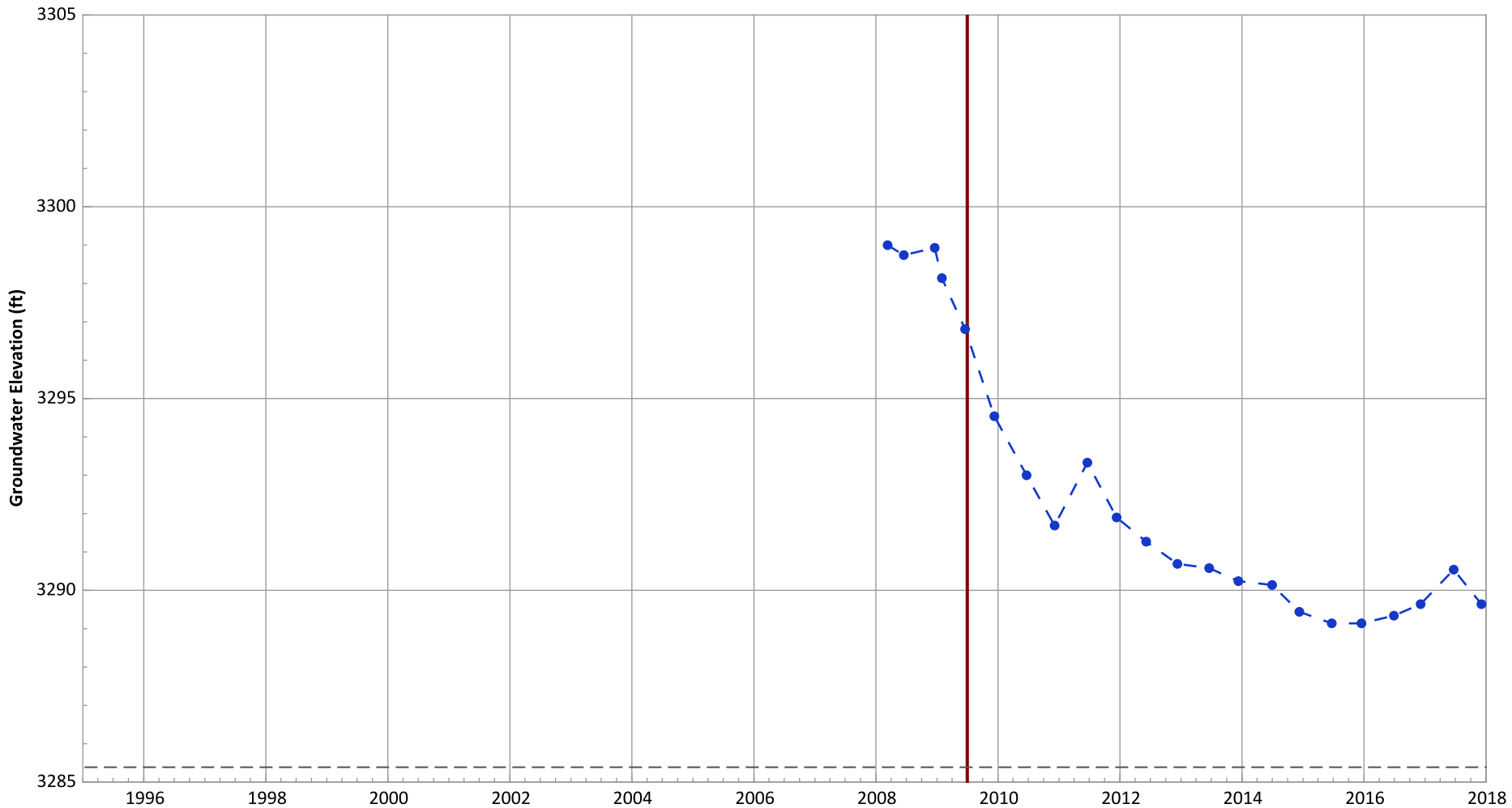
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: Decreasing at 1.03 ft/yr
 Data (1/2012 - 1/2016): Decreasing at 0.6 ft/yr

**PTX06-1129 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

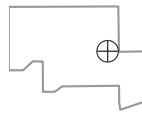


Notes:

1. Top of screen elevation is 3305.39 ft msl.
 2. The bottom of screen elevation is 3285.39 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- Start of Remedial Action

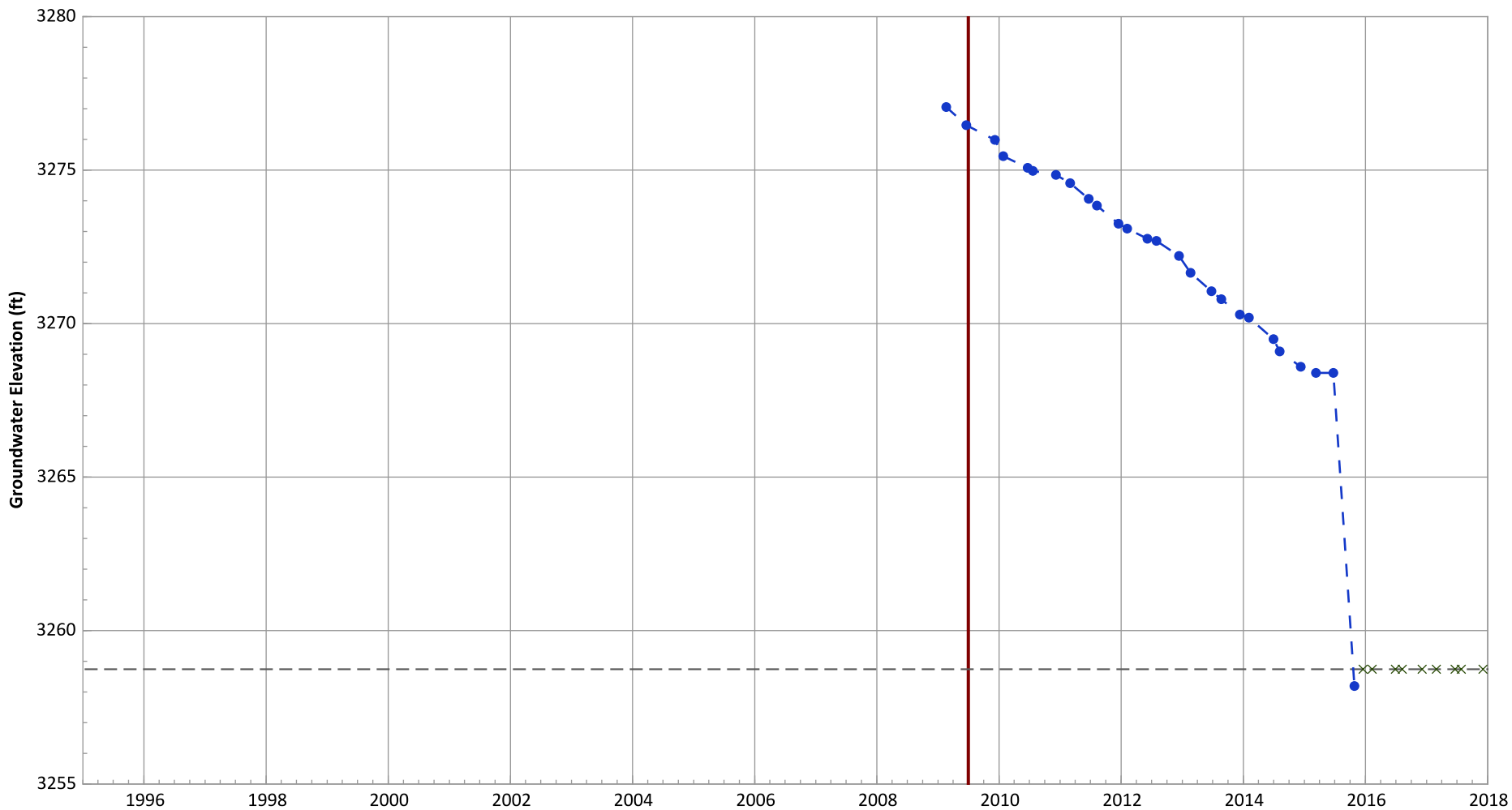
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: Decreasing at 1.0 ft/yr
 Data (1/2012 - 1/2016): Decreasing at 0.43 ft/yr

**PTX06-1130 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

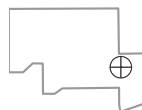


Notes:

1. Top of screen elevation is 3283.74 ft msl.
 2. The bottom of screen elevation is 3258.74 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements. Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- × No Water Detected
- Start of Remedial Action

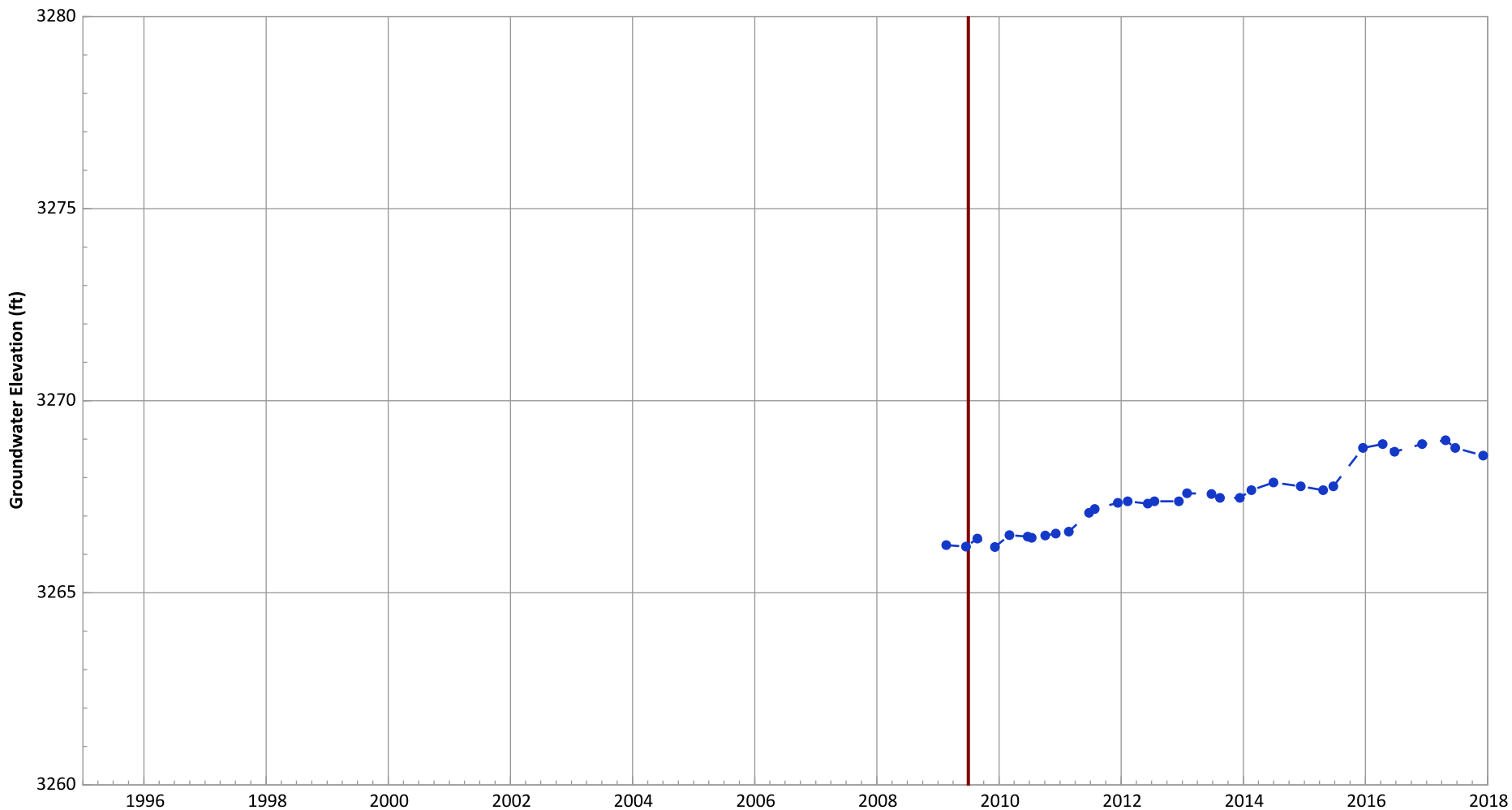
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: Decreasing at 1.74 ft/yr
 Data (1/2012 - 1/2016): Decreasing at 2.5 ft/yr

**PTX06-1131 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

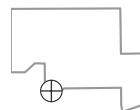


Notes:

1. Top of screen elevation is 3278.81 ft msl.
 2. The bottom of screen elevation is 3258.81 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- Start of Remedial Action

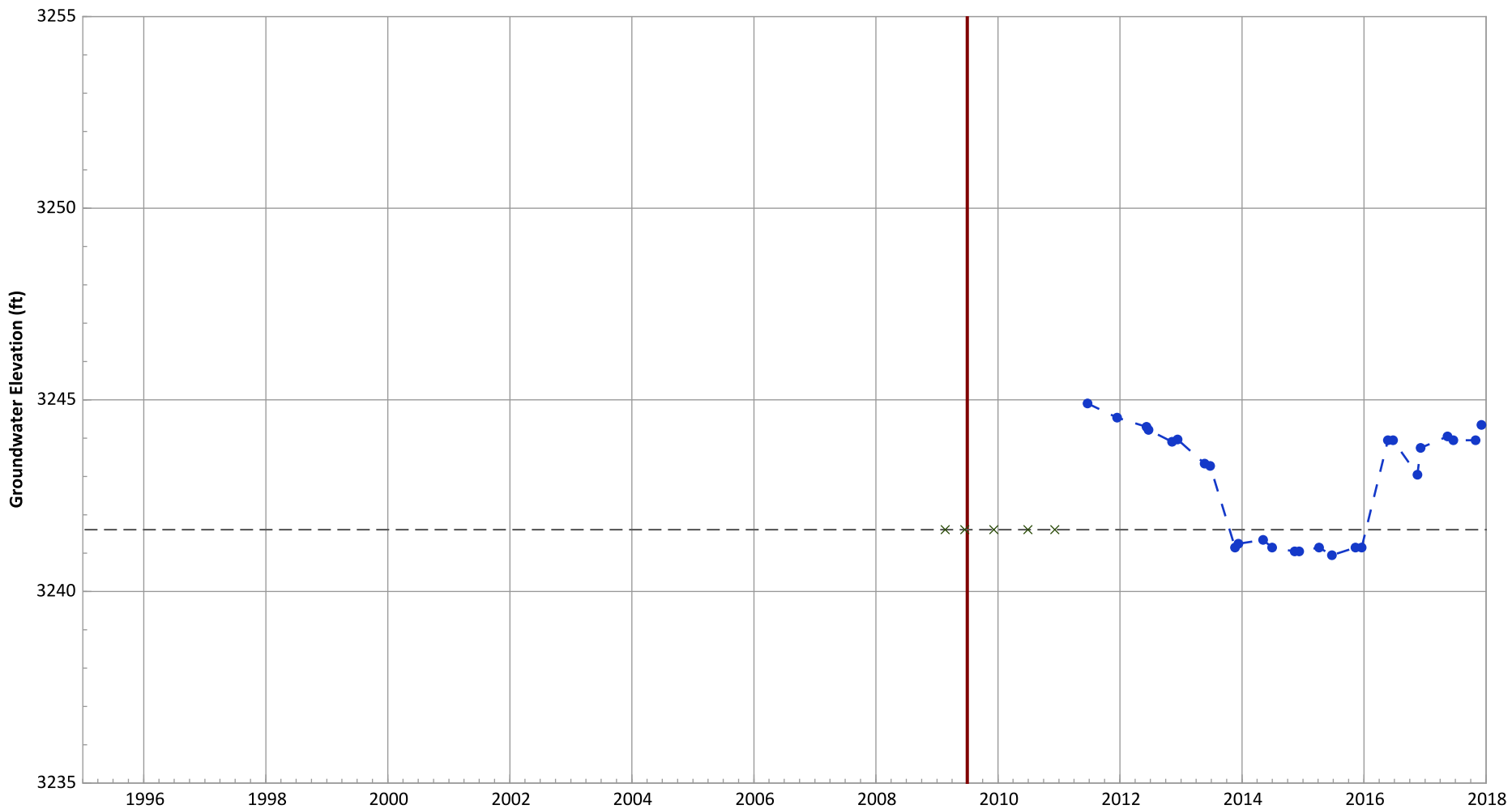
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
All Data: Increasing at 0.32 ft/yr
Data (1/2012 - 1/2016): Increasing at 0.33 ft/yr

**PTX06-1133A Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**



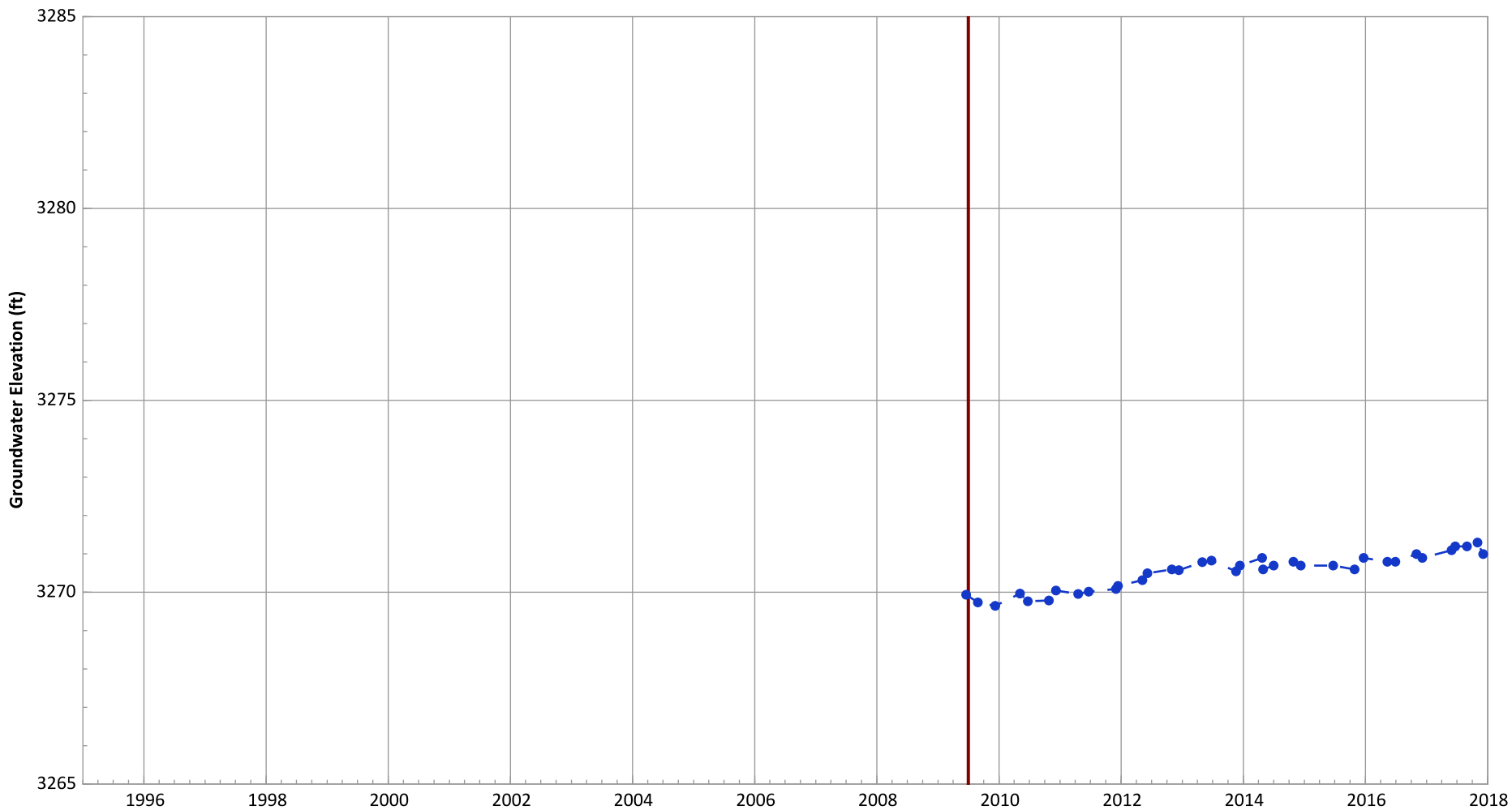
Notes:
 1. Top of screen elevation is 3256.61 ft msl.
 2. The bottom of screen elevation is 3241.61 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements. Actual groundwater elevations between measurements may be different than shown.
 Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- × No Water Detected
- Start of Remedial Action



Hydrograph Trend
 (MAROS Linear Regression Method)
 All Data: No Trend
 Data (1/2012 - 1/2016): Decreasing at 0.23 ft/yr

**PTX06-1134 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

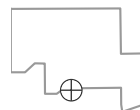


Notes:

1. Top of screen elevation is 3276.07 ft msl.
 2. The bottom of screen elevation is 3261.07 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- Start of Remedial Action

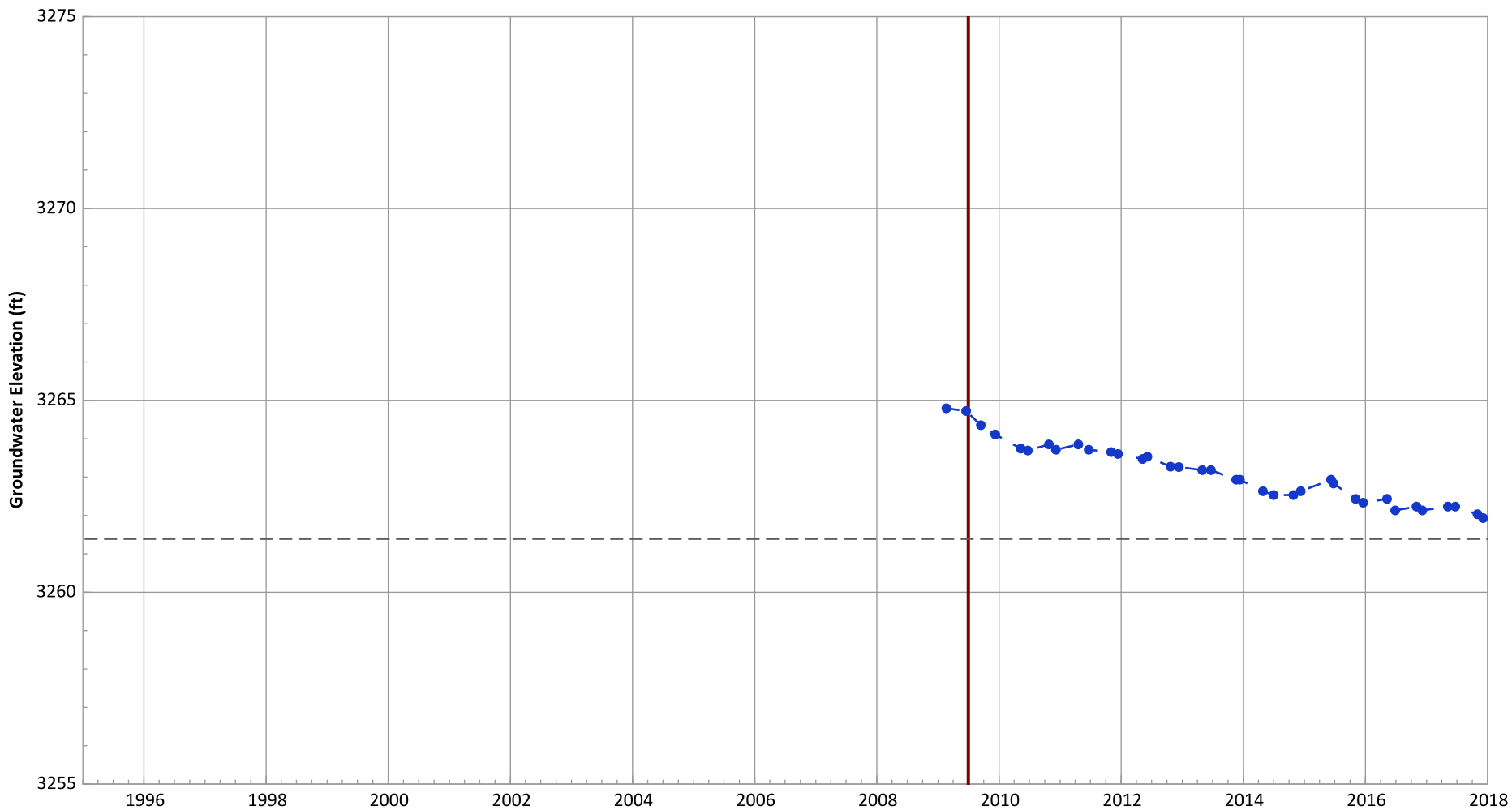
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
All Data: Increasing at 0.17 ft/yr
Data (1/2012 - 1/2016): No Trend

**PTX06-1135 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**



Notes:

1. Top of screen elevation is 3281.39 ft msl.
 2. The bottom of screen elevation is 3261.39 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- Start of Remedial Action

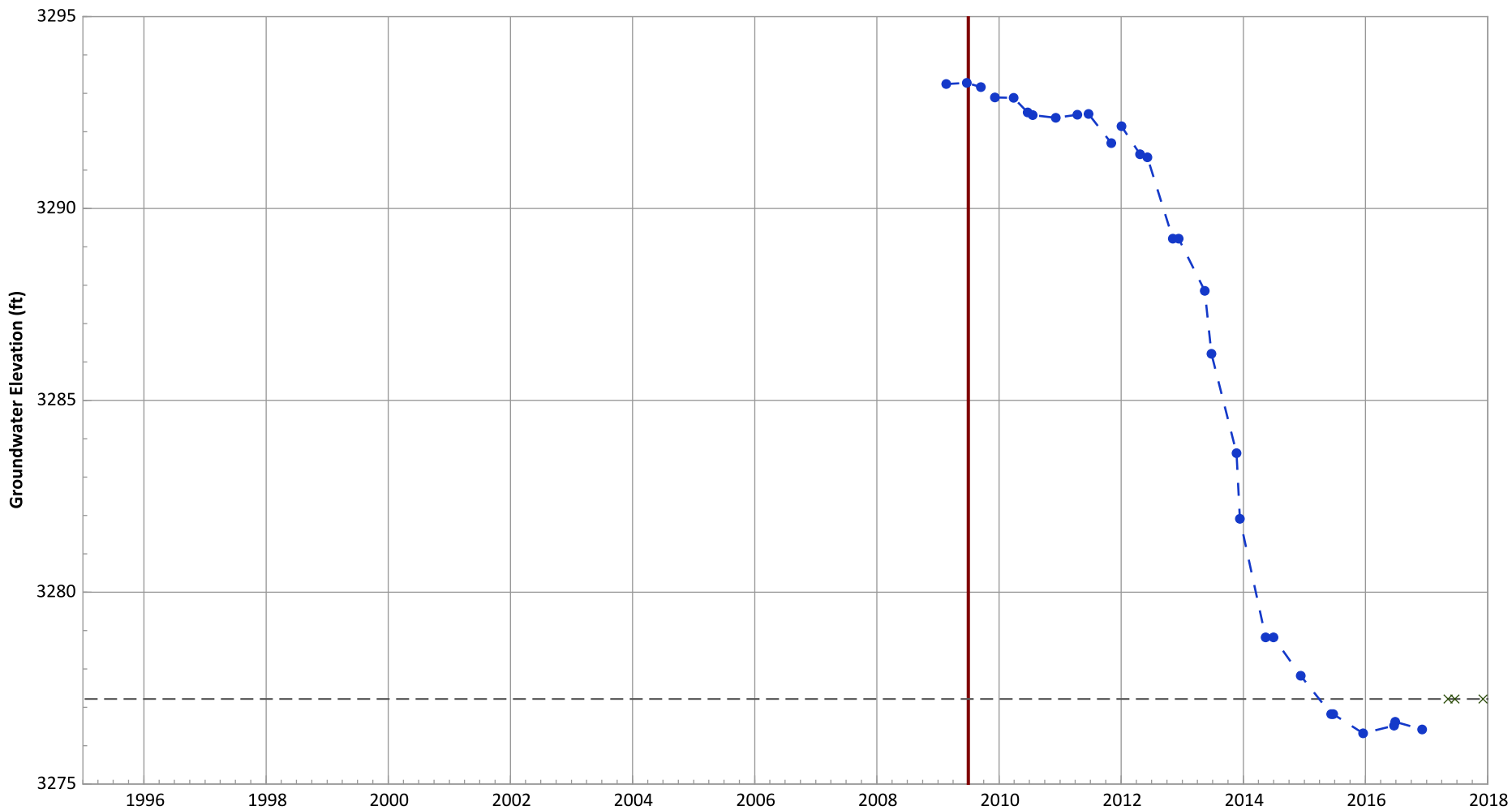
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
All Data: Decreasing at 0.28 ft/yr
Data (1/2012 - 1/2016): Decreasing at 0.28 ft/yr

**PTX06-1136 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**



Notes:

1. Top of screen elevation is 3297.22 ft msl.
 2. The bottom of screen elevation is 3277.22 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements. Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- × No Water Detected
- Start of Remedial Action

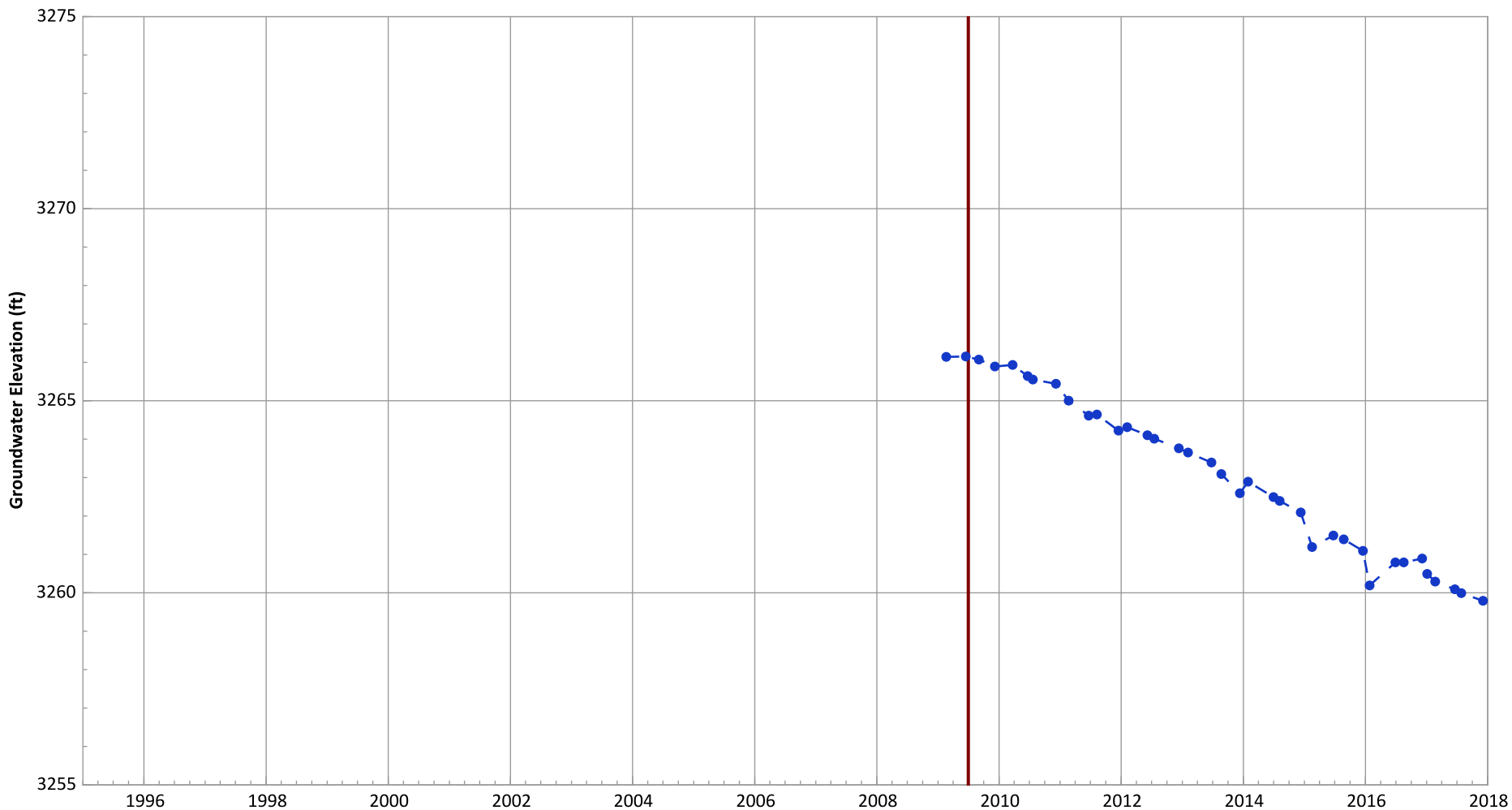
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: Decreasing at 2.8 ft/yr
 Data (1/2012 - 1/2016): Decreasing at 3.74 ft/yr

PTX06-1146 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant

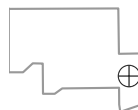


Notes:

1. Top of screen elevation is 3263.96 ft msl.
 2. The bottom of screen elevation is 3243.96 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

—●— Groundwater Elevation
— Start of Remedial Action

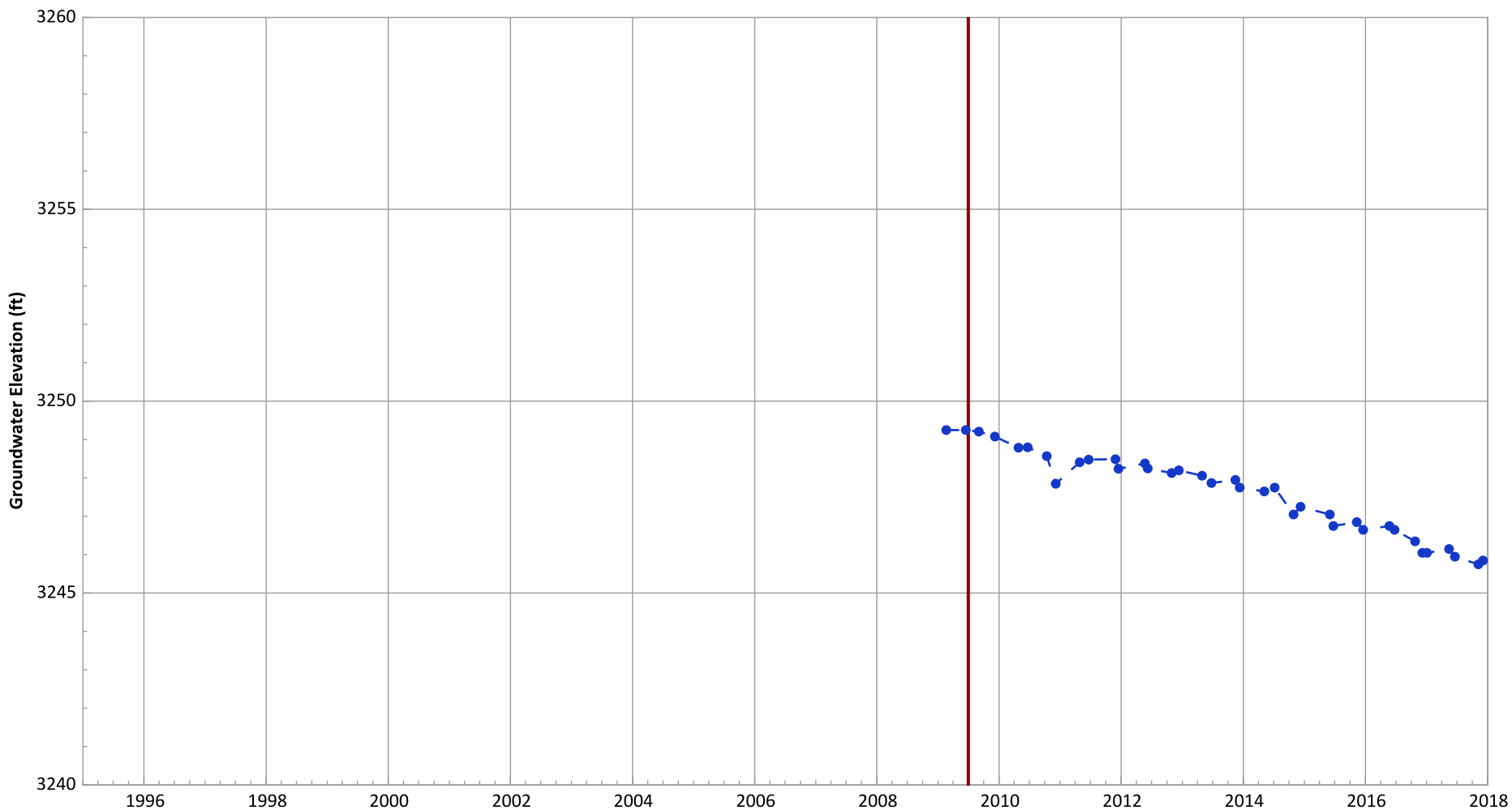
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
All Data: Decreasing at 0.78 ft/yr
Data (1/2012 - 1/2016): Decreasing at 0.84 ft/yr

PTX06-1147 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant

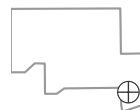


Notes:

1. Top of screen elevation is 3251.62 ft msl.
 2. The bottom of screen elevation is 3231.62 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

—●— Groundwater Elevation
— Start of Remedial Action

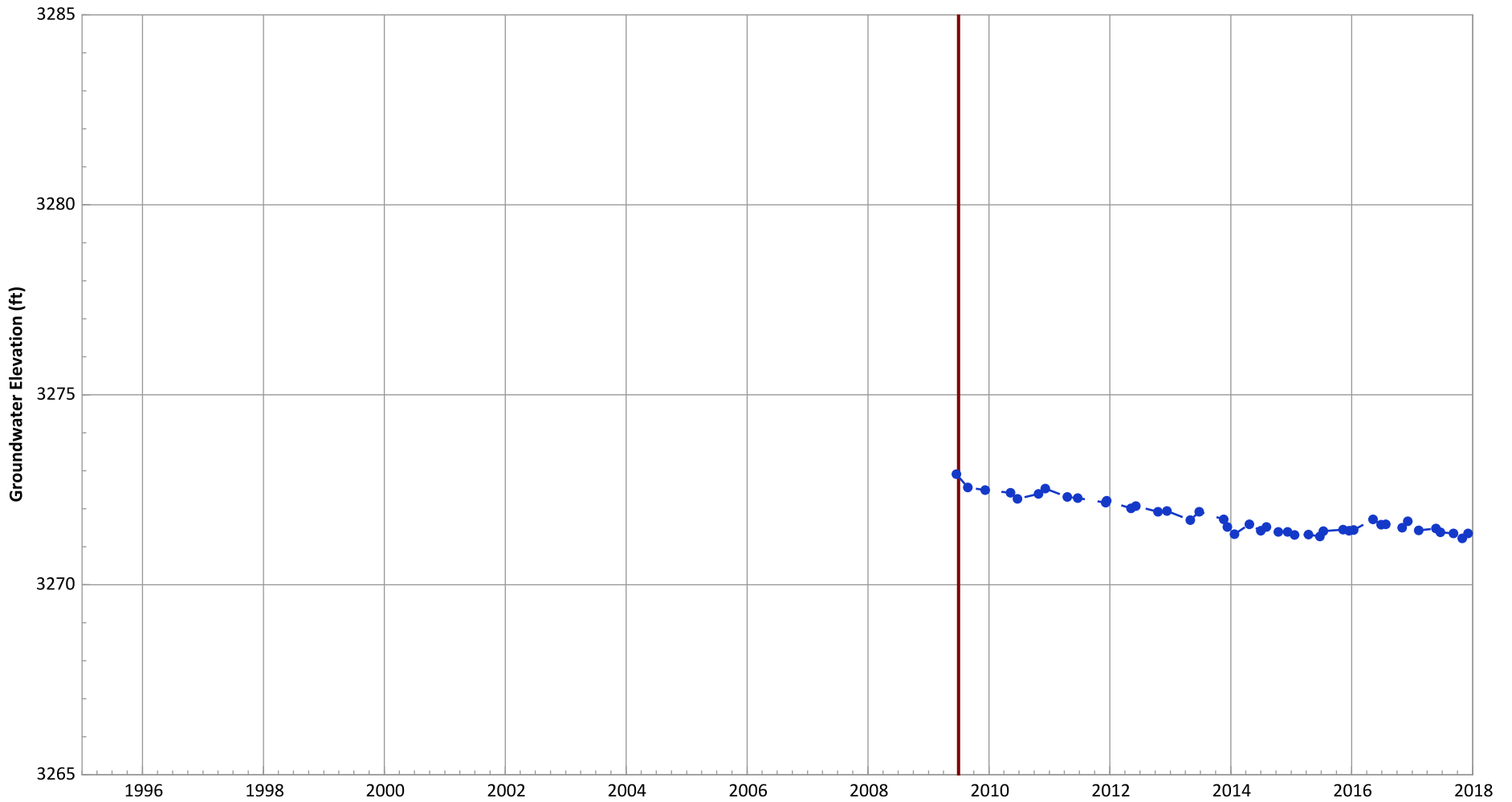
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
All Data: Decreasing at 0.39 ft/yr
Data (1/2012 - 1/2016): Decreasing at 0.47 ft/yr

**PTX06-1148 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

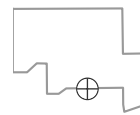


Notes:

1. Top of screen elevation is 3276.06 ft msl.
 2. The bottom of screen elevation is 3256.06 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

—●— Groundwater Elevation
 — Start of Remedial Action

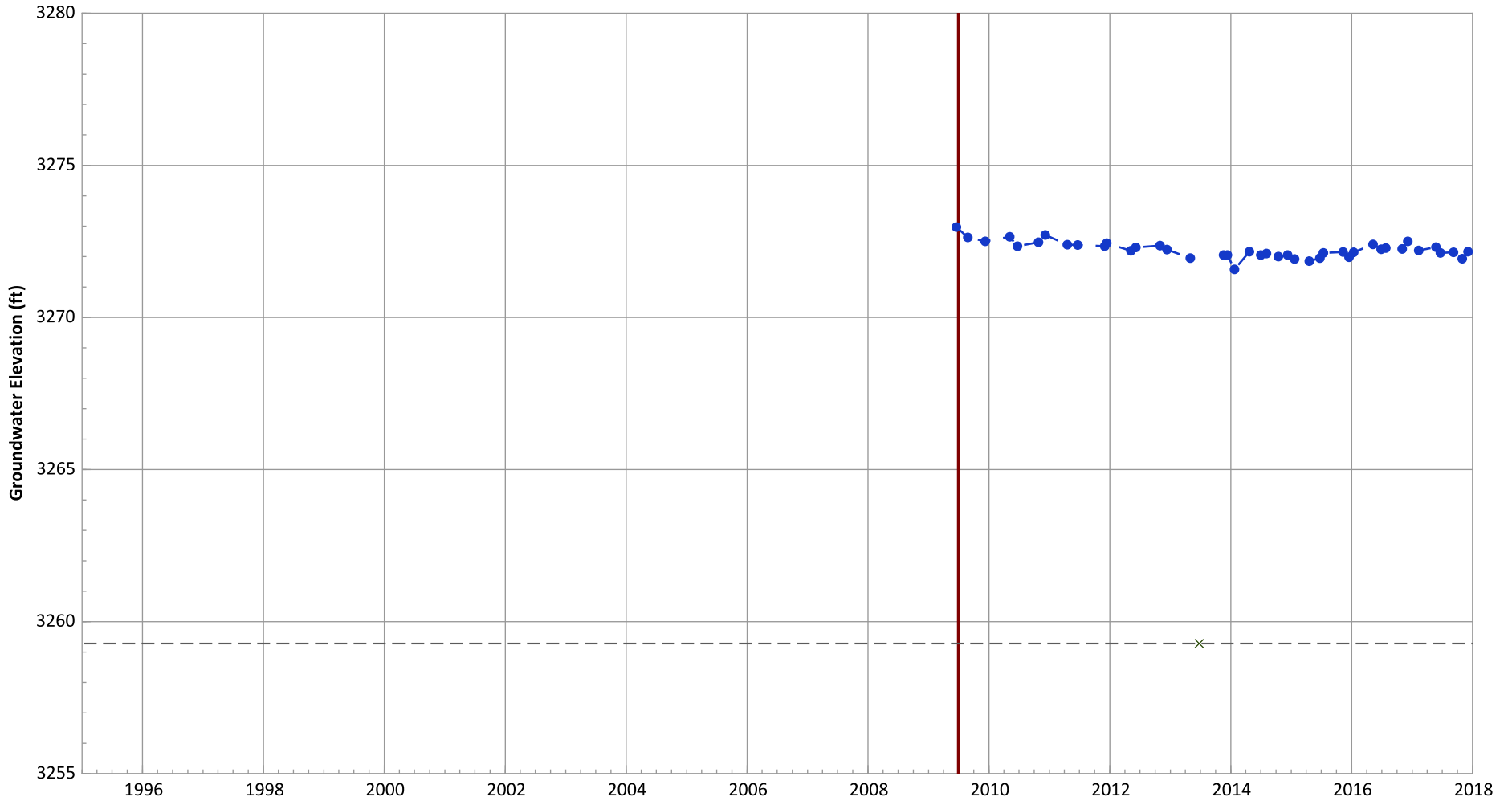
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: Decreasing at 0.16 ft/yr
 Data (1/2012 - 1/2016): Decreasing at 0.1 ft/yr

**PTX06-1149 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

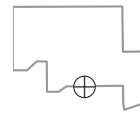


Notes:

1. Top of screen elevation is 3279.28 ft msl.
 2. The bottom of screen elevation is 3259.28 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements. Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- × No Water Detected
- Start of Remedial Action

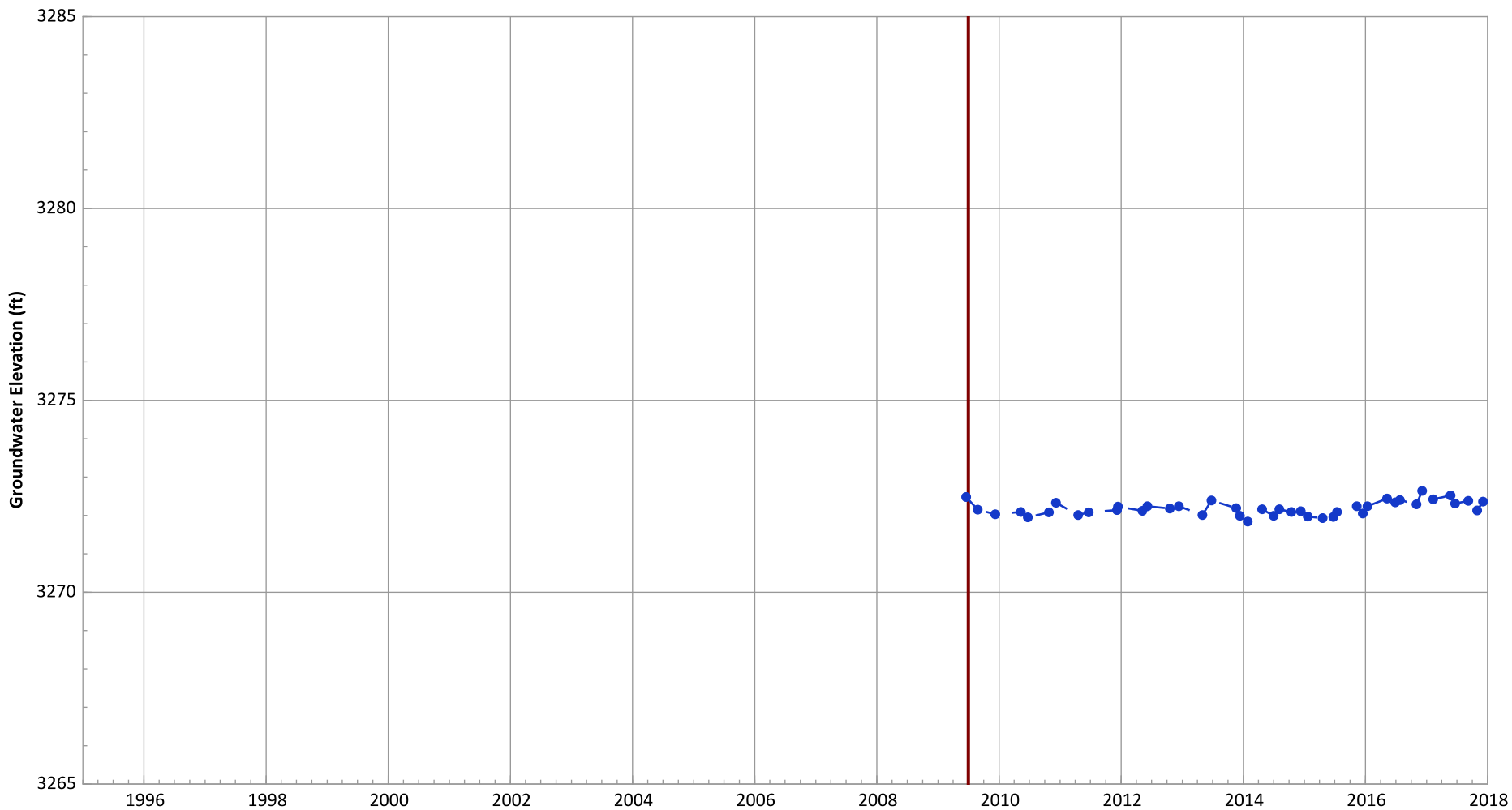
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: No Trend
 Data (1/2012 - 1/2016): No Trend

**PTX06-1150 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

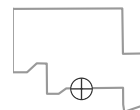


Notes:

1. Top of screen elevation is 3280.9 ft msl.
 2. The bottom of screen elevation is 3260.9 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- Start of Remedial Action

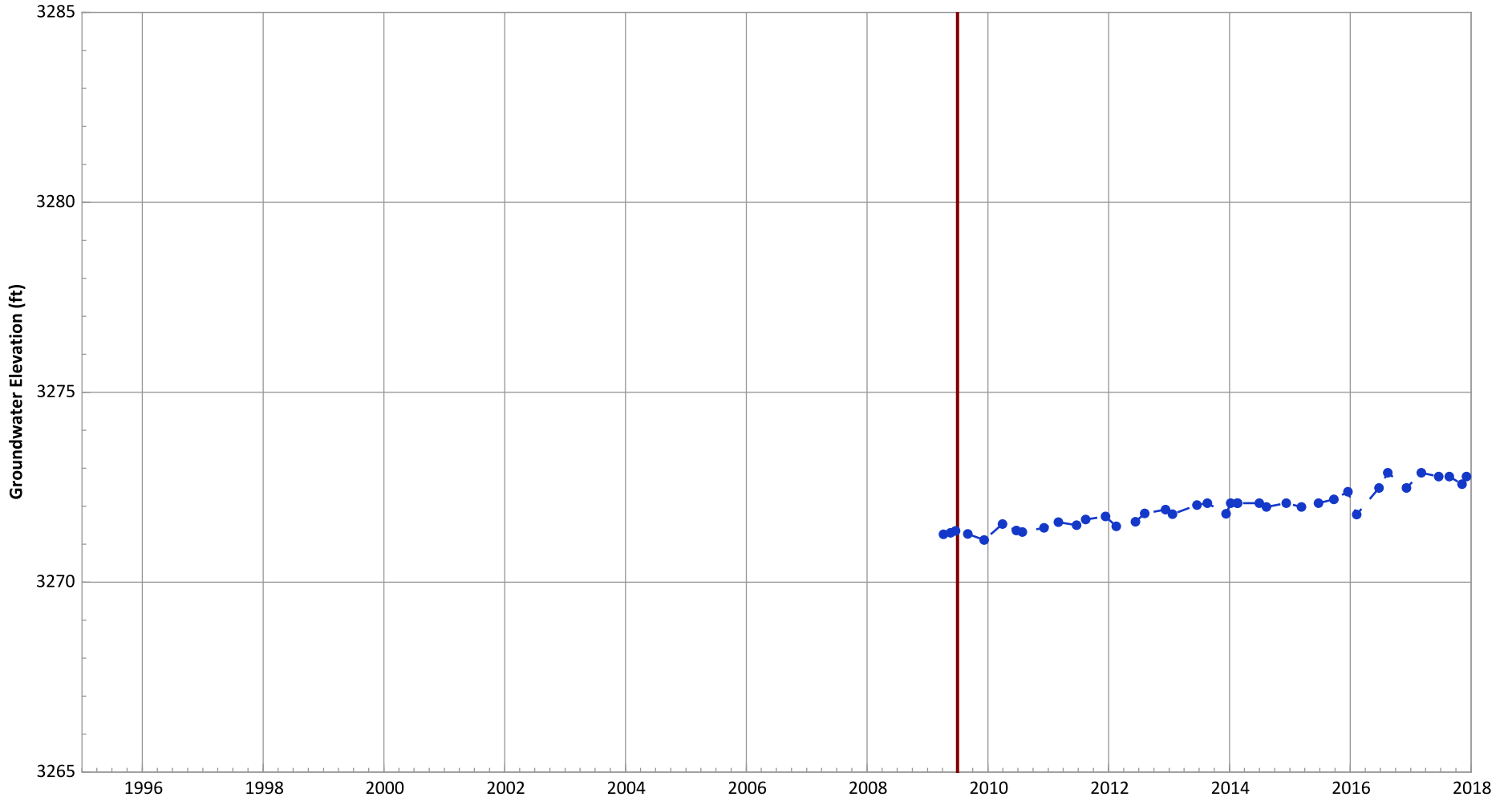
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
All Data: No Trend
Data (1/2012 - 1/2016): No Trend

**PTX06-1151 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

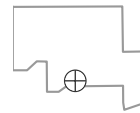


Notes:

1. Top of screen elevation is 3269.55 ft msl.
 2. The bottom of screen elevation is 3254.55 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

—●— Groundwater Elevation
— Start of Remedial Action

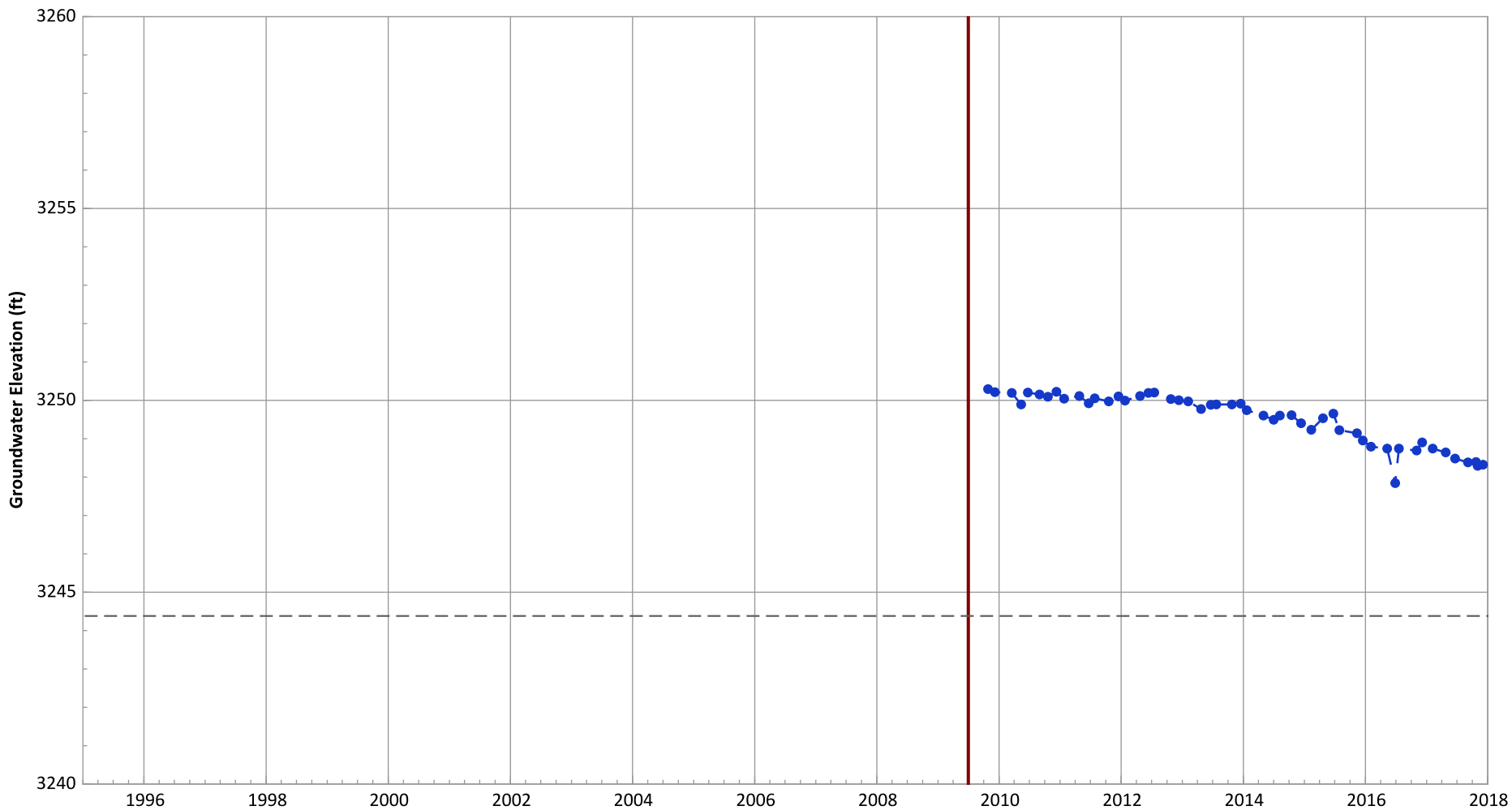
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
All Data: Increasing at 0.18 ft/yr
Data (1/2012 - 1/2016): Increasing at 0.17 ft/yr

**PTX06-1153 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

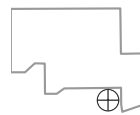


Notes:

1. Top of screen elevation is 3254.38 ft msl.
 2. The bottom of screen elevation is 3244.38 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- Start of Remedial Action

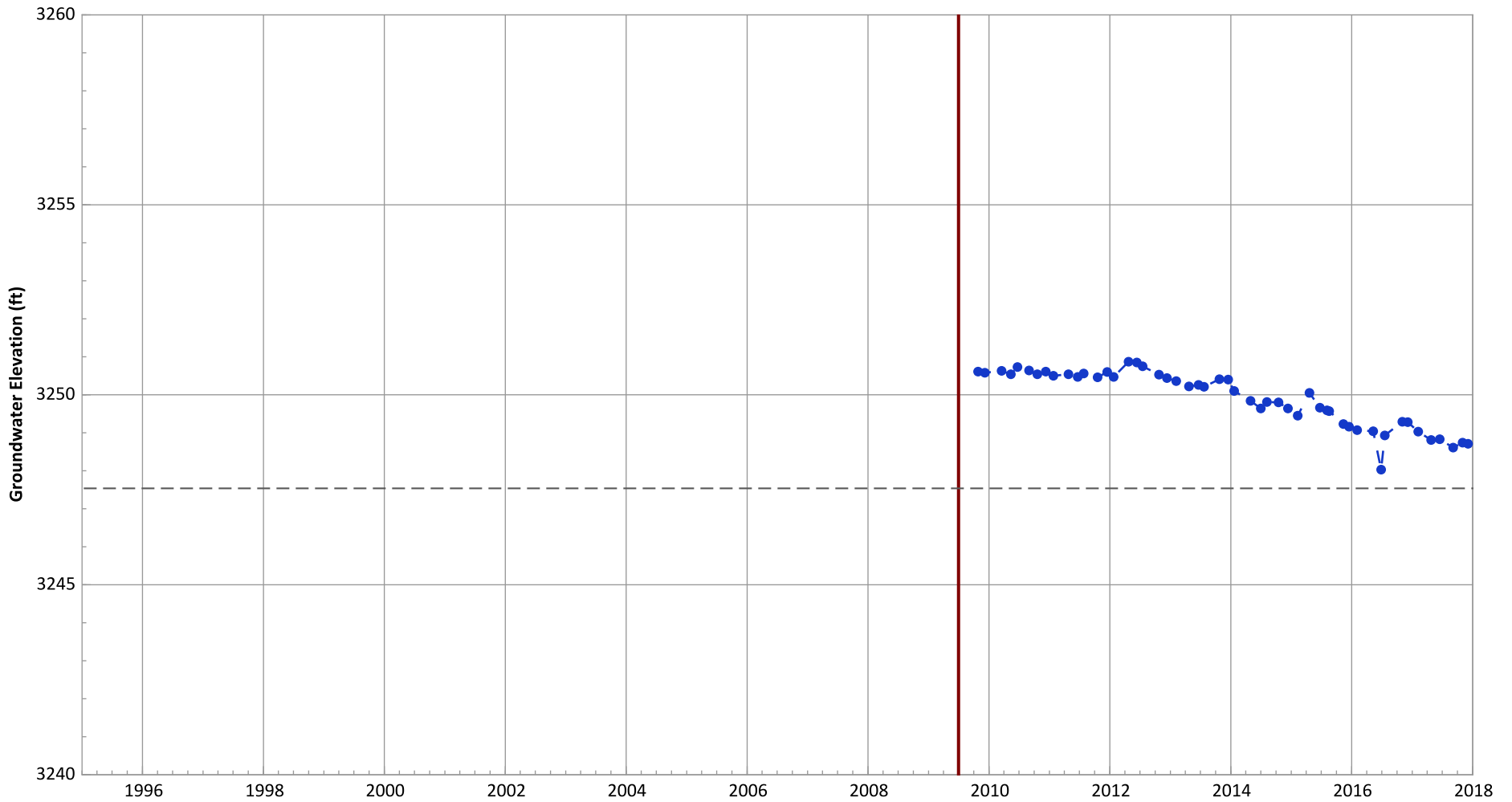
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: Decreasing at 0.25 ft/yr
 Data (1/2012 - 1/2016): Decreasing at 0.34 ft/yr

**PTX06-1154 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

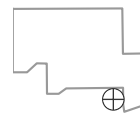


Notes:

1. Top of screen elevation is 3257.54 ft msl.
 2. The bottom of screen elevation is 3247.54 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- Start of Remedial Action

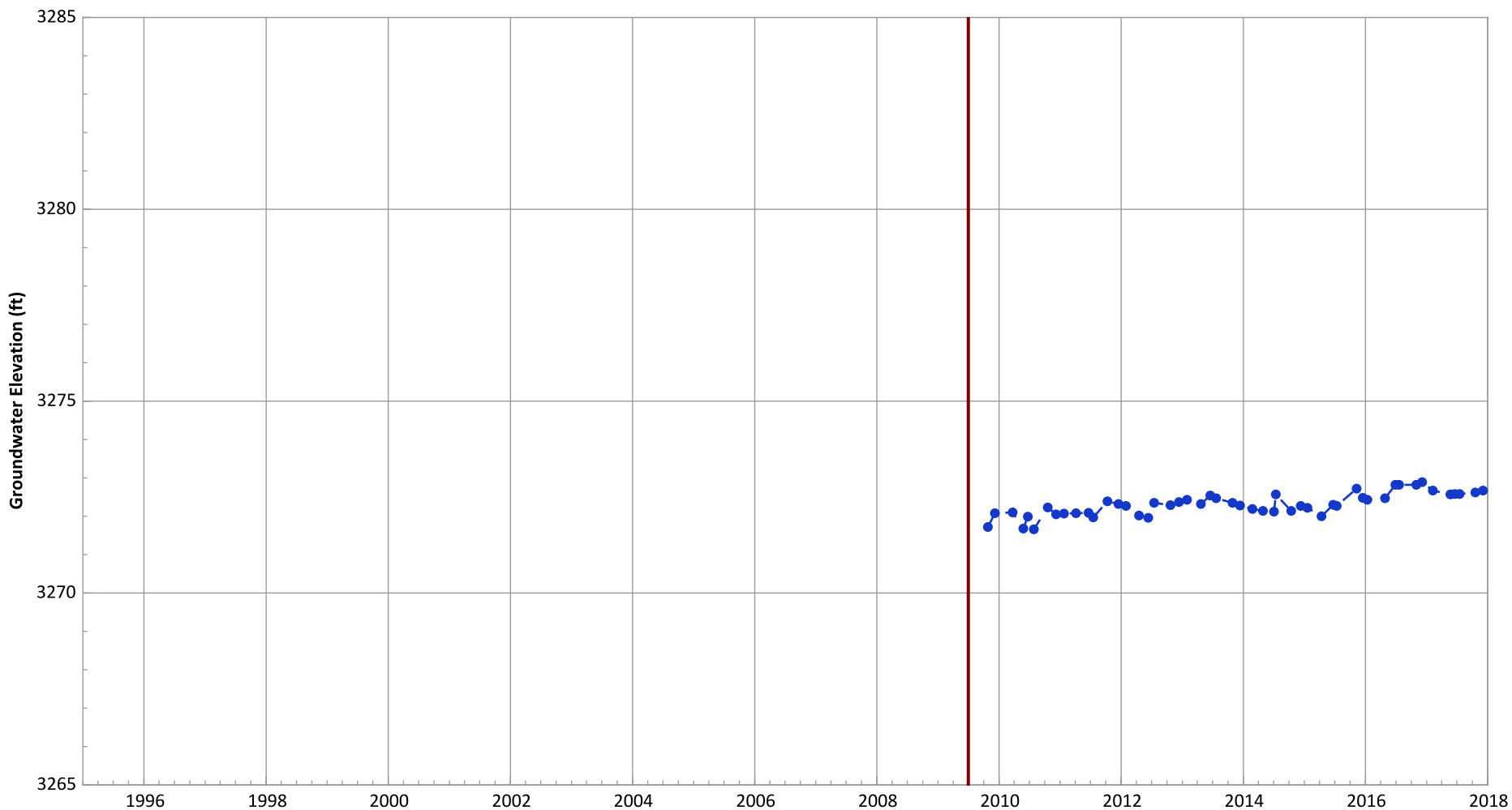
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: Decreasing at 0.28 ft/yr
 Data (1/2012 - 1/2016): Decreasing at 0.4 ft/yr

PTX06-1155 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant

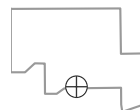


Notes:

1. Top of screen elevation is 3271.89 ft msl.
 2. The bottom of screen elevation is 3256.89 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

—●— Groundwater Elevation
— Start of Remedial Action

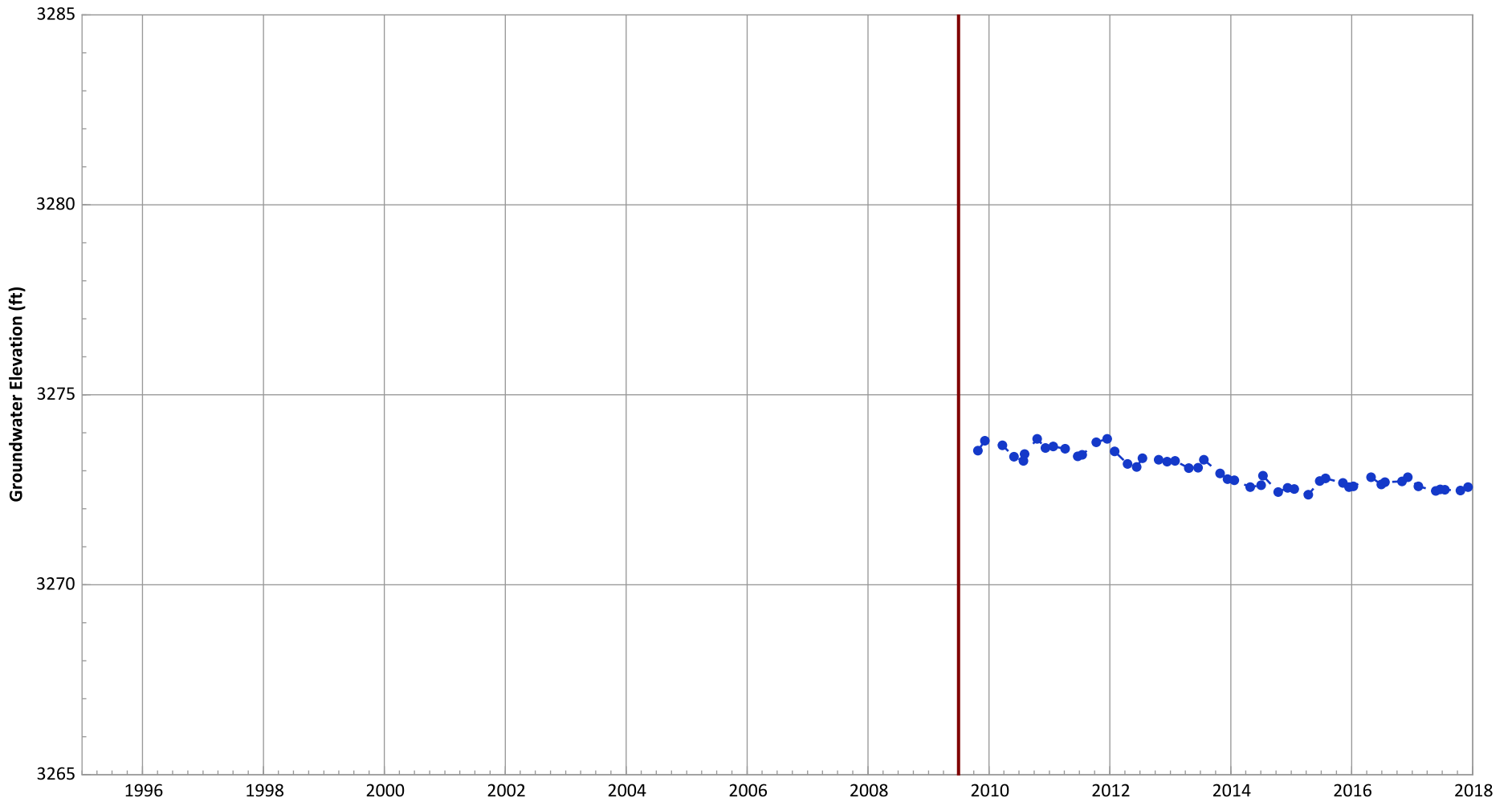
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
All Data: No Trend
Data (1/2012 - 1/2016): Increasing at 0.1 ft/yr

**PTX06-1156 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

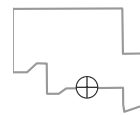


Notes:

1. Top of screen elevation is 3275.27 ft msl.
 2. The bottom of screen elevation is 3250.27 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

—●— Groundwater Elevation
— Start of Remedial Action

Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
All Data: Decreasing at 0.16 ft/yr
Data (1/2012 - 1/2016): Decreasing at 0.15 ft/yr

**PTX06-1158 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**



Notes:

1. Top of screen elevation is 3245.25 ft msl.
 2. The bottom of screen elevation is 3235.25 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements. Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- × No Water Detected
- Start of Remedial Action

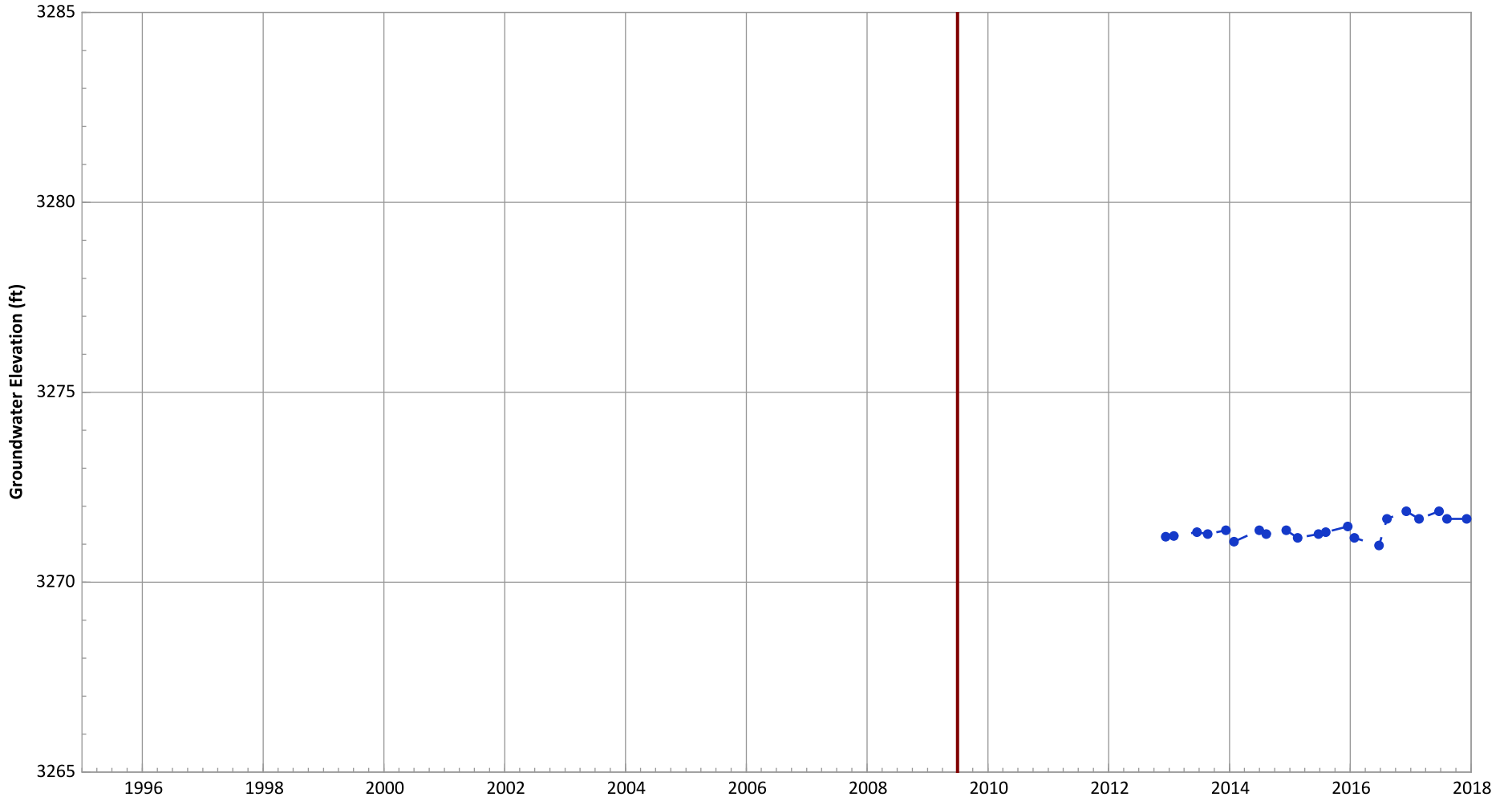
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: N/A (No Measurements)
 Data (1/2012 - 1/2016): N/A (No Measurements)

**PTX06-1159 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

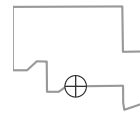


Notes:

1. Top of screen elevation is 3273.93 ft msl.
 2. The bottom of screen elevation is 3253.93 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

—●— Groundwater Elevation
 — Start of Remedial Action

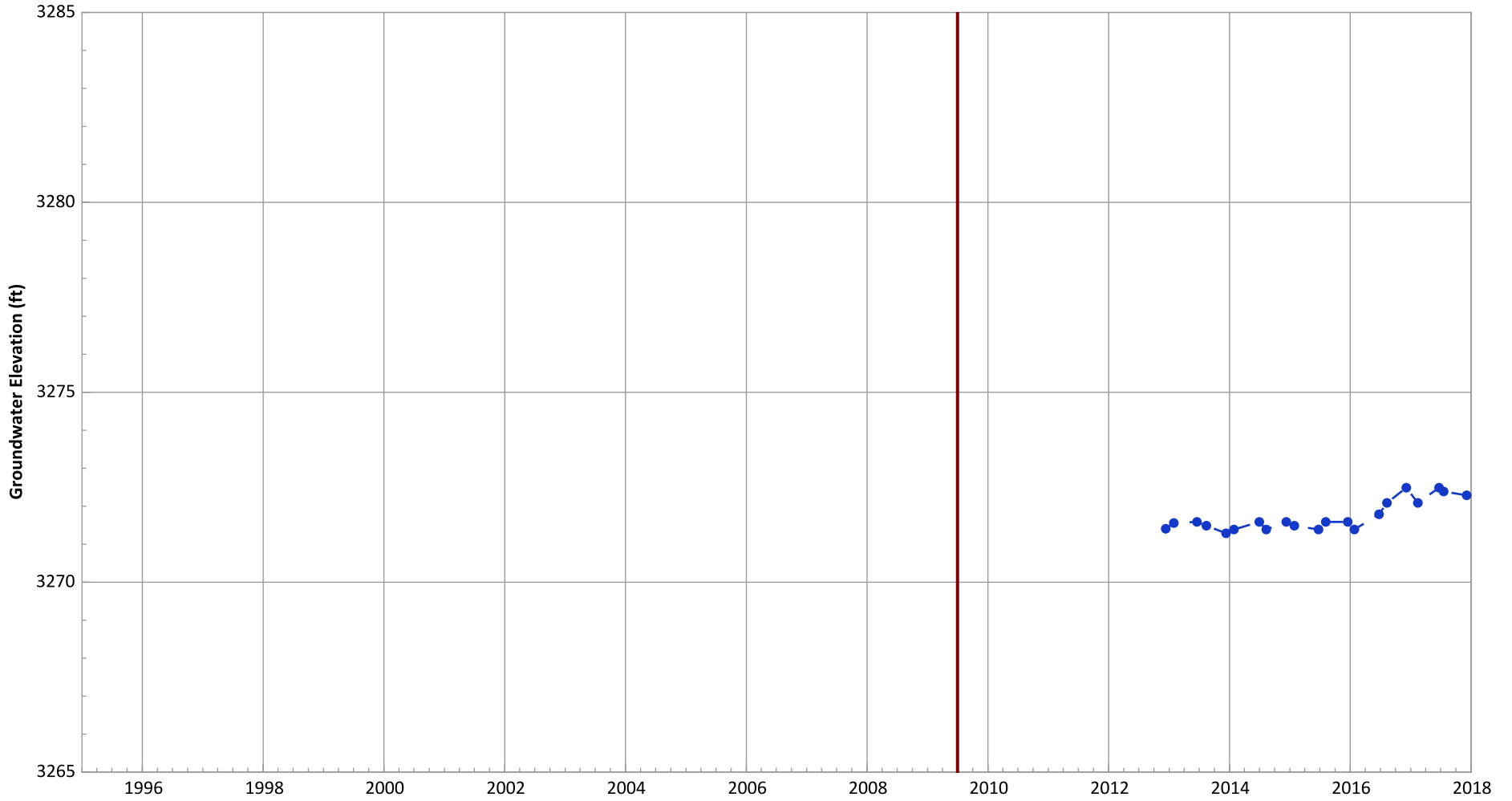
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: Increasing at 0.11 ft/yr
 Data (1/2012 - 1/2016): No Trend

**PTX06-1160 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

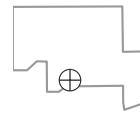


Notes:

1. Top of screen elevation is 3271.51 ft msl.
 2. The bottom of screen elevation is 3246.51 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

—●— Groundwater Elevation
 — Start of Remedial Action

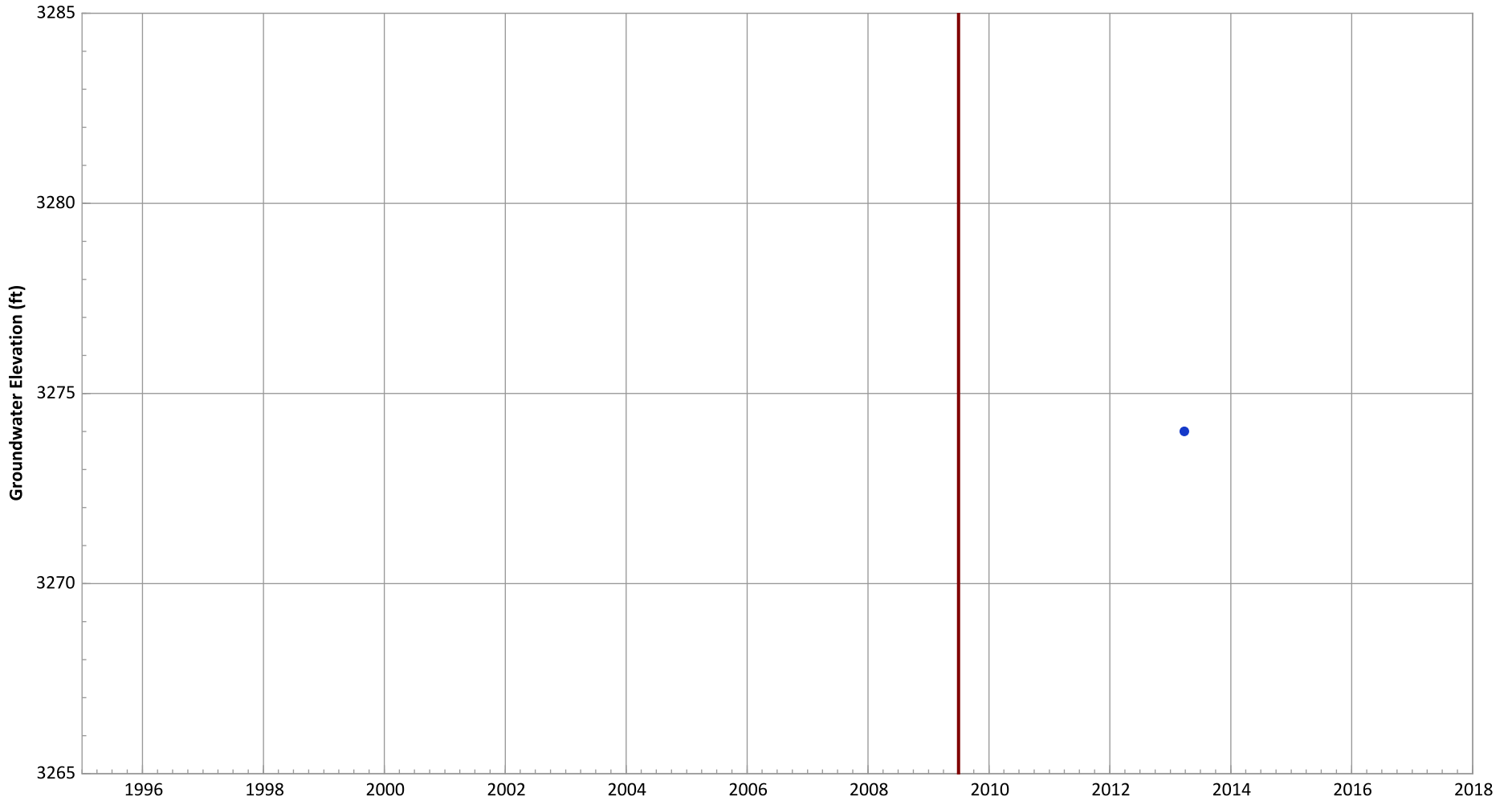
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: Increasing at 0.2 ft/yr
 Data (1/2012 - 1/2016): Increasing at 0.14 ft/yr

PTX06-1162 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant

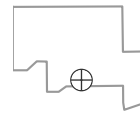


Notes:

1. Top of screen elevation is 3276.3 ft msl.
 2. The bottom of screen elevation is 3256.3 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

—●— Groundwater Elevation
— Start of Remedial Action

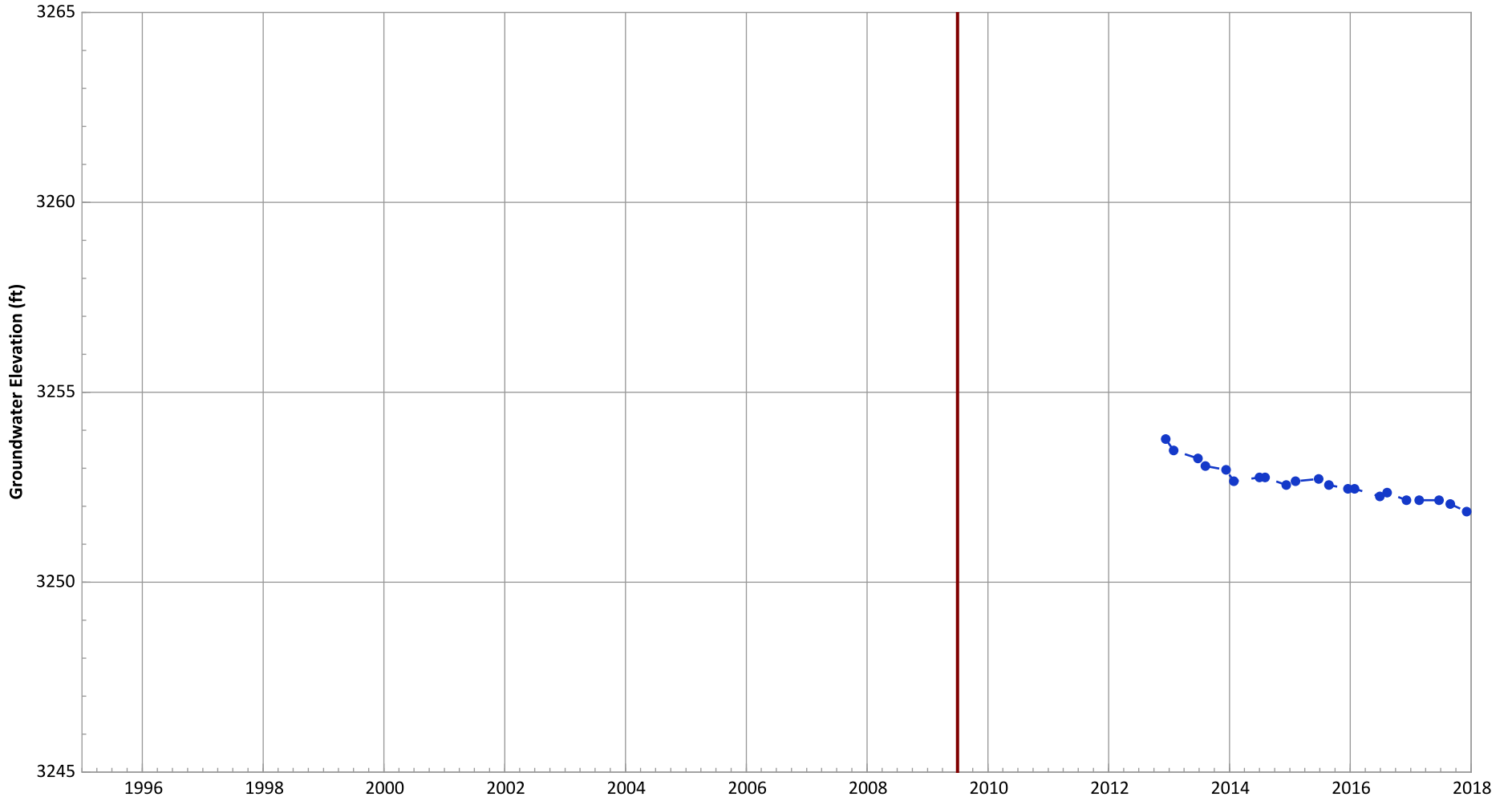
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
All Data: N/A (No Measurements)
Data (1/2012 - 1/2016): N/A (No Measurements)

**PTX06-1166 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

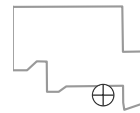


Notes:

1. Top of screen elevation is 3254.36 ft msl.
 2. The bottom of screen elevation is 3244.36 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- Start of Remedial Action

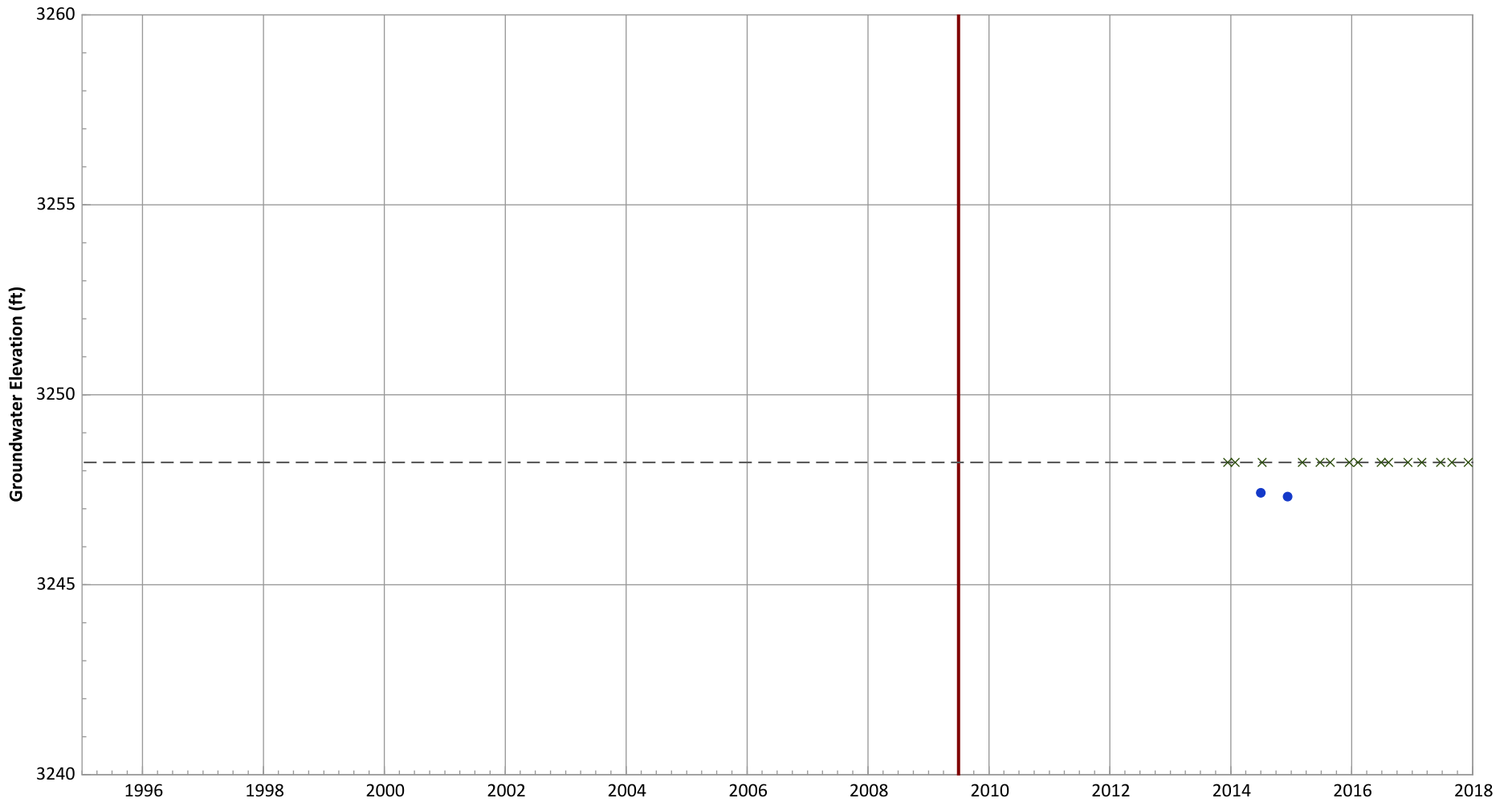
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: Decreasing at 0.29 ft/yr
 Data (1/2012 - 1/2016): Decreasing at 0.31 ft/yr

**PTX06-1167 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

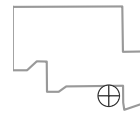


Notes:

1. Top of screen elevation is 3258.22 ft msl.
 2. The bottom of screen elevation is 3248.22 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements. Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- × No Water Detected
- Start of Remedial Action

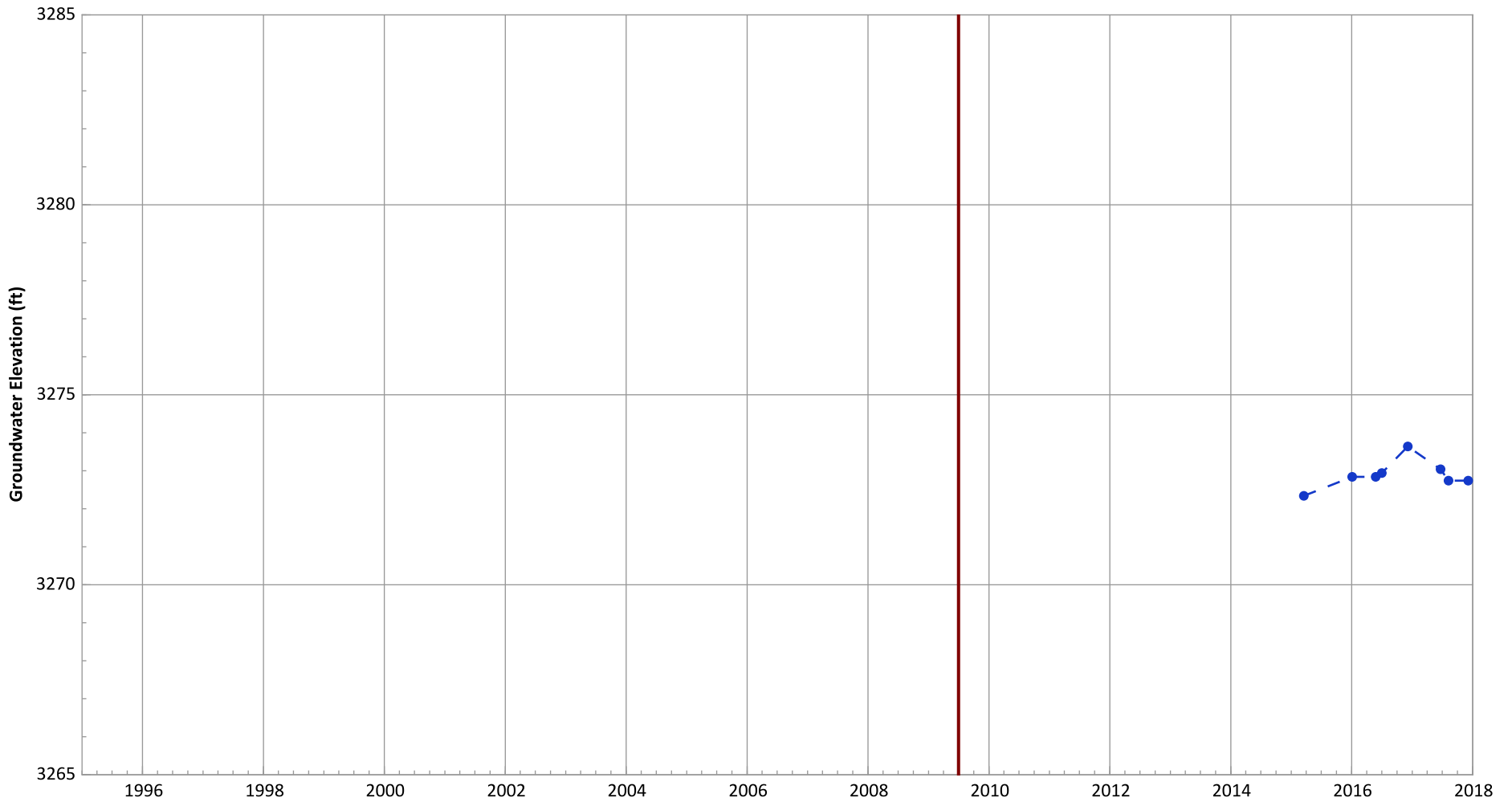
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: N/A (<3 Measurements)
 Data (1/2012 - 1/2016): N/A (<3 Measurements)

**PTX06-1171 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

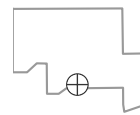


Notes:

1. Top of screen elevation is 3267.42 ft msl.
 2. The bottom of screen elevation is 3257.42 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

—●— Groundwater Elevation
 — Start of Remedial Action

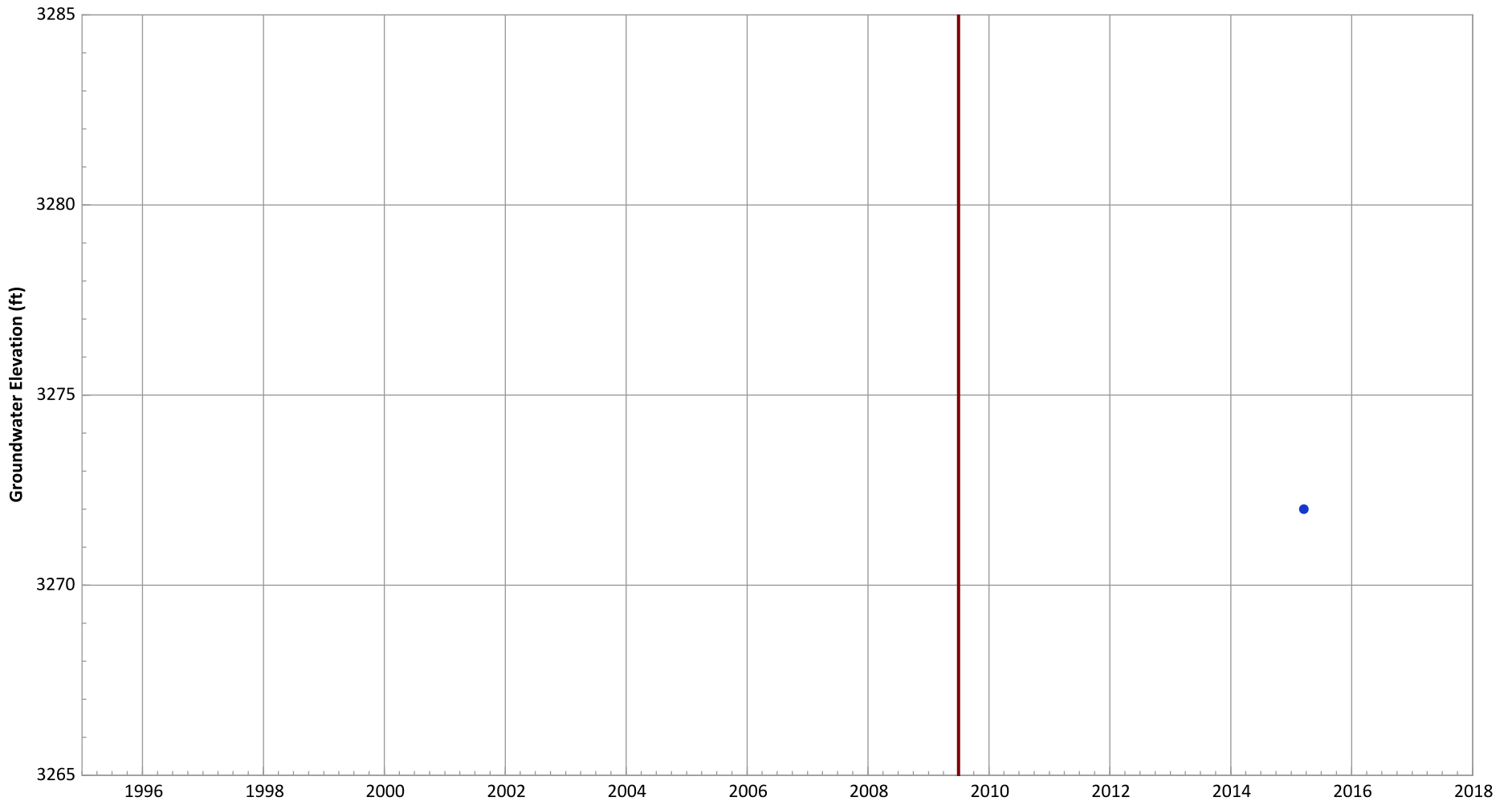
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: Increasing at 0.14 ft/yr
 Data (1/2012 - 1/2016): Increasing at 0.66 ft/yr

**PTX06-1172 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

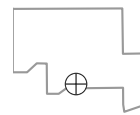


Notes:

1. Top of screen elevation is 3267.32 ft msl.
 2. The bottom of screen elevation is 3257.32 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

—●— Groundwater Elevation
— Start of Remedial Action

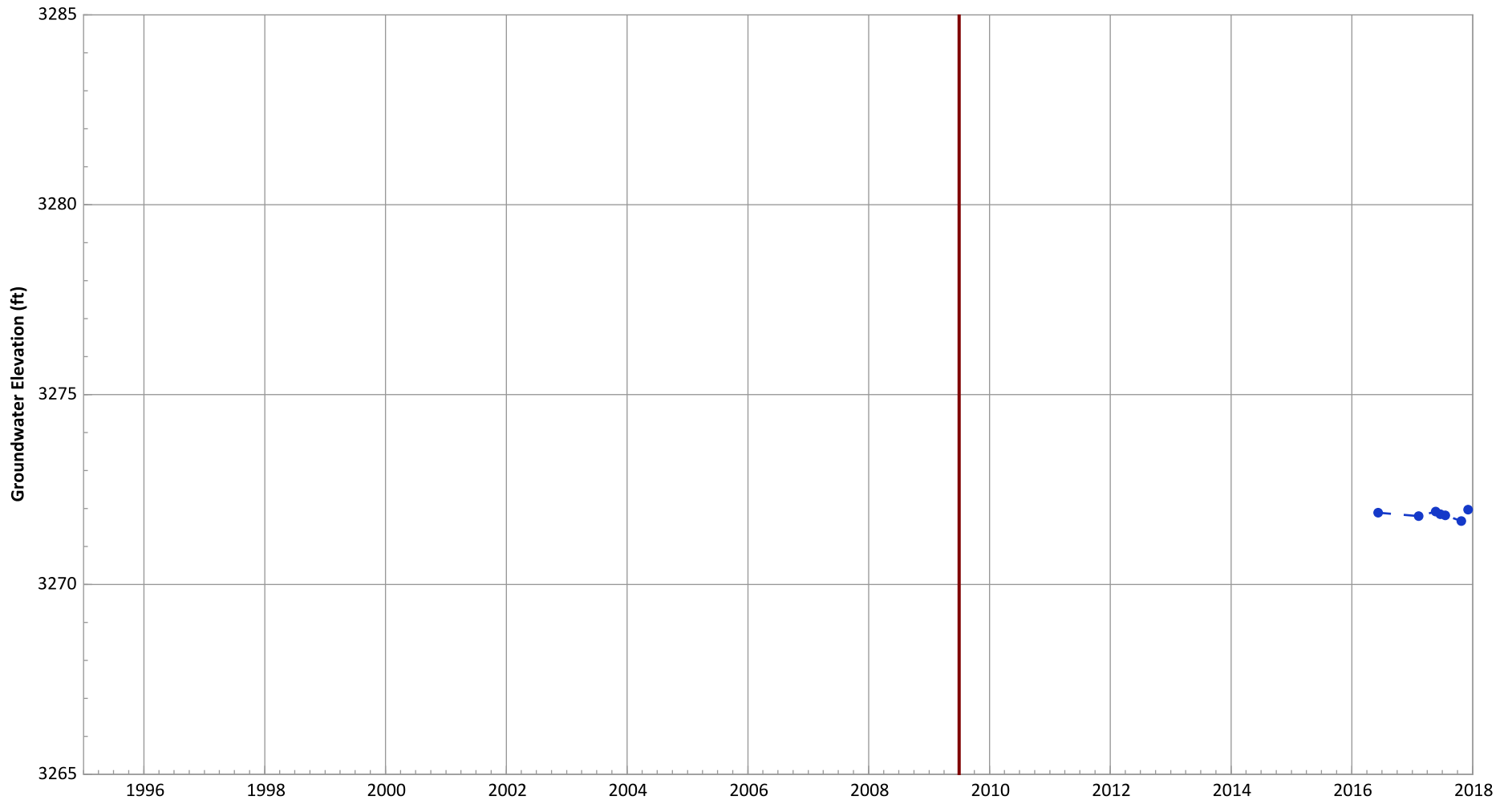
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
All Data: N/A (No Measurements)
Data (1/2012 - 1/2016): N/A (No Measurements)

PTX06-1173 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant

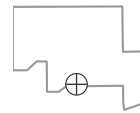


Notes:

1. Top of screen elevation is 3265.86 ft msl.
 2. The bottom of screen elevation is 3255.86 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

—●— Groundwater Elevation
— Start of Remedial Action

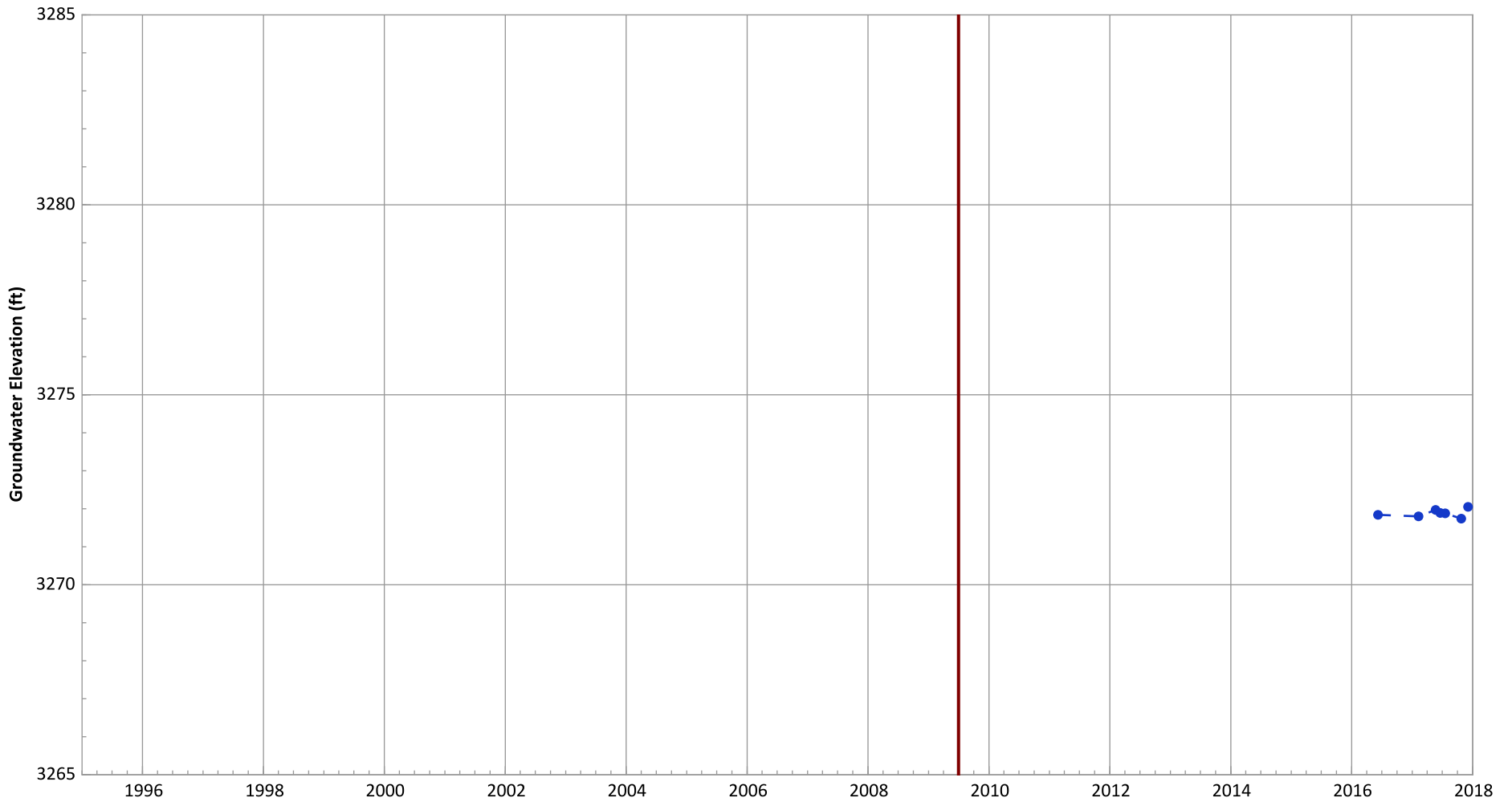
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
All Data: No Trend
Data (1/2012 - 1/2016): N/A (<3 Measurements)

**PTX06-1174 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

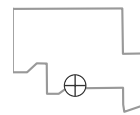


Notes:

1. Top of screen elevation is 3266.12 ft msl.
 2. The bottom of screen elevation is 3256.12 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

—●— Groundwater Elevation
 — Start of Remedial Action

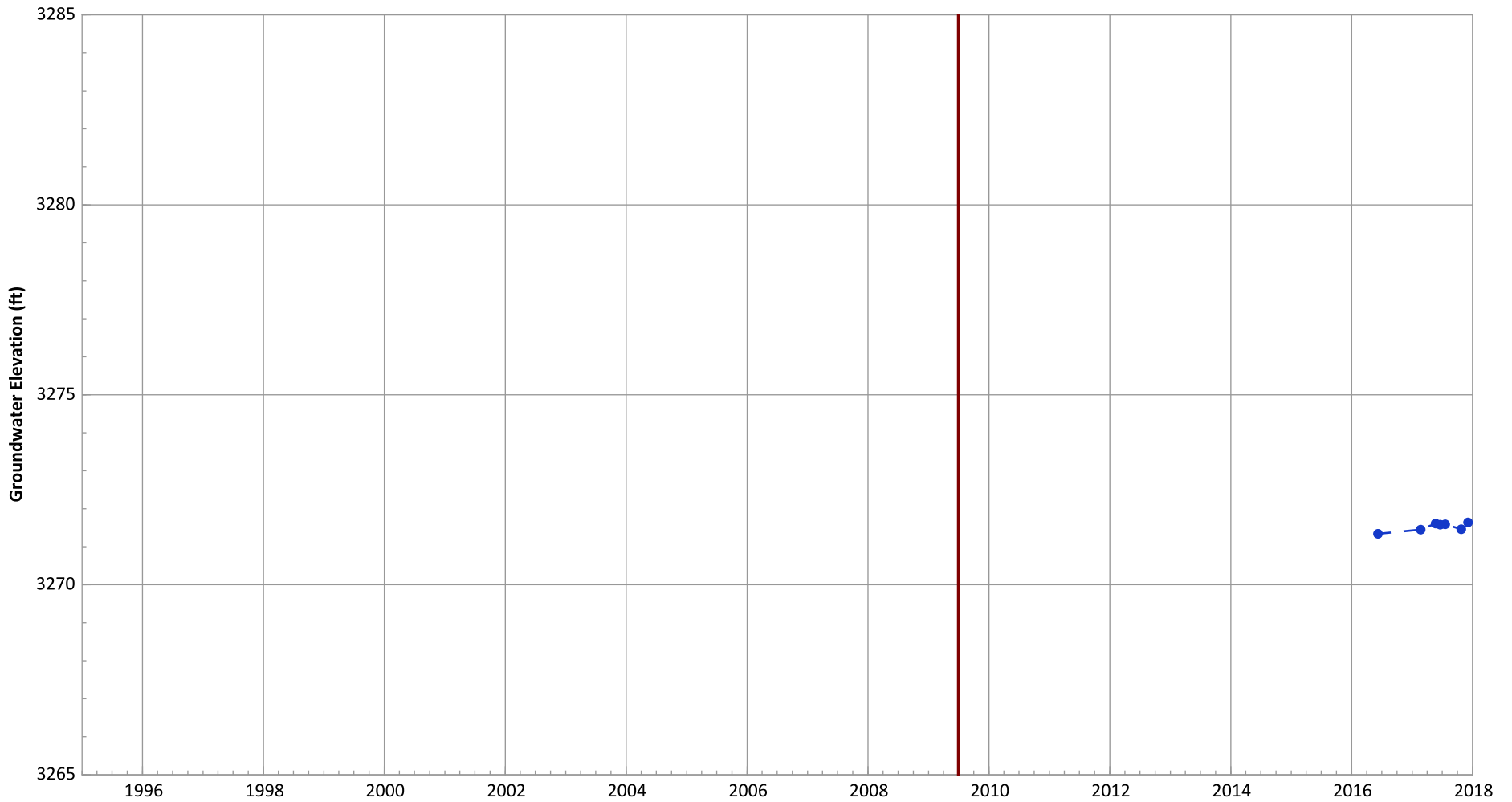
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: No Trend
 Data (1/2012 - 1/2016): N/A (<3 Measurements)

**PTX06-1175 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

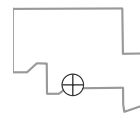


Notes:

1. Top of screen elevation is 3268.15 ft msl.
 2. The bottom of screen elevation is 3258.15 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

—●— Groundwater Elevation
— Start of Remedial Action

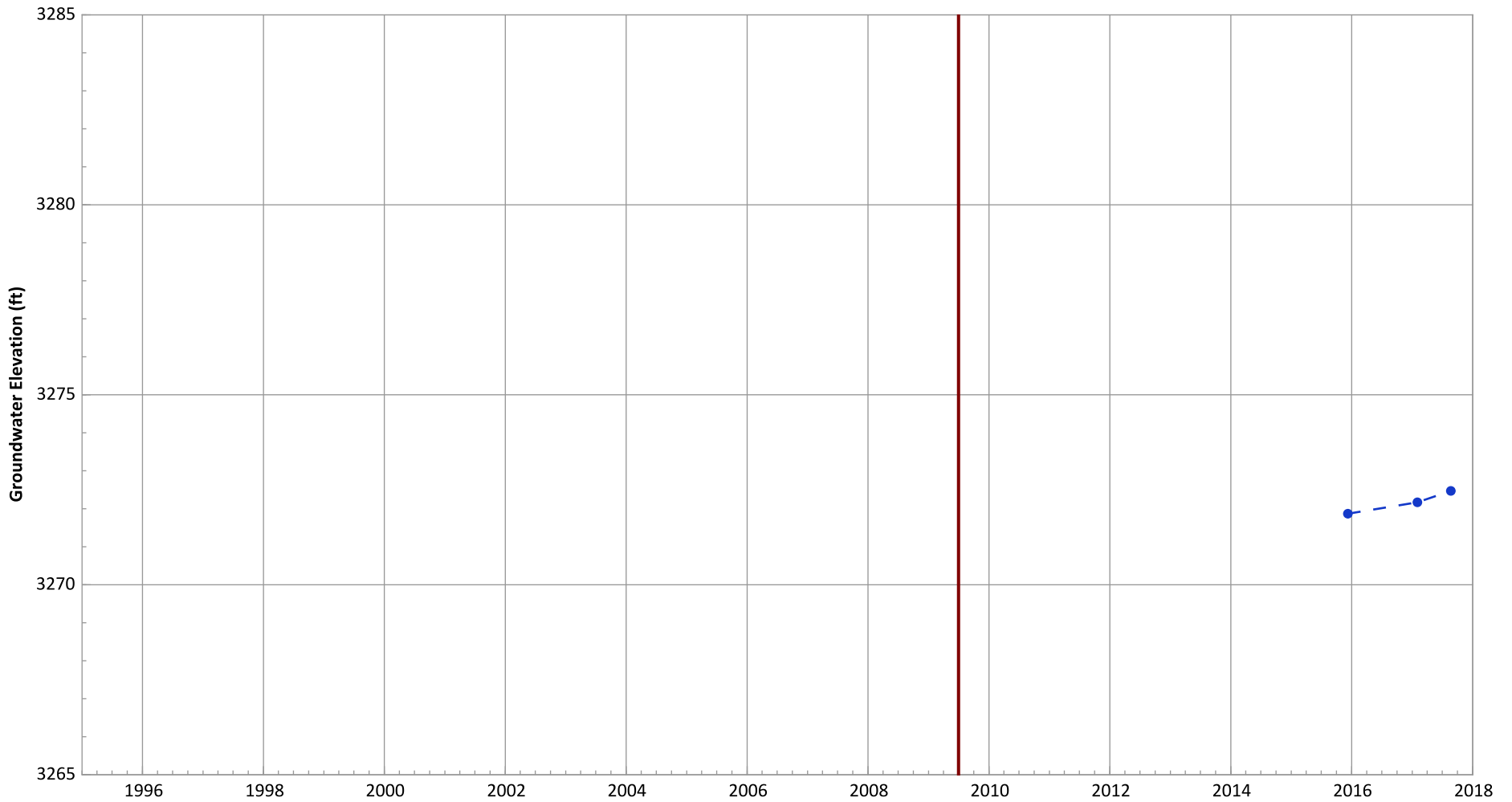
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
All Data: Increasing at 0.17 ft/yr
Data (1/2012 - 1/2016): N/A (<3 Measurements)

**PTX06-1180 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

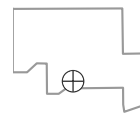


Notes:

1. Top of screen elevation is 3268.29 ft msl.
 2. The bottom of screen elevation is 3258.29 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

—●— Groundwater Elevation
 — Start of Remedial Action

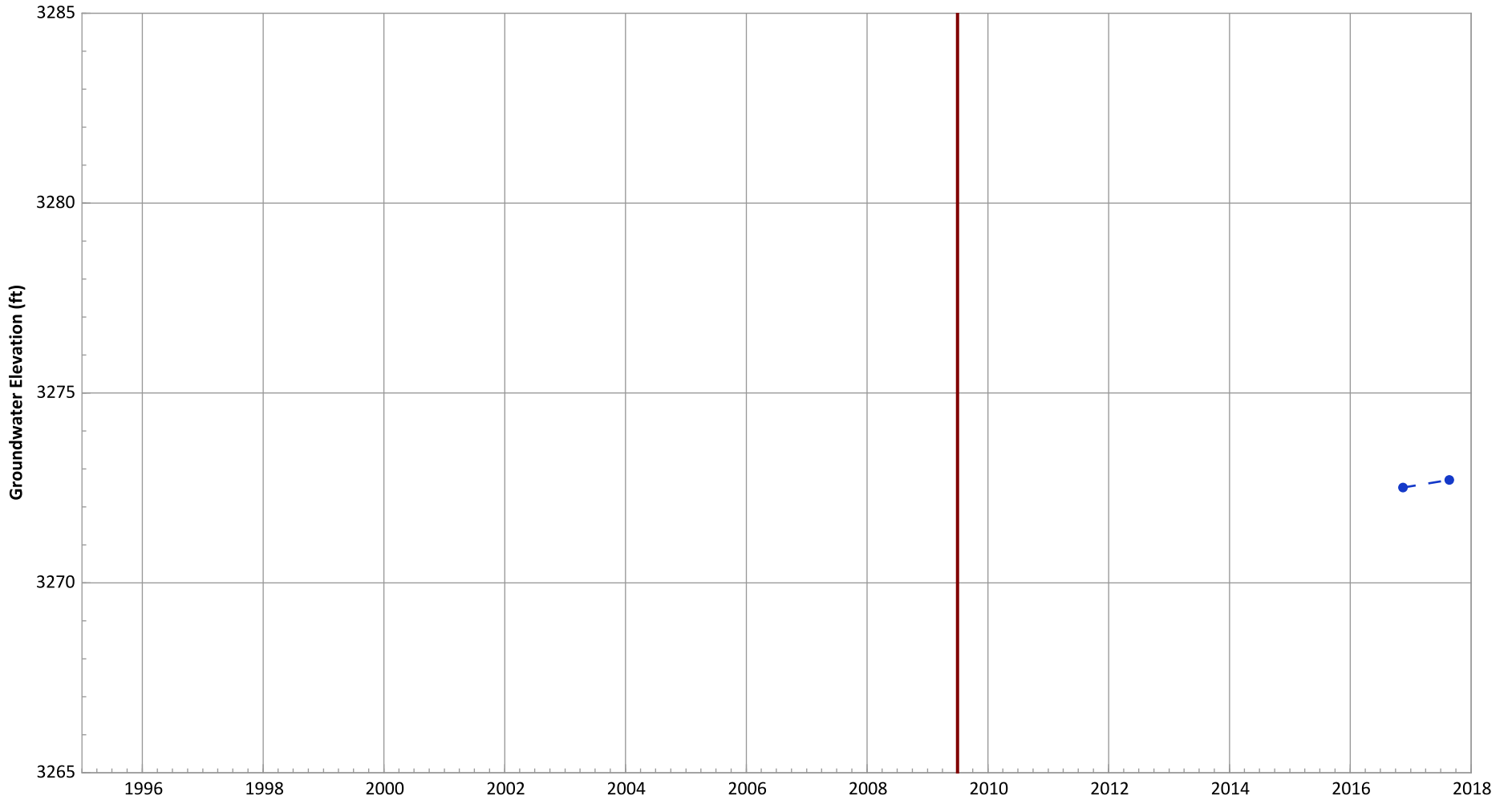
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: Increasing at 0.34 ft/yr
 Data (1/2012 - 1/2016): N/A (<3 Measurements)

PTX06-1181 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant



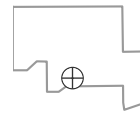
Notes:

1. Top of screen elevation is 3280.54 ft msl.
2. The bottom of screen elevation is 3250.54 ft msl.
3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.

Analysis Date: 02/15/2018

—●— Groundwater Elevation
— Start of Remedial Action

Well Location



Hydrograph Trend

(MAROS Linear Regression Method)

All Data: N/A (<3 Measurements)

Data (1/2012 - 1/2016): N/A (<3 Measurements)

**PTX06-1182 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**



Notes:

1. Top of screen elevation is 3243.3 ft msl.
 2. The bottom of screen elevation is 3233.3 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- Start of Remedial Action

Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
All Data: Decreasing at 0.25 ft/yr
Data (1/2012 - 1/2016): N/A (<3 Measurements)

**PTX06-1183 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

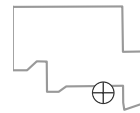


Notes:

1. Top of screen elevation is 3256.36 ft msl.
 2. The bottom of screen elevation is 3246.36 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- Start of Remedial Action

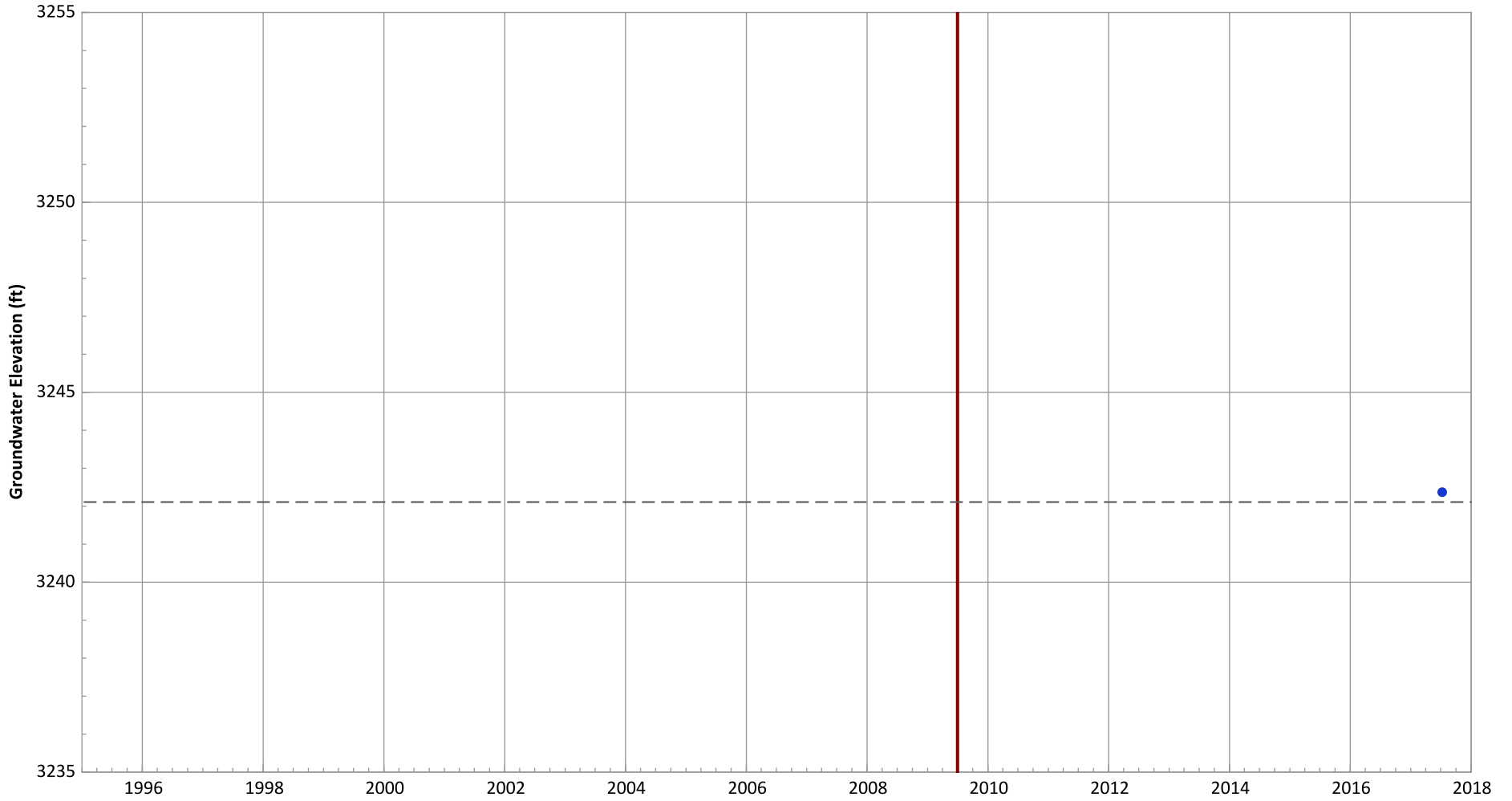
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: Decreasing at 0.57 ft/yr
 Data (1/2012 - 1/2016): N/A (<3 Measurements)

PTX06-1184 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant



Notes:

1. Top of screen elevation is 3252.11 ft msl.
 2. The bottom of screen elevation is 3242.11 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
- Actual groundwater elevations between measurements may be different than shown.

Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- Start of Remedial Action

Well Location



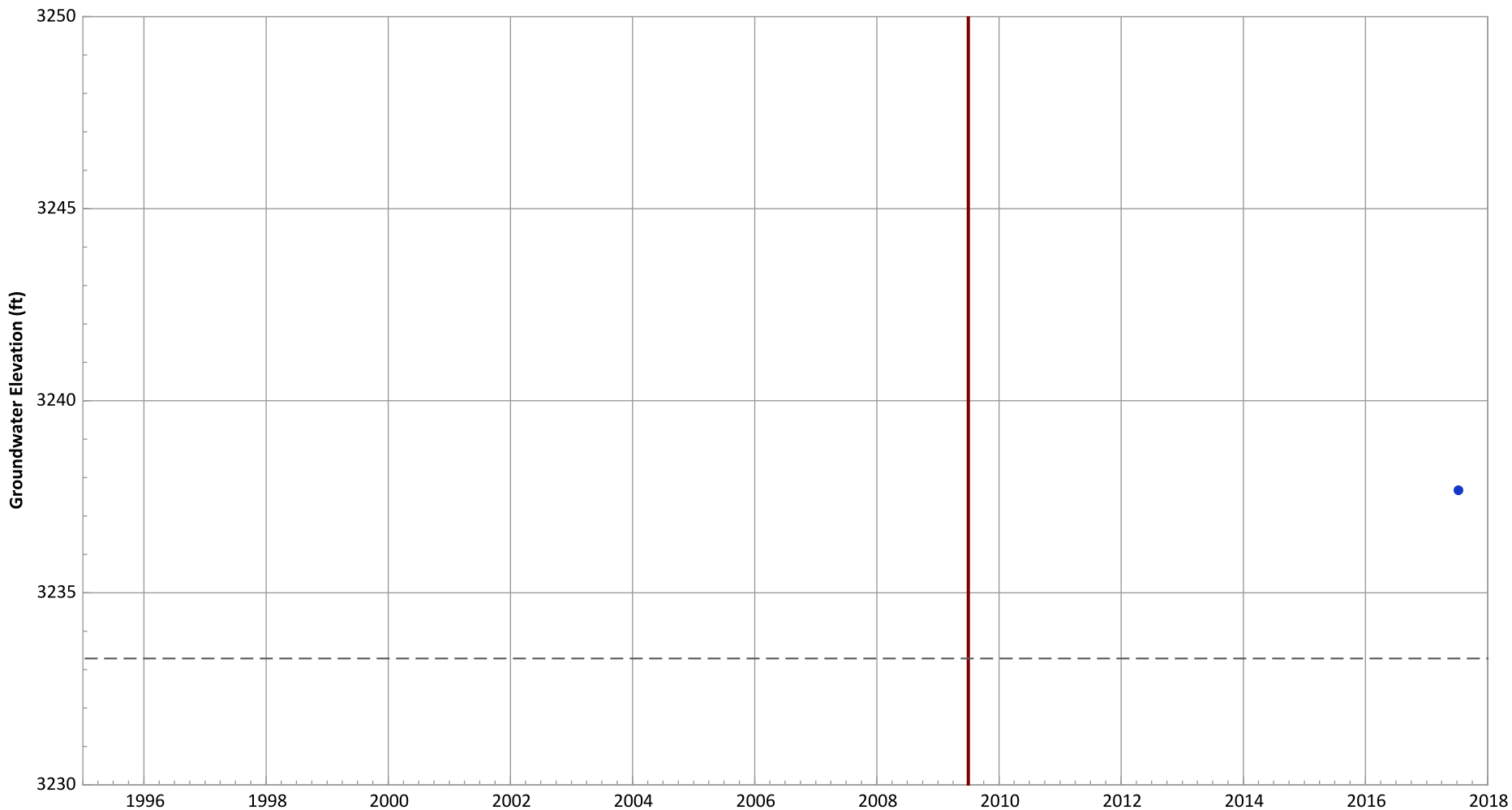
Hydrograph Trend

(MAROS Linear Regression Method)

All Data: N/A (No Measurements)

Data (1/2012 - 1/2016): N/A (No Measurements)

**PTX06-1185 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**



Notes:

1. Top of screen elevation is 3243.29 ft msl.
 2. The bottom of screen elevation is 3233.29 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
- Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- Start of Remedial Action

Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: N/A (No Measurements)
 Data (1/2012 - 1/2016): N/A (No Measurements)

**PTX06-1186 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**



Notes:

1. Top of screen elevation is 3241.98 ft msl.
 2. The bottom of screen elevation is 3231.98 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- Start of Remedial Action

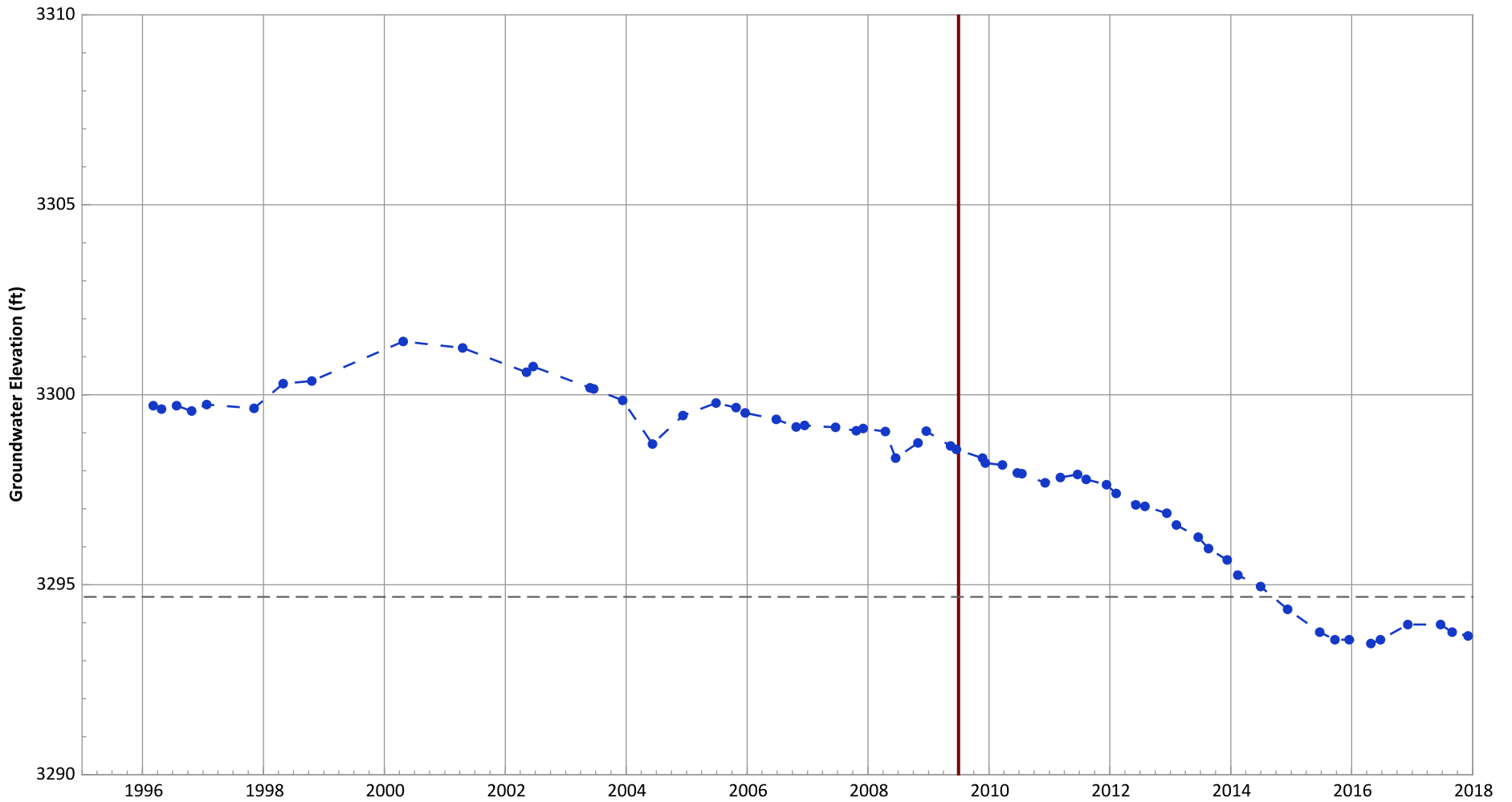
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
All Data: N/A (No Measurements)
Data (1/2012 - 1/2016): N/A (No Measurements)

**PTX07-1001 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

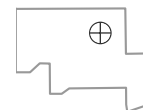


Notes:

1. Top of screen elevation is 3314.68 ft msl.
 2. The bottom of screen elevation is 3294.68 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- Start of Remedial Action

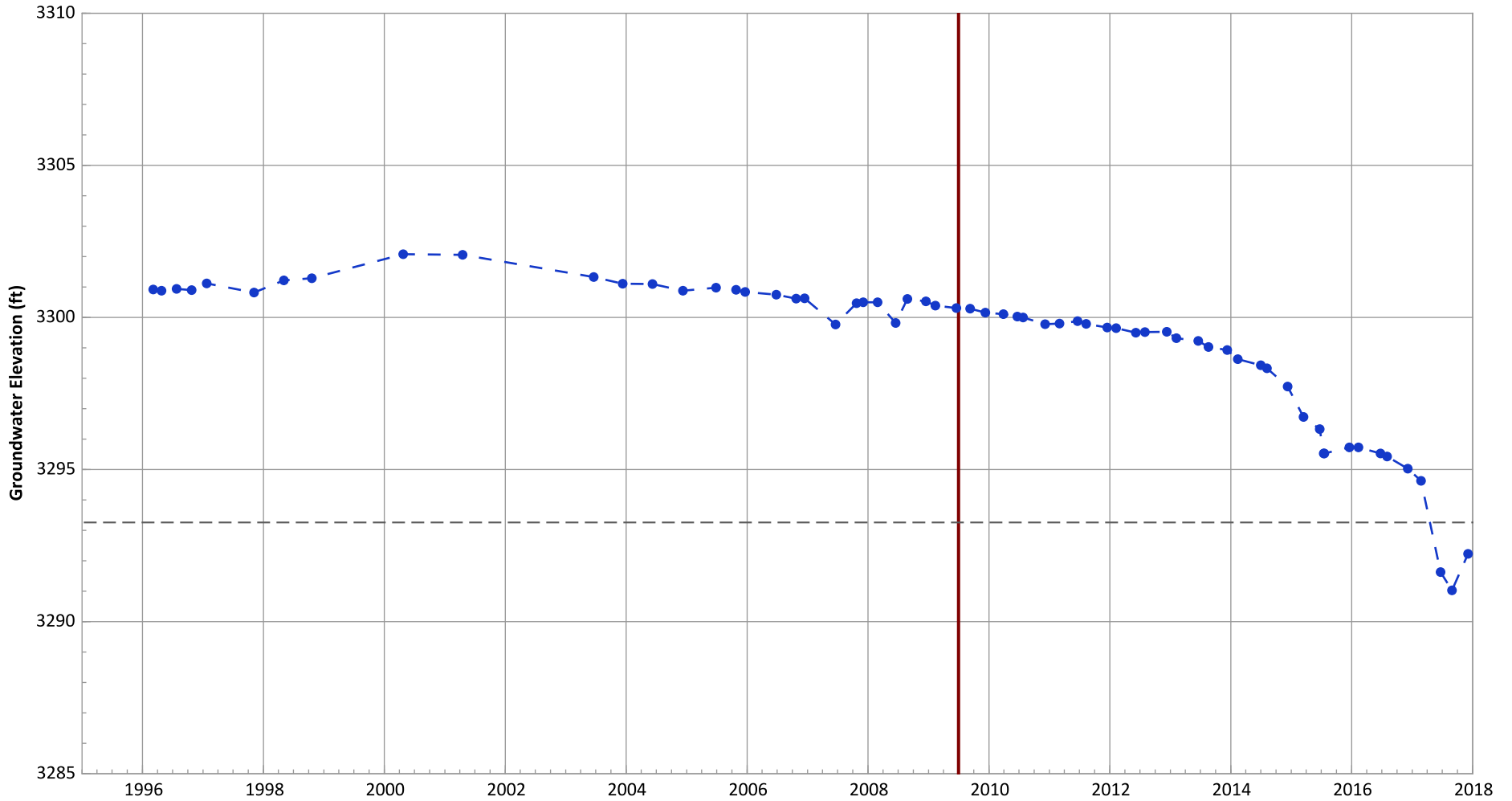
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: Decreasing at 0.32 ft/yr
 Data (1/2012 - 1/2016): Decreasing at 0.92 ft/yr

**PTX07-1002 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

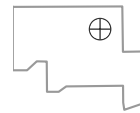


Notes:

1. Top of screen elevation is 3318.26 ft msl.
 2. The bottom of screen elevation is 3293.26 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- Start of Remedial Action

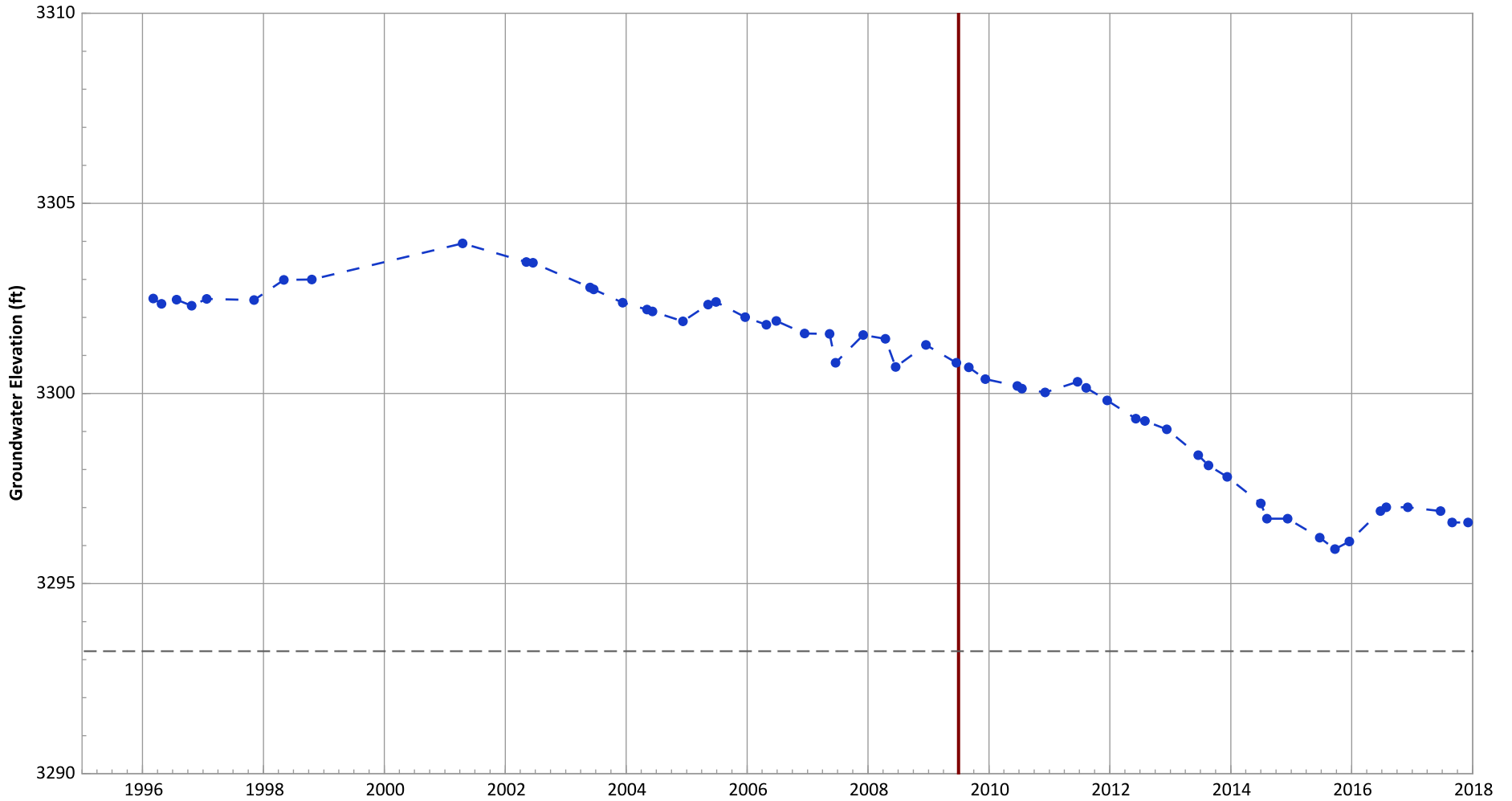
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: Decreasing at 0.31 ft/yr
 Data (1/2012 - 1/2016): Decreasing at 1.13 ft/yr

**PTX07-1003 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

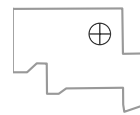


Notes:

1. Top of screen elevation is 3318.22 ft msl.
 2. The bottom of screen elevation is 3293.22 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- Start of Remedial Action

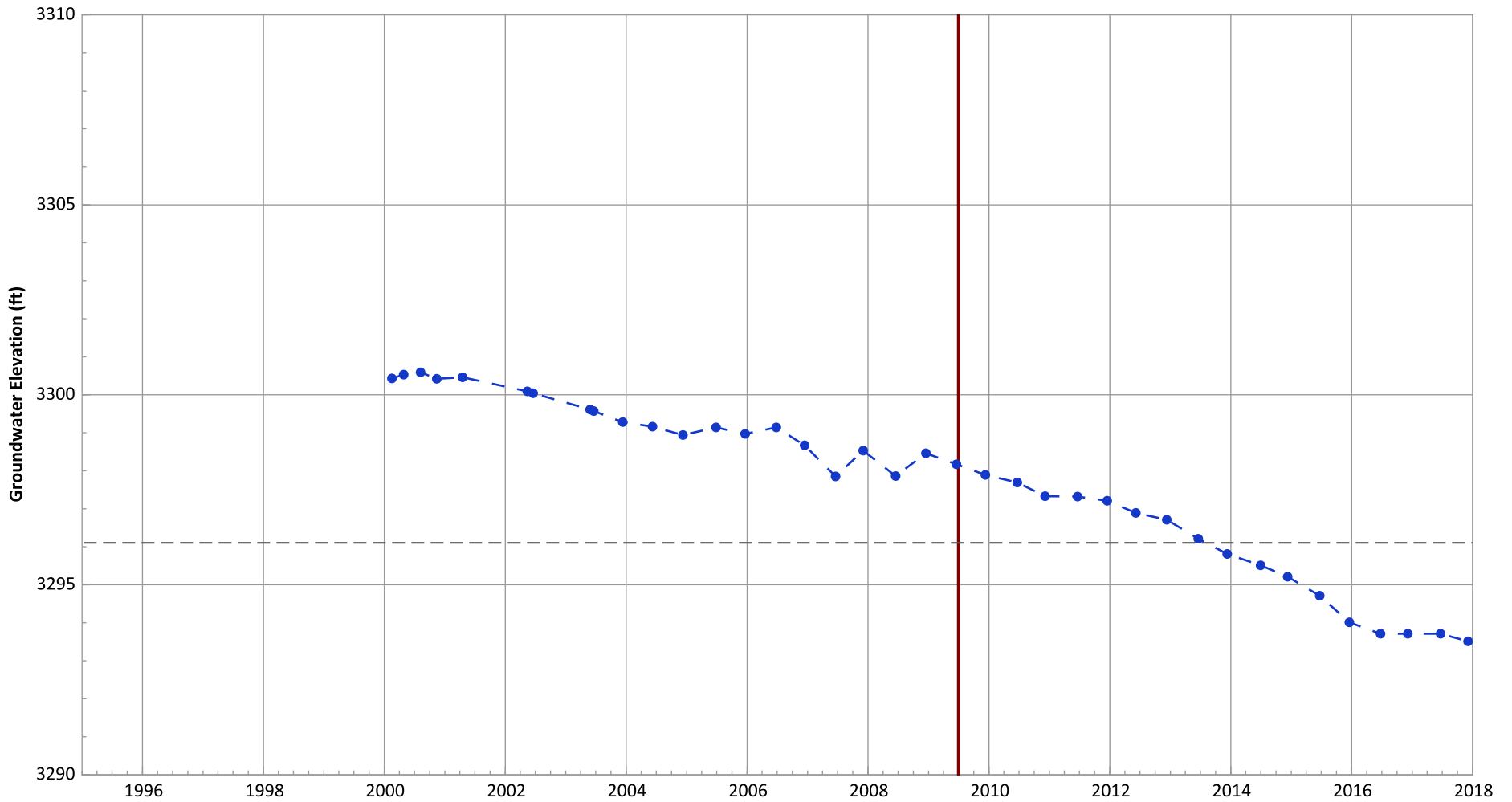
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: Decreasing at 0.33 ft/yr
 Data (1/2012 - 1/2016): Decreasing at 0.65 ft/yr

**PTX07-1004 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

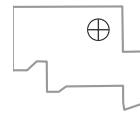


Notes:

1. Top of screen elevation is 3336.1 ft msl.
 2. The bottom of screen elevation is 3296.1 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- Start of Remedial Action

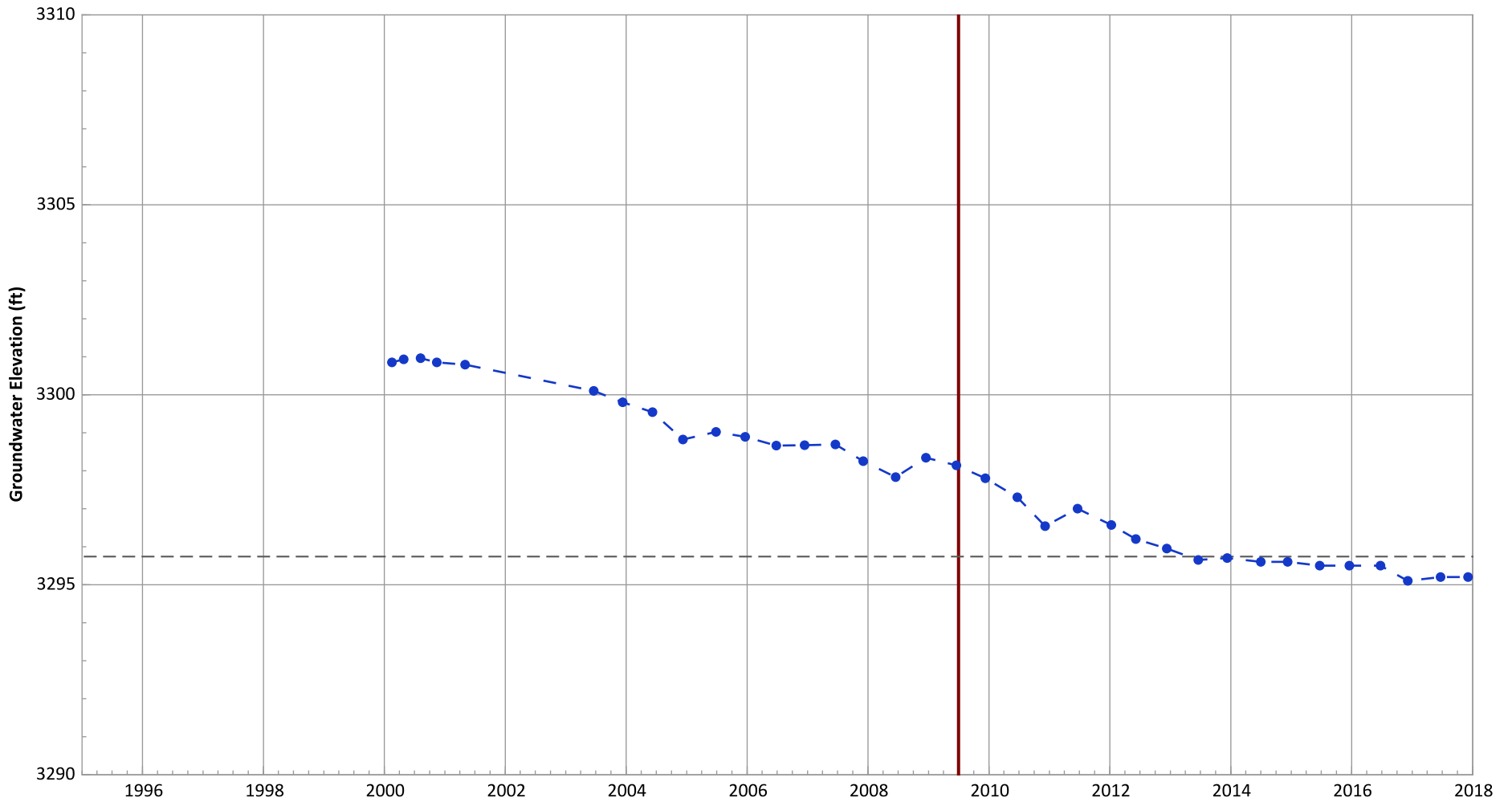
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: Decreasing at 0.39 ft/yr
 Data (1/2012 - 1/2016): Decreasing at 0.78 ft/yr

**PTX07-1005 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

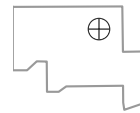


Notes:

1. Top of screen elevation is 3335.74 ft msl.
 2. The bottom of screen elevation is 3295.74 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- Start of Remedial Action

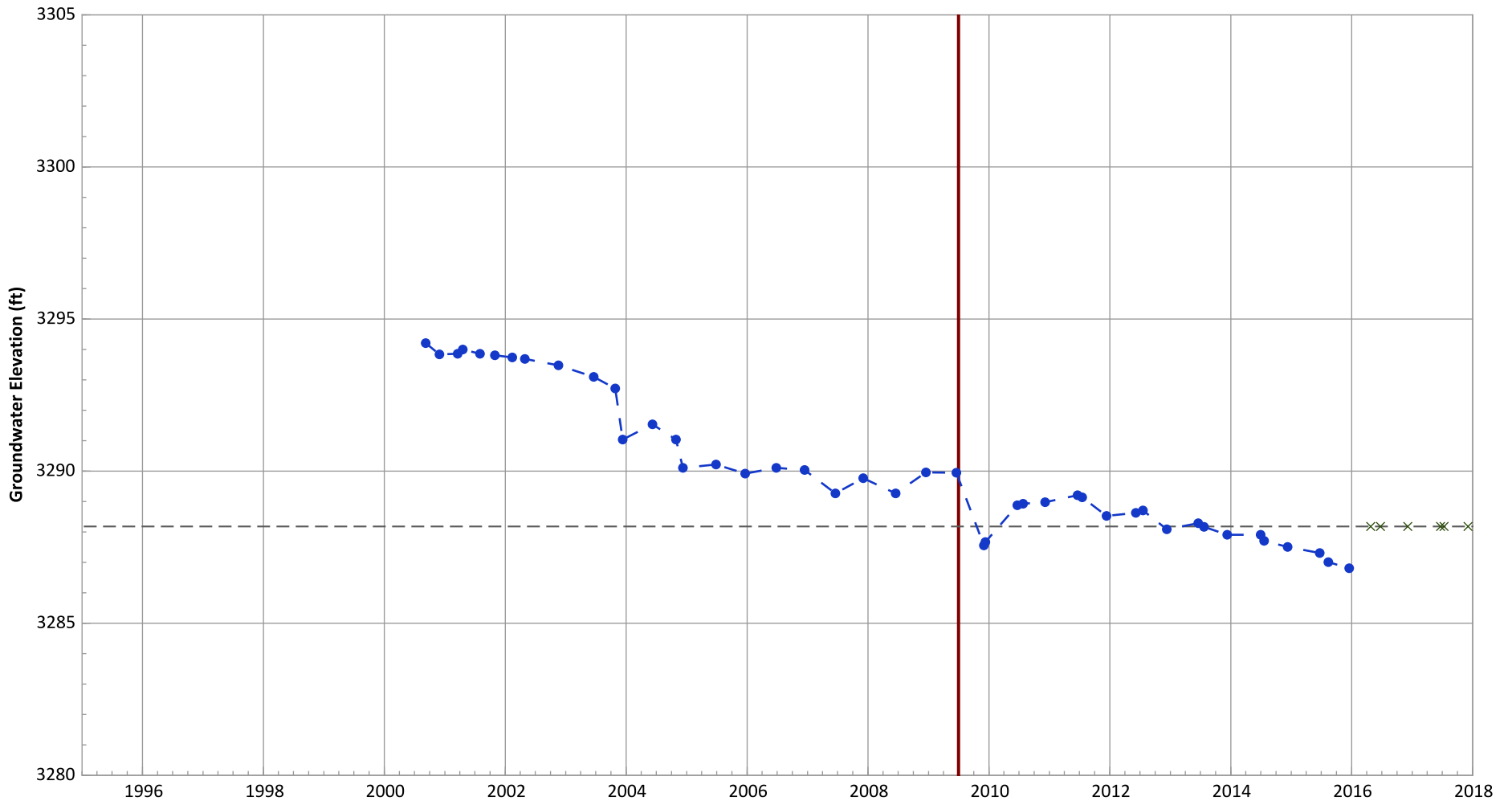
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: Decreasing at 0.36 ft/yr
 Data (1/2012 - 1/2016): Decreasing at 0.22 ft/yr

**PTX07-1006 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

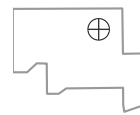


Notes:

1. Top of screen elevation is 3308.18 ft msl.
 2. The bottom of screen elevation is 3288.18 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements. Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- × No Water Detected
- Start of Remedial Action

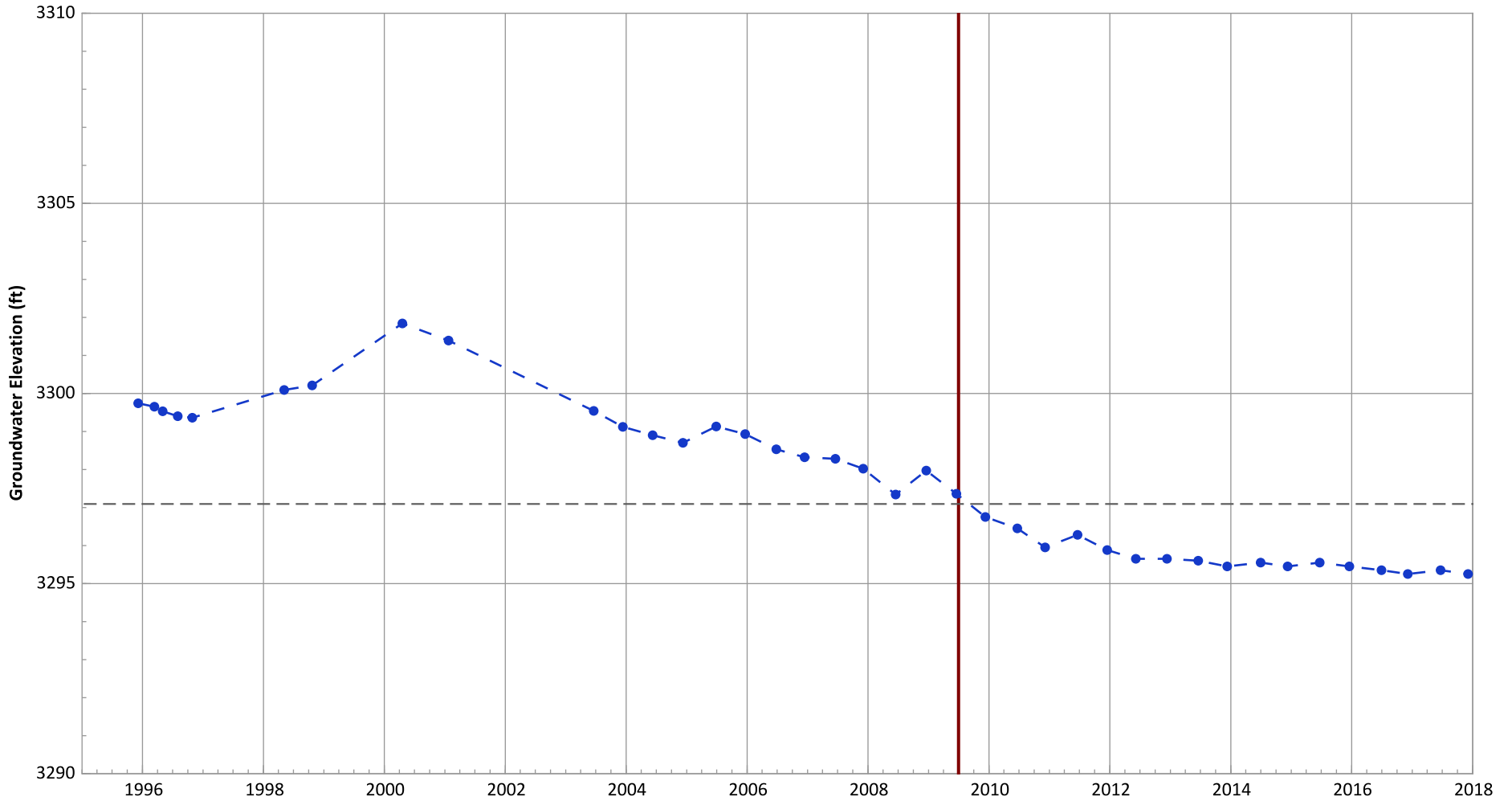
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: Decreasing at 0.45 ft/yr
 Data (1/2012 - 1/2016): Decreasing at 0.48 ft/yr

**PTX07-1P01 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

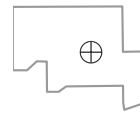


Notes:

1. Top of screen elevation is 3312.09 ft msl.
 2. The bottom of screen elevation is 3297.09 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements. Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- Start of Remedial Action

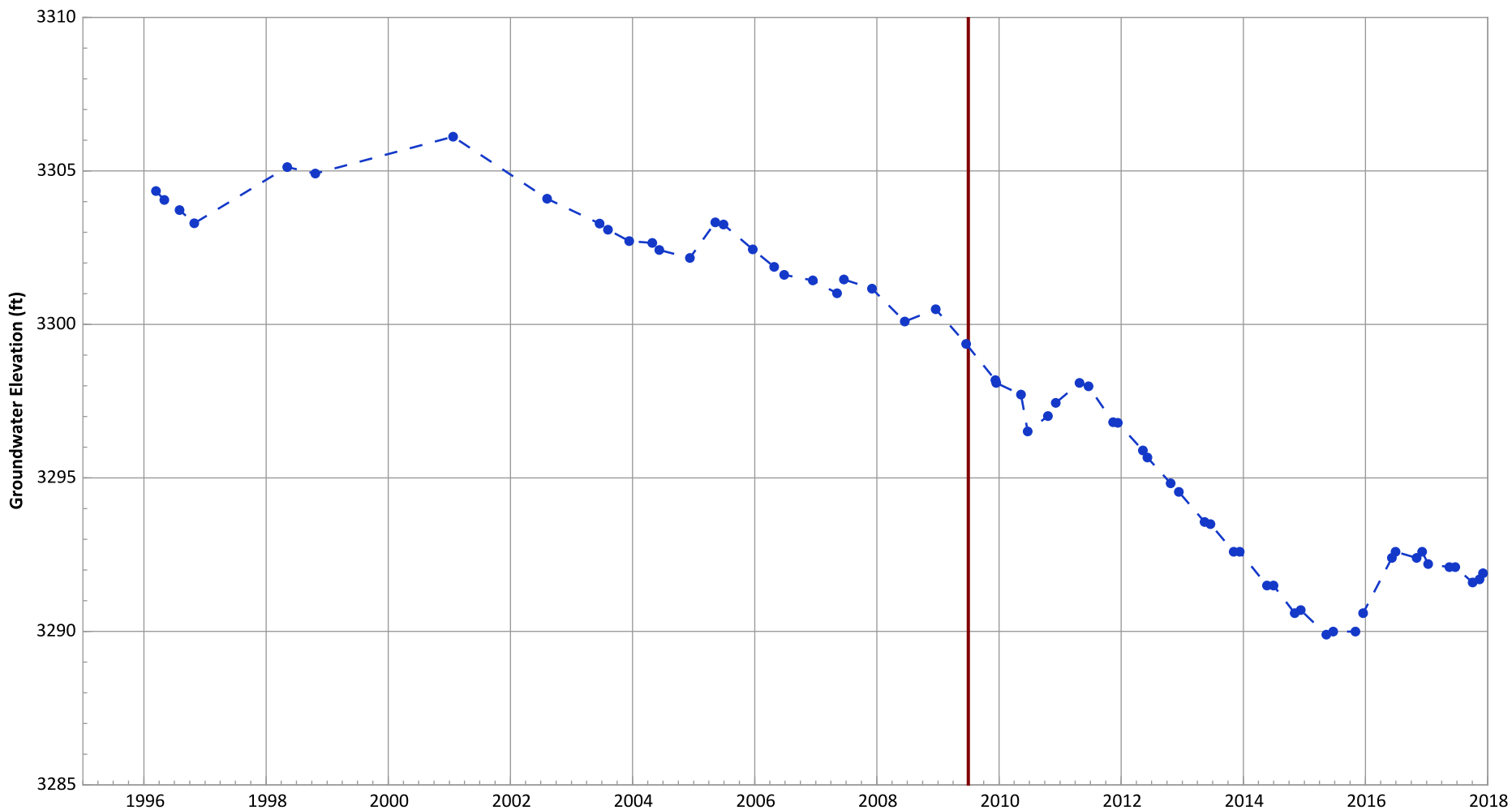
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: Decreasing at 0.26 ft/yr
 Data (1/2012 - 1/2016): No Trend

PTX07-1P02 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant

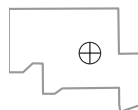


Notes:

1. Top of screen elevation is 3308.46 ft msl.
 2. The bottom of screen elevation is 3283.46 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements. Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- Start of Remedial Action

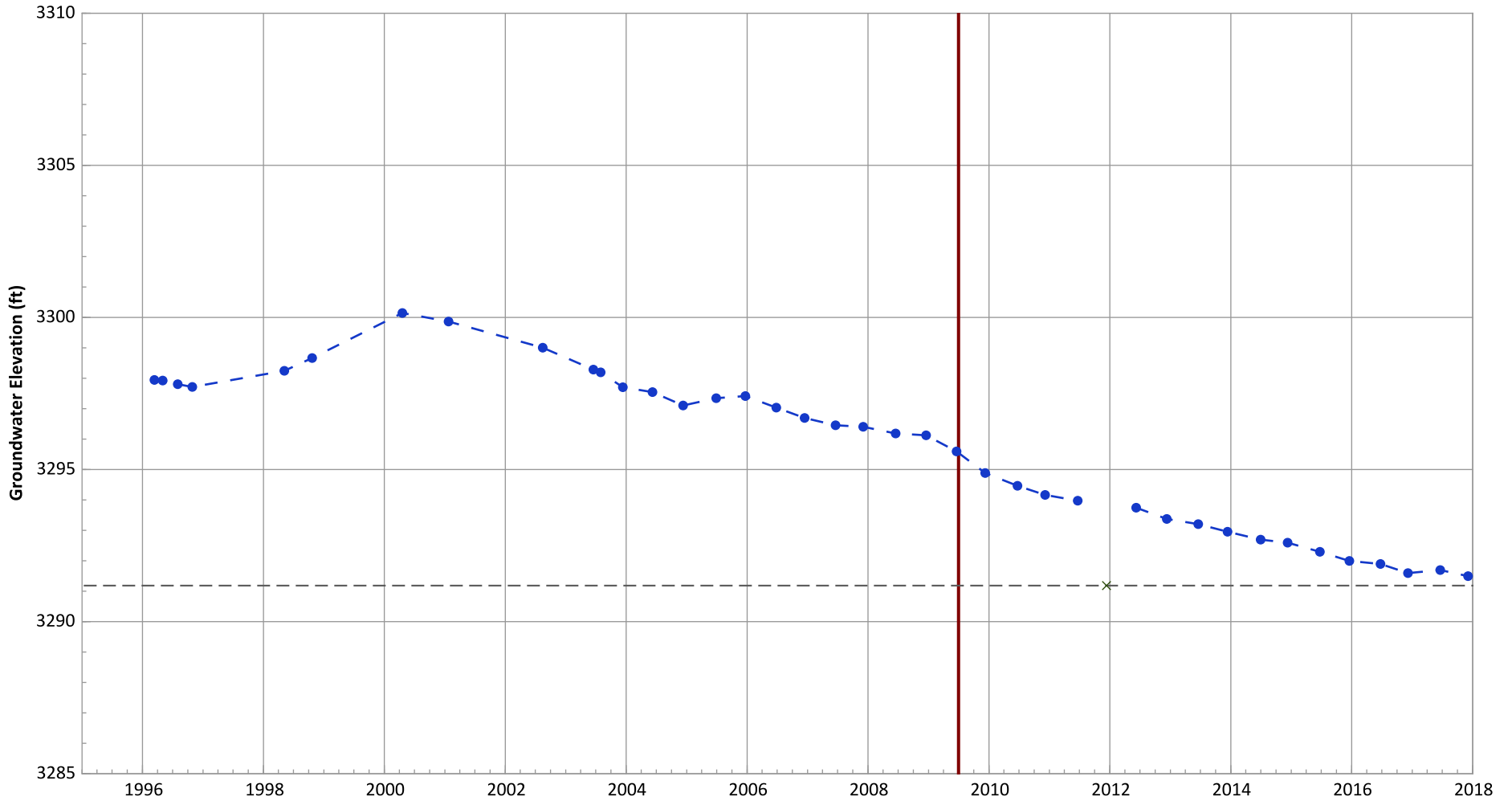
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
All Data: Decreasing at 0.76 ft/yr
Data (1/2012 - 1/2016): Decreasing at 0.84 ft/yr

**PTX07-1P03 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**



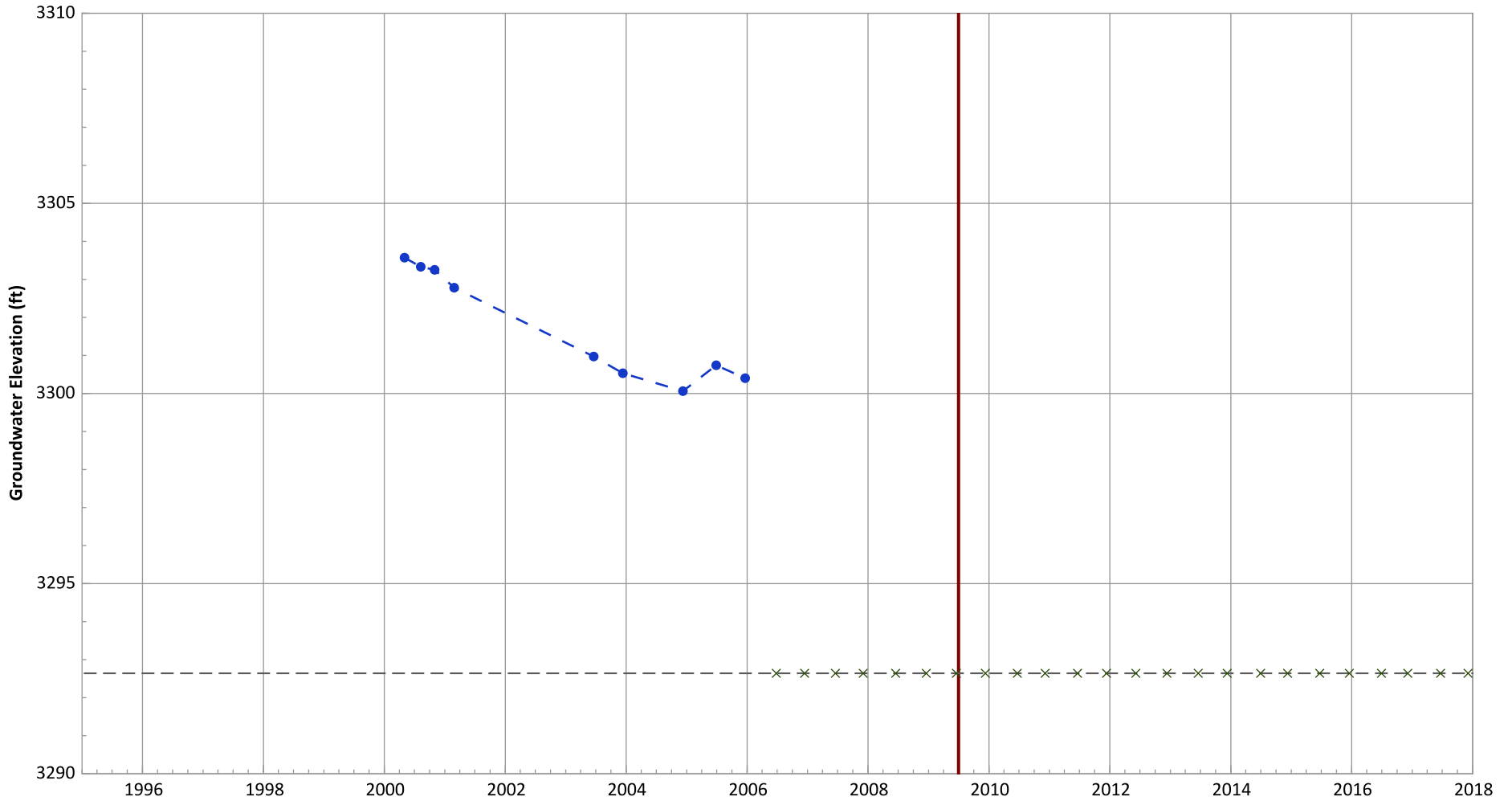
Notes:
 1. Top of screen elevation is 3311.18 ft msl.
 2. The bottom of screen elevation is 3291.18 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements. Actual groundwater elevations between measurements may be different than shown.
 Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- × No Water Detected
- Start of Remedial Action



Hydrograph Trend
 (MAROS Linear Regression Method)
 All Data: Decreasing at 0.36 ft/yr
 Data (1/2012 - 1/2016): Decreasing at 0.46 ft/yr

**PTX07-1P04 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

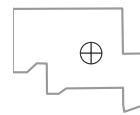


Notes:

1. Top of screen elevation is 3332.64 ft msl.
 2. The bottom of screen elevation is 3292.64 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements. Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- × No Water Detected
- Start of Remedial Action

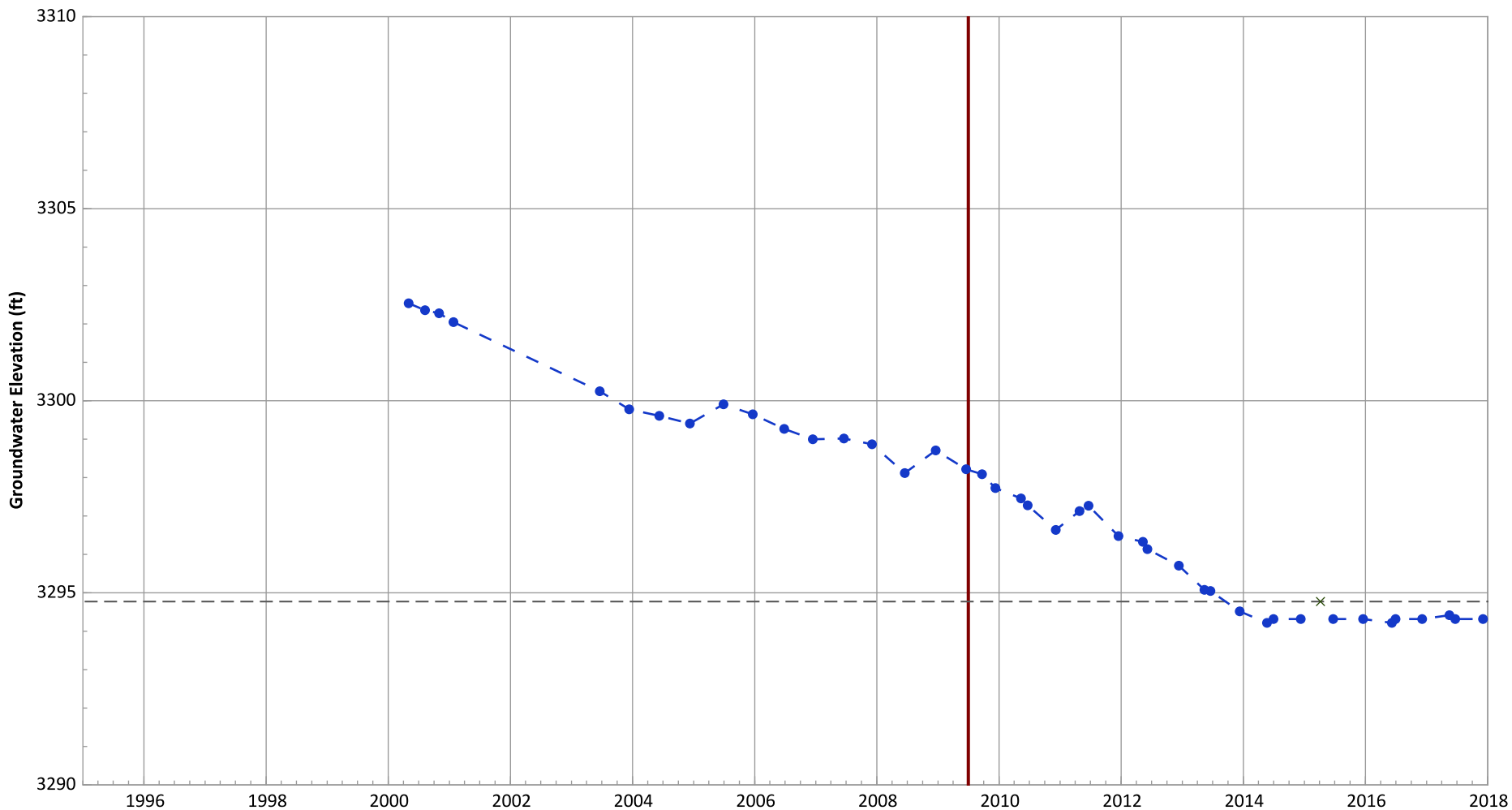
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: Decreasing at 0.61 ft/yr
 Data (1/2012 - 1/2016): N/A (No Measurements)

**PTX07-1P05 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

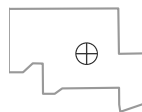


Notes:

1. Top of screen elevation is 3334.77 ft msl.
 2. The bottom of screen elevation is 3294.77 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements. Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- × No Water Detected
- Start of Remedial Action

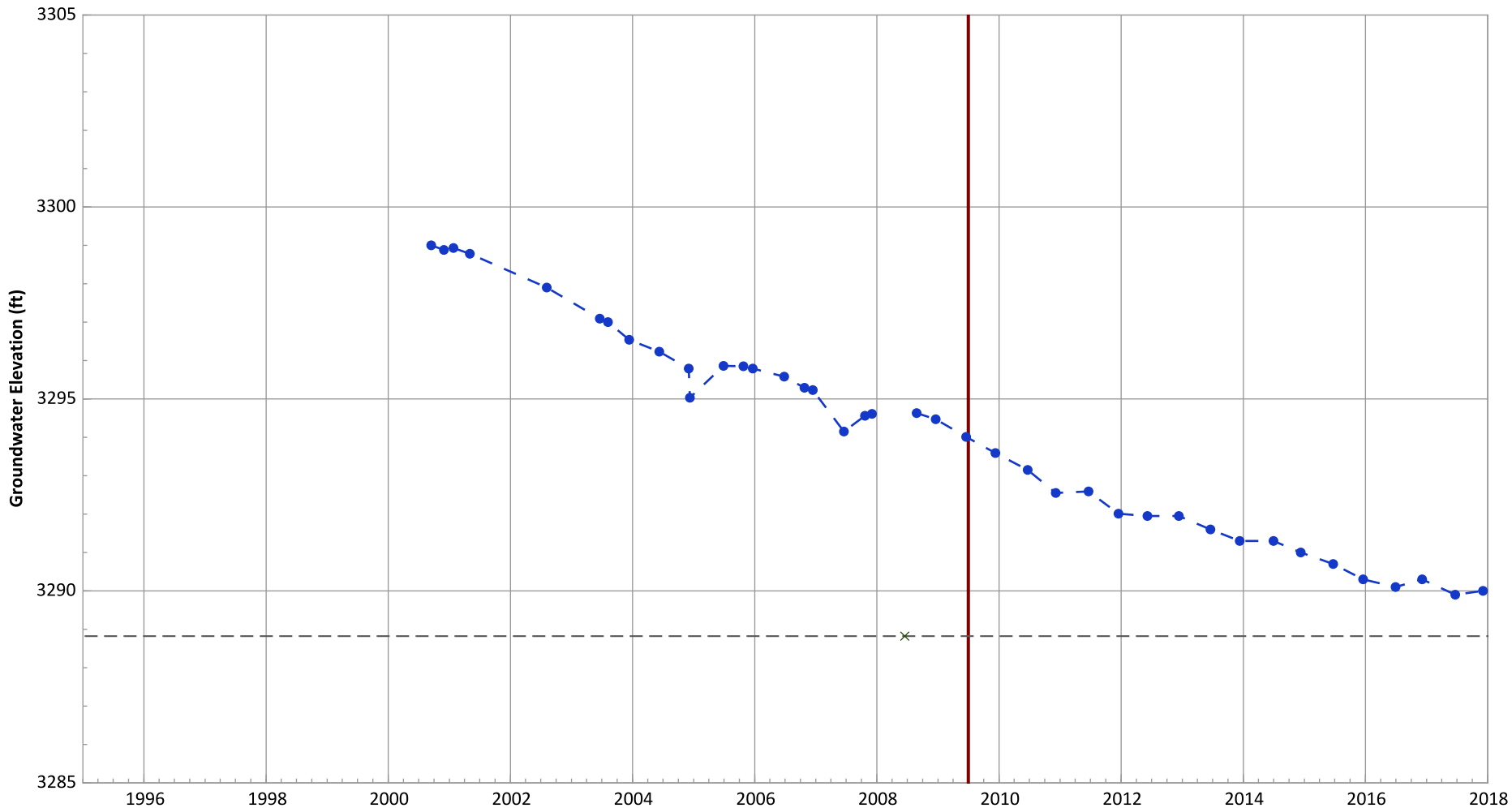
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: Decreasing at 0.5 ft/yr
 Data (1/2012 - 1/2016): Decreasing at 0.4 ft/yr

**PTX07-1P06 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

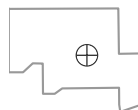


Notes:

1. Top of screen elevation is 3308.82 ft msl.
 2. The bottom of screen elevation is 3288.82 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements. Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- × No Water Detected
- Start of Remedial Action

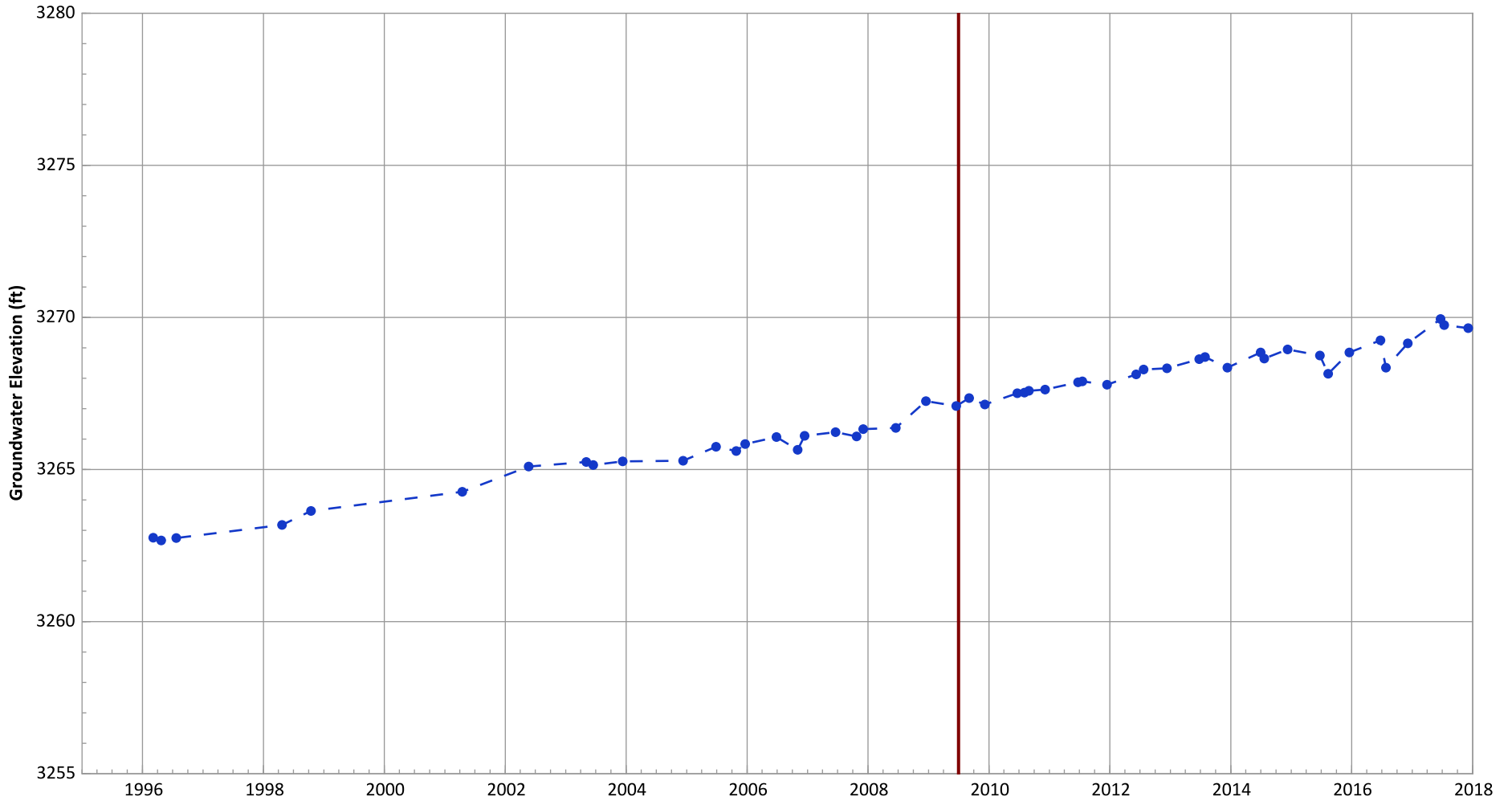
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: Decreasing at 0.54 ft/yr
 Data (1/2012 - 1/2016): Decreasing at 0.44 ft/yr

**PTX07-1Q01 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

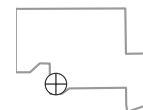


Notes:

1. Top of screen elevation is 3274.86 ft msl.
 2. The bottom of screen elevation is 3249.86 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

—●— Groundwater Elevation
 — Start of Remedial Action

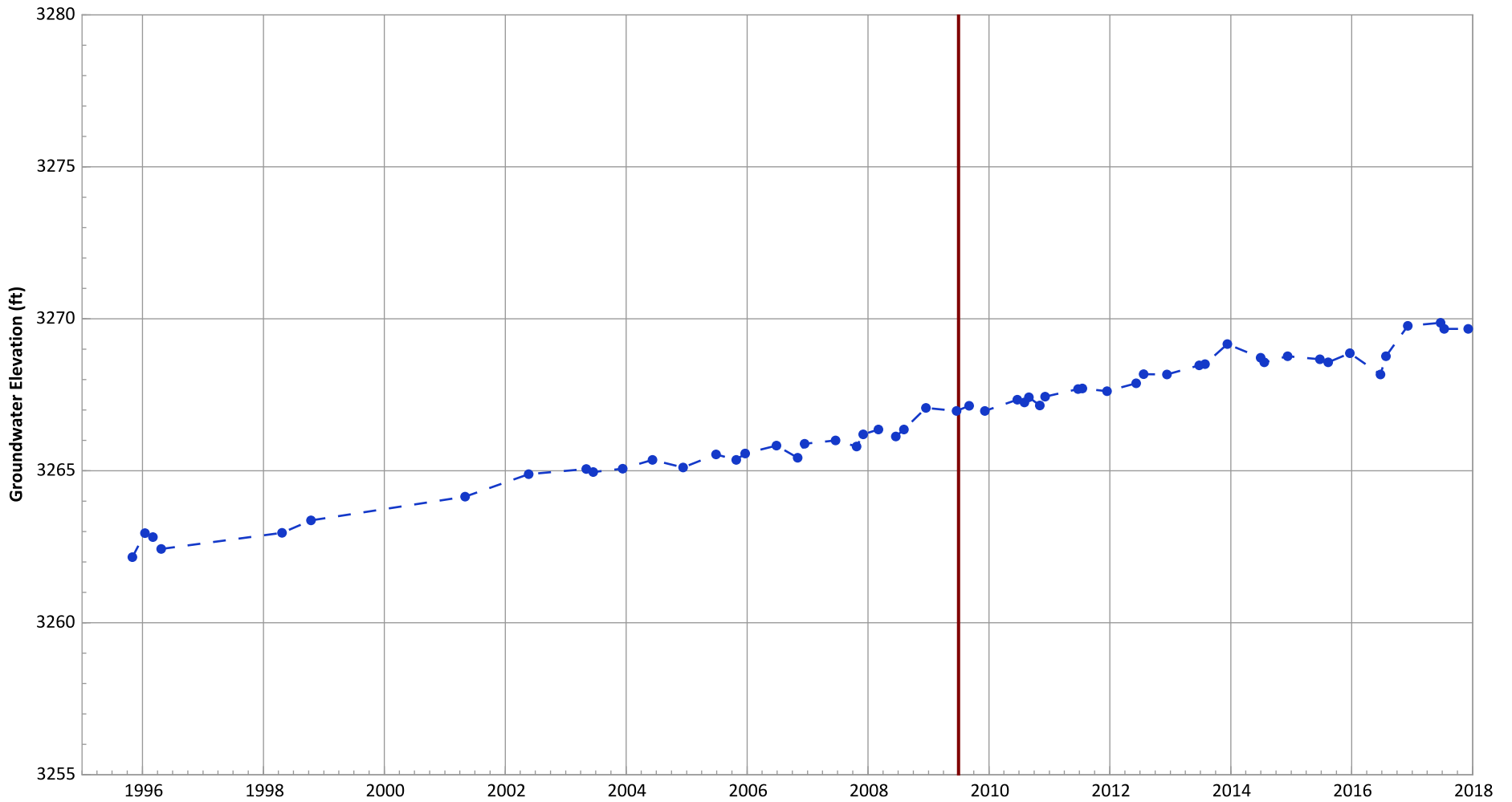
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: Increasing at 0.32 ft/yr
 Data (1/2012 - 1/2016): Increasing at 0.14 ft/yr

**PTX07-1Q02 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

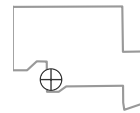


Notes:

1. Top of screen elevation is 3267.94 ft msl.
 2. The bottom of screen elevation is 3237.94 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

—●— Groundwater Elevation
 — Start of Remedial Action

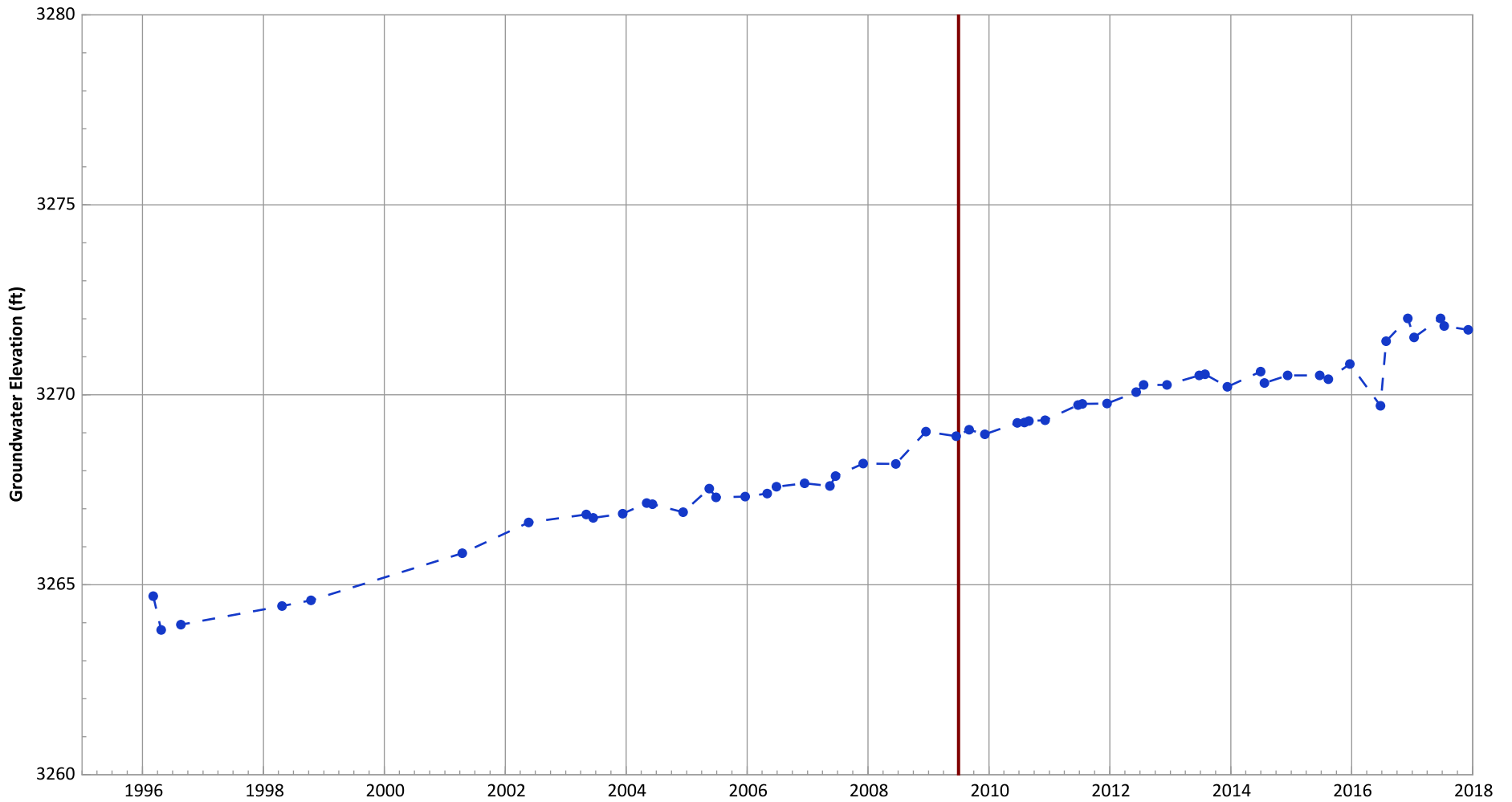
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: Increasing at 0.33 ft/yr
 Data (1/2012 - 1/2016): Increasing at 0.18 ft/yr

PTX07-1Q03 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant

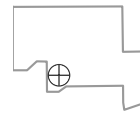


Notes:

1. Top of screen elevation is 3278.29 ft msl.
 2. The bottom of screen elevation is 3228.29 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements. Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

—●— Groundwater Elevation
— Start of Remedial Action

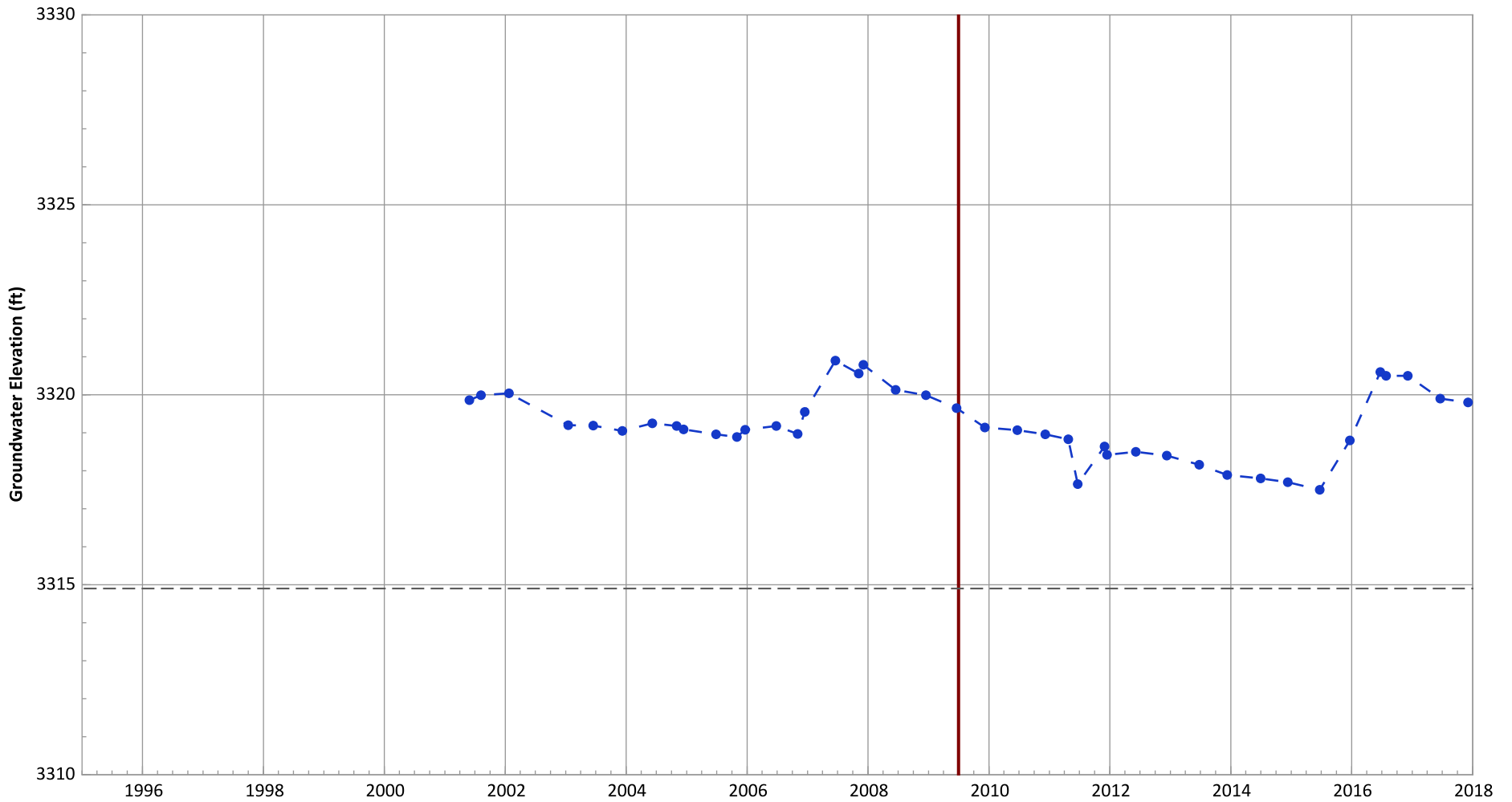
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
All Data: Increasing at 0.35 ft/yr
Data (1/2012 - 1/2016): Increasing at 0.2 ft/yr

**PTX07-1R03 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

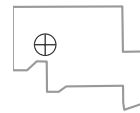


Notes:

1. Top of screen elevation is 3334.9 ft msl.
 2. The bottom of screen elevation is 3314.9 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- Start of Remedial Action

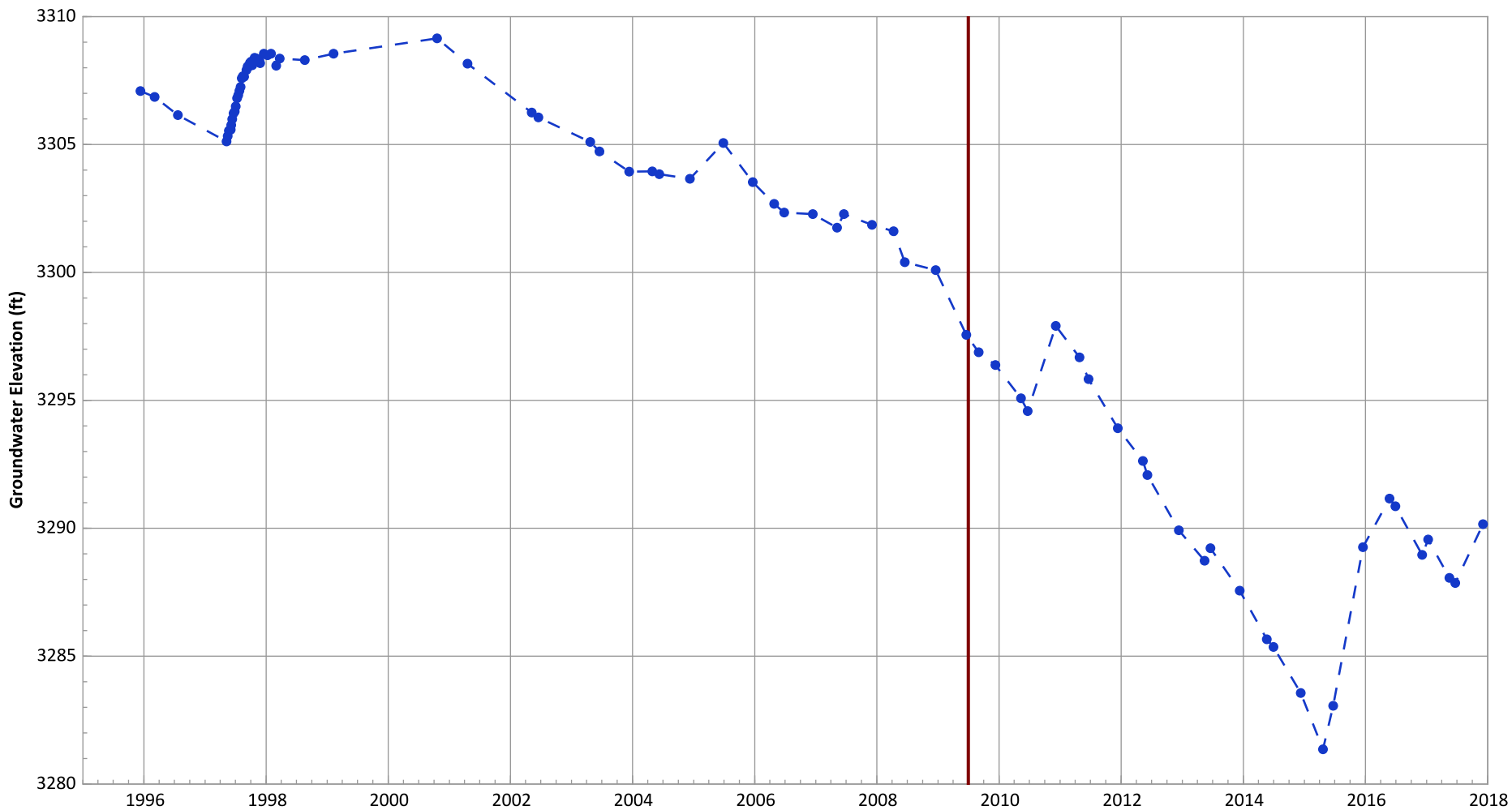
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
All Data: No Trend
Data (1/2012 - 1/2016): Increasing at 0.5 ft/yr

**PTX08-1001 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**



Notes:

1. Top of screen elevation is 3286.63 ft msl.
 2. The bottom of screen elevation is 3241.63 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements. Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

—●— Groundwater Elevation
 — Start of Remedial Action

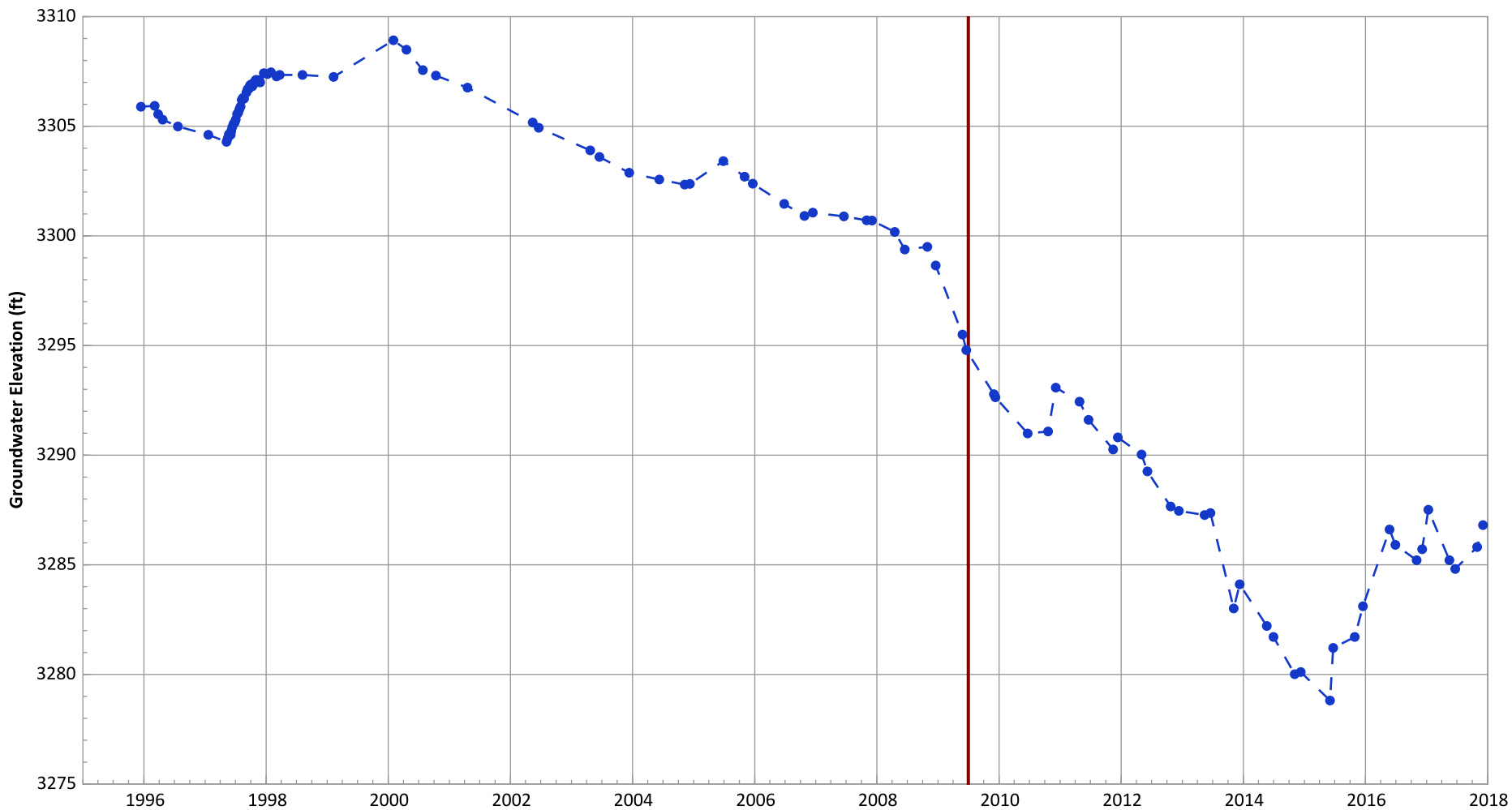
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: Decreasing at 1.02 ft/yr
 Data (1/2012 - 1/2016): Decreasing at 0.61 ft/yr

**PTX08-1002 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**



Notes:

1. Top of screen elevation is 3289.71 ft msl.
 2. The bottom of screen elevation is 3254.71 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

—●— Groundwater Elevation
 — Start of Remedial Action

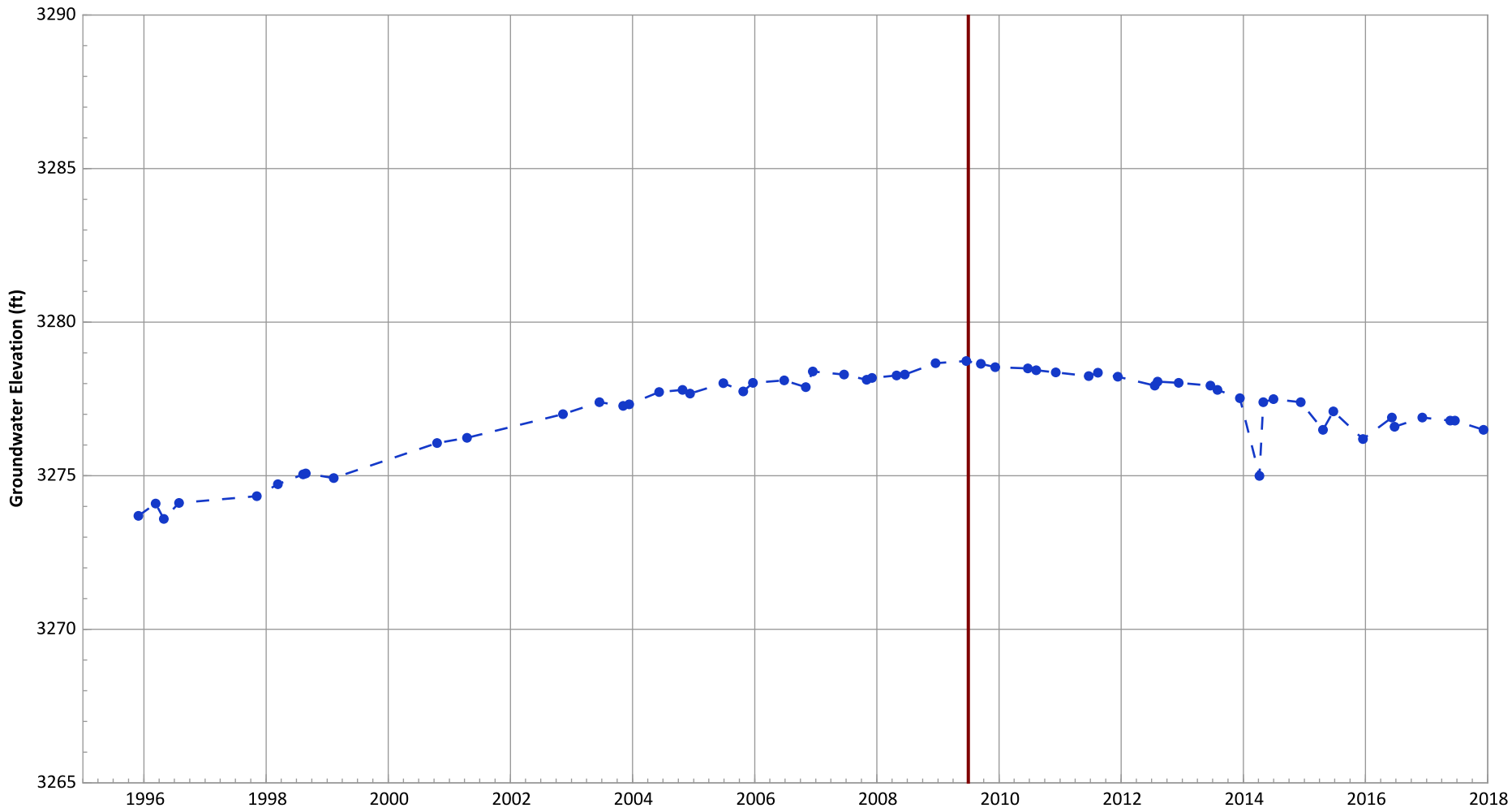
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: Decreasing at 1.17 ft/yr
 Data (1/2012 - 1/2016): Decreasing at 1.01 ft/yr

PTX08-1003 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant

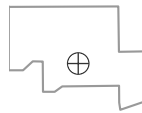


Notes:

1. Top of screen elevation is 3284.39 ft msl.
 2. The bottom of screen elevation is 3254.39 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements. Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

—●— Groundwater Elevation
— Start of Remedial Action

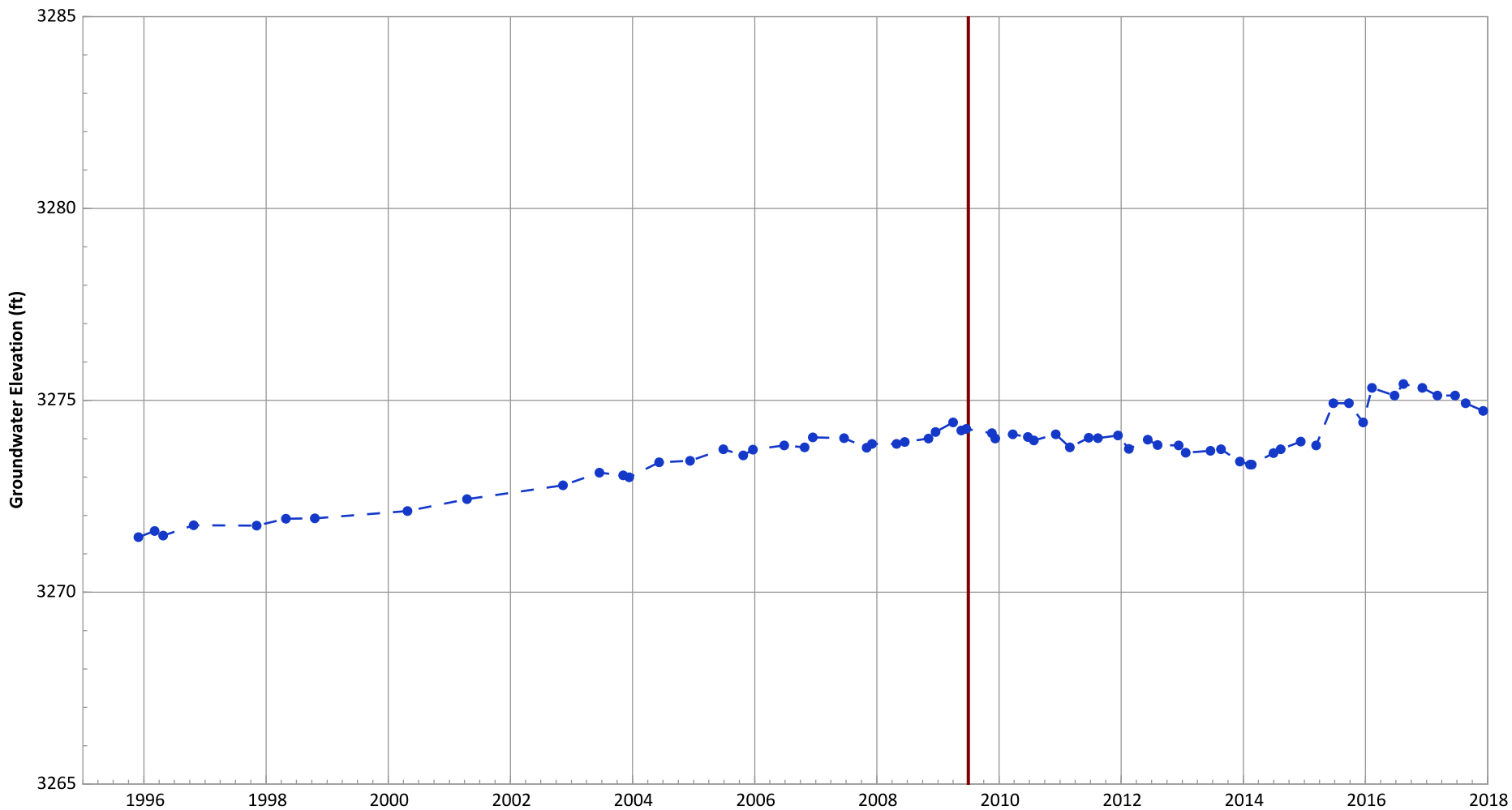
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
All Data: Increasing at 0.12 ft/yr
Data (1/2012 - 1/2016): Decreasing at 0.34 ft/yr

**PTX08-1005 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

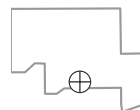


Notes:

1. Top of screen elevation is 3279.61 ft msl.
 2. The bottom of screen elevation is 3259.61 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- Start of Remedial Action

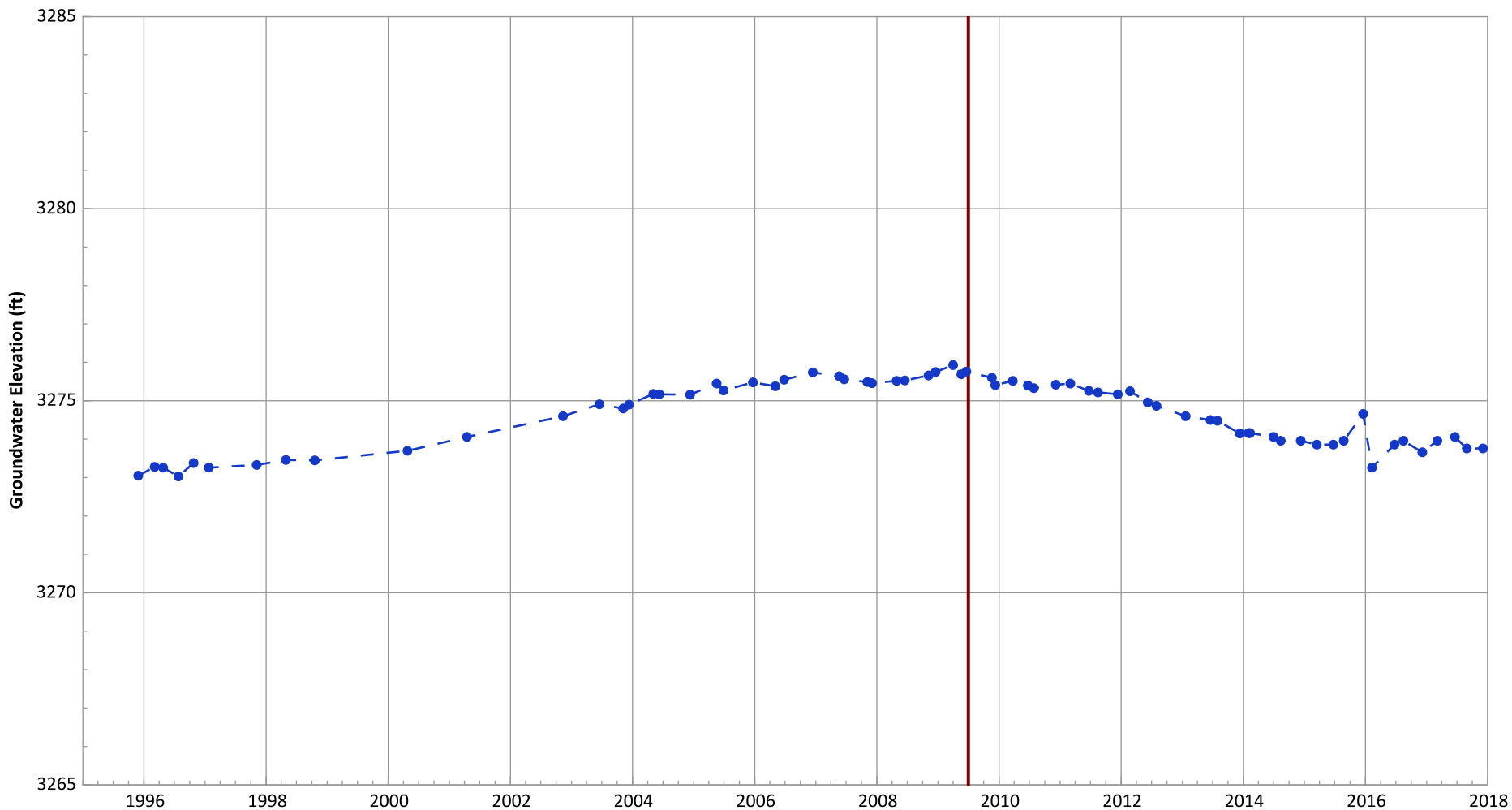
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
All Data: Increasing at 0.14 ft/yr
Data (1/2012 - 1/2016): Increasing at 0.38 ft/yr

**PTX08-1006 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

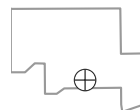


Notes:

1. Top of screen elevation is 3285.96 ft msl.
 2. The bottom of screen elevation is 3240.96 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

—●— Groundwater Elevation
— Start of Remedial Action

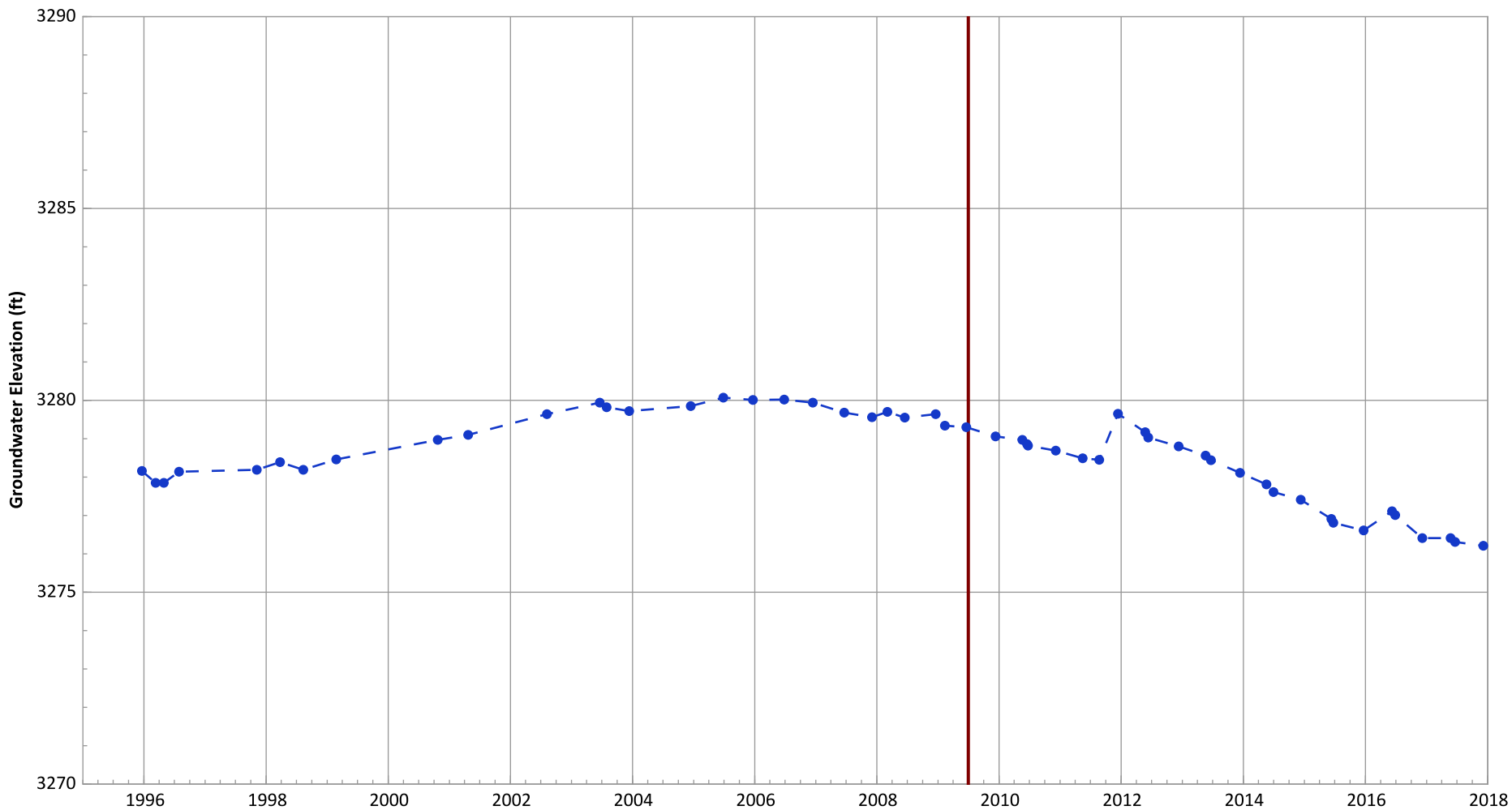
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
All Data: No Trend
Data (1/2012 - 1/2016): Decreasing at 0.27 ft/yr

PTX08-1007 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant

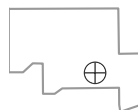


Notes:

1. Top of screen elevation is 3280.55 ft msl.
 2. The bottom of screen elevation is 3245.55 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements. Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

—●— Groundwater Elevation
— Start of Remedial Action

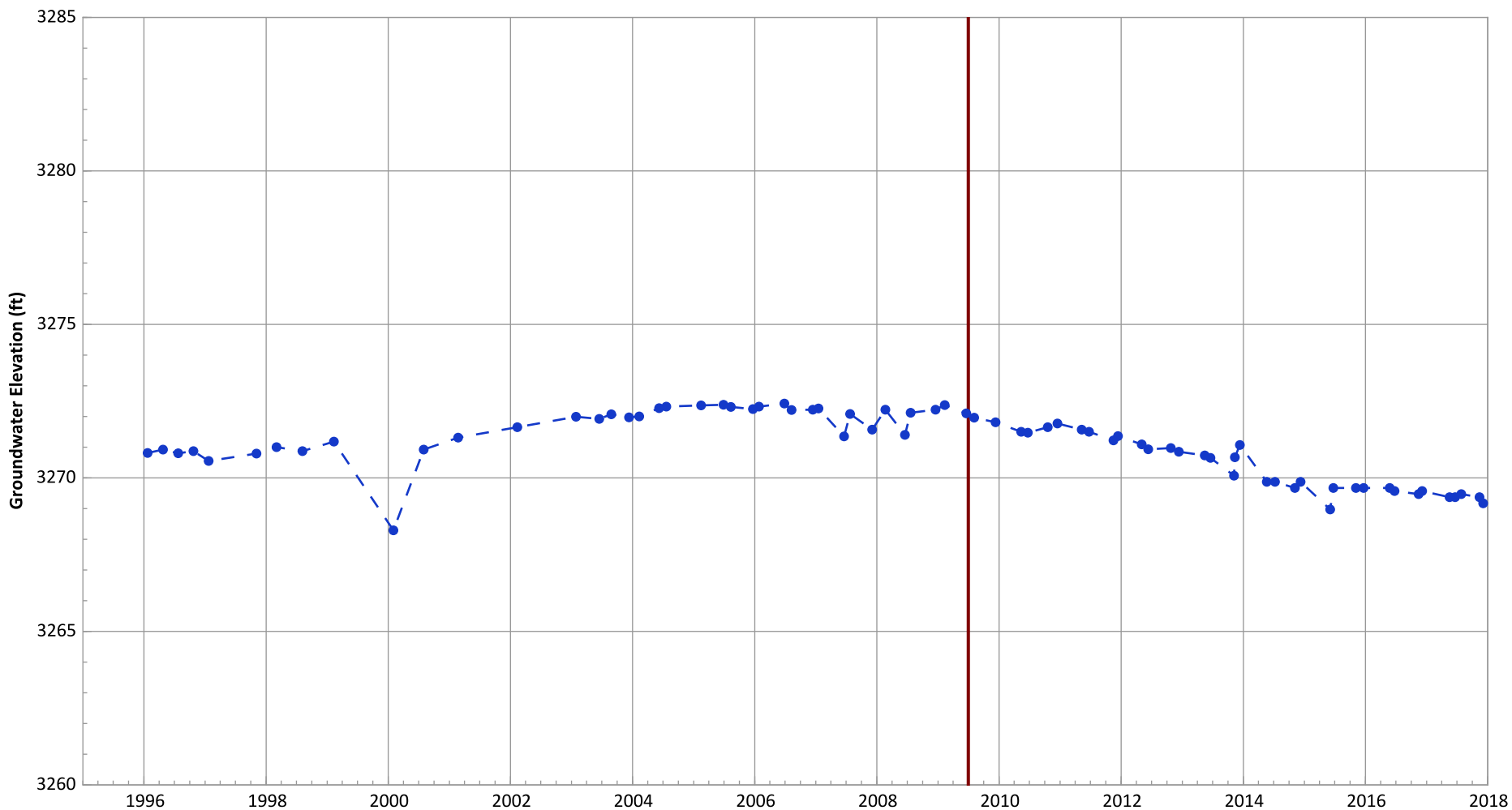
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
All Data: No Trend
Data (1/2012 - 1/2016): Decreasing at 0.59 ft/yr

**PTX08-1008 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

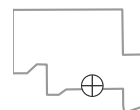


Notes:

1. Top of screen elevation is 3277.04 ft msl.
 2. The bottom of screen elevation is 3247.04 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

—●— Groundwater Elevation
— Start of Remedial Action

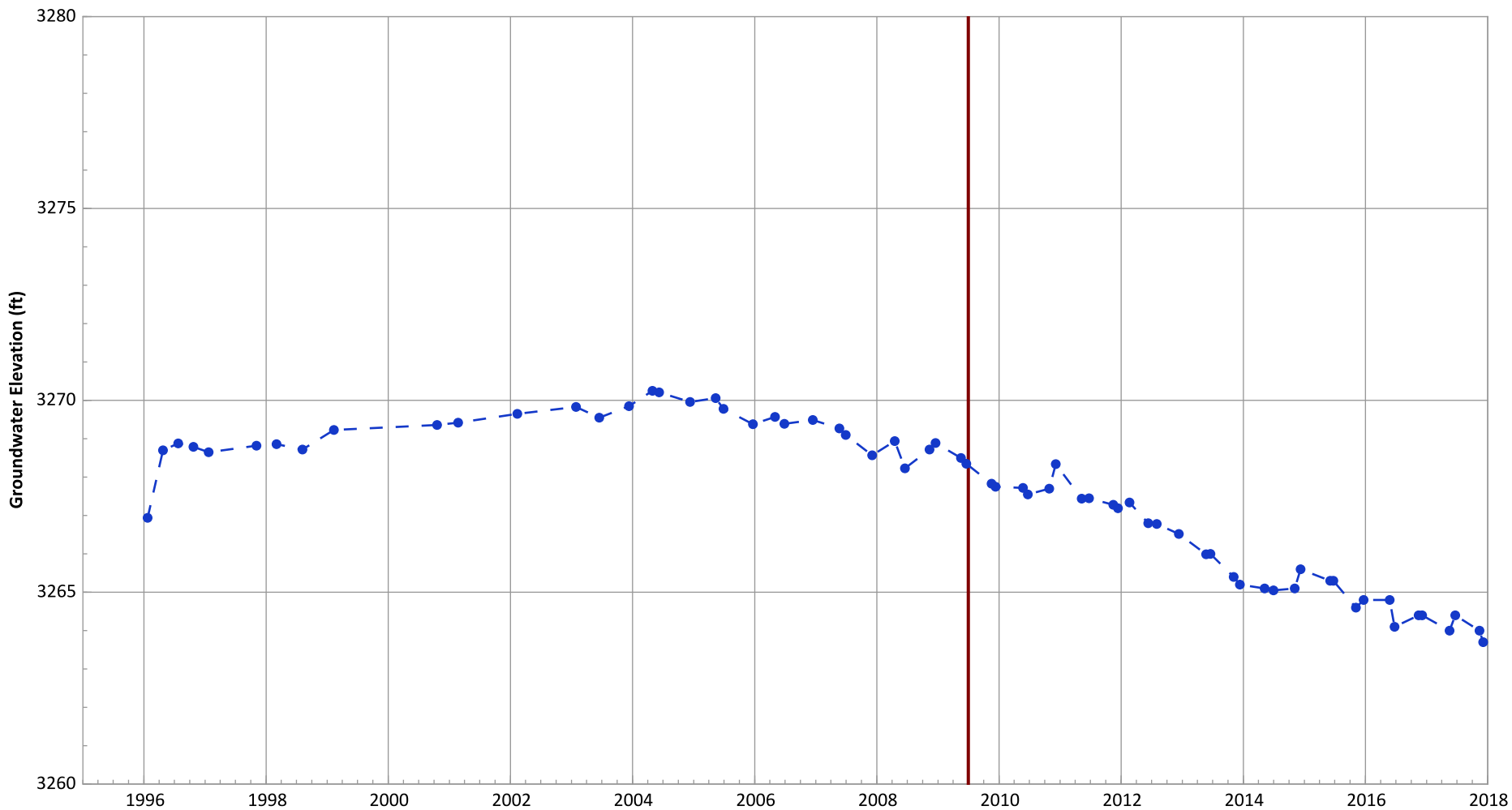
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
All Data: No Trend
Data (1/2012 - 1/2016): Decreasing at 0.38 ft/yr

**PTX08-1009 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

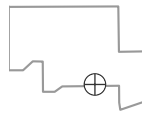


Notes:

1. Top of screen elevation is 3280.09 ft msl.
 2. The bottom of screen elevation is 3250.09 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

—●— Groundwater Elevation
 — Start of Remedial Action

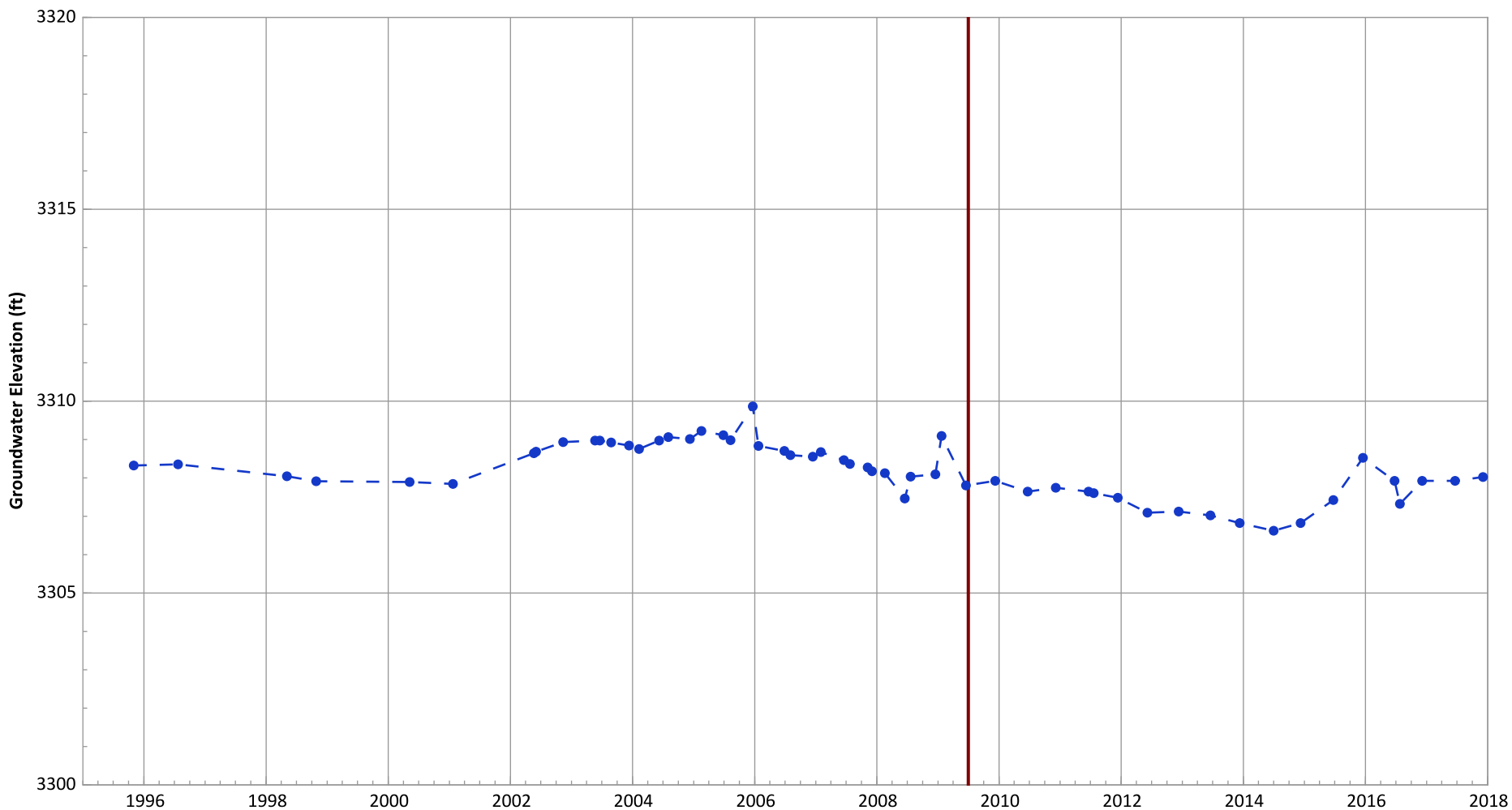
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 All Data: Decreasing at 0.25 ft/yr
 Data (1/2012 - 1/2016): Decreasing at 0.54 ft/yr

PTX08-1010 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant



Notes:

1. Top of screen elevation is 3321.22 ft msl.
 2. The bottom of screen elevation is 3286.22 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements. Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

—●— Groundwater Elevation
— Start of Remedial Action

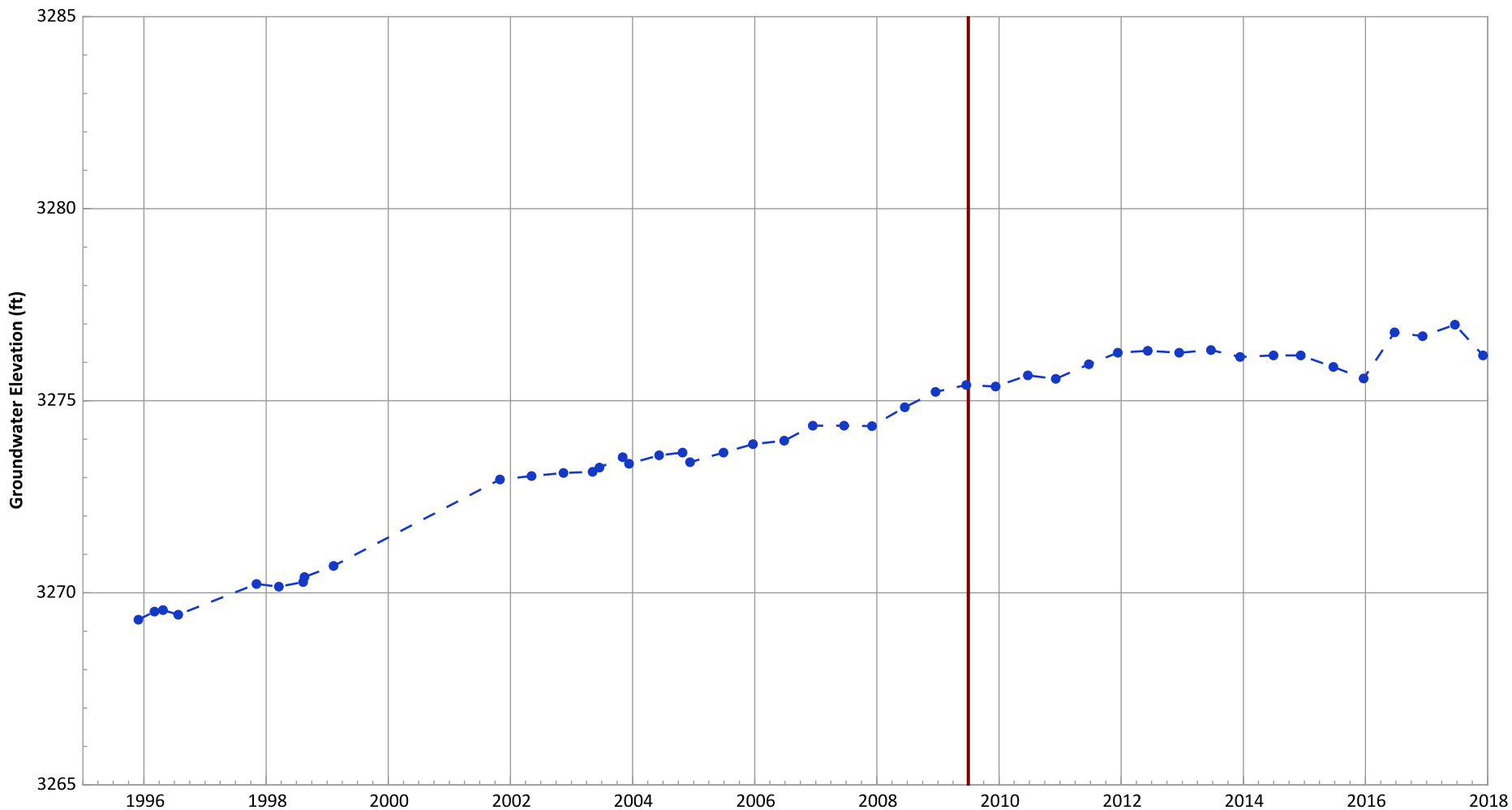
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
All Data: No Trend
Data (1/2012 - 1/2016): Increasing at 0.24 ft/yr

PTX10-1008 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant

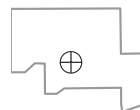


Notes:

1. Top of screen elevation is 3277.2 ft msl.
 2. The bottom of screen elevation is 3252.7 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements. Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

—●— Groundwater Elevation
— Start of Remedial Action

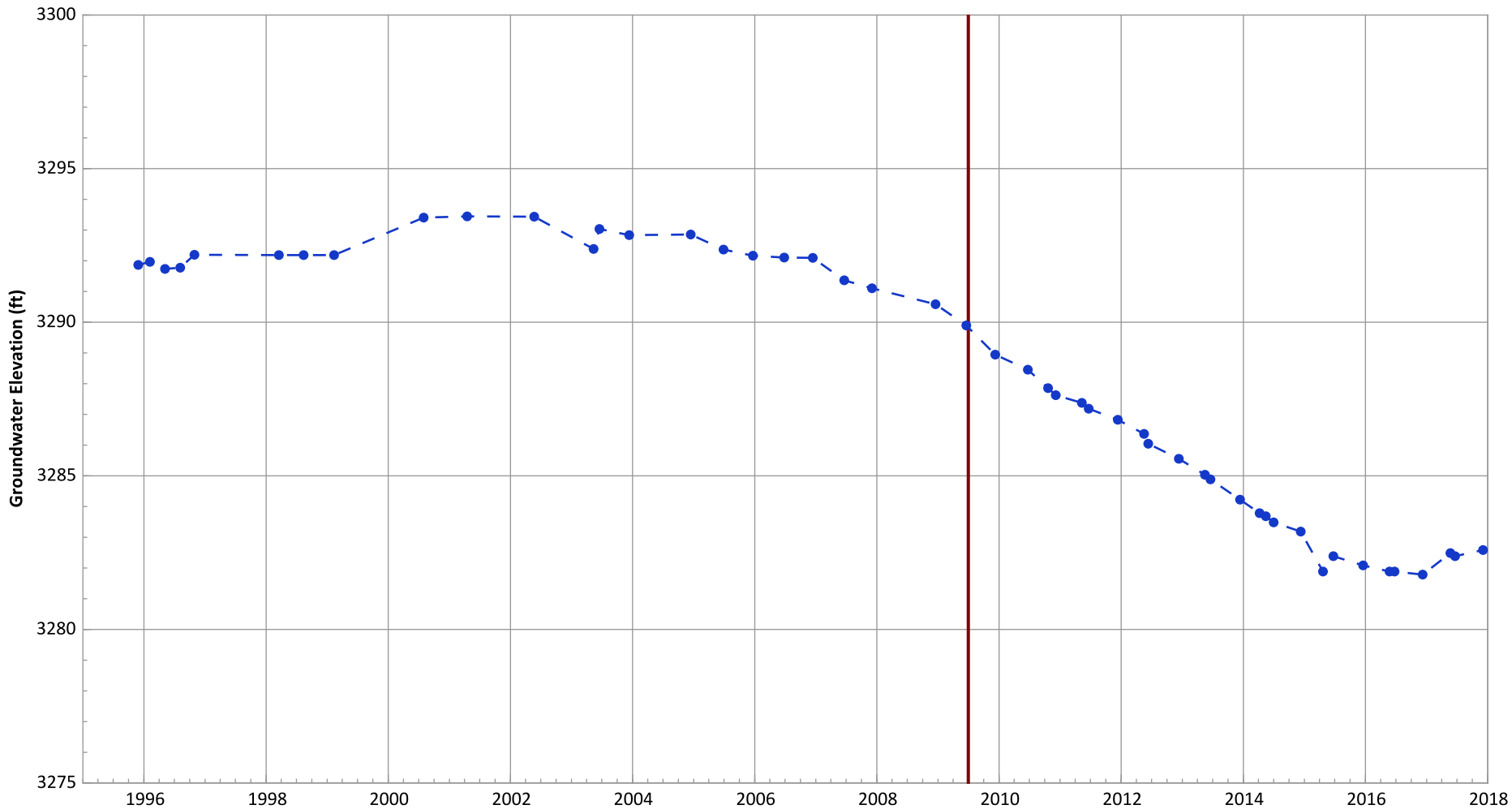
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
All Data: Increasing at 0.34 ft/yr
Data (1/2012 - 1/2016): No Trend

**PTX10-1014 Hydrograph in Perched Aquifer
USDOE/NNSA Pantex Plant**

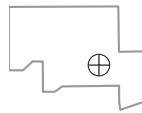


Notes:

1. Top of screen elevation is 3301.64 ft msl.
 2. The bottom of screen elevation is 3271.84 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/15/2018

- Groundwater Elevation
- - - Bottom of Screen Elevation
- Start of Remedial Action

Well Location



Hydrograph Trend

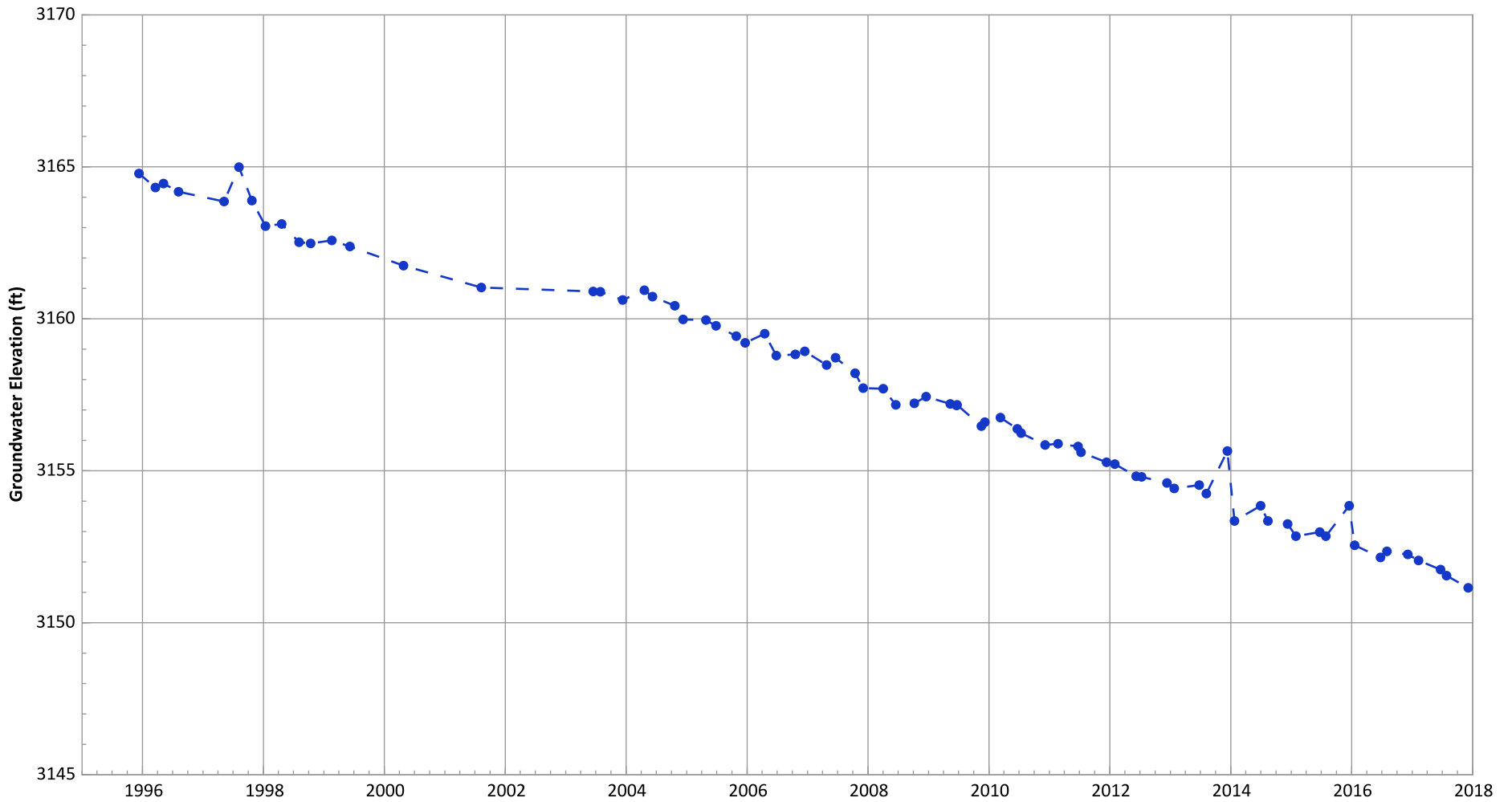
(MAROS Linear Regression Method)
 All Data: Decreasing at 0.55 ft/yr
 Data (1/2012 - 1/2016): Decreasing at 1.07 ft/yr

Ogallala Aquifer Water Level Trends and Hydrographs

Ogallala Water Level Summary Trends

Well	Easting	Northing	Num_AD	Slope_AD	Trend_AD	Change_AD	Num_L2Y	Slope_L2Y	Trend_L2Y	Change_L2Y	Num_SSRA	Slope_SSRA	Trend_SSRA	Change_SSRA	Num_5YRP	Slope_5YRP	Trend_5YRP	Change_5YRP
PTX01-1010	630576.88	3771397.26	77	-1.84	Decreasing	-23.4	8	-1.80	Decreasing	-2.6	35	-2.13	Decreasing	-14.36	21	-1.91	Decreasing	-9.27
PTX01-1011	629986.45	3771397.29	67	-1.65	Decreasing	-24.58	9	-1.57	Decreasing	-2.7	36	-1.86	Decreasing	-13.52	22	-1.70	Decreasing	-8.97
PTX01-1012	632664.21	3773264.13	60	-1.97	Decreasing	-23.9	8	-4.20	Decreasing	-3.3	34	-2.23	Decreasing	-13.46	20	-1.67	Decreasing	-9.8
PTX01-1013	628976.89	3773218.25	77	-1.92	Decreasing	-22.47	8	-1.84	Decreasing	-3.1	34	-2.22	Decreasing	-15.07	20	-1.79	Decreasing	-9.53
PTX06-1033	642614.48	3759581.41	70	-0.87	Decreasing	-17.99	6	-0.86	Decreasing	-1.3	32	-0.96	Decreasing	-7.41	20	-1.02	Decreasing	-4.86
PTX06-1043	640711.00	3765225.21	58	-1.06	Decreasing	-20.98	8	-1.49	Decreasing	-3.7	33	-1.36	Decreasing	-11.6	20	-1.62	Decreasing	-6.69
PTX06-1044	642706.18	3764538.54	66	-1.70	Decreasing	-27.46	8	-1.49	Decreasing	-2.2	35	-2.04	Decreasing	-14.65	21	-2.46	Decreasing	-10.92
PTX06-1056	643767.03	3754642.87	78	-0.37	Decreasing	-5.96	12	-0.56	Decreasing	-1.2	44	-0.48	Decreasing	-3.94	28	-0.53	Decreasing	-2.42
PTX06-1057A	629630.04	3768142.23	57	-1.27	Decreasing	-20.09	6	-1.16	Decreasing	-1.8	26	-1.45	Decreasing	-10.94	16	-1.47	Decreasing	-6.5
PTX06-1058	624894.00	3759747.11	55	-0.40	Decreasing	-6.72	6	-0.42	Decreasing	-0.5	25	-0.43	Decreasing	-3.04	15	-0.42	Decreasing	-2.08
PTX06-1059	628129.98	3760459.31	53	-0.98	Decreasing	-13.9	6	-0.70	Decreasing	-0.9	25	-1.00	Decreasing	-7.54	15	-1.07	Decreasing	-4.75
PTX06-1060	620969.93	3758599.72	48	0.16	Increasing	3.21	7	0.31	Increasing	0.7	27	0.15	Increasing	1.6	16	0.13	Increasing	1.18
PTX06-1061	625651.61	3773186.59	56	-1.76	Decreasing	-22.92	8	-2.08	Decreasing	-3.4	28	-1.71	Decreasing	-11.77	17	-1.26	Decreasing	-6.65
PTX06-1062A	633017.18	3771685.22	82	-1.59	Decreasing	-23.58	9	-1.80	Decreasing	-2.9	37	-1.84	Decreasing	-12.89	23	-1.80	Decreasing	-8.26
PTX06-1064	635900.45	3773557.90	75	-1.41	Decreasing	-20.64	9	-1.89	Decreasing	-3.3	36	-1.50	Decreasing	-11.9	21	-1.47	Decreasing	-7.29
PTX06-1068	643403.70	3773360.30	79	-1.65	Decreasing	-23.6	8	-1.58	Decreasing	-1.8	39	-1.23	Decreasing	-10.08	24	-0.97	Decreasing	-3.4
PTX06-1072	635047.45	3758434.63	58	-0.77	Decreasing	-12.12	8	-0.56	Decreasing	-0.9	36	-0.73	Decreasing	-5.89	19	-0.69	Decreasing	-3.36
PTX06-1074	620994.02	3765626.52	54	-0.74	Decreasing	-10.62	7	-0.71	Decreasing	-1.1	25	-0.78	Decreasing	-5.93	15	-0.77	Decreasing	-3.32
PTX06-1075	630512.54	3753624.01	53	0.13	Increasing	1.04	6	0.55	Increasing	1.3	26	0.11	Increasing	1.51	16	-0.05	No Trend	0.81
PTX06-1076	637327.32	3752978.41	64	0.10	Increasing	0.45	8	0.18	Increasing	0	35	0.20	Increasing	1.17	21	0.11	Increasing	0.79
PTX06-1137A	647900.89	3758635.67	37	-1.56	Decreasing	-12.2	10	-1.03	Decreasing	-1.5	36	-1.57	Decreasing	-11.47	20	-1.66	Decreasing	-7.05
PTX06-1138	646285.31	3760503.82	35	-1.31	Decreasing	-10.48	8	-1.32	Decreasing	-1.7	34	-1.32	Decreasing	-10.28	20	-1.51	Decreasing	-6.18
PTX06-1139	646768.73	3756376.08	35	-1.13	Decreasing	-8.39	8	-0.58	Decreasing	-1	34	-1.15	Decreasing	-8.91	20	-1.31	Decreasing	-5.83
PTX06-1140	646959.38	3762807.67	35	-2.54	Decreasing	-19.21	7	-1.92	Decreasing	-2.9	34	-2.58	Decreasing	-18.64	21	-3.11	Decreasing	-13.06
PTX06-1141	633445.44	3766872.94	35	-1.34	Decreasing	-10.64	8	-0.95	Decreasing	-1	34	-1.35	Decreasing	-9.95	22	-1.54	Decreasing	-6.68
PTX06-1143	639244.72	3770496.78	36	-1.30	Decreasing	-9.33	8	-1.44	Decreasing	-1.9	35	-1.34	Decreasing	-9.92	21	-1.45	Decreasing	-6.47
PTX06-1144	640252.98	3773320.45	35	-0.99	Decreasing	-8.54	8	-1.79	Decreasing	-2.3	34	-1.02	Decreasing	-10.2	21	-0.84	Decreasing	-4.24
PTX06-1157	647101.97	3753701.98	34	-0.07	No Trend	0.48	9	0.28	Increasing	0.5	34	-0.07	No Trend	0.48	22	-0.21	Decreasing	-0.52
PTX07-1R01	627914.28	3764159.91	58	-1.11	Decreasing	-19.25	7	-1.21	Decreasing	-1.5	34	-1.21	Decreasing	-9.35	20	-1.27	Decreasing	-5.46
PTX08-1011A	622327.80	3760147.86	38	-0.58	Decreasing	-12.68	4	-0.40	Decreasing	-0.5	17	-0.59	Decreasing	-4.41	10	-0.62	Decreasing	-2.8
PTX-BEG2	632652.49	3756906.56	75	-0.60	Decreasing	-13.63	8	-0.69	Decreasing	-1.4	34	-0.65	Decreasing	-5.32	20	-0.62	Decreasing	-2.97

**PTX-BEG2 Hydrograph in Ogallala Aquifer
USDOE/NNSA Pantex Plant**

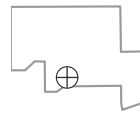


Notes:

1. Top of screen elevation is 3175.57 ft msl.
 2. The bottom of screen elevation is 3125.57 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/22/2018

—●— Groundwater Elevation

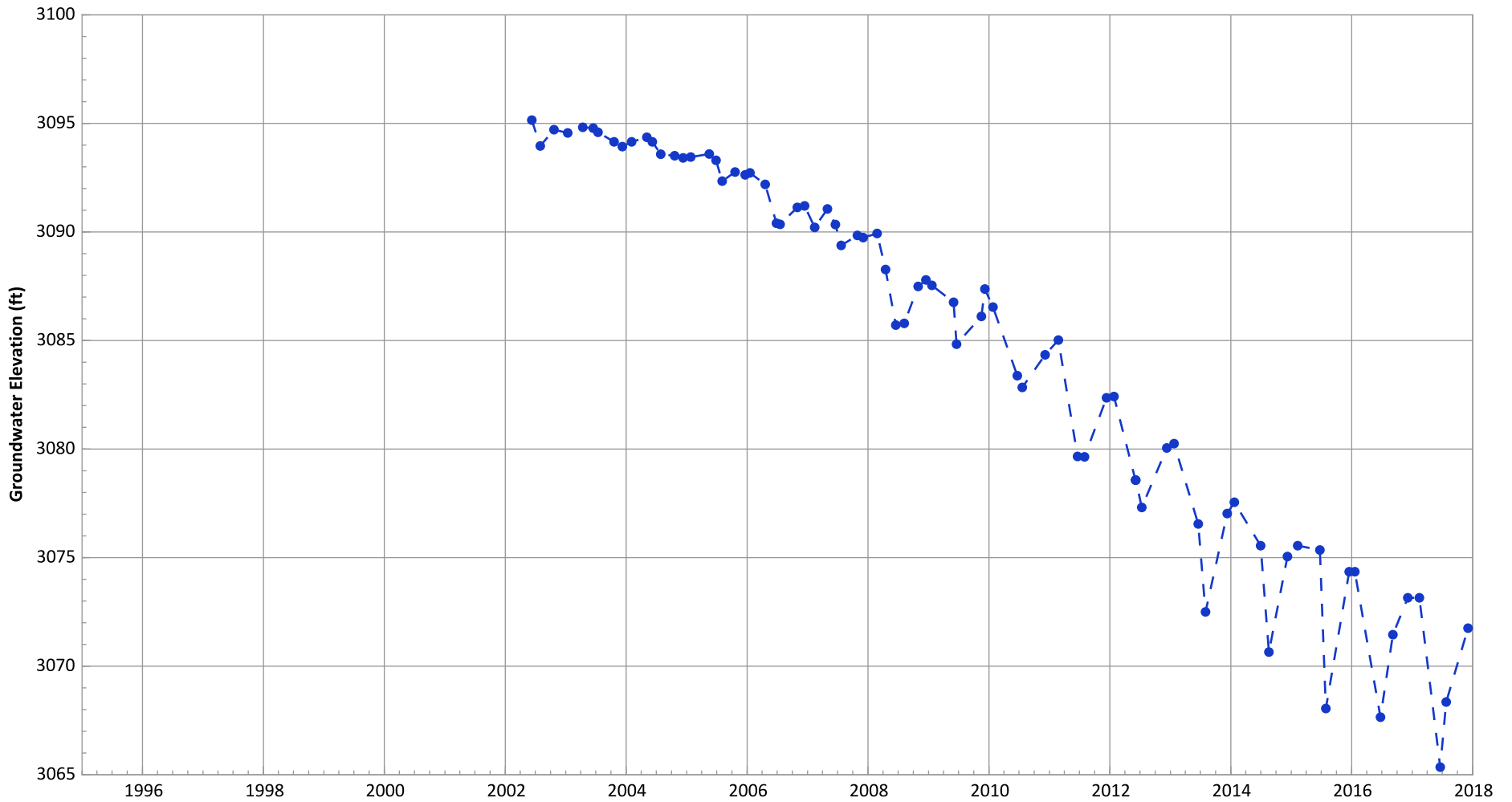
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
Data (7/2009 - 12/2017): Decreasing at 0.65 ft/yr
2015 - 2017 Data: Decreasing at 0.69 ft/yr

**PTX01-1010 Hydrograph in Ogallala Aquifer
USDOE/NNSA Pantex Plant**

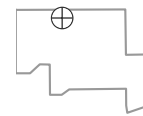


Notes:

1. Top of screen elevation is 3104.01 ft msl.
 2. The bottom of screen elevation is 2729.01 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/22/2018

—●— Groundwater Elevation

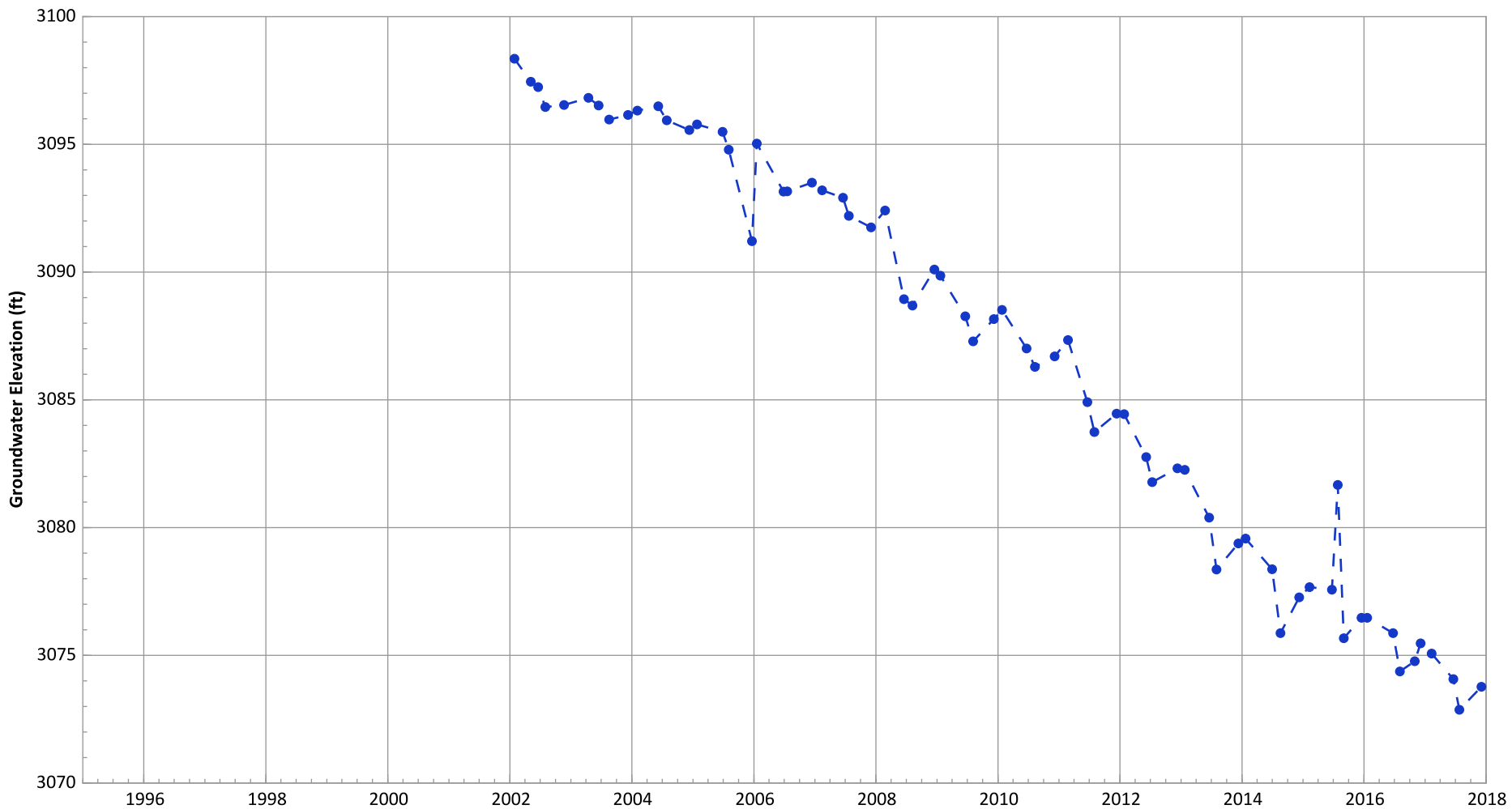
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 Data (7/2009 - 12/2017): Decreasing at 2.13 ft/yr
 2015 - 2017 Data: Decreasing at 1.8 ft/yr

**PTX01-1011 Hydrograph in Ogallala Aquifer
USDOE/NNSA Pantex Plant**

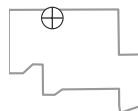


Notes:

1. Top of screen elevation is 3107.81 ft msl.
 2. The bottom of screen elevation is 2782.81 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/22/2018

—●— Groundwater Elevation

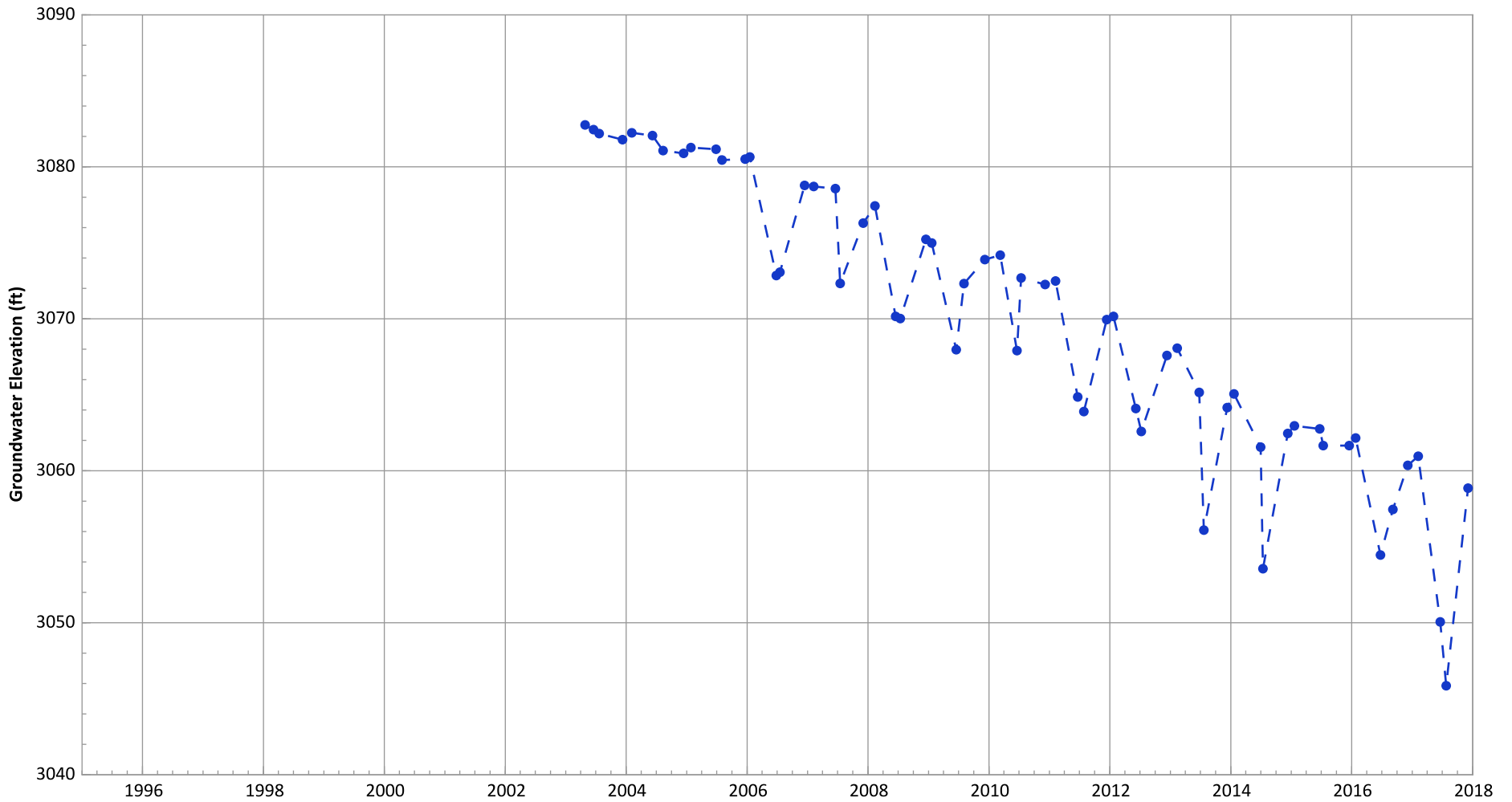
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
Data (7/2009 - 12/2017): Decreasing at 1.86 ft/yr
2015 - 2017 Data: Decreasing at 1.57 ft/yr

**PTX01-1012 Hydrograph in Ogallala Aquifer
USDOE/NNSA Pantex Plant**

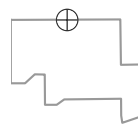


Notes:

1. Top of screen elevation is 3112.48 ft msl.
 2. The bottom of screen elevation is 2677.48 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/22/2018

—●— Groundwater Elevation

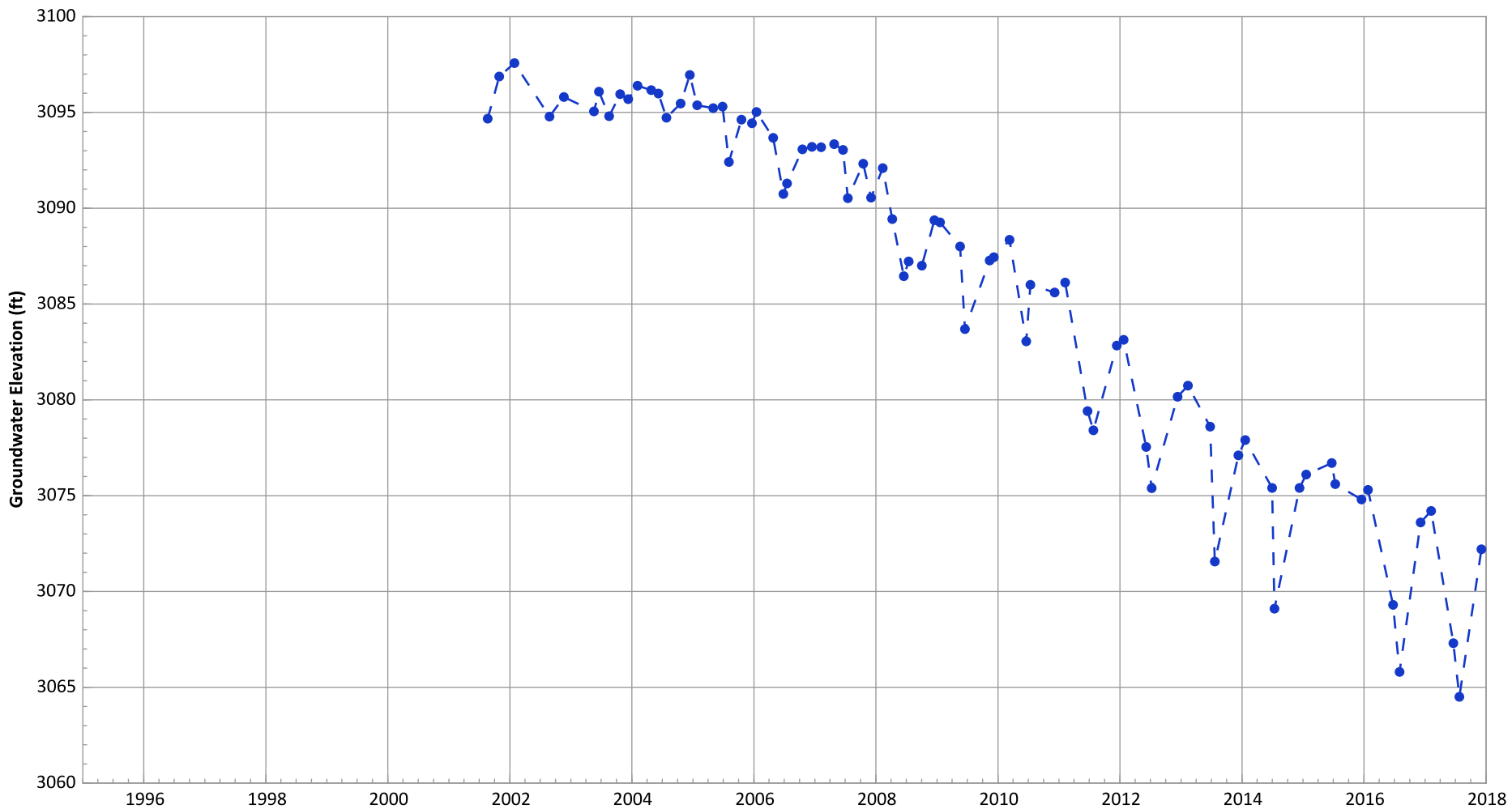
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 Data (7/2009 - 12/2017): Decreasing at 2.23 ft/yr
 2015 - 2017 Data: Decreasing at 4.2 ft/yr

**PTX01-1013 Hydrograph in Ogallala Aquifer
USDOE/NNSA Pantex Plant**

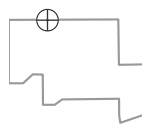


Notes:

1. Top of screen elevation is 3122.17 ft msl.
 2. The bottom of screen elevation is 2717.17 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/22/2018

—●— Groundwater Elevation

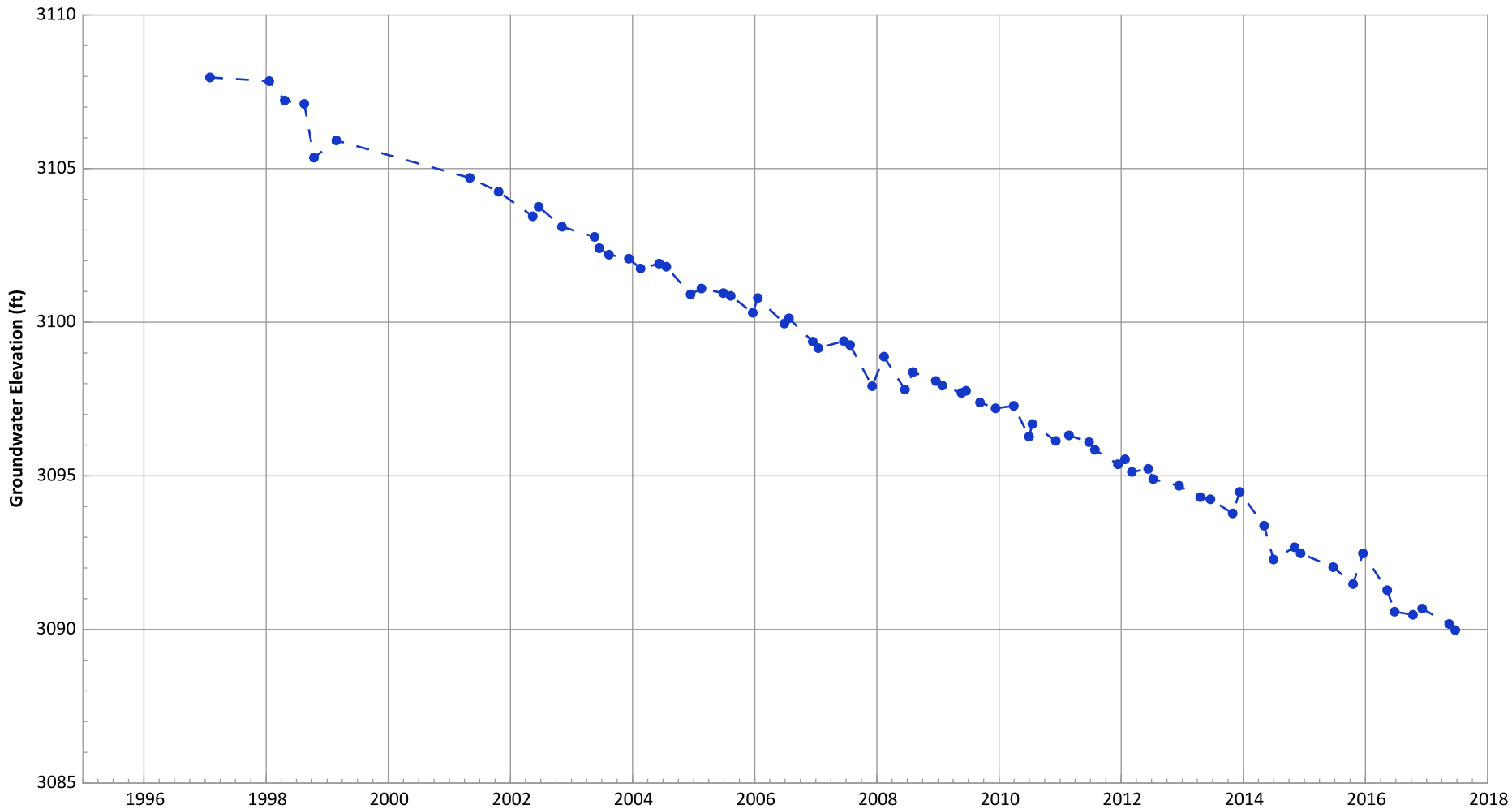
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 Data (7/2009 - 12/2017): Decreasing at 2.22 ft/yr
 2015 - 2017 Data: Decreasing at 1.84 ft/yr

**PTX06-1033 Hydrograph in Ogallala Aquifer
USDOE/NNSA Pantex Plant**

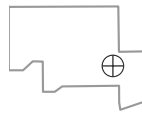


Notes:

1. Top of screen elevation is 3134.04 ft msl.
 2. The bottom of screen elevation is 2994.04 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/22/2018

—●— Groundwater Elevation

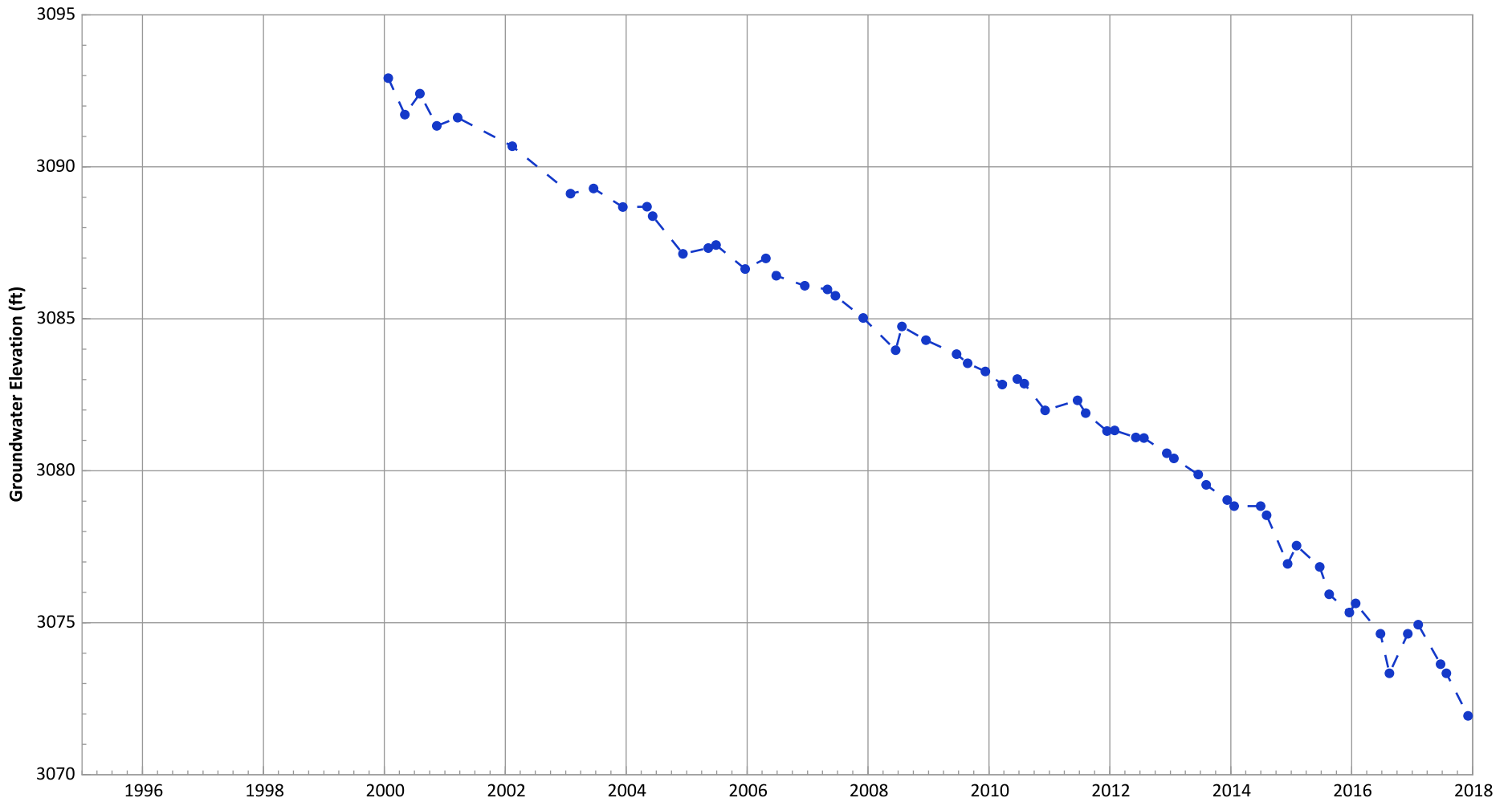
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 Data (7/2009 - 12/2017): Decreasing at 0.96 ft/yr
 2015 - 2017 Data: Decreasing at 0.86 ft/yr

PTX06-1043 Hydrograph in Ogallala Aquifer
USDOE/NNSA Pantex Plant



Notes:

1. Top of screen elevation is 3116.09 ft msl.
 2. The bottom of screen elevation is 2896.09 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/22/2018

—●— Groundwater Elevation

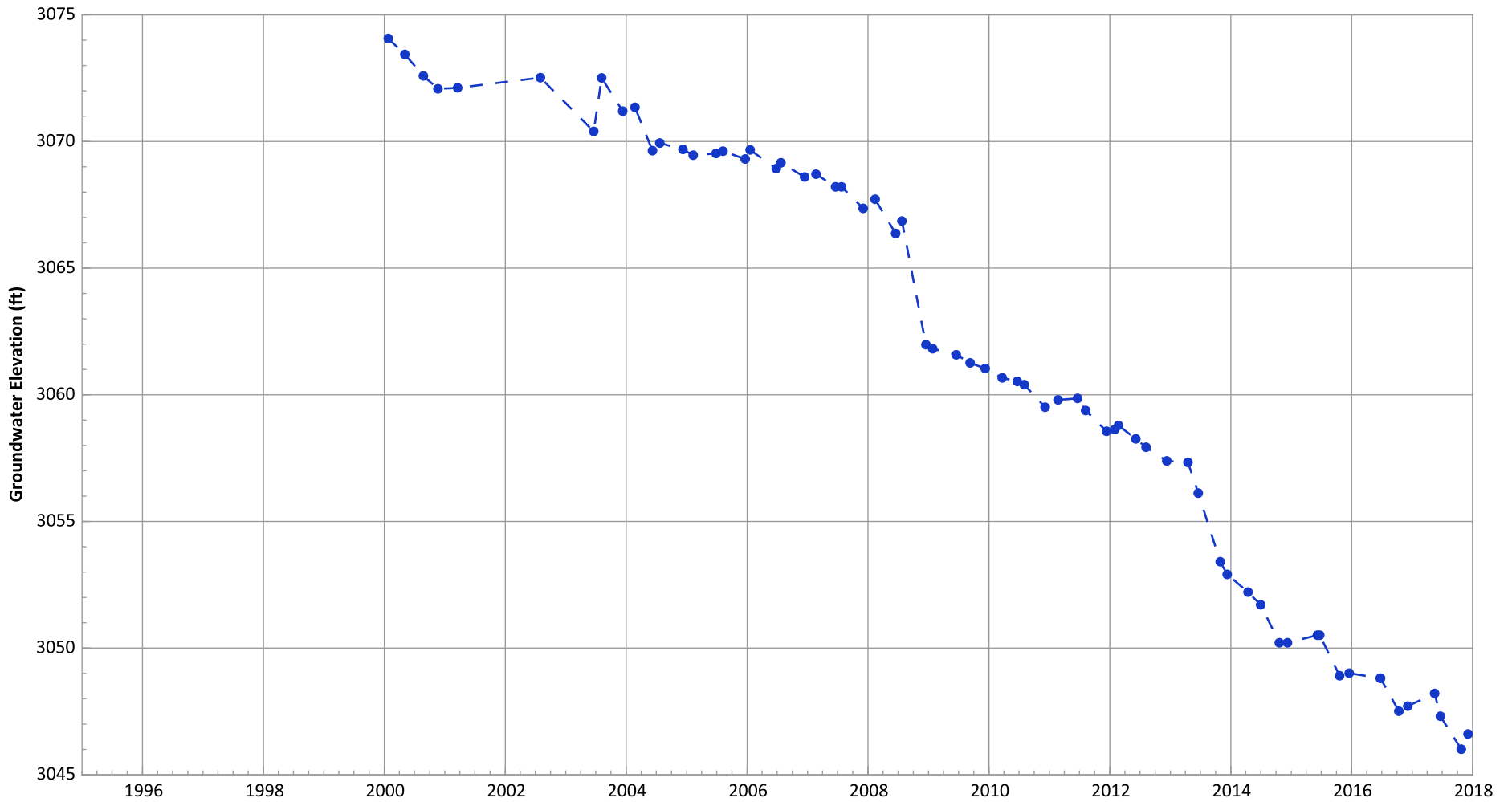
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
Data (7/2009 - 12/2017): Decreasing at 1.36 ft/yr
2015 - 2017 Data: Decreasing at 1.49 ft/yr

**PTX06-1044 Hydrograph in Ogallala Aquifer
USDOE/NNSA Pantex Plant**

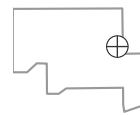


Notes:

1. Top of screen elevation is 3148.69 ft msl.
 2. The bottom of screen elevation is 2928.69 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/22/2018

—●— Groundwater Elevation

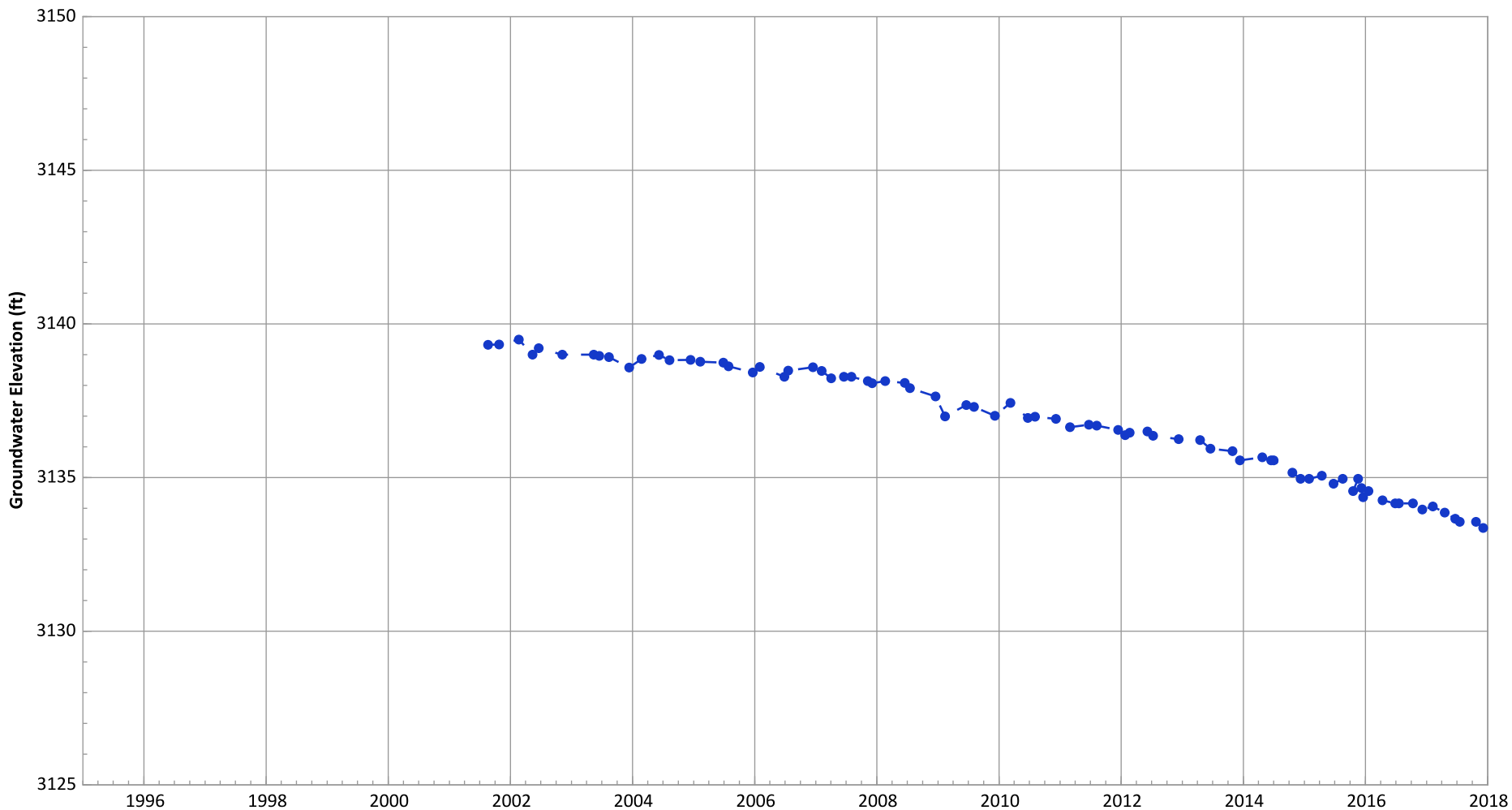
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
Data (7/2009 - 12/2017): Decreasing at 2.04 ft/yr
2015 - 2017 Data: Decreasing at 1.49 ft/yr

PTX06-1056 Hydrograph in Ogallala Aquifer
USDOE/NNSA Pantex Plant

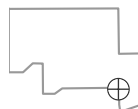


Notes:

1. Top of screen elevation is 3180.77 ft msl.
 2. The bottom of screen elevation is 3060.77 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/22/2018

—●— Groundwater Elevation

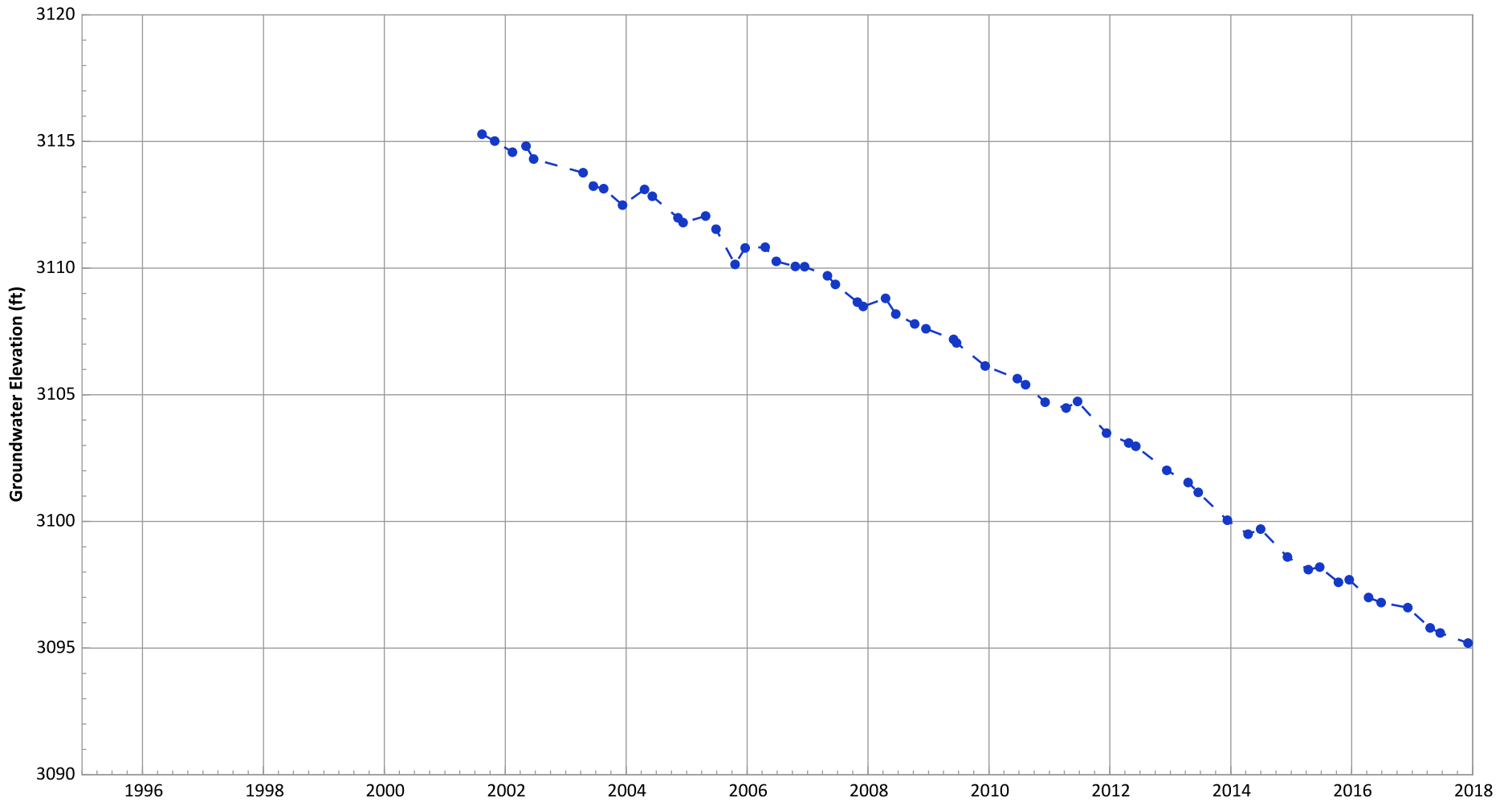
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
Data (7/2009 - 12/2017): Decreasing at 0.48 ft/yr
2015 - 2017 Data: Decreasing at 0.56 ft/yr

**PTX06-1057A Hydrograph in Ogallala Aquifer
USDOE/NNSA Pantex Plant**

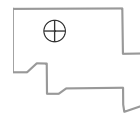


Notes:

1. Top of screen elevation is 3141.52 ft msl.
 2. The bottom of screen elevation is 2811.52 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/22/2018

—●— Groundwater Elevation

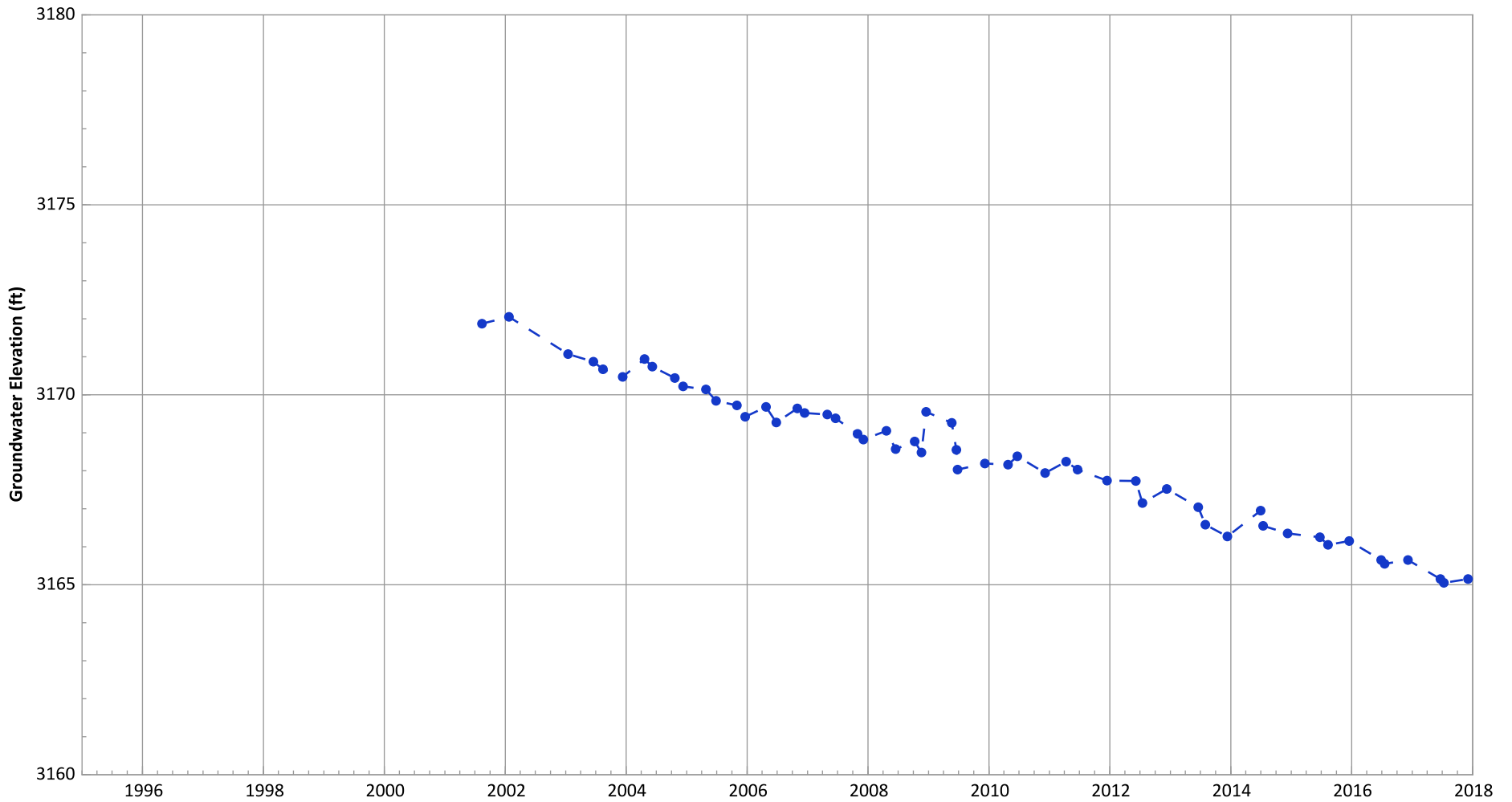
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 Data (7/2009 - 12/2017): Decreasing at 1.45 ft/yr
 2015 - 2017 Data: Decreasing at 1.16 ft/yr

PTX06-1058 Hydrograph in Ogallala Aquifer
USDOE/NNSA Pantex Plant

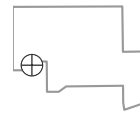


Notes:

1. Top of screen elevation is 3188.45 ft msl.
 2. The bottom of screen elevation is 3038.45 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/22/2018

—●— Groundwater Elevation

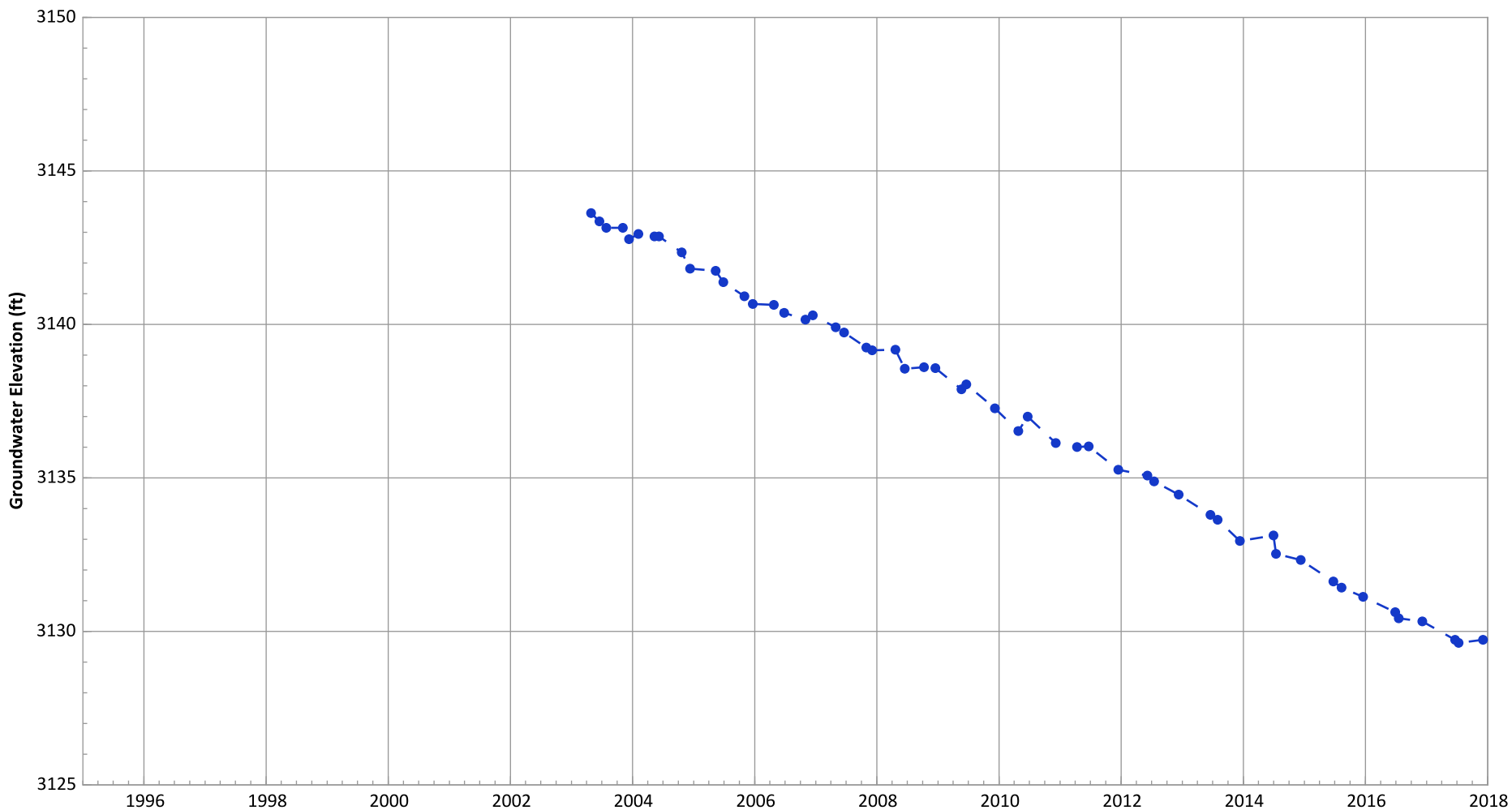
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
Data (7/2009 - 12/2017): Decreasing at 0.43 ft/yr
2015 - 2017 Data: Decreasing at 0.42 ft/yr

PTX06-1059 Hydrograph in Ogallala Aquifer
USDOE/NNSA Pantex Plant

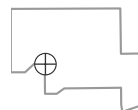


Notes:

1. Top of screen elevation is 3167.39 ft msl.
 2. The bottom of screen elevation is 3007.39 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/22/2018

—●— Groundwater Elevation

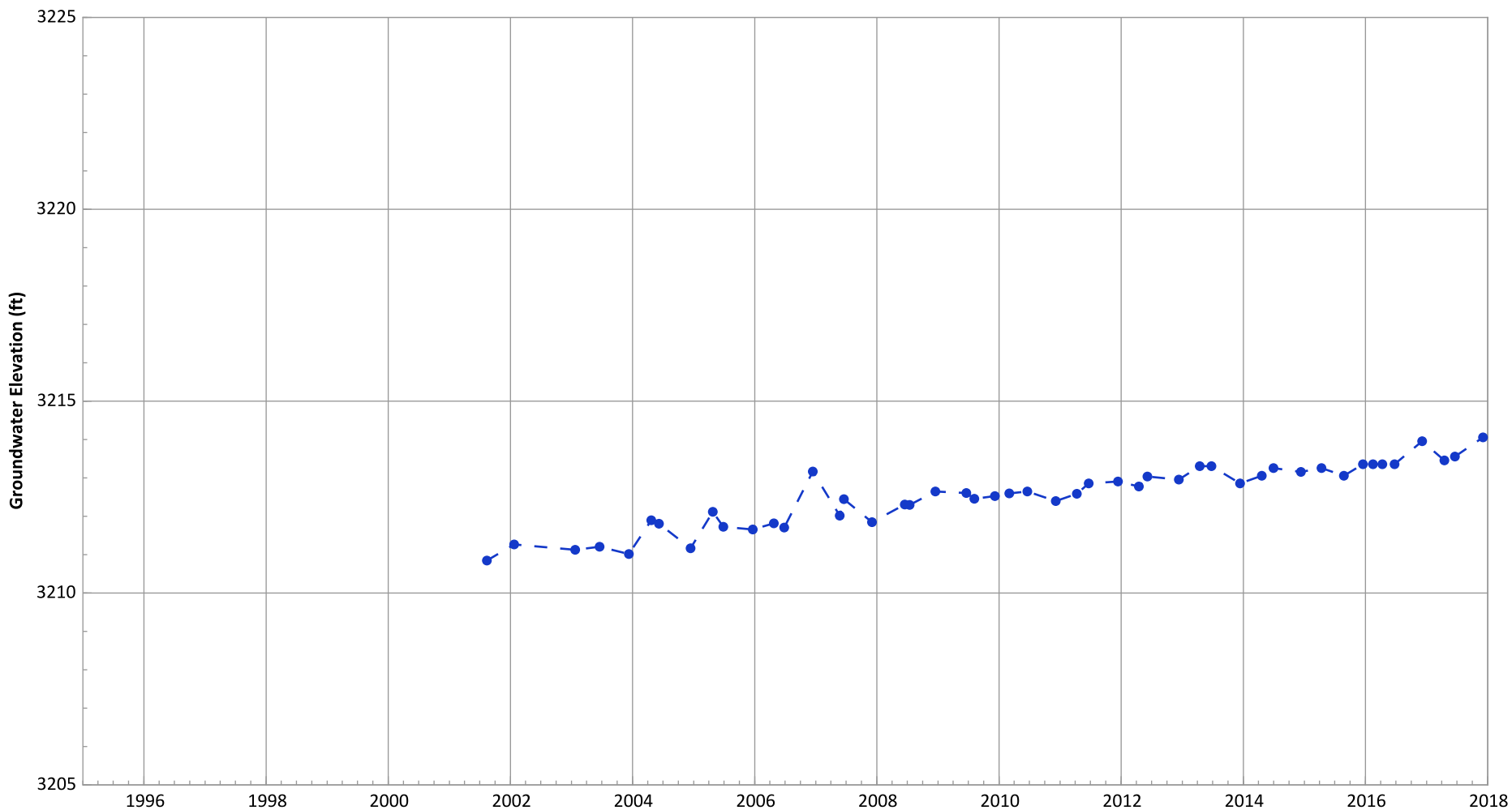
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
Data (7/2009 - 12/2017): Decreasing at 1.0 ft/yr
2015 - 2017 Data: Decreasing at 0.7 ft/yr

**PTX06-1060 Hydrograph in Ogallala Aquifer
USDOE/NNSA Pantex Plant**

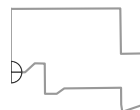


Notes:

1. Top of screen elevation is 3191.81 ft msl.
 2. The bottom of screen elevation is 3066.81 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/22/2018

—●— Groundwater Elevation

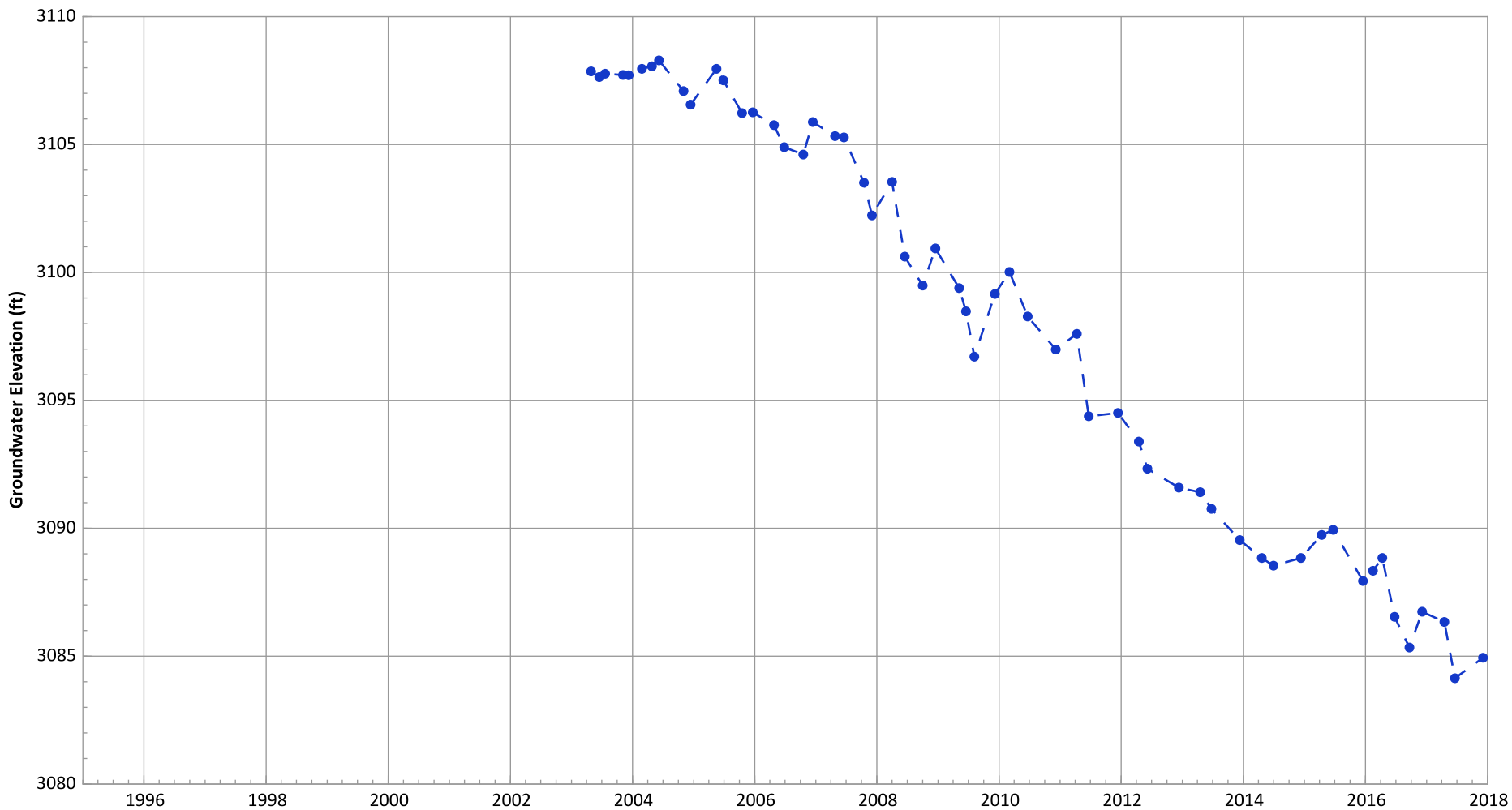
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
Data (7/2009 - 12/2017): Increasing at 0.15 ft/yr
2015 - 2017 Data: Increasing at 0.31 ft/yr

**PTX06-1061 Hydrograph in Ogallala Aquifer
USDOE/NNSA Pantex Plant**

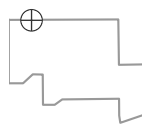


Notes:

1. Top of screen elevation is 3124.65 ft msl.
 2. The bottom of screen elevation is 2729.65 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/22/2018

—●— Groundwater Elevation

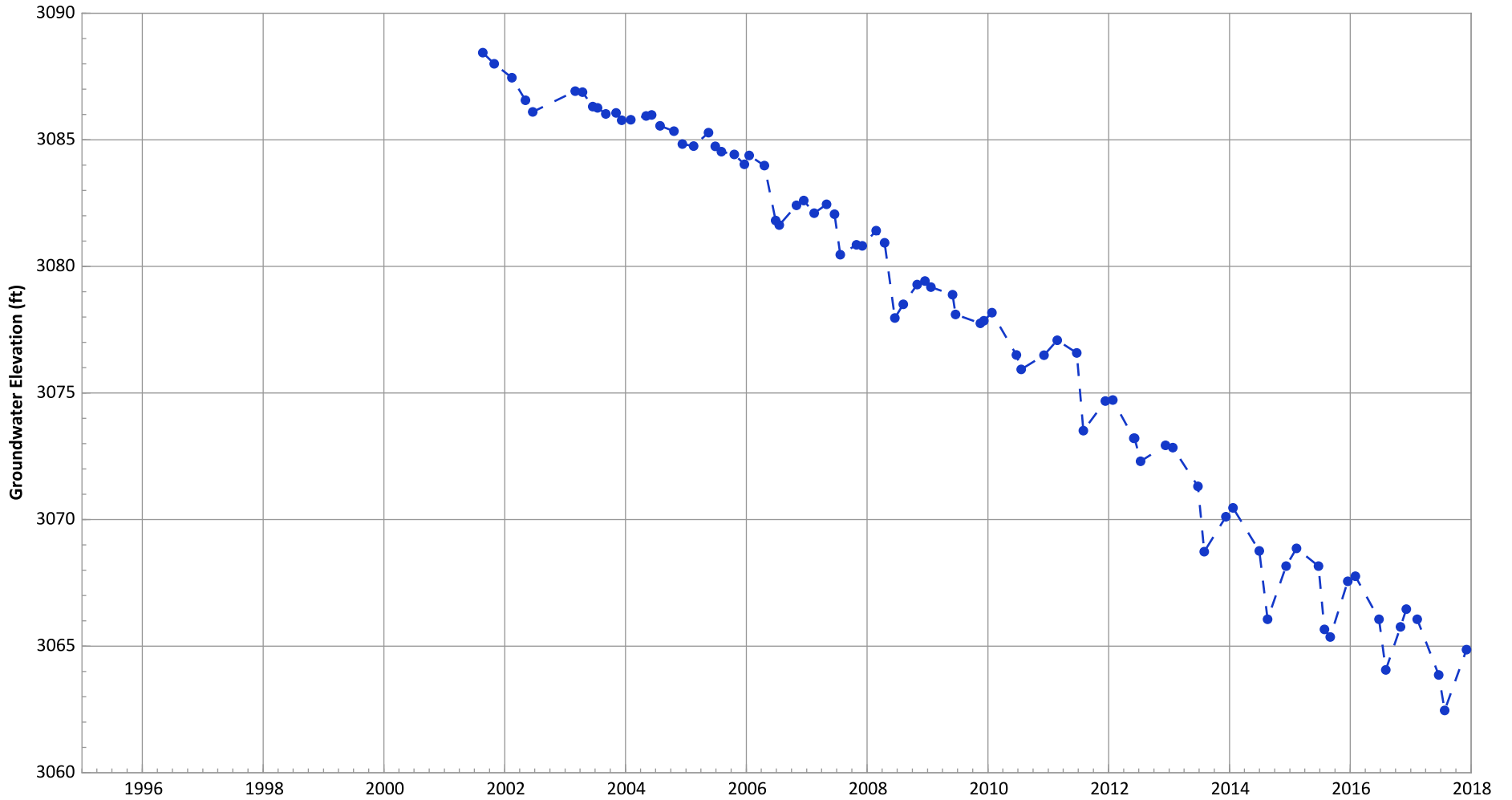
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 Data (7/2009 - 12/2017): Decreasing at 1.71 ft/yr
 2015 - 2017 Data: Decreasing at 2.08 ft/yr

PTX06-1062A Hydrograph in Ogallala Aquifer
USDOE/NNSA Pantex Plant

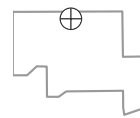


Notes:

1. Top of screen elevation is 3103.89 ft msl.
 2. The bottom of screen elevation is 2683.89 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/22/2018

—●— Groundwater Elevation

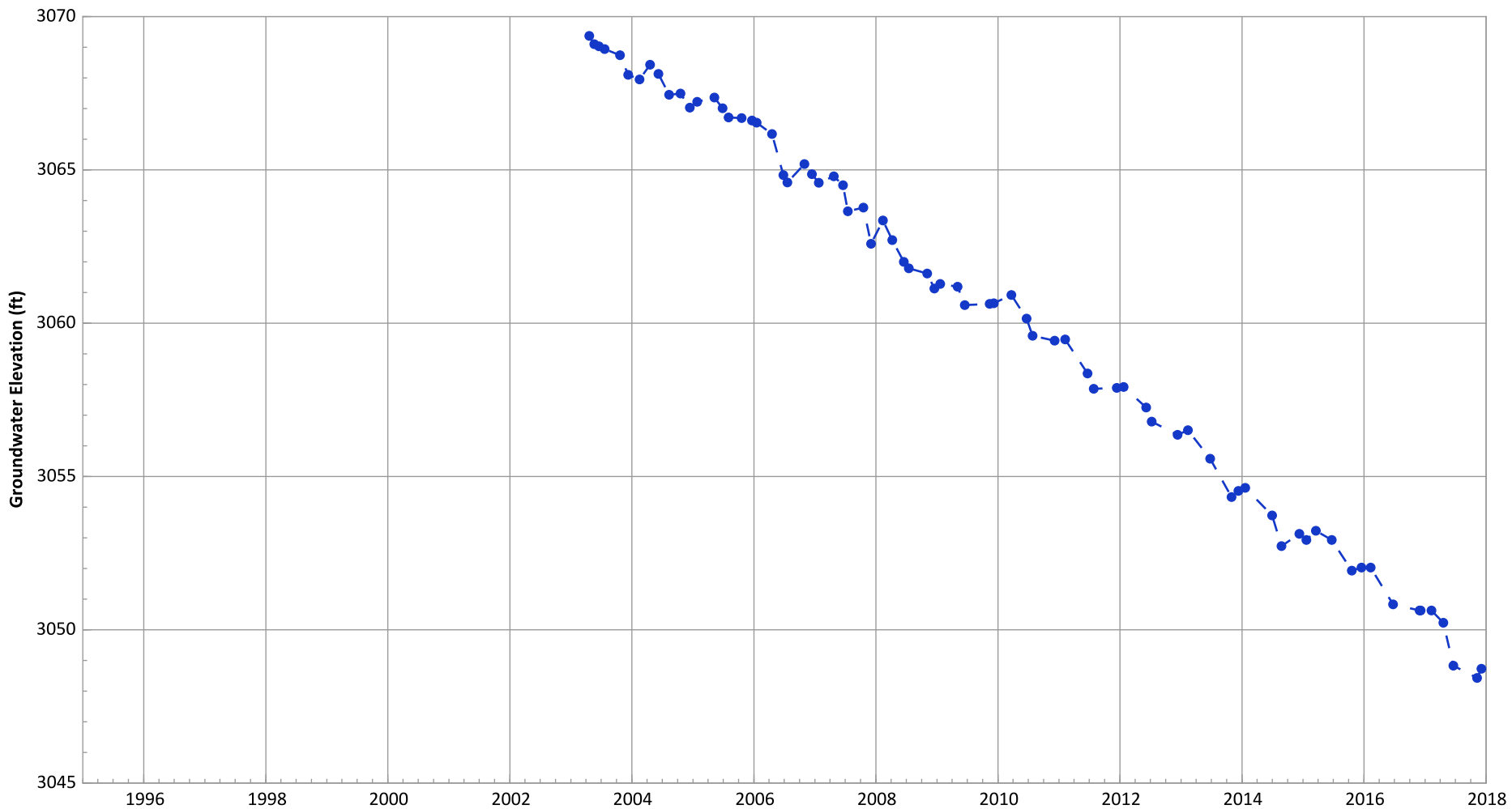
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
Data (7/2009 - 12/2017): Decreasing at 1.84 ft/yr
2015 - 2017 Data: Decreasing at 1.8 ft/yr

PTX06-1064 Hydrograph in Ogallala Aquifer
USDOE/NNSA Pantex Plant

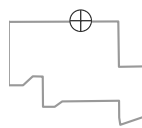


Notes:

1. Top of screen elevation is 3121.99 ft msl.
 2. The bottom of screen elevation is 2771.99 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/22/2018

—●— Groundwater Elevation

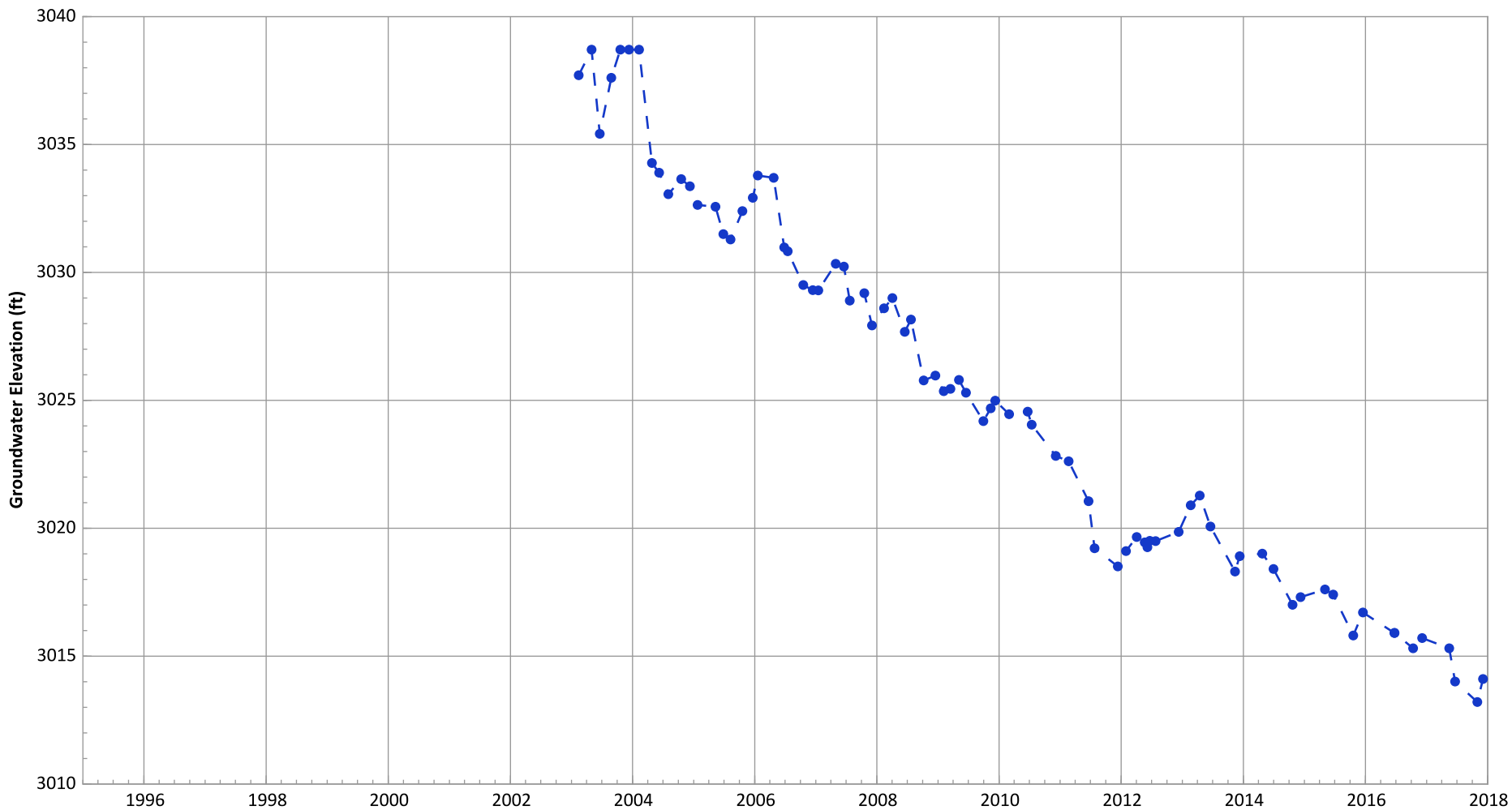
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
Data (7/2009 - 12/2017): Decreasing at 1.5 ft/yr
2015 - 2017 Data: Decreasing at 1.89 ft/yr

**PTX06-1068 Hydrograph in Ogallala Aquifer
USDOE/NNSA Pantex Plant**



Notes:

1. Top of screen elevation is 3081.55 ft msl.
 2. The bottom of screen elevation is 2736.55 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/22/2018

—●— Groundwater Elevation

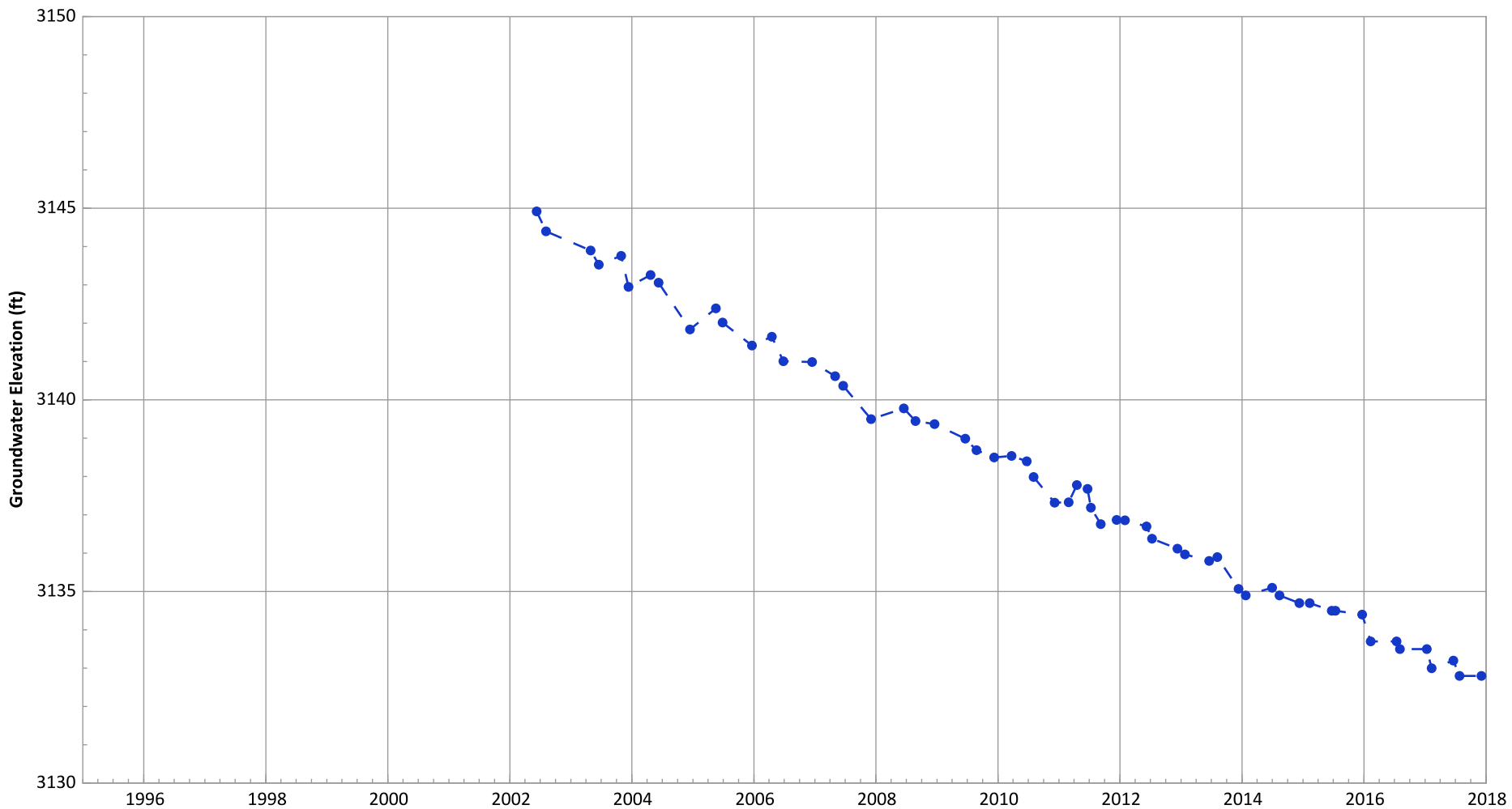
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 Data (7/2009 - 12/2017): Decreasing at 1.23 ft/yr
 2015 - 2017 Data: Decreasing at 1.58 ft/yr

**PTX06-1072 Hydrograph in Ogallala Aquifer
USDOE/NNSA Pantex Plant**

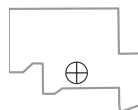


Notes:

1. Top of screen elevation is 3146.3 ft msl.
 2. The bottom of screen elevation is 3006.3 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/22/2018

—●— Groundwater Elevation

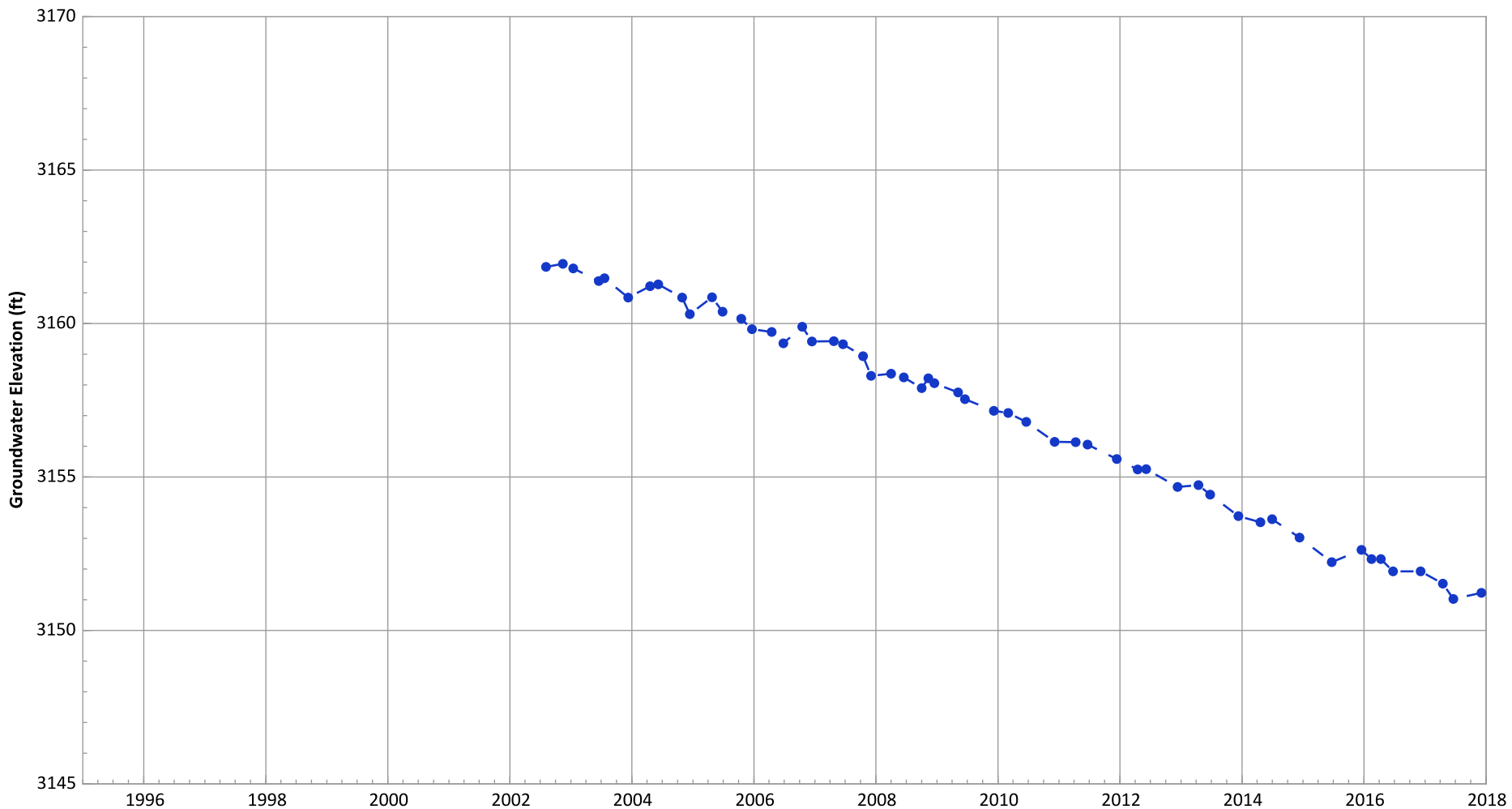
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 Data (7/2009 - 12/2017): Decreasing at 0.73 ft/yr
 2015 - 2017 Data: Decreasing at 0.56 ft/yr

PTX06-1074 Hydrograph in Ogallala Aquifer
USDOE/NNSA Pantex Plant

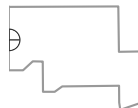


Notes:

1. Top of screen elevation is 3175.53 ft msl.
 2. The bottom of screen elevation is 2955.53 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/22/2018

—●— Groundwater Elevation

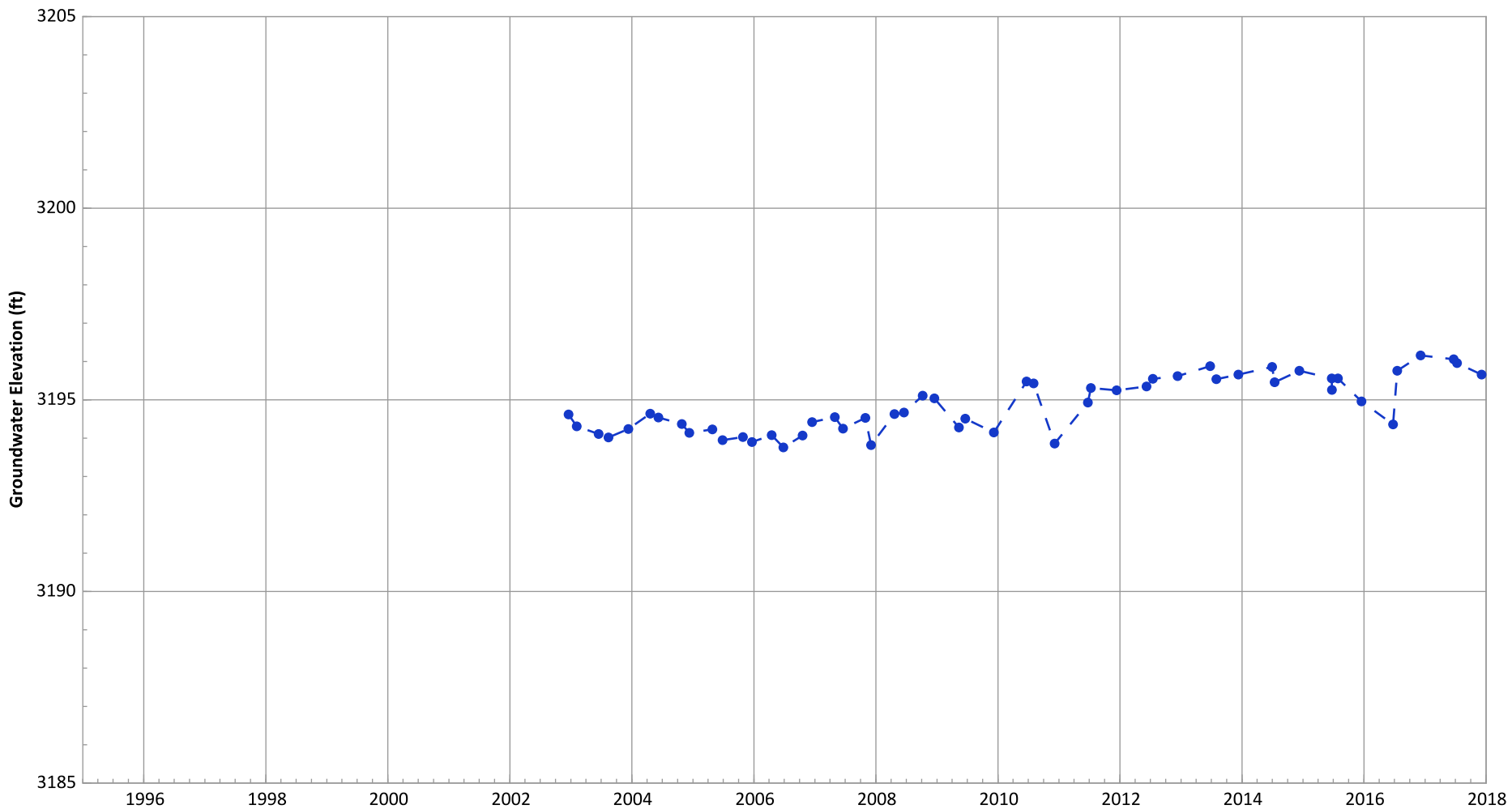
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
Data (7/2009 - 12/2017): Decreasing at 0.78 ft/yr
2015 - 2017 Data: Decreasing at 0.71 ft/yr

**PTX06-1075 Hydrograph in Ogallala Aquifer
USDOE/NNSA Pantex Plant**

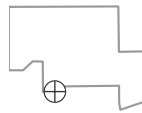


Notes:

1. Top of screen elevation is 3193.11 ft msl.
 2. The bottom of screen elevation is 3133.11 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/22/2018

—●— Groundwater Elevation

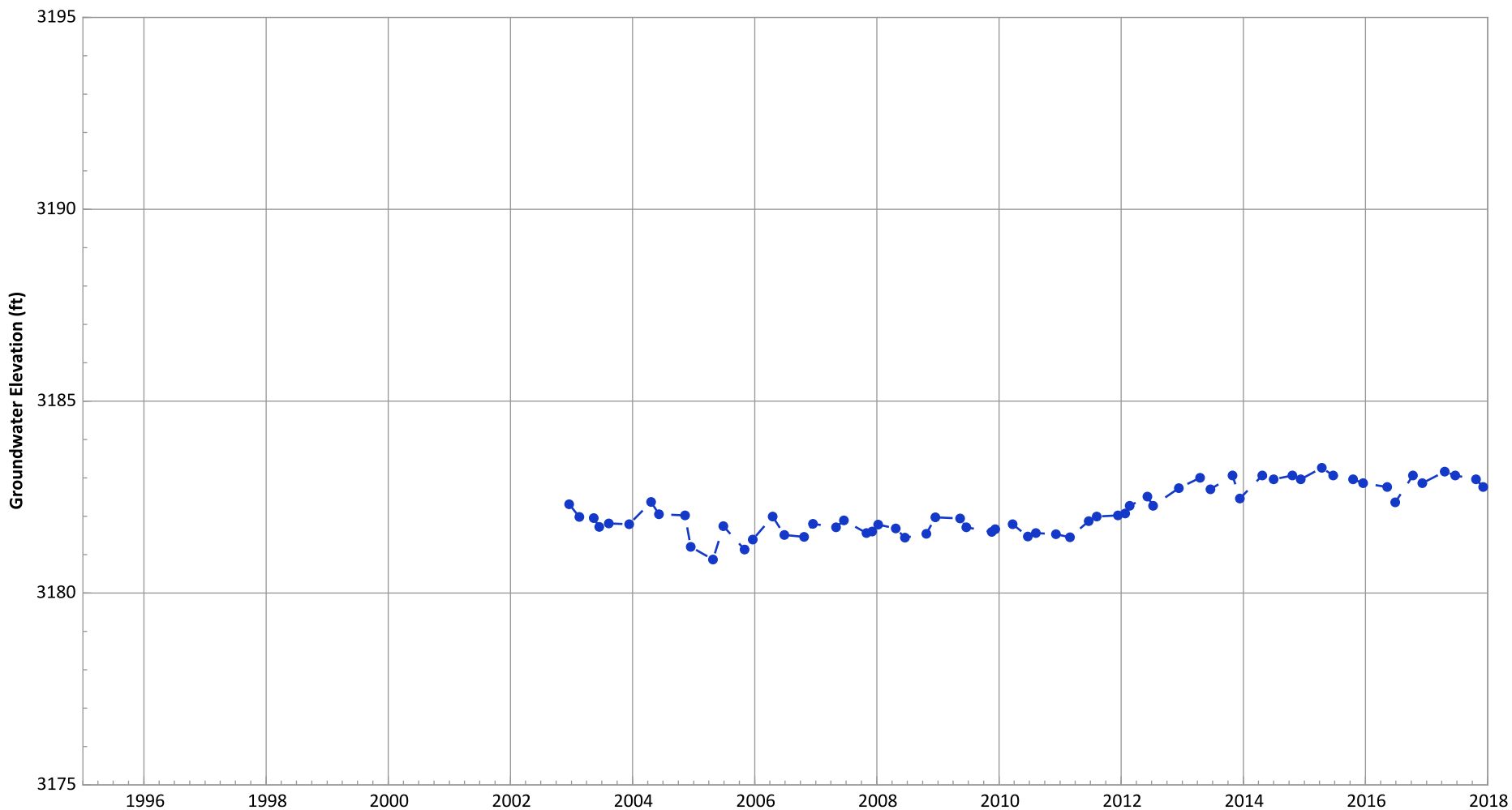
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 Data (7/2009 - 12/2017): Increasing at 0.11 ft/yr
 2015 - 2017 Data: Increasing at 0.55 ft/yr

PTX06-1076 Hydrograph in Ogallala Aquifer
USDOE/NNSA Pantex Plant

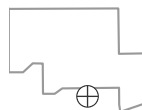


Notes:

1. Top of screen elevation is 3187.64 ft msl.
 2. The bottom of screen elevation is 3167.64 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/22/2018

—●— Groundwater Elevation

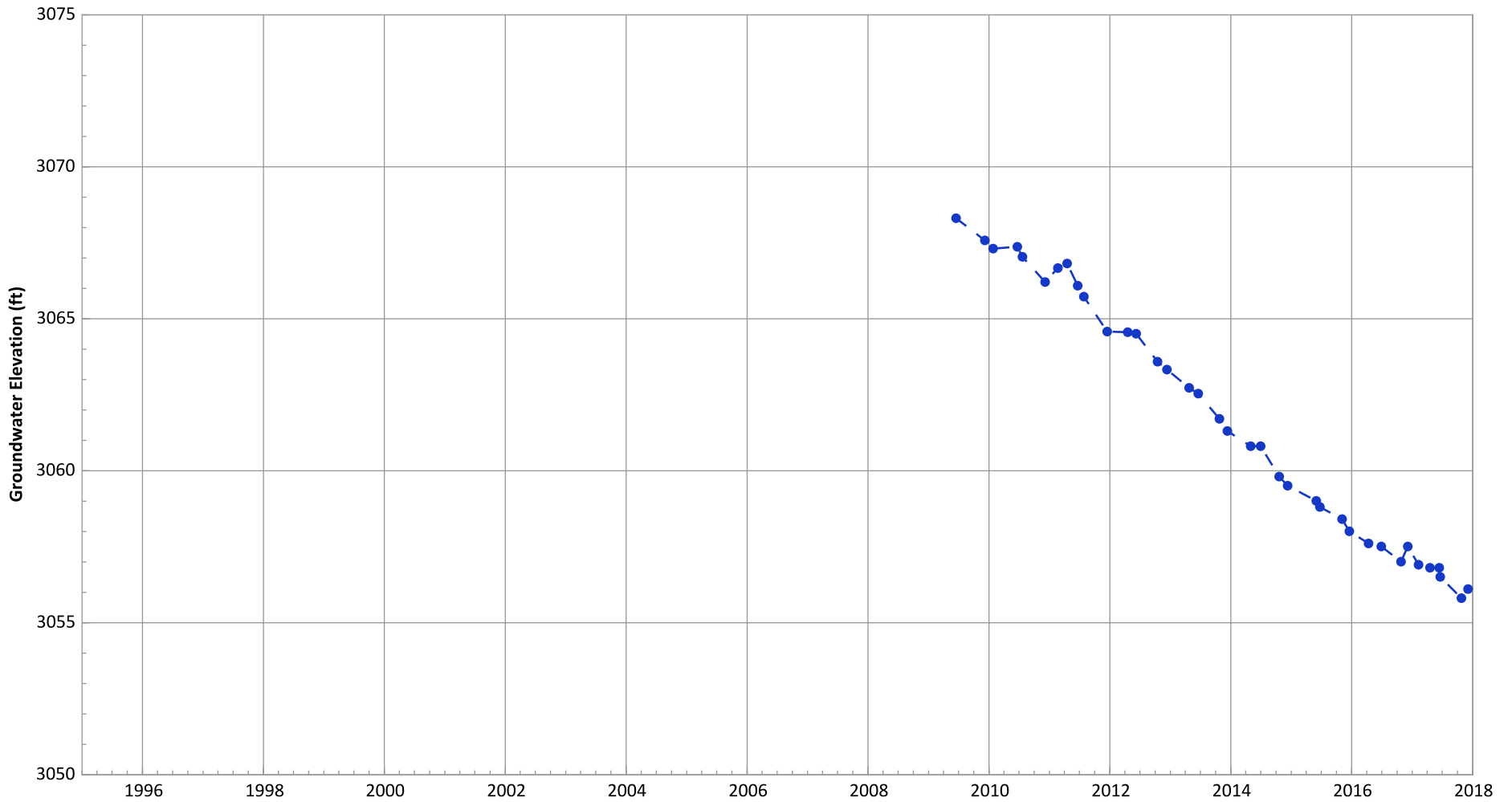
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
Data (7/2009 - 12/2017): Increasing at 0.2 ft/yr
2015 - 2017 Data: Increasing at 0.18 ft/yr

**PTX06-1137A Hydrograph in Ogallala Aquifer
USDOE/NNSA Pantex Plant**



Notes:

1. Top of screen elevation is 3107.5 ft msl.
 2. The bottom of screen elevation is 2952.5 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/22/2018

—●— Groundwater Elevation

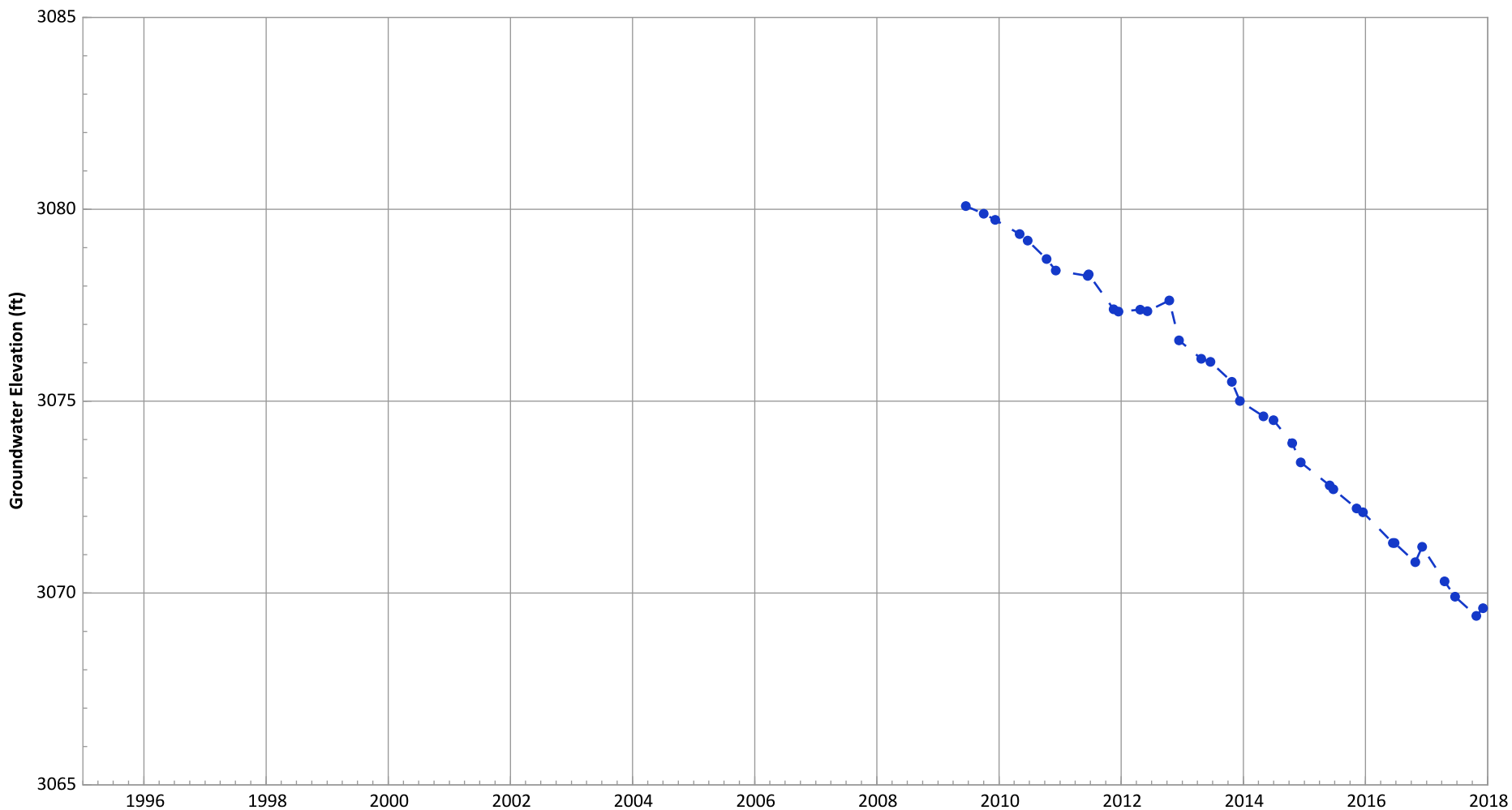
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
Data (7/2009 - 12/2017): Decreasing at 1.57 ft/yr
2015 - 2017 Data: Decreasing at 1.03 ft/yr

PTX06-1138 Hydrograph in Ogallala Aquifer
USDOE/NNSA Pantex Plant



Notes:

1. Top of screen elevation is 3094.47 ft msl.
 2. The bottom of screen elevation is 2949.47 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/22/2018

—●— Groundwater Elevation

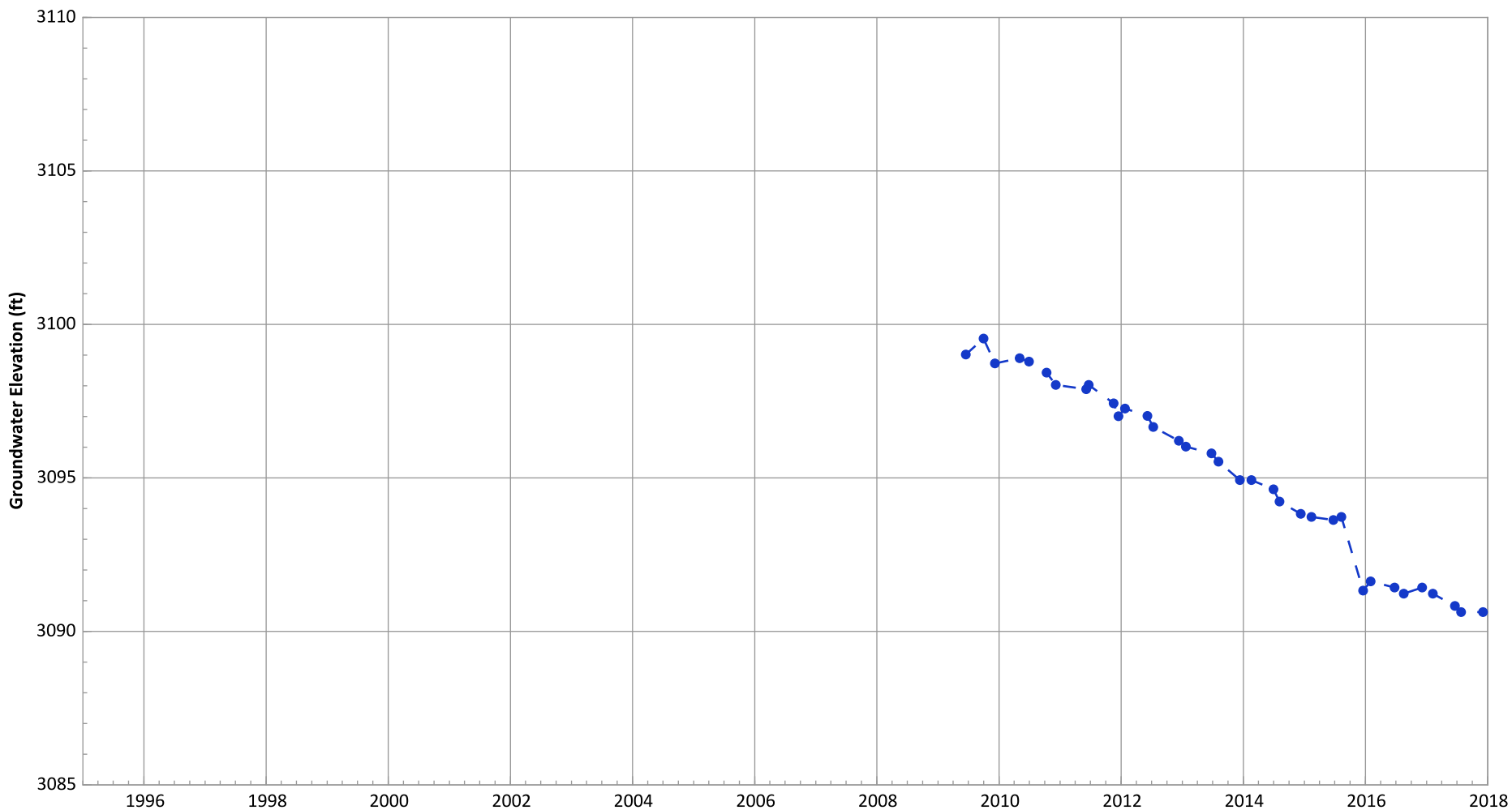
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
Data (7/2009 - 12/2017): Decreasing at 1.32 ft/yr
2015 - 2017 Data: Decreasing at 1.32 ft/yr

PTX06-1139 Hydrograph in Ogallala Aquifer
USDOE/NNSA Pantex Plant



Notes:

1. Top of screen elevation is 3129.41 ft msl.
 2. The bottom of screen elevation is 2979.41 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/22/2018

—●— Groundwater Elevation

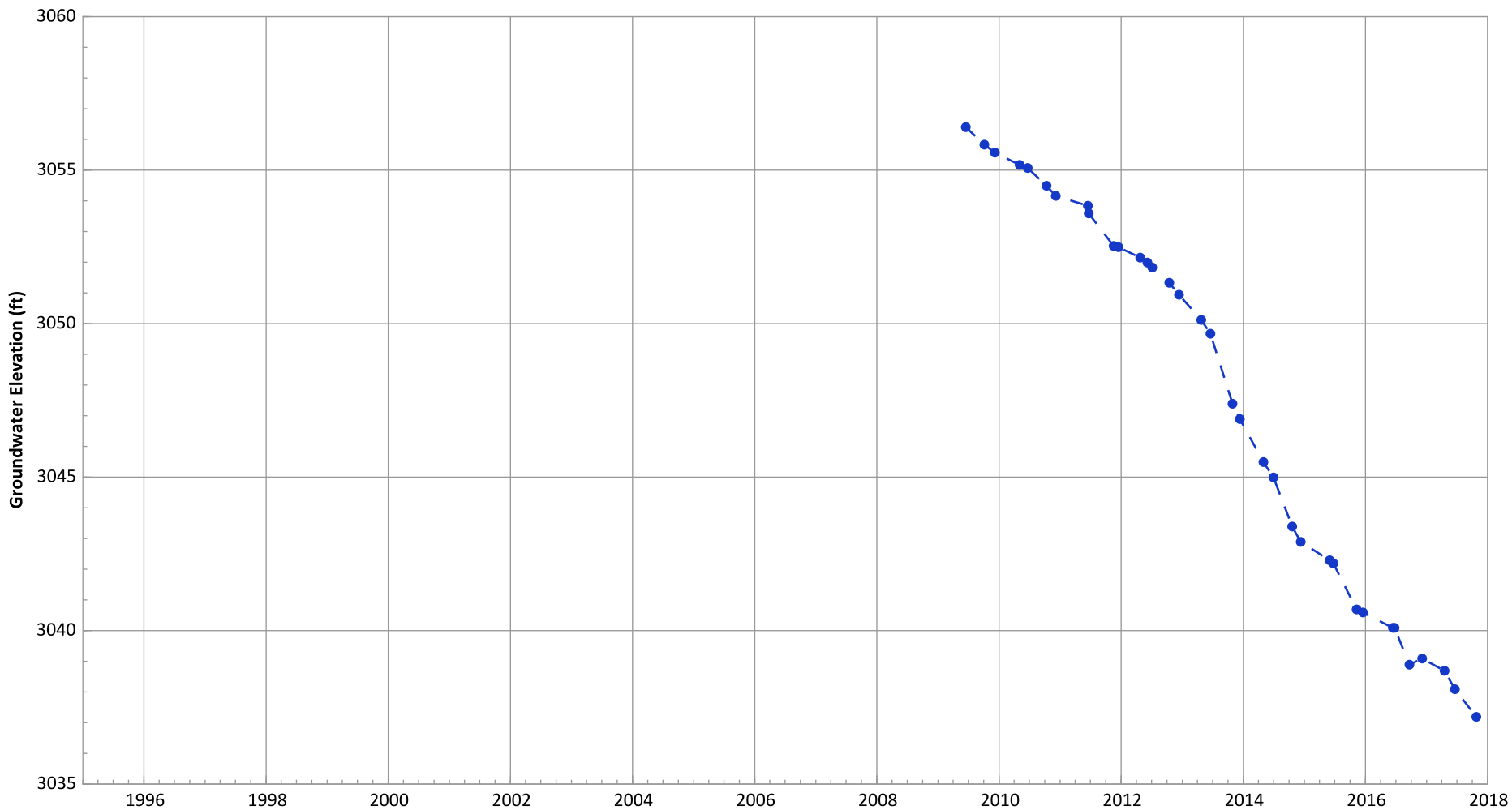
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
Data (7/2009 - 12/2017): Decreasing at 1.15 ft/yr
2015 - 2017 Data: Decreasing at 0.58 ft/yr

**PTX06-1140 Hydrograph in Ogallala Aquifer
USDOE/NNSA Pantex Plant**

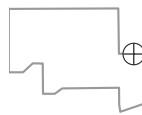


Notes:

1. Top of screen elevation is 3067.33 ft msl.
 2. The bottom of screen elevation is 2847.33 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/22/2018

—●— Groundwater Elevation

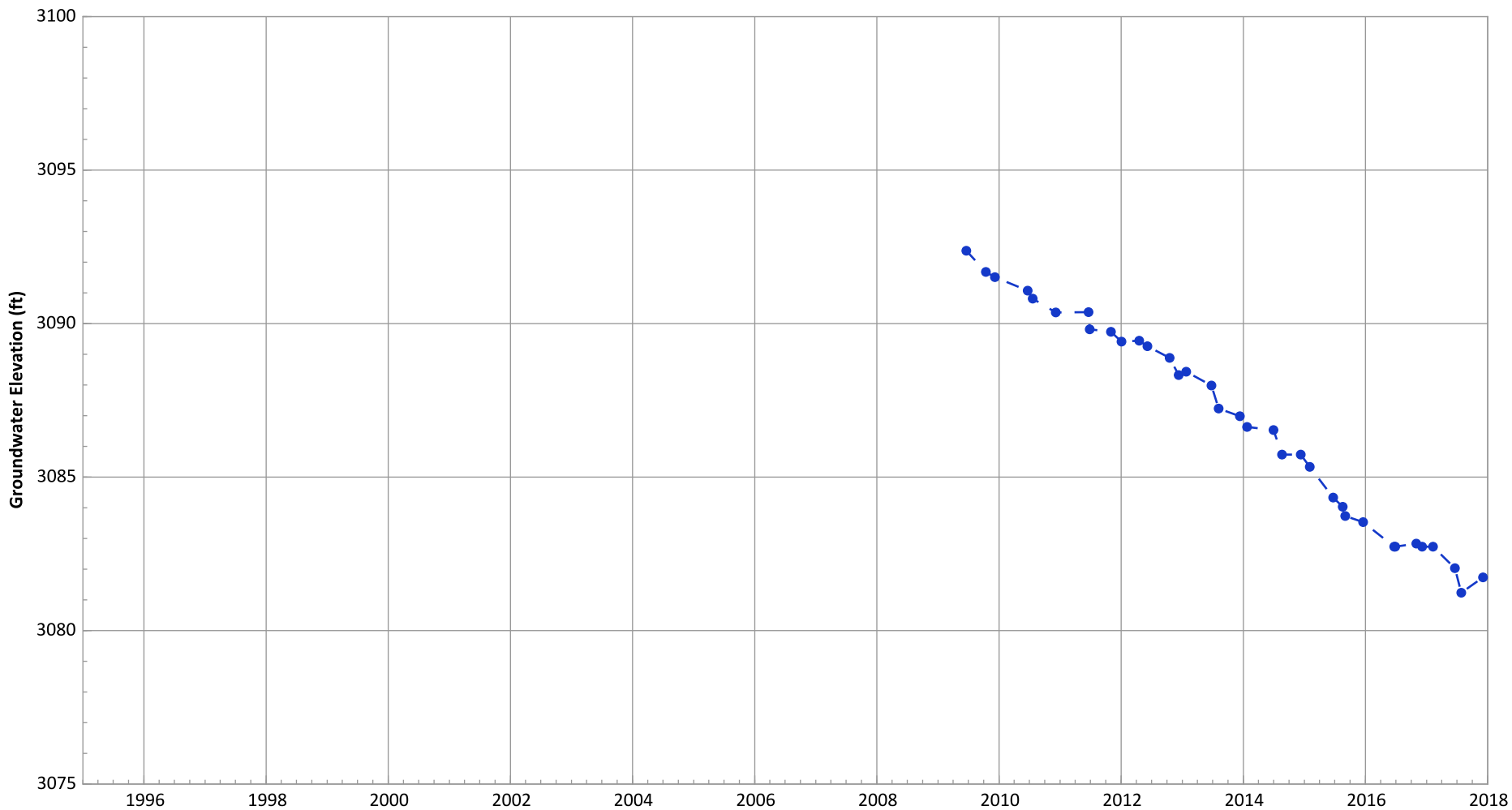
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 Data (7/2009 - 12/2017): Decreasing at 2.58 ft/yr
 2015 - 2017 Data: Decreasing at 1.92 ft/yr

**PTX06-1141 Hydrograph in Ogallala Aquifer
USDOE/NNSA Pantex Plant**

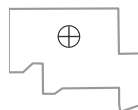


Notes:

1. Top of screen elevation is 3095.57 ft msl.
 2. The bottom of screen elevation is 2885.57 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/22/2018

—●— Groundwater Elevation

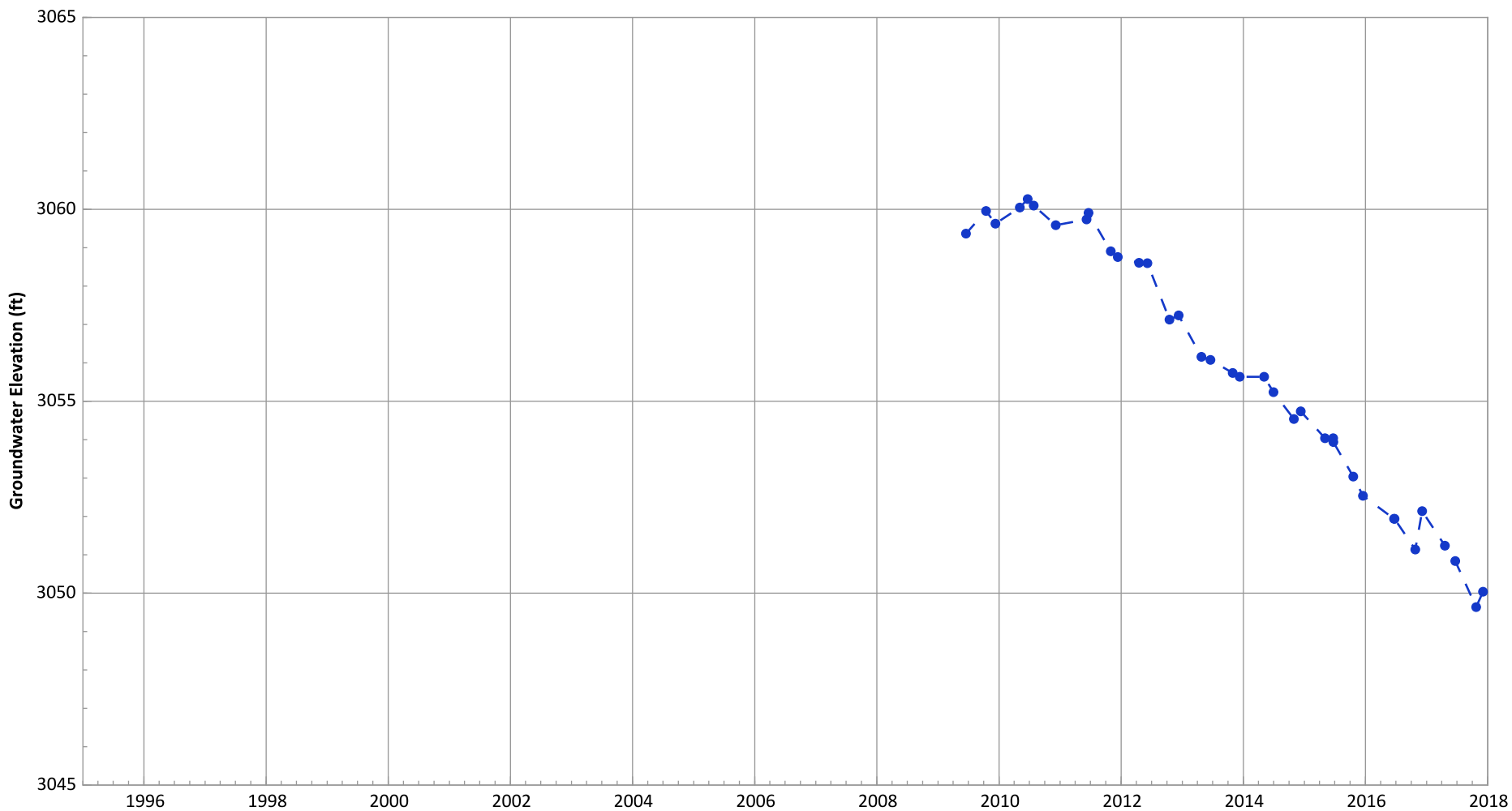
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
Data (7/2009 - 12/2017): Decreasing at 1.35 ft/yr
2015 - 2017 Data: Decreasing at 0.95 ft/yr

PTX06-1143 Hydrograph in Ogallala Aquifer
USDOE/NNSA Pantex Plant

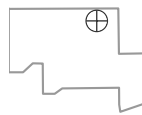


Notes:

1. Top of screen elevation is 3065.99 ft msl.
 2. The bottom of screen elevation is 2765.99 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/22/2018

—●— Groundwater Elevation

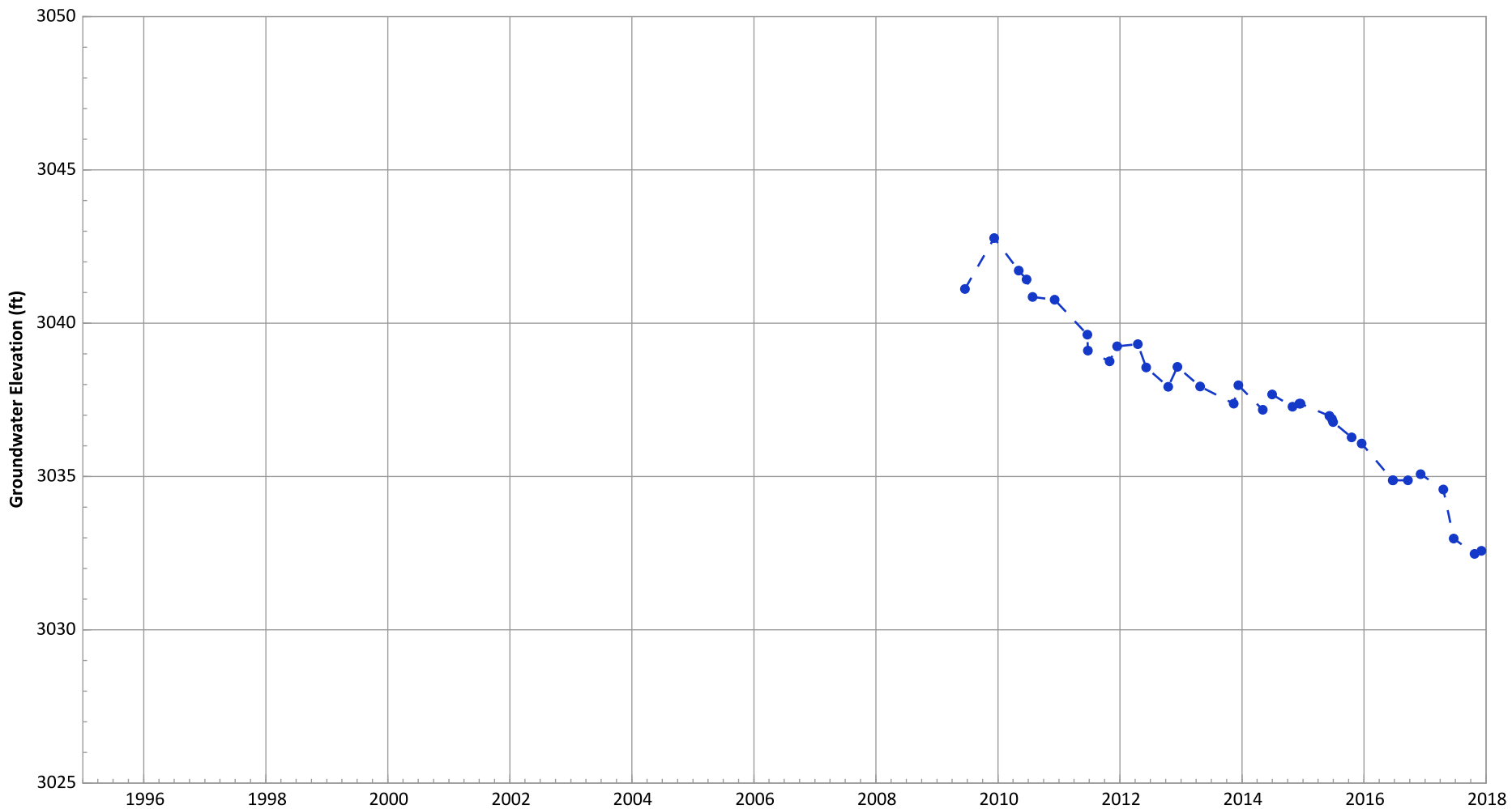
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
Data (7/2009 - 12/2017): Decreasing at 1.34 ft/yr
2015 - 2017 Data: Decreasing at 1.44 ft/yr

**PTX06-1144 Hydrograph in Ogallala Aquifer
USDOE/NNSA Pantex Plant**

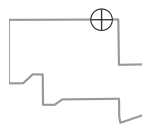


Notes:

1. Top of screen elevation is 3041.34 ft msl.
 2. The bottom of screen elevation is 2726.34 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/22/2018

—●— Groundwater Elevation

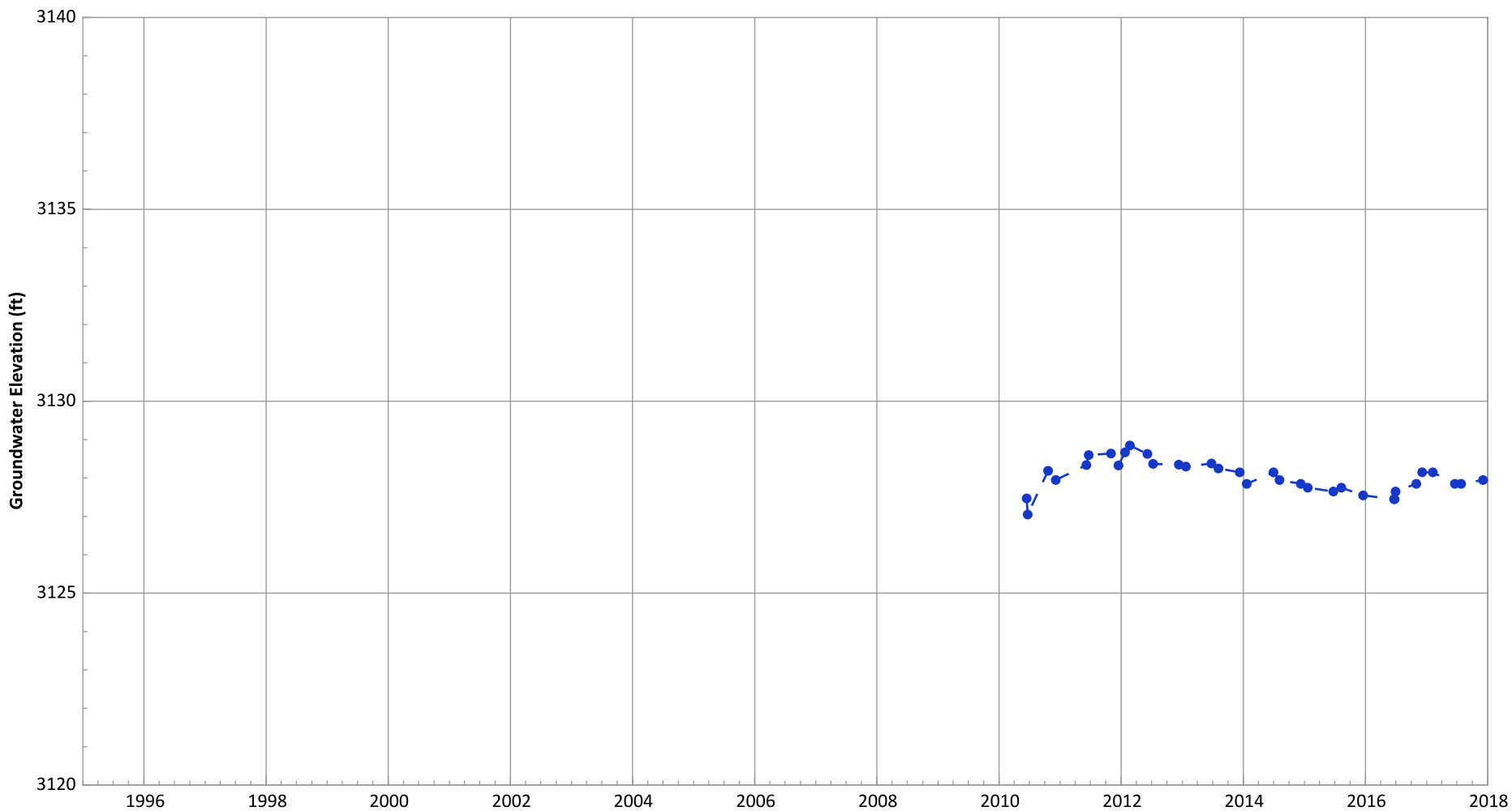
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
 Data (7/2009 - 12/2017): Decreasing at 1.02 ft/yr
 2015 - 2017 Data: Decreasing at 1.79 ft/yr

PTX06-1157 Hydrograph in Ogallala Aquifer
USDOE/NNSA Pantex Plant



Notes:

1. Top of screen elevation is 3143.59 ft msl.
 2. The bottom of screen elevation is 2998.59 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/22/2018

—●— Groundwater Elevation

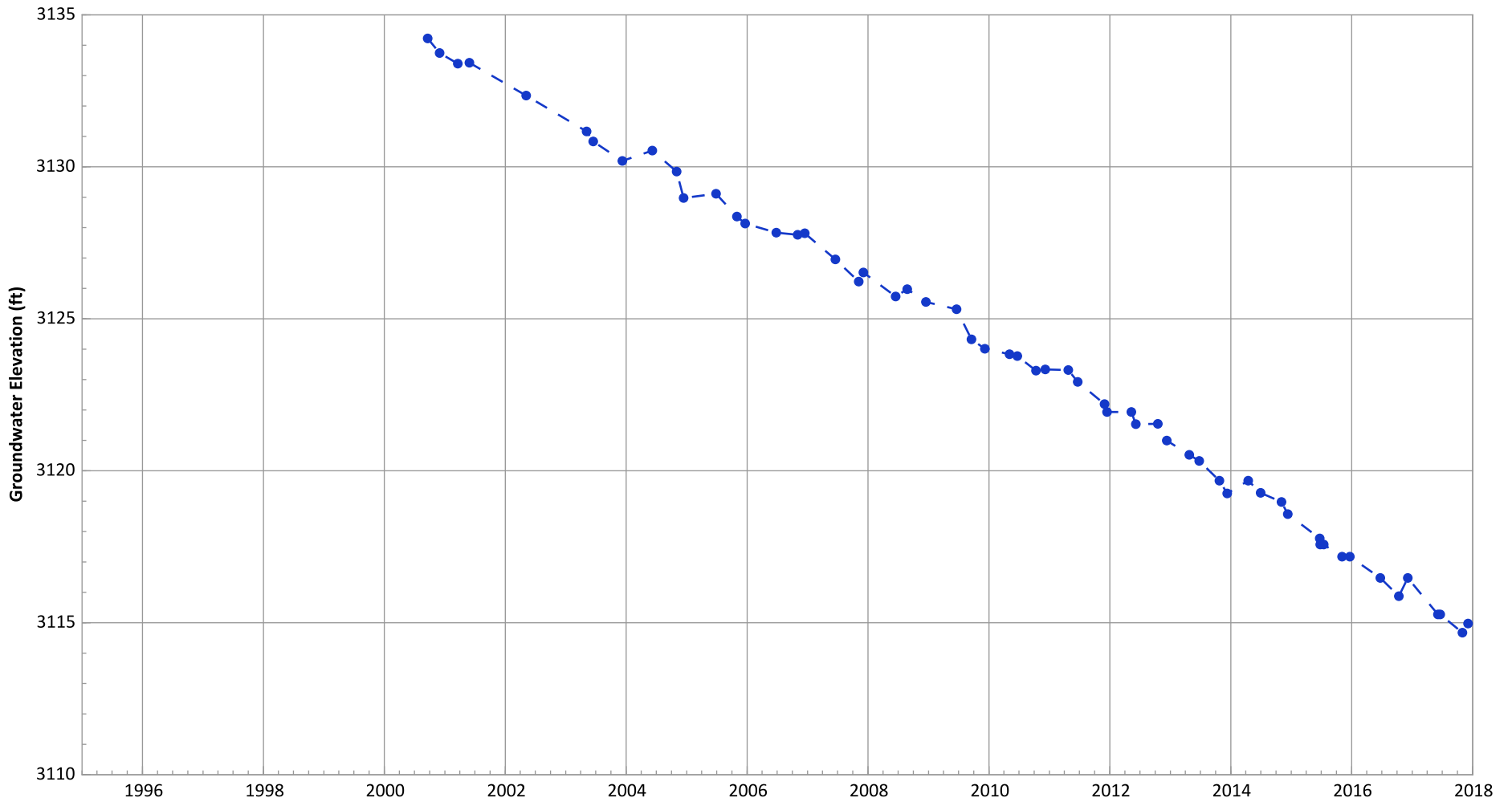
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
Data (7/2009 - 12/2017): No Trend
2015 - 2017 Data: Increasing at 0.28 ft/yr

**PTX07-1R01 Hydrograph in Ogallala Aquifer
USDOE/NNSA Pantex Plant**

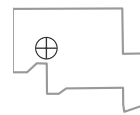


Notes:

1. Top of screen elevation is 3164.47 ft msl.
 2. The bottom of screen elevation is 2974.47 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/22/2018

—●— Groundwater Elevation

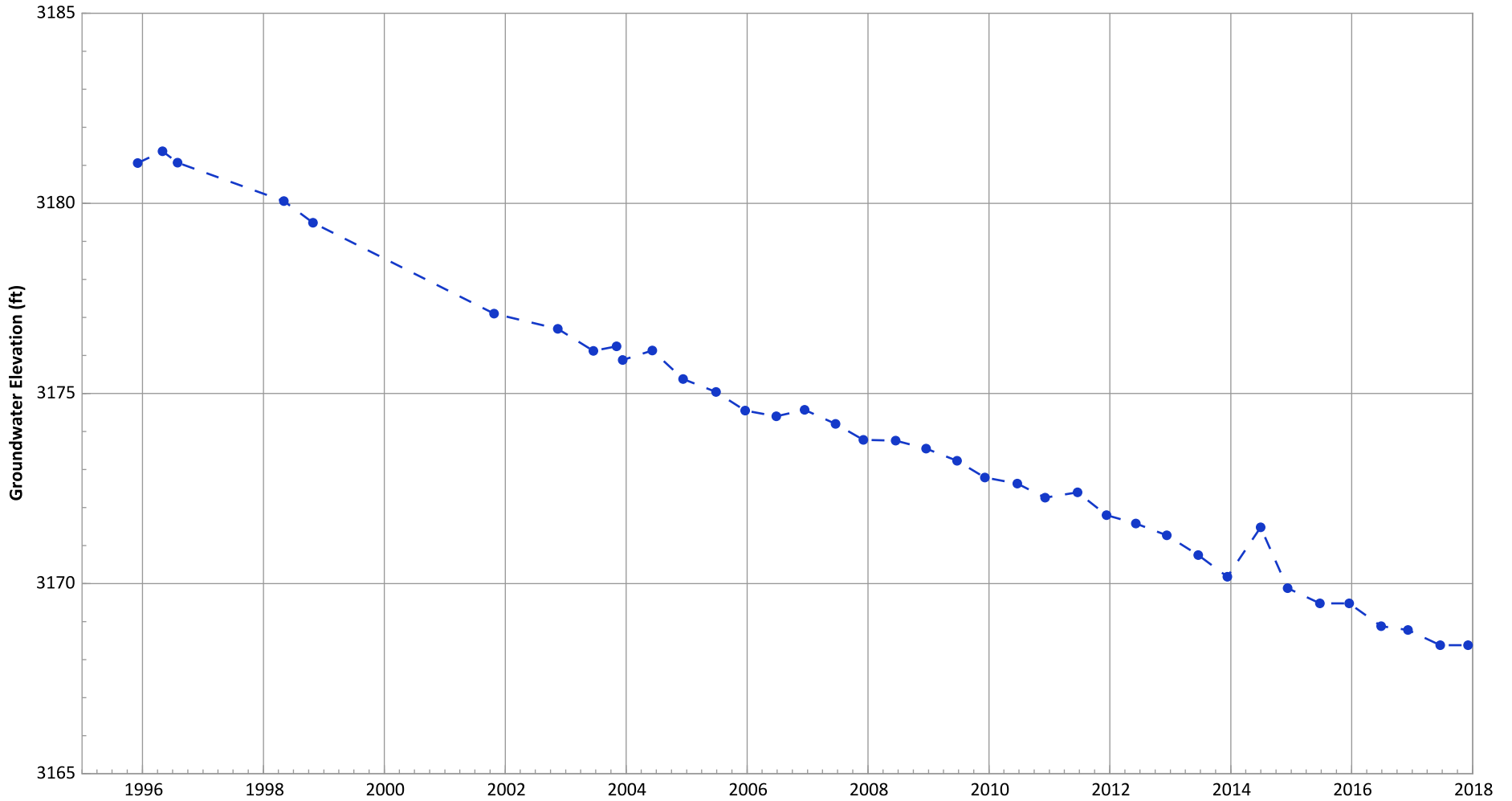
Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
Data (7/2009 - 12/2017): Decreasing at 1.21 ft/yr
2015 - 2017 Data: Decreasing at 1.21 ft/yr

PTX08-1011A Hydrograph in Ogallala Aquifer
USDOE/NNSA Pantex Plant

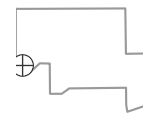


Notes:

1. Top of screen elevation is 3165.26 ft msl.
 2. The bottom of screen elevation is 3135.26 ft msl.
 3. A continuous hydrograph was produced by linear interpolation between successive discrete measurements.
Actual groundwater elevations between measurements may be different than shown.
- Analysis Date: 02/22/2018

—●— Groundwater Elevation

Well Location



Hydrograph Trend

(MAROS Linear Regression Method)
Data (7/2009 - 12/2017): Decreasing at 0.59 ft/yr
2015 - 2017 Data: Decreasing at 0.4 ft/yr

Perched Aquifer Expected Conditions Evaluation and Analyte Concentration Trends

2017 Perched Groundwater COC Trends Vs Expected Conditions
Trends Since Start of Remedial Action (2009)

Indicator Area	Well ID	LTM Objectives	Progress Report Metrics	COC Expected Condition - LTM Design	COC>GWPS	Indicator List Monitoring Frequency	Trend Since Start of Remedial Action			
							RDX	Perc	TCE	CR-6
Zone 11	1114-MW4	UM	Trend/Compare to GWPS	Long-term decreasing trend	PERC, TCE	Semi-Annual	N/A	Increasing	Decreasing	NT
North	OW-WR-38	UM, RAE	Water Level, Trend/Compare to GWPS	Long-term stabilization of concentrations	RDX	Annual	No Trend	NT	Probably Increasing	NT
Burning Ground	PTX01-1001	UM	Trend/Compare to GWPS	Stable or decreasing trend below GWPS	NONE	Semi-Annual	N/A	N/A	Decreasing	NT
Burning Ground	PTX01-1002	UM	Compare to GWPS	Below background/PQL and GWPS	NONE	Annual	NT	NT	NT	NT
Burning Ground	PTX01-1004	PS	Dry			NA	NT	NT	NT	NT
Burning Ground	PTX01-1008	UM	Compare to GWPS	Below background/PQL and GWPS	NONE	Semi-Annual	N/A	ND	ND	NT
Burning Ground	PTX01-1009	PS	Dry			NA	NT	NT	NT	NT
Miscellaneous	PTX04-1001	UM	Trend/Compare to GWPS	Stable or decreasing trend below GWPS	NONE	5 Yrs	N/A	NT	N/A	NT
Miscellaneous	PTX04-1002	UM	Trend/Compare to GWPS	Stable or decreasing trend below GWPS	NONE	Annual	Decreasing	NT	Decreasing	NT
Southeast	PTX06-1002A	UM, RAE	Water Level, Trend/Compare to GWPS	Long-term stabilization of concentrations	RDX, TNX	Semi-Annual	Decreasing	NT	No Trend	Decreasing
Southeast	PTX06-1003	UM, RAE	Water Level, Trend/Compare to GWPS	Long-term stabilization of concentrations		Annual	NT	NT	NT	NT
Southeast	PTX06-1005	UM, RAE	Water Level, Trend/Compare to GWPS	Long-term stabilization of concentrations	DNT2A, DNT4A, RDX, TNB135, TNX,	Semi-Annual	Decreasing	NT	Increasing	No Trend
Zone 11	PTX06-1006	PS	Trend/Compare to GWPS	Long-term decreasing trend	RDX, PERC, DNT4A	Annual	Decreasing	Probably Increasing	Probably Increasing	NT
Zone 11	PTX06-1007	UM	Trend/Compare to GWPS	Long-term decreasing trend	PERC, DNT4A	Annual	No Trend	No Trend	Decreasing	NT
Southeast, Zone 11	PTX06-1008	UM	Trend/Compare to GWPS	Long-term decreasing trend	DCA12	Annual	ND	N/A	Decreasing	Decreasing
Southeast	PTX06-1010	UM	Trend/Compare to GWPS	Long-term decreasing trend	CR, CR6, RDX	Semi-Annual	Decreasing	NT	Increasing	Decreasing
Southeast, Zone 11	PTX06-1011	UM	Trend/Compare to GWPS	Stable or decreasing trend below GWPS	TCE	Annual	No Trend	No Trend	No Trend	Increasing
Zone 11	PTX06-1012	PS, RAE	Trend/Compare to GWPS	Below GWPS in 2-5 years	DCA12, TCE, DCE12C,	Quarterly	NT	NT	NT	NT
Southeast	PTX06-1013	RAE	Water Level, Trend/Compare to GWPS	Long-term stabilization of concentrations	RDX	Semi-Annual	Decreasing	NT	ND	ND
Southeast	PTX06-1014	RAE	Water Level, Trend/Compare to GWPS	Long-term stabilization of concentrations	RDX, TNX, DNT2A, DNT4A, DNT24	Annual	No Trend	NT	N/A	N/A
Southeast	PTX06-1015	RAE	Water Level, Trend/Compare to GWPS	Long-term stabilization of concentrations	RDX, TNX, DNT4A	Semi-Annual	Decreasing	NT	Decreasing	Increasing
Southeast	PTX06-1023	RAE	Water Level, Trend/Compare to GWPS	Long-term stabilization of concentrations	NONE	Semi-Annual	Decreasing	NT	ND	N/A
Southeast	PTX06-1030	RAE	Trend/Compare to GWPS	Long-term stabilization of concentrations	RDX, TNX, DNT2A, DNT4A	Semi-Annual	NT	NT	NT	NT
Southeast	PTX06-1031	RAE	Trend/Compare to GWPS	Long-term stabilization of concentrations	RDX, TNX, DNT4A, CR	Semi-Annual	No Trend	NT	No Trend	Decreasing
Southeast	PTX06-1034	RAE	Trend/Compare to GWPS	Long-term stabilization of concentrations	RDX, TNX, DNT4A	Semi-Annual	Increasing	NT	No Trend	Decreasing

2017 Perched Groundwater COC Trends Vs Expected Conditions
Trends Since Start of Remedial Action (2009)

Indicator Area	Well ID	LTM Objectives	Progress Report Metrics	COC Expected Condition - LTM Design	COC>GWPS	Indicator List Monitoring Frequency	Trend Since Start of Remedial Action			
							RDX	Perc	TCE	CR-6
Zone 11	PTX06-1035	PS	Trend/Compare to GWPS	Stable or decreasing trend below GWPS	PERC	Semi-Annual	ND	Increasing	Increasing	NT
Southeast	PTX06-1036	PS	Trend/Compare to GWPS	Stable or decreasing trend below GWPS	NONE	Annual	NT	NT	NT	NT
Southeast	PTX06-1037	RAE	Trend/Compare to GWPS	Below GWPS in 2-5 years	NONE	Quarterly	NT	NT	NT	NT
Southeast	PTX06-1038	RAE	Water Level, Trend/Compare to GWPS	Long-term stabilization of concentrations	TNT, RDX, DNX, TNX, DNT2A,	Semi-Annual	Decreasing	NT	ND	Decreasing
Southeast	PTX06-1039A	RAE	Water Level, Trend/Compare to GWPS	Long-term stabilization of concentrations	TNT, RDX, DNX, TNX, DNT2A,	Semi-Annual	Decreasing	NT	ND	Decreasing
Southeast	PTX06-1040	RAE	Water Level, Trend/Compare to GWPS	Long-term stabilization of concentrations	RDX, DNX, TNX, DNT2A, DNT4A,	Semi-Annual	No Trend	NT	ND	Decreasing
Southeast	PTX06-1041	RAE	Water Level, Trend/Compare to GWPS	Long-term stabilization of concentrations	TNT, RDX, DNX, TNX, DNT2A,	Semi-Annual	Probably Increasing	NT	ND	Decreasing
Southeast	PTX06-1042	RAE	Water Level, Trend/Compare to GWPS	Long-term stabilization of concentrations	RDX, MNX, TNX, DNT4A	Semi-Annual	Decreasing	NT	ND	Decreasing
Southeast	PTX06-1045	RAE	Trend/Compare to GWPS	Below GWPS in 2-5 years		Quarterly	NT	NT	NT	NT
Southeast	PTX06-1046	RAE	Water Level, Trend/Compare to GWPS	Long-term stabilization of concentrations	RDX, TNX, DNT2A, DNT4A	Semi-Annual	Increasing	NT	No Trend	No Trend
Southeast	PTX06-1047A	RAE	Water Level, Trend/Compare to GWPS	Long-term stabilization of concentrations	RDX, TNX, DNT4A	Semi-Annual	Decreasing	NT	No Trend	N/A
North	PTX06-1048A	PS, RAE	Trend/Compare to GWPS	Stable or decreasing trend below GWPS	NONE	Annual	ND	NT	Increasing	NT
Miscellaneous	PTX06-1049	PS, UM	Compare to GWPS	Below background/PQL and GWPS	DNT4A, RDX	Annual	Increasing	NT	Increasing	NT
North	PTX06-1050	UM, RAE	Water Level, Trend/Compare to GWPS	Long-term stabilization of concentrations	RDX, TNX, DNT4A	Semi-Annual	Decreasing	NT	ND	NT
Southeast	PTX06-1051	PS	Dry			NA	NT	NT	NT	NT
Southeast	PTX06-1052	RAE	Water Level, Trend/Compare to GWPS	Long-term stabilization of concentrations	CR,CR-6	Semi-Annual	Decreasing	NT	Decreasing	Decreasing
Southeast, Zone 11	PTX06-1053	PS, UM	Trend/Compare to GWPS	Stable or decreasing trend below GWPS	NONE	Semi-Annual	No Trend	ND	ND	N/A
Miscellaneous	PTX06-1055	PS	Dry			NA	NT	NT	NT	NT
Southeast	PTX06-1069	PS	Trend/Compare to GWPS	Stable or decreasing trend below GWPS		Annual	NT	NT	NT	NT
Miscellaneous	PTX06-1071	UM	Compare to GWPS	Below background/PQL and GWPS		5 Yrs	NT	NT	NT	NT
Zone 11	PTX06-1073A	PS	Water Level, Trend/Compare to GWPS	Long-term stabilization of concentrations		NA	NT	NT	NT	NT
Zone 11	PTX06-1077A	UM	Trend/Compare to GWPS	Stable or decreasing trend below GWPS	TCE	Annual	Decreasing	Probably Increasing	Decreasing	NT
Miscellaneous	PTX06-1080	UM	Compare to GWPS	Below background/PQL and GWPS		5 Yrs	NT	NT	NT	NT
Miscellaneous	PTX06-1081	UM	Trend/Compare to GWPS	Stable or decreasing trend below GWPS	NONE	Annual	N/A	NT	No Trend	NT
Miscellaneous	PTX06-1082	UM	Compare to GWPS	Below background/PQL and GWPS		5 Yrs	NT	NT	NT	NT

2017 Perched Groundwater COC Trends Vs Expected Conditions
Trends Since Start of Remedial Action (2009)

Indicator Area	Well ID	LTM Objectives	Progress Report Metrics	COC Expected Condition - LTM Design	COC>GWPS	Indicator List Monitoring Frequency	Trend Since Start of Remedial Action			
							RDX	Perc	TCE	CR-6
Miscellaneous	PTX06-1083	UM	Trend/Compare to GWPS	Stable or decreasing trend below GWPS		5 Yrs	NT	NT	NT	NT
Miscellaneous	PTX06-1085	UM	Compare to GWPS	Below background/PQL and GWPS	NONE	Annual	ND	NT	ND	NT
Miscellaneous	PTX06-1086	UM	Compare to GWPS	Below background/PQL and GWPS	NONE	Annual	ND	NT	ND	NT
Southeast	PTX06-1088	UM, RAE	Water Level, Trend/Compare to GWPS	Long-term stabilization of concentrations	TCE, RDX, DNT24, DNT4A, PCE	Semi-Annual	Decreasing	NT	Decreasing	Decreasing
Southeast	PTX06-1089	PS	Dry			NA	NT	NT	NT	NT
Southeast	PTX06-1090	PS	Dry			NA	NT	NT	NT	NT
Southeast	PTX06-1091	PS	Dry			NA	NT	NT	NT	NT
Southeast	PTX06-1093	PS	Dry			NA	NT	NT	NT	NT
Southeast	PTX06-1094	PS	Dry			NA	NT	NT	NT	NT
Southeast	PTX06-1095A	UM, RAE	Water Level, Trend/Compare to GWPS	Long-term stabilization of concentrations	RDX, TNX, DNT4A, DNT2A, TCE, CR,	Semi-Annual	Increasing	NT	Increasing	No Trend
Miscellaneous	PTX06-1096A	PS, UM	Dry	Remain dry		NA	NT	NT	NT	NT
Miscellaneous	PTX06-1097	PS, UM	Dry	Remain dry		NA	NT	NT	NT	NT
Southeast	PTX06-1098	RAE	Water Level, Trend/Compare to GWPS	Long-term stabilization of concentrations	NONE	Semi-Annual	NT	NT	NT	NT
Southeast	PTX06-1100	RAE	Water Level, Trend/Compare to GWPS	Long-term stabilization of concentrations	NONE	Annual	NT	NT	NT	NT
Southeast	PTX06-1101	RAE	Water Level, Trend/Compare to GWPS	Long-term stabilization of concentrations	RDX, TCE	Annual	NT	NT	NT	NT
Southeast	PTX06-1102	RAE	Water Level, Trend/Compare to GWPS	Long-term stabilization of concentrations		Annual	NT	NT	NT	NT
Southeast	PTX06-1103	RAE	Water Level, Trend/Compare to GWPS	Long-term stabilization of concentrations		Semi-Annual	NT	NT	NT	NT
Southeast	PTX06-1118	RAE	Trend/Compare to GWPS	Long-term stabilization of concentrations		Annual	NT	NT	NT	NT
Southeast	PTX06-1119	PS	Dry	Remain dry		NA	NT	NT	NT	NT
Southeast	PTX06-1120	PS	Water Level, Trend/Compare to GWPS	Long-term stabilization of concentrations	RDX, TNX, DNT2A, DNT4A	NA	Decreasing	NT	Decreasing	Probably Increasing
Southeast	PTX06-1121	PS	Water Level, Trend/Compare to GWPS	Long-term stabilization of concentrations		NA	NT	NT	NT	NT
Southeast	PTX06-1122	PS	Dry	Remain dry		NA	NT	NT	NT	NT
Southeast	PTX06-1123	RAE	Trend/Compare to GWPS	Below GWPS in 2-5 years	TNX	Quarterly	NT	NT	NT	NT
Southeast	PTX06-1124	PS	Dry	Remain dry		NA	NT	NT	NT	NT
Southeast	PTX06-1125	PS	Dry	Remain dry		NA	NT	NT	NT	NT

2017 Perched Groundwater COC Trends Vs Expected Conditions
Trends Since Start of Remedial Action (2009)

Indicator Area	Well ID	LTM Objectives	Progress Report Metrics	COC Expected Condition - LTM Design	COC>GWPS	Indicator List Monitoring Frequency	Trend Since Start of Remedial Action			
							RDX	Perc	TCE	CR-6
Zone 11	PTX06-1126	PS, UM	Trend/Compare to GWPS	Long-term decreasing trend	TCE, PERC, DIOXANE14,	Semi-Annual	Increasing	Decreasing	Decreasing	Decreasing
Zone 11	PTX06-1127	PS, UM	Trend/Compare to GWPS	Long-term decreasing trend	TCE, PERC, DIOXANE14,	Semi-Annual	Increasing	Decreasing	No Trend	Decreasing
Southeast	PTX06-1130	RAE	Water Level, Trend/Compare to GWPS	Long-term stabilization of concentrations	RDX, TNX, DNT2A, DNT4A, CR	Semi-Annual	NT	NT	NT	NT
Miscellaneous	PTX06-1131	UM	Compare to GWPS	Below background/PQL and GWPS	NONE	Semi-Annual	N/A	NT	ND	NT
Southeast	PTX06-1133A	PS	Water Level, Trend/Compare to GWPS	Long-term stabilization of concentrations		Semi-Annual	N/A	NT	ND	N/A
Zone 11	PTX06-1134	PS	Trend/Compare to GWPS	Long-term decreasing trend	DNT4A	Semi-Annual	N/A	Increasing	Increasing	NT
Southeast	PTX06-1135	PS	Trend/Compare to GWPS	Long-term decreasing trend	NONE	Semi-Annual	NT	NT	NT	NT
North	PTX06-1136	PS	Trend/Compare to GWPS	Long-term decreasing trend	NONE	Semi-Annual	NT	NT	NT	NT
Southeast	PTX06-1146	PS	Trend/Compare to GWPS	Long-term decreasing trend	RDX, TNX, DNT4A	Semi-Annual	Decreasing	NT	ND	Increasing
Southeast	PTX06-1147	PS	Trend/Compare to GWPS	Long-term decreasing trend	RDX, MNX, DNX, TNX, DNT4A	Semi-Annual	No Trend	NT	Decreasing	Decreasing
Zone 11	PTX06-1148	PS, RAE	Trend/Compare to GWPS	Below GWPS in 5 -10 years	PERC	Semi-Annual	NT	NT	NT	NT
Zone 11	PTX06-1149	PS	Trend/Compare to GWPS	Below GWPS in 5 -10 years	NONE	Semi-Annual	NT	NT	NT	NT
Zone 11	PTX06-1150	PS, RAE	Trend/Compare to GWPS	Below GWPS in 5 -10 years	PERC	Semi-Annual	NT	NT	NT	NT
Zone 11	PTX06-1151	PS	Trend/Compare to GWPS	Long-term decreasing trend	TCE, DCA12, RDX, PERC	Semi-Annual	Decreasing	Decreasing	Decreasing	NT
Southeast	PTX06-1153	RAE	Trend/Compare to GWPS	Below GWPS in 2-5 years	RDX, MNX, TNX, CR, CR-6, DNT4A,	Quarterly	NT	NT	NT	NT
Southeast	PTX06-1154	RAE	Trend/Compare to GWPS	Below GWPS in 2-5 years	TNX	Quarterly	NT	NT	NT	NT
Zone 11	PTX06-1155	RAE	Trend/Compare to GWPS	Below GWPS in 2-5 years	TCE, DCA12, DCE12C,	Quarterly	NT	NT	NT	NT
Zone 11	PTX06-1156	RAE	Trend/Compare to GWPS	Below GWPS in 2-5 years	NONE	Quarterly	NT	NT	NT	NT
Southeast	PTX06-1158	PS	Water Level, Trend/Compare to GWPS	Long-term decreasing trend		Semi-Annual	NT	NT	NT	NT
Zone 11	PTX06-1159	PS, RAE	Trend/Compare to GWPS	Long-term decreasing trend	TCE, DCA12, PERC, DNT4A	Semi-Annual	N/A	Increasing	Increasing	NT
Zone 11	PTX06-1160	PS	Trend/Compare to GWPS	Long-term decreasing trend	NONE	Semi-Annual	N/A	N/A	Increasing	NT
Southeast	PTX06-1166	PS	Trend/Compare to GWPS	Long-term decreasing trend	RDX, TCE	Semi-Annual	Decreasing	NT	Decreasing	Increasing
Southeast	PTX06-1167	RAE	Trend/Compare to GWPS	Long-term decreasing trend		Semi-Annual	NT	NT	NT	NT
North	PTX07-1O01	PS, UM, RAE	Trend/Compare to GWPS	Long-term decreasing trend	RDX	Semi-Annual	NT	NT	NT	NT
North	PTX07-1O02	PS, UM, RAE	Trend/Compare to GWPS	Long-term decreasing trend	NONE	Semi-Annual	NT	NT	NT	NT

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Indicator Area	Well ID	LTM Objectives	Progress Report Metrics	COC Expected Condition - LTM Design	COC>GWPS	Indicator List Monitoring Frequency	Trend Since Start of Remedial Action			
							RDX	Perc	TCE	CR-6
North	PTX07-1O03	PS, UM, RAE	Trend/Compare to GWPS	Long-term decreasing trend	RDX, TNX	Annual	Increasing	NT	Probably Increasing	NT
North	PTX07-1O06	PS, UM, RAE	Trend/Compare to GWPS	Stable or decreasing trend below GWPS	NONE	Annual	NT	NT	NT	NT
Zone 11	PTX07-1P02	UM	Trend/Compare to GWPS	Stable or decreasing trend below GWPS	NONE	Semi-Annual	Increasing	N/A	ND	NT
Zone 11	PTX07-1P05	UM	Trend/Compare to GWPS	Stable or decreasing trend below GWPS	RDX	Annual	NT	NT	NT	NT
Miscellaneous	PTX07-1Q01	UM	Compare to GWPS	Below background/PQL and GWPS	NONE	Annual	ND	NT	ND	NT
Miscellaneous	PTX07-1Q02	UM	Compare to GWPS	Below background/PQL and GWPS	NONE	Annual	ND	NT	ND	NT
Miscellaneous	PTX07-1Q03	UM	Compare to GWPS	Below background/PQL and GWPS	NONE	Annual	ND	NT	ND	NT
Miscellaneous	PTX07-1R03	UM	Compare to GWPS	Below background/PQL and GWPS		5 Yrs	NT	NT	NT	NT
Zone 11	PTX08-1001	UM, RAE	Water Level, Trend/Compare to GWPS	Long-term stabilization of concentrations	RDX, TNX	Annual	No Trend	Decreasing	ND	NT
Southeast	PTX08-1002	UM, RAE	Water Level, Trend/Compare to GWPS	Long-term stabilization of concentrations	RDX, MNX, TNX, DNT2A, DNT4A	Semi-Annual	Decreasing	NT	ND	N/A
Zone 11	PTX08-1003	PS	Trend/Compare to GWPS	Stable or decreasing trend below GWPS	NONE	Annual	Increasing	Decreasing	Decreasing	NT
Zone 11	PTX08-1005	UM	Trend/Compare to GWPS	Long-term decreasing trend	TCE, DNT4A	Semi-Annual	Decreasing	Decreasing	Decreasing	Decreasing
Zone 11	PTX08-1006	UM	Trend/Compare to GWPS	Long-term decreasing trend	RDX, TNX, PERC, DNT4A, TCE, PCE,	Semi-Annual	Decreasing	Decreasing	Increasing	NT
Southeast, Zone 11	PTX08-1007	UM	Trend/Compare to GWPS	Long-term decreasing trend	TCE, RDX	Annual	No Trend	Decreasing	Decreasing	Decreasing
Southeast, Zone 11	PTX08-1008	UM, RAE	Water Level, Trend/Compare to GWPS	Long-term stabilization of concentrations	CR, CR-6	Semi-Annual	N/A	Increasing	N/A	Decreasing
Southeast	PTX08-1009	UM, RAE	Water Level, Trend/Compare to GWPS	Long-term stabilization of concentrations	NONE	Semi-Annual	Decreasing	NT	N/A	Increasing
Miscellaneous	PTX08-1010	UM	Trend/Compare to GWPS	Stable or decreasing trend below GWPS		5 Yrs	NT	NT	NT	NT
Southeast, Zone 11	PTX10-1014	UM	Trend/Compare to GWPS	Long-term decreasing trend	TCE	Annual	Decreasing	No Trend	Decreasing	Decreasing

NT - Trends were not calculated for this COC in this well. Well is dry or the COC was not sampled during 2015, based on SAP.

N/A - Trending could not be performed, either due to a) <4 samples in dataset or b) <4 Detections in dataset

ND - all samples were non-detect

UM = Uncertainty management

PS = Plume stability

RAE = Response action effectiveness

NS* = well not sampled due to either dry conditions or insufficient water for sampling

Perched Aquifer Well 2017 COC Trends

Table with columns: Well, COC, First_Date, Last_Date, Num_S, Num_AD, AI/ND_AD, CV_AD, MKS_AD, Conf_AD, Trend_AD, NumS_L4S, NumD_L4S, AI/ND_L4S, CV_L4S, MKS_L4S, Conf_L4S, Trend_L4S, NumS_SSRA, NumD_SSRA, AI/ND_SSRA, CV_SSRA, MKS_SSRA, Conf_SSRA, Trend_SSRA. Rows include data for wells like PTX06-1002, PTX06-1002A, PTX06-1002B, etc., with various chemical oxygen concentrations (COC) and trends.

Well	COC	First_Date	Last_Date	NumS_AD	NumD_AD	AI/ND	CV_AD	MKS_AD	Conf_AD	Trend_AD	NumS_L4S	NumD_L4S	AI/ND_L4S	CV_L4S	MKS_L4S	Conf_L4S	Trend_L4S	NumS_SSRA	NumD_SSRA	AI/ND_SSRA	CV_SSRA	MKS_SSRA	Conf_SSRA	Trend_SSRA
PTX06-1046	DCE12C	10/24/2001	11/29/2017	33	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	17	0	Yes	0	0.00	0	All Non-Detect
PTX06-1046	DCA12	9/11/2000	11/29/2017	33	31	No	0.575822252	-305.00	1	Decreasing	4	3	No	0	0.00	0	N/A (<4 Detections in Dataset)	17	16	No	0.41320694	-114.00	1	Decreasing
PTX06-1046	TCLME	9/11/2000	11/29/2017	32	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	17	0	Yes	0	0.00	0	All Non-Detect
PTX06-1046	B	1/5/2000	11/29/2017	38	38	No	0.383248949	601.00	1	Increasing	4	4	No	0.115983897	-6.00	1	Decreasing	17	17	No	0.172284921	82.00	1	Increasing
PTX06-1046	CR	1/5/2000	11/29/2017	38	29	No	0.860821365	375.00	1	Increasing	4	4	No	0.31834291	0.00	0.375	Stable	17	11	No	0.647107441	72.00	0.999	Increasing
PTX06-1046	CR-6	9/11/2000	11/29/2017	37	16	No	0.498775158	217.00	0.998	Increasing	4	4	No	0.33546233	-2.00	1	Decreasing	17	10	No	0.418150991	9.00	0.627	No Trend
PTX06-1047A	RDX	9/11/2000	3/1/2017	32	24	No	1.105802441	137.00	0.9865	Increasing	4	4	No	0.214253177	2.00	0.625	No Trend	16	16	No	0.861884599	-69.00	1	Decreasing
PTX06-1047A	HMX	9/11/2000	3/1/2017	32	17	No	0.947511692	-85.00	0	Decreasing	4	1	No	0	0.00	0	N/A (<4 Detections in Dataset)	16	12	No	0.871506299	-78.00	1	Decreasing
PTX06-1047A	TNT	9/11/2000	3/1/2017	32	1	No	0	0.00	0	N/A (<4 Detections in Dataset)	4	0	Yes	0	0.00	0	All Non-Detect	16	1	No	0	0.00	0	N/A (<4 Detections in Dataset)
PTX06-1047A	DNT24	9/11/2000	3/1/2017	31	1	No	0	0.00	0	N/A (<4 Detections in Dataset)	4	1	No	0	0.00	0	N/A (<4 Detections in Dataset)	15	1	No	0	0.00	0	N/A (<4 Detections in Dataset)
PTX06-1047A	DNT26	9/11/2000	3/1/2017	31	2	No	0	0.00	0	N/A (<4 Detections in Dataset)	4	1	No	0	0.00	0	N/A (<4 Detections in Dataset)	15	2	No	0	0.00	0	N/A (<4 Detections in Dataset)
PTX06-1047A	DNT2A	9/11/2000	3/1/2017	31	1	No	0	0.00	0	N/A (<4 Detections in Dataset)	4	1	No	0	0.00	0	N/A (<4 Detections in Dataset)	15	1	No	0	0.00	0	N/A (<4 Detections in Dataset)
PTX06-1047A	DNT4A	9/11/2000	3/1/2017	31	23	No	1.041562501	50.00	0.8145	No Trend	4	4	No	0.416819131	-2.00	1	Decreasing	15	15	No	0.860678646	-35.00	1	Decreasing
PTX06-1047A	TNB135	9/11/2000	3/1/2017	31	1	No	0	0.00	0	N/A (<4 Detections in Dataset)	4	0	Yes	0	0.00	0	All Non-Detect	15	0	Yes	0	0.00	0	All Non-Detect
PTX06-1047A	DNB13	9/11/2000	3/1/2017	29	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	15	0	Yes	0	0.00	0	All Non-Detect
PTX06-1047A	PCE	9/11/2000	3/1/2017	31	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	16	0	Yes	0	0.00	0	All Non-Detect
PTX06-1047A	TCE	9/11/2000	3/1/2017	32	13	No	0.898491777	-191.00	1	Decreasing	4	0	Yes	0	0.00	0	All Non-Detect	16	7	No	0.136917297	22.00	0.825	No Trend
PTX06-1047A	DCE12C	10/24/2001	3/1/2017	28	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	16	0	Yes	0	0.00	0	All Non-Detect
PTX06-1047A	DCA12	9/11/2000	3/1/2017	30	13	No	0.714729218	-147.00	1	Decreasing	4	0	Yes	0	0.00	0	All Non-Detect	16	10	No	0.836076023	-81.00	1	Decreasing
PTX06-1047A	TCLME	9/11/2000	3/1/2017	30	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	16	0	Yes	0	0.00	0	All Non-Detect
PTX06-1047A	B	9/11/2000	3/1/2017	32	32	No	0.257824548	75.00	0.894	No Trend	4	4	No	0.095501161	-4.00	1	Decreasing	16	16	No	0.274640275	-78.00	1	Decreasing
PTX06-1047A	CR	9/11/2000	3/1/2017	32	17	No	0.480130692	263.00	1	Increasing	4	1	No	0	0.00	0	N/A (<4 Detections in Dataset)	16	3	No	0	0.00	0	N/A (<4 Detections in Dataset)
PTX06-1047A	CR-6	9/11/2000	3/1/2017	32	6	No	0.510736762	8.00	0.545	No Trend	4	2	No	0	0.00	0	N/A (<4 Detections in Dataset)	16	3	No	0	0.00	0	N/A (<4 Detections in Dataset)
PTX06-1048A	RDX	9/5/2000	4/25/2017	26	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	8	0	Yes	0	0.00	0	All Non-Detect
PTX06-1048A	HMX	9/5/2000	4/25/2017	26	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	8	0	Yes	0	0.00	0	All Non-Detect
PTX06-1048A	TNT	9/5/2000	4/25/2017	26	1	No	0	0.00	0	N/A (<4 Detections in Dataset)	4	0	Yes	0	0.00	0	All Non-Detect	8	0	Yes	0	0.00	0	All Non-Detect
PTX06-1048A	DNT24	9/5/2000	4/25/2017	26	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	8	0	Yes	0	0.00	0	All Non-Detect
PTX06-1048A	DNT26	9/5/2000	4/25/2017	26	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	8	0	Yes	0	0.00	0	All Non-Detect
PTX06-1048A	DNT2A	9/5/2000	4/25/2017	26	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	8	0	Yes	0	0.00	0	All Non-Detect
PTX06-1048A	DNT4A	9/5/2000	4/25/2017	26	14	No	0.354083237	-127.00	0	Decreasing	4	4	No	0.150746638	-4.00	1	Decreasing	8	7	No	0.15991753	-24.00	1	Decreasing
PTX06-1048A	TNB135	9/5/2000	4/25/2017	25	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	8	0	Yes	0	0.00	0	All Non-Detect
PTX06-1048A	DNB13	9/5/2000	4/25/2017	22	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	8	0	Yes	0	0.00	0	All Non-Detect
PTX06-1048A	PCE	9/5/2000	4/25/2017	22	4	No	0.879750081	-9.00	1	Decreasing	4	0	Yes	0	0.00	0	All Non-Detect	8	0	Yes	0	0.00	0	All Non-Detect
PTX06-1048A	TCE	9/5/2000	4/25/2017	26	25	No	0.588315746	-159.00	1	Decreasing	4	4	No	0.085379437	0.00	0.375	Stable	8	7	No	0.631431148	16.00	0.969	Increasing
PTX06-1048A	DCE12C	5/21/2002	4/25/2017	22	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	8	0	Yes	0	0.00	0	All Non-Detect
PTX06-1048A	DCA12	9/5/2000	4/25/2017	22	9	No	0.791032753	-2.00	1	Decreasing	4	2	No	0	0.00	0	N/A (<4 Detections in Dataset)	8	3	No	0	0.00	0	N/A (<4 Detections in Dataset)
PTX06-1048A	TCLME	9/5/2000	4/25/2017	21	5	No	0.240944457	62.00	0	Increasing	4	0	Yes	0	0.00	0	All Non-Detect	8	1	No	0	0.00	0	N/A (<4 Detections in Dataset)
PTX06-1048A	B	9/5/2000	4/25/2017	26	26	No	0.117672671	106.00	0.9905	Increasing	4	4	No	0.036111773	2.00	0.625	No Trend	8	8	No	0.044166532	-4.00	1	Decreasing
PTX06-1049	RDX	9/7/2000	11/2/2017	26	14	No	0.930523635	146.00	0.9995	Increasing	4	4	No	0.025853706	-2.00	1	Decreasing	16	14	No	0.626514145	41.00	0.9645	Increasing
PTX06-1049	HMX	9/7/2000	11/2/2017	26	1	No	0	0.00	0	N/A (<4 Detections in Dataset)	4	0	Yes	0	0.00	0	All Non-Detect	16	1	No	0	0.00	0	N/A (<4 Detections in Dataset)
PTX06-1049	TNT	9/7/2000	11/2/2017	26	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	16	0	Yes	0	0.00	0	All Non-Detect
PTX06-1049	DNT24	9/7/2000	11/2/2017	26	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	16	0	Yes	0	0.00	0	All Non-Detect
PTX06-1049	DNT26	9/7/2000	11/2/2017	26	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	16	0	Yes	0	0.00	0	All Non-Detect
PTX06-1049	DNT4A	9/7/2000	11/2/2017	26	15	No	0.928645	122.00	0.9865	Increasing	4	4	No	0.053664026	-6.00	1	Decreasing	16	15	No	0.50281946	-15.00	1	Decreasing
PTX06-1049	TNB135	9/7/2000	11/2/2017	26	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	16	0	Yes	0	0.00	0	All Non-Detect
PTX06-1049	DNB13	9/7/2000	11/2/2017	24	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	16	0	Yes	0	0.00	0	All Non-Detect
PTX06-1049	PCE	9/7/2000	11/2/2017	25	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	16	0	Yes	0	0.00	0	All Non-Detect
PTX06-1049	TCE	9/7/2000	11/2/2017	27	18	No	0.79355678	33.00	0.746	No Trend	4	4	No	0.184931246	-6.00	1	Decreasing	17	17	No	0.865613395	42.00	0.954	Increasing
PTX06-1049	DCE12C	8/12/2002	11/2/2017	22	1	No	0	0.00	0	N/A (<4 Detections in Dataset)	4	0	Yes	0	0.00	0	All Non-Detect	16	1	No	0	0.00	0	N/A (<4 Detections in Dataset)
PTX06-1049	DCA12	9/7/2000	11/2/2017	24	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	16	0	Yes	0	0.00	0	All Non-Detect
PTX06-1049	TCLME	9/7/2000	11/2/2017	24	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	16	0	Yes	0	0.00	0	

Well	COC	First_Date	Last_Date	NumS_AD	NumD_AD	AIIND_AD	CV_AD	MKS_AD	Conf_AD	Trend_AD	NumS_L4S	NumD_L4S	AIIND_L4S	CV_L4S	MKS_L4S	Conf_L4S	Trend_L4S	NumS_SSRA	NumD_SSRA	AIIND_SSRA	CV_SSRA	MKS_SSRA	Conf_SSRA	Trend_SSRA
PTX06-1053	DNB13	9/12/2000	11/1/2017	34	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	17	0	Yes	0	0.00	0	All Non-Detect
PTX06-1053	DIOXANE14	7/26/2005	11/1/2017	22	1	No	0	0.00	0	N/A (<4 Detections in Dataset)	4	1	No	0	0.00	0	N/A (<4 Detections in Dataset)	17	1	No	0	0.00	0	N/A (<4 Detections in Dataset)
PTX06-1053	PCE	9/12/2000	11/1/2017	33	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	17	0	Yes	0	0.00	0	All Non-Detect
PTX06-1053	TCE	9/12/2000	11/1/2017	37	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	17	0	Yes	0	0.00	0	All Non-Detect
PTX06-1053	DCE12C	5/9/2001	11/1/2017	34	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	17	0	Yes	0	0.00	0	All Non-Detect
PTX06-1053	DCA12	9/12/2000	11/1/2017	33	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	17	0	Yes	0	0.00	0	All Non-Detect
PTX06-1053	TCLEME	9/12/2000	11/1/2017	32	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	17	0	Yes	0	0.00	0	All Non-Detect
PTX06-1053	PERC	9/12/2000	11/1/2017	36	4	No	0.068061626	114.00	0.938	Probably Increasing	4	0	Yes	0	0.00	0	All Non-Detect	16	0	Yes	0	0.00	0	All Non-Detect
PTX06-1053	B	9/12/2000	11/1/2017	37	37	No	0.101981744	355.00	1	Increasing	4	4	No	0.027422374	-5.00	1	Decreasing	17	17	No	0.075966382	25.00	0.836	No Trend
PTX06-1053	CR	9/12/2000	11/1/2017	38	15	No	0.562155014	337.00	1	Increasing	4	0	Yes	0	0.00	0	All Non-Detect	18	2	No	0	0.00	0	N/A (<4 Detections in Dataset)
PTX06-1053	CR-6	9/12/2000	11/1/2017	38	4	No	0.523609516	25.00	0.618	No Trend	4	1	No	0	0.00	0	N/A (<4 Detections in Dataset)	18	3	No	0	0.00	0	N/A (<4 Detections in Dataset)
PTX06-1077A	RDX	2/20/2002	7/19/2017	14	8	No	0.51786599	-4.00	1	Decreasing	4	1	No	0.31765678	-4.00	1	Decreasing	9	8	No	0.339201379	-14.00	1	Decreasing
PTX06-1077A	HMX	2/20/2002	7/19/2017	14	1	No	0	0.00	0	N/A (<4 Detections in Dataset)	4	1	No	0	0.00	0	N/A (<4 Detections in Dataset)	9	1	No	0	0.00	0	N/A (<4 Detections in Dataset)
PTX06-1077A	TNT	2/20/2002	7/19/2017	14	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	9	0	Yes	0	0.00	0	All Non-Detect
PTX06-1077A	DNT24	2/20/2002	7/19/2017	14	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	9	0	Yes	0	0.00	0	All Non-Detect
PTX06-1077A	DNT26	2/20/2002	7/19/2017	14	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	9	0	Yes	0	0.00	0	All Non-Detect
PTX06-1077A	DNT2A	2/20/2002	7/19/2017	14	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	9	0	Yes	0	0.00	0	All Non-Detect
PTX06-1077A	DNT4A	2/20/2002	7/19/2017	14	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	9	0	Yes	0	0.00	0	All Non-Detect
PTX06-1077A	TNB135	2/20/2002	7/19/2017	13	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	9	0	Yes	0	0.00	0	All Non-Detect
PTX06-1077A	B	2/20/2002	7/19/2017	13	13	No	0.126693919	33.00	0.975	Increasing	4	4	No	0.084364118	-9.00	1	Decreasing	9	9	No	0.121203943	14.00	0.91	Probably Increasing
PTX06-1077A	DIOXANE14	11/4/2002	7/19/2017	13	2	No	0	0.00	0	N/A (<4 Detections in Dataset)	4	0	No	0	0.00	0	N/A (<4 Detections in Dataset)	9	2	No	0	0.00	0	N/A (<4 Detections in Dataset)
PTX06-1077A	PCE	2/20/2002	7/19/2017	16	5	No	0.878887288	-13.00	1	Decreasing	4	0	Yes	0	0.00	0	All Non-Detect	9	2	No	0	0.00	0	N/A (<4 Detections in Dataset)
PTX06-1077A	TCE	2/20/2002	7/19/2017	18	16	No	0.599081195	-52.00	1	Decreasing	4	4	No	0.138551413	-2.00	1	Decreasing	9	8	No	0.667049426	-18.00	1	Decreasing
PTX06-1077A	DCE12C	2/20/2002	7/19/2017	18	16	No	0.732901073	-65.00	1	Decreasing	4	4	No	0.364687034	-4.00	1	Decreasing	9	8	No	1.020480569	-24.00	1	Decreasing
PTX06-1077A	DCA12	2/20/2002	7/19/2017	16	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	9	0	Yes	0	0.00	0	All Non-Detect
PTX06-1077A	TCLEME	2/20/2002	7/19/2017	15	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	9	0	Yes	0	0.00	0	All Non-Detect
PTX06-1077A	PERC	2/20/2002	7/19/2017	16	10	No	0.219943369	-10.00	1	Decreasing	4	1	No	0	0.00	0	N/A (<4 Detections in Dataset)	9	5	No	0.121203943	14.00	0.91	Probably Increasing
PTX06-1077A	B	2/20/2002	7/19/2017	13	13	No	0.126693919	33.00	0.975	Increasing	4	4	No	0.084364118	-9.00	1	Decreasing	9	9	No	0.097117351	5.00	0.656	No Trend
PTX06-1081	RDX	7/18/2002	7/12/2017	24	1	No	0	0.00	0	N/A (<4 Detections in Dataset)	4	1	No	0	0.00	0	N/A (<4 Detections in Dataset)	8	1	No	0	0.00	0	N/A (<4 Detections in Dataset)
PTX06-1081	HMX	7/18/2002	7/12/2017	24	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	8	0	Yes	0	0.00	0	All Non-Detect
PTX06-1081	TNT	7/18/2002	7/12/2017	24	1	No	0	0.00	0	N/A (<4 Detections in Dataset)	4	0	Yes	0	0.00	0	All Non-Detect	8	0	Yes	0	0.00	0	All Non-Detect
PTX06-1081	DNT24	7/18/2002	7/12/2017	24	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	8	0	Yes	0	0.00	0	All Non-Detect
PTX06-1081	DNT26	7/18/2002	7/12/2017	24	1	No	0	0.00	0	N/A (<4 Detections in Dataset)	4	0	Yes	0	0.00	0	All Non-Detect	8	0	Yes	0	0.00	0	All Non-Detect
PTX06-1081	DNT2A	7/18/2002	7/12/2017	24	1	No	0	0.00	0	N/A (<4 Detections in Dataset)	4	0	Yes	0	0.00	0	All Non-Detect	8	0	Yes	0	0.00	0	All Non-Detect
PTX06-1081	DNT4A	7/18/2002	7/12/2017	24	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	8	0	Yes	0	0.00	0	All Non-Detect
PTX06-1081	TNB135	7/18/2002	7/12/2017	24	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	8	0	Yes	0	0.00	0	All Non-Detect
PTX06-1081	DNB13	7/18/2002	7/12/2017	21	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	8	0	Yes	0	0.00	0	All Non-Detect
PTX06-1081	PCE	7/18/2002	7/12/2017	20	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	8	0	Yes	0	0.00	0	All Non-Detect
PTX06-1081	TCE	7/18/2002	7/12/2017	24	22	No	0.273772775	16.00	0.644	No Trend	4	4	No	0.409593658	2.00	0.625	No Trend	8	8	No	0.43326545	5.00	0.683	No Trend
PTX06-1081	DCE12C	7/18/2002	7/12/2017	24	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	8	0	Yes	0	0.00	0	All Non-Detect
PTX06-1081	DCA12	7/18/2002	7/12/2017	20	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	8	0	Yes	0	0.00	0	All Non-Detect
PTX06-1081	TCLEME	7/18/2002	7/12/2017	19	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	8	0	Yes	0	0.00	0	All Non-Detect
PTX06-1081	B	7/18/2002	7/12/2017	21	21	No	0.123293411	30.00	0.807	No Trend	4	4	No	0.15387222	4.00	0.833	No Trend	8	8	No	0.134339164	8.00	0.801	No Trend
PTX06-1085	RDX	5/27/2003	10/3/2017	14	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	10	0	Yes	0	0.00	0	All Non-Detect
PTX06-1085	HMX	5/27/2003	10/3/2017	14	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	10	0	Yes	0	0.00	0	All Non-Detect
PTX06-1085	TNT	5/27/2003	10/3/2017	14	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	10	0	Yes	0	0.00	0	All Non-Detect
PTX06-1085	DNT24	5/27/2003	10/3/2017	14	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	10	0	Yes	0	0.00	0	All Non-Detect
PTX06-1085	DNT26	5/27/2003	10/3/2017	14	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	10	0	Yes	0	0.00	0	All Non-Detect
PTX06-1085	DNT2A	5/27/2003	10/3/2017	14	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	10	0	Yes	0	0.00	0	All Non-Detect
PTX06-1085	DNT4A	5/27/2003	10/3/2017	14	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	10	0	Yes	0	0.00	0	All Non-Detect
PTX06-1085	TNB135	5/27/2003	10/3/2017	14	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	10	0	Yes	0	0.00	0	All Non-Detect
PTX06-1085	DNB13	5/27/2003	10/3/2017	14	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	10	0	Yes	0	0.00	0	All Non-Detect

Well	COC	First_Date	Last_Date	NumS_AD	NumD_AD	AI/ND_AD	CV_AD	MKS_AD	Conf_AD	Trend_AD	NumS_L4S	NumD_L4S	AI/ND_L4S	CV_L4S	MKS_L4S	Conf_L4S	Trend_L4S	NumS_SSRA	NumD_SSRA	AI/ND_SSRA	CV_SSRA	MKS_SSRA	Conf_SSRA	Trend_SSRA
PTX06-1095A	TNT	5/9/2005	8/7/2017	32	18	No	0.620298179	208.00	1	Increasing	4	4	No	0.289230958	6.00	0.958	Increasing	17	17	No	0.305685773	36.00	0.924	Probably Increasing
PTX06-1095A	DNT24	5/9/2005	8/7/2017	32	1	No	0	0.00	0	N/A (<4 Detections in Dataset)	4	0	Yes	0	0.00	0	All Non-Detect	17	0	Yes	0	0.00	0	All Non-Detect
PTX06-1095A	DNT26	5/9/2005	8/7/2017	32	5	No	0.52681915	-102.00	0	Decreasing	4	1	No	0	0.00	0	N/A (<4 Detections in Dataset)	17	5	No	0.654087387	19.00	1	Decreasing
PTX06-1095A	DNT2A	5/9/2005	8/7/2017	32	17	No	1.498819584	223.00	1	Increasing	4	4	No	0.272442111	-6.00	1	Decreasing	17	16	No	1.02853806	108.00	1	Increasing
PTX06-1095A	DNT4A	5/9/2005	8/7/2017	32	18	No	1.076351431	210.00	1	Increasing	4	4	No	0.257618748	-4.00	1	Decreasing	17	17	No	0.860546415	6.00	0.58	No Trend
PTX06-1095A	TNB135	5/9/2005	8/7/2017	32	24	No	1.392331648	295.00	1	Increasing	4	4	No	0.229911521	2.00	0.625	No Trend	17	17	No	0.586485485	72.00	0.999	Increasing
PTX06-1095A	DNB13	5/9/2005	8/7/2017	26	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	17	0	Yes	0	0.00	0	All Non-Detect
PTX06-1095A	DIOXANE14	9/13/2005	2/27/2017	7	2	No	0	0.00	0	N/A (<4 Detections in Dataset)	4	2	No	0	0.00	0	N/A (<4 Detections in Dataset)	2	2	No	0	0.00	0	N/A (<4 Samples in Dataset)
PTX06-1095A	PCE	5/9/2005	8/7/2017	26	11	No	1.10342455	164.00	1	Increasing	4	4	No	0.285932189	6.00	0.958	Increasing	17	11	No	0.904311241	83.00	1	Increasing
PTX06-1095A	TCE	5/9/2005	8/7/2017	31	20	No	1.490387833	274.00	1	Increasing	4	4	No	0.25791992	6.00	0.958	Increasing	17	17	No	1.01757641	52.00	0.983	Increasing
PTX06-1095A	DCE12C	5/9/2005	8/7/2017	31	1	No	0	0.00	0	N/A (<4 Detections in Dataset)	4	1	No	0	0.00	0	N/A (<4 Detections in Dataset)	17	1	No	0	0.00	0	N/A (<4 Detections in Dataset)
PTX06-1095A	DCA12	5/9/2005	8/7/2017	24	13	No	0.242756216	-57.00	0	Decreasing	4	3	No	0	0.00	0	N/A (<4 Detections in Dataset)	17	13	No	0.288966549	-50.00	1	Decreasing
PTX06-1095A	TCLME	5/9/2005	8/7/2017	24	11	No	0.411293698	103.00	0.9945	Increasing	4	4	No	0.576100041	6.00	0.958	Increasing	17	11	No	0.460753613	75.00	0.999	Increasing
PTX06-1095A	B	5/9/2005	8/7/2017	30	30	No	0.281088521	-70.00	1	Decreasing	4	4	No	0.539777296	-6.00	1	Decreasing	17	17	No	0.323454661	-19.00	1	Decreasing
PTX06-1095A	CR	5/9/2005	8/7/2017	30	17	No	1.778842992	247.00	1	Increasing	4	4	No	0.428006758	-4.00	1	Decreasing	17	13	No	1.279523699	38.00	0.936	Probably Increasing
PTX06-1095A	CR-6	9/13/2005	8/7/2017	29	11	No	2.252310831	170.00	0.999	Increasing	4	4	No	0.189190995	6.00	0.958	Increasing	17	11	No	1.821229211	9.00	0.627	No Trend
PTX06-1095A	MN	5/9/2005	8/7/2017	29	29	No	0.821858143	14.00	0.595	No Trend	4	4	No	0.58150947	0.00	0.375	Stable	17	17	No	0.832333266	-56.00	1	Decreasing
PTX06-1095A	NI	5/9/2005	8/7/2017	29	27	No	1.876580978	258.00	1	Increasing	4	4	No	0.701451092	-6.00	1	Decreasing	17	17	No	1.365734784	62.00	0.995	Increasing
PTX06-1095A	MO	5/9/2005	8/7/2017	28	28	No	1.290506364	-34.00	1	Decreasing	4	4	No	0.06239972	2.00	0.625	No Trend	17	17	No	0.190104421	74.00	0.999	Increasing
PTX06-1120	RDX	10/13/2010	6/1/2017	14	14	No	0.183684867	-4.00	1	Decreasing	4	4	No	0.136420791	2.00	0.625	No Trend	14	14	No	0.183684867	-4.00	1	Decreasing
PTX06-1120	HMX	10/13/2010	6/1/2017	14	14	No	0.216770176	17.00	0.806	No Trend	4	4	No	0.186428738	0.00	0.375	Stable	14	14	No	0.216770176	17.00	0.806	No Trend
PTX06-1120	TNT	10/13/2010	6/1/2017	14	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	14	0	Yes	0	0.00	0	All Non-Detect
PTX06-1120	DNT24	10/13/2010	6/1/2017	14	1	No	0	0.00	0	N/A (<4 Detections in Dataset)	4	1	No	0	0.00	0	N/A (<4 Detections in Dataset)	14	1	No	0	0.00	0	N/A (<4 Detections in Dataset)
PTX06-1120	DNT26	10/13/2010	6/1/2017	14	8	No	0.190741778	-6.00	1	Decreasing	4	0	Yes	0	0.00	0	All Non-Detect	14	8	No	0.190741778	-6.00	1	Decreasing
PTX06-1120	DNT2A	10/13/2010	6/1/2017	14	14	No	0.25293202	-7.00	1	Decreasing	4	4	No	0.158425199	-6.00	1	Decreasing	14	14	No	0.25293202	-7.00	1	Decreasing
PTX06-1120	DNT4A	10/13/2010	6/1/2017	14	14	No	0.324229937	-3.00	1	Decreasing	4	4	No	0.135247735	-2.00	1	Decreasing	14	14	No	0.324229937	-3.00	1	Decreasing
PTX06-1120	TNB135	10/13/2010	6/1/2017	14	8	No	1.474271767	-26.00	1	Decreasing	4	3	No	0	0.00	0	N/A (<4 Detections in Dataset)	14	8	No	1.474271767	-26.00	1	Decreasing
PTX06-1120	DNB13	10/13/2010	6/1/2017	14	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	14	0	Yes	0	0.00	0	All Non-Detect
PTX06-1120	PCE	10/13/2010	6/1/2017	14	4	No	0.098070082	28.00	0.929	Probably Increasing	4	0	Yes	0	0.00	0	All Non-Detect	14	4	No	0.098070082	28.00	0.929	Probably Increasing
PTX06-1120	TCE	10/13/2010	6/1/2017	14	14	No	0.359322252	-83.00	1	Decreasing	4	4	No	0.041911644	-5.00	1	Decreasing	14	14	No	0.359322252	-83.00	1	Decreasing
PTX06-1120	DCE12C	10/13/2010	6/1/2017	14	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	14	0	Yes	0	0.00	0	All Non-Detect
PTX06-1120	DCA12	10/13/2010	6/1/2017	14	14	No	0.116739395	6.00	0.6055	No Trend	4	4	No	0.036316593	0.00	0.375	Stable	14	14	No	0.116739395	6.00	0.6055	No Trend
PTX06-1120	TCLME	10/13/2010	6/1/2017	14	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	14	0	Yes	0	0.00	0	All Non-Detect
PTX06-1120	B	10/13/2010	6/1/2017	14	14	No	0.066779754	3.00	0.543	No Trend	4	4	No	0.044654845	2.00	0.625	No Trend	14	14	No	0.066779754	3.00	0.543	No Trend
PTX06-1120	CR	10/13/2010	6/1/2017	14	14	No	0.914939796	56.00	0.999	Increasing	4	4	No	0.680212502	-2.00	1	Decreasing	14	14	No	0.914939796	56.00	0.999	Increasing
PTX06-1120	CR-6	10/13/2010	6/1/2017	14	11	No	0.171376876	27.00	0.921	Probably Increasing	4	4	No	0.450356789	13.00	1	Stable	14	11	No	0.171376876	27.00	0.921	Probably Increasing
PTX06-1120	MN	10/13/2010	6/1/2017	14	14	No	0.613170392	29.00	0.937	Probably Increasing	4	4	No	0.348331363	0.00	0.375	Stable	14	14	No	0.613170392	29.00	0.937	Probably Increasing
PTX06-1120	NI	10/13/2010	6/1/2017	14	14	No	2.454529539	-21.00	1	Decreasing	4	4	No	0.33241866	-2.00	1	Decreasing	14	14	No	2.454529539	-21.00	1	Decreasing
PTX06-1120	MO	10/13/2010	6/1/2017	14	14	No	0.326955841	27.00	0.921	Probably Increasing	4	4	No	0.374852983	-2.00	1	Decreasing	14	14	No	0.326955841	27.00	0.921	Probably Increasing
PTX06-1126	RDX	2/7/2008	11/7/2017	25	19	No	4.449702551	92.00	0.984	Increasing	4	4	No	1.794422504	6.00	0.958	Increasing	18	18	No	3.80280566	61.00	0.989	Increasing
PTX06-1126	HMX	2/7/2008	11/7/2017	25	5	No	0.59047318	-45.00	1	Decreasing	4	4	No	0.555256807	6.00	0.958	Increasing	18	5	No	0.699742889	5.00	0.559	No Trend
PTX06-1126	TNT	2/7/2008	11/7/2017	25	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	18	0	Yes	0	0.00	0	All Non-Detect
PTX06-1126	DNT24	2/7/2008	11/7/2017	25	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	18	0	Yes	0	0.00	0	All Non-Detect
PTX06-1126	DNT26	2/7/2008	11/7/2017	25	3	No	0	0.00	0	N/A (<4 Detections in Dataset)	4	1	No	0	0.00	0	N/A (<4 Detections in Dataset)	18	3	No	0	0.00	0	N/A (<4 Detections in Dataset)
PTX06-1126	DNT2A	2/7/2008	11/7/2017	25	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	18	0	Yes	0	0.00	0	All Non-Detect
PTX06-1126	DNT4A	2/7/2008	11/7/2017	25	23	No	0.937181448	201.00	1	Increasing	4	0	No	0.562336971	6.00	0.958	Increasing	18	16	No	0.788781441	114.00	1	Increasing
PTX06-1126	TNB135	2/7/2008	11/7/2017	25	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	18	0	Yes	0	0.00	0	All Non-Detect
PTX06-1126	DNB13	2/7/2008	11/7/2017	25	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	18	0	Yes	0	0.00	0	All Non-Detect
PTX06-1126	DIOXANE14	2/14/2008	11/7/2017	24	24	No	0.813781953	93.00	0.9895	Increasing	4	4	No	0.176603623	-4.00	1	Decreasing	18	18	No	0.711641496			

Well	COC	First_Date	Last_Date	NumS_AD	NumD_AD	AIIND_AD	CV_AD	MKS_AD	Conf_AD	Trend_AD	NumS_L4S	NumD_L4S	AIIND_L4S	CV_L4S	MKS_L4S	Conf_L4S	Trend_L4S	NumS_SSRA	NumD_SSRA	AIIND_SSRA	CV_SSRA	MKS_SSRA	Conf_SSRA	Trend_SSRA
PTX06-1133A	HMX	12/15/2011	10/30/2017	8	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	8	0	Yes	0	0.00	0	All Non-Detect
PTX06-1133A	TNT	12/15/2011	10/30/2017	8	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	8	0	Yes	0	0.00	0	All Non-Detect
PTX06-1133A	DNT24	12/15/2011	10/30/2017	8	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	8	0	Yes	0	0.00	0	All Non-Detect
PTX06-1133A	DNT26	12/15/2011	10/30/2017	8	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	8	0	Yes	0	0.00	0	All Non-Detect
PTX06-1133A	DNT2A	12/15/2011	10/30/2017	8	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	8	0	Yes	0	0.00	0	All Non-Detect
PTX06-1133A	DNT4A	12/15/2011	10/30/2017	8	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	8	0	Yes	0	0.00	0	All Non-Detect
PTX06-1133A	TNB135	12/15/2011	10/30/2017	8	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	8	0	Yes	0	0.00	0	All Non-Detect
PTX06-1133A	DNB13	12/15/2011	10/30/2017	8	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	8	0	Yes	0	0.00	0	All Non-Detect
PTX06-1133A	PCE	12/15/2011	10/30/2017	8	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	8	0	Yes	0	0.00	0	All Non-Detect
PTX06-1133A	TCE	12/15/2011	10/30/2017	8	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	8	0	Yes	0	0.00	0	All Non-Detect
PTX06-1133A	DCE12C	12/15/2011	10/30/2017	8	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	8	0	Yes	0	0.00	0	All Non-Detect
PTX06-1133A	DCA12	12/15/2011	10/30/2017	8	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	8	0	Yes	0	0.00	0	All Non-Detect
PTX06-1133A	TCLME	12/15/2011	10/30/2017	8	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	8	0	Yes	0	0.00	0	All Non-Detect
PTX06-1133A	B	12/15/2011	10/30/2017	8	8	No	0.080207424	11.00	0.8865	No Trend	4	4	No	0.067704423	2.00	0.625	No Trend	8	8	No	0.080207424	11.00	0.8865	No Trend
PTX06-1133A	CR	12/15/2011	10/30/2017	8	8	No	1.28520054	4.00	0.64	No Trend	4	4	No	1.342884283	2.00	0.625	No Trend	8	8	No	1.28520054	4.00	0.64	No Trend
PTX06-1133A	CR-6	12/15/2011	10/30/2017	8	2	No	0	0.00	0	N/A (<4 Detections in Dataset)	4	1	No	0	0.00	0	N/A (<4 Detections in Dataset)	8	2	No	0	0.00	0	N/A (<4 Detections in Dataset)
PTX06-1133A	MN	12/15/2011	10/30/2017	8	8	No	1.202864985	-6.00	1	Decreasing	4	4	No	0.519525507	-4.00	1	Decreasing	8	8	No	1.202864985	-6.00	1	Decreasing
PTX06-1133A	NI	12/15/2011	10/30/2017	8	8	No	1.277117905	-8.00	1	Decreasing	4	4	No	0.486156687	-2.00	1	Decreasing	8	8	No	1.277117905	-8.00	1	Decreasing
PTX06-1133A	MO	12/15/2011	10/30/2017	8	8	No	0.606922864	2.00	0.548	No Trend	4	4	No	0.383011467	2.00	0.625	No Trend	8	8	No	0.606922864	2.00	0.548	No Trend
PTX06-1134	RDX	8/27/2009	11/1/2017	17	1	No	0	0.00	0	N/A (<4 Detections in Dataset)	4	0	Yes	0	0.00	0	All Non-Detect	17	1	No	0	0.00	0	N/A (<4 Detections in Dataset)
PTX06-1134	HMX	8/27/2009	11/1/2017	17	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	17	0	Yes	0	0.00	0	All Non-Detect
PTX06-1134	TNT	8/27/2009	11/1/2017	17	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	17	0	Yes	0	0.00	0	All Non-Detect
PTX06-1134	DNT24	8/27/2009	11/1/2017	17	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	17	0	Yes	0	0.00	0	All Non-Detect
PTX06-1134	DNT26	8/27/2009	11/1/2017	17	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	17	0	Yes	0	0.00	0	All Non-Detect
PTX06-1134	DNT2A	8/27/2009	11/1/2017	17	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	17	0	Yes	0	0.00	0	All Non-Detect
PTX06-1134	DNT4A	8/27/2009	11/1/2017	17	17	No	0.651464713	-62.00	1	Decreasing	4	4	No	0.204124145	-2.00	1	Decreasing	17	17	No	0.651464713	-62.00	1	Decreasing
PTX06-1134	TNB135	8/27/2009	11/1/2017	17	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	17	0	Yes	0	0.00	0	All Non-Detect
PTX06-1134	DNB13	8/27/2009	11/1/2017	17	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	17	0	Yes	0	0.00	0	All Non-Detect
PTX06-1134	DIOXANE14	8/27/2009	11/1/2017	17	14	No	0.486186272	48.00	0.974	Increasing	4	4	No	0.246274756	0.00	0.375	Stable	17	14	No	0.486186272	48.00	0.974	Increasing
PTX06-1134	PCE	8/27/2009	11/1/2017	17	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	17	0	Yes	0	0.00	0	All Non-Detect
PTX06-1134	TCE	8/27/2009	11/1/2017	17	6	No	1.362824876	57.00	0.99	Increasing	4	4	No	0.454746753	4.00	0.833	No Trend	17	6	No	1.362824876	57.00	0.99	Increasing
PTX06-1134	DCE12C	8/27/2009	11/1/2017	17	3	No	0	0.00	0	N/A (<4 Detections in Dataset)	4	3	No	0	0.00	0	N/A (<4 Detections in Dataset)	17	3	No	0	0.00	0	N/A (<4 Detections in Dataset)
PTX06-1134	DCA12	8/27/2009	11/1/2017	17	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	17	0	Yes	0	0.00	0	All Non-Detect
PTX06-1134	TCLME	8/27/2009	11/1/2017	17	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	17	0	Yes	0	0.00	0	All Non-Detect
PTX06-1134	PERC	8/27/2009	11/1/2017	17	16	No	1.147424137	58.00	0.991	Increasing	4	4	No	0.234367864	4.00	0.833	No Trend	17	16	No	1.147424137	58.00	0.991	Increasing
PTX06-1134	B	8/27/2009	11/1/2017	17	17	No	0.394046041	81.00	1	Stable	4	4	No	0.041682911	0.00	0.375	Stable	17	17	No	0.394046041	81.00	1	Stable
PTX06-1134	MN	5/6/2010	8/30/2017	5	5	No	0.551437586	0.00	0.408	Stable	4	4	No	0.559945709	-2.00	1	Decreasing	5	5	No	0.551437586	0.00	0.408	Stable
PTX06-1146	RDX	9/2/2009	7/27/2017	17	17	No	0.198263966	-54.00	1	Decreasing	4	4	No	0.048671645	-2.00	1	Decreasing	17	17	No	0.198263966	-54.00	1	Decreasing
PTX06-1146	HMX	9/2/2009	7/27/2017	17	17	No	0.314241079	94.00	1	Increasing	4	4	No	0.191930427	4.00	0.833	No Trend	17	17	No	0.314241079	94.00	1	Increasing
PTX06-1146	TNT	9/2/2009	7/27/2017	17	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	17	0	Yes	0	0.00	0	All Non-Detect
PTX06-1146	DNT24	9/2/2009	7/27/2017	17	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	17	0	Yes	0	0.00	0	All Non-Detect
PTX06-1146	DNT26	9/2/2009	7/27/2017	17	16	No	0.152368905	-18.00	1	Decreasing	4	4	No	0.075465011	6.00	0.958	Increasing	17	16	No	0.152368905	-18.00	1	Decreasing
PTX06-1146	DNT2A	9/2/2009	7/27/2017	17	14	No	0.771578308	112.00	1	Increasing	4	4	No	0.131352403	5.00	0.8955	No Trend	17	14	No	0.771578308	112.00	1	Increasing
PTX06-1146	DNT4A	9/2/2009	7/27/2017	17	17	No	0.315696145	-52.00	1	Decreasing	4	4	No	0.063561266	6.00	0.958	Increasing	17	17	No	0.315696145	-52.00	1	Decreasing
PTX06-1146	TNB135	9/2/2009	7/27/2017	17	10	No	0.202702952	-34.00	1	Decreasing	4	3	No	0	0.00	0	N/A (<4 Detections in Dataset)	17	10	No	0.202702952	-34.00	1	Decreasing
PTX06-1146	DNB13	9/2/2009	7/27/2017	17	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	17	0	Yes	0	0.00	0	All Non-Detect
PTX06-1146	PCE	9/2/2009	7/27/2017	17	1	No	0	0.00	0	N/A (<4 Detections in Dataset)	4	0	Yes	0	0.00	0	All Non-Detect	17	1	No	0	0.00	0	N/A (<4 Detections in Dataset)
PTX06-1146	TCE	9/2/2009	7/27/2017	17	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	17	0	Yes	0	0.00	0	All Non-Detect
PTX06-1146	DCE12C	9/2/2009	7/27/2017	17	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	17	0	Yes	0	0.00	0	All Non-Detect
PTX06-1146	DCA12	9/2/2009	7/27/2017	17	4	No	0.22678797	44.00	0.962	Increasing	4	0	Yes	0	0.00	0	All Non-Detect	17	4	No	0.22678797	44.00	0.962	Increasing
PTX06-1146	TCLME	9/2/2009	7/27/2017	17	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	17	0	Yes	0	0.00	0	All Non-Detect
PTX06-1146	B																							

Well	COC	First_Date	Last_Date	NumS_AD	NumD_AD	AIIND_AD	CV_AD	MKS_AD	Conf_AD	Trend_AD	NumS_L4S	NumD_L4S	AIIND_L4S	CV_L4S	MKS_L4S	Conf_L4S	Trend_L4S	NumS_SSRA	NumD_SSRA	AIIND_SSRA	CV_SSRA	MKS_SSRA	Conf_SSRA	Trend_SSRA
PTX06-1151	B	9/1/2009	8/22/2017	17	17	No	0.069727846	23.00	0.815	No Trend	4	4	No	0.074744744	-4.00	1	Decreasing	17	17	No	0.069727846	23.00	0.815	No Trend
PTX06-1159	RDX	1/29/2013	8/8/2017	10	3	No	0	0.00	0	N/A (<4 Detections in Dataset)	4	2	No	0	0.00	0	N/A (<4 Detections in Dataset)	10	3	No	0	0.00	0	N/A (<4 Detections in Dataset)
PTX06-1159	HMX	1/29/2013	8/8/2017	10	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	10	0	Yes	0	0.00	0	All Non-Detect
PTX06-1159	TNT	1/29/2013	8/8/2017	10	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	10	0	Yes	0	0.00	0	All Non-Detect
PTX06-1159	DNT24	1/29/2013	8/8/2017	10	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	10	0	Yes	0	0.00	0	All Non-Detect
PTX06-1159	DNT26	1/29/2013	8/8/2017	10	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	10	0	Yes	0	0.00	0	All Non-Detect
PTX06-1159	DNT2A	1/29/2013	8/8/2017	10	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	10	0	Yes	0	0.00	0	All Non-Detect
PTX06-1159	DNT4A	1/29/2013	8/8/2017	10	10	No	0.173283878	25.00	0.986	Increasing	4	4	No	0.130150107	4.00	0.833	No Trend	10	10	No	0.173283878	25.00	0.986	Increasing
PTX06-1159	TNB135	1/29/2013	8/8/2017	10	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	10	0	Yes	0	0.00	0	All Non-Detect
PTX06-1159	DNB13	1/29/2013	8/8/2017	10	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	10	0	Yes	0	0.00	0	All Non-Detect
PTX06-1159	DIOXANE14	1/29/2013	8/8/2017	10	10	No	0.248144293	31.00	1	Decreasing	4	4	No	0.172378029	-5.00	1	Decreasing	10	10	No	0.248144293	31.00	1	Decreasing
PTX06-1159	PCE	1/29/2013	8/8/2017	10	6	No	0.705220617	10.00	1	Increasing	4	4	No	0.00	0.00	0	N/A (<4 Detections in Dataset)	10	6	No	0.705220617	10.00	1	Increasing
PTX06-1159	TCE	1/29/2013	8/8/2017	10	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	10	0	Yes	0	0.00	0	All Non-Detect
PTX06-1159	DCE12C	1/29/2013	8/8/2017	10	10	No	0.318044074	38.00	1	Increasing	4	4	No	0.149500604	4.00	0.833	No Trend	10	10	No	0.318044074	38.00	1	Increasing
PTX06-1159	DCA12	1/29/2013	8/8/2017	10	10	No	0.228764858	-7.00	1	Decreasing	4	4	No	0.216824058	-6.00	1	Decreasing	10	10	No	0.228764858	-7.00	1	Decreasing
PTX06-1159	TCLME	1/29/2013	8/8/2017	10	9	No	0.257714631	6.00	1	Increasing	4	3	No	0	0.00	0	N/A (<4 Detections in Dataset)	10	9	No	0.257714631	6.00	1	Increasing
PTX06-1159	PERC	1/29/2013	8/8/2017	10	10	No	0.536346848	43.00	1	Increasing	4	4	No	0.245877794	4.00	0.833	No Trend	10	10	No	0.536346848	43.00	1	Increasing
PTX06-1159	B	1/29/2013	8/8/2017	10	10	No	0.095531801	-13.00	1	Decreasing	4	4	No	0.133242193	-4.00	1	Decreasing	10	10	No	0.095531801	-13.00	1	Decreasing
PTX06-1160	RDX	1/29/2013	7/19/2017	10	1	No	0	0.00	0	N/A (<4 Detections in Dataset)	4	1	No	0	0.00	0	N/A (<4 Detections in Dataset)	10	1	No	0	0.00	0	N/A (<4 Detections in Dataset)
PTX06-1160	HMX	1/29/2013	7/19/2017	10	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	10	0	Yes	0	0.00	0	All Non-Detect
PTX06-1160	TNT	1/29/2013	7/19/2017	10	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	10	0	Yes	0	0.00	0	All Non-Detect
PTX06-1160	DNT24	1/29/2013	7/19/2017	10	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	10	0	Yes	0	0.00	0	All Non-Detect
PTX06-1160	DNT26	1/29/2013	7/19/2017	10	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	10	0	Yes	0	0.00	0	All Non-Detect
PTX06-1160	DNT2A	1/29/2013	7/19/2017	10	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	10	0	Yes	0	0.00	0	All Non-Detect
PTX06-1160	DNT4A	1/29/2013	7/19/2017	10	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	10	0	Yes	0	0.00	0	All Non-Detect
PTX06-1160	TNB135	1/29/2013	7/19/2017	10	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	10	0	Yes	0	0.00	0	All Non-Detect
PTX06-1160	DNB13	1/29/2013	7/19/2017	10	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	10	0	Yes	0	0.00	0	All Non-Detect
PTX06-1160	DIOXANE14	1/29/2013	7/19/2017	10	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	10	0	Yes	0	0.00	0	All Non-Detect
PTX06-1160	PCE	1/29/2013	7/19/2017	10	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	10	0	Yes	0	0.00	0	All Non-Detect
PTX06-1160	TCE	1/29/2013	7/19/2017	10	4	No	0.069248744	26.00	0.989	Increasing	4	4	No	0.069783484	2.00	0.625	No Trend	10	4	No	0.069248744	26.00	0.989	Increasing
PTX06-1160	DCE12C	1/29/2013	7/19/2017	10	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	10	0	Yes	0	0.00	0	All Non-Detect
PTX06-1160	DCA12	1/29/2013	7/19/2017	10	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	10	0	Yes	0	0.00	0	All Non-Detect
PTX06-1160	TCLME	1/29/2013	7/19/2017	10	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	10	0	Yes	0	0.00	0	All Non-Detect
PTX06-1160	PERC	1/29/2013	7/19/2017	10	1	No	0	0.00	0	N/A (<4 Detections in Dataset)	4	1	No	0	0.00	0	N/A (<4 Detections in Dataset)	10	1	No	0	0.00	0	N/A (<4 Detections in Dataset)
PTX06-1160	B	1/29/2013	7/19/2017	10	10	No	0.083792025	2.00	1	Increasing	4	4	No	0.11249541	-4.00	1	Decreasing	10	10	No	0.083792025	2.00	1	Increasing
PTX06-1166	RDX	1/28/2013	8/28/2017	10	10	No	0.249169366	-25.00	1	Decreasing	4	4	No	0.167053017	-6.00	1	Decreasing	10	10	No	0.249169366	-25.00	1	Decreasing
PTX06-1166	HMX	1/28/2013	8/28/2017	10	10	No	0.18576996	-9.00	1	Decreasing	4	4	No	0.152866221	-6.00	1	Decreasing	10	10	No	0.18576996	-9.00	1	Decreasing
PTX06-1166	TNT	1/28/2013	8/28/2017	10	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	10	0	Yes	0	0.00	0	All Non-Detect
PTX06-1166	DNT24	1/28/2013	8/28/2017	10	8	No	0.390583209	-7.00	1	Decreasing	4	2	No	0	0.00	0	N/A (<4 Detections in Dataset)	10	8	No	0.390583209	-7.00	1	Decreasing
PTX06-1166	DNT26	1/28/2013	8/28/2017	10	8	No	0.671645758	11.00	1	Increasing	4	2	No	0	0.00	0	N/A (<4 Detections in Dataset)	10	8	No	0.671645758	11.00	1	Increasing
PTX06-1166	DNT2A	1/28/2013	8/28/2017	10	10	No	0.29059489	7.00	1	Increasing	4	4	No	0.131447851	-2.00	1	Decreasing	10	10	No	0.29059489	7.00	1	Increasing
PTX06-1166	DNT4A	1/28/2013	8/28/2017	10	10	No	0.229569531	-17.00	1	Decreasing	4	4	No	0.055075105	-2.00	1	Decreasing	10	10	No	0.229569531	-17.00	1	Decreasing
PTX06-1166	TNB135	1/28/2013	8/28/2017	9	1	No	0	0.00	0	N/A (<4 Detections in Dataset)	4	1	No	0	0.00	0	N/A (<4 Detections in Dataset)	9	1	No	0	0.00	0	N/A (<4 Detections in Dataset)
PTX06-1166	DNB13	1/28/2013	8/28/2017	10	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	10	0	Yes	0	0.00	0	All Non-Detect
PTX06-1166	PCE	1/28/2013	8/28/2017	10	10	No	0.213323152	-31.00	1	N/A (<4 Detections in Dataset)	4	4	No	0.190848379	-4.00	1	Decreasing	10	10	No	0.213323152	-31.00	1	N/A (<4 Detections in Dataset)
PTX06-1166	TCE	1/28/2013	8/28/2017	10	10	No	0.213323152	-31.00	1	Decreasing	4	4	No	0.190848379	-4.00	1	Decreasing	10	10	No	0.213323152	-31.00	1	Decreasing
PTX06-1166	DCE12C	1/28/2013	8/28/2017	10	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	10	0	Yes	0	0.00	0	All Non-Detect
PTX06-1166	DCA12	1/28/2013	8/28/2017	10	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	10	0	Yes	0	0.00	0	All Non-Detect
PTX06-1166	TCLME	1/28/2013	8/28/2017	10	10	No	0.181968152	-34.00	1	Decreasing	4	4	No	0.12796849	-6.00	1	Decreasing	10	10	No	0.181968152	-34.00	1	Decreasing
PTX06-1166	B	1/28/2013	8/28/2017	10	10	No	0.089624317	-9.00	1	Decreasing	4	4	No	0.109149348	-3.00	1	Decreasing	10	10	No	0.089624317	-9.00	1	Decreasing
PTX06-1166	CR	1/28/2013	8/28/2017	10	10	No	0.327632665	-17.00	1	Decreasing	4	4	No	0.102010411	-4.00	1	Decreasing	10	10	No	0.327632665			

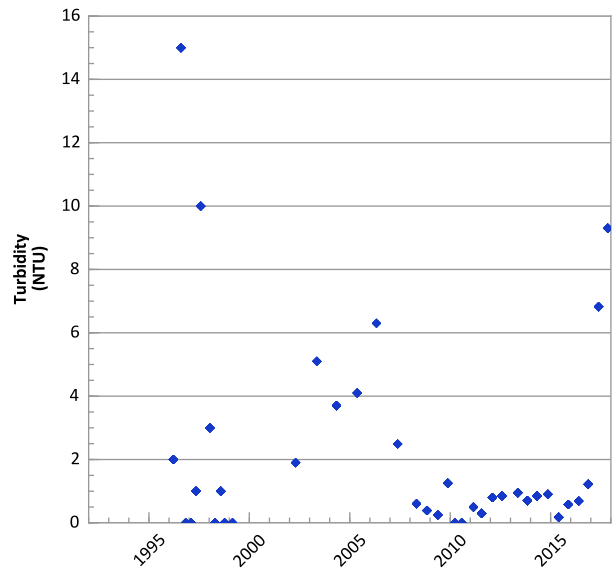
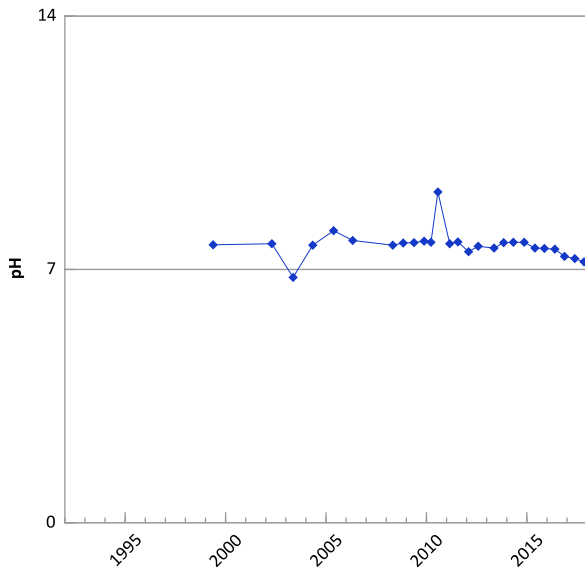
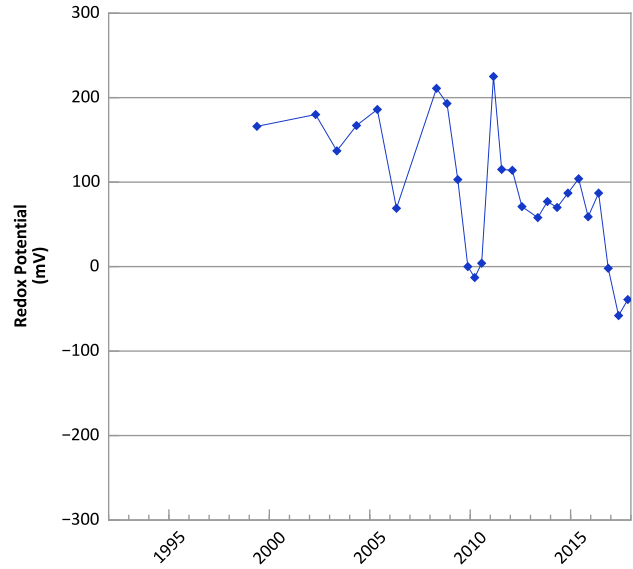
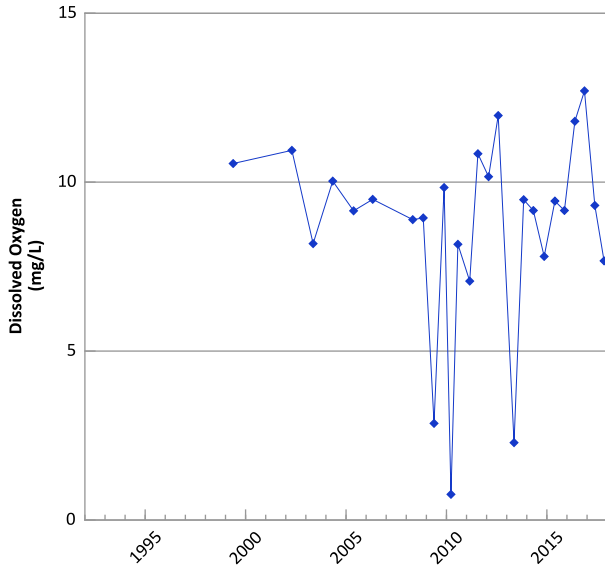
Well	COC	First_Date	Last_Date	NumS_AD	NumD_AD	AIIND_AD	CV_AD	MKS_AD	Conf_AD	Trend_AD	NumS_L4S	NumD_L4S	AIIND_L4S	CV_L4S	MKS_L4S	Conf_L4S	Trend_L4S	NumS_SSRA	NumD_SSRA	AIIND_SSRA	CV_SSRA	MKS_SSRA	Conf_SSRA	Trend_SSRA
PTX07-1001	TNT	12/12/1995	7/13/2017	21	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	9	0	Yes	0	0.00	0	All Non-Detect
PTX07-1001	DNT24	12/12/1995	7/13/2017	22	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	9	0	Yes	0	0.00	0	All Non-Detect
PTX07-1001	DNT26	12/12/1995	7/13/2017	22	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	9	0	Yes	0	0.00	0	All Non-Detect
PTX07-1001	DNT2A	12/12/1995	7/13/2017	22	1	No	0	0.00	0	N/A (<4 Detections in Dataset)	4	0	Yes	0	0.00	0	All Non-Detect	9	0	Yes	0	0.00	0	All Non-Detect
PTX07-1001	DNT4A	12/12/1995	7/13/2017	22	1	No	0	0.00	0	N/A (<4 Detections in Dataset)	4	0	Yes	0	0.00	0	All Non-Detect	9	0	Yes	0	0.00	0	All Non-Detect
PTX07-1001	TNB135	12/12/1995	7/13/2017	22	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	9	0	Yes	0	0.00	0	All Non-Detect
PTX07-1001	DNB13	12/12/1995	7/13/2017	21	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	9	0	Yes	0	0.00	0	All Non-Detect
PTX07-1001	PCE	12/12/1995	7/13/2017	20	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	9	0	Yes	0	0.00	0	All Non-Detect
PTX07-1001	TCE	12/12/1995	7/13/2017	22	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	9	0	Yes	0	0.00	0	All Non-Detect
PTX07-1001	DCE12C	12/12/1995	7/13/2017	17	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	9	0	Yes	0	0.00	0	All Non-Detect
PTX07-1001	DCA12	12/12/1995	7/13/2017	20	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	9	0	Yes	0	0.00	0	All Non-Detect
PTX07-1001	TCLME	12/12/1995	7/13/2017	20	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	9	0	Yes	0	0.00	0	All Non-Detect
PTX07-1001	B	12/12/1995	7/13/2017	19	19	No	0.214933001	-71.00	1	Decreasing	4	4	No	0.19045797	3.00	0.729	No Trend	9	9	No	0.258544845	-5.00	1	Decreasing
PTX07-1002	RDX	11/1/1995	7/13/2017	23	1	No	0	0.00	0	N/A (<4 Detections in Dataset)	4	0	Yes	0	0.00	0	All Non-Detect	9	0	Yes	0	0.00	0	All Non-Detect
PTX07-1002	HMX	11/1/1995	7/13/2017	23	1	No	0	0.00	0	N/A (<4 Detections in Dataset)	4	0	Yes	0	0.00	0	All Non-Detect	9	0	Yes	0	0.00	0	All Non-Detect
PTX07-1002	TNT	11/1/1995	7/13/2017	23	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	9	0	Yes	0	0.00	0	All Non-Detect
PTX07-1002	DNT24	11/1/1995	7/13/2017	23	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	9	0	Yes	0	0.00	0	All Non-Detect
PTX07-1002	DNT26	11/1/1995	7/13/2017	22	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	9	0	Yes	0	0.00	0	All Non-Detect
PTX07-1002	DNT2A	11/1/1995	7/13/2017	23	1	No	0	0.00	0	N/A (<4 Detections in Dataset)	4	0	Yes	0	0.00	0	All Non-Detect	9	0	Yes	0	0.00	0	All Non-Detect
PTX07-1002	DNT26	11/1/1995	7/13/2017	23	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	9	0	Yes	0	0.00	0	All Non-Detect
PTX07-1002	TNB135	11/1/1995	7/13/2017	23	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	9	0	Yes	0	0.00	0	All Non-Detect
PTX07-1002	DNB13	11/1/1995	7/13/2017	22	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	9	0	Yes	0	0.00	0	All Non-Detect
PTX07-1002	PCE	11/1/1995	7/13/2017	19	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	9	0	Yes	0	0.00	0	All Non-Detect
PTX07-1002	TCE	11/1/1995	7/13/2017	21	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	9	0	Yes	0	0.00	0	All Non-Detect
PTX07-1002	DCE12C	11/1/1995	7/13/2017	16	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	9	0	Yes	0	0.00	0	All Non-Detect
PTX07-1002	DCA12	11/1/1995	7/13/2017	19	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	9	0	Yes	0	0.00	0	All Non-Detect
PTX07-1002	TCLME	11/1/1995	7/13/2017	19	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	9	0	Yes	0	0.00	0	All Non-Detect
PTX07-1002	B	11/1/1995	7/13/2017	18	17	No	0.11892328	65.00	0.993	Increasing	4	4	No	0.00	0.00	1	Decreasing	9	9	No	0.071770453	0.00	0.46	Stable
PTX07-1003	RDX	12/12/1995	7/13/2017	23	1	No	0	0.00	0	N/A (<4 Detections in Dataset)	4	0	Yes	0	0.00	0	All Non-Detect	9	0	Yes	0	0.00	0	All Non-Detect
PTX07-1003	HMX	12/12/1995	7/13/2017	23	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	9	0	Yes	0	0.00	0	All Non-Detect
PTX07-1003	TNT	12/12/1995	7/13/2017	23	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	9	0	Yes	0	0.00	0	All Non-Detect
PTX07-1003	DNT24	12/12/1995	7/13/2017	23	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	9	0	Yes	0	0.00	0	All Non-Detect
PTX07-1003	DNT26	12/12/1995	7/13/2017	23	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	9	0	Yes	0	0.00	0	All Non-Detect
PTX07-1003	DNT2A	12/12/1995	7/13/2017	23	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	9	0	Yes	0	0.00	0	All Non-Detect
PTX07-1003	DNT4A	12/12/1995	7/13/2017	23	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	9	0	Yes	0	0.00	0	All Non-Detect
PTX07-1003	TNB135	12/12/1995	7/13/2017	23	0	No	0	0.00	0	N/A (<4 Detections in Dataset)	4	0	Yes	0	0.00	0	All Non-Detect	9	0	Yes	0	0.00	0	N/A (<4 Detections in Dataset)
PTX07-1003	DNB13	12/12/1995	7/13/2017	21	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	9	0	Yes	0	0.00	0	All Non-Detect
PTX07-1003	PCE	12/12/1995	7/13/2017	22	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	9	0	Yes	0	0.00	0	All Non-Detect
PTX07-1003	TCE	12/12/1995	7/13/2017	23	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	9	0	Yes	0	0.00	0	All Non-Detect
PTX07-1003	DCE12C	12/12/1995	7/13/2017	18	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	9	0	Yes	0	0.00	0	All Non-Detect
PTX07-1003	DCA12	12/12/1995	7/13/2017	20	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	9	0	Yes	0	0.00	0	All Non-Detect
PTX07-1003	TCLME	12/12/1995	7/13/2017	21	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	9	0	Yes	0	0.00	0	All Non-Detect
PTX07-1003	B	12/12/1995	7/13/2017	20	19	No	0.255290728	38.00	0.883	No Trend	4	4	No	0.058991832	2.00	0.625	No Trend	9	9	No	0.078769503	2.00	0.54	No Trend
PTX08-1001	RDX	12/11/1995	5/17/2017	22	14	No	1.47043273	77.00	1	Increasing	4	4	No	0.352868483	0.00	0.375	Stable	8	8	No	0.538478146	6.00	0.726	No Trend
PTX08-1001	HMX	12/11/1995	5/17/2017	22	9	No	1.025191081	-53.00	1	Decreasing	4	4	No	0.821195395	0.00	1	Decreasing	8	8	No	0.81060286	0.00	0.452	Stable
PTX08-1001	TNT	12/11/1995	5/17/2017	22	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	8	0	Yes	0	0.00	0	All Non-Detect
PTX08-1001	DNT24	12/11/1995	5/17/2017	22	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	8	0	Yes	0	0.00	0	All Non-Detect
PTX08-1001	DNT26	12/11/1995	5/17/2017	21	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	8	0	Yes	0	0.00	0	All Non-Detect
PTX08-1001	DNT2A	12/11/1995	5/17/2017	22	1	No	0	0.00	0	N/A (<4 Detections in Dataset)	4	1	No	0	0.00	0	N/A (<4 Detections in Dataset)	8	1	No	0	0.00	0	N/A (<4 Detections in Dataset)
PTX08-1001	DNT4A	12/11/1995	5/17/2017	22	2	No	0	0.00	0	N/A (<4 Detections in Dataset)	4	1	No	0	0.00	0	N/A (<4 Detections in Dataset)	8	1	No	0	0.00	0	N/A (<4 Detections in Dataset)
PTX08-1001	TNB135	12/11/1995	5/17/2017	22	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	8	0	Yes	0	0.00	0	All Non-Detect
PTX08-1001	DNB13	12/11/1995	5/17/2017	19	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	8	0	Yes	0	0.00	0	All Non-Detect
PTX08-1001	DIOXANE14	4/27/2006	5/17/2017	10	2	No	0	0.00	0	N/A (<4 Detections in Dataset)	4	2	No	0	0.00	0	N/A (<4 Detections in Dataset)	8	2					

Well	COC	First_Date	Last_Date	Num_S_AD	Num_D_AD	AI/ND_AD	CV_AD	MKS_AD	Conf_AD	Trend_AD	Num_S_L4S	Num_D_L4S	AI/ND_L4S	CV_L4S	MKS_L4S	Conf_L4S	Trend_L4S	Num_S_SSRA	Num_D_SSRA	AI/ND_SSRA	CV_SSRA	MKS_SSRA	Conf_SSRA	Trend_SSRA
PTX08-1003	B	11/29/1995	5/22/2017	24	23	No	0.164445196	142.00	1	Increasing	4	4	No	0.103454647	0.00	0.375	Stable	10	10	No	0.090748728	13.00	0.854	No Trend
PTX08-1005	RDX	11/29/1995	8/22/2017	34	31	No	1.86649903	-244.00	1	Decreasing	4	2	No	0.00	0.00	0	N/A (<4 Detections in Dataset)	17	15	No	1.322052563	-24.00	1	Decreasing
PTX08-1006	HMX	11/29/1995	8/22/2017	34	32	No	2.192303734	-331.00	1	Decreasing	4	4	No	1.526631083	-6.00	1	Decreasing	17	17	No	1.627642123	-18.00	1	Decreasing
PTX08-1005	TNT	11/29/1995	8/22/2017	34	1	No	0.00	0.00	0	N/A (<4 Detections in Dataset)	4	0	Yes	0.00	0.00	0	All Non-Detect	17	0	Yes	0.00	0.00	0	All Non-Detect
PTX08-1005	DNT24	11/29/1995	8/22/2017	35	0	Yes	0.00	0.00	0	All Non-Detect	4	0	Yes	0.00	0.00	0	All Non-Detect	17	0	Yes	0.00	0.00	0	All Non-Detect
PTX08-1005	DNT26	11/29/1995	8/22/2017	34	0	Yes	0.00	0.00	0	All Non-Detect	4	0	Yes	0.00	0.00	0	All Non-Detect	17	0	Yes	0.00	0.00	0	All Non-Detect
PTX08-1005	DNT2A	11/29/1995	8/22/2017	34	11	No	0.939294583	-340.00	1	Decreasing	4	0	Yes	0.00	0.00	0	All Non-Detect	17	1	No	0.00	0.00	0	N/A (<4 Detections in Dataset)
PTX08-1005	DNT4A	11/29/1995	8/22/2017	34	29	No	0.719807625	-79.00	0	Decreasing	4	1	No	0.00	0.00	0	N/A (<4 Detections in Dataset)	17	12	No	0.819003732	-34.00	1	Decreasing
PTX08-1005	TNB135	11/29/1995	8/22/2017	34	1	No	0.00	0.00	0	N/A (<4 Detections in Dataset)	4	0	Yes	0.00	0.00	0	All Non-Detect	17	0	Yes	0.00	0.00	0	All Non-Detect
PTX08-1005	DNB13	11/29/1995	8/22/2017	34	0	Yes	0.00	0.00	0	All Non-Detect	4	0	Yes	0.00	0.00	0	All Non-Detect	17	0	Yes	0.00	0.00	0	All Non-Detect
PTX08-1005	DIOXANE14	11/29/1995	8/22/2017	24	19	No	0.698447914	-89.00	1	Decreasing	4	1	No	0.00	0.00	0	N/A (<4 Detections in Dataset)	17	14	No	0.687802306	-93.00	1	Decreasing
PTX08-1005	PCE	11/29/1995	8/22/2017	35	23	No	0.611257638	-120.00	1	Decreasing	4	0	Yes	0.00	0.00	0	All Non-Detect	17	13	No	0.789776502	-26.00	1	Decreasing
PTX08-1005	TCE	11/29/1995	8/22/2017	37	37	No	0.515452836	5.00	0.521	No Trend	4	4	No	0.198878591	6.00	0.958	Increasing	17	17	No	0.579970558	-46.00	1	Decreasing
PTX08-1005	DCE12C	11/29/1995	8/22/2017	32	27	No	0.617356573	-12.00	1	Decreasing	4	4	No	0.078656173	0.00	0.375	Stable	17	17	No	0.641316926	-91.00	1	Decreasing
PTX08-1005	DCA12	11/29/1995	8/22/2017	36	29	No	0.740683505	-240.00	1	Decreasing	4	1	No	0.00	0.00	0	N/A (<4 Detections in Dataset)	17	14	No	0.702416758	-78.00	1	Decreasing
PTX08-1005	TCLME	11/29/1995	8/22/2017	35	29	No	0.798373761	6.00	0.528	No Trend	4	4	No	0.039967669	4.00	0.833	No Trend	17	17	No	0.677900217	-56.00	1	Decreasing
PTX08-1005	PERC	4/25/2000	8/22/2017	28	24	No	1.707709378	-218.00	1	Decreasing	4	0	Yes	0.00	0.00	0	All Non-Detect	17	13	No	0.792024776	-48.00	1	Decreasing
PTX08-1005	B	11/29/1995	8/22/2017	31	31	No	0.142363816	240.00	1	Increasing	4	4	No	0.051357856	-6.00	1	Decreasing	17	17	No	0.100278878	56.00	0.989	Increasing
PTX08-1005	CR	11/29/1995	8/22/2017	26	24	No	0.732499409	-7.00	1	Decreasing	4	3	No	0.00	0.00	0	N/A (<4 Detections in Dataset)	9	8	No	0.944934143	-24.00	1	Decreasing
PTX08-1005	CR-6	3/5/1996	8/22/2017	21	14	No	1.477113187	-41.00	1	Decreasing	4	4	No	0.067014191	2.00	0.625	No Trend	9	9	No	1.595558682	-20.00	1	Decreasing
PTX08-1006	RDX	11/28/1995	8/29/2017	36	33	No	0.929679269	359.00	1	Increasing	4	4	No	0.525435683	-6.00	0.00	Decreasing	17	17	No	0.503929283	-82.00	1	Decreasing
PTX08-1006	HMX	11/28/1995	8/29/2017	36	24	No	1.240830717	221.00	0.999	Increasing	4	4	No	0.212806788	-2.00	1	Decreasing	17	17	No	0.844636899	42.00	0.954	Increasing
PTX08-1006	TNT	11/28/1995	8/29/2017	35	1	No	0.00	0.00	0	N/A (<4 Detections in Dataset)	4	0	Yes	0.00	0.00	0	All Non-Detect	17	0	Yes	0.00	0.00	0	All Non-Detect
PTX08-1006	DNT24	11/28/1995	8/29/2017	37	0	Yes	0.00	0.00	0	All Non-Detect	4	0	Yes	0.00	0.00	0	All Non-Detect	17	0	Yes	0.00	0.00	0	All Non-Detect
PTX08-1006	DNT26	11/28/1995	8/29/2017	36	7	No	0.417293748	-280.00	1	Decreasing	4	0	Yes	0.00	0.00	0	All Non-Detect	17	5	No	0.193727182	-5.00	1	Decreasing
PTX08-1006	DNT2A	11/28/1995	8/29/2017	36	16	No	4.307732153	101.00	0.913	Probably Increasing	4	3	No	0.00	0.00	0	N/A (<4 Detections in Dataset)	17	15	No	0.581346709	70.00	0.998	Increasing
PTX08-1006	DNT4A	11/28/1995	8/29/2017	36	34	No	0.57305959	-216.00	1	Decreasing	4	4	No	0.463138372	-6.00	1	Decreasing	17	17	No	0.685876518	-46.00	1	Decreasing
PTX08-1006	TNB135	11/28/1995	8/29/2017	36	2	No	0.00	0.00	0	N/A (<4 Detections in Dataset)	4	0	Yes	0.00	0.00	0	All Non-Detect	17	2	No	0.00	0.00	0	N/A (<4 Detections in Dataset)
PTX08-1006	DNB13	11/28/1995	8/29/2017	35	0	Yes	0.00	0.00	0	All Non-Detect	4	0	Yes	0.00	0.00	0	All Non-Detect	17	0	Yes	0.00	0.00	0	All Non-Detect
PTX08-1006	DIOXANE14	11/11/2002	8/29/2017	26	26	No	0.586972099	-197.00	1	Decreasing	4	4	No	0.495603939	-6.00	1	Decreasing	17	17	No	0.741784707	-128.00	1	Decreasing
PTX08-1006	PCE	11/28/1995	8/29/2017	38	30	No	0.876841469	-150.00	0.97	Increasing	4	4	No	0.31702328	-4.00	1	Increasing	17	17	No	0.776179189	-88.00	1	Decreasing
PTX08-1006	TCE	11/28/1995	8/29/2017	39	38	No	0.845323989	394.00	1	Increasing	4	4	No	0.280715124	0.00	0.375	Stable	17	17	No	0.480933567	96.00	1	Increasing
PTX08-1006	DCE12C	11/28/1995	8/29/2017	34	30	No	0.569084843	-150.00	1	Decreasing	4	4	No	0.178875637	0.00	0.375	Stable	17	17	No	0.580804122	-76.00	1	Decreasing
PTX08-1006	DCA12	11/28/1995	8/29/2017	37	37	No	0.575551649	-272.00	1	Decreasing	4	4	No	0.174121543	-4.00	1	Decreasing	17	17	No	0.45267597	-98.00	1	Decreasing
PTX08-1006	TCLME	11/28/1995	8/29/2017	37	36	No	0.68121105	-72.00	0	Decreasing	4	4	No	0.274030619	2.00	0.625	No Trend	17	17	No	0.647037185	-92.00	1	Decreasing
PTX08-1006	PERC	4/25/2000	8/29/2017	31	31	No	0.732105374	-11.00	0.657	No Trend	4	4	No	0.243843501	-4.00	1	Decreasing	17	17	No	0.614285215	-128.00	1	Decreasing
PTX08-1006	B	11/28/1995	8/29/2017	32	32	No	0.155542928	213.00	0	Increasing	4	4	No	0.143898034	-4.00	1	Increasing	17	17	No	0.094432781	-36.00	1	Decreasing
PTX08-1007	RDX	3/11/1996	5/24/2017	16	12	No	0.810116542	61.00	0.9975	Increasing	4	4	No	0.28879349	-2.00	1	Decreasing	8	8	No	0.333963596	4.00	0.64	No Trend
PTX08-1007	HMX	3/11/1996	5/24/2017	16	7	No	1.361030049	-31.00	1	Decreasing	4	4	No	0.219265315	-6.00	1	Decreasing	8	7	No	0.415717651	12.00	0.911	Probably Increasing
PTX08-1007	TNT	3/11/1996	5/24/2017	16	0	Yes	0.00	0.00	0	All Non-Detect	4	0	Yes	0.00	0.00	0	All Non-Detect	8	0	Yes	0.00	0.00	0	All Non-Detect
PTX08-1007	DNT24	3/11/1996	5/24/2017	16	0	Yes	0.00	0.00	0	All Non-Detect	4	0	Yes	0.00	0.00	0	All Non-Detect	8	0	Yes	0.00	0.00	0	All Non-Detect
PTX08-1007	DNT26	3/11/1996	5/24/2017	16	0	Yes	0.00	0.00	0	All Non-Detect	4	0	Yes	0.00	0.00	0	All Non-Detect	8	0	Yes	0.00	0.00	0	All Non-Detect
PTX08-1007	DNT2A	3/11/1996	5/24/2017	16	0	Yes	0.00	0.00	0	All Non-Detect	4	0	Yes	0.00	0.00	0	All Non-Detect	8	0	Yes	0.00	0.00	0	All Non-Detect
PTX08-1007	DNT4A	3/11/1996	5/24/2017	15	3	No	0.00	0.00	0	N/A (<4 Detections in Dataset)	4	1	No	0.00	0.00	0	N/A (<4 Detections in Dataset)	8	3	No	0.00	0.00	0	N/A (<4 Detections in Dataset)
PTX08-1007	TNB135	3/11/1996	5/24/2017	16	0	Yes	0.00	0.00	0	All Non-Detect	4	0	Yes	0.00	0.00	0	All Non-Detect	8	0	Yes	0.00	0.00	0	All Non-Detect
PTX08-1007	DNB13	3/11/1996	5/24/2017	16	0	Yes	0.00	0.00	0	All Non-Detect	4	0	Yes	0.00	0.00	0	All Non-Detect	8	0	Yes	0.00	0.00	0	All Non-Detect
PTX08-1007	DIOXANE14	8/7/2002	5/24/2017	9	7	No	0.862437838	3.00	0.5795	No Trend	4	4	No	0.288371066	0.00	0.375	Stable	8	7	No	0.324625751	11.00	0.8665	No Trend
PTX08-1007	PCE	3/11/1996	5/24/2017	19	11	No	0.793386303	-46.00	1	Decreasing	4	4	No	0.312108548	-2.00	1	Decreasing	8	8	No	0.348749942	-14.00	1	Decreasing
PTX08-1007	TCE	3/11/1996	5/24/2017	19	19	No	0.309133423	27.00	0.816	No Trend	4	4</												

Perched Aquifer Well 2017 COC Trends

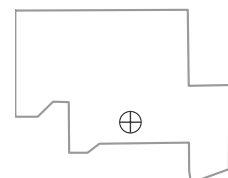
Well	COC	First_Date	Last_Date	NumS_AD	NumD_AD	AIIND_AD	CV_AD	MKS_AD	Conf_AD	Trend_AD	NumS_L4S	NumD_L4S	AIIND_L4S	CV_L4S	MKS_L4S	Conf_L4S	Trend_L4S	NumS_SSRA	NumD_SSRA	AIIND_SSRA	CV_SSRA	MKS_SSRA	Conf_SSRA	Trend_SSRA
PTX08-1009	CR	11/14/1995	11/13/2017	36	34	No	2.160985695	-337.00	1	Decreasing	4	4	No	0.085205884	-2.00	1	Decreasing	17	15	No	0.896323328	57.00	0.99	Increasing
PTX08-1009	CR-6	11/14/1995	11/13/2017	35	25	No	2.016936687	-301.00	1	Decreasing	4	4	No	0.161916876	0.00	0.375	Stable	17	8	No	0.743713967	64.00	0.996	Increasing
PTX08-1009	MN	11/14/1995	11/13/2017	34	20	No	1.93183291	175.00	0.995	Increasing	4	1	No	0	0.00	0	N/A (<4 Detections in Dataset)	17	9	No	1.664874942	-50.00	1	Decreasing
PTX08-1009	NI	11/14/1995	11/13/2017	34	29	No	1.303635574	-302.00	1	Decreasing	4	3	No	0	0.00	0	N/A (<4 Detections in Dataset)	17	15	No	0.769037949	-29.00	1	Decreasing
PTX08-1009	MO	11/14/1995	11/13/2017	35	31	No	0.701044454	58.00	0.7895	No Trend	4	4	No	0.067188308	-2.00	1	Decreasing	17	17	No	0.067423251	-54.00	1	Decreasing
PTX10-1014	RDX	11/28/1995	5/23/2017	16	13	No	1.500511524	1.00	0.5	No Trend	4	4	No	0.497949819	-2.00	1	Decreasing	8	8	No	0.402376686	-4.00	1	Decreasing
PTX10-1014	HMX	11/28/1995	5/23/2017	16	9	No	1.664891337	-64.00	1	Decreasing	4	4	No	0.172251557	-2.00	1	Decreasing	8	7	No	0.220637588	-4.00	1	Decreasing
PTX10-1014	TNT	11/28/1995	5/23/2017	16	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	8	0	Yes	0	0.00	0	All Non-Detect
PTX10-1014	DNT24	7/7/1992	5/23/2017	17	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	8	0	Yes	0	0.00	0	All Non-Detect
PTX10-1014	DNT26	11/28/1995	5/23/2017	16	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	8	0	Yes	0	0.00	0	All Non-Detect
PTX10-1014	DNT2A	11/28/1995	5/23/2017	16	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	8	0	Yes	0	0.00	0	All Non-Detect
PTX10-1014	DNT4A	11/28/1995	5/23/2017	16	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	8	0	Yes	0	0.00	0	All Non-Detect
PTX10-1014	TNB135	11/28/1995	5/23/2017	16	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	8	0	Yes	0	0.00	0	All Non-Detect
PTX10-1014	DNB13	11/28/1995	5/23/2017	16	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	8	0	Yes	0	0.00	0	All Non-Detect
PTX10-1014	DIOXANE14	5/23/2002	5/23/2017	9	3	No	0	0.00	0	N/A (<4 Detections in Dataset)	4	3	No	0	0.00	0	N/A (<4 Detections in Dataset)	8	3	No	0	0.00	0	N/A (<4 Detections in Dataset)
PTX10-1014	PCE	7/7/1992	5/23/2017	19	8	No	1.462233819	-21.00	1	Decreasing	4	4	No	0.58863707	-4.00	1	Decreasing	8	8	No	0.475789171	-18.00	1	Decreasing
PTX10-1014	TCE	7/7/1992	5/23/2017	19	18	No	0.536091473	-29.00	1	Decreasing	4	4	No	0.567849772	0.00	0.375	Stable	8	8	No	0.544091903	-12.00	1	Decreasing
PTX10-1014	DCE12C	11/28/1995	5/23/2017	14	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	8	0	Yes	0	0.00	0	All Non-Detect
PTX10-1014	DCA12	7/7/1992	5/23/2017	19	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	8	0	Yes	0	0.00	0	All Non-Detect
PTX10-1014	TCLME	7/7/1992	5/23/2017	19	7	No	1.703759268	-43.00	1	Decreasing	4	3	No	0	0.00	0	N/A (<4 Detections in Dataset)	8	7	No	0.421642724	-18.00	1	Decreasing
PTX10-1014	PERC	7/31/2000	5/23/2017	12	9	No	0.709384792	-35.00	1	Decreasing	4	3	No	0	0.00	0	N/A (<4 Detections in Dataset)	8	5	No	0.150672072	3.00	0.594	No Trend
PTX10-1014	B	11/28/1995	5/23/2017	19	19	No	0.665522262	64.00	0.987	Increasing	4	4	No	0.316088113	0.00	0.375	Stable	8	8	No	0.27072684	6.00	0.726	No Trend
PTX10-1014	CR	7/7/1992	5/23/2017	20	18	No	1.549652285	-46.00	1	Decreasing	4	4	No	0.622812978	4.00	0.833	No Trend	8	7	No	1.048883173	20.00	0.993	Increasing
PTX10-1014	CR-6	11/28/1995	5/23/2017	17	5	No	1.068496024	49.00	0.9765	Increasing	4	4	No	0.922575407	4.00	0.833	No Trend	8	4	No	0.776128947	-3.00	1	Decreasing
PTX10-1014	MN	11/28/1995	5/23/2017	19	19	No	1.201082096	-32.00	1	Decreasing	4	4	No	0.440602088	2.00	0.625	No Trend	8	8	No	1.18017729	-12.00	1	Decreasing
PTX10-1014	NI	11/28/1995	5/23/2017	19	19	No	0.587180936	-35.00	1	Decreasing	4	4	No	0.191470091	0.00	0.375	Stable	8	8	No	1.0579765	-12.00	1	Decreasing
PTX10-1014	MO	11/28/1995	5/23/2017	19	19	No	0.818602443	-71.00	1	Decreasing	4	4	No	0.360026253	-2.00	1	Decreasing	8	8	No	0.240775049	-12.00	1	Decreasing

**1114-MW4 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



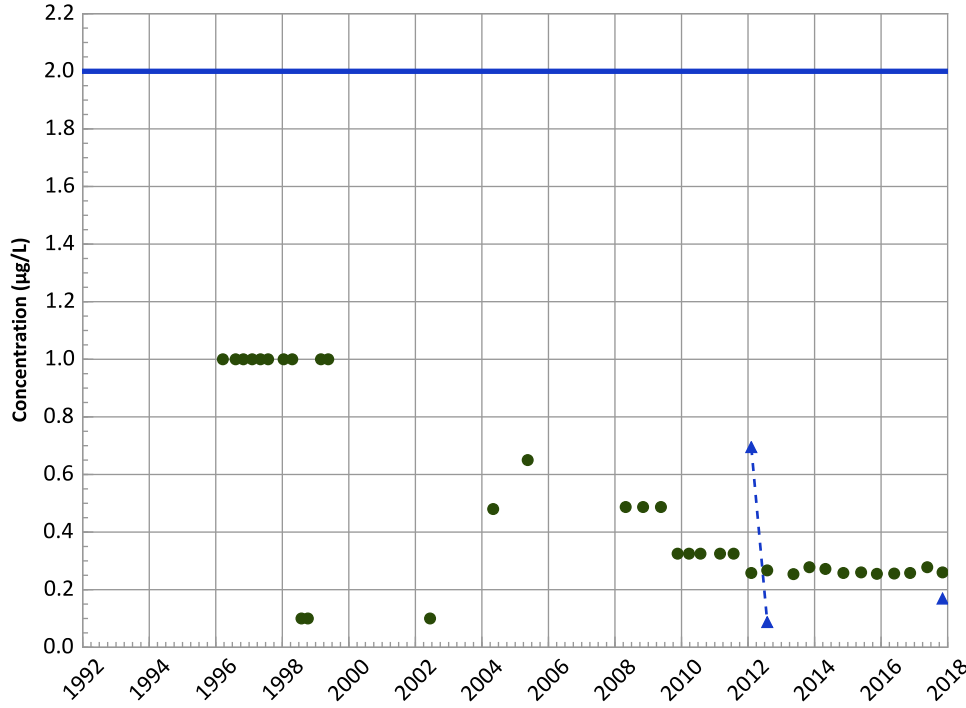
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 03/19/1996 to 11/06/2017
 Analysis Date: 03/21/2018

Well Location



1114-MW4 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

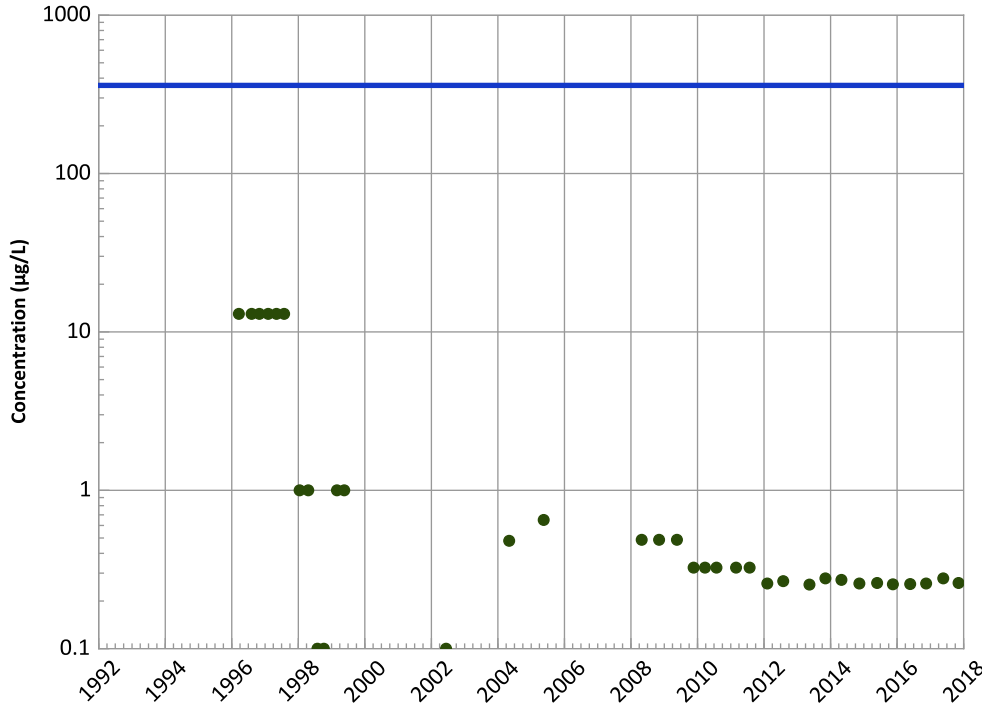
Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

All Non-Detect

All Data

All Non-Detect

MAROS Linear Regression Method

Data ():

All Non-Detect

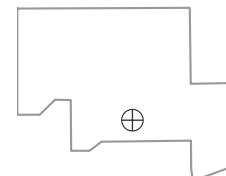
All Data

All Non-Detect

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/19/1996 to 11/06/2017
Analysis Date: 03/21/2018

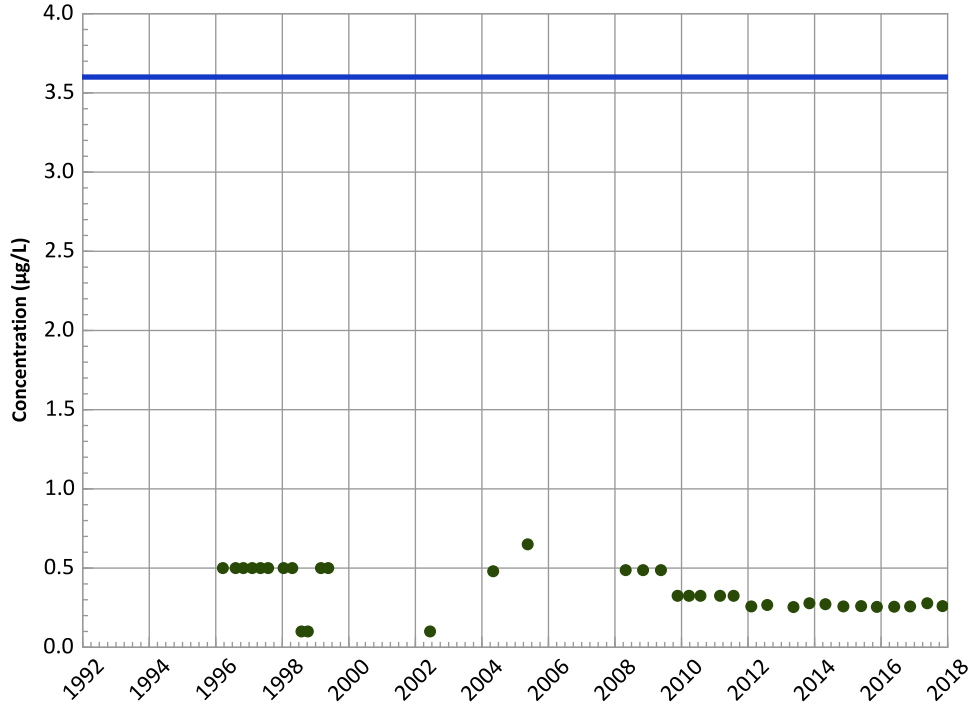
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

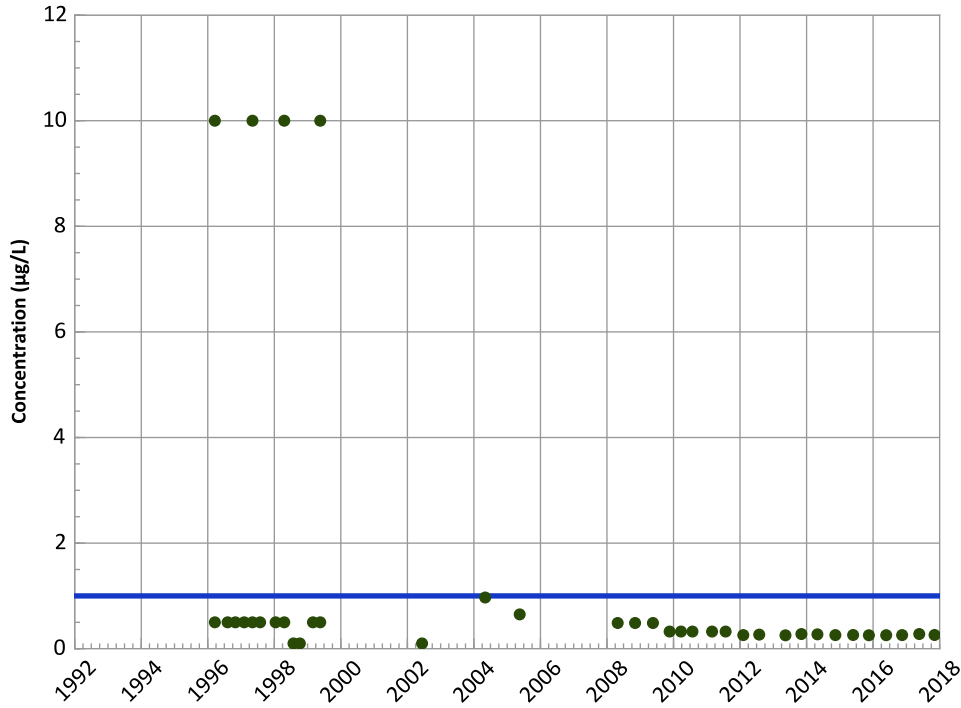


1114-MW4 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



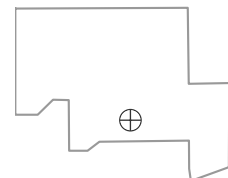
2,4-Dinitrotoluene Trend



Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 03/19/1996 to 11/06/2017
 Analysis Date: 03/21/2018

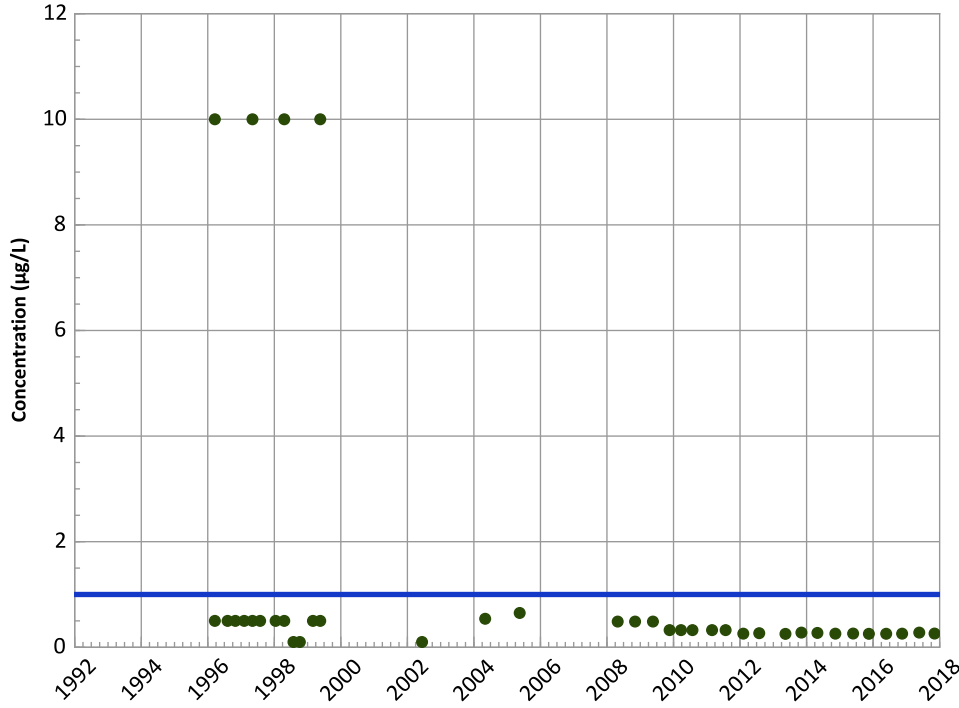
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



1114-MW4 in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

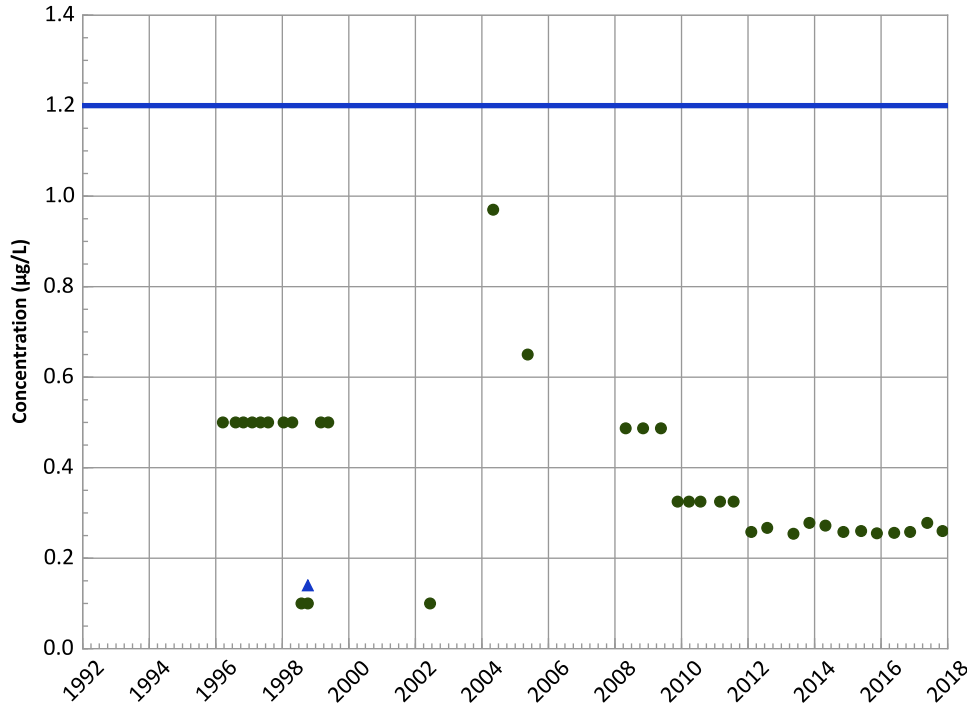
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

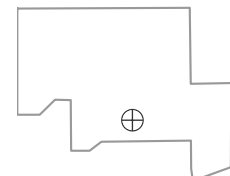
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

Well Location

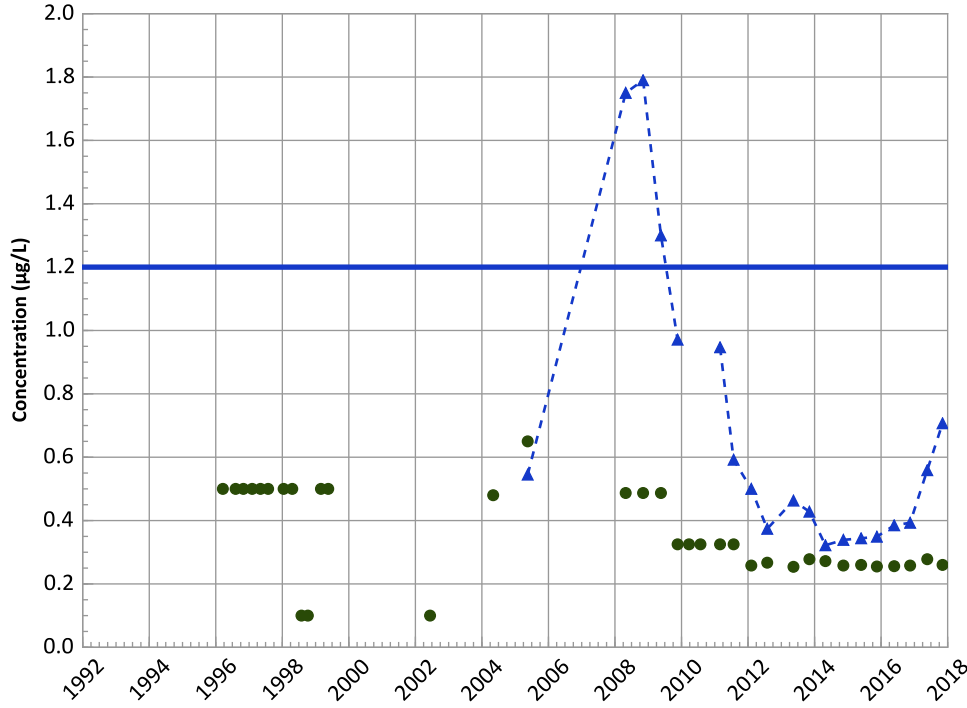


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/19/1996 to 11/06/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

1114-MW4 in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

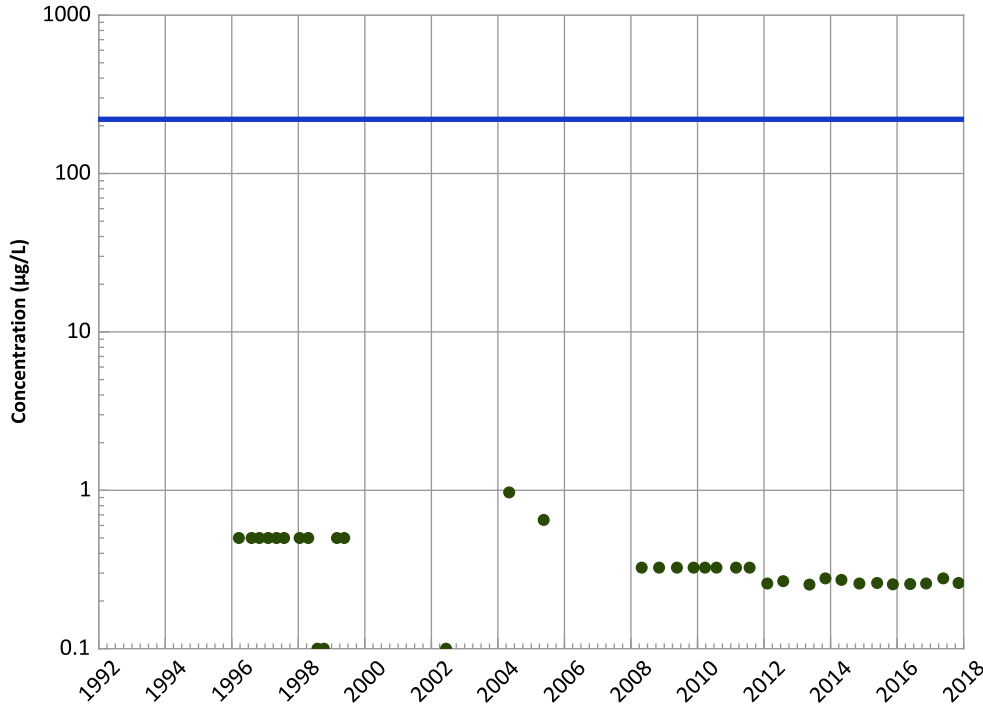
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Probably Decreasing
All Data
Decreasing

1,3,5-Trinitrobenzene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

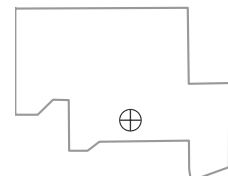
MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/19/1996 to 11/06/2017
Analysis Date: 03/21/2018

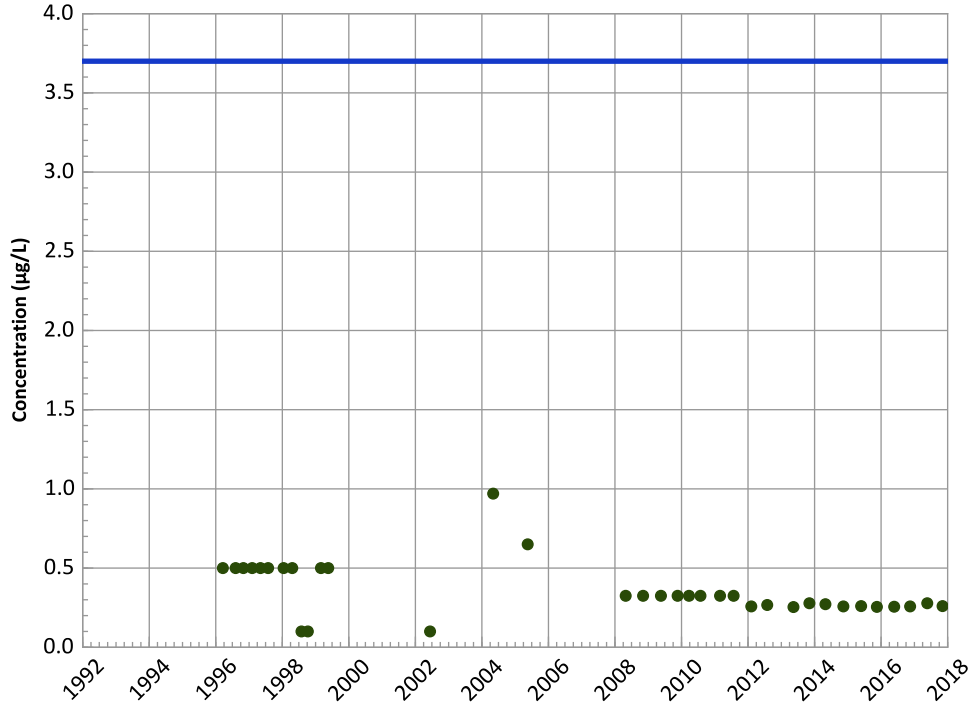
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



1114-MW4 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

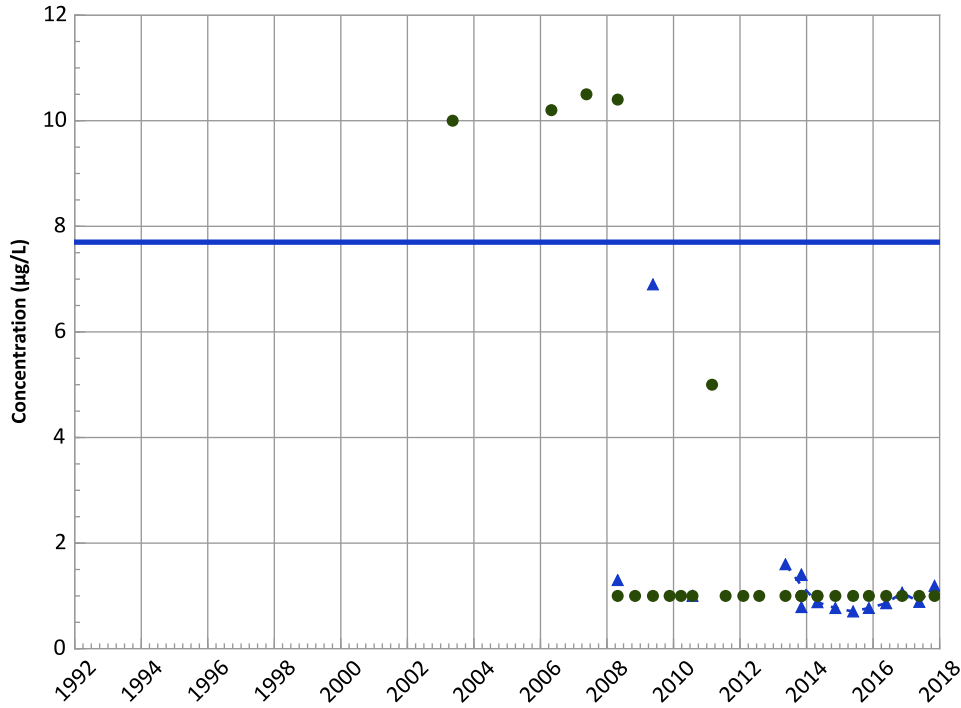
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,4-Dioxane (p-Dioxane) Trend



Concentration Trend

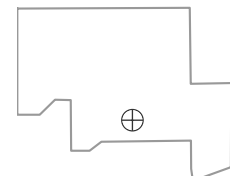
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Probably Decreasing
All Data
Decreasing

Well Location

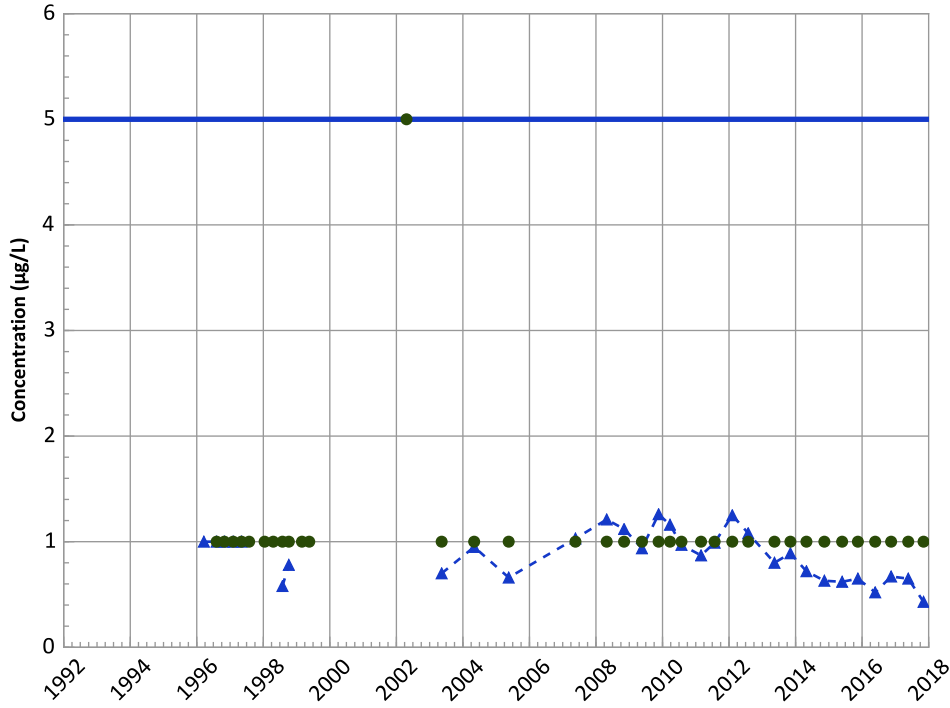


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/19/1996 to 11/06/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

1114-MW4 in Perched Aquifer
USDOE/NNSA Pantex Plant

Tetrachloroethylene (PCE) Trend



Concentration Trend

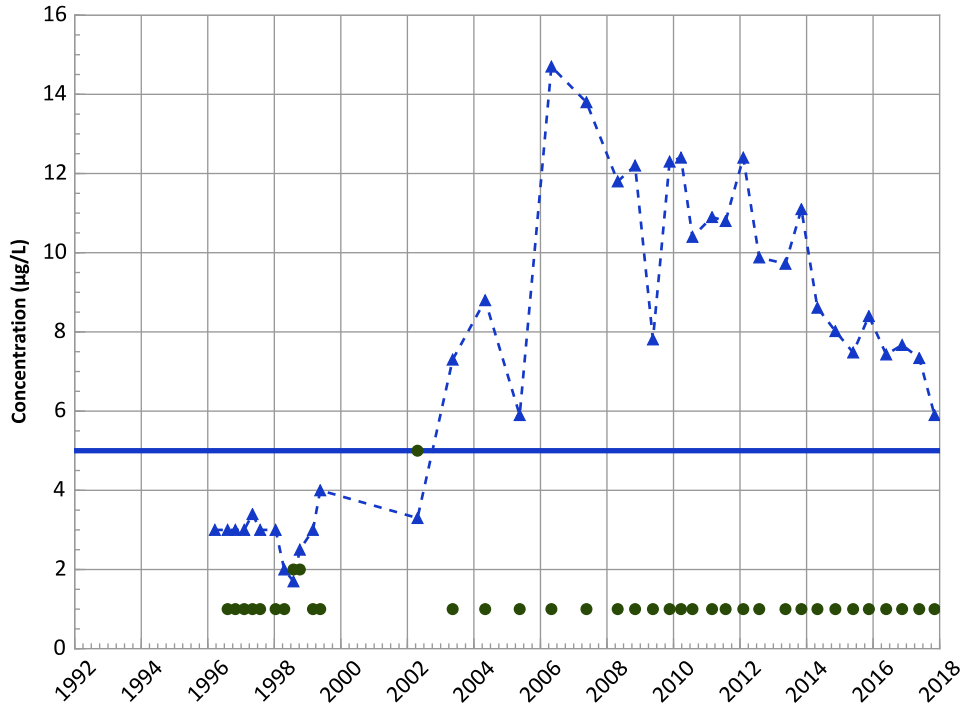
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

Trichloroethene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Increasing

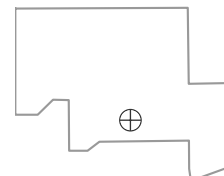
MAROS Linear Regression Method

Data ():
Decreasing
All Data
Increasing

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/19/1996 to 11/06/2017
Analysis Date: 03/21/2018

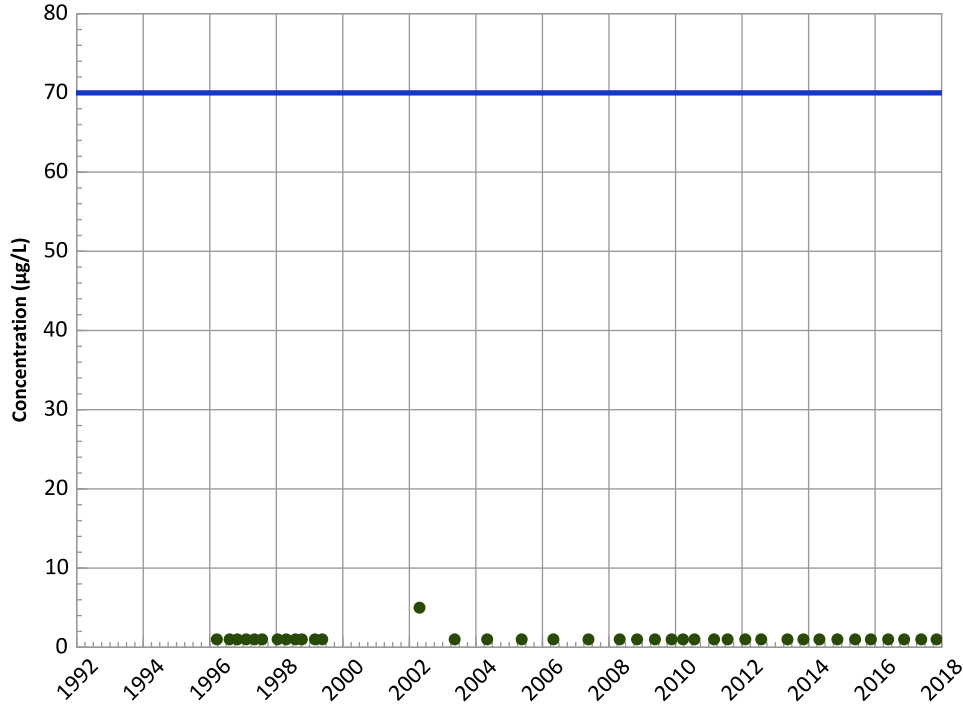
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



1114-MW4 in Perched Aquifer
USDOE/NNSA Pantex Plant

cis-1,2-Dichloroethene Trend



Concentration Trend

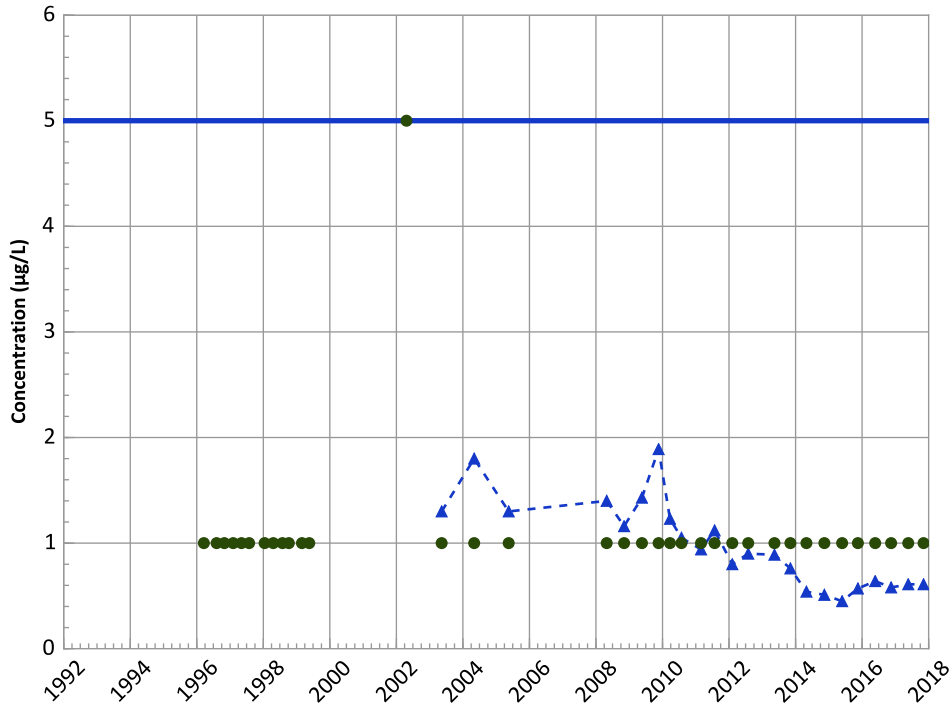
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,2-Dichloroethane Trend



Concentration Trend

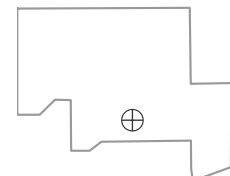
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
No Trend

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

Well Location

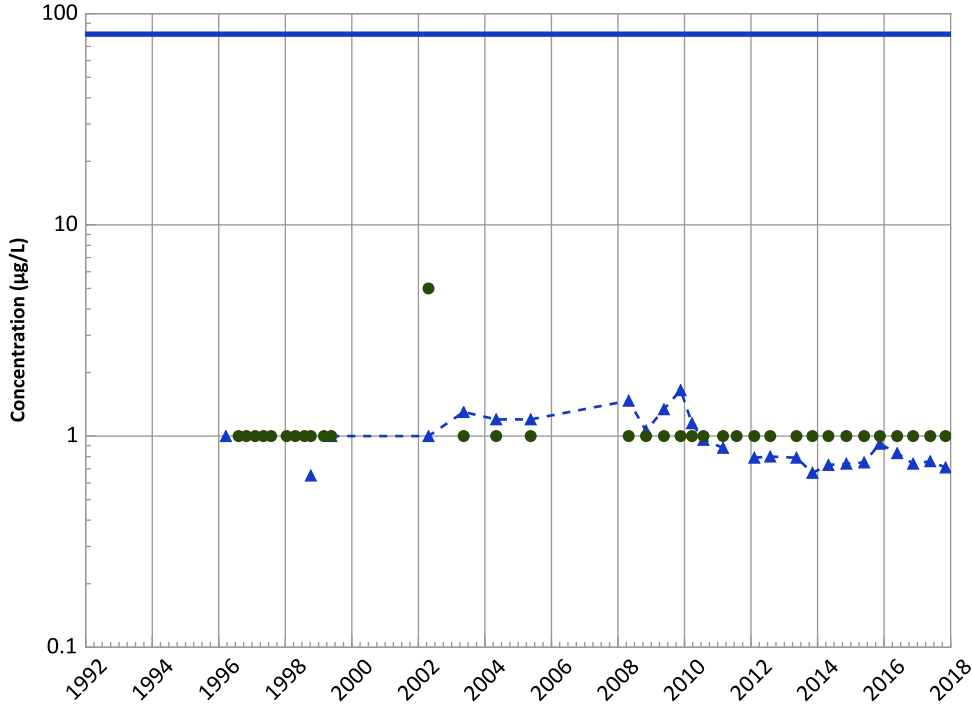


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/19/1996 to 11/06/2017
Analysis Date: 03/21/2018

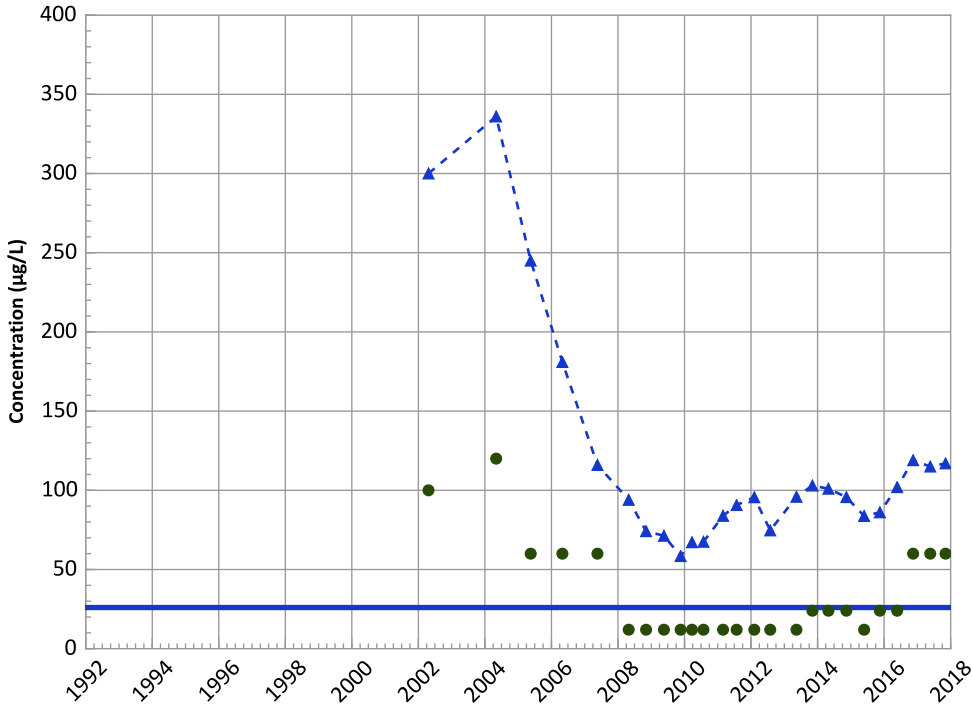
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

1114-MW4 in Perched Aquifer
USDOE/NNSA Pantex Plant

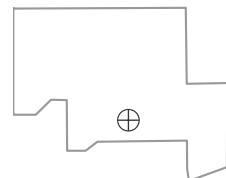
Chloroform Trend



Perchlorate Trend



Well Location

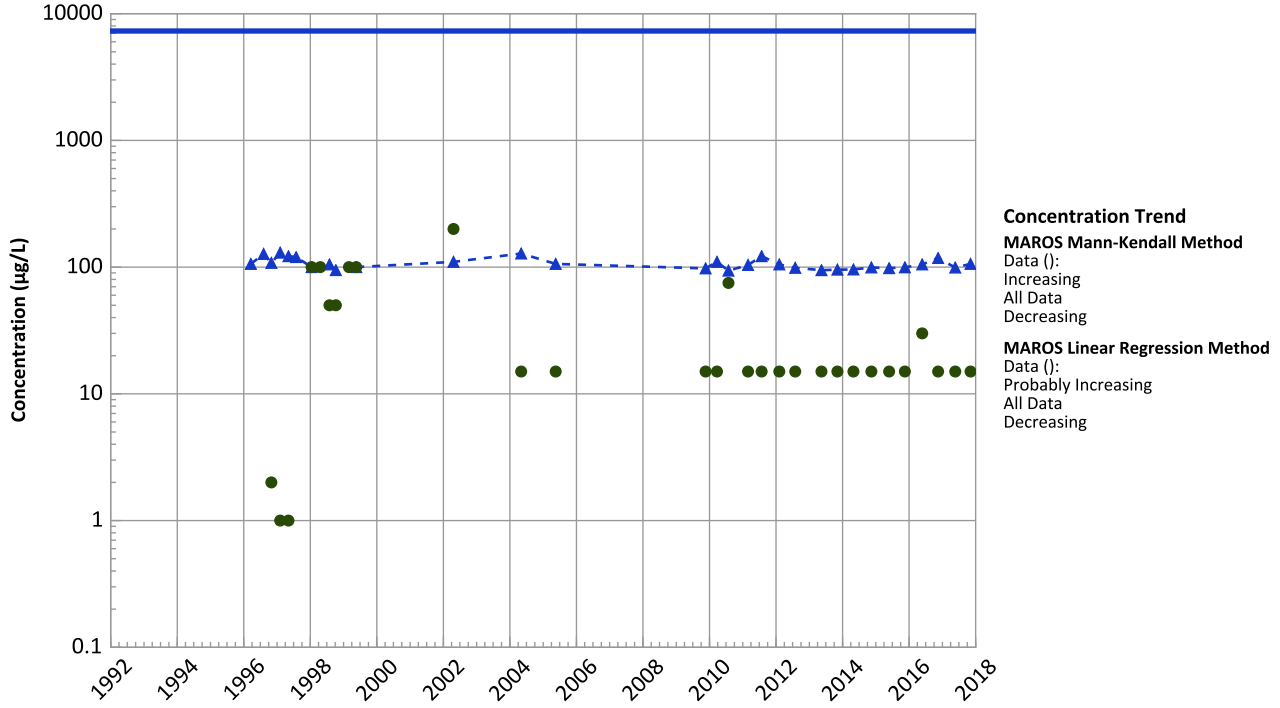


Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 03/19/1996 to 11/06/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

1114-MW4 in Perched Aquifer
USDOE/NNSA Pantex Plant

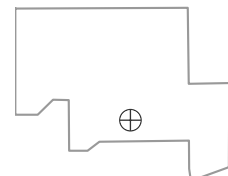
Boron Trend



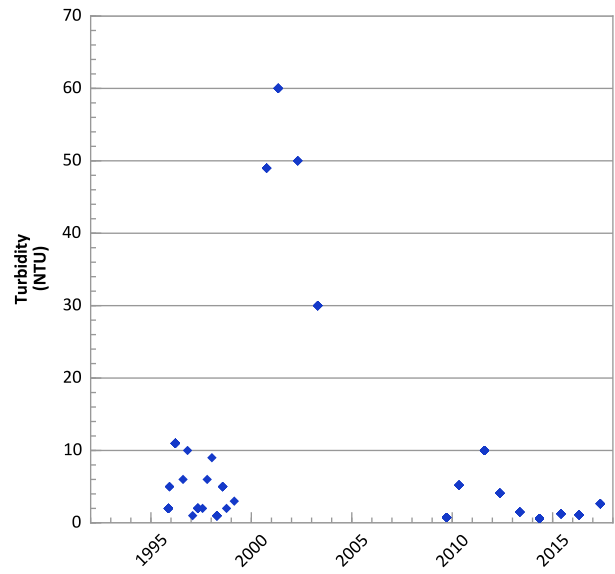
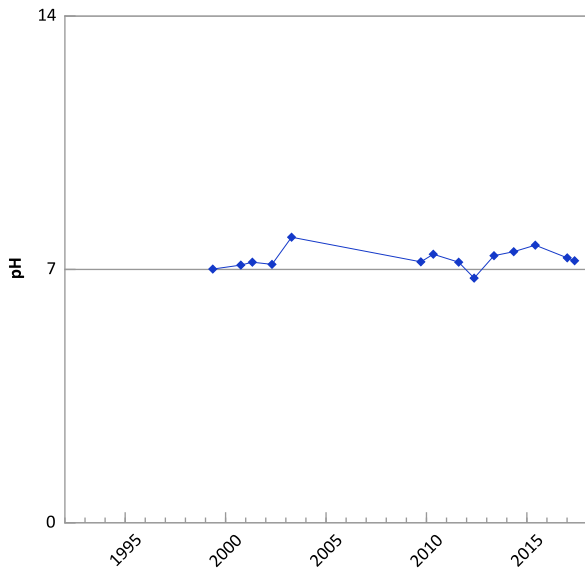
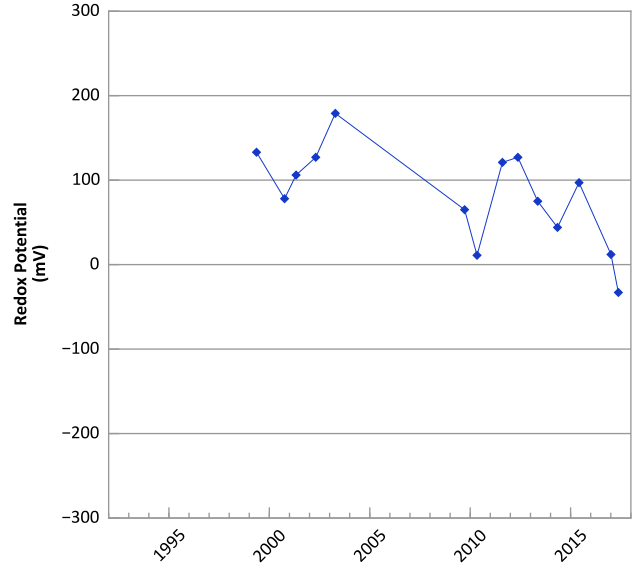
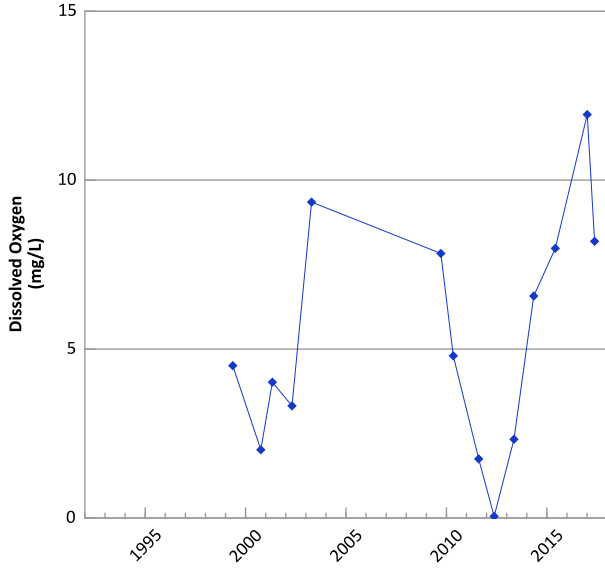
Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/19/1996 to 11/06/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

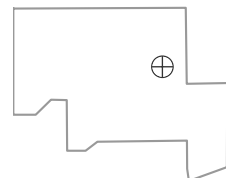


**OW-WR-38 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



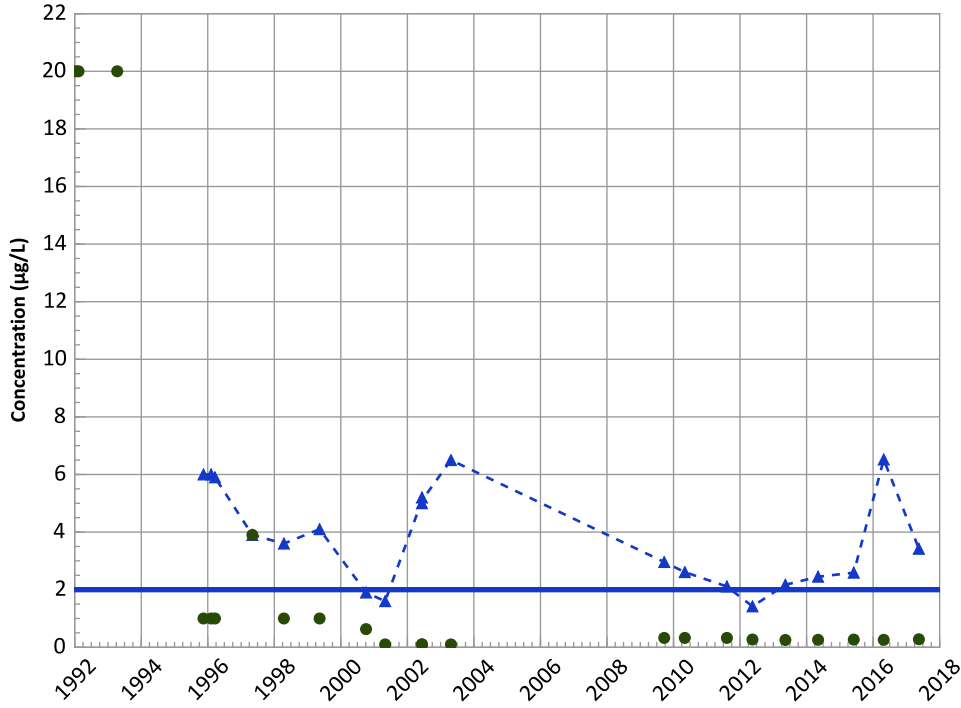
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 01/16/1992 to 05/18/2017
 Analysis Date: 03/21/2018

Well Location



**OW-WR-38 in Perched Aquifer
USDOE/NNSA Pantex Plant**

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

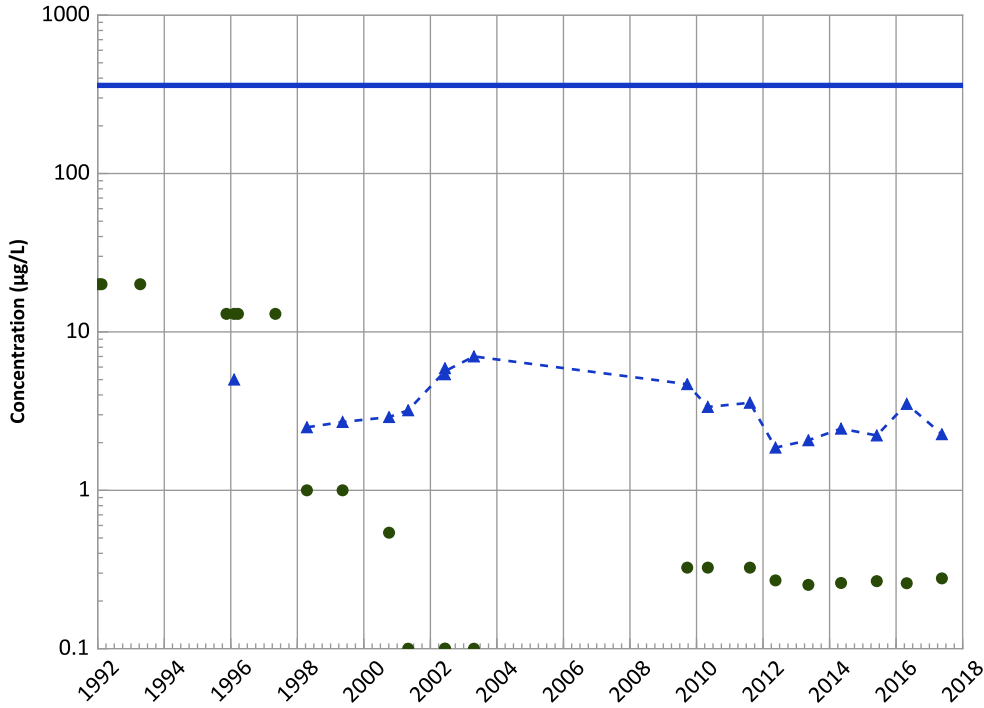
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Decreasing

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Decreasing

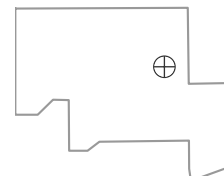
MAROS Linear Regression Method

Data ():
Increasing
All Data
Decreasing

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 01/16/1992 to 05/18/2017
Analysis Date: 03/21/2018

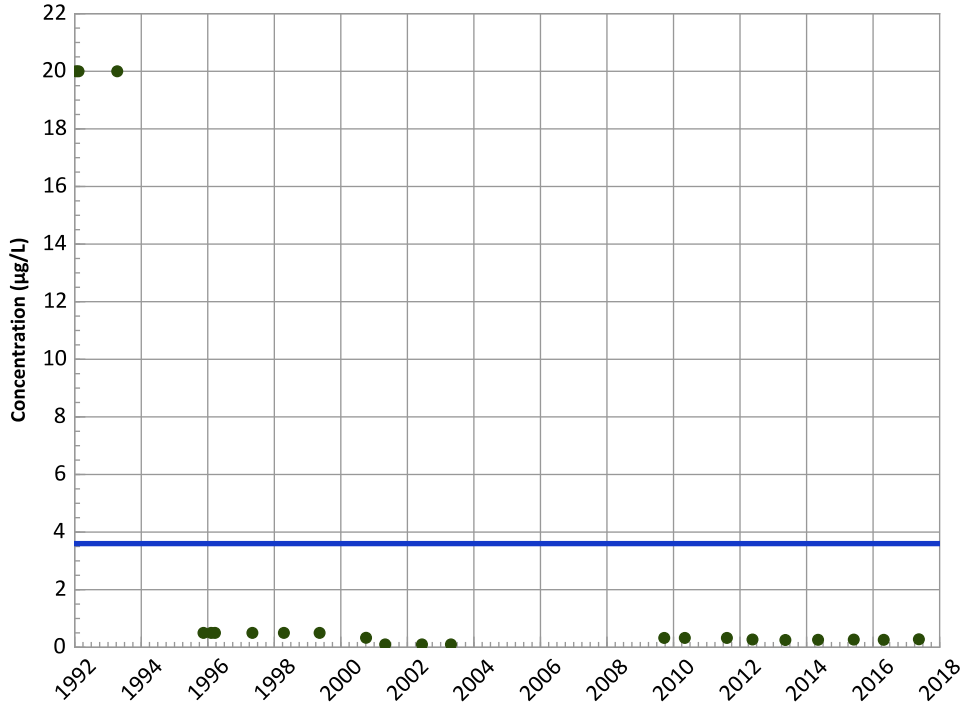
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



OW-WR-38 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

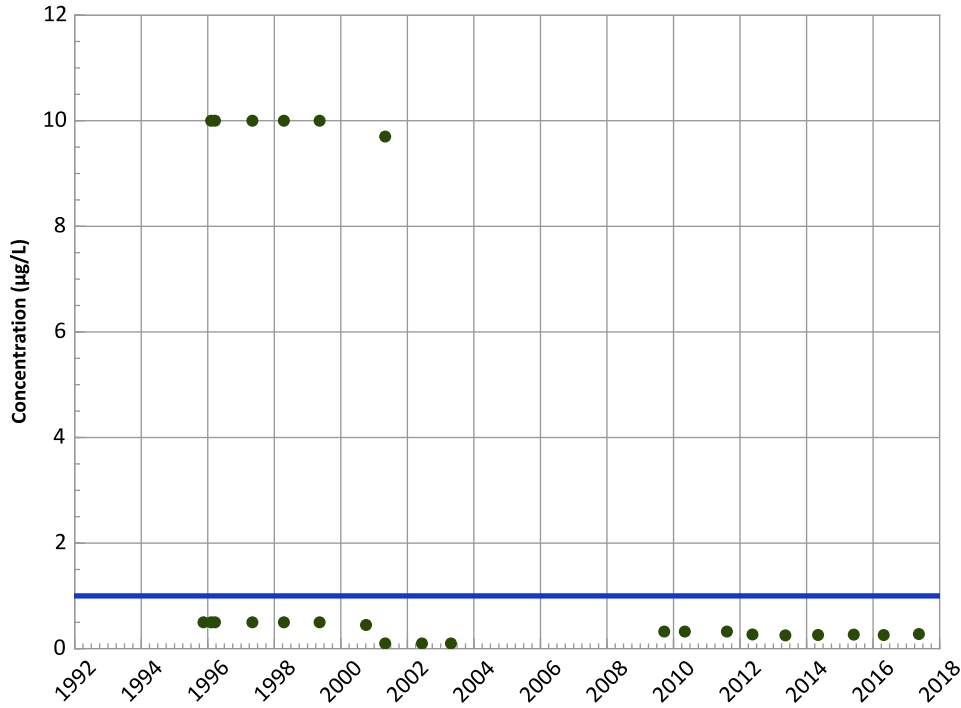
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

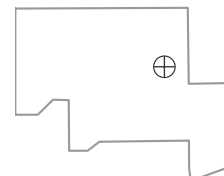
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

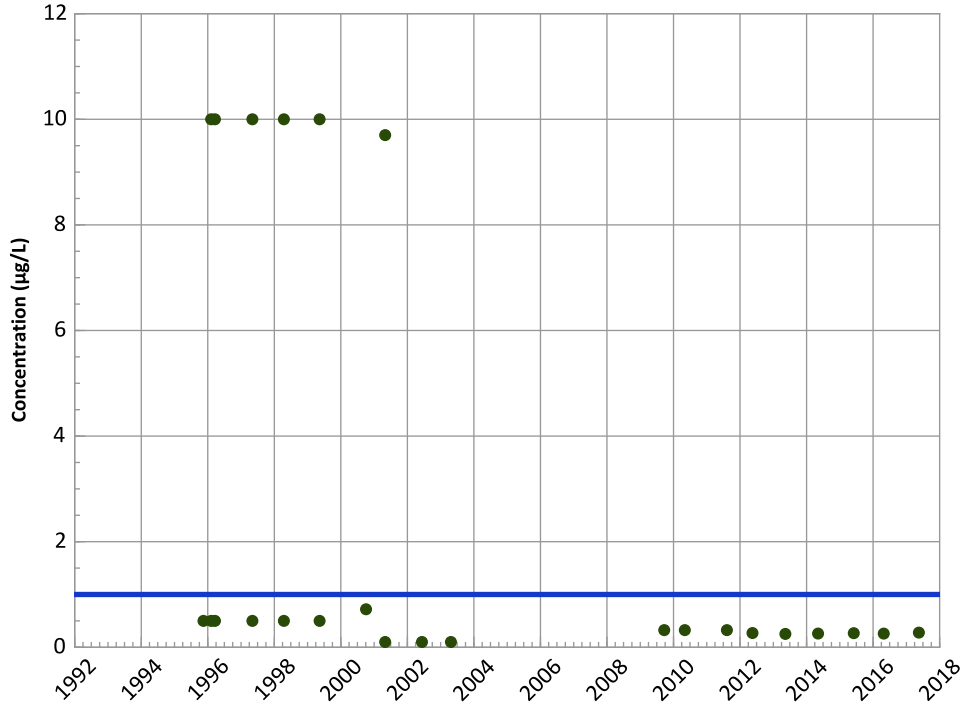


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 01/16/1992 to 05/18/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

OW-WR-38 in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

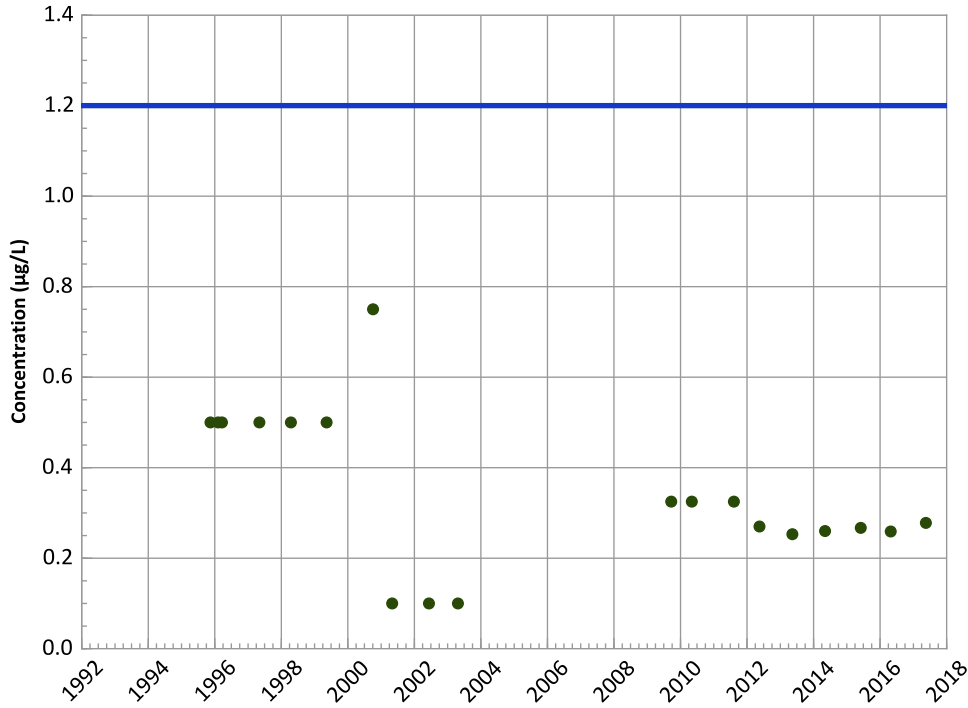
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

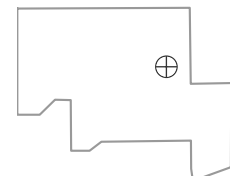
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

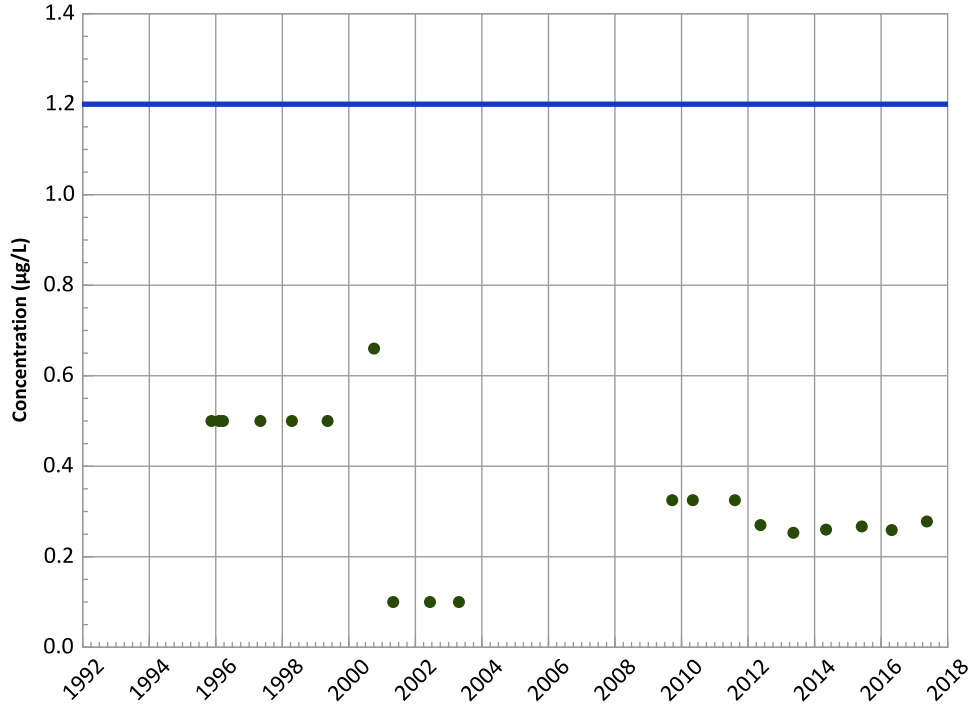


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 01/16/1992 to 05/18/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

OW-WR-38 in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

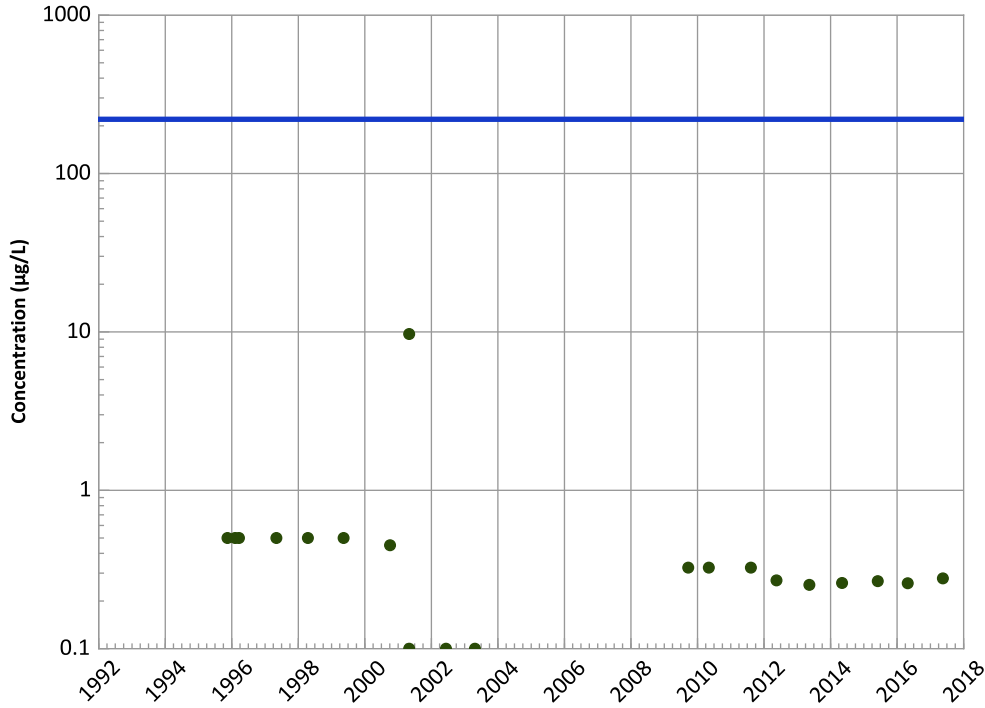
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,3,5-Trinitrobenzene Trend



Concentration Trend

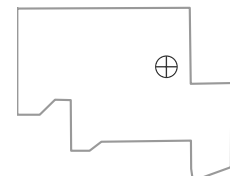
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

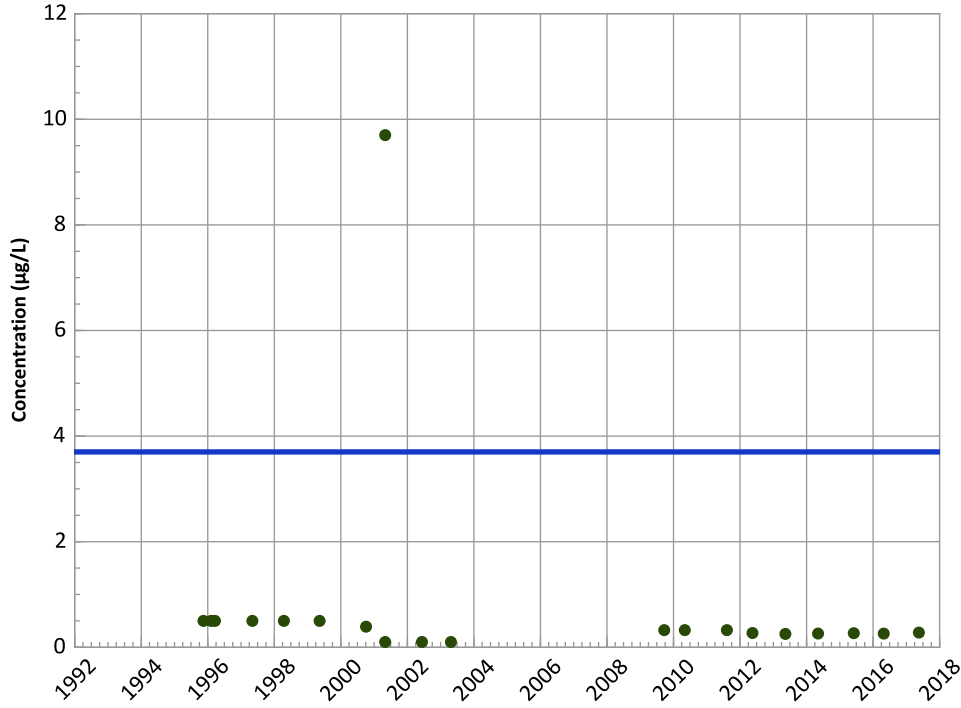


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 01/16/1992 to 05/18/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

OW-WR-38 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

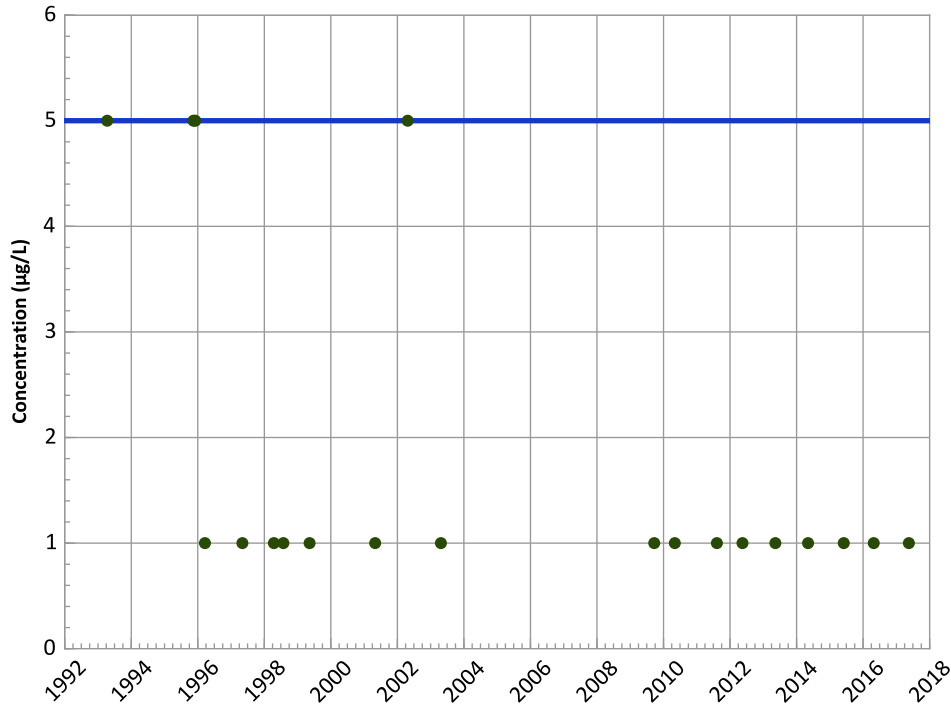
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Tetrachloroethylene (PCE) Trend



Concentration Trend

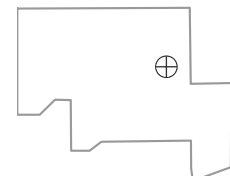
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

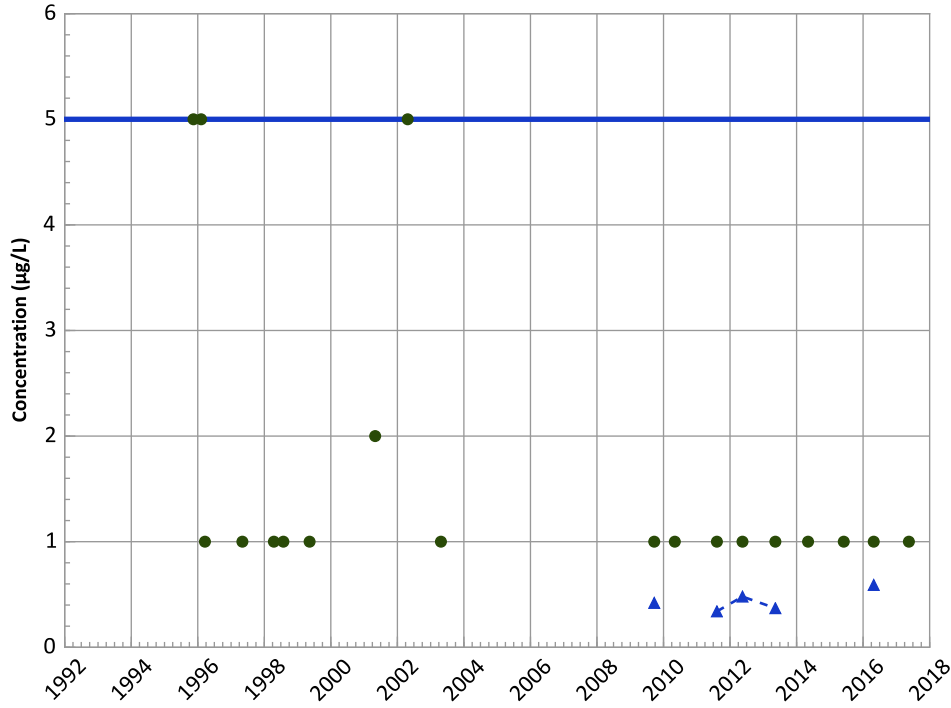


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 01/16/1992 to 05/18/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

OW-WR-38 in Perched Aquifer
USDOE/NNSA Pantex Plant

Trichloroethene Trend

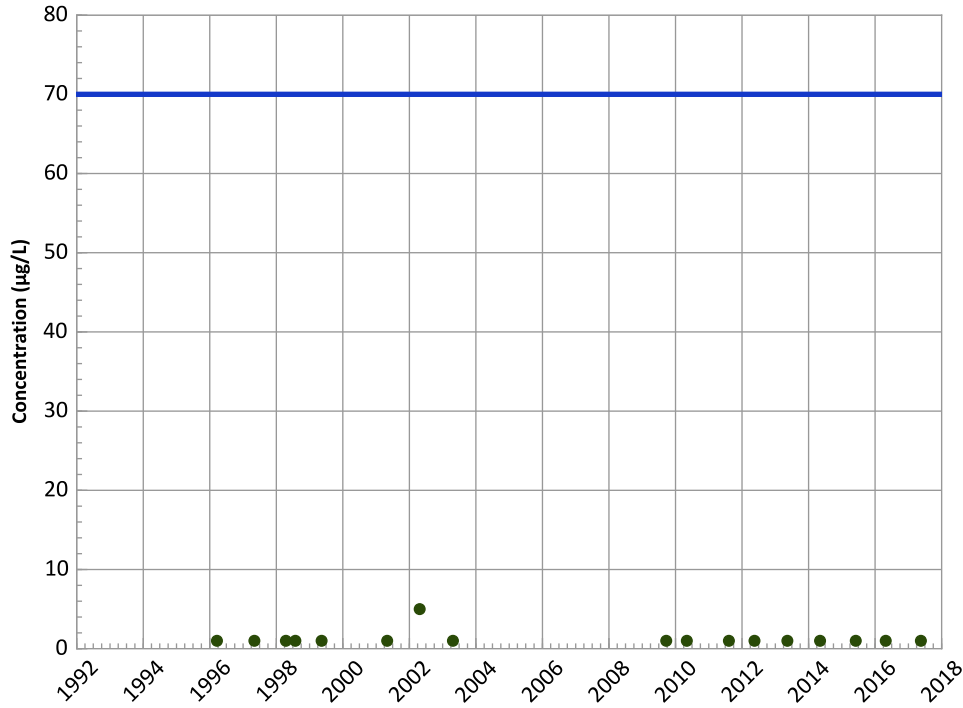


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

MAROS Linear Regression Method
Data ():
N/A (<4 Detections in Dataset)
All Data
No Trend

cis-1,2-Dichloroethene Trend

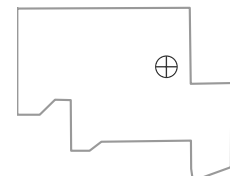


Concentration Trend

MAROS Mann-Kendall Method
Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method
Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

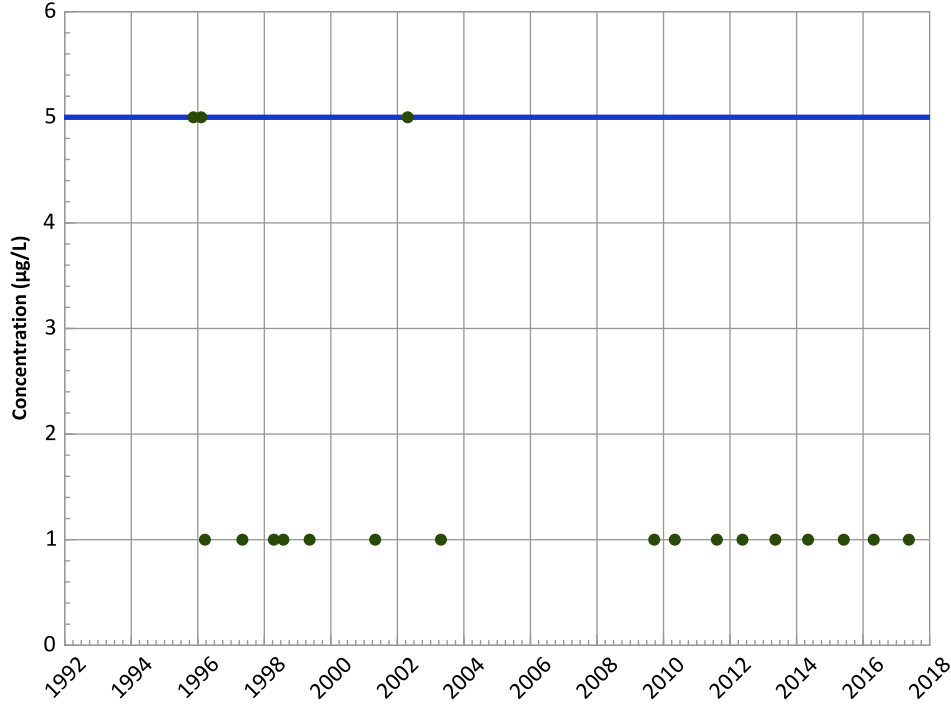


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 01/16/1992 to 05/18/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

OW-WR-38 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,2-Dichloroethane Trend



Concentration Trend

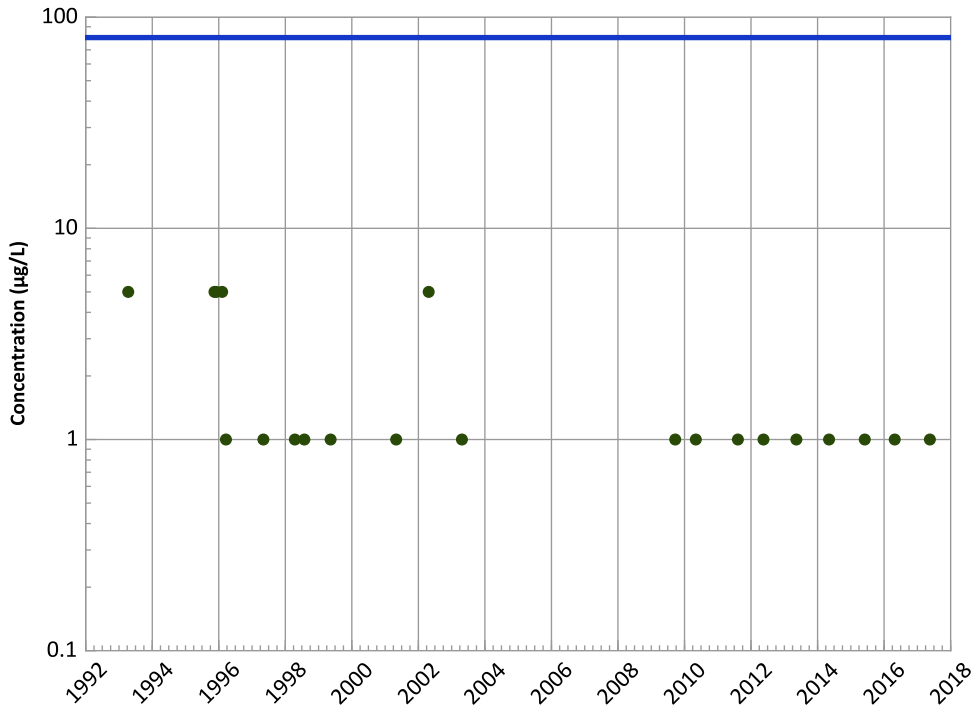
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Chloroform Trend



Concentration Trend

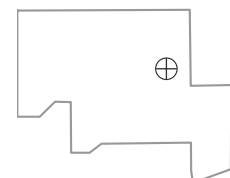
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

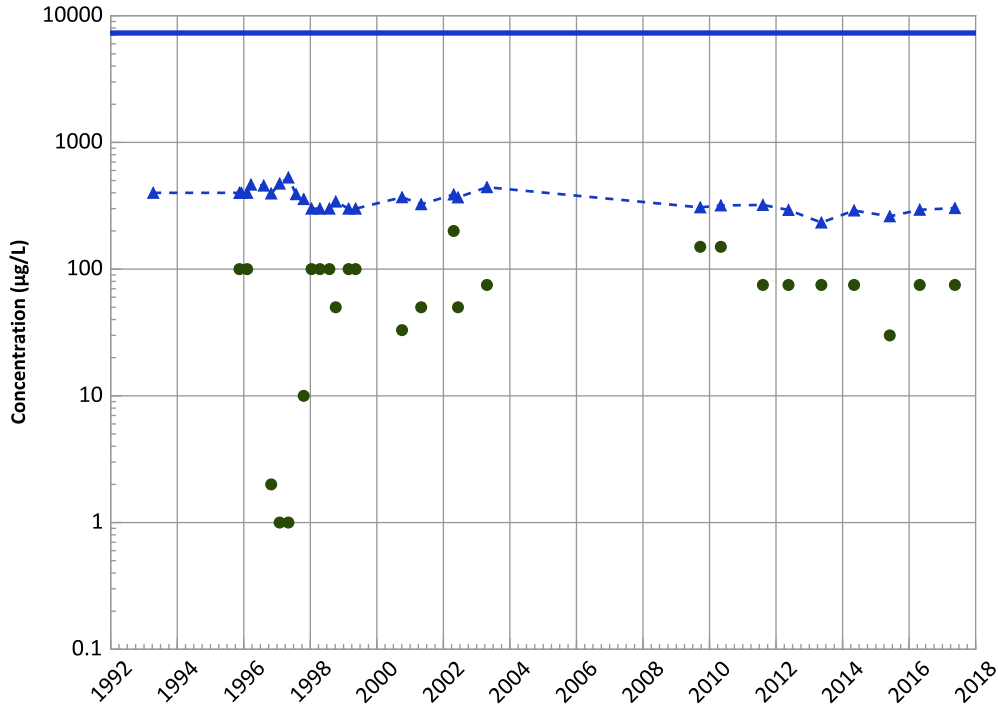


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 01/16/1992 to 05/18/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

OW-WR-38 in Perched Aquifer
USDOE/NNSA Pantex Plant

Boron Trend

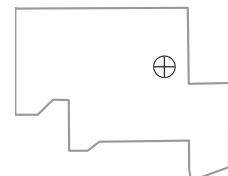


Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 No Trend
 All Data
 Decreasing
MAROS Linear Regression Method
 Data ():
 No Trend
 All Data
 Decreasing

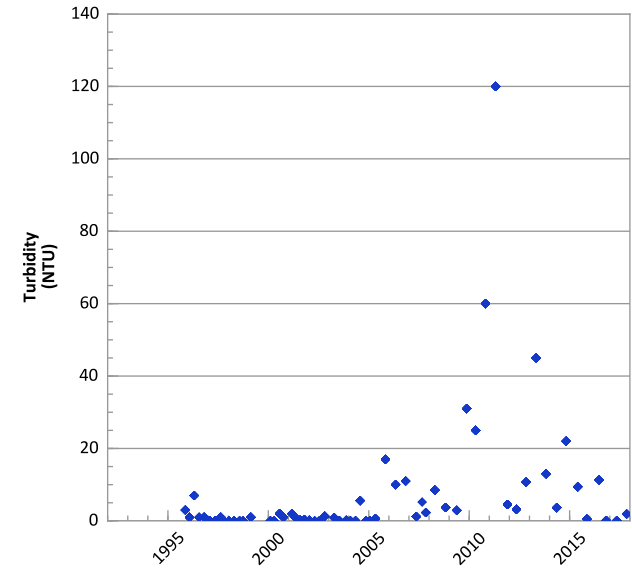
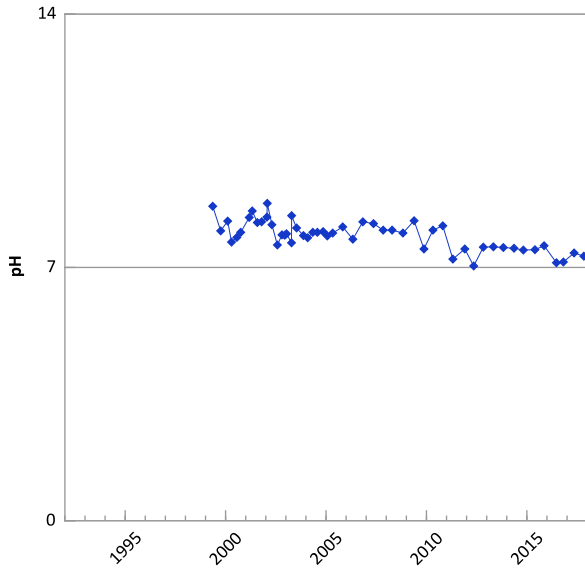
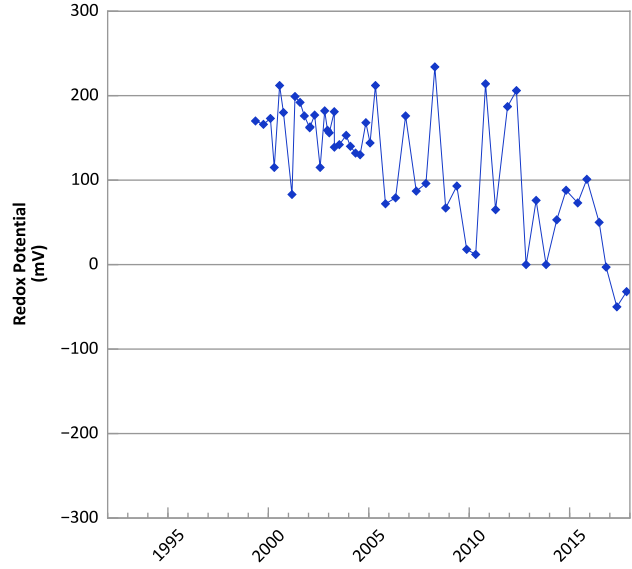
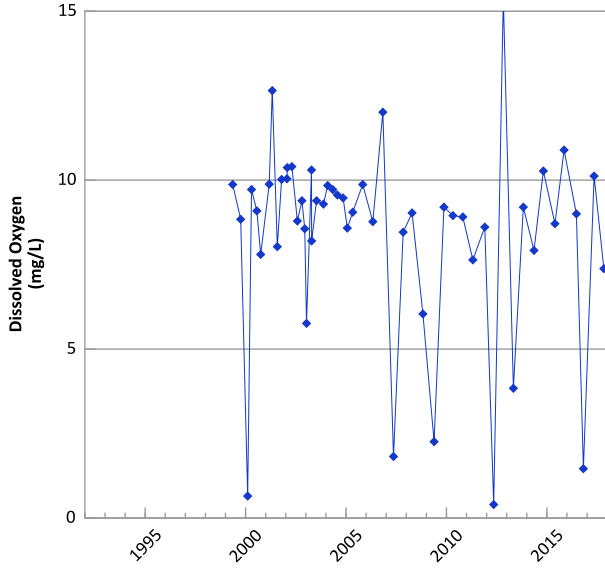
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 01/16/1992 to 05/18/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

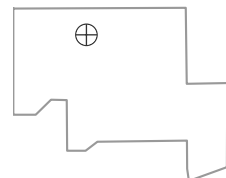


**PTX01-1001 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



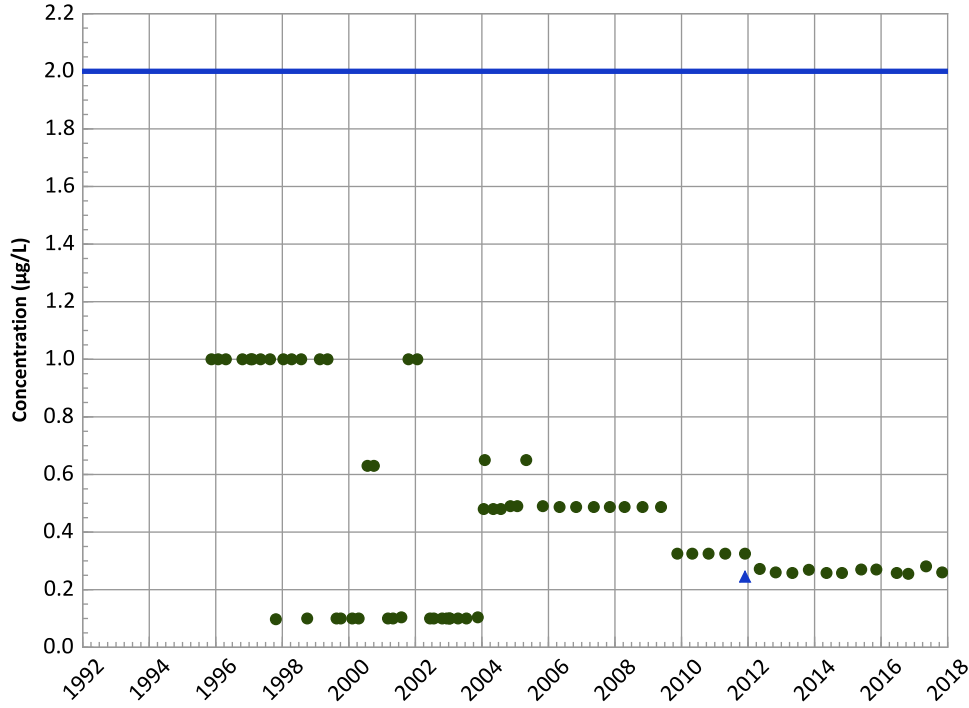
Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/15/1995 to 11/02/2017
Analysis Date: 03/21/2018

Well Location



PTX01-1001 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

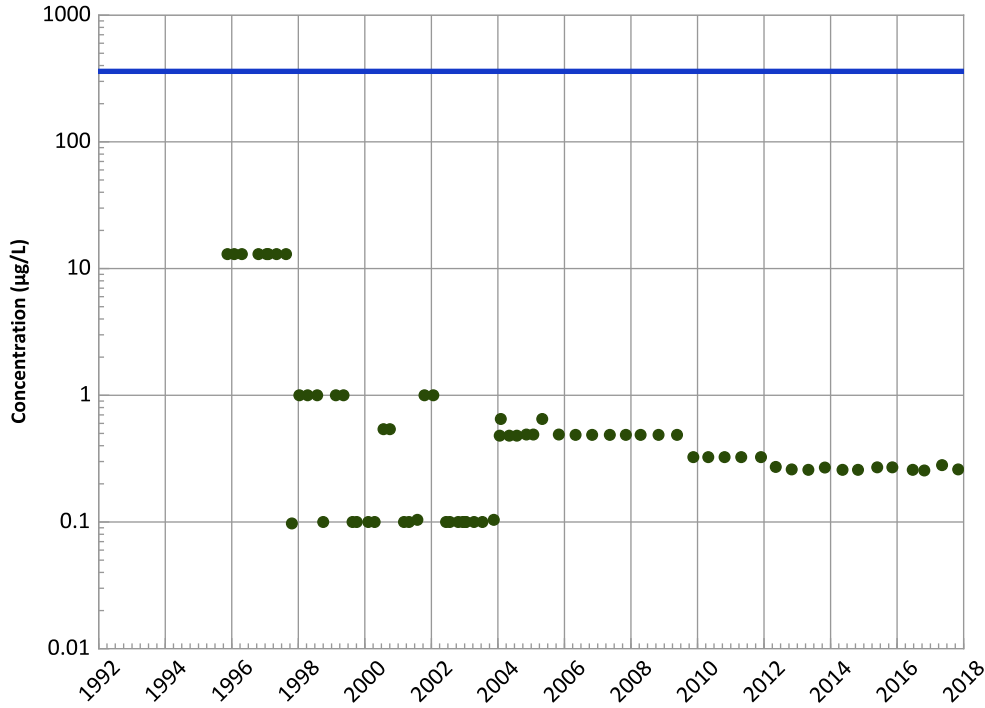
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

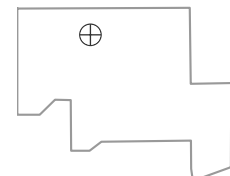
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

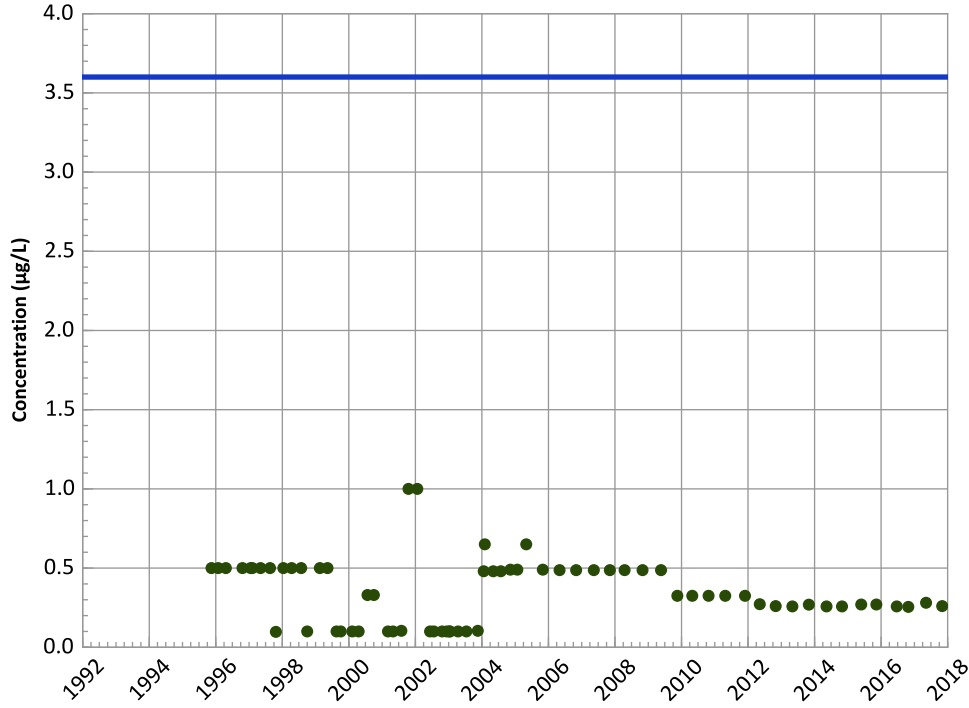


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/15/1995 to 11/02/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX01-1001 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

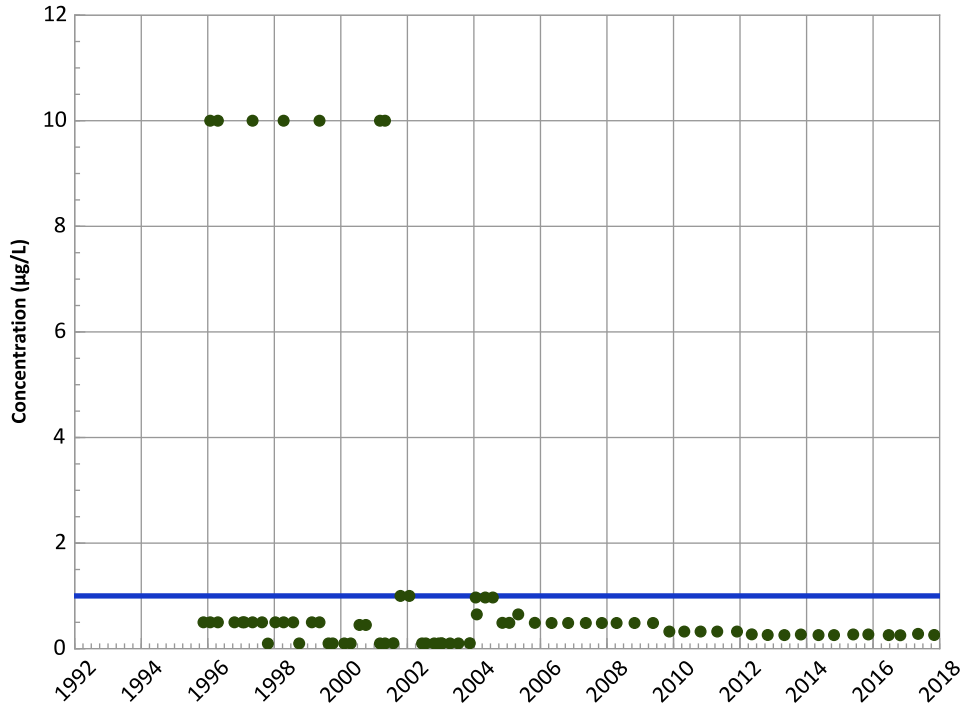
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

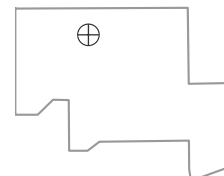
MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/15/1995 to 11/02/2017
Analysis Date: 03/21/2018

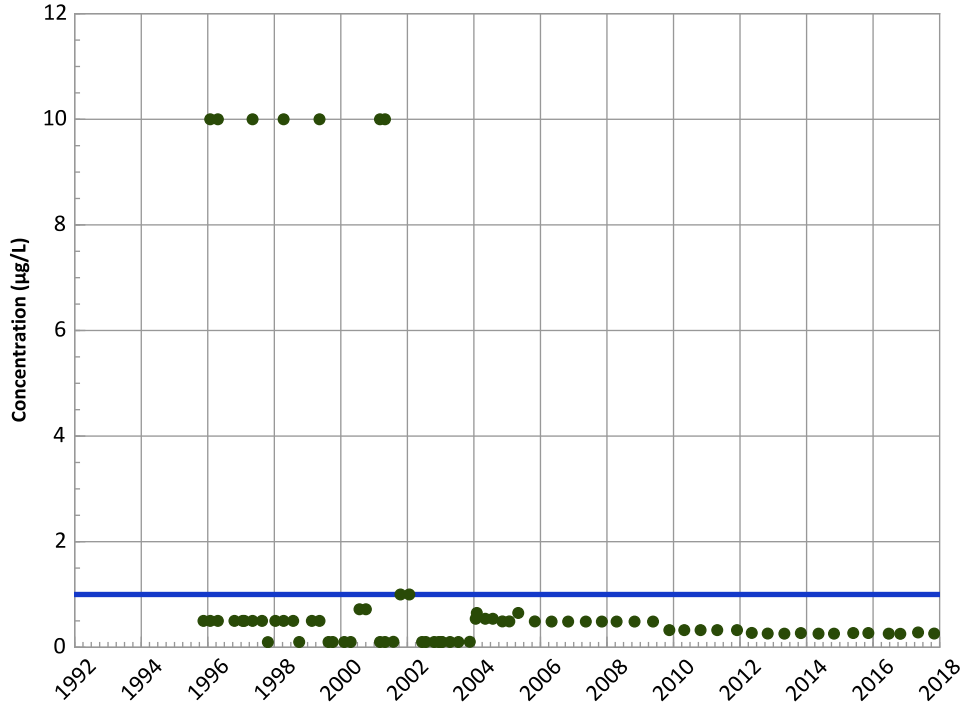
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX01-1001 in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

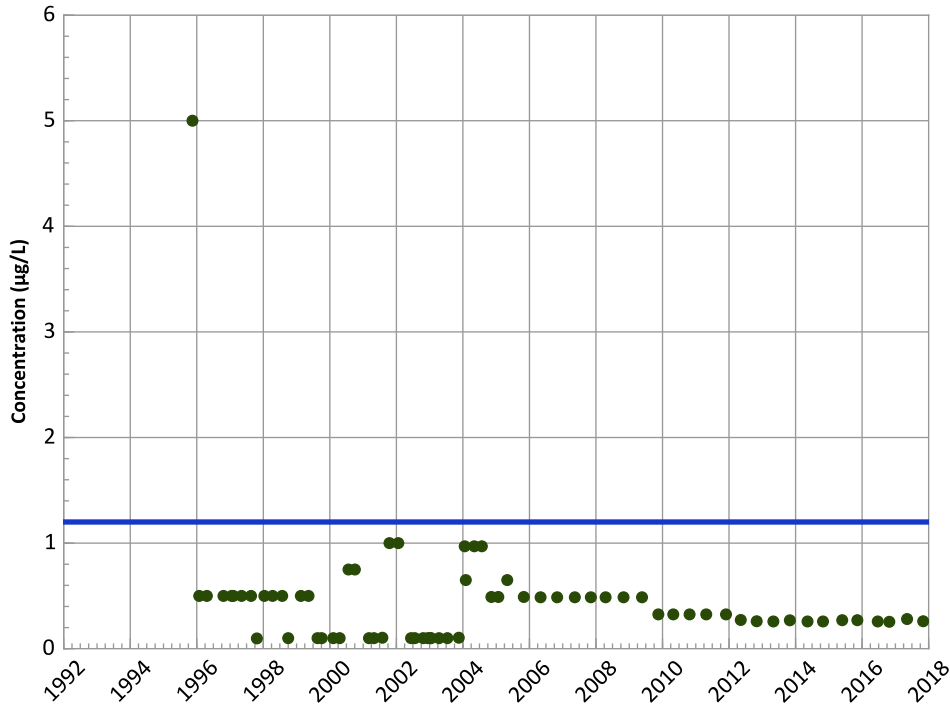
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

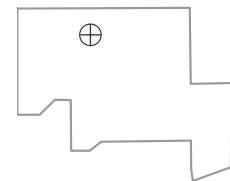
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

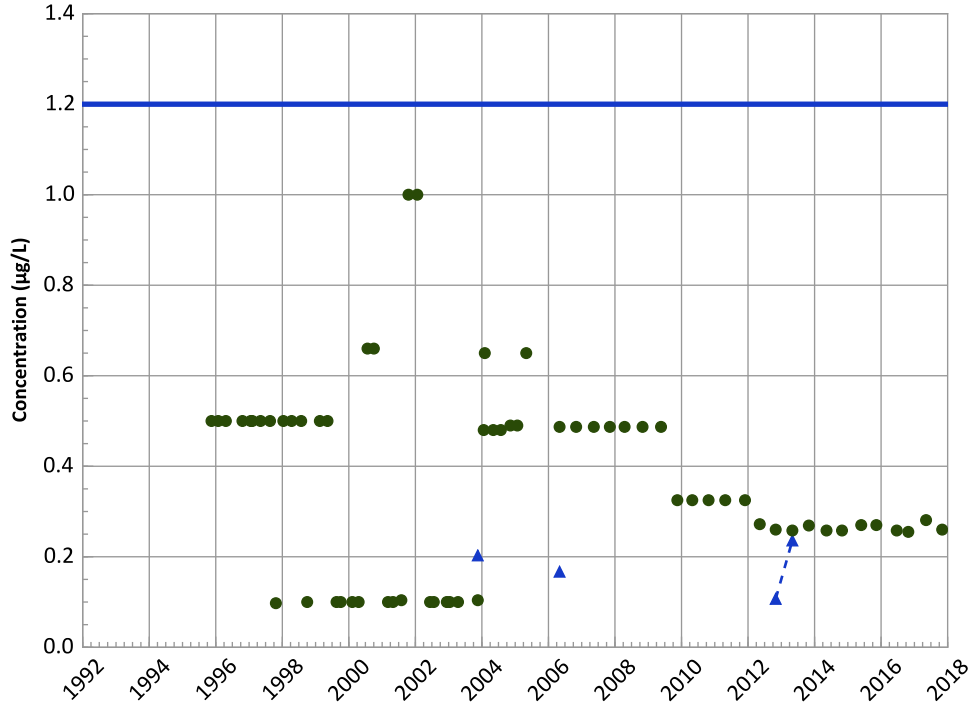


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/15/1995 to 11/02/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX01-1001 in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend

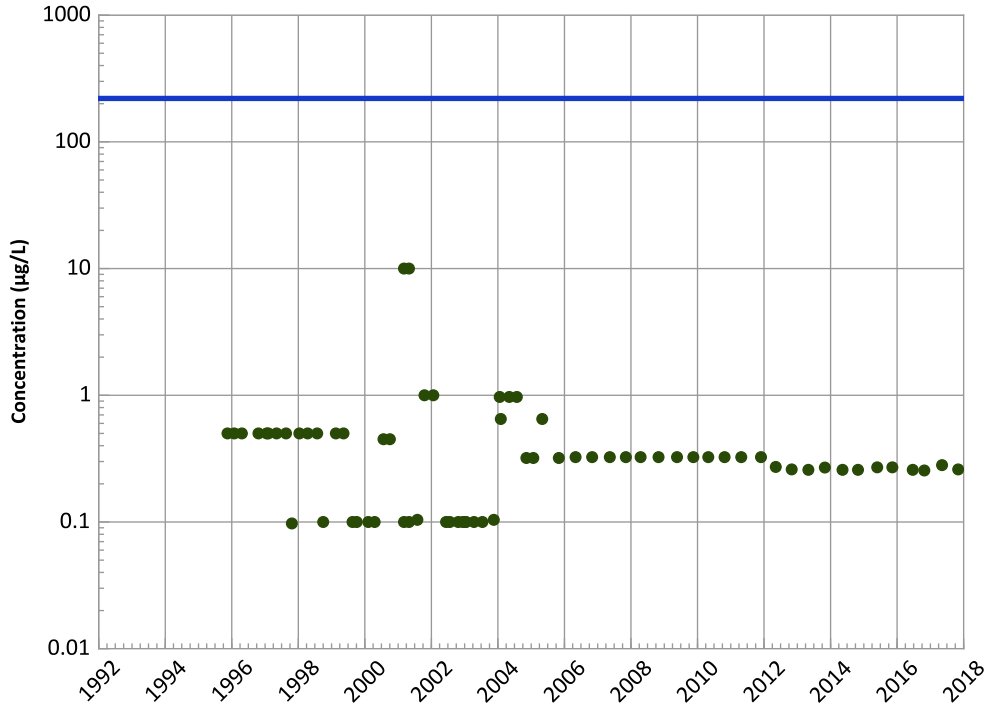


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

MAROS Linear Regression Method
Data ():
N/A (<4 Detections in Dataset)
All Data
Stable

1,3,5-Trinitrobenzene Trend

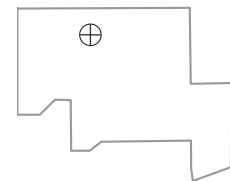


Concentration Trend

MAROS Mann-Kendall Method
Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method
Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

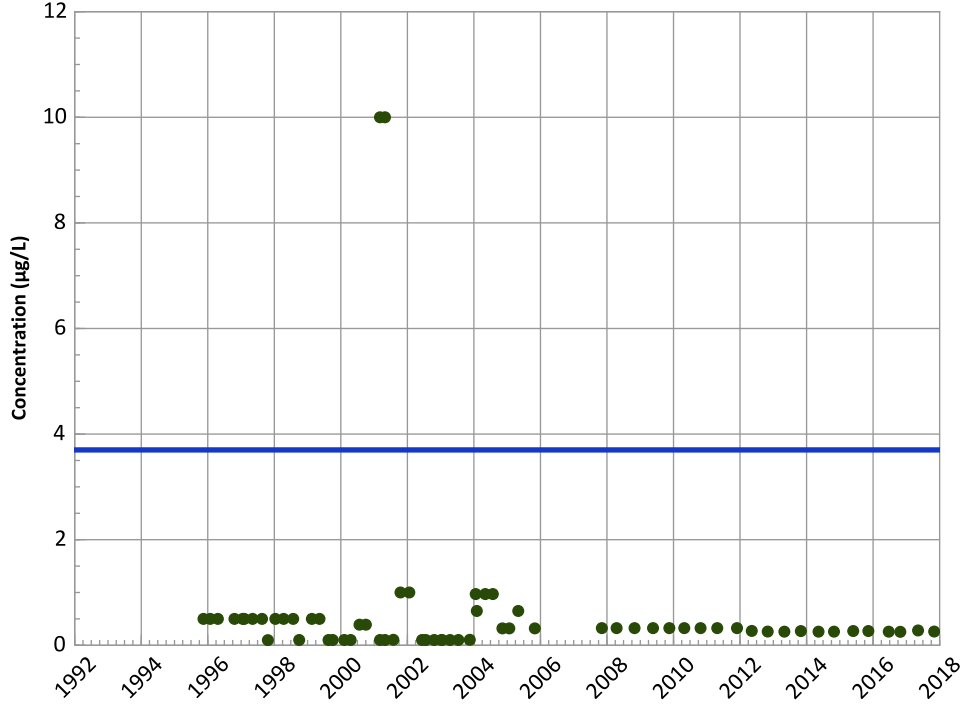


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/15/1995 to 11/02/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX01-1001 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

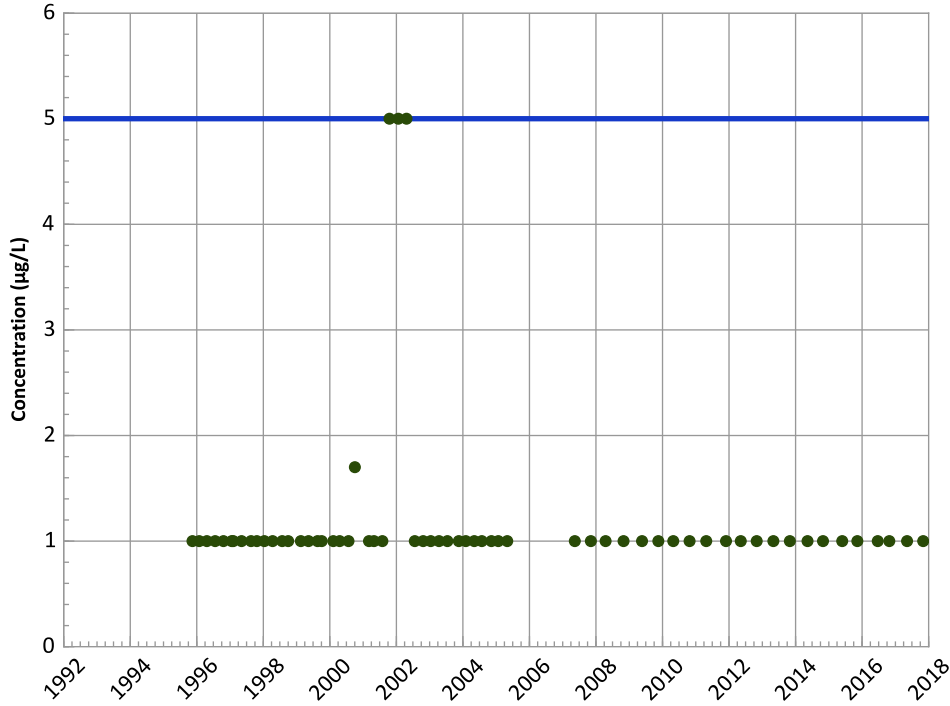
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Tetrachloroethylene (PCE) Trend



Concentration Trend

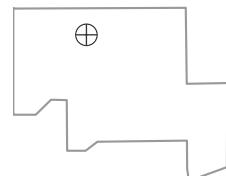
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

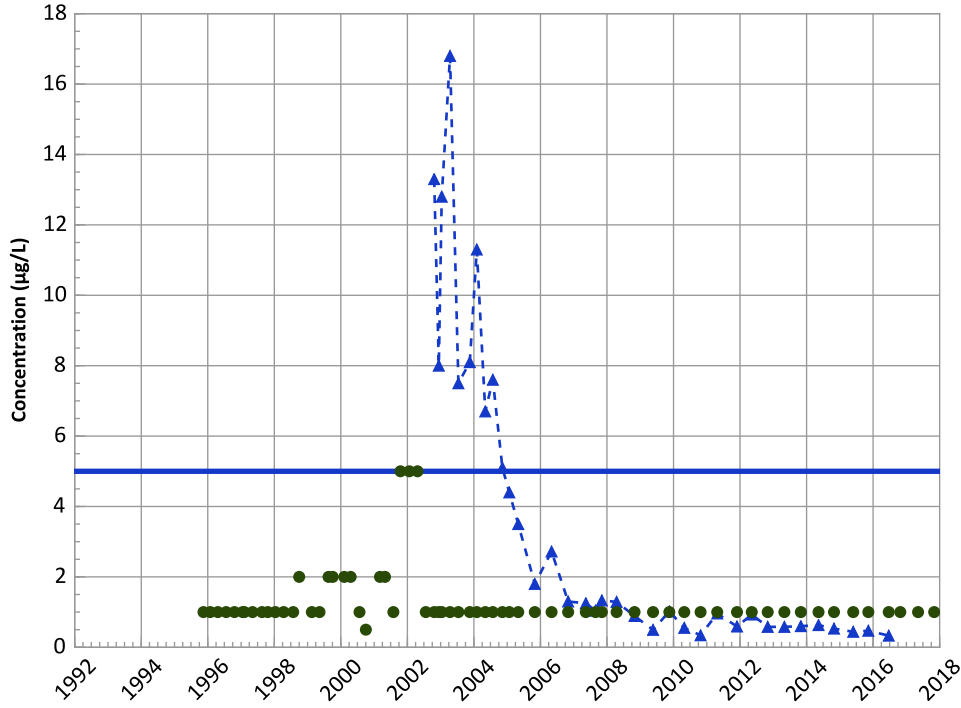


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/15/1995 to 11/02/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX01-1001 in Perched Aquifer
USDOE/NNSA Pantex Plant

Trichloroethene Trend



Concentration Trend

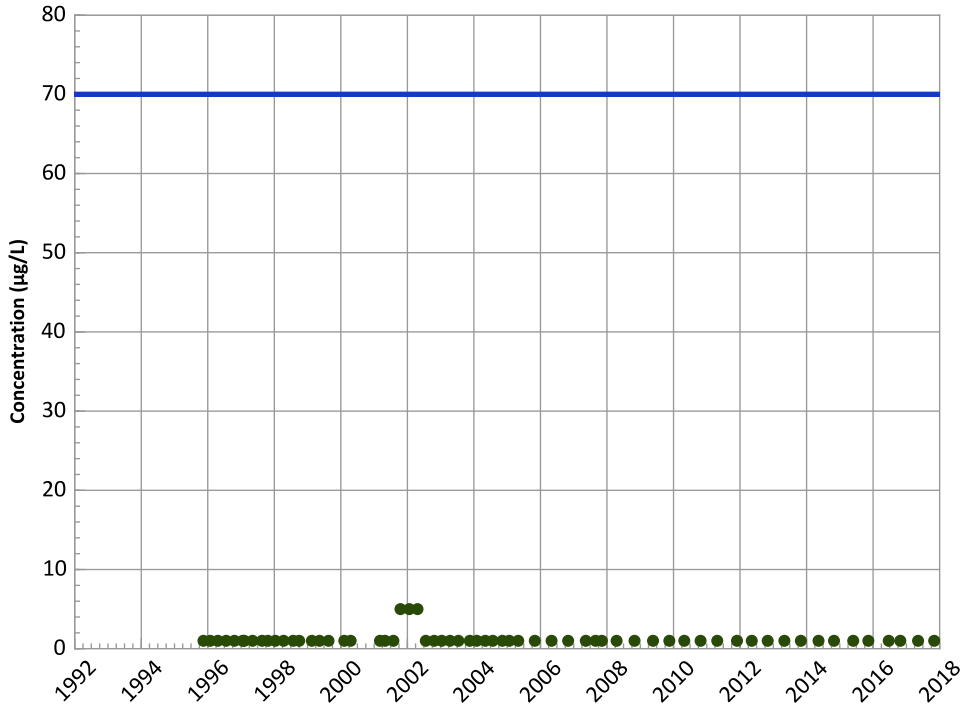
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

cis-1,2-Dichloroethene Trend



Concentration Trend

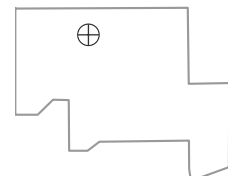
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

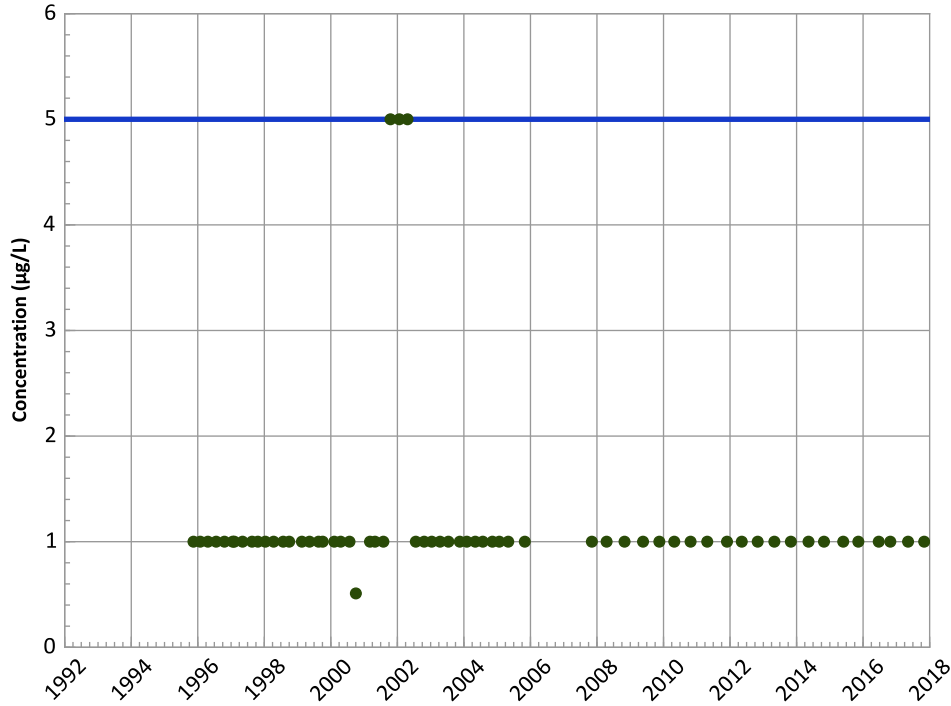
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/15/1995 to 11/02/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX01-1001 in Perched Aquifer
USDOE/NNSA Pantex Plant
1,2-Dichloroethane Trend**



Concentration Trend

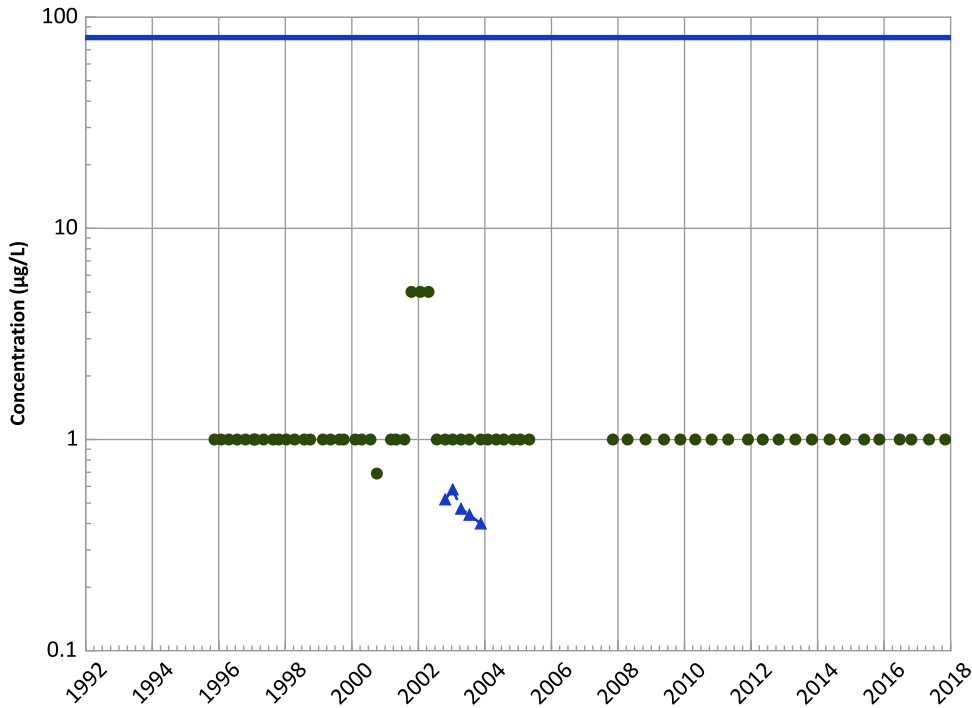
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Chloroform Trend



Concentration Trend

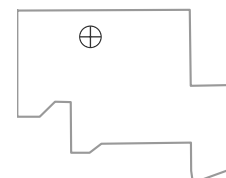
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
Decreasing

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
Decreasing

Well Location

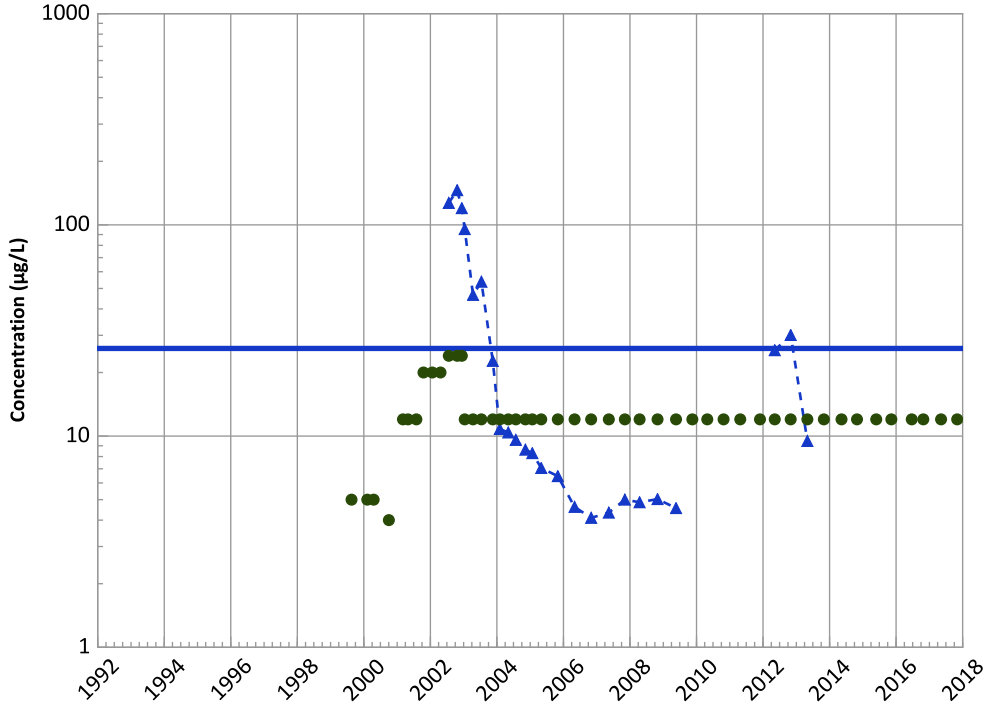


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/15/1995 to 11/02/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX01-1001 in Perched Aquifer
USDOE/NNSA Pantex Plant

Perchlorate Trend

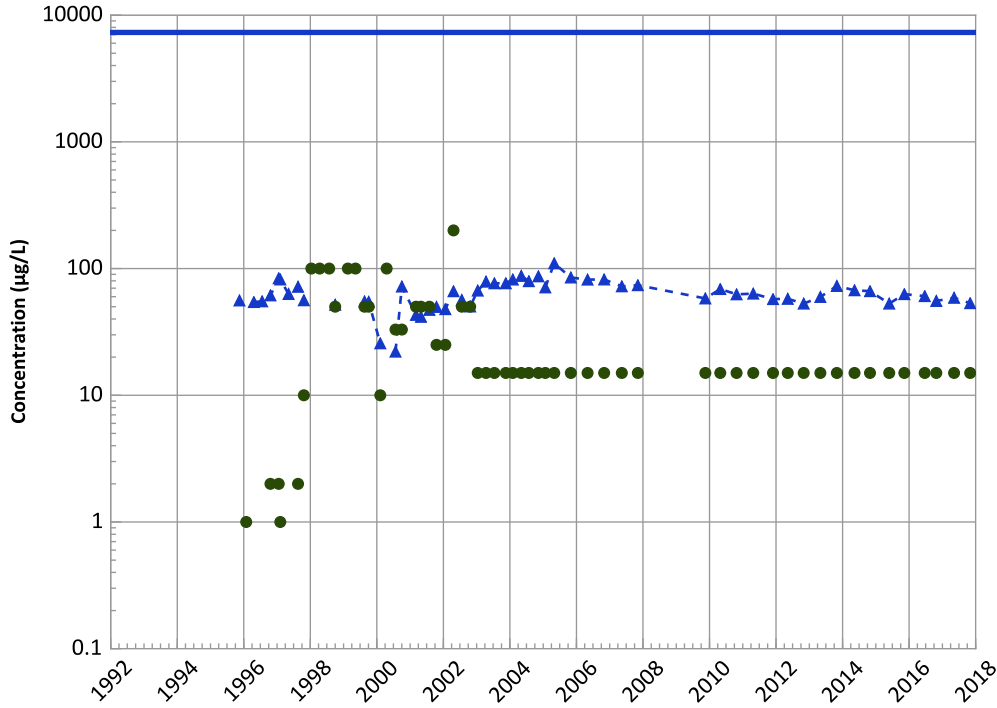


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

MAROS Linear Regression Method
Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

Boron Trend

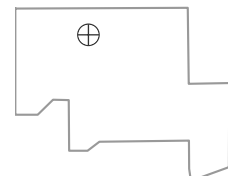


Concentration Trend

MAROS Mann-Kendall Method
Data ():
Decreasing
All Data
Increasing

MAROS Linear Regression Method
Data ():
Decreasing
All Data
No Trend

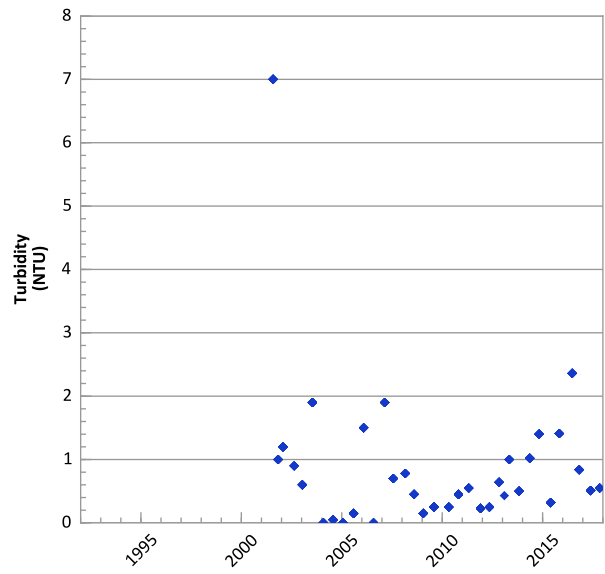
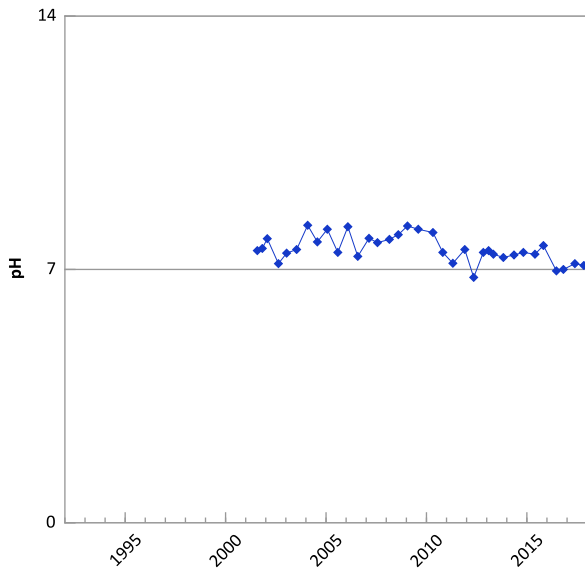
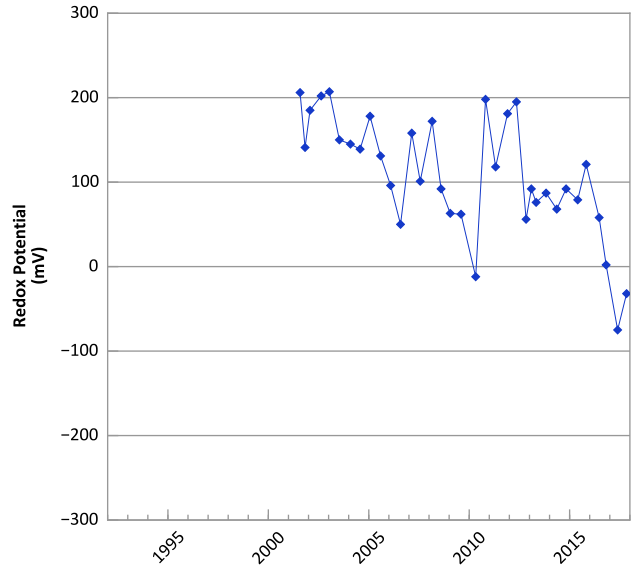
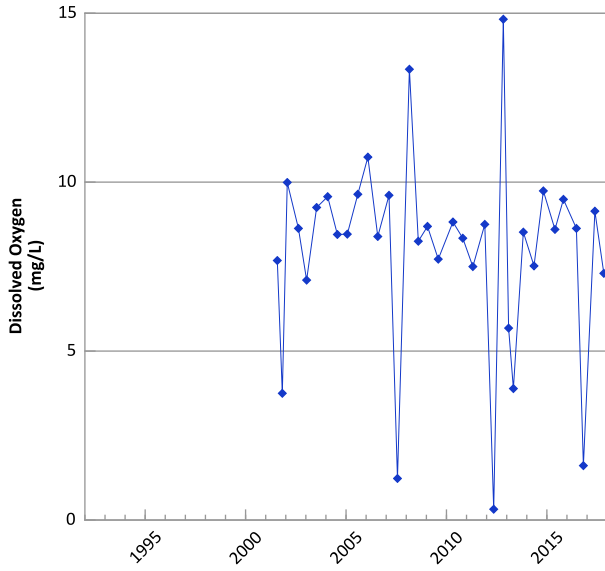
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/15/1995 to 11/02/2017
Analysis Date: 03/21/2018

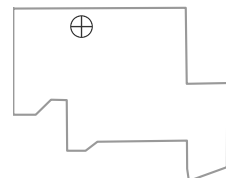
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX01-1008 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



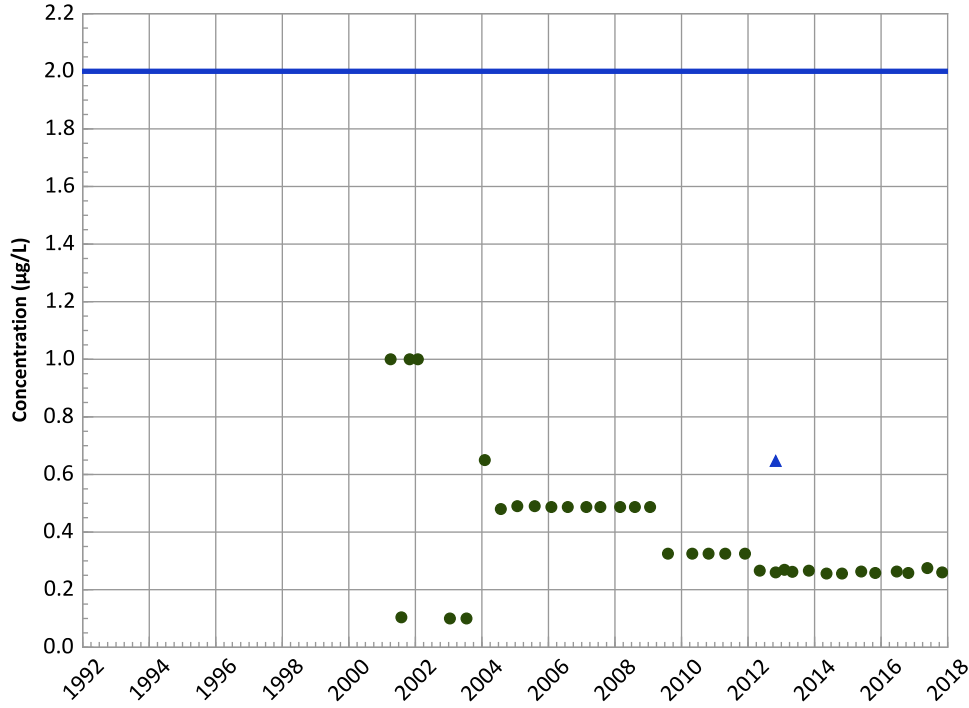
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 04/04/2001 to 11/02/2017
 Analysis Date: 03/21/2018

Well Location



PTX01-1008 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

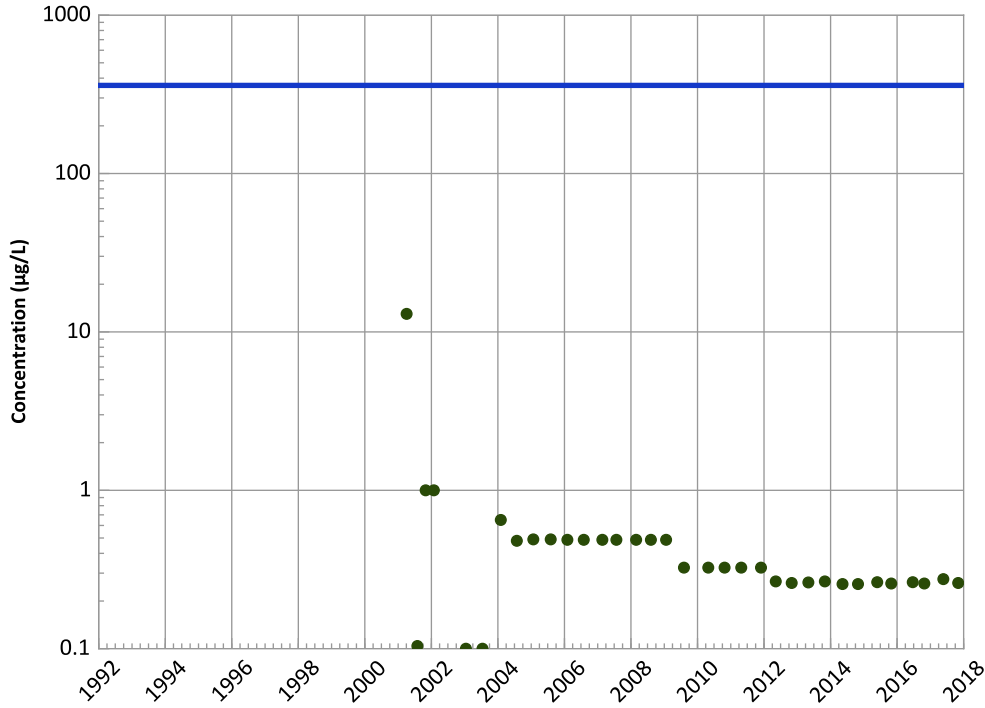
Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

All Non-Detect

All Data

All Non-Detect

MAROS Linear Regression Method

Data ():

All Non-Detect

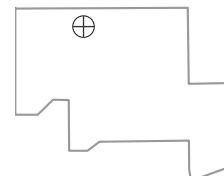
All Data

All Non-Detect

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 04/04/2001 to 11/02/2017
Analysis Date: 03/21/2018

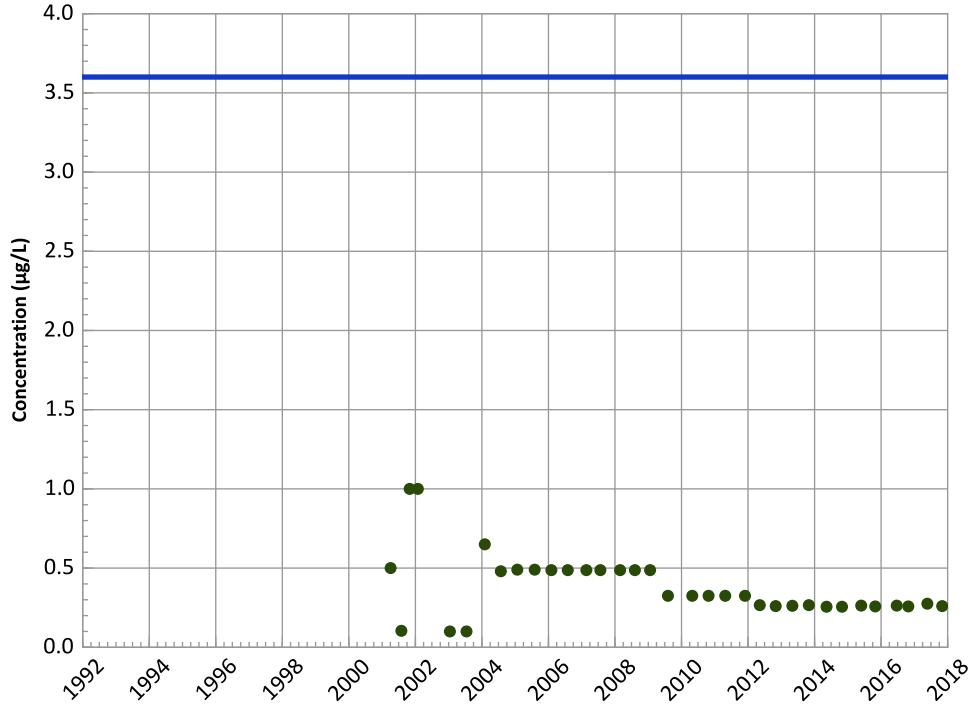
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX01-1008 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

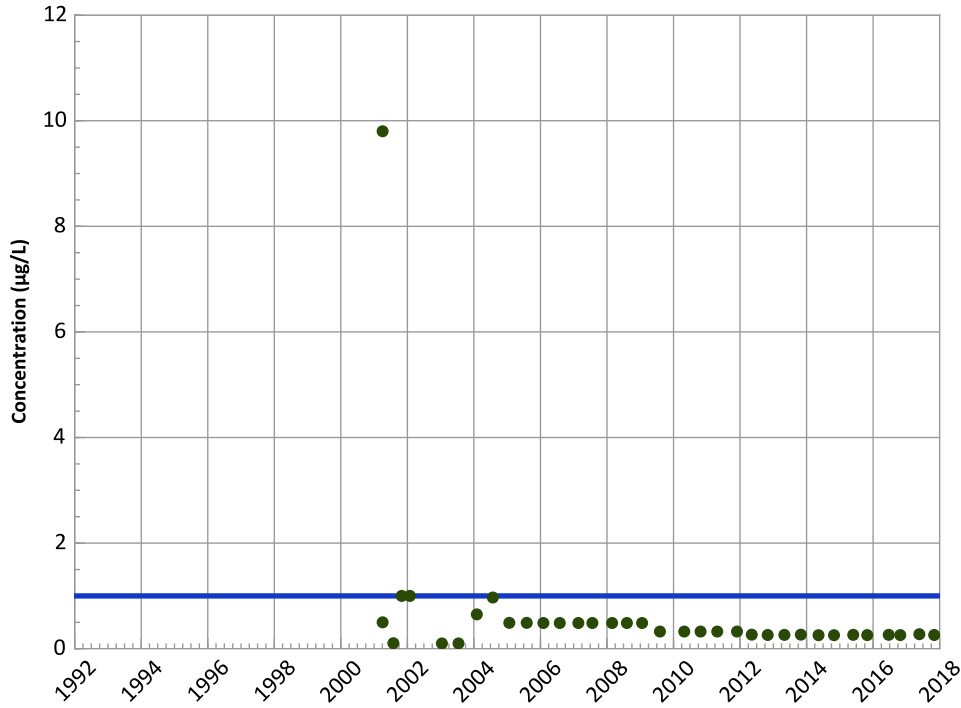
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

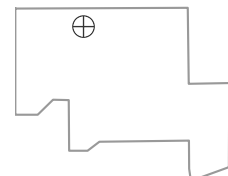
MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 04/04/2001 to 11/02/2017
Analysis Date: 03/21/2018

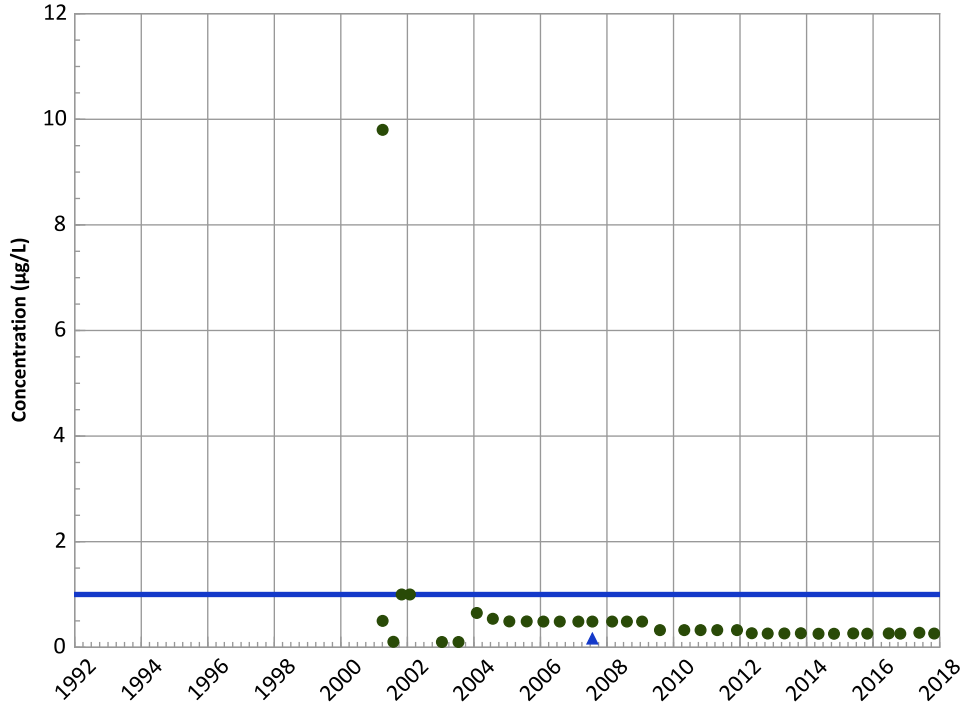
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX01-1008 in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

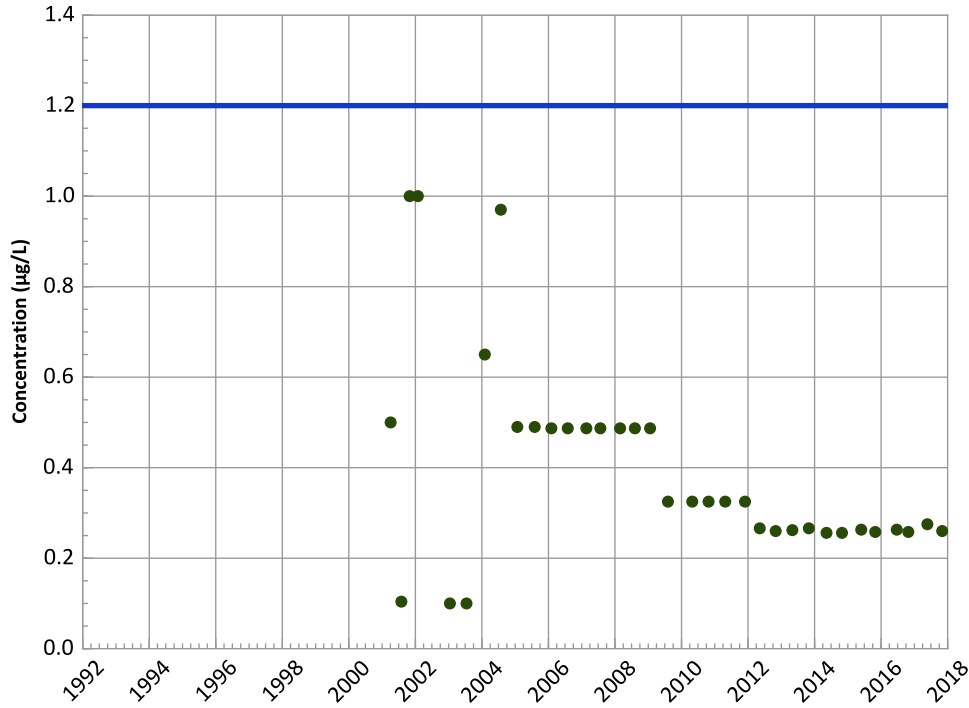
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

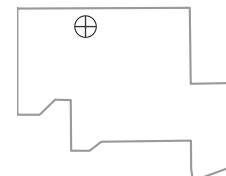
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

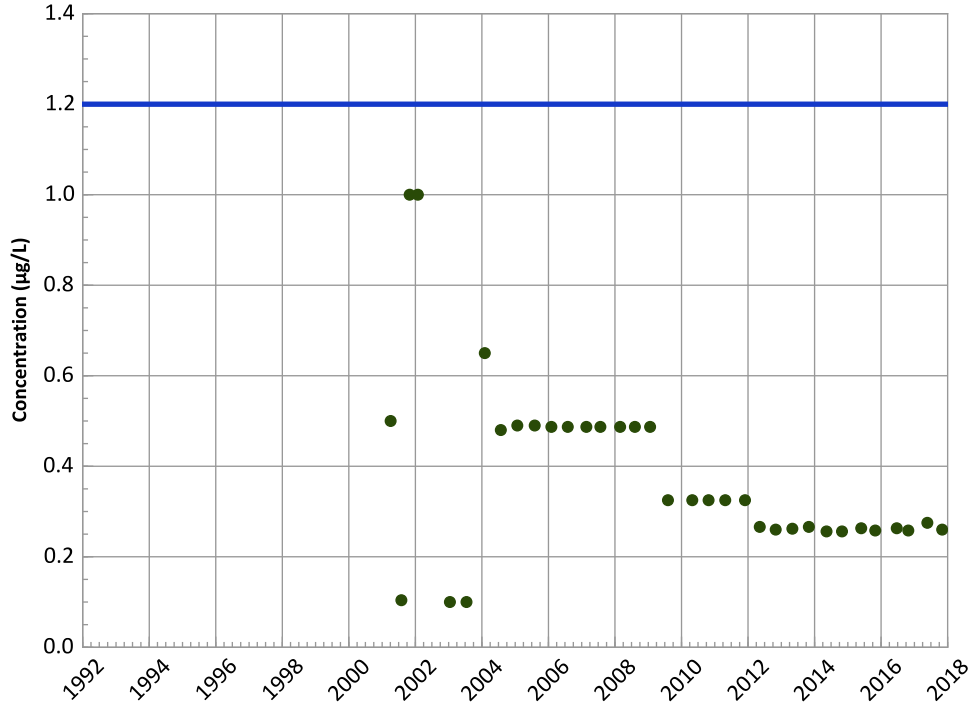


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 04/04/2001 to 11/02/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX01-1008 in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

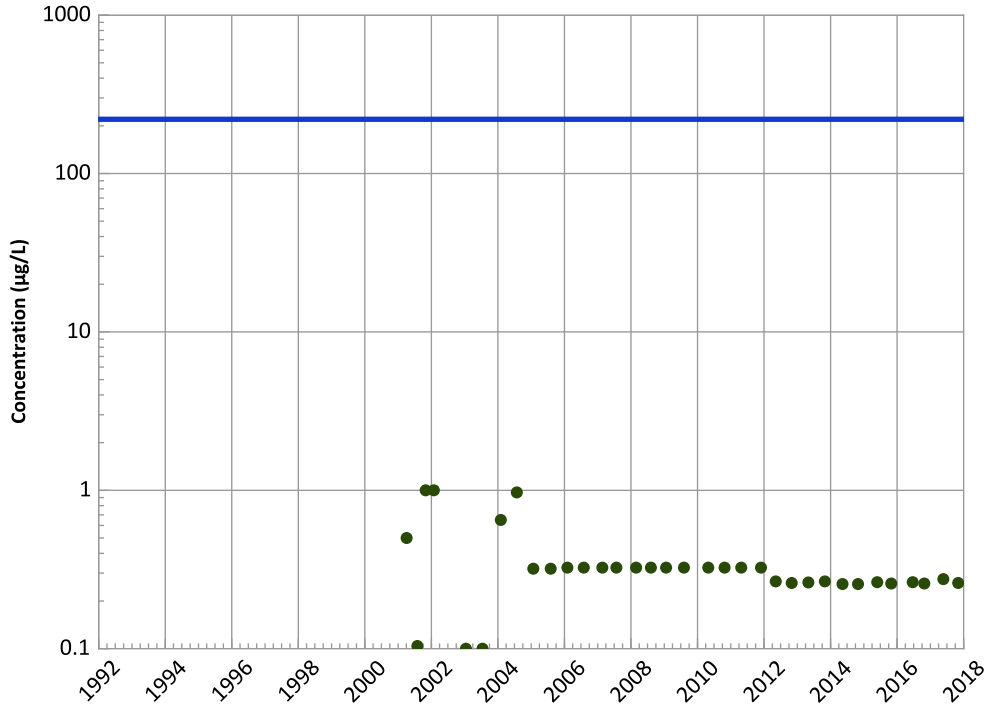
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,3,5-Trinitrobenzene Trend



Concentration Trend

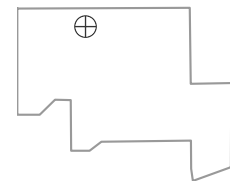
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

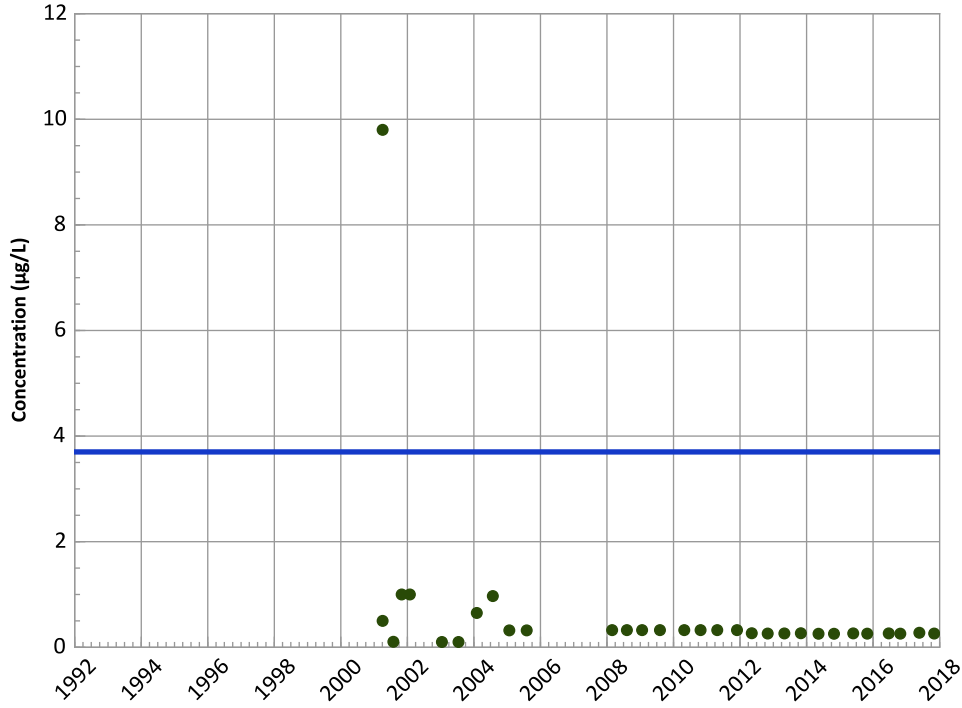


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 04/04/2001 to 11/02/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX01-1008 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

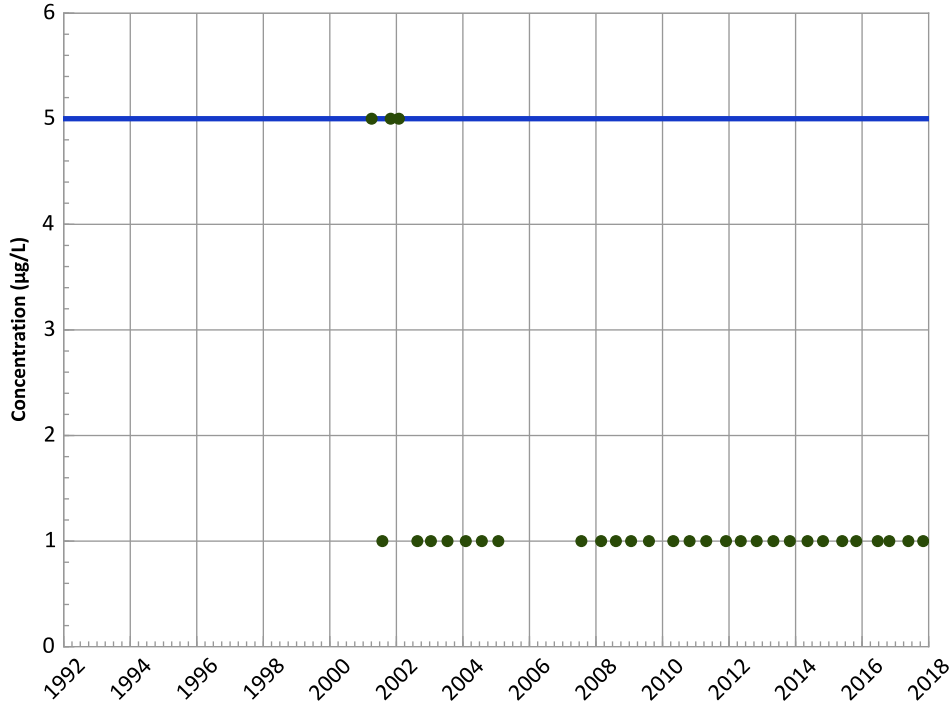
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Tetrachloroethylene (PCE) Trend



Concentration Trend

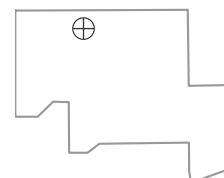
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

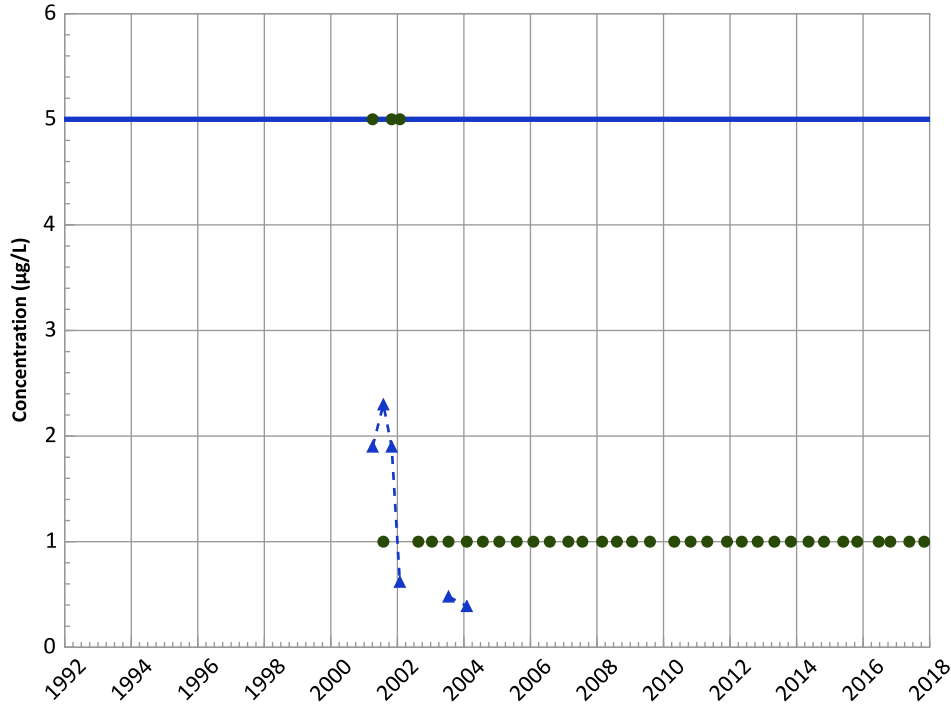


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 04/04/2001 to 11/02/2017
Analysis Date: 03/21/2018

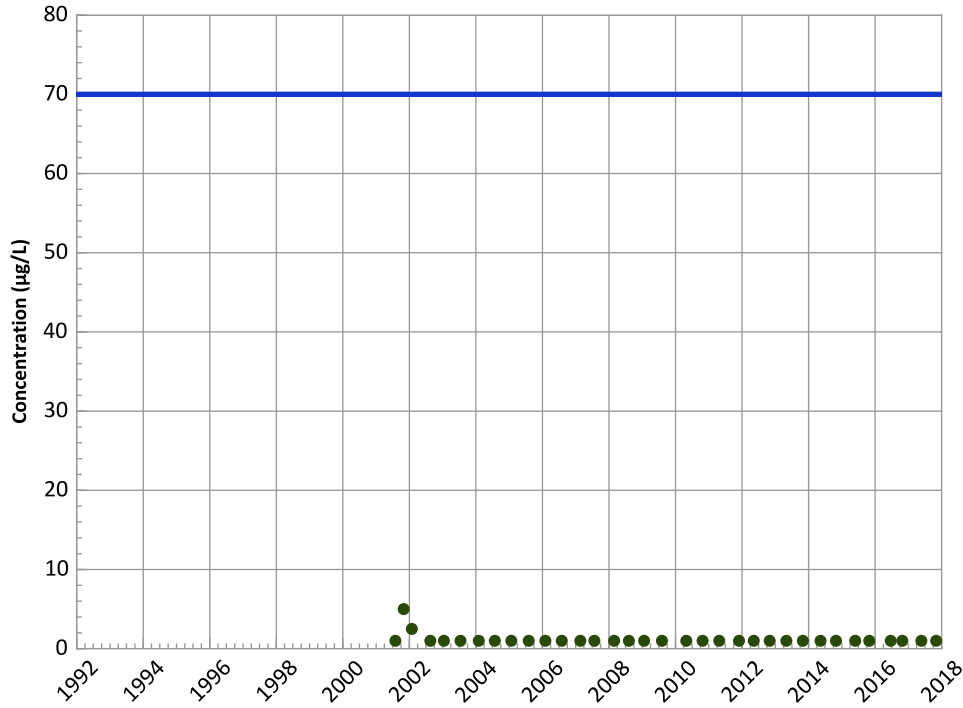
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX01-1008 in Perched Aquifer
USDOE/NNSA Pantex Plant

Trichloroethene Trend



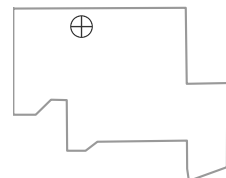
cis-1,2-Dichloroethene Trend



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 04/04/2001 to 11/02/2017
Analysis Date: 03/21/2018

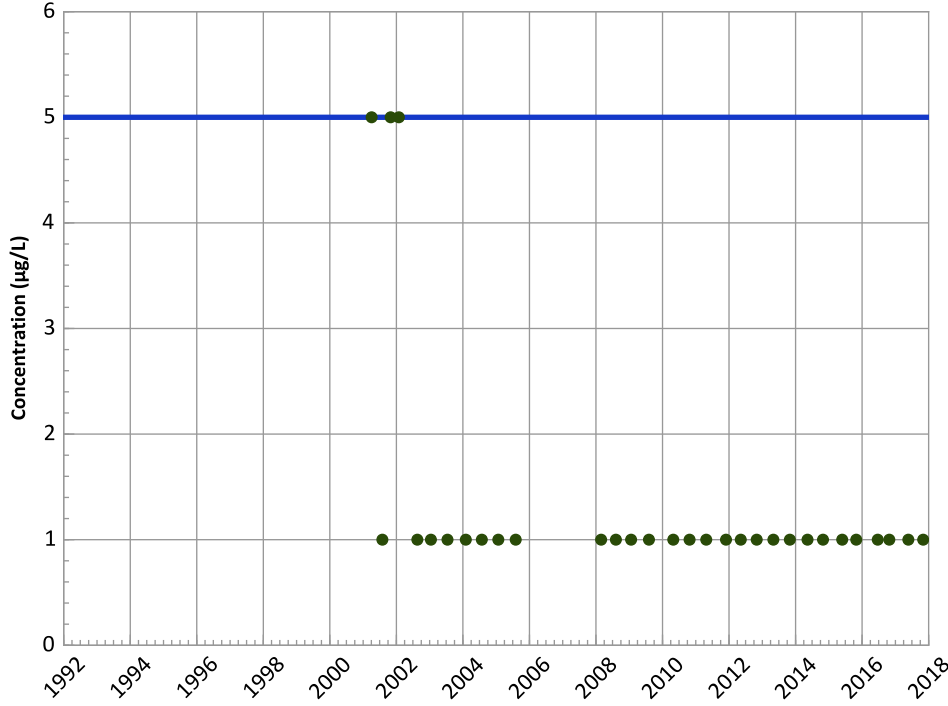
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX01-1008 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,2-Dichloroethane Trend



Concentration Trend

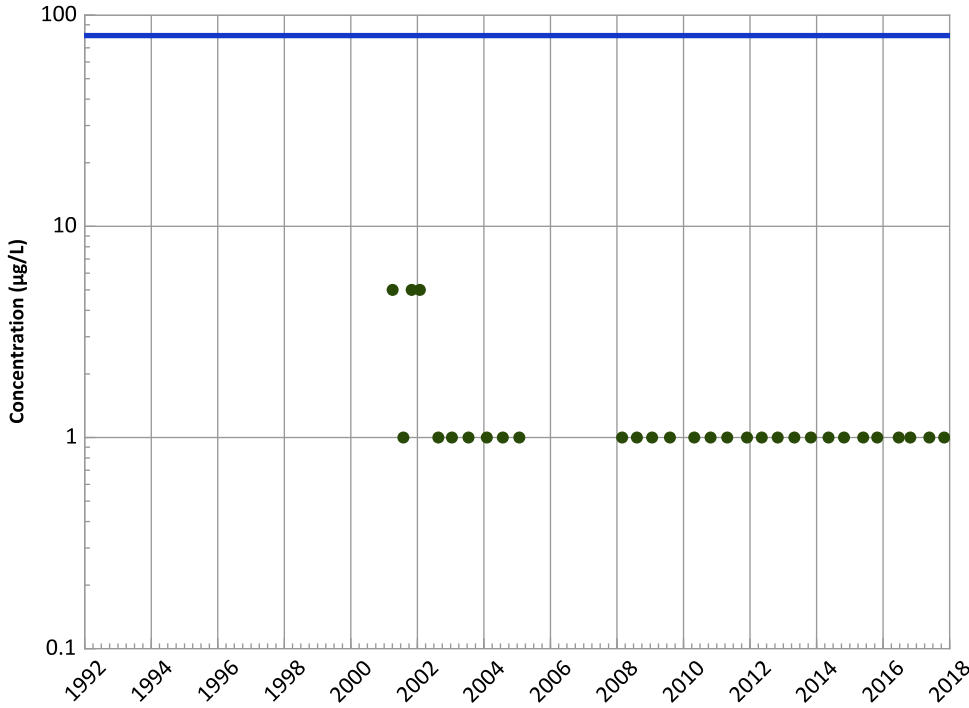
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Chloroform Trend



Concentration Trend

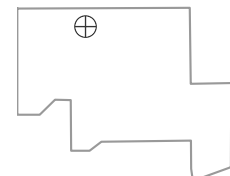
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

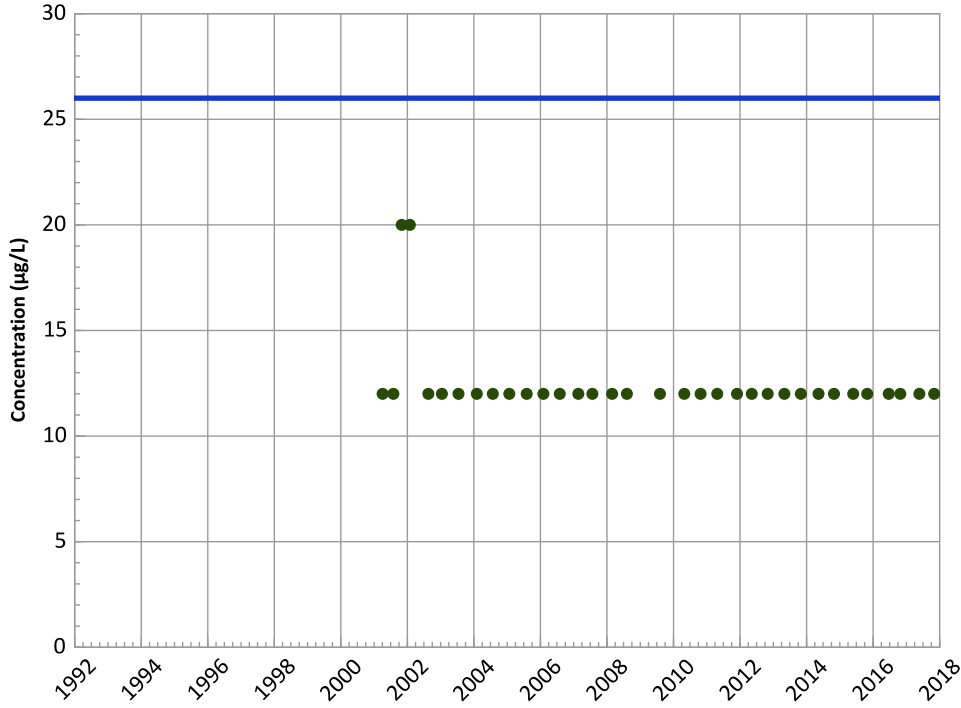


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 04/04/2001 to 11/02/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX01-1008 in Perched Aquifer
USDOE/NNSA Pantex Plant

Perchlorate Trend



Concentration Trend

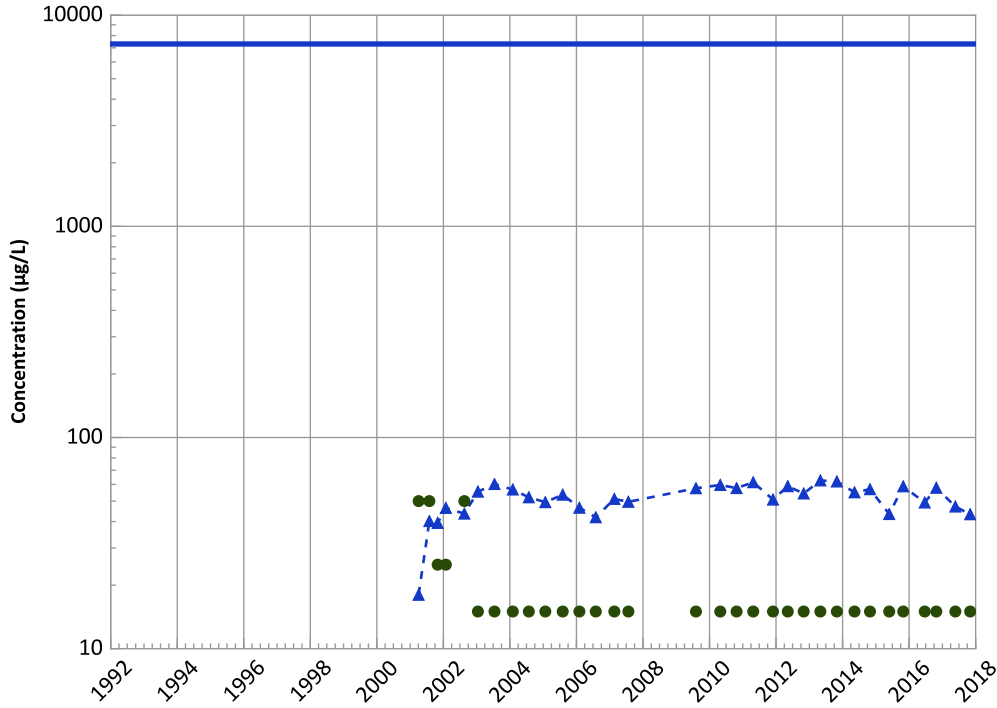
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Boron Trend



Concentration Trend

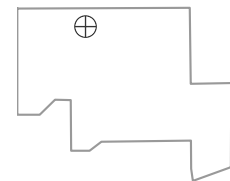
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Stable
All Data
Increasing

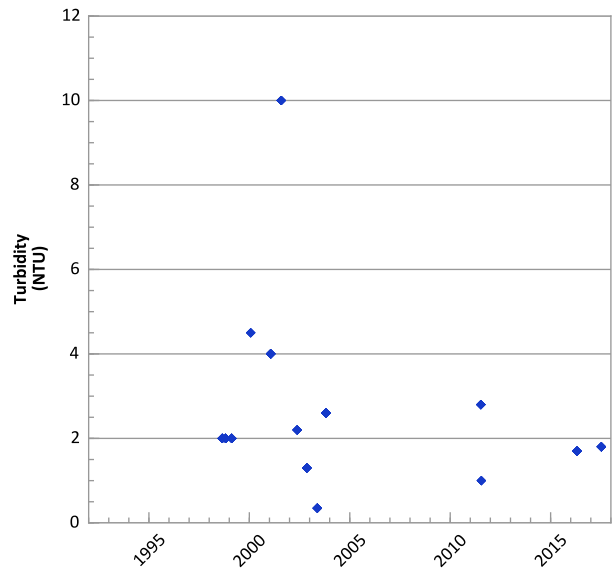
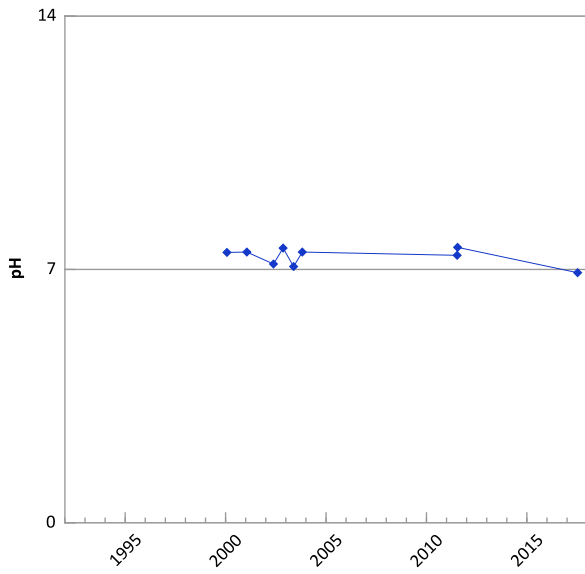
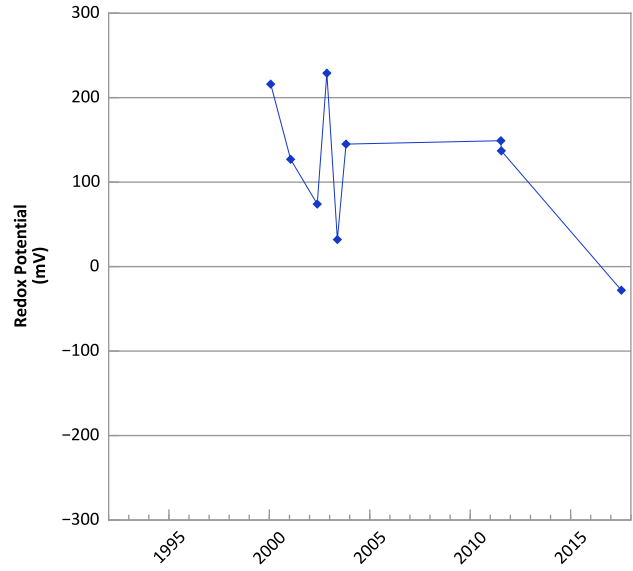
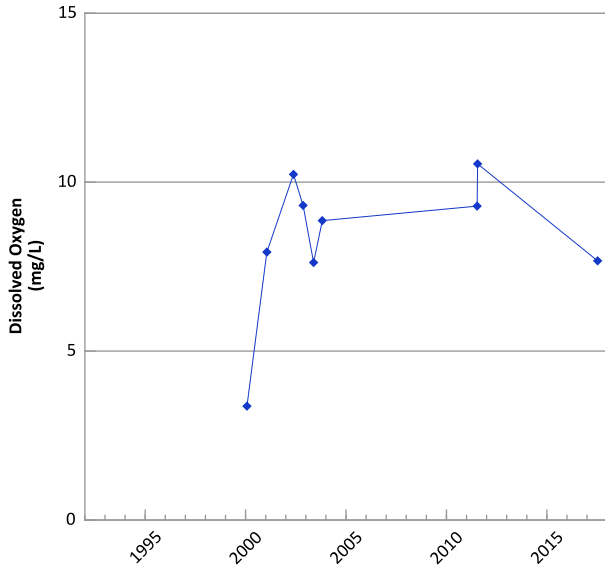
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 04/04/2001 to 11/02/2017
Analysis Date: 03/21/2018

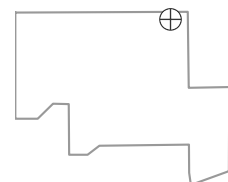
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX04-1001 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



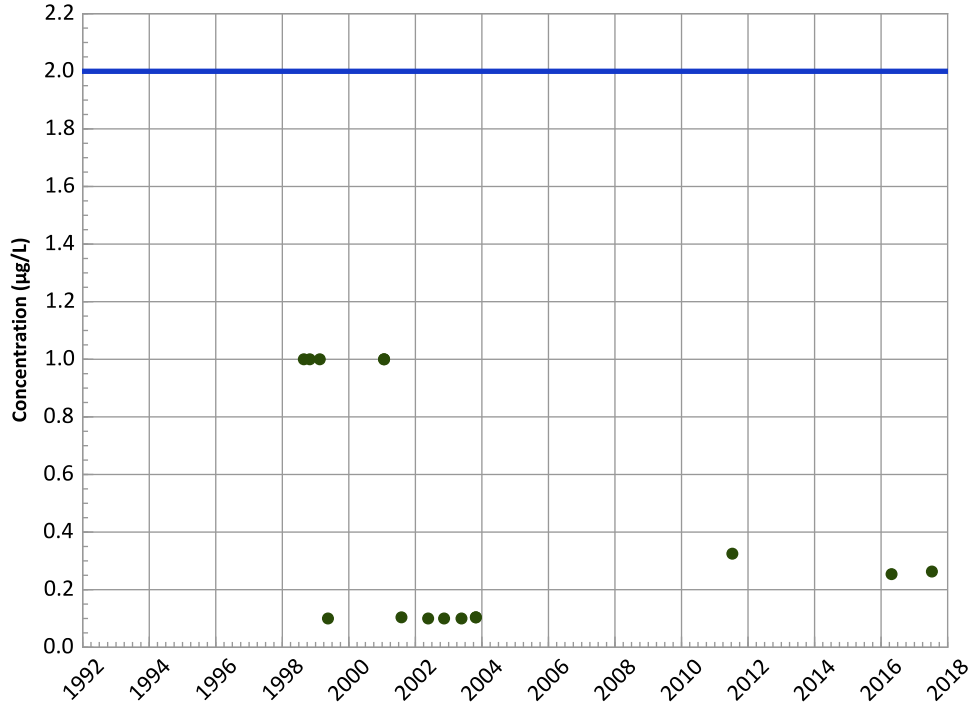
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 08/25/1998 to 07/12/2017
 Analysis Date: 03/21/2018

Well Location



PTX04-1001 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

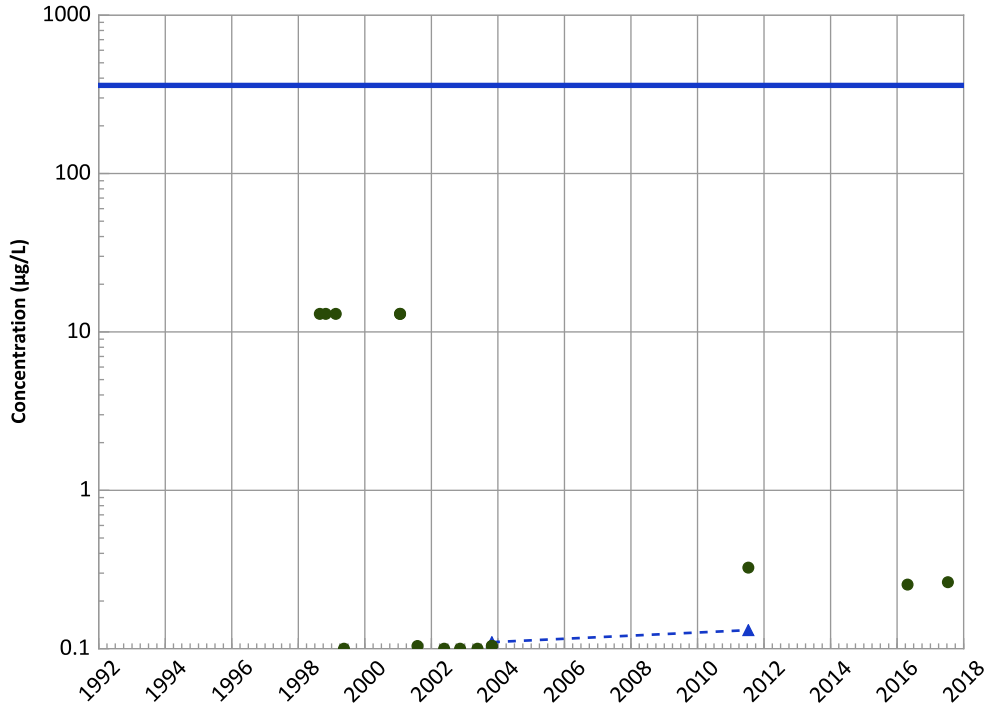
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

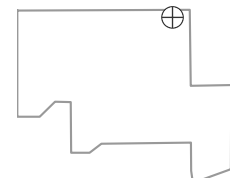
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
N/A (<4 Samples in Dataset)
All Data
N/A (<4 Detections in Dataset)

Well Location

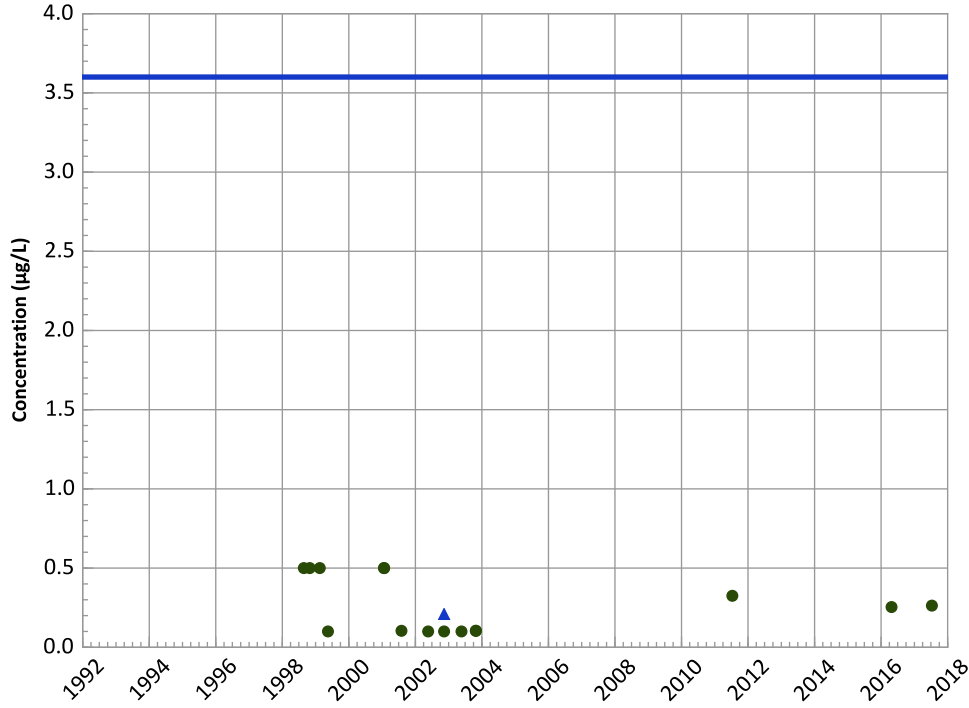


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/25/1998 to 07/12/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX04-1001 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

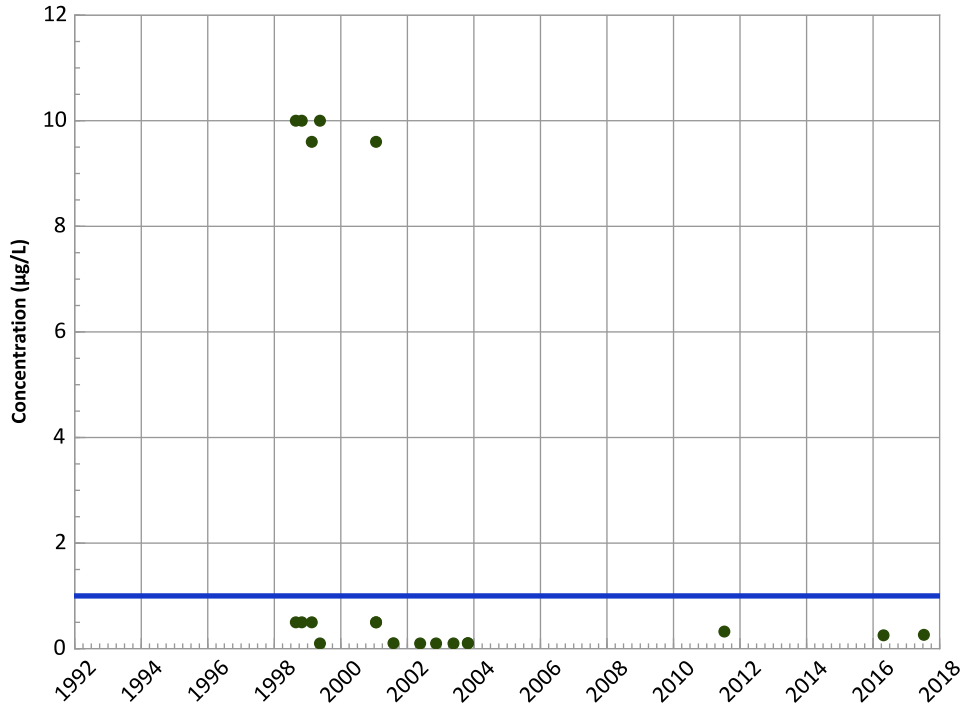
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
N/A (<4 Samples in Dataset)
All Data
N/A (<4 Detections in Dataset)

2,4-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

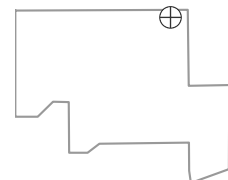
MAROS Linear Regression Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/25/1998 to 07/12/2017
Analysis Date: 03/21/2018

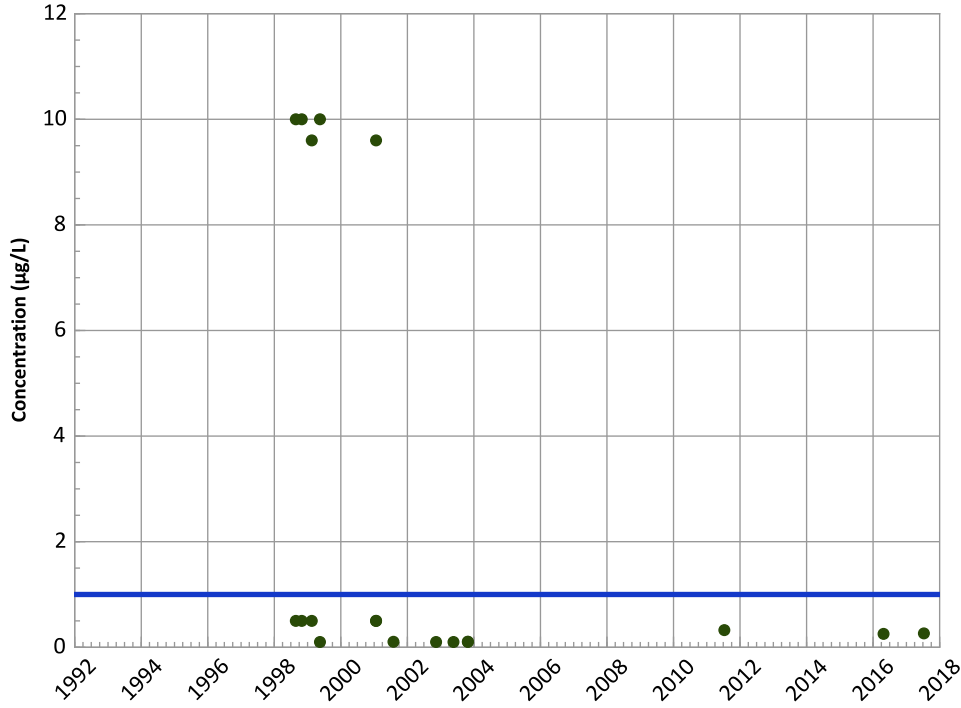
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX04-1001 in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend

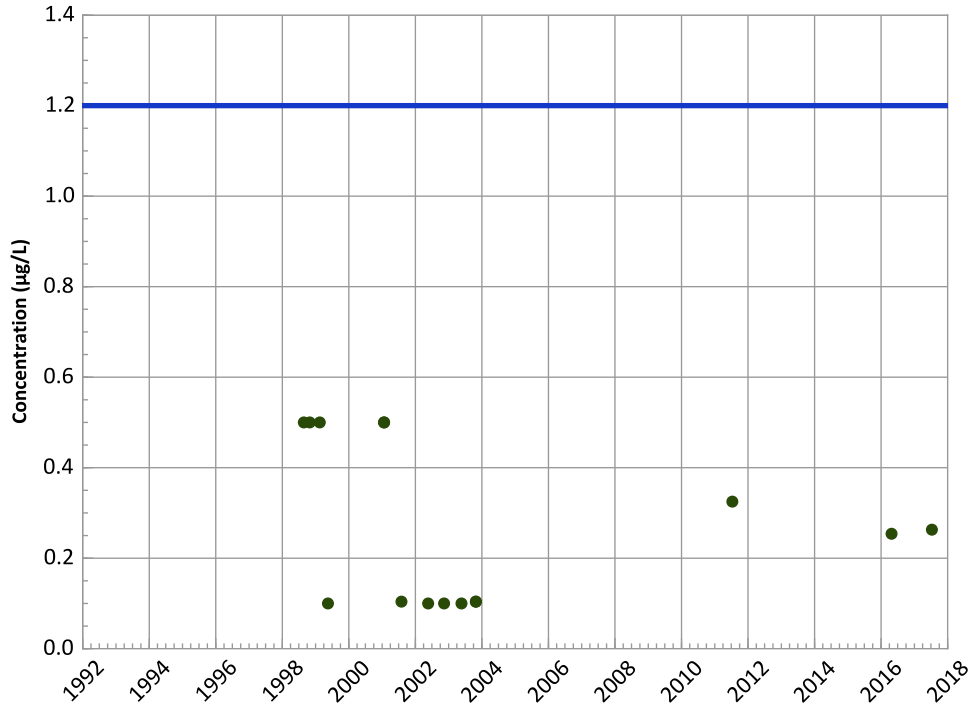


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

MAROS Linear Regression Method
Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

2-Amino-4,6-Dinitrotoluene Trend

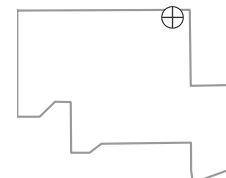


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

MAROS Linear Regression Method
Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

Well Location

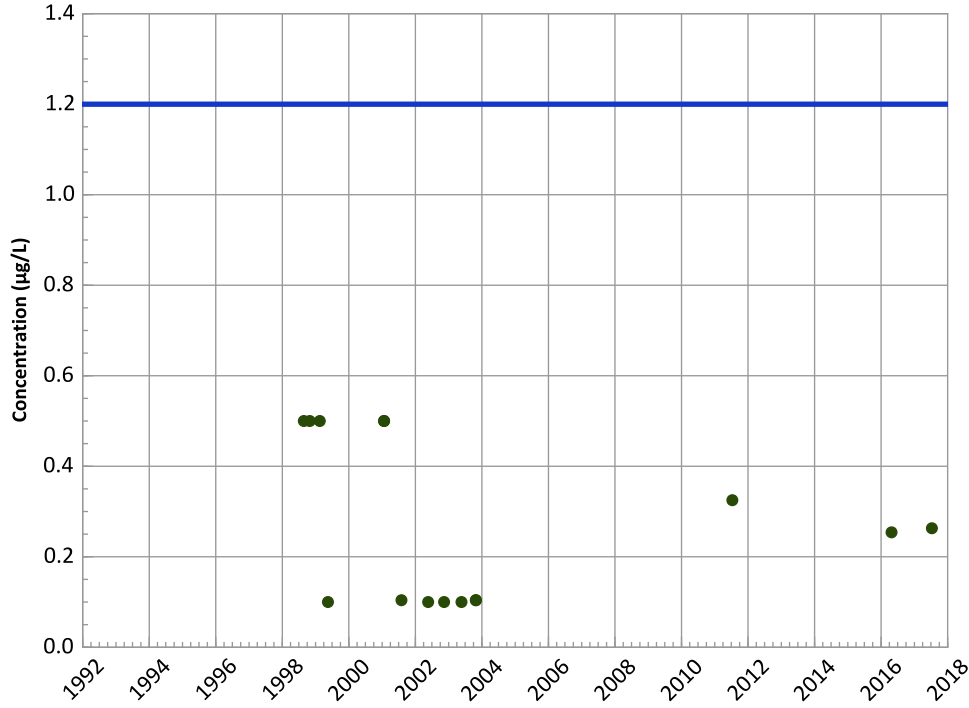


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/25/1998 to 07/12/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX04-1001 in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

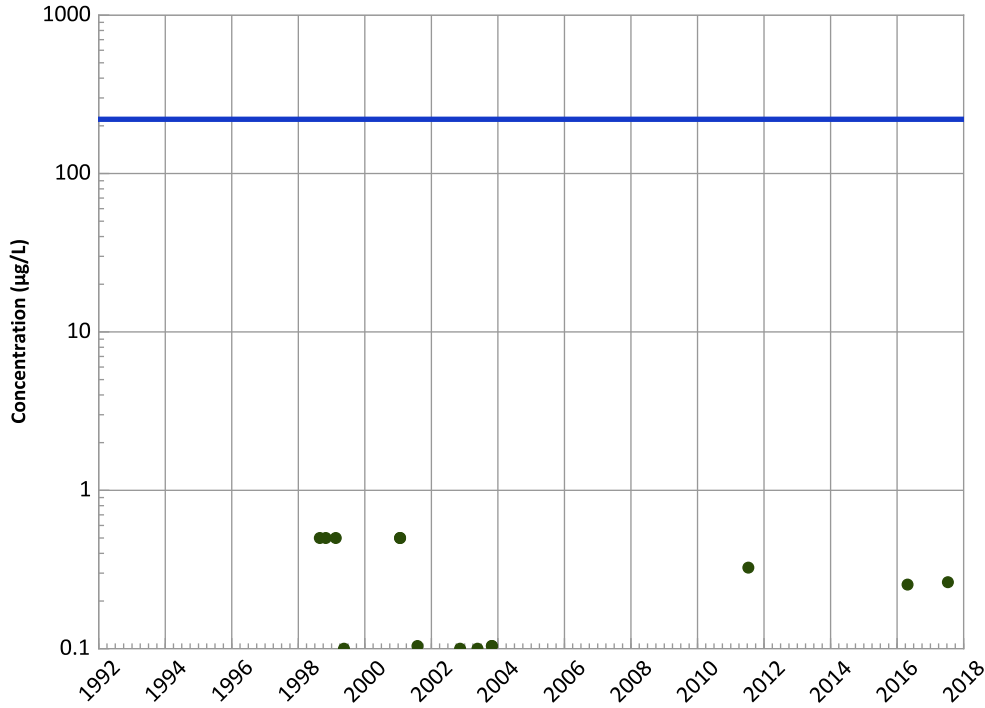
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

1,3,5-Trinitrobenzene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

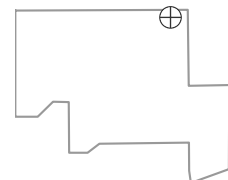
MAROS Linear Regression Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/25/1998 to 07/12/2017
Analysis Date: 03/21/2018

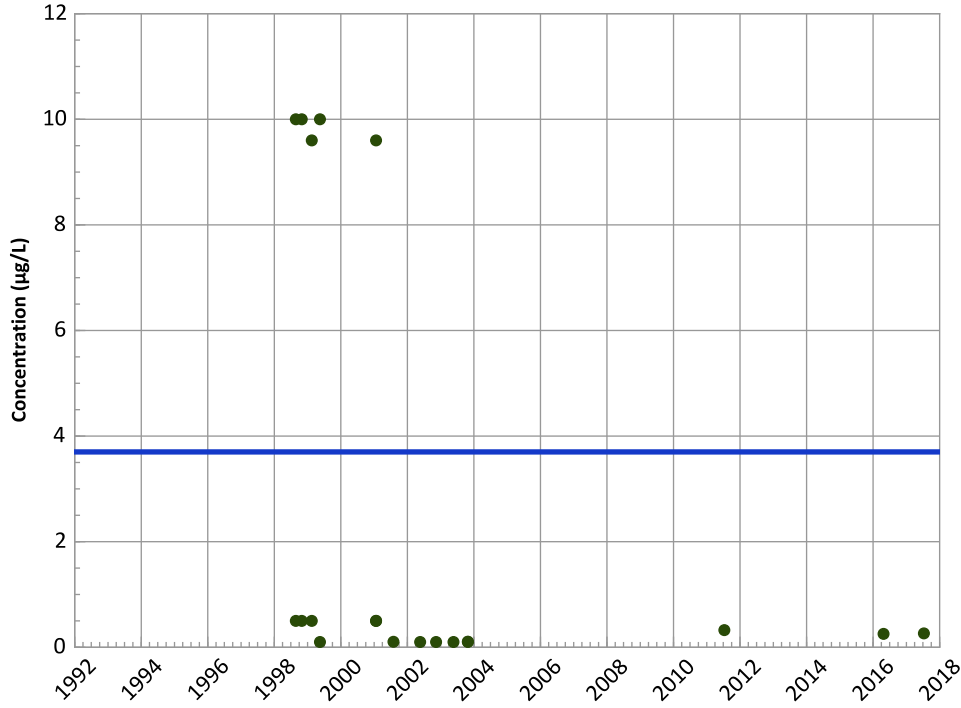
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX04-1001 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

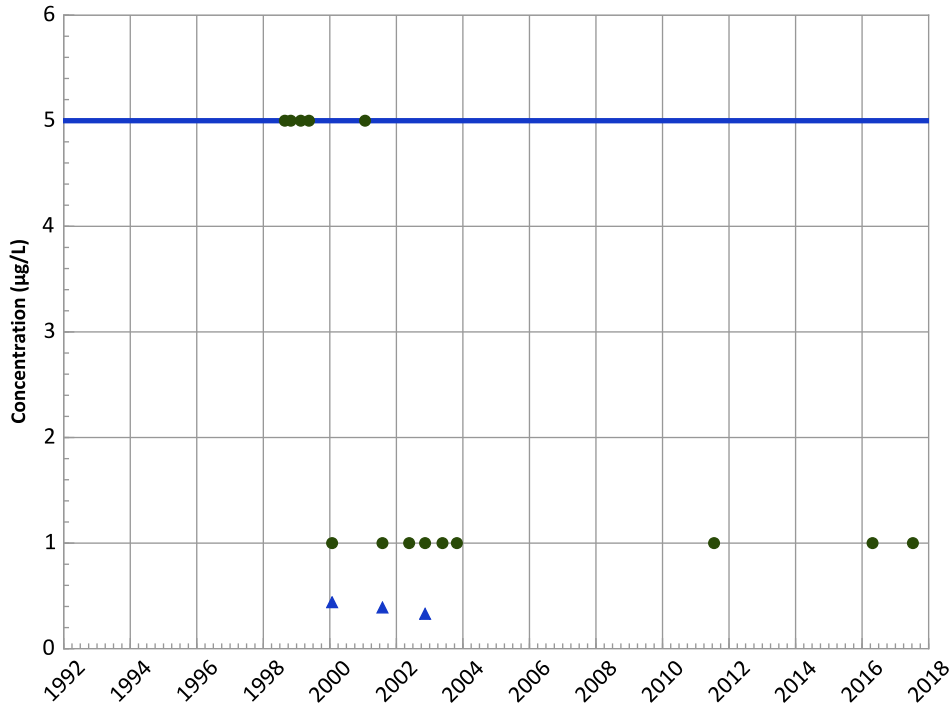
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

Tetrachloroethylene (PCE) Trend



Concentration Trend

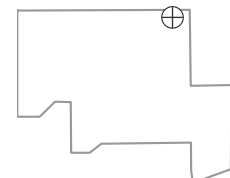
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
N/A (<4 Samples in Dataset)
All Data
N/A (<4 Detections in Dataset)

Well Location

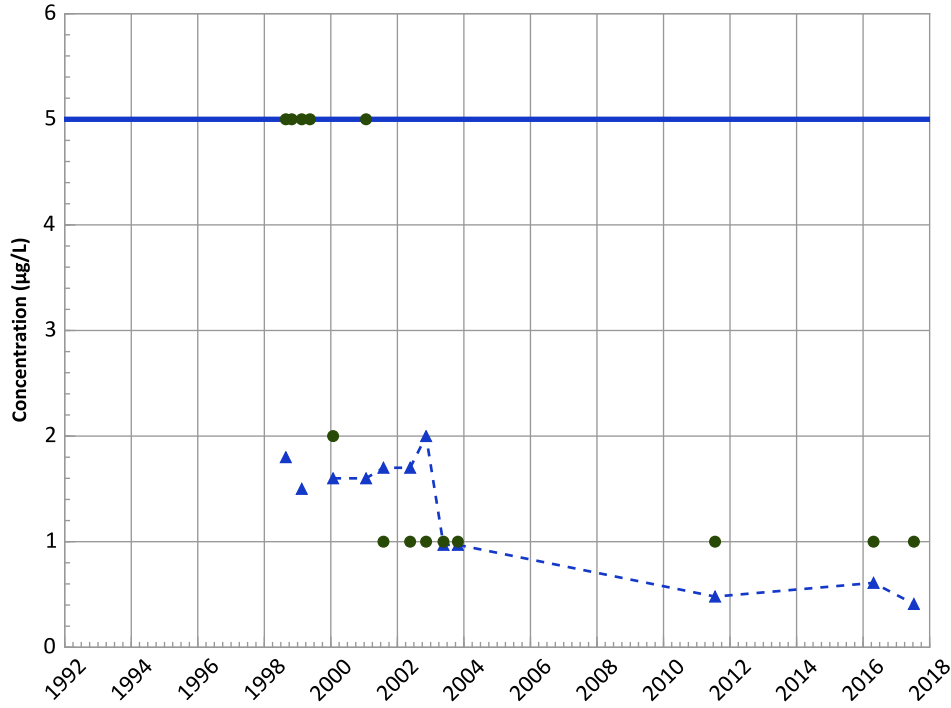


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/25/1998 to 07/12/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX04-1001 in Perched Aquifer
USDOE/NNSA Pantex Plant

Trichloroethene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

Decreasing

MAROS Linear Regression Method

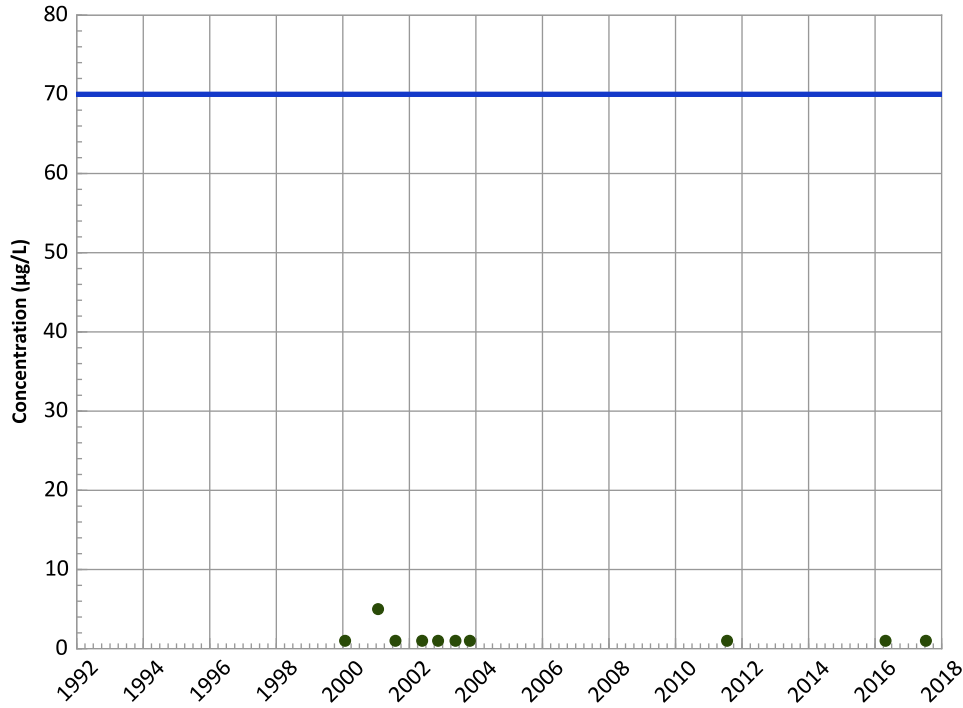
Data ():

N/A (<4 Detections in Dataset)

All Data

Decreasing

cis-1,2-Dichloroethene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

All Non-Detect

MAROS Linear Regression Method

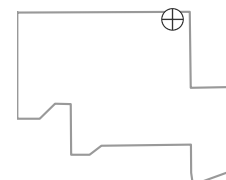
Data ():

N/A (<4 Samples in Dataset)

All Data

All Non-Detect

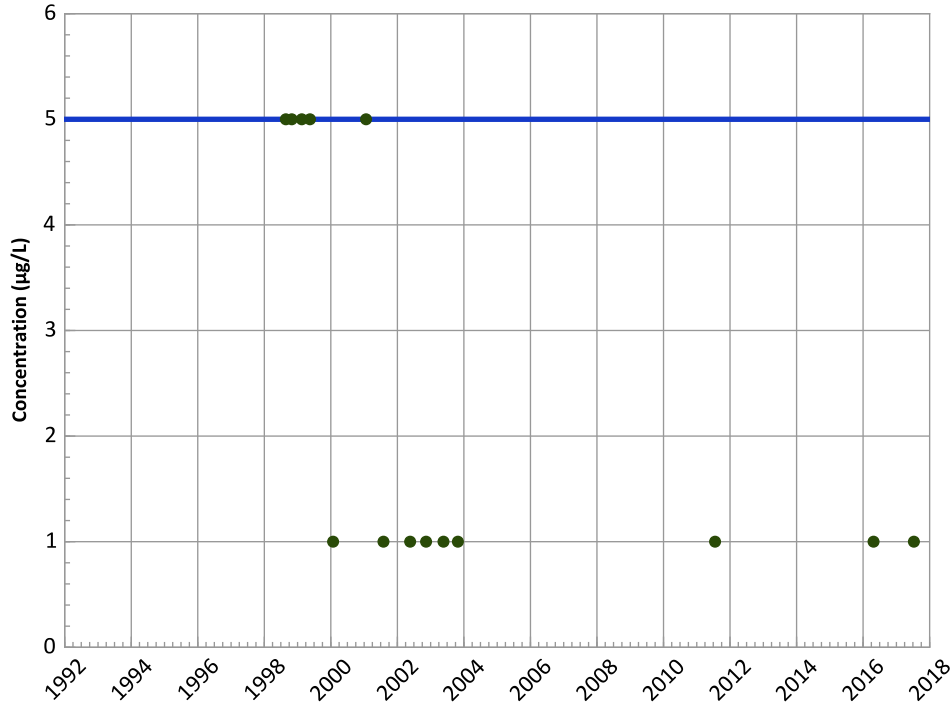
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/25/1998 to 07/12/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX04-1001 in Perched Aquifer
USDOE/NNSA Pantex Plant
1,2-Dichloroethane Trend**



Concentration Trend

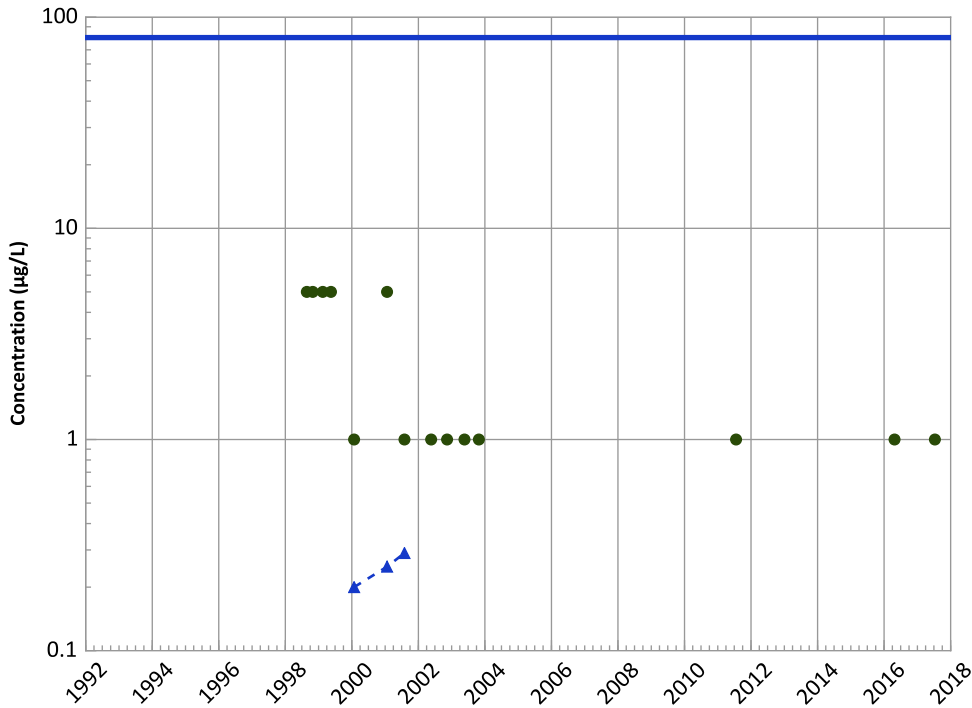
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

Chloroform Trend



Concentration Trend

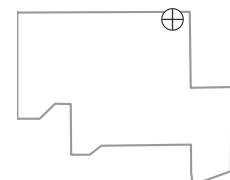
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
N/A (<4 Samples in Dataset)
All Data
N/A (<4 Detections in Dataset)

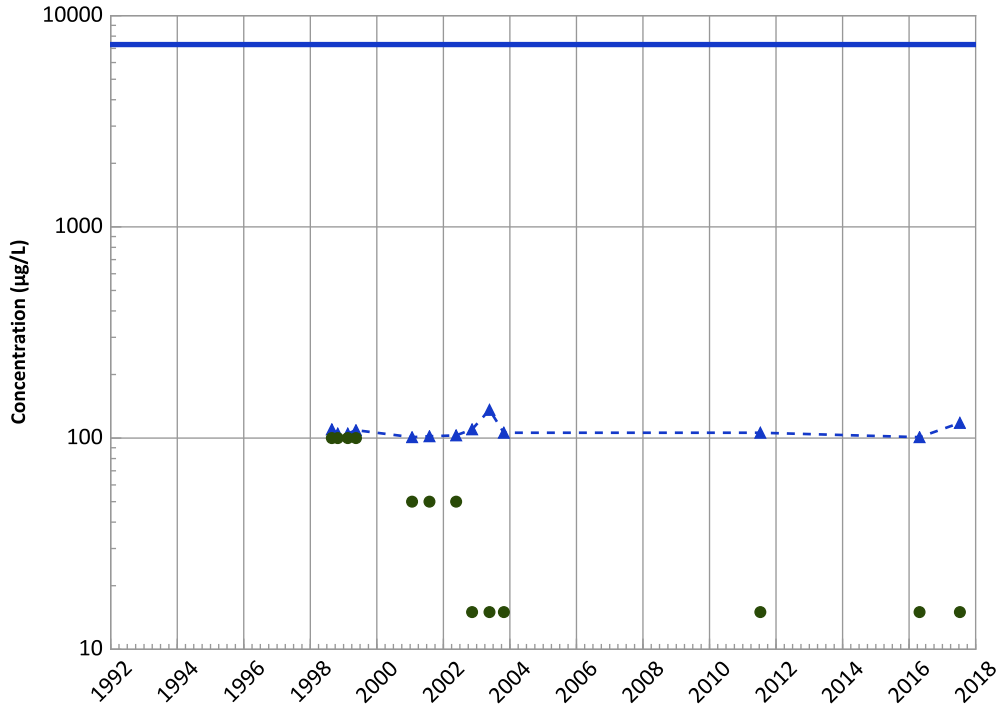
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/25/1998 to 07/12/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- Concentration Trend
- Groundwater Protection Standard

PTX04-1001 in Perched Aquifer
 USDOE/NNSA Pantex Plant
 Boron Trend

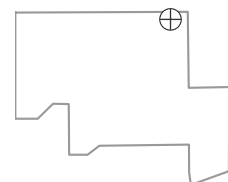


Concentration Trend
 MAROS Mann-Kendall Method
 Data ():
 N/A (<4 Samples in Dataset)
 All Data
 Increasing
 MAROS Linear Regression Method
 Data ():
 N/A (<4 Detections in Dataset)
 All Data
 Increasing

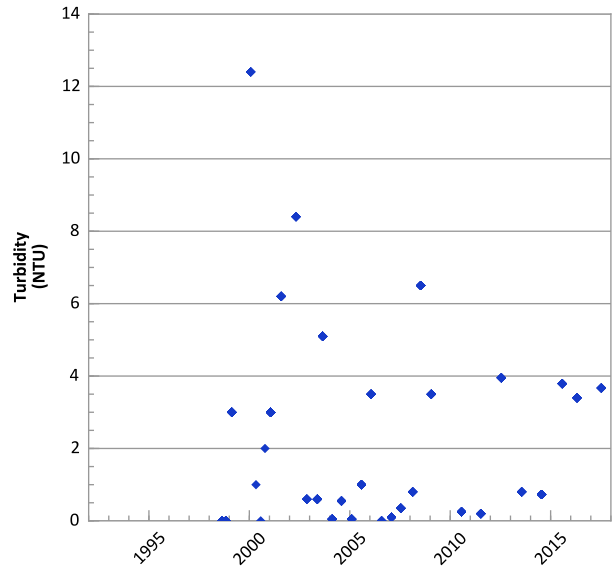
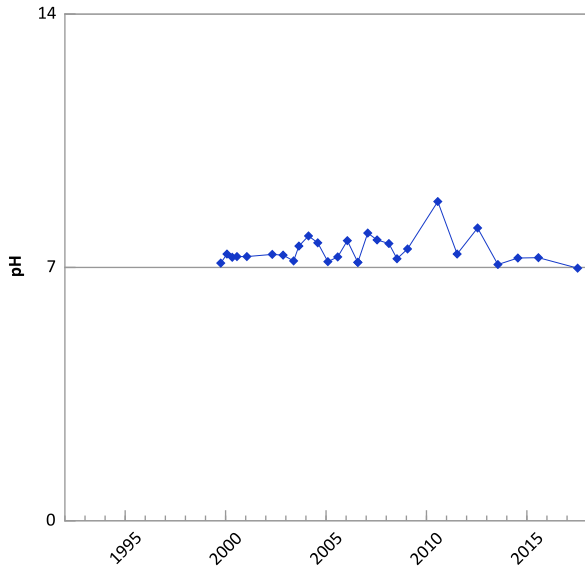
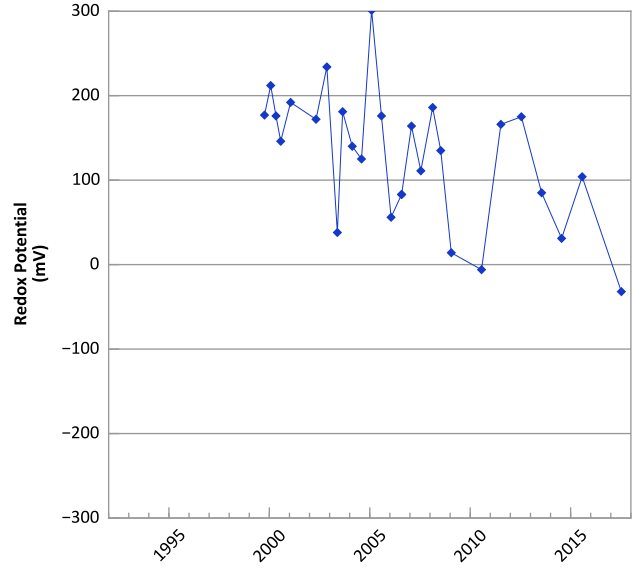
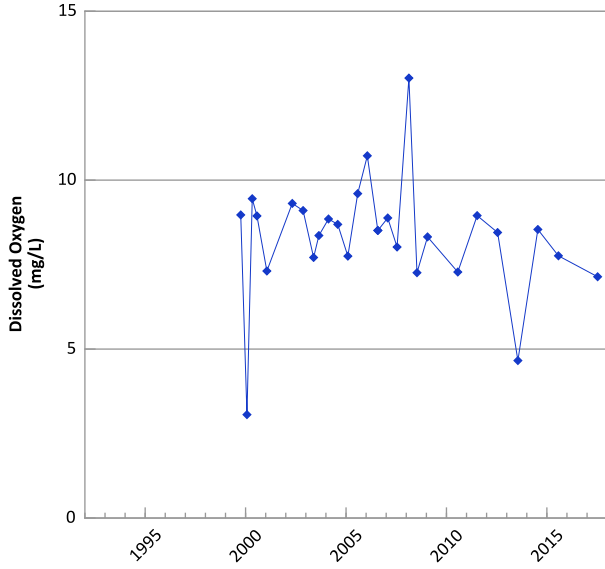
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 08/25/1998 to 07/12/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

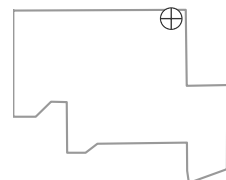


**PTX04-1002 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



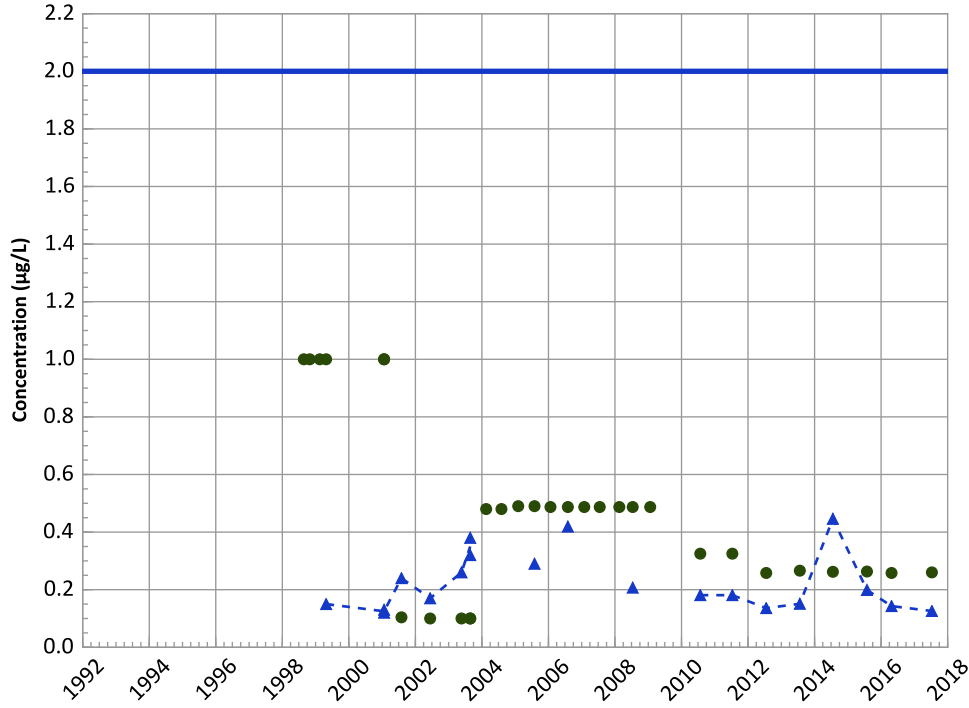
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 08/25/1998 to 07/12/2017
 Analysis Date: 03/21/2018

Well Location



PTX04-1002 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

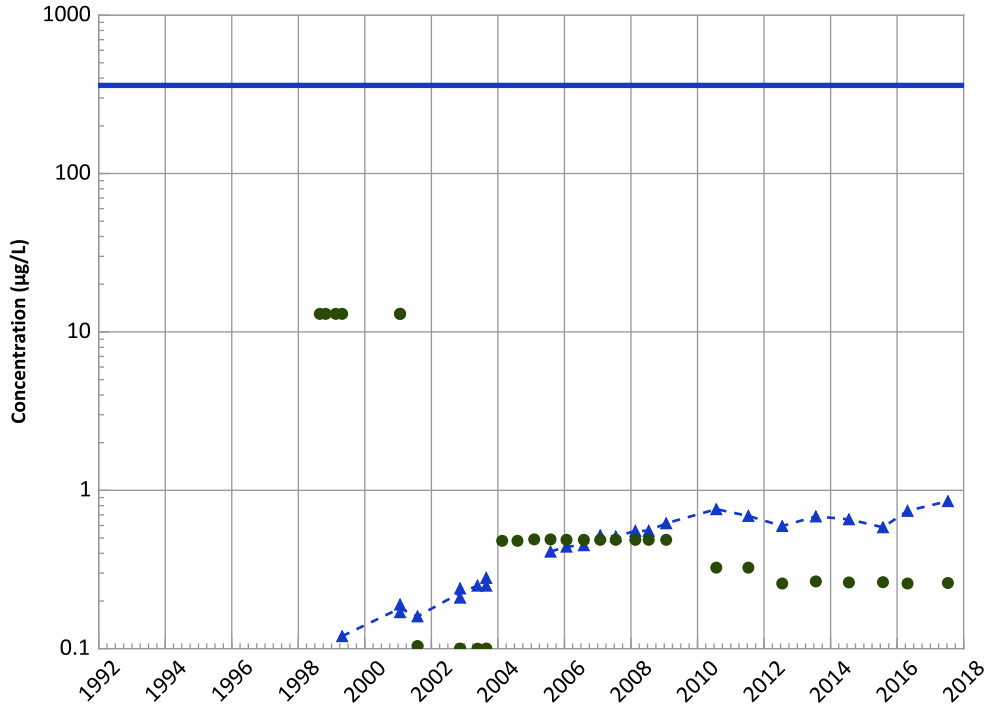
MAROS Mann-Kendall Method

Data ():
No Trend
All Data
Decreasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
Stable

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

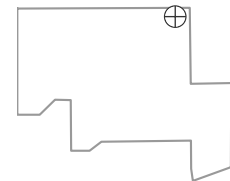
MAROS Mann-Kendall Method

Data ():
No Trend
All Data
Increasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
Increasing

Well Location

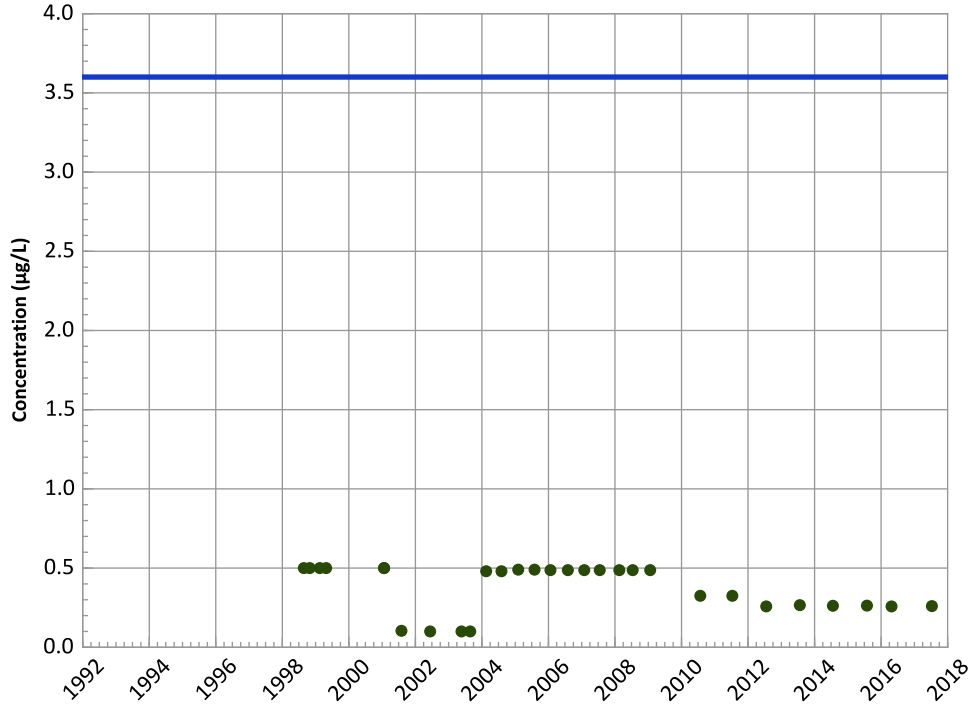


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/25/1998 to 07/12/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX04-1002 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

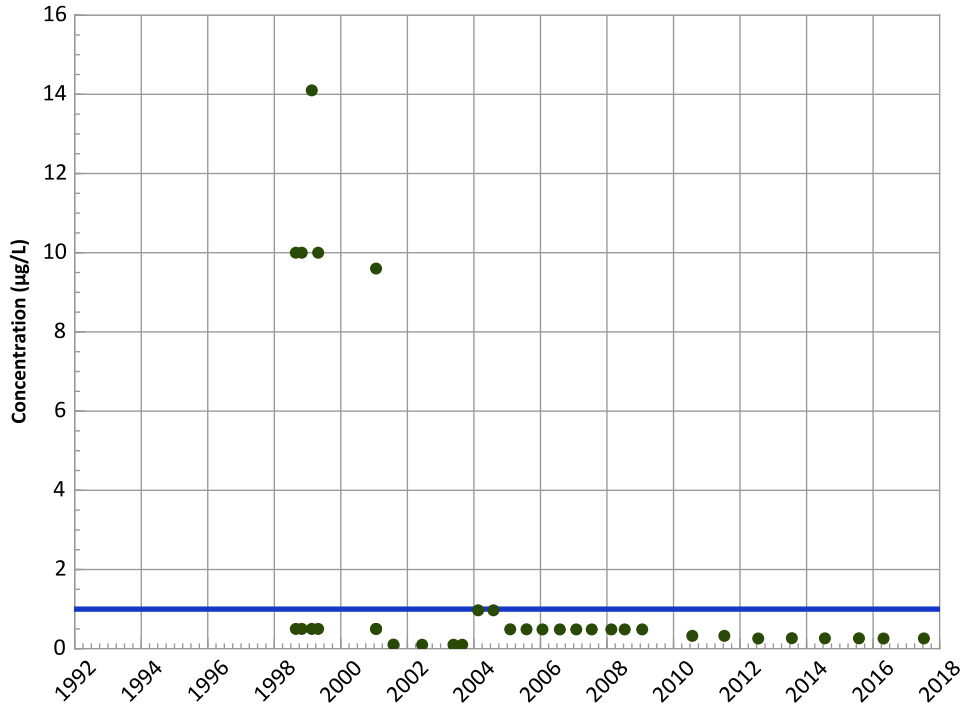
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

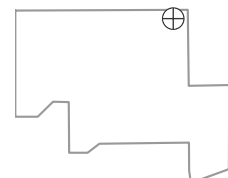
MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/25/1998 to 07/12/2017
Analysis Date: 03/21/2018

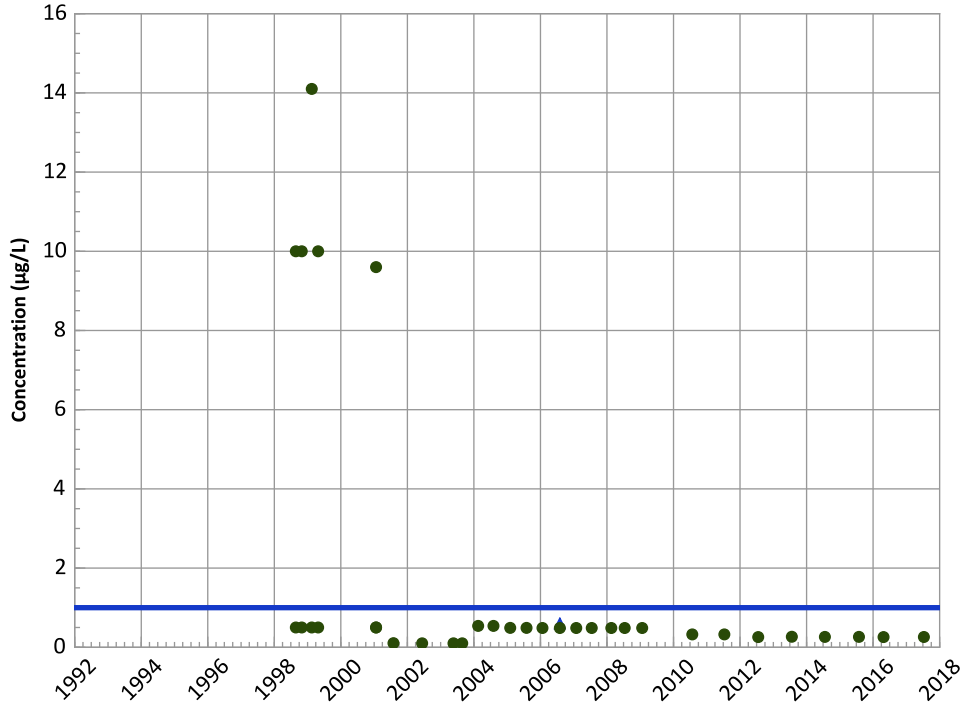
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX04-1002 in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

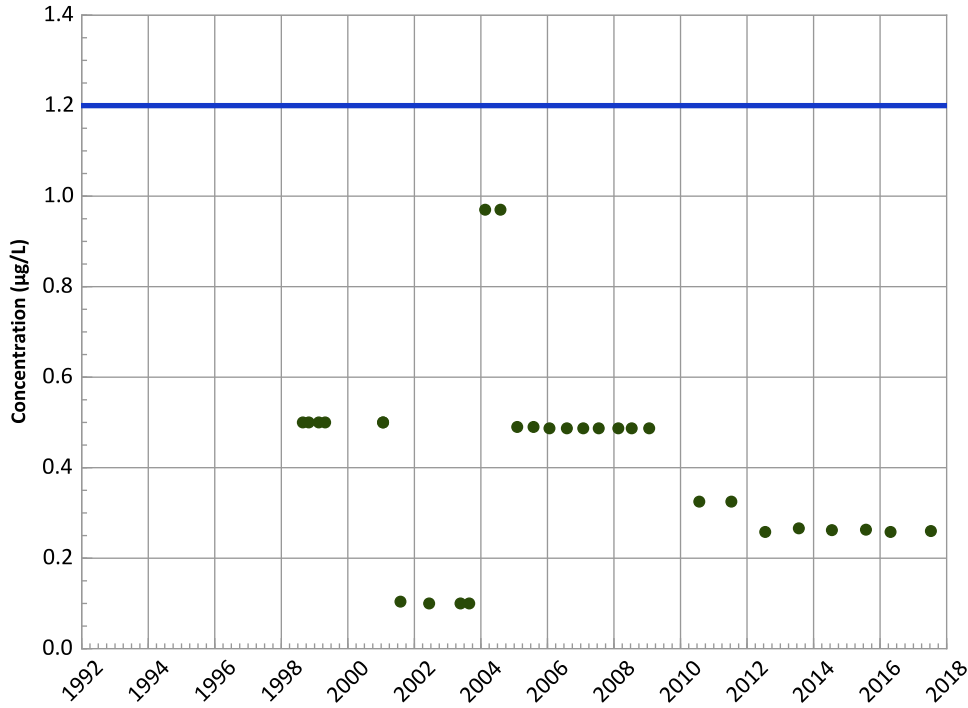
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

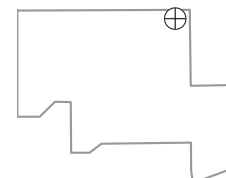
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

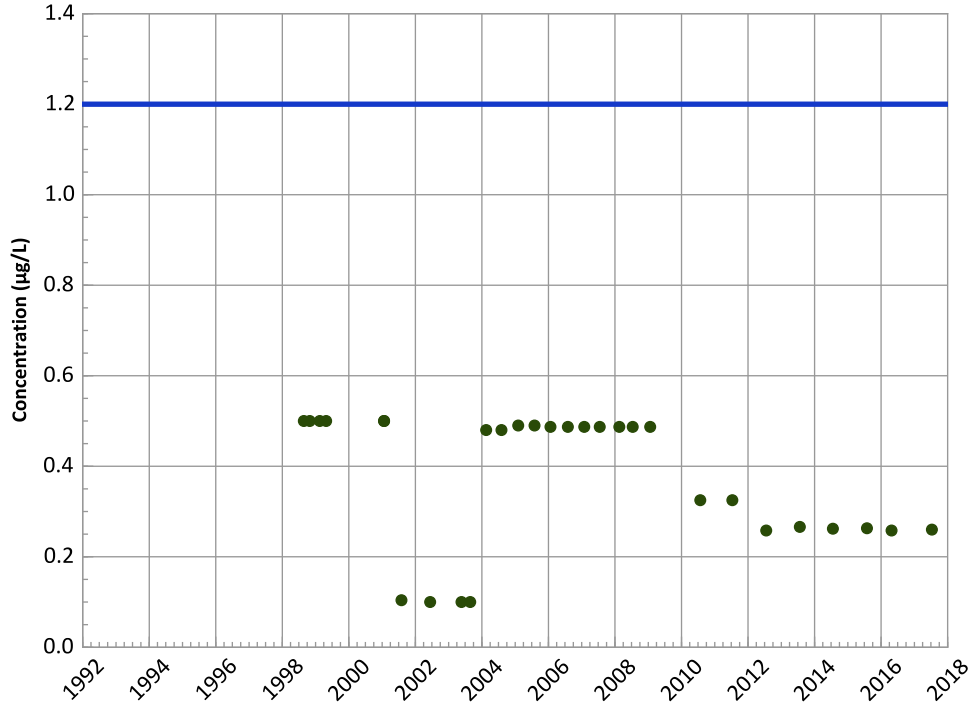


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/25/1998 to 07/12/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX04-1002 in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

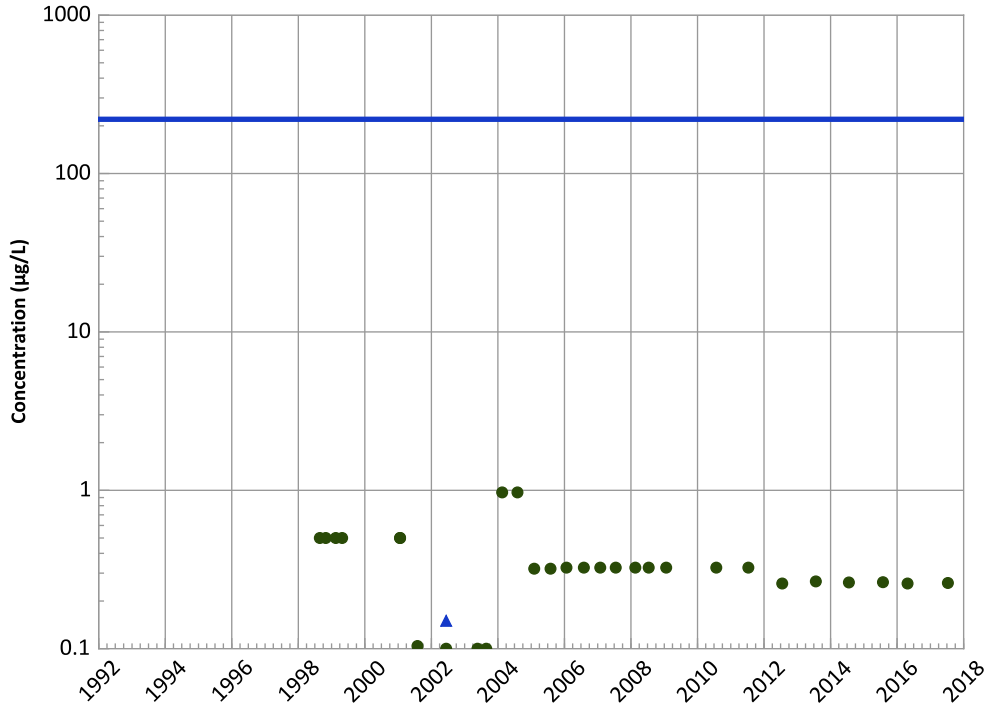
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,3,5-Trinitrobenzene Trend



Concentration Trend

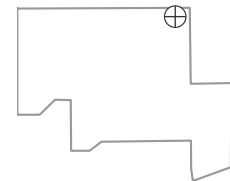
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

Well Location

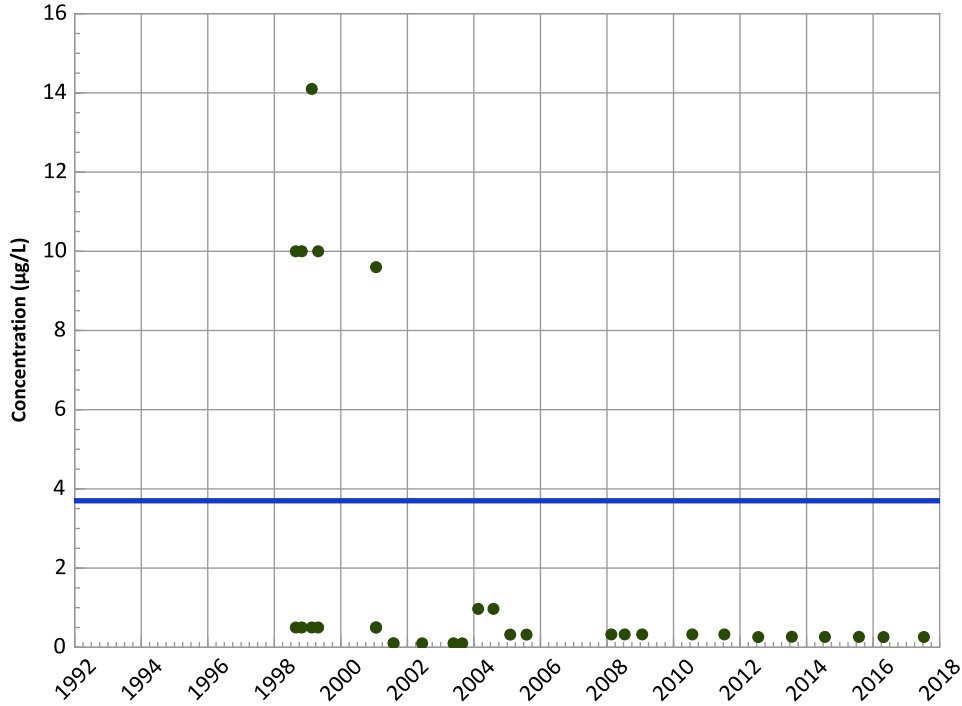


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/25/1998 to 07/12/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX04-1002 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

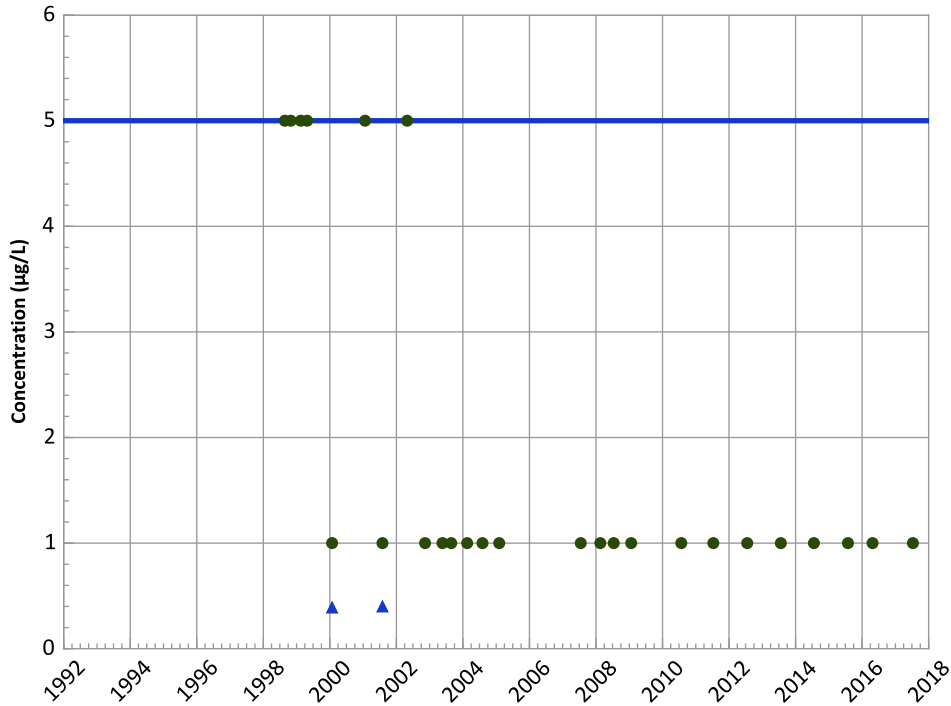
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Tetrachloroethylene (PCE) Trend



Concentration Trend

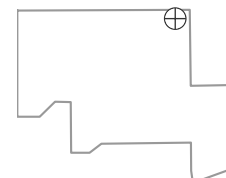
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

Well Location

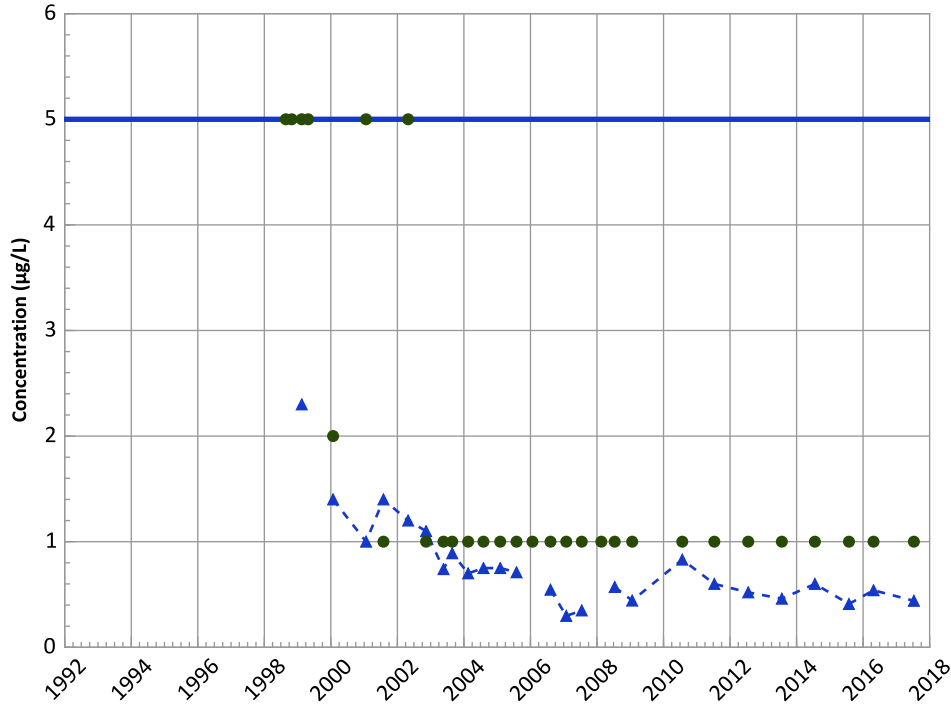


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/25/1998 to 07/12/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX04-1002 in Perched Aquifer
USDOE/NNSA Pantex Plant

Trichloroethene Trend



Concentration Trend

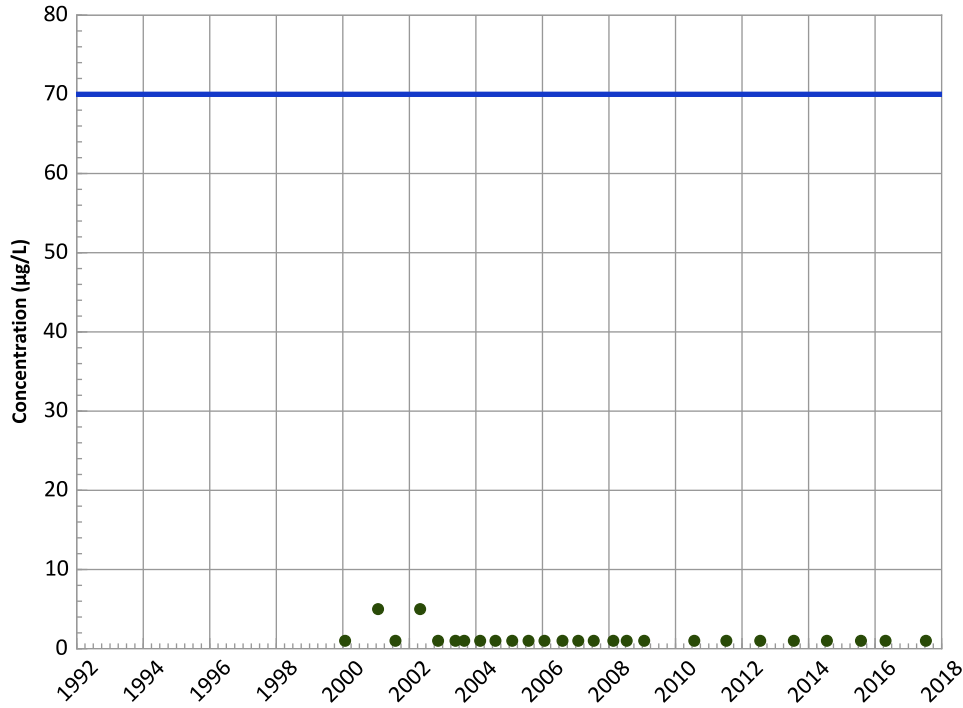
MAROS Mann-Kendall Method

Data ():
Stable
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Stable
All Data
Decreasing

cis-1,2-Dichloroethene Trend



Concentration Trend

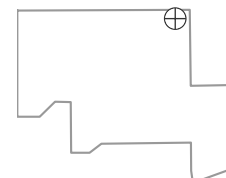
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

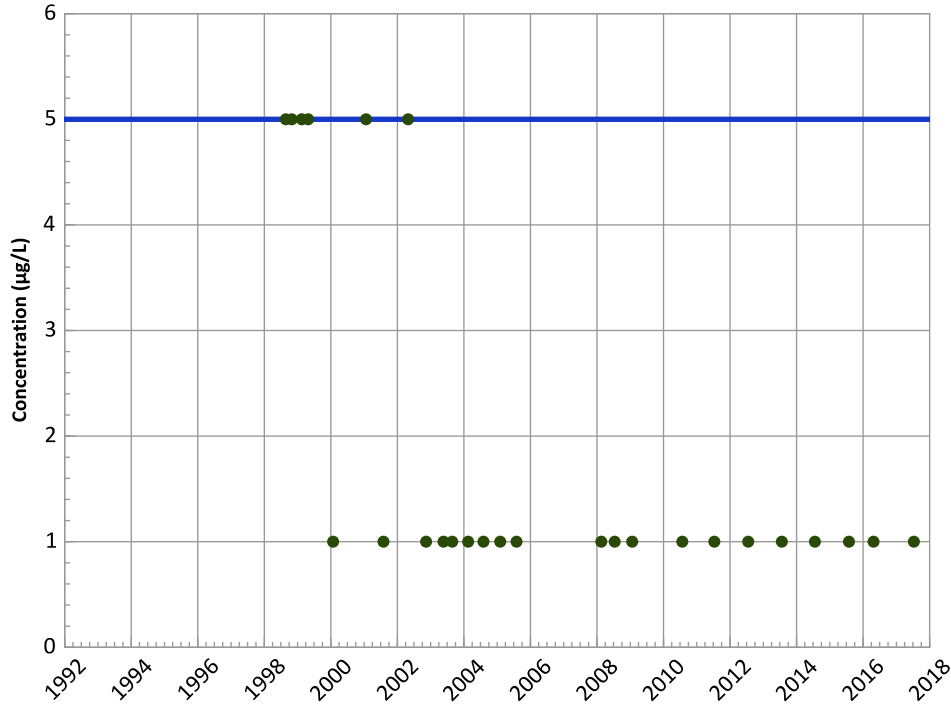
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/25/1998 to 07/12/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX04-1002 in Perched Aquifer
USDOE/NNSA Pantex Plant
1,2-Dichloroethane Trend**



Concentration Trend

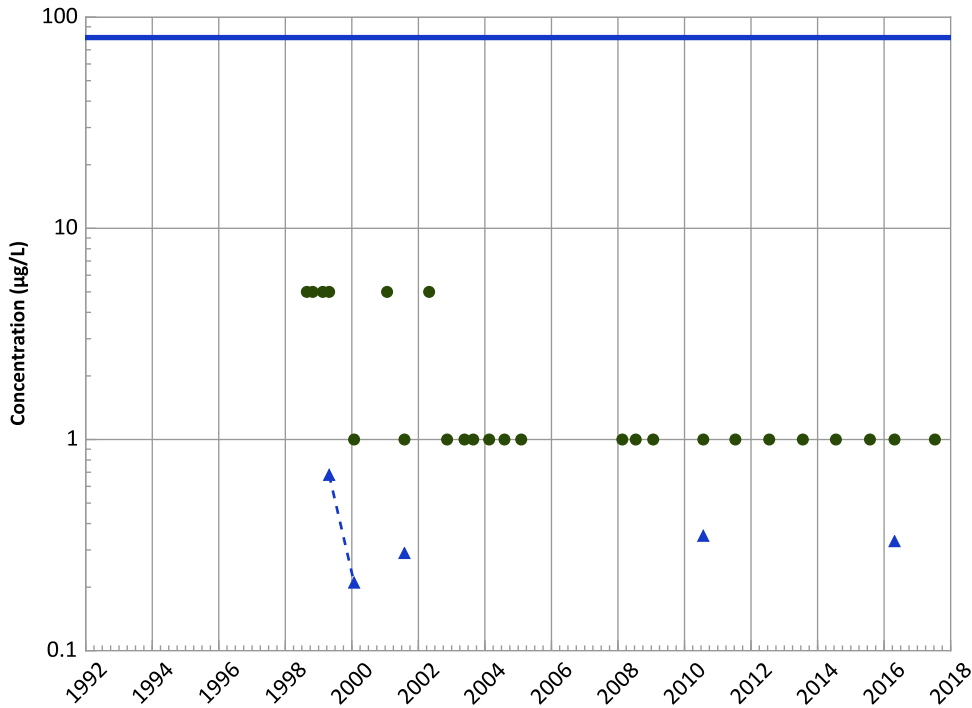
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Chloroform Trend



Concentration Trend

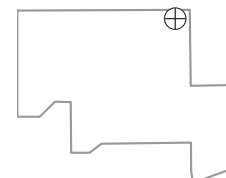
MAROS Mann-Kendall Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Stable

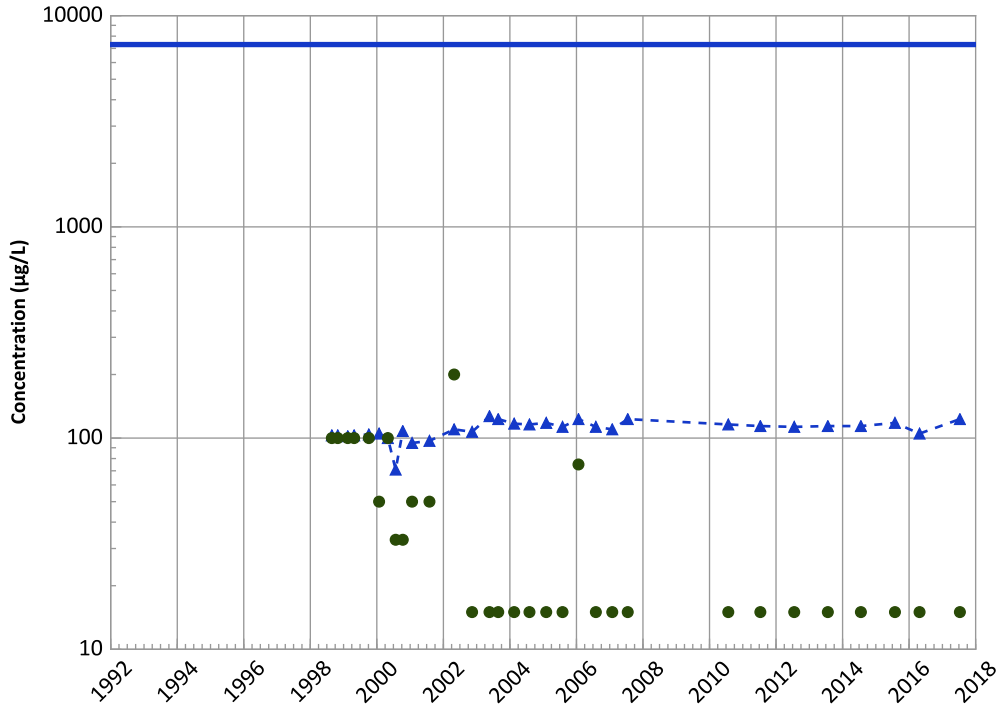
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/25/1998 to 07/12/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

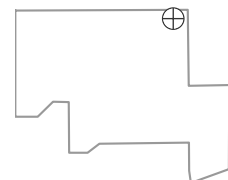
PTX04-1002 in Perched Aquifer
 USDOE/NNSA Pantex Plant
 Boron Trend



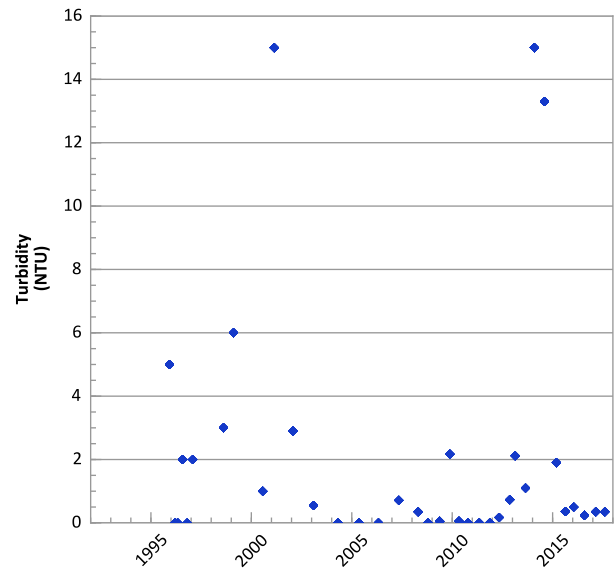
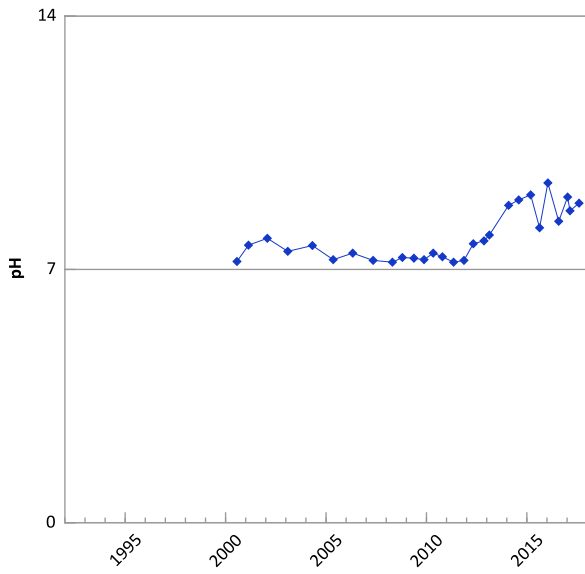
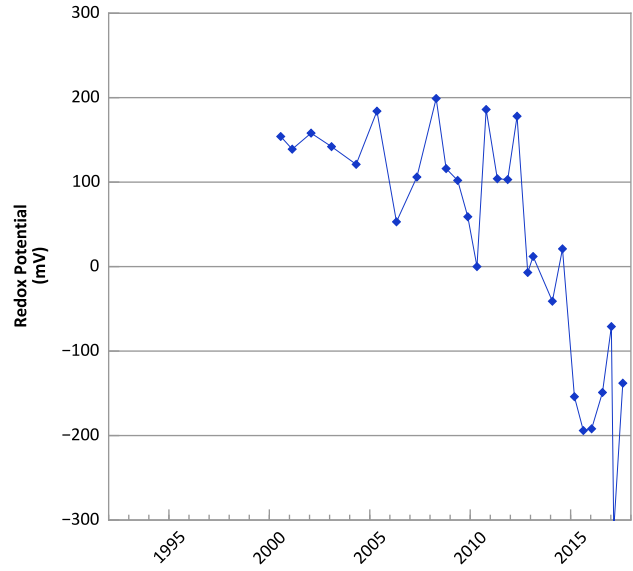
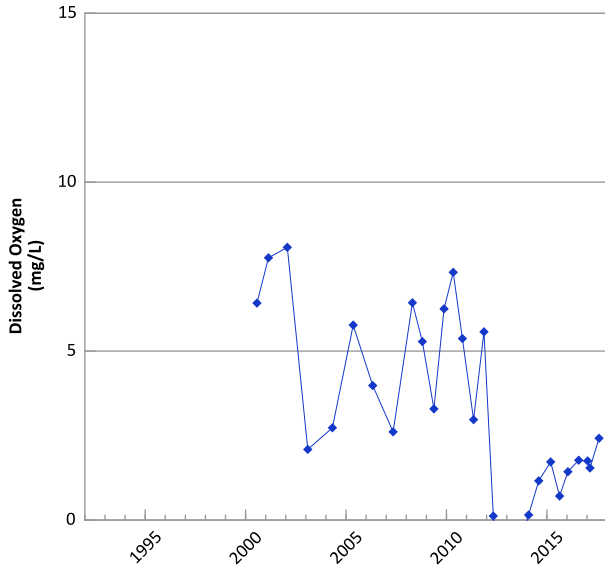
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 08/25/1998 to 07/12/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

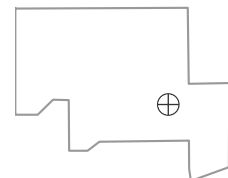


**PTX06-1002A in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



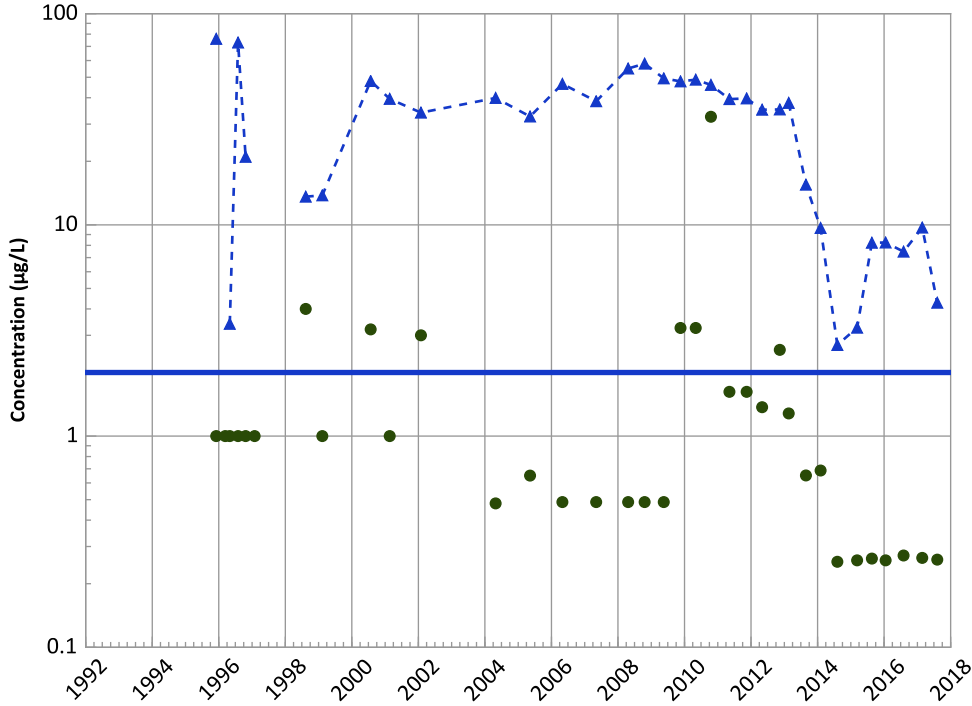
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 12/04/1995 to 08/07/2017
 Analysis Date: 03/21/2018

Well Location



PTX06-1002A in Perched Aquifer
USDOE/NSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

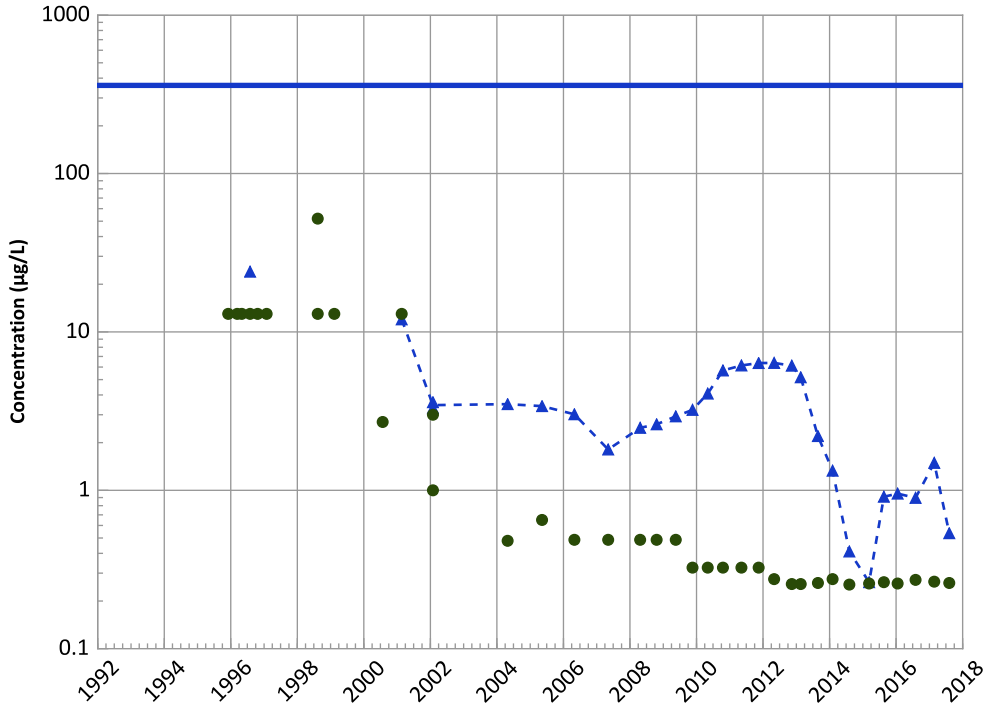
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

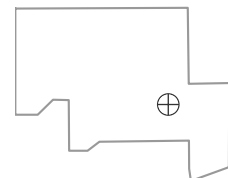
MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/04/1995 to 08/07/2017
Analysis Date: 03/21/2018

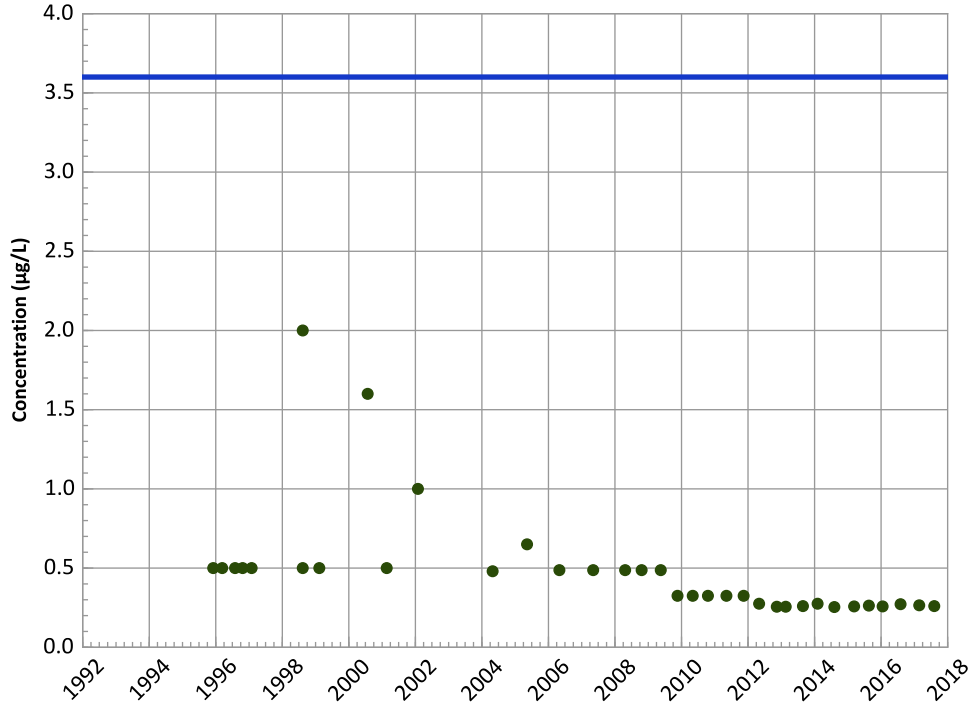
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1002A in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

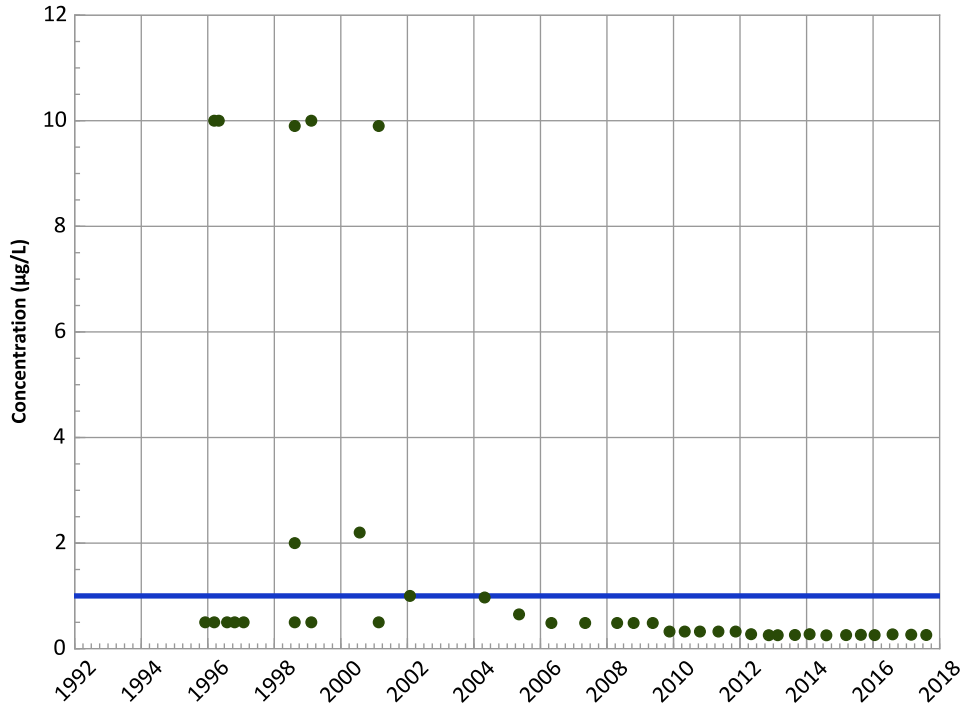
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

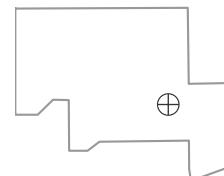
MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/04/1995 to 08/07/2017
Analysis Date: 03/21/2018

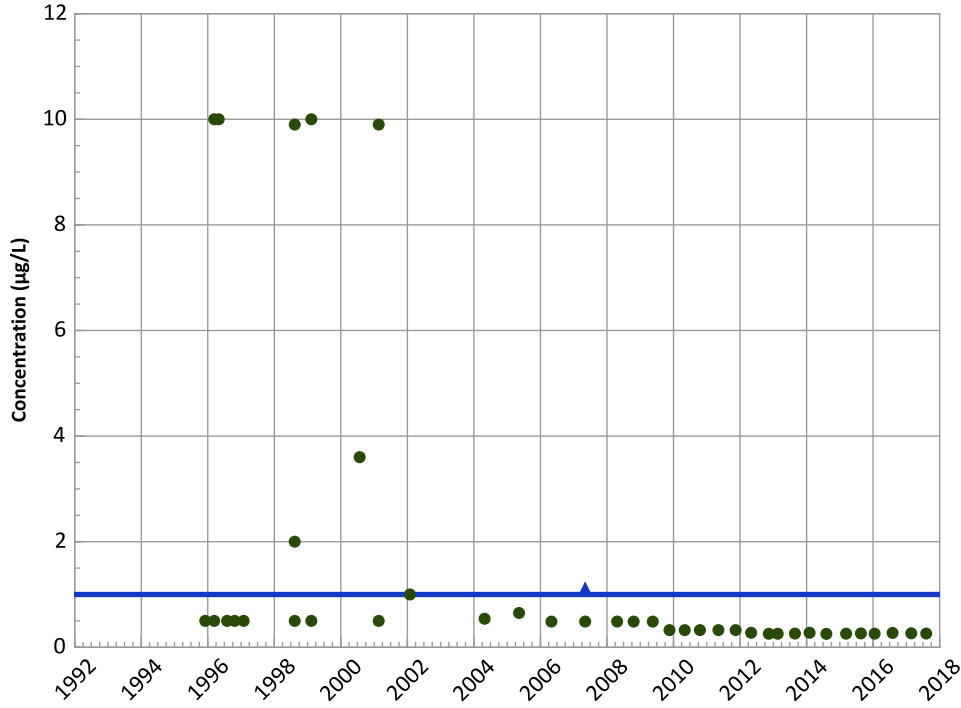
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1002A in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

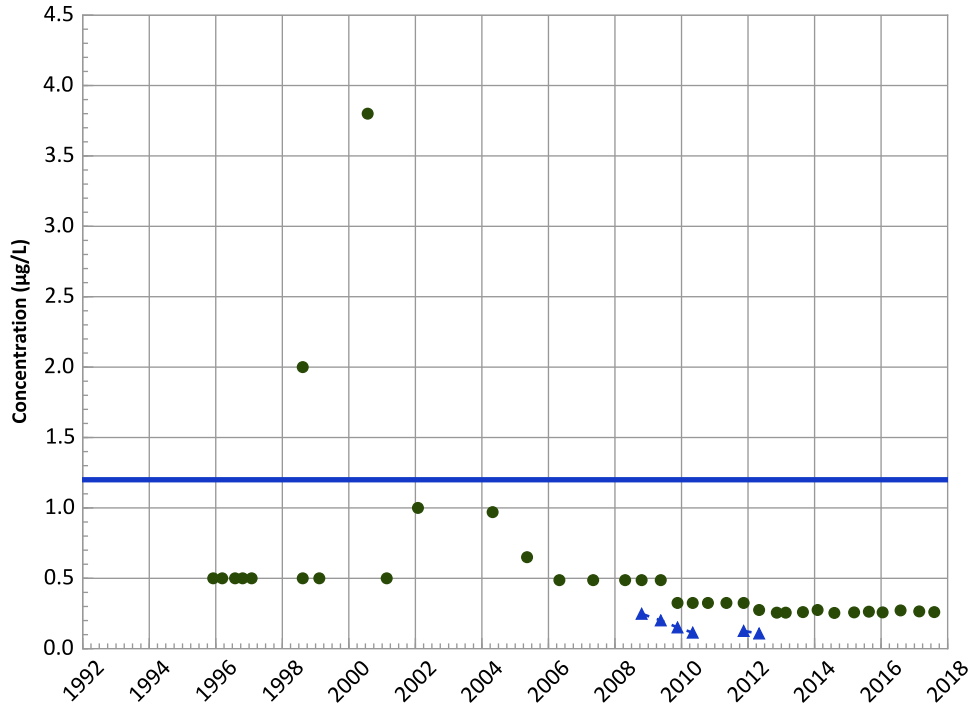
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

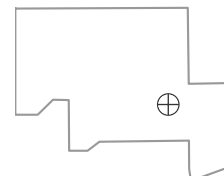
MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/04/1995 to 08/07/2017
Analysis Date: 03/21/2018

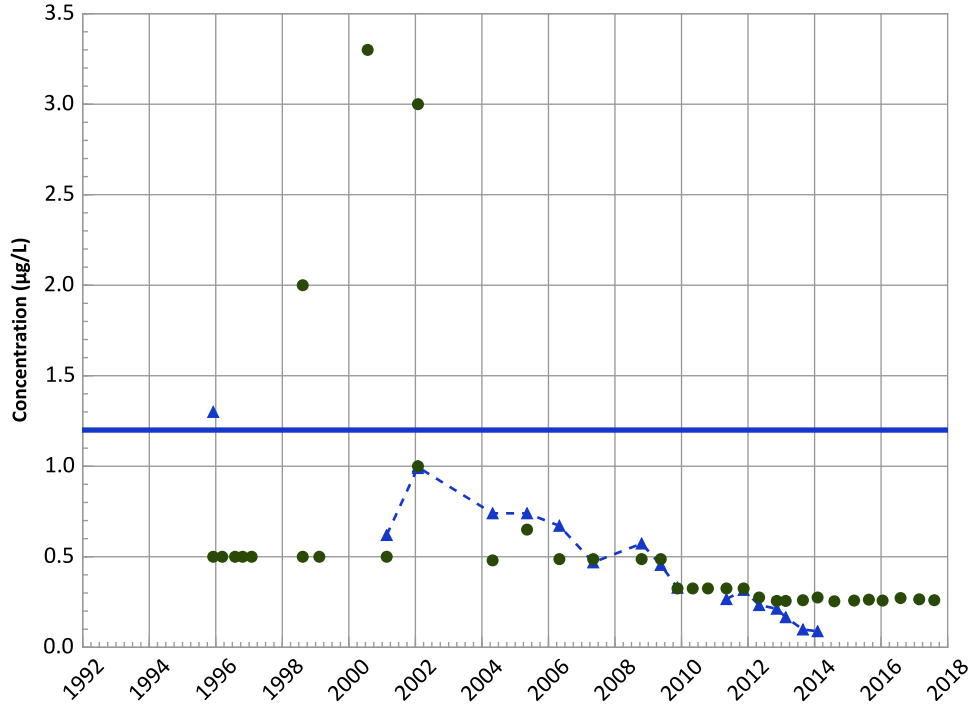
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1002A in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

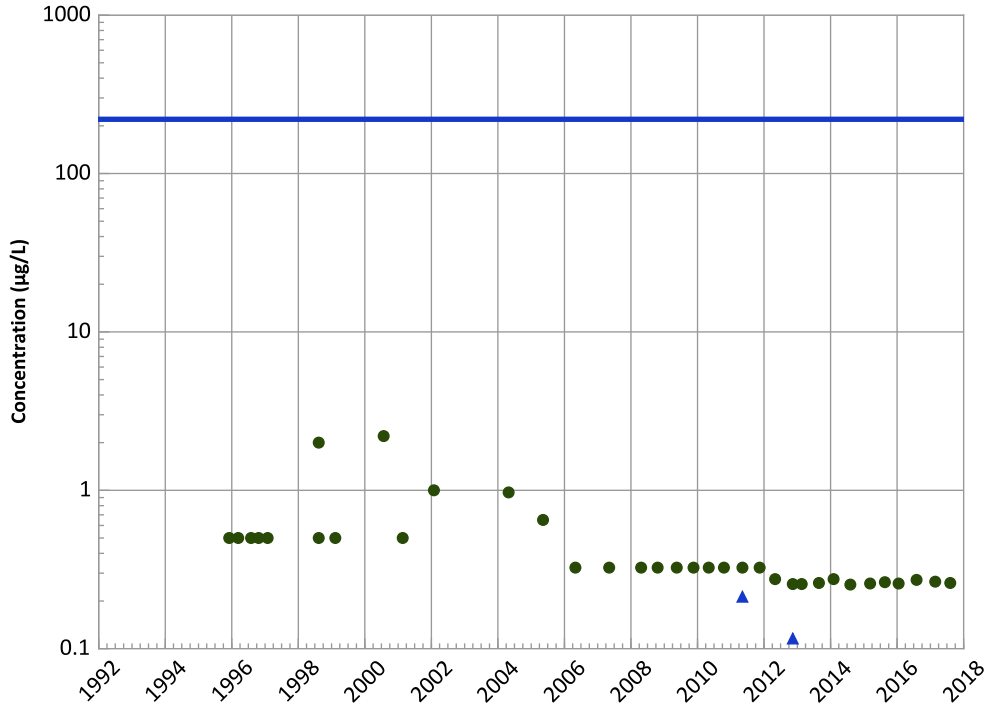
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

1,3,5-Trinitrobenzene Trend



Concentration Trend

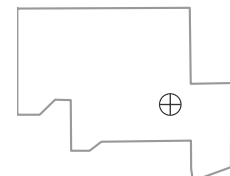
MAROS Mann-Kendall Method

Data ():
N/A (<4 Detections in Dataset)
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
N/A (<4 Detections in Dataset)

Well Location

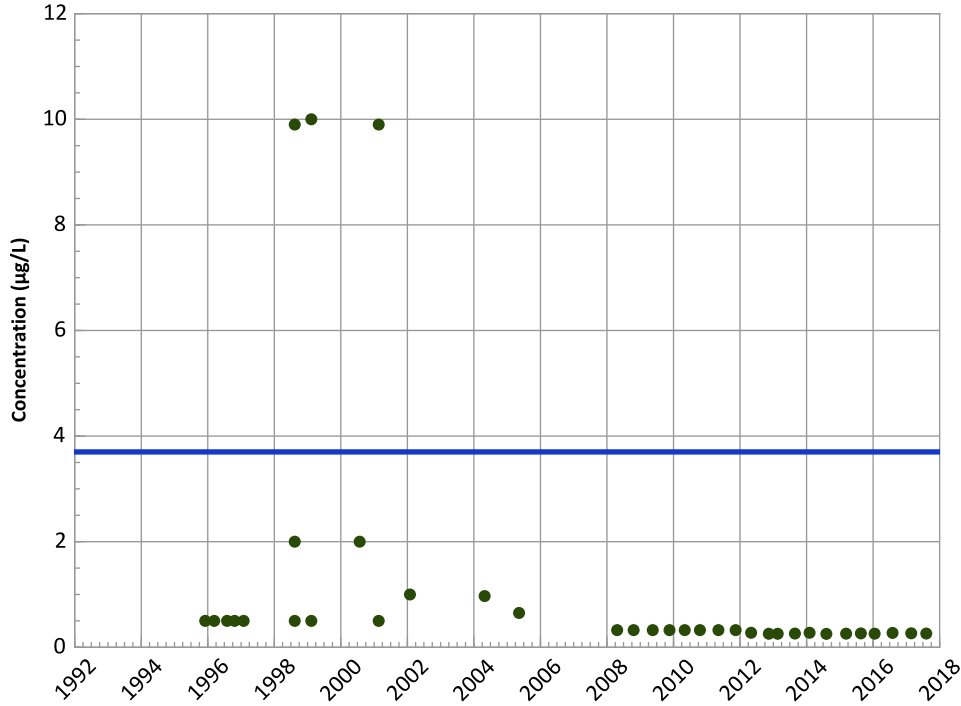


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/04/1995 to 08/07/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1002A in Perched Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

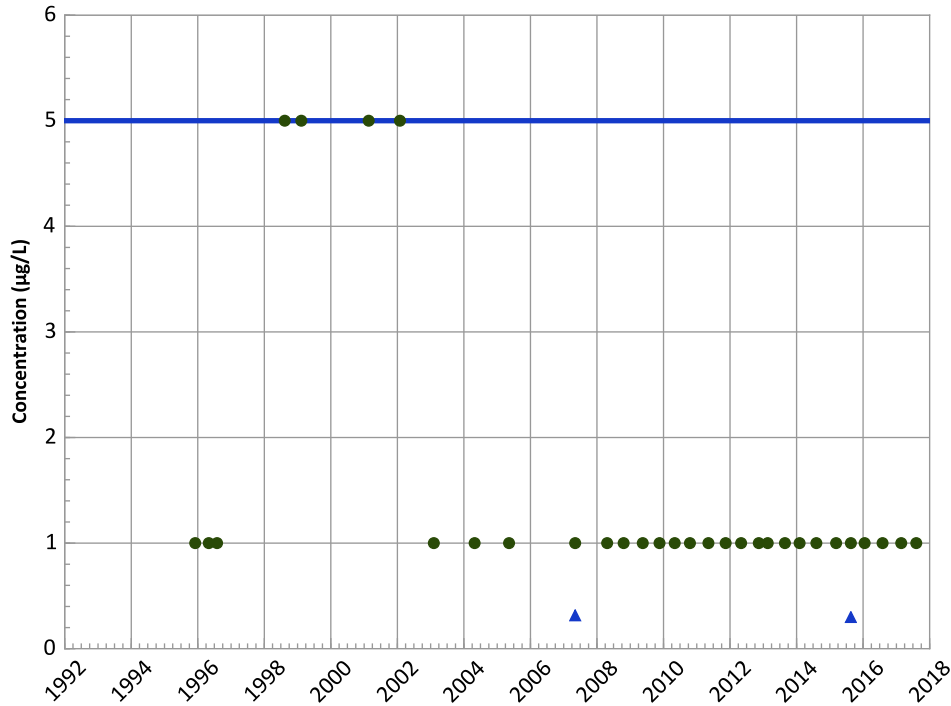
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Tetrachloroethylene (PCE) Trend



Concentration Trend

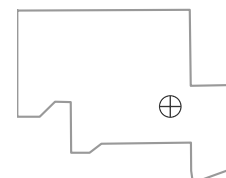
MAROS Mann-Kendall Method

Data ():
N/A (<4 Detections in Dataset)
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
N/A (<4 Detections in Dataset)

Well Location

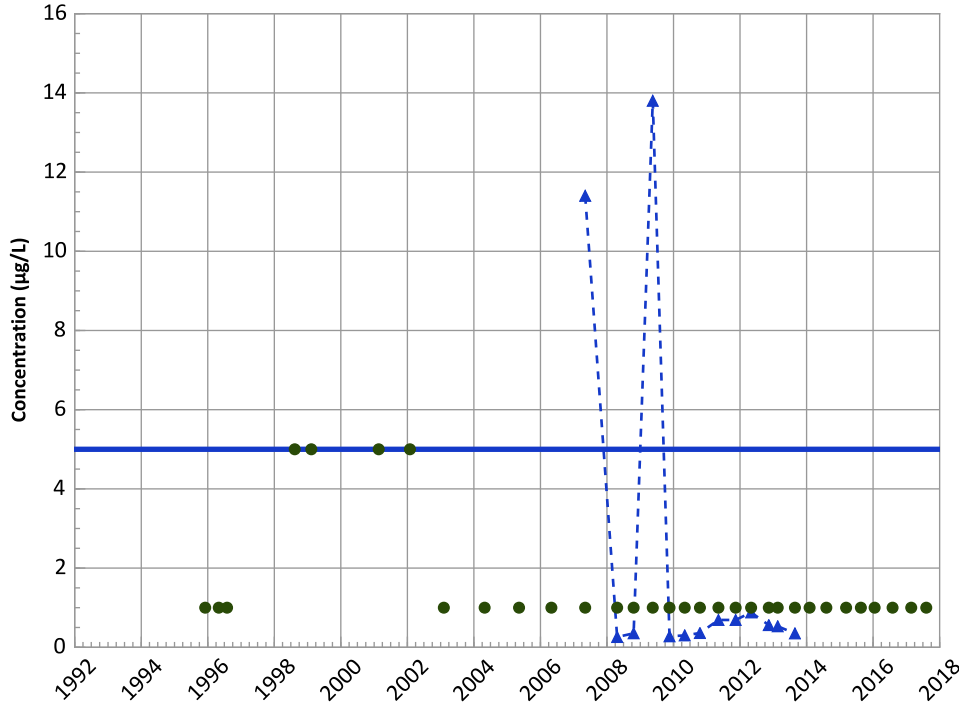


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/04/1995 to 08/07/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1002A in Perched Aquifer
USDOE/NNSA Pantex Plant

Trichloroethene Trend



Concentration Trend

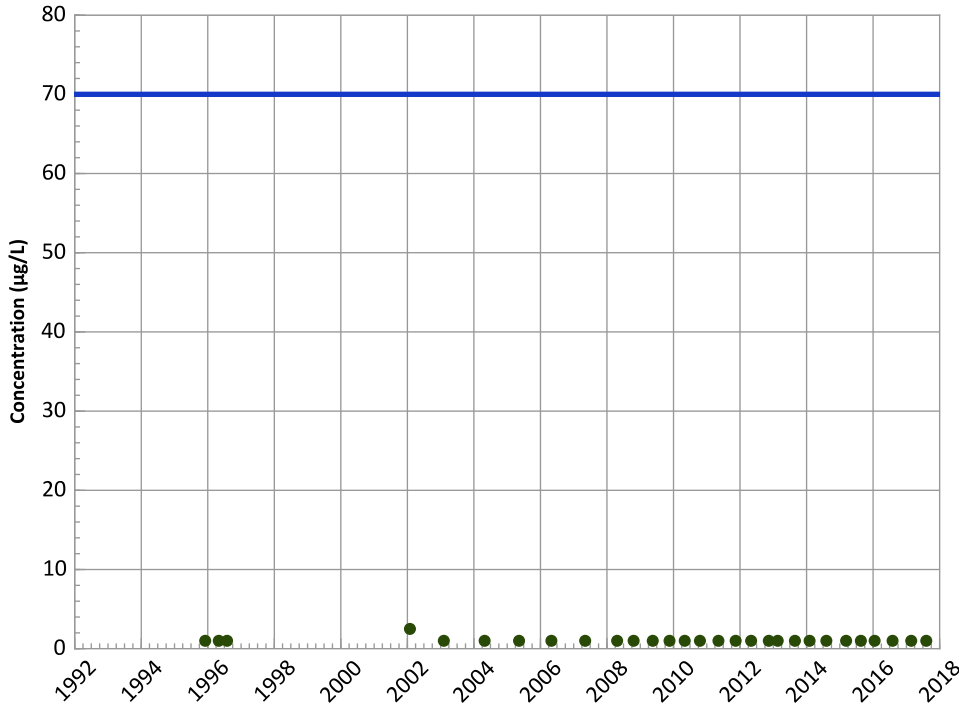
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
No Trend

cis-1,2-Dichloroethene Trend



Concentration Trend

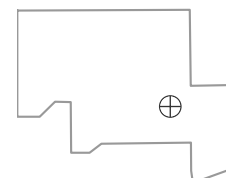
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

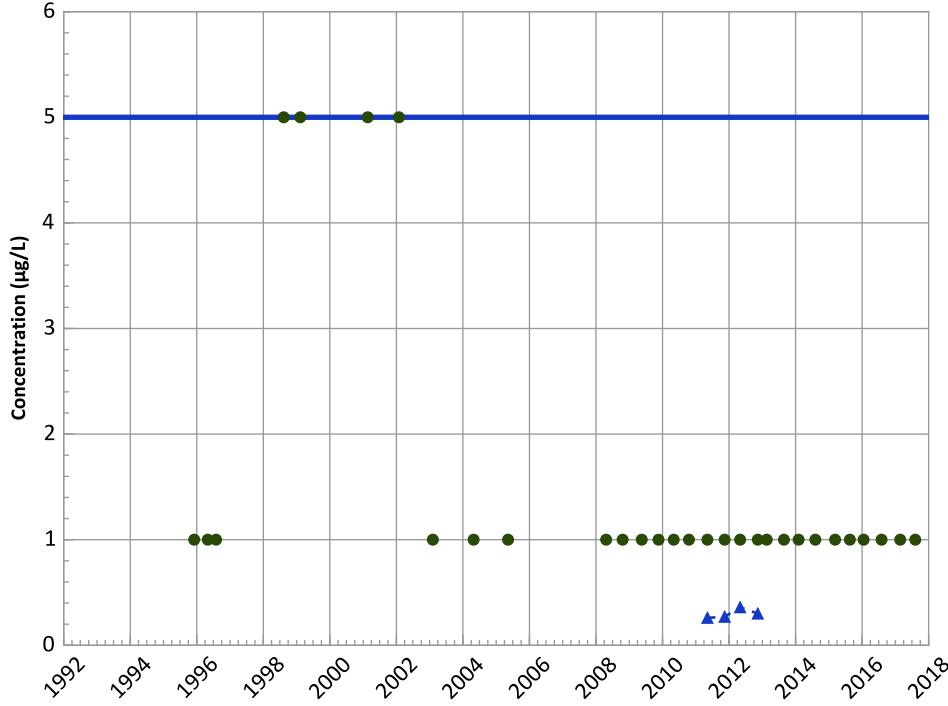


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/04/1995 to 08/07/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1002A in Perched Aquifer
USDOE/NNSA Pantex Plant

1,2-Dichloroethane Trend

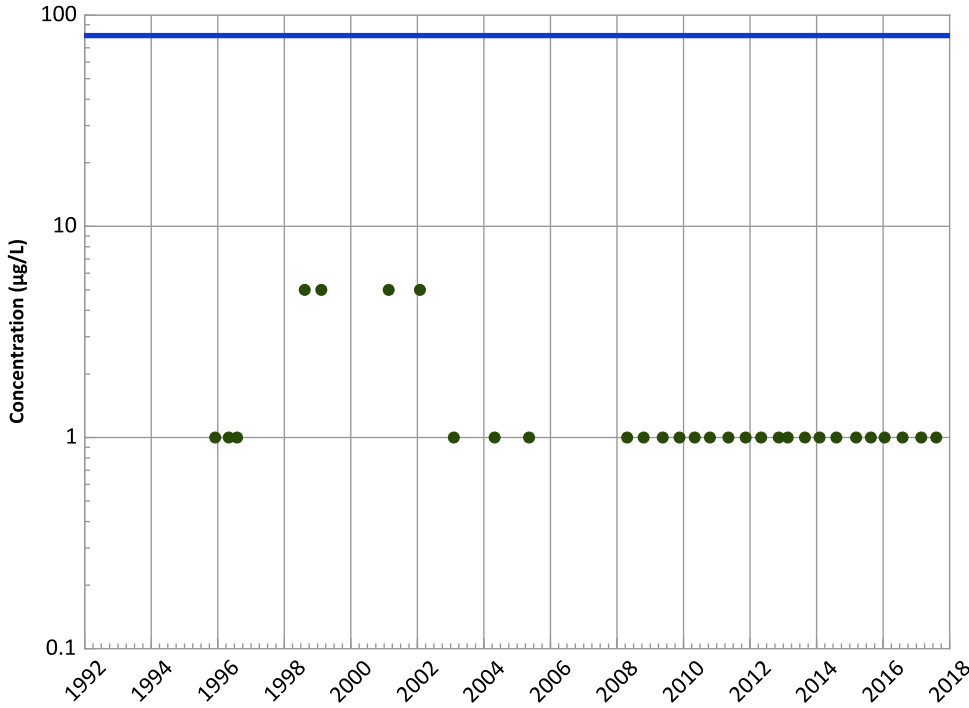


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

MAROS Linear Regression Method
Data ():
N/A (<4 Detections in Dataset)
All Data
No Trend

Chloroform Trend

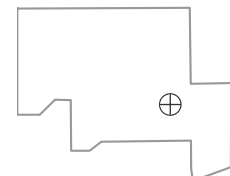


Concentration Trend

MAROS Mann-Kendall Method
Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method
Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

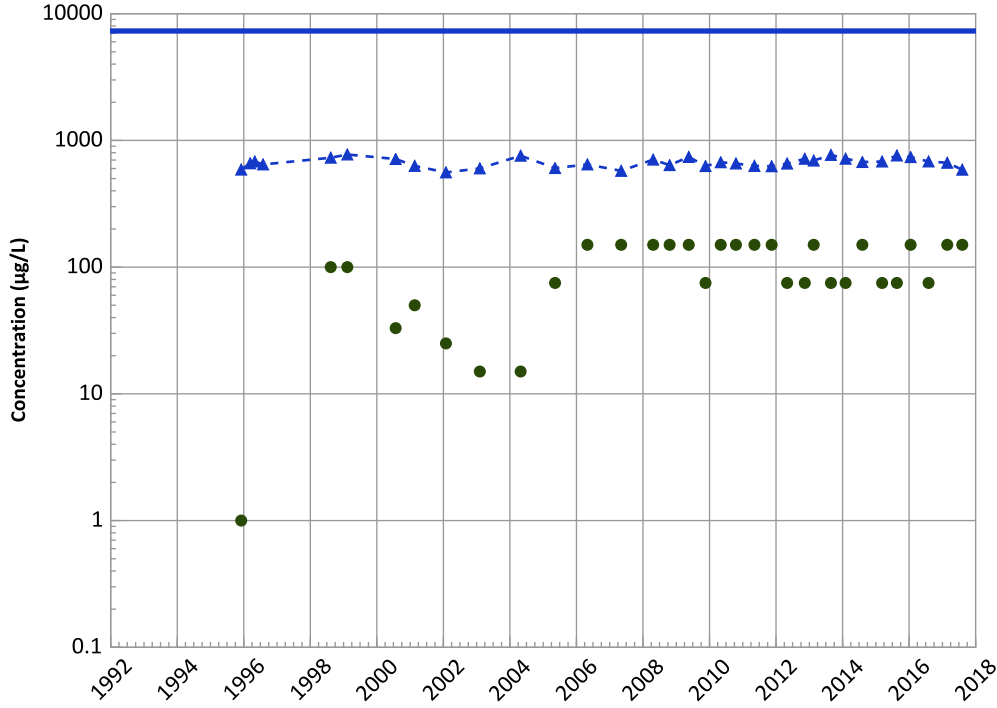


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/04/1995 to 08/07/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- Concentration Trend
- Groundwater Protection Standard

PTX06-1002A in Perched Aquifer
USDOE/NNSA Pantex Plant

Boron Trend



Concentration Trend

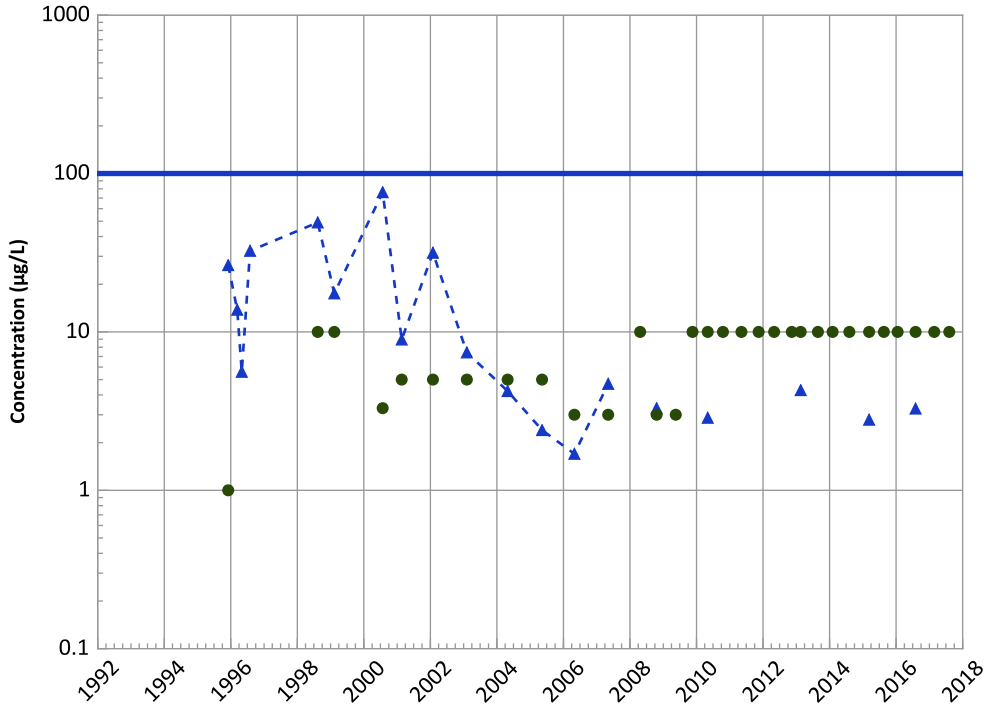
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
No Trend

MAROS Linear Regression Method

Data ():
No Trend
All Data
Increasing

Chromium, Total Trend



Concentration Trend

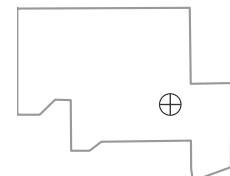
MAROS Mann-Kendall Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

Well Location

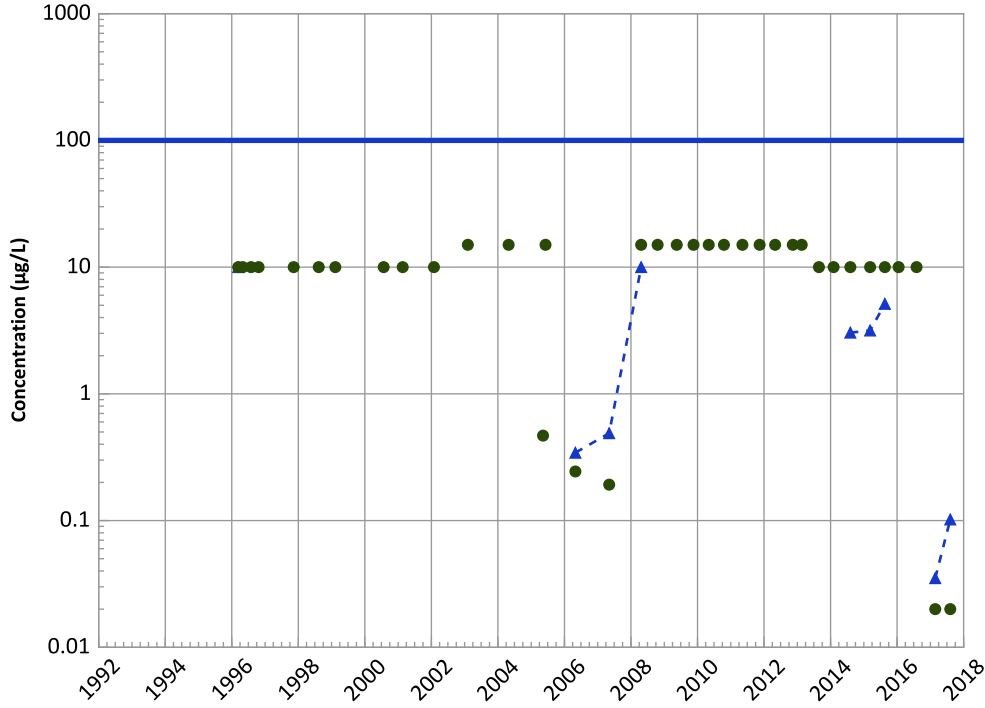


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/04/1995 to 08/07/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1002A in Perched Aquifer
USDOE/NNSA Pantex Plant

Chromium, Hexavalent Trend

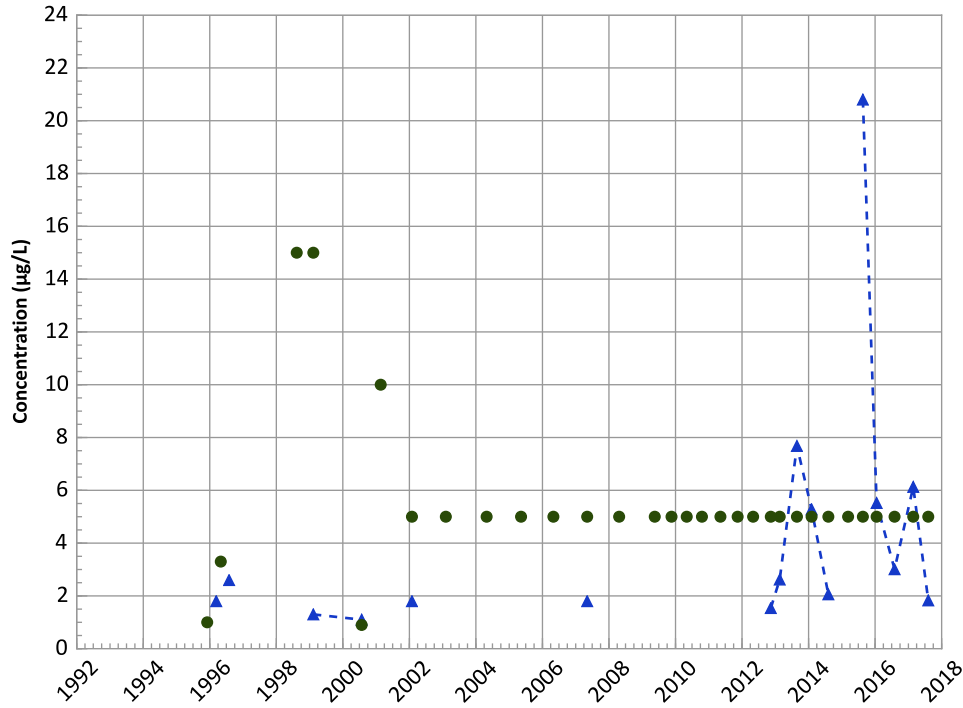


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

MAROS Linear Regression Method
Data ():
N/A (<4 Detections in Dataset)
All Data
No Trend

Manganese Trend



Concentration Trend

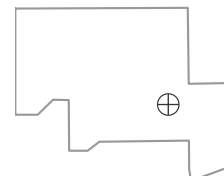
MAROS Mann-Kendall Method
Data ():
No Trend
All Data
Increasing

MAROS Linear Regression Method
Data ():
No Trend
All Data
Increasing

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/04/1995 to 08/07/2017
Analysis Date: 03/21/2018

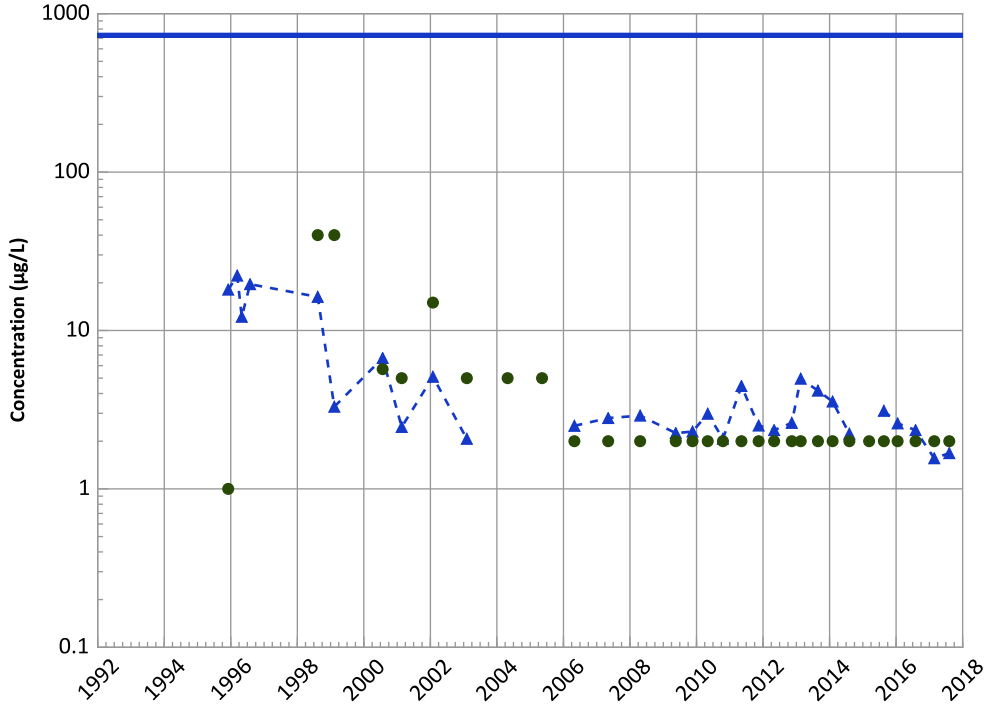
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1002A in Perched Aquifer
USDOE/NNSA Pantex Plant

Nickel Trend



Concentration Trend

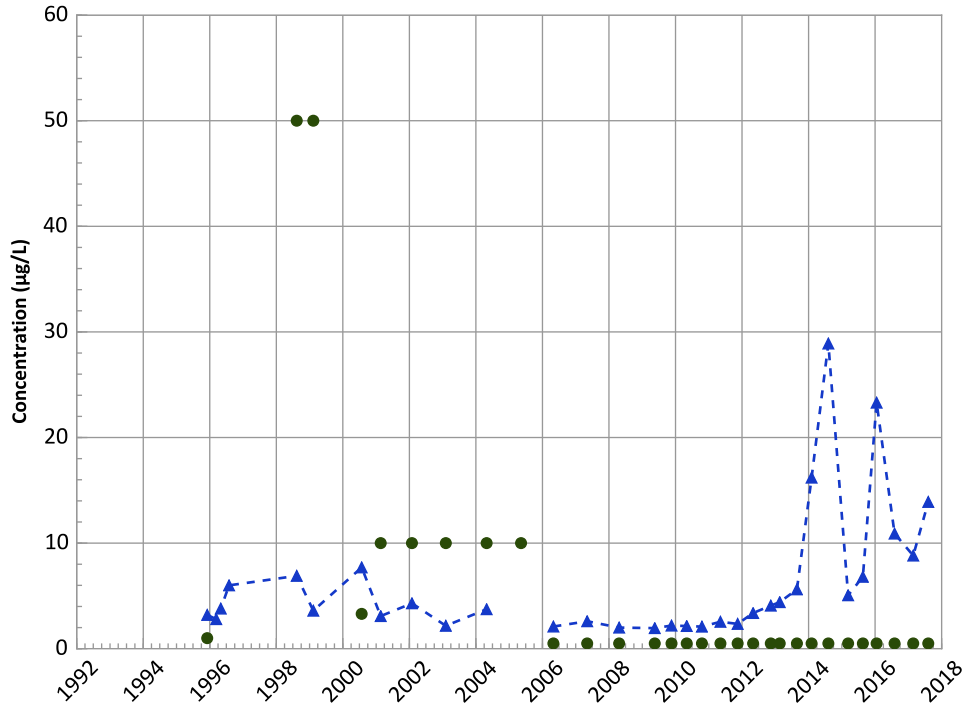
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Stable
All Data
Decreasing

Molybdenum Trend



Concentration Trend

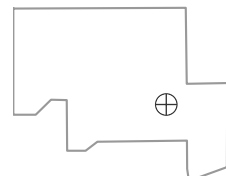
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

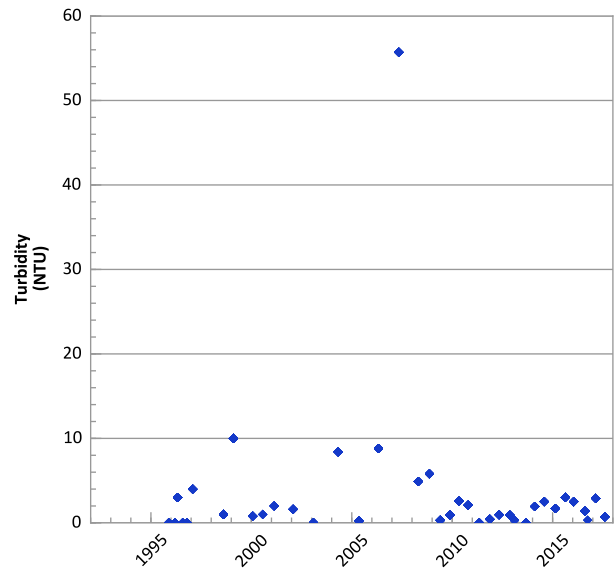
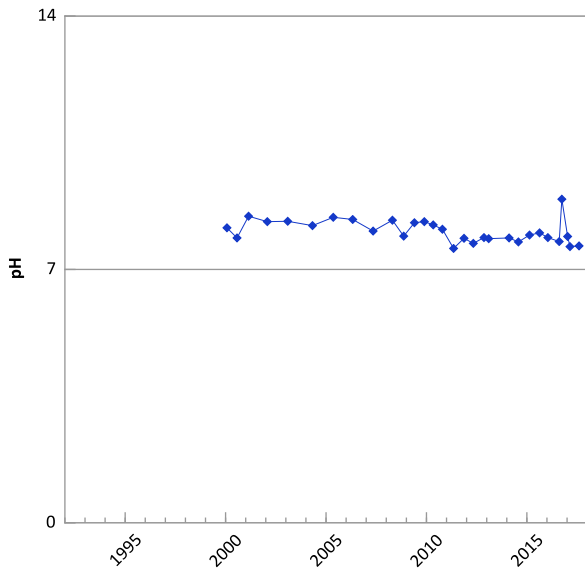
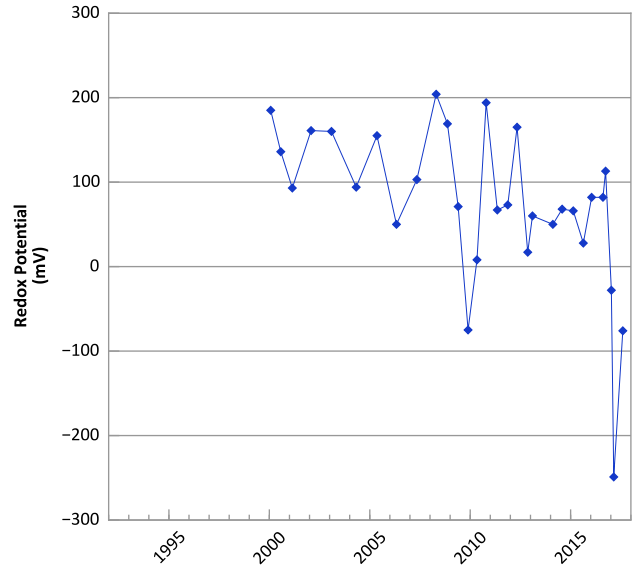
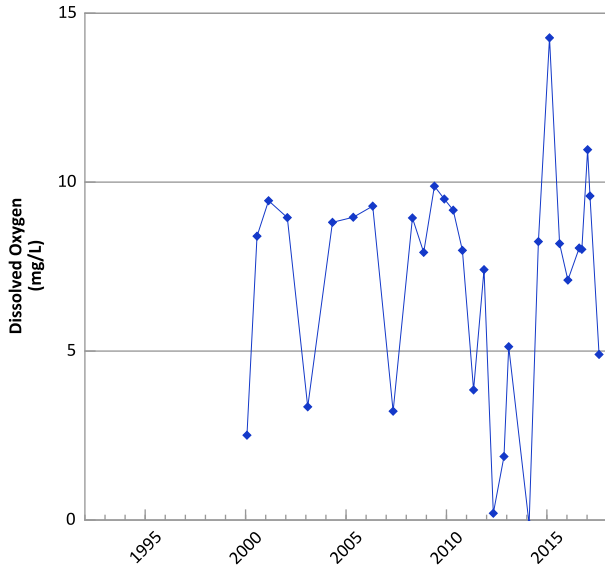
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/04/1995 to 08/07/2017
Analysis Date: 03/21/2018

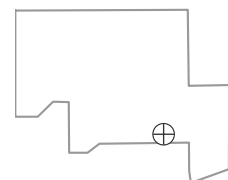
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1005 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



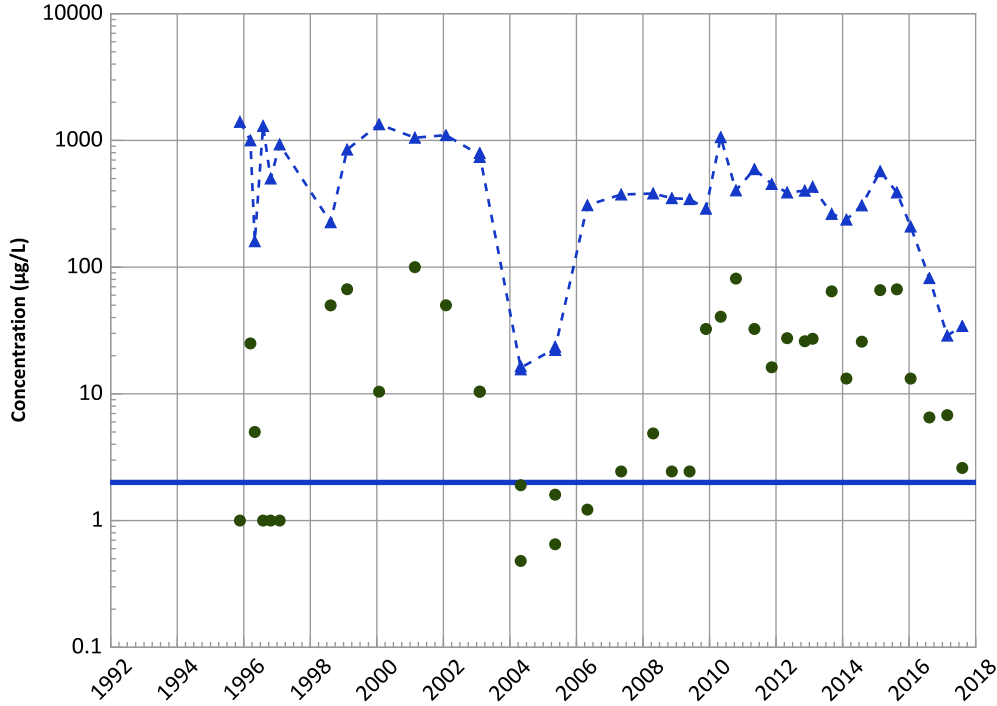
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 11/20/1995 to 08/07/2017
 Analysis Date: 03/21/2018

Well Location



PTX06-1005 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

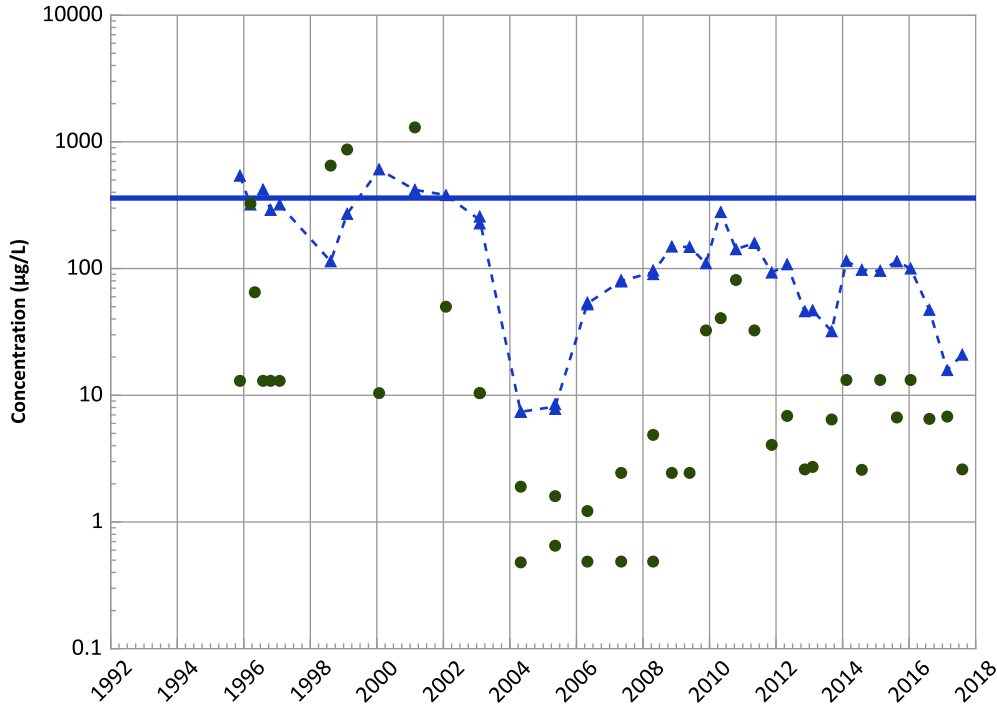
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Decreasing

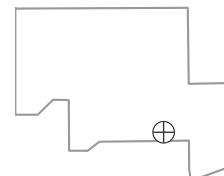
MAROS Linear Regression Method

Data ():
No Trend
All Data
Decreasing

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/20/1995 to 08/07/2017
Analysis Date: 03/21/2018

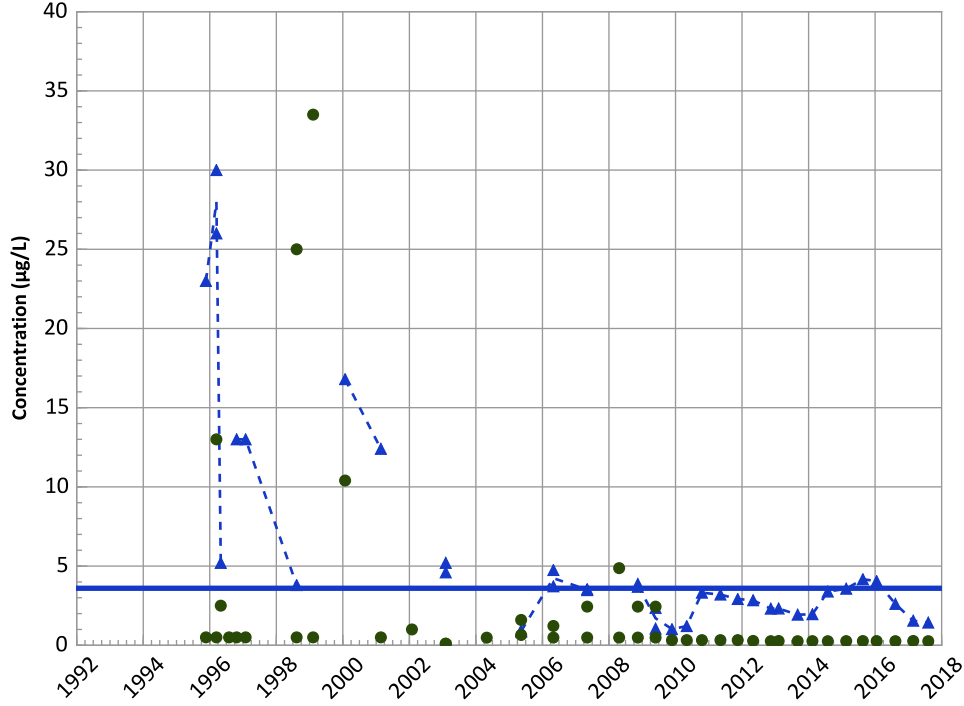
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1005 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

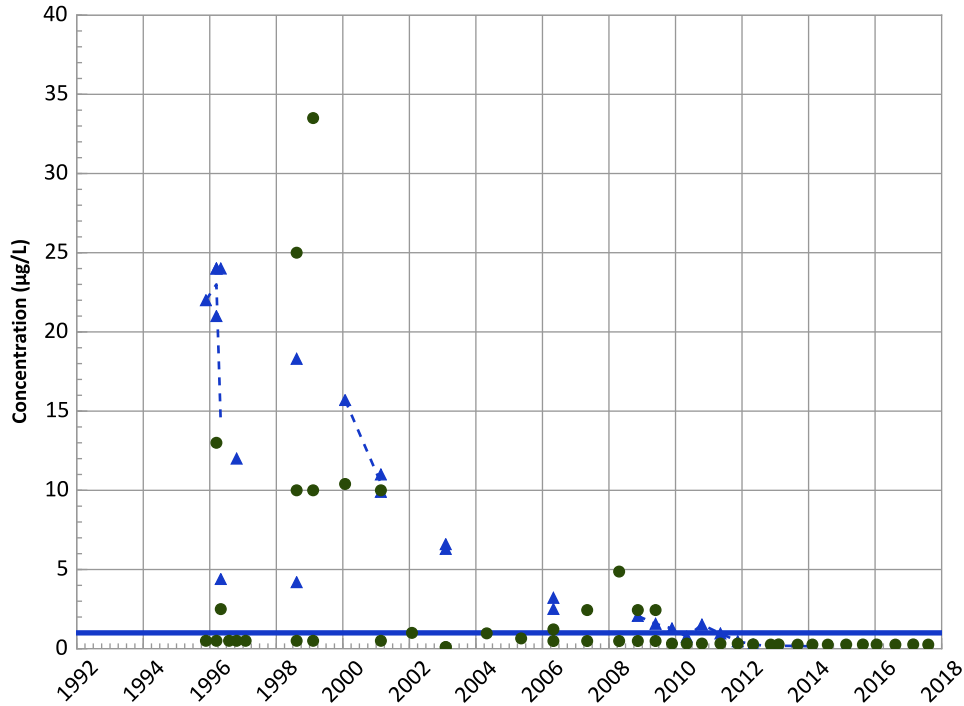
MAROS Mann-Kendall Method

Data ():
Probably Increasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Decreasing

2,4-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

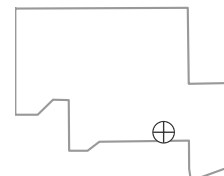
MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/20/1995 to 08/07/2017
Analysis Date: 03/21/2018

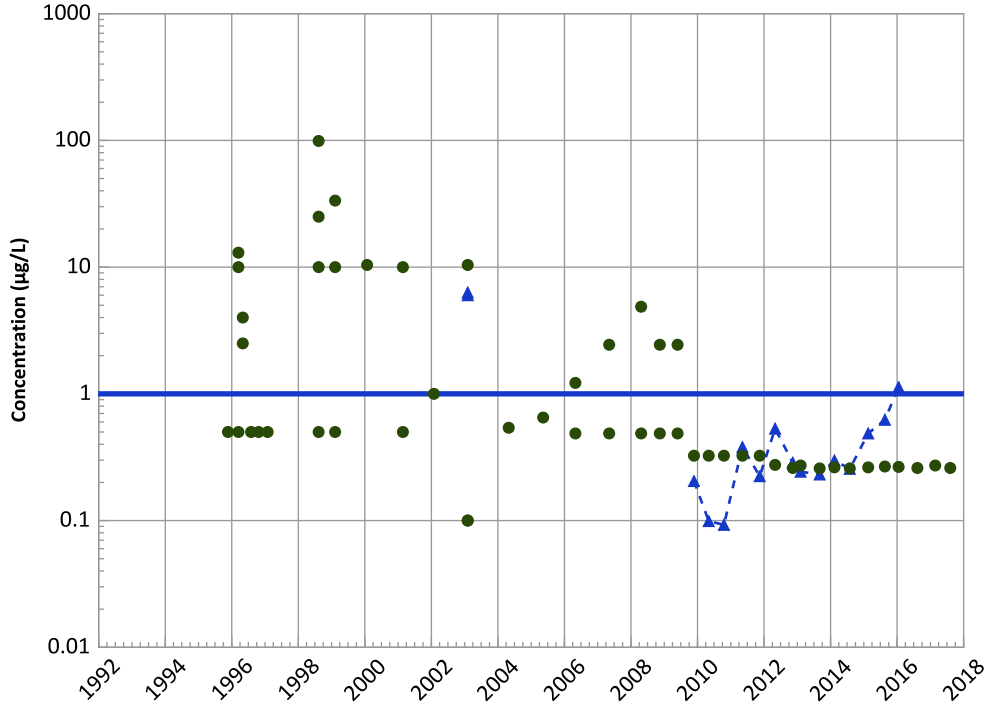
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1005 in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

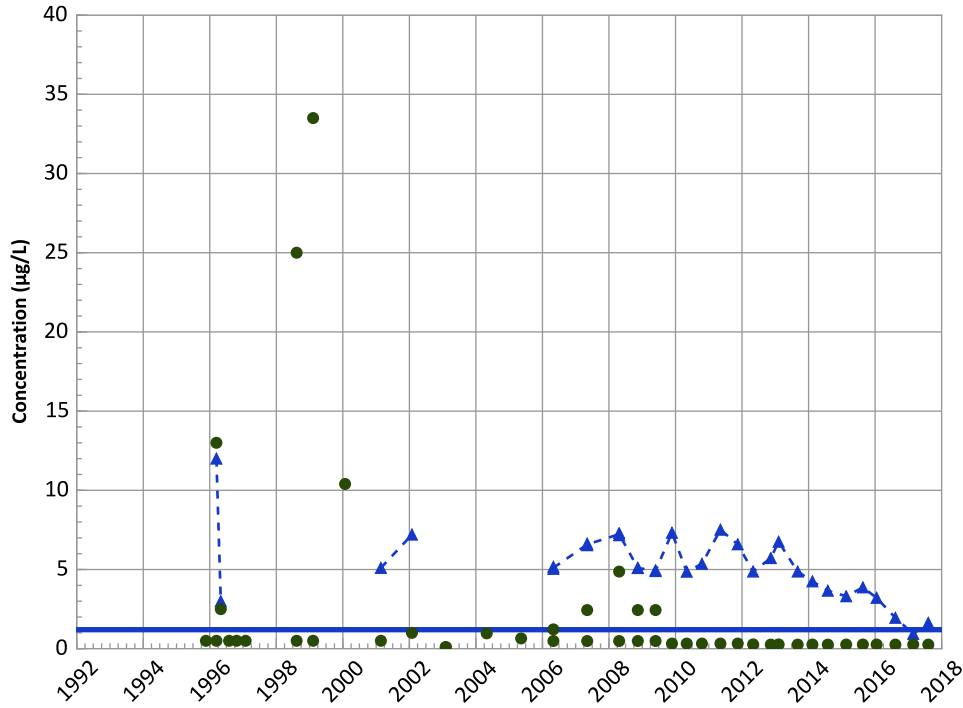
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
No Trend

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
No Trend

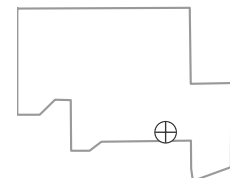
MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/20/1995 to 08/07/2017
Analysis Date: 03/21/2018

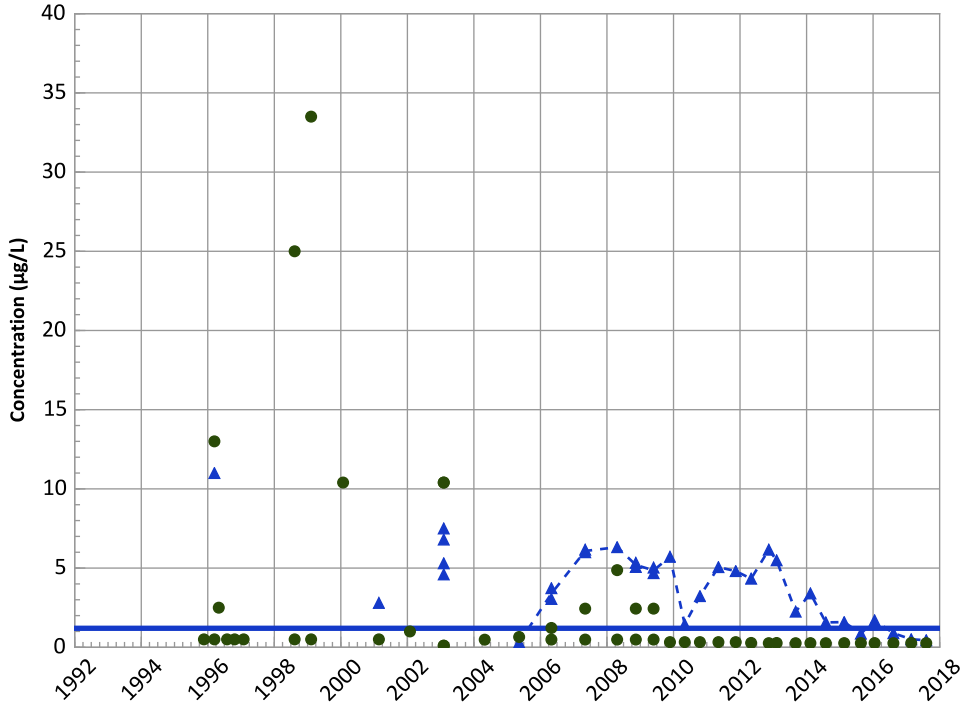
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1005 in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

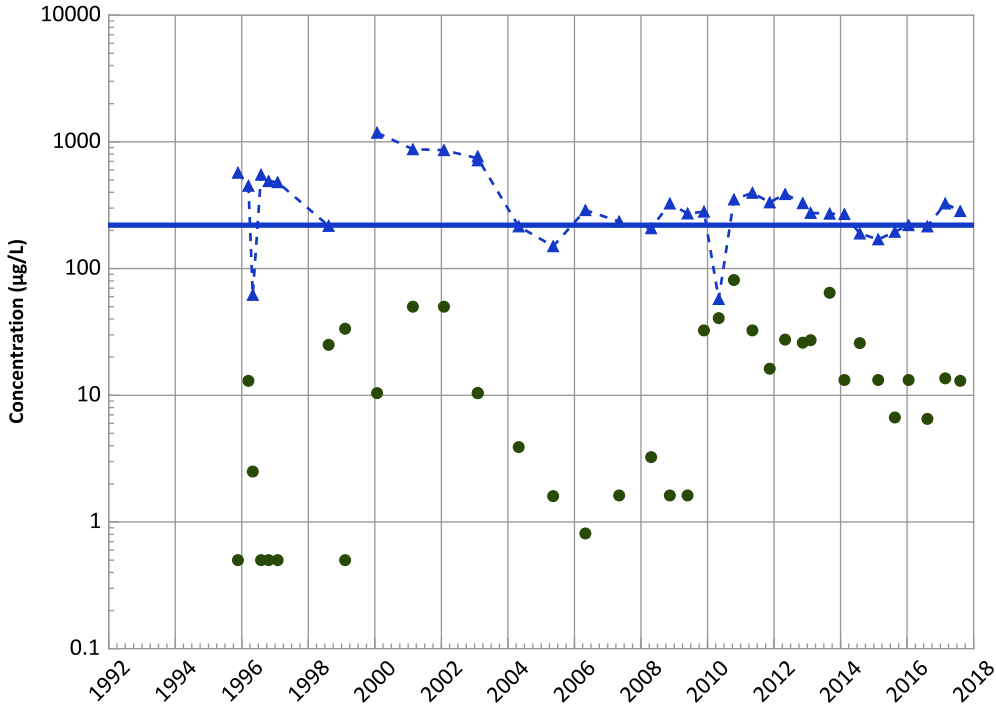
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
No Trend

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

1,3,5-Trinitrobenzene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

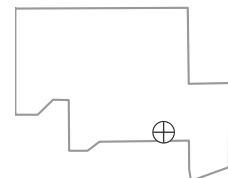
MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/20/1995 to 08/07/2017
Analysis Date: 03/21/2018

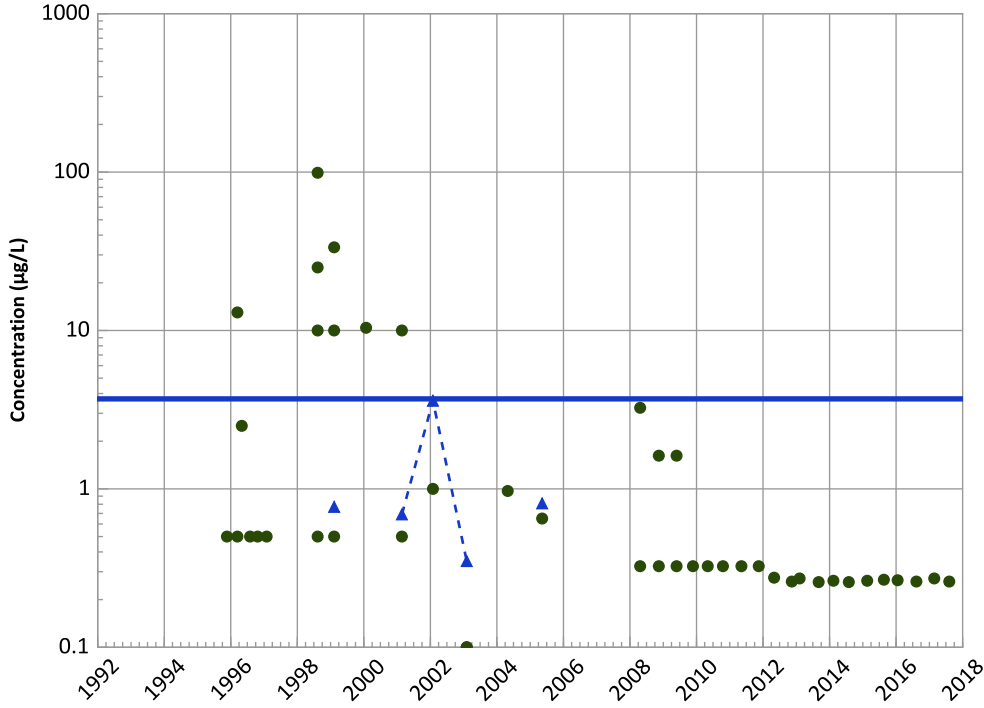
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1005 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

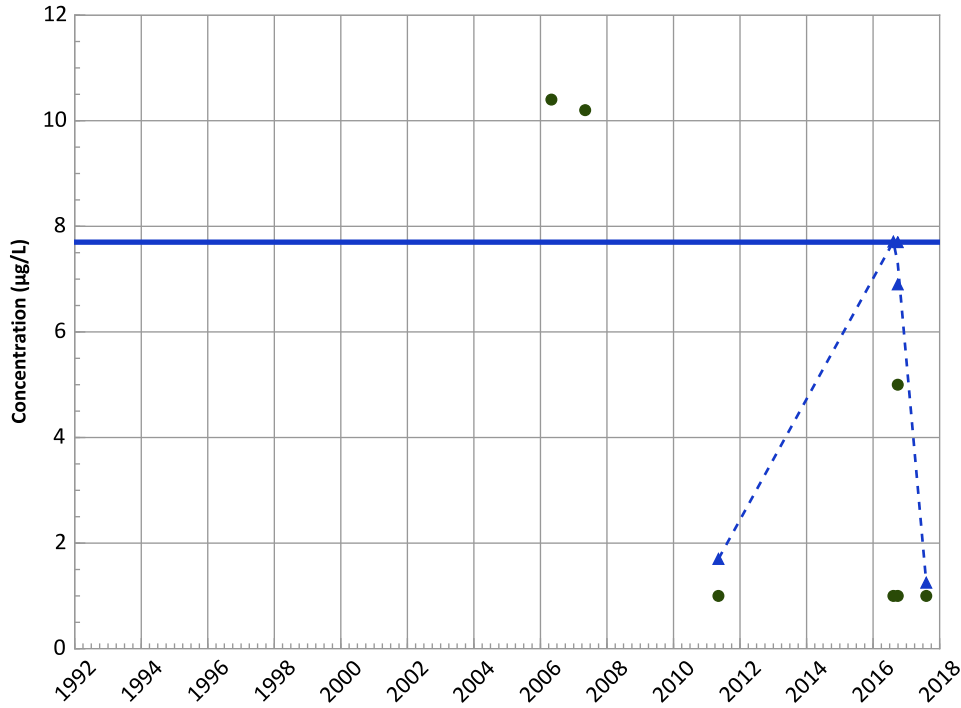
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
Decreasing

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
No Trend

1,4-Dioxane (p-Dioxane) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
Decreasing

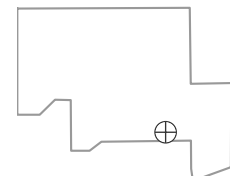
MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
No Trend

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/20/1995 to 08/07/2017
Analysis Date: 03/21/2018

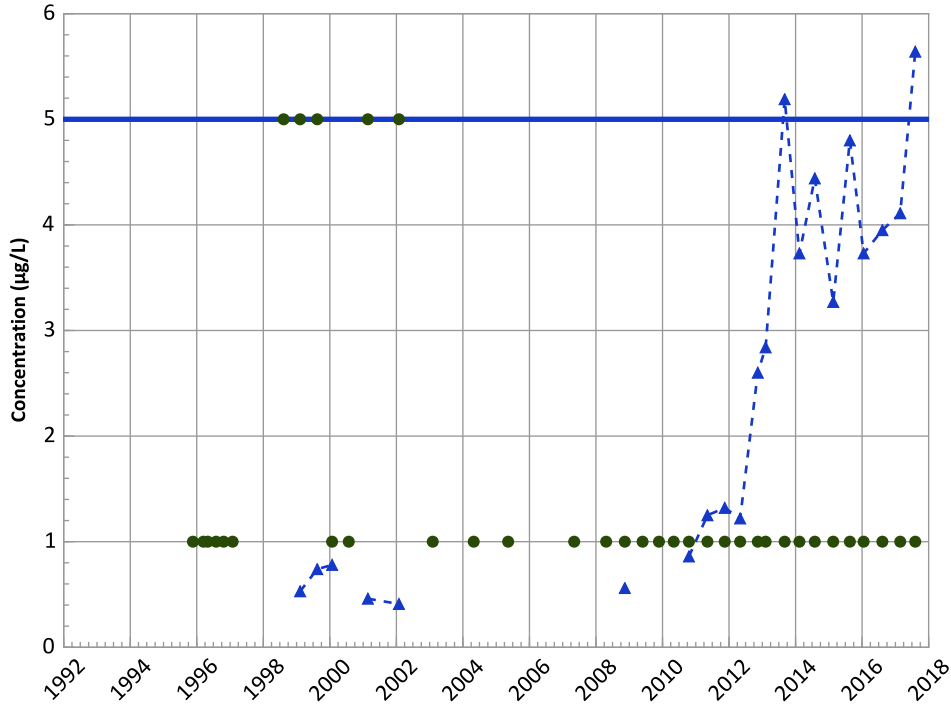
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1005 in Perched Aquifer
USDOE/NNSA Pantex Plant

Tetrachloroethylene (PCE) Trend



Concentration Trend

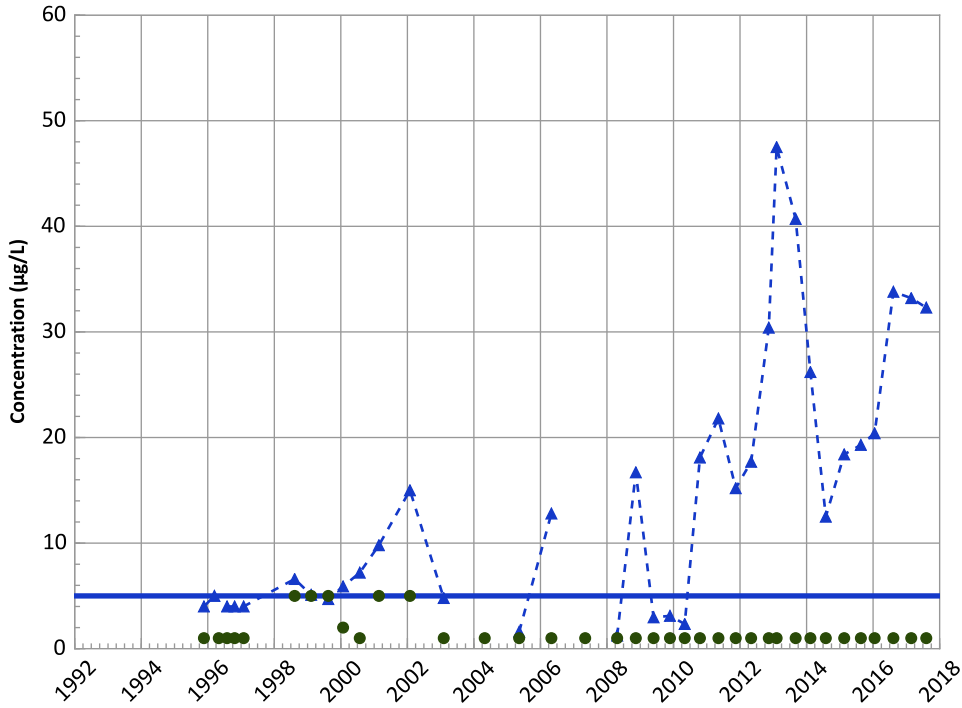
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

Trichloroethene Trend



Concentration Trend

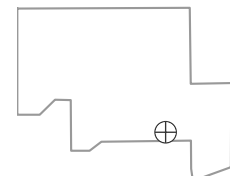
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Stable
All Data
Increasing

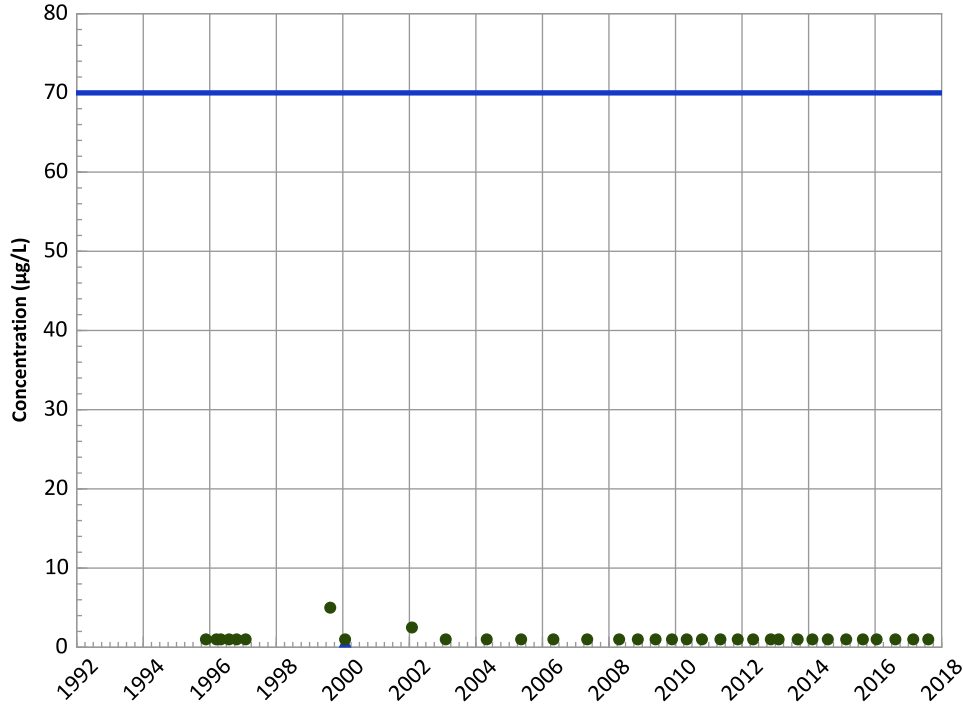
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/20/1995 to 08/07/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1005 in Perched Aquifer
USDOE/NNSA Pantex Plant
cis-1,2-Dichloroethene Trend**



Concentration Trend

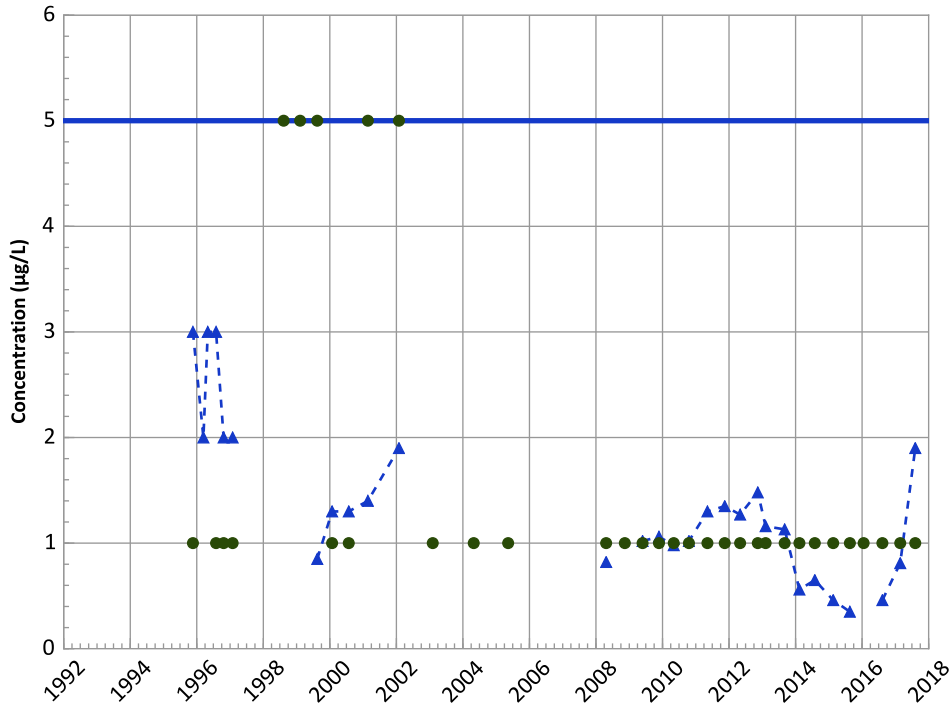
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

1,2-Dichloroethane Trend



Concentration Trend

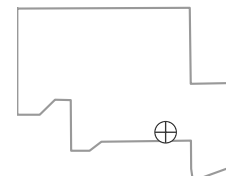
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

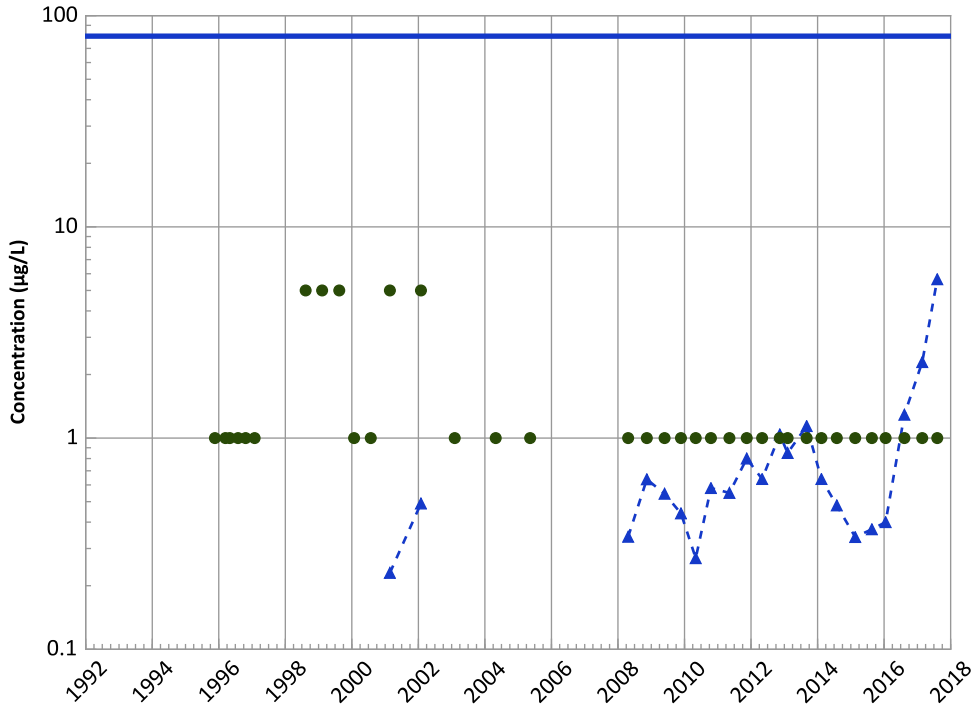
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/20/1995 to 08/07/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1005 in Perched Aquifer
 USDOE/NNSA Pantex Plant
 Chloroform Trend



Concentration Trend

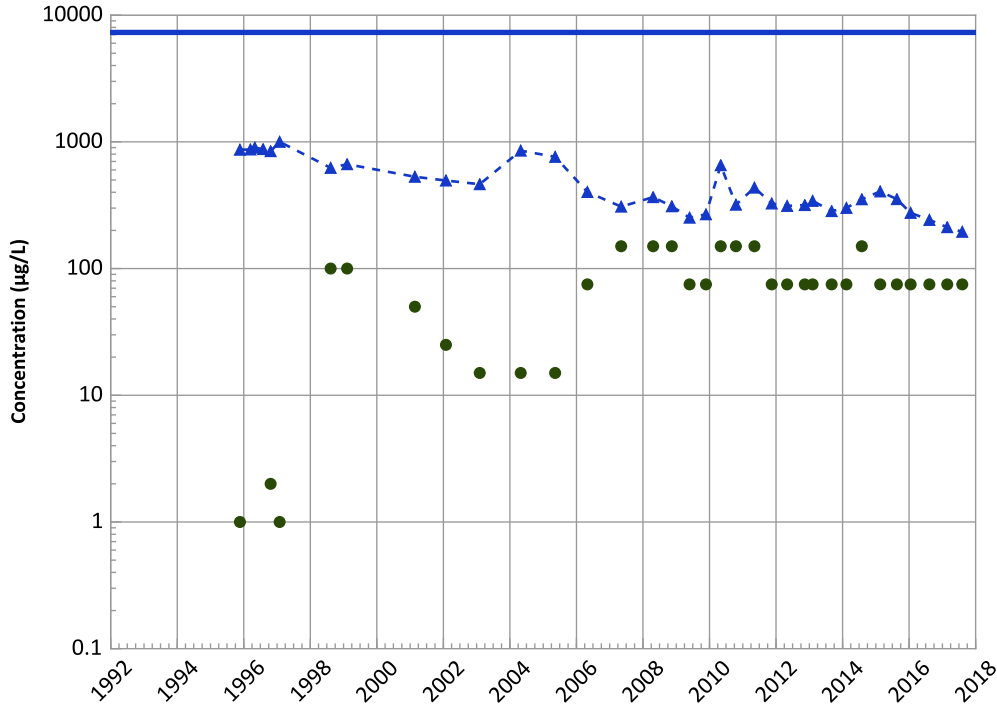
MAROS Mann-Kendall Method

Data ():
 Decreasing
 All Data
 No Trend

MAROS Linear Regression Method

Data ():
 Stable
 All Data
 Increasing

Boron Trend



Concentration Trend

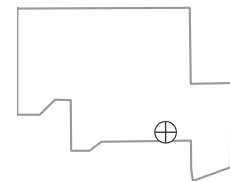
MAROS Mann-Kendall Method

Data ():
 Decreasing
 All Data
 Decreasing

MAROS Linear Regression Method

Data ():
 Stable
 All Data
 Decreasing

Well Location

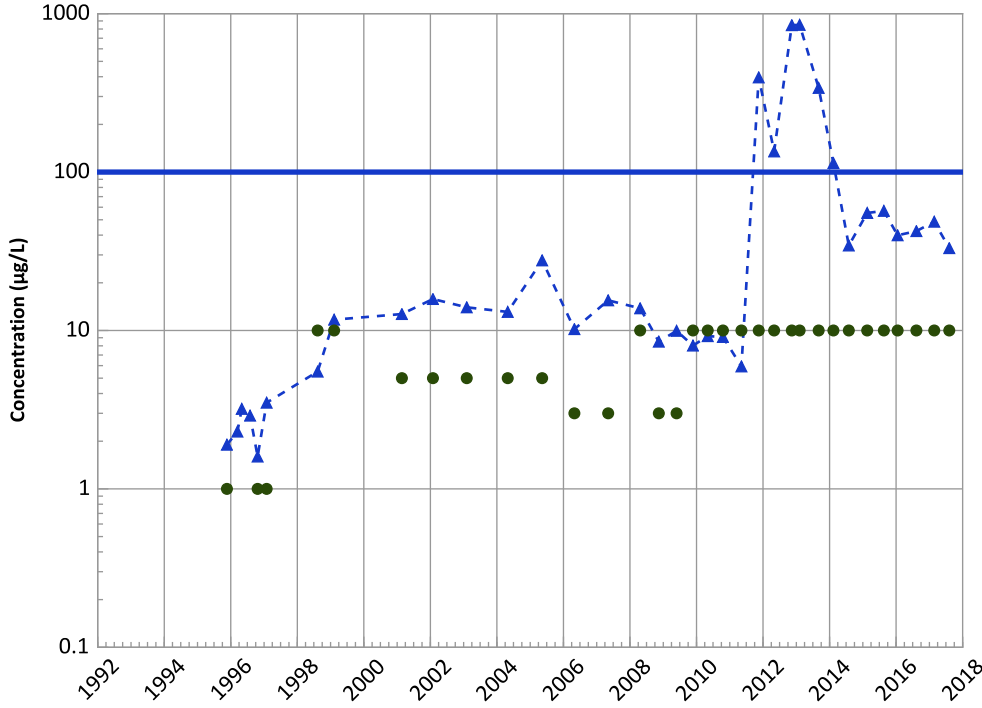


Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 11/20/1995 to 08/07/2017
 Analysis Date: 03/21/2018

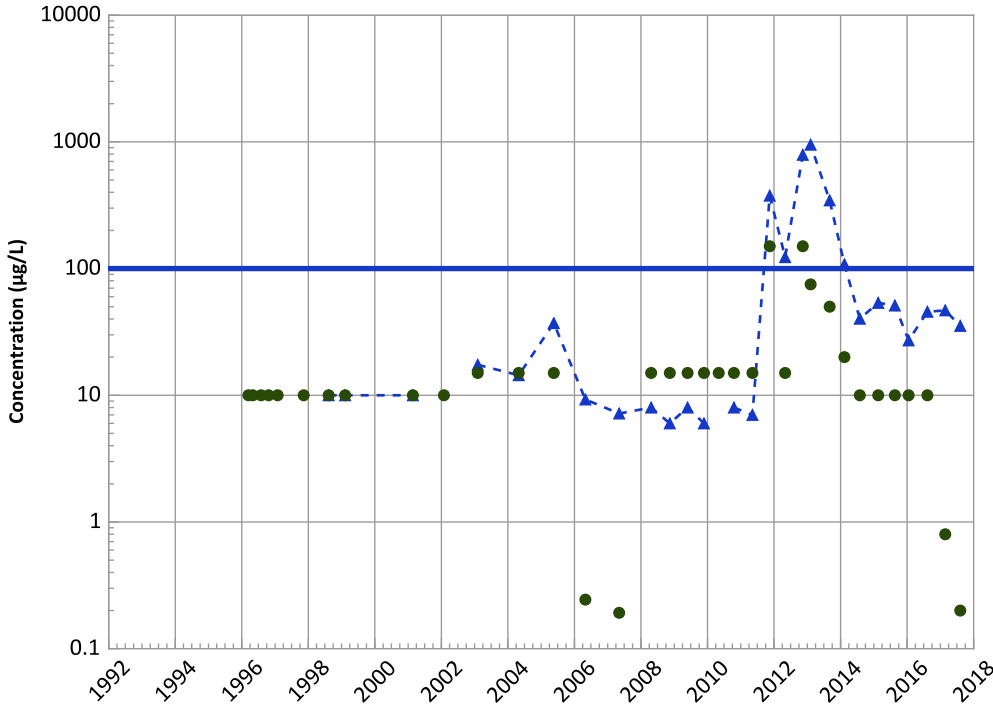
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1005 in Perched Aquifer
USDOE/NNSA Pantex Plant

Chromium, Total Trend



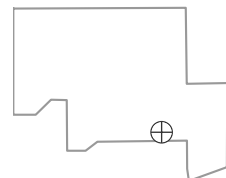
Chromium, Hexavalent Trend



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/20/1995 to 08/07/2017
Analysis Date: 03/21/2018

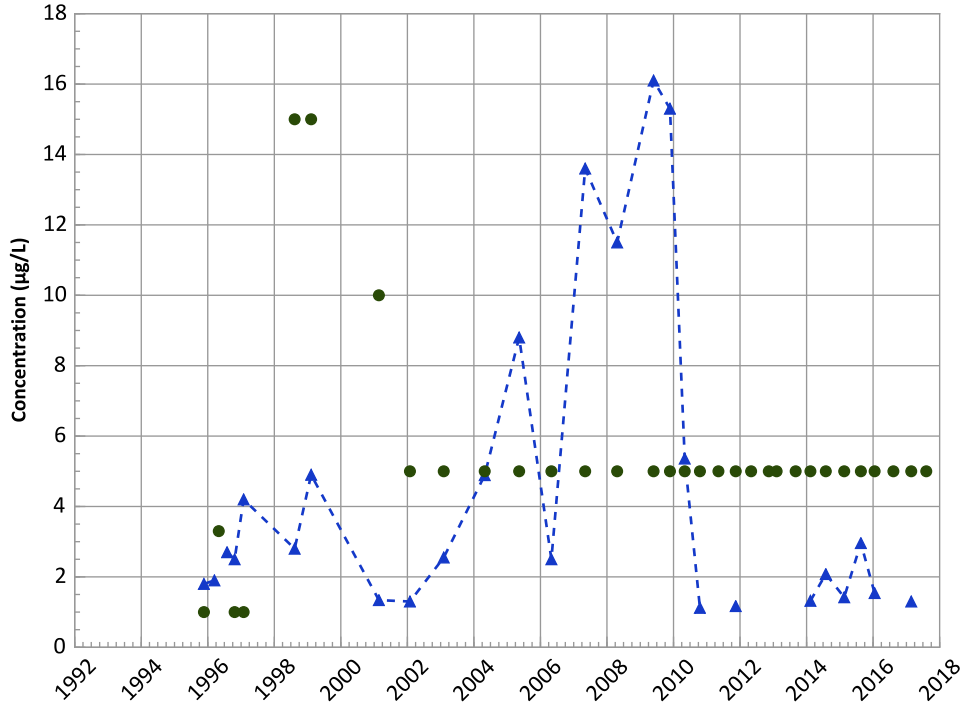
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1005 in Perched Aquifer
USDOE/NNSA Pantex Plant

Manganese Trend



Concentration Trend

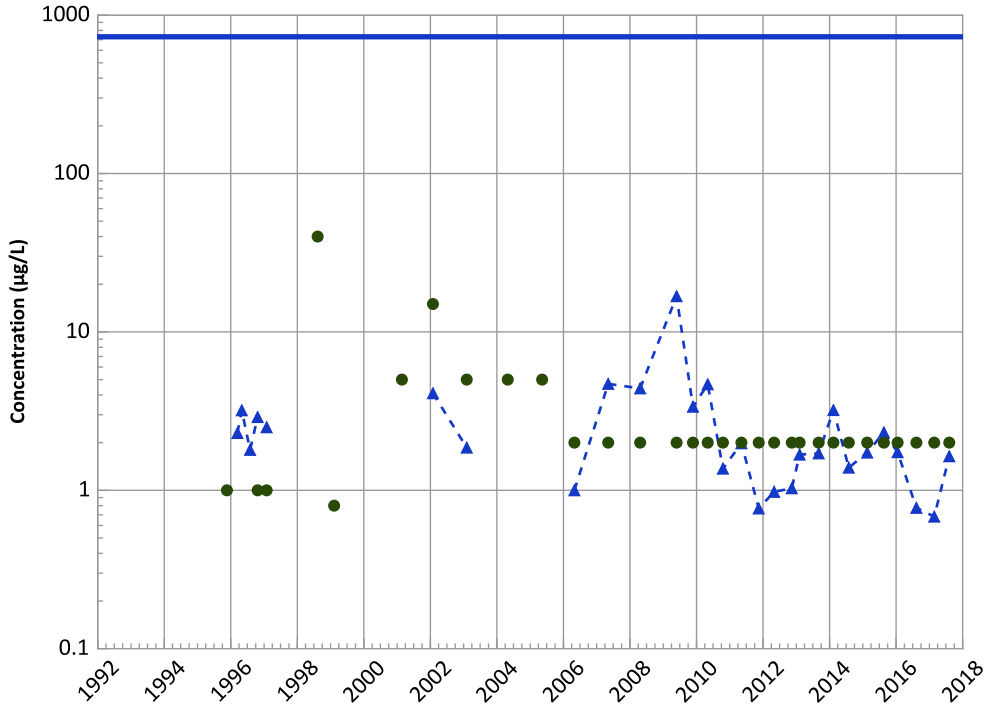
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
No Trend

Nickel Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
No Trend
All Data
Decreasing

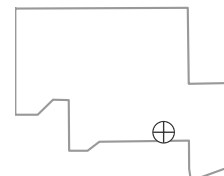
MAROS Linear Regression Method

Data ():
No Trend
All Data
Decreasing

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/20/1995 to 08/07/2017
Analysis Date: 03/21/2018

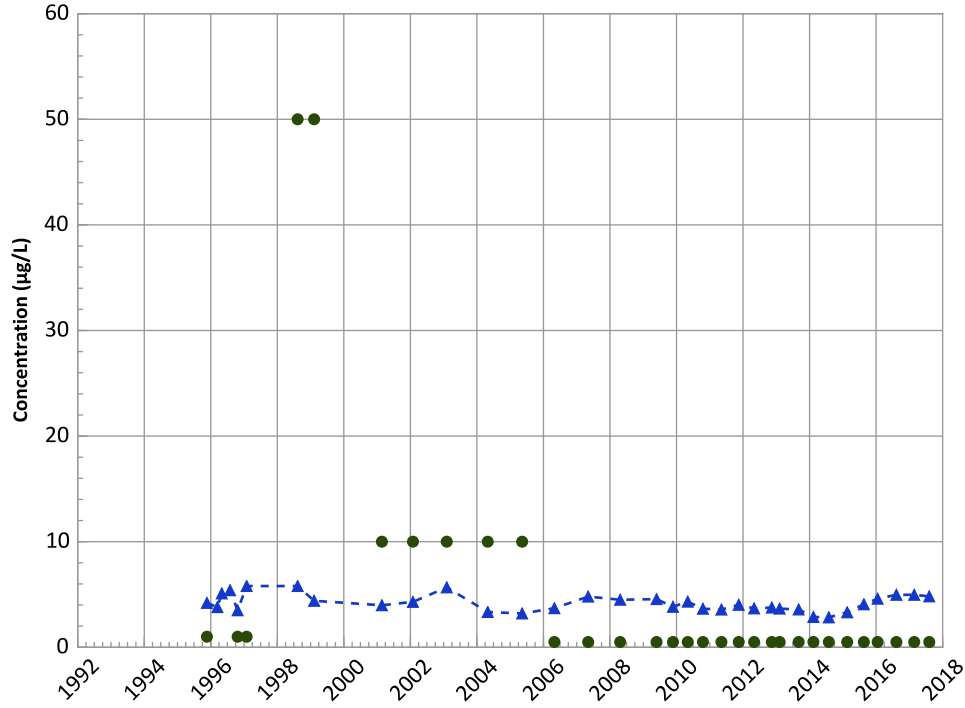
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1005 in Perched Aquifer
USDOE/NNSA Pantex Plant

Molybdenum Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Decreasing

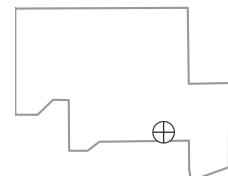
MAROS Linear Regression Method

Data ():
Probably Increasing
All Data
Decreasing

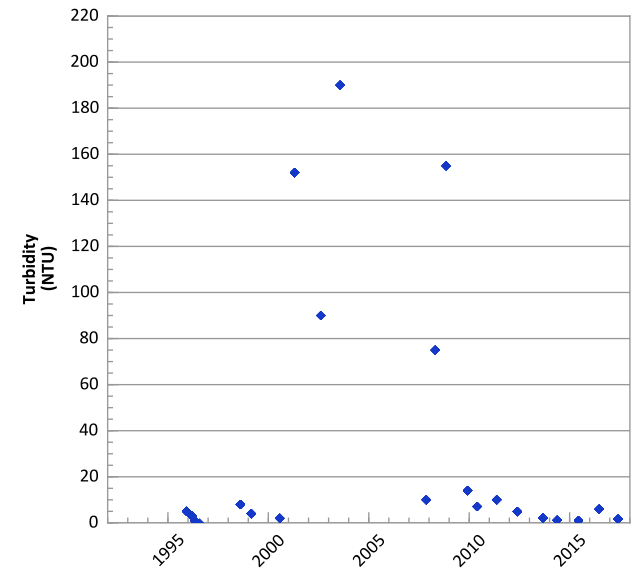
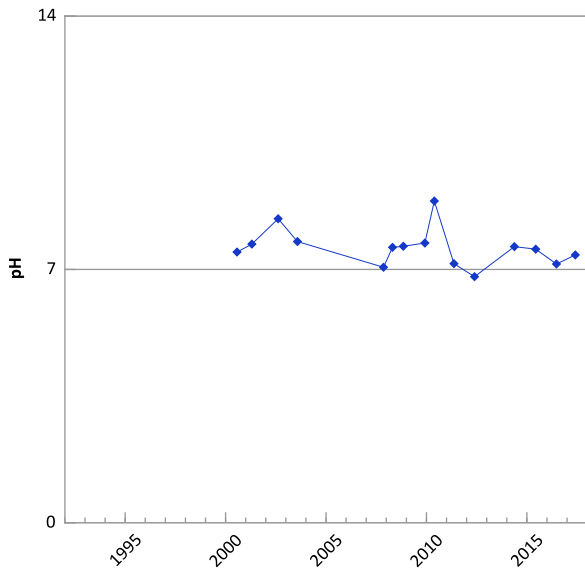
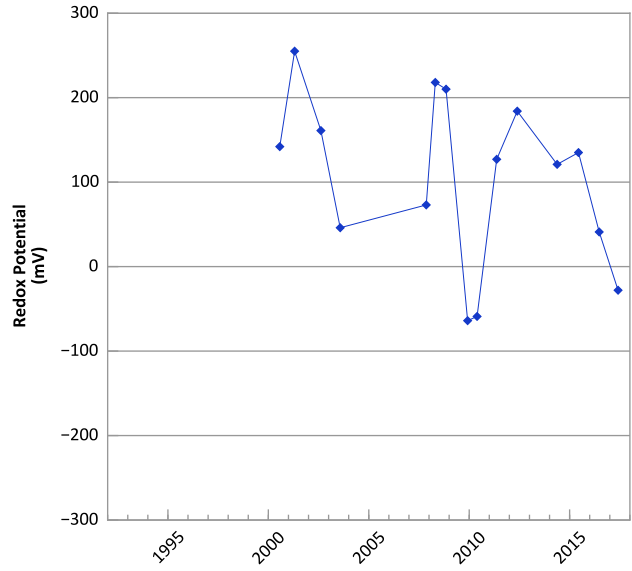
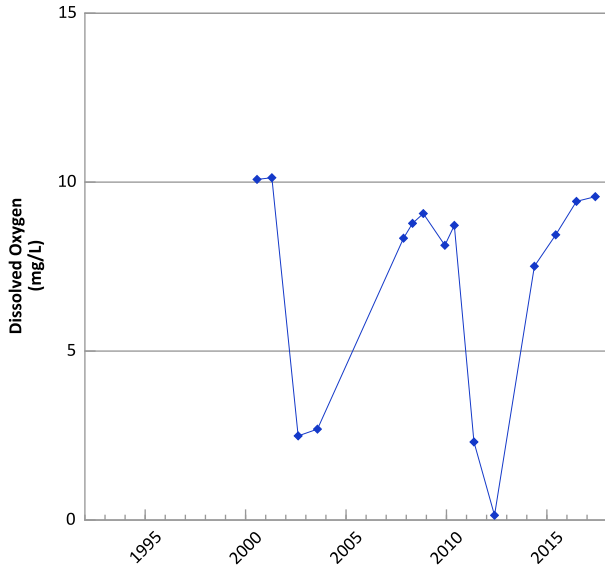
Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/20/1995 to 08/07/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

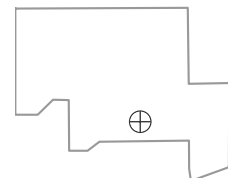


**PTX06-1006 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



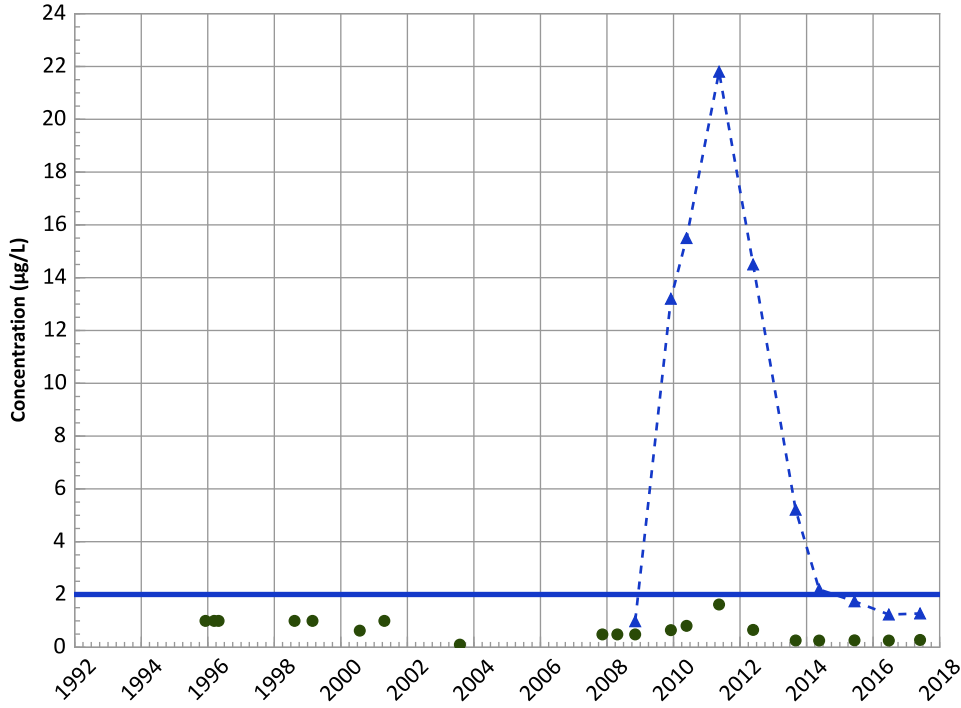
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 12/07/1995 to 05/31/2017
 Analysis Date: 03/21/2018

Well Location



PTX06-1006 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

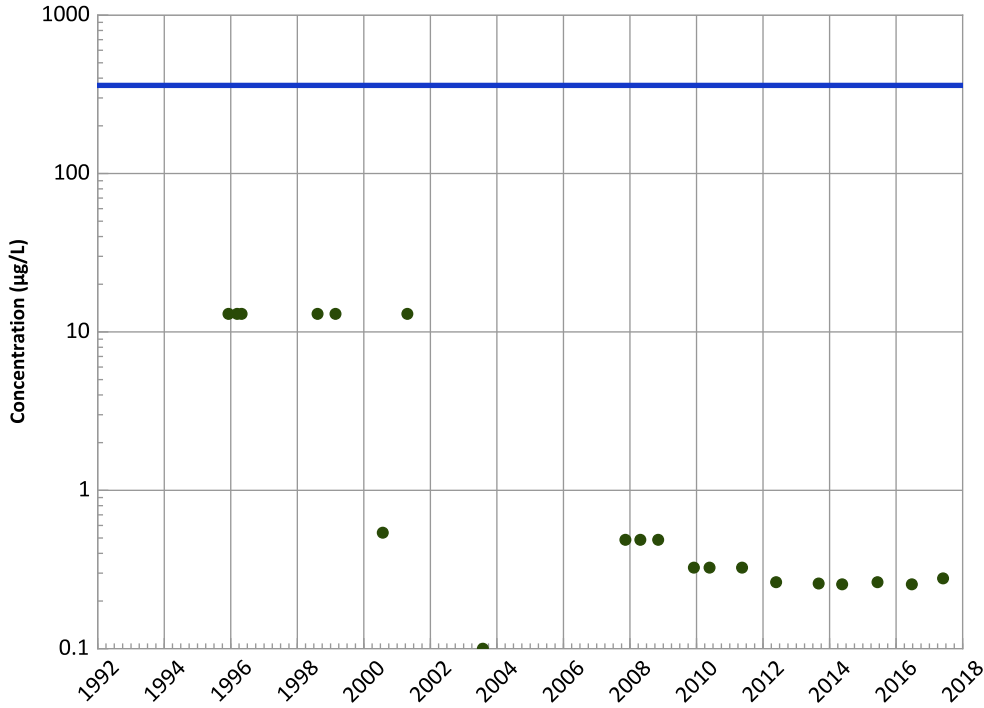
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Probably Decreasing

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

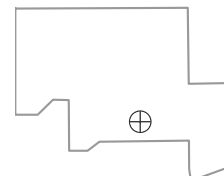
MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/07/1995 to 05/31/2017
Analysis Date: 03/21/2018

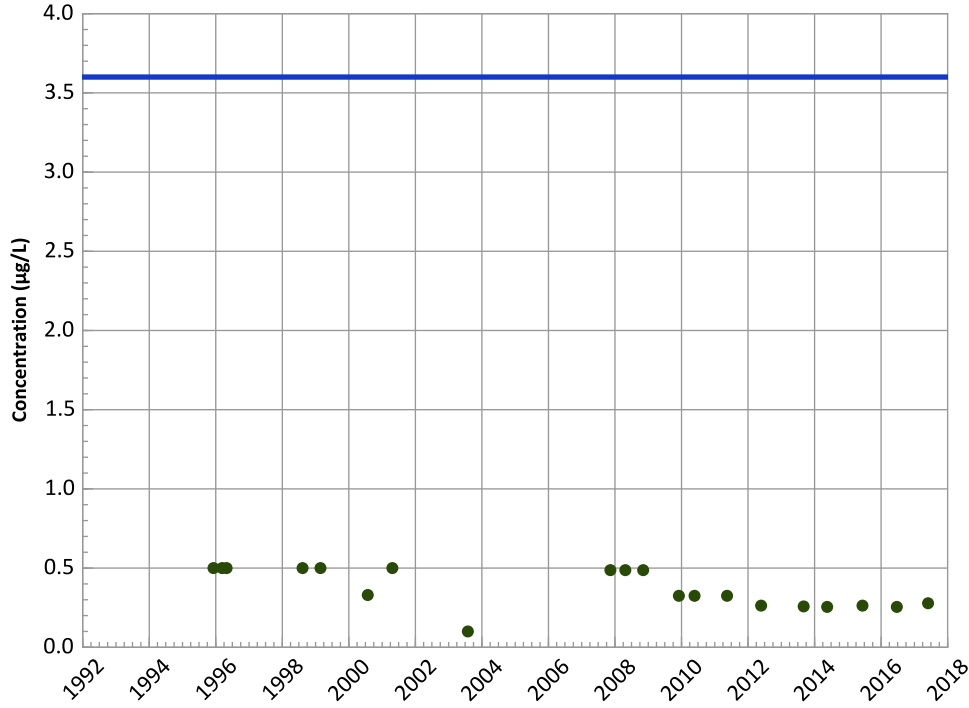
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1006 in Perched Aquifer
USDOE/NSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

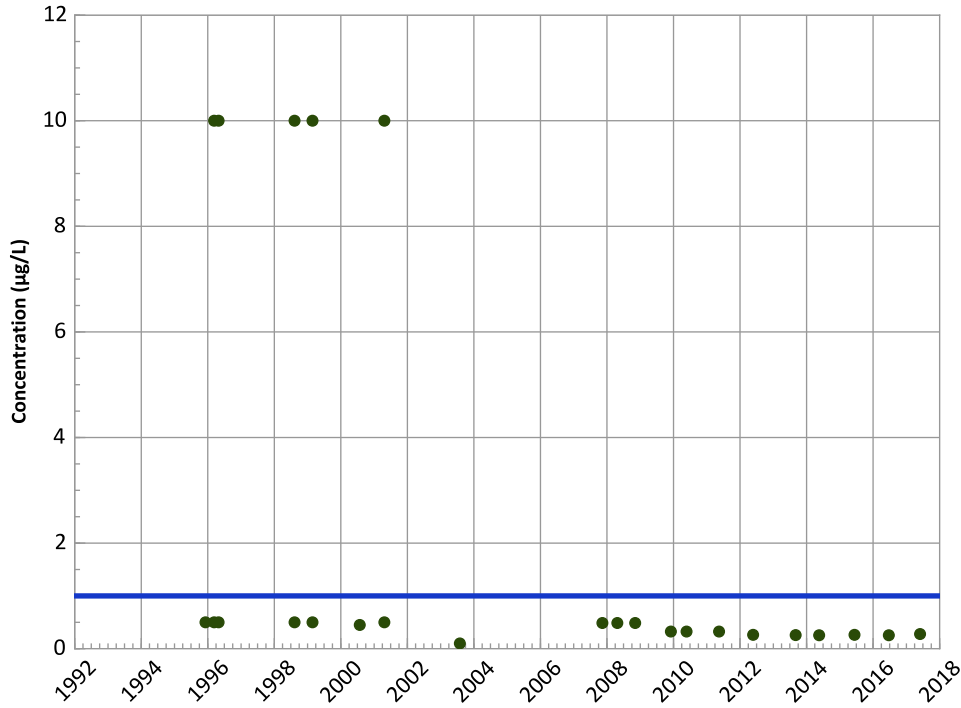
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

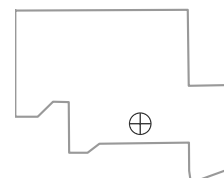
MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/07/1995 to 05/31/2017
Analysis Date: 03/21/2018

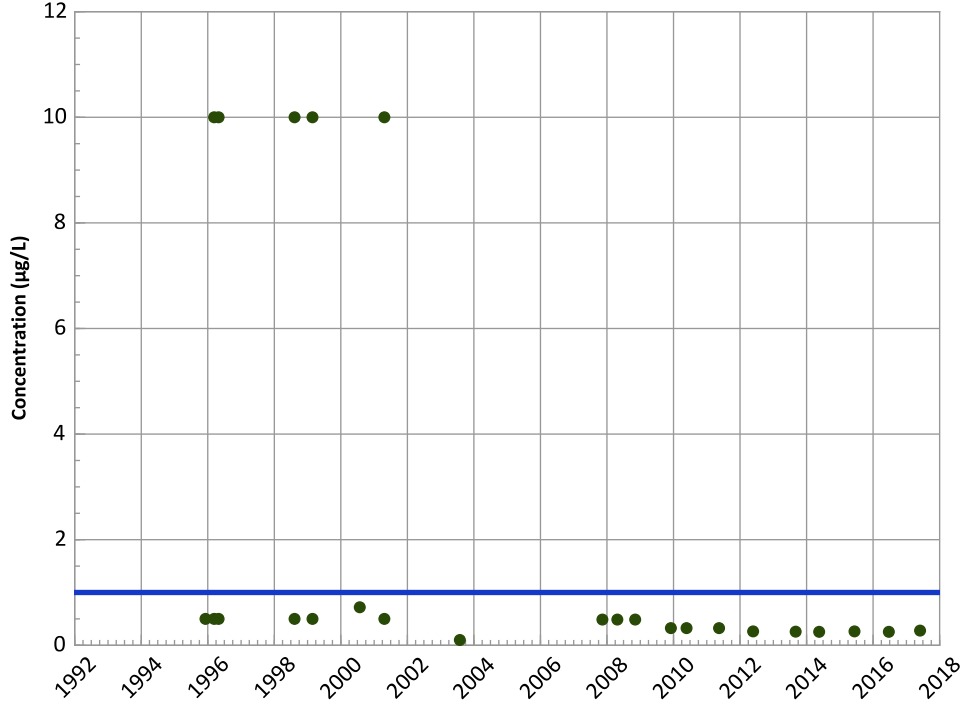
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1006 in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

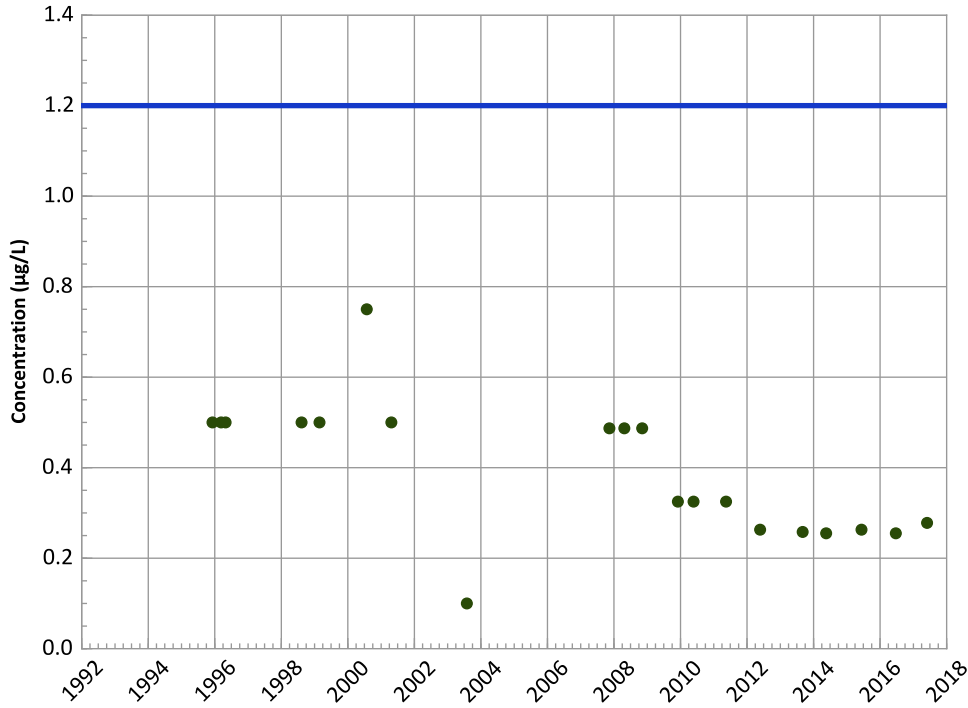
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

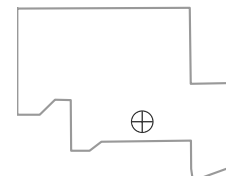
MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/07/1995 to 05/31/2017
Analysis Date: 03/21/2018

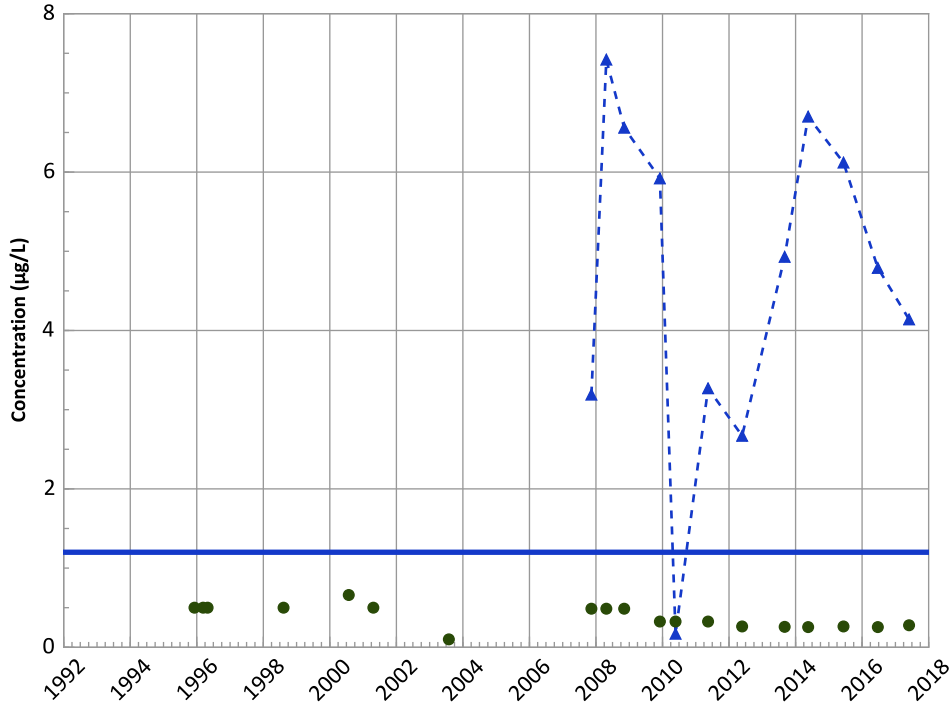
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1006 in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

No Trend

All Data

Increasing

MAROS Linear Regression Method

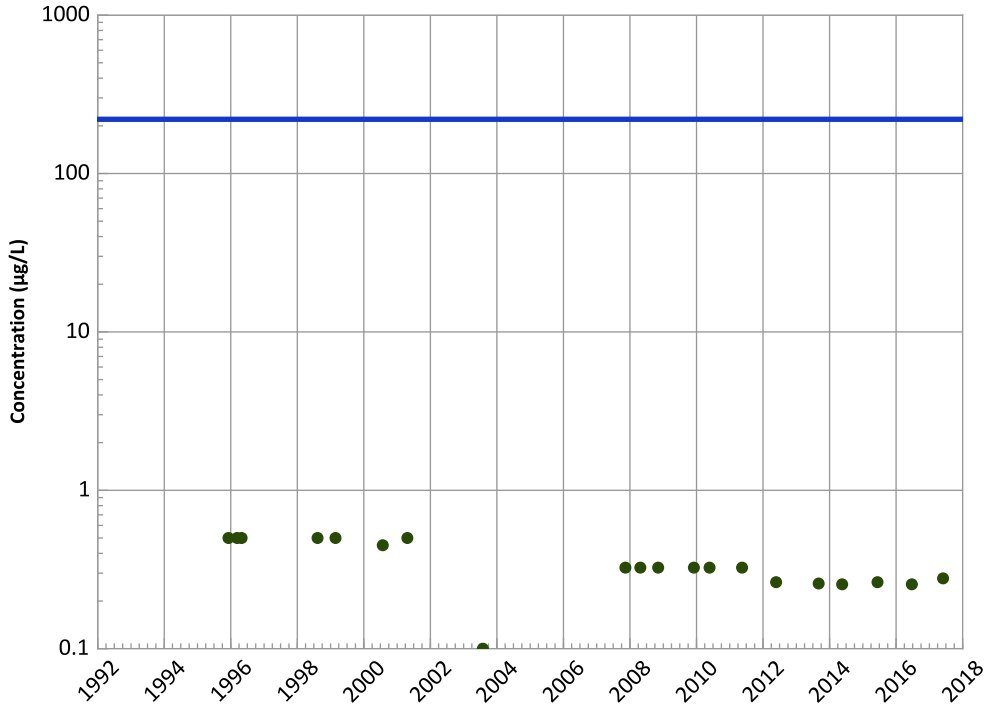
Data ():

No Trend

All Data

No Trend

1,3,5-Trinitrobenzene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

All Non-Detect

All Data

All Non-Detect

MAROS Linear Regression Method

Data ():

All Non-Detect

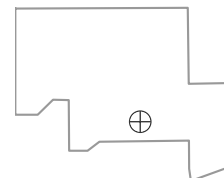
All Data

All Non-Detect

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/07/1995 to 05/31/2017
Analysis Date: 03/21/2018

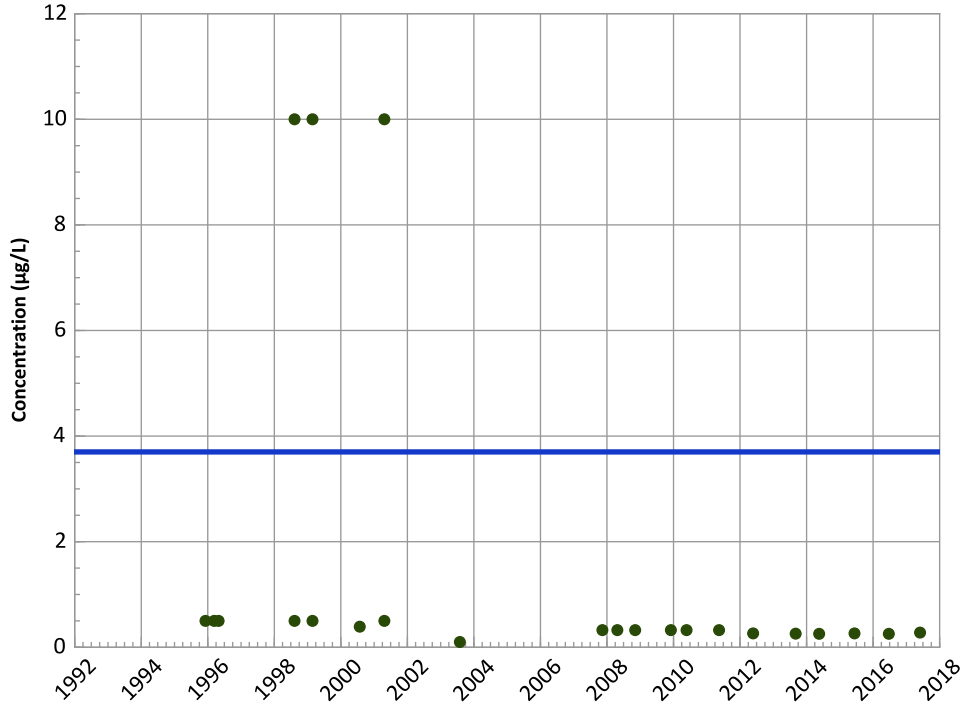
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1006 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

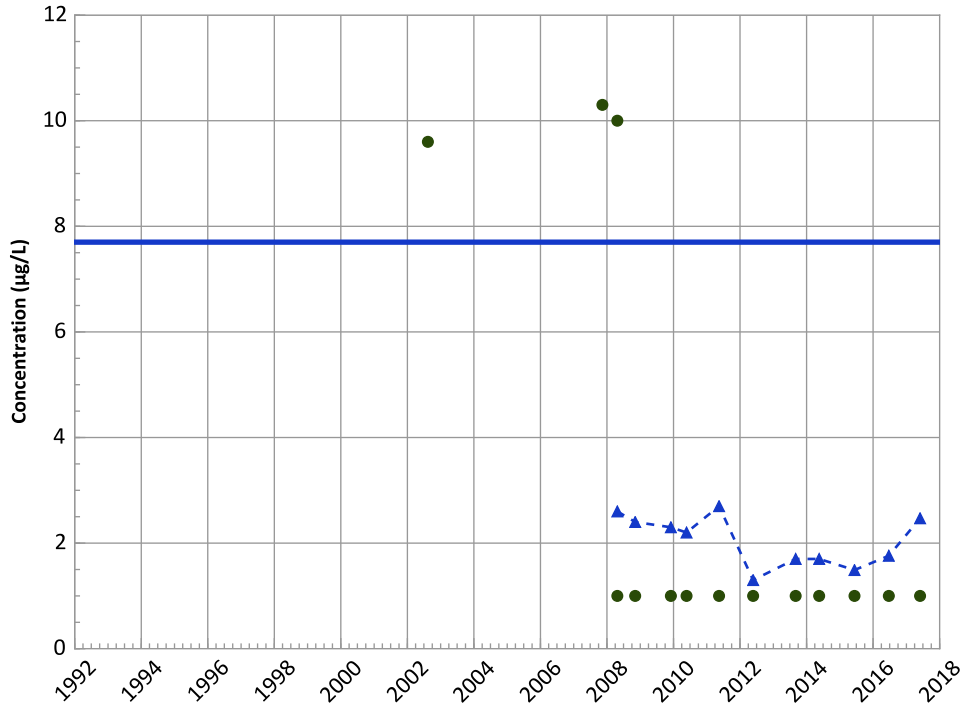
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,4-Dioxane (p-Dioxane) Trend



Concentration Trend

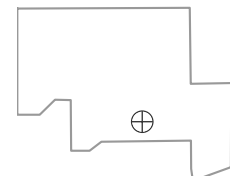
MAROS Mann-Kendall Method

Data ():
No Trend
All Data
Decreasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
Probably Decreasing

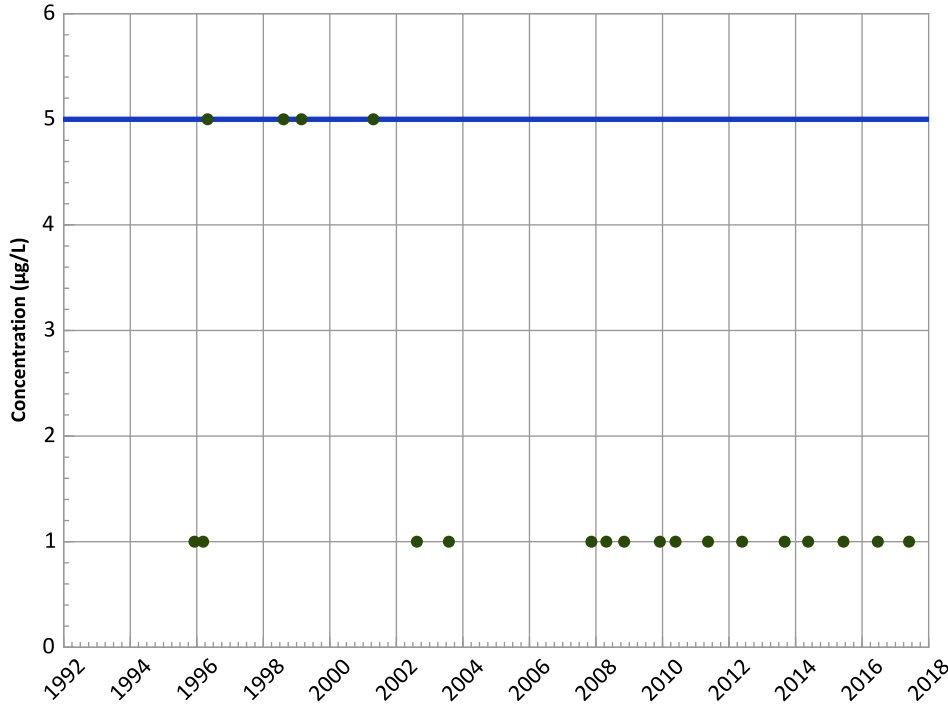
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/07/1995 to 05/31/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1006 in Perched Aquifer
USDOE/NNSA Pantex Plant
Tetrachloroethylene (PCE) Trend**



Concentration Trend

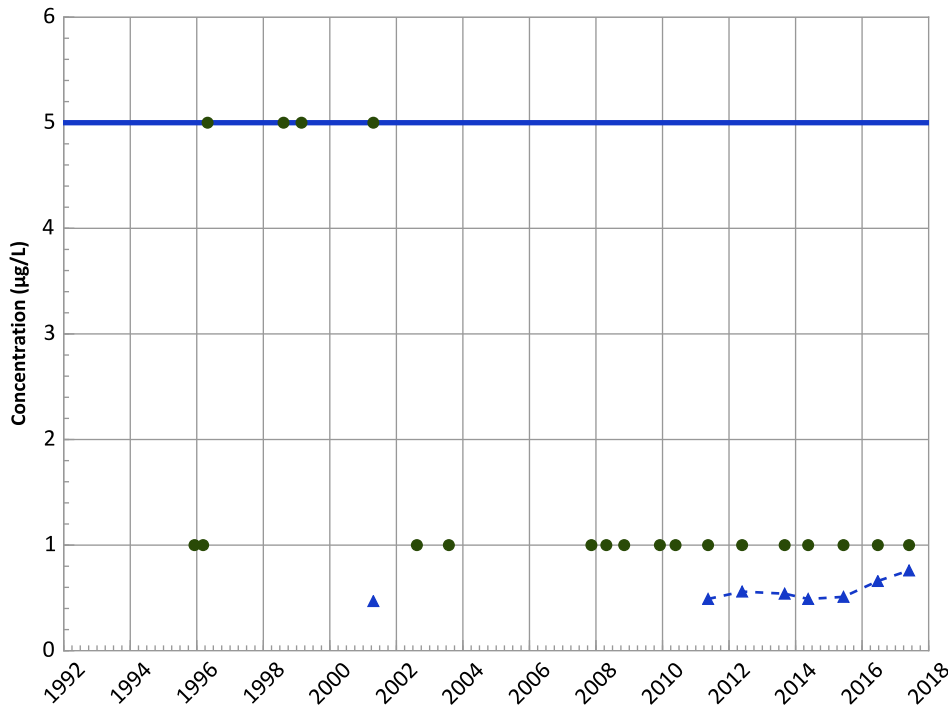
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Trichloroethene Trend



Concentration Trend

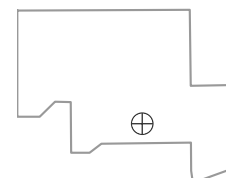
MAROS Mann-Kendall Method

Data ():
Stable
All Data
No Trend

MAROS Linear Regression Method

Data ():
No Trend
All Data
Increasing

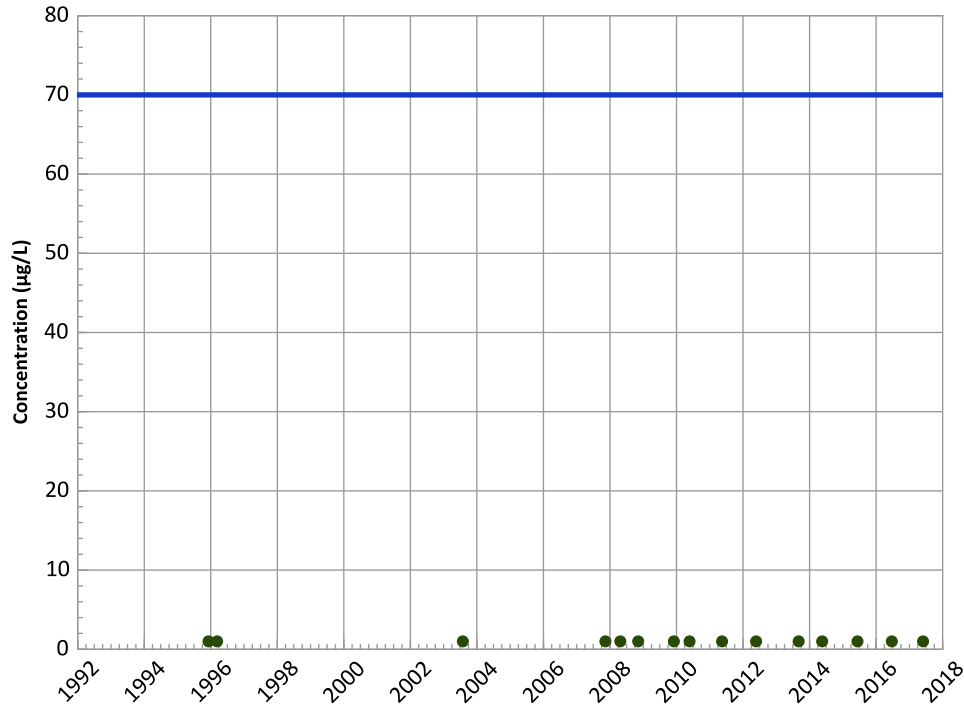
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/07/1995 to 05/31/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1006 in Perched Aquifer
 USDOE/NNSA Pantex Plant
 cis-1,2-Dichloroethene Trend



Concentration Trend

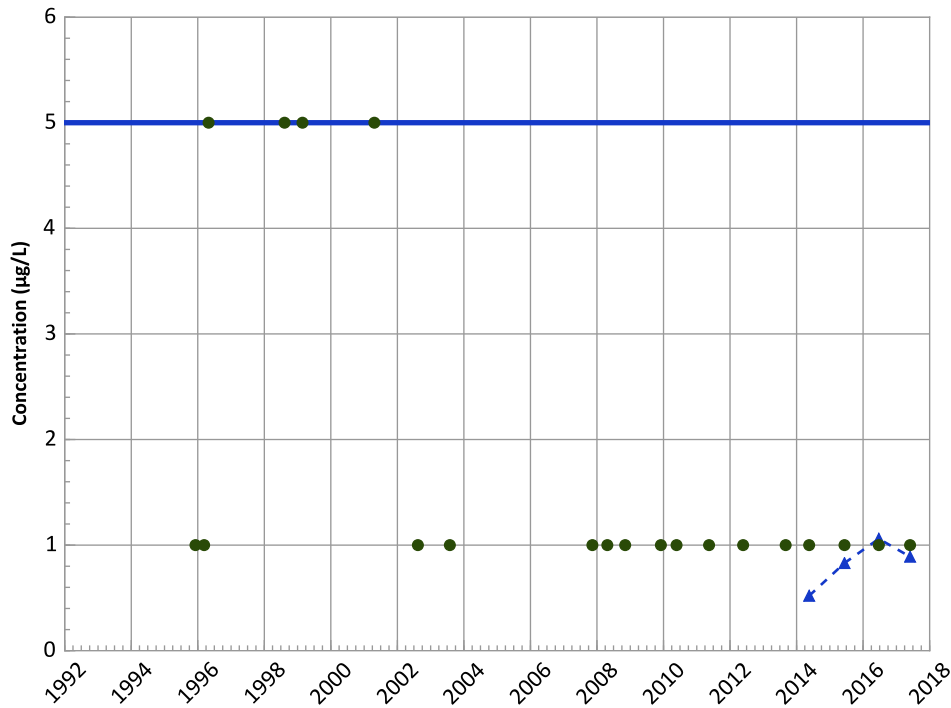
MAROS Mann-Kendall Method

Data ():
 All Non-Detect
 All Data
 All Non-Detect

MAROS Linear Regression Method

Data ():
 All Non-Detect
 All Data
 All Non-Detect

1,2-Dichloroethane Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
 N/A (<4 Detections in Dataset)
 All Data
 Increasing

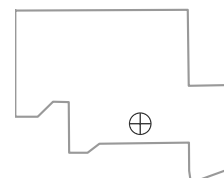
MAROS Linear Regression Method

Data ():
 N/A (<4 Detections in Dataset)
 All Data
 Probably Increasing

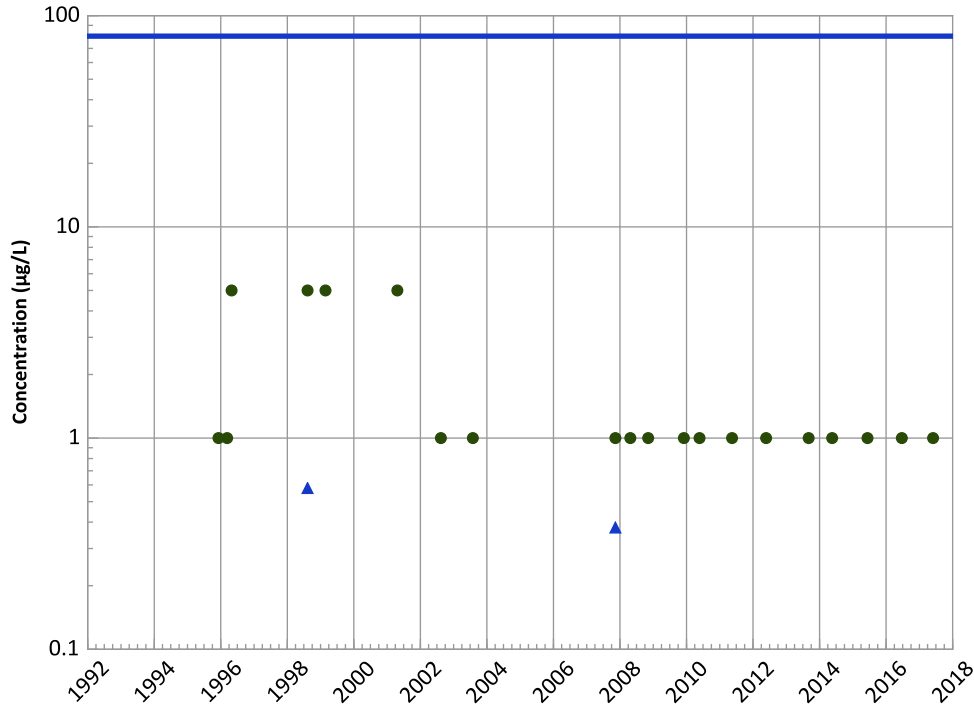
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 12/07/1995 to 05/31/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

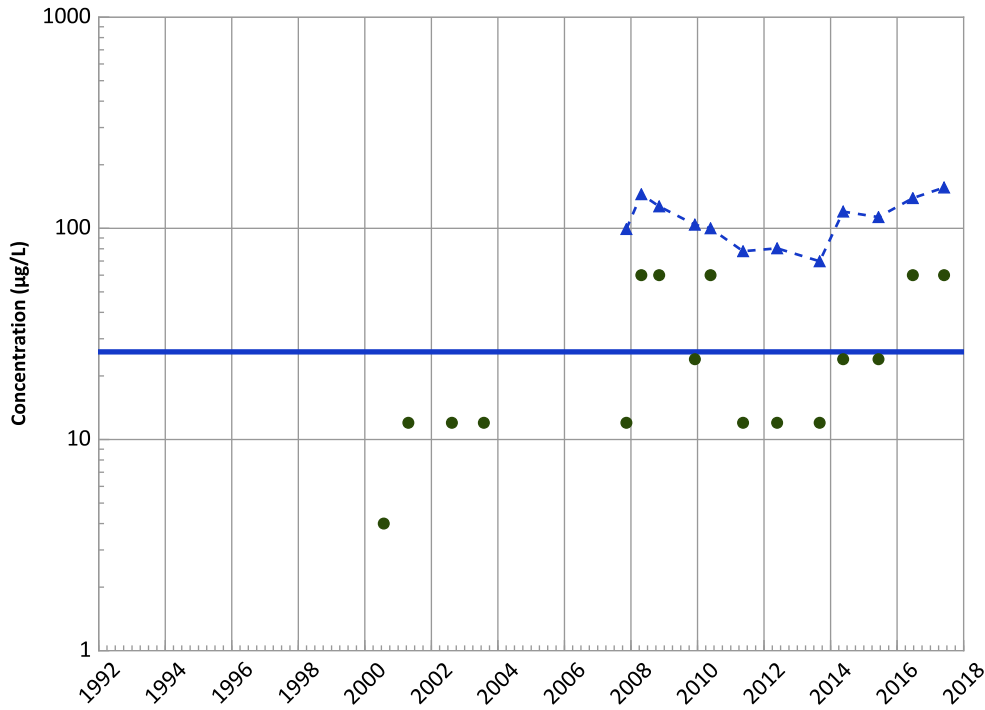


**PTX06-1006 in Perched Aquifer
USDOE/NNSA Pantex Plant
Chloroform Trend**



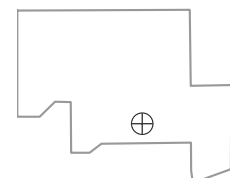
Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 All Non-Detect
 All Data
 N/A (<4 Detections in Dataset)
MAROS Linear Regression Method
 Data ():
 All Non-Detect
 All Data
 N/A (<4 Detections in Dataset)

Perchlorate Trend



Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 No Trend
 All Data
 Increasing
MAROS Linear Regression Method
 Data ():
 Increasing
 All Data
 No Trend

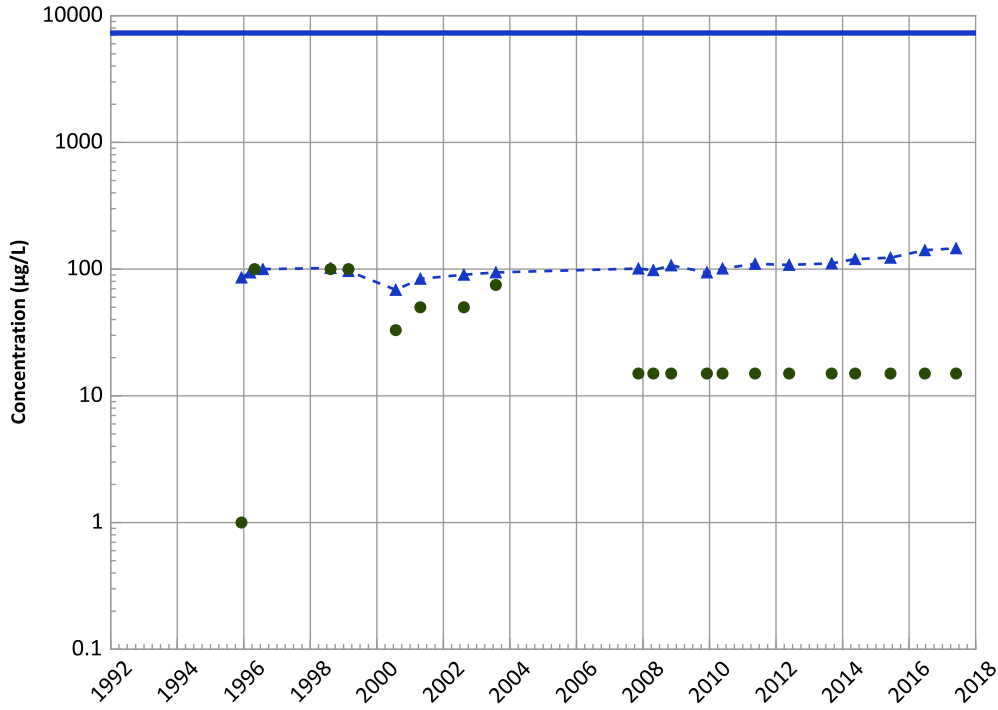
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 12/07/1995 to 05/31/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1006 in Perched Aquifer
 USDOE/NNSA Pantex Plant
 Boron Trend



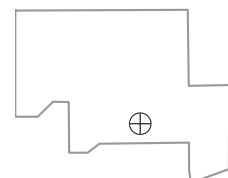
Concentration Trend
 MAROS Mann-Kendall Method
 Data ():
 Increasing
 All Data
 Increasing

MAROS Linear Regression Method
 Data ():
 Increasing
 All Data
 Increasing

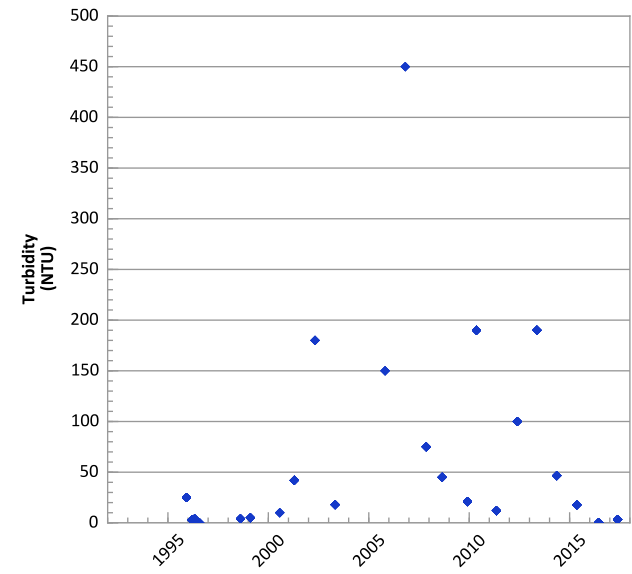
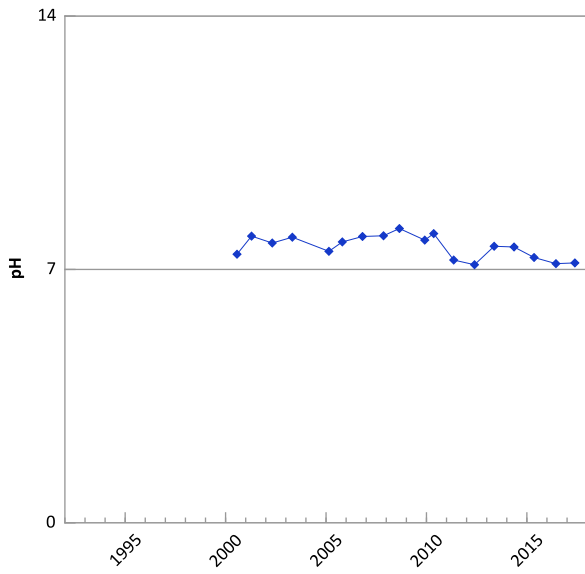
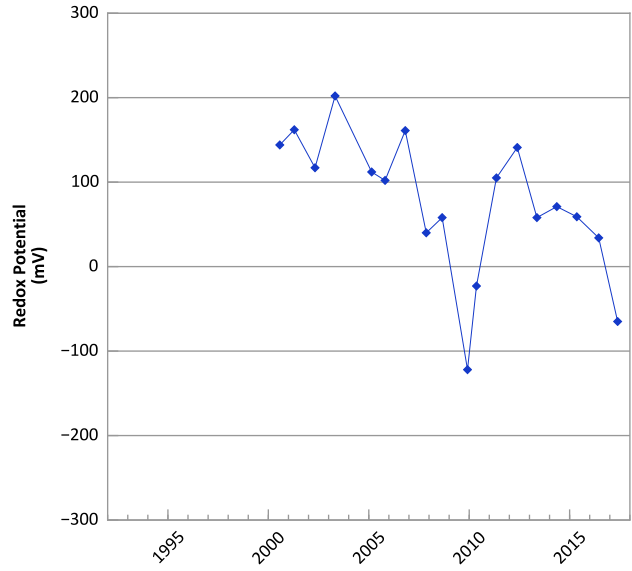
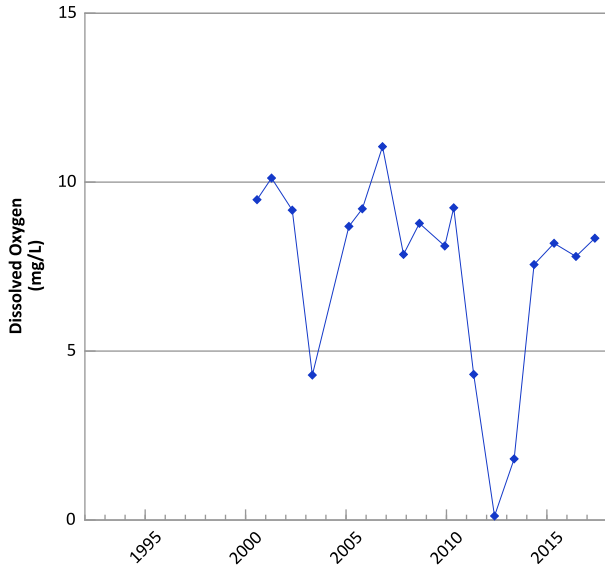
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 12/07/1995 to 05/31/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

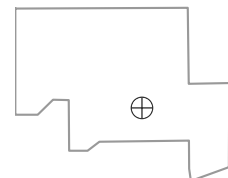


**PTX06-1007 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



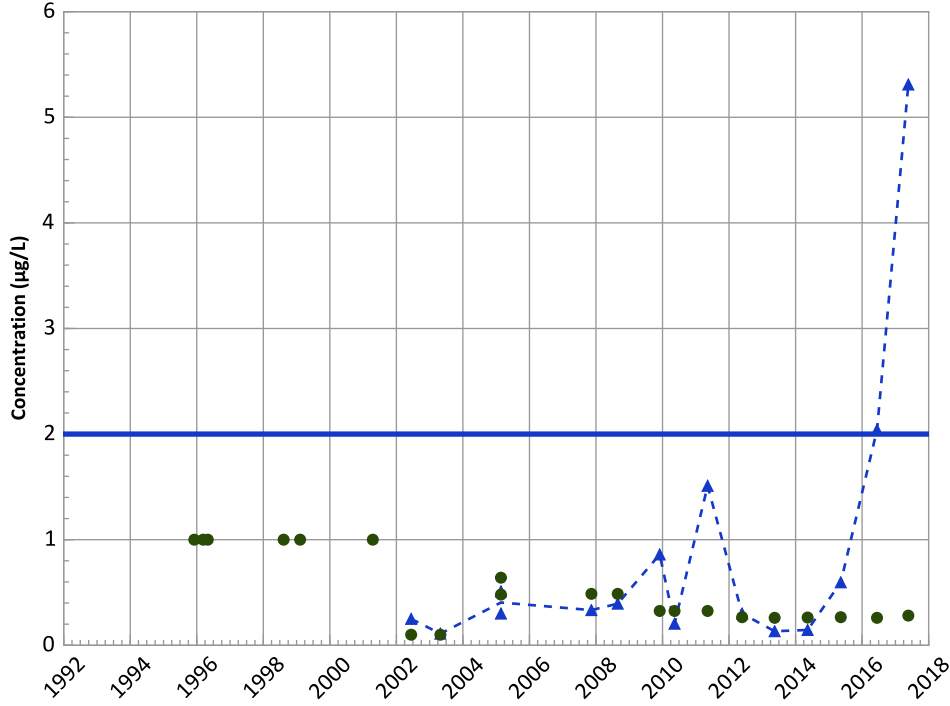
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 12/05/1995 to 05/23/2017
 Analysis Date: 03/21/2018

Well Location



PTX06-1007 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

No Trend

All Data

Increasing

MAROS Linear Regression Method

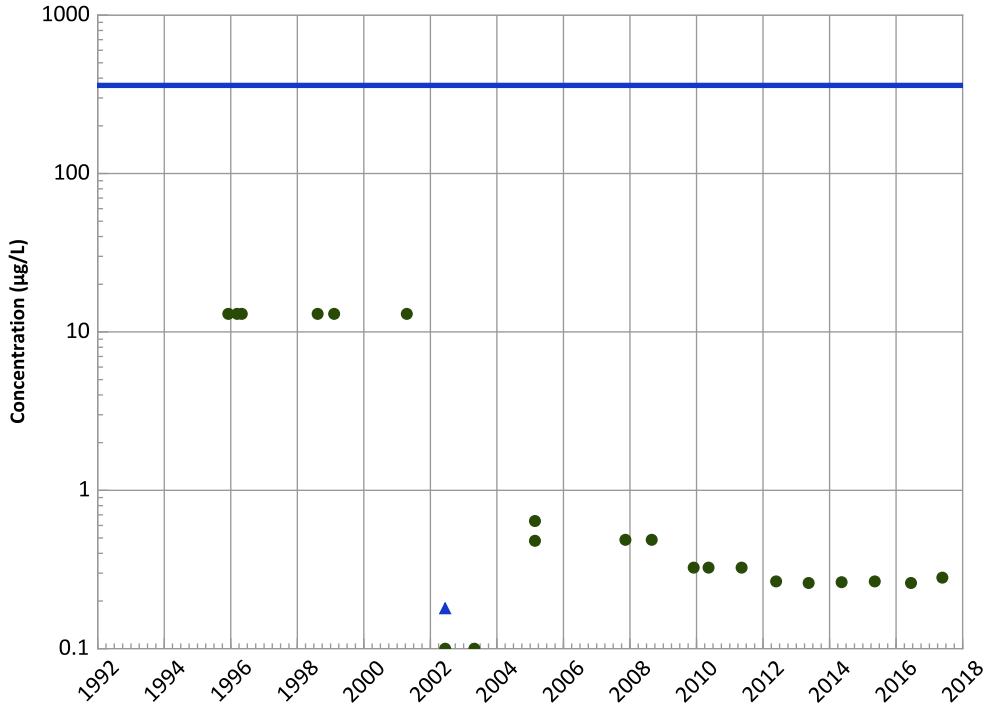
Data ():

Probably Increasing

All Data

Increasing

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

All Non-Detect

All Data

N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

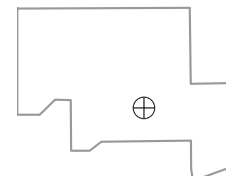
Data ():

All Non-Detect

All Data

N/A (<4 Detections in Dataset)

Well Location

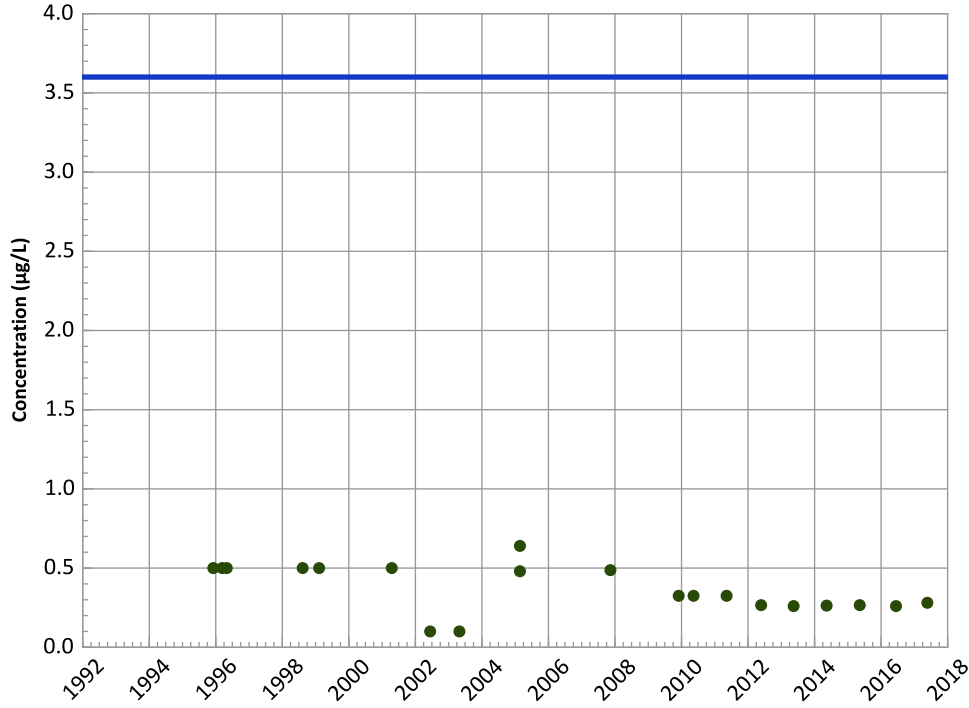


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/05/1995 to 05/23/2017
Analysis Date: 03/21/2018

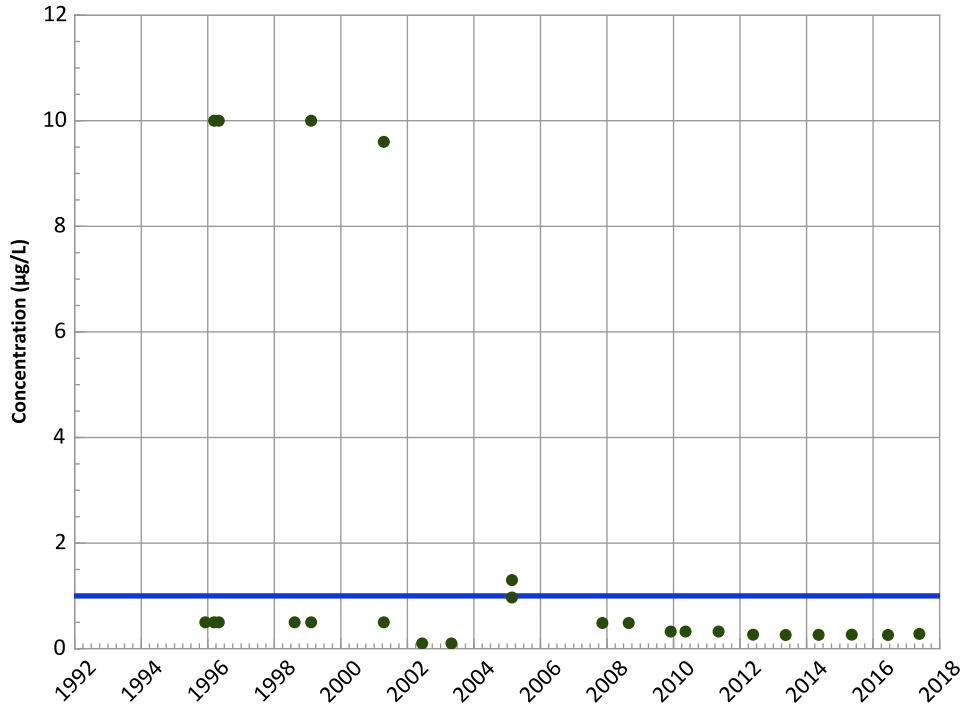
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1007 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



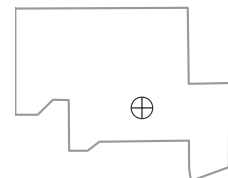
2,4-Dinitrotoluene Trend



Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 12/05/1995 to 05/23/2017
 Analysis Date: 03/21/2018

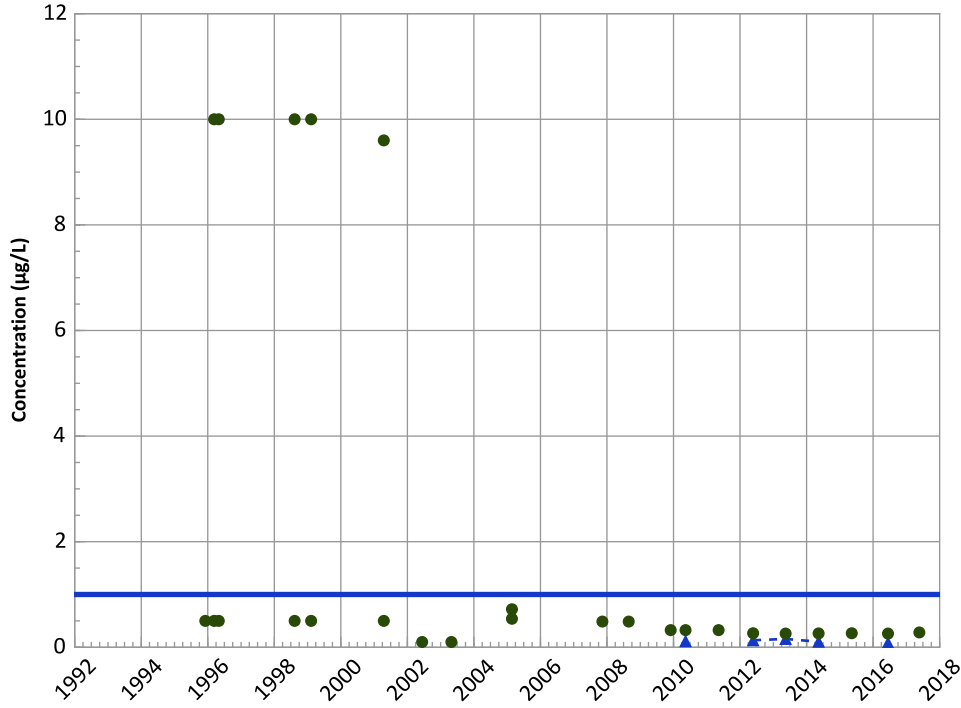
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1007 in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

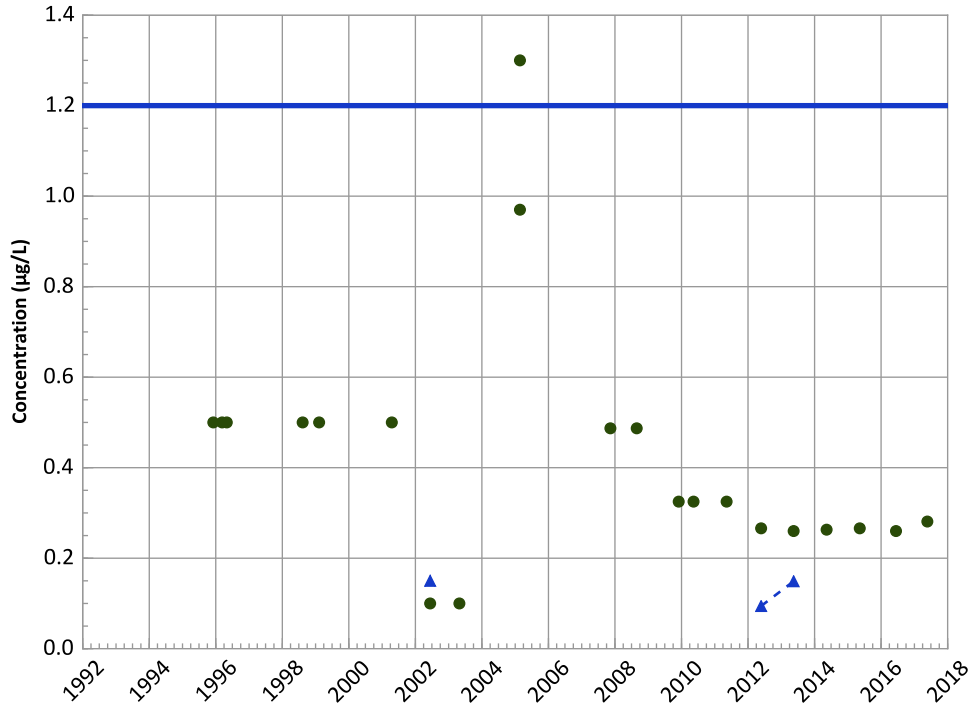
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Probably Decreasing
All Data
Stable

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

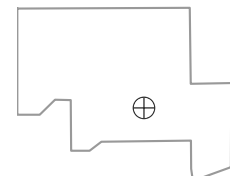
MAROS Mann-Kendall Method

Data ():
N/A (<4 Detections in Dataset)
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
N/A (<4 Detections in Dataset)

Well Location

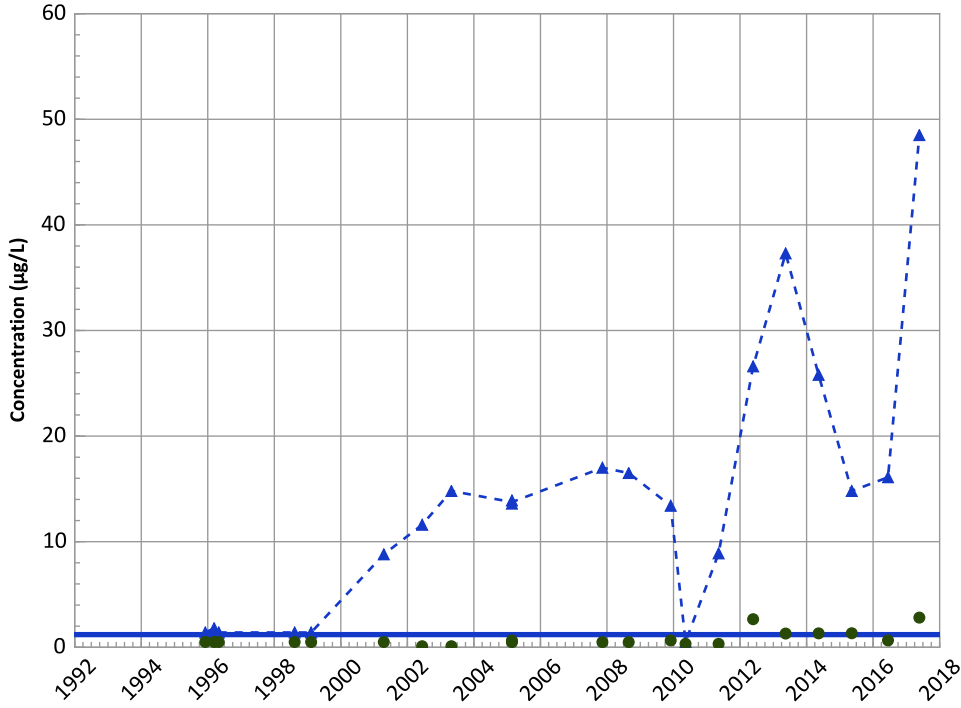


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/05/1995 to 05/23/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1007 in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

Decreasing

All Data

Increasing

MAROS Linear Regression Method

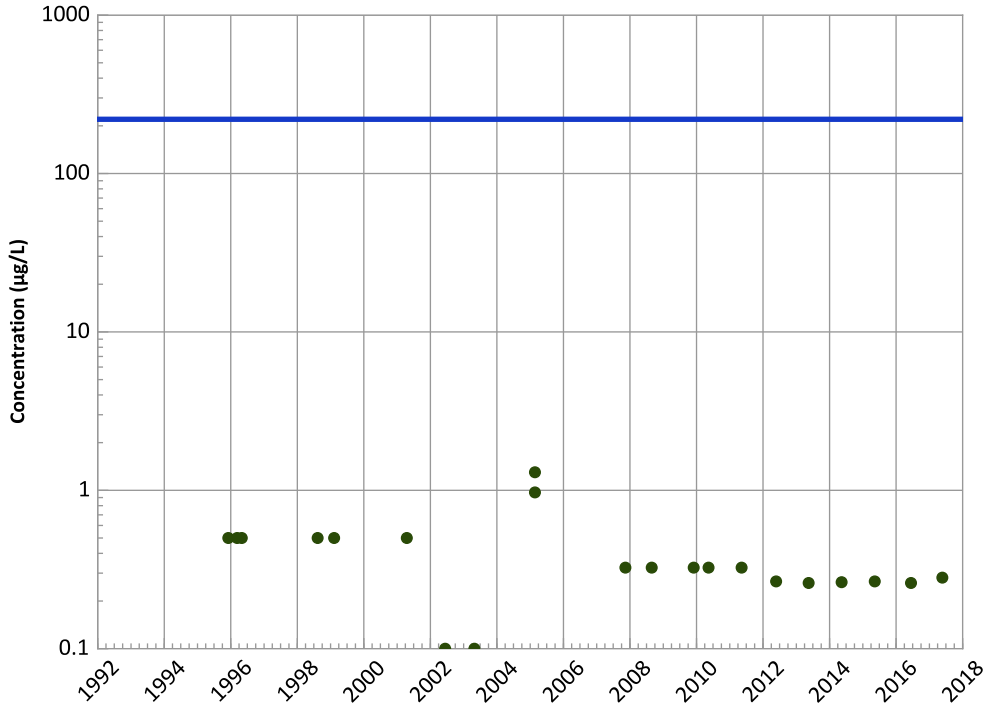
Data ():

Probably Decreasing

All Data

Increasing

1,3,5-Trinitrobenzene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

All Non-Detect

All Data

All Non-Detect

MAROS Linear Regression Method

Data ():

All Non-Detect

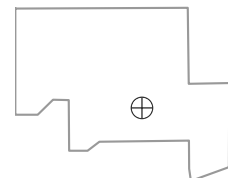
All Data

All Non-Detect

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/05/1995 to 05/23/2017
Analysis Date: 03/21/2018

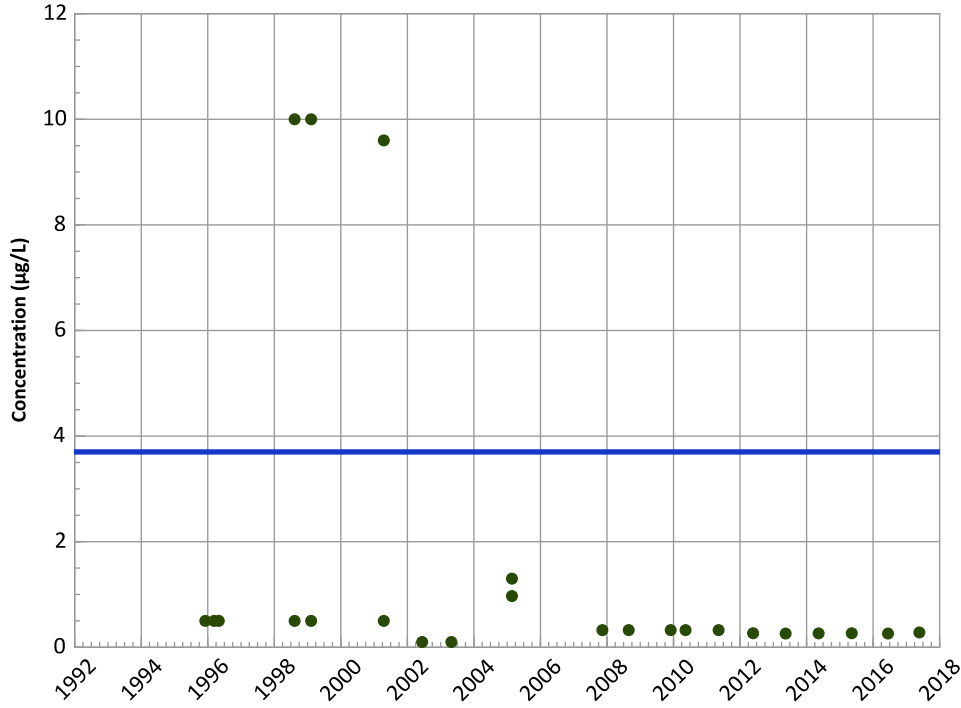
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1007 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

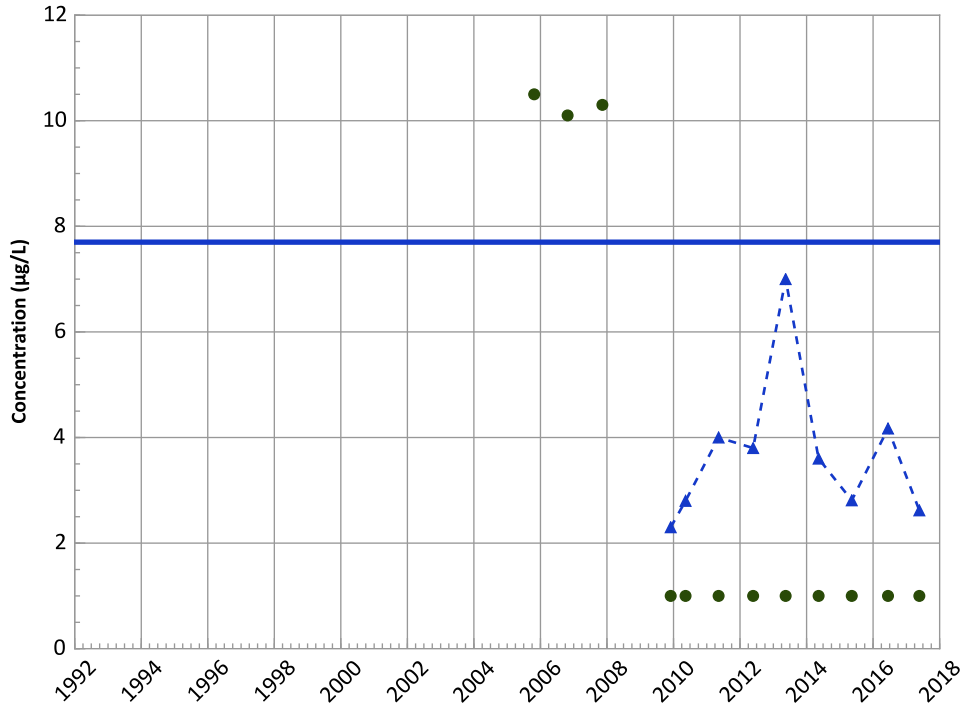
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,4-Dioxane (p-Dioxane) Trend



Concentration Trend

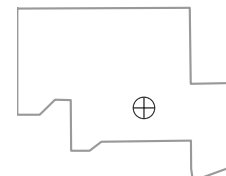
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Stable
All Data
No Trend

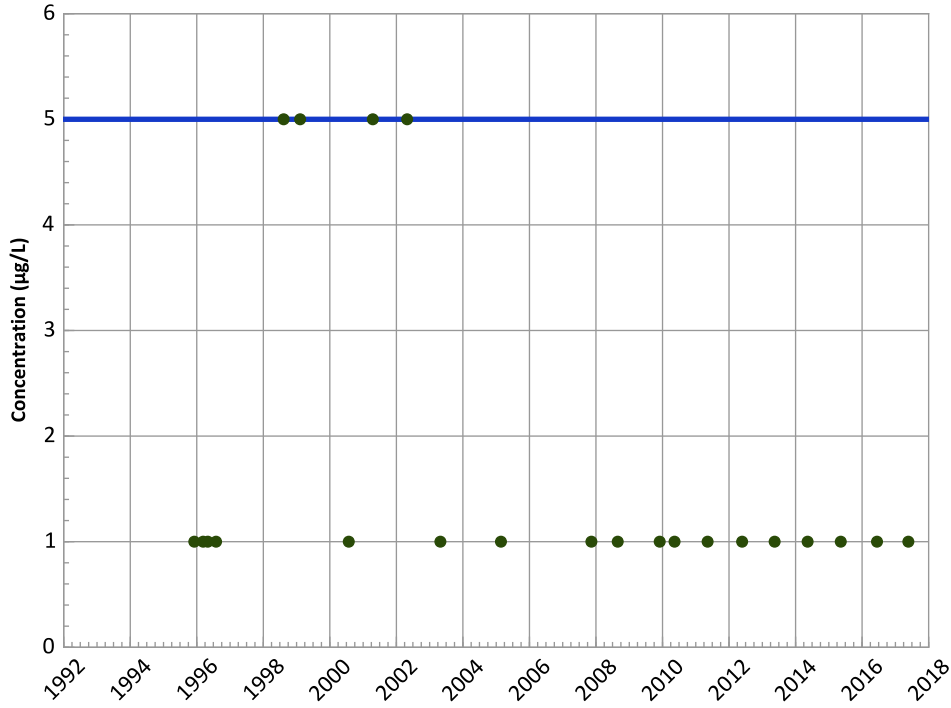
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/05/1995 to 05/23/2017
Analysis Date: 03/21/2018

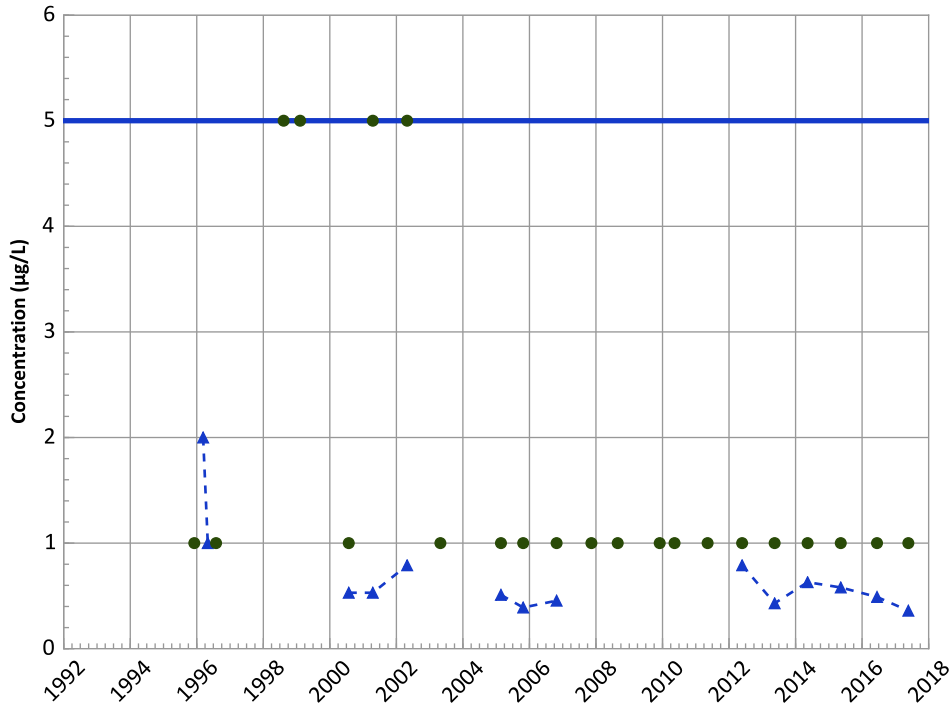
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1007 in Perched Aquifer
USDOE/NNSA Pantex Plant
Tetrachloroethylene (PCE) Trend**



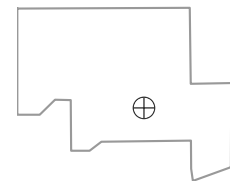
Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect
MAROS Linear Regression Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect

Trichloroethene Trend



Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 Decreasing
 All Data
 Decreasing
MAROS Linear Regression Method
 Data ():
 Stable
 All Data
 Decreasing

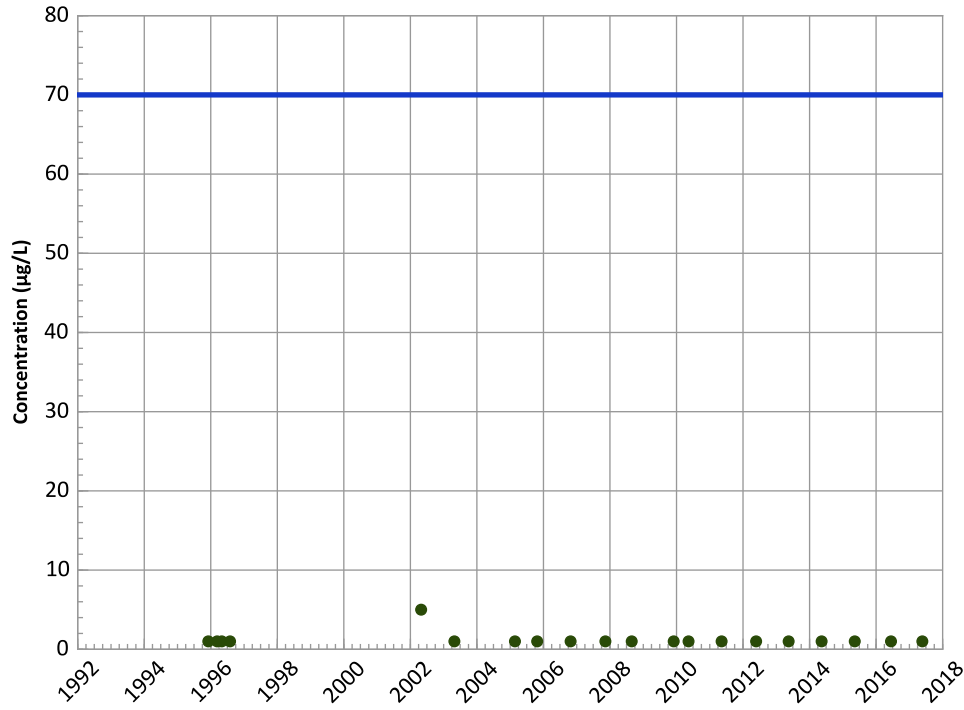
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 12/05/1995 to 05/23/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1007 in Perched Aquifer
 USDOE/NNSA Pantex Plant
 cis-1,2-Dichloroethene Trend



Concentration Trend

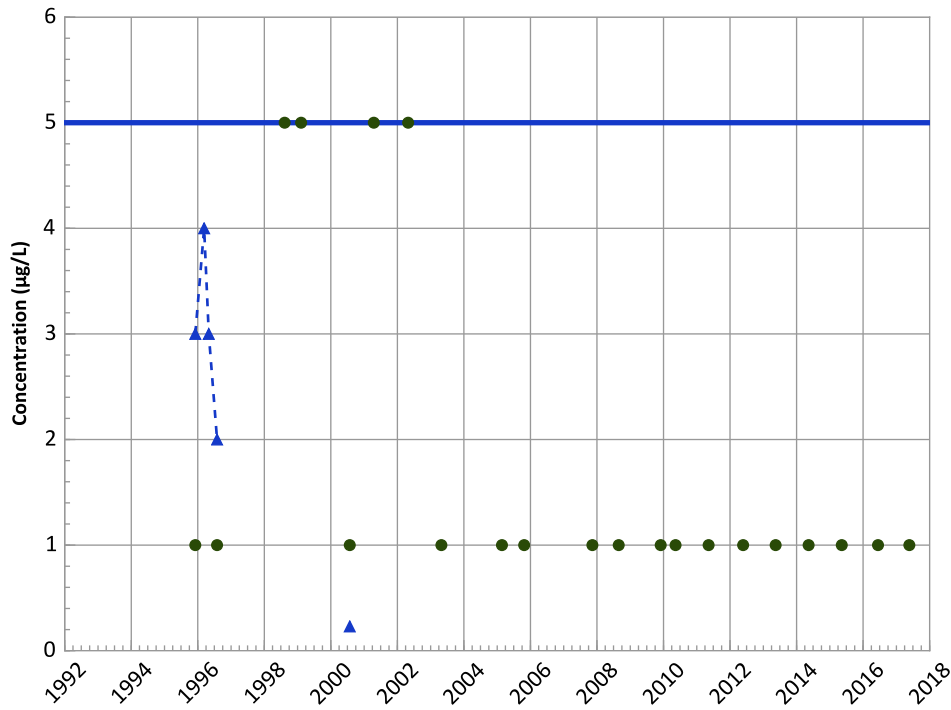
MAROS Mann-Kendall Method

Data ():
 All Non-Detect
 All Data
 All Non-Detect

MAROS Linear Regression Method

Data ():
 All Non-Detect
 All Data
 All Non-Detect

1,2-Dichloroethane Trend



Concentration Trend

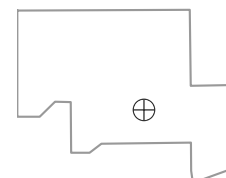
MAROS Mann-Kendall Method

Data ():
 All Non-Detect
 All Data
 Decreasing

MAROS Linear Regression Method

Data ():
 All Non-Detect
 All Data
 Decreasing

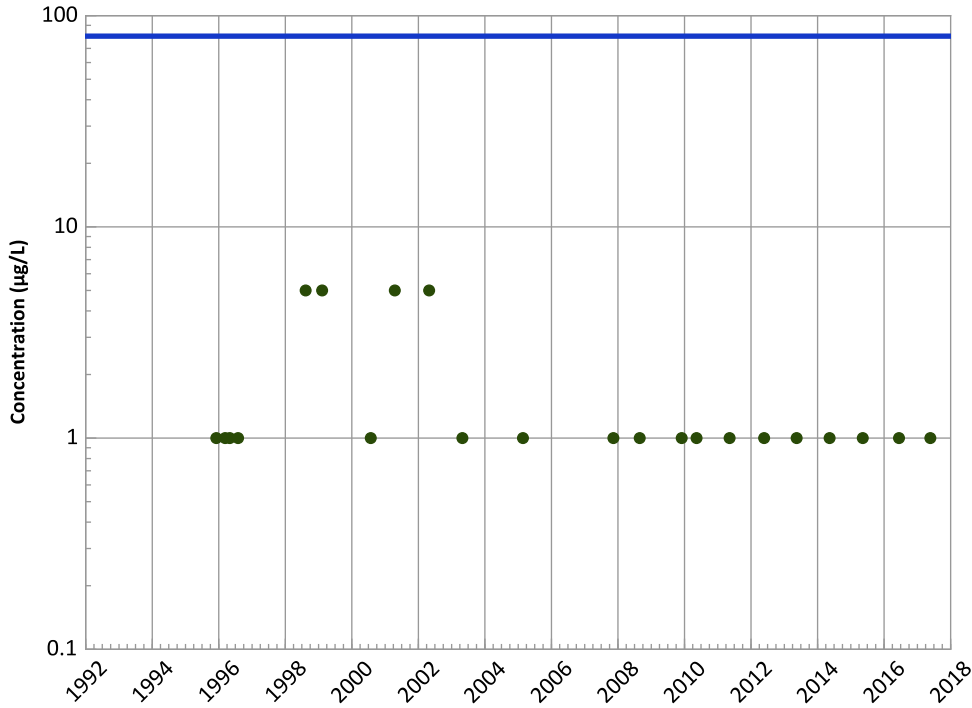
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 12/05/1995 to 05/23/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1007 in Perched Aquifer
USDOE/NNSA Pantex Plant
Chloroform Trend**



Concentration Trend

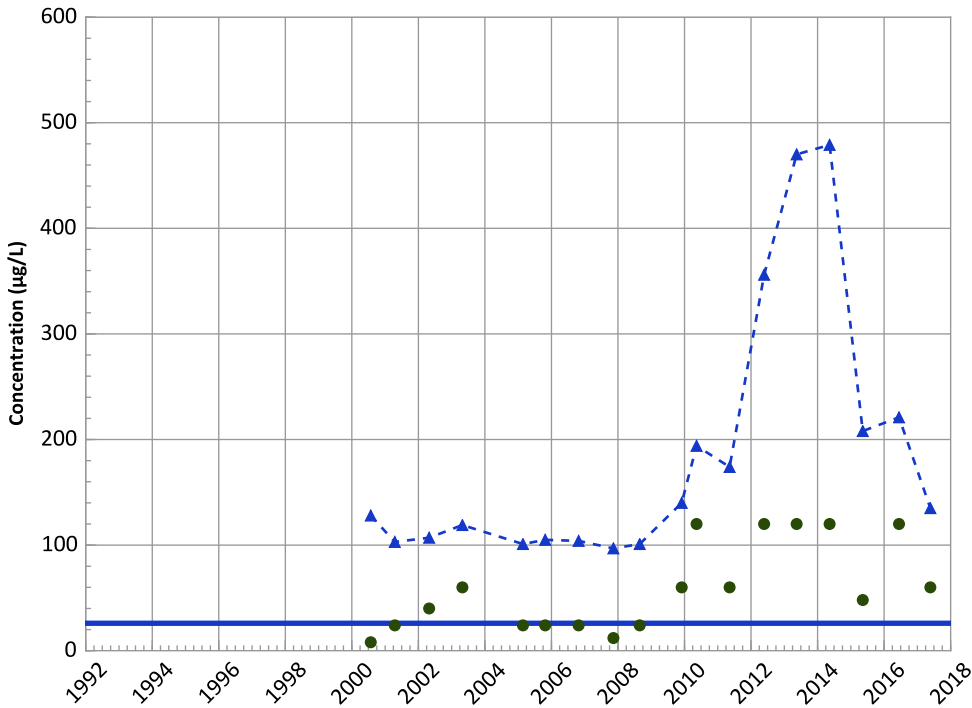
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Perchlorate Trend



Concentration Trend

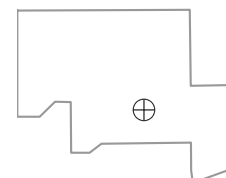
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Probably Decreasing
All Data
Increasing

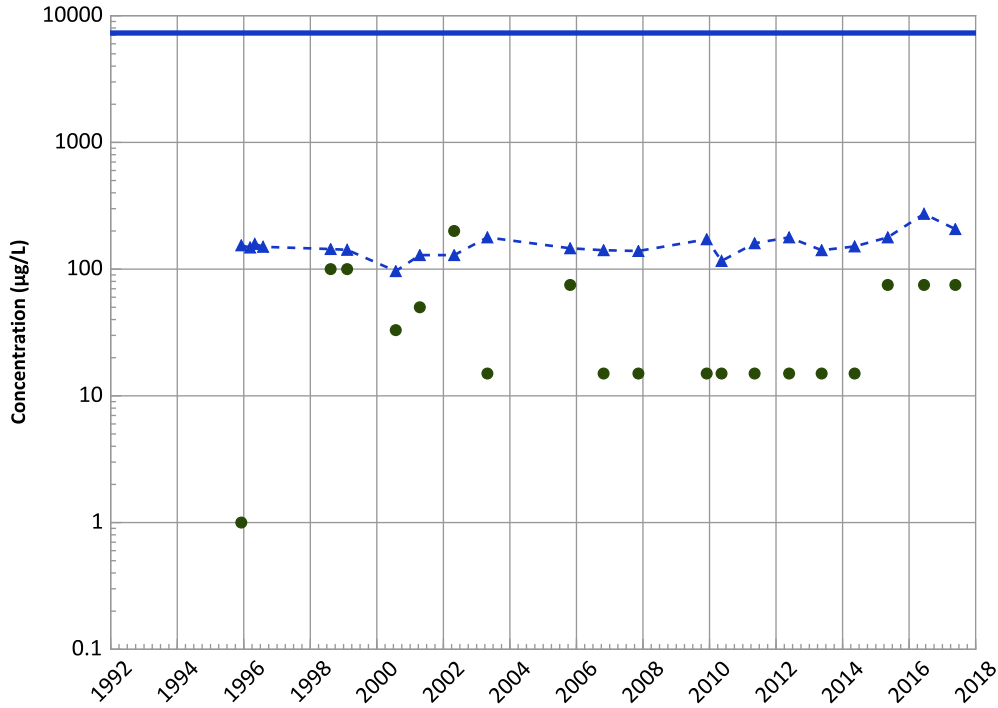
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/05/1995 to 05/23/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

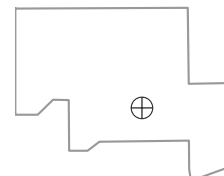
PTX06-1007 in Perched Aquifer
 USDOE/NNSA Pantex Plant
 Boron Trend



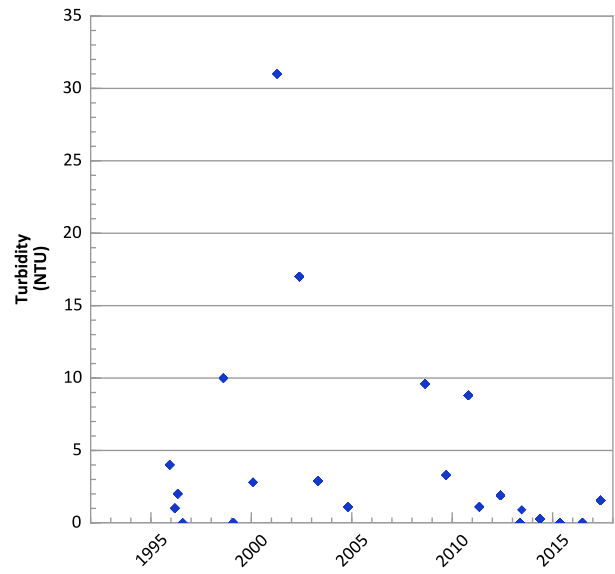
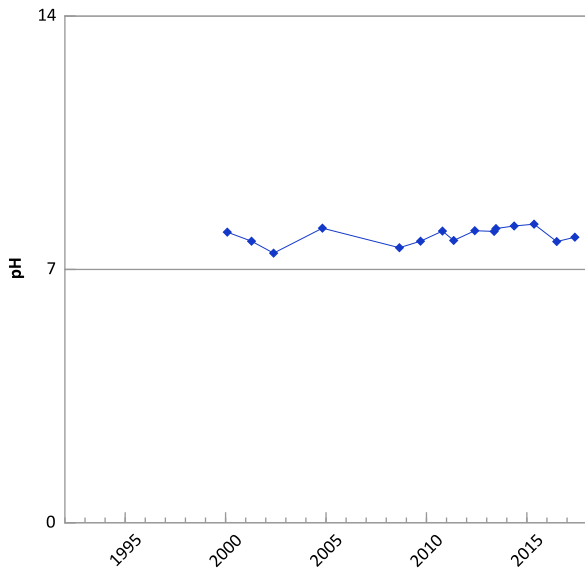
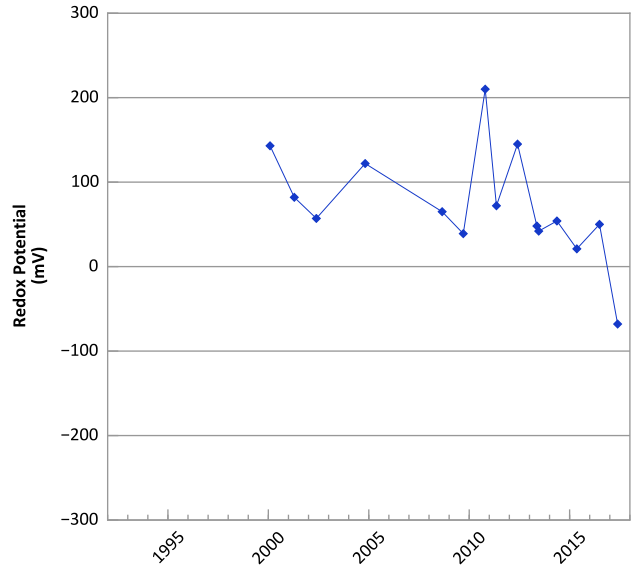
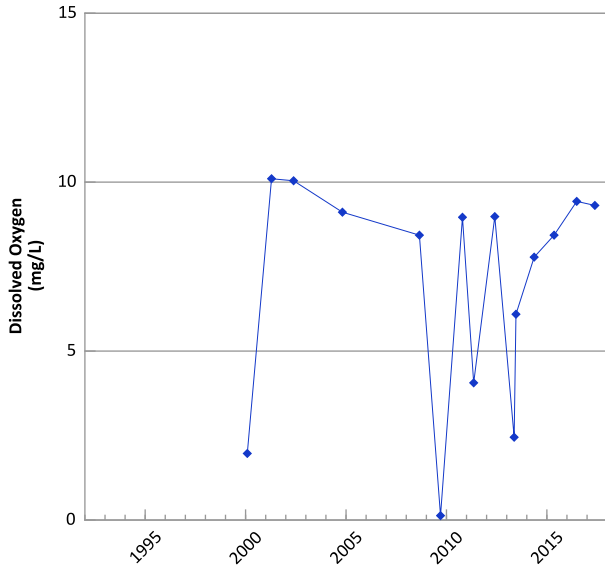
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 12/05/1995 to 05/23/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

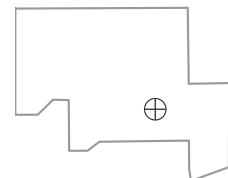


**PTX06-1008 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



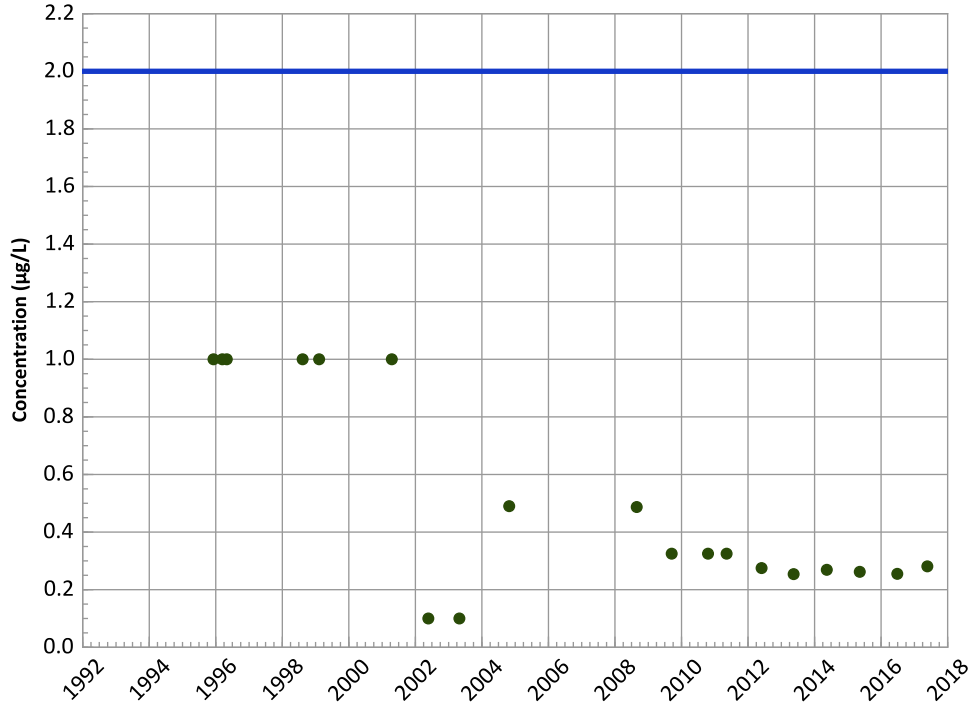
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 12/07/1995 to 05/23/2017
 Analysis Date: 03/21/2018

Well Location



PTX06-1008 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

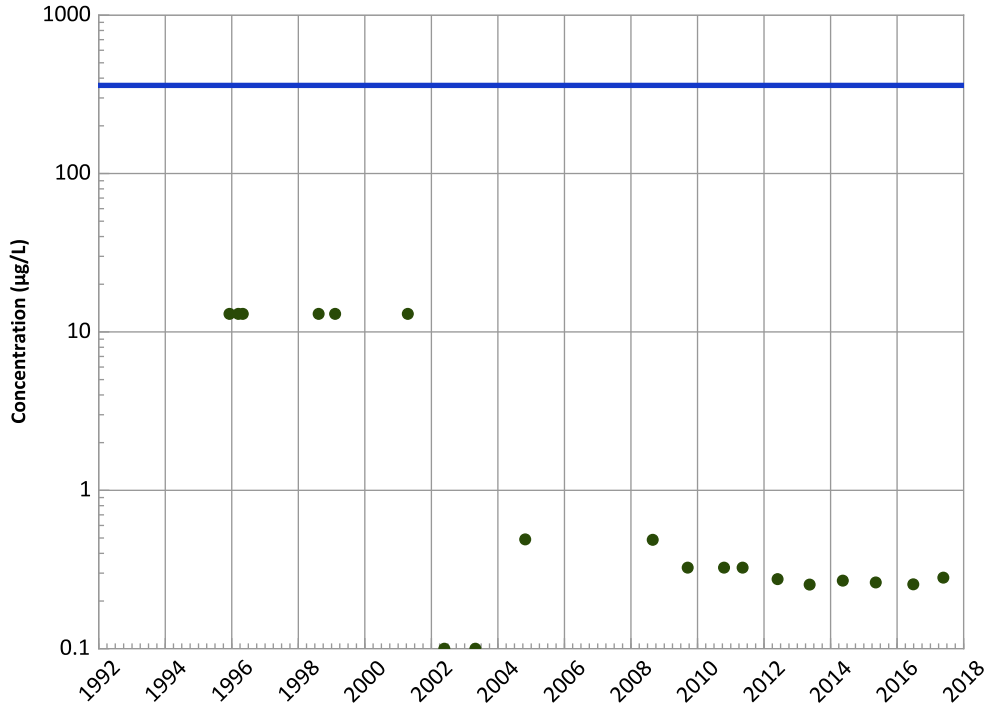
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

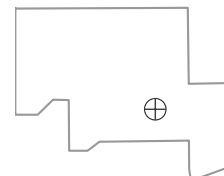
MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/07/1995 to 05/23/2017
Analysis Date: 03/21/2018

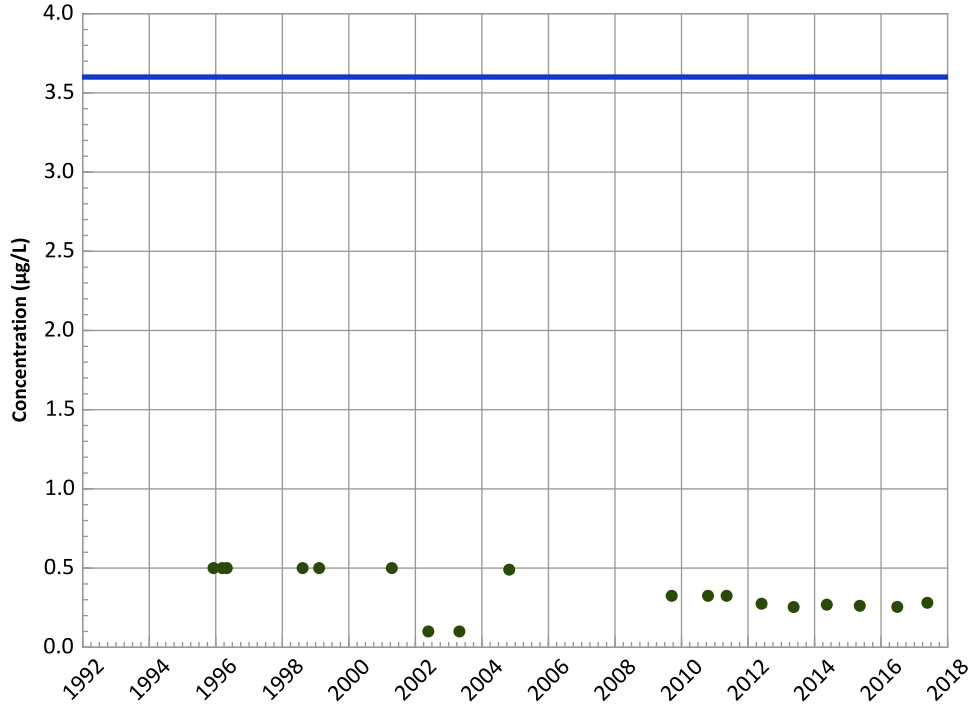
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1008 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

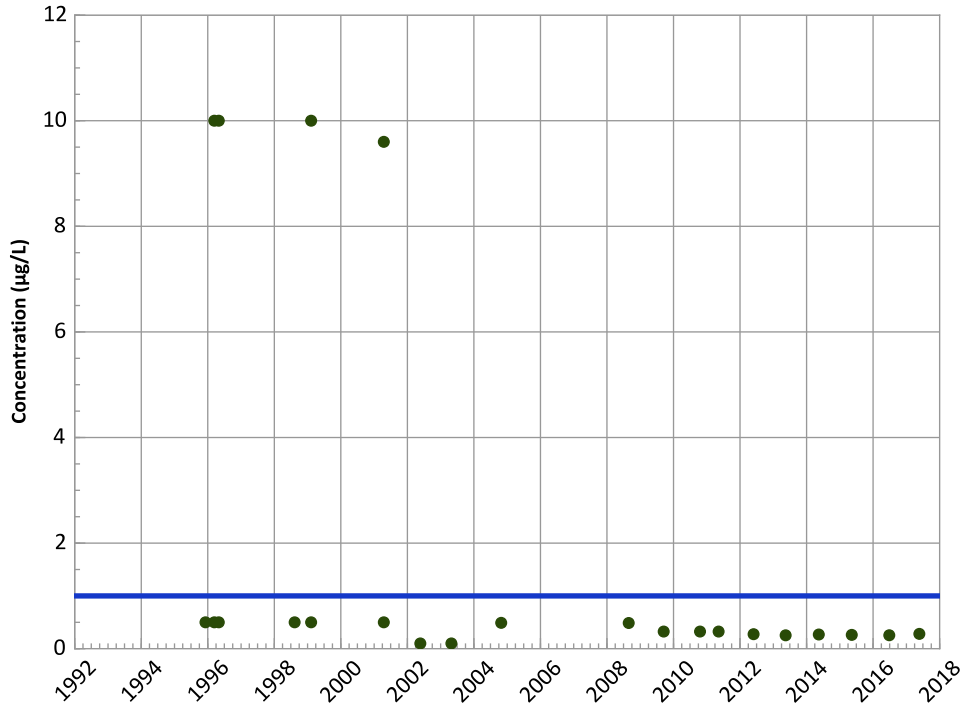
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

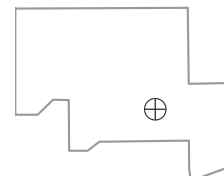
MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/07/1995 to 05/23/2017
Analysis Date: 03/21/2018

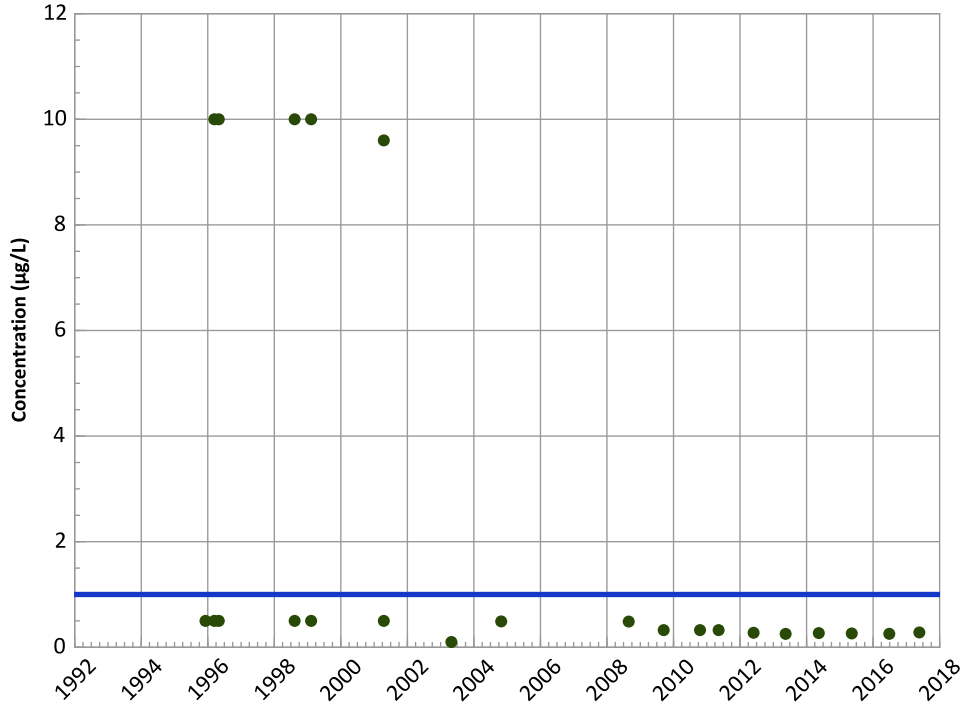
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1008 in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

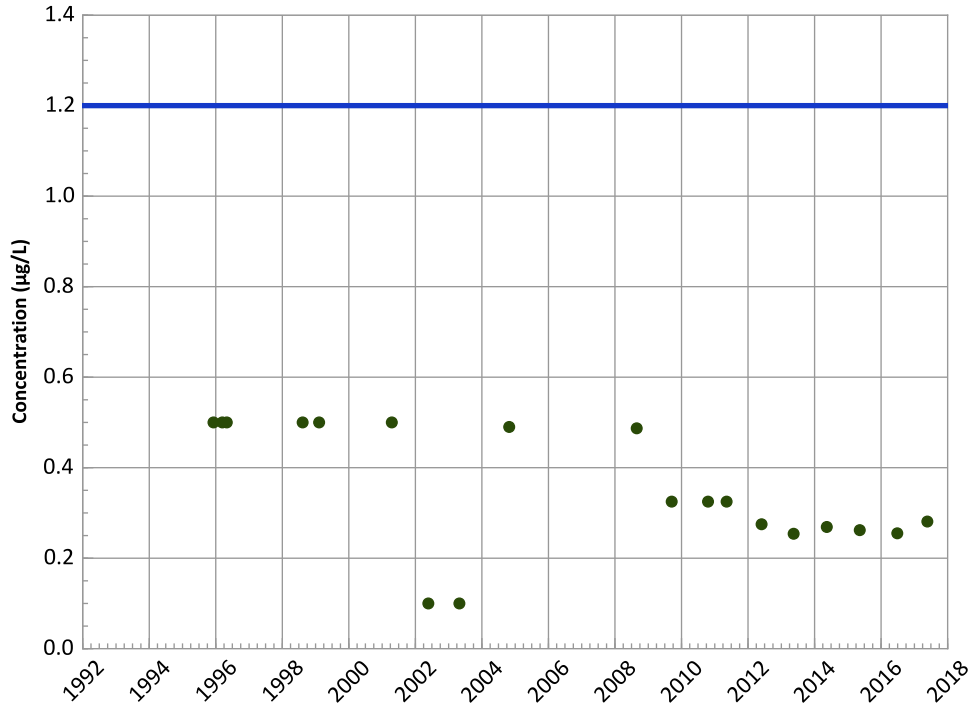
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

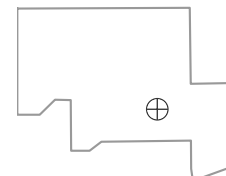
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

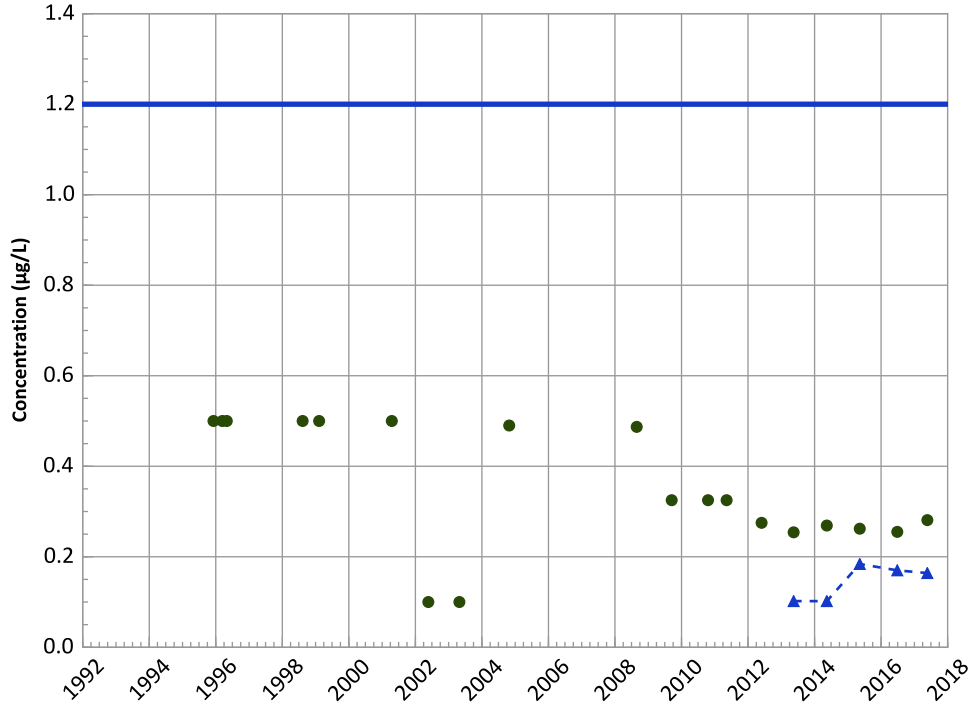


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/07/1995 to 05/23/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1008 in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

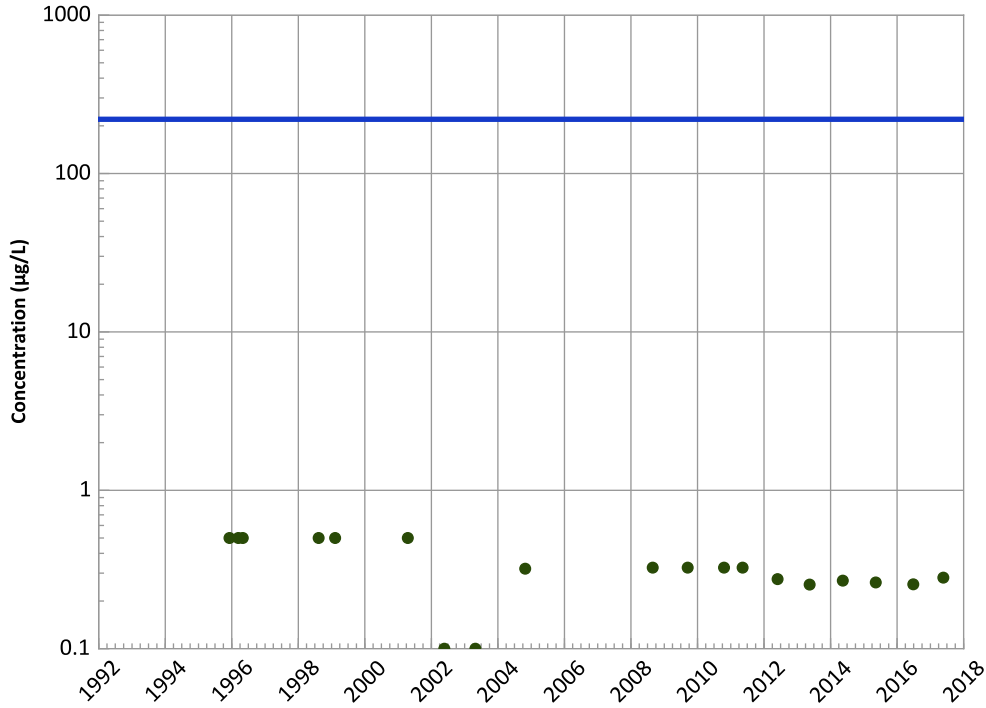
MAROS Mann-Kendall Method

Data ():
No Trend
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Probably Increasing
All Data
Probably Increasing

1,3,5-Trinitrobenzene Trend



Concentration Trend

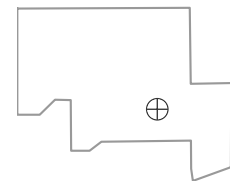
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

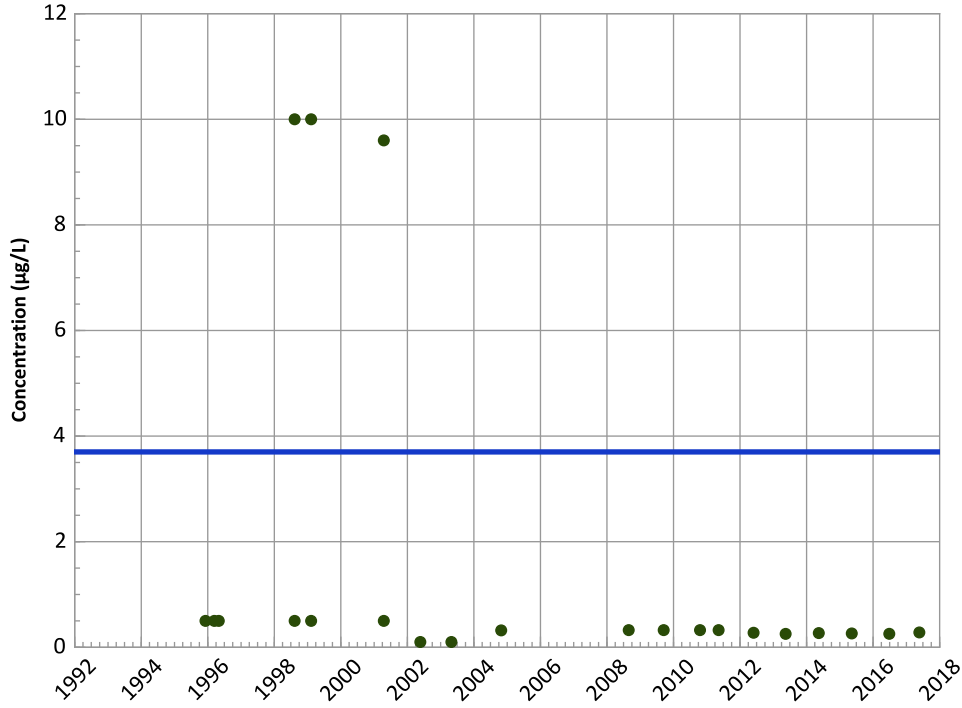


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/07/1995 to 05/23/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1008 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

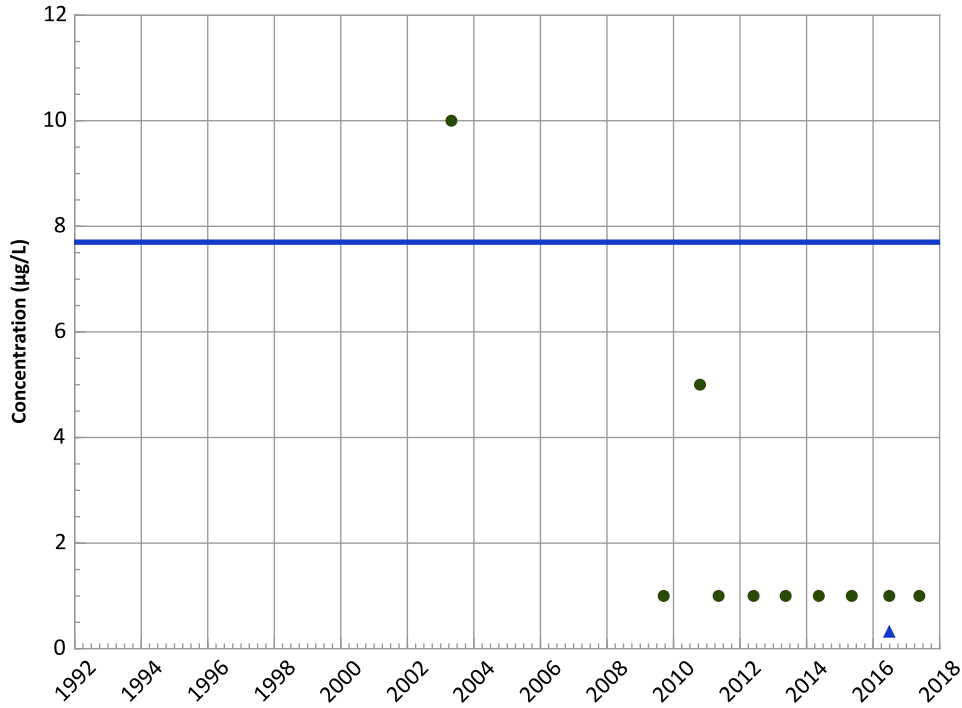
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,4-Dioxane (p-Dioxane) Trend



Concentration Trend

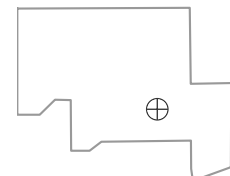
MAROS Mann-Kendall Method

Data ():
N/A (<4 Detections in Dataset)
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
N/A (<4 Detections in Dataset)

Well Location

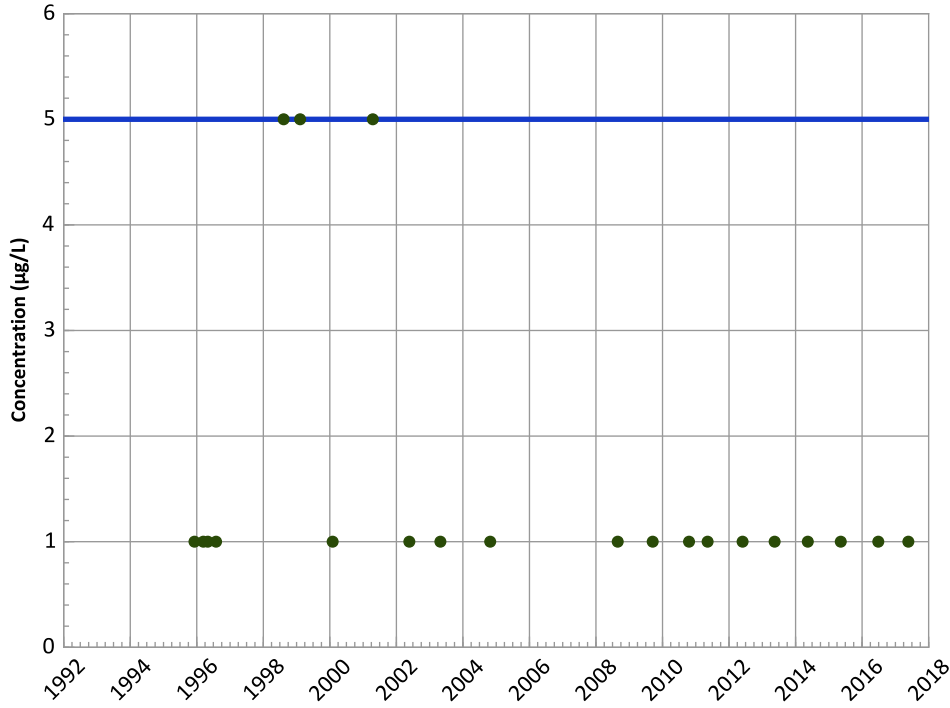


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/07/1995 to 05/23/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1008 in Perched Aquifer
USDOE/NNSA Pantex Plant

Tetrachloroethylene (PCE) Trend



Concentration Trend

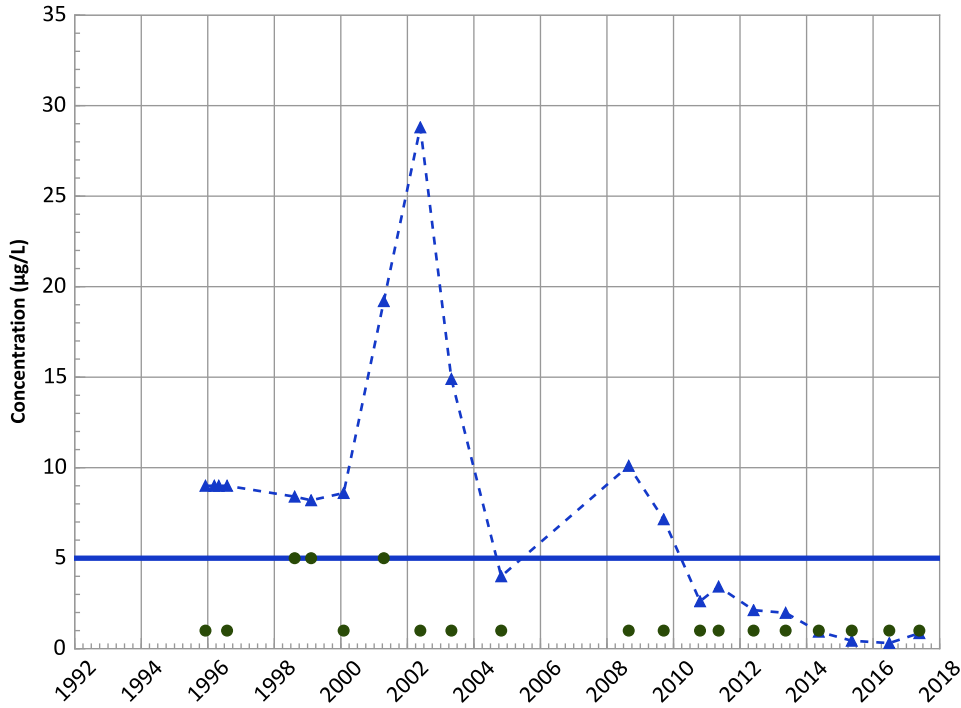
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Trichloroethene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

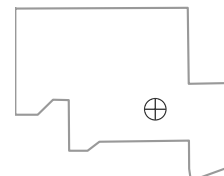
MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

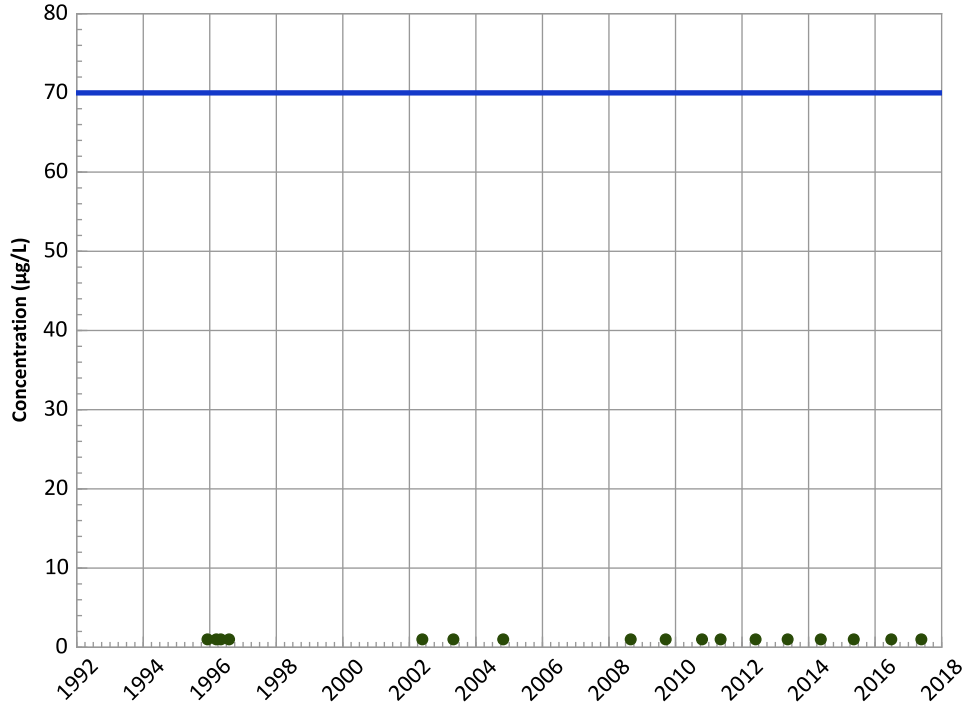
Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/07/1995 to 05/23/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



**PTX06-1008 in Perched Aquifer
USDOE/NNSA Pantex Plant
cis-1,2-Dichloroethene Trend**



Concentration Trend

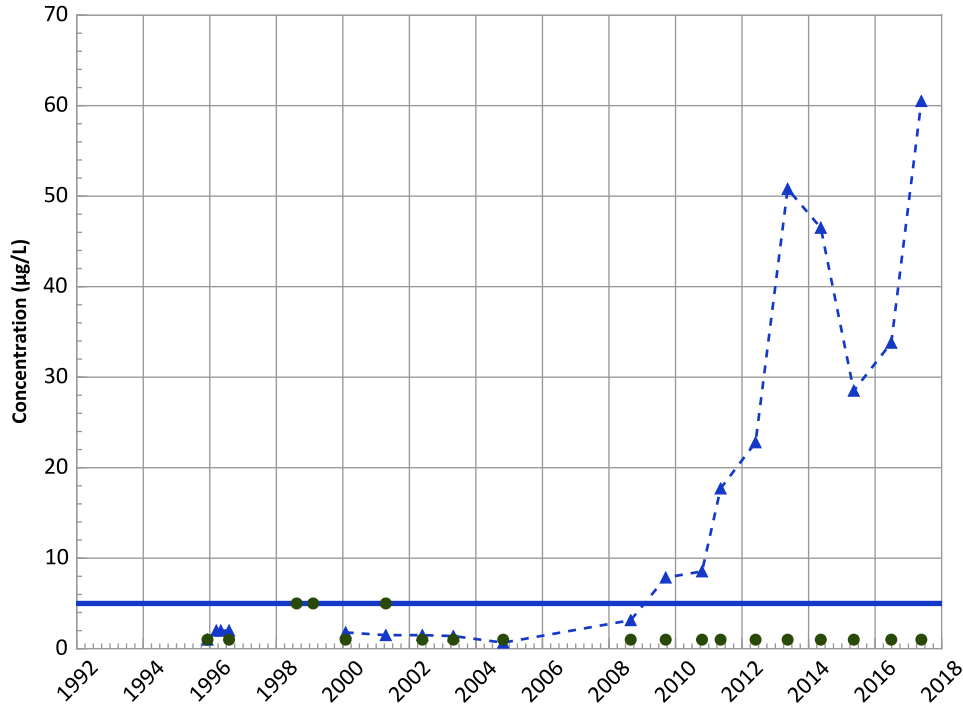
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,2-Dichloroethane Trend



Concentration Trend

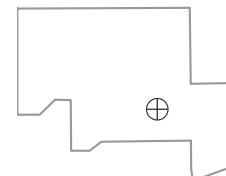
MAROS Mann-Kendall Method

Data ():
Stable
All Data
Increasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
Increasing

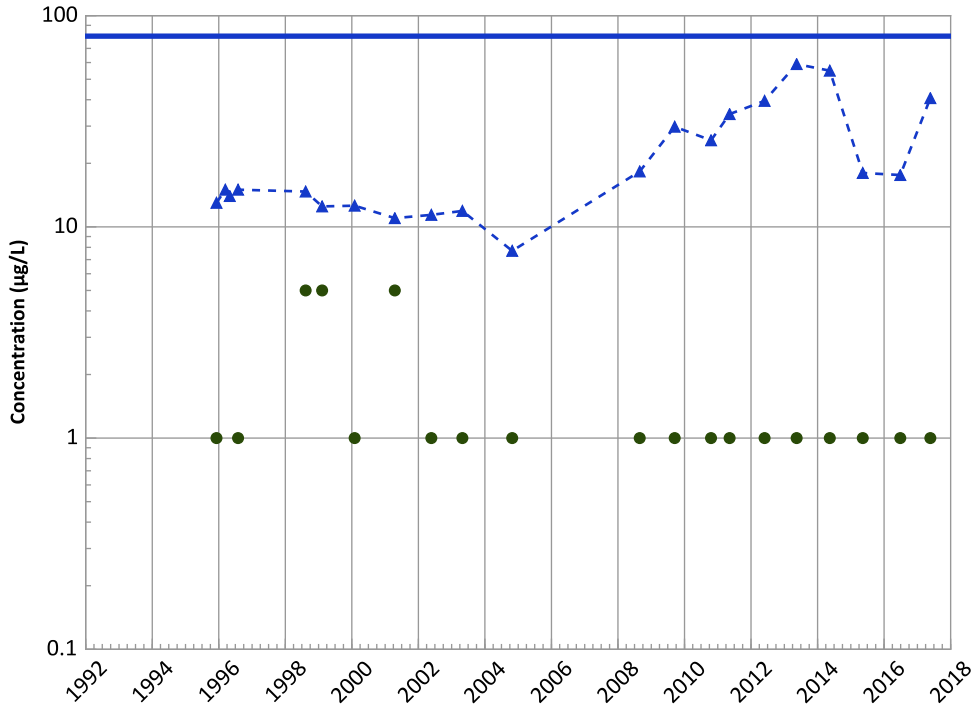
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/07/1995 to 05/23/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1008 in Perched Aquifer
 USDOE/NNSA Pantex Plant
 Chloroform Trend



Concentration Trend

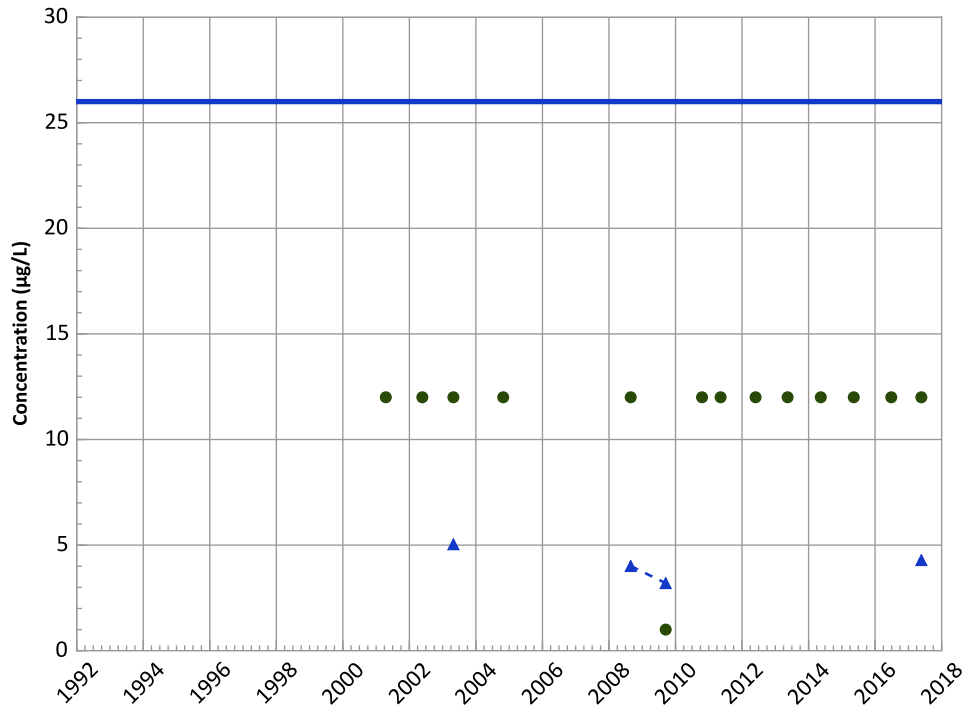
MAROS Mann-Kendall Method

Data ():
 Decreasing
 All Data
 Increasing

MAROS Linear Regression Method

Data ():
 Probably Decreasing
 All Data
 Increasing

Perchlorate Trend



Concentration Trend

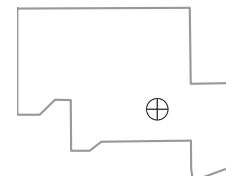
MAROS Mann-Kendall Method

Data ():
 All Non-Detect
 All Data
 No Trend

MAROS Linear Regression Method

Data ():
 All Non-Detect
 All Data
 Stable

Well Location

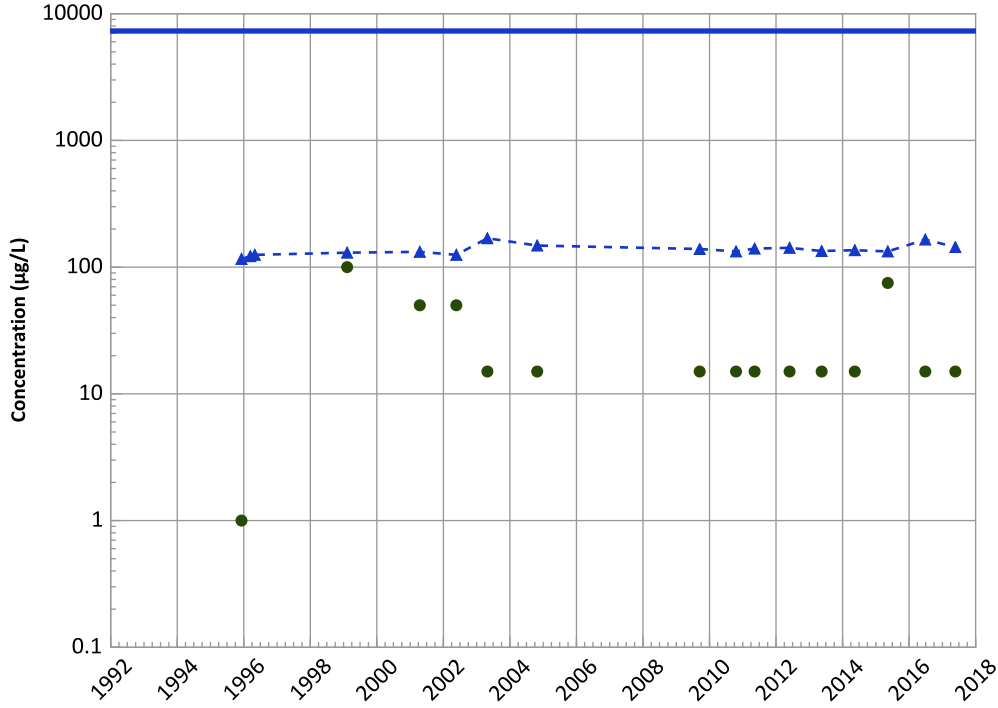


Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 12/07/1995 to 05/23/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1008 in Perched Aquifer
USDOE/NNSA Pantex Plant

Boron Trend



Concentration Trend

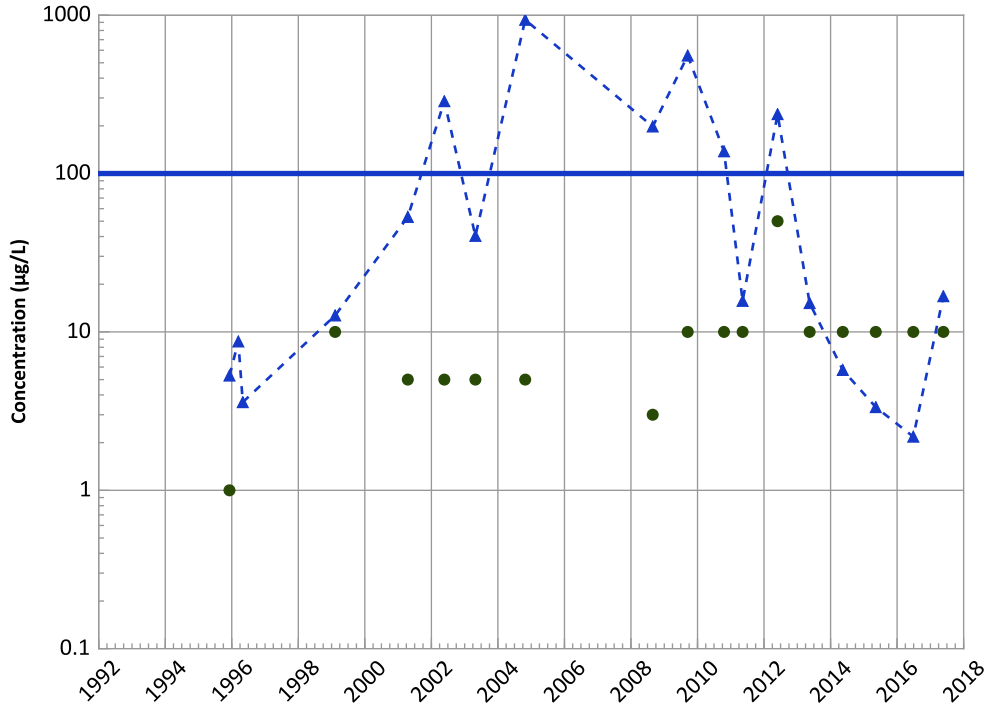
MAROS Mann-Kendall Method

Data ():
Stable
All Data
Increasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
Increasing

Chromium, Total Trend



Concentration Trend

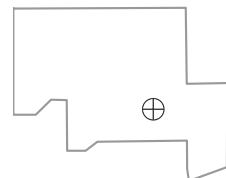
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

Well Location

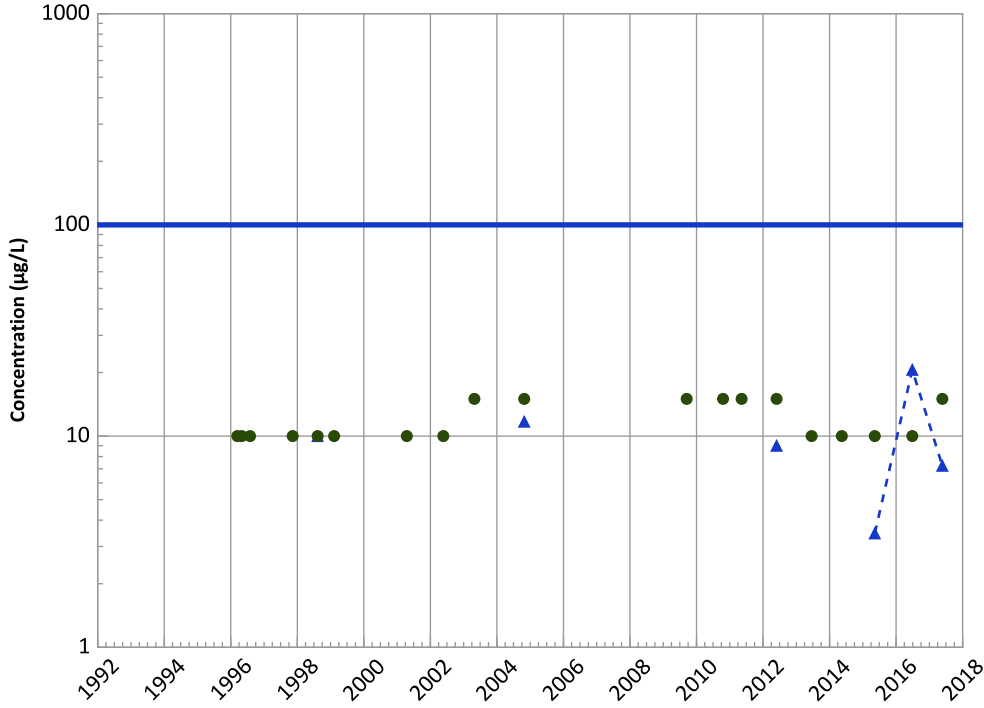


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/07/1995 to 05/23/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1008 in Perched Aquifer
USDOE/NNSA Pantex Plant

Chromium, Hexavalent Trend

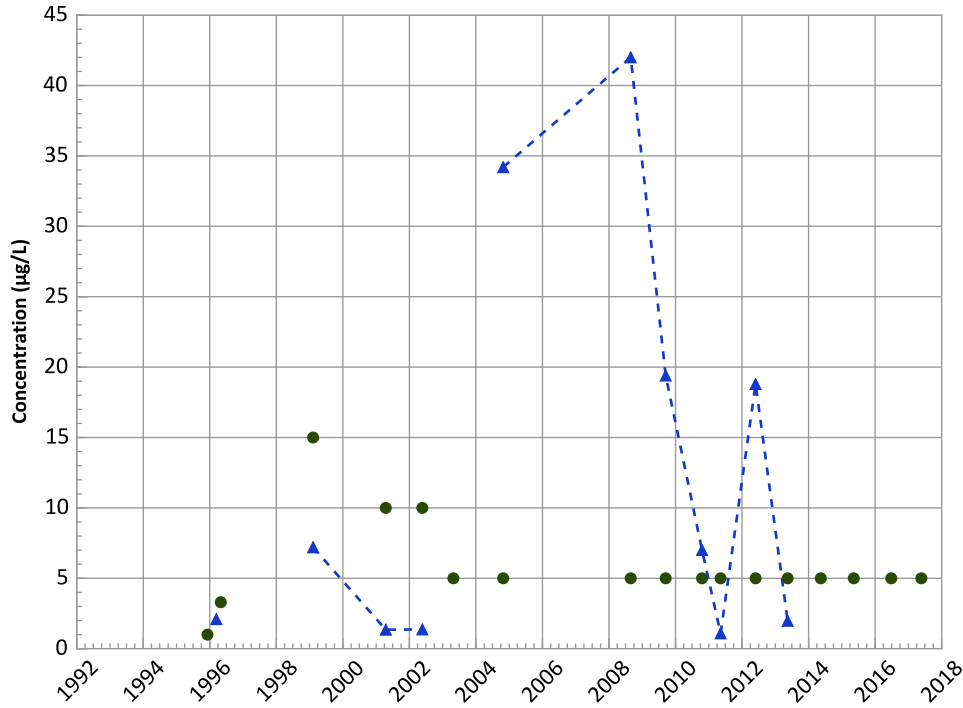


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Detections in Dataset)
All Data
Probably Increasing

MAROS Linear Regression Method
Data ():
N/A (<4 Detections in Dataset)
All Data
Stable

Manganese Trend

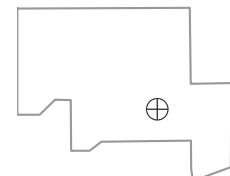


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Detections in Dataset)
All Data
No Trend

MAROS Linear Regression Method
Data ():
N/A (<4 Detections in Dataset)
All Data
No Trend

Well Location

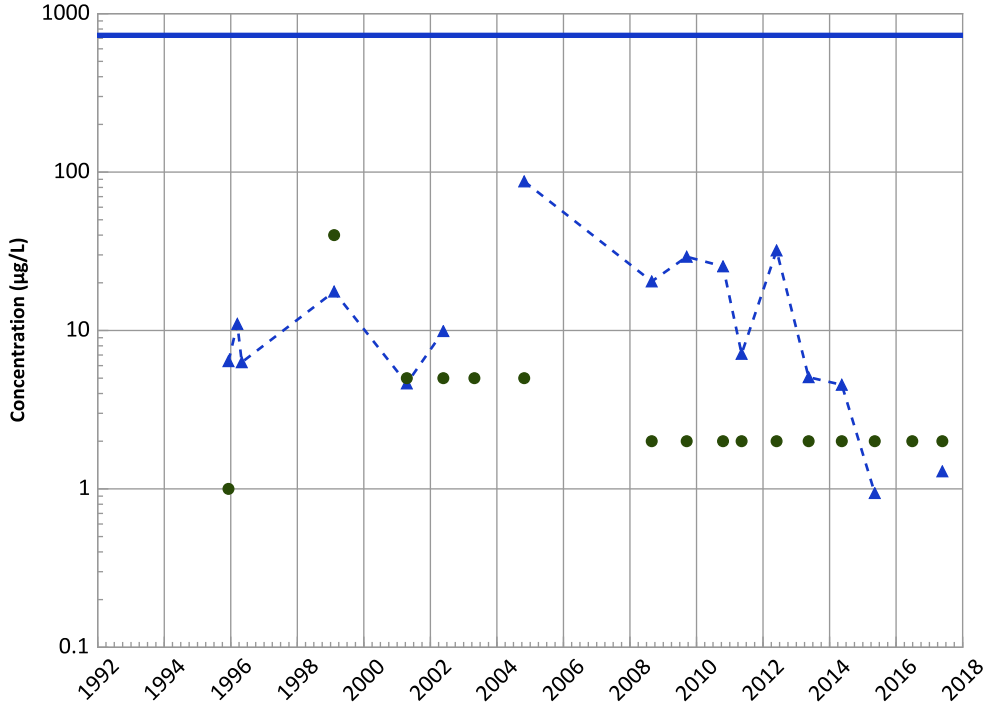


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/07/1995 to 05/23/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1008 in Perched Aquifer
USDOE/NNSA Pantex Plant

Nickel Trend



Concentration Trend

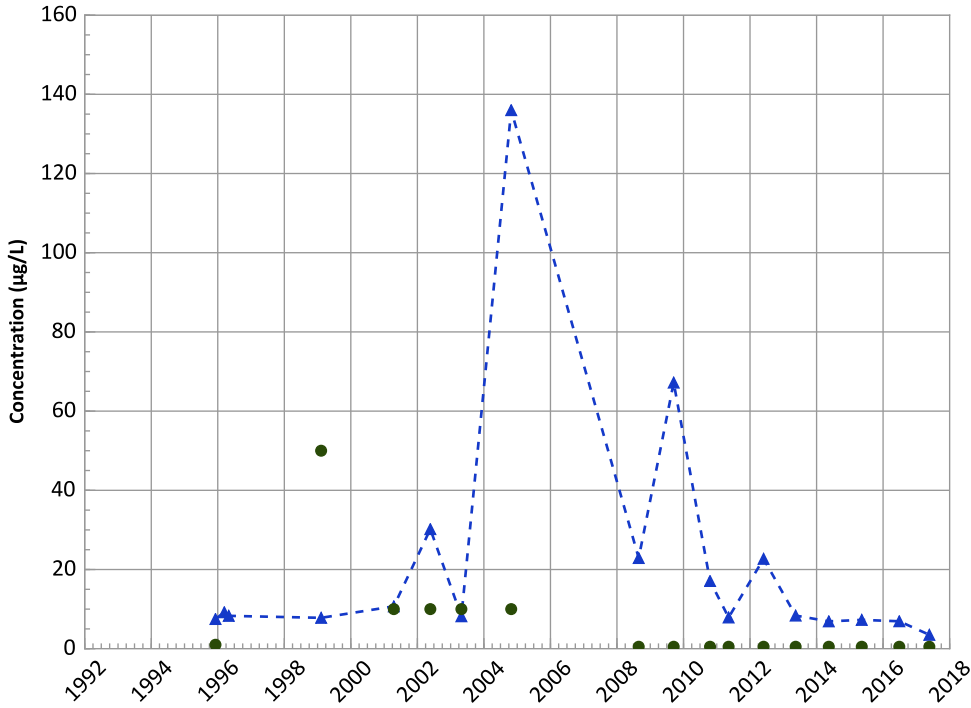
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
No Trend

Molybdenum Trend



Concentration Trend

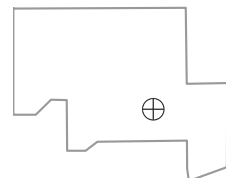
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Probably Decreasing
All Data
No Trend

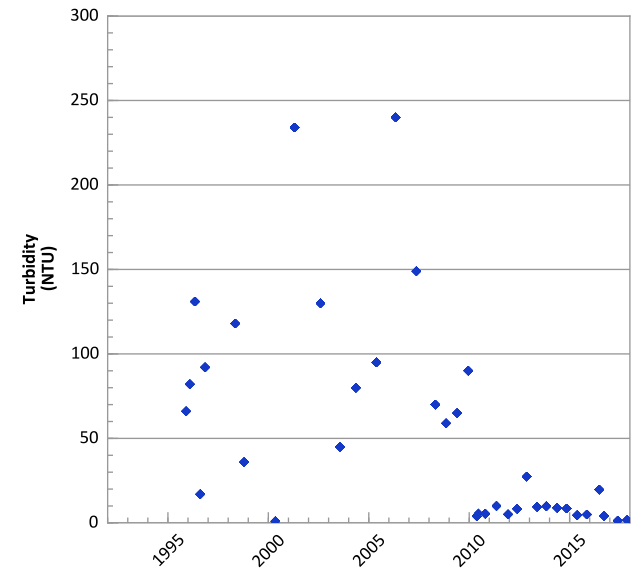
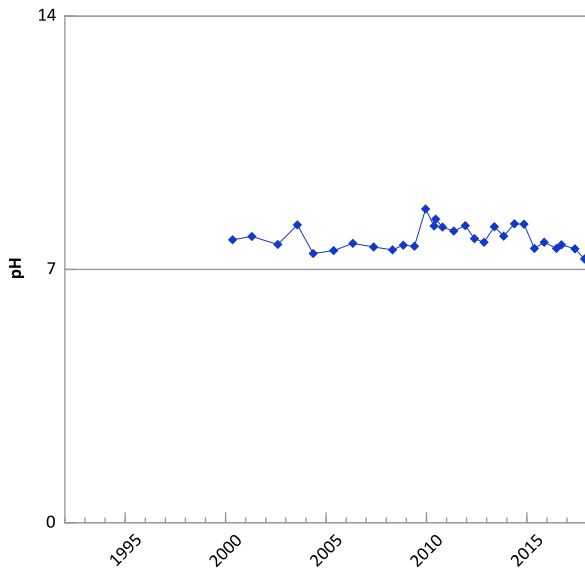
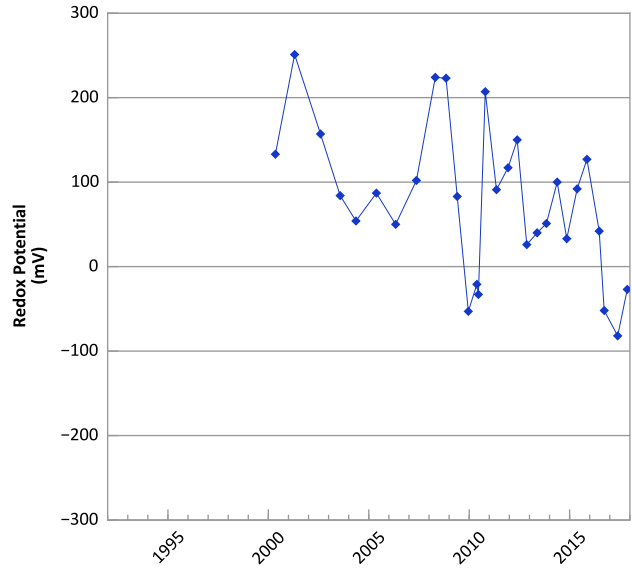
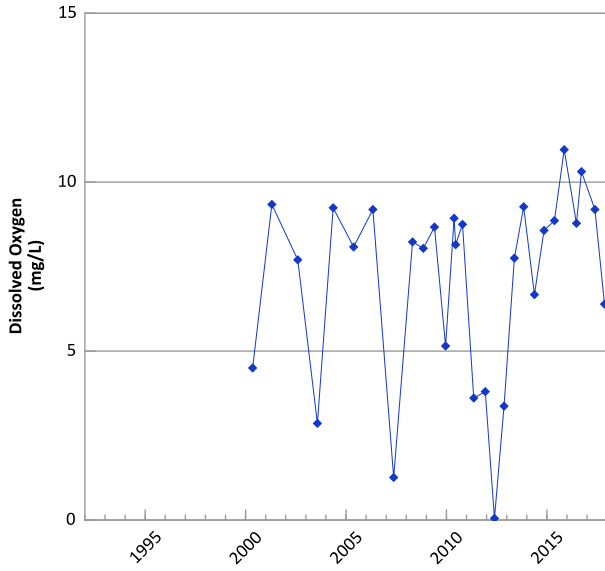
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/07/1995 to 05/23/2017
Analysis Date: 03/21/2018

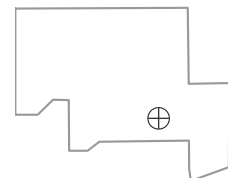
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1010 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



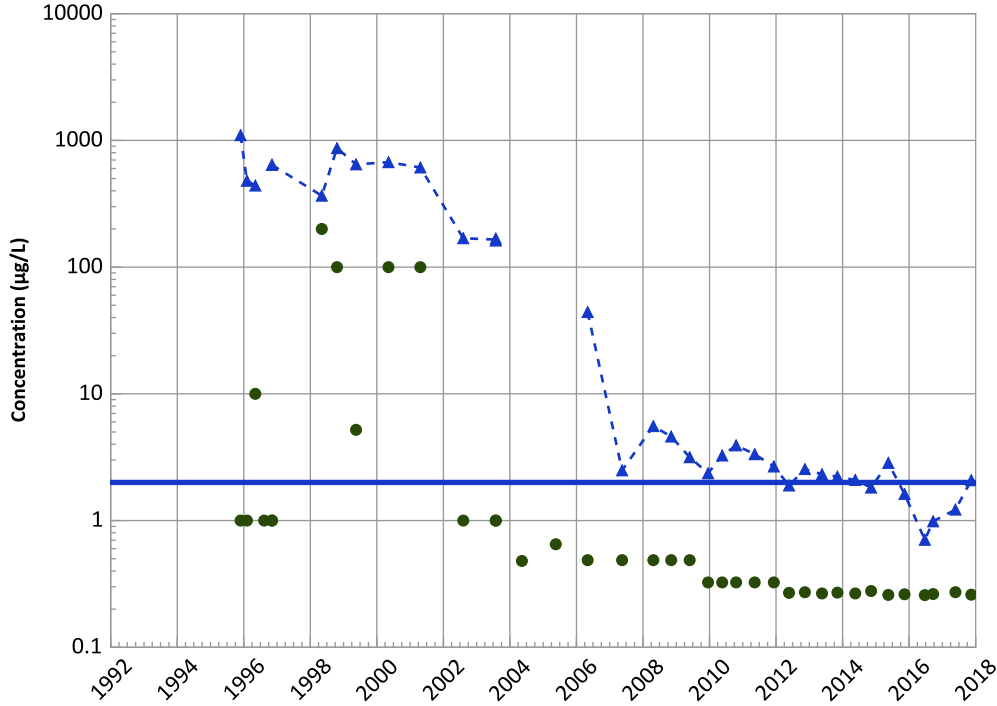
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 11/27/1995 to 11/14/2017
 Analysis Date: 03/21/2018

Well Location



PTX06-1010 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

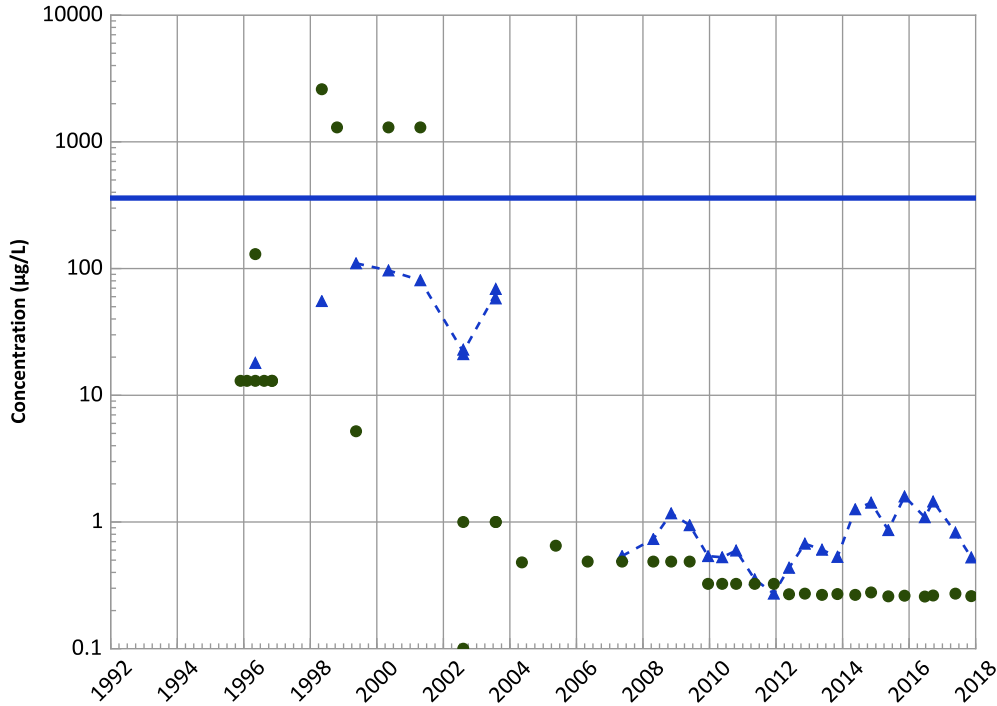
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Decreasing

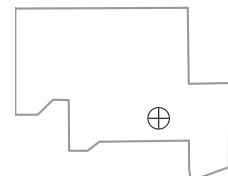
MAROS Linear Regression Method

Data ():
Increasing
All Data
Decreasing

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/27/1995 to 11/14/2017
Analysis Date: 03/21/2018

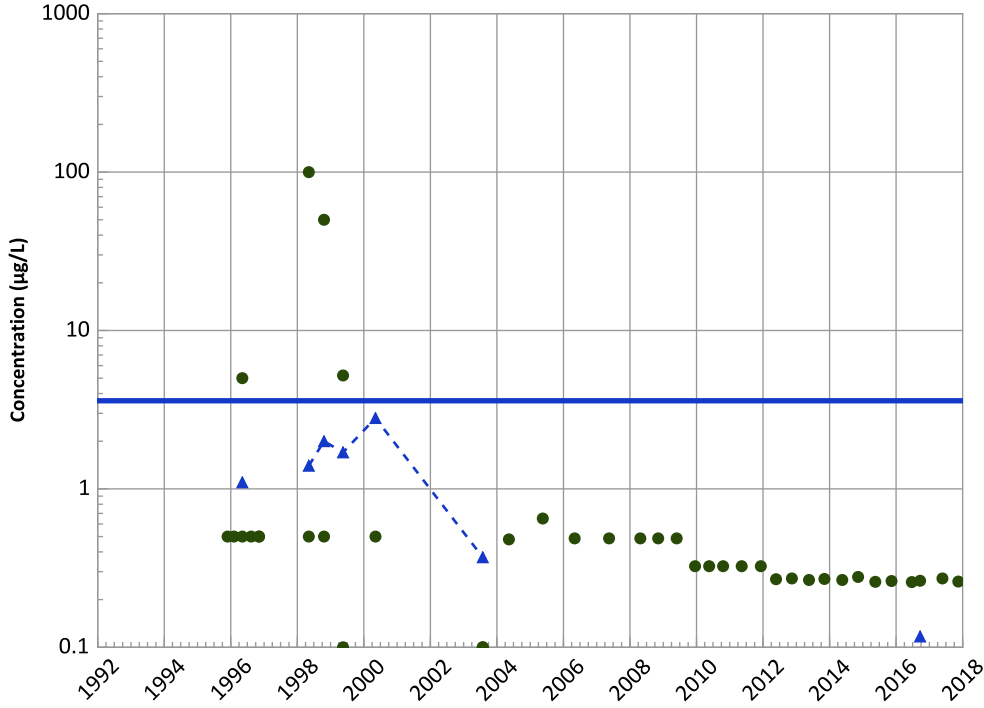
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1010 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend

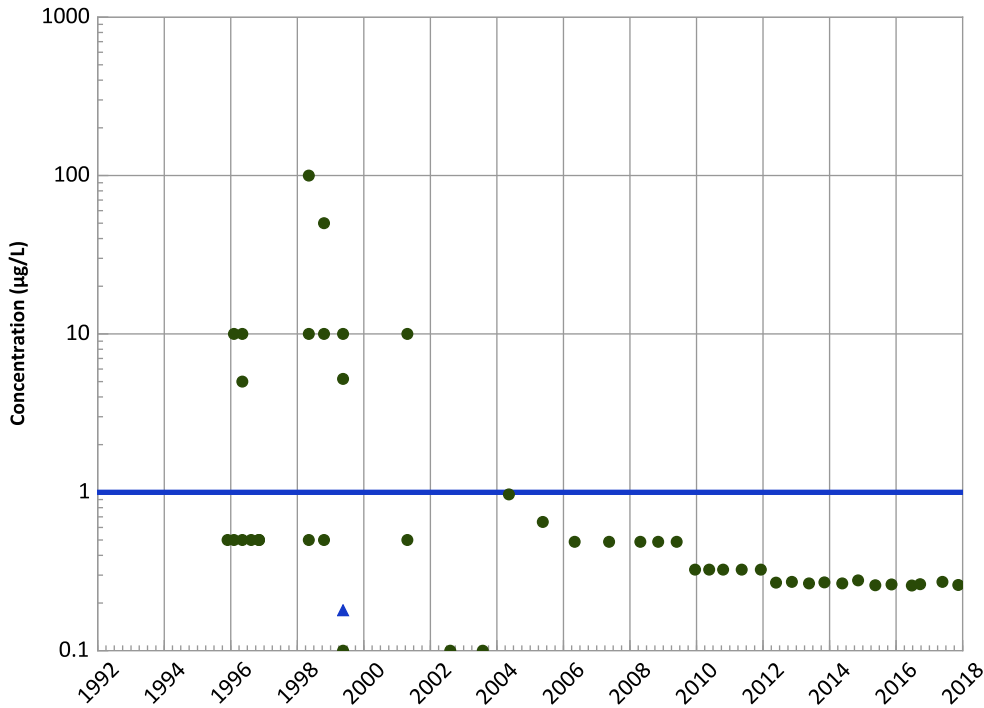


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

MAROS Linear Regression Method
Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

2,4-Dinitrotoluene Trend

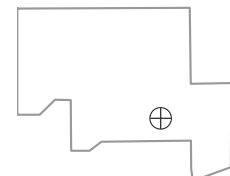


Concentration Trend

MAROS Mann-Kendall Method
Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method
Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

Well Location

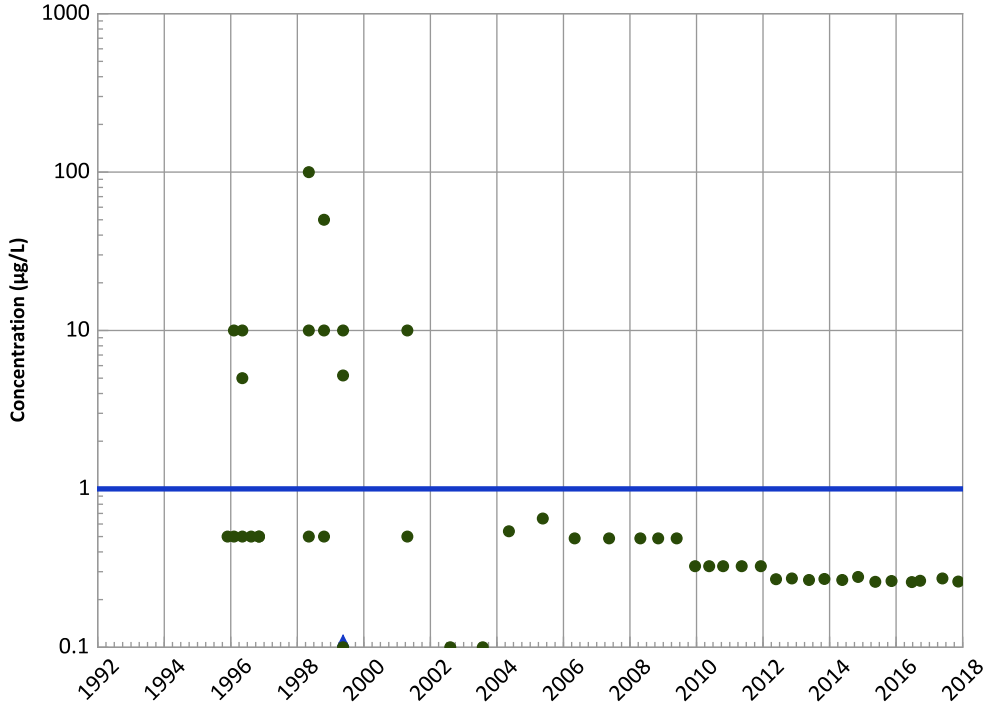


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/27/1995 to 11/14/2017
Analysis Date: 03/21/2018

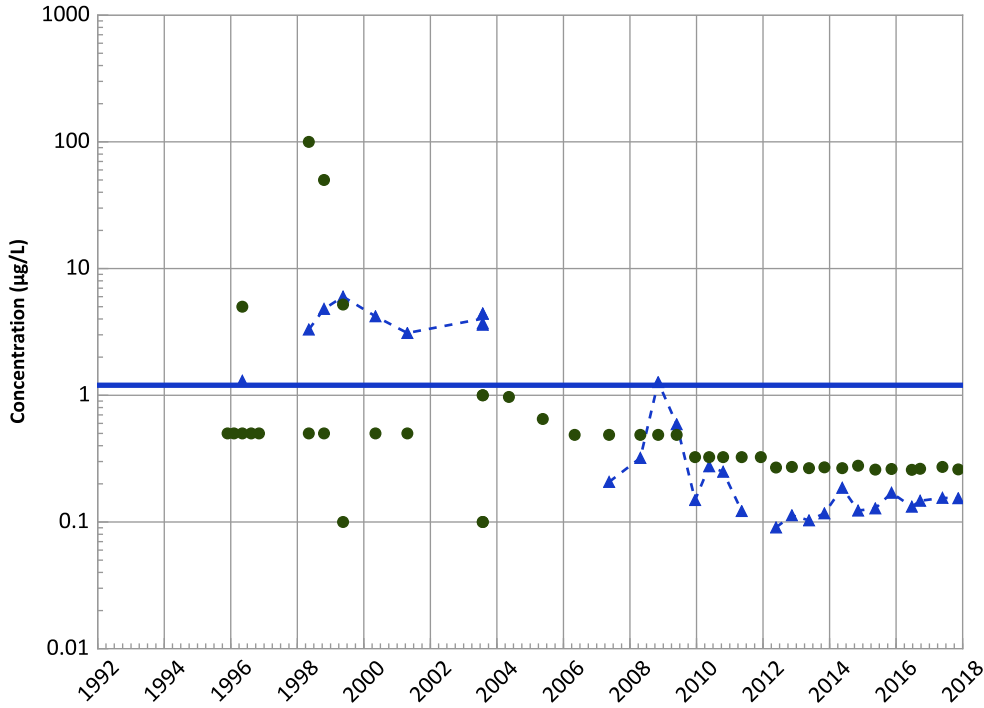
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1010 in Perched Aquifer
USDOE/NNSA Pantex Plant

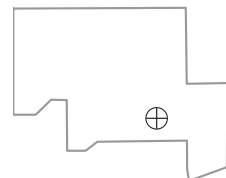
2,6-Dinitrotoluene Trend



2-Amino-4,6-Dinitrotoluene Trend



Well Location

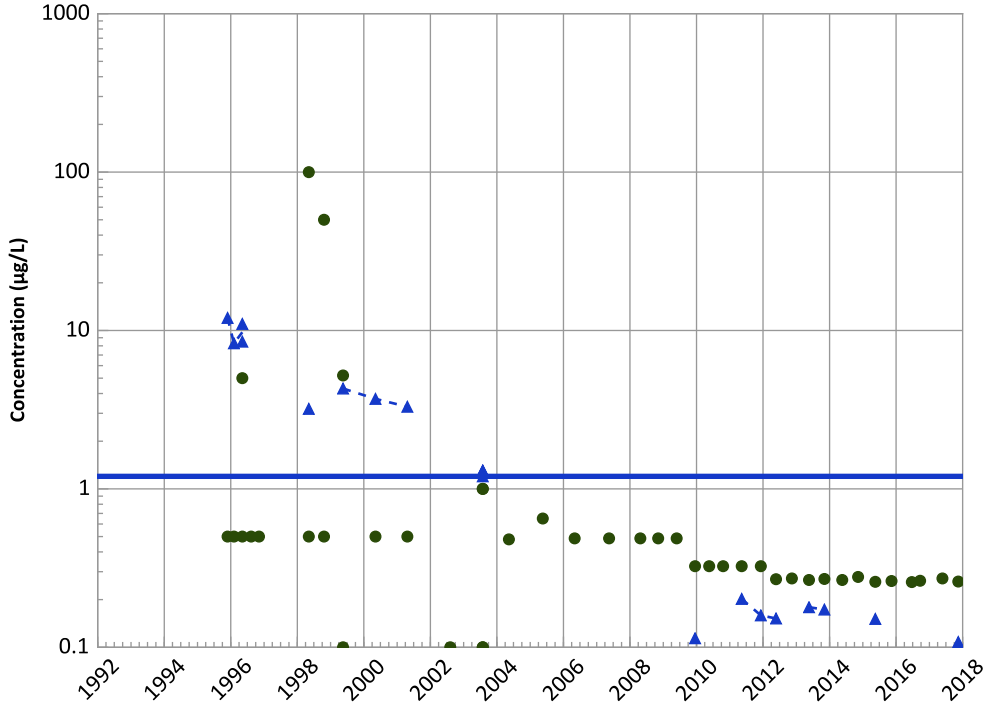


Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 11/27/1995 to 11/14/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1010 in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

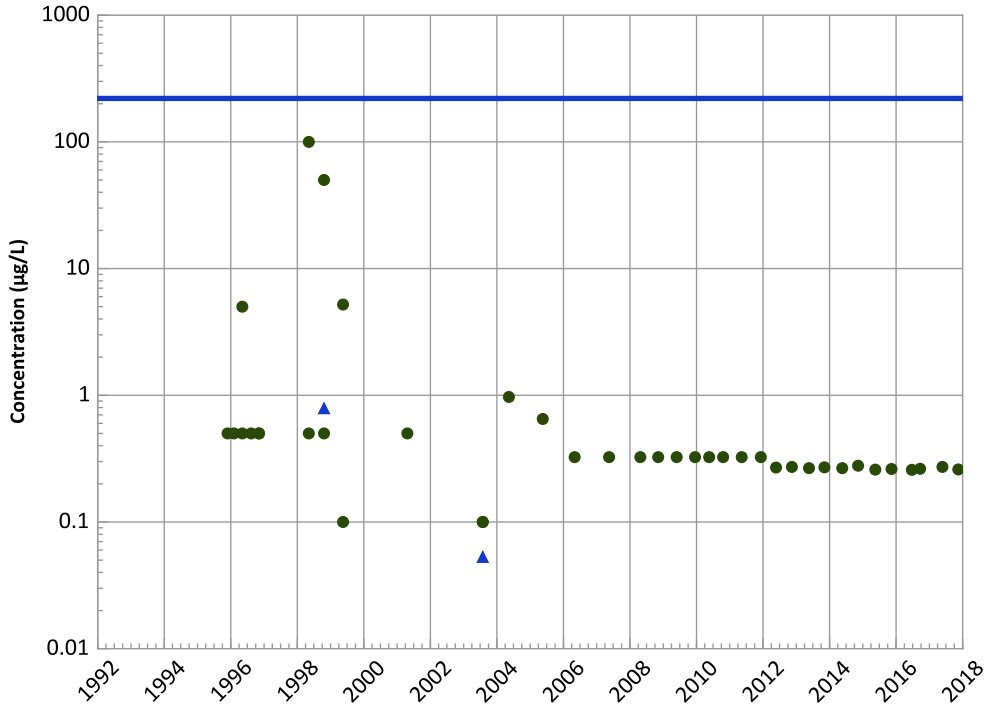
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Stable
All Data
Decreasing

1,3,5-Trinitrobenzene Trend



Concentration Trend

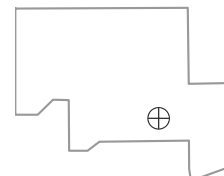
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

Well Location

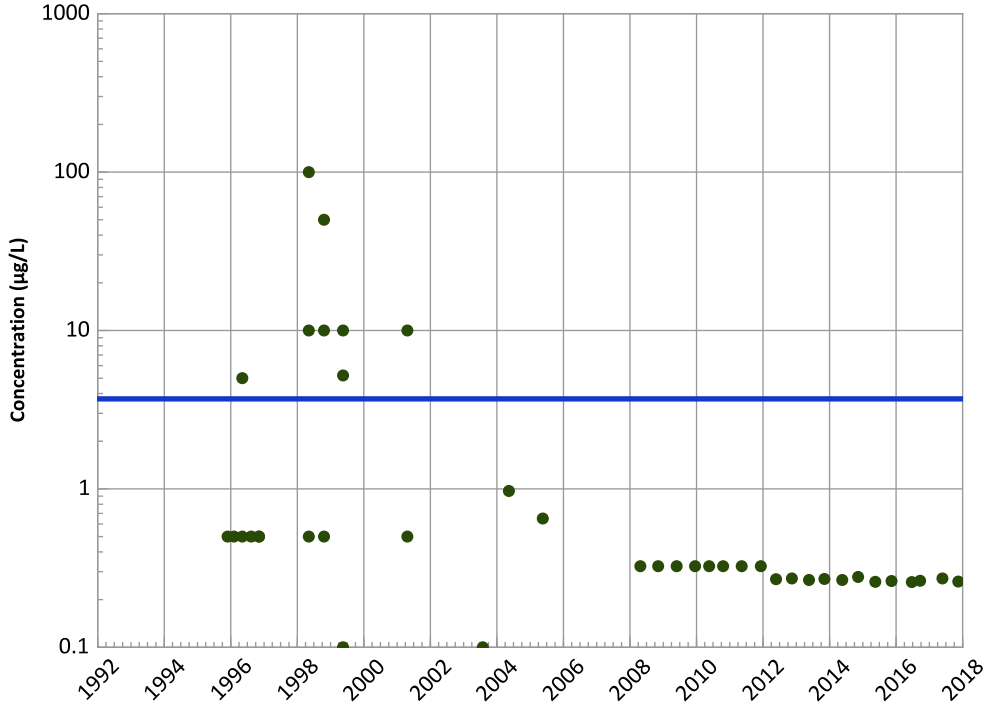


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/27/1995 to 11/14/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1010 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

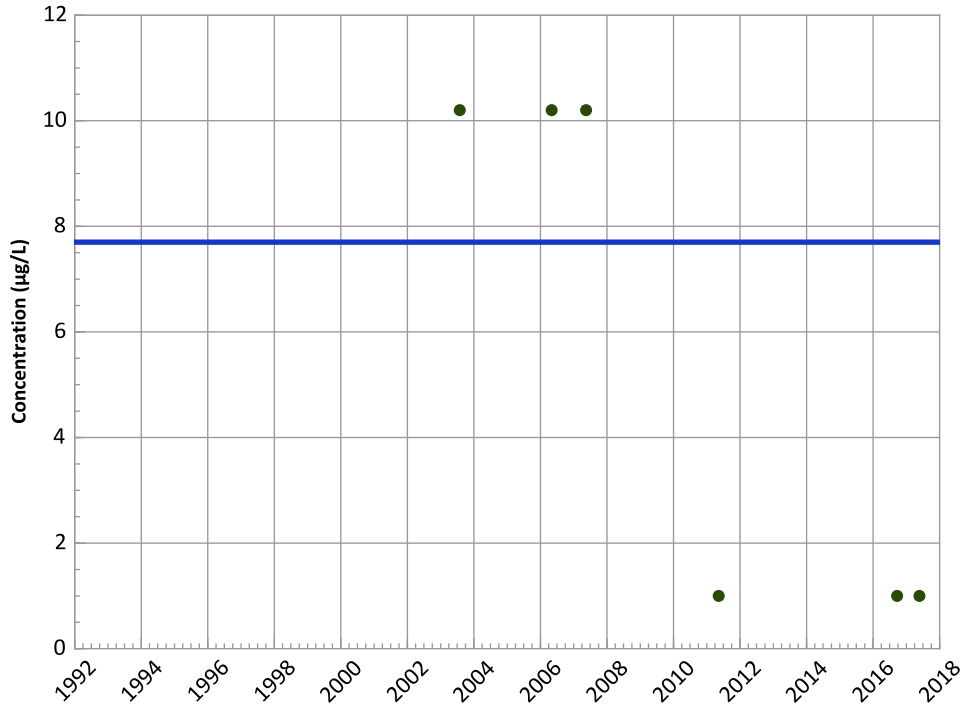
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,4-Dioxane (p-Dioxane) Trend



Concentration Trend

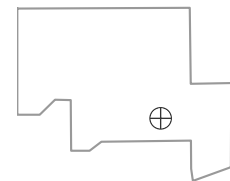
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

Well Location

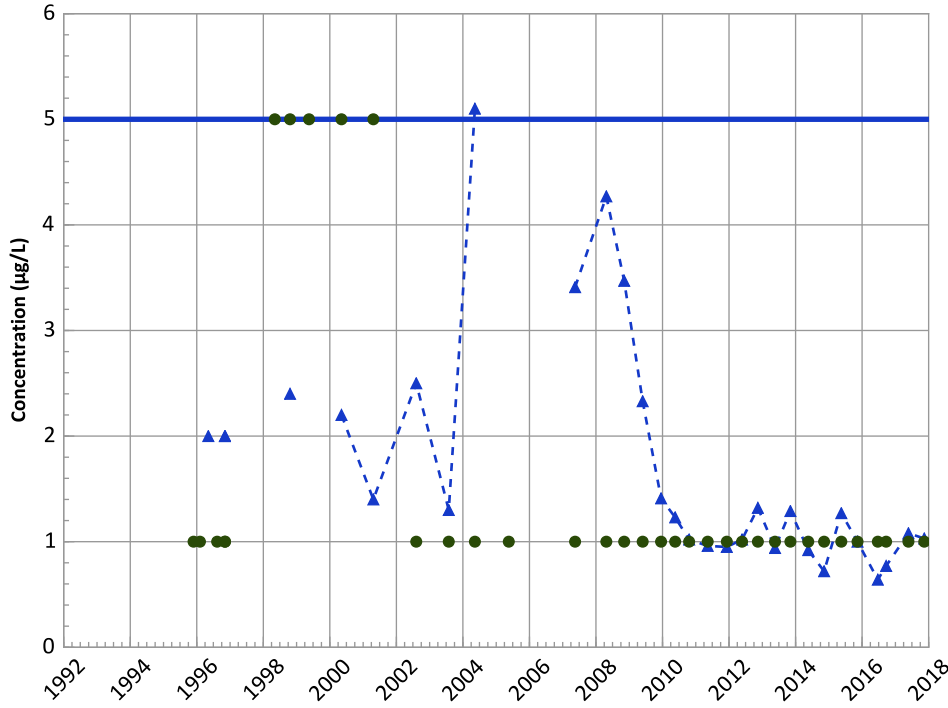


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/27/1995 to 11/14/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1010 in Perched Aquifer
USDOE/NNSA Pantex Plant

Tetrachloroethylene (PCE) Trend



Concentration Trend

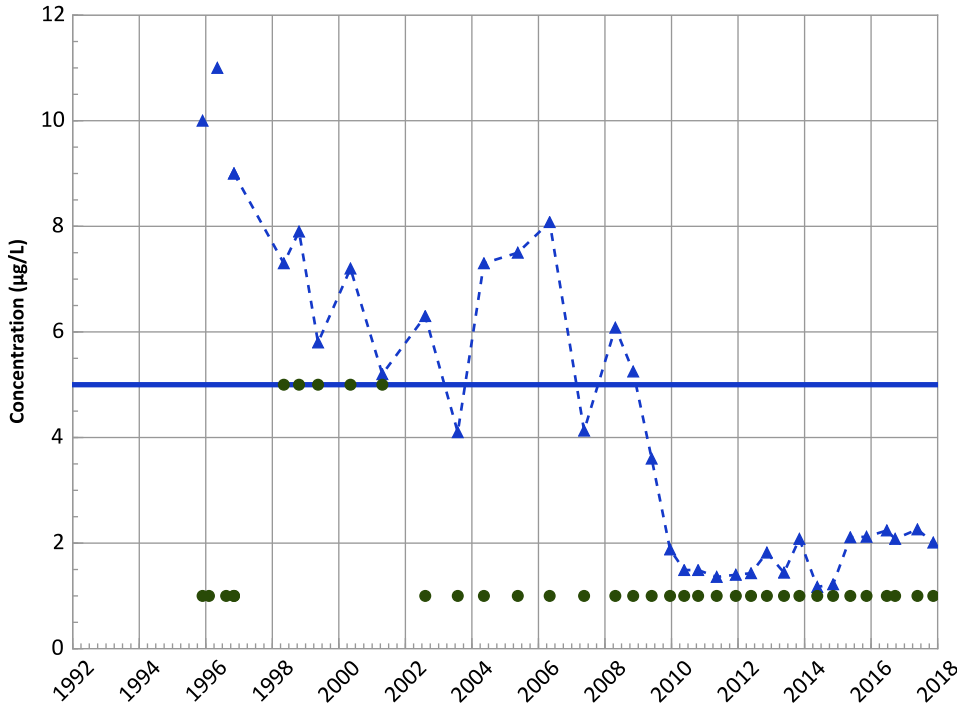
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

Trichloroethene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Decreasing

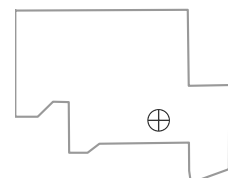
MAROS Linear Regression Method

Data ():
Probably Increasing
All Data
Decreasing

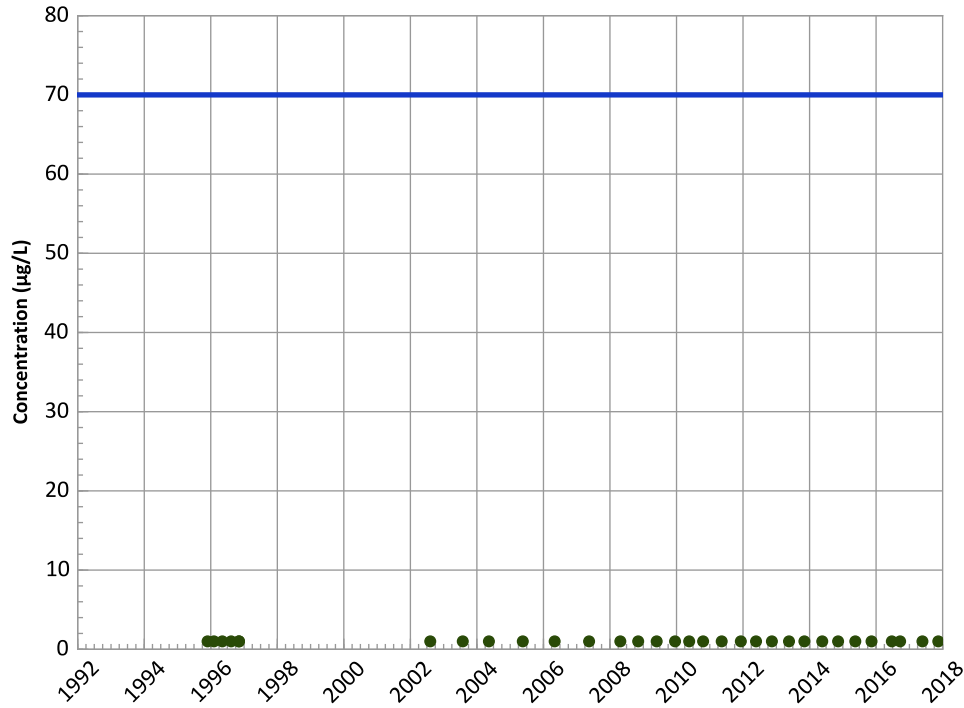
Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/27/1995 to 11/14/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



**PTX06-1010 in Perched Aquifer
USDOE/NNSA Pantex Plant
cis-1,2-Dichloroethene Trend**



Concentration Trend

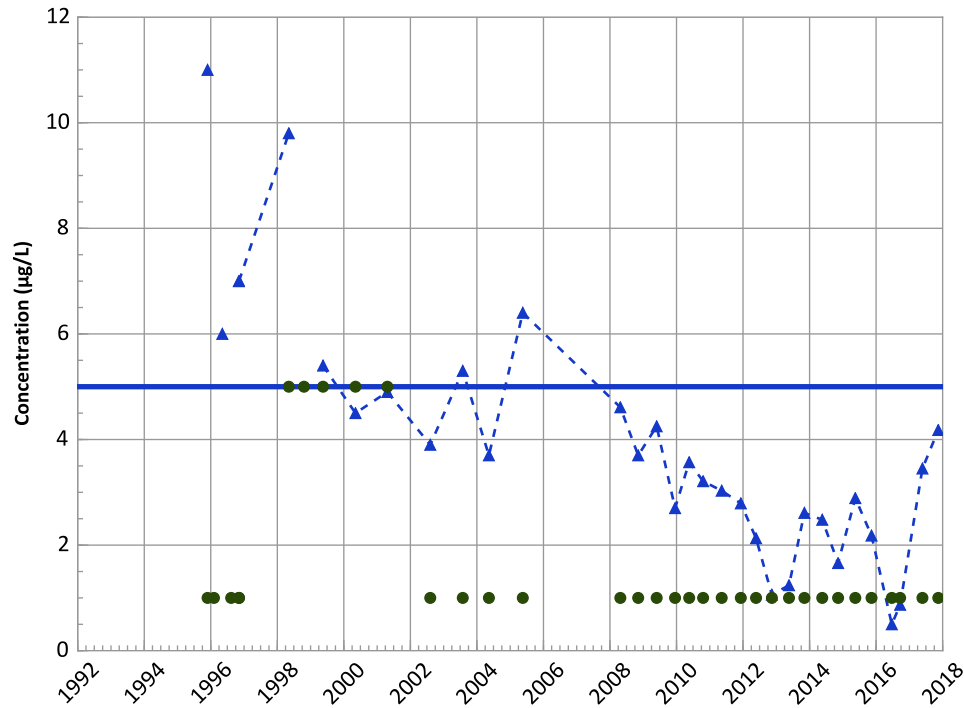
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,2-Dichloroethane Trend



Concentration Trend

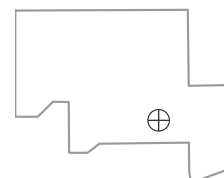
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Stable
All Data
Decreasing

Well Location

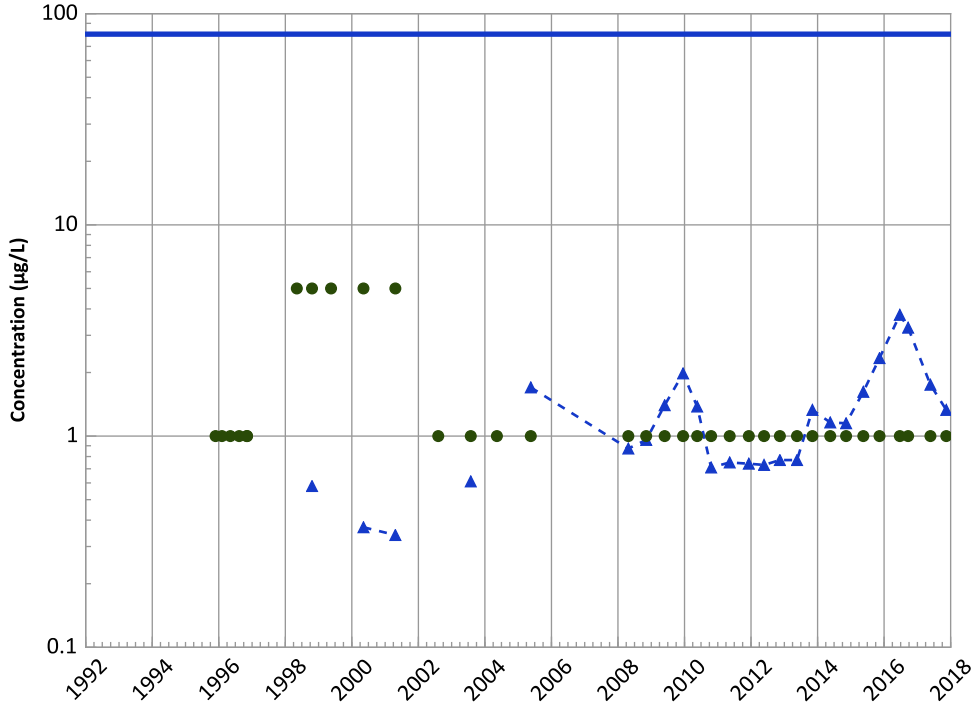


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/27/1995 to 11/14/2017
Analysis Date: 03/21/2018

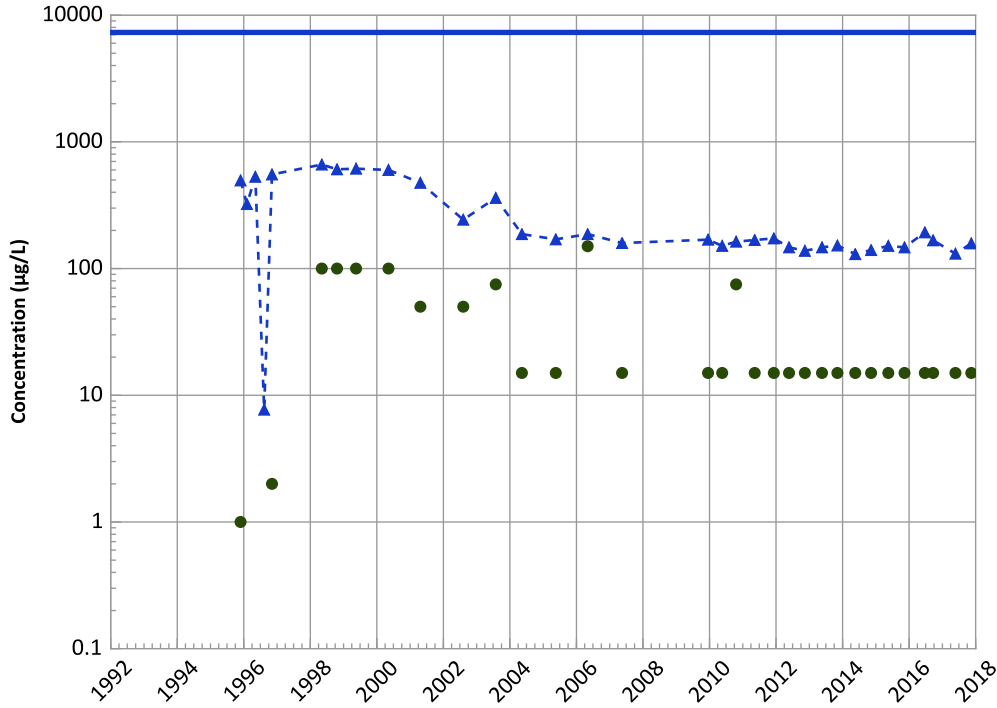
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1010 in Perched Aquifer
USDOE/NNSA Pantex Plant

Chloroform Trend



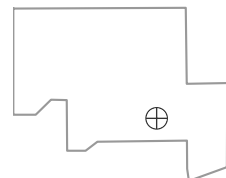
Boron Trend



Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 11/27/1995 to 11/14/2017
 Analysis Date: 03/21/2018

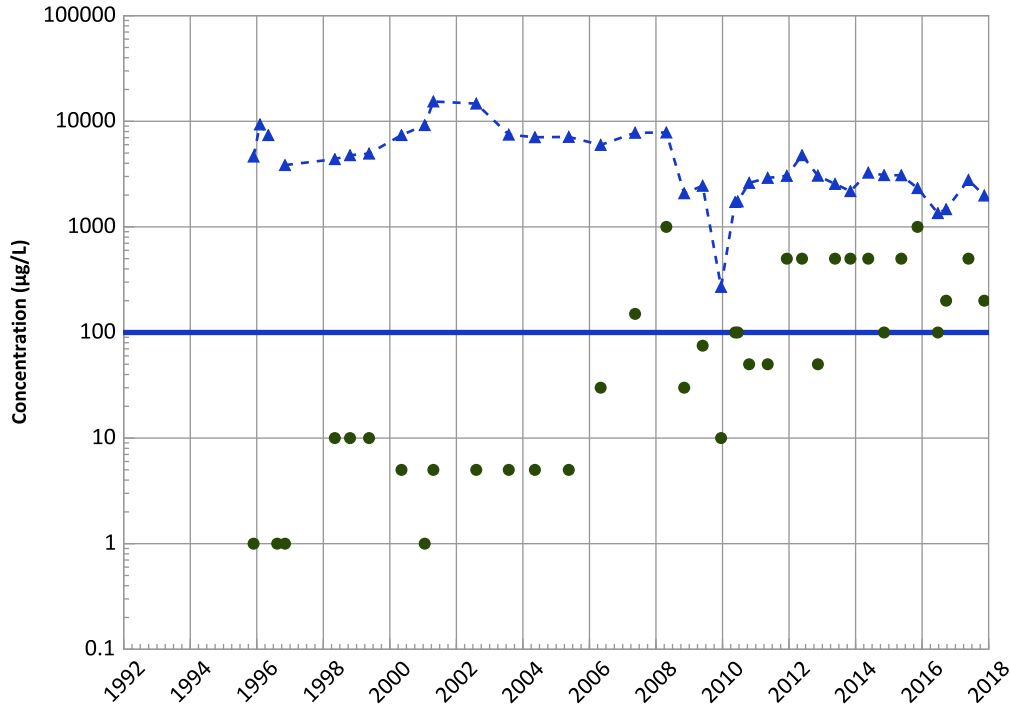
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1010 in Perched Aquifer
USDOE/NNSA Pantex Plant

Chromium, Total Trend



Concentration Trend

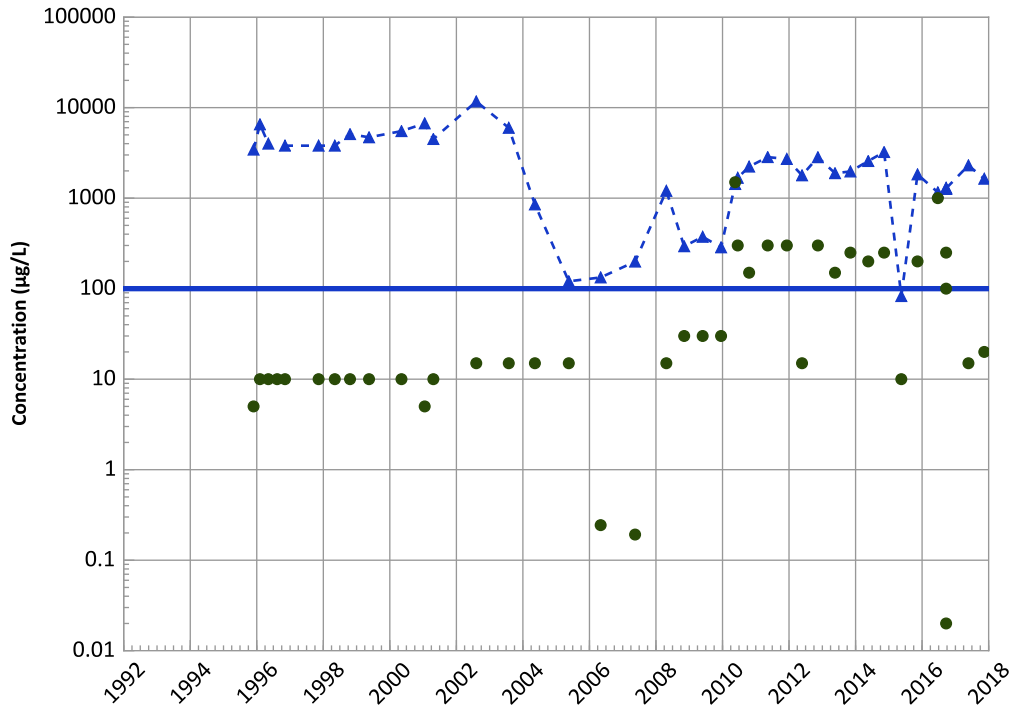
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

Chromium, Hexavalent Trend



Concentration Trend

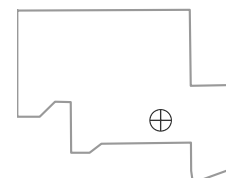
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Stable
All Data
Decreasing

Well Location

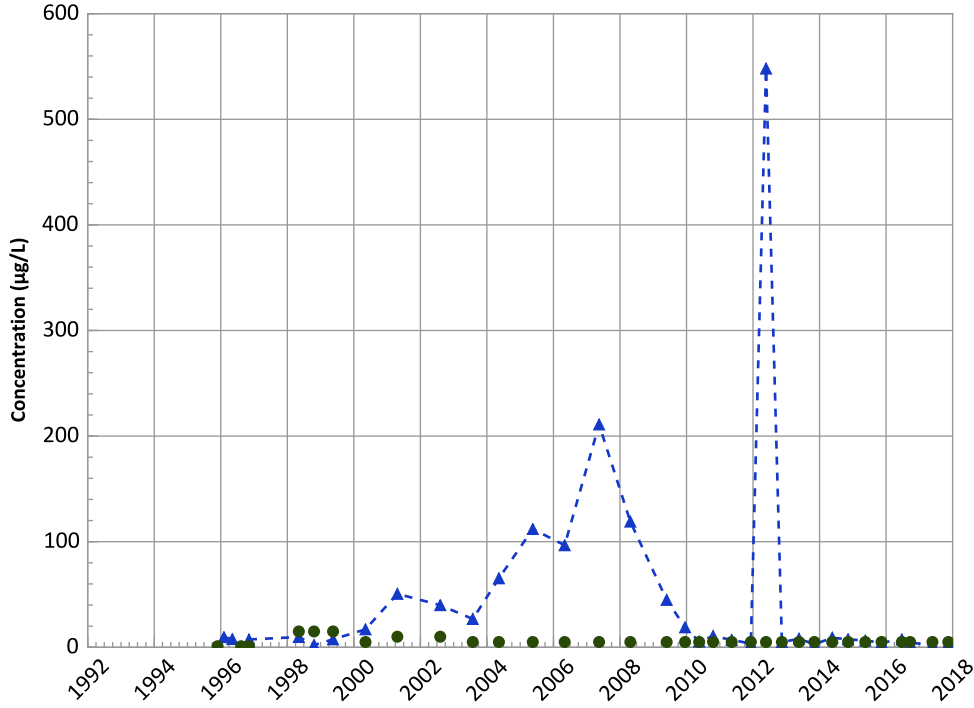


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/27/1995 to 11/14/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1010 in Perched Aquifer
USDOE/NNSA Pantex Plant

Manganese Trend



Concentration Trend

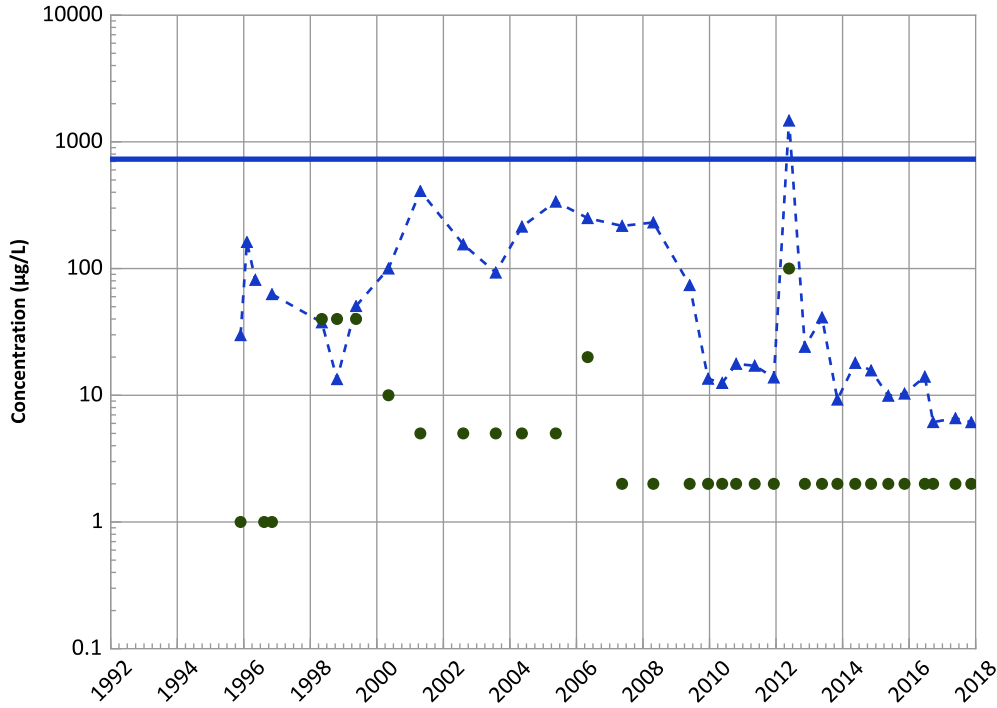
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Probably Decreasing
All Data
No Trend

Nickel Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

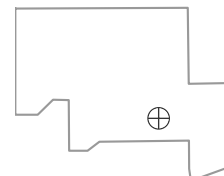
MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/27/1995 to 11/14/2017
Analysis Date: 03/21/2018

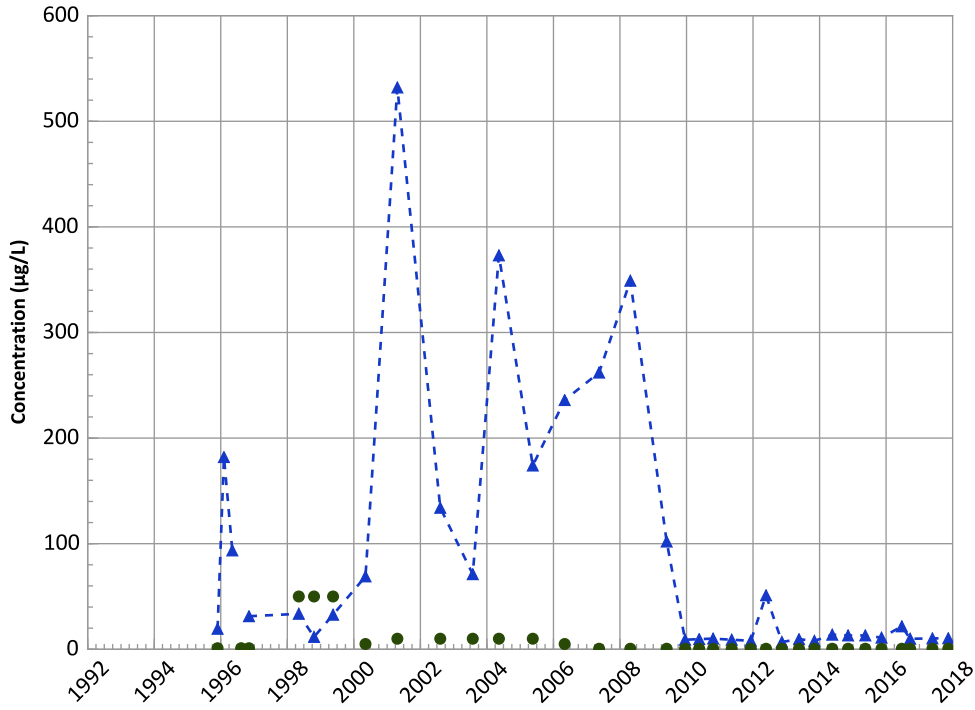
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1010 in Perched Aquifer
USDOE/NNSA Pantex Plant

Molybdenum Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Decreasing

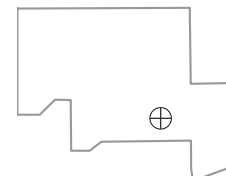
MAROS Linear Regression Method

Data ():
Stable
All Data
Decreasing

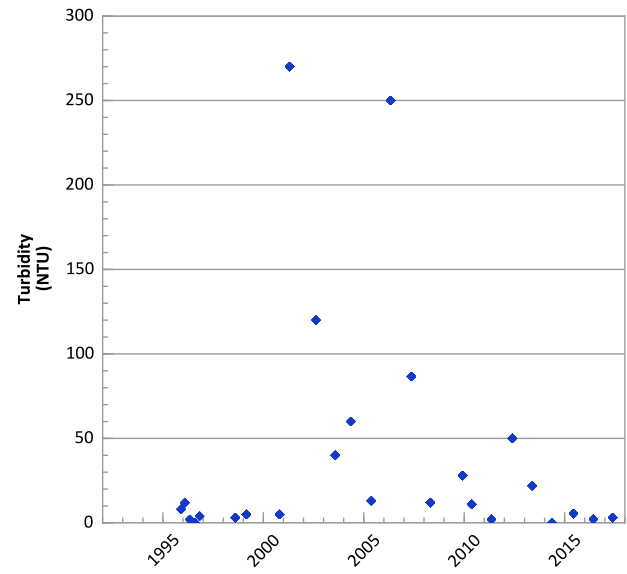
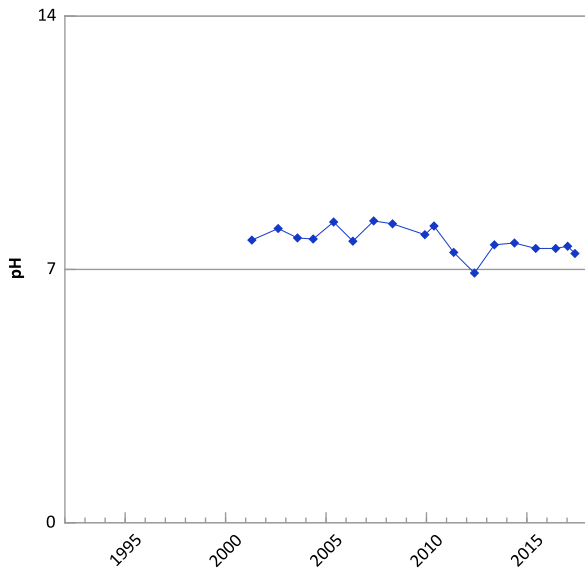
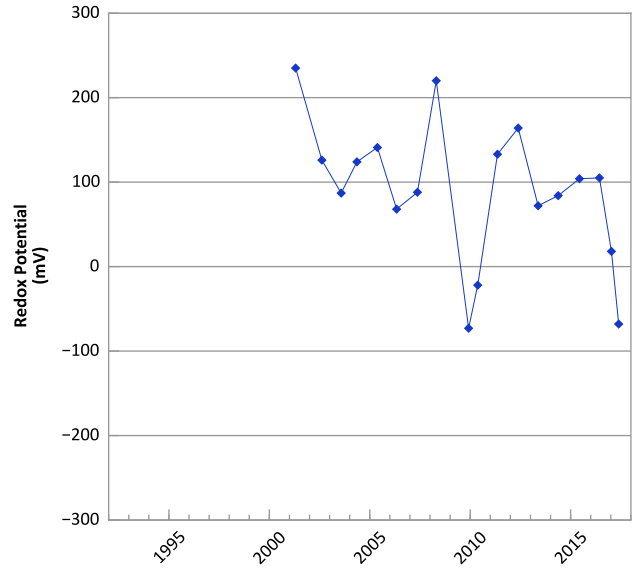
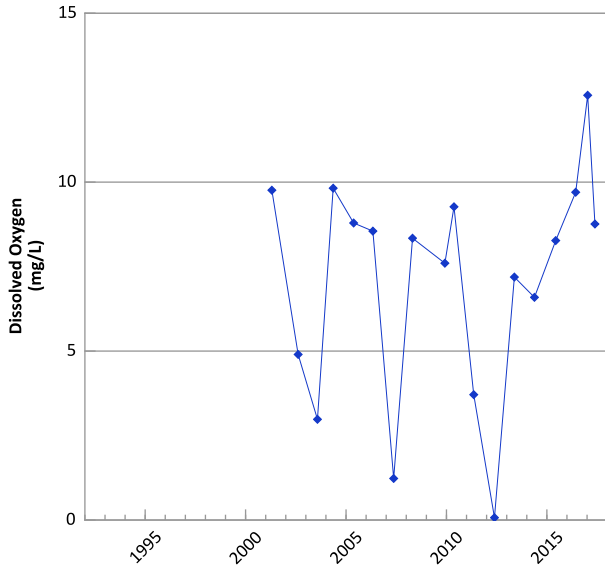
Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/27/1995 to 11/14/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

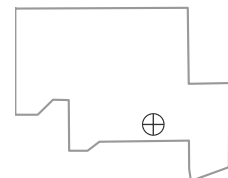


**PTX06-1011 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



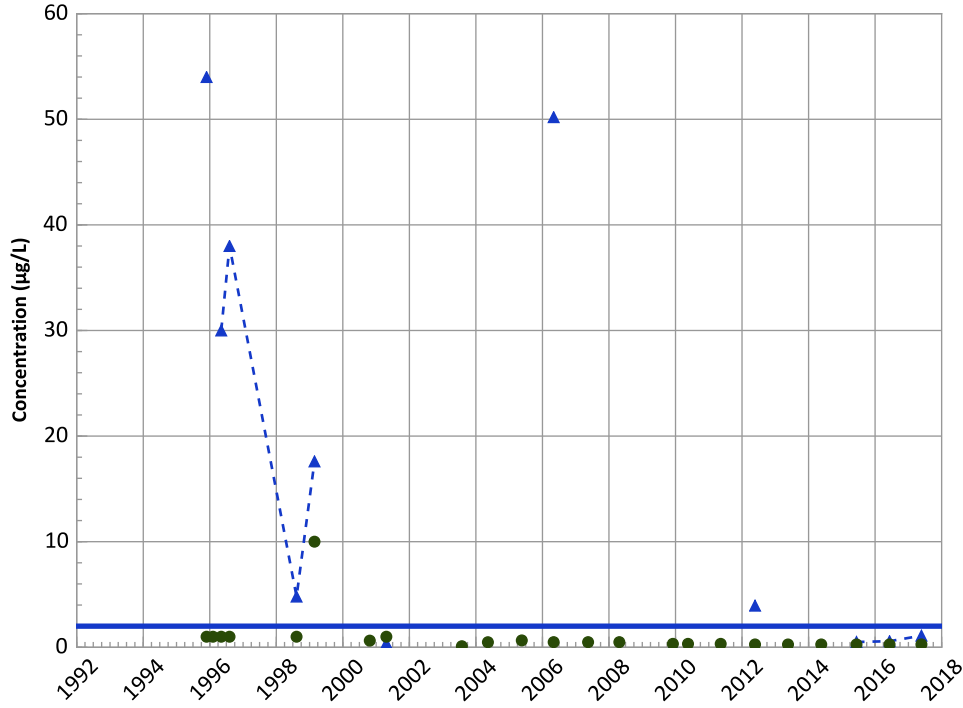
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 11/27/1995 to 05/24/2017
 Analysis Date: 03/21/2018

Well Location



PTX06-1011 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

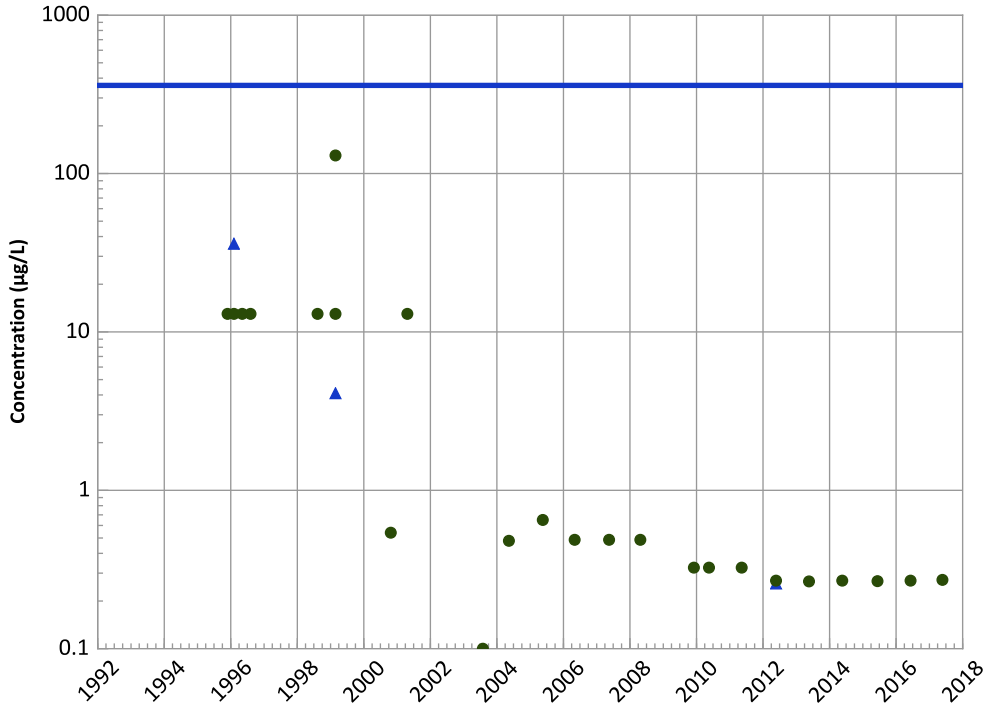
MAROS Mann-Kendall Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

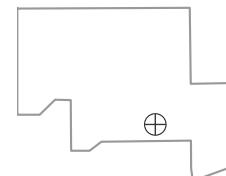
MAROS Mann-Kendall Method

Data ():
N/A (<4 Detections in Dataset)
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
N/A (<4 Detections in Dataset)

Well Location

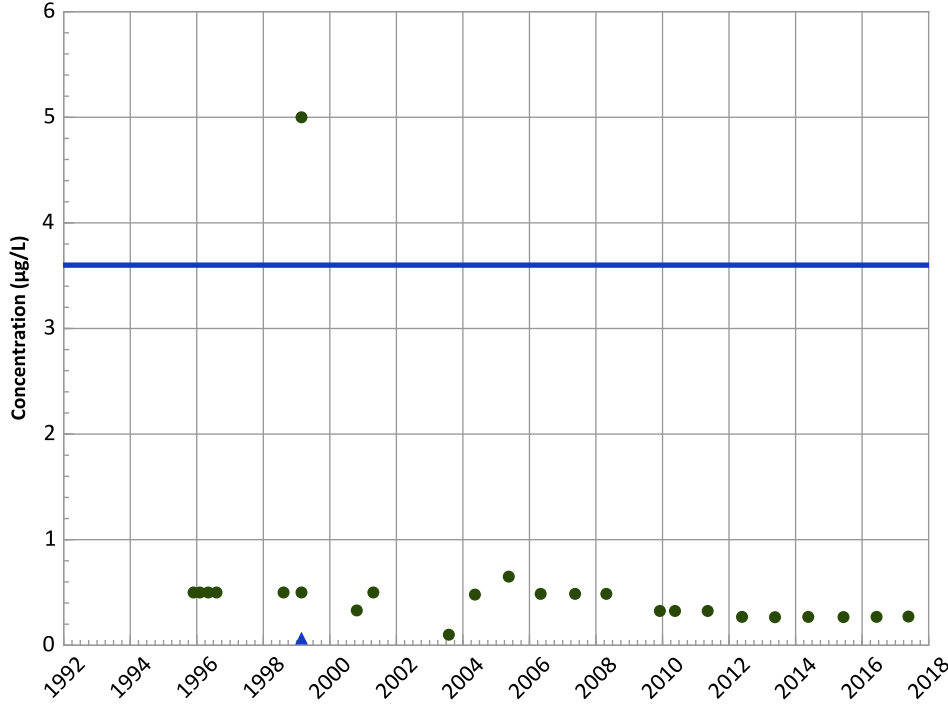


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/27/1995 to 05/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1011 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

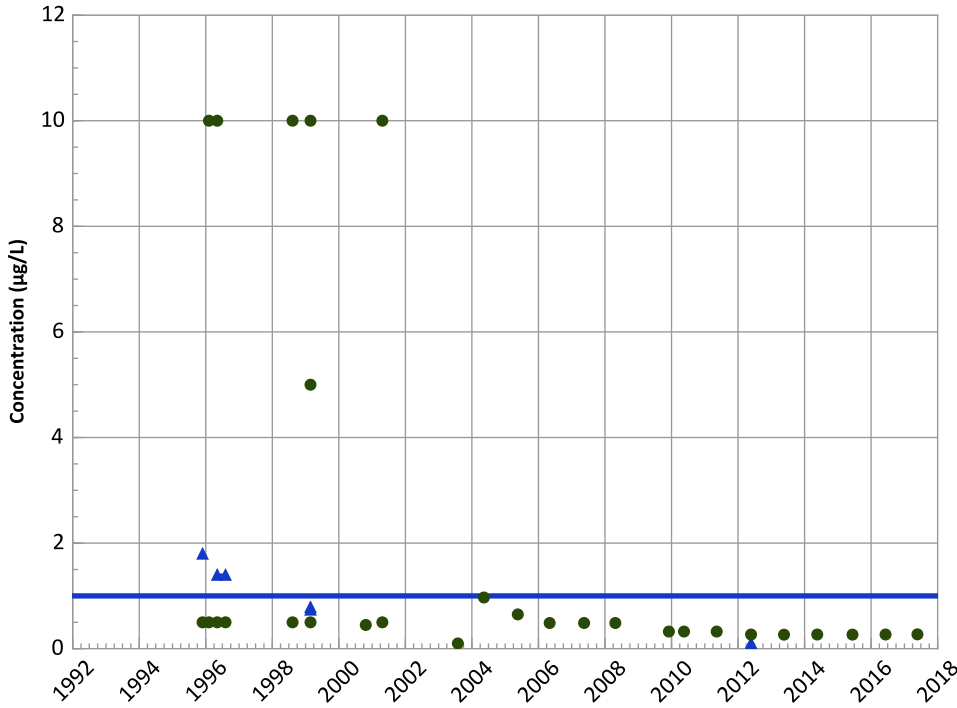
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

2,4-Dinitrotoluene Trend



Concentration Trend

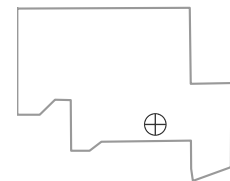
MAROS Mann-Kendall Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

Well Location

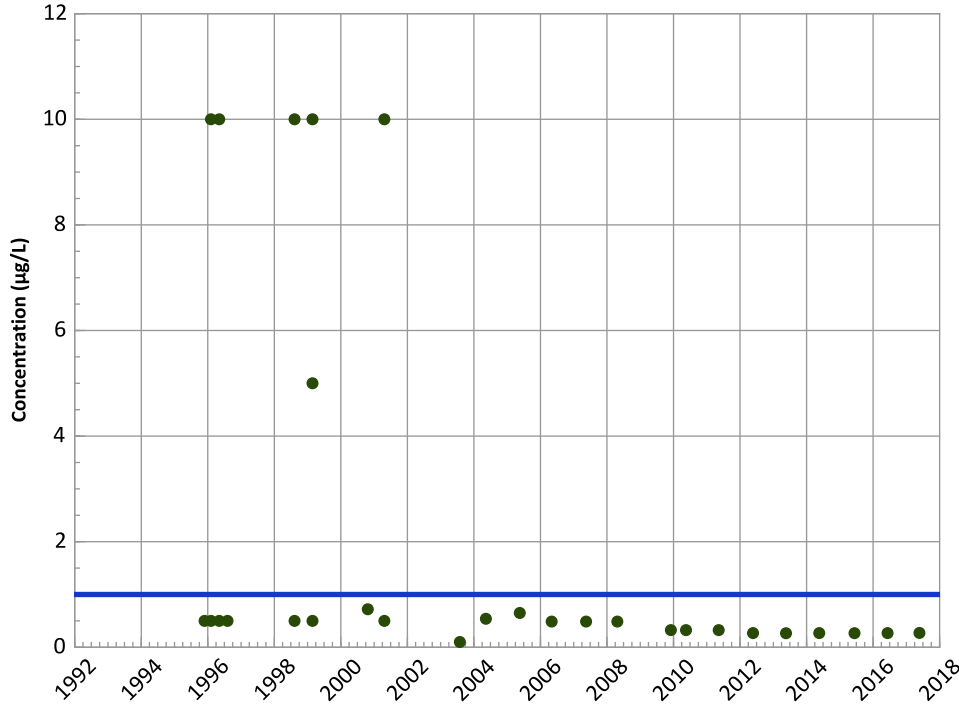


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/27/1995 to 05/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1011 in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

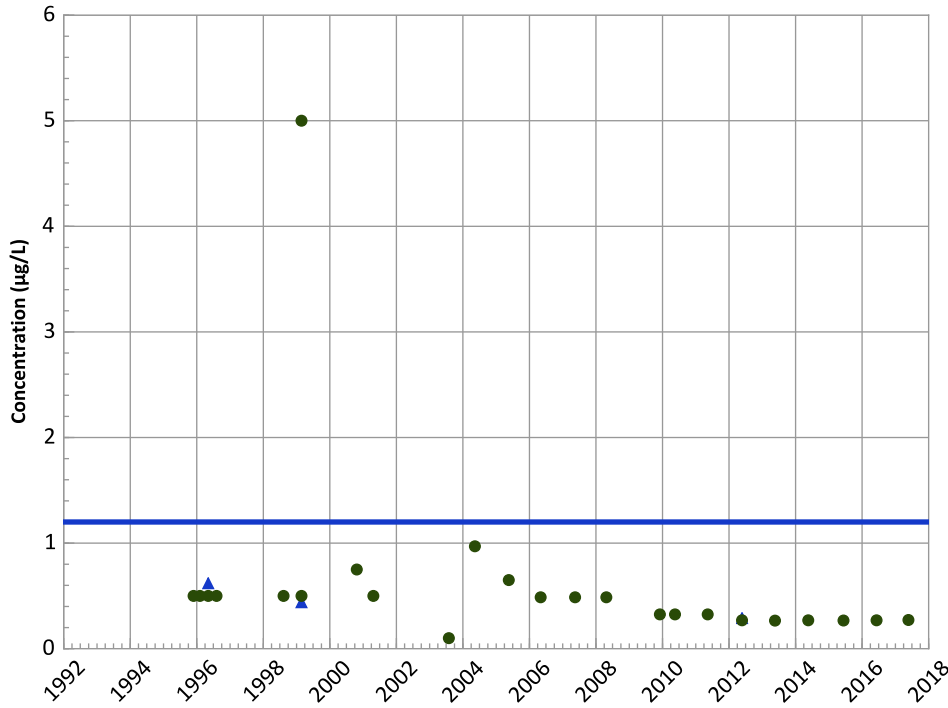
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

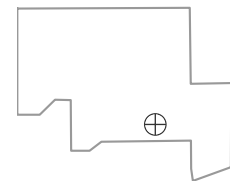
MAROS Mann-Kendall Method

Data ():
N/A (<4 Detections in Dataset)
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
N/A (<4 Detections in Dataset)

Well Location

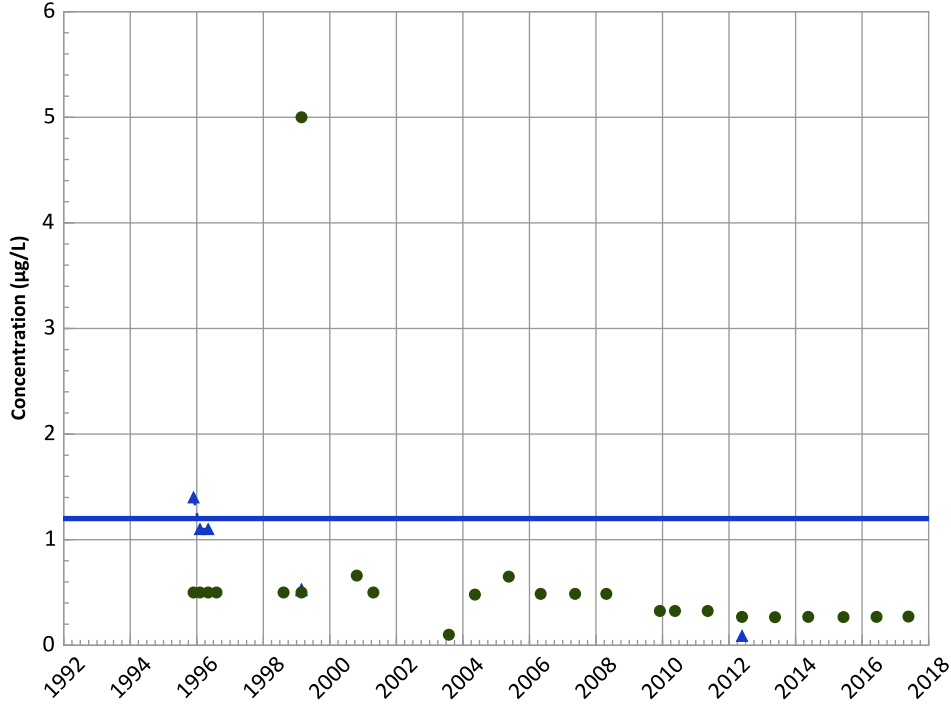


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/27/1995 to 05/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1011 in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Detections in Dataset)

All Data

Decreasing

MAROS Linear Regression Method

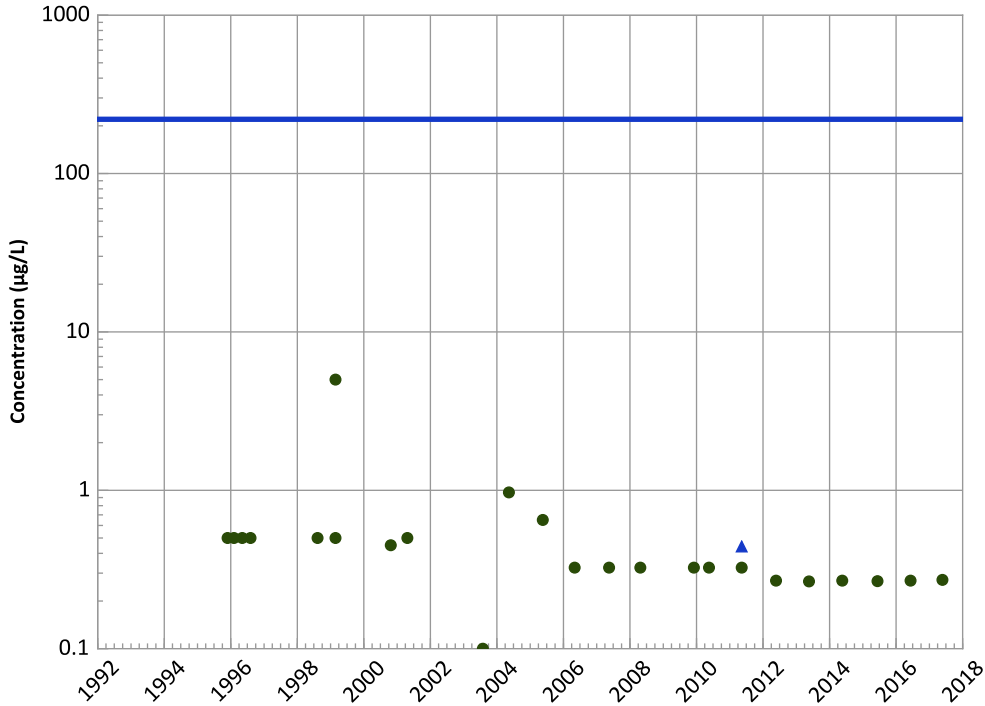
Data ():

N/A (<4 Detections in Dataset)

All Data

Decreasing

1,3,5-Trinitrobenzene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

All Non-Detect

All Data

N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

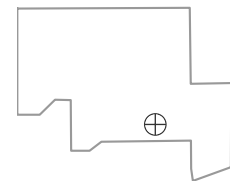
Data ():

All Non-Detect

All Data

N/A (<4 Detections in Dataset)

Well Location

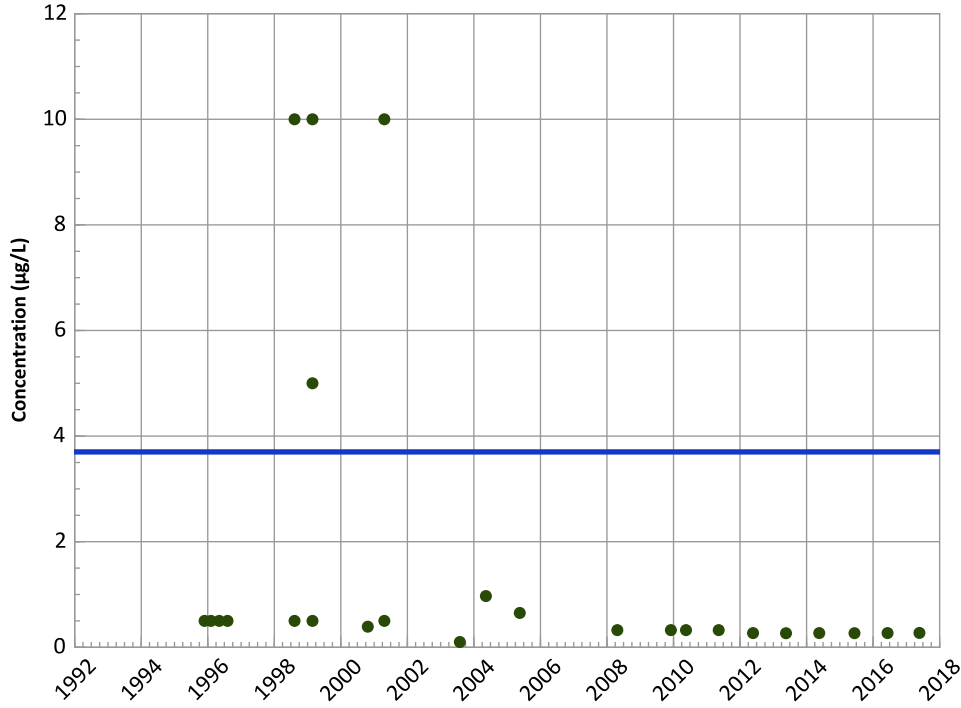


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/27/1995 to 05/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1011 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

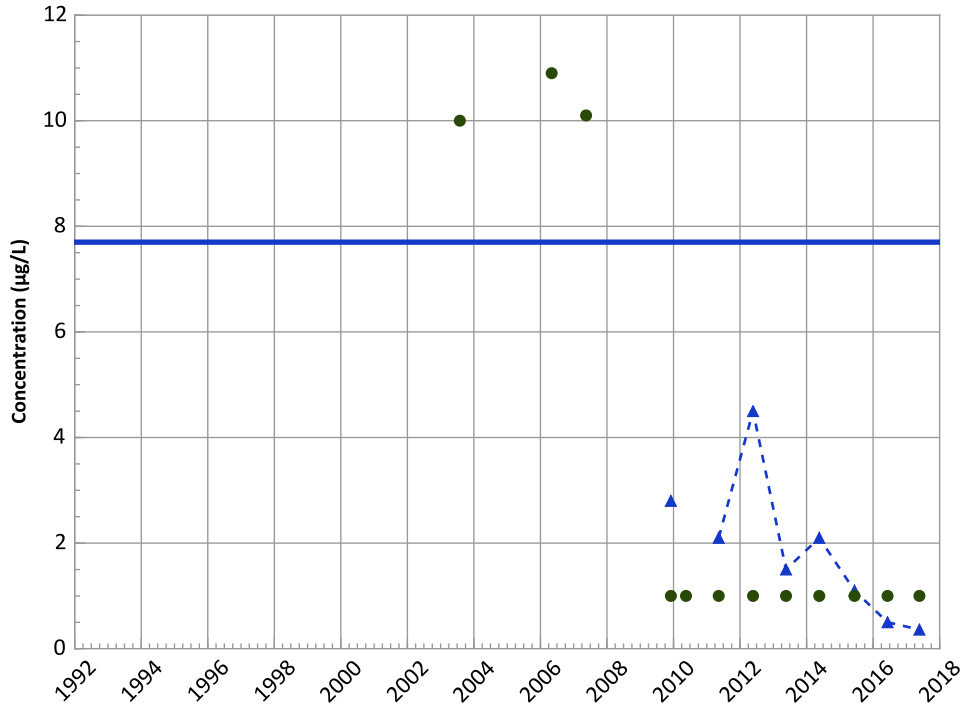
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,4-Dioxane (p-Dioxane) Trend



Concentration Trend

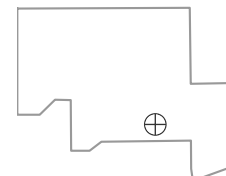
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

Well Location

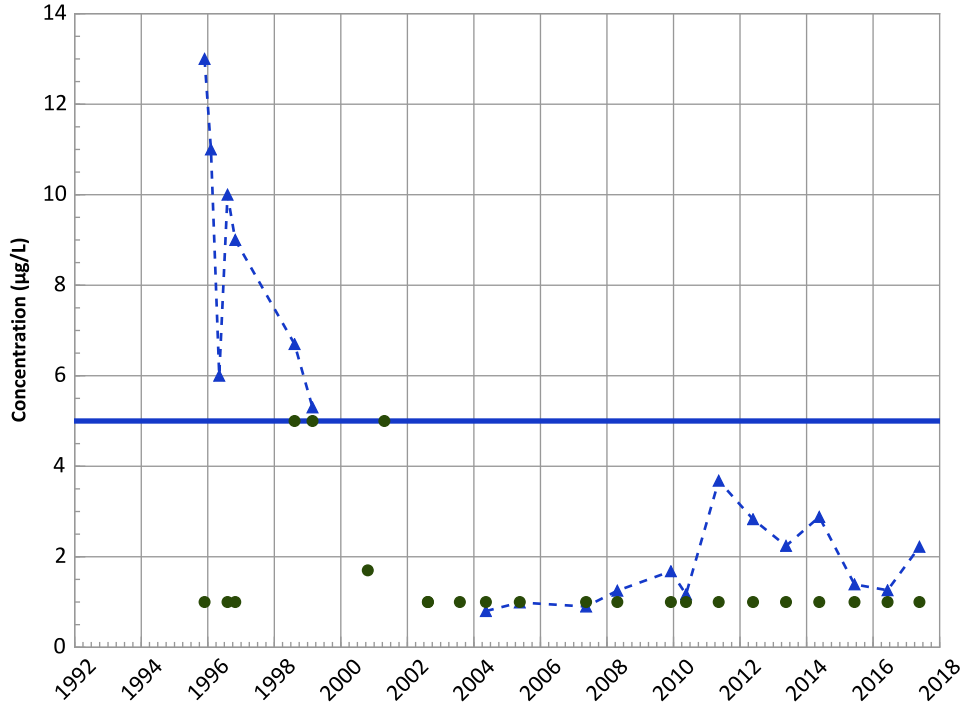


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/27/1995 to 05/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1011 in Perched Aquifer
USDOE/NNSA Pantex Plant

Tetrachloroethylene (PCE) Trend



Concentration Trend

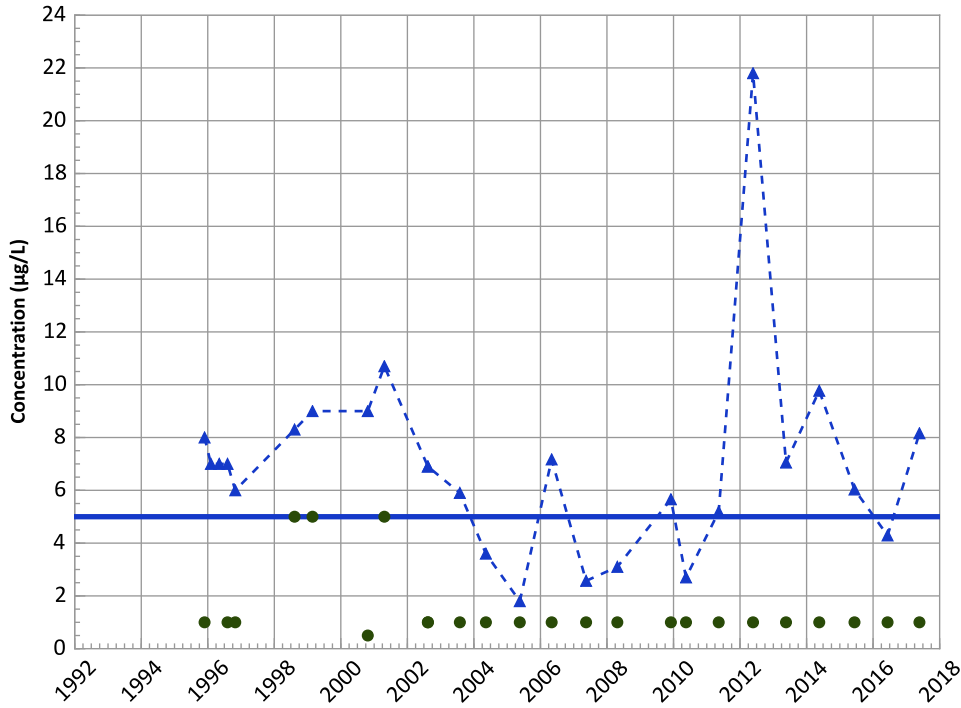
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

Trichloroethene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

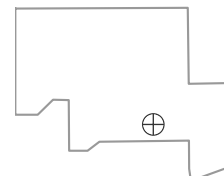
MAROS Linear Regression Method

Data ():
Decreasing
All Data
Stable

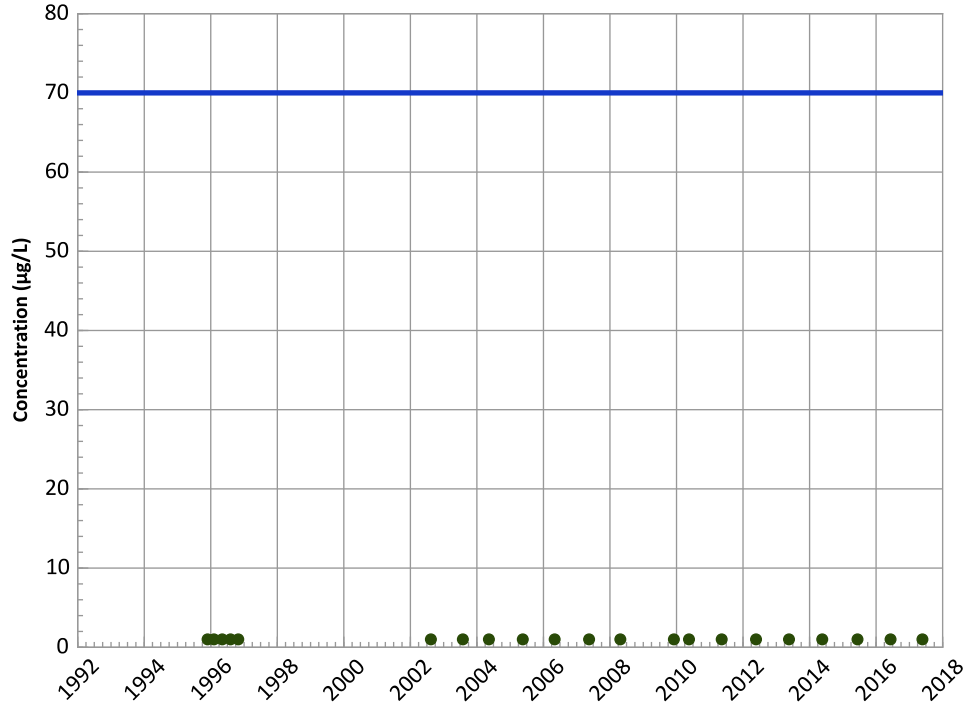
Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/27/1995 to 05/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

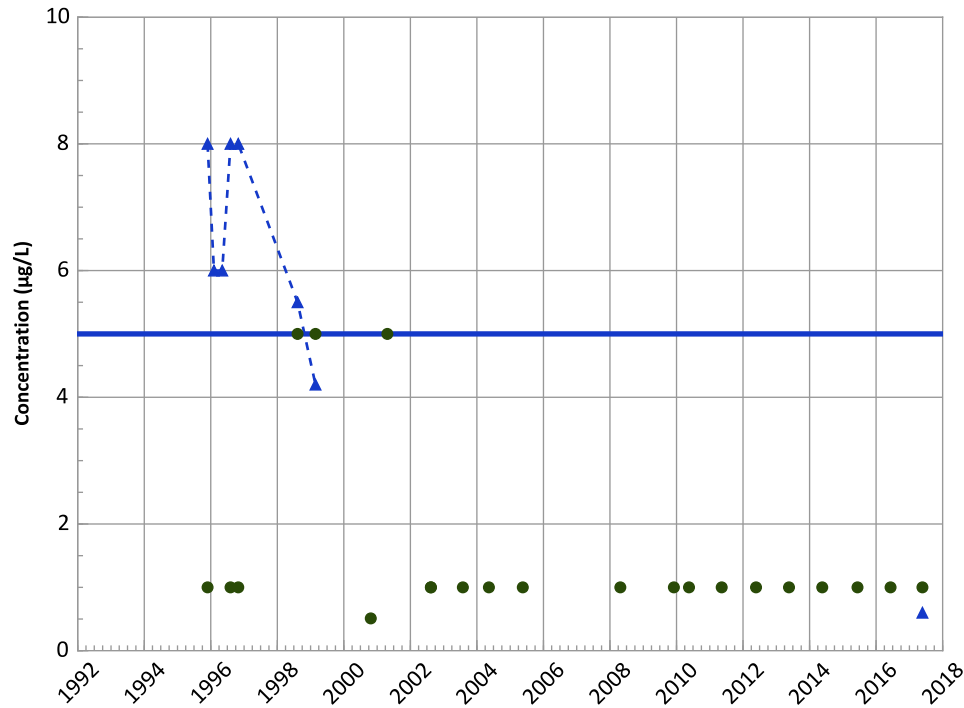
Well Location



**PTX06-1011 in Perched Aquifer
USDOE/NNSA Pantex Plant
cis-1,2-Dichloroethene Trend**



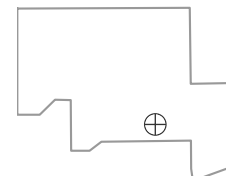
1,2-Dichloroethane Trend



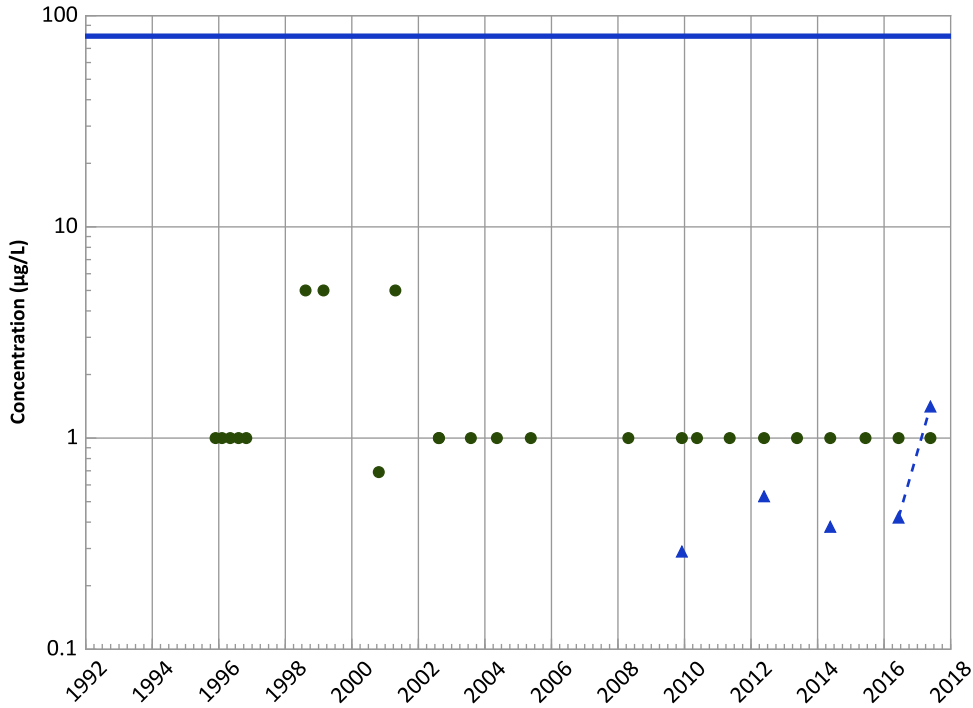
Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/27/1995 to 05/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



**PTX06-1011 in Perched Aquifer
USDOE/NNSA Pantex Plant
Chloroform Trend**

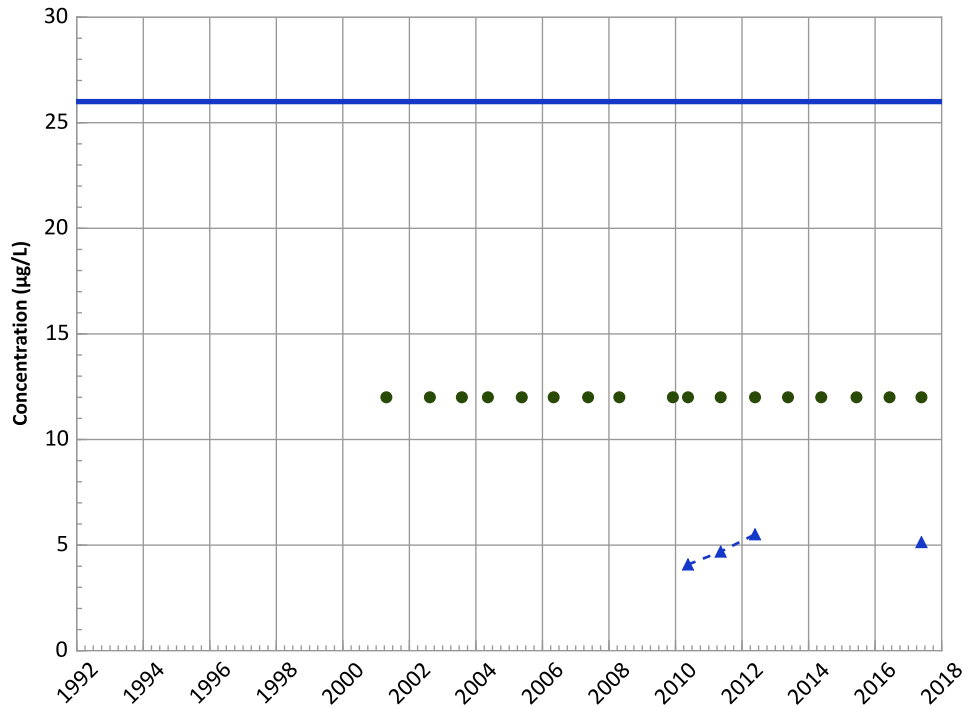


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

MAROS Linear Regression Method
Data ():
N/A (<4 Detections in Dataset)
All Data
Probably Increasing

Perchlorate Trend

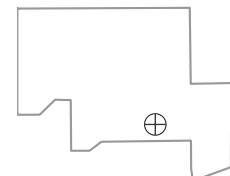


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

MAROS Linear Regression Method
Data ():
N/A (<4 Detections in Dataset)
All Data
No Trend

Well Location

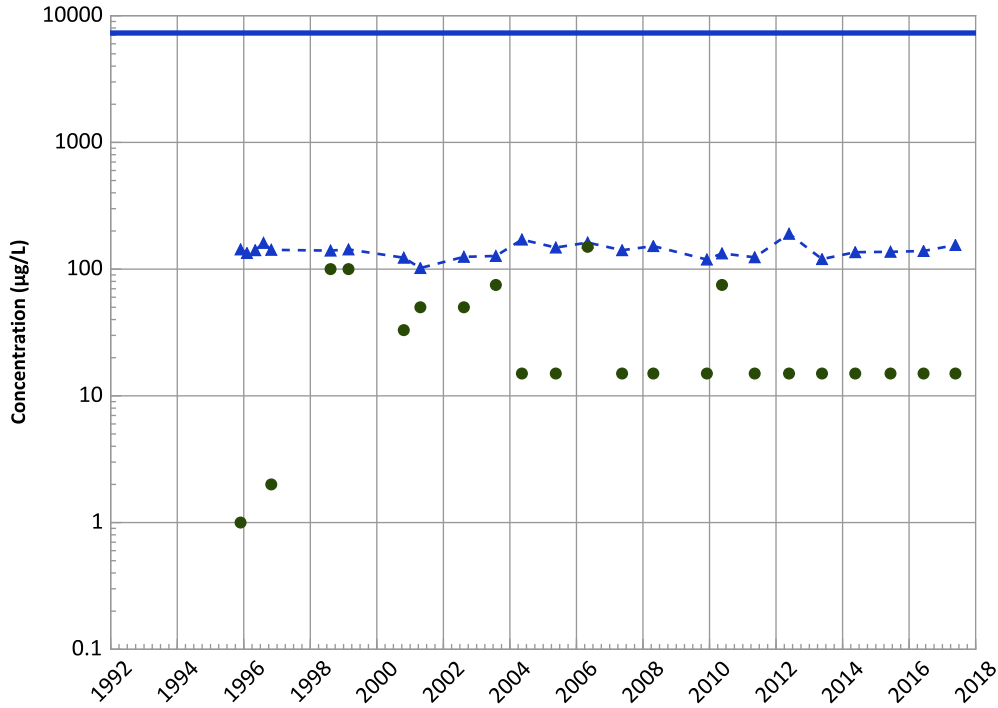


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/27/1995 to 05/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1011 in Perched Aquifer
USDOE/NNSA Pantex Plant

Boron Trend



Concentration Trend

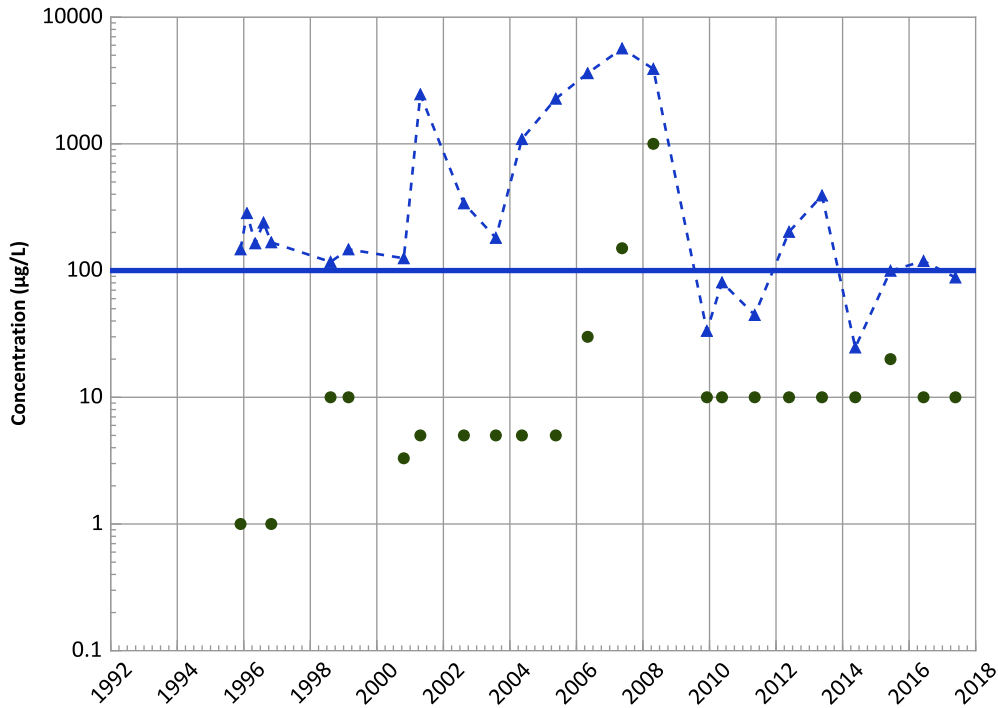
MAROS Mann-Kendall Method

Data ():
No Trend
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Stable
All Data
Increasing

Chromium, Total Trend



Concentration Trend

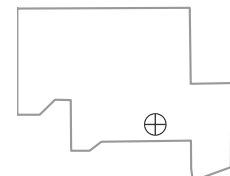
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Stable
All Data
No Trend

Well Location

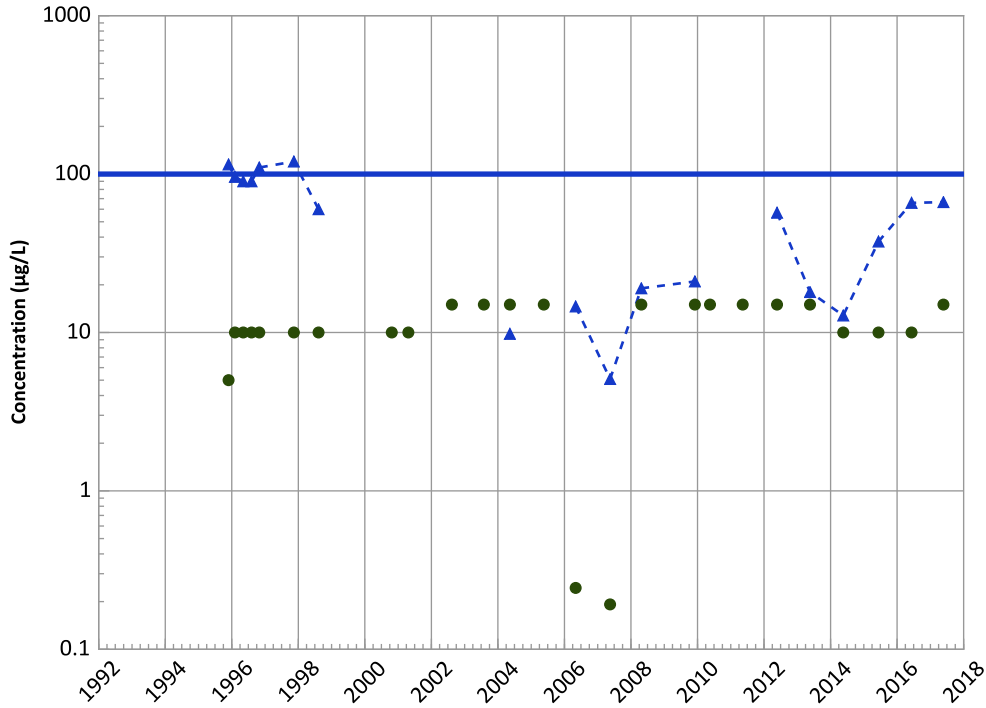


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/27/1995 to 05/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1011 in Perched Aquifer
USDOE/NNSA Pantex Plant

Chromium, Hexavalent Trend



Concentration Trend

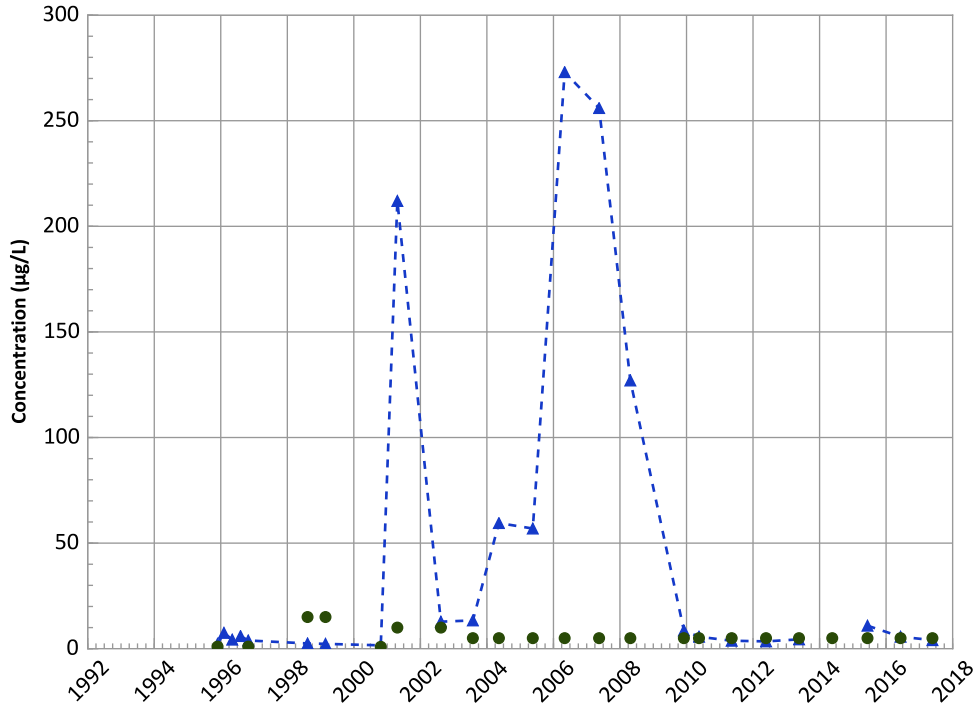
MAROS Mann-Kendall Method

Data ():
No Trend
All Data
Decreasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
Decreasing

Manganese Trend



Concentration Trend

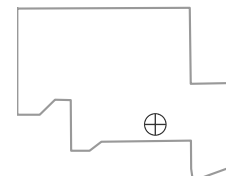
MAROS Mann-Kendall Method

Data ():
No Trend
All Data
No Trend

MAROS Linear Regression Method

Data ():
No Trend
All Data
No Trend

Well Location

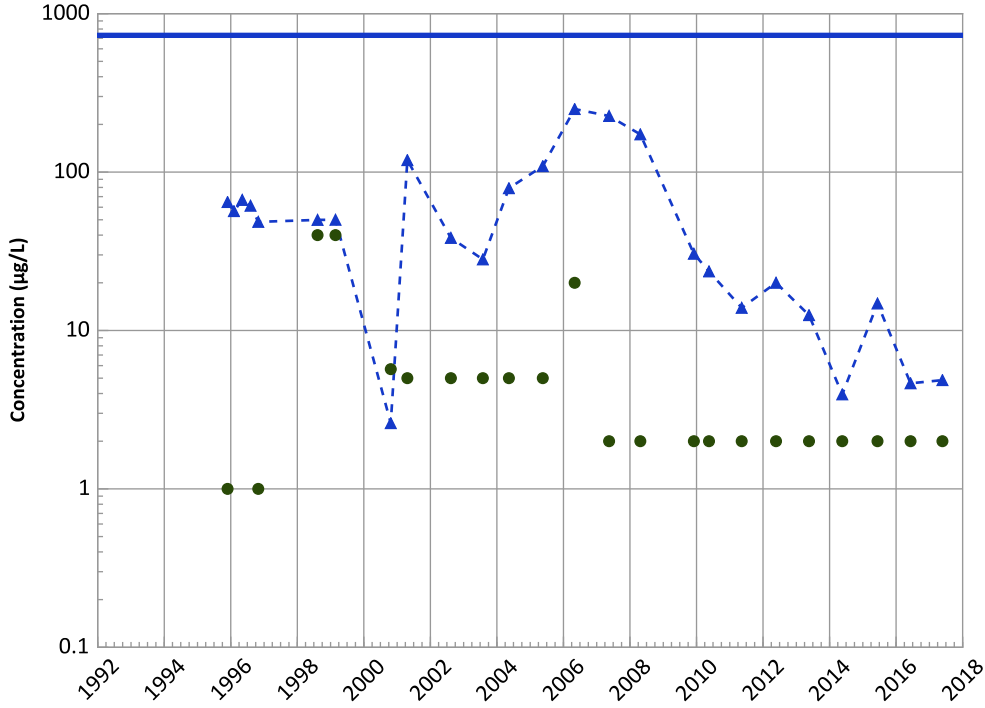


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/27/1995 to 05/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1011 in Perched Aquifer
USDOE/NNSA Pantex Plant

Nickel Trend



Concentration Trend

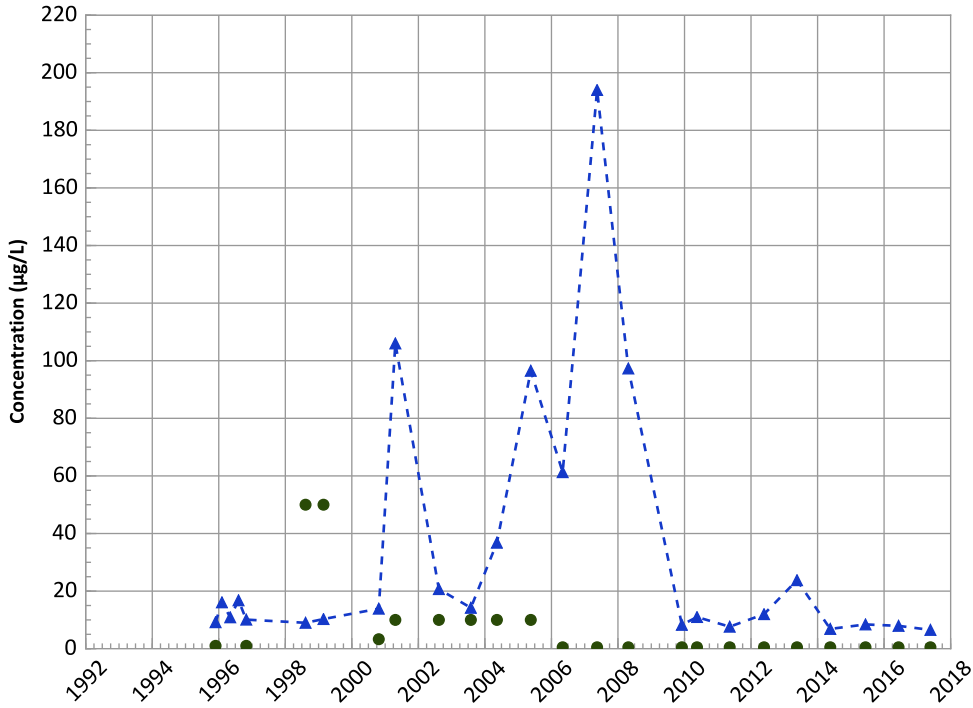
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Stable
All Data
Decreasing

Molybdenum Trend



Concentration Trend

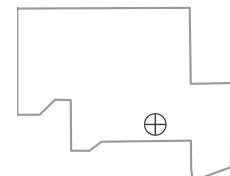
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Stable
All Data
No Trend

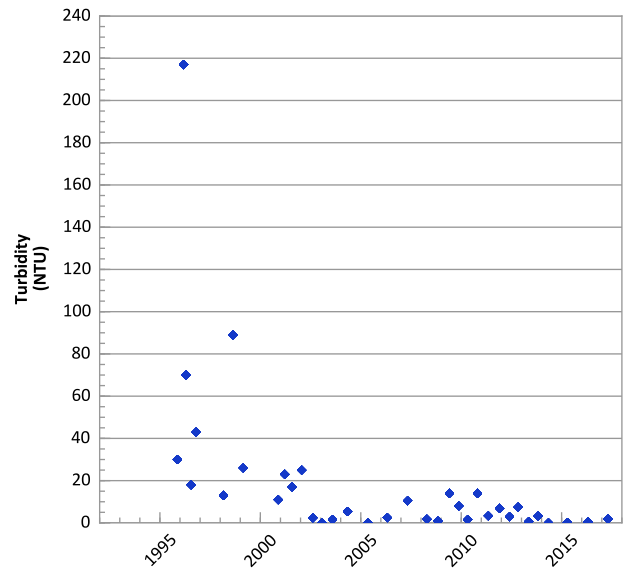
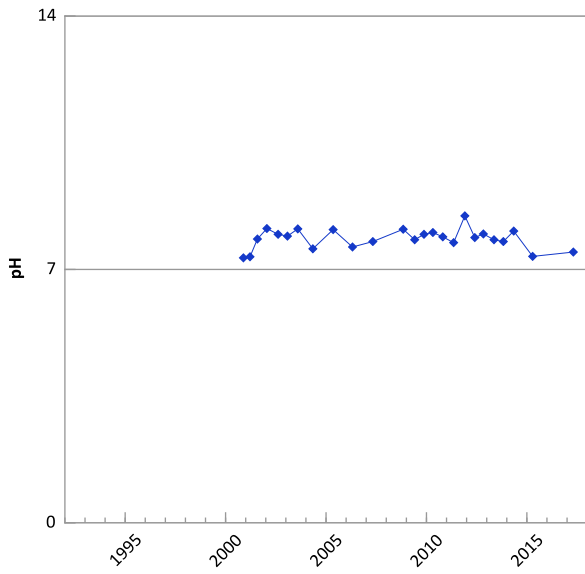
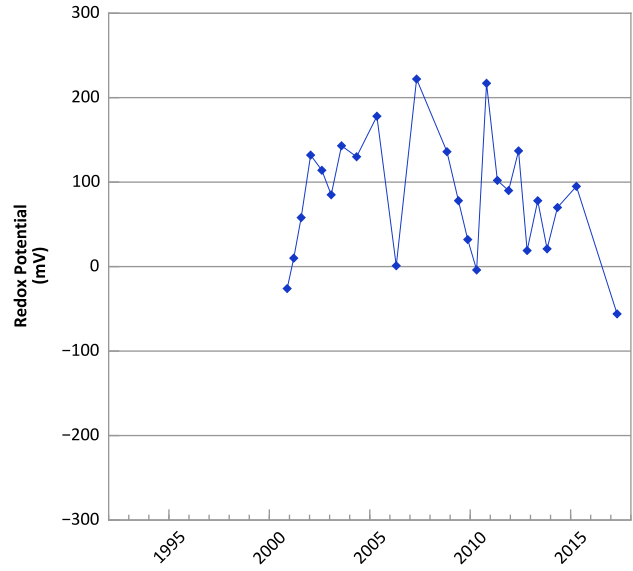
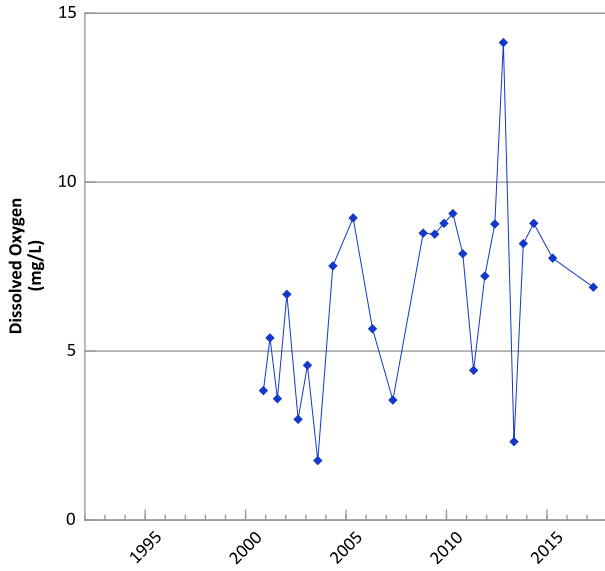
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/27/1995 to 05/24/2017
Analysis Date: 03/21/2018

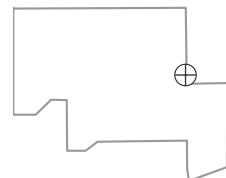
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1013 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



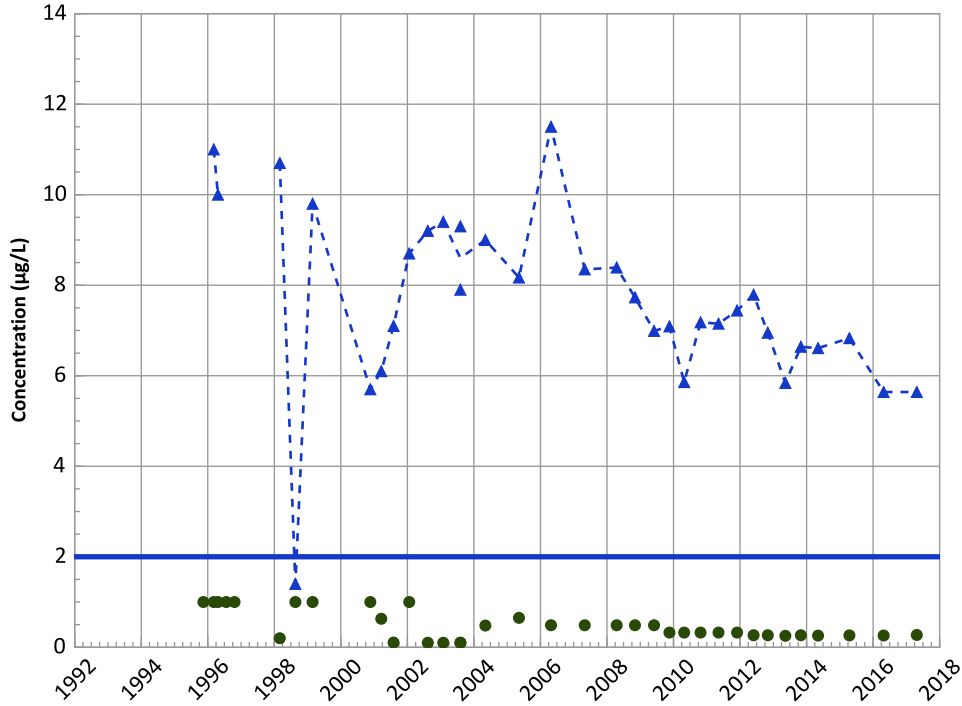
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 11/14/1995 to 04/25/2017
 Analysis Date: 03/21/2018

Well Location



PTX06-1013 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

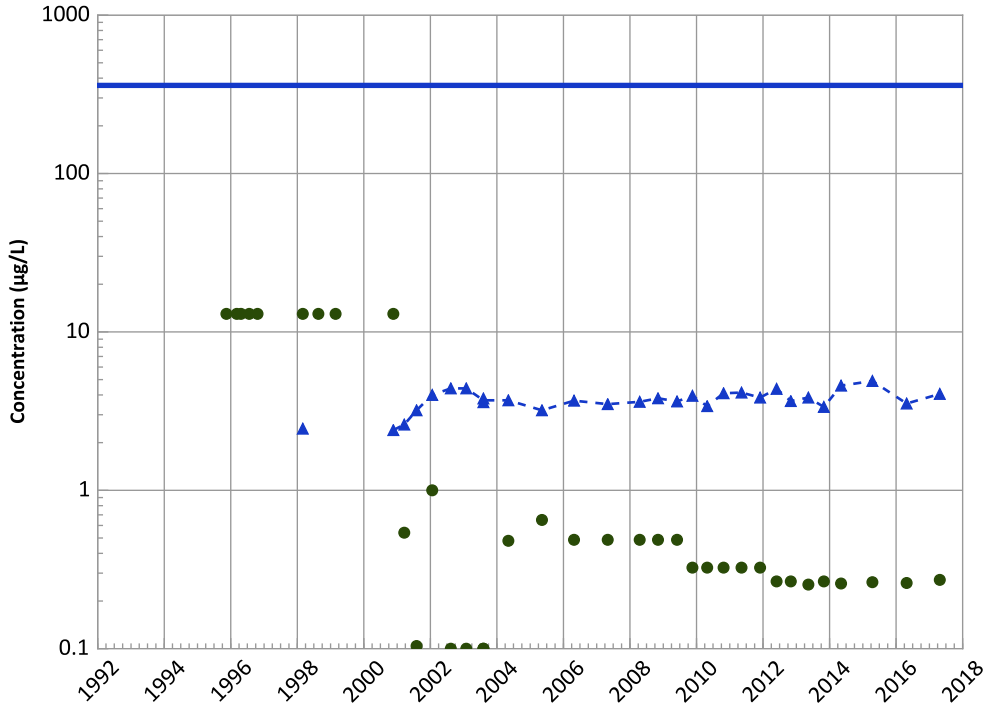
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Probably Decreasing
All Data
Stable

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
No Trend
All Data
Decreasing

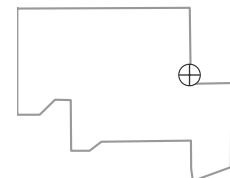
MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/14/1995 to 04/25/2017
Analysis Date: 03/21/2018

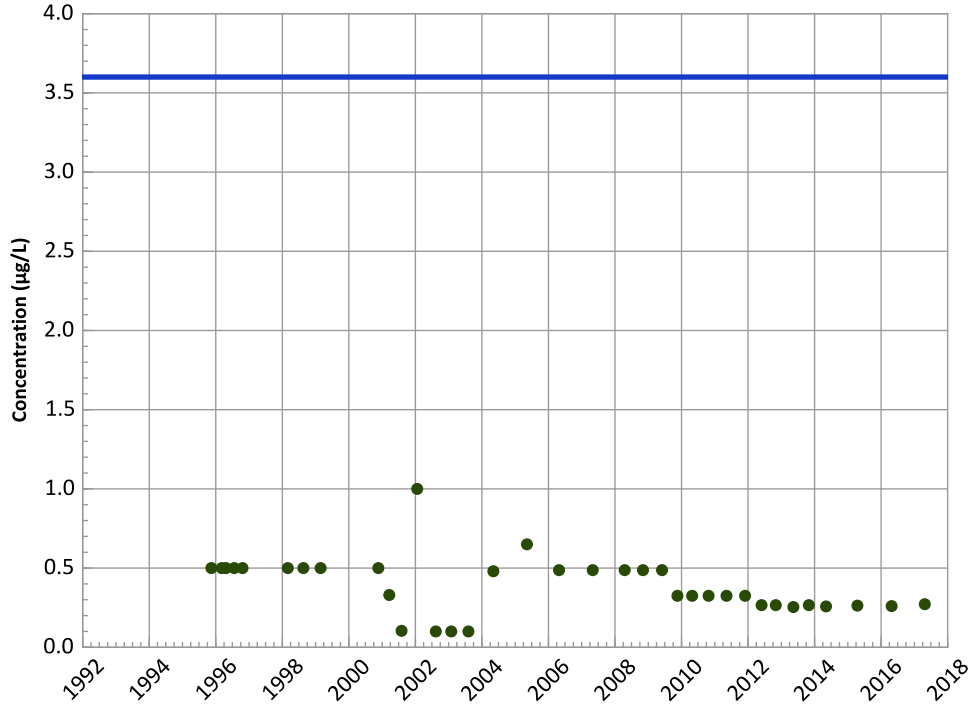
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1013 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

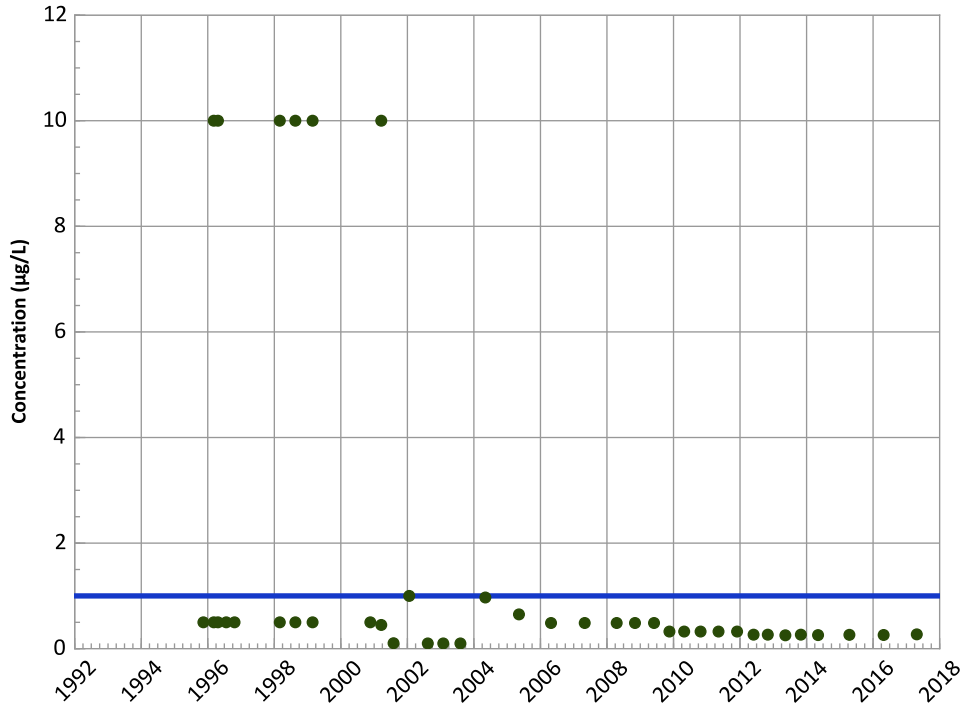
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

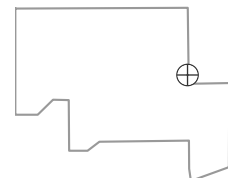
MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/14/1995 to 04/25/2017
Analysis Date: 03/21/2018

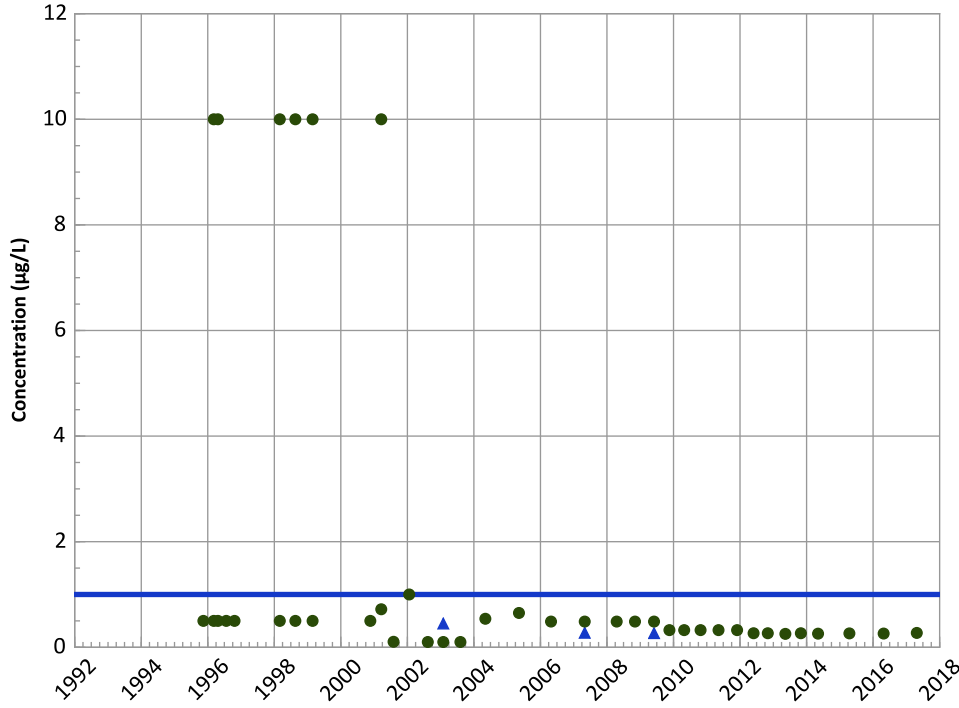
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

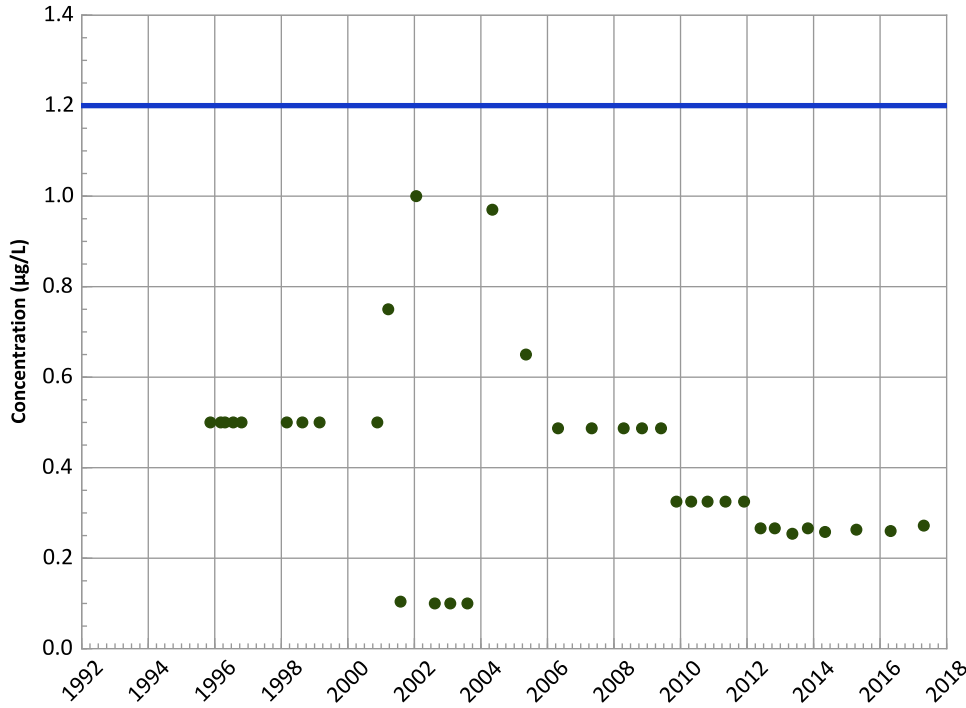


PTX06-1013 in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



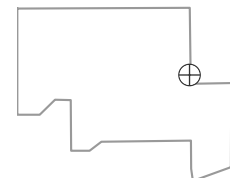
2-Amino-4,6-Dinitrotoluene Trend



Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 11/14/1995 to 04/25/2017
 Analysis Date: 03/21/2018

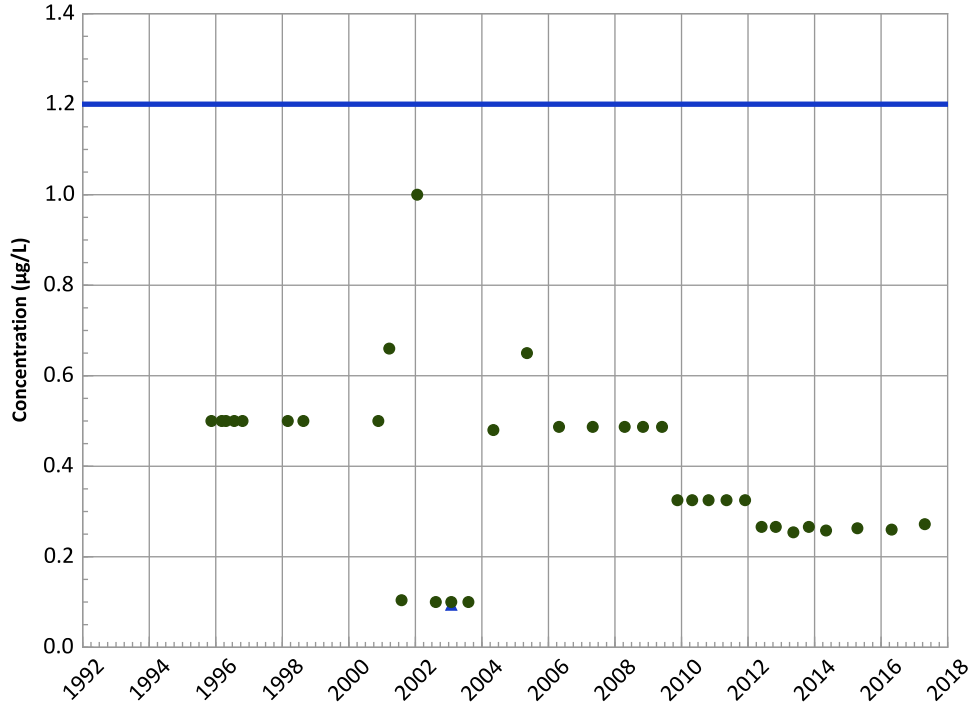
- ▲ Measured Value
- Sample Detection Limit
- Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1013 in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

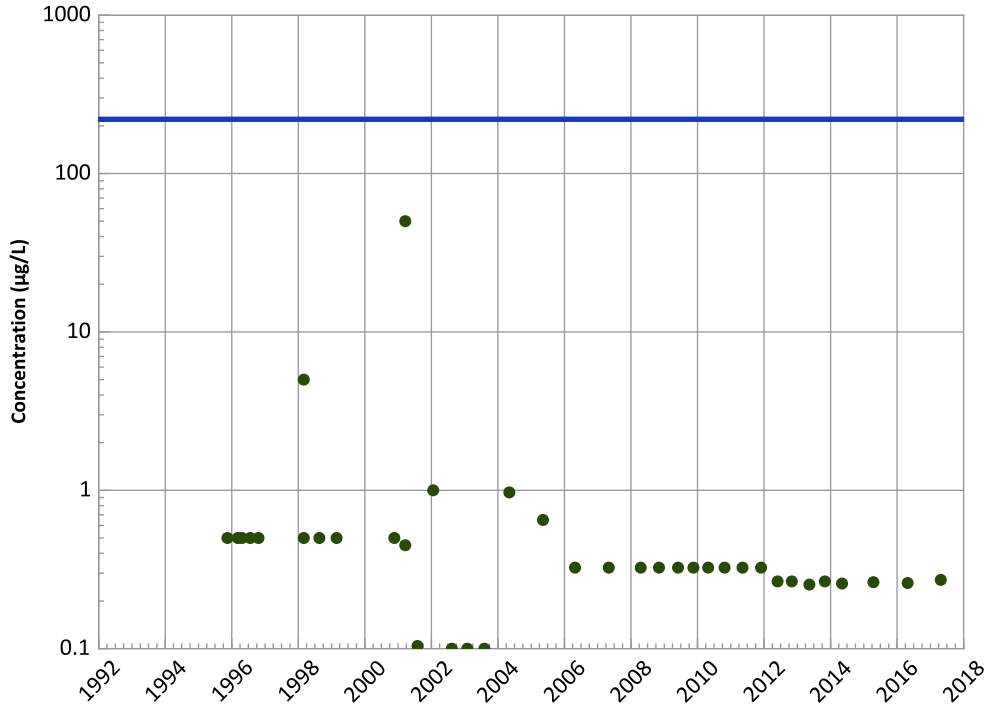
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

1,3,5-Trinitrobenzene Trend



Concentration Trend

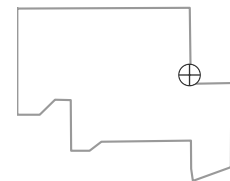
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

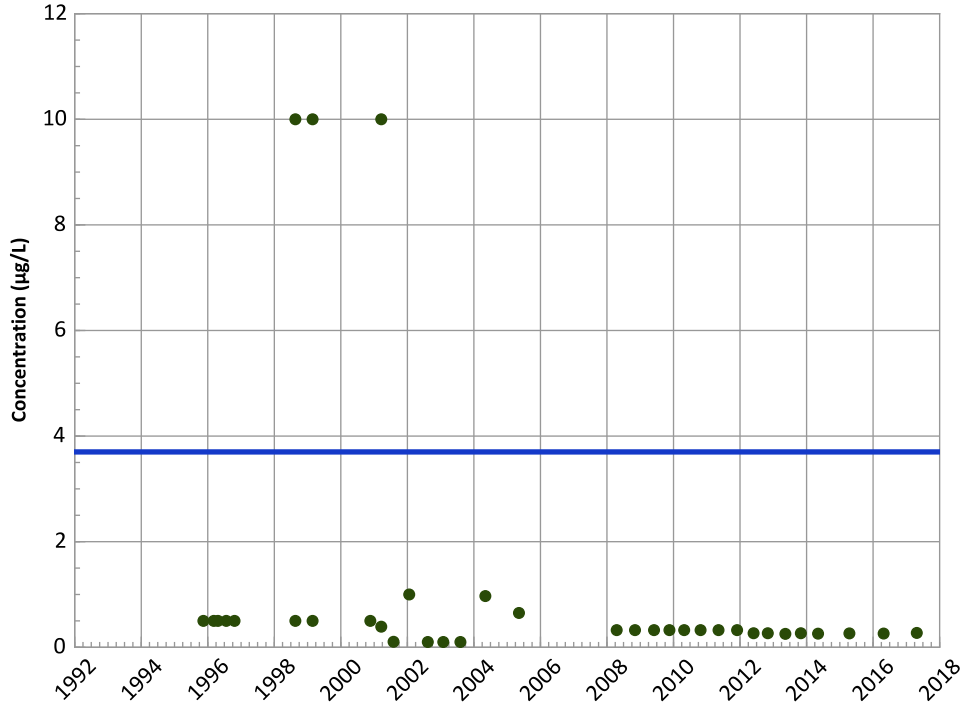


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/14/1995 to 04/25/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1013 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

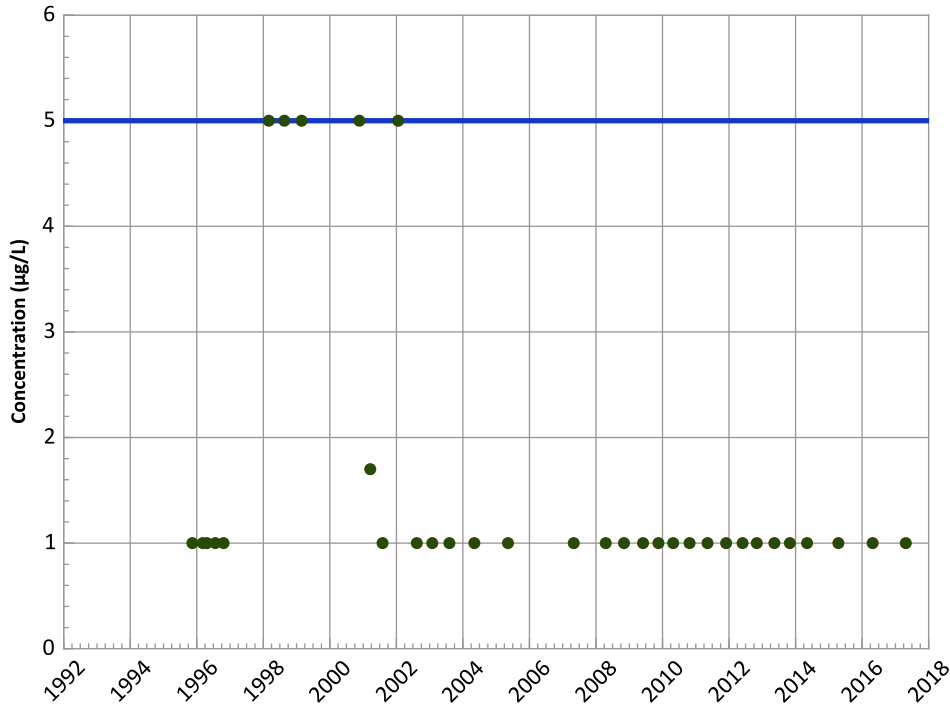
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Tetrachloroethylene (PCE) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

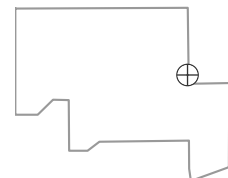
MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/14/1995 to 04/25/2017
Analysis Date: 03/21/2018

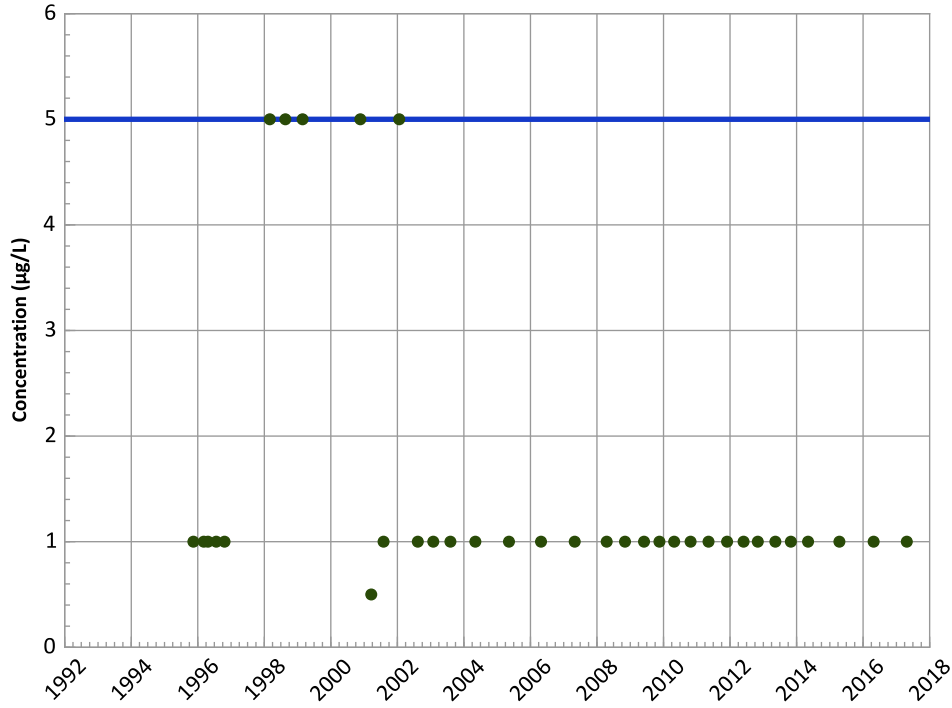
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1013 in Perched Aquifer
USDOE/NNSA Pantex Plant

Trichloroethene Trend



Concentration Trend

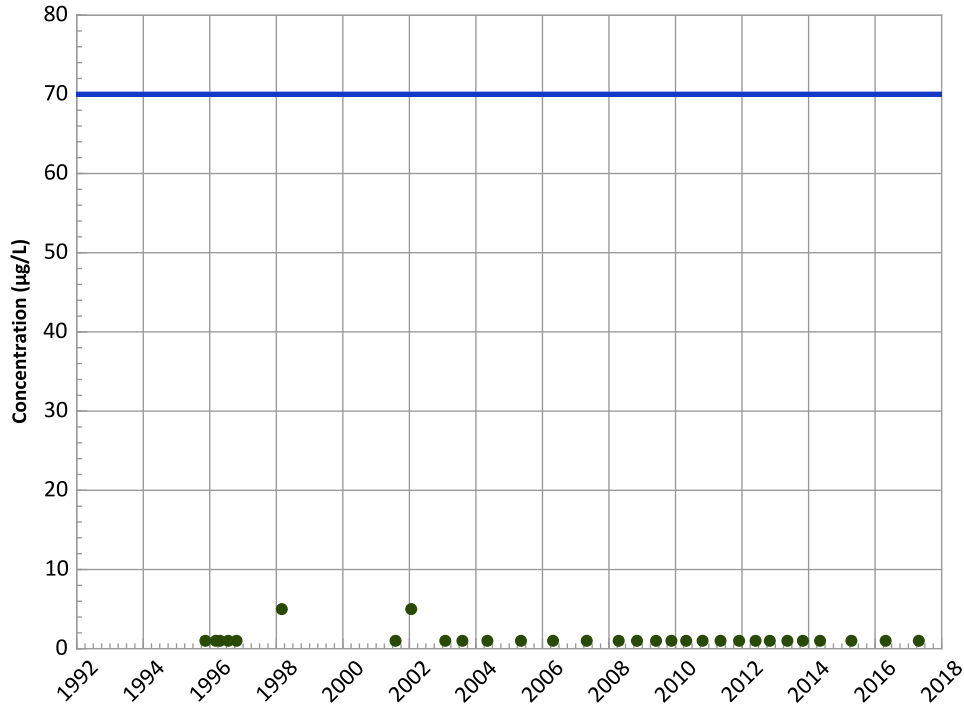
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

cis-1,2-Dichloroethene Trend



Concentration Trend

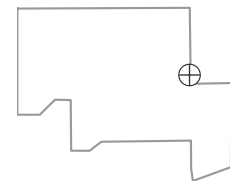
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

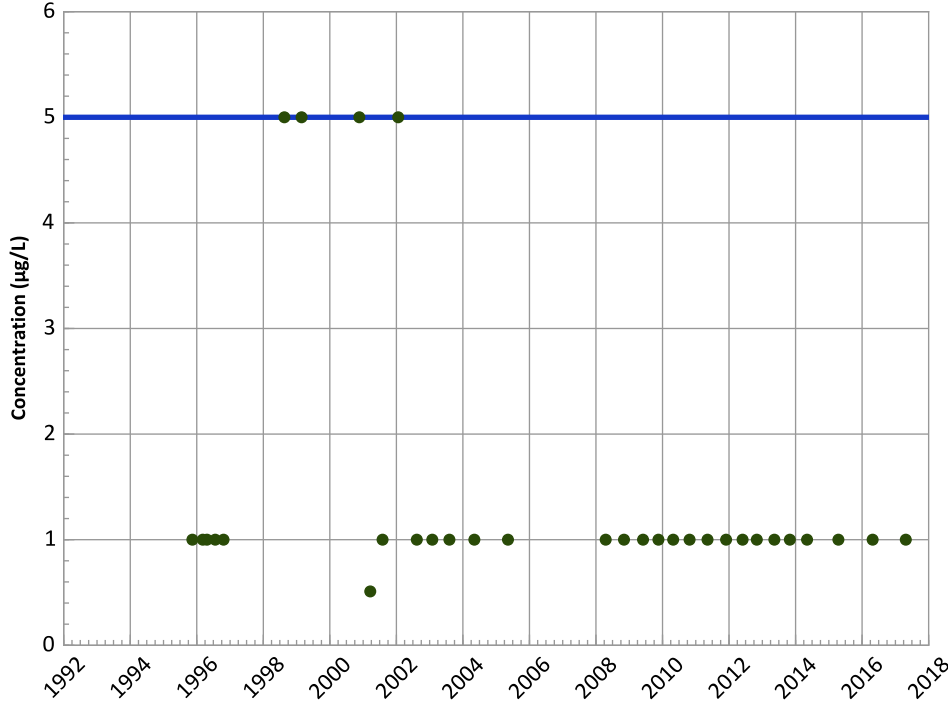


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/14/1995 to 04/25/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1013 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,2-Dichloroethane Trend



Concentration Trend

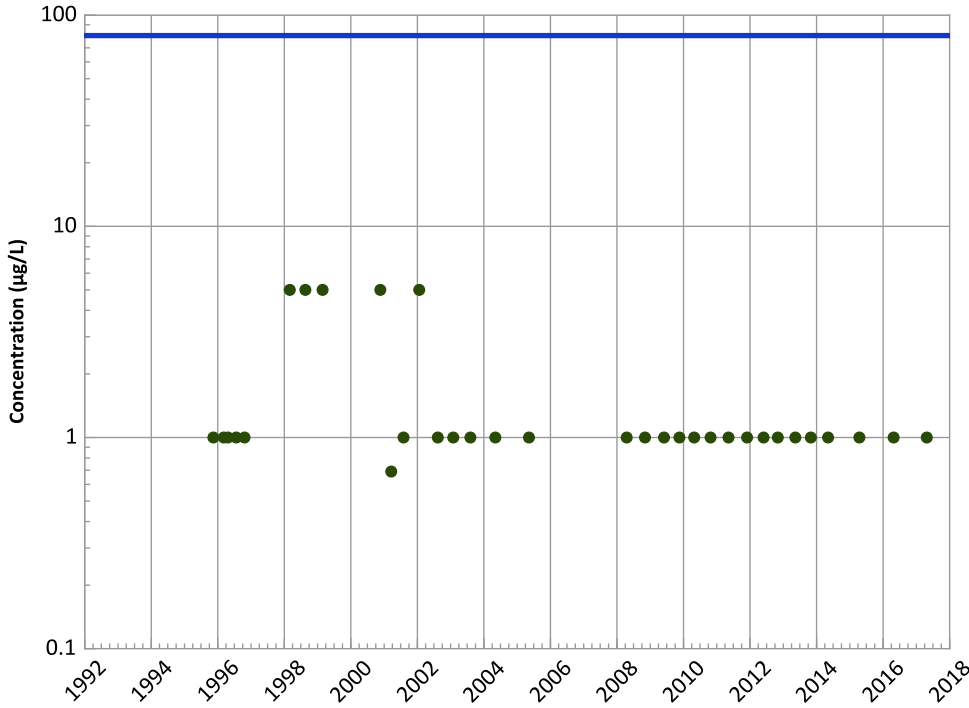
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Chloroform Trend



Concentration Trend

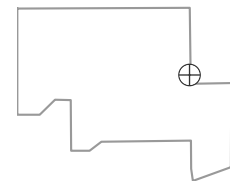
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

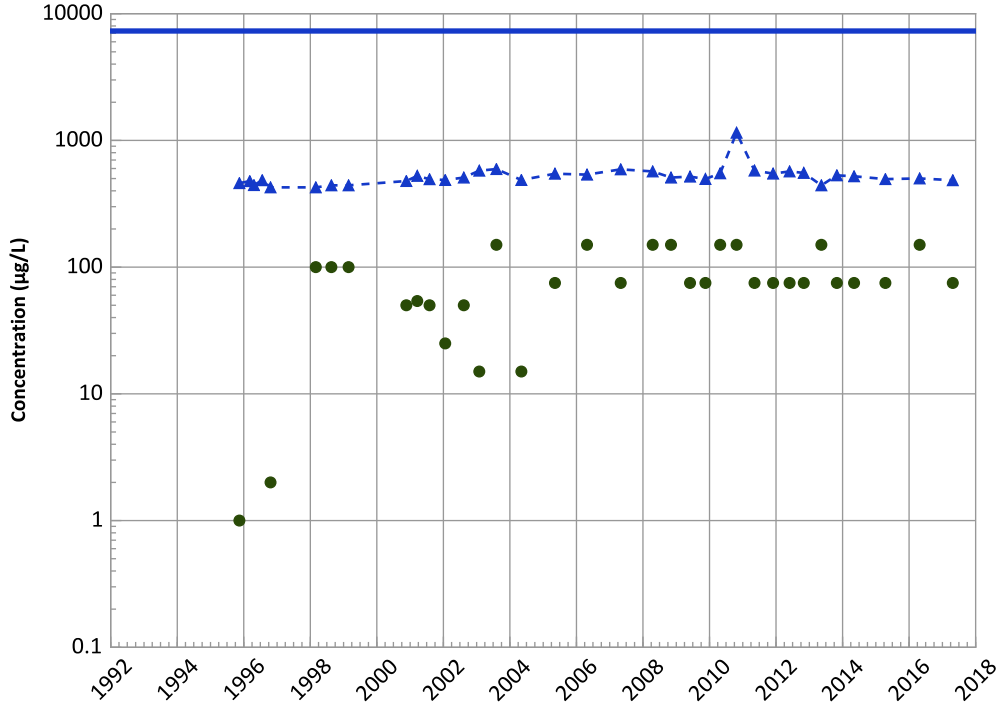


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/14/1995 to 04/25/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1013 in Perched Aquifer
USDOE/NNSA Pantex Plant

Boron Trend



Concentration Trend

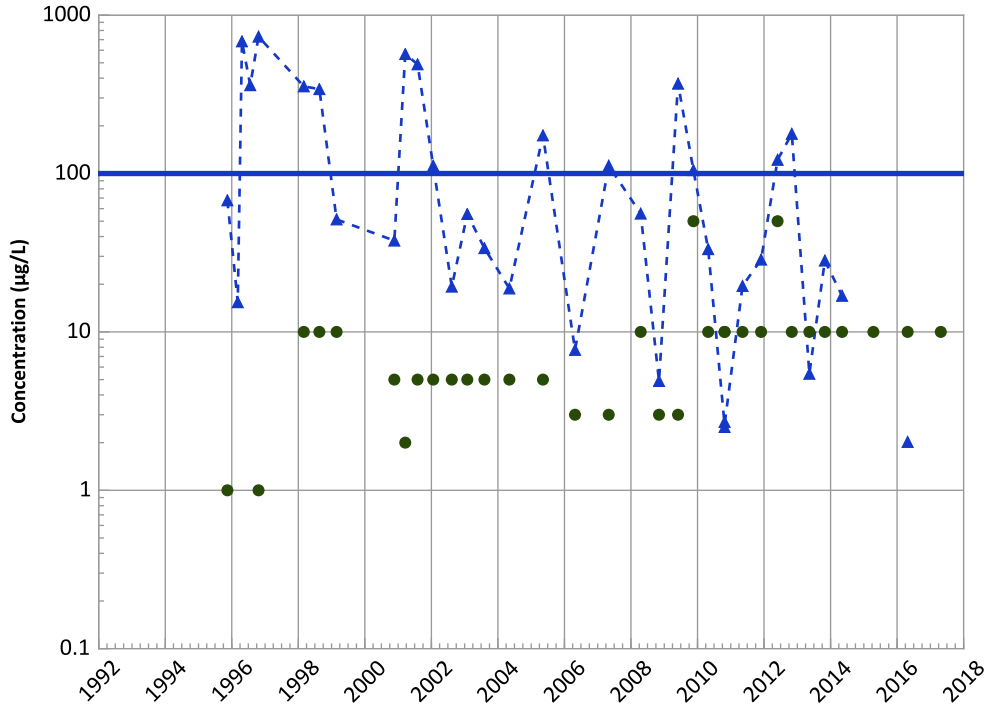
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Stable
All Data
Increasing

Chromium, Total Trend



Concentration Trend

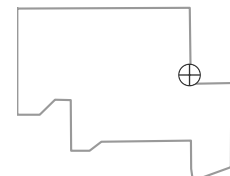
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

Well Location

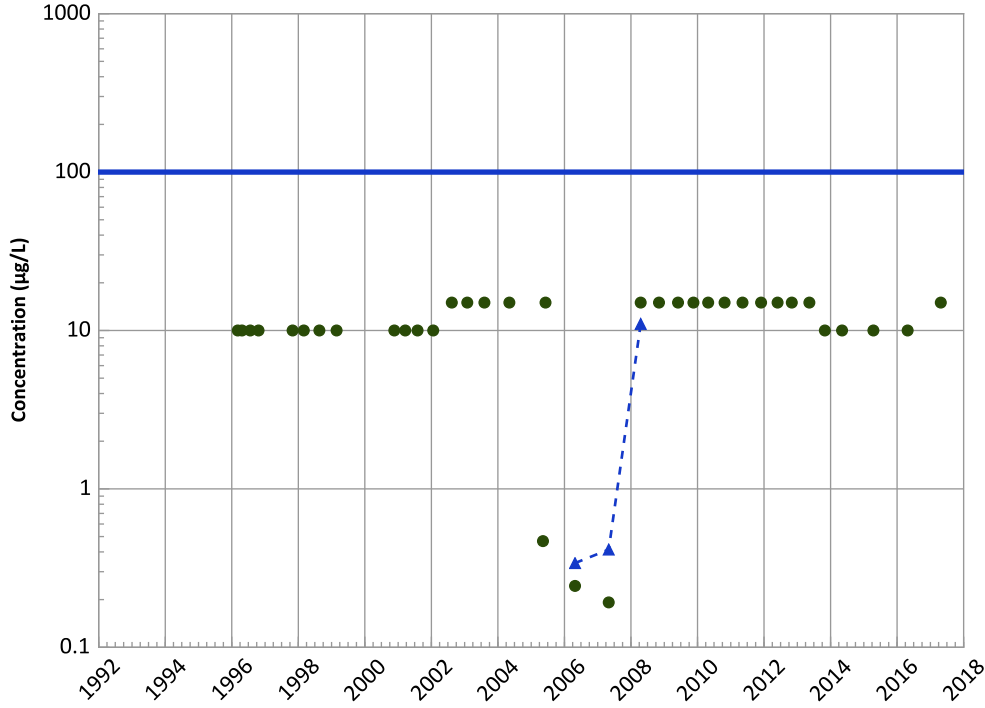


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/14/1995 to 04/25/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1013 in Perched Aquifer
USDOE/NNSA Pantex Plant

Chromium, Hexavalent Trend



Concentration Trend

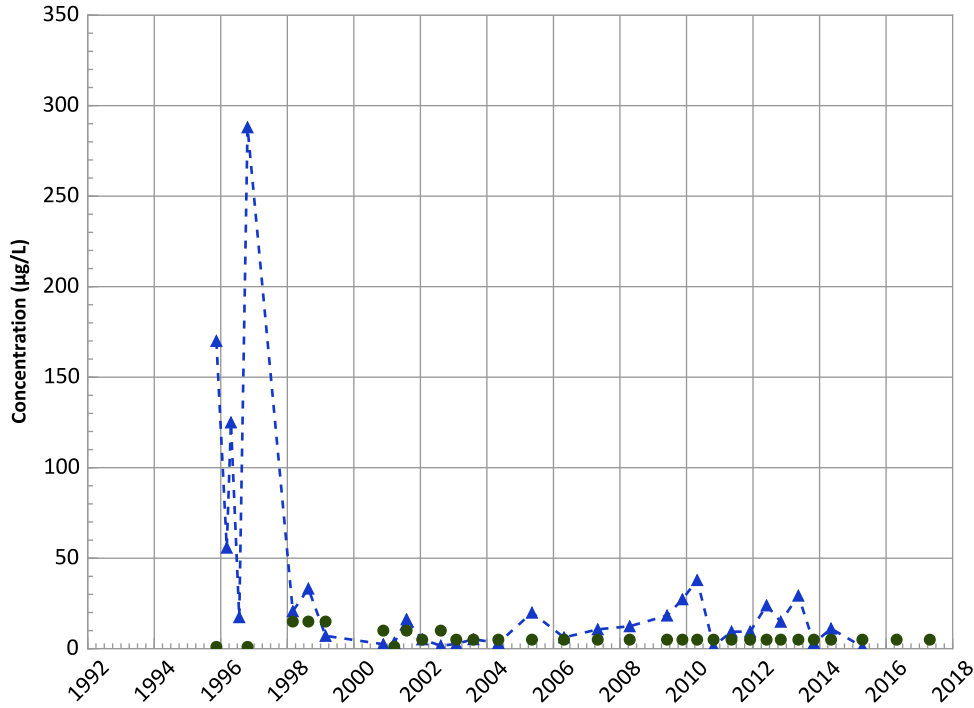
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

Manganese Trend



Concentration Trend

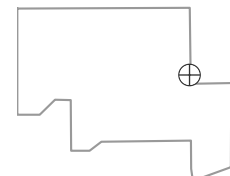
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

Well Location

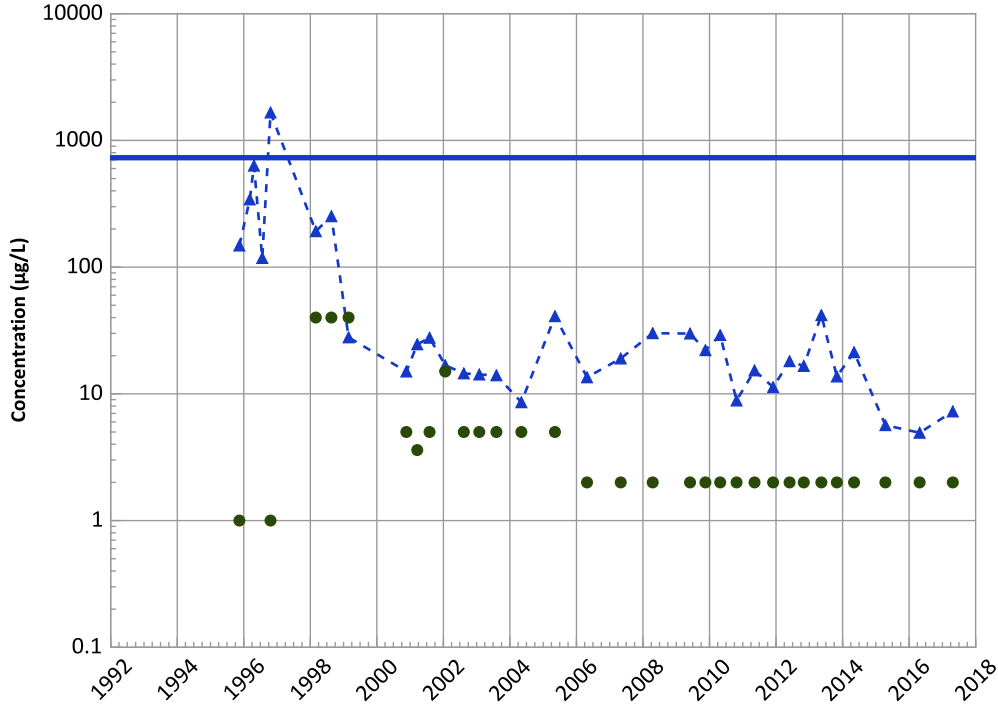


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/14/1995 to 04/25/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1013 in Perched Aquifer
USDOE/NNSA Pantex Plant

Nickel Trend



Concentration Trend

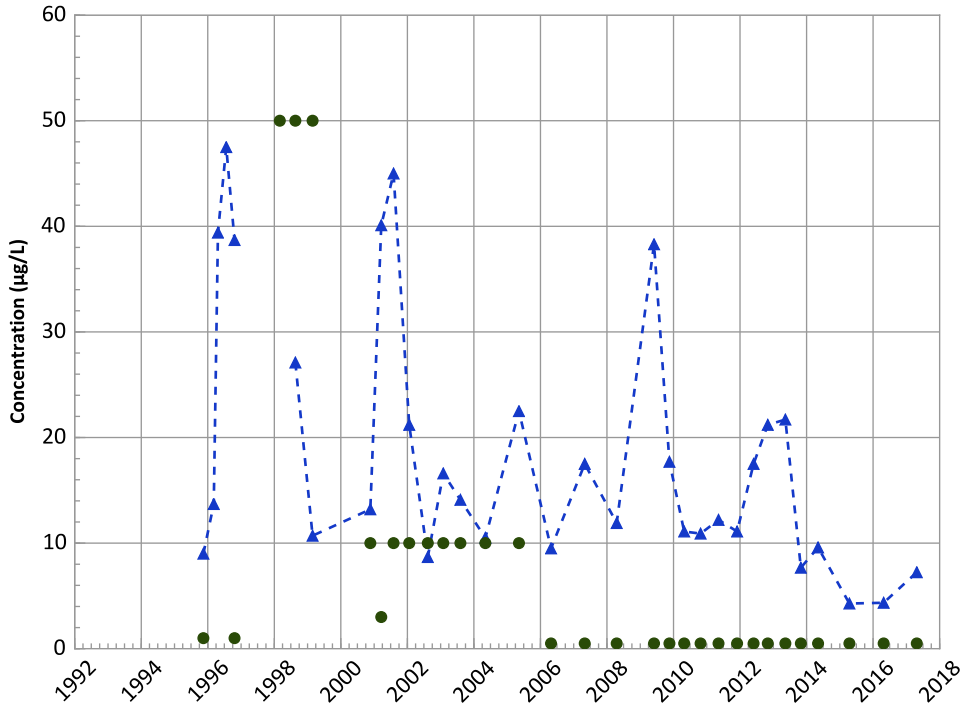
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

Molybdenum Trend



Concentration Trend

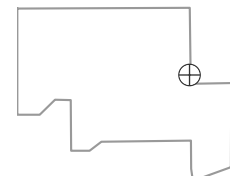
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

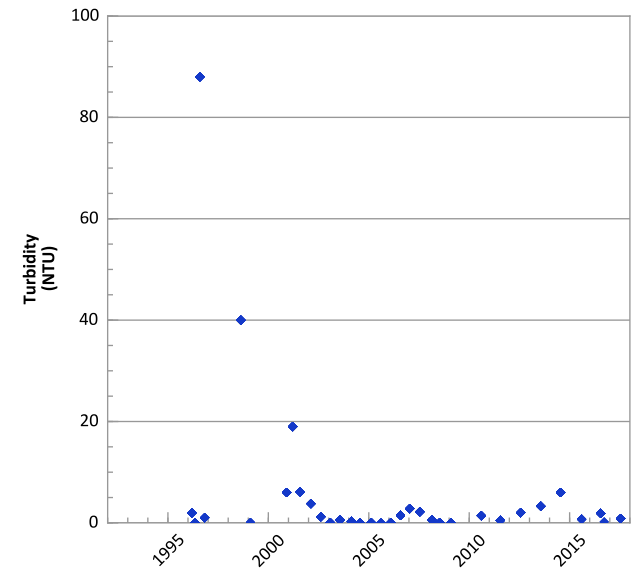
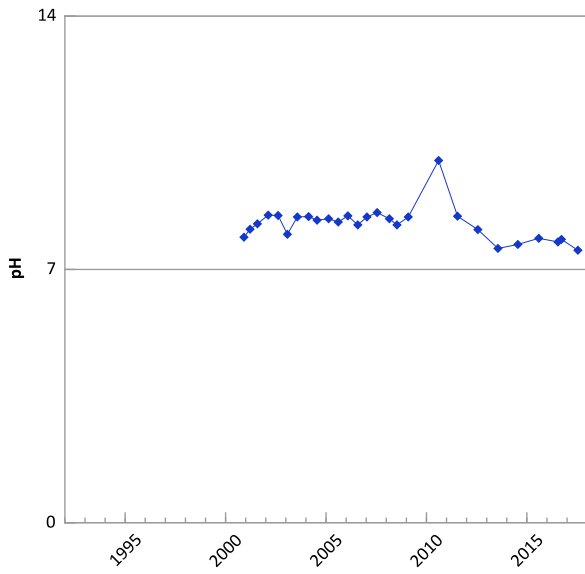
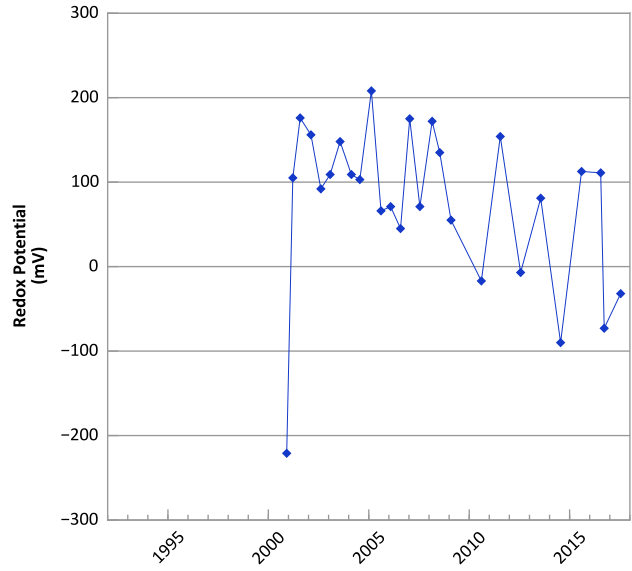
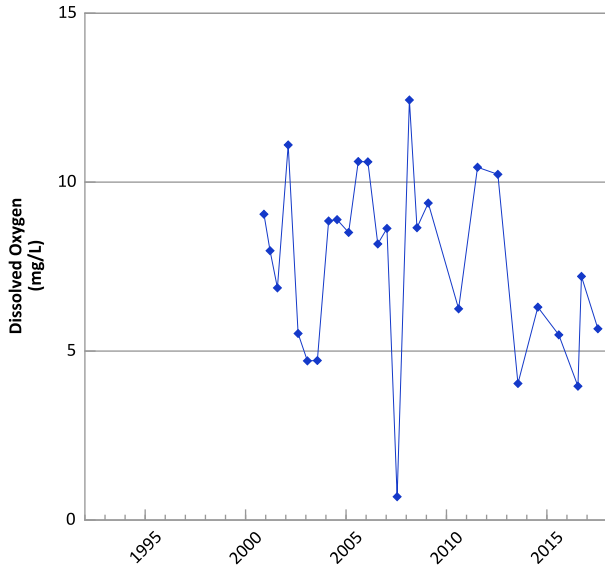
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/14/1995 to 04/25/2017
Analysis Date: 03/21/2018

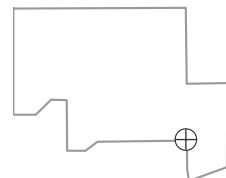
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1014 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



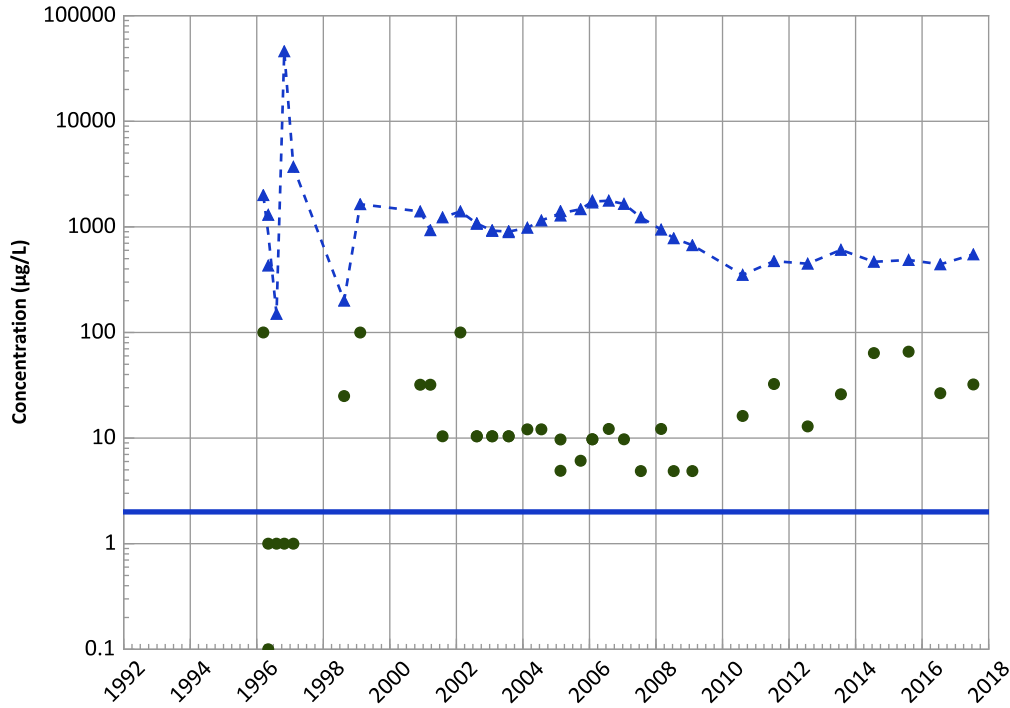
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 03/13/1996 to 07/17/2017
 Analysis Date: 03/21/2018

Well Location



PTX06-1014 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

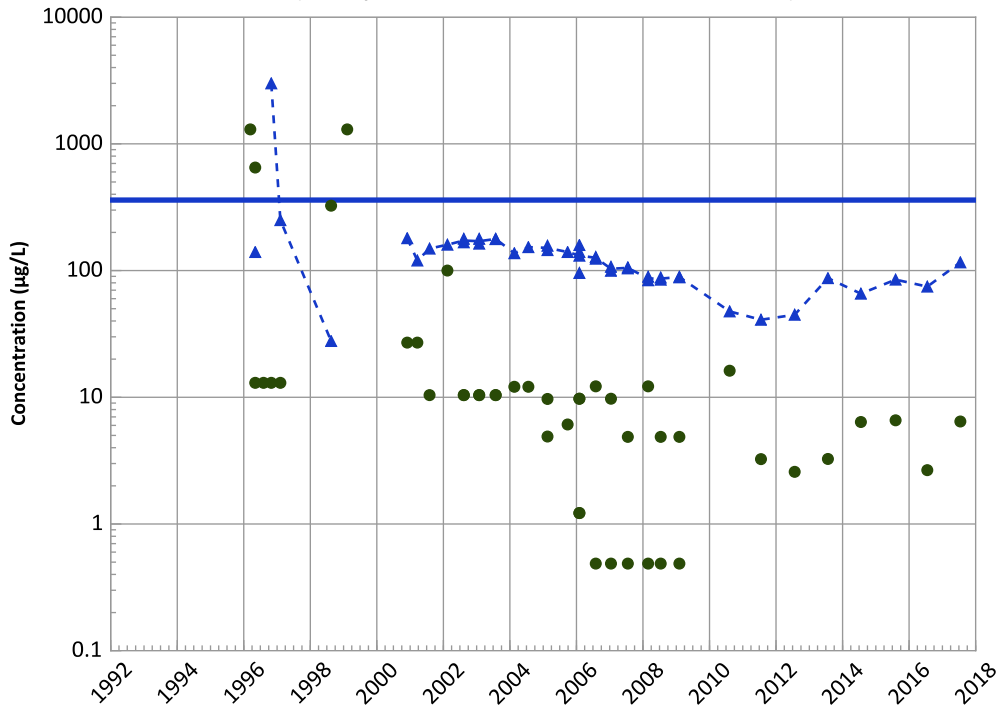
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Stable
All Data
Decreasing

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
No Trend
All Data
Decreasing

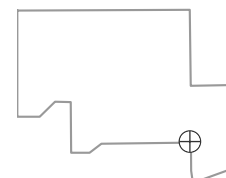
MAROS Linear Regression Method

Data ():
No Trend
All Data
Decreasing

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/13/1996 to 07/17/2017
Analysis Date: 03/21/2018

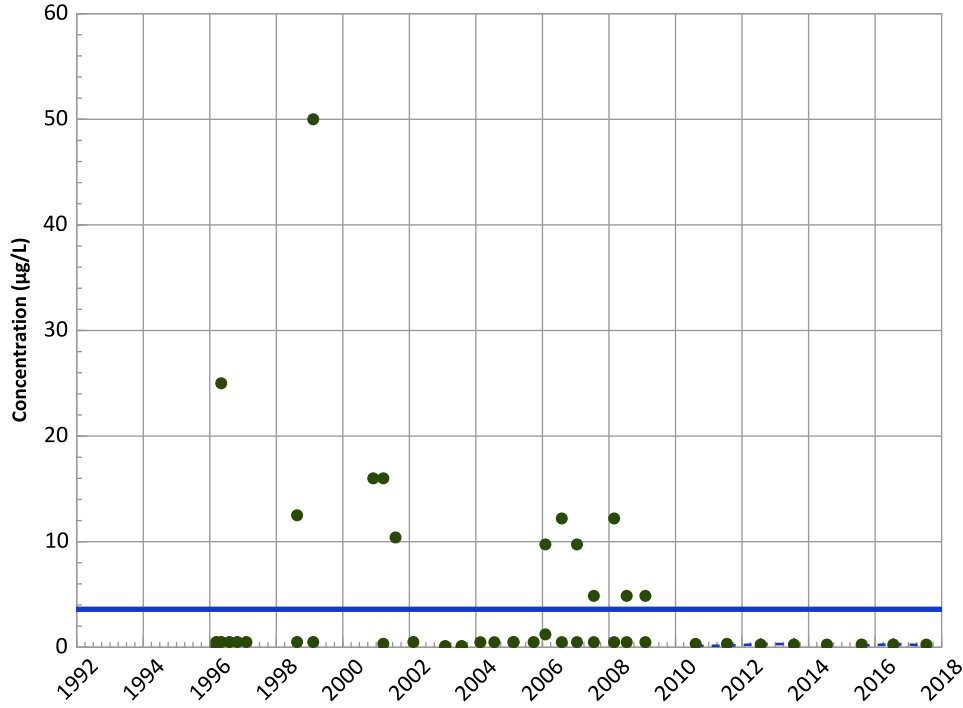
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1014 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

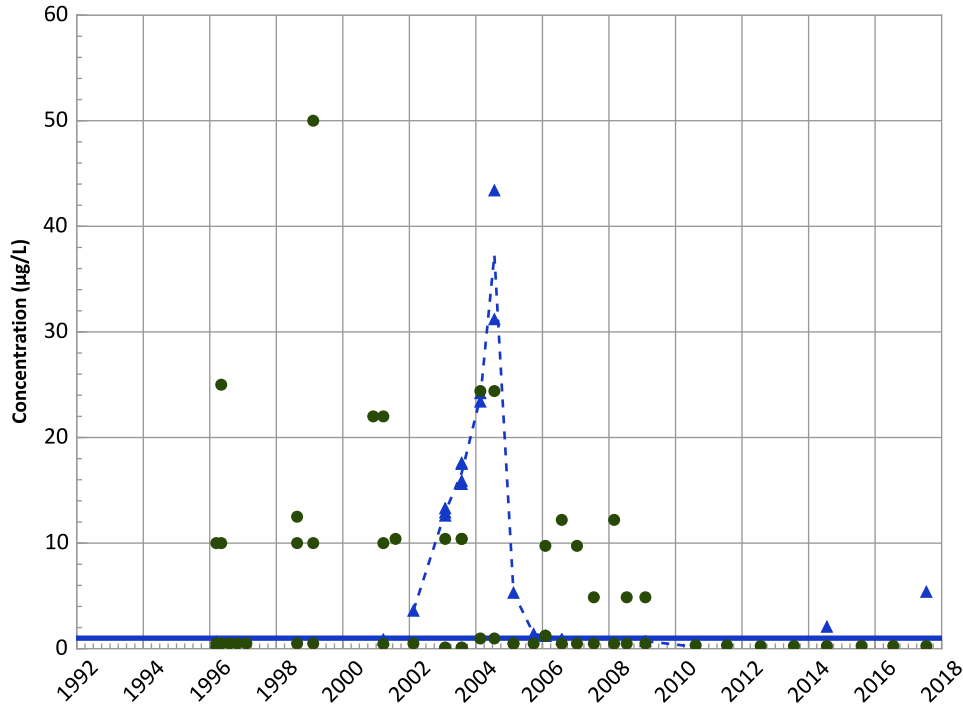
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Stable
All Data
No Trend

2,4-Dinitrotoluene Trend



Concentration Trend

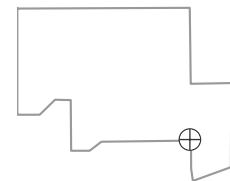
MAROS Mann-Kendall Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
No Trend

Well Location

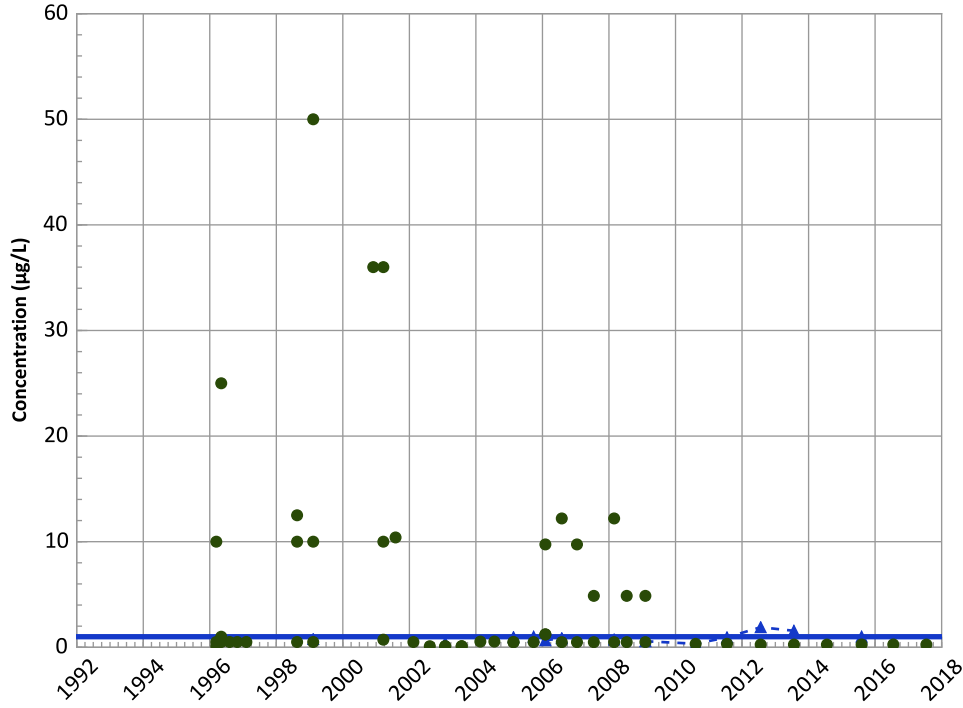


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/13/1996 to 07/17/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1014 in Perched Aquifer
USDOE/NSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

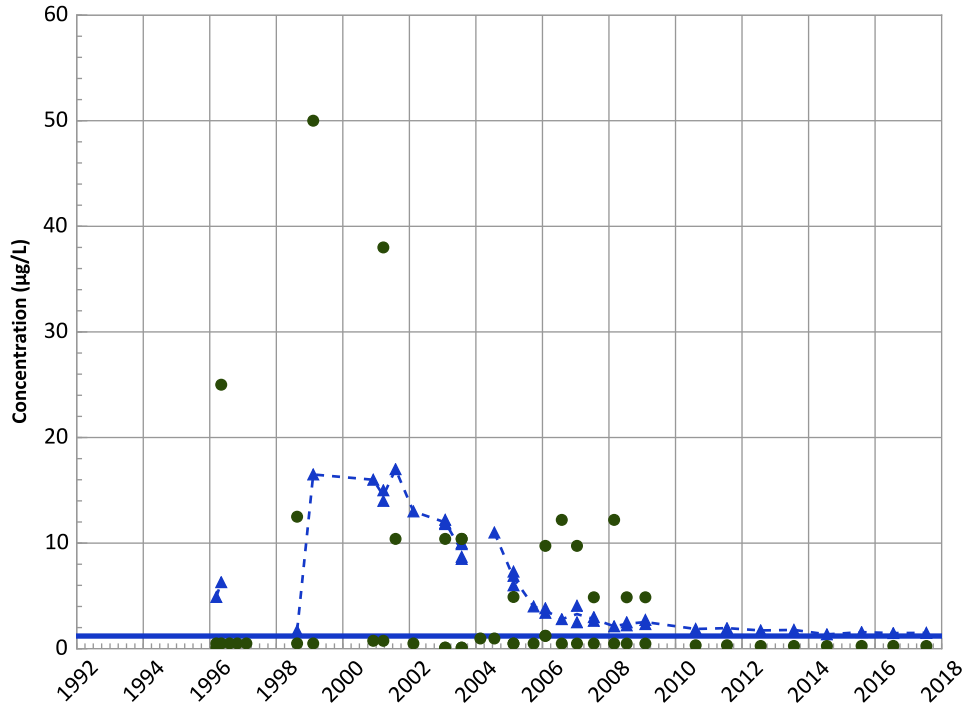
MAROS Mann-Kendall Method

Data ():
N/A (<4 Detections in Dataset)
All Data
No Trend

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Probably Increasing

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

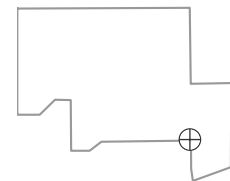
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Stable
All Data
Decreasing

Well Location

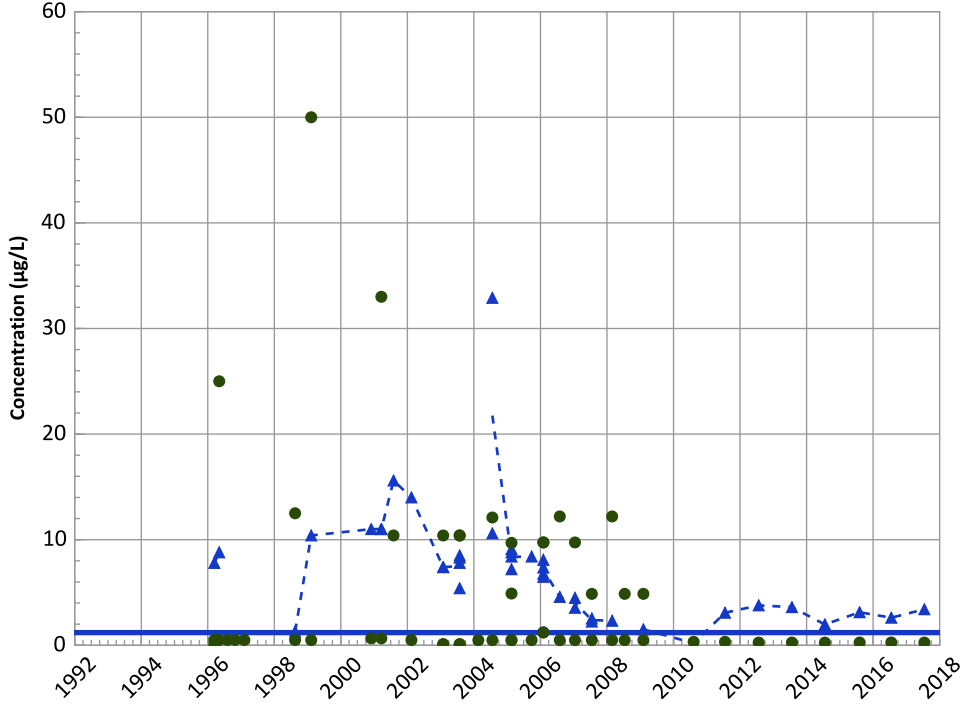


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/13/1996 to 07/17/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1014 in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

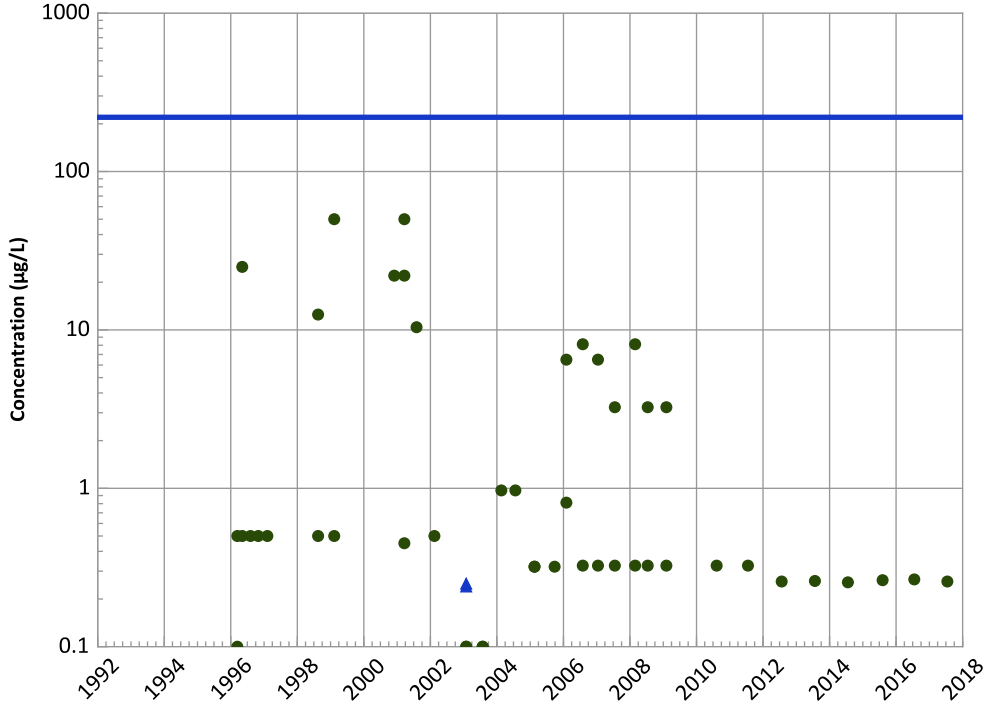
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Stable
All Data
Decreasing

1,3,5-Trinitrobenzene Trend



Concentration Trend

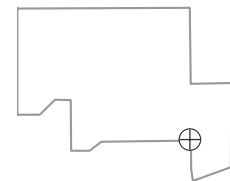
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

Well Location

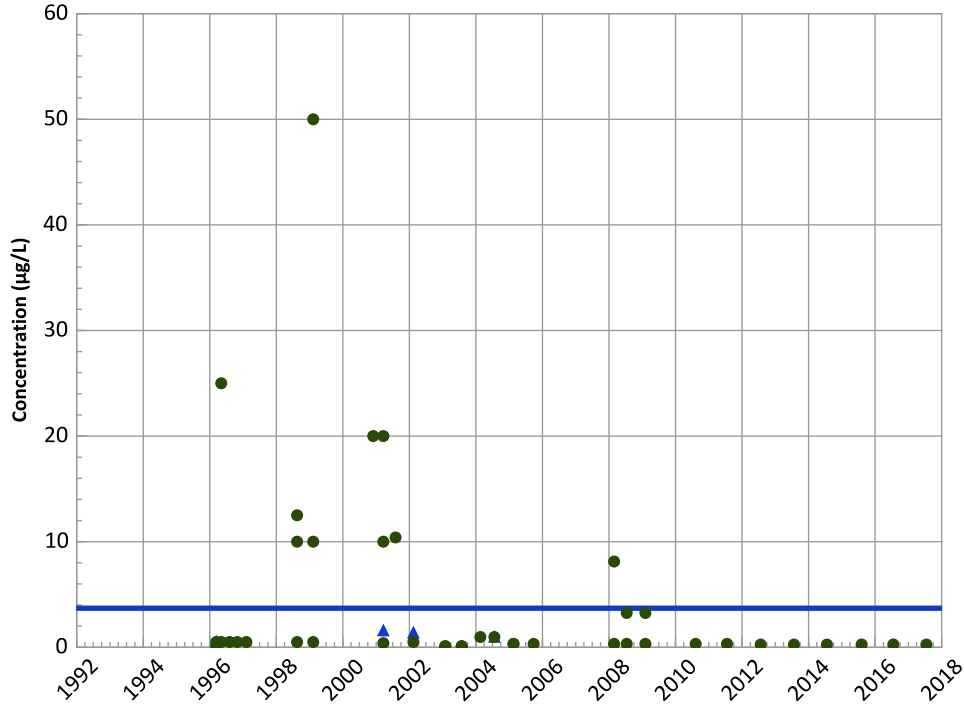


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/13/1996 to 07/17/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1014 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

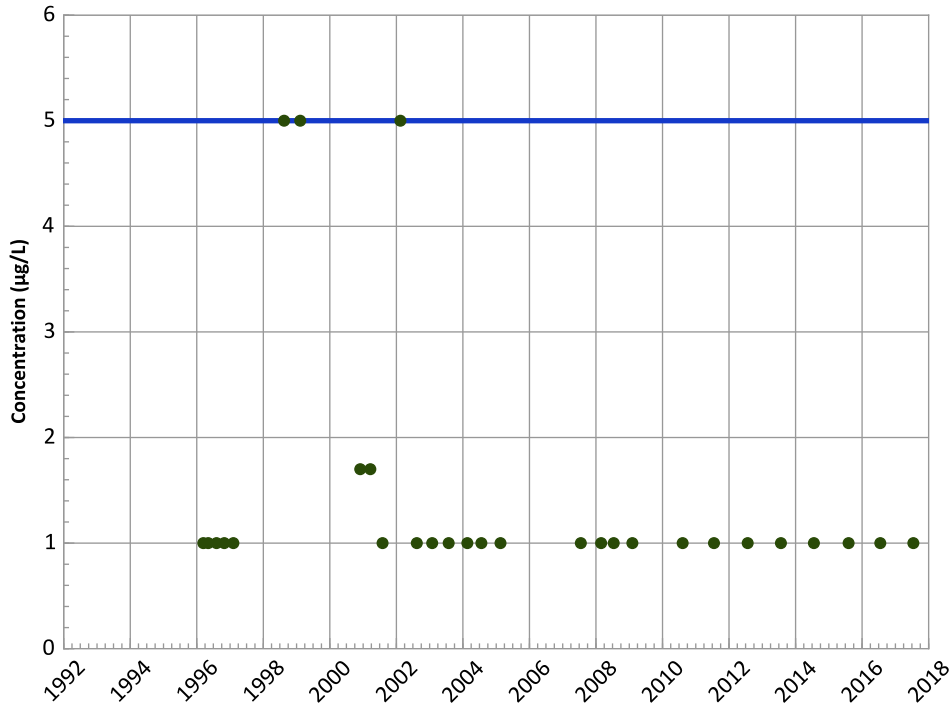
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
Decreasing

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
No Trend

Tetrachloroethylene (PCE) Trend



Concentration Trend

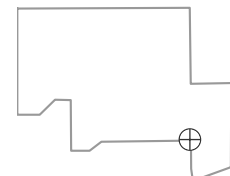
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

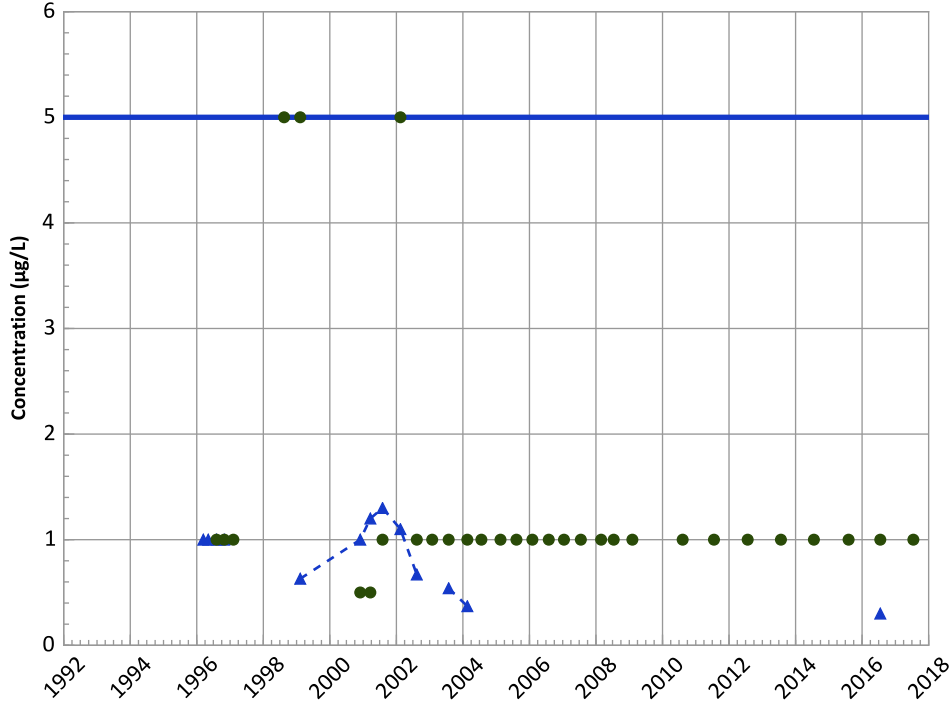


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/13/1996 to 07/17/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1014 in Perched Aquifer
USDOE/NNSA Pantex Plant

Trichloroethene Trend



Concentration Trend

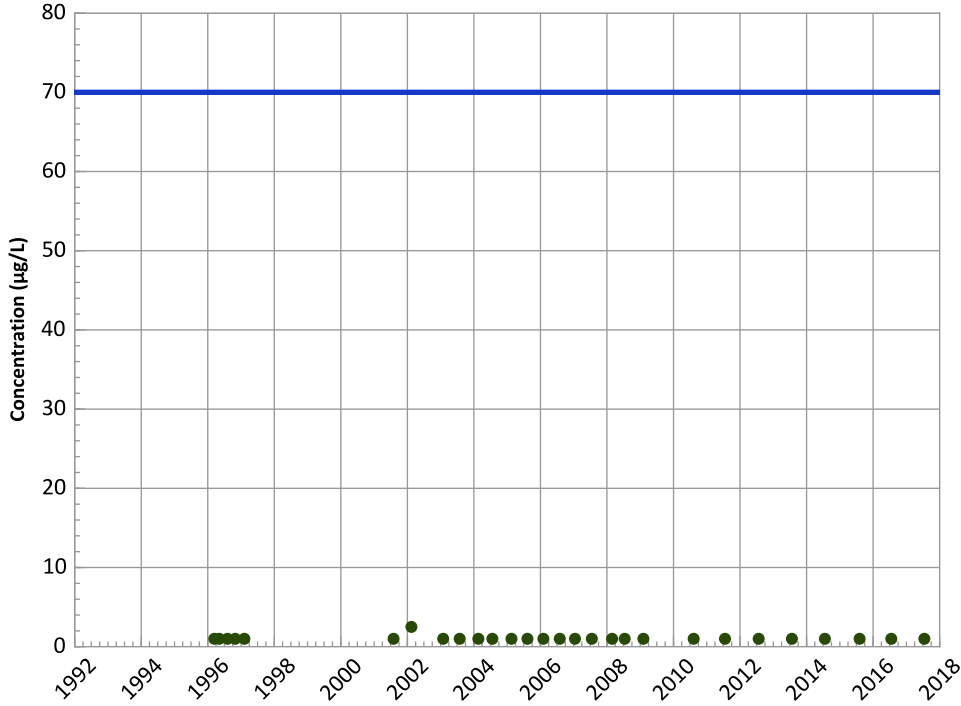
MAROS Mann-Kendall Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

cis-1,2-Dichloroethene Trend



Concentration Trend

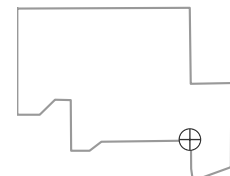
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

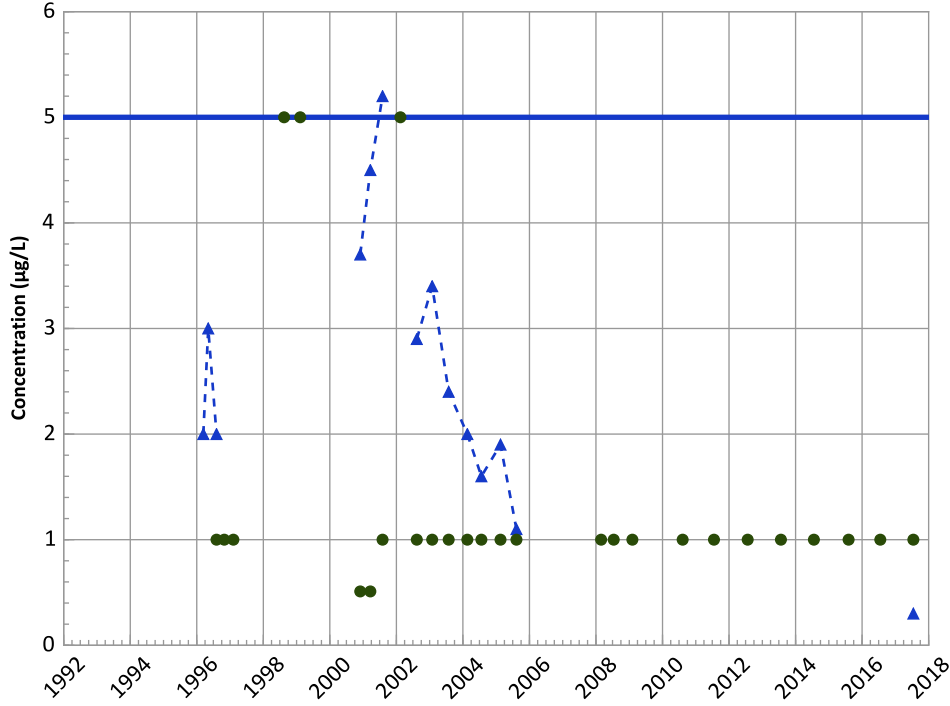


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/13/1996 to 07/17/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1014 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,2-Dichloroethane Trend



Concentration Trend

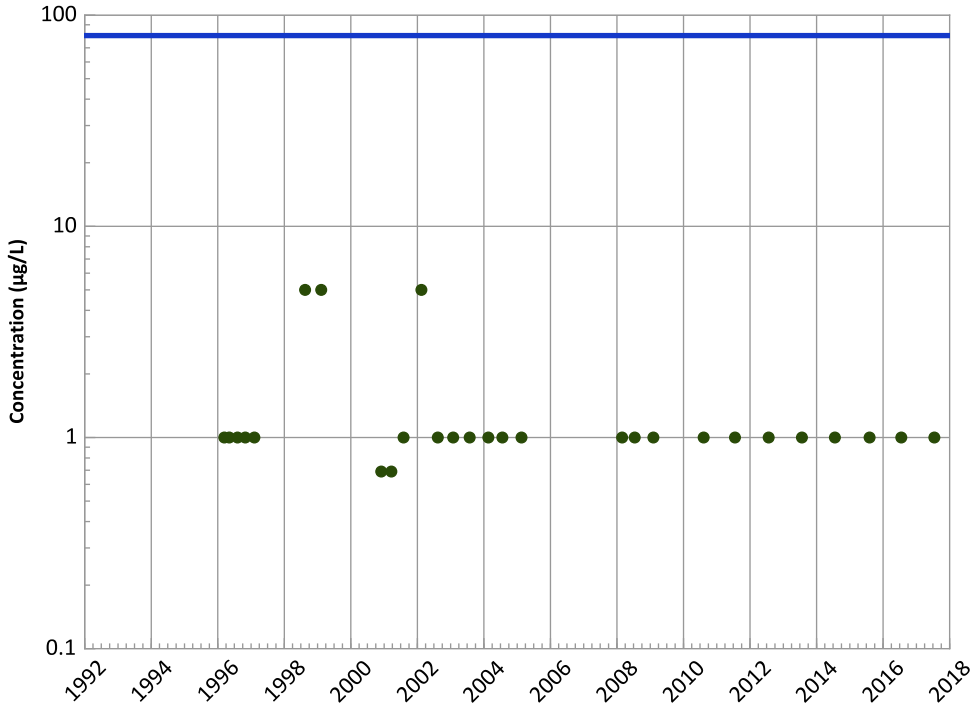
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
Decreasing

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
Decreasing

Chloroform Trend



Concentration Trend

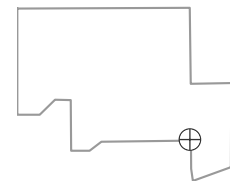
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

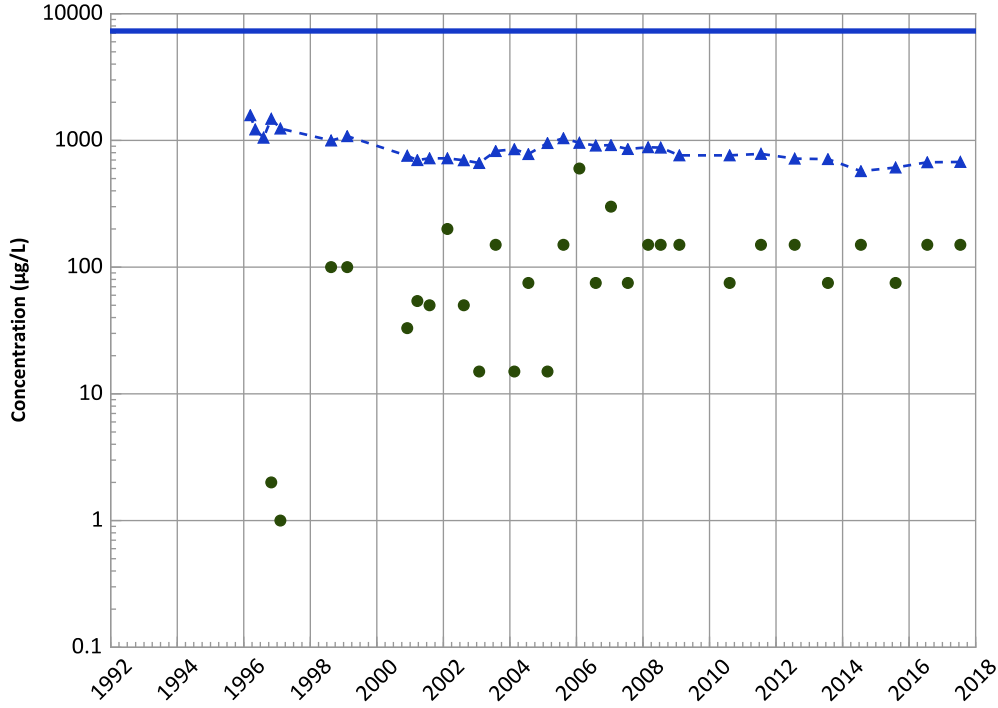


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/13/1996 to 07/17/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1014 in Perched Aquifer
USDOE/NNSA Pantex Plant

Boron Trend



Concentration Trend

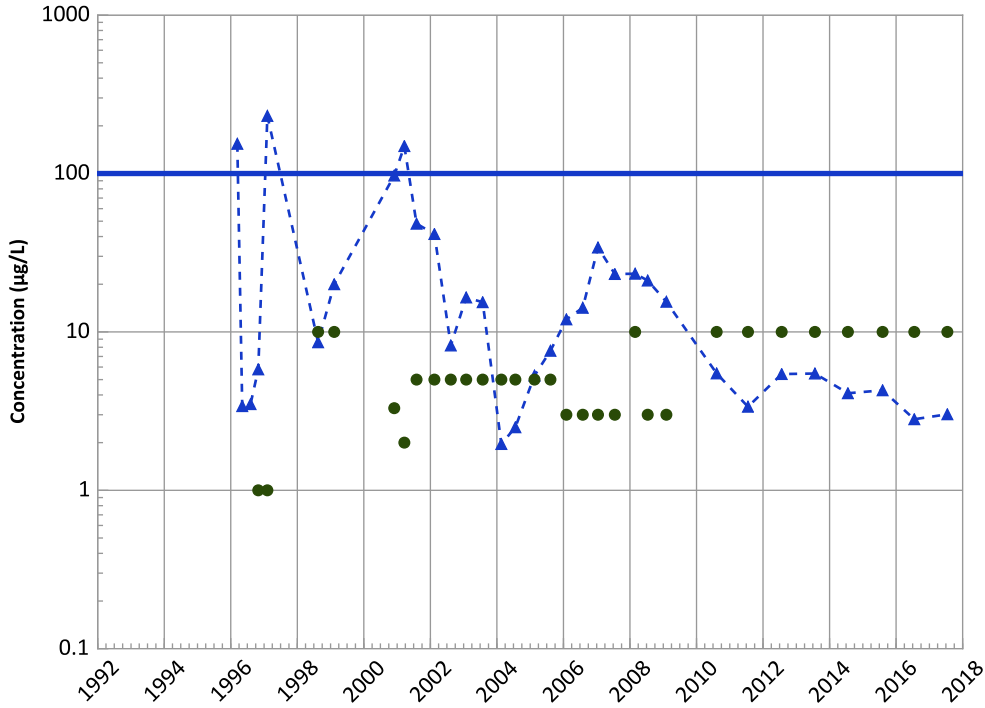
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Stable
All Data
Decreasing

Chromium, Total Trend



Concentration Trend

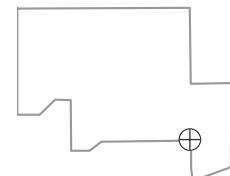
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

Well Location

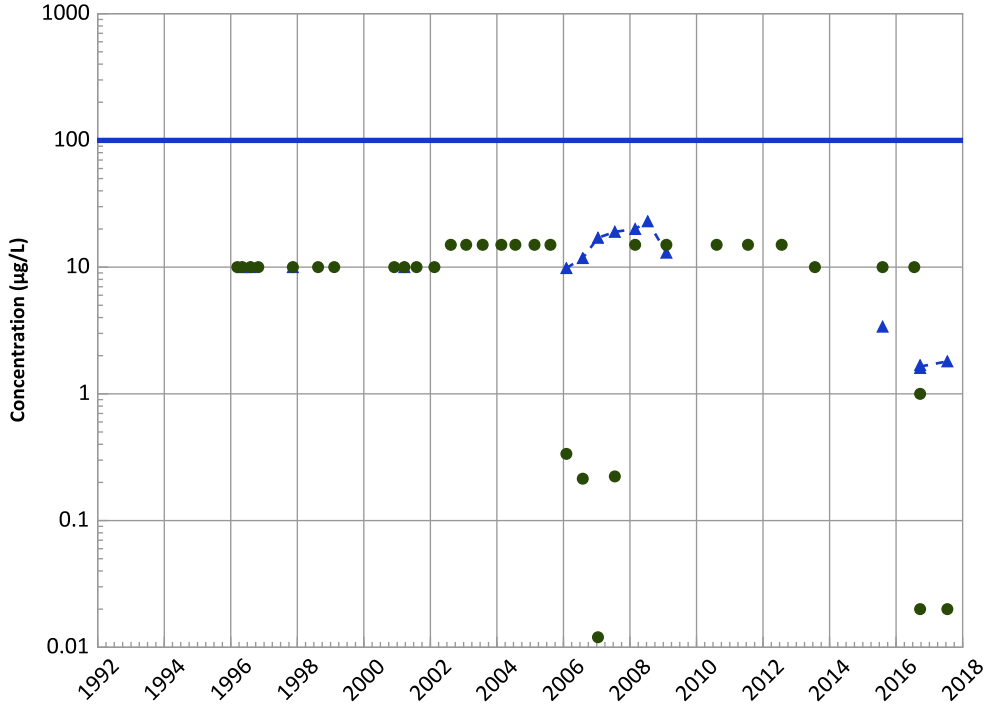


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/13/1996 to 07/17/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1014 in Perched Aquifer
USDOE/NNSA Pantex Plant

Chromium, Hexavalent Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Detections in Dataset)

All Data

No Trend

MAROS Linear Regression Method

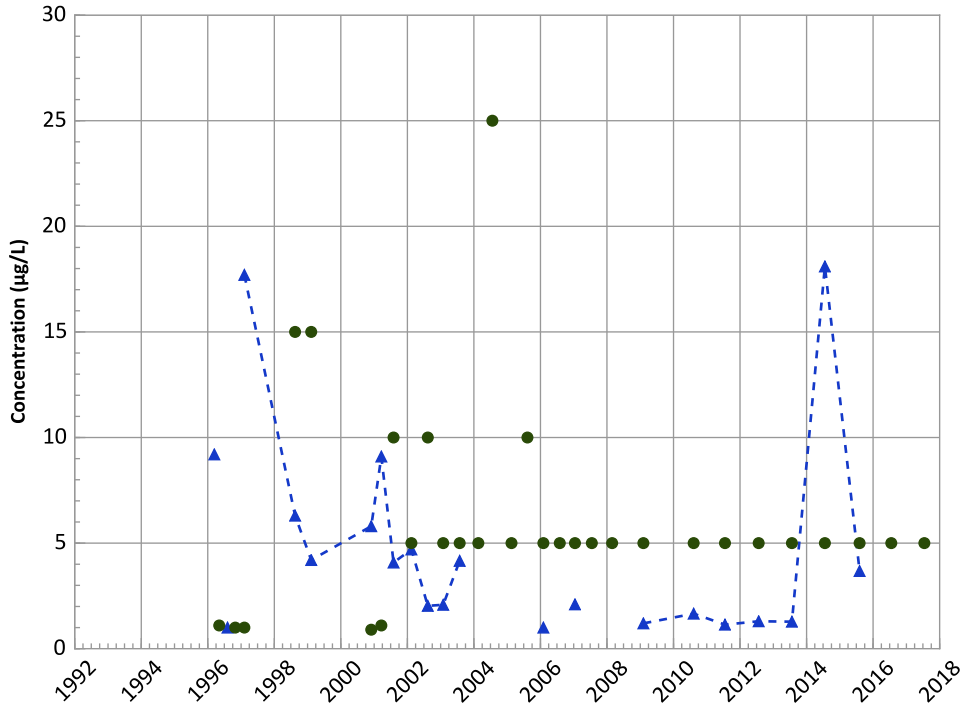
Data ():

N/A (<4 Detections in Dataset)

All Data

Decreasing

Manganese Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

No Trend

All Data

Decreasing

MAROS Linear Regression Method

Data ():

No Trend

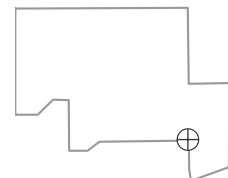
All Data

Probably Decreasing

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/13/1996 to 07/17/2017
Analysis Date: 03/21/2018

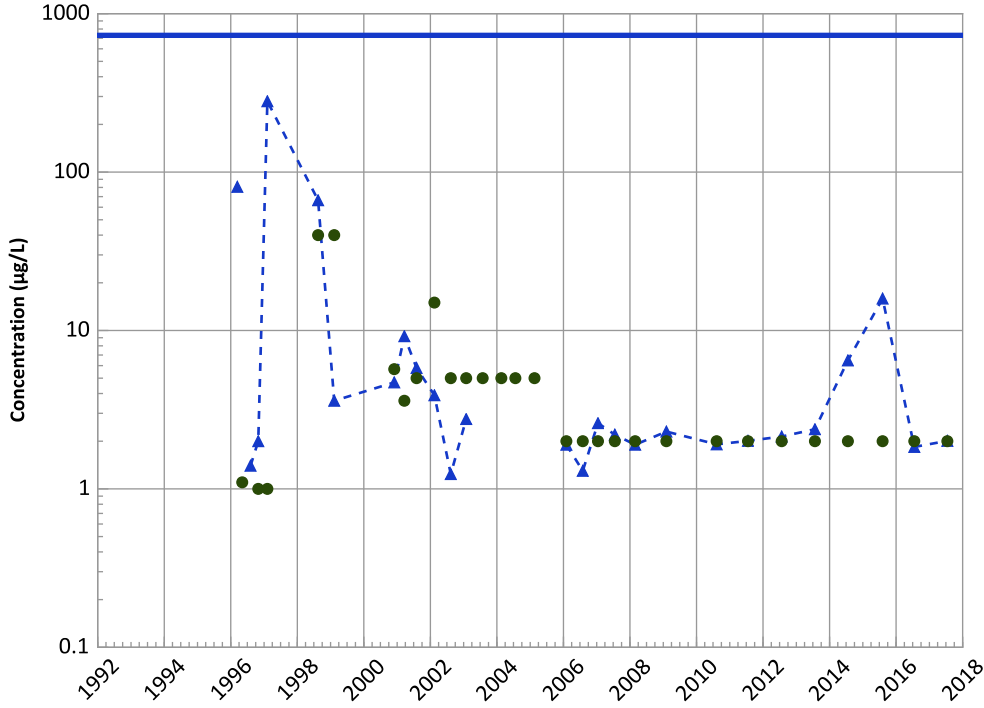
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1014 in Perched Aquifer
USDOE/NNSA Pantex Plant

Nickel Trend



Concentration Trend

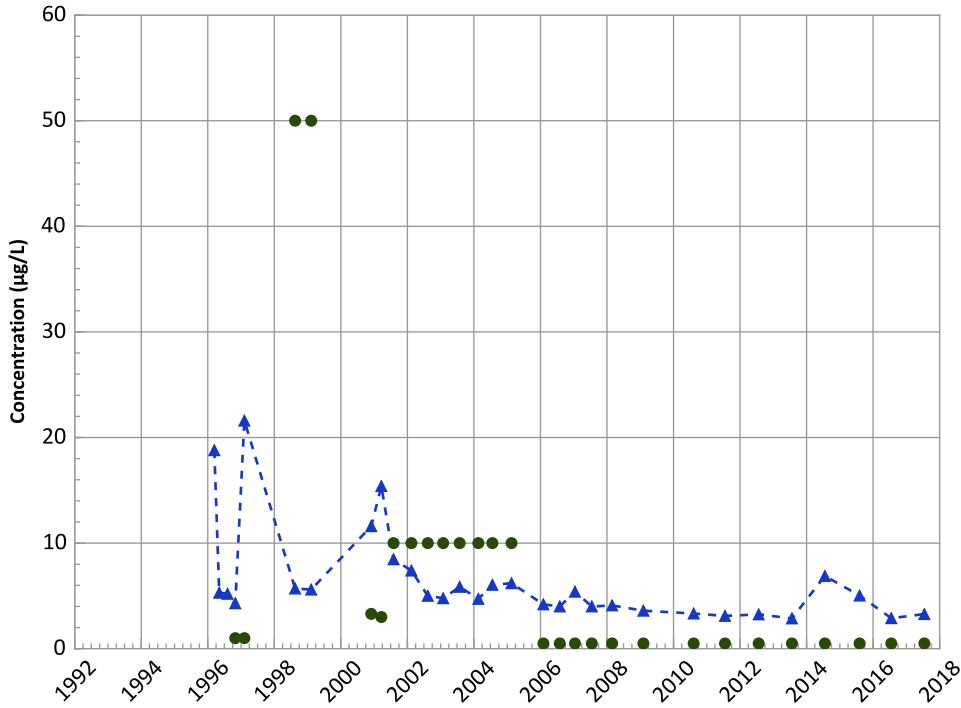
MAROS Mann-Kendall Method

Data ():
No Trend
All Data
Decreasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
Decreasing

Molybdenum Trend



Concentration Trend

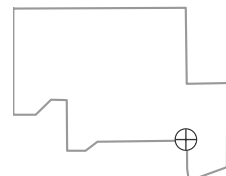
MAROS Mann-Kendall Method

Data ():
Stable
All Data
Decreasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
Decreasing

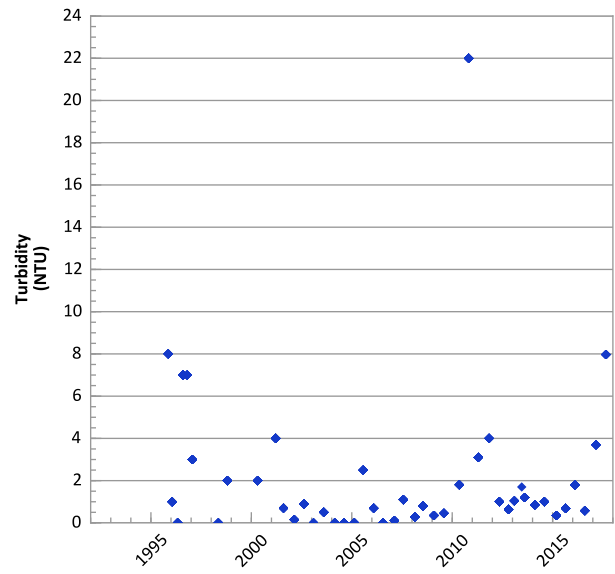
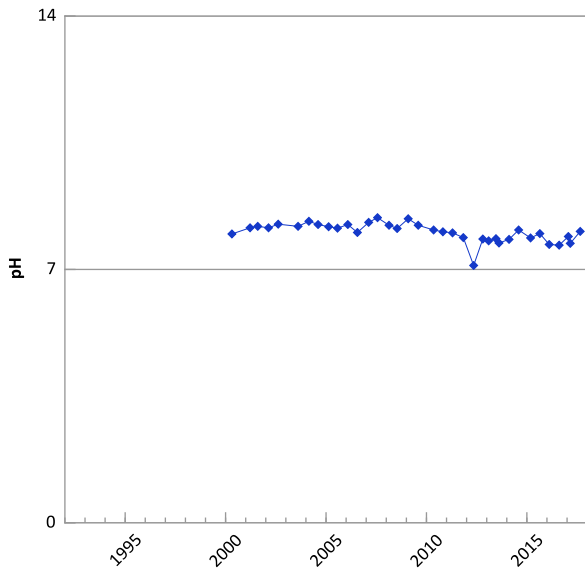
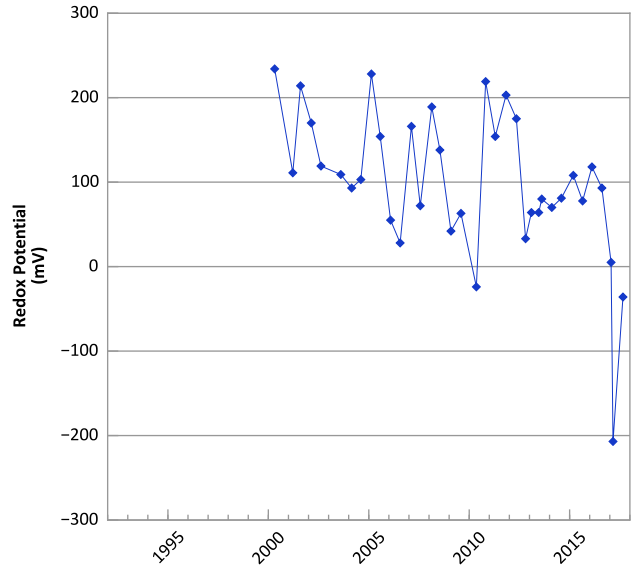
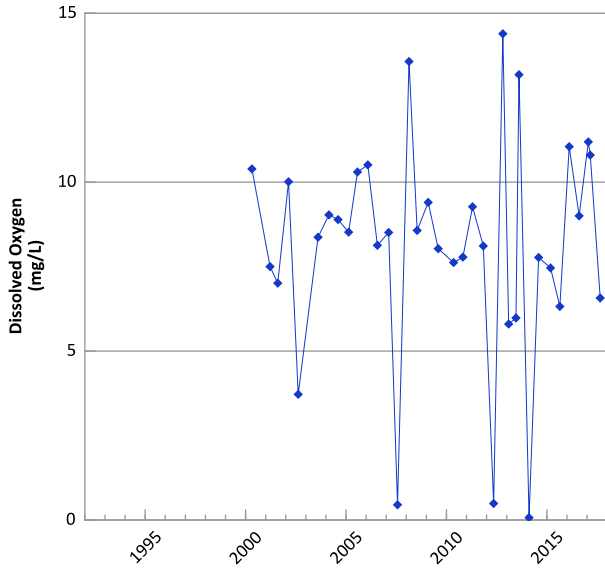
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/13/1996 to 07/17/2017
Analysis Date: 03/21/2018

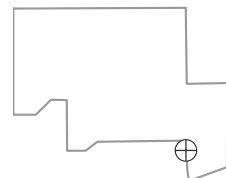
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1015 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



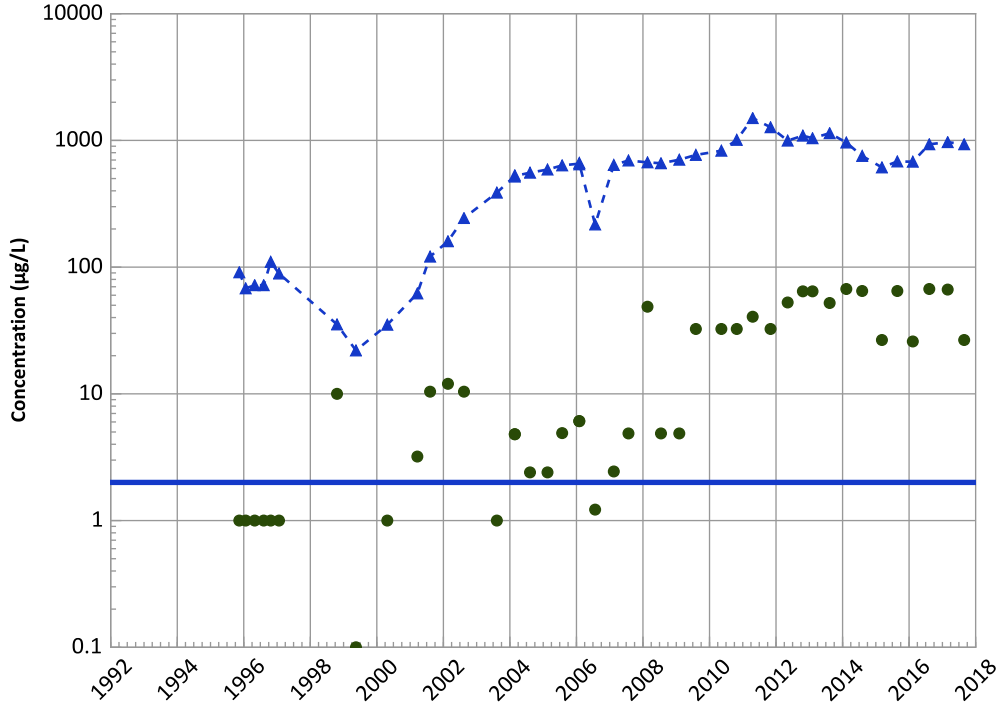
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 11/13/1995 to 08/28/2017
 Analysis Date: 03/21/2018

Well Location



PTX06-1015 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

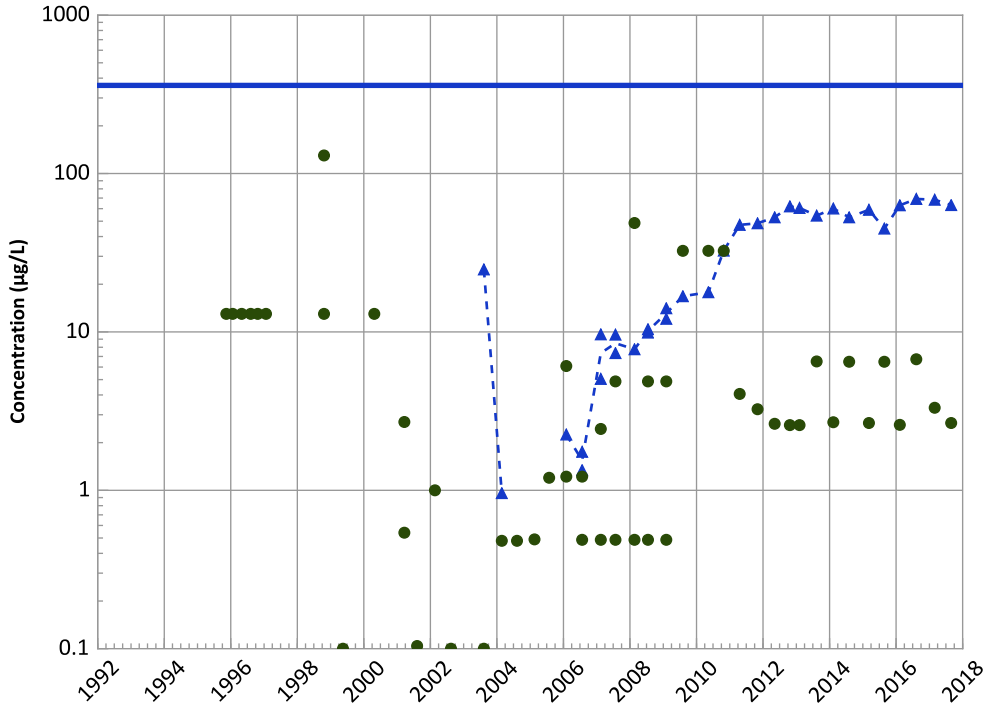
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Increasing

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

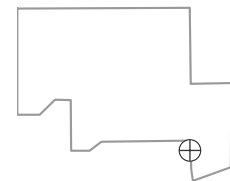
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
Increasing

Well Location

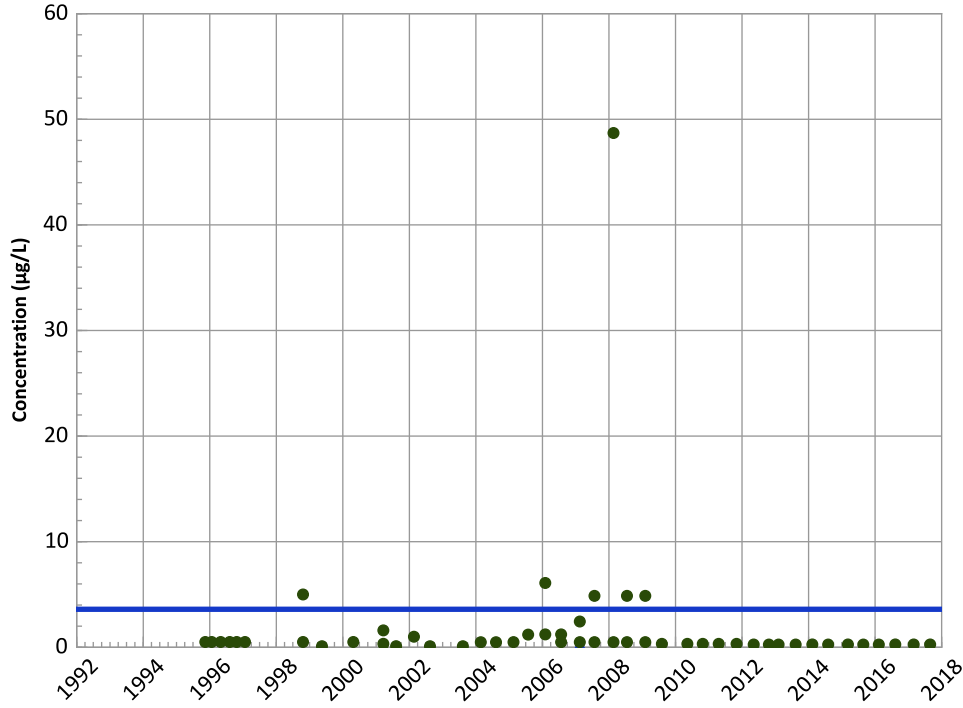


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/13/1995 to 08/28/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1015 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

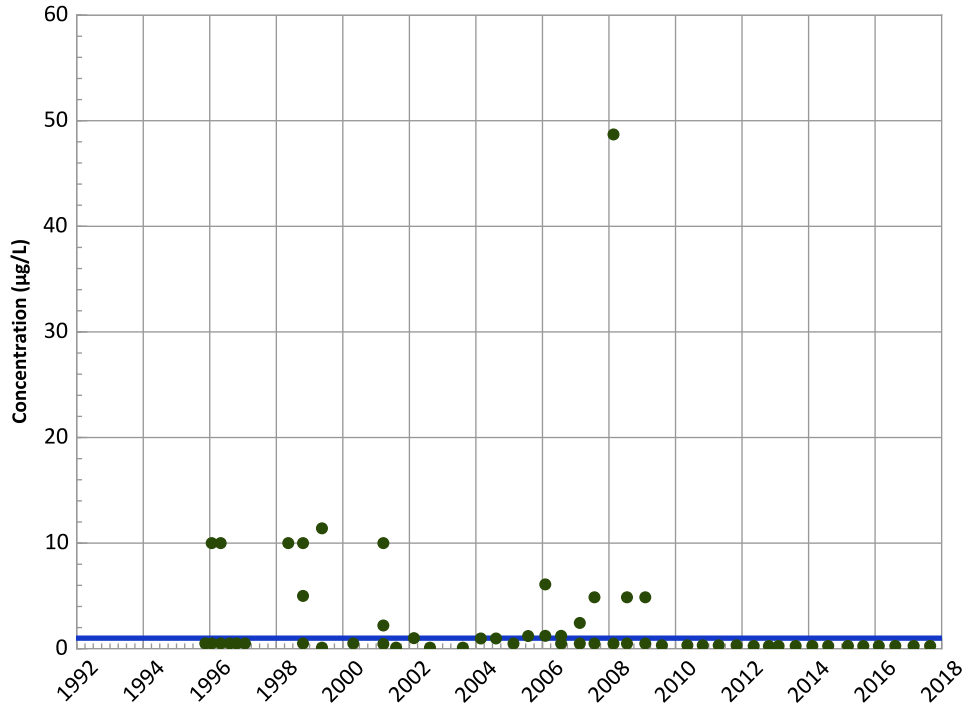
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

2,4-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

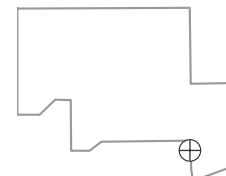
MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/13/1995 to 08/28/2017
Analysis Date: 03/21/2018

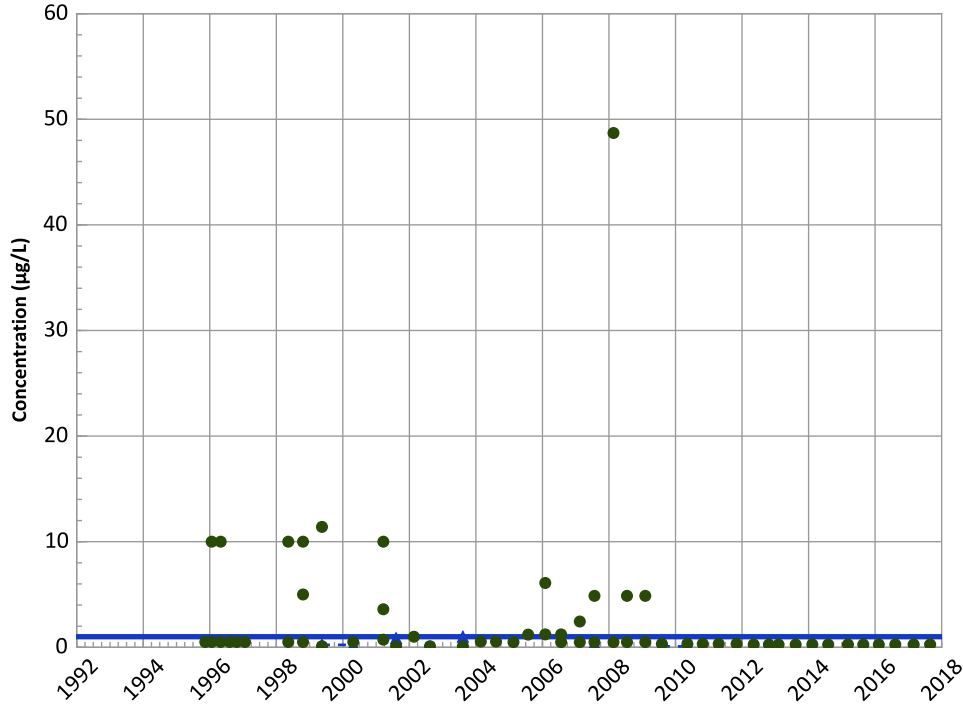
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

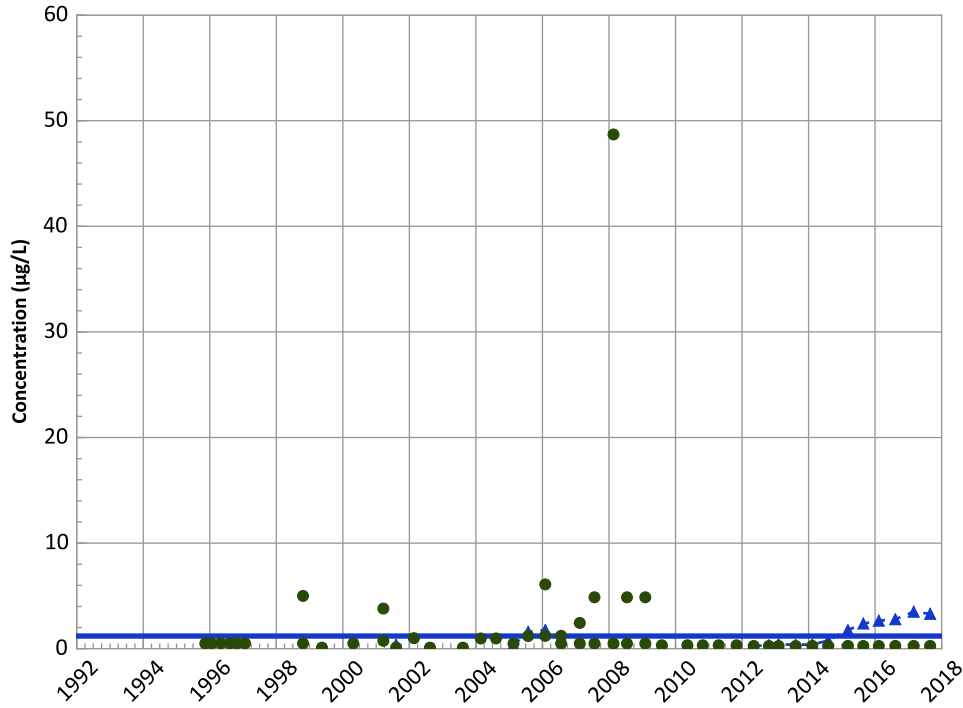


PTX06-1015 in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



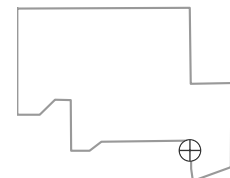
2-Amino-4,6-Dinitrotoluene Trend



Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 11/13/1995 to 08/28/2017
 Analysis Date: 03/21/2018

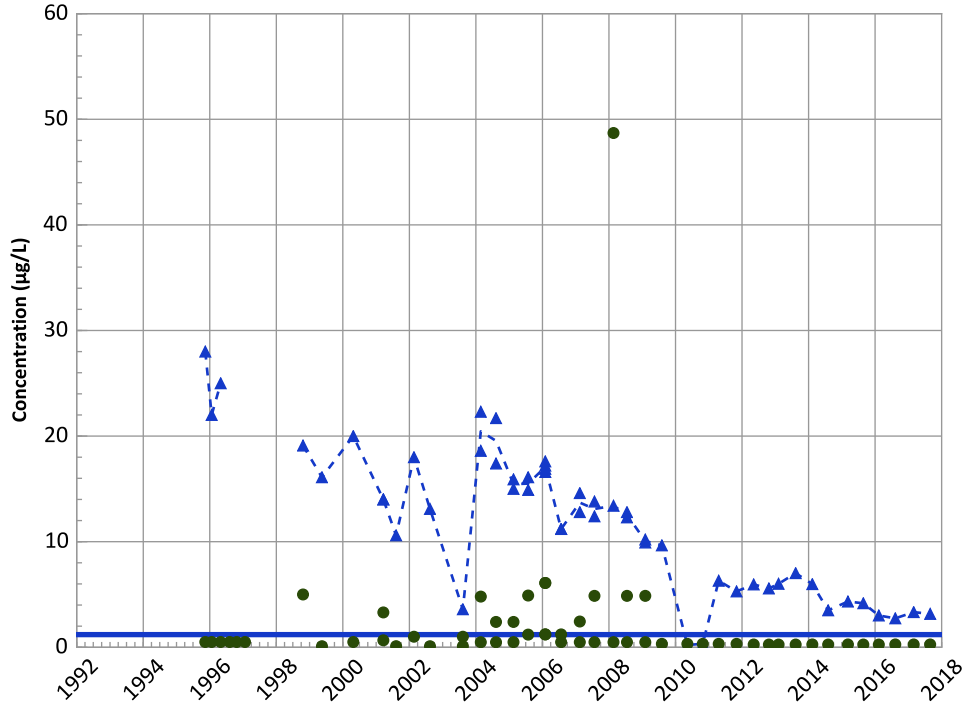
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1015 in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

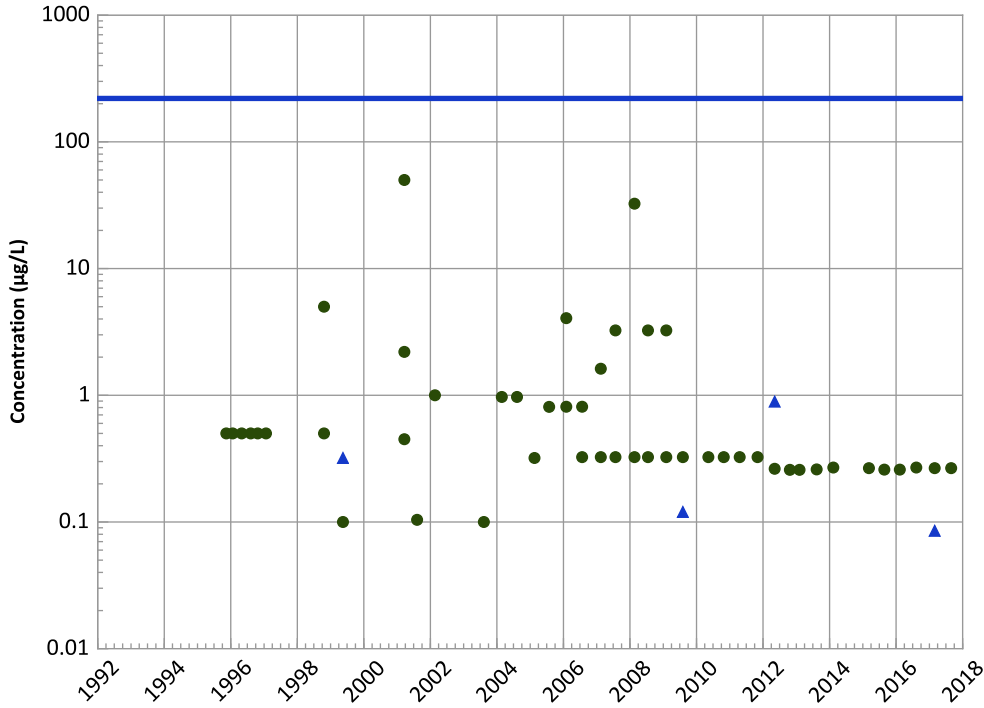
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

1,3,5-Trinitrobenzene Trend



Concentration Trend

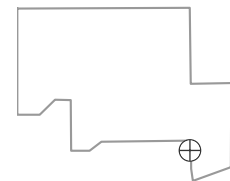
MAROS Mann-Kendall Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
No Trend

Well Location

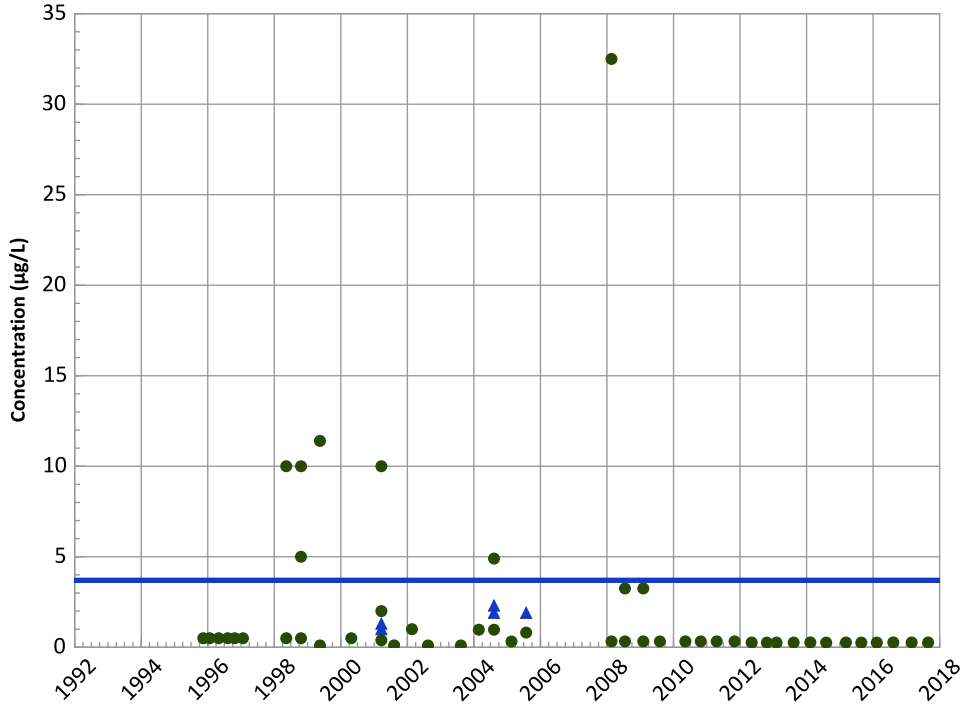


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/13/1995 to 08/28/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1015 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

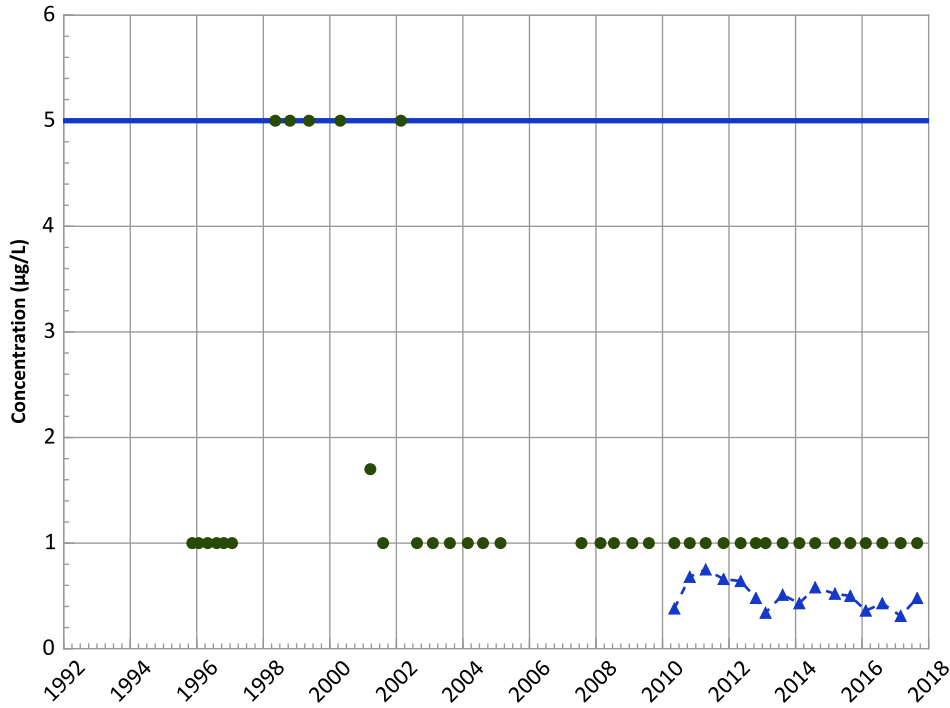
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

Tetrachloroethylene (PCE) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

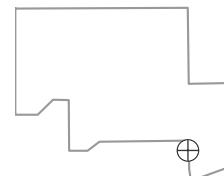
MAROS Linear Regression Method

Data ():
Stable
All Data
Decreasing

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/13/1995 to 08/28/2017
Analysis Date: 03/21/2018

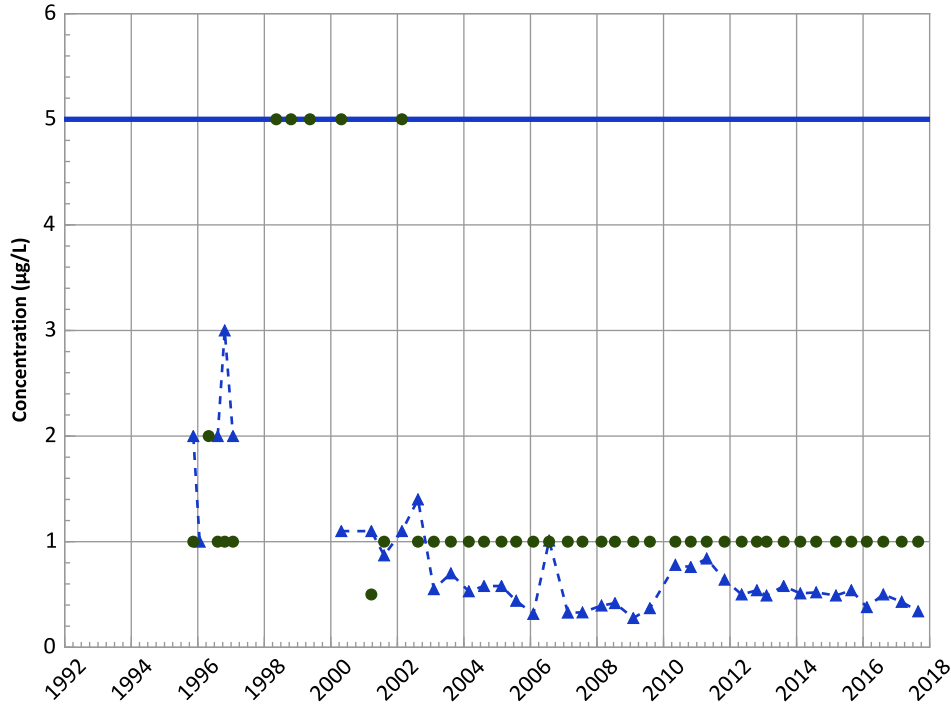
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

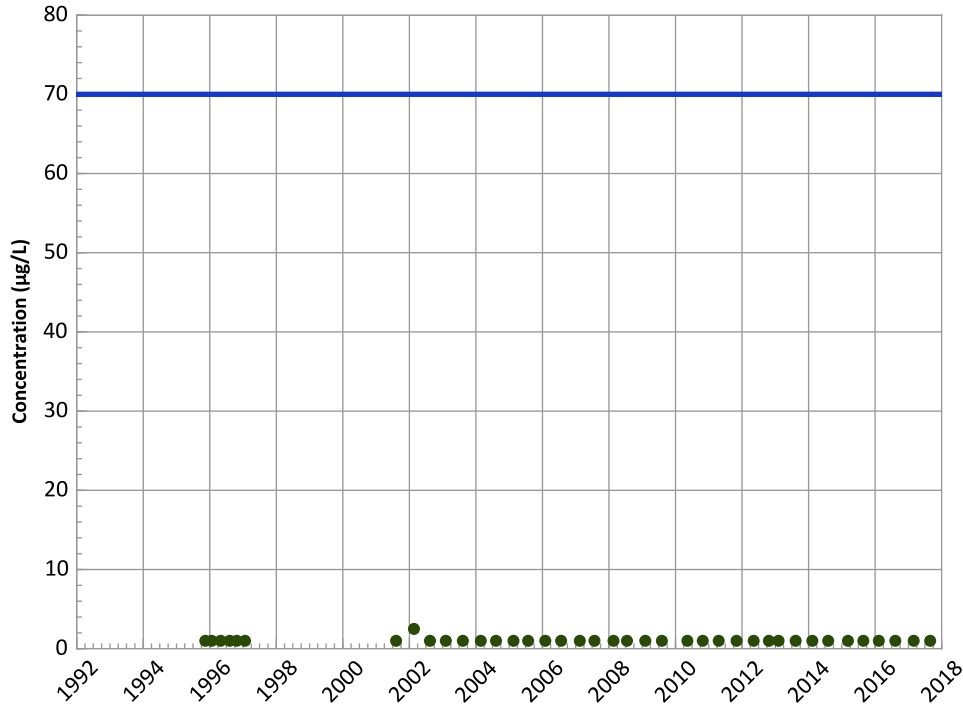


PTX06-1015 in Perched Aquifer
USDOE/NNSA Pantex Plant

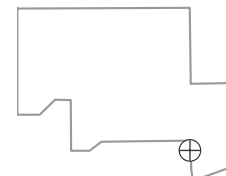
Trichloroethene Trend



cis-1,2-Dichloroethene Trend



Well Location

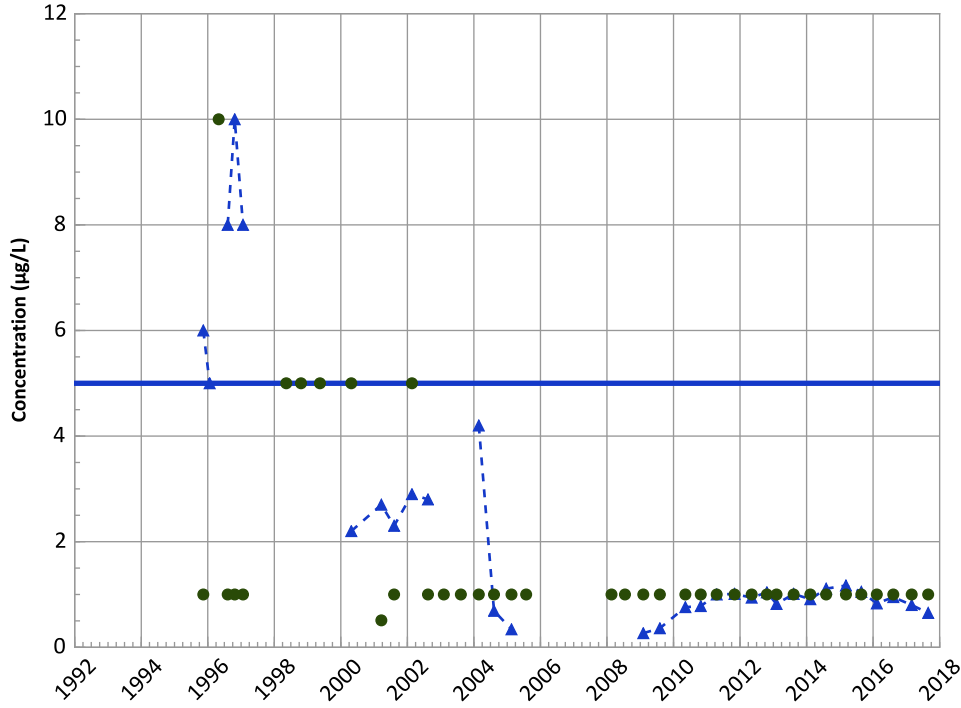


Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 11/13/1995 to 08/28/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1015 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,2-Dichloroethane Trend



Concentration Trend

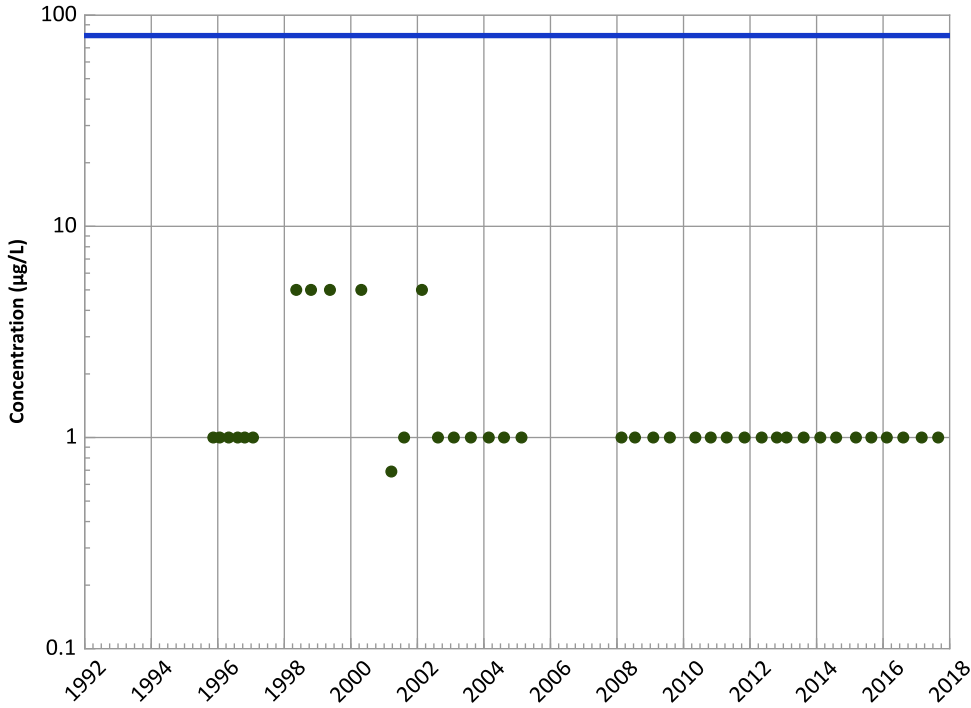
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
Decreasing

Chloroform Trend



Concentration Trend

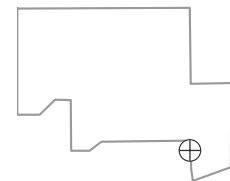
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

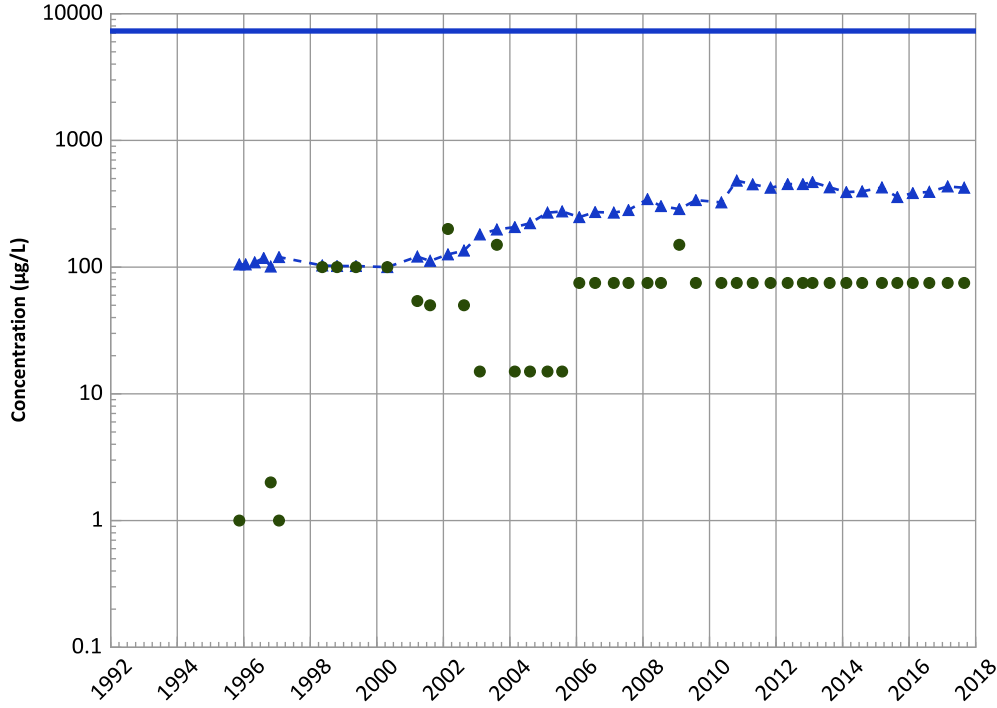


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/13/1995 to 08/28/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1015 in Perched Aquifer
USDOE/NNSA Pantex Plant

Boron Trend



Concentration Trend

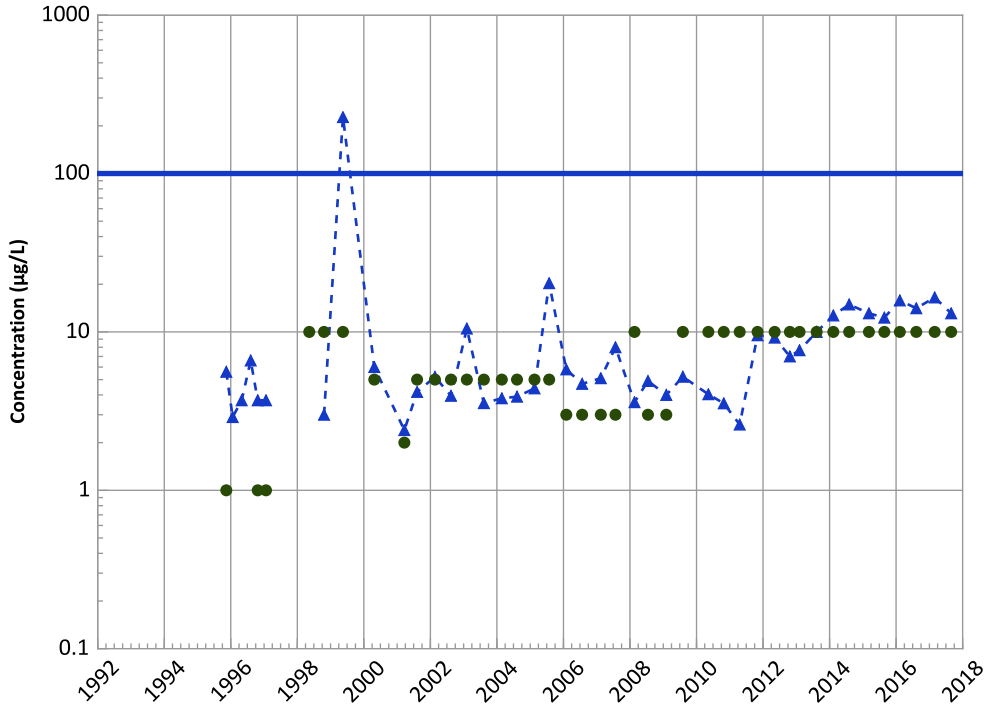
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Increasing

Chromium, Total Trend



Concentration Trend

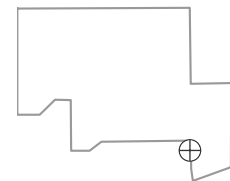
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

Well Location

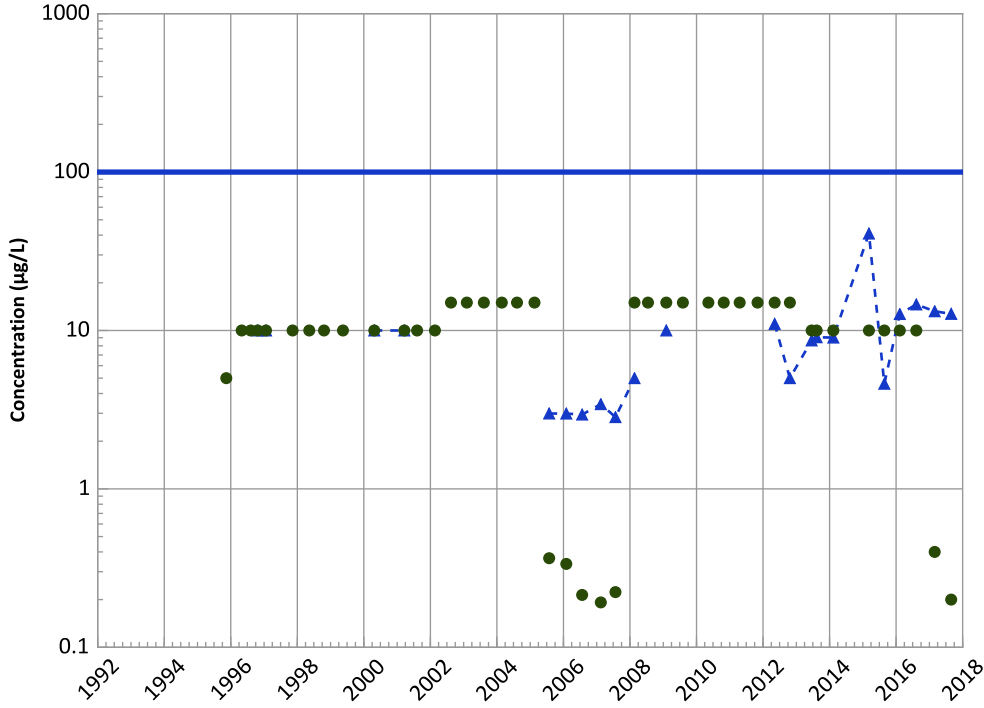


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/13/1995 to 08/28/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1015 in Perched Aquifer
USDOE/NNSA Pantex Plant

Chromium, Hexavalent Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

No Trend

All Data

Increasing

MAROS Linear Regression Method

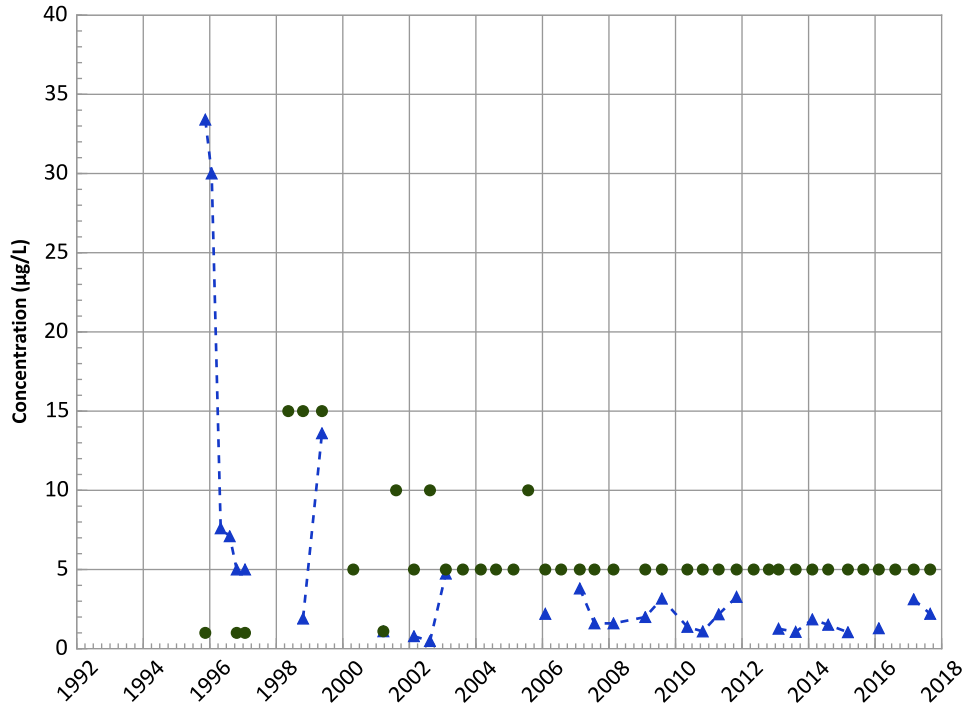
Data ():

No Trend

All Data

Probably Increasing

Manganese Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

Decreasing

All Data

Decreasing

MAROS Linear Regression Method

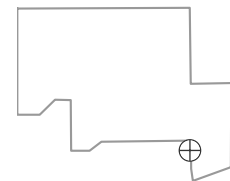
Data ():

Stable

All Data

Decreasing

Well Location

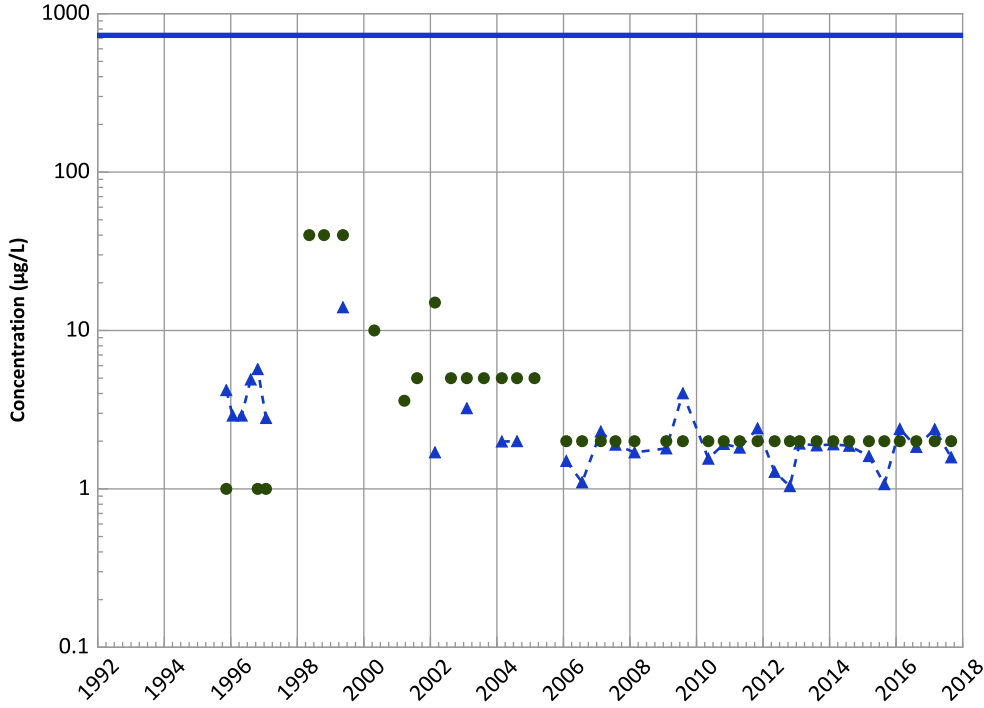


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/13/1995 to 08/28/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1015 in Perched Aquifer
USDOE/NNSA Pantex Plant

Nickel Trend



Concentration Trend

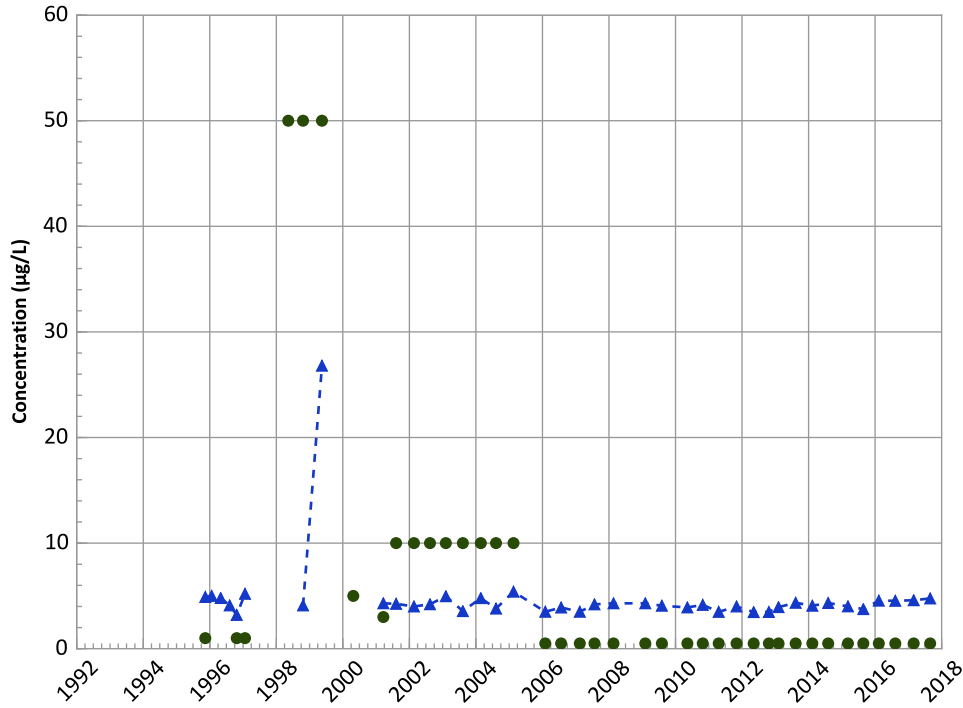
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
Decreasing

Molybdenum Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Decreasing

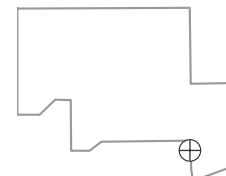
MAROS Linear Regression Method

Data ():
Increasing
All Data
Probably Decreasing

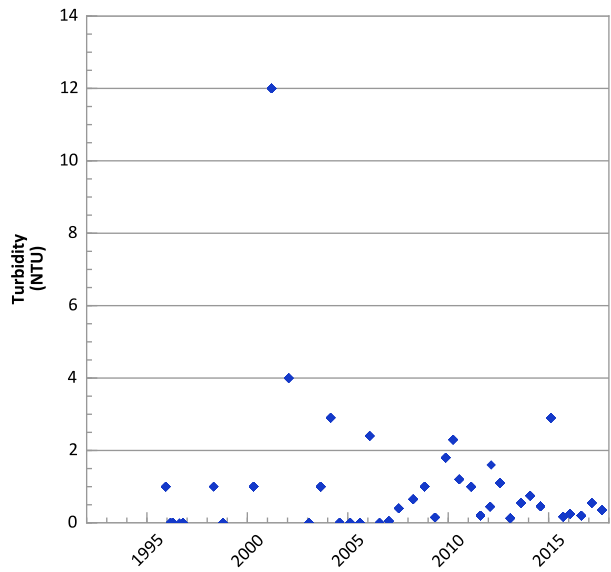
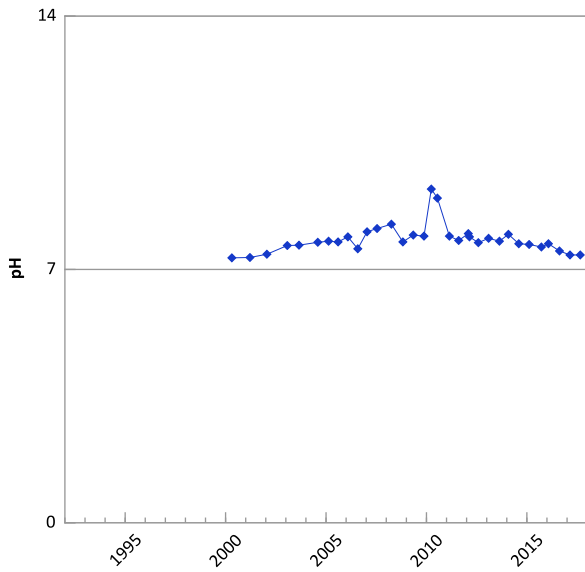
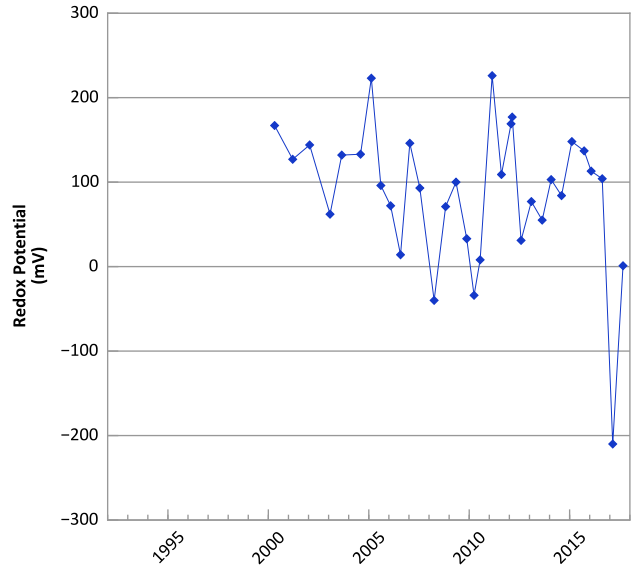
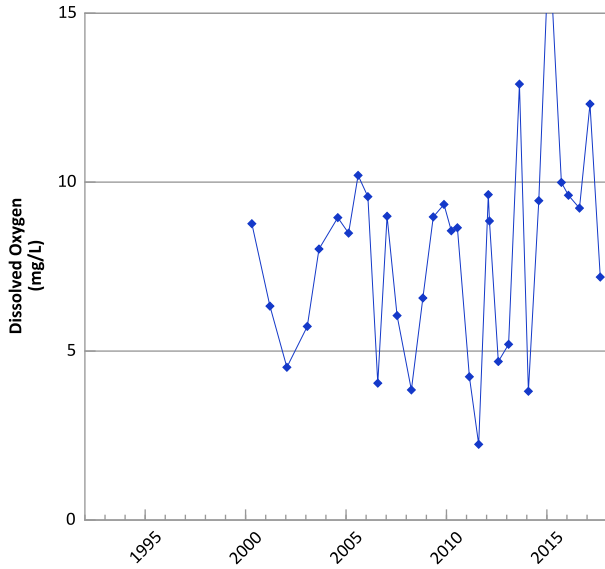
Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/13/1995 to 08/28/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

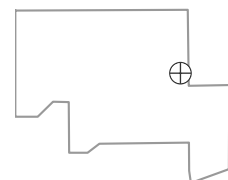


**PTX06-1023 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



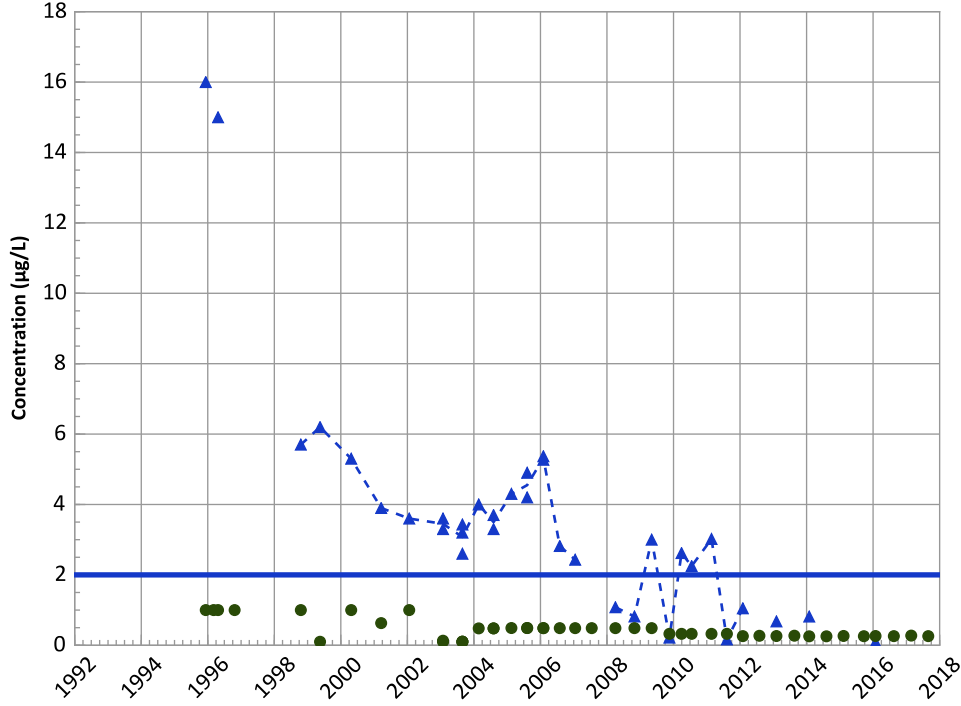
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 10/18/1995 to 08/29/2017
 Analysis Date: 03/21/2018

Well Location



PTX06-1023 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

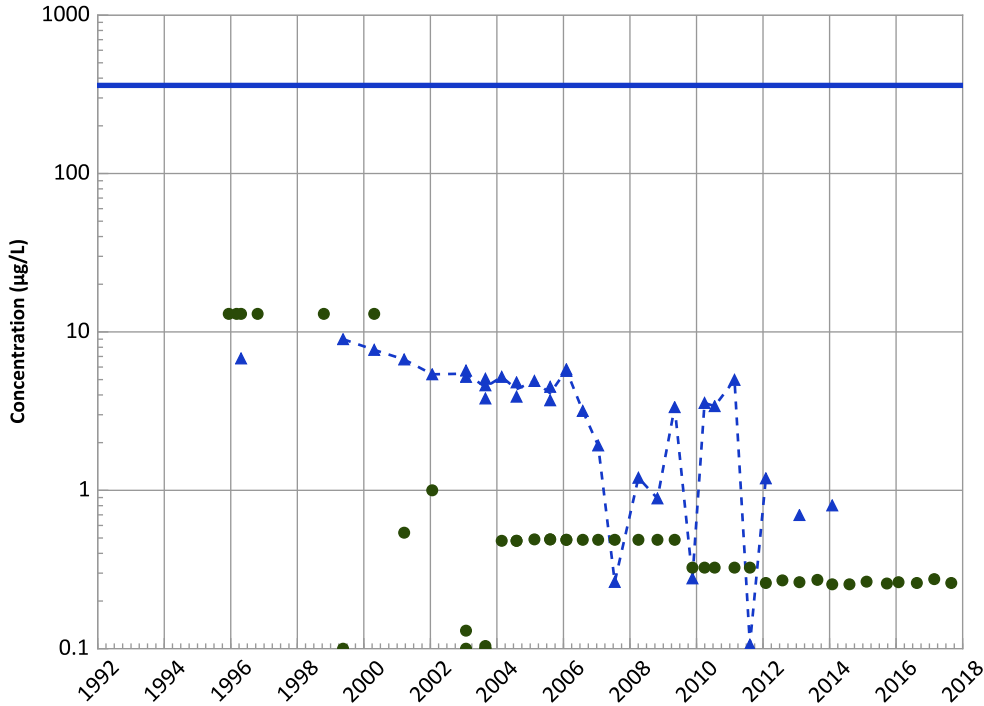
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

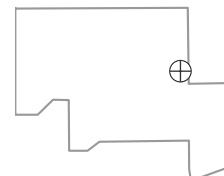
MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/18/1995 to 08/29/2017
Analysis Date: 03/21/2018

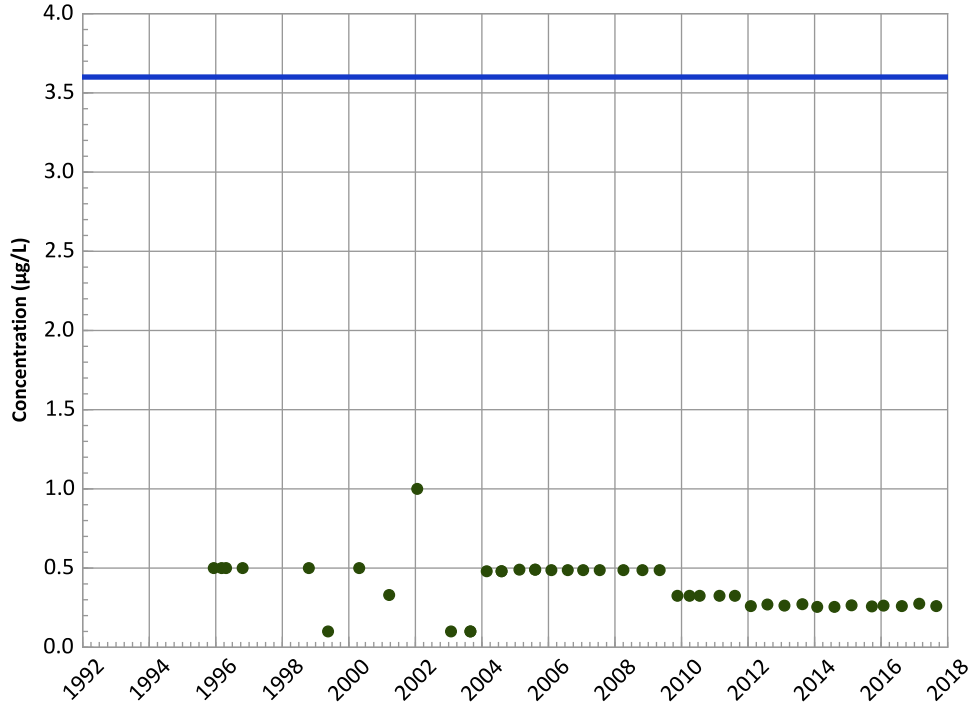
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1023 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

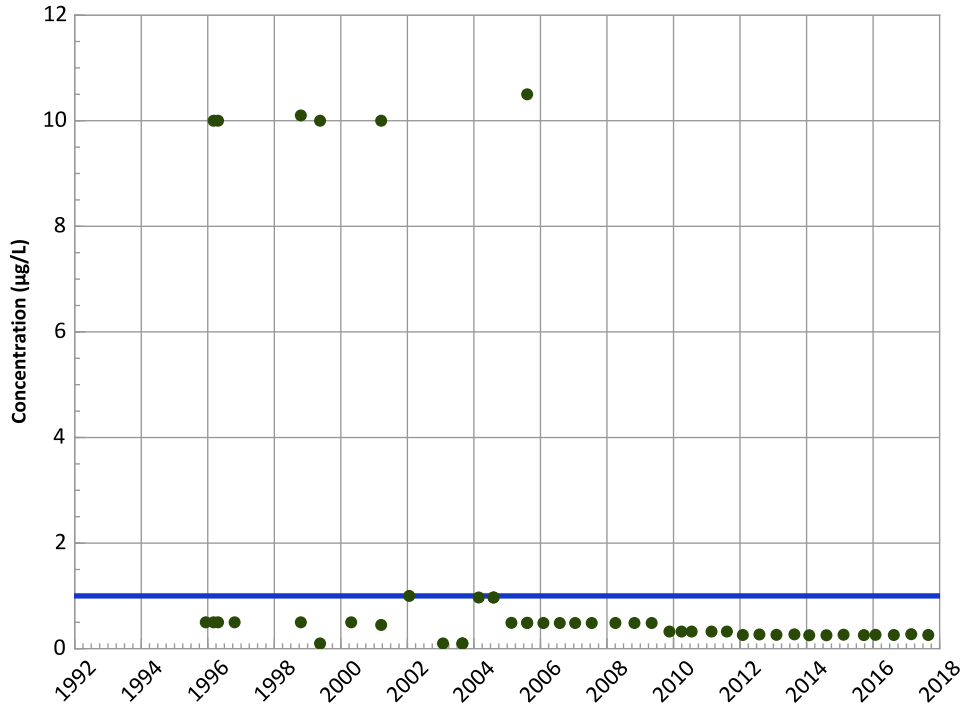
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

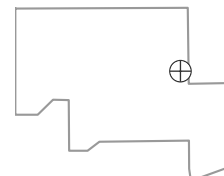
MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/18/1995 to 08/29/2017
Analysis Date: 03/21/2018

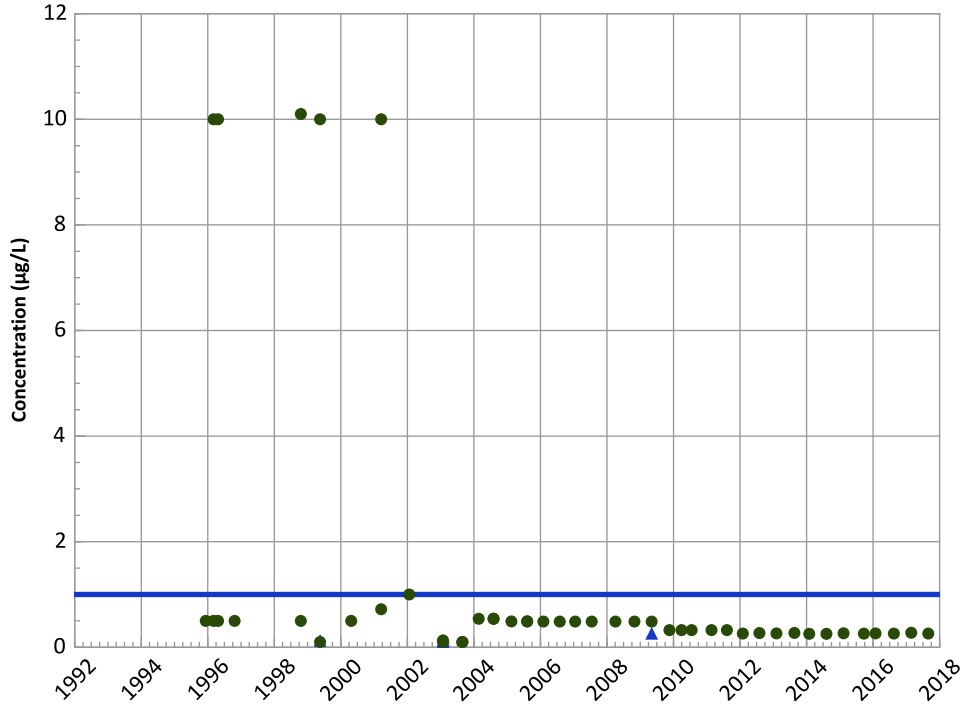
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1023 in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

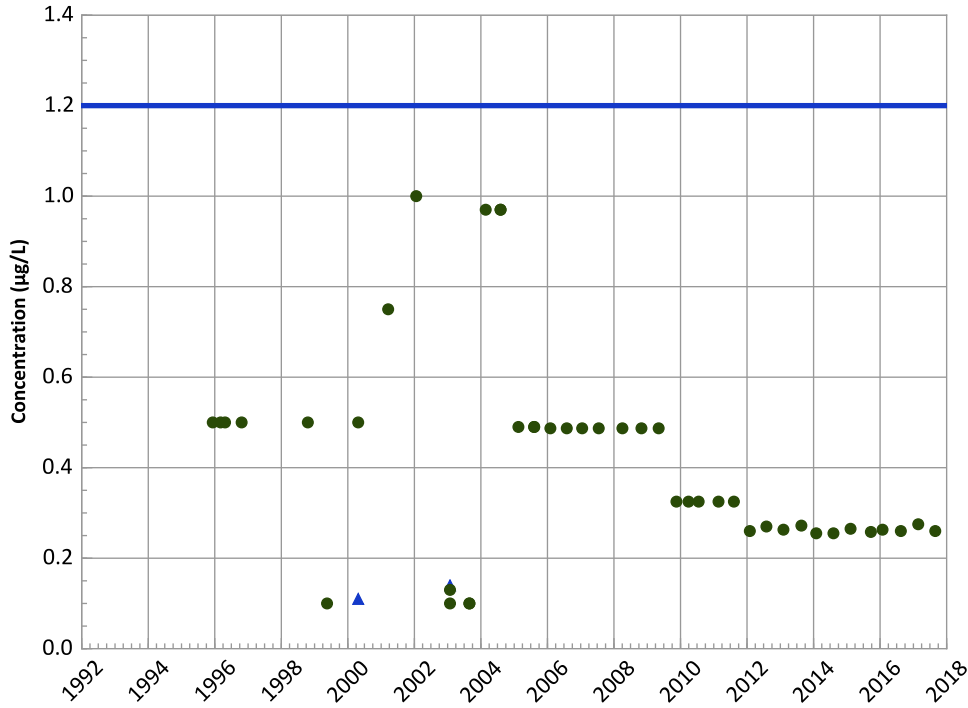
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

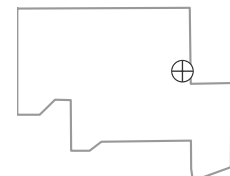
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

Well Location

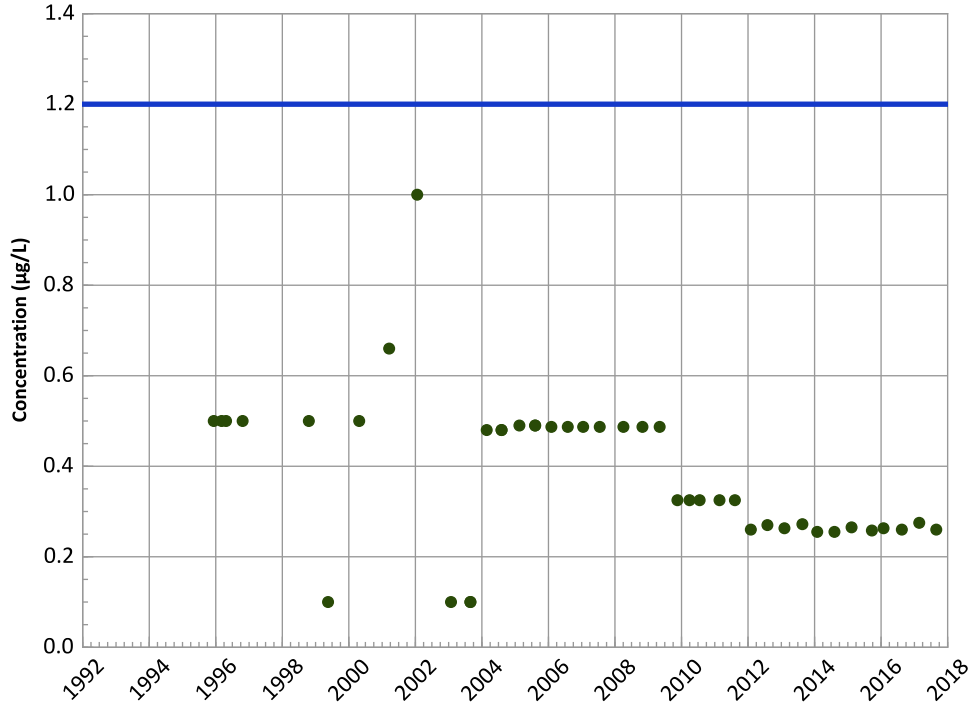


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/18/1995 to 08/29/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1023 in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

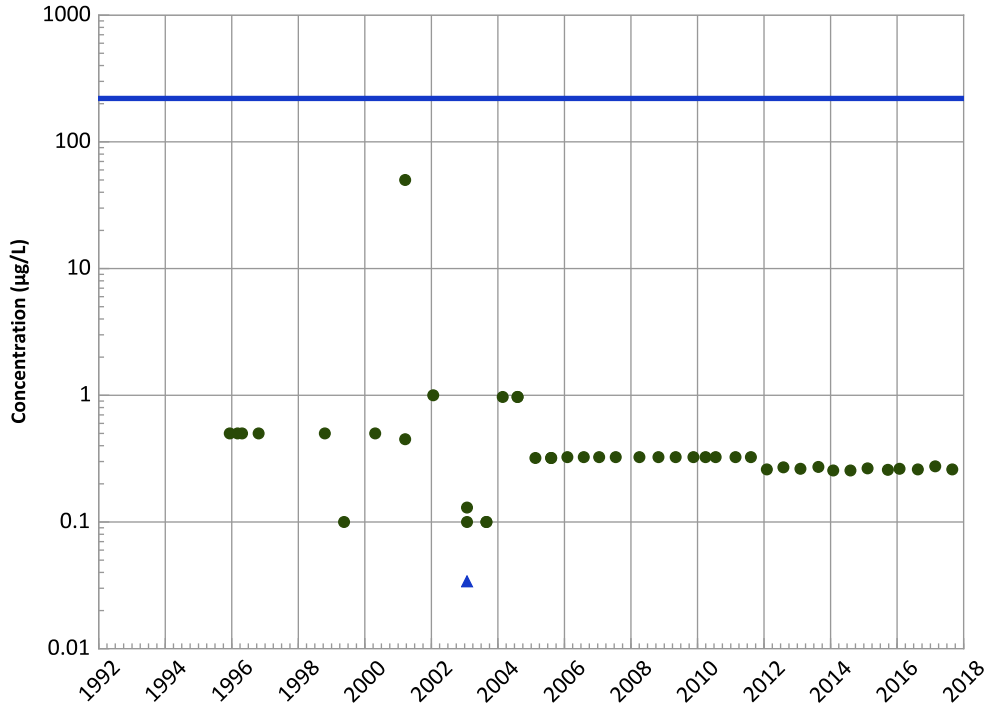
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,3,5-Trinitrobenzene Trend



Concentration Trend

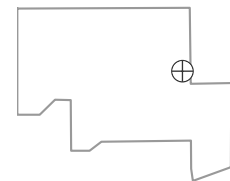
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

Well Location

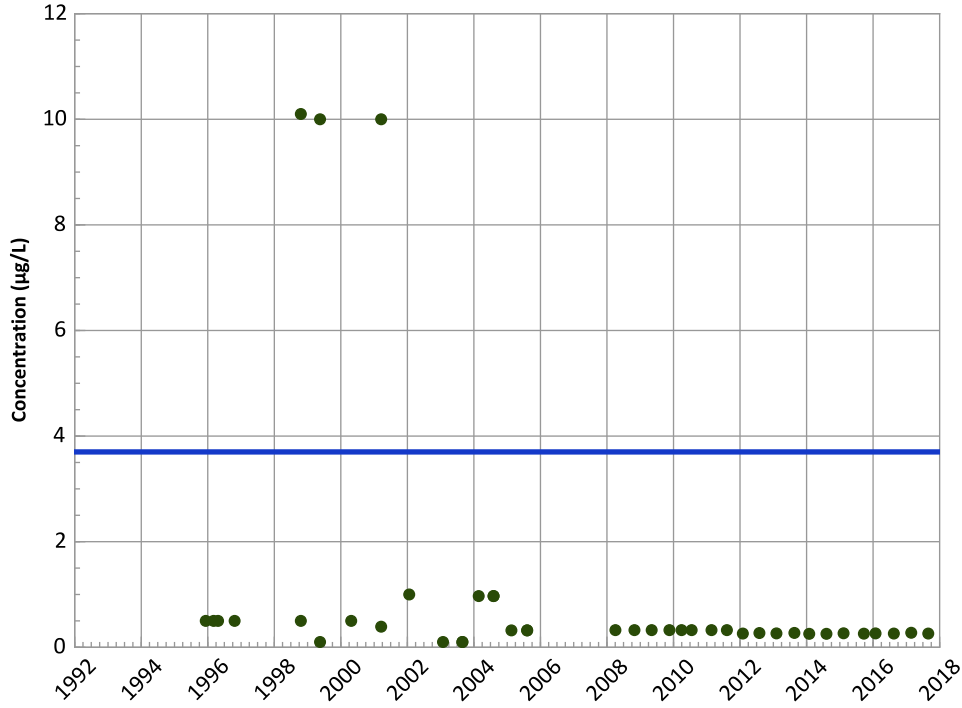


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/18/1995 to 08/29/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1023 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

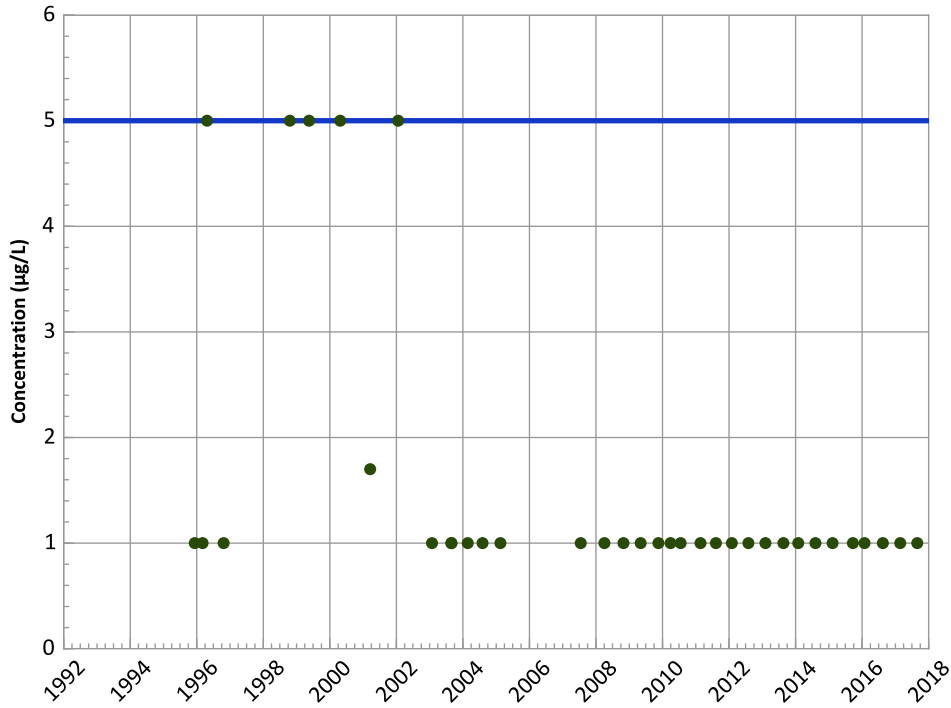
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Tetrachloroethylene (PCE) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

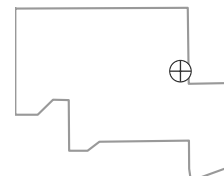
MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/18/1995 to 08/29/2017
Analysis Date: 03/21/2018

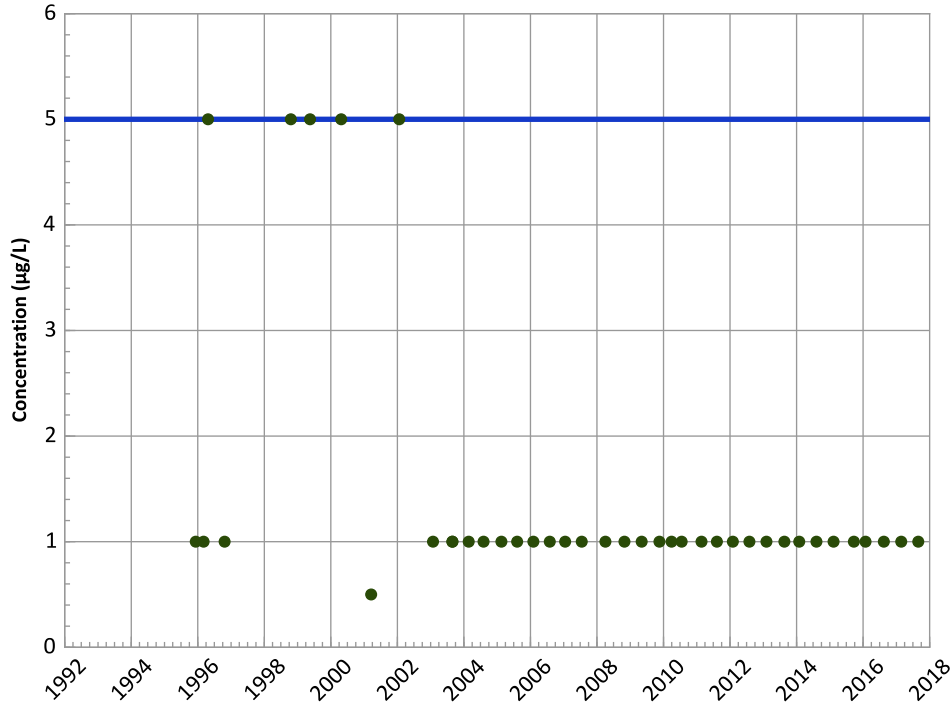
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1023 in Perched Aquifer
USDOE/NNSA Pantex Plant

Trichloroethene Trend



Concentration Trend

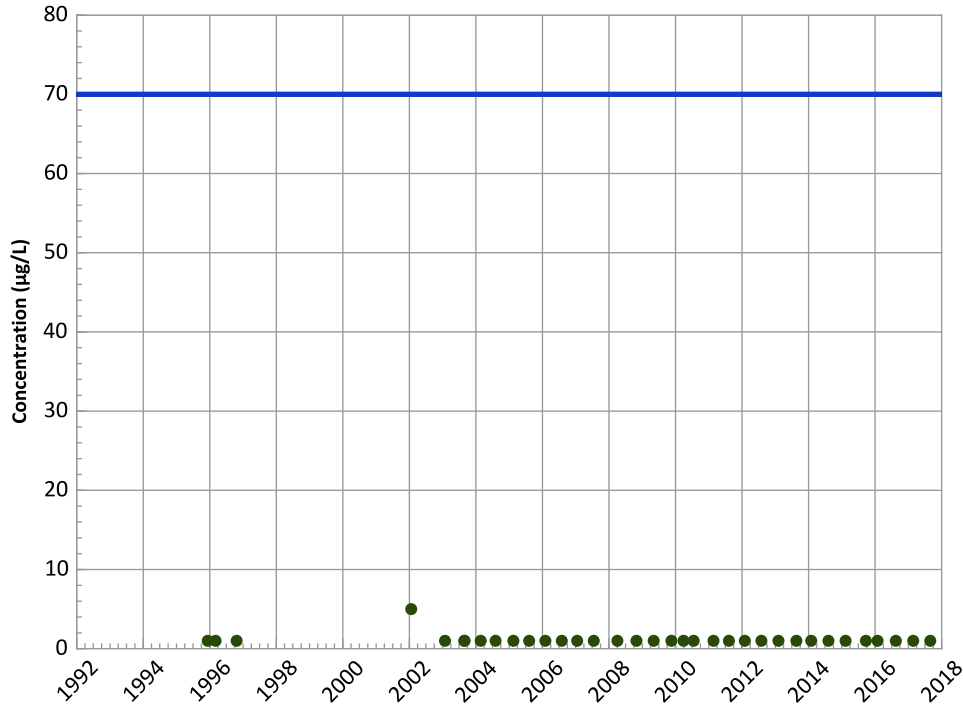
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

cis-1,2-Dichloroethene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

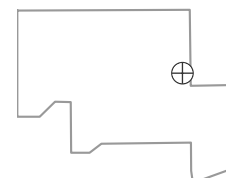
MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/18/1995 to 08/29/2017
Analysis Date: 03/21/2018

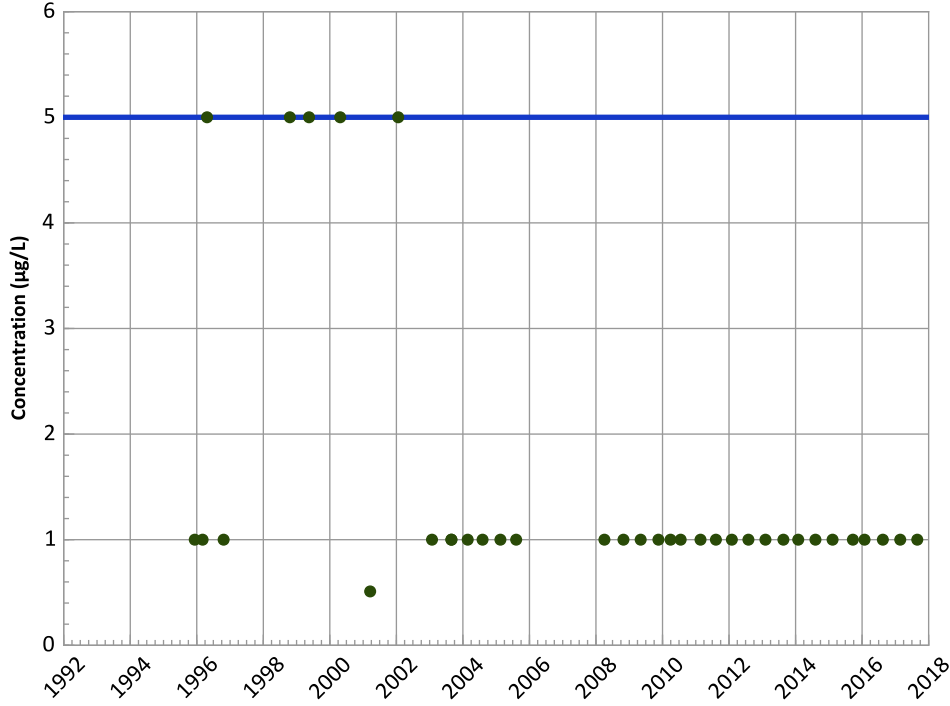
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1023 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,2-Dichloroethane Trend



Concentration Trend

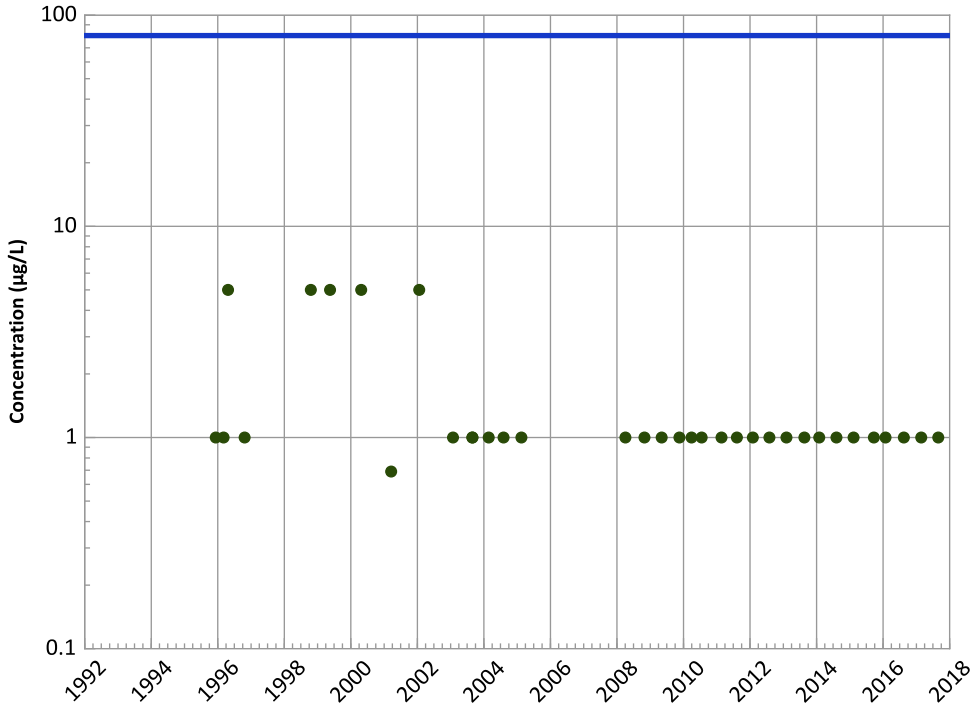
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Chloroform Trend



Concentration Trend

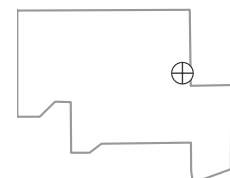
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

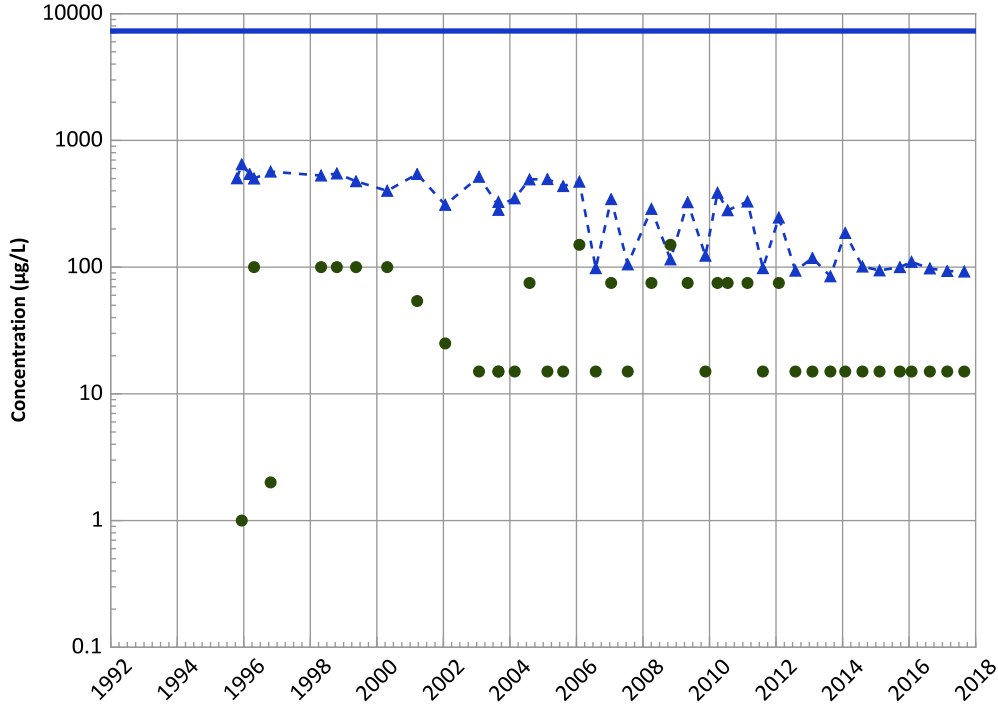


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/18/1995 to 08/29/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1023 in Perched Aquifer
USDOE/NNSA Pantex Plant

Boron Trend



Concentration Trend

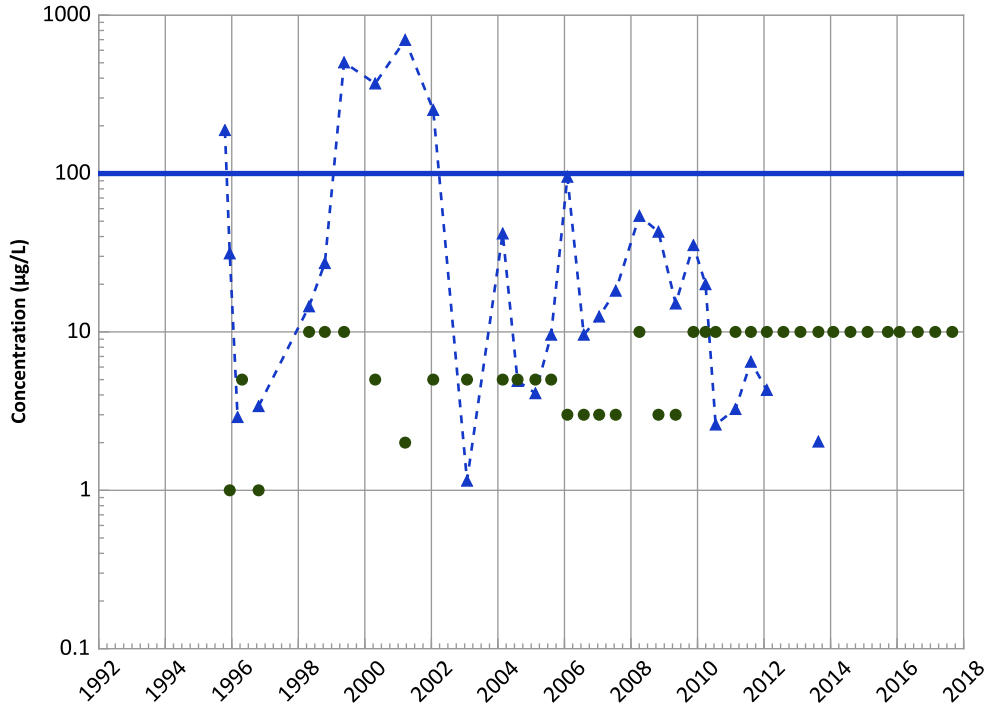
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Probably Decreasing
All Data
Decreasing

Chromium, Total Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

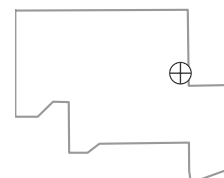
MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/18/1995 to 08/29/2017
Analysis Date: 03/21/2018

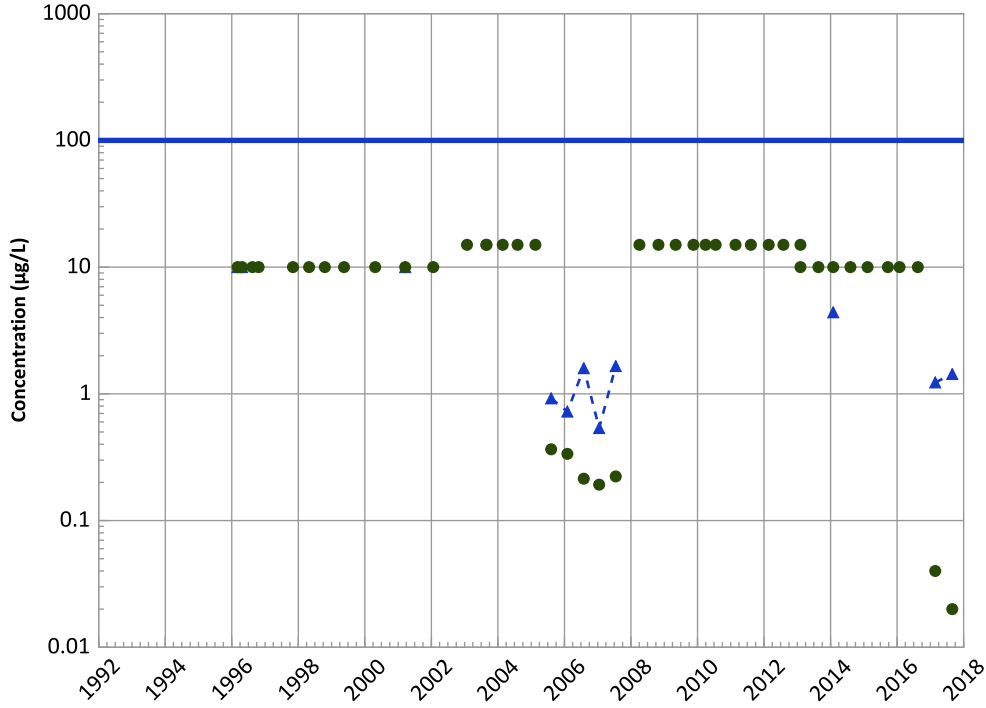
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1023 in Perched Aquifer
USDOE/NNSA Pantex Plant

Chromium, Hexavalent Trend

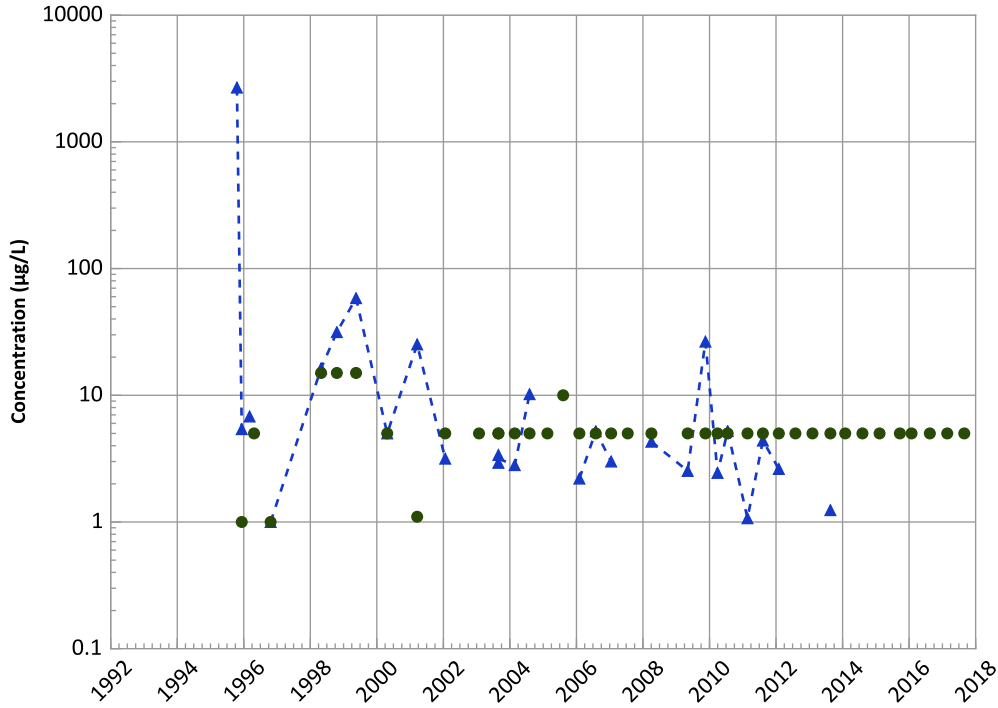


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

MAROS Linear Regression Method
Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

Manganese Trend

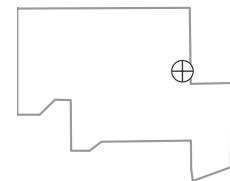


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

MAROS Linear Regression Method
Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

Well Location

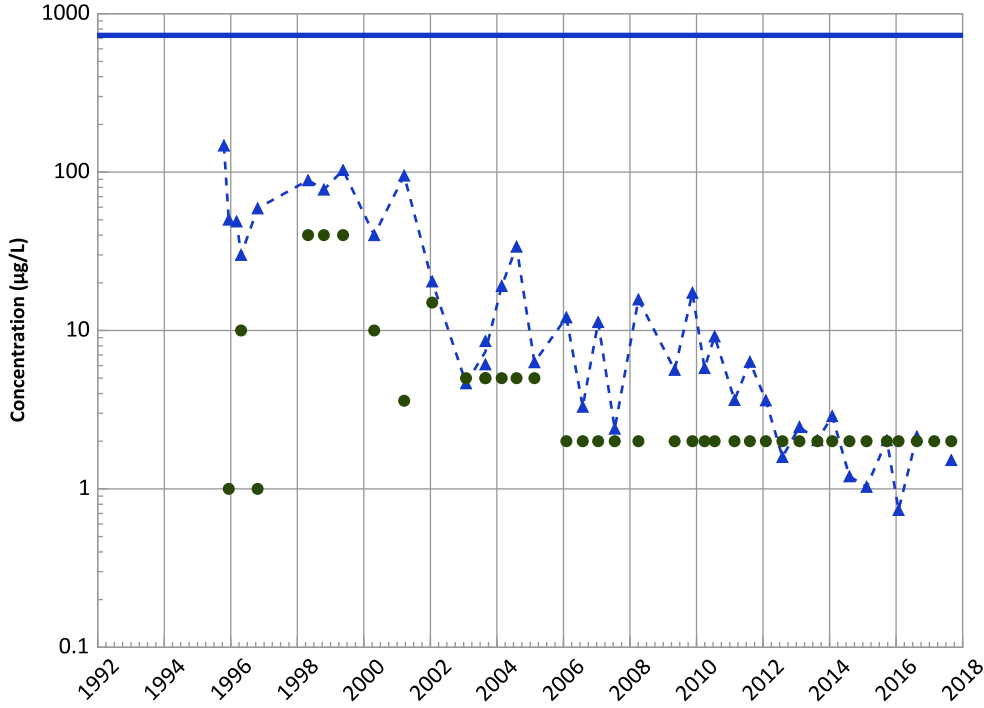


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/18/1995 to 08/29/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1023 in Perched Aquifer
USDOE/NNSA Pantex Plant

Nickel Trend



Concentration Trend

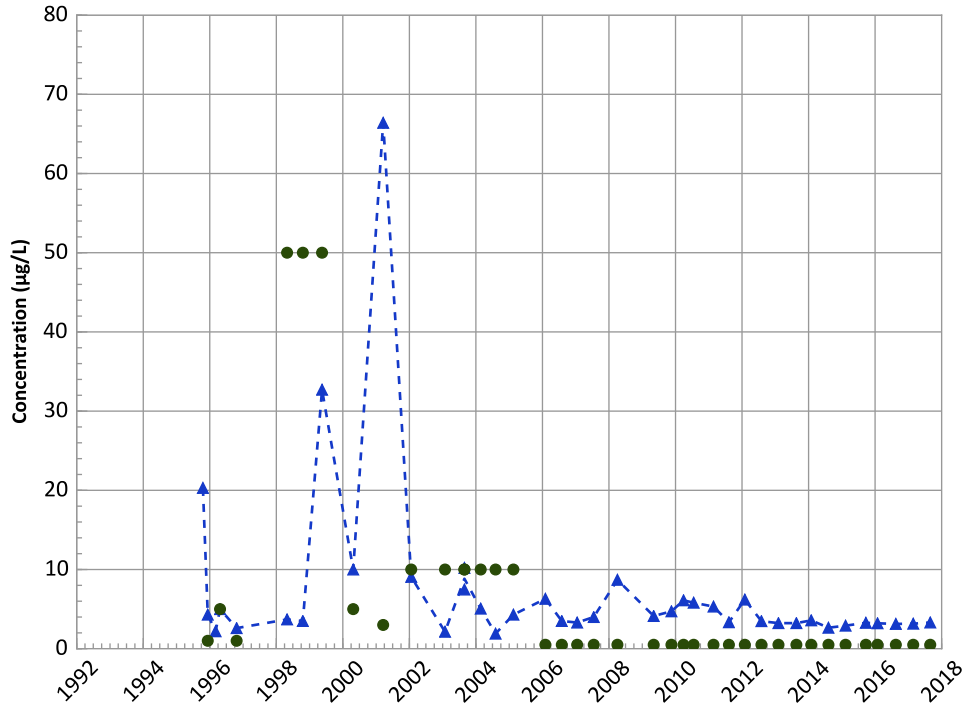
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Probably Decreasing
All Data
Decreasing

Molybdenum Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

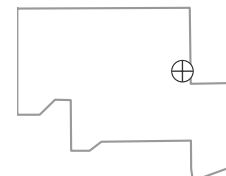
MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

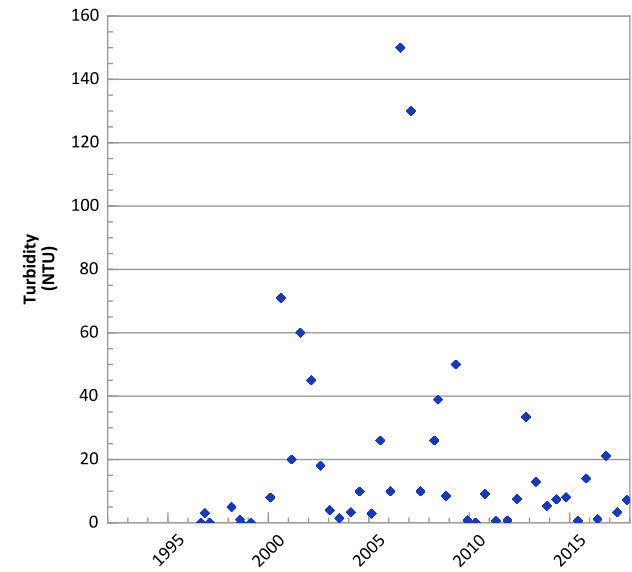
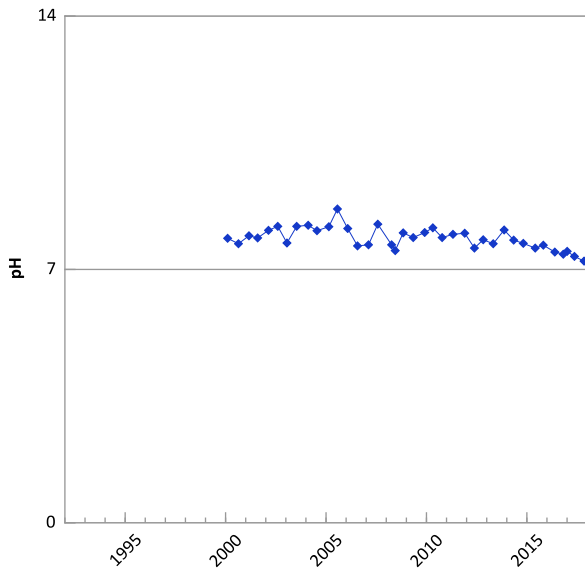
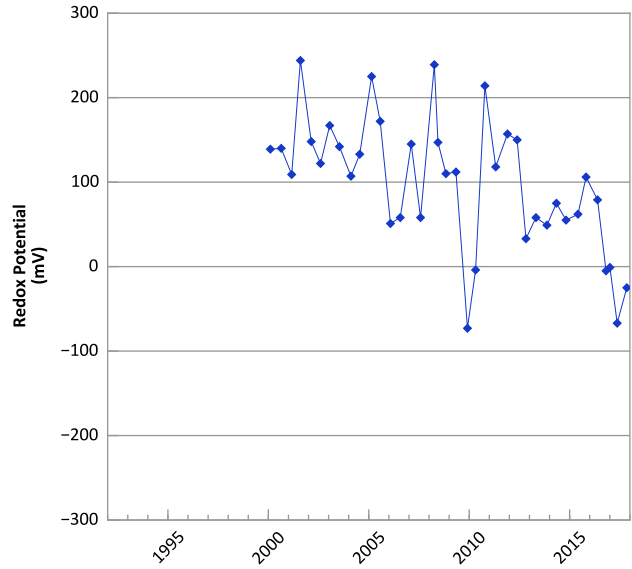
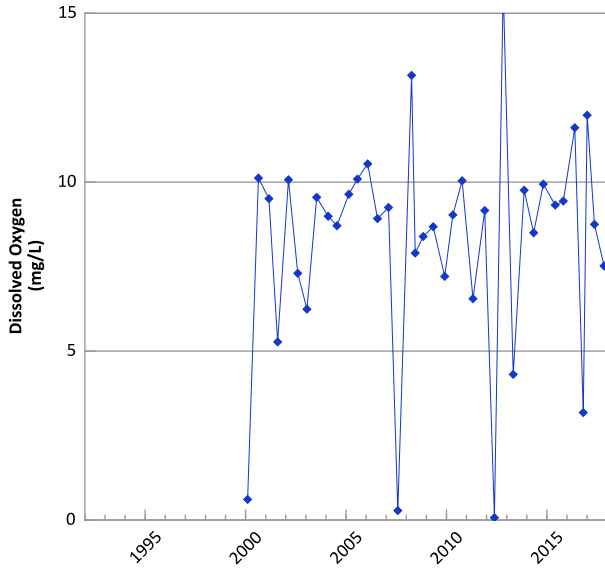
Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/18/1995 to 08/29/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

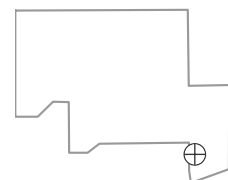


**PTX06-1031 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



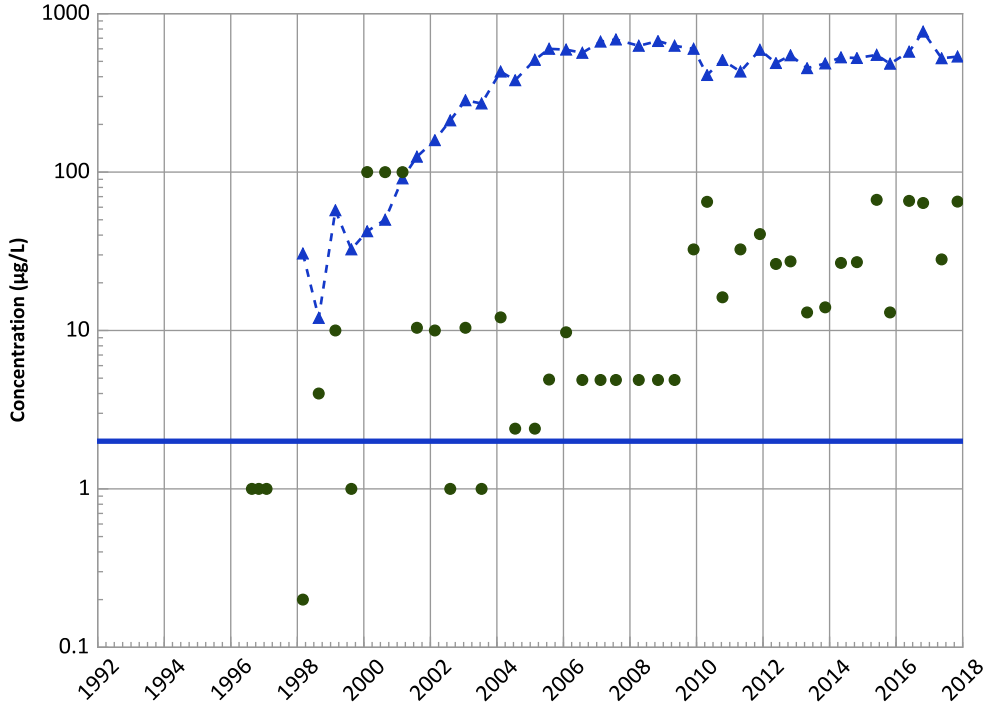
Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/20/1996 to 11/06/2017
Analysis Date: 03/21/2018

Well Location



PTX06-1031 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

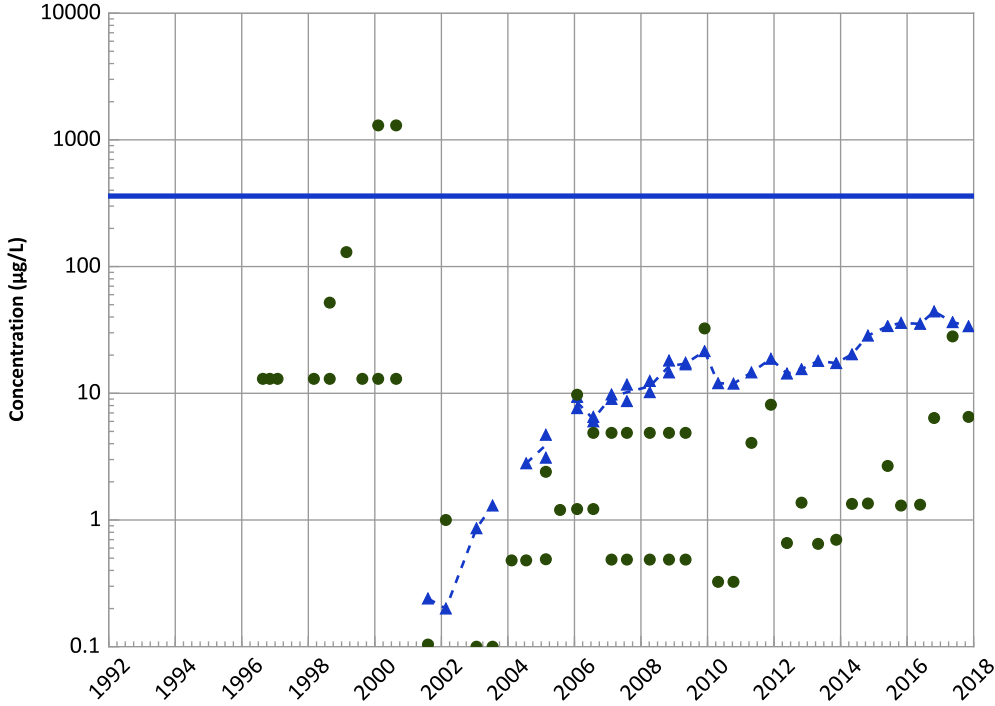
MAROS Mann-Kendall Method

Data ():
Probably Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

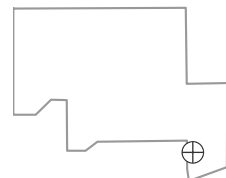
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

Well Location

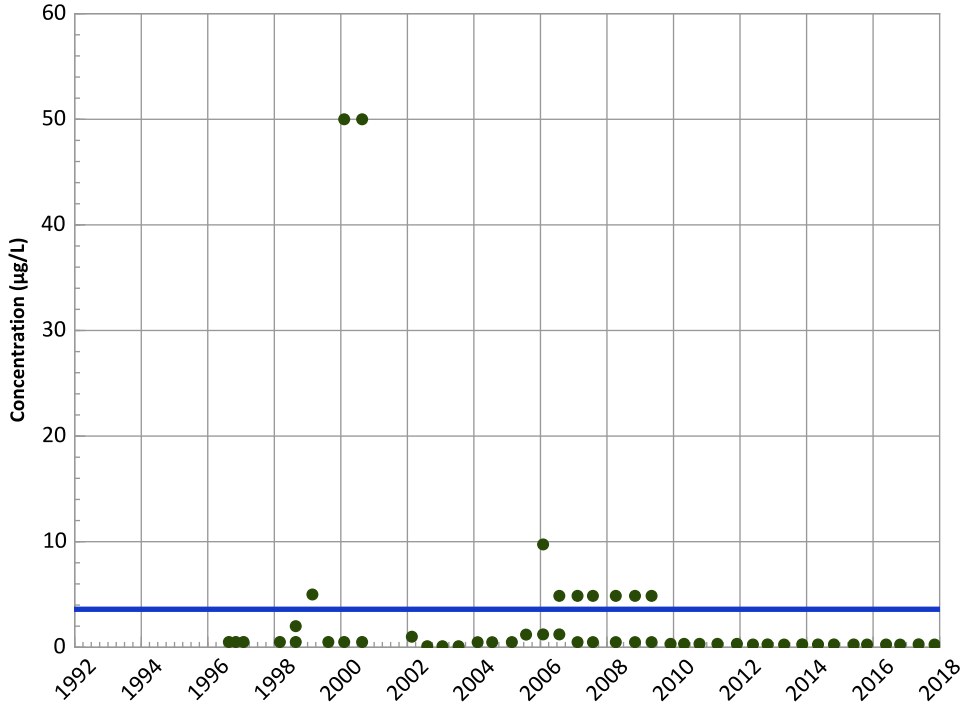


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/20/1996 to 11/06/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1031 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

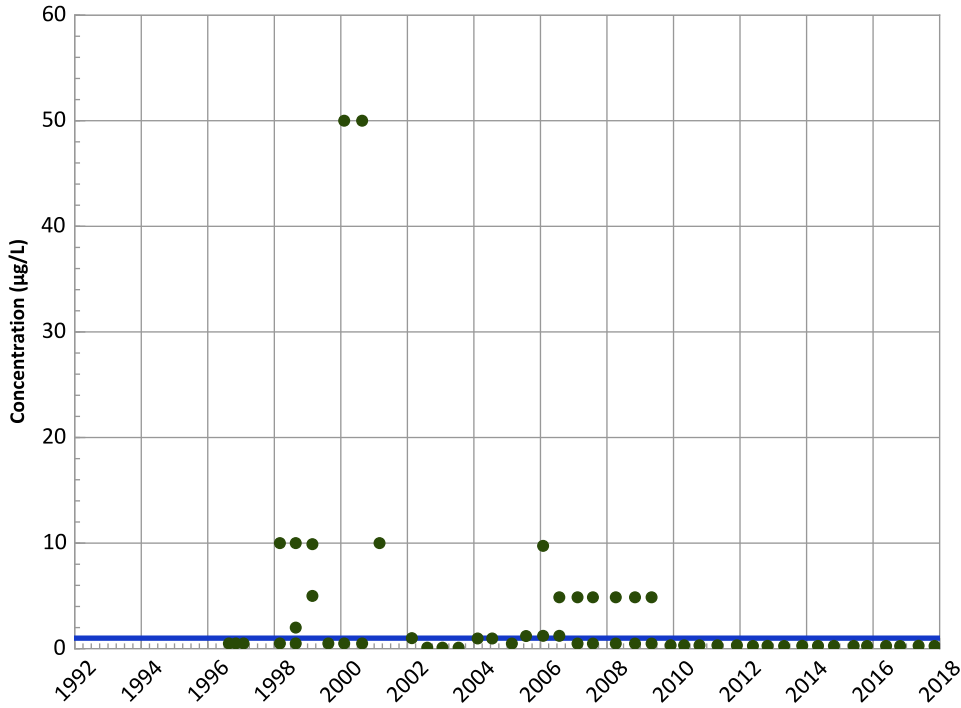
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

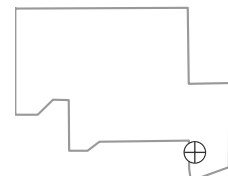
MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/20/1996 to 11/06/2017
Analysis Date: 03/21/2018

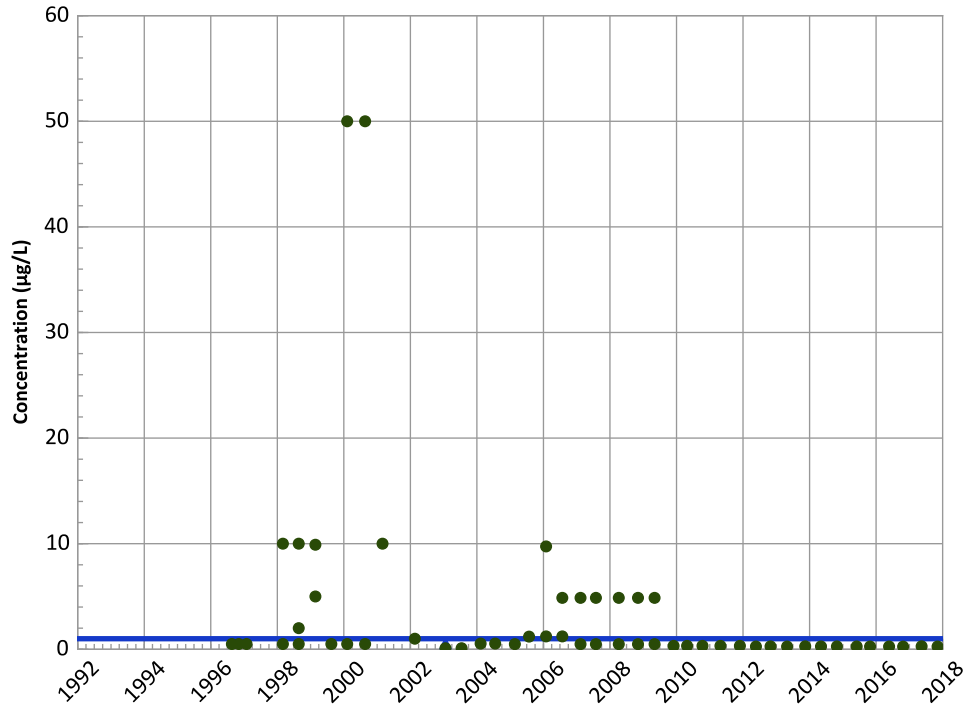
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1031 in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

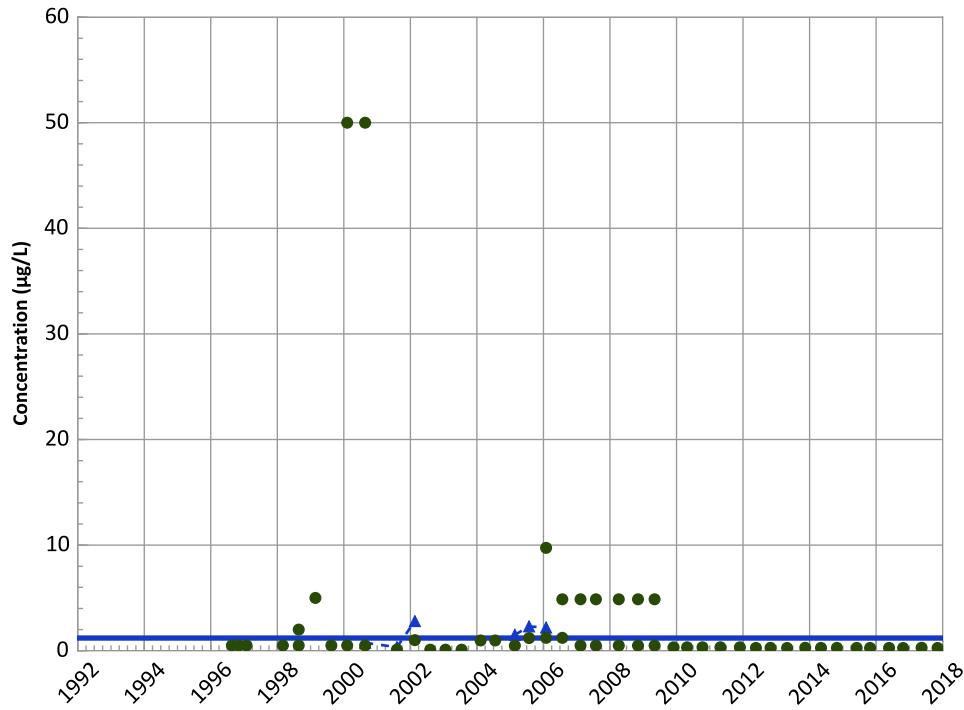
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
Decreasing

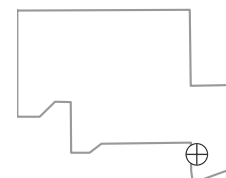
MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
Probably Increasing

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/20/1996 to 11/06/2017
Analysis Date: 03/21/2018

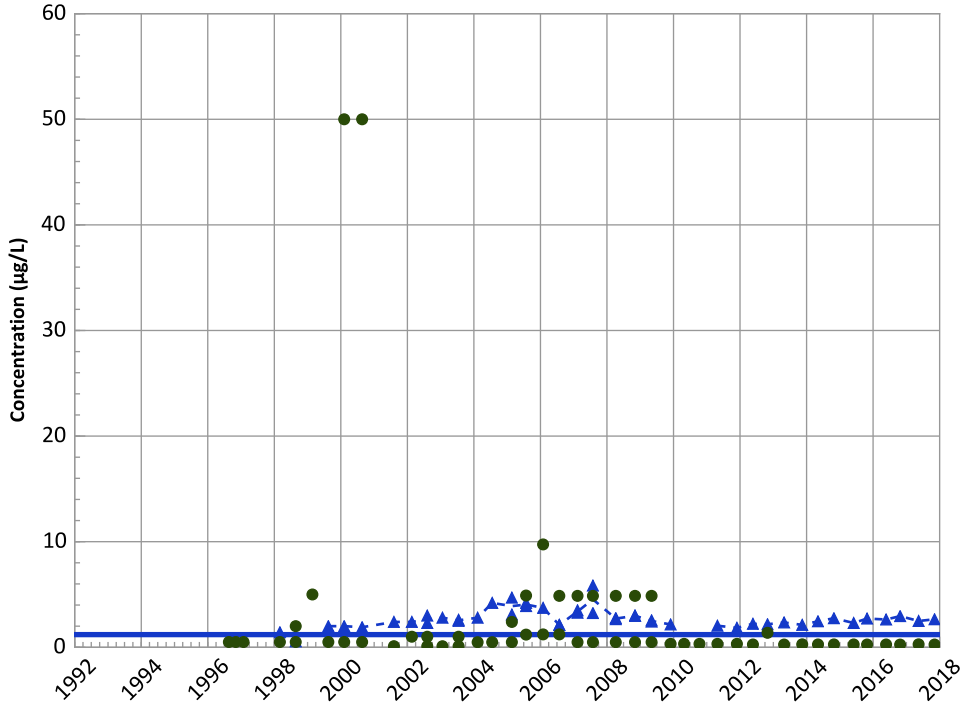
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1031 in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

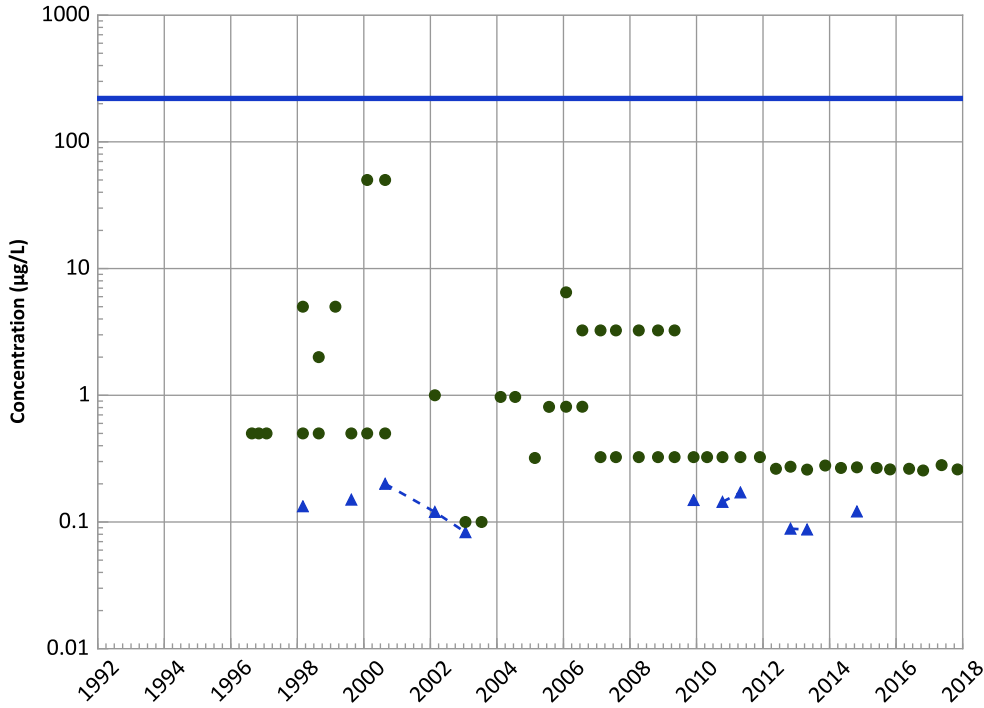
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Probably Increasing

1,3,5-Trinitrobenzene Trend



Concentration Trend

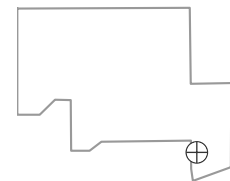
MAROS Mann-Kendall Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Stable

Well Location

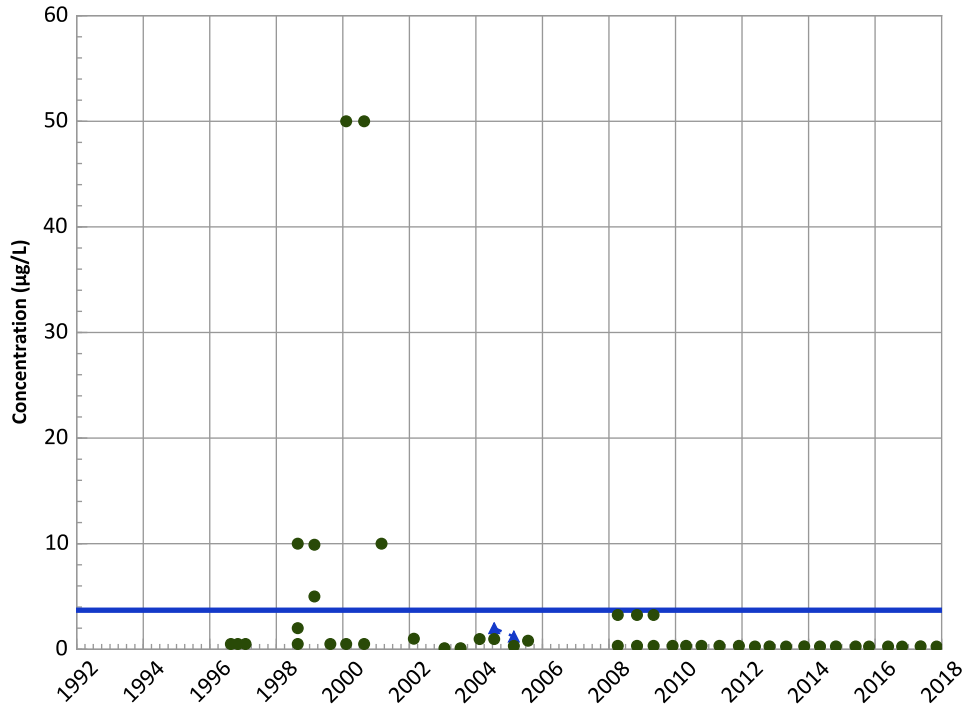


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/20/1996 to 11/06/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1031 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

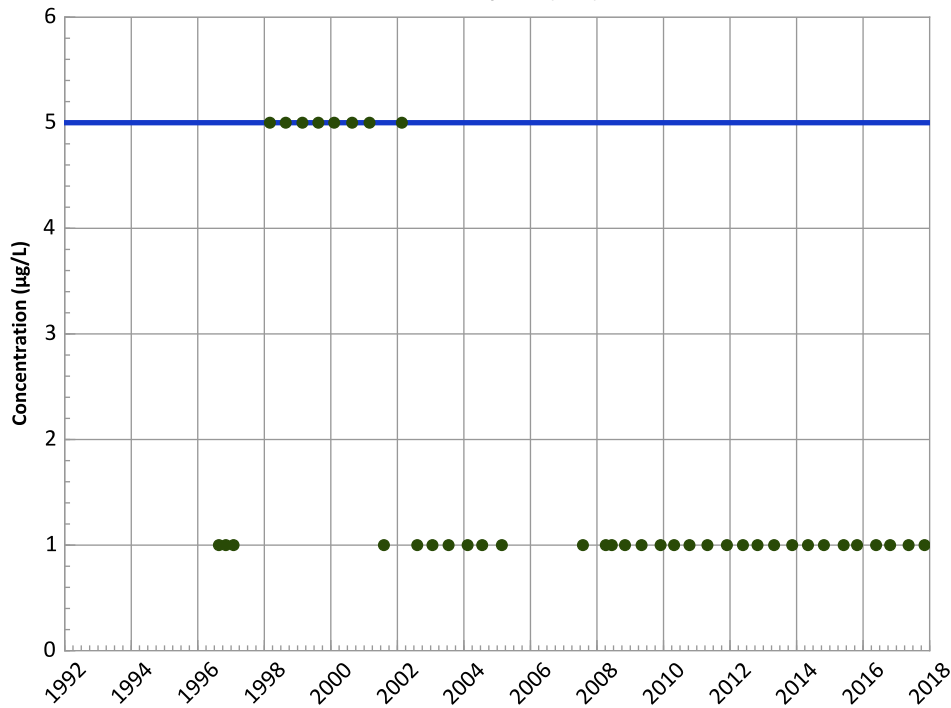
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

Tetrachloroethylene (PCE) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

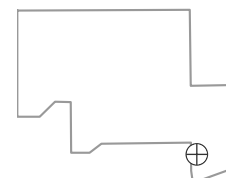
MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/20/1996 to 11/06/2017
Analysis Date: 03/21/2018

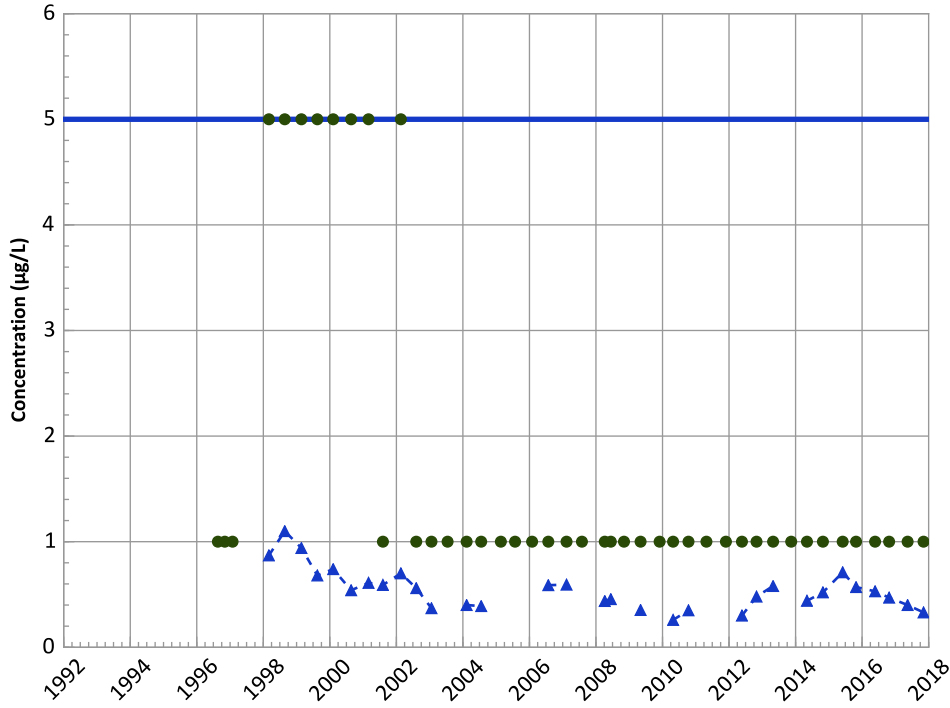
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1031 in Perched Aquifer
USDOE/NNSA Pantex Plant

Trichloroethene Trend



Concentration Trend

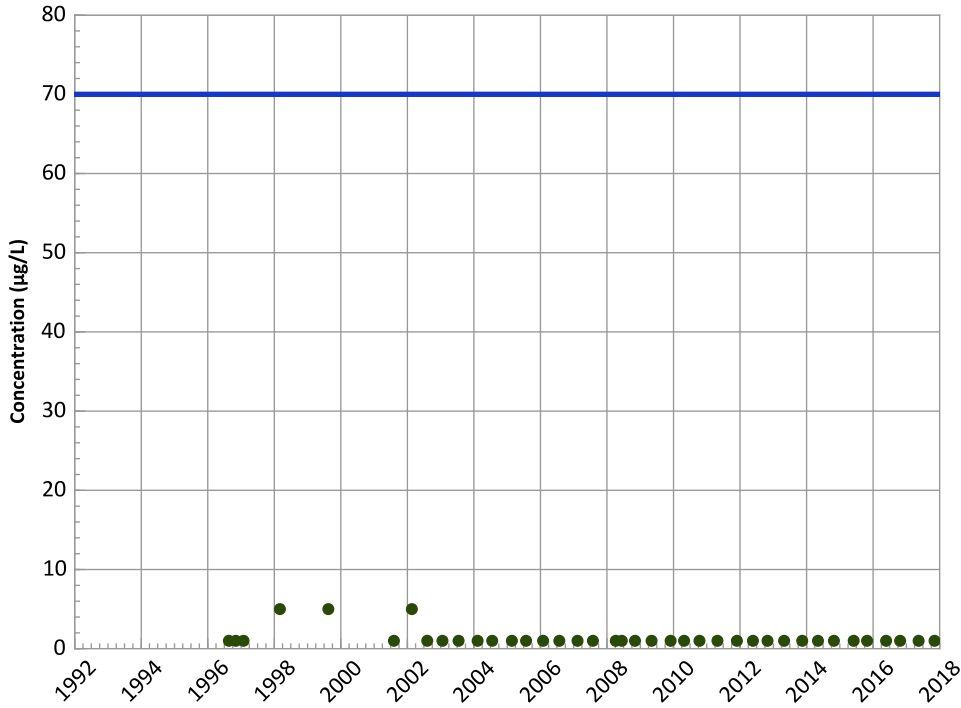
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Probably Increasing
All Data
Decreasing

cis-1,2-Dichloroethene Trend



Concentration Trend

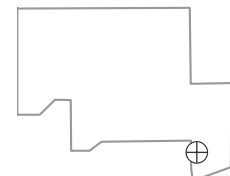
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

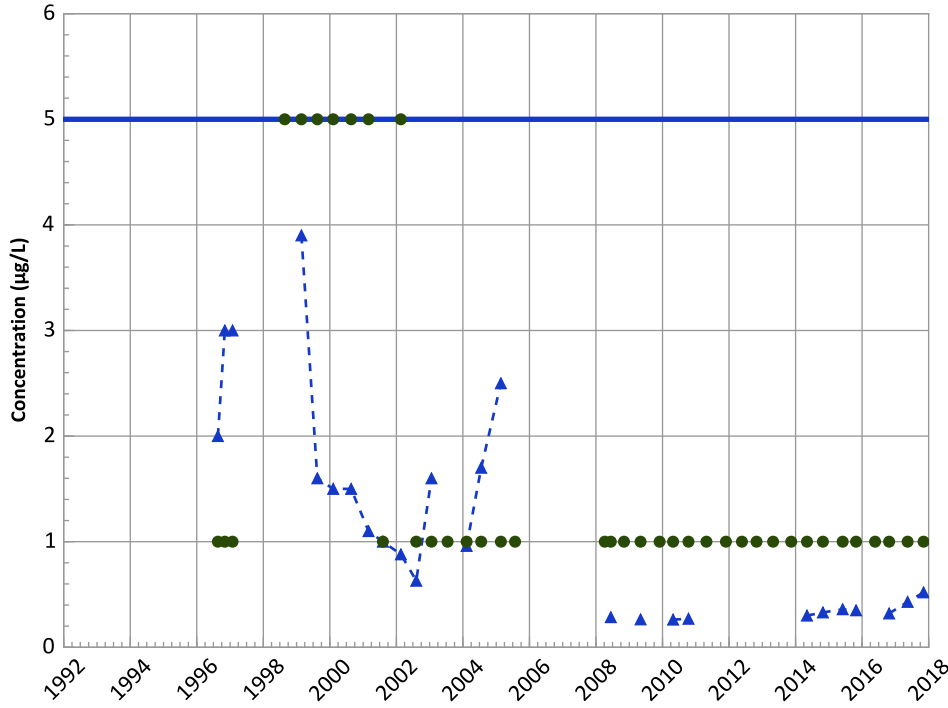
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/20/1996 to 11/06/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1031 in Perched Aquifer
 USDOE/NNSA Pantex Plant
 1,2-Dichloroethane Trend



Concentration Trend

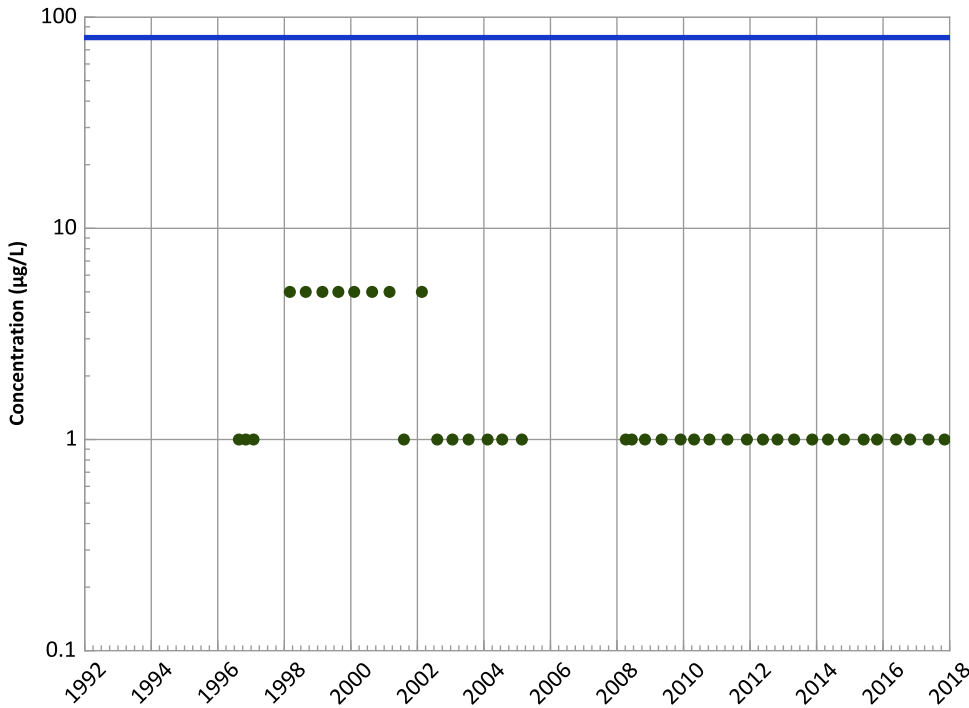
MAROS Mann-Kendall Method

Data ():
 Decreasing
 All Data
 Decreasing

MAROS Linear Regression Method

Data ():
 No Trend
 All Data
 Decreasing

Chloroform Trend



Concentration Trend

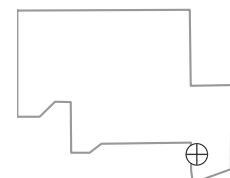
MAROS Mann-Kendall Method

Data ():
 All Non-Detect
 All Data
 All Non-Detect

MAROS Linear Regression Method

Data ():
 All Non-Detect
 All Data
 All Non-Detect

Well Location

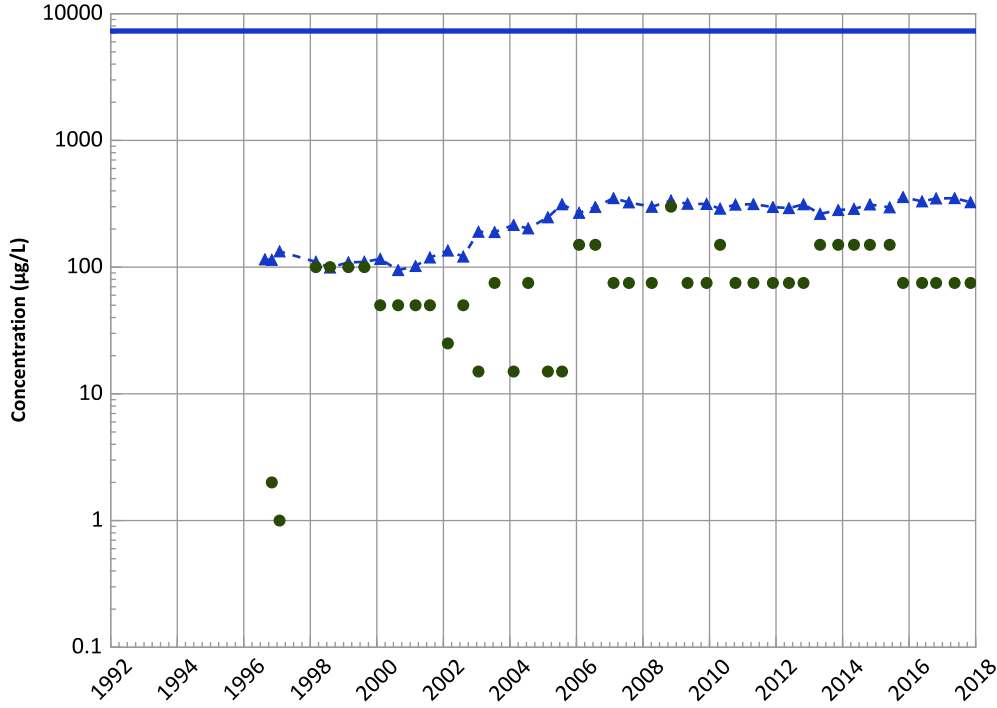


Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 08/20/1996 to 11/06/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1031 in Perched Aquifer
USDOE/NNSA Pantex Plant

Boron Trend



Concentration Trend

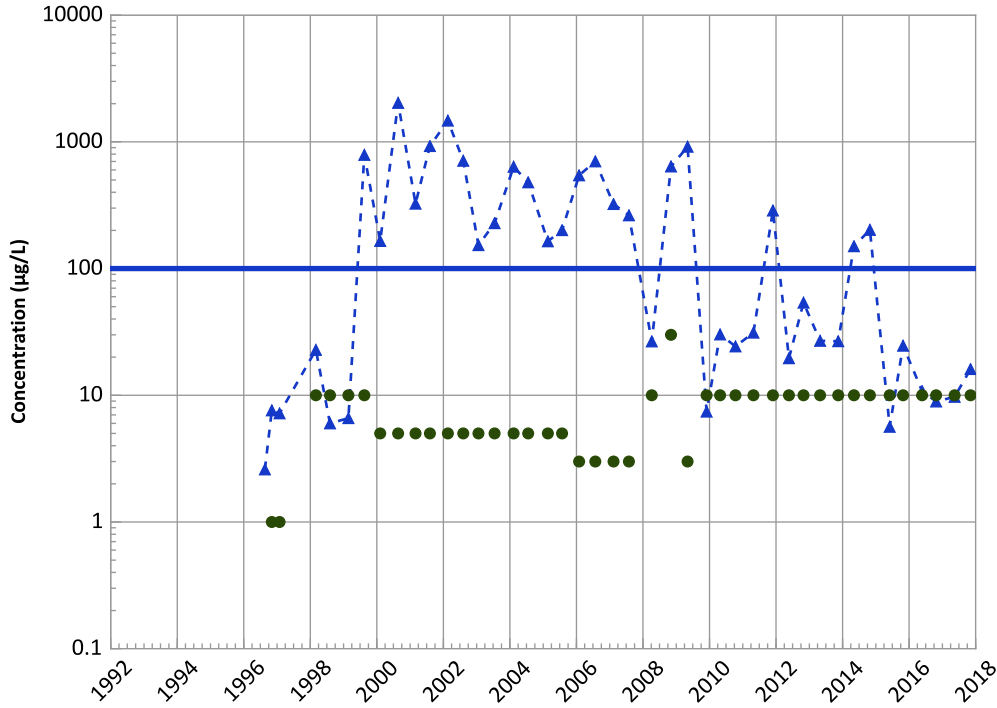
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

Chromium, Total Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

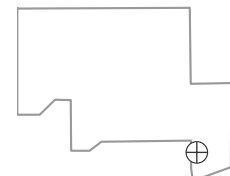
MAROS Linear Regression Method

Data ():
No Trend
All Data
Probably Decreasing

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/20/1996 to 11/06/2017
Analysis Date: 03/21/2018

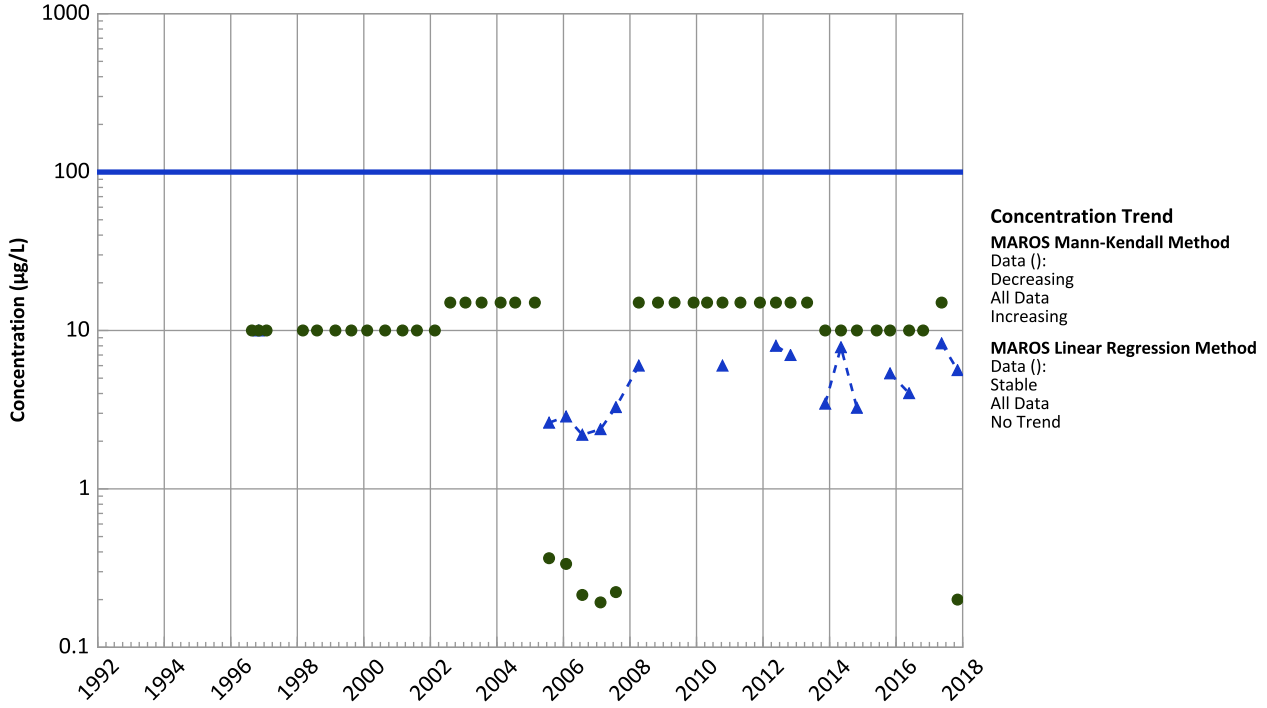
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

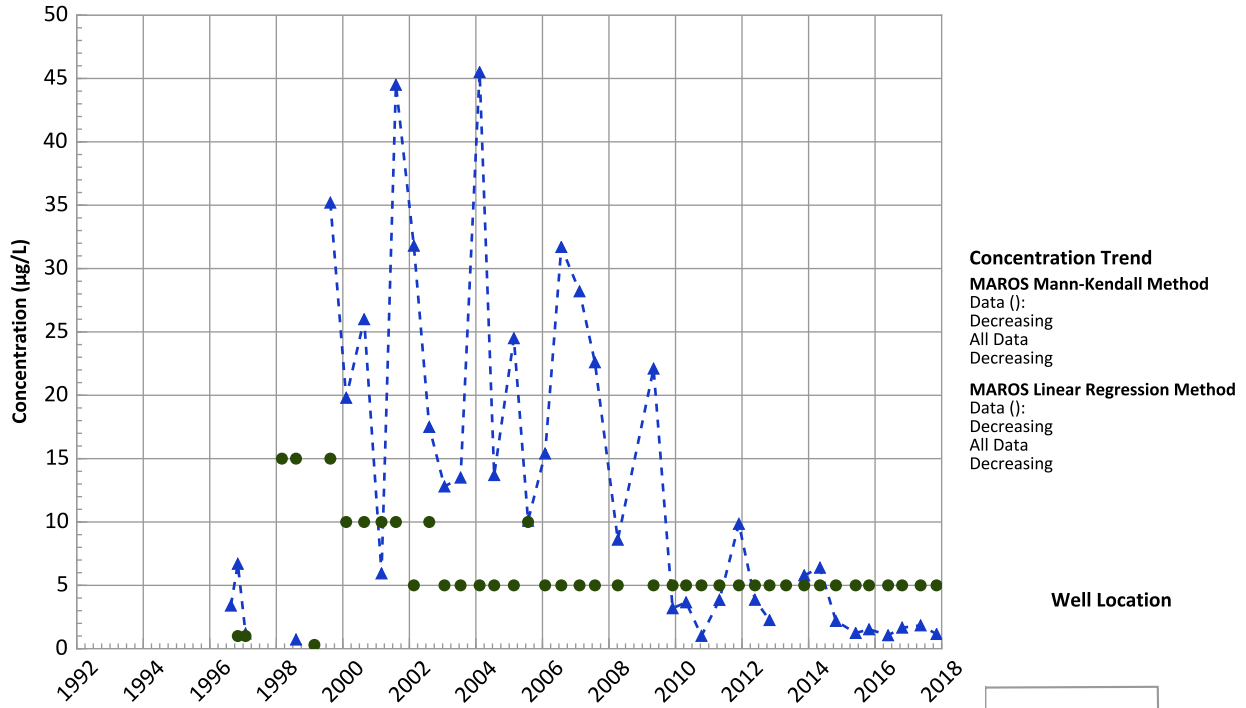


PTX06-1031 in Perched Aquifer
USDOE/NNSA Pantex Plant

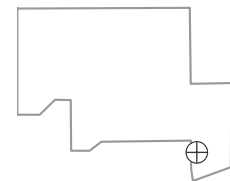
Chromium, Hexavalent Trend



Manganese Trend



Well Location

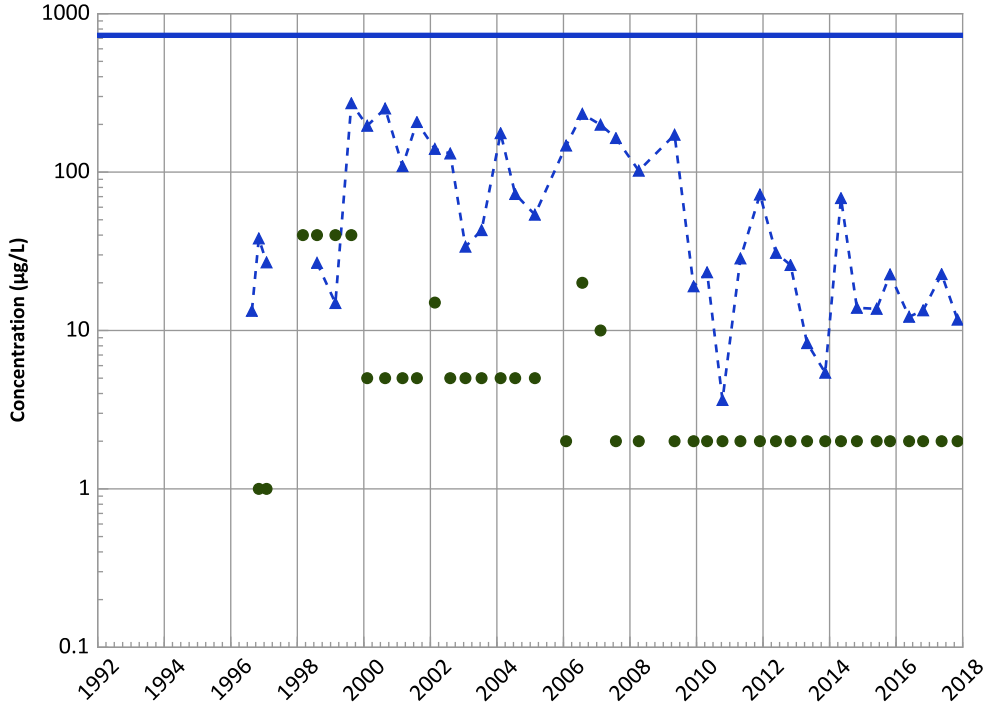


Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 08/20/1996 to 11/06/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

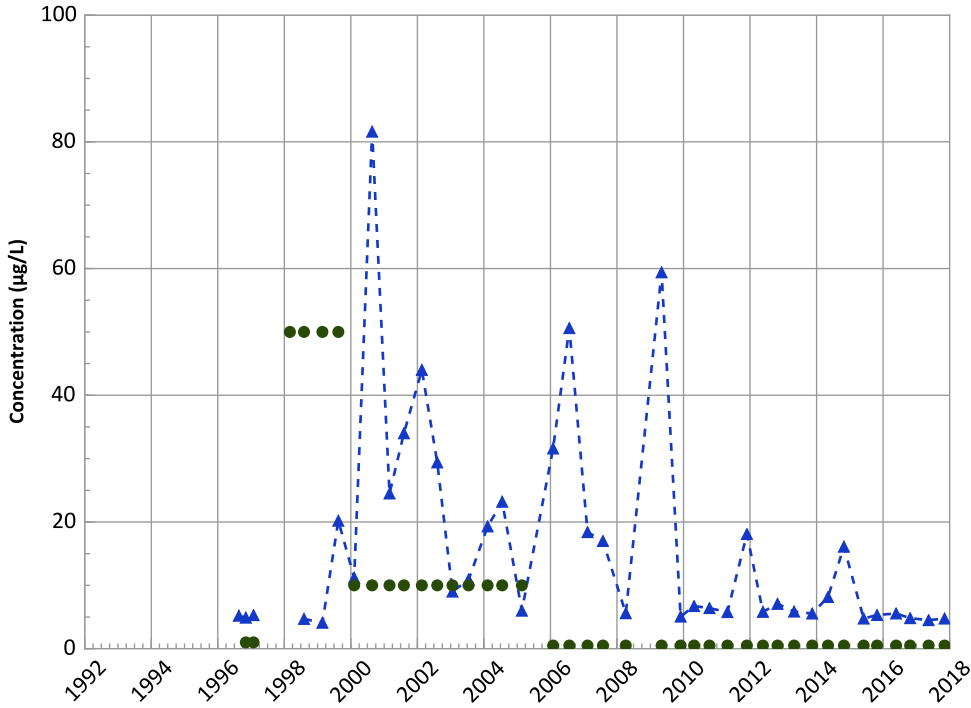
PTX06-1031 in Perched Aquifer
USDOE/NNSA Pantex Plant

Nickel Trend



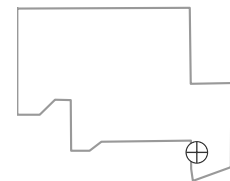
Concentration Trend
MAROS Mann-Kendall Method
 Data (): Decreasing
 All Data Decreasing
MAROS Linear Regression Method
 Data (): Stable
 All Data Decreasing

Molybdenum Trend



Concentration Trend
MAROS Mann-Kendall Method
 Data (): Decreasing
 All Data Decreasing
MAROS Linear Regression Method
 Data (): Stable
 All Data Decreasing

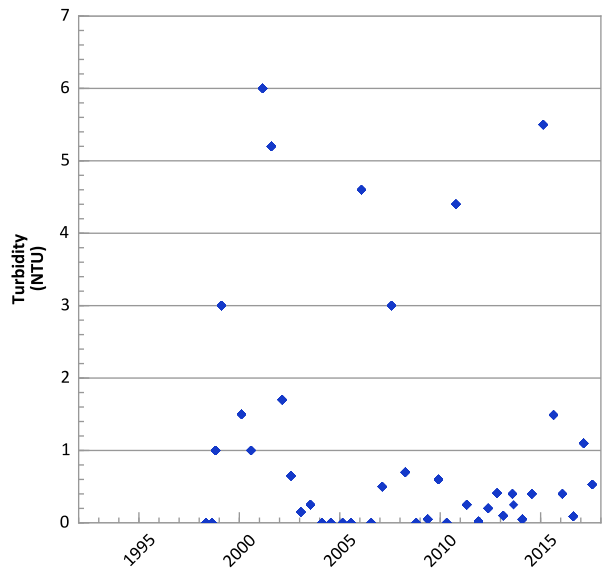
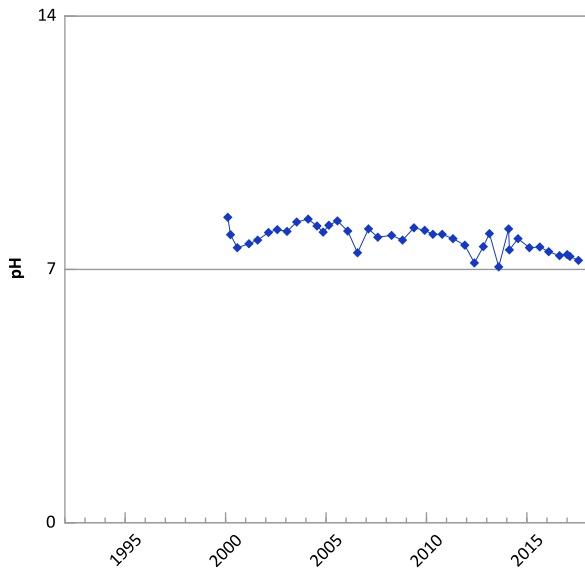
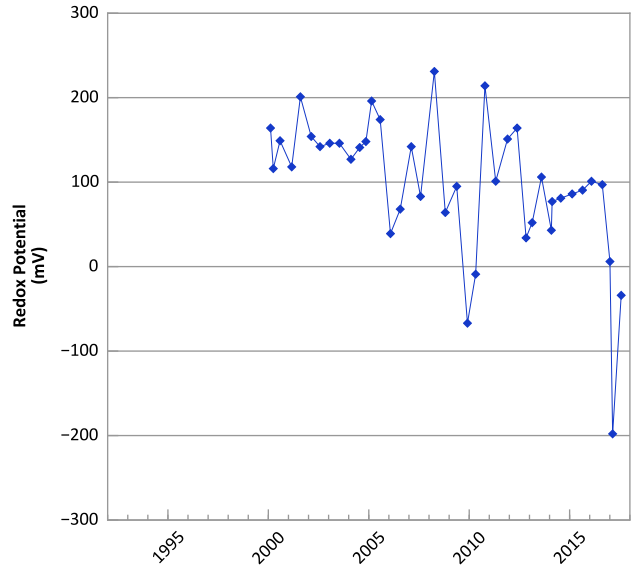
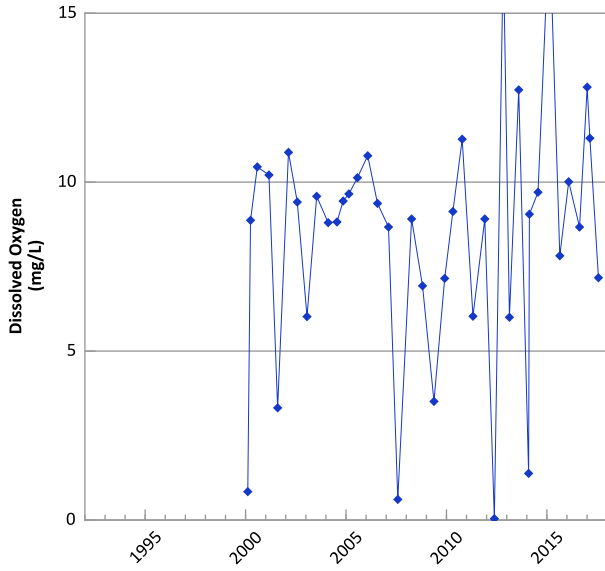
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 08/20/1996 to 11/06/2017
 Analysis Date: 03/21/2018

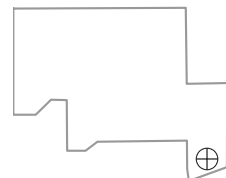
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1034 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



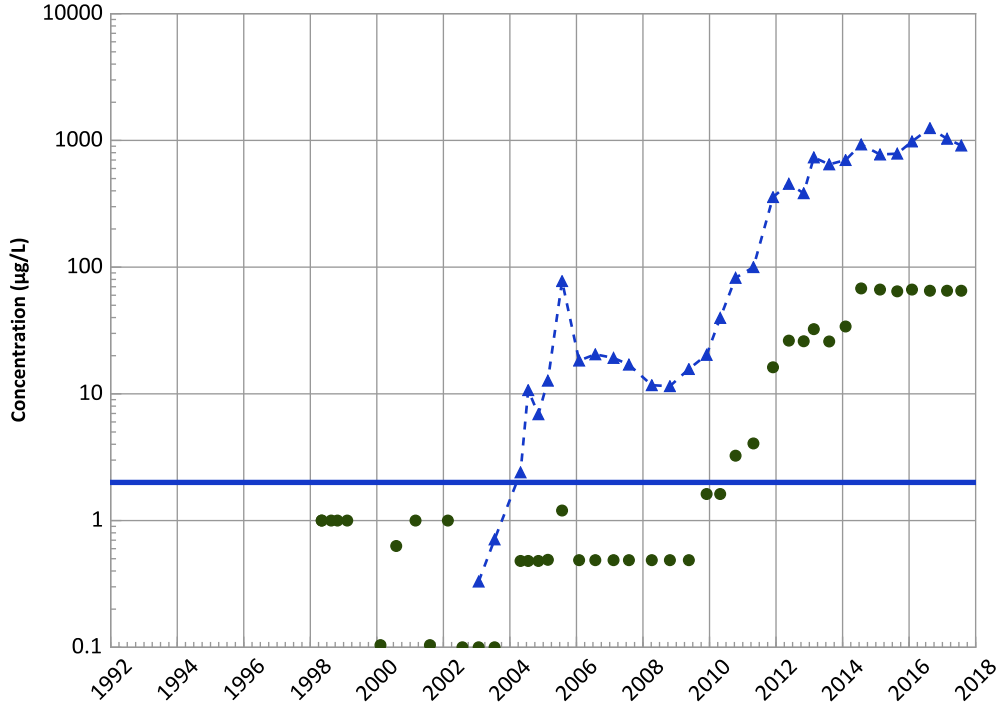
Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 02/26/1998 to 07/27/2017
Analysis Date: 03/21/2018

Well Location



PTX06-1034 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

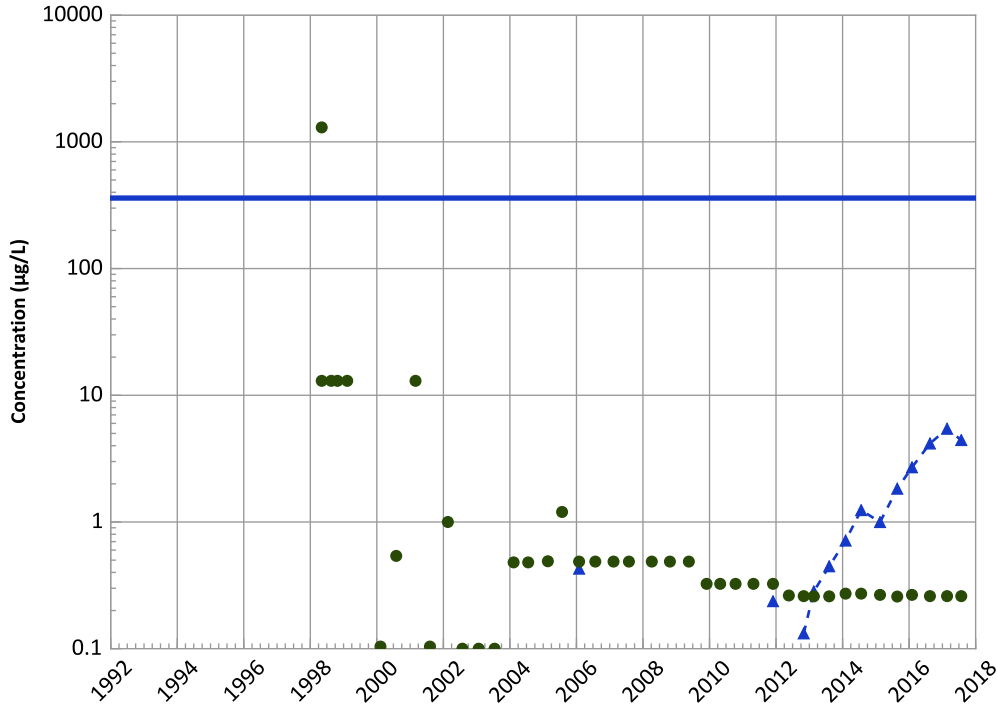
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

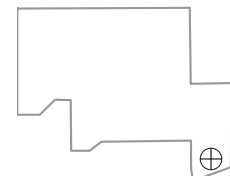
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
No Trend

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

Well Location

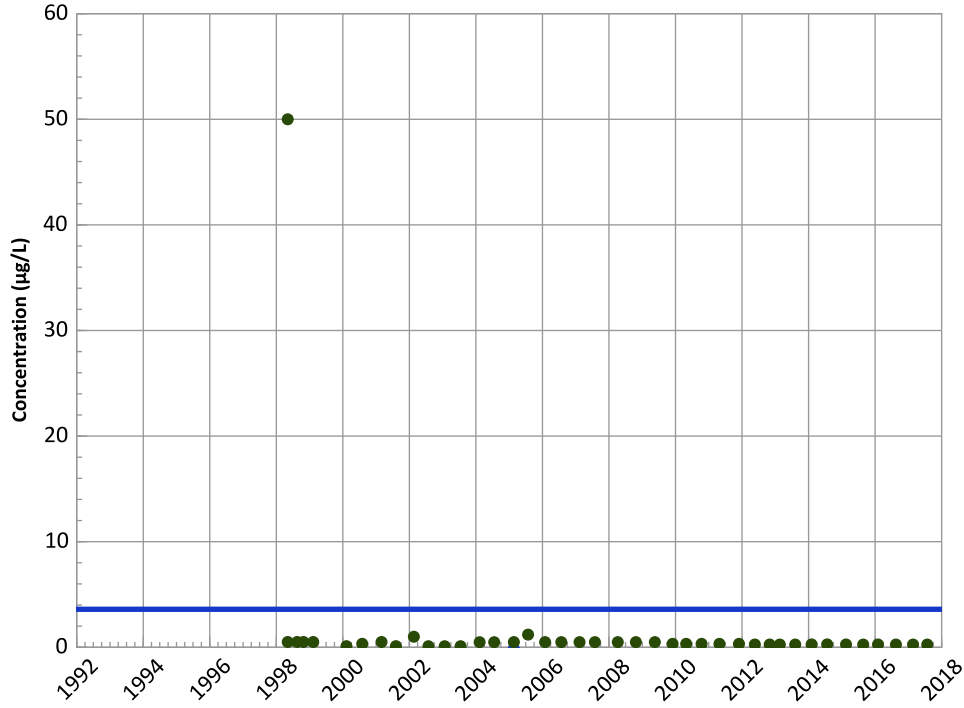


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 02/26/1998 to 07/27/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1034 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

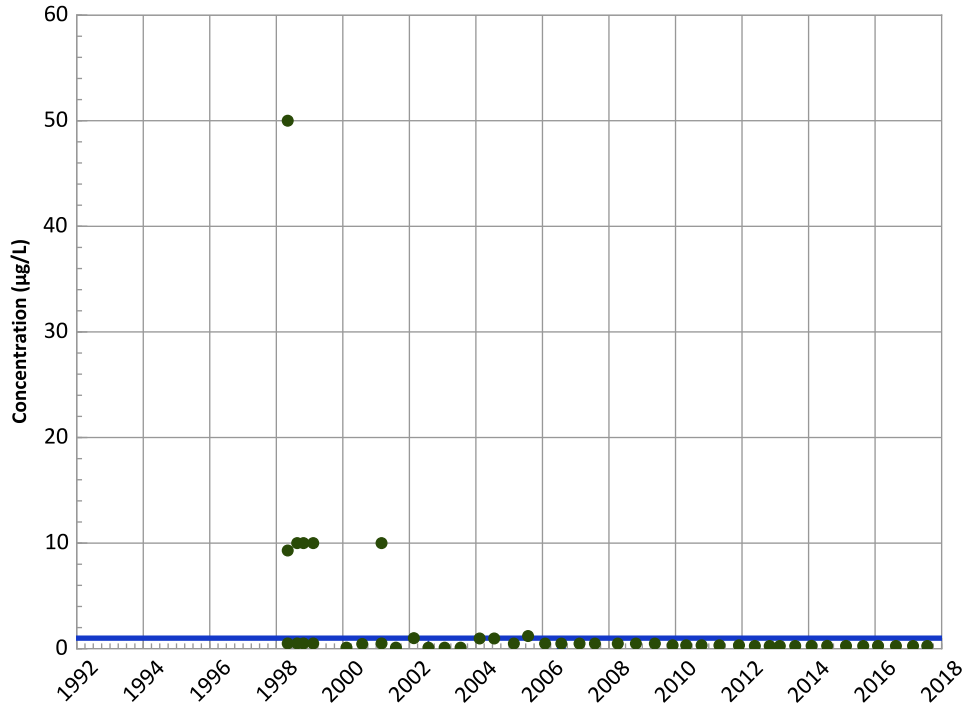
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

2,4-Dinitrotoluene Trend



Concentration Trend

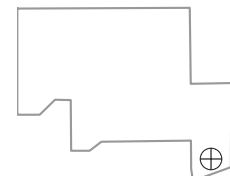
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

Well Location

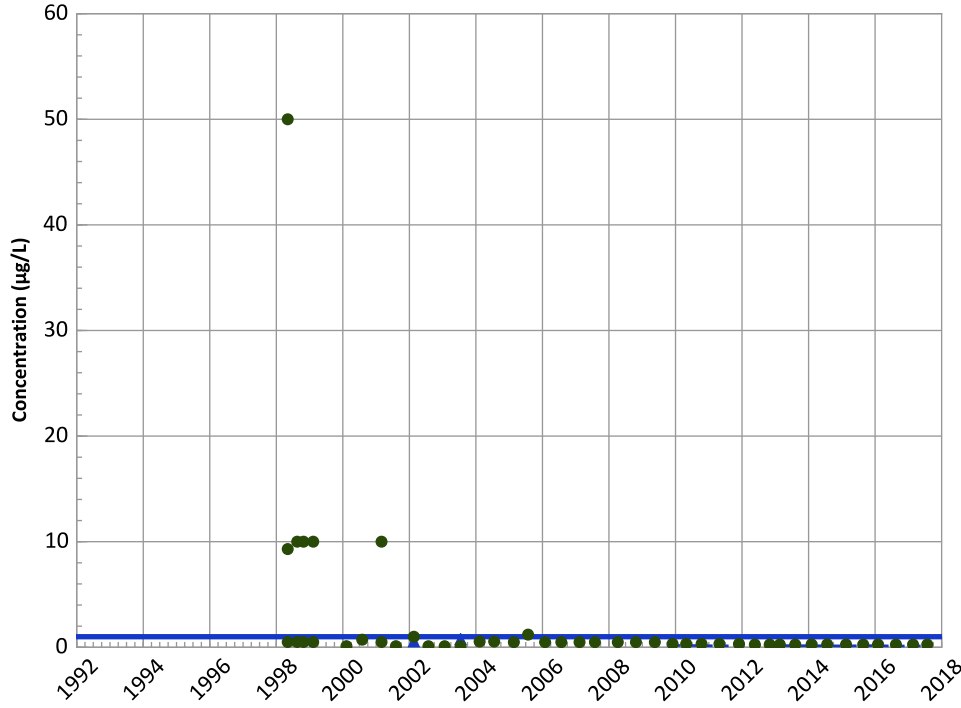


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 02/26/1998 to 07/27/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1034 in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

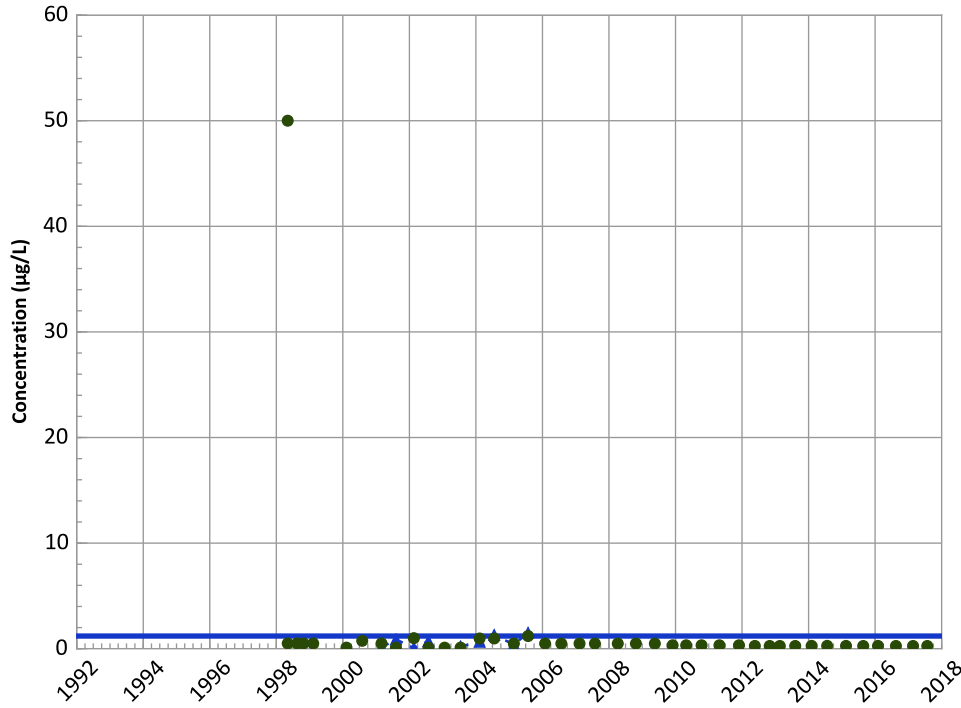
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

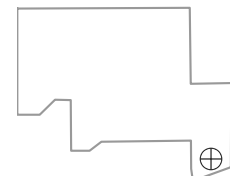
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
Decreasing

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
Probably Increasing

Well Location

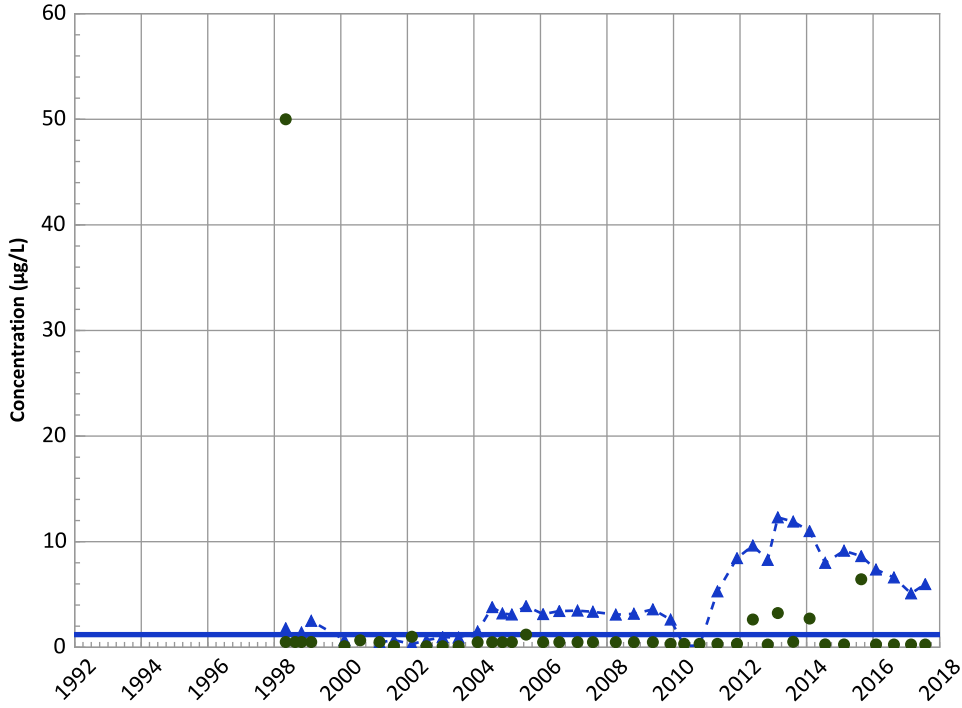


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 02/26/1998 to 07/27/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1034 in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

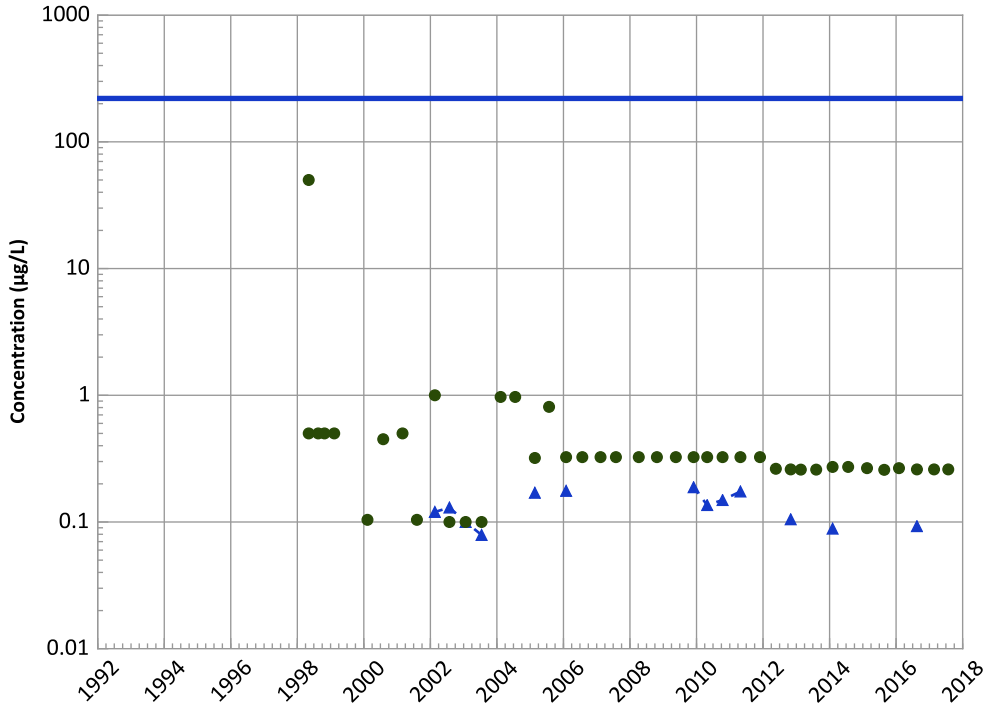
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Increasing

1,3,5-Trinitrobenzene Trend



Concentration Trend

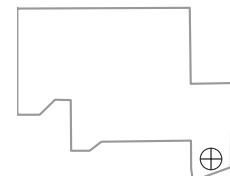
MAROS Mann-Kendall Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Stable

Well Location

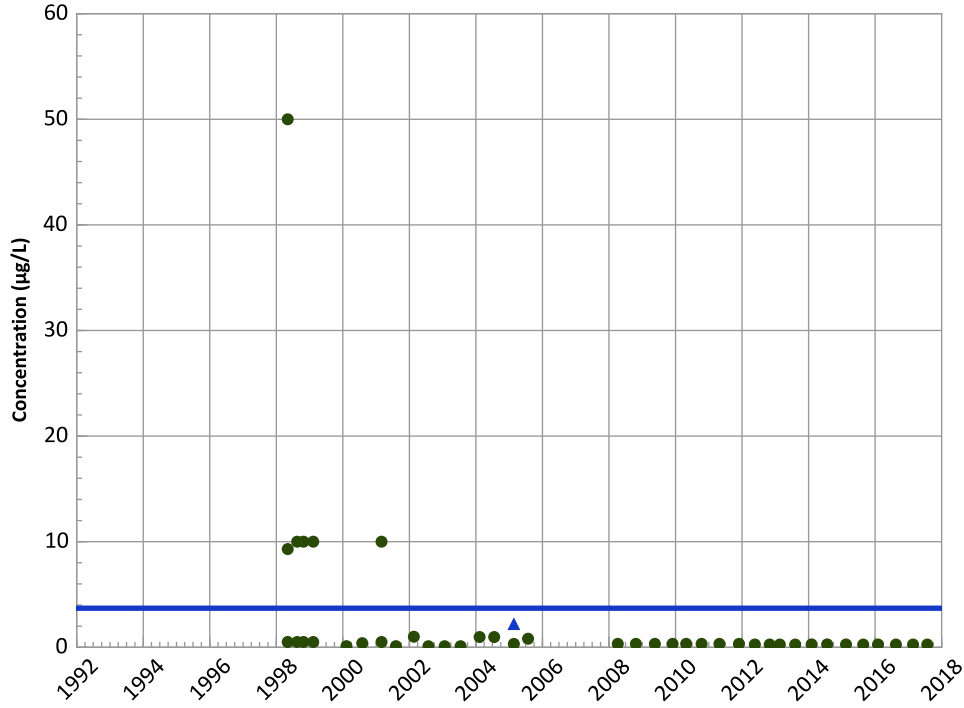


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 02/26/1998 to 07/27/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1034 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

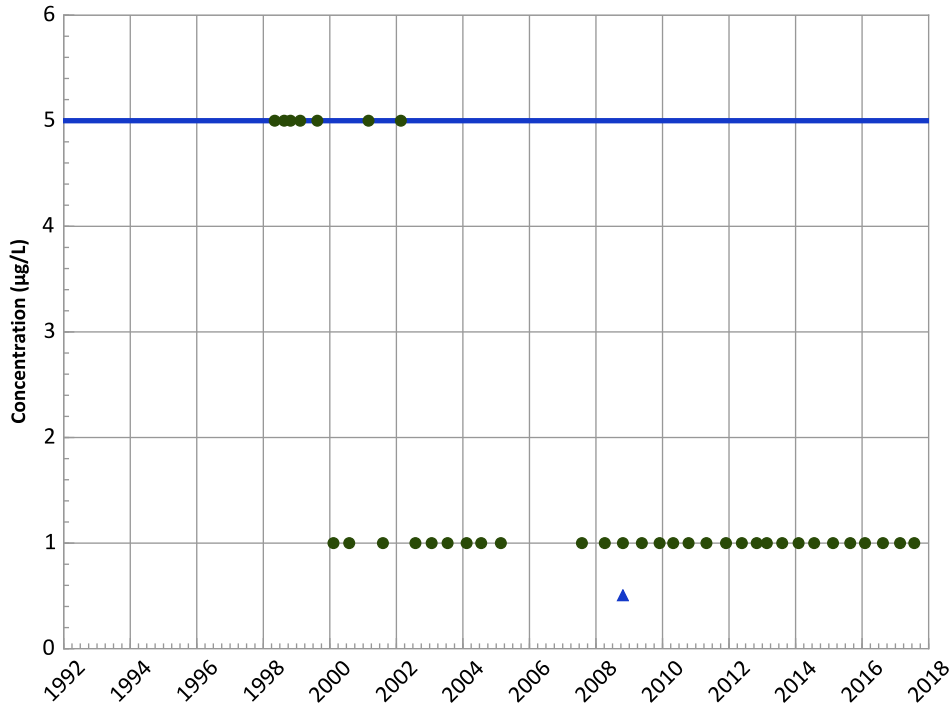
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

Tetrachloroethylene (PCE) Trend



Concentration Trend

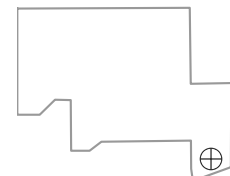
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

Well Location

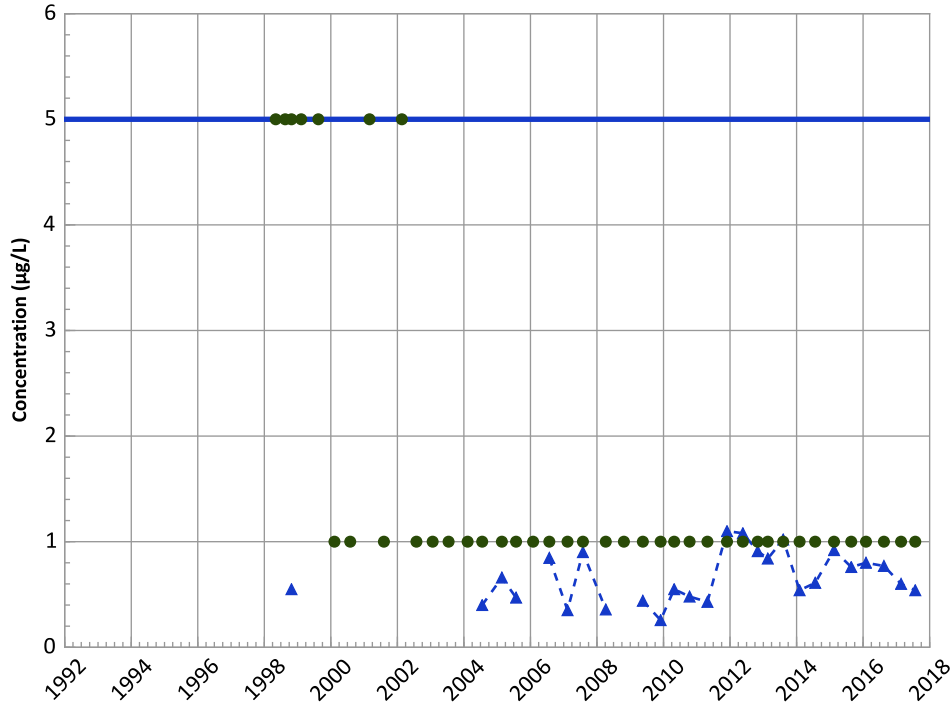


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 02/26/1998 to 07/27/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1034 in Perched Aquifer
USDOE/NNSA Pantex Plant

Trichloroethene Trend



Concentration Trend

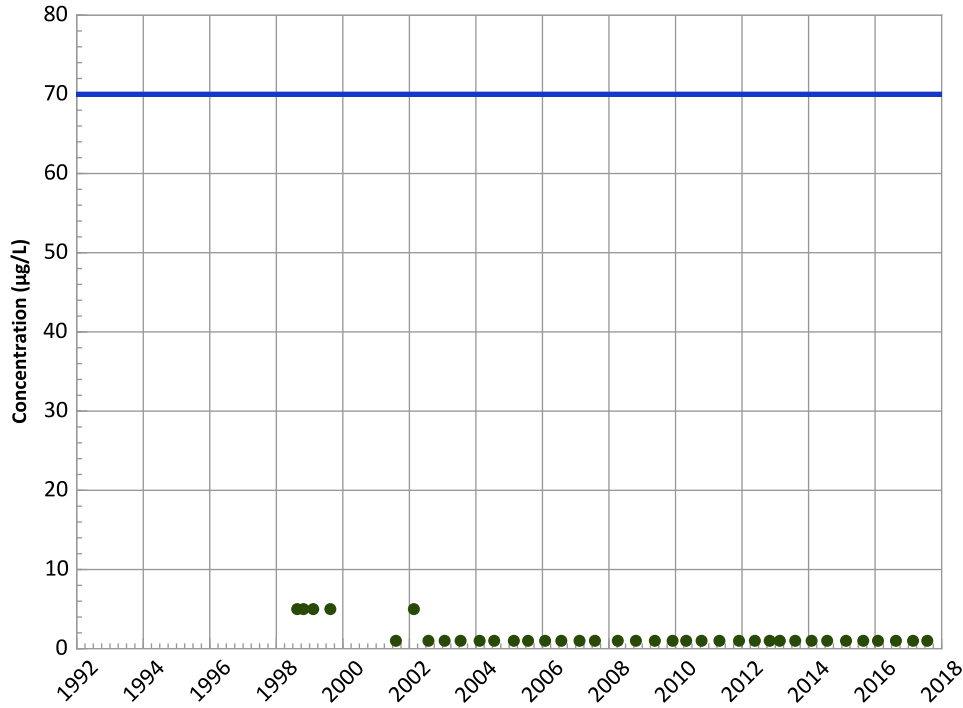
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Stable
All Data
Increasing

cis-1,2-Dichloroethene Trend



Concentration Trend

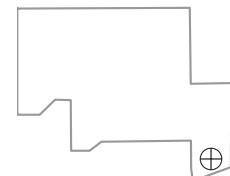
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

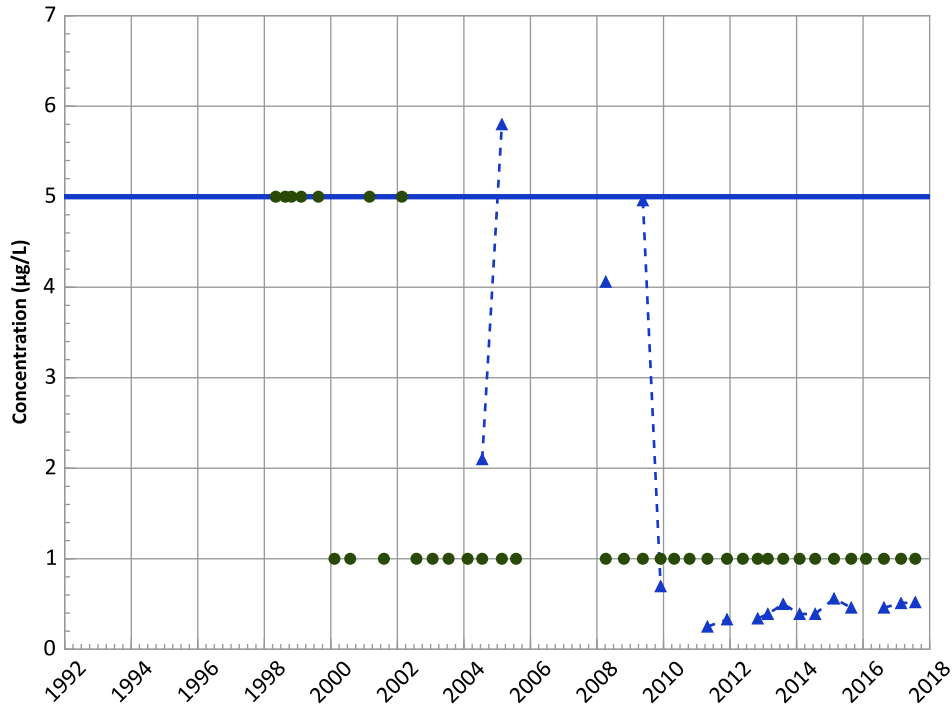


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 02/26/1998 to 07/27/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1034 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,2-Dichloroethane Trend



Concentration Trend

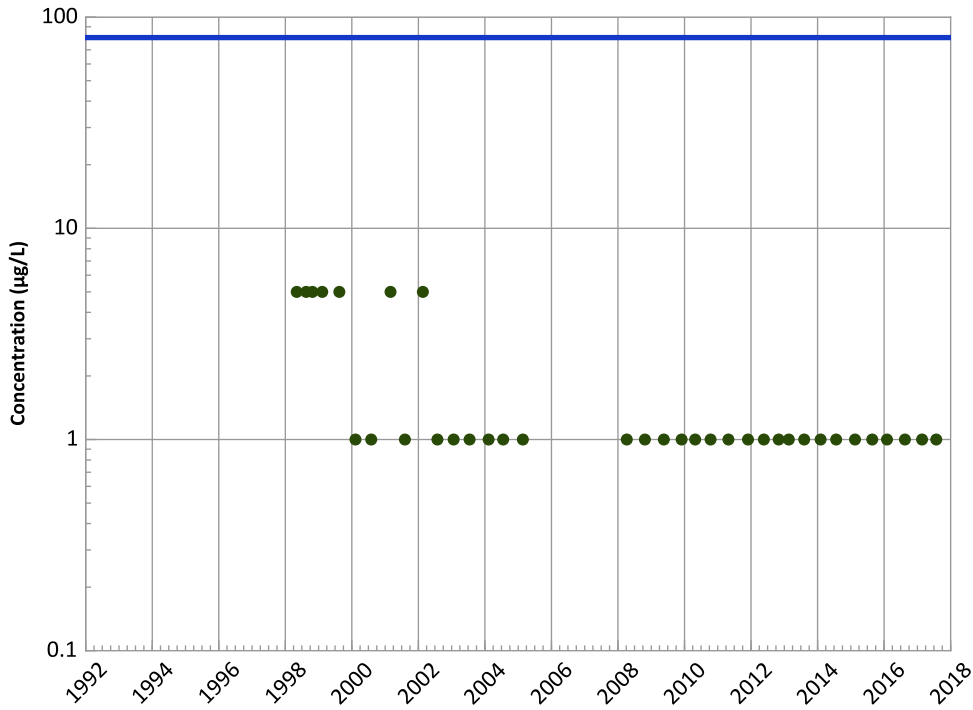
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Probably Increasing
All Data
Decreasing

Chloroform Trend



Concentration Trend

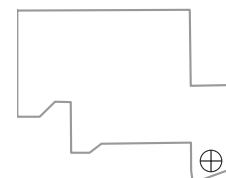
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

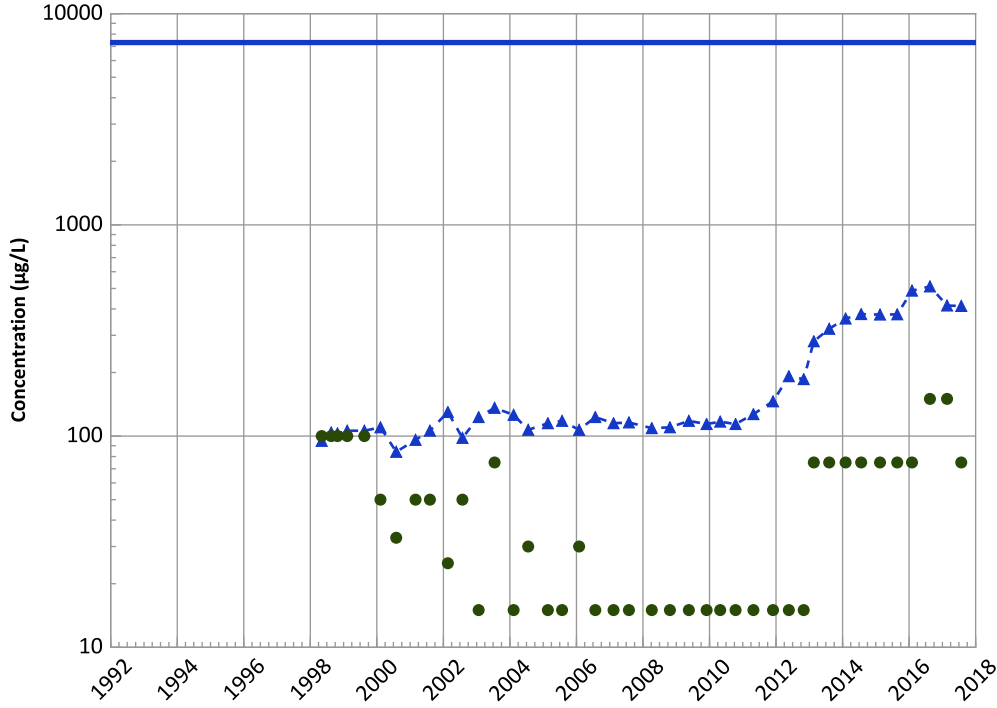


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 02/26/1998 to 07/27/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1034 in Perched Aquifer
USDOE/NNSA Pantex Plant

Boron Trend



Concentration Trend

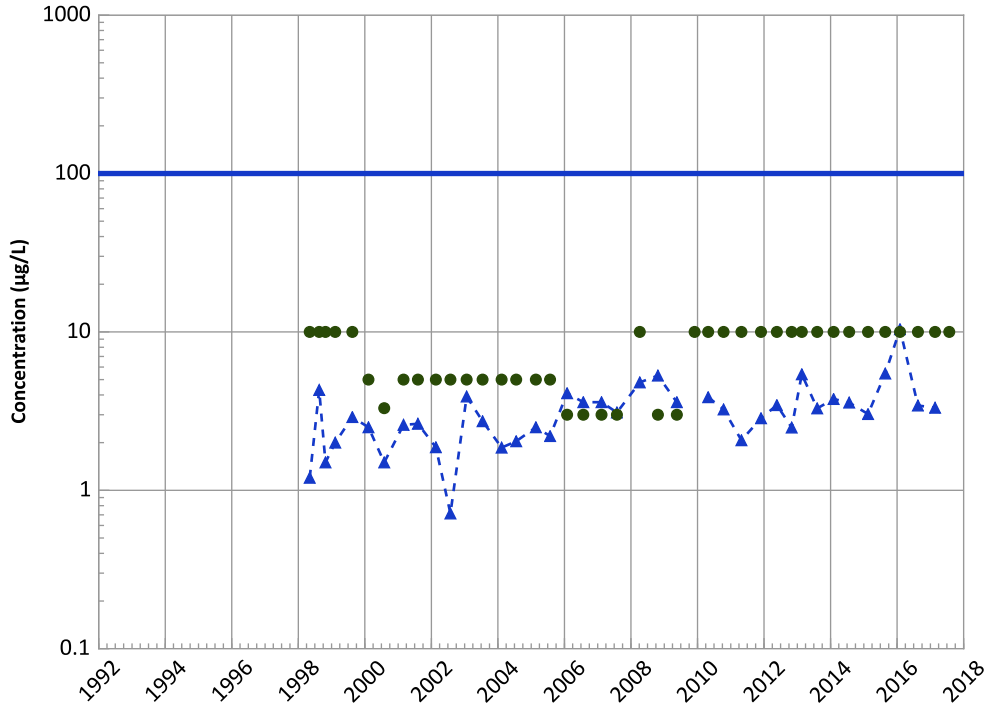
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

Chromium, Total Trend



Concentration Trend

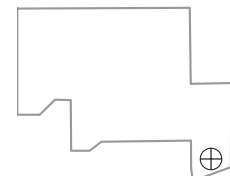
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
Increasing

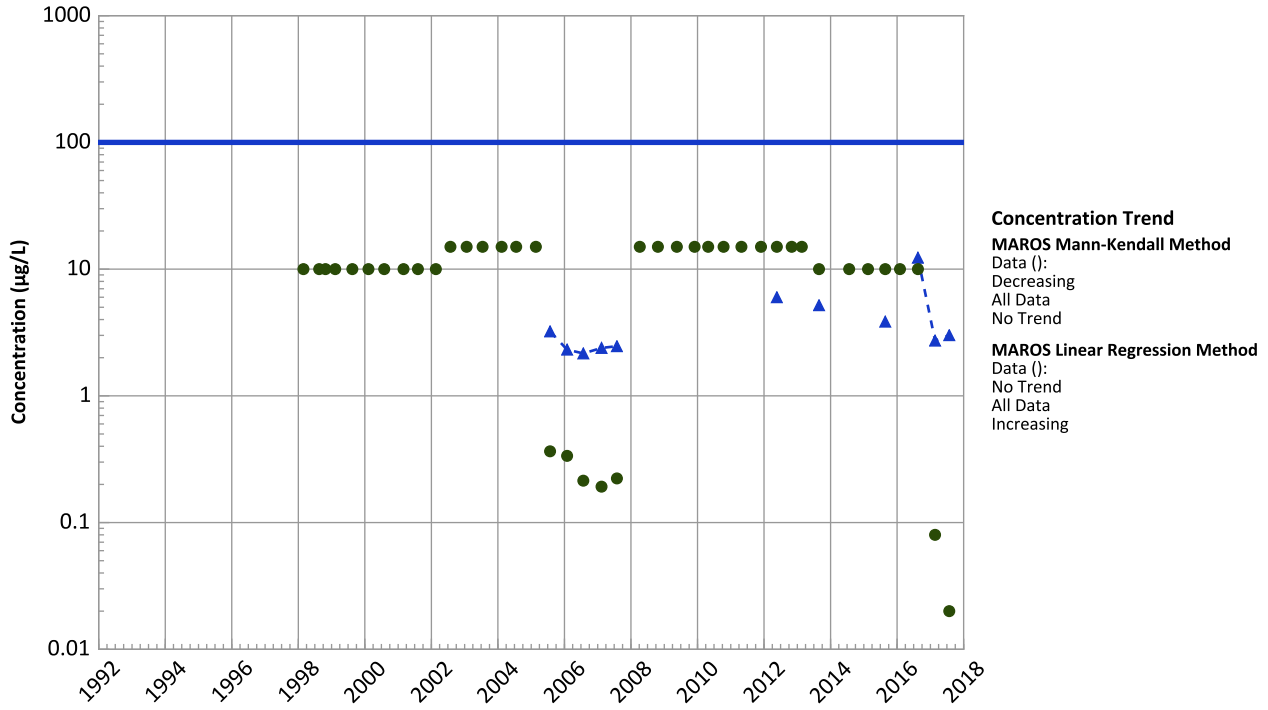
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 02/26/1998 to 07/27/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

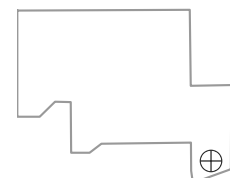
**PTX06-1034 in Perched Aquifer
USDOE/NNSA Pantex Plant
Chromium, Hexavalent Trend**



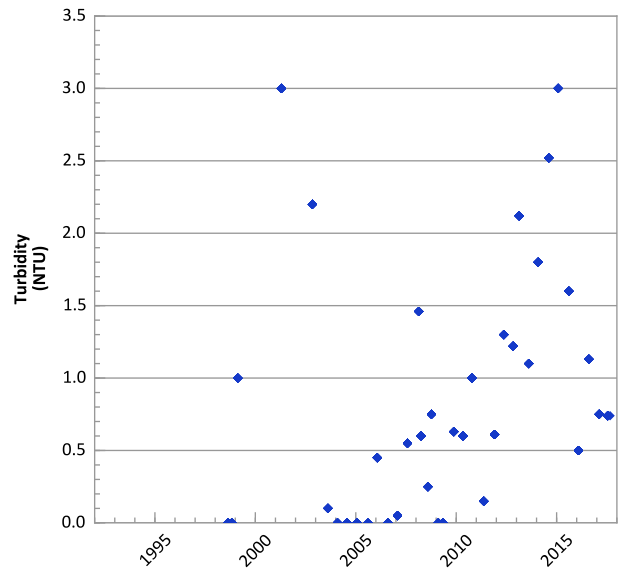
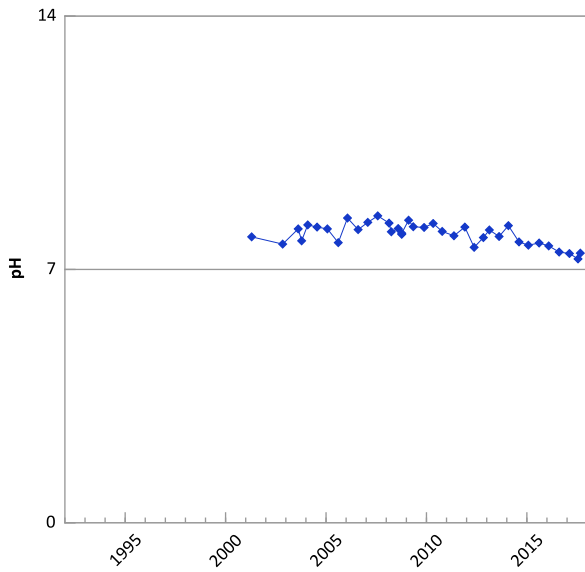
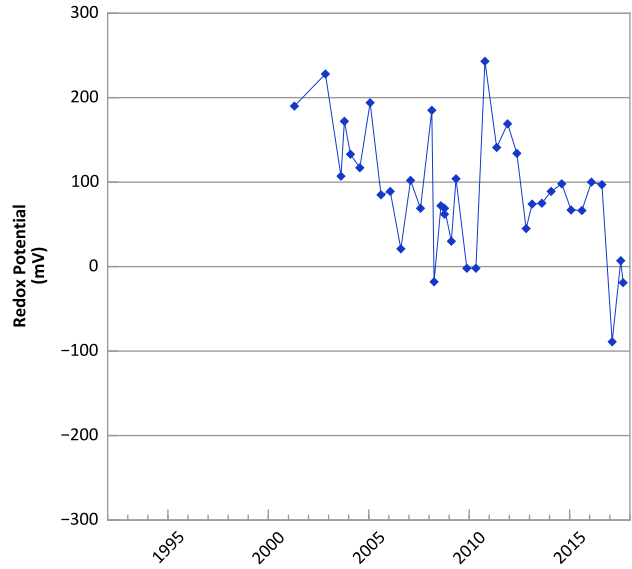
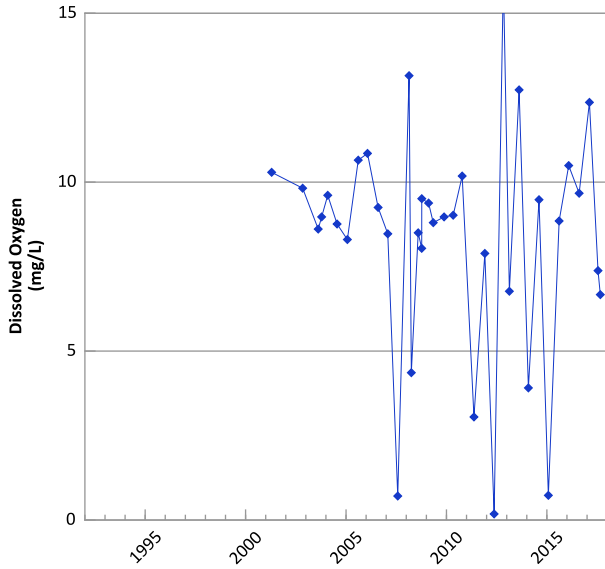
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 02/26/1998 to 07/27/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

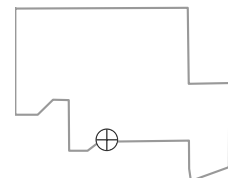


**PTX06-1035 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



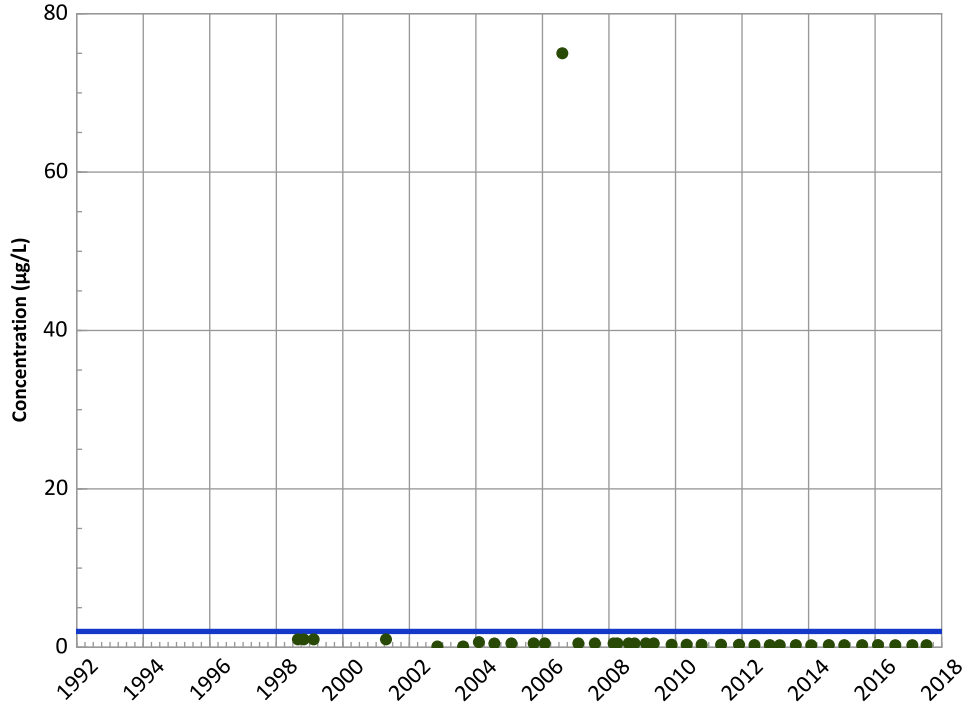
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 08/26/1998 to 08/30/2017
 Analysis Date: 03/21/2018

Well Location



PTX06-1035 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

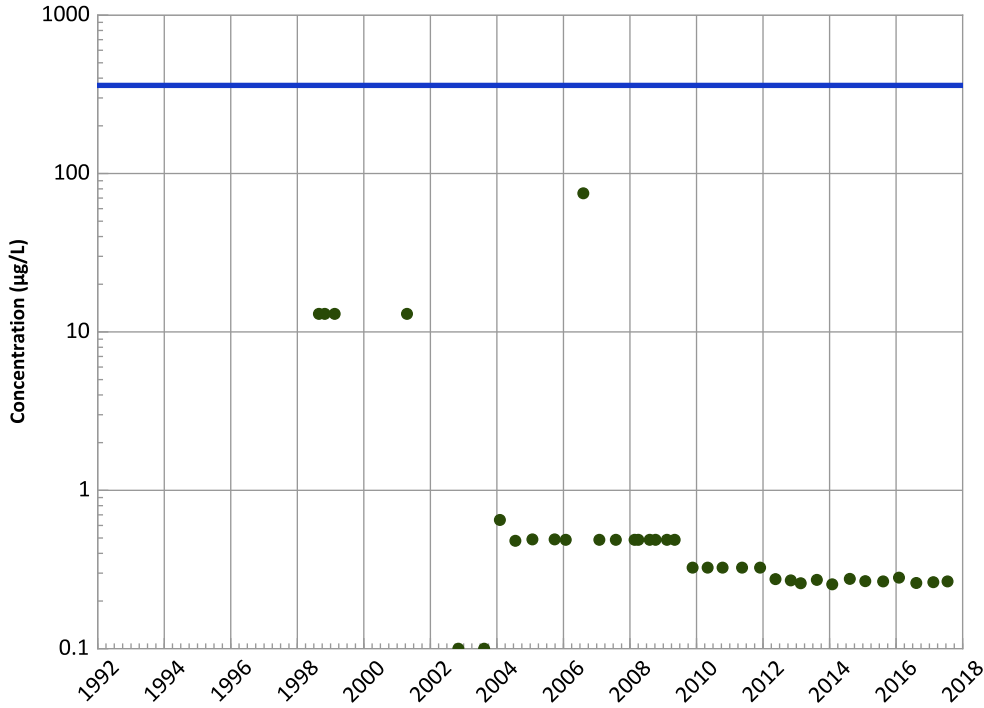
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

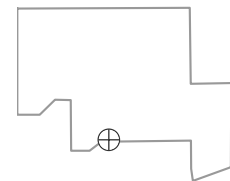
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

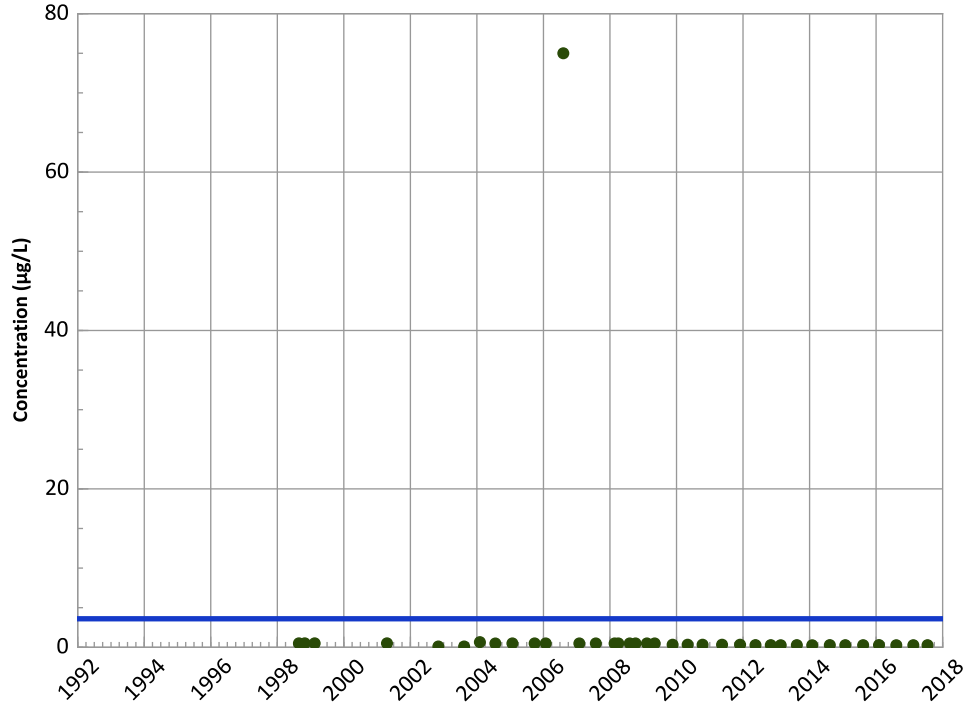


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/26/1998 to 08/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1035 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

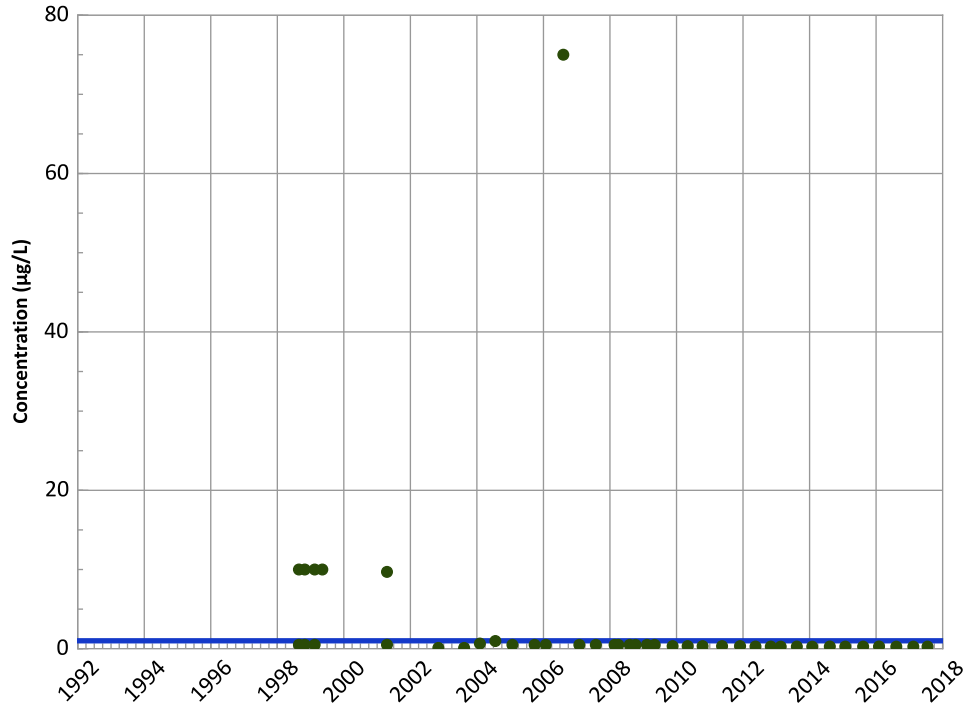
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

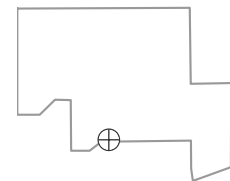
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

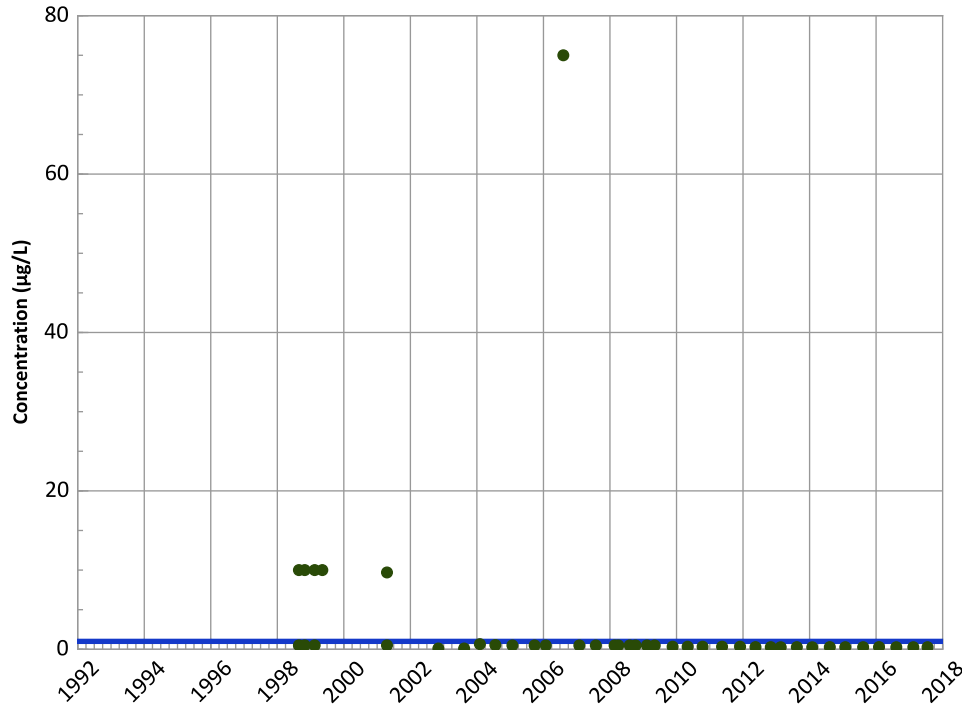


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/26/1998 to 08/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1035 in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

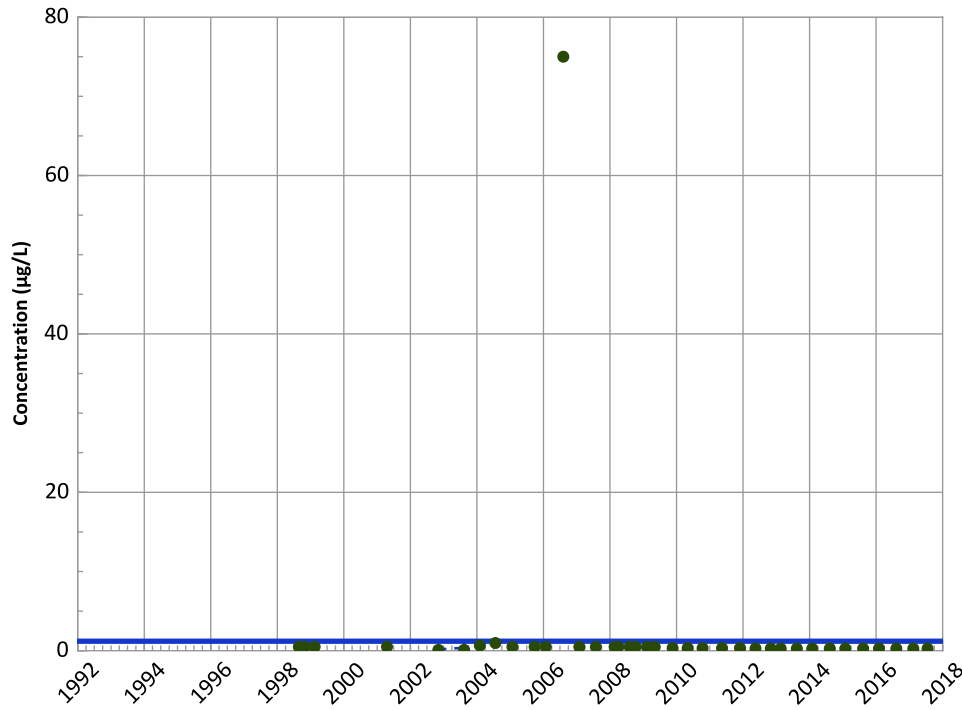
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

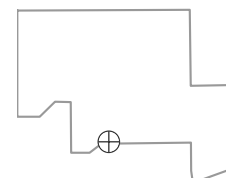
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

Well Location

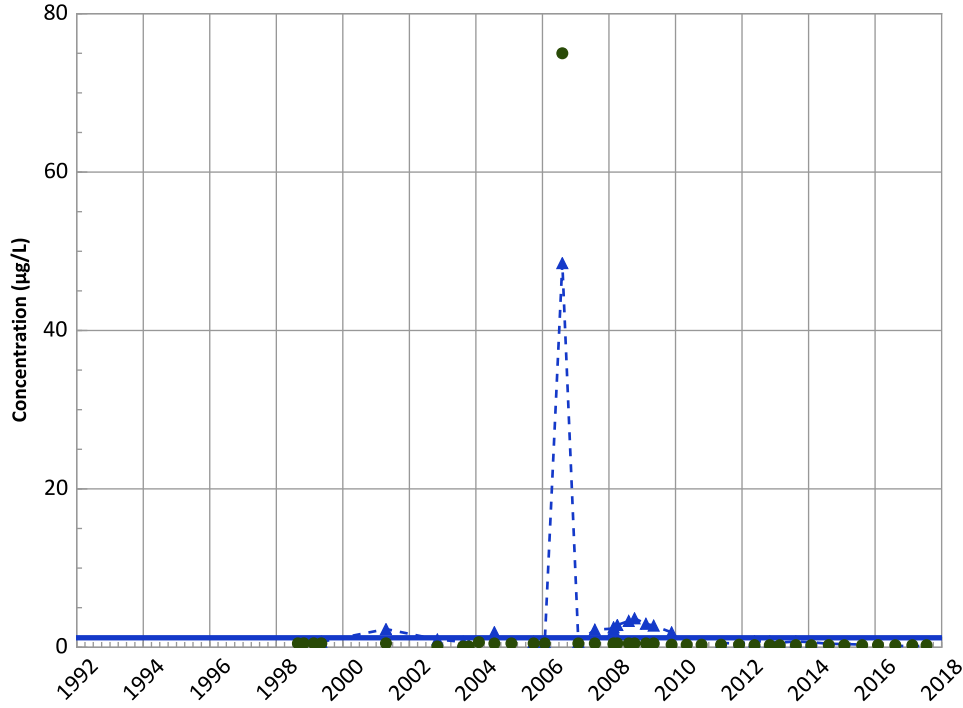


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/26/1998 to 08/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1035 in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

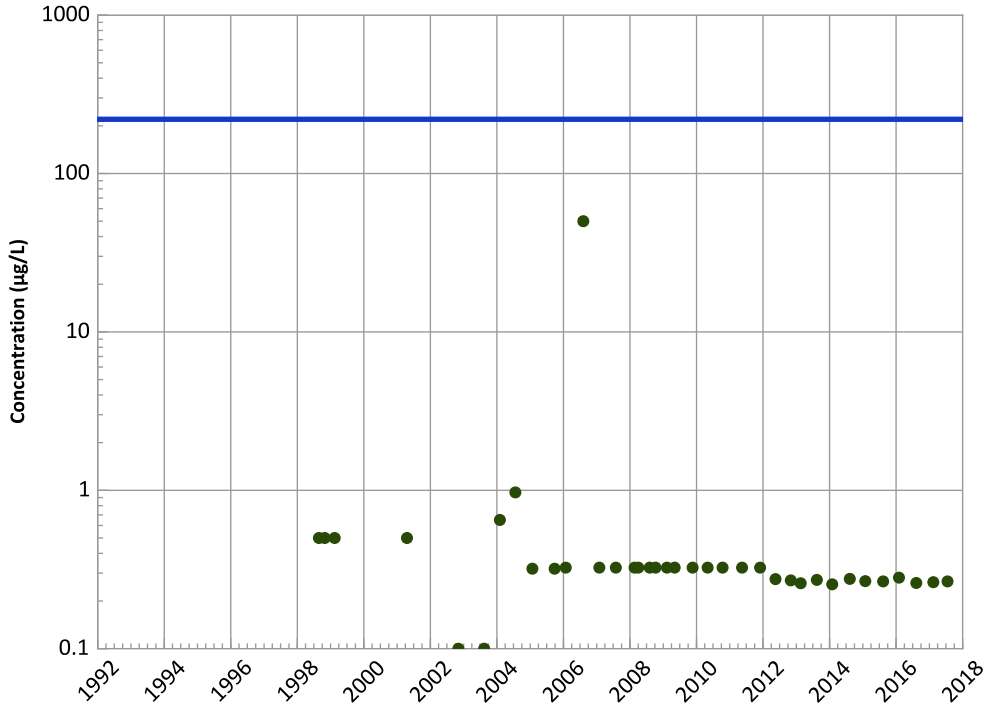
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

1,3,5-Trinitrobenzene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

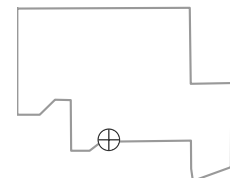
MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/26/1998 to 08/30/2017
Analysis Date: 03/21/2018

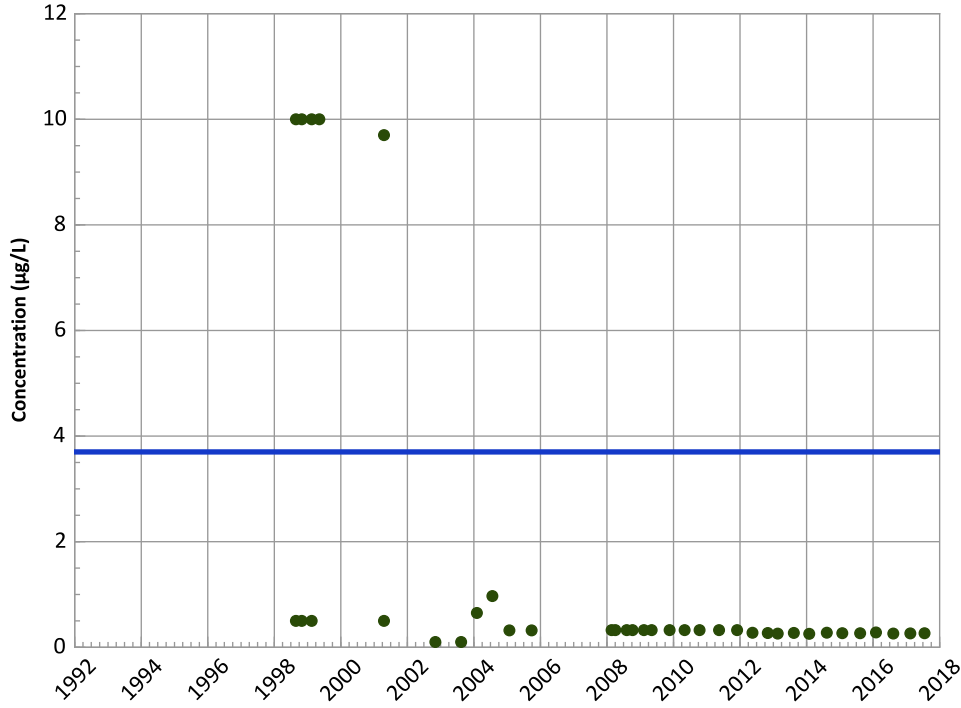
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1035 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

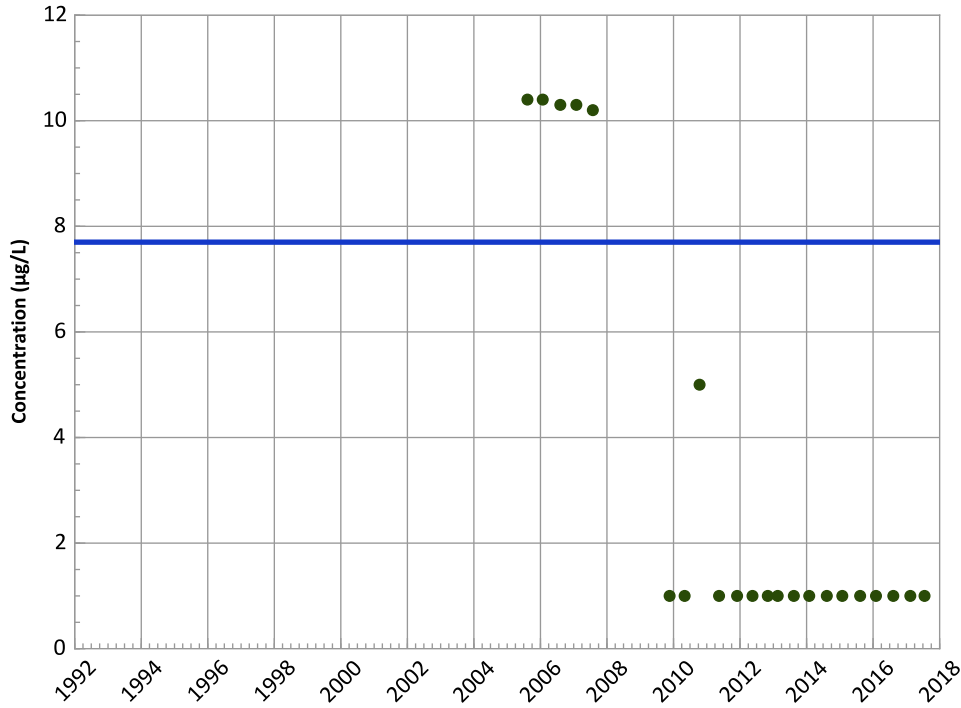
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,4-Dioxane (p-Dioxane) Trend



Concentration Trend

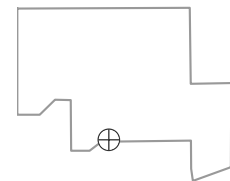
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

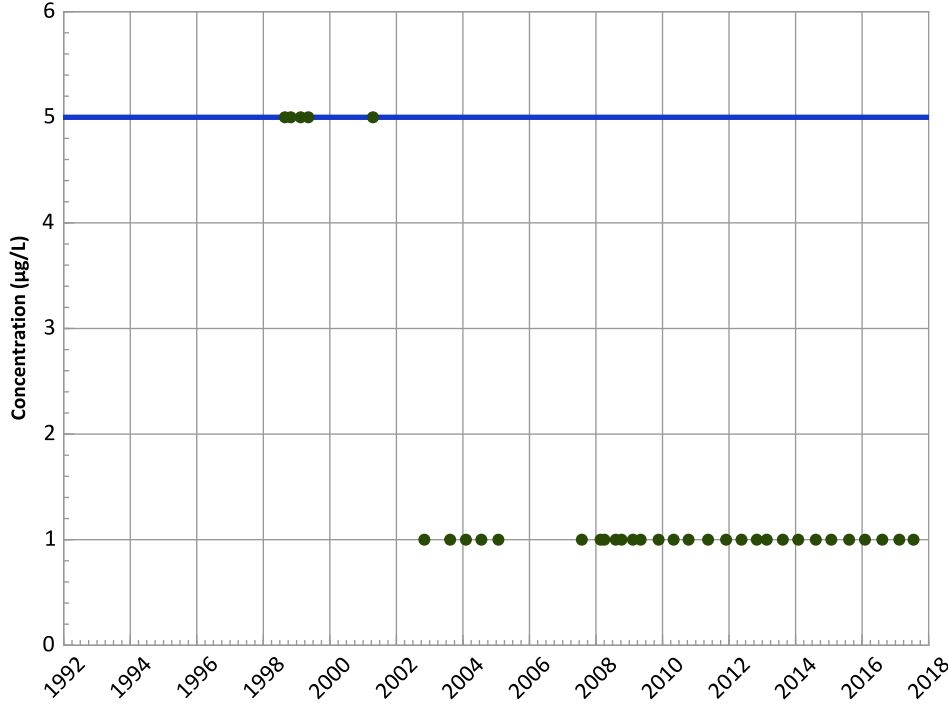


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/26/1998 to 08/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1035 in Perched Aquifer
USDOE/NNSA Pantex Plant

Tetrachloroethylene (PCE) Trend



Concentration Trend

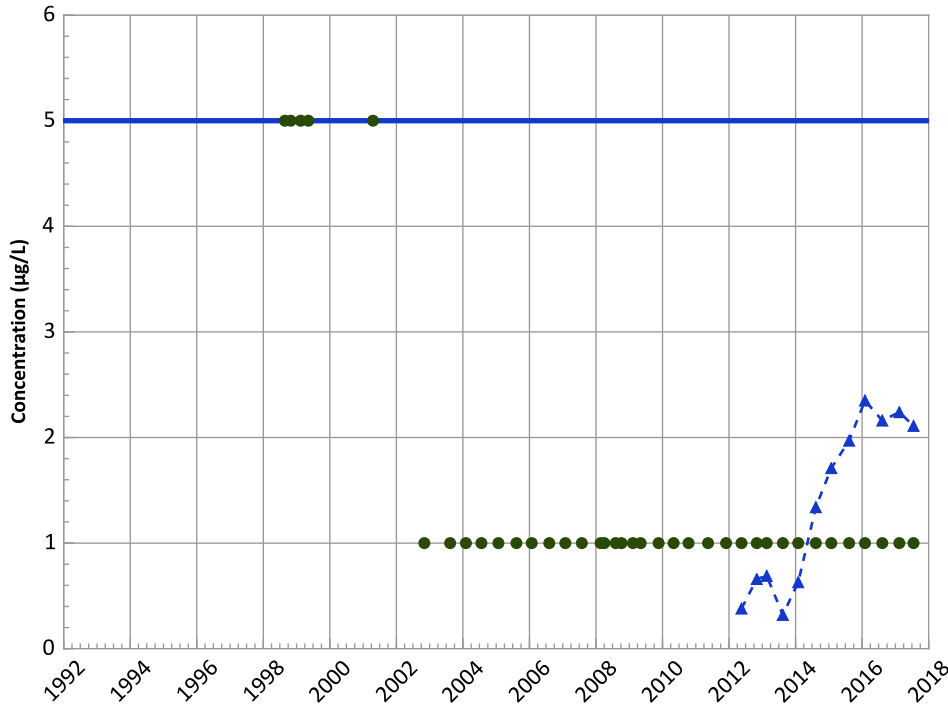
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Trichloroethene Trend



Concentration Trend

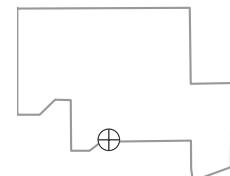
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
No Trend

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

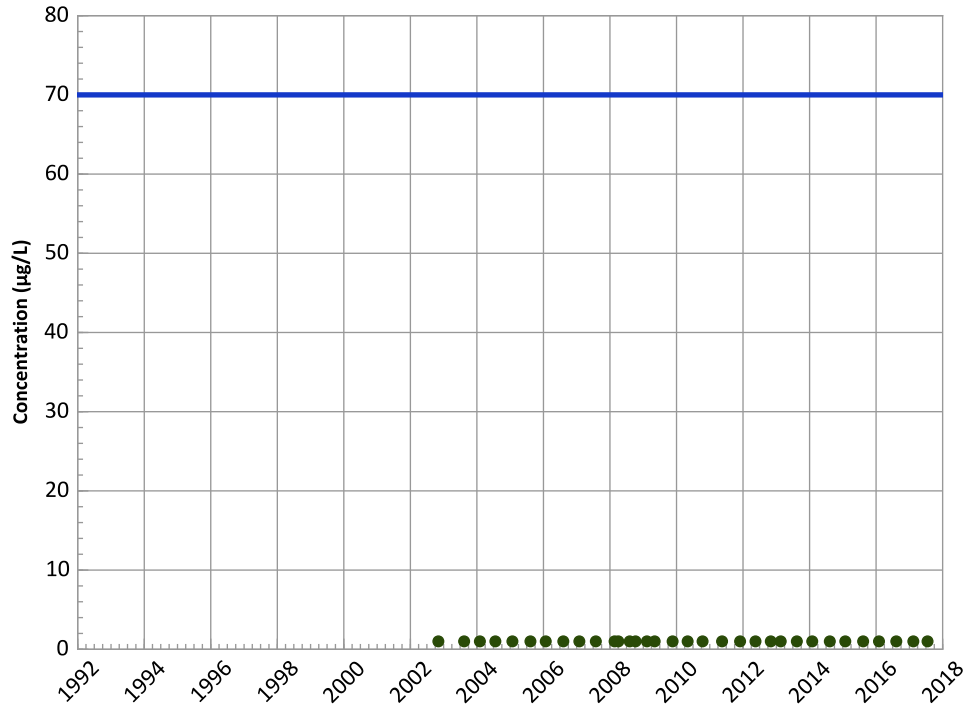
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/26/1998 to 08/30/2017
Analysis Date: 03/21/2018

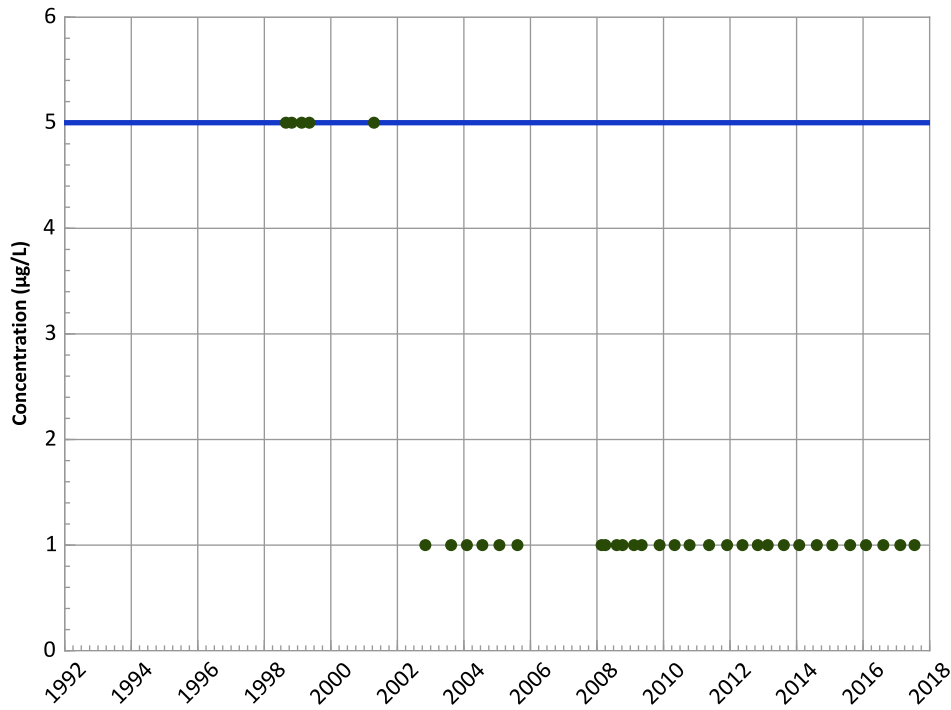
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1035 in Perched Aquifer
 USDOE/NNSA Pantex Plant
 cis-1,2-Dichloroethene Trend



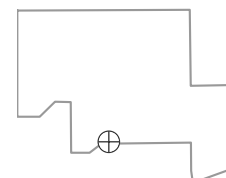
Concentration Trend
 MAROS Mann-Kendall Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect
 MAROS Linear Regression Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect

1,2-Dichloroethane Trend



Concentration Trend
 MAROS Mann-Kendall Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect
 MAROS Linear Regression Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect

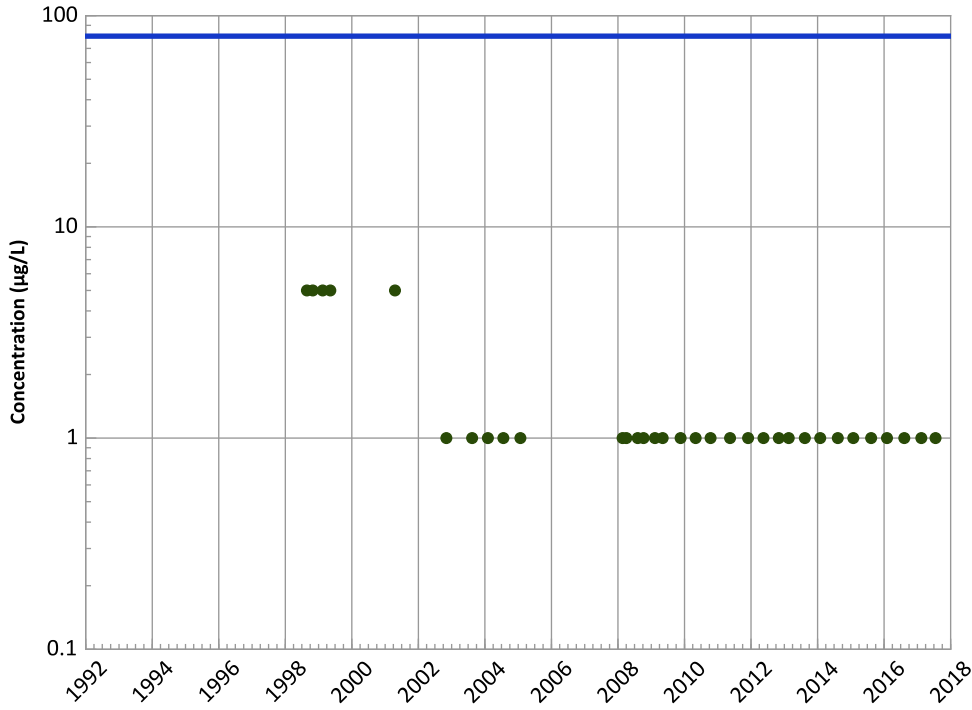
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 08/26/1998 to 08/30/2017
 Analysis Date: 03/21/2018

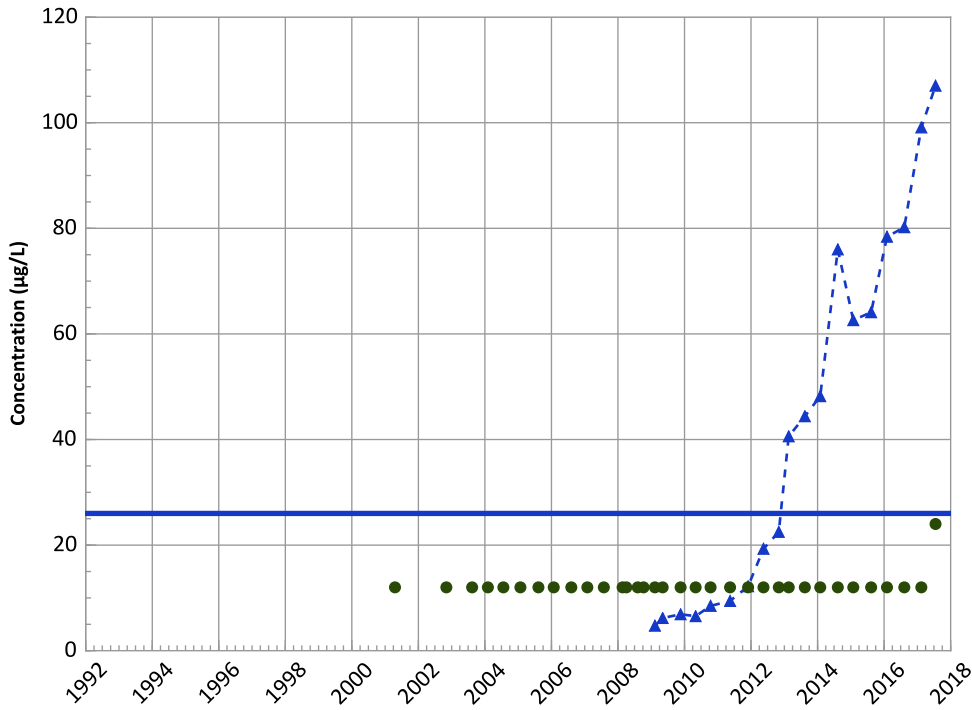
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1035 in Perched Aquifer
USDOE/NNSA Pantex Plant
Chloroform Trend**



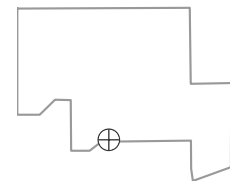
Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect
MAROS Linear Regression Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect

Perchlorate Trend



Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 Increasing
 All Data
 Increasing
MAROS Linear Regression Method
 Data ():
 Increasing
 All Data
 Increasing

Well Location

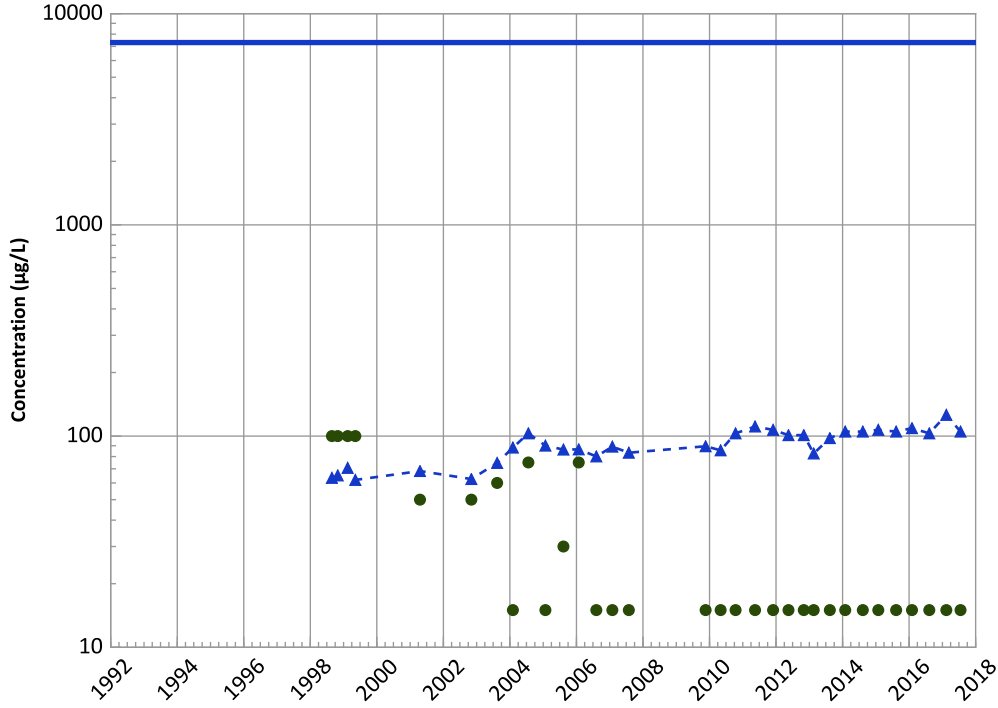


Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 08/26/1998 to 08/30/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1035 in Perched Aquifer
USDOE/NNSA Pantex Plant

Boron Trend



Concentration Trend

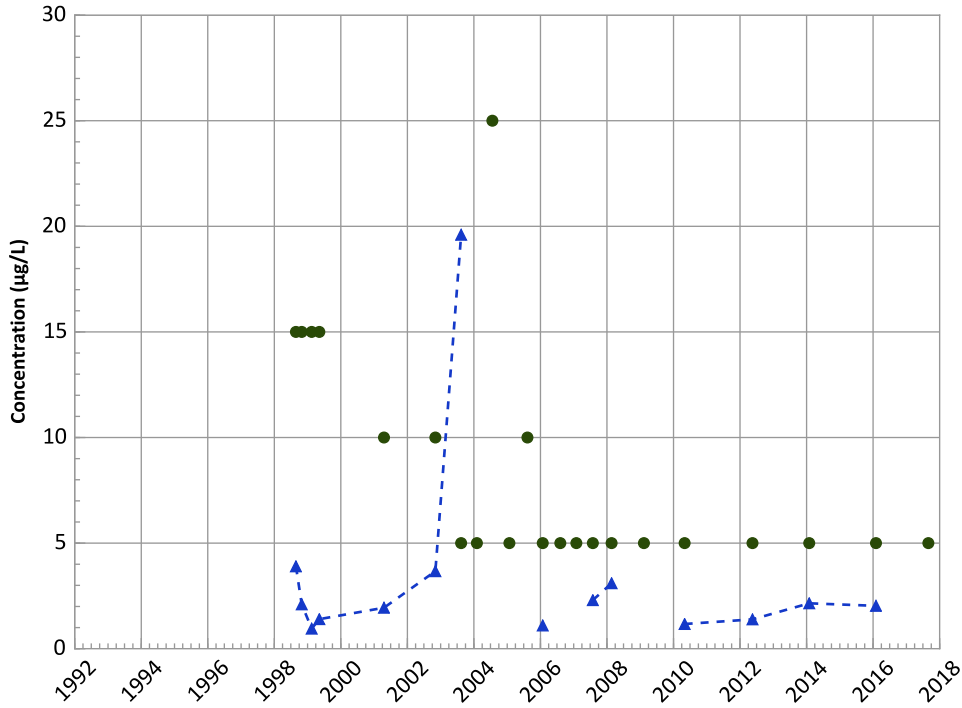
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Probably Increasing
All Data
Increasing

Manganese Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
Decreasing

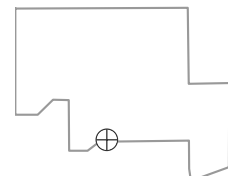
MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
No Trend

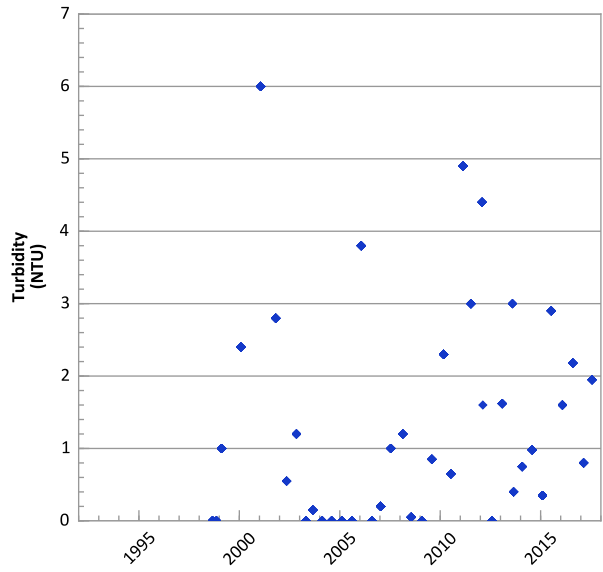
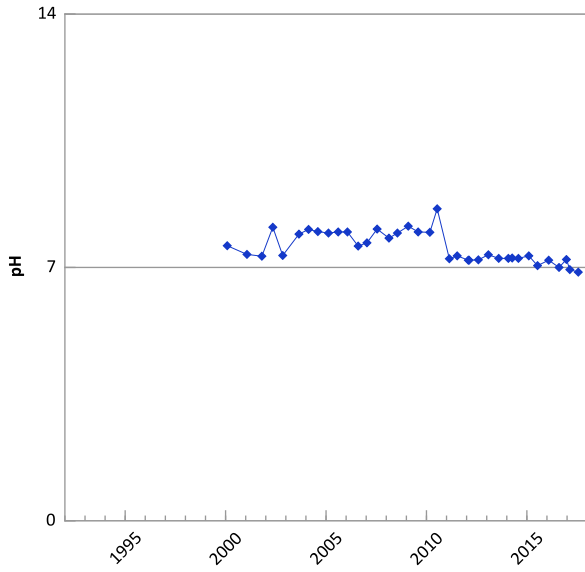
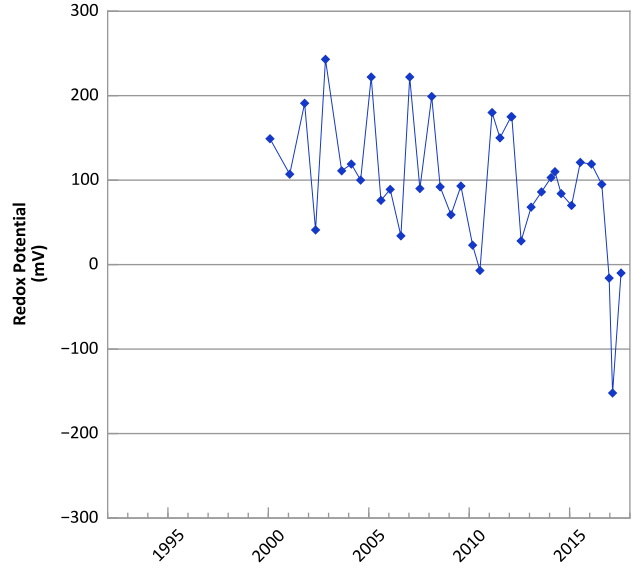
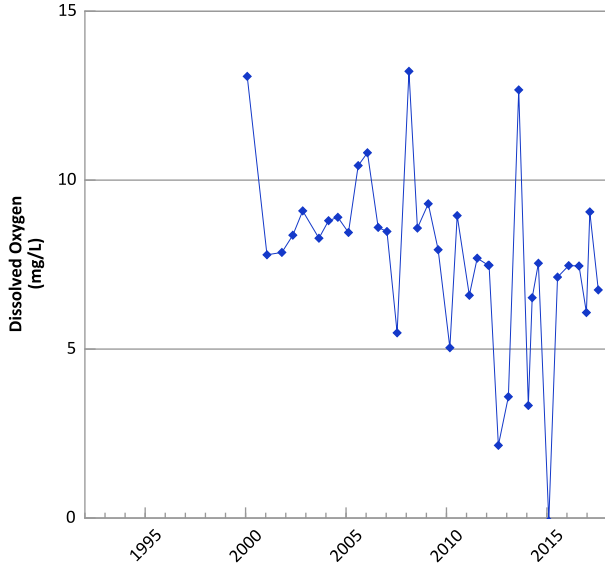
Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/26/1998 to 08/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

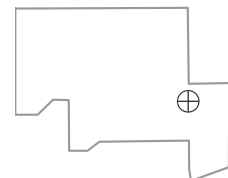


**PTX06-1038 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



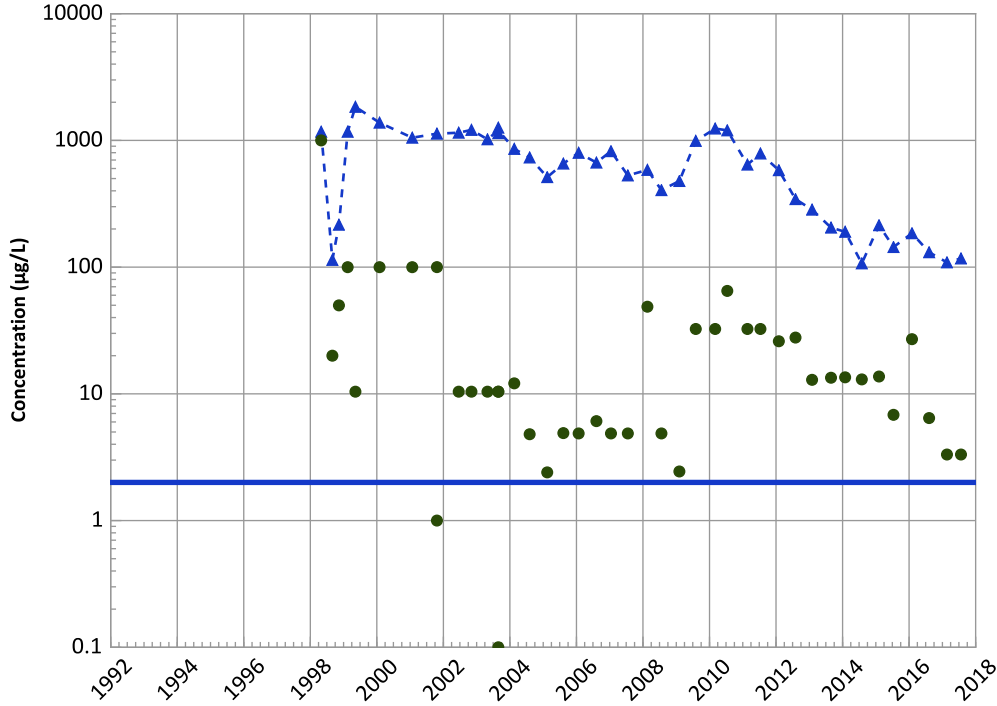
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 04/30/1998 to 07/24/2017
 Analysis Date: 03/21/2018

Well Location



PTX06-1038 in Perched Aquifer
USDOE/NSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

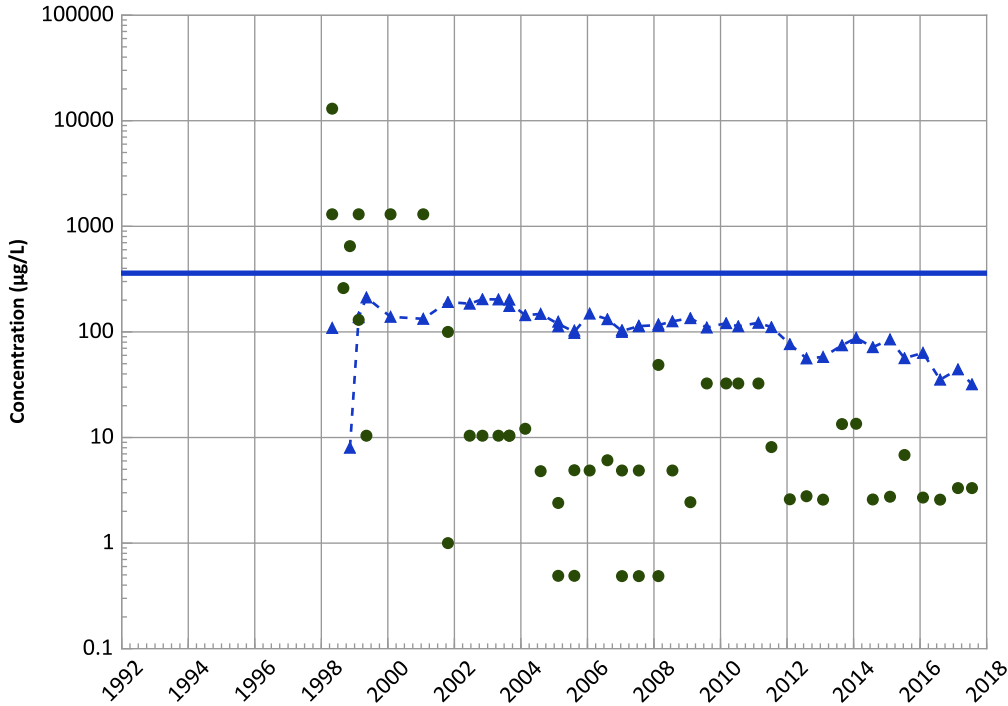
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

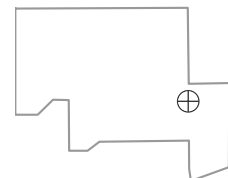
MAROS Linear Regression Method

Data ():
Stable
All Data
Decreasing

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 04/30/1998 to 07/24/2017
Analysis Date: 03/21/2018

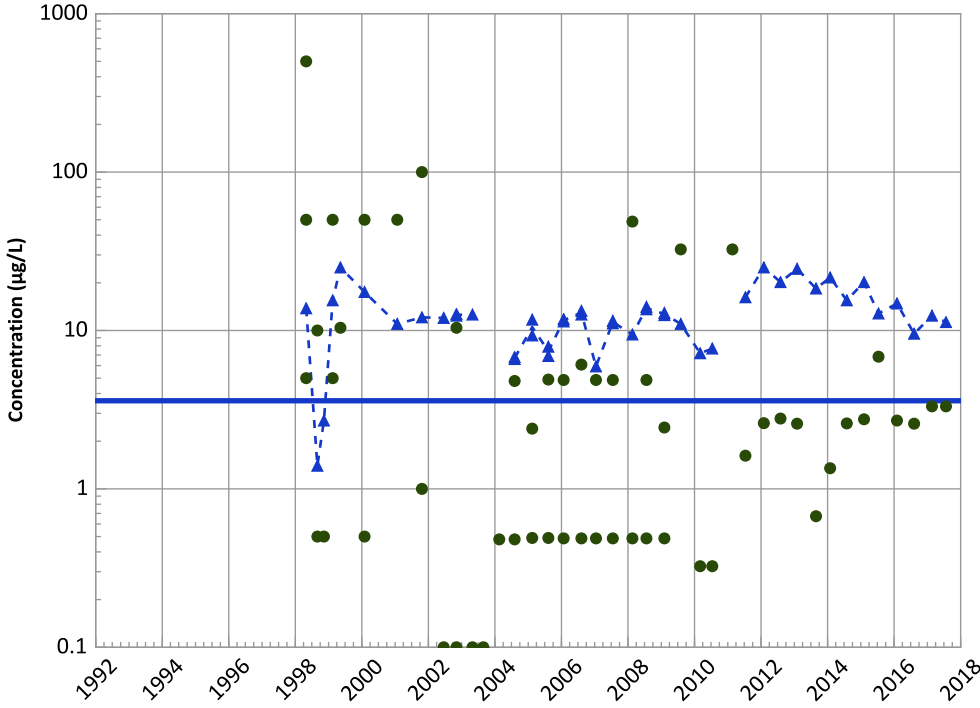
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1038 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

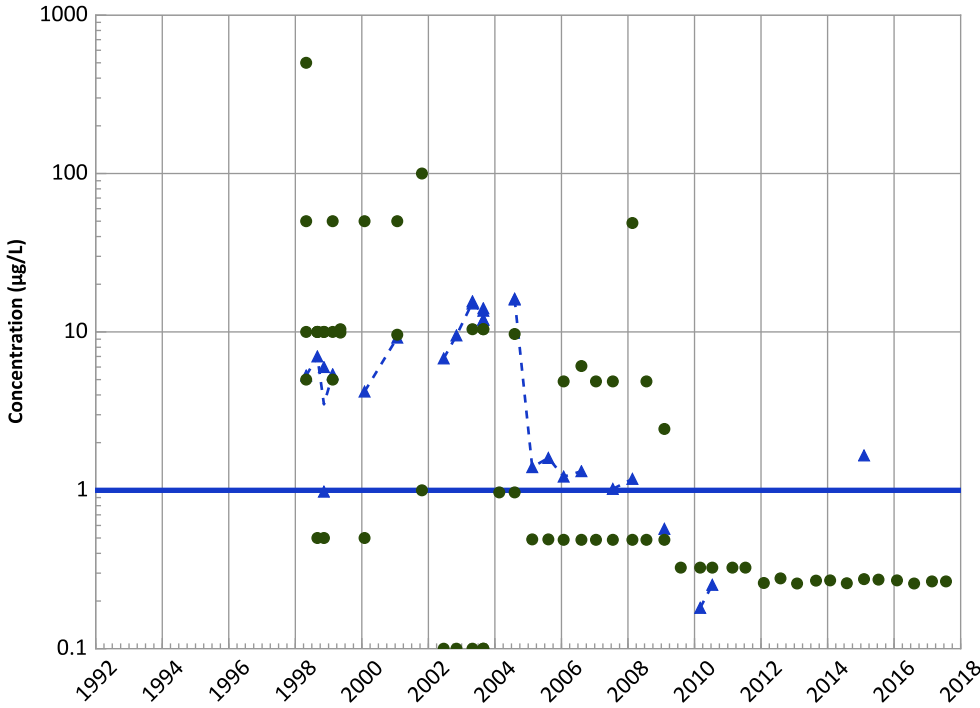
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Increasing

2,4-Dinitrotoluene Trend



Concentration Trend

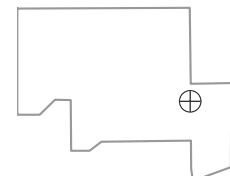
MAROS Mann-Kendall Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

Well Location

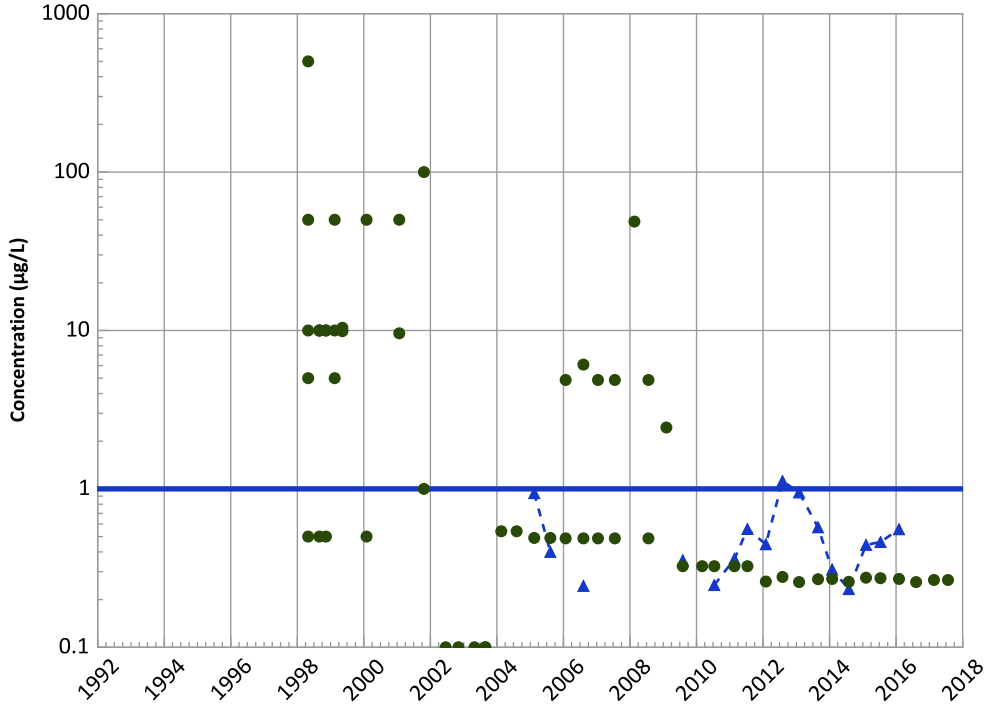


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 04/30/1998 to 07/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1038 in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

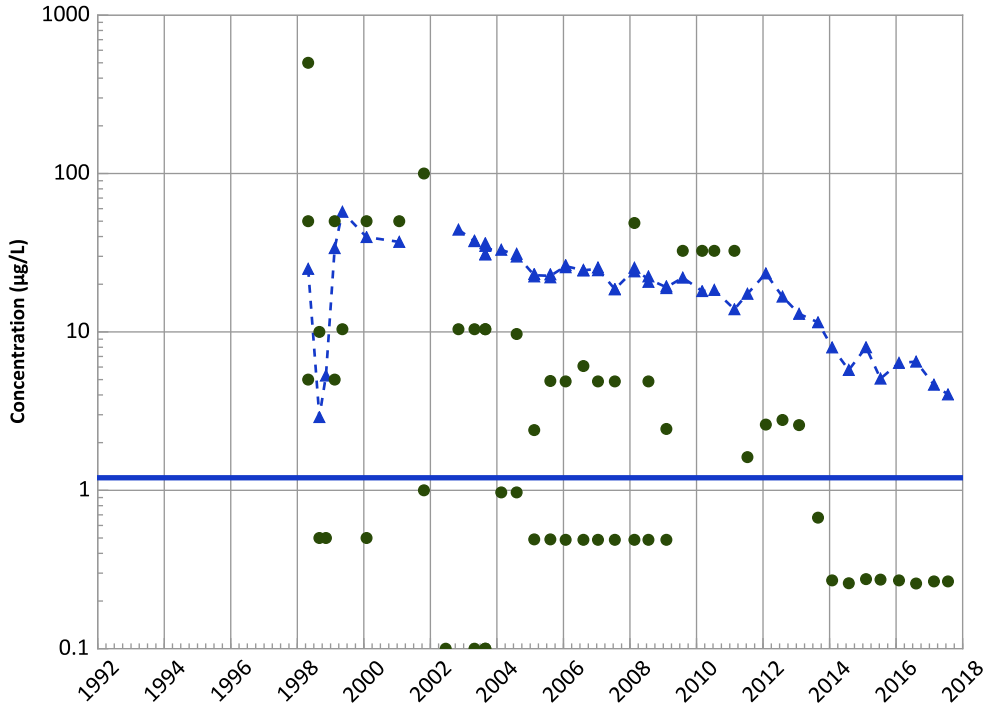
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Stable
All Data
No Trend

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

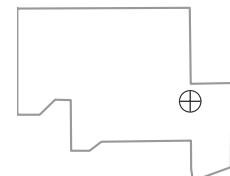
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

Well Location

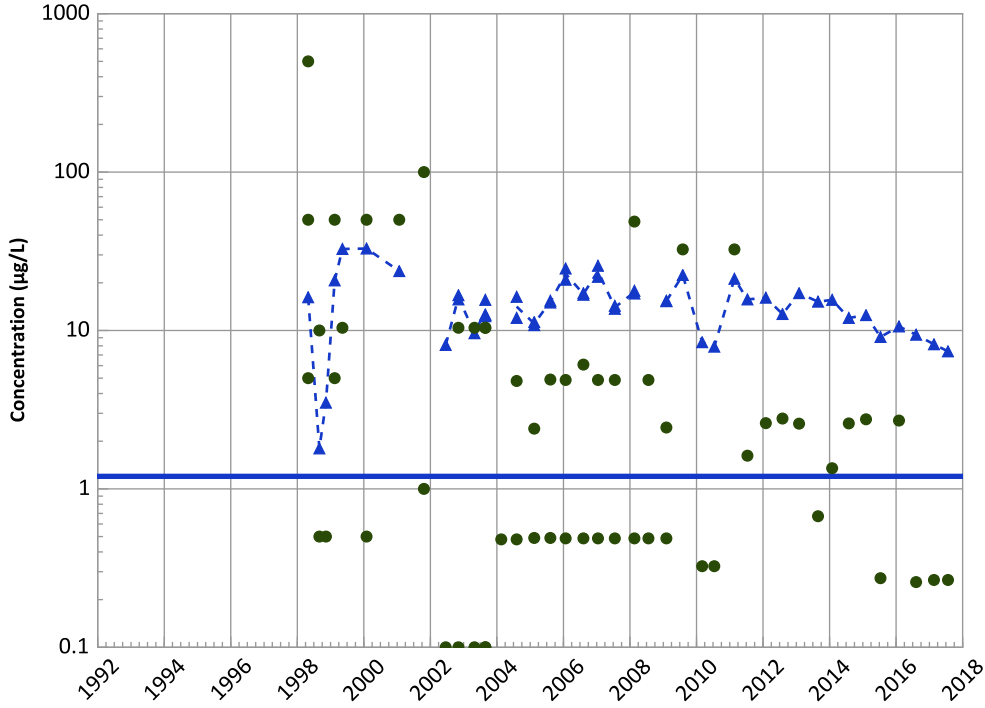


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 04/30/1998 to 07/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1038 in Perched Aquifer
USDOE/NSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

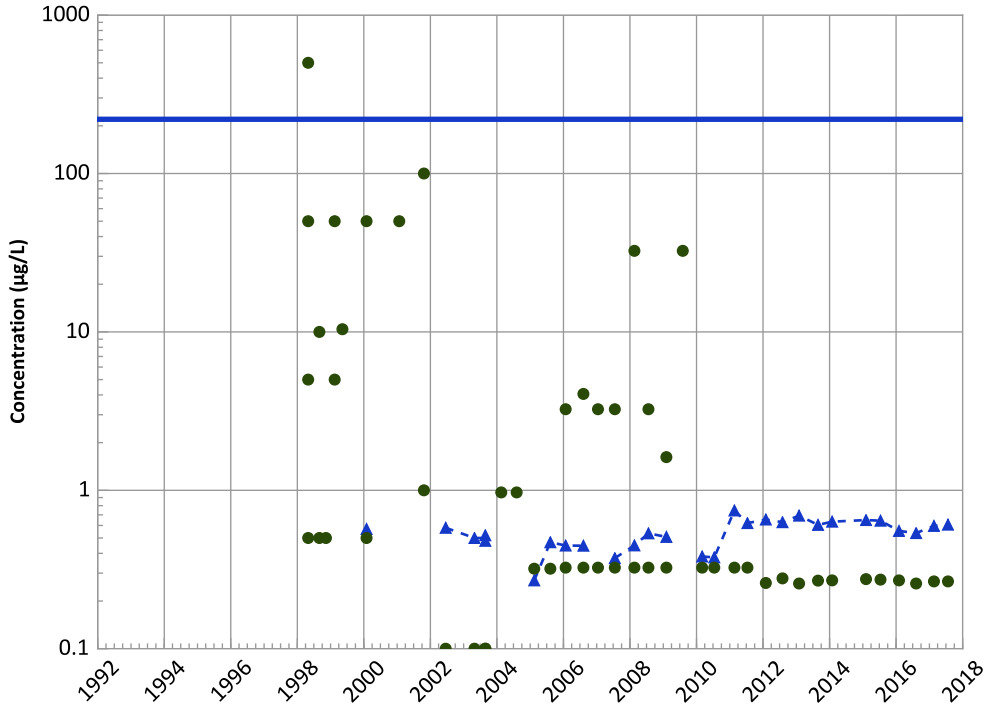
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Stable

1,3,5-Trinitrobenzene Trend



Concentration Trend

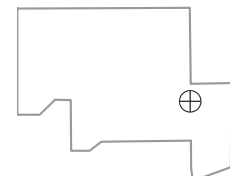
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Increasing

Well Location

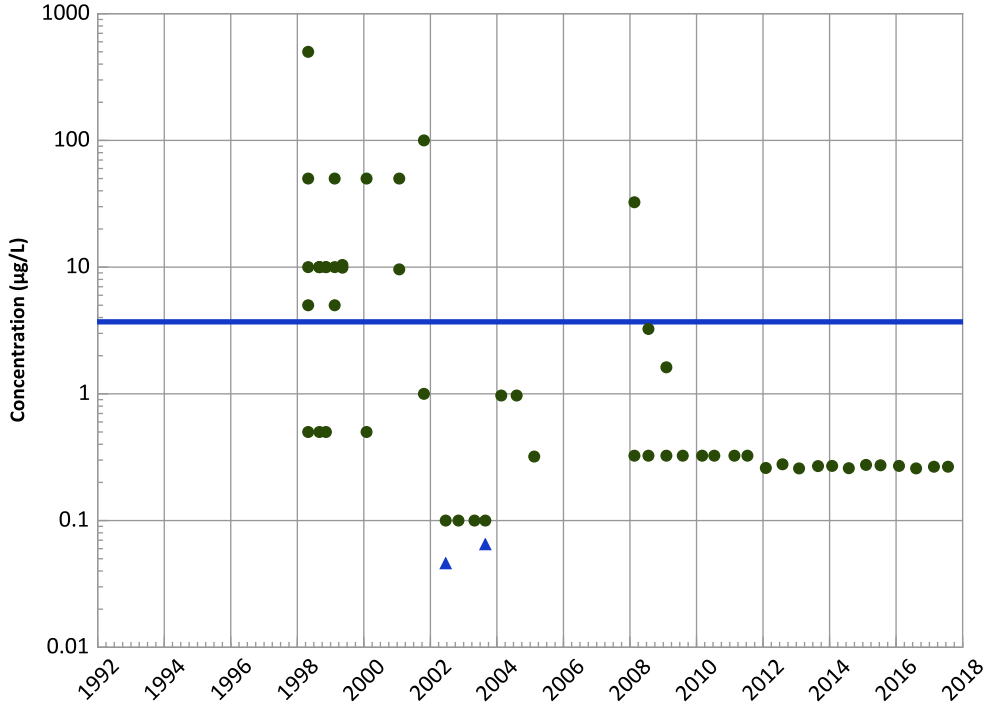


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 04/30/1998 to 07/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1038 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

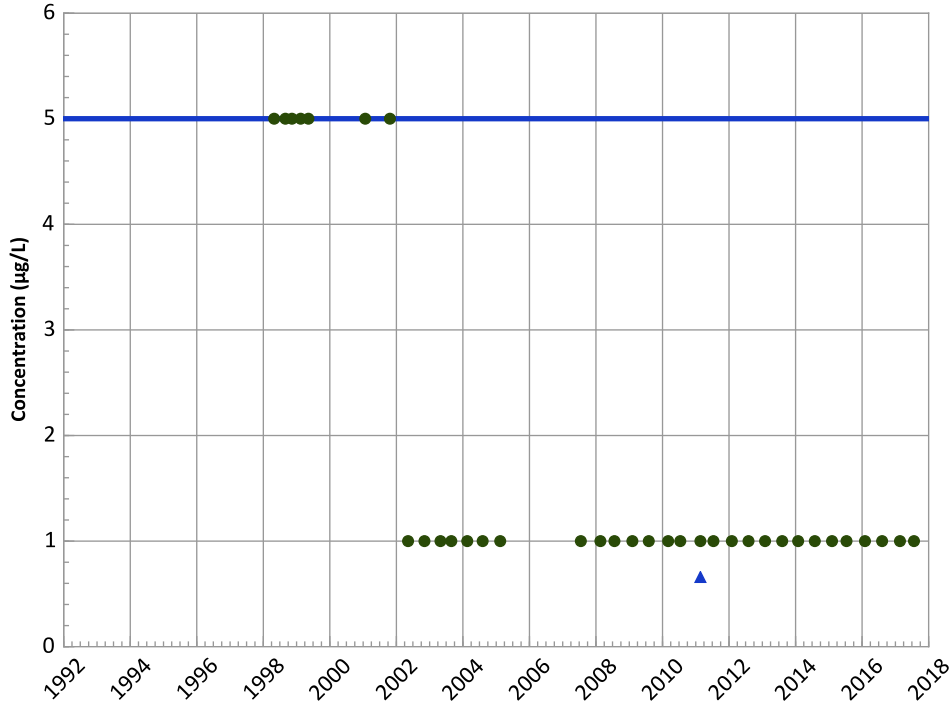
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

Tetrachloroethylene (PCE) Trend



Concentration Trend

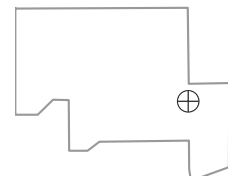
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

Well Location

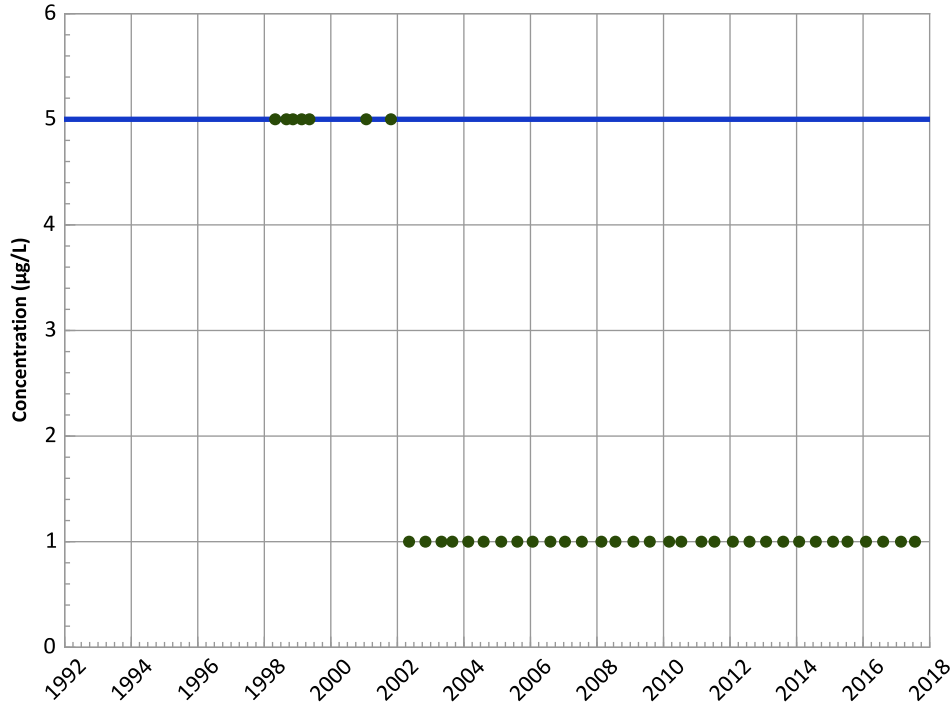


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 04/30/1998 to 07/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1038 in Perched Aquifer
USDOE/NNSA Pantex Plant

Trichloroethene Trend



Concentration Trend

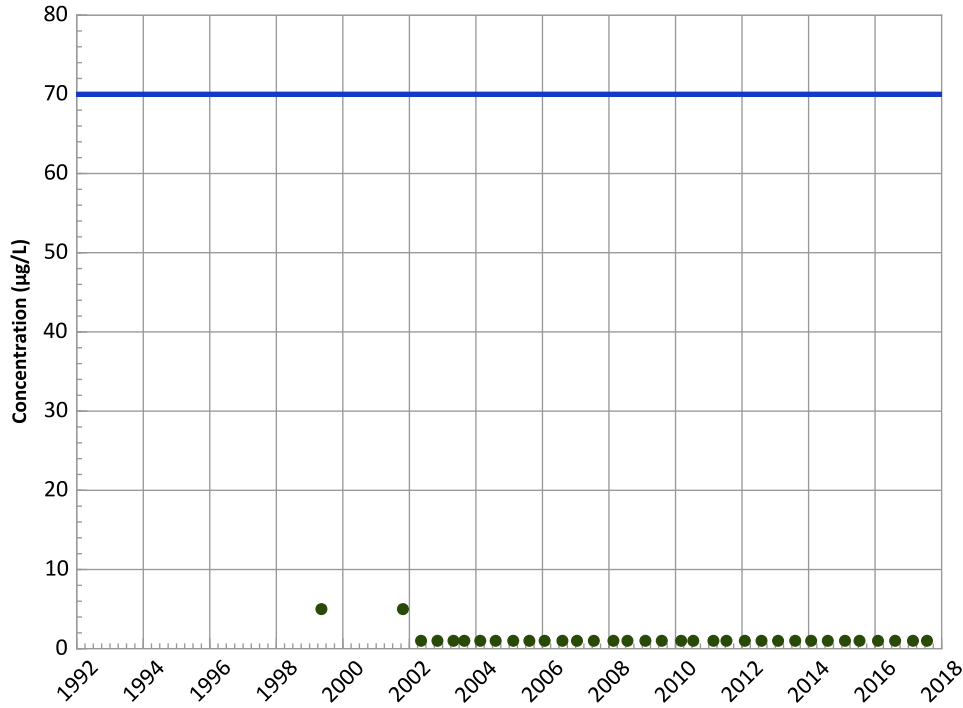
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

cis-1,2-Dichloroethene Trend



Concentration Trend

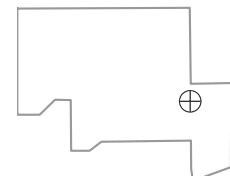
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

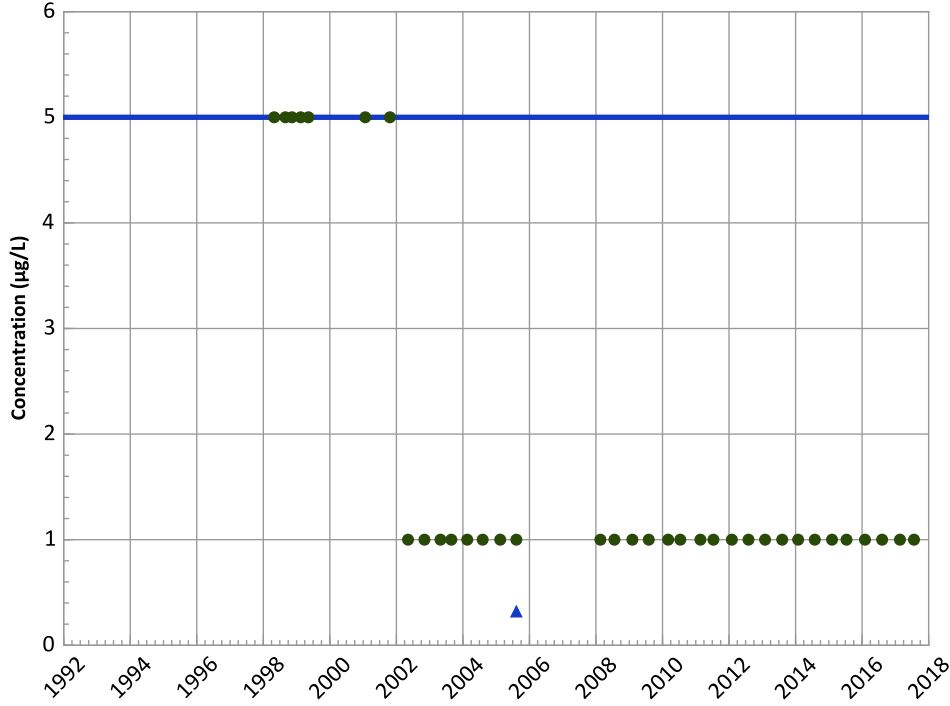


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 04/30/1998 to 07/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1038 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,2-Dichloroethane Trend



Concentration Trend

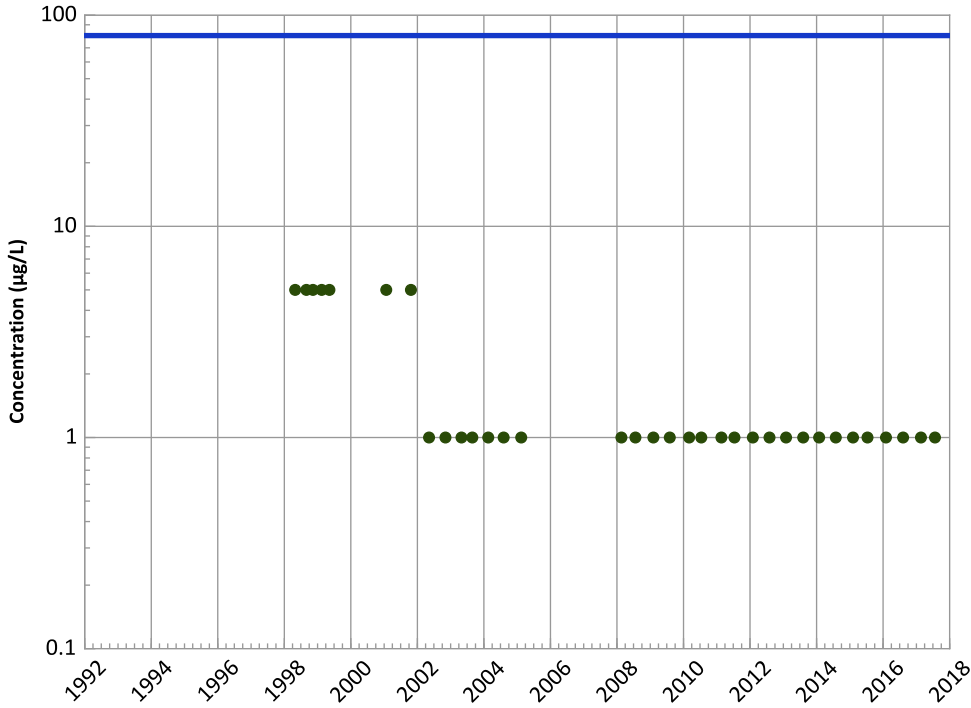
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

Chloroform Trend



Concentration Trend

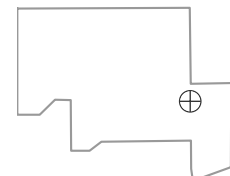
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

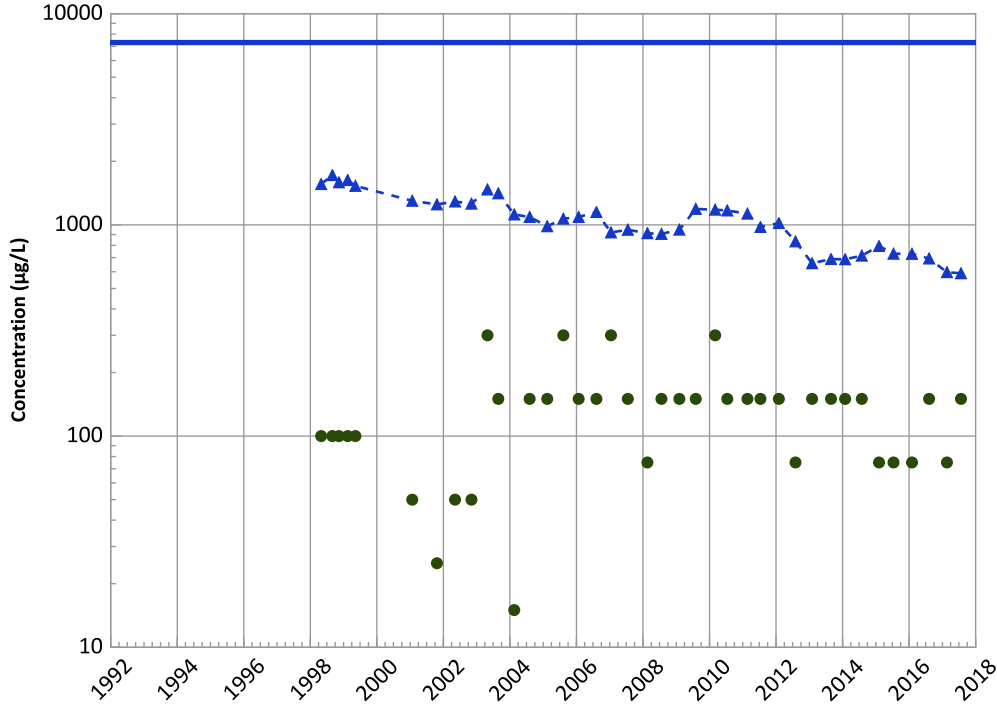


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 04/30/1998 to 07/24/2017
Analysis Date: 03/21/2018

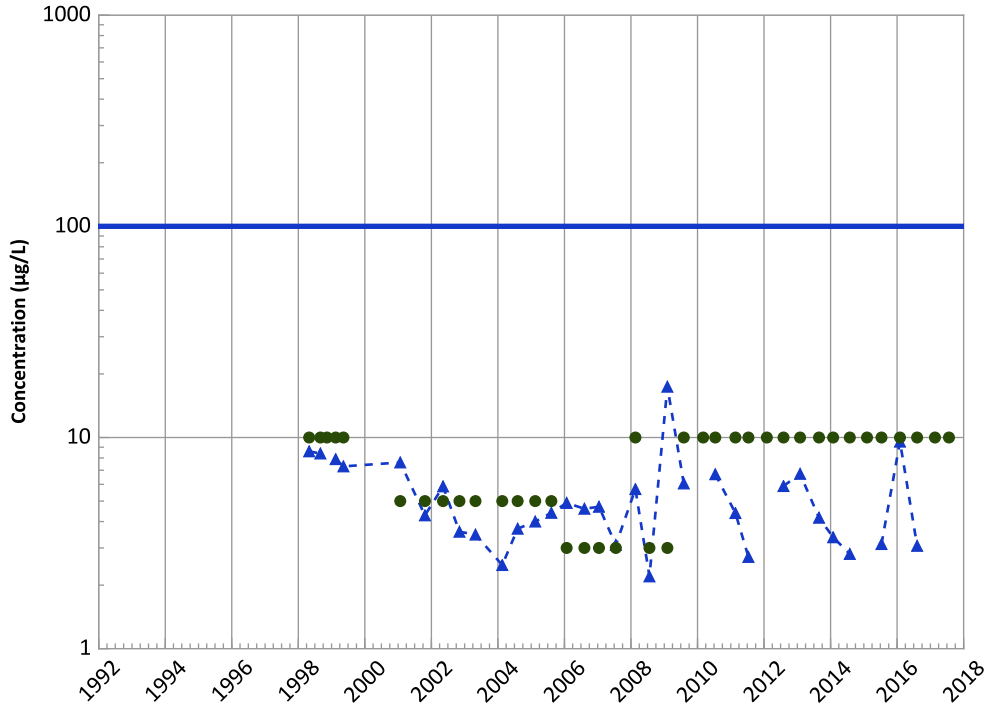
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1038 in Perched Aquifer
USDOE/NNSA Pantex Plant

Boron Trend



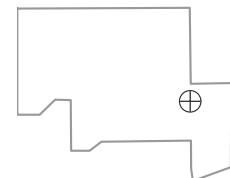
Chromium, Total Trend



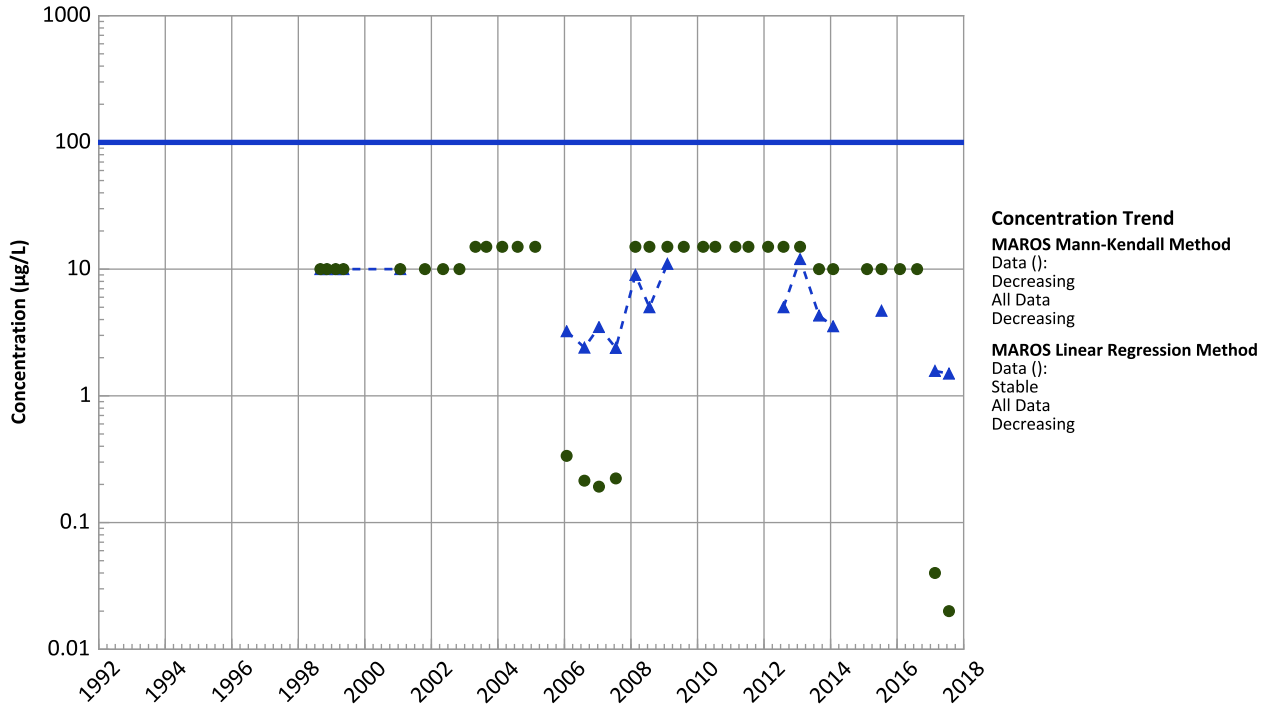
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 04/30/1998 to 07/24/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



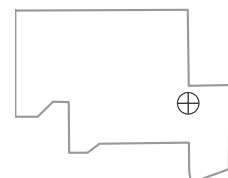
**PTX06-1038 in Perched Aquifer
USDOE/NNSA Pantex Plant
Chromium, Hexavalent Trend**



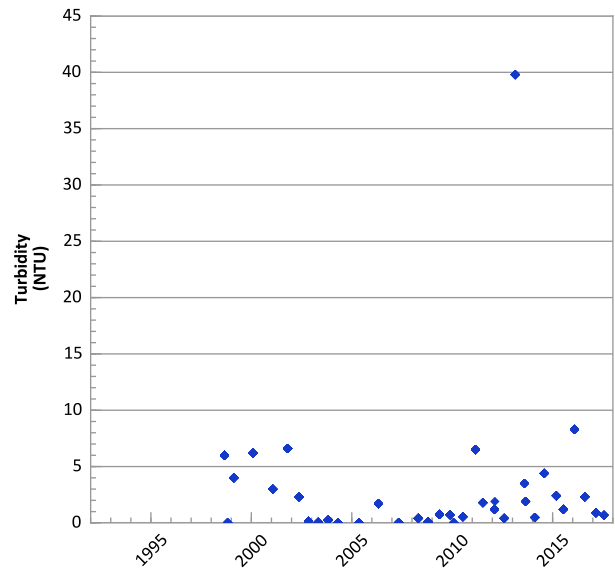
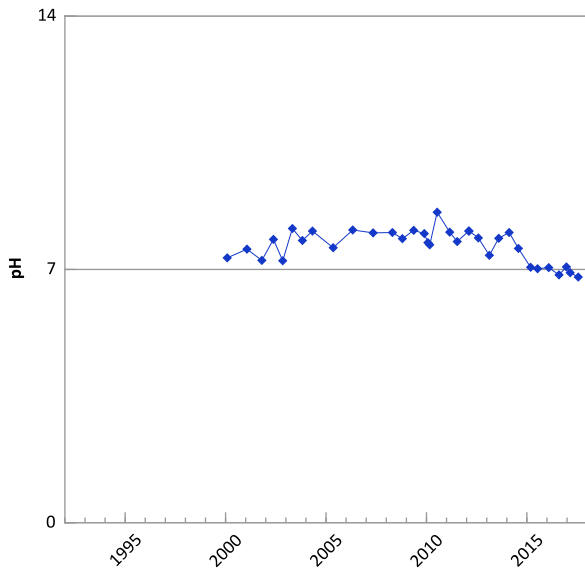
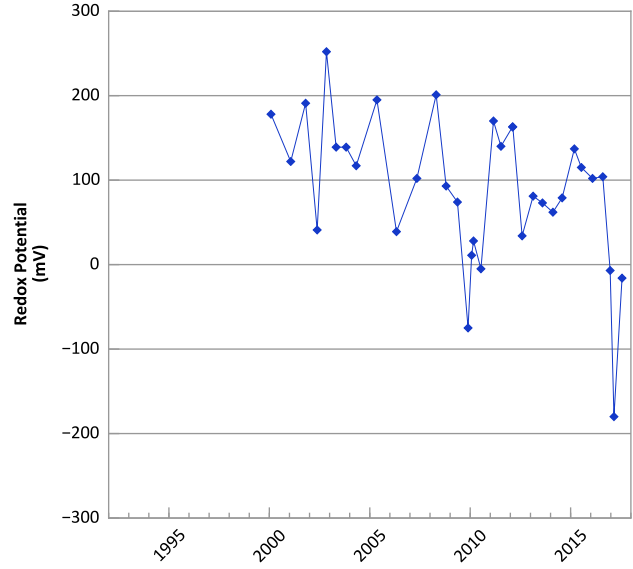
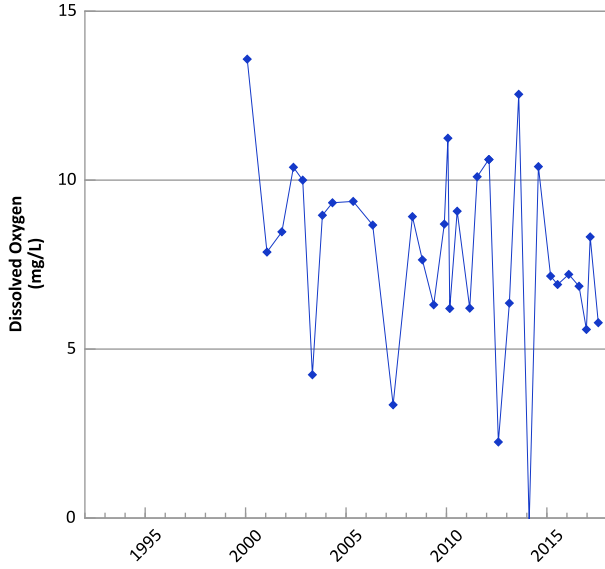
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 04/30/1998 to 07/24/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

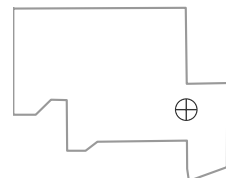


**PTX06-1039A in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



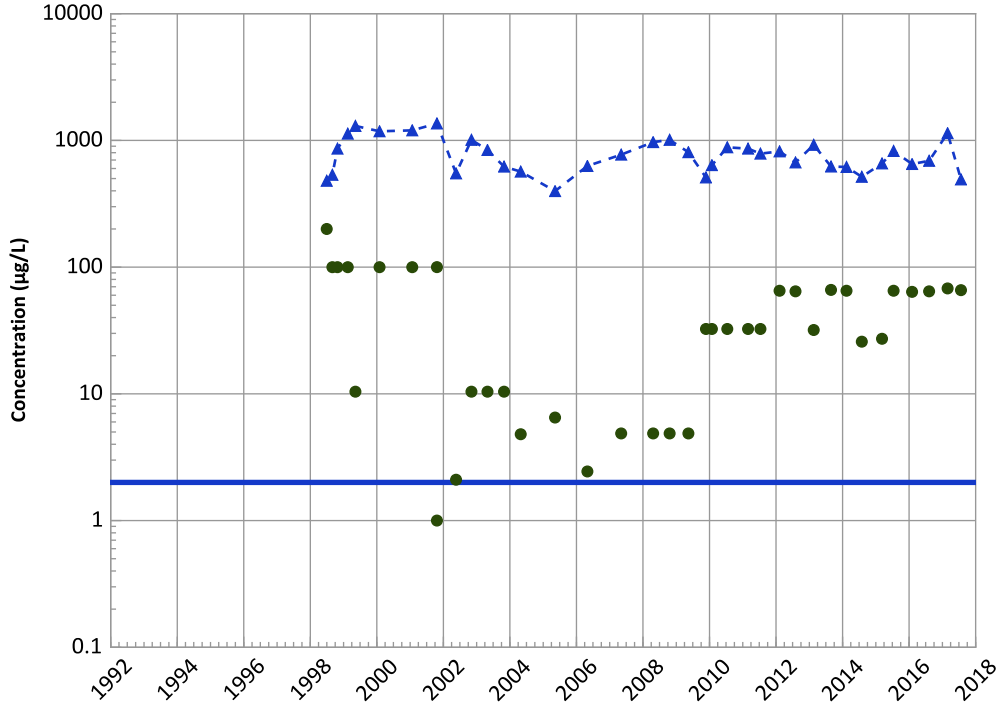
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 06/30/1998 to 07/24/2017
 Analysis Date: 03/21/2018

Well Location



PTX06-1039A in Perched Aquifer
USDOE/NSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

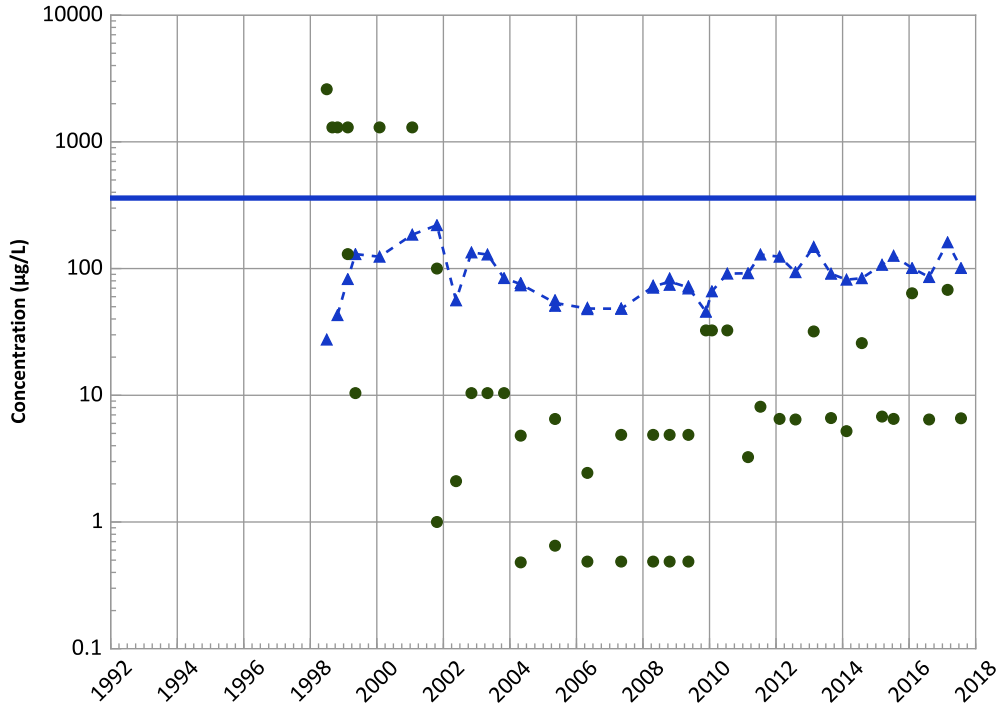
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Stable
All Data
Probably Decreasing

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

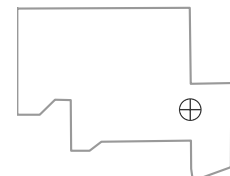
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
No Trend

MAROS Linear Regression Method

Data ():
Stable
All Data
No Trend

Well Location

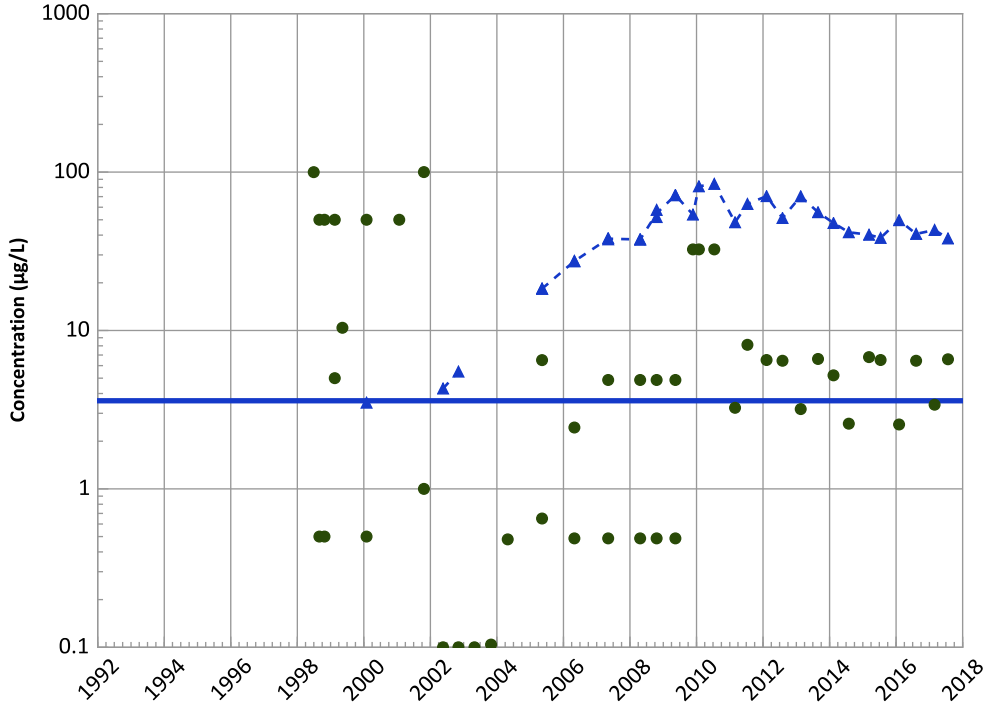


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/30/1998 to 07/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1039A in Perched Aquifer
USDOE/NSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

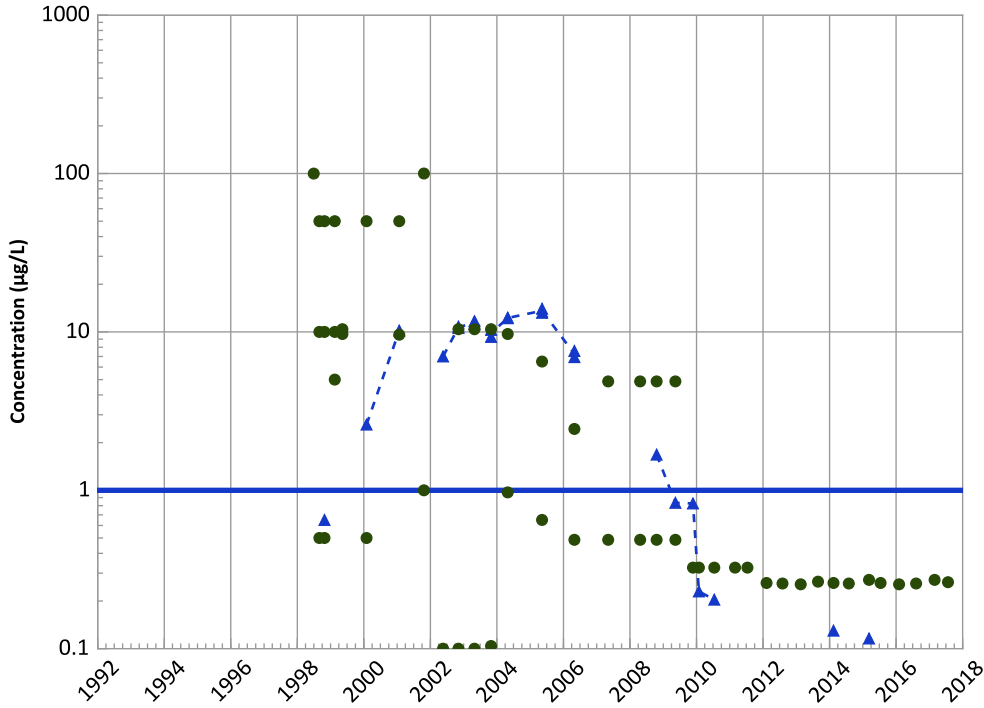
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Increasing

2,4-Dinitrotoluene Trend



Concentration Trend

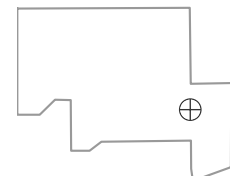
MAROS Mann-Kendall Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

Well Location

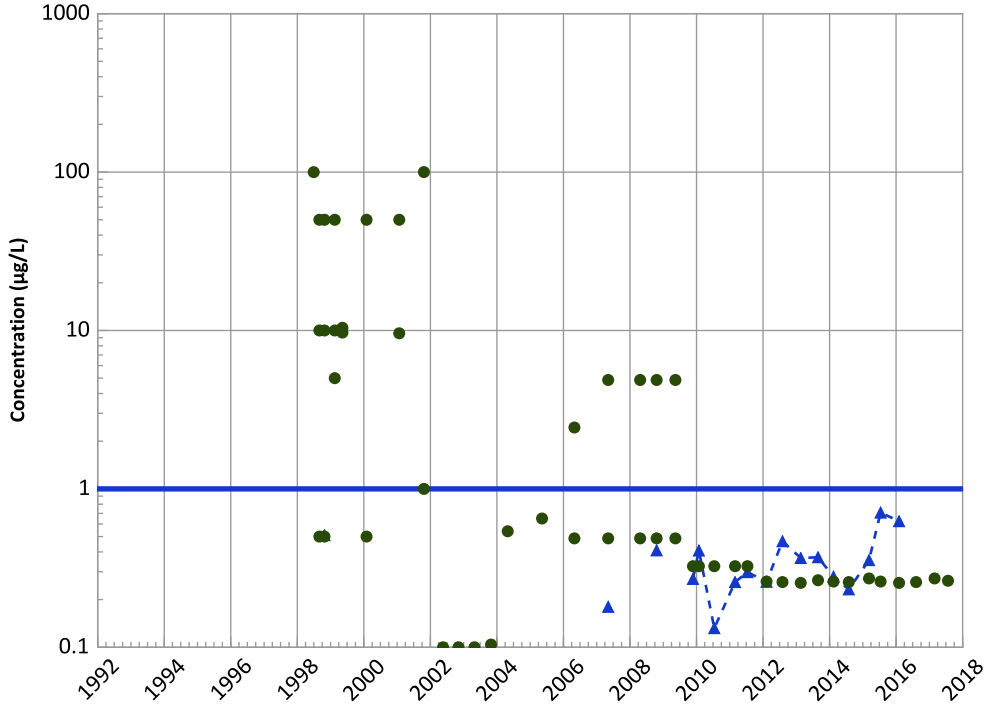


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/30/1998 to 07/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1039A in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

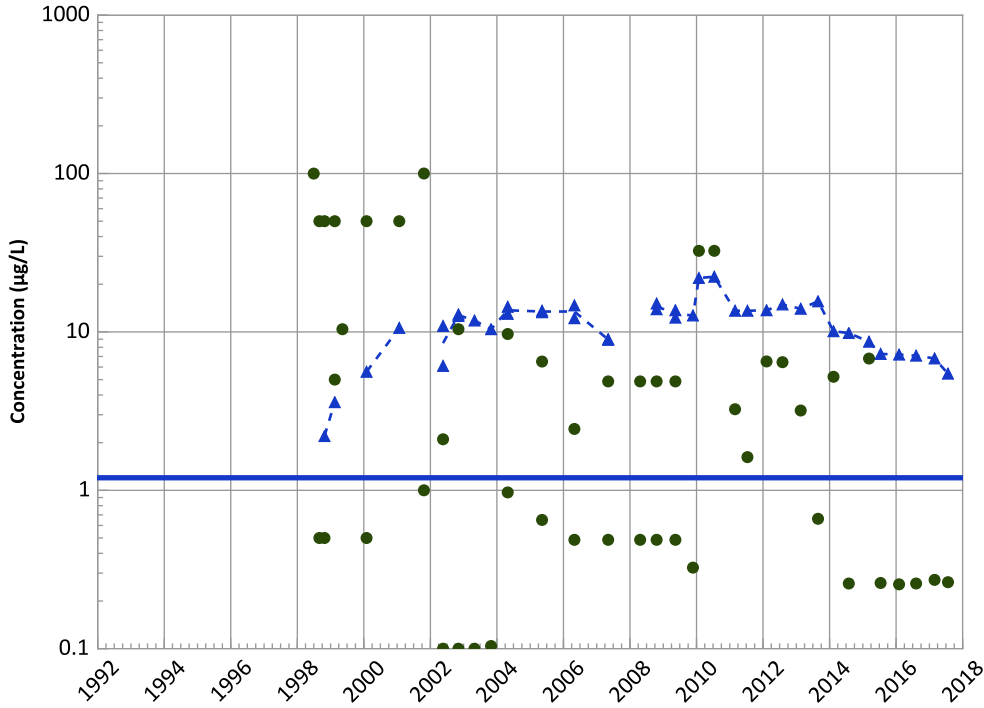
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Probably Increasing
All Data
No Trend

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

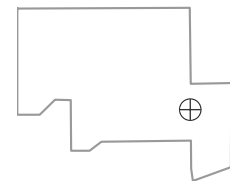
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
No Trend

MAROS Linear Regression Method

Data ():
Decreasing
All Data
No Trend

Well Location

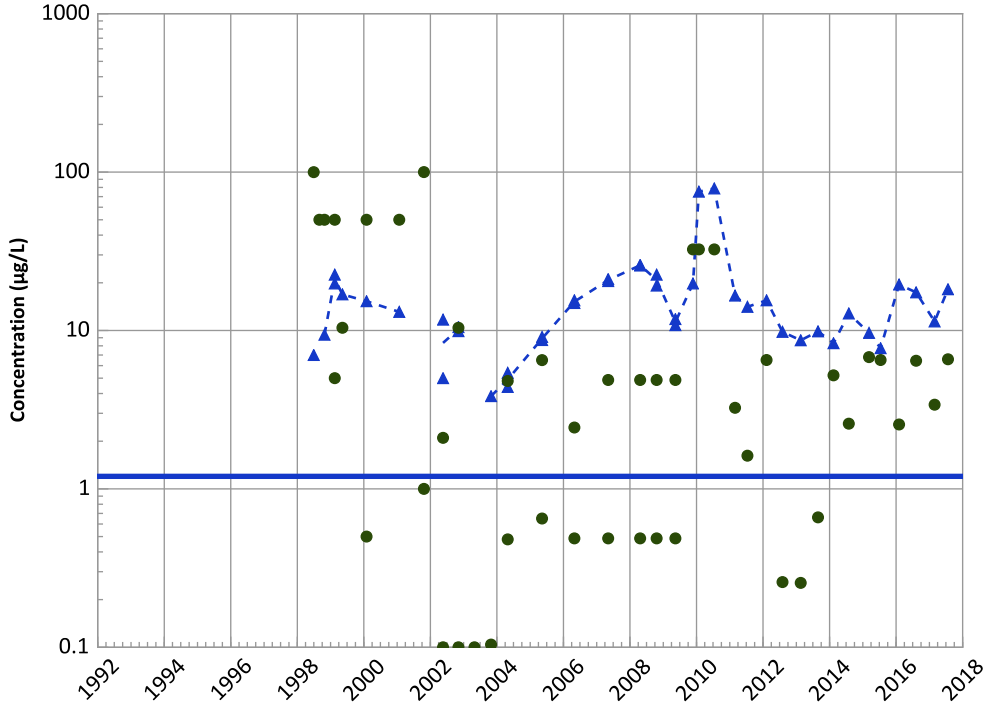


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/30/1998 to 07/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1039A in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

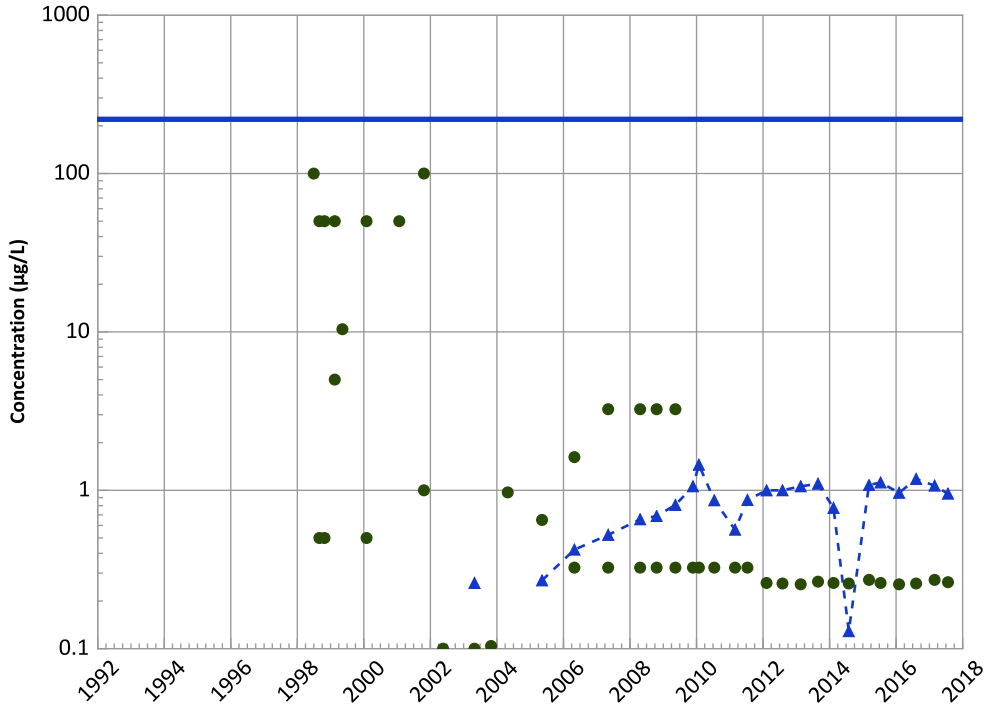
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
No Trend

MAROS Linear Regression Method

Data ():
No Trend
All Data
No Trend

1,3,5-Trinitrobenzene Trend



Concentration Trend

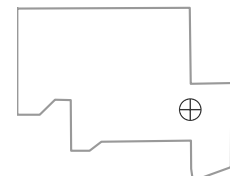
MAROS Mann-Kendall Method

Data ():
No Trend
All Data
Increasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Increasing

Well Location

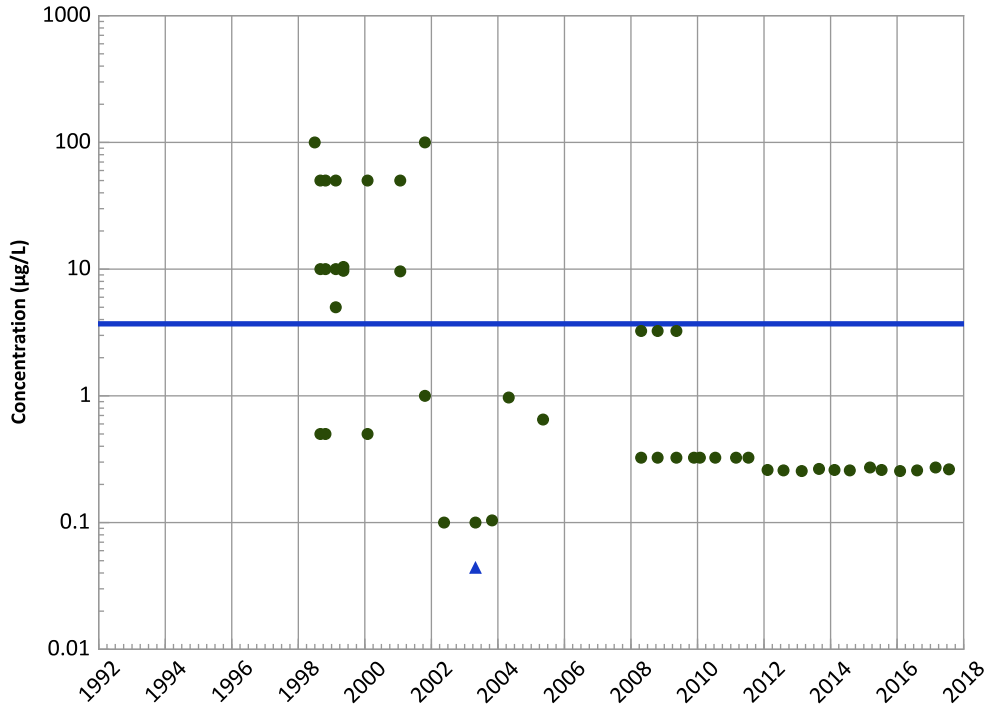


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/30/1998 to 07/24/2017
Analysis Date: 03/21/2018

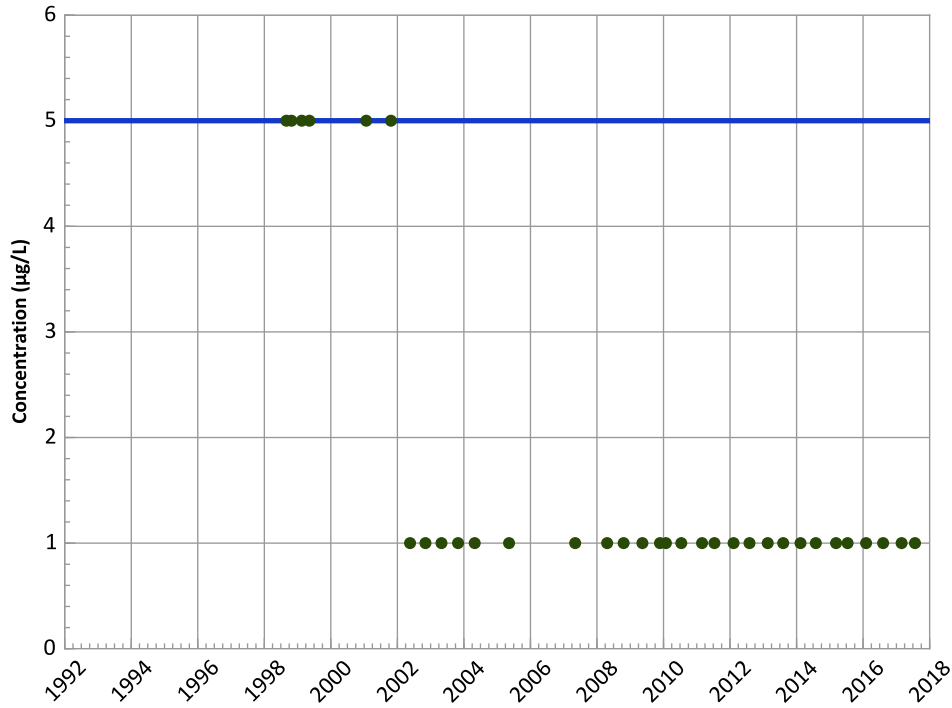
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1039A in Perched Aquifer
USDOE/NNSA Pantex Plant

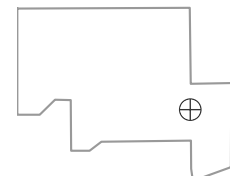
1,3-Dinitrobenzene Trend



Tetrachloroethylene (PCE) Trend



Well Location

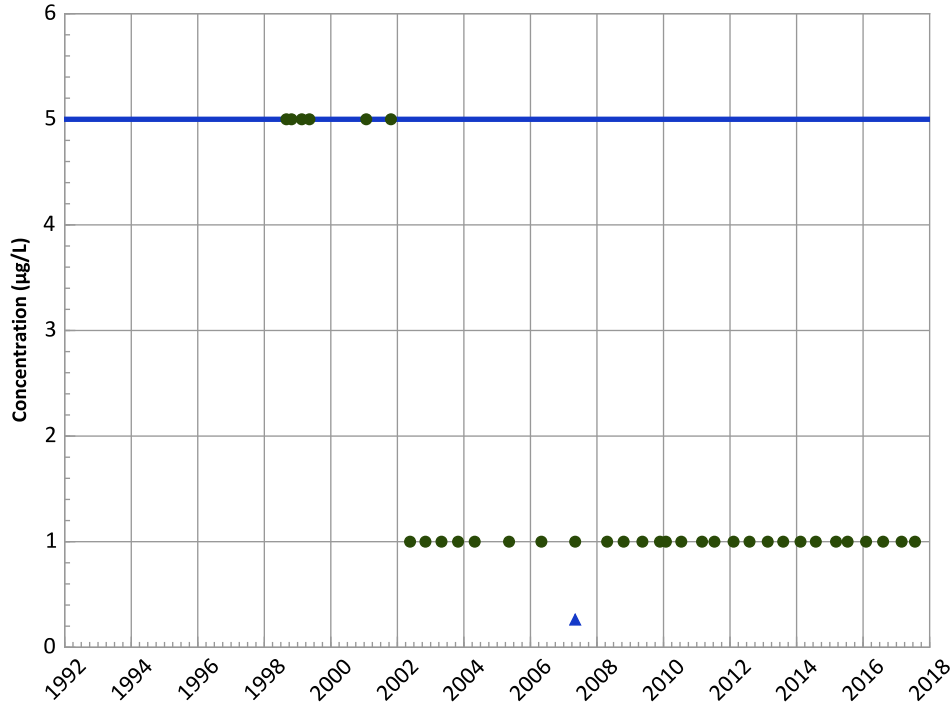


Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 06/30/1998 to 07/24/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1039A in Perched Aquifer
USDOE/NNSA Pantex Plant

Trichloroethene Trend



Concentration Trend

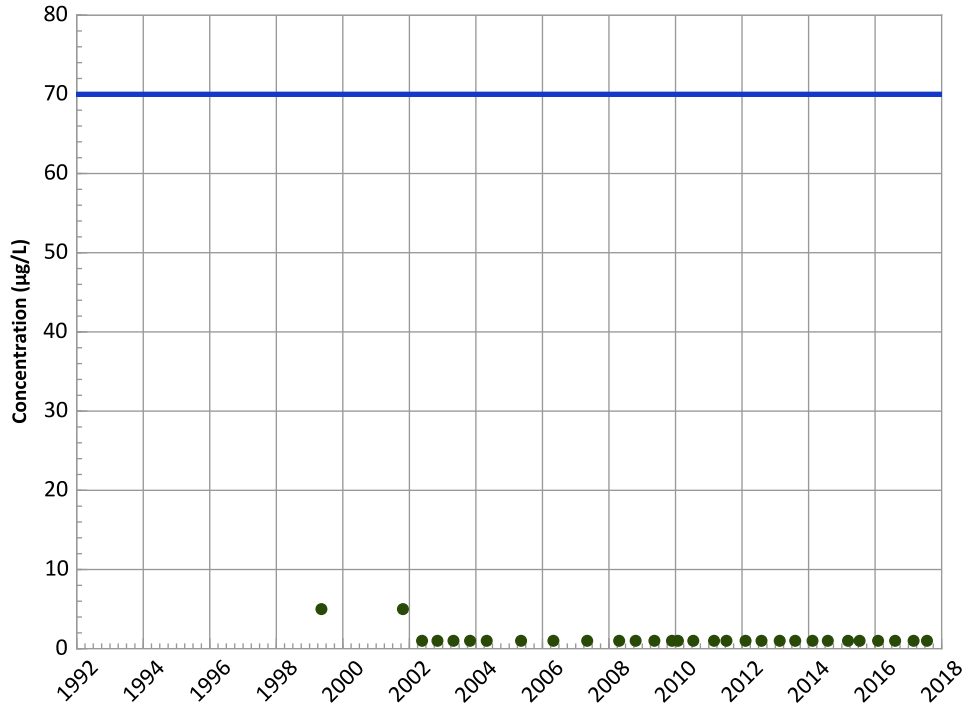
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

cis-1,2-Dichloroethene Trend



Concentration Trend

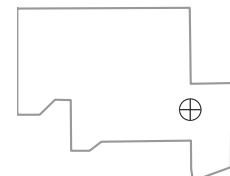
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

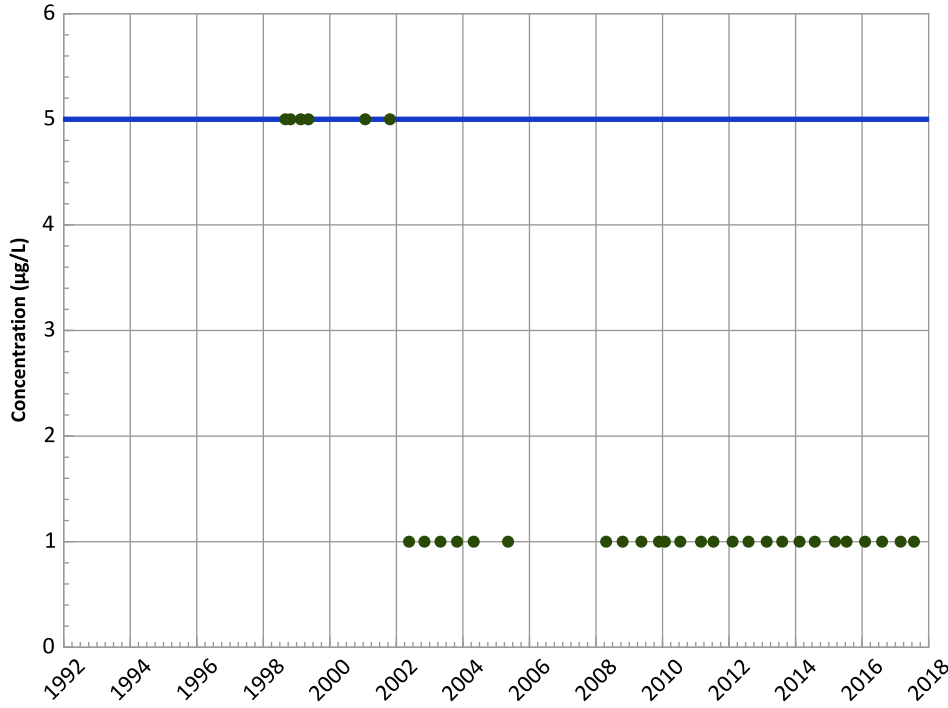


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/30/1998 to 07/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1039A in Perched Aquifer
USDOE/NNSA Pantex Plant

1,2-Dichloroethane Trend



Concentration Trend

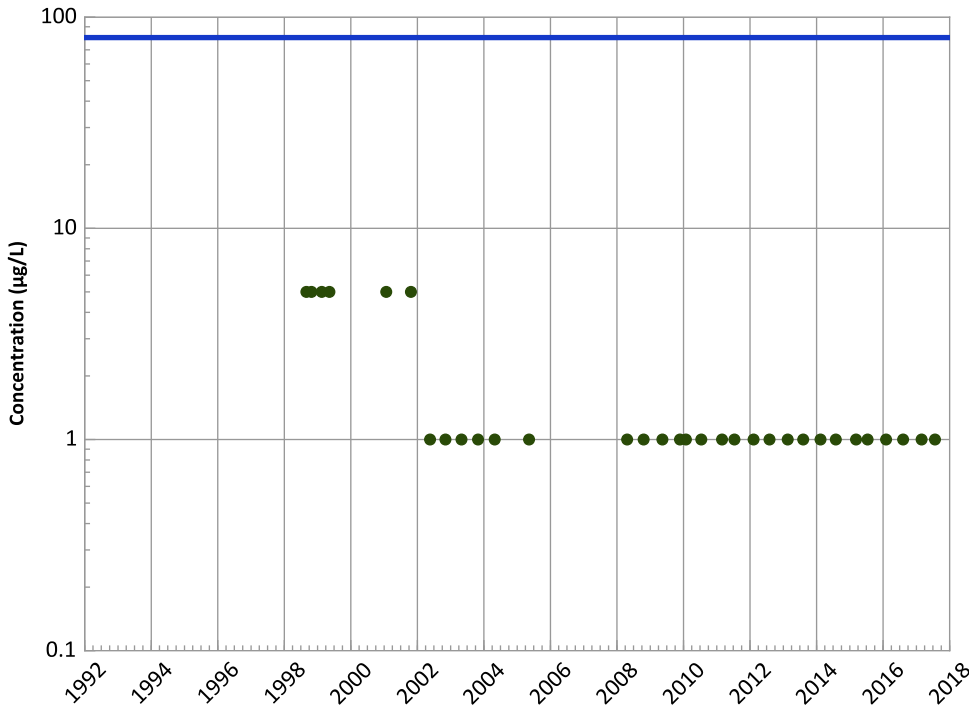
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Chloroform Trend



Concentration Trend

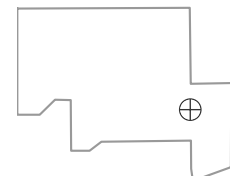
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

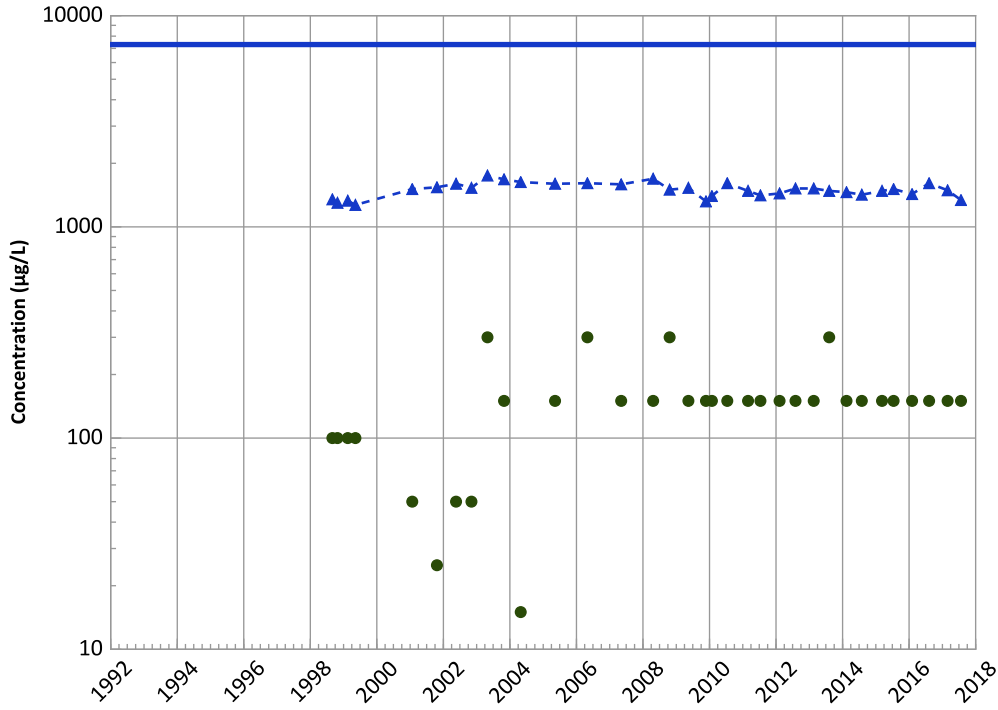


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/30/1998 to 07/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1039A in Perched Aquifer
USDOE/NNSA Pantex Plant

Boron Trend



Concentration Trend

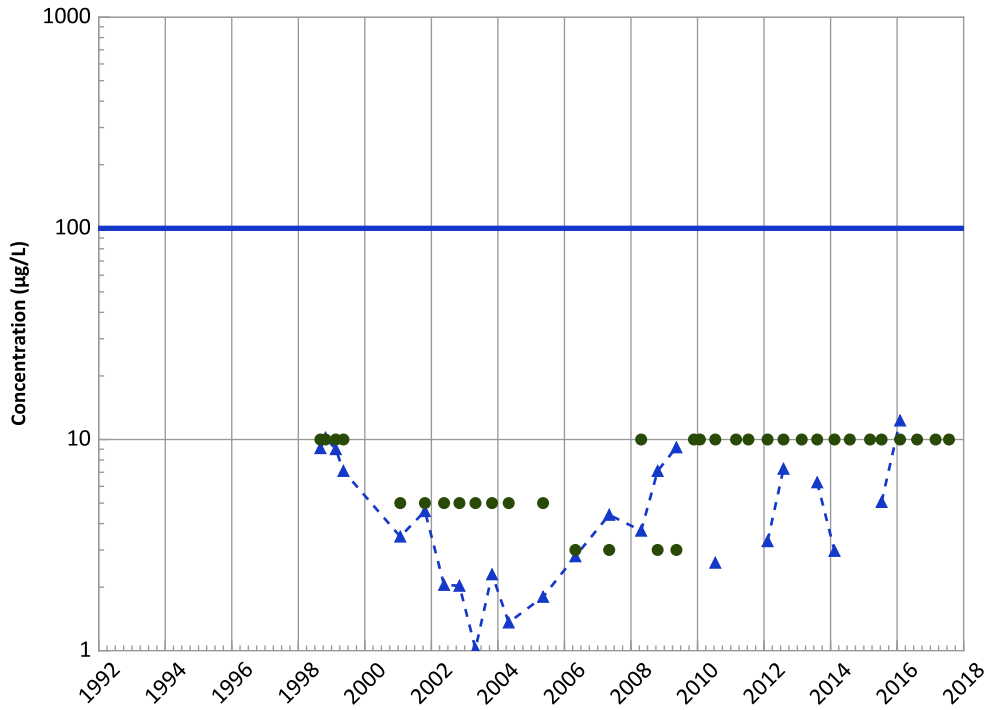
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
Increasing

Chromium, Total Trend



Concentration Trend

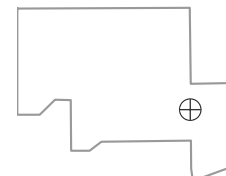
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
No Trend

MAROS Linear Regression Method

Data ():
No Trend
All Data
No Trend

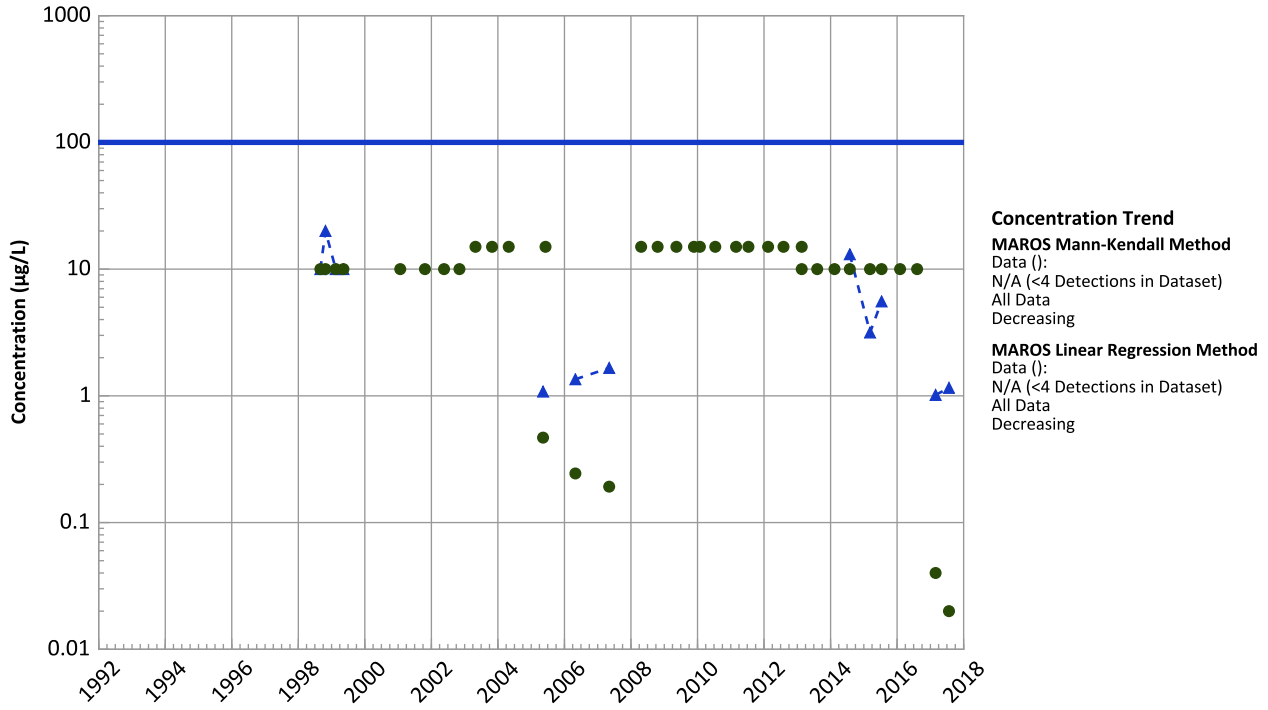
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/30/1998 to 07/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

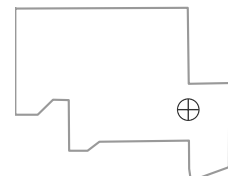
**PTX06-1039A in Perched Aquifer
USDOE/NNSA Pantex Plant
Chromium, Hexavalent Trend**



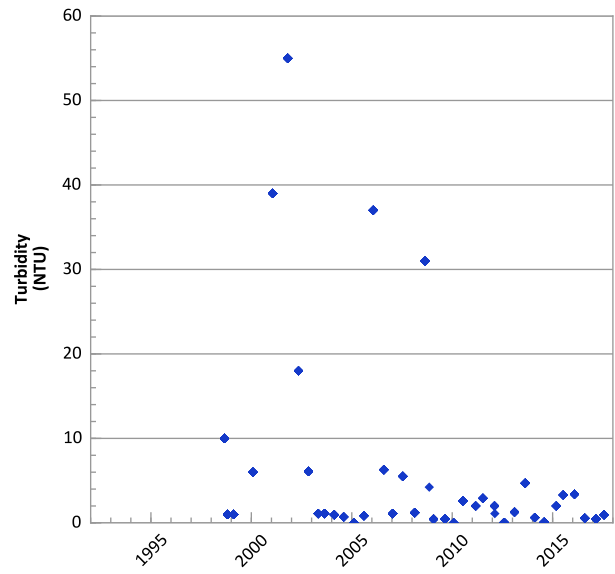
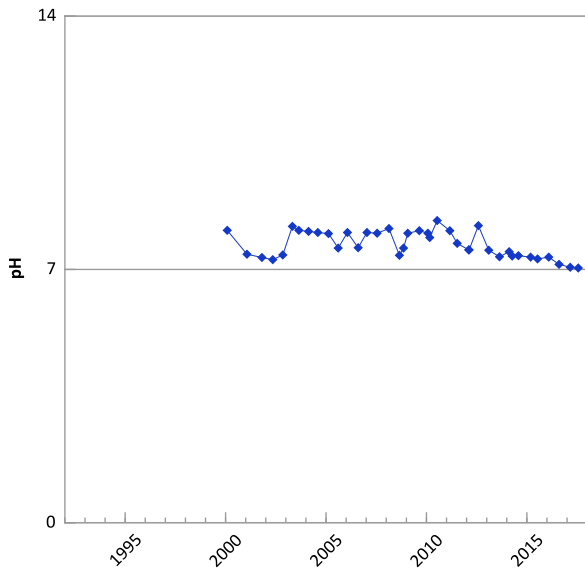
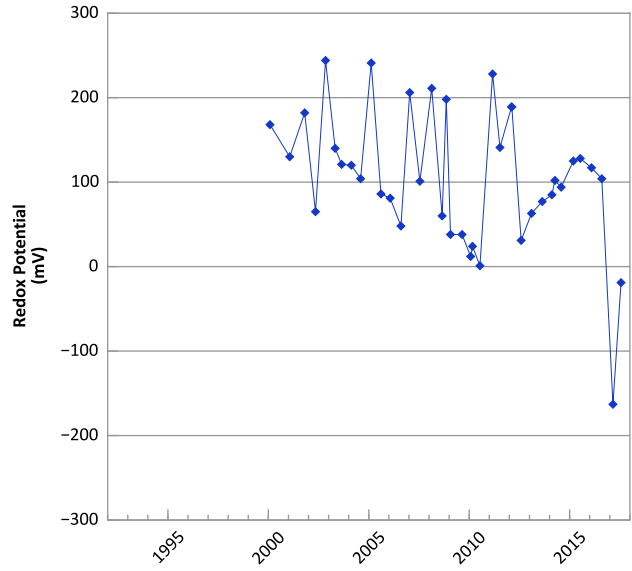
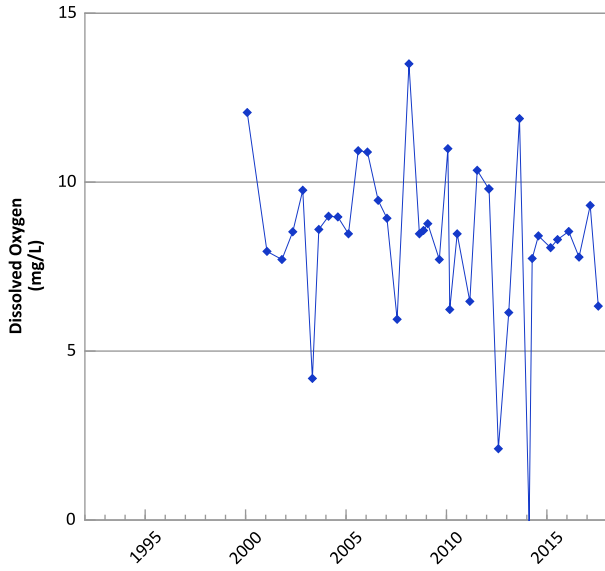
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 06/30/1998 to 07/24/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

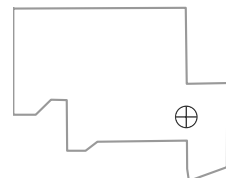


**PTX06-1040 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



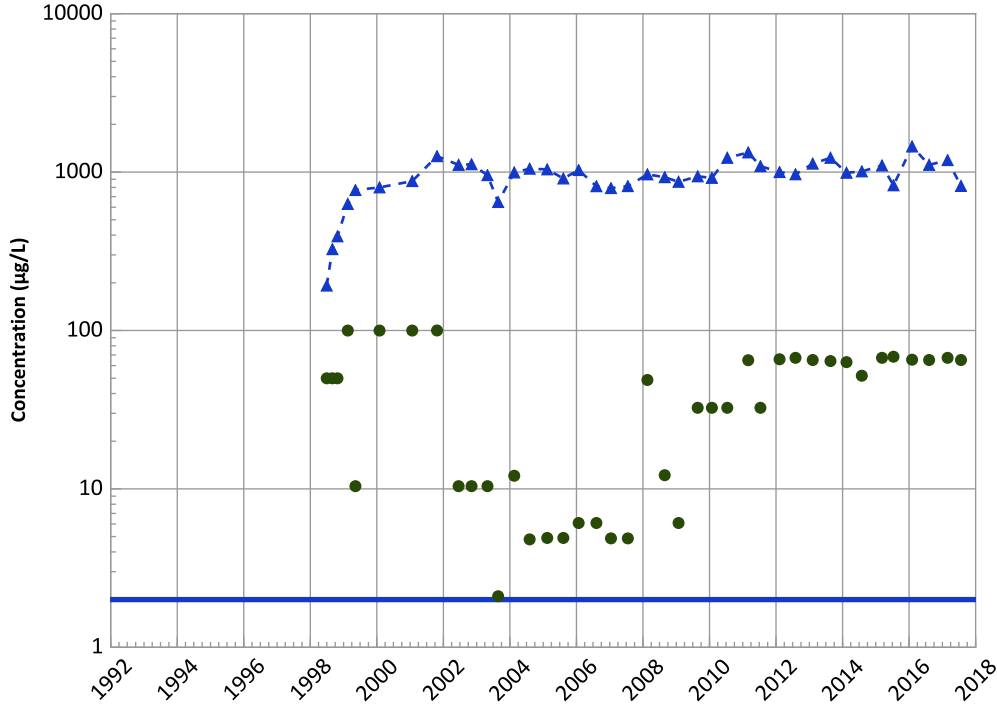
Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/30/1998 to 07/24/2017
Analysis Date: 03/21/2018

Well Location



PTX06-1040 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

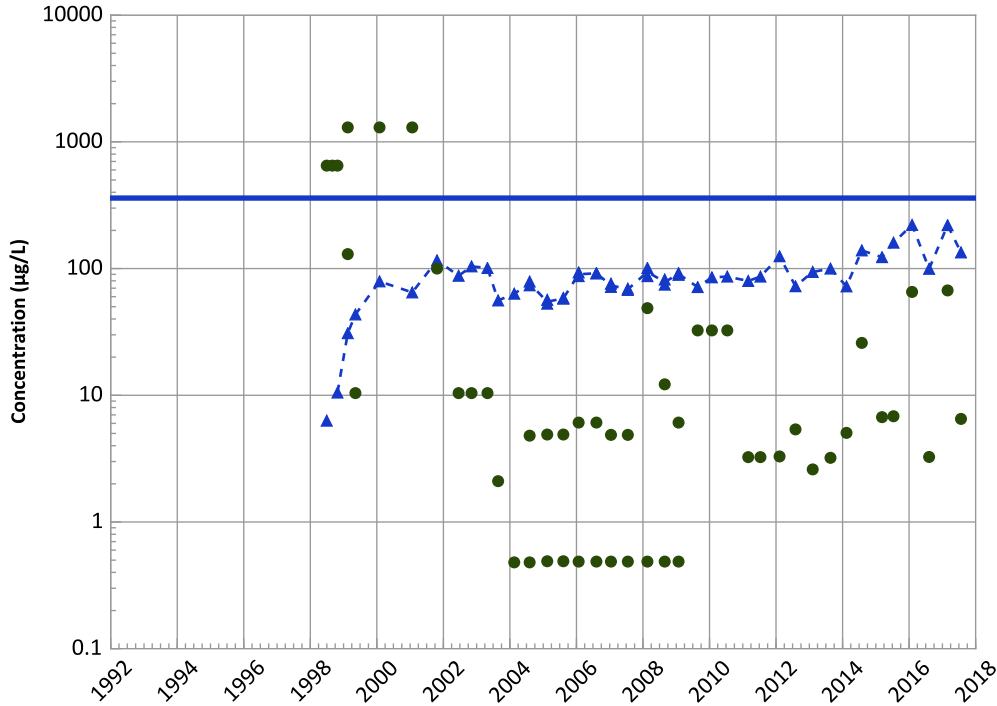
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
Increasing

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

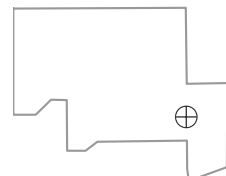
MAROS Mann-Kendall Method

Data ():
No Trend
All Data
Increasing

MAROS Linear Regression Method

Data ():
Probably Increasing
All Data
Increasing

Well Location

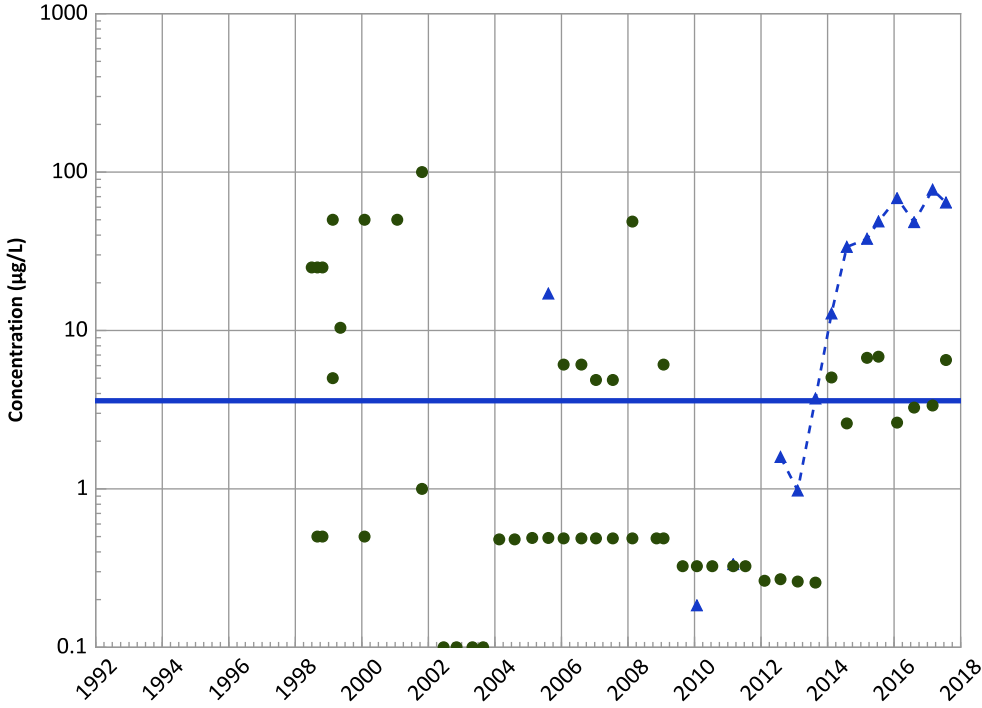


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/30/1998 to 07/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- Concentration Trend
- Groundwater Protection Standard

PTX06-1040 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

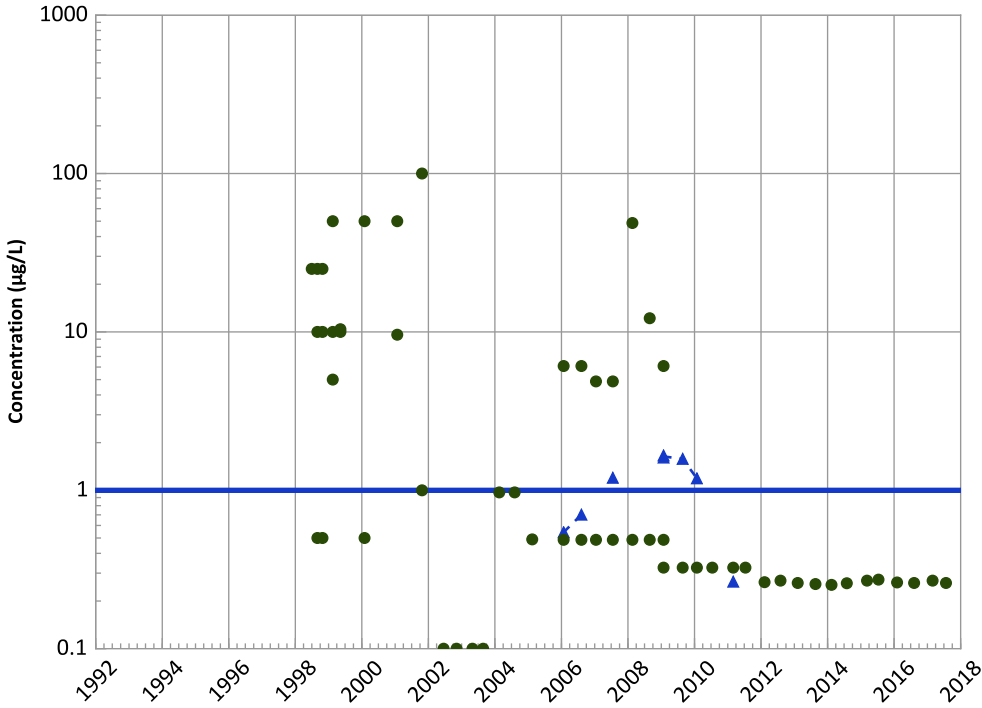
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

2,4-Dinitrotoluene Trend



Concentration Trend

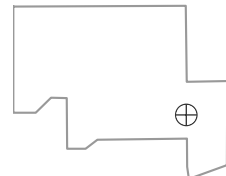
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
Decreasing

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
Stable

Well Location

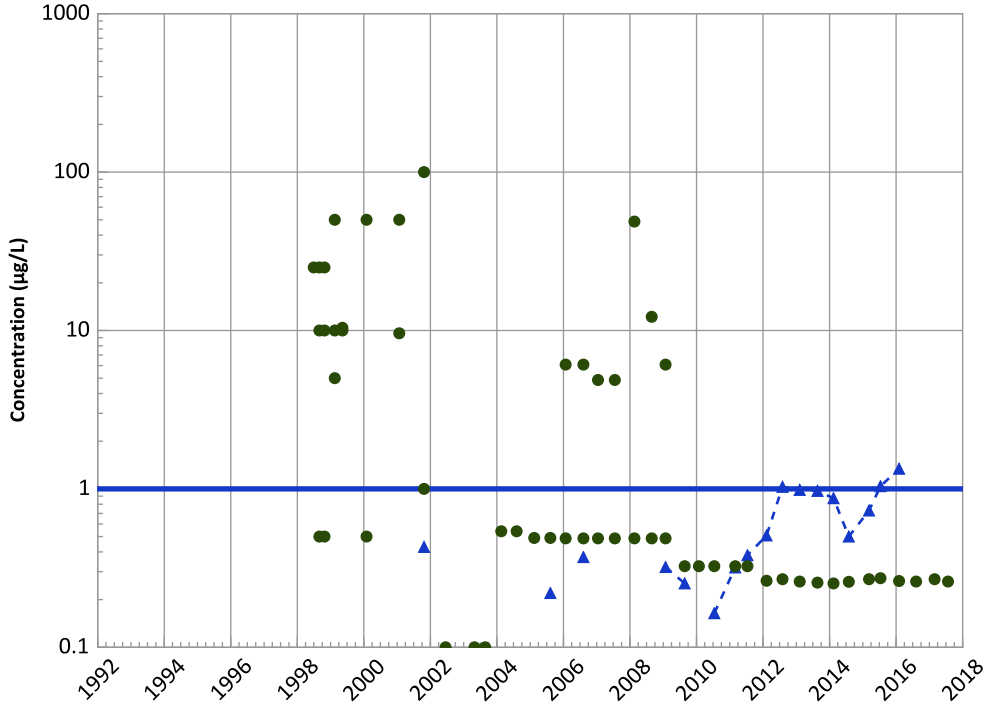


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/30/1998 to 07/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1040 in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

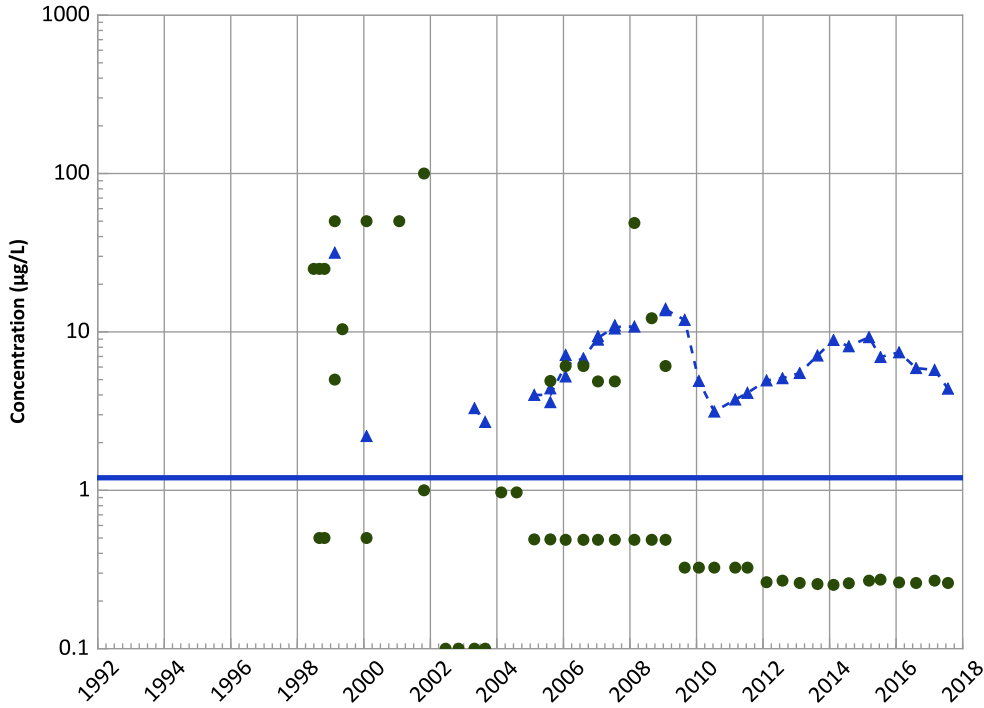
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
No Trend

MAROS Linear Regression Method

Data ():
No Trend
All Data
Increasing

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

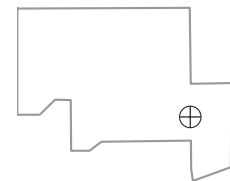
MAROS Mann-Kendall Method

Data ():
Probably Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Probably Increasing
All Data
Increasing

Well Location

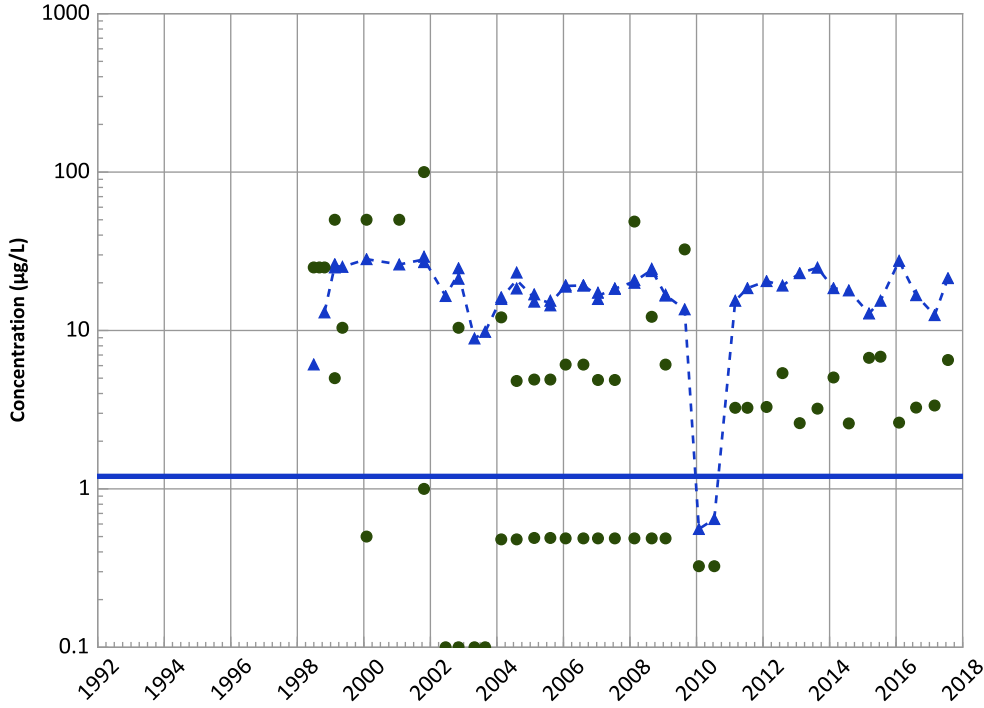


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/30/1998 to 07/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1040 in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

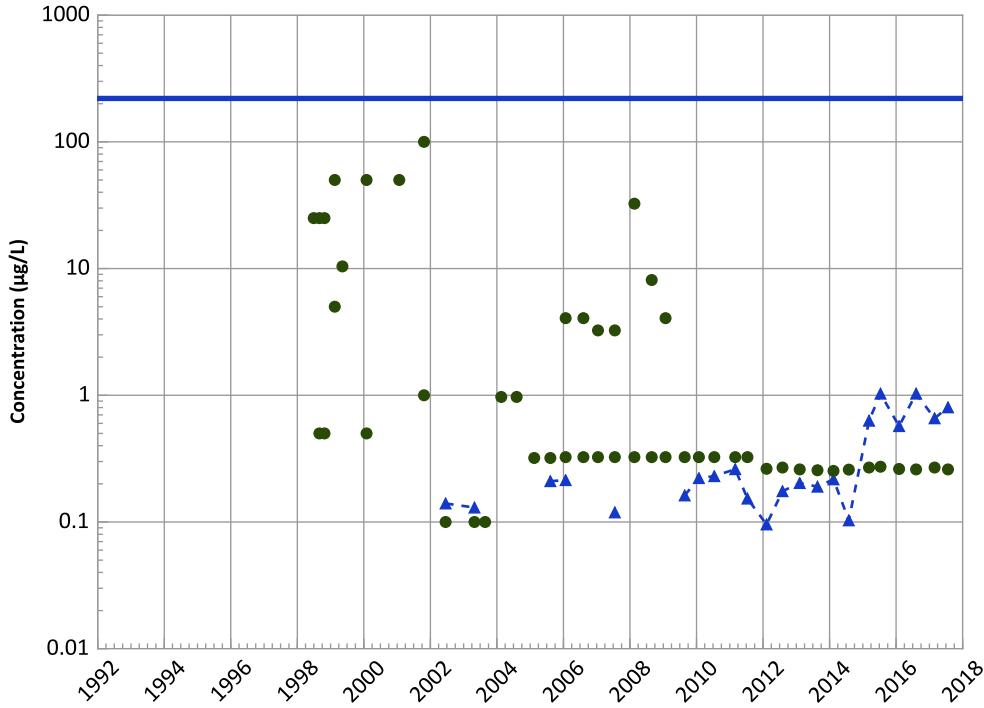
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Stable
All Data
Stable

1,3,5-Trinitrobenzene Trend



Concentration Trend

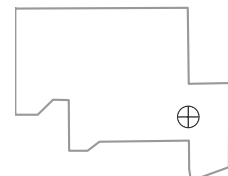
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

Well Location

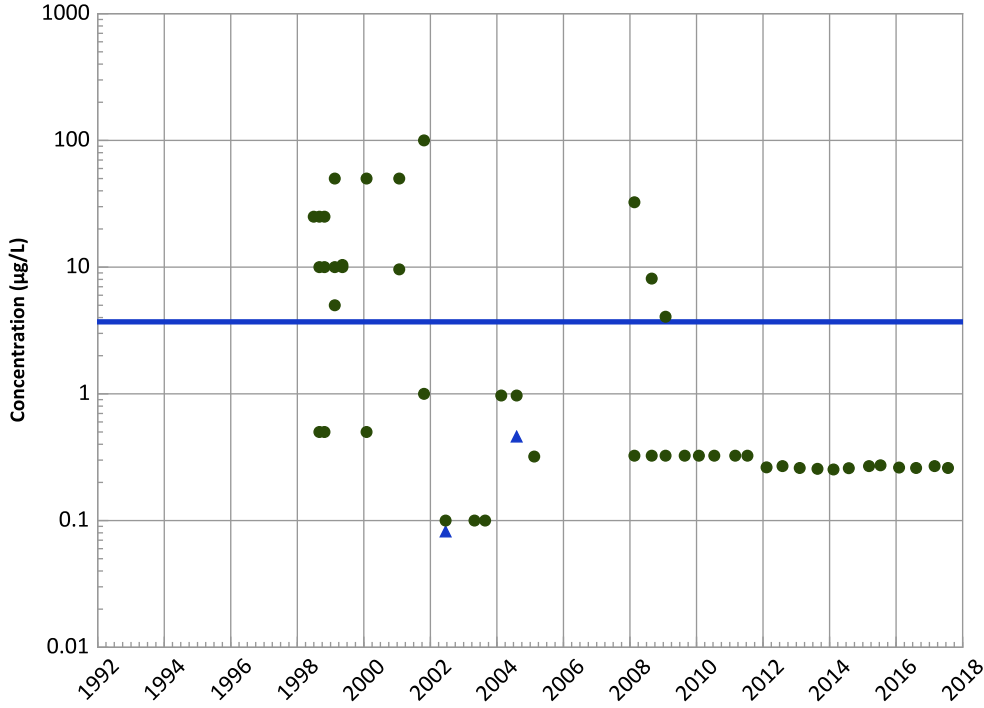


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/30/1998 to 07/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1040 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

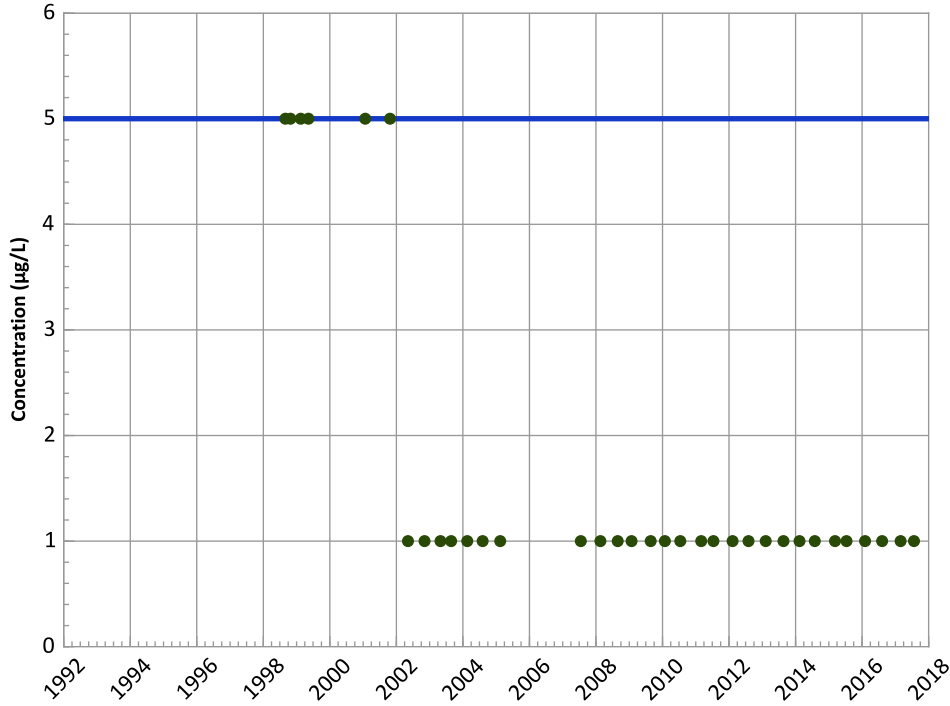
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

Tetrachloroethylene (PCE) Trend



Concentration Trend

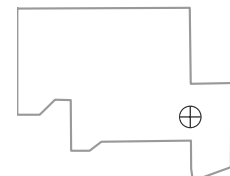
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

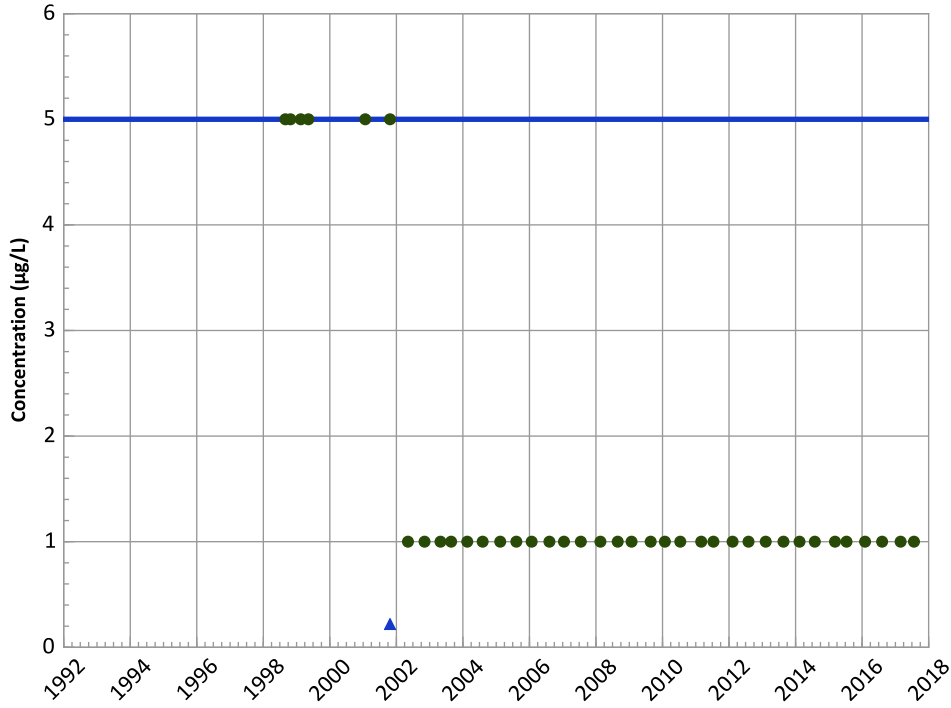


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/30/1998 to 07/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- Concentration Trend
- Groundwater Protection Standard

PTX06-1040 in Perched Aquifer
USDOE/NNSA Pantex Plant

Trichloroethene Trend



Concentration Trend

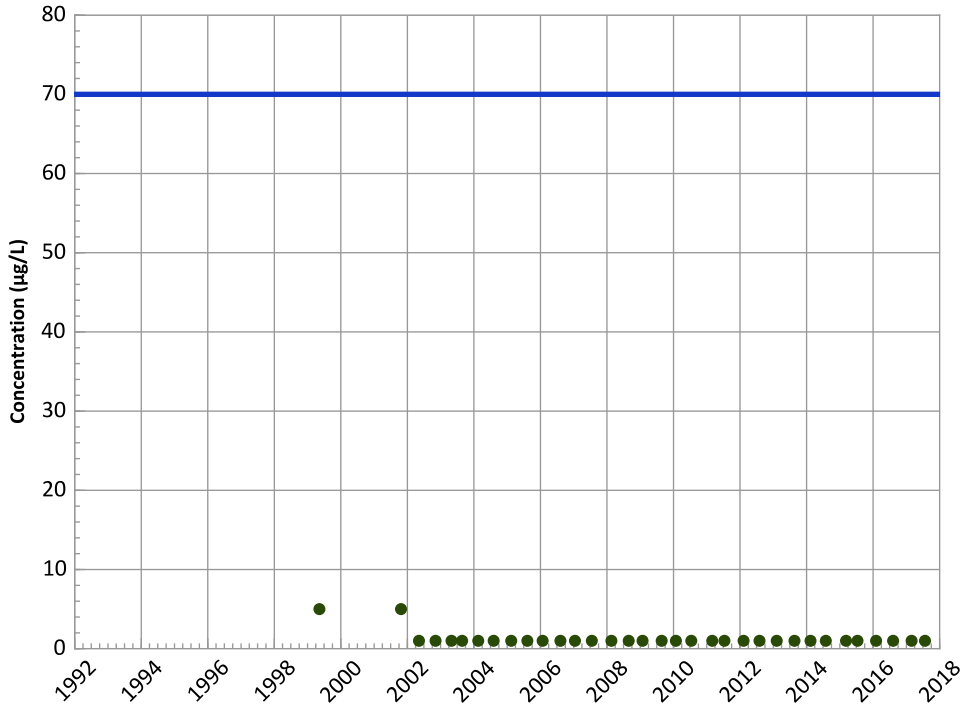
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

cis-1,2-Dichloroethene Trend



Concentration Trend

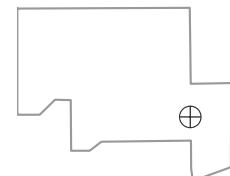
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

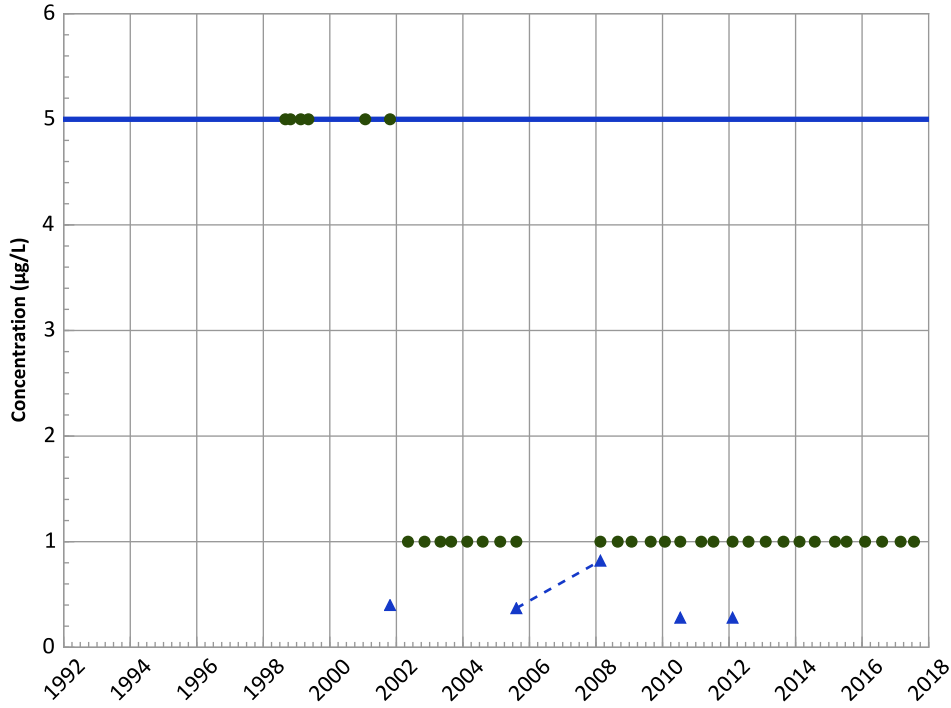


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/30/1998 to 07/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1040 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,2-Dichloroethane Trend

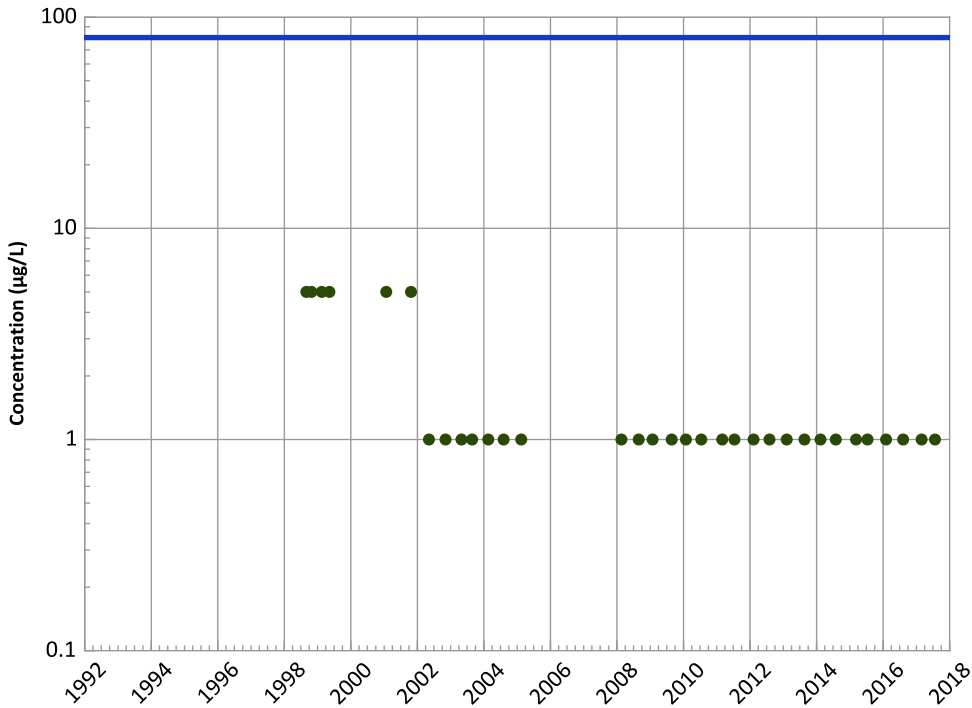


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

MAROS Linear Regression Method
Data ():
N/A (<4 Detections in Dataset)
All Data
Stable

Chloroform Trend

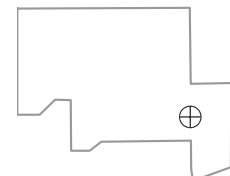


Concentration Trend

MAROS Mann-Kendall Method
Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method
Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

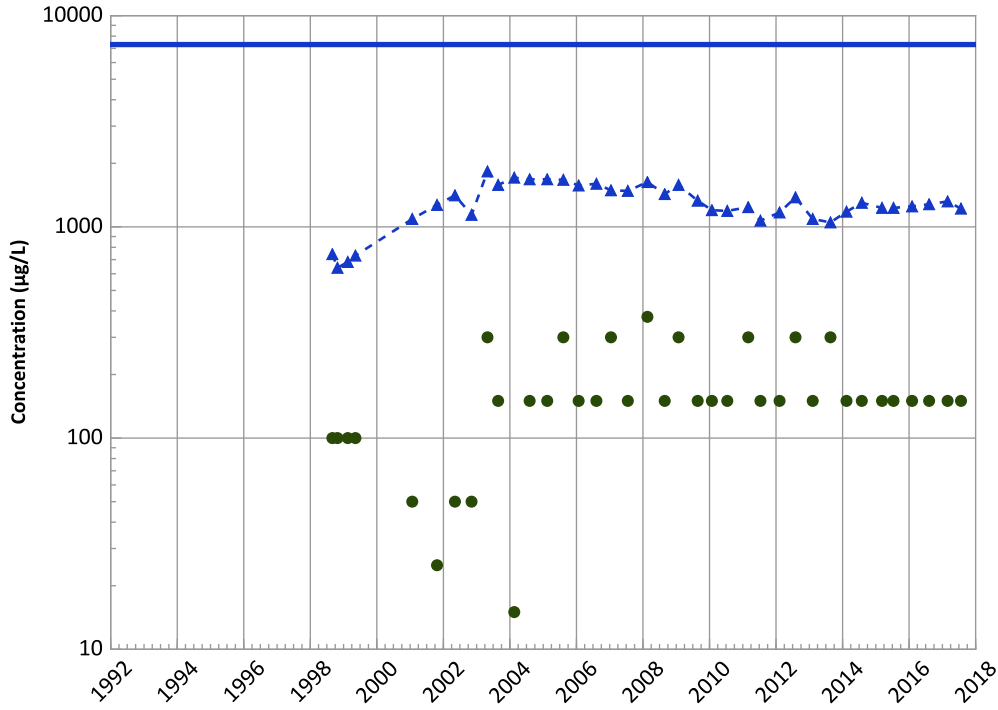


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/30/1998 to 07/24/2017
Analysis Date: 03/21/2018

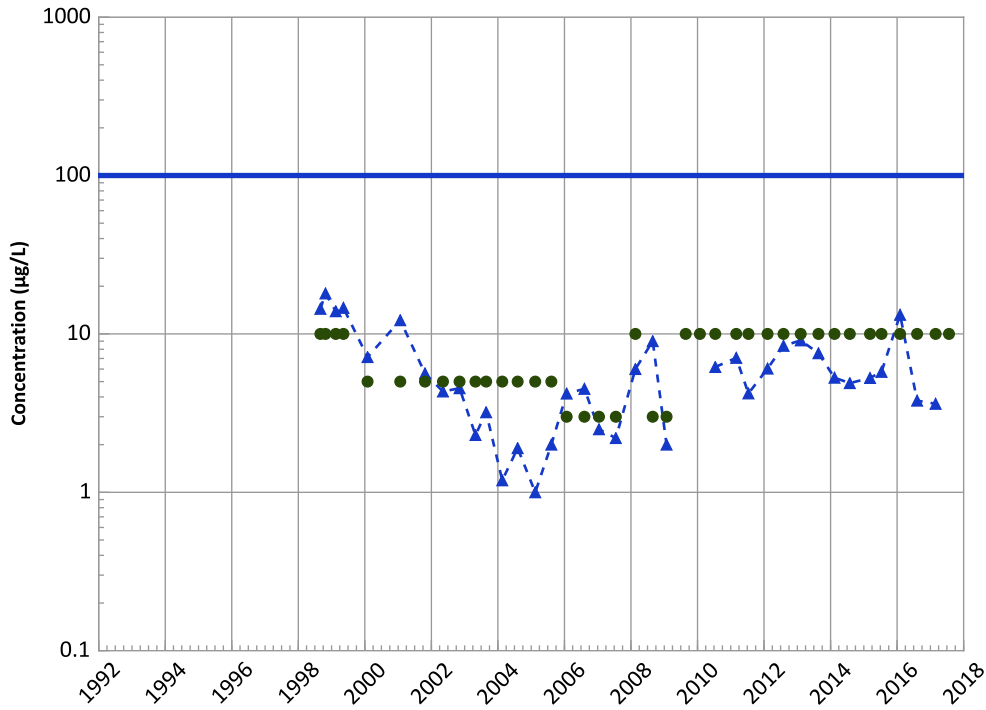
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1040 in Perched Aquifer
USDOE/NNSA Pantex Plant

Boron Trend



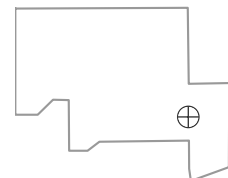
Chromium, Total Trend



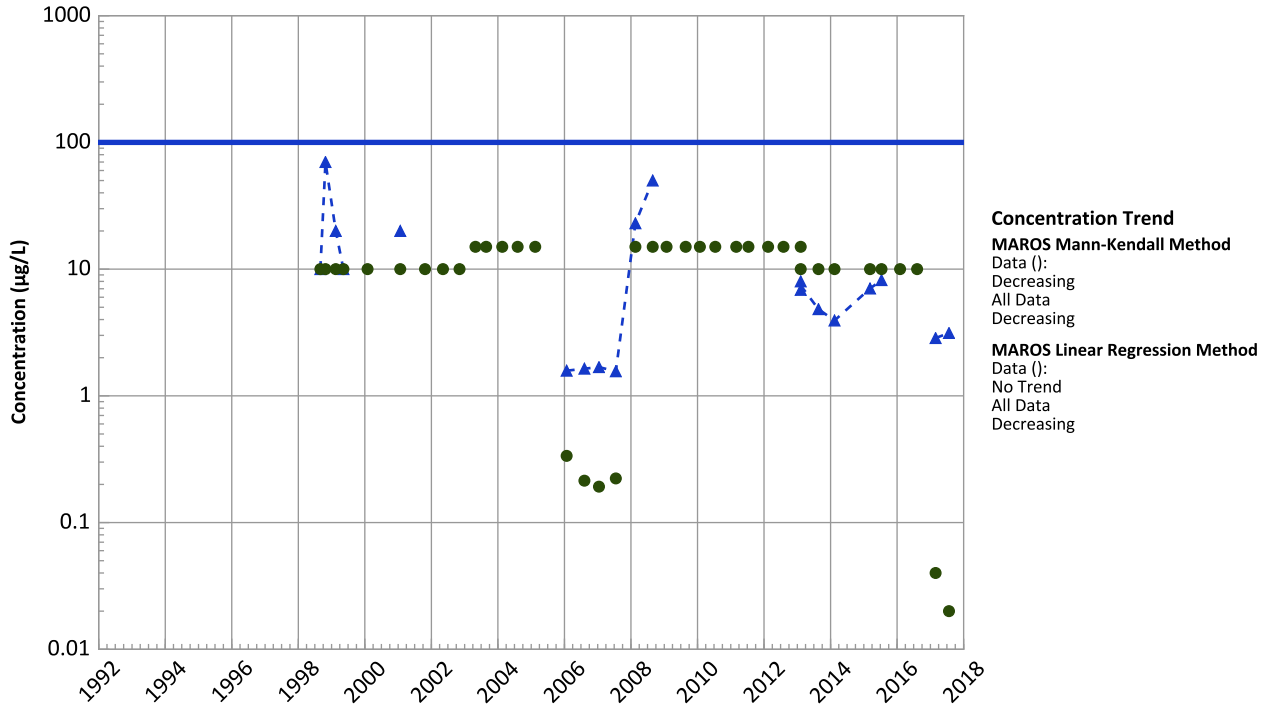
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 06/30/1998 to 07/24/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



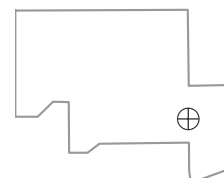
**PTX06-1040 in Perched Aquifer
USDOE/NNSA Pantex Plant
Chromium, Hexavalent Trend**



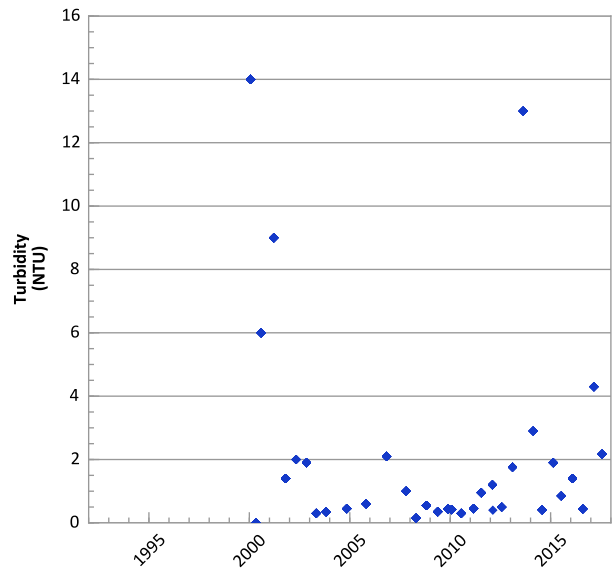
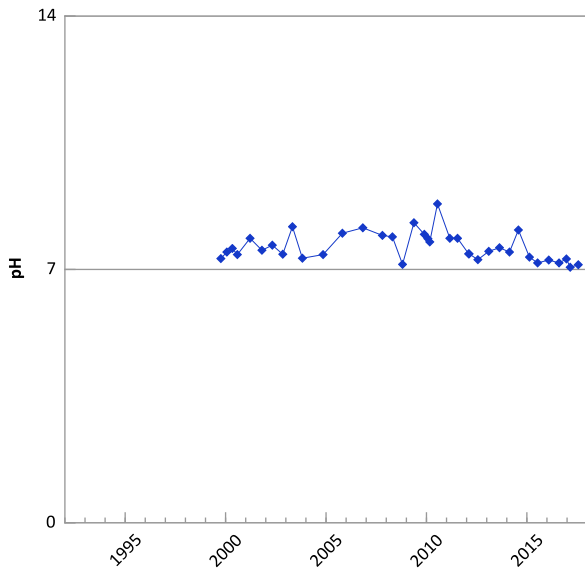
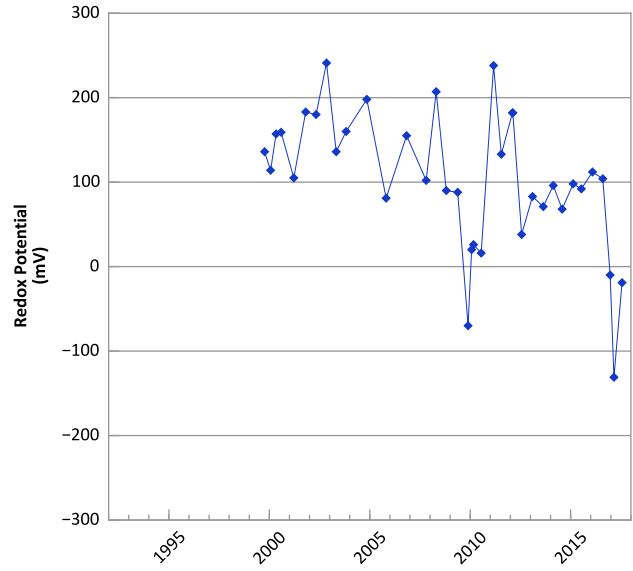
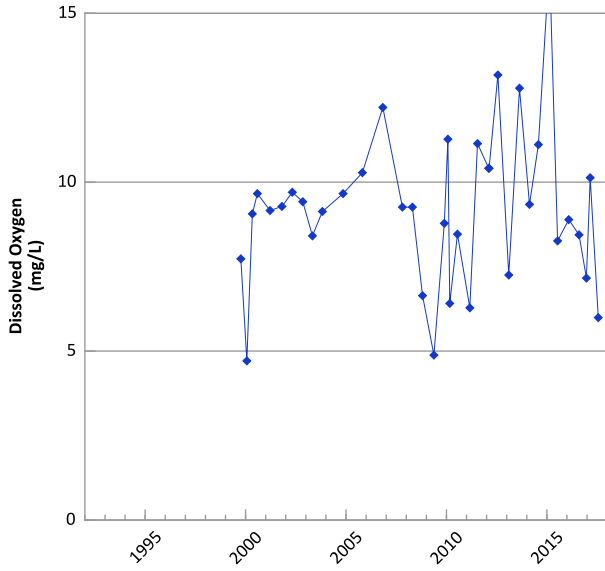
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 06/30/1998 to 07/24/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

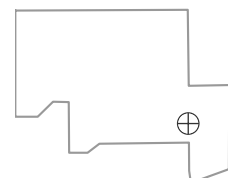


**PTX06-1041 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



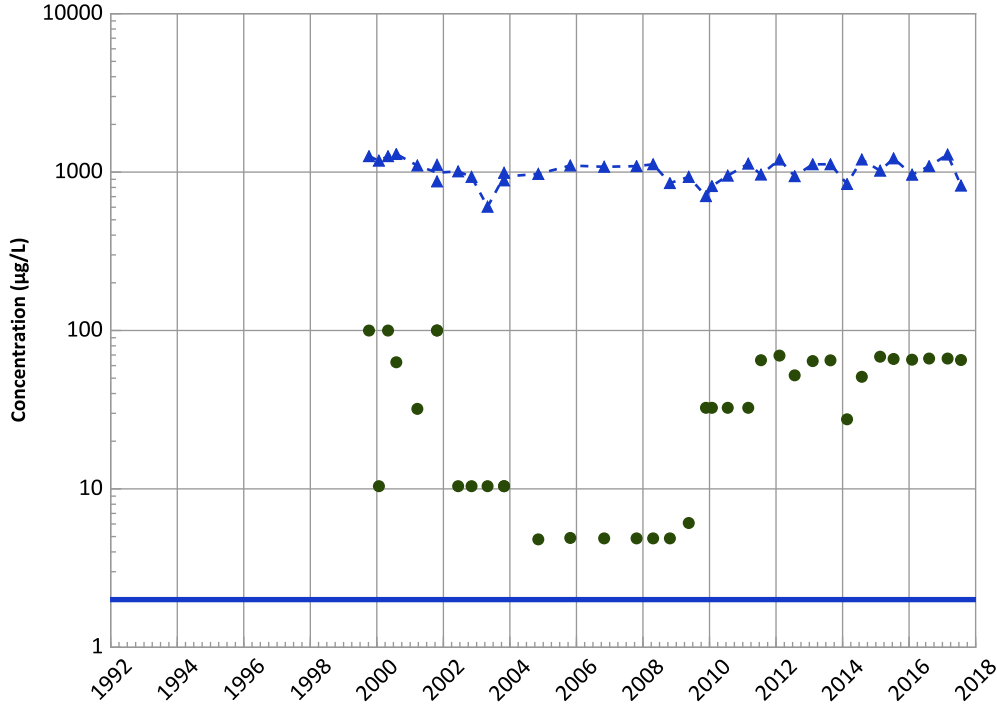
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 10/07/1999 to 07/24/2017
 Analysis Date: 03/21/2018

Well Location



PTX06-1041 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

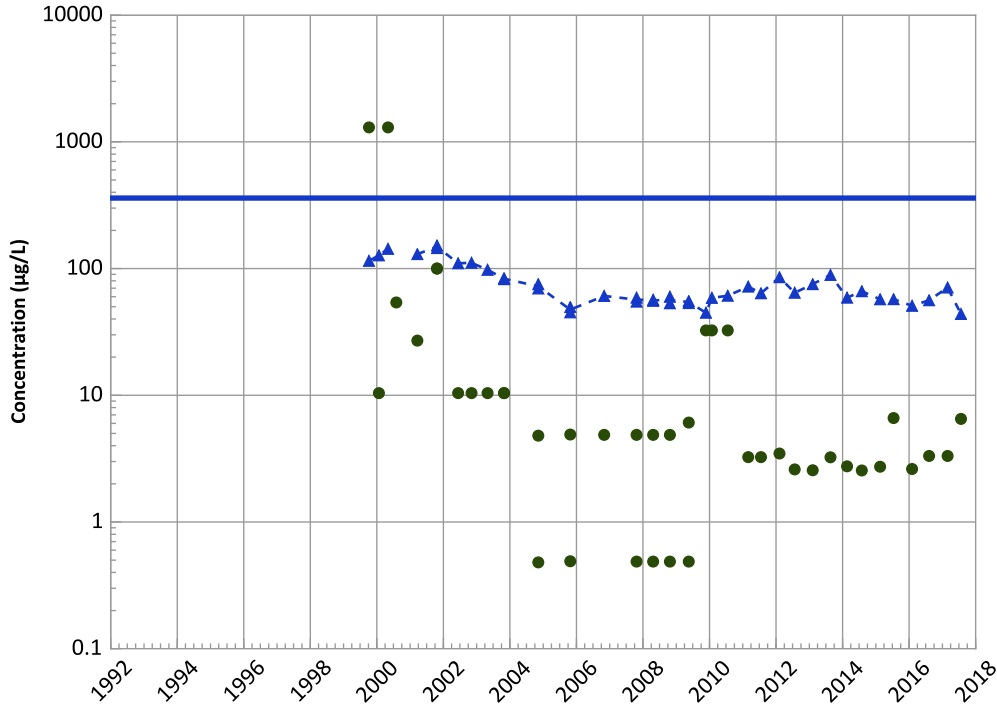
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

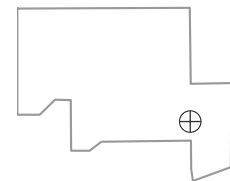
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

Well Location

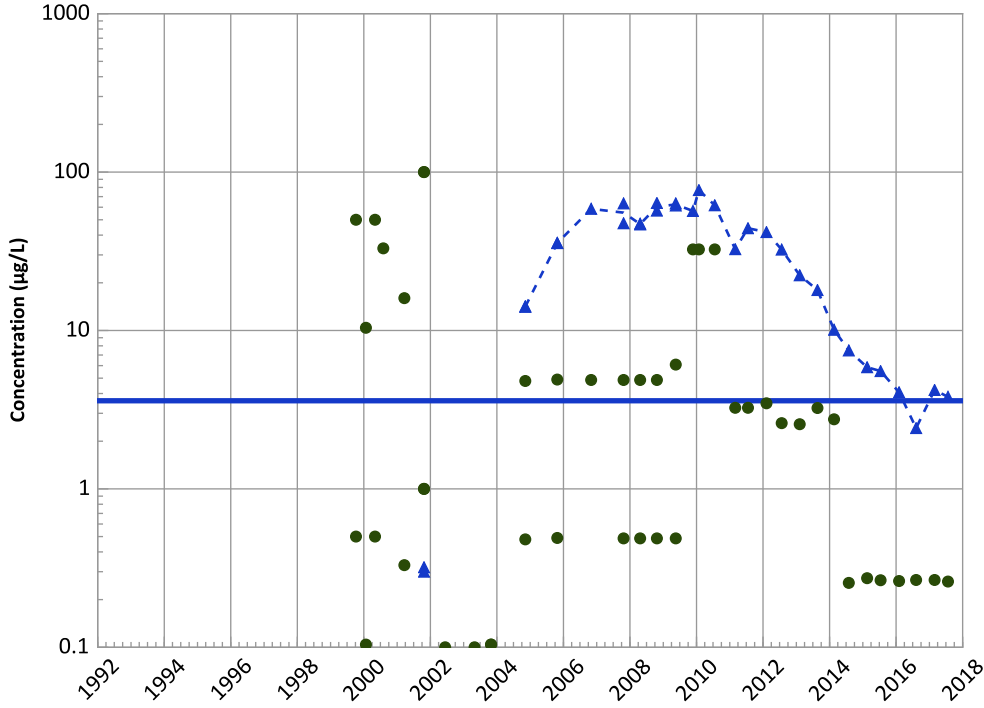


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/07/1999 to 07/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1041 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

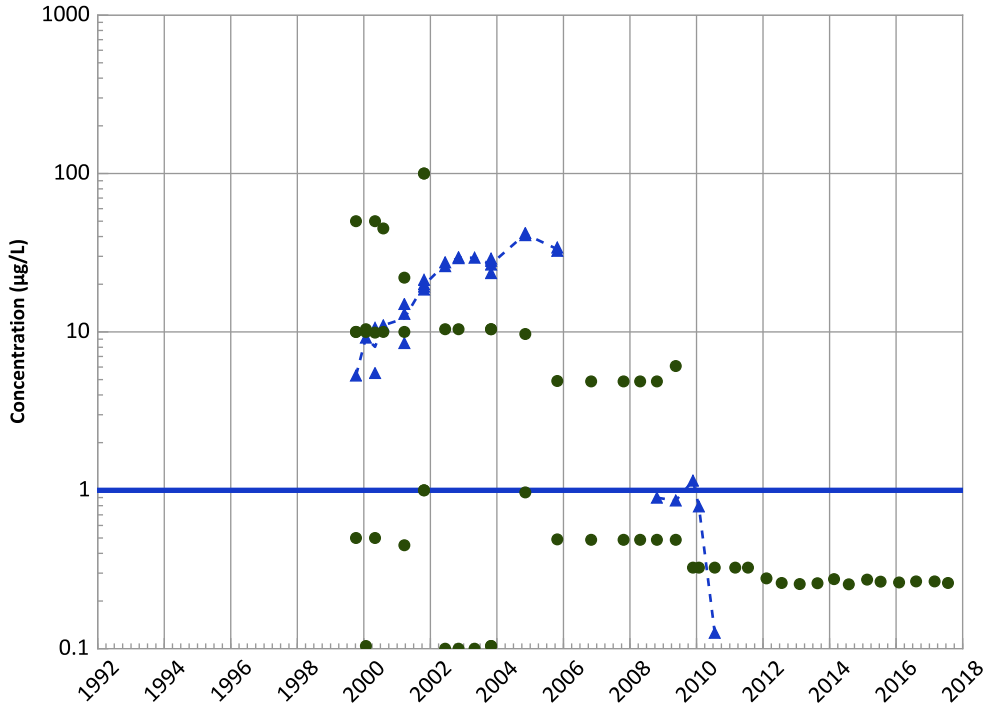
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
No Trend

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Stable

2,4-Dinitrotoluene Trend



Concentration Trend

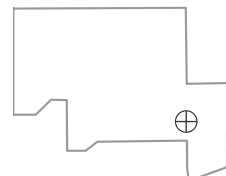
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
Decreasing

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
Decreasing

Well Location

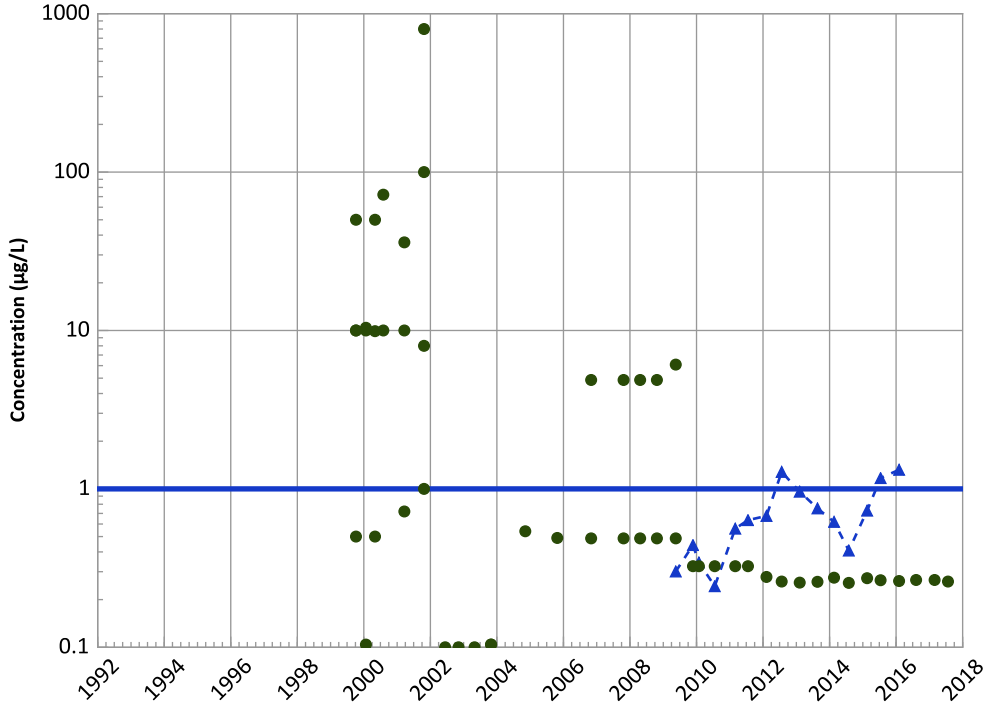


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/07/1999 to 07/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1041 in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

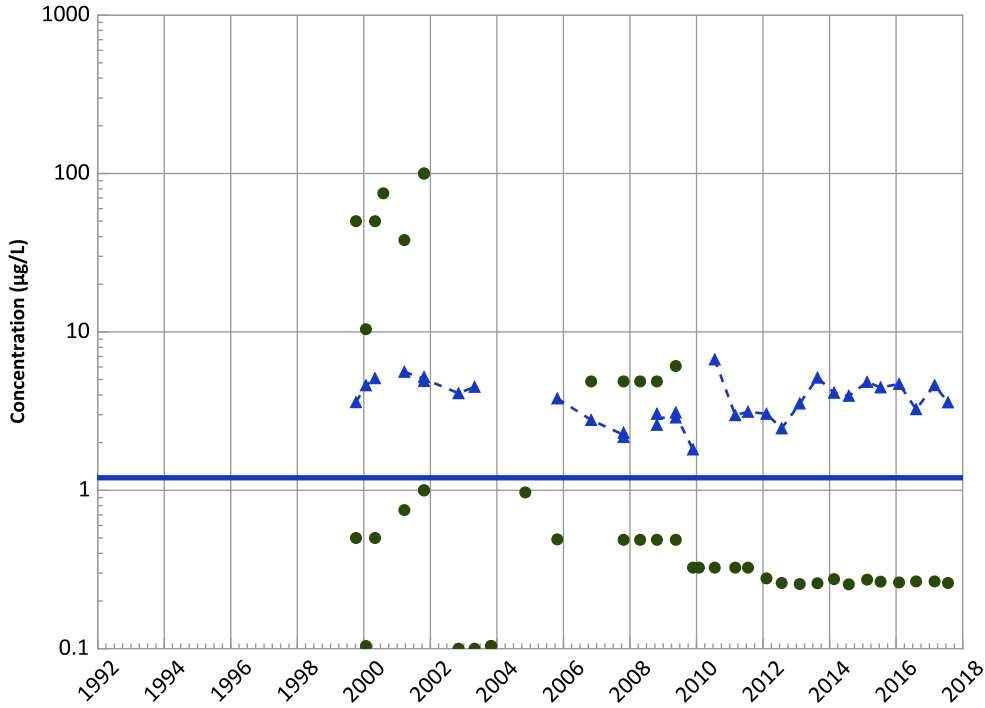
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
Increasing

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
No Trend
All Data
No Trend

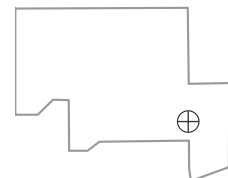
MAROS Linear Regression Method

Data ():
Probably Increasing
All Data
Stable

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/07/1999 to 07/24/2017
Analysis Date: 03/21/2018

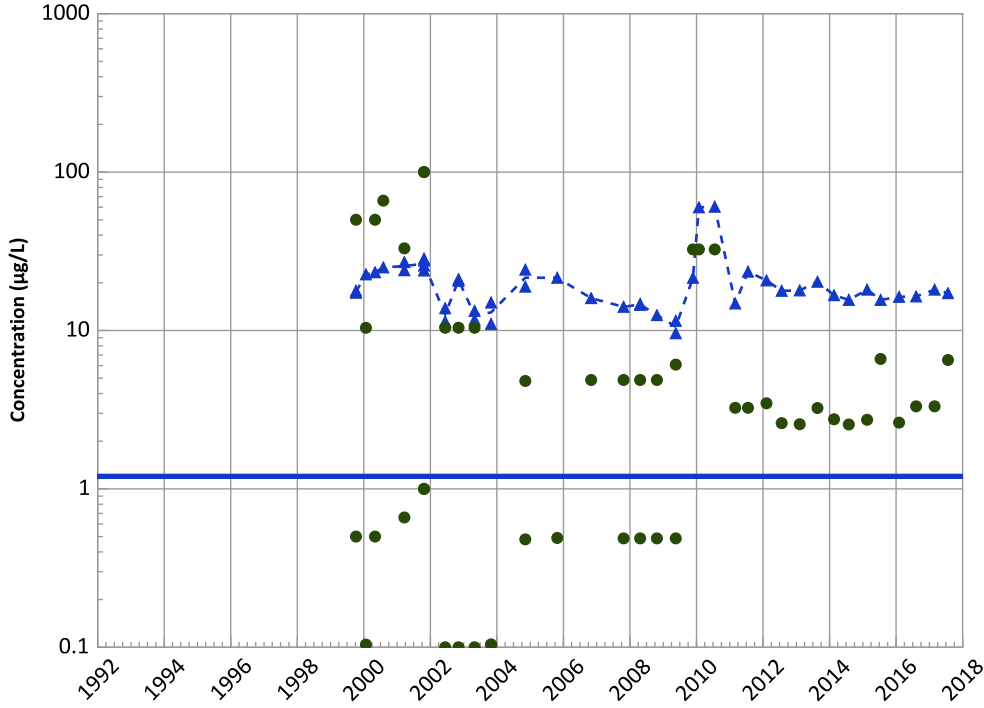
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

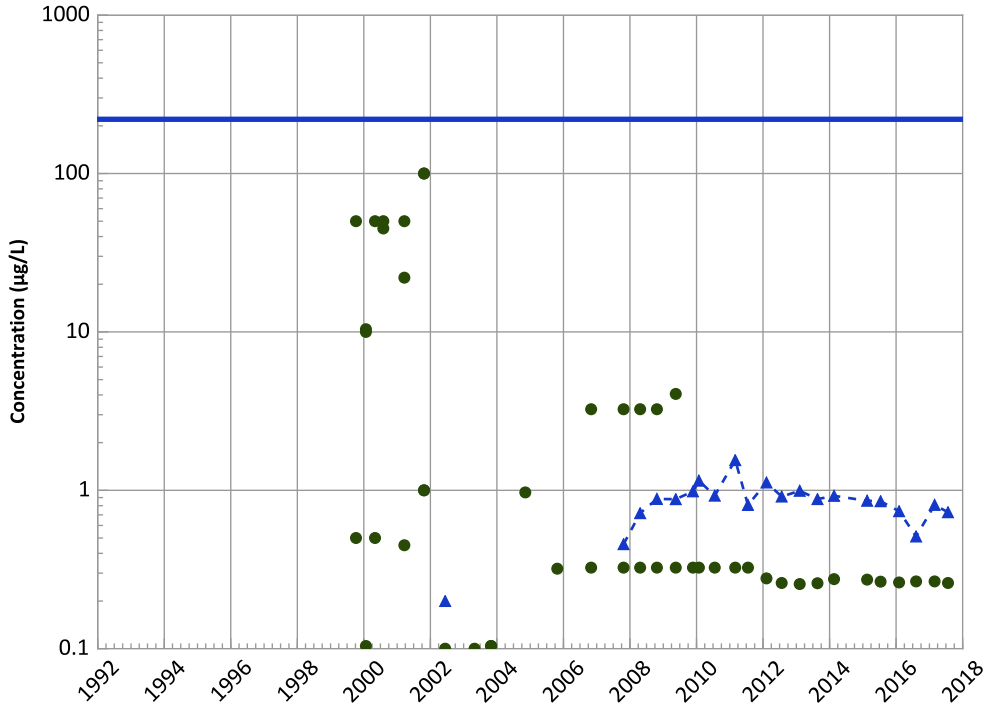


PTX06-1041 in Perched Aquifer
USDOE/NSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



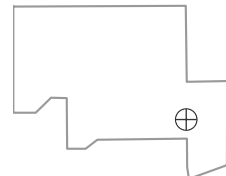
1,3,5-Trinitrobenzene Trend



Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 10/07/1999 to 07/24/2017
 Analysis Date: 03/21/2018

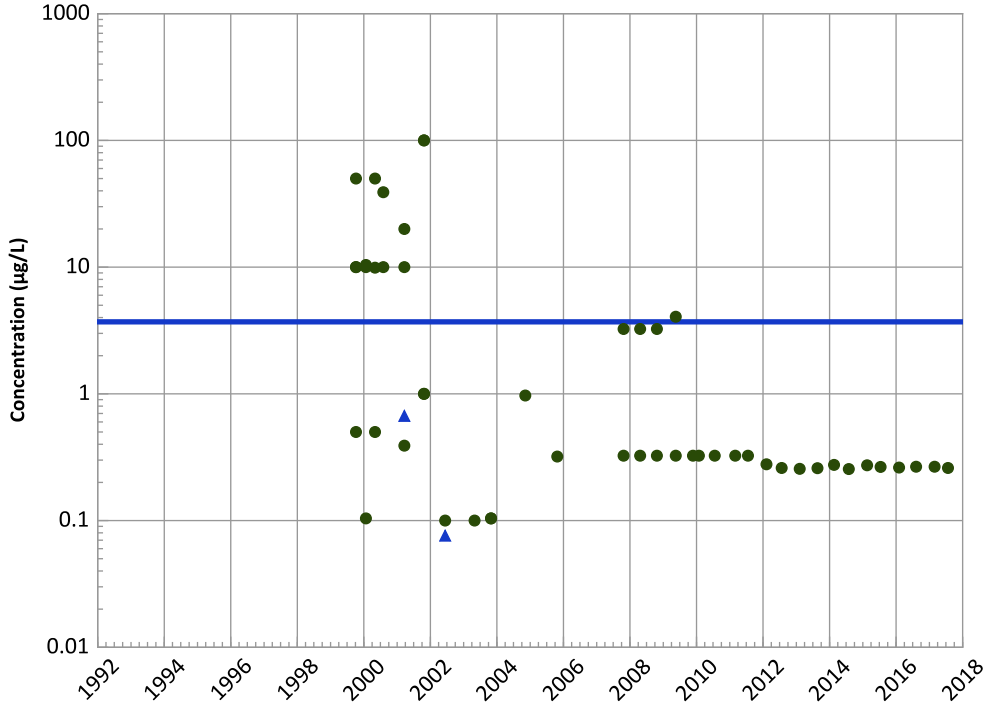
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1041 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

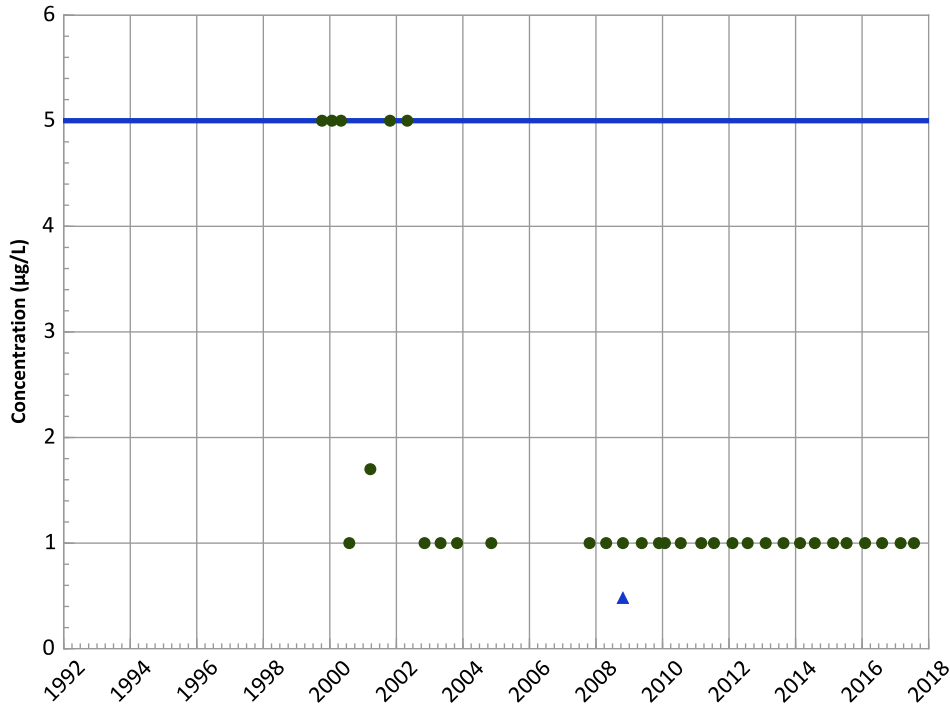
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

Tetrachloroethylene (PCE) Trend



Concentration Trend

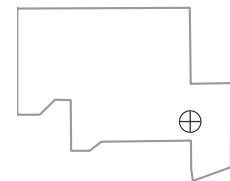
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

Well Location

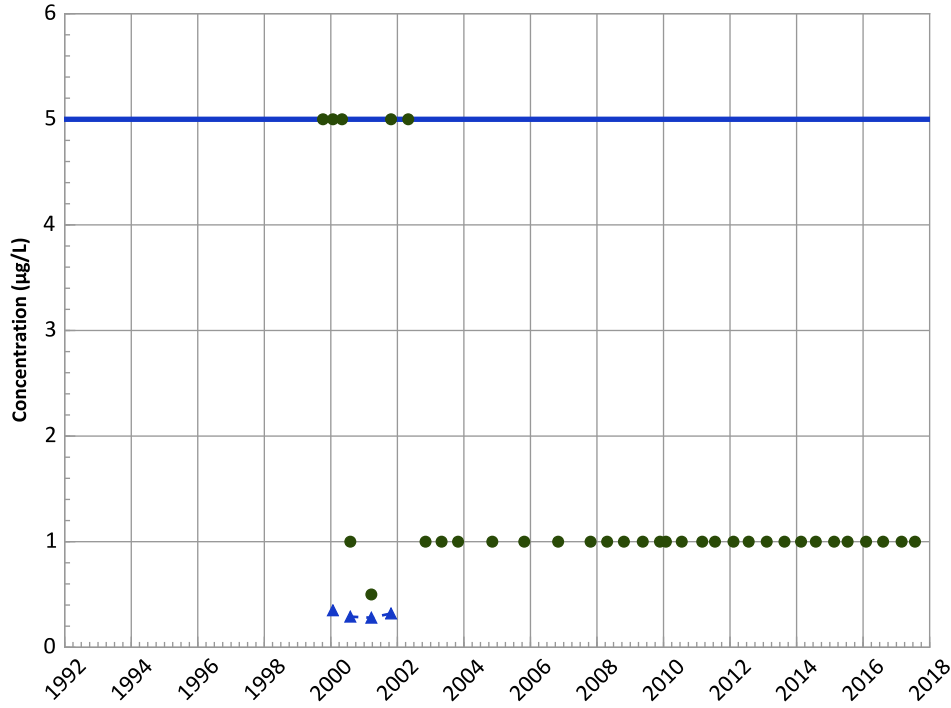


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/07/1999 to 07/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1041 in Perched Aquifer
USDOE/NNSA Pantex Plant

Trichloroethene Trend



Concentration Trend

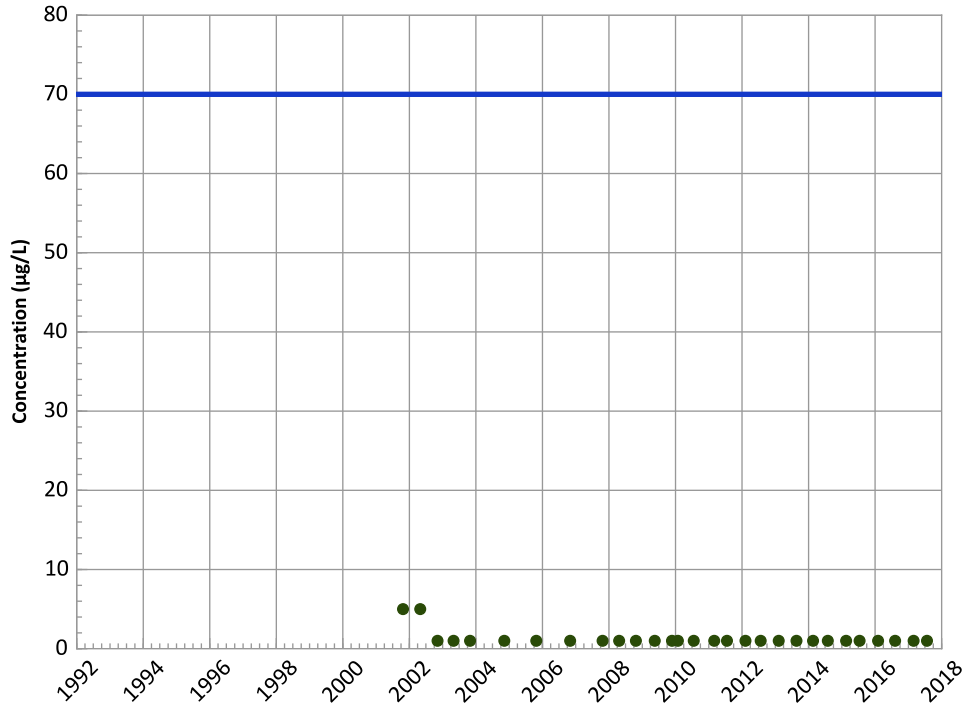
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
No Trend

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
Stable

cis-1,2-Dichloroethene Trend



Concentration Trend

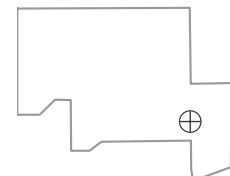
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

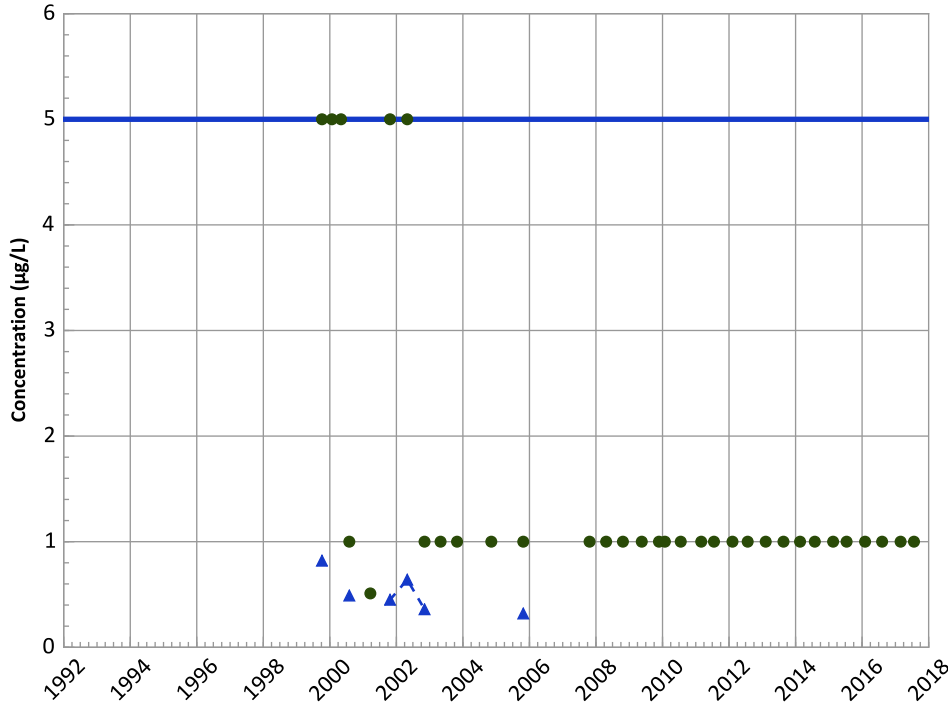


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/07/1999 to 07/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1041 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,2-Dichloroethane Trend



Concentration Trend

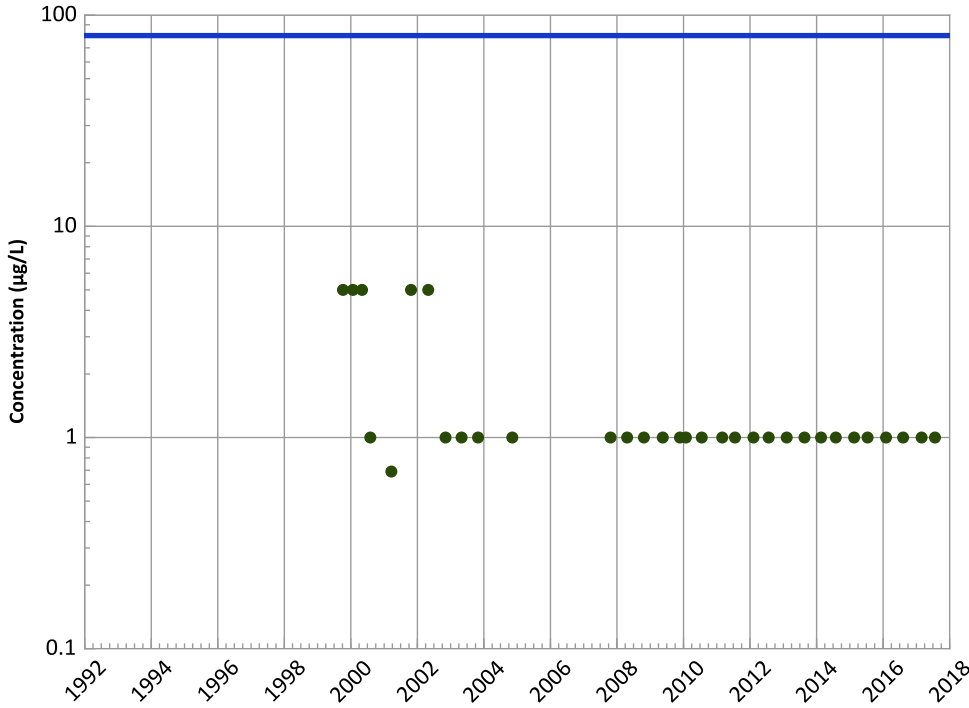
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
Decreasing

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
Decreasing

Chloroform Trend



Concentration Trend

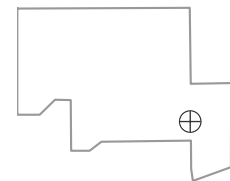
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

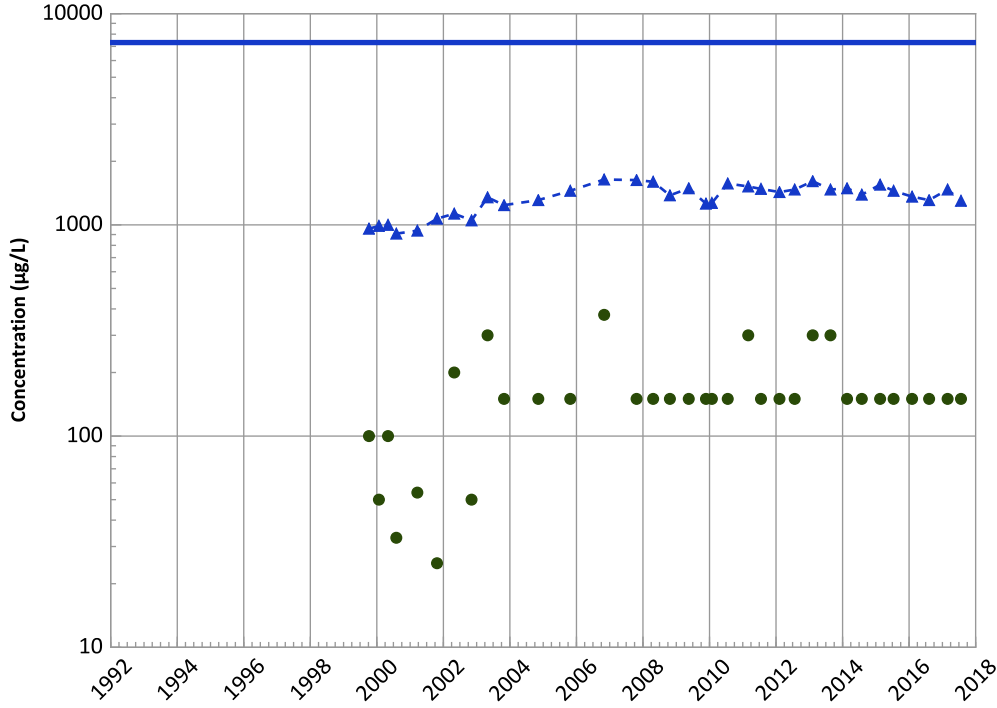


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/07/1999 to 07/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1041 in Perched Aquifer
USDOE/NNSA Pantex Plant

Boron Trend



Concentration Trend

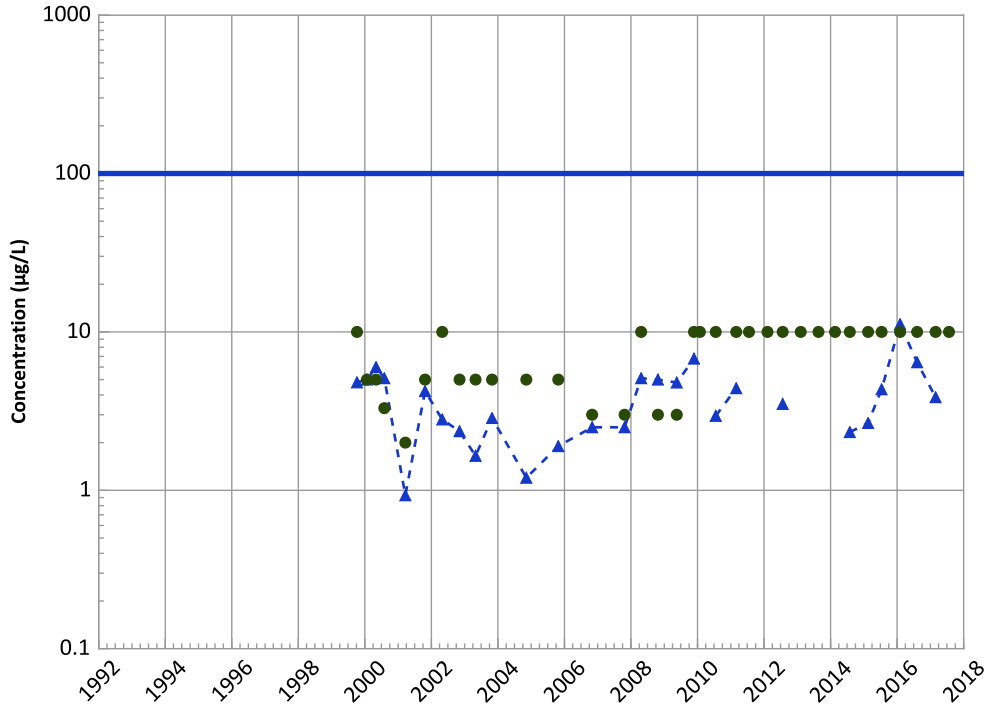
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Probably Decreasing
All Data
Increasing

Chromium, Total Trend



Concentration Trend

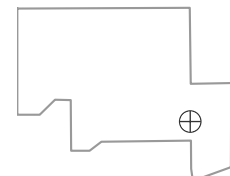
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Probably Increasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
Probably Increasing

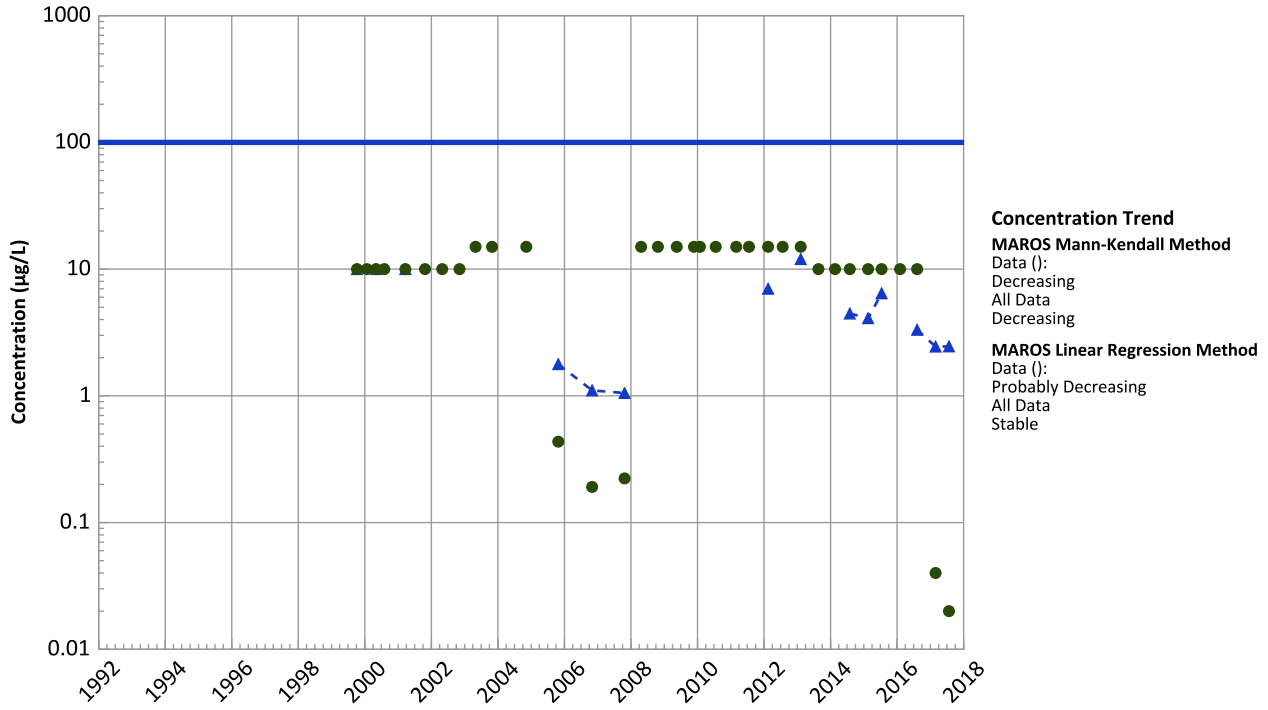
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/07/1999 to 07/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

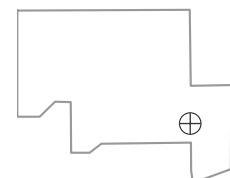
**PTX06-1041 in Perched Aquifer
USDOE/NNSA Pantex Plant
Chromium, Hexavalent Trend**



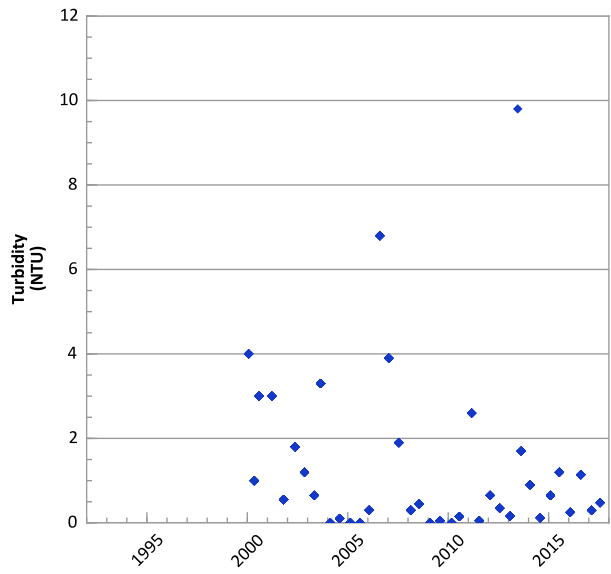
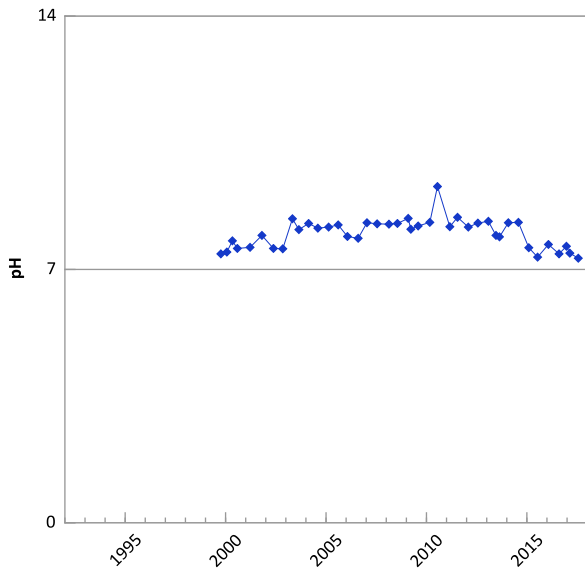
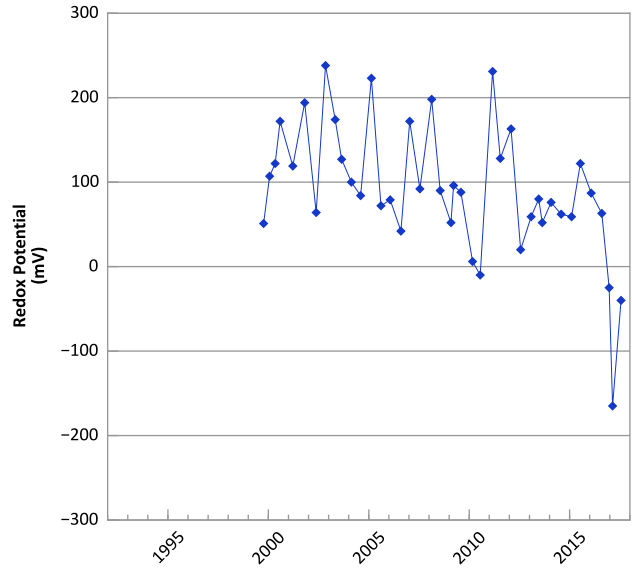
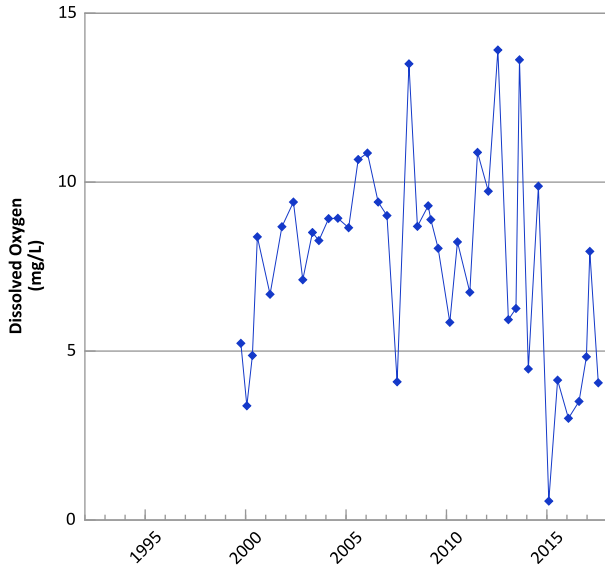
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 10/07/1999 to 07/24/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

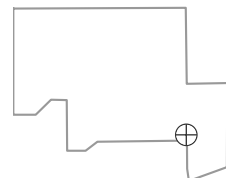


**PTX06-1042 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



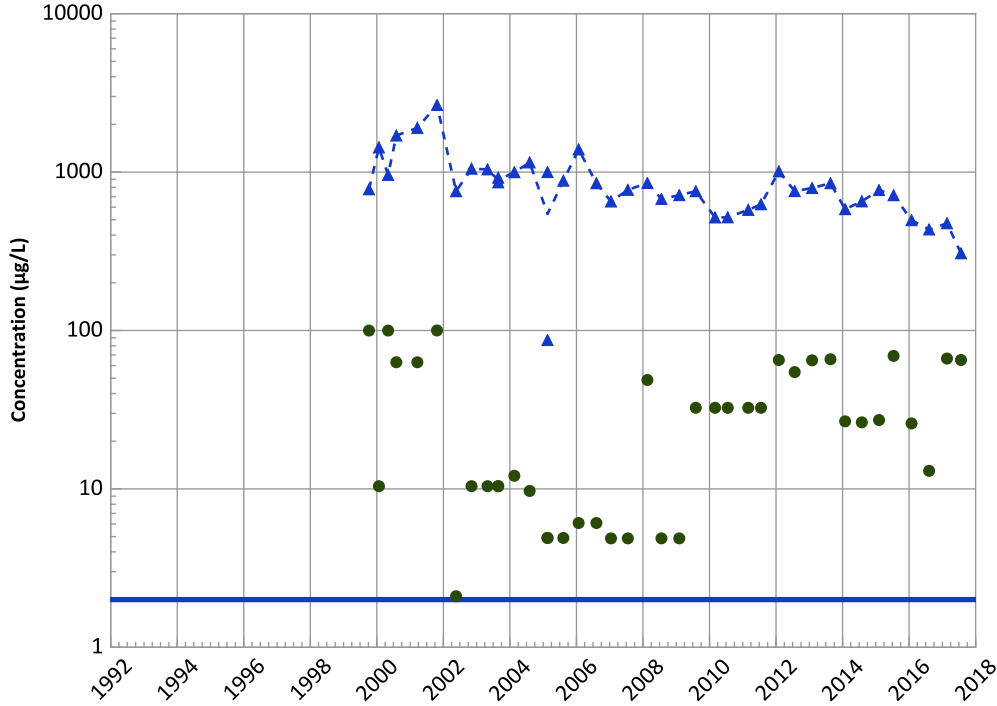
Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/07/1999 to 07/24/2017
Analysis Date: 03/21/2018

Well Location



PTX06-1042 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

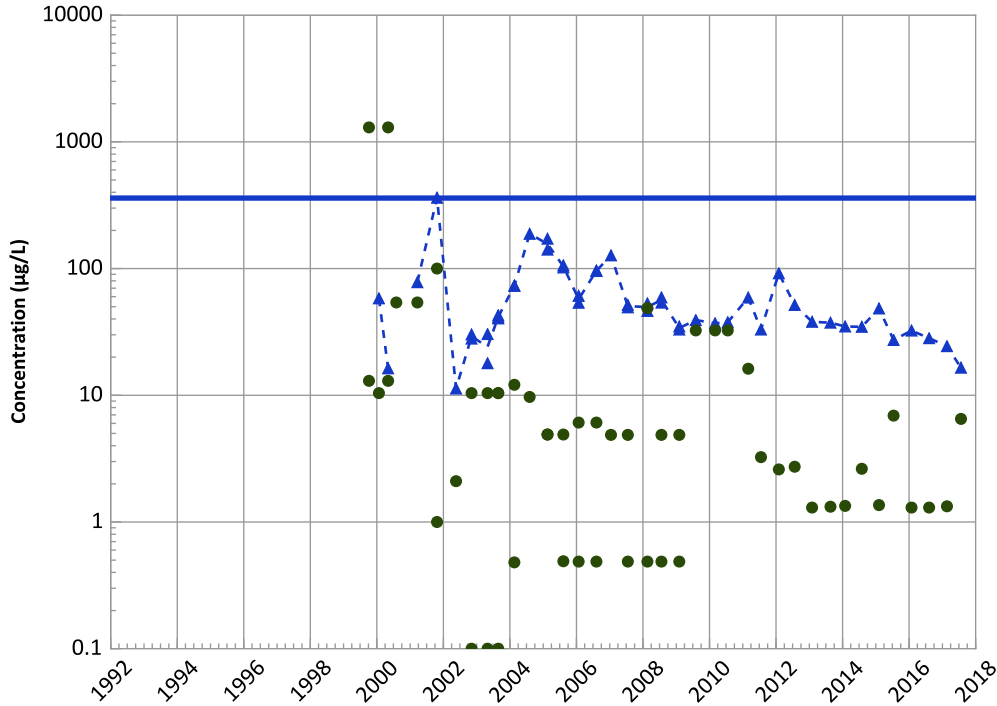
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

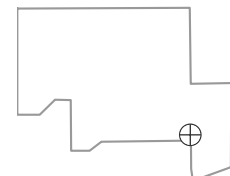
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

Well Location

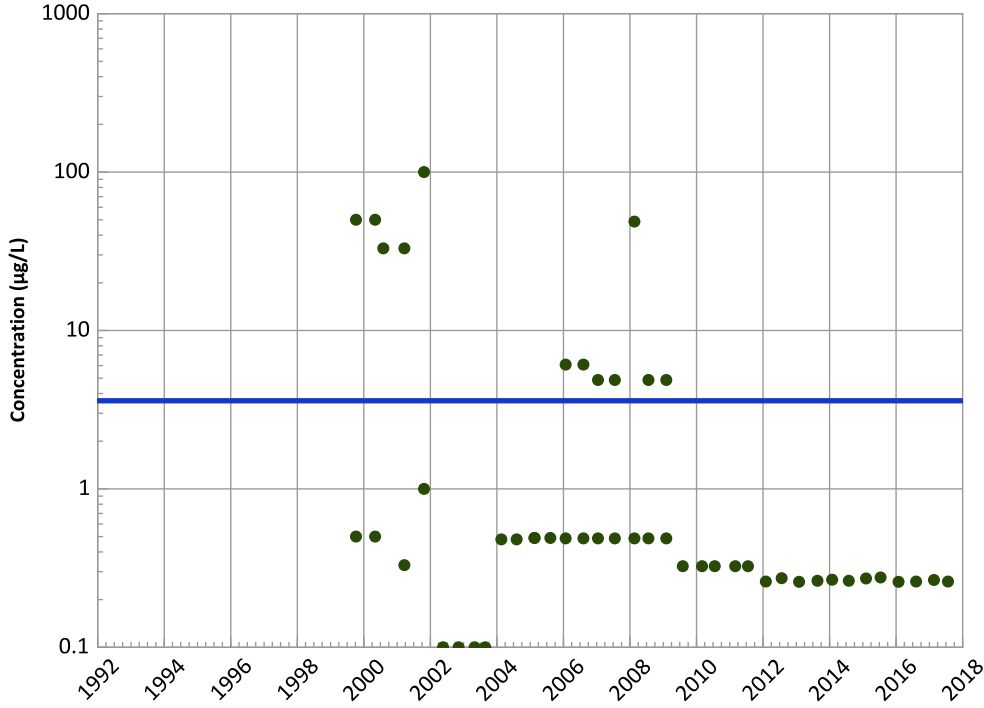


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/07/1999 to 07/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1042 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

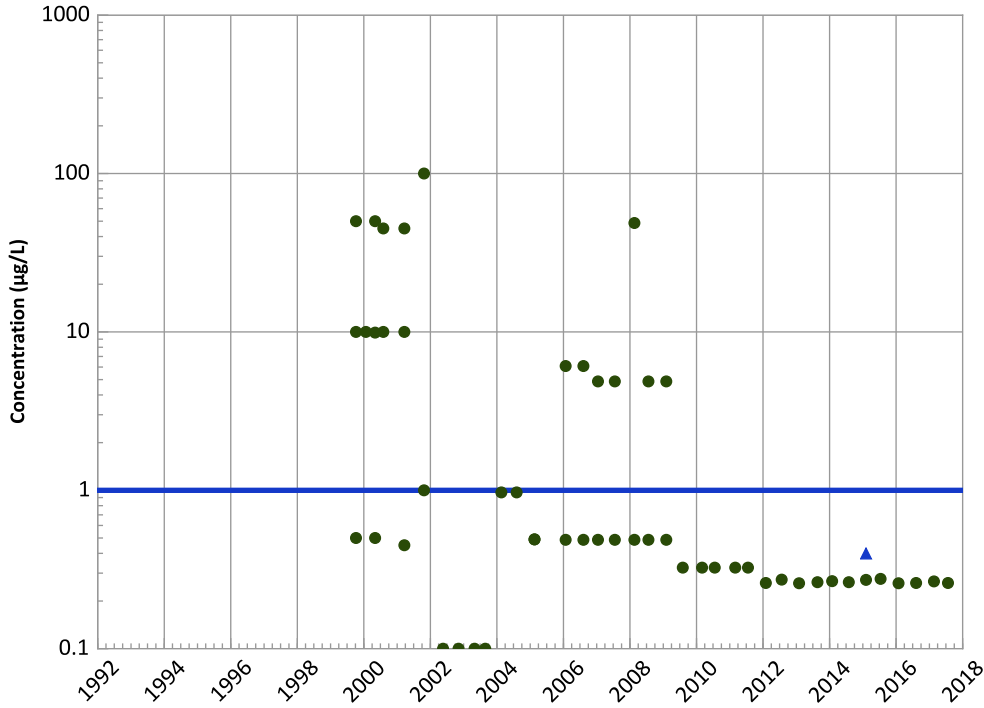
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

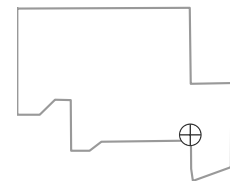
MAROS Mann-Kendall Method

Data ():
N/A (<4 Detections in Dataset)
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
N/A (<4 Detections in Dataset)

Well Location

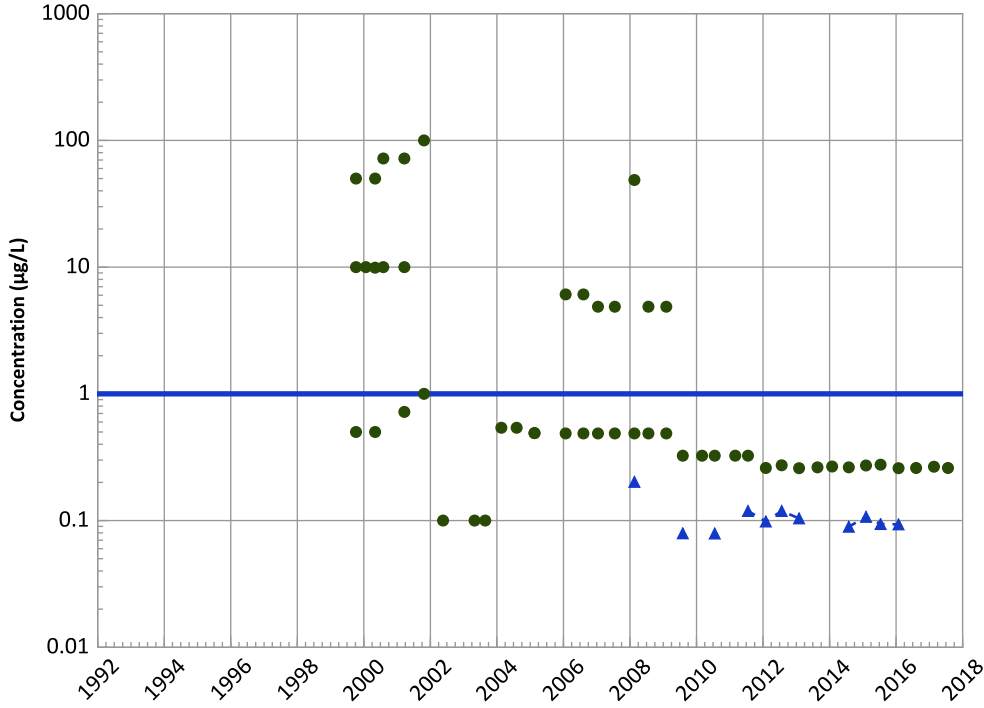


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/07/1999 to 07/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1042 in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

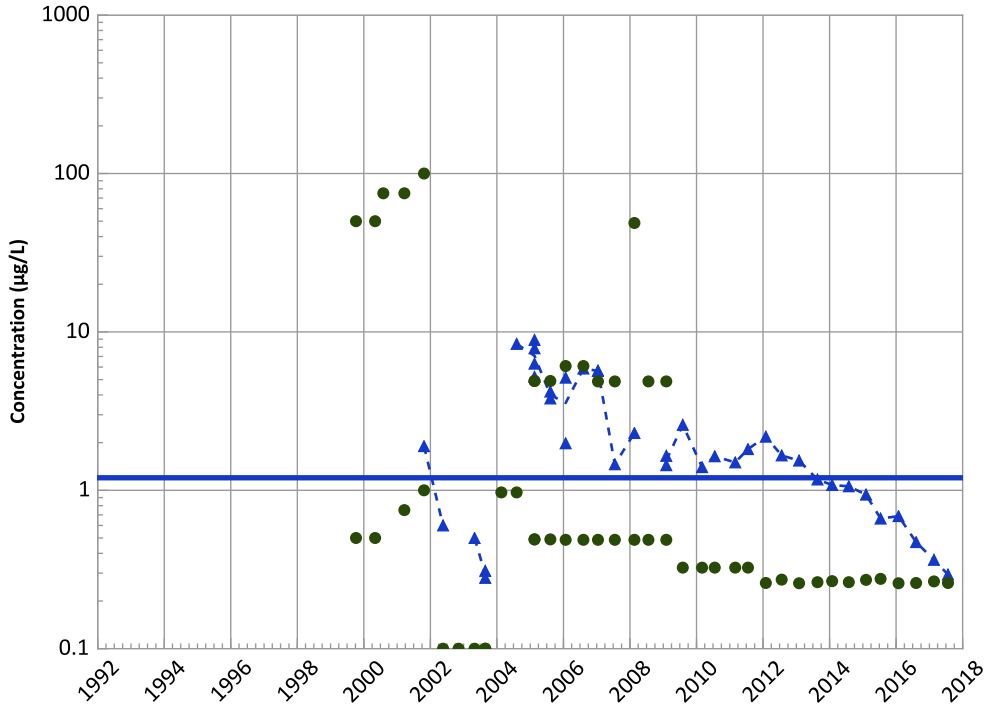
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Stable
All Data
Stable

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

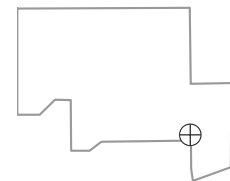
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

Well Location

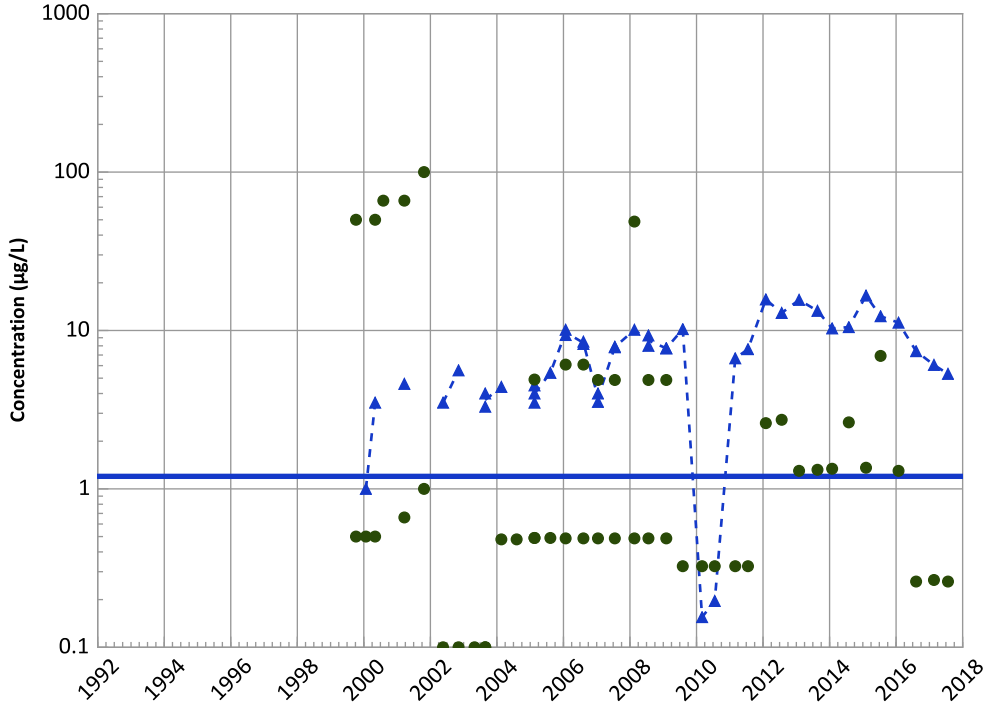


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/07/1999 to 07/24/2017
Analysis Date: 03/21/2018

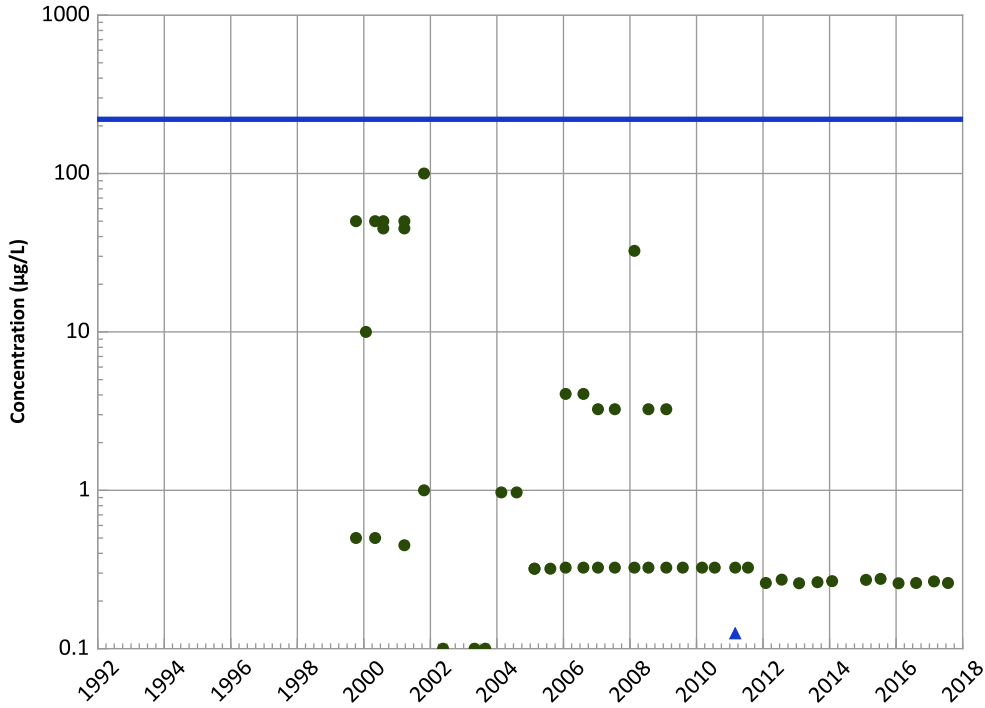
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1042 in Perched Aquifer
USDOE/NSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



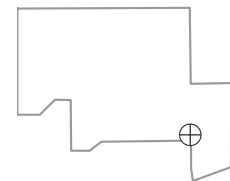
1,3,5-Trinitrobenzene Trend



Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 10/07/1999 to 07/24/2017
 Analysis Date: 03/21/2018

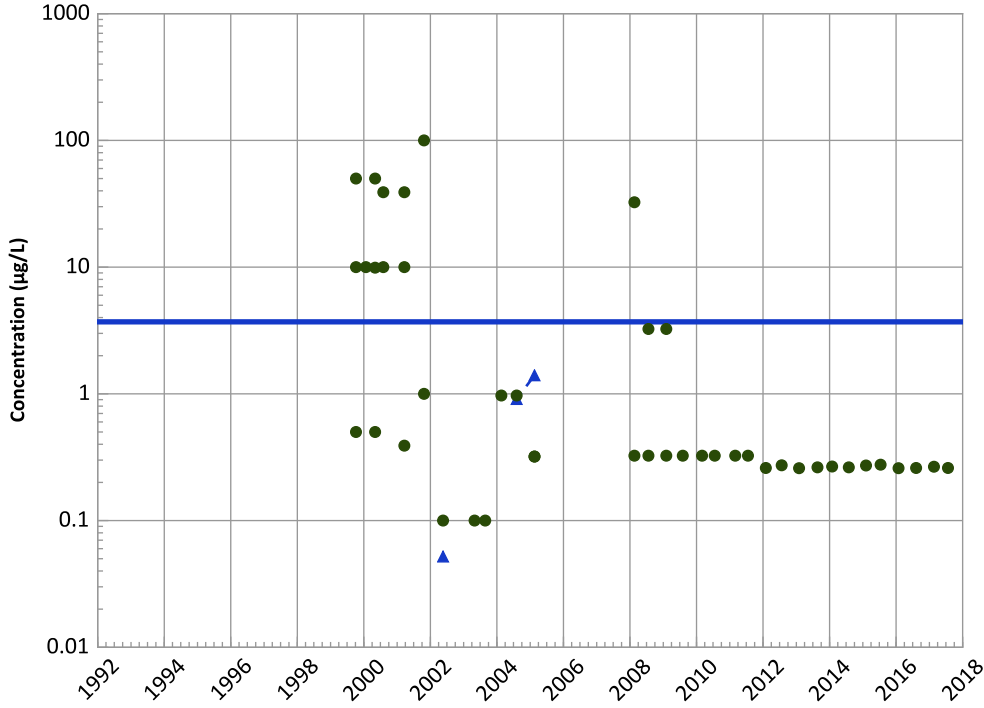
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1042 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

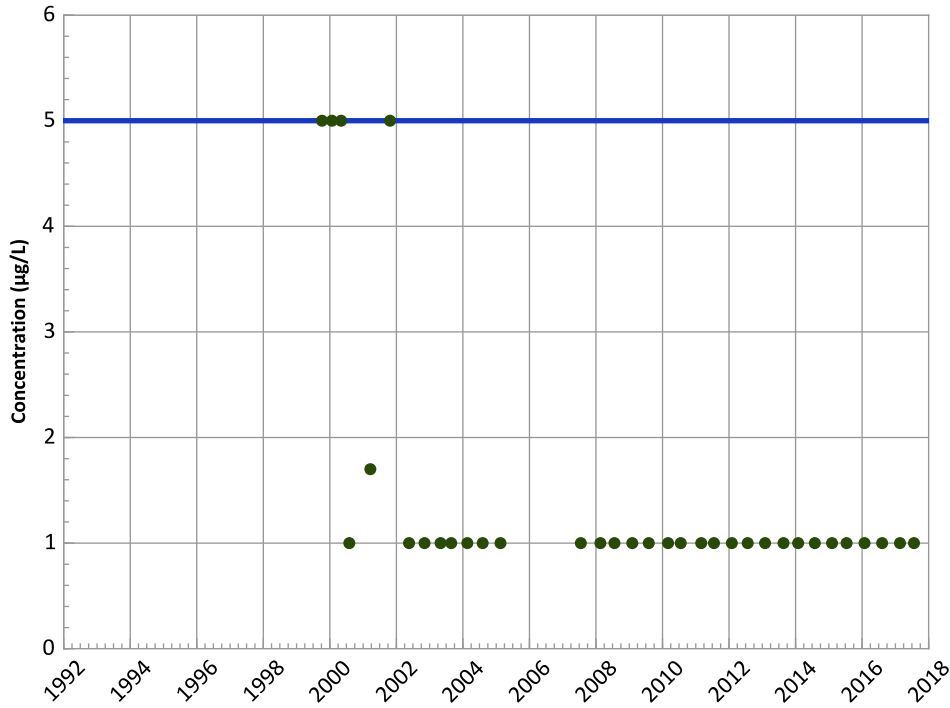
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

Tetrachloroethylene (PCE) Trend



Concentration Trend

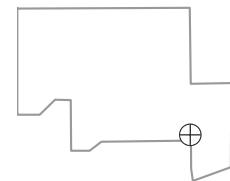
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

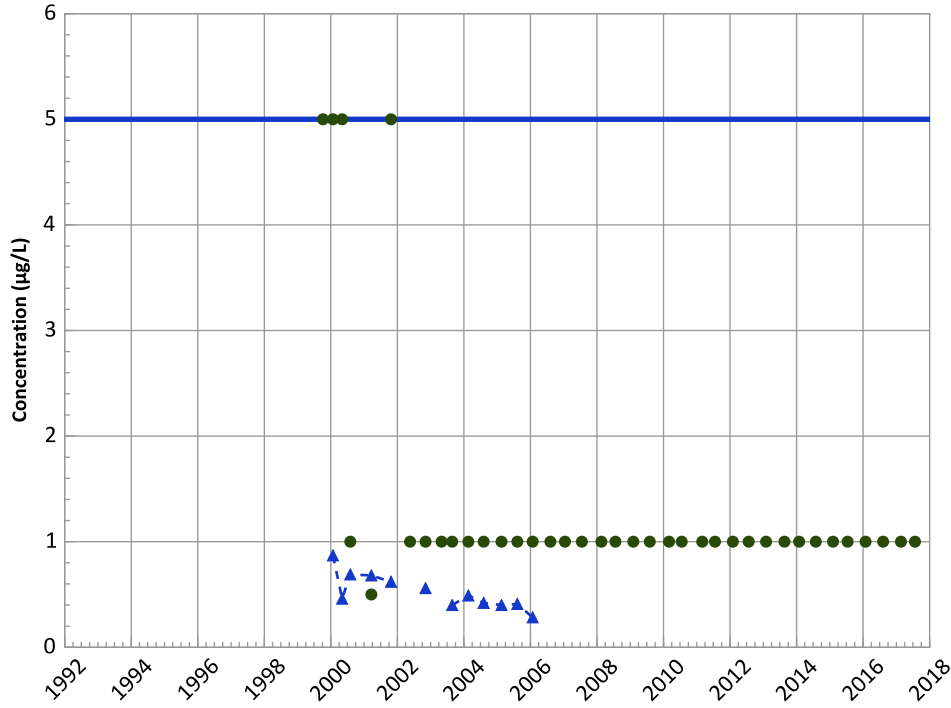


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/07/1999 to 07/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1042 in Perched Aquifer
USDOE/NNSA Pantex Plant

Trichloroethene Trend



Concentration Trend

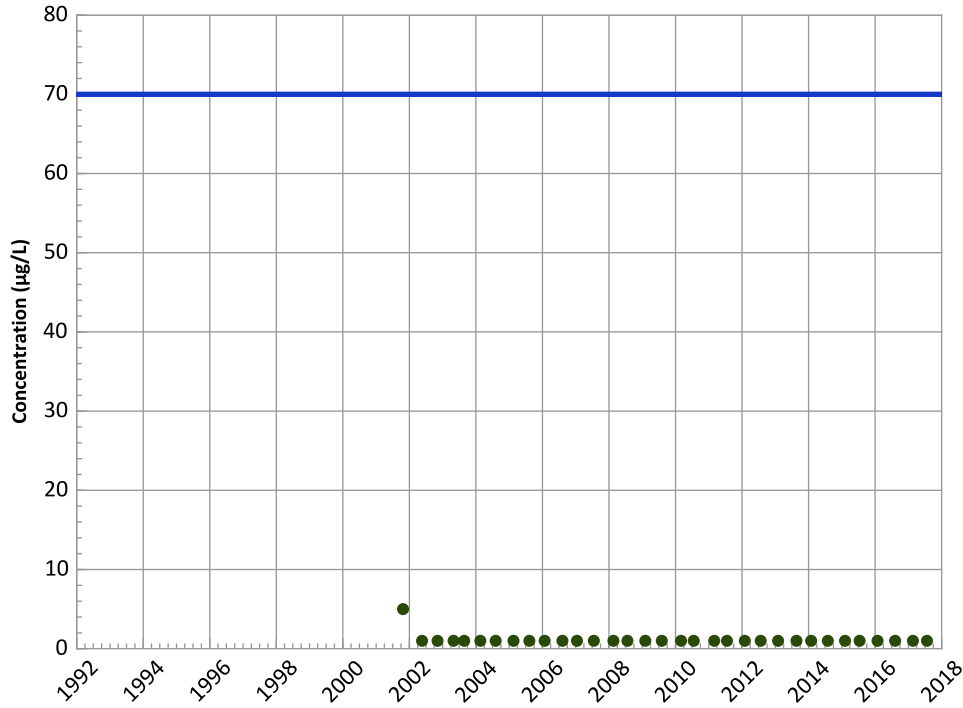
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
Decreasing

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
Decreasing

cis-1,2-Dichloroethene Trend



Concentration Trend

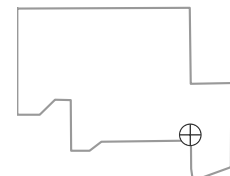
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

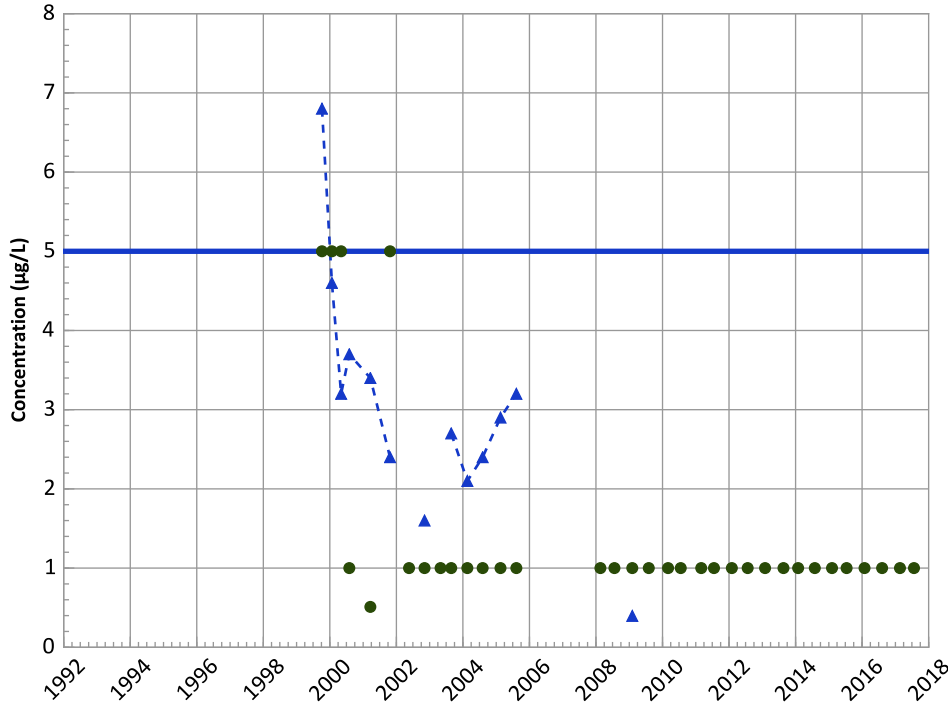
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/07/1999 to 07/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1042 in Perched Aquifer
USDOE/NNSA Pantex Plant
1,2-Dichloroethane Trend**



Concentration Trend

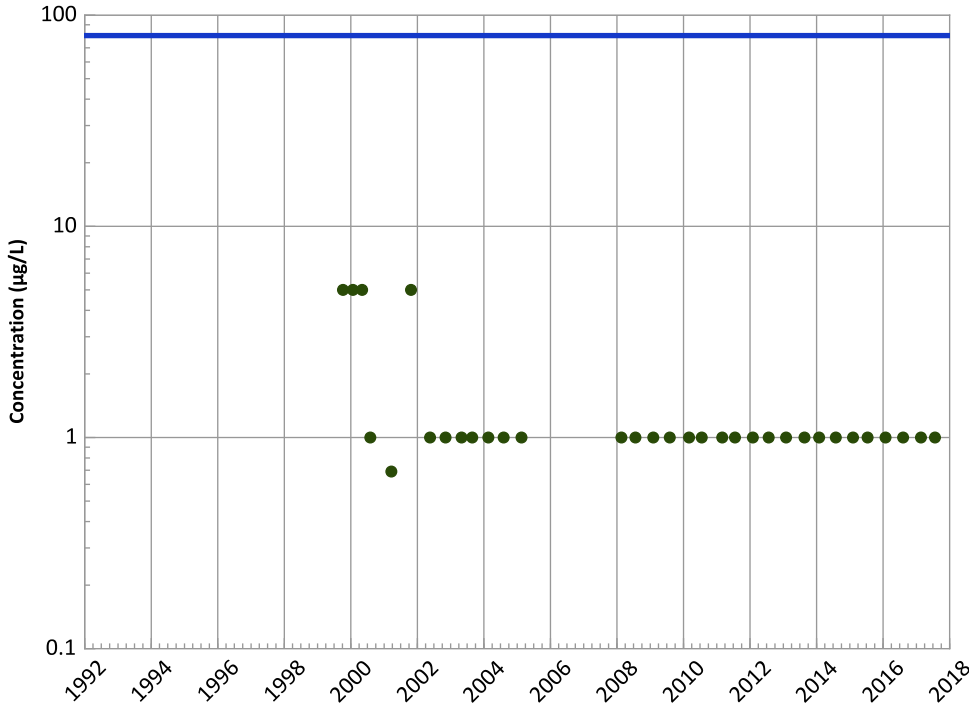
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
Decreasing

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
Decreasing

Chloroform Trend



Concentration Trend

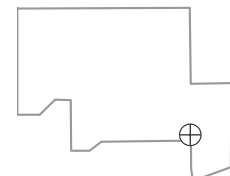
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

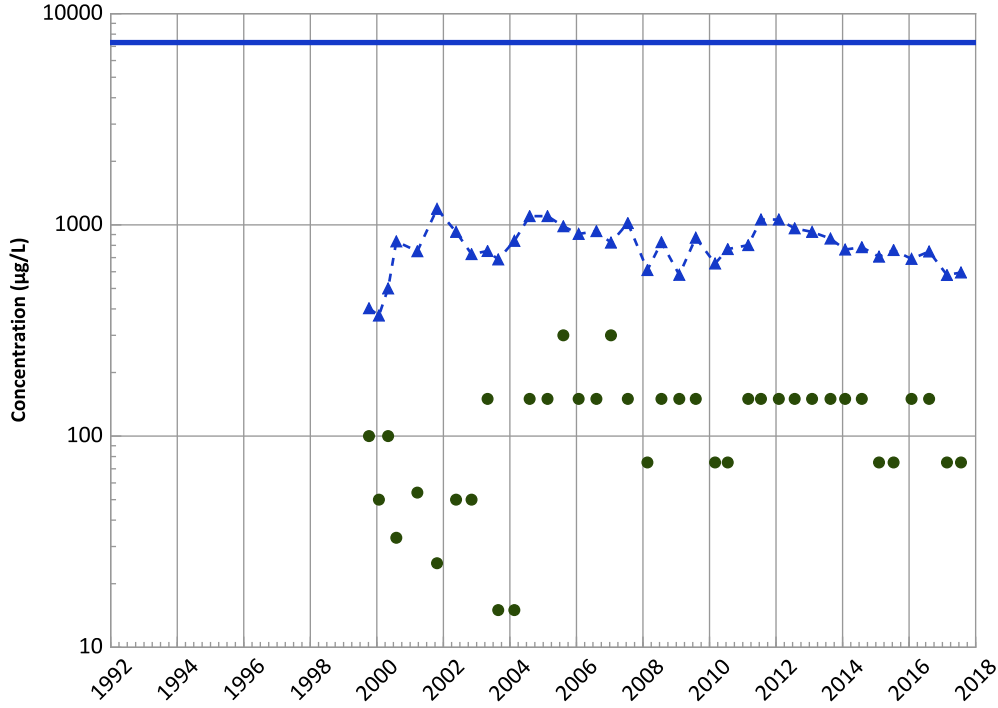


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/07/1999 to 07/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1042 in Perched Aquifer
USDOE/NNSA Pantex Plant

Boron Trend



Concentration Trend

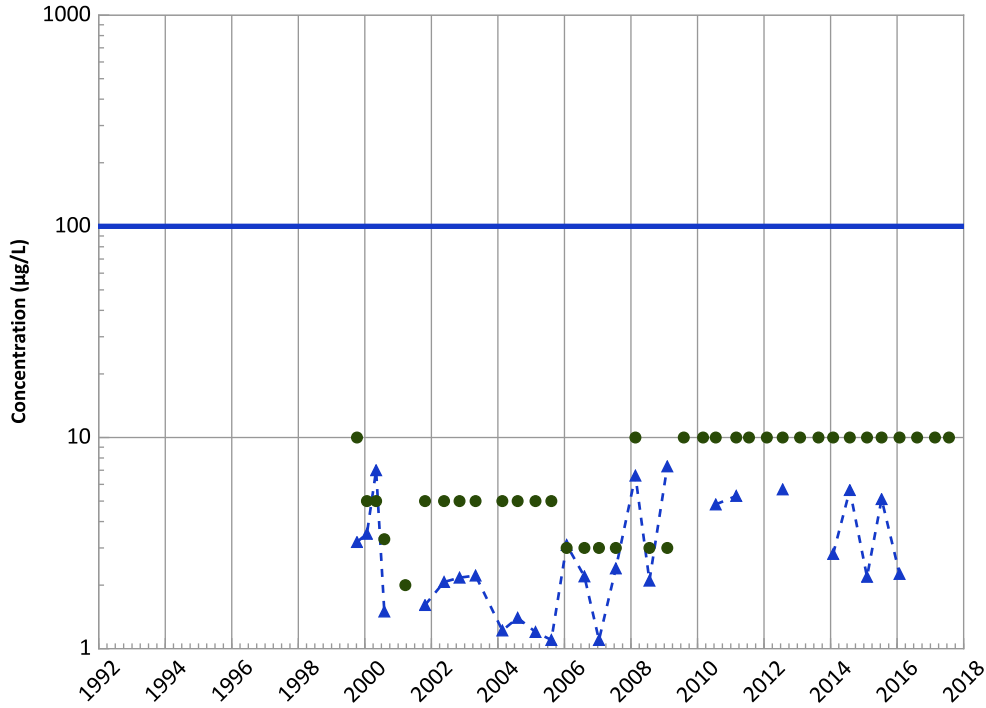
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
No Trend

Chromium, Total Trend



Concentration Trend

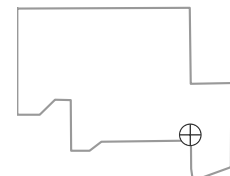
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Stable
All Data
Increasing

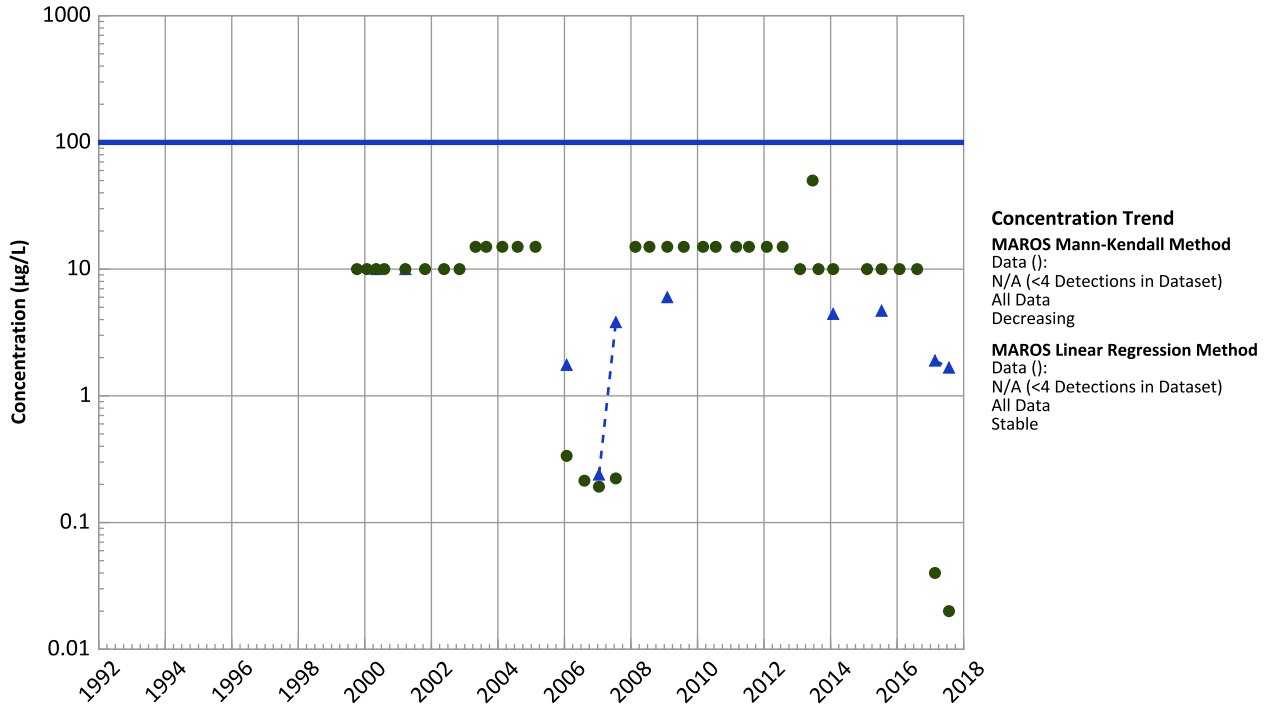
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/07/1999 to 07/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

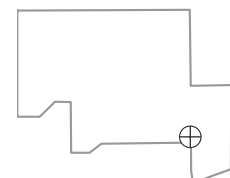
**PTX06-1042 in Perched Aquifer
USDOE/NNSA Pantex Plant
Chromium, Hexavalent Trend**



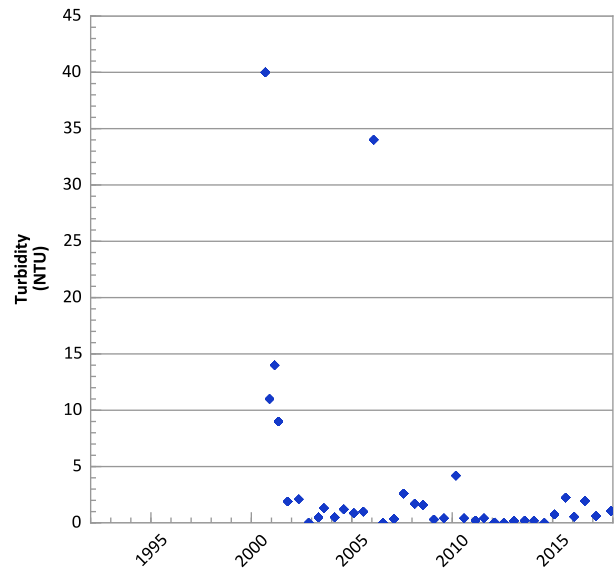
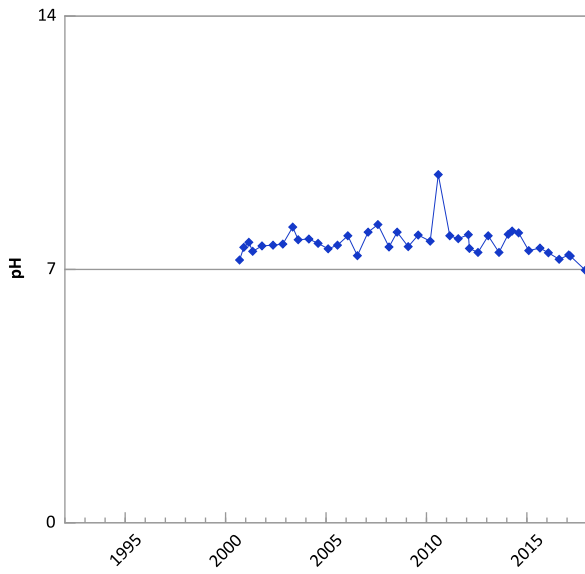
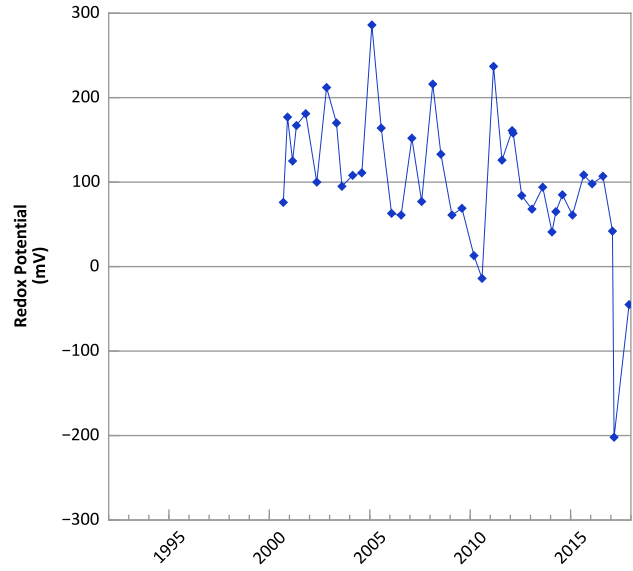
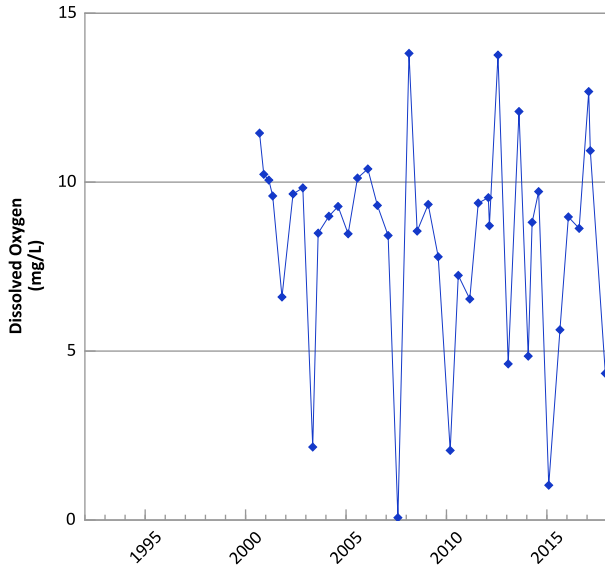
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 10/07/1999 to 07/24/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

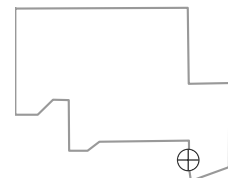


**PTX06-1046 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



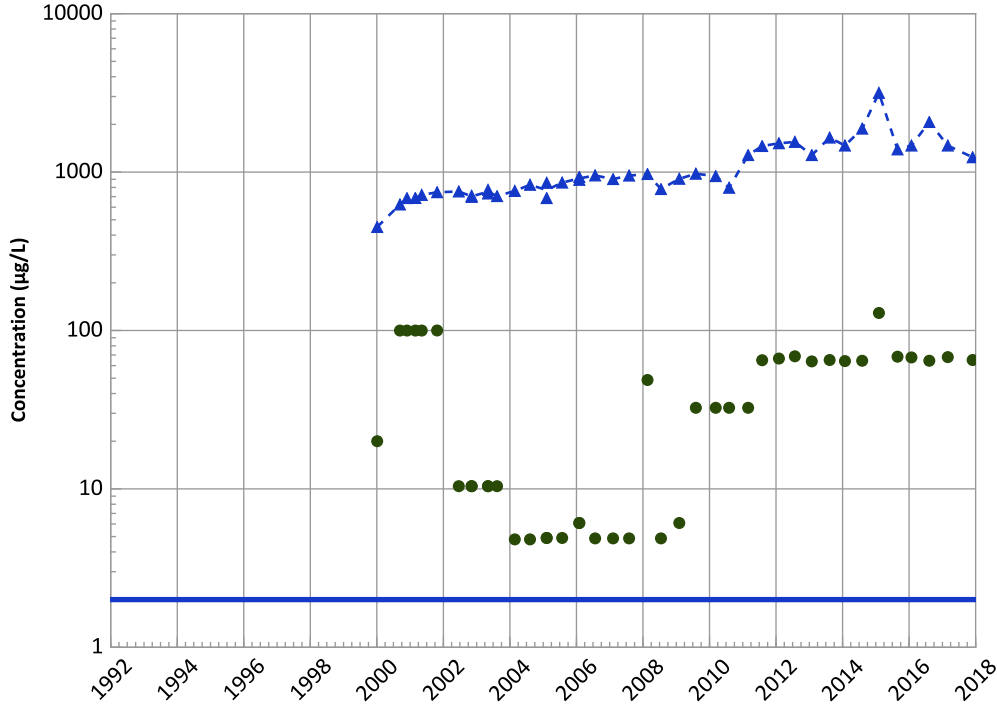
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 01/05/2000 to 11/29/2017
 Analysis Date: 03/21/2018

Well Location



PTX06-1046 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

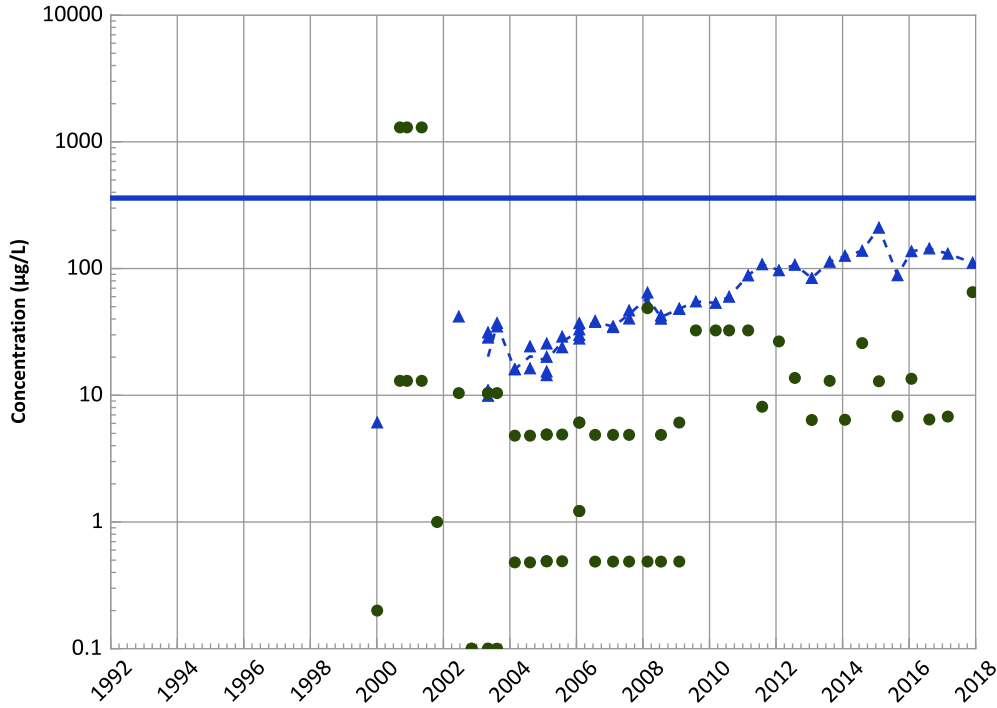
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
Increasing

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

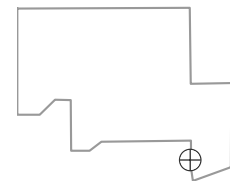
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Probably Increasing
All Data
Increasing

Well Location

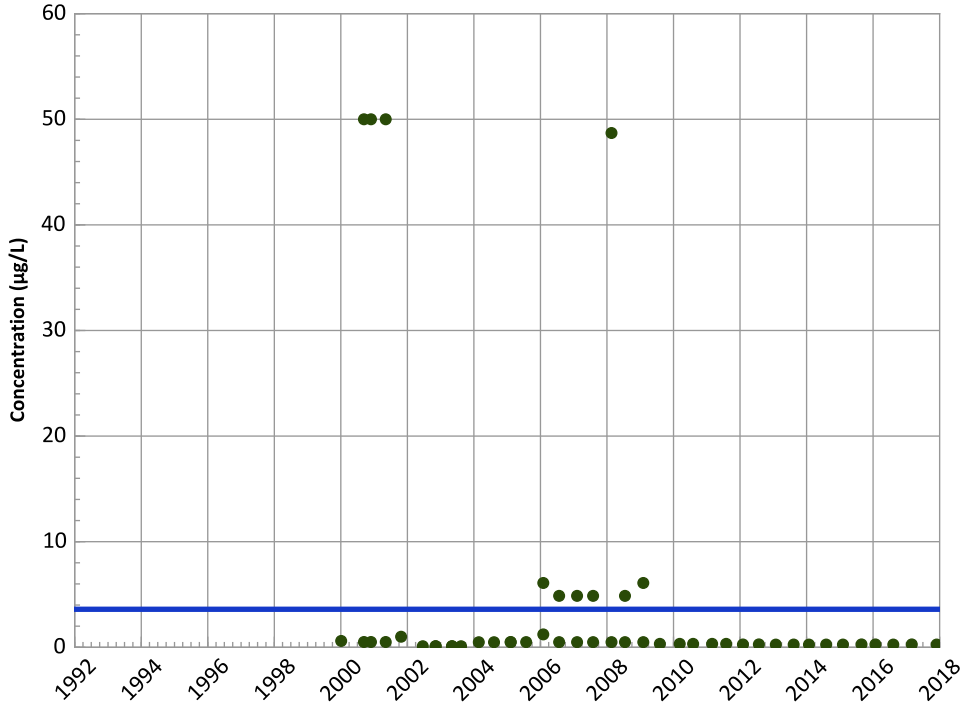


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 01/05/2000 to 11/29/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1046 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

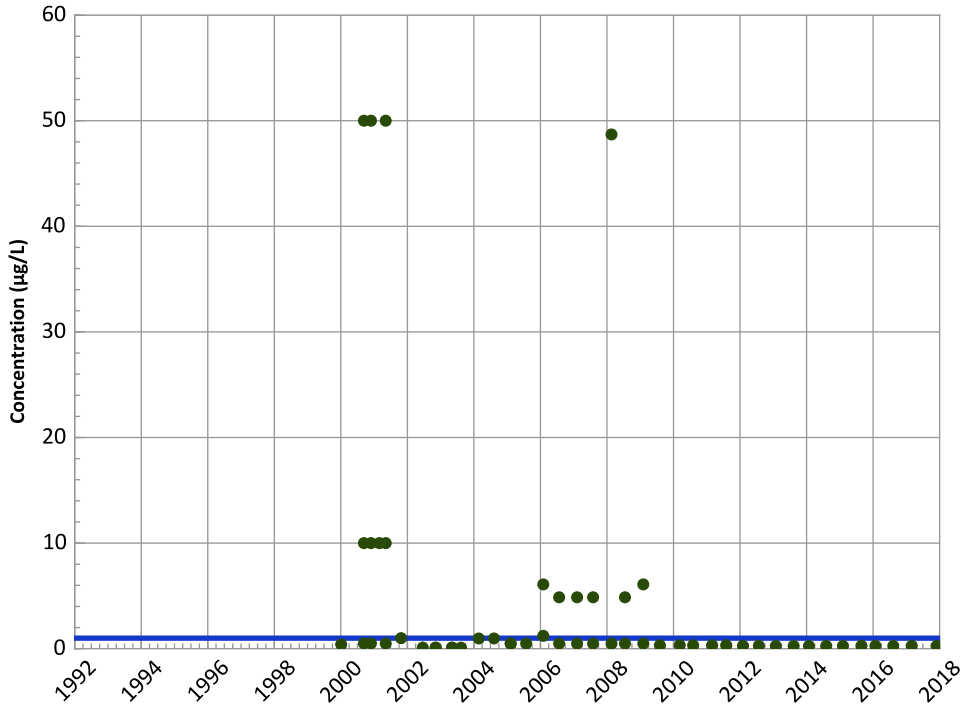
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

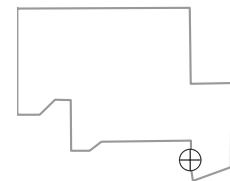
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

Well Location

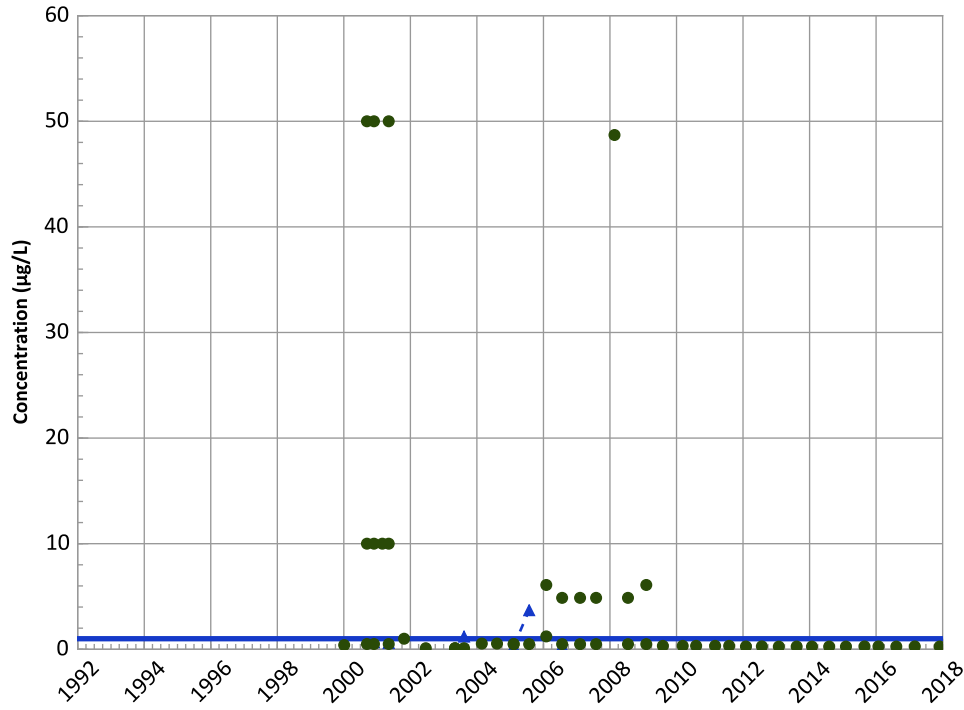


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 01/05/2000 to 11/29/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1046 in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

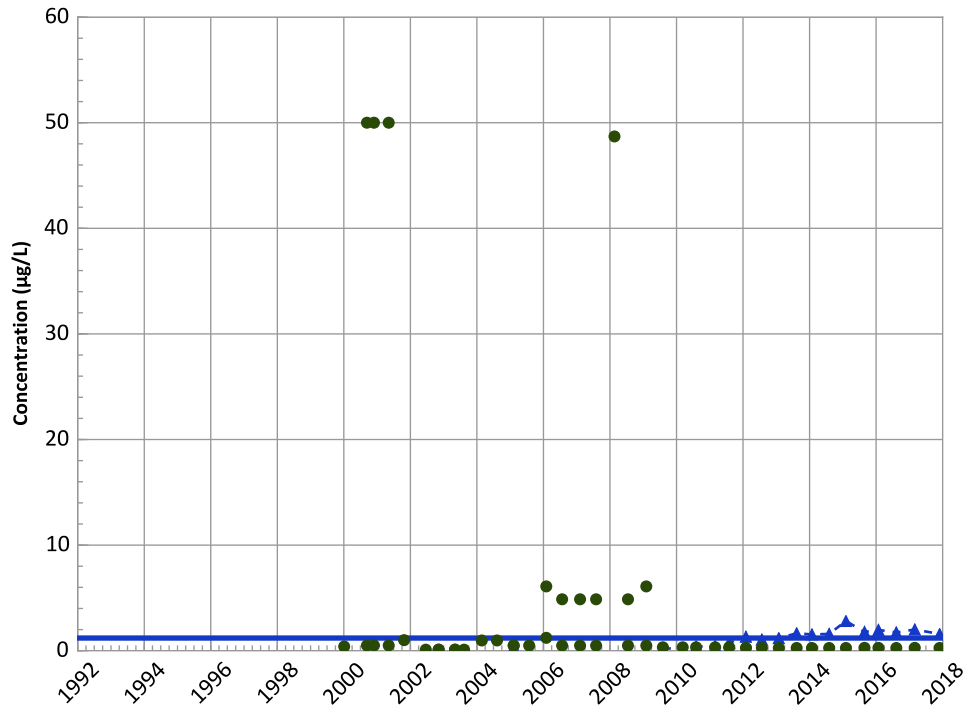
MAROS Mann-Kendall Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

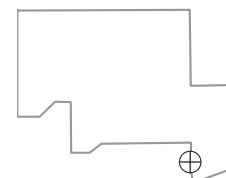
MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 01/05/2000 to 11/29/2017
Analysis Date: 03/21/2018

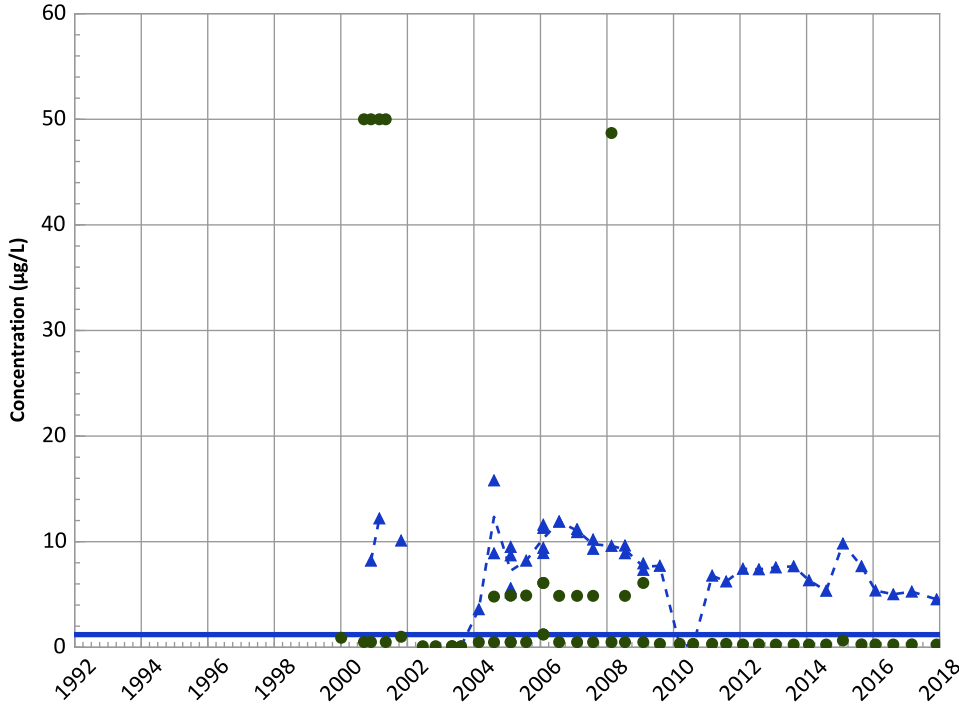
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1046 in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

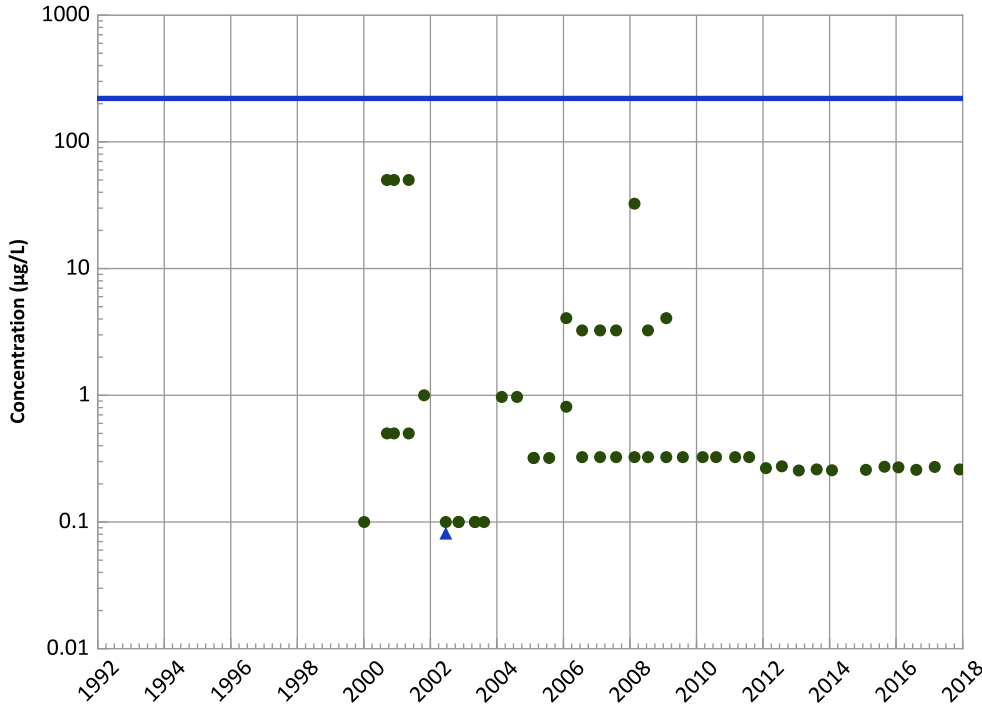
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Stable
All Data
Decreasing

1,3,5-Trinitrobenzene Trend



Concentration Trend

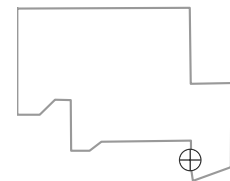
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

Well Location

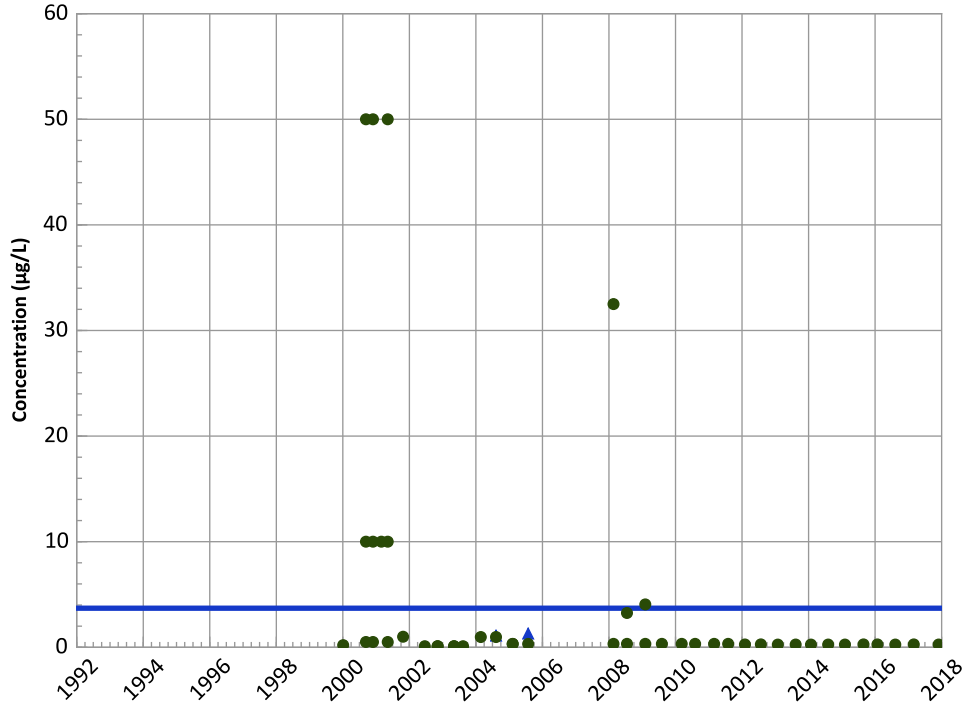


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 01/05/2000 to 11/29/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1046 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

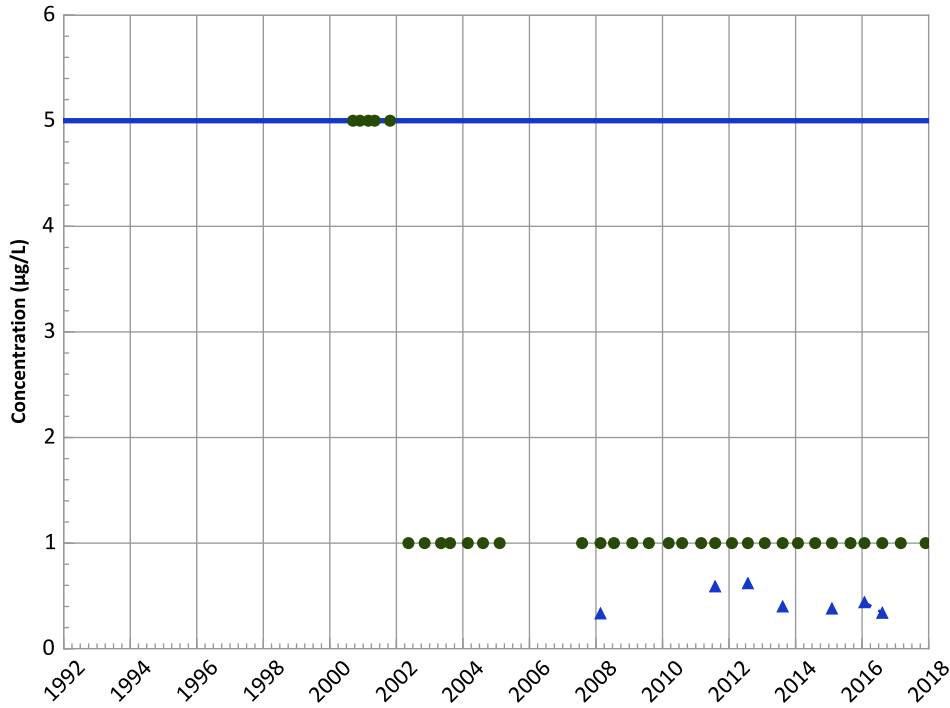
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

Tetrachloroethylene (PCE) Trend



Concentration Trend

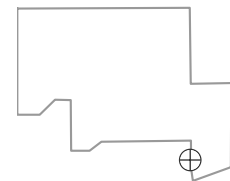
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Probably Decreasing
All Data
Stable

Well Location

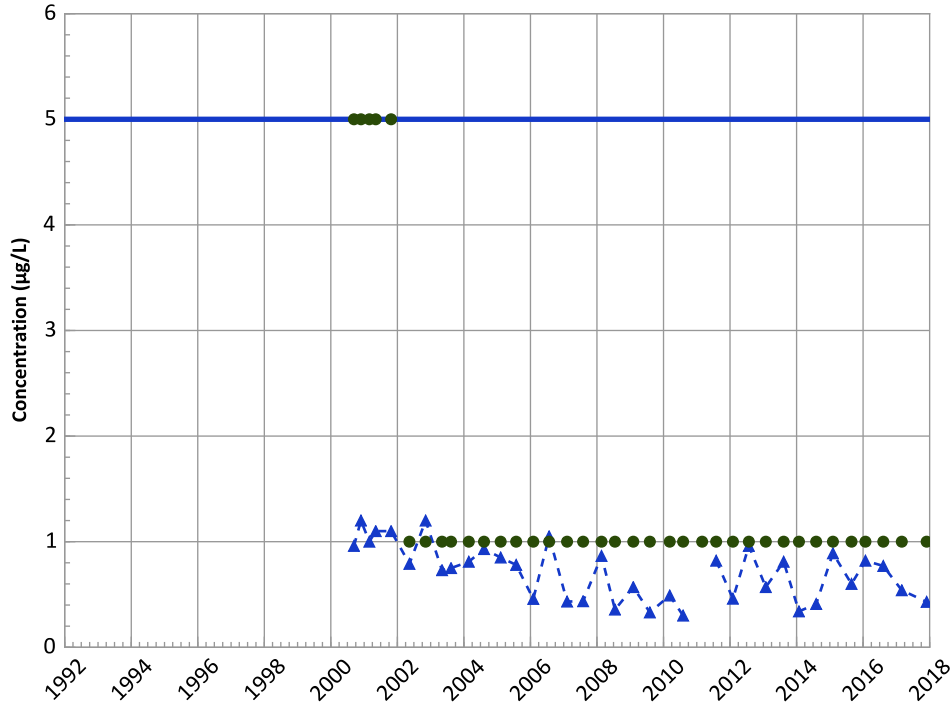


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 01/05/2000 to 11/29/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1046 in Perched Aquifer
USDOE/NNSA Pantex Plant

Trichloroethene Trend



Concentration Trend

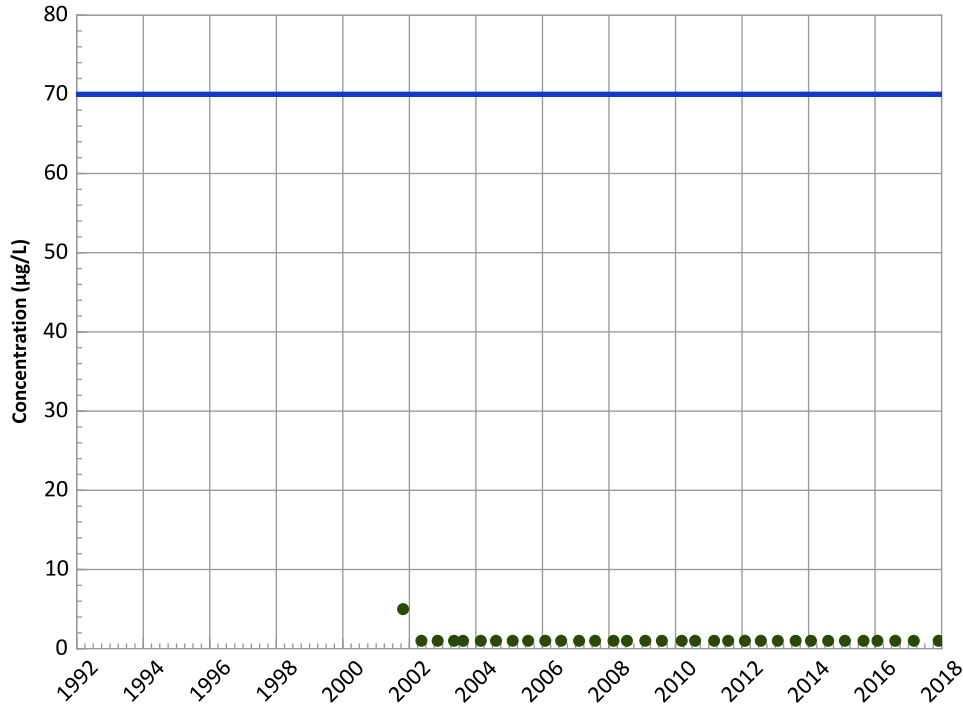
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
Decreasing

cis-1,2-Dichloroethene Trend



Concentration Trend

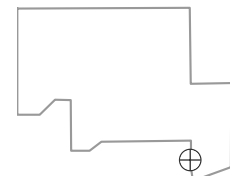
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

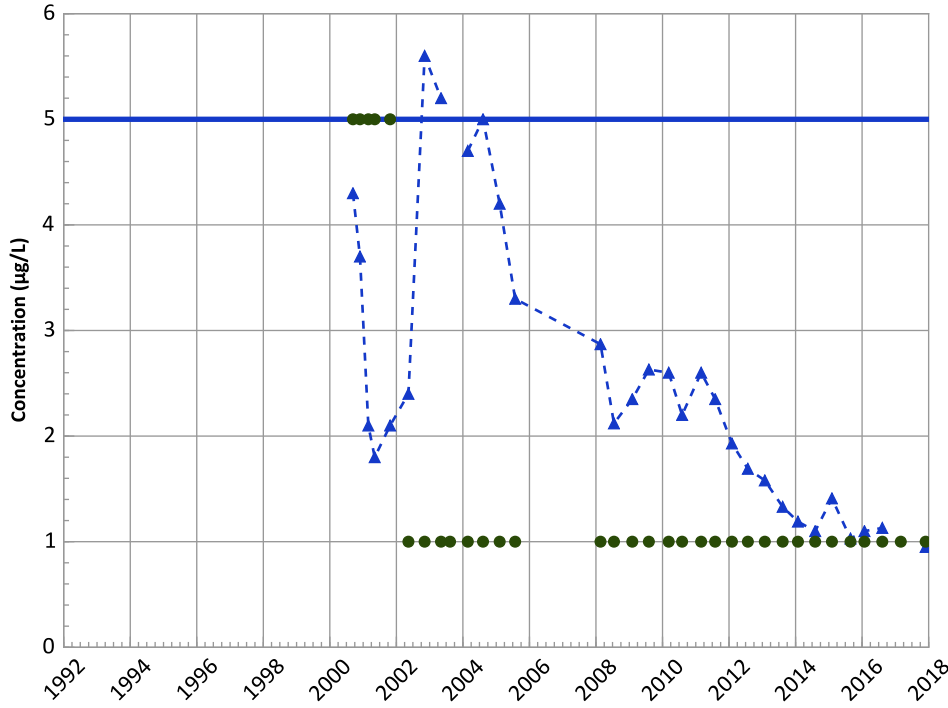


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 01/05/2000 to 11/29/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1046 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,2-Dichloroethane Trend



Concentration Trend

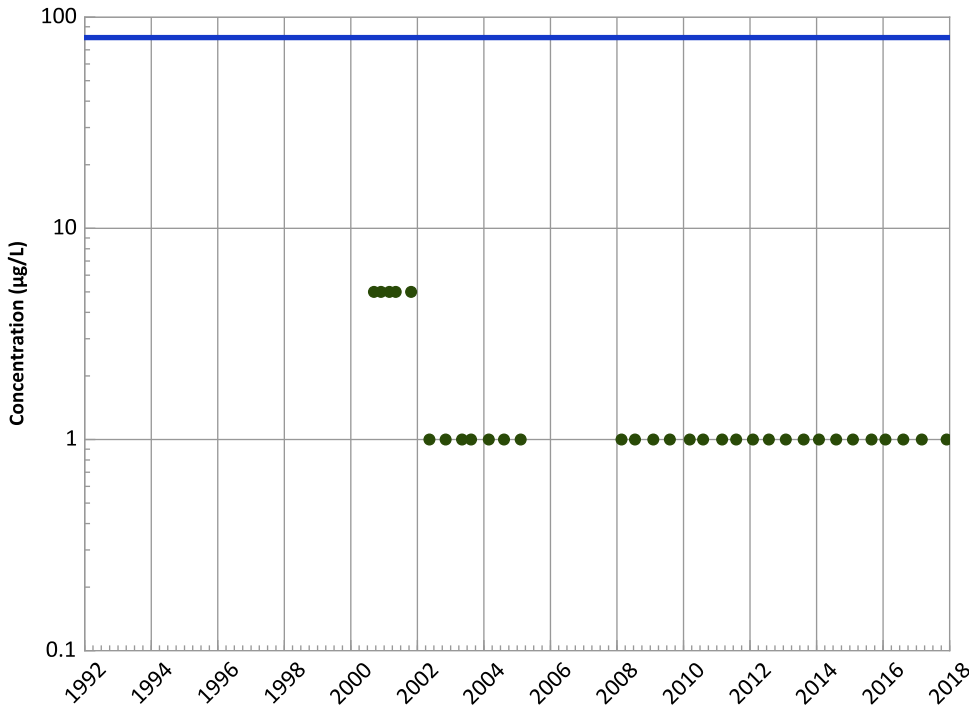
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

Chloroform Trend



Concentration Trend

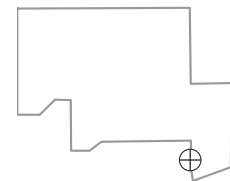
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

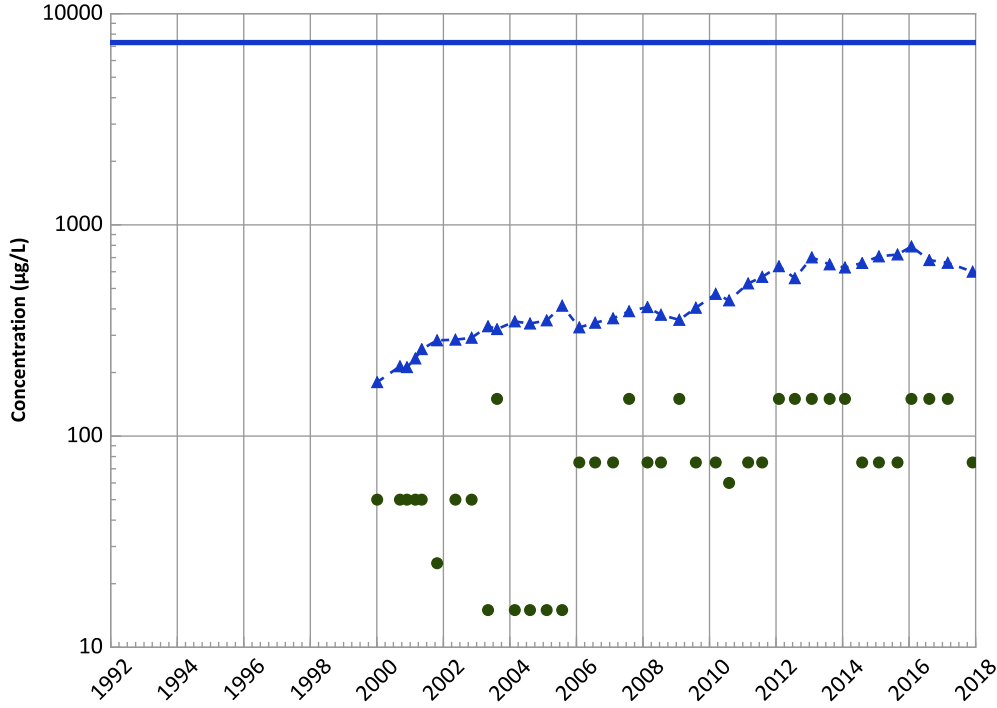


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 01/05/2000 to 11/29/2017
Analysis Date: 03/21/2018

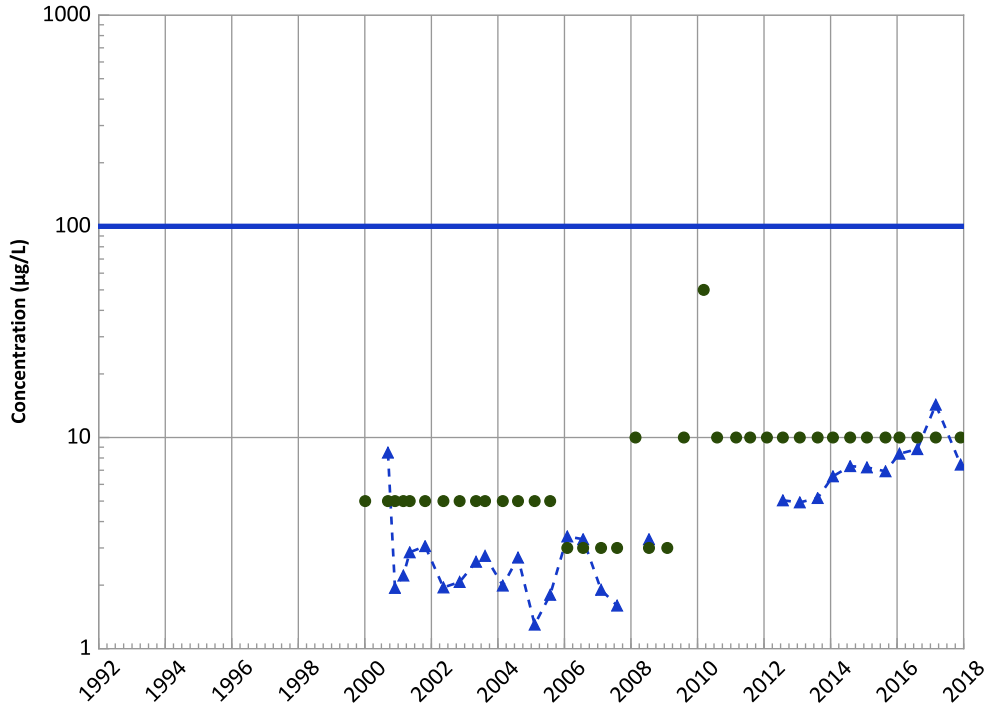
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1046 in Perched Aquifer
USDOE/NNSA Pantex Plant

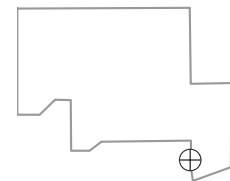
Boron Trend



Chromium, Total Trend



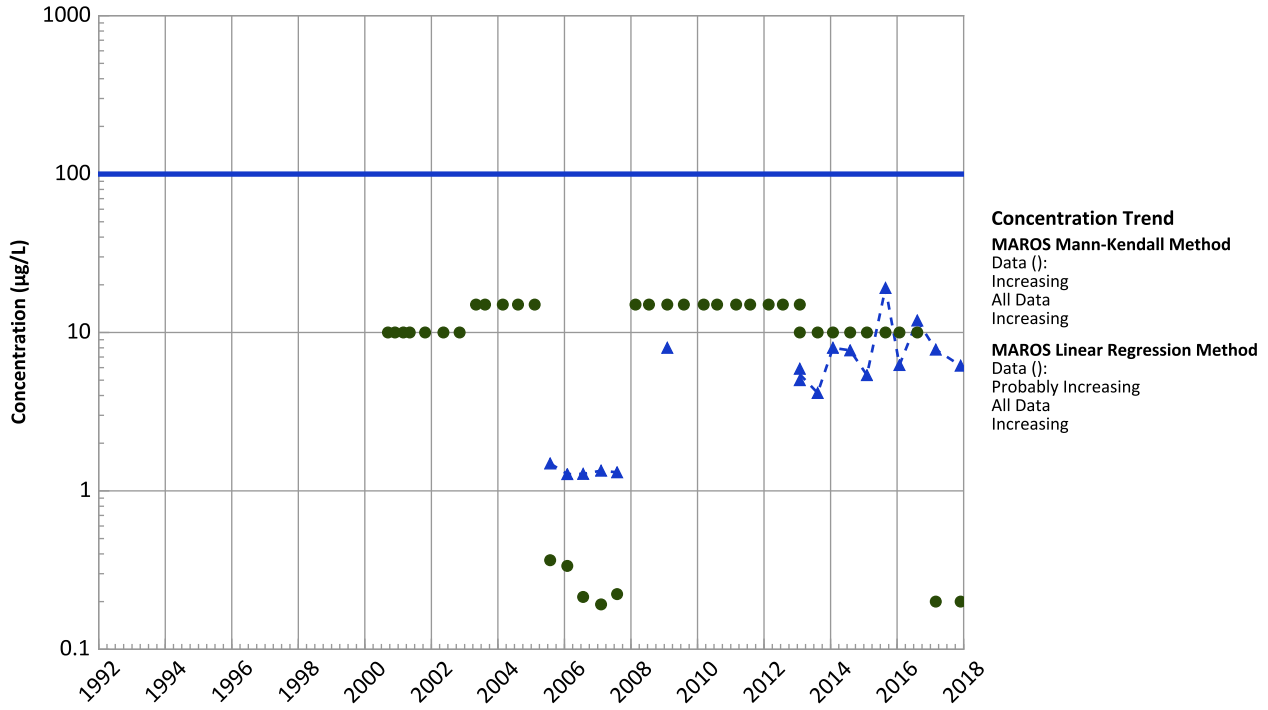
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 01/05/2000 to 11/29/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

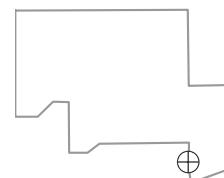
**PTX06-1046 in Perched Aquifer
USDOE/NNSA Pantex Plant
Chromium, Hexavalent Trend**



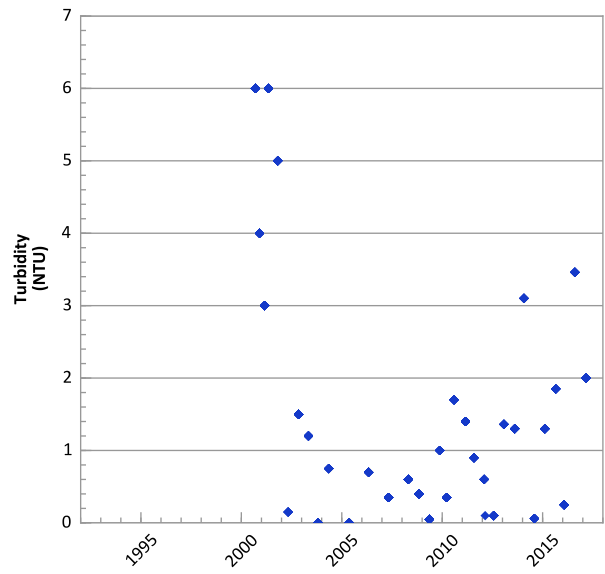
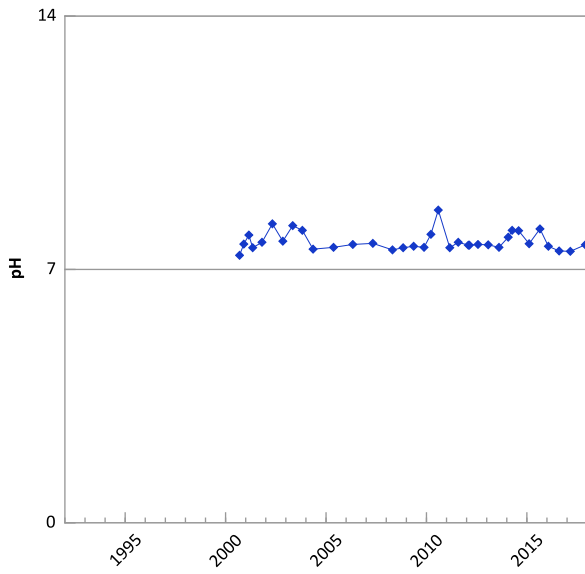
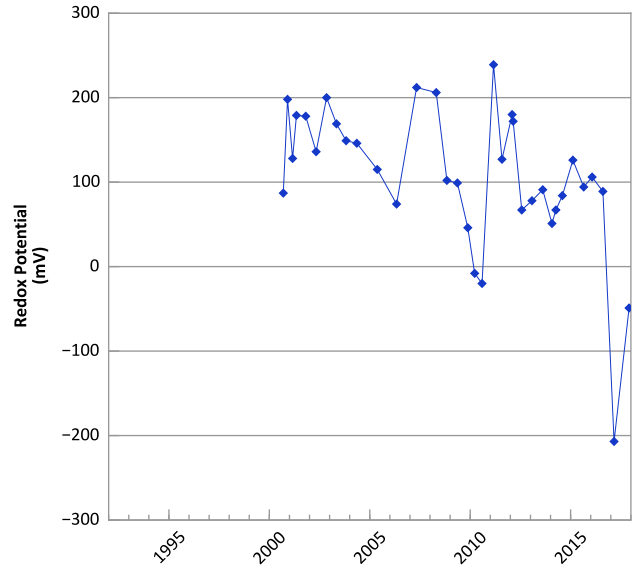
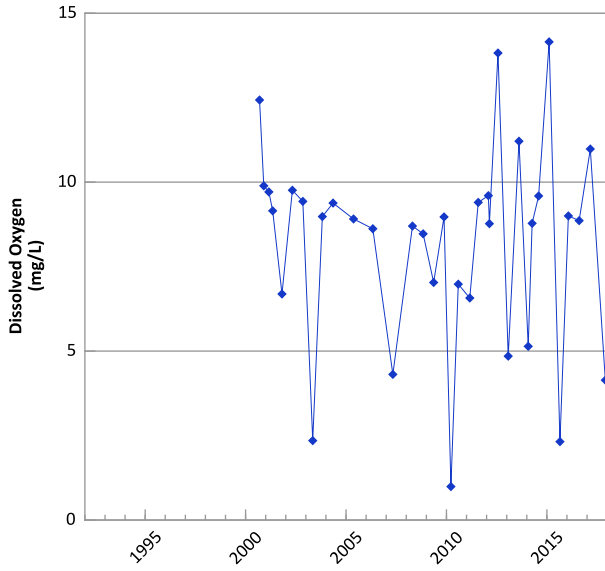
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 01/05/2000 to 11/29/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

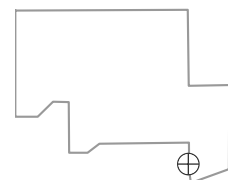


**PTX06-1047A in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



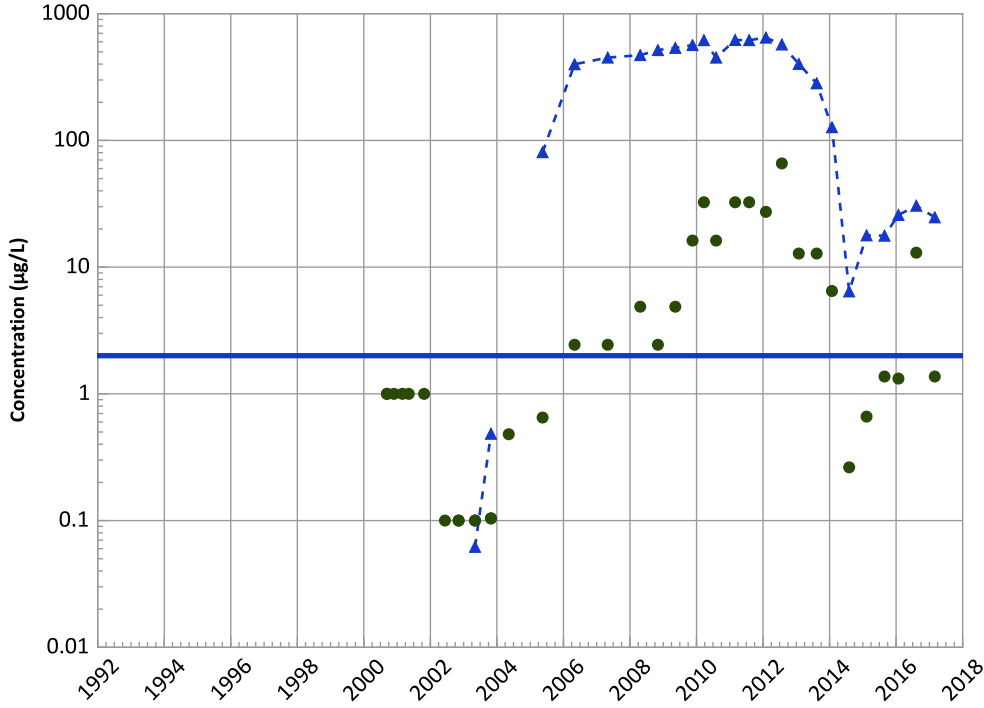
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 09/11/2000 to 03/01/2017
 Analysis Date: 03/21/2018

Well Location



PTX06-1047A in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

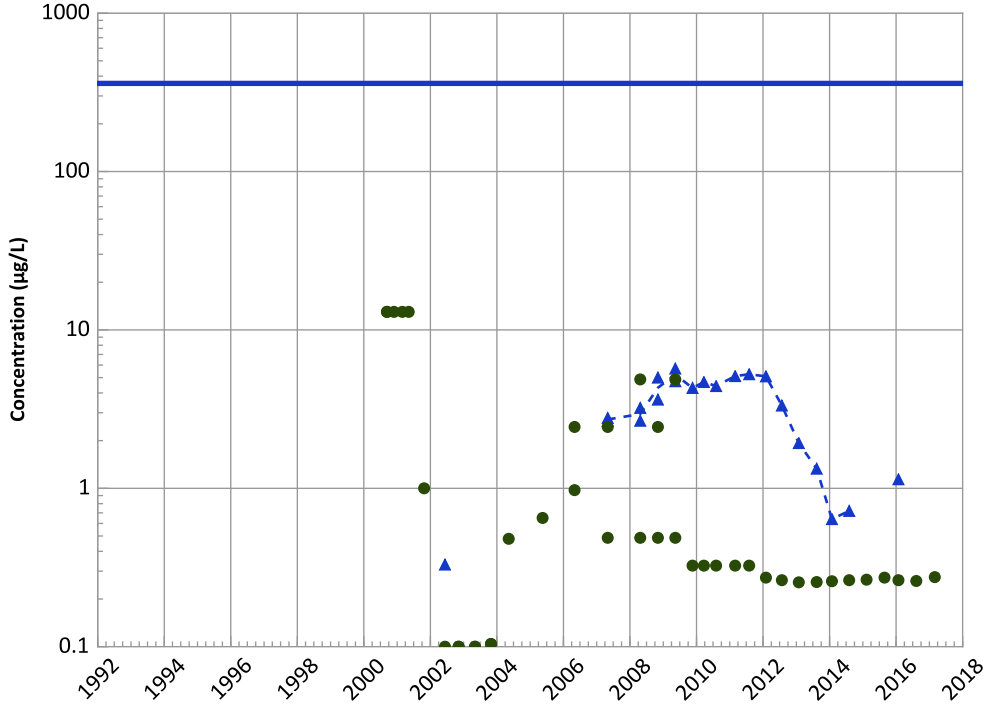
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
No Trend

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

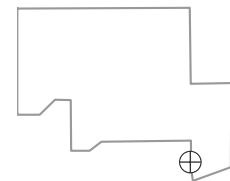
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

Well Location

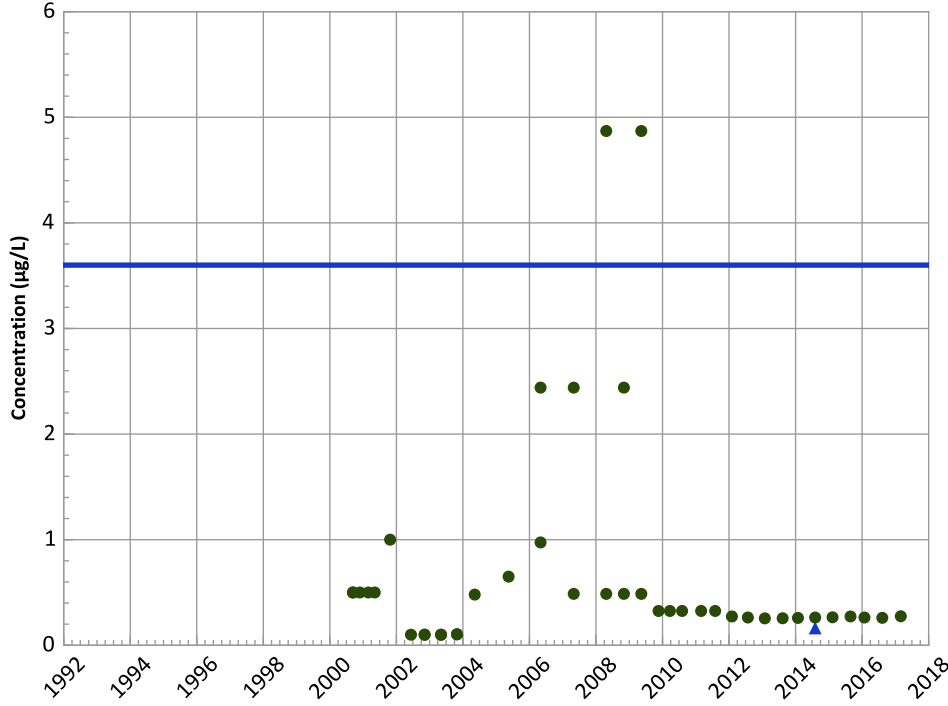


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/11/2000 to 03/01/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1047A in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

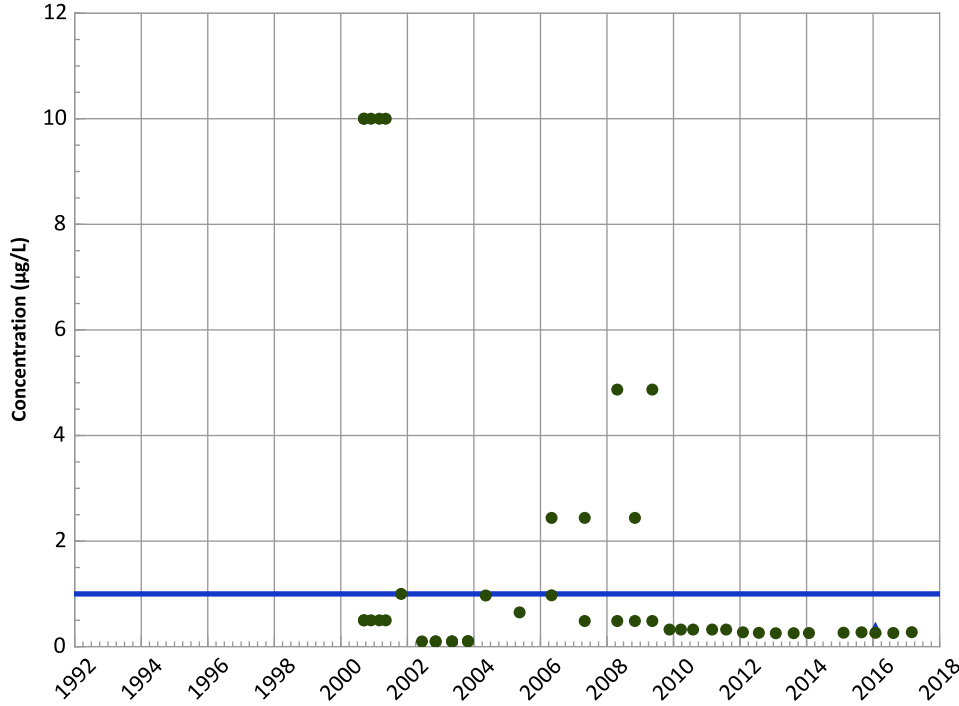
Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

2,4-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

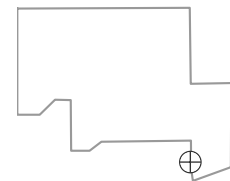
Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

Well Location

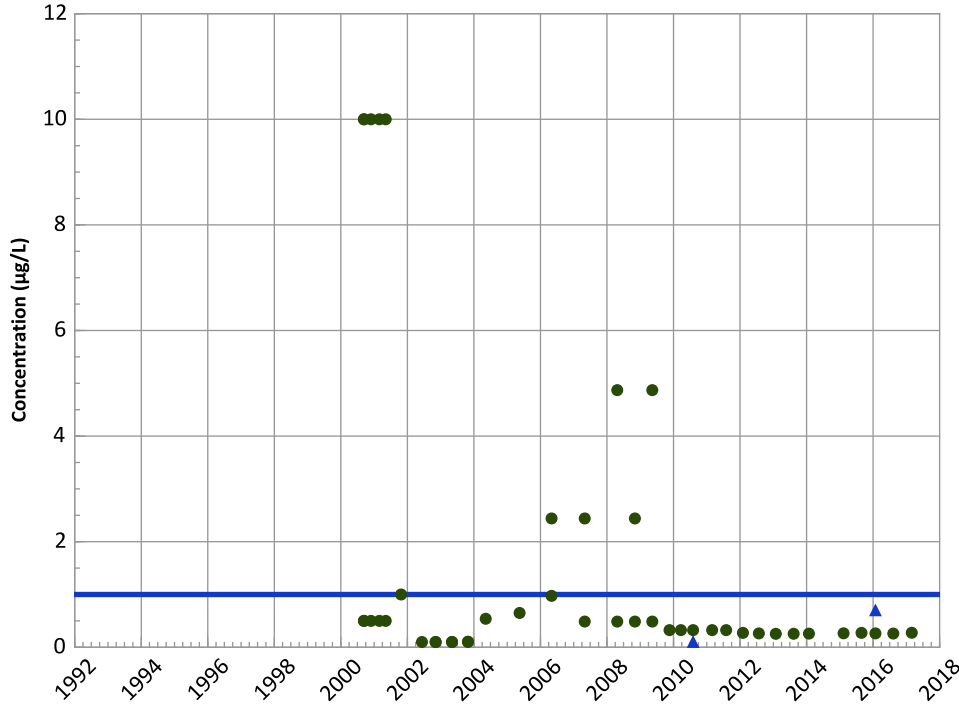


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/11/2000 to 03/01/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1047A in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

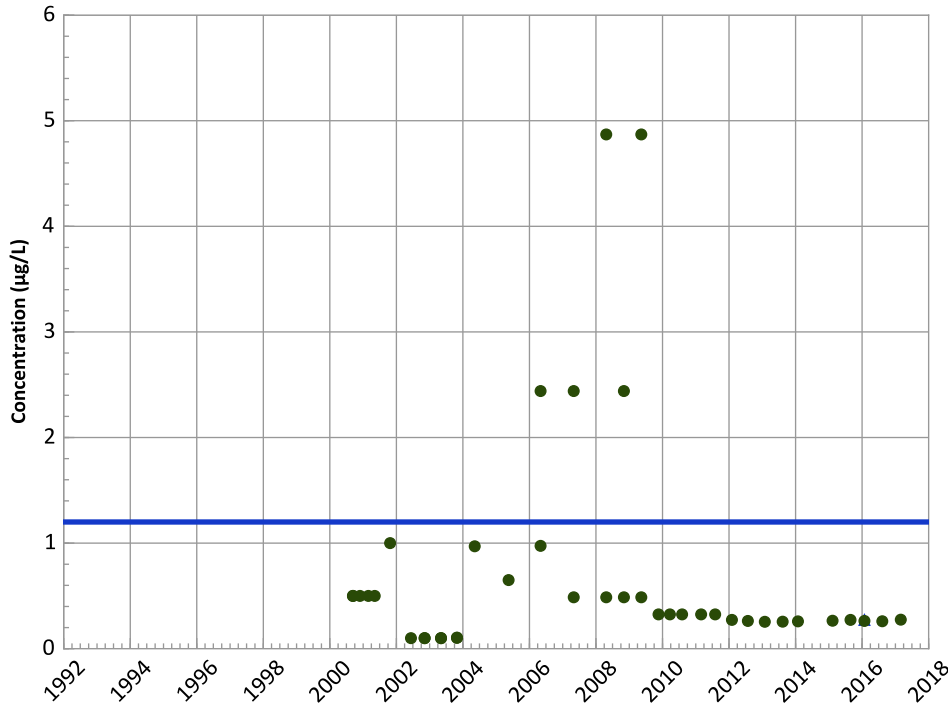
Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

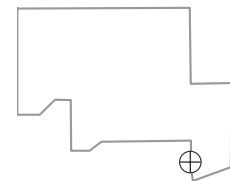
Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

Well Location

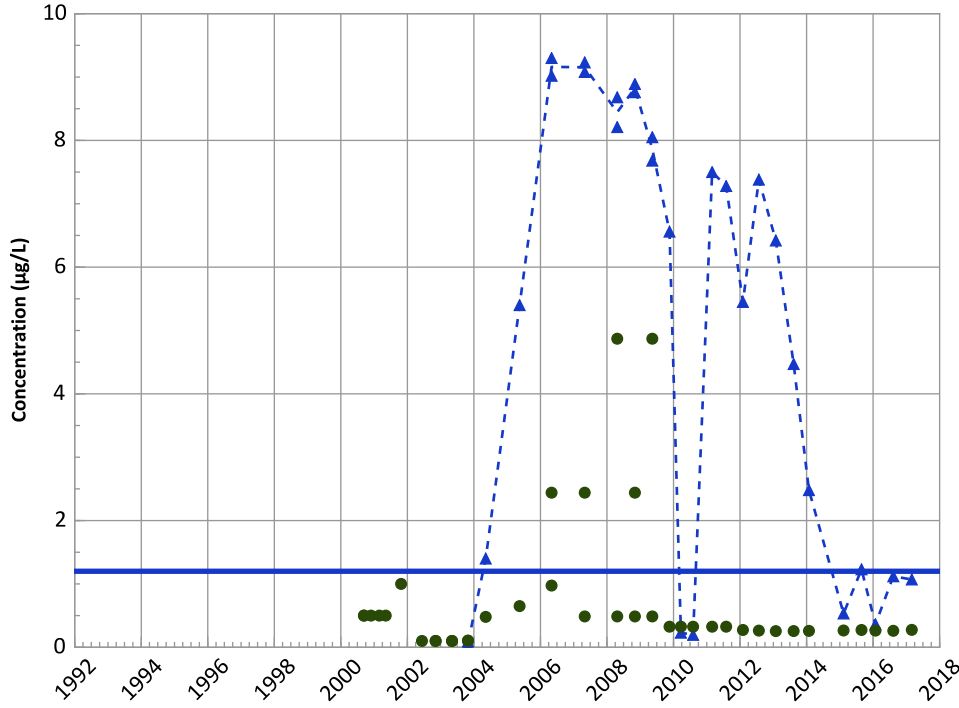


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/11/2000 to 03/01/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1047A in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

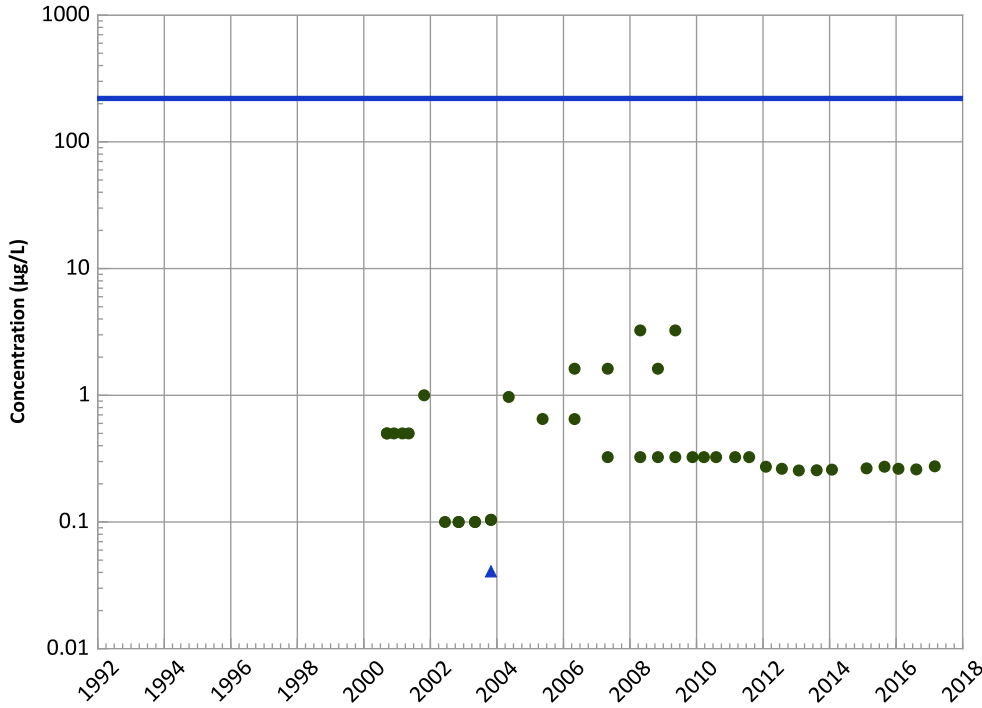
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
No Trend

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Stable

1,3,5-Trinitrobenzene Trend



Concentration Trend

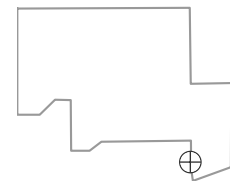
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

Well Location

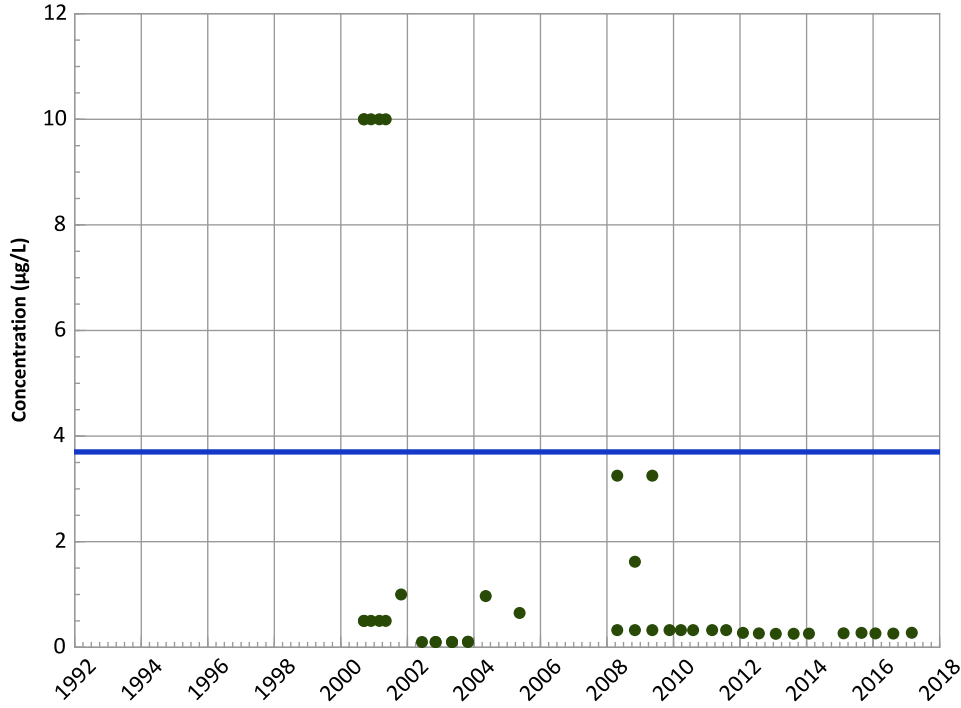


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/11/2000 to 03/01/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1047A in Perched Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

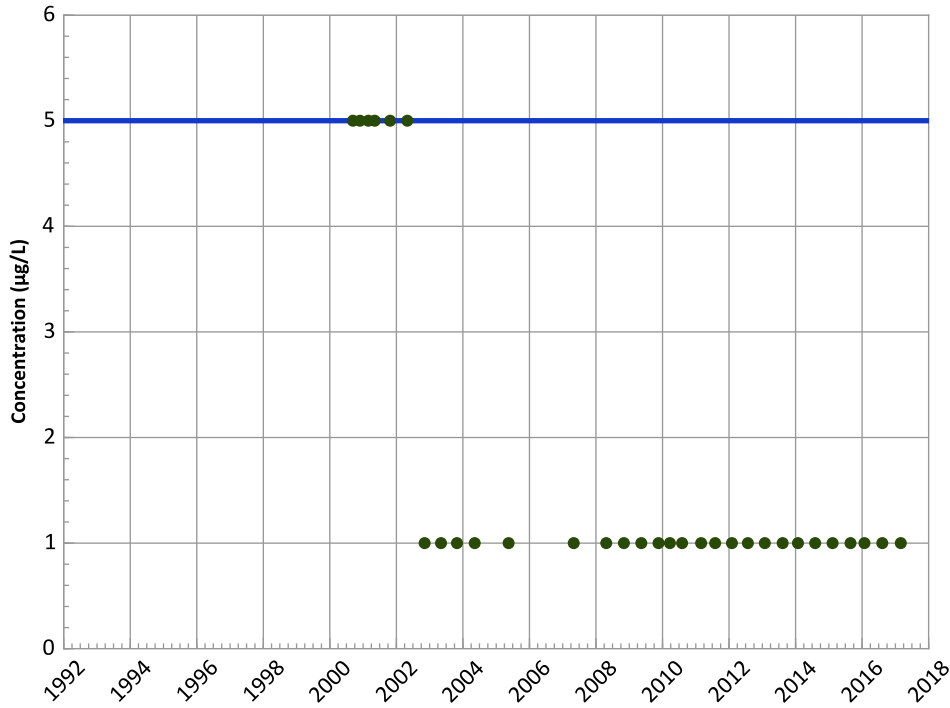
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Tetrachloroethylene (PCE) Trend



Concentration Trend

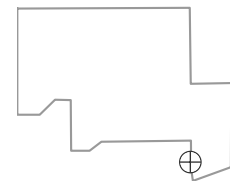
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

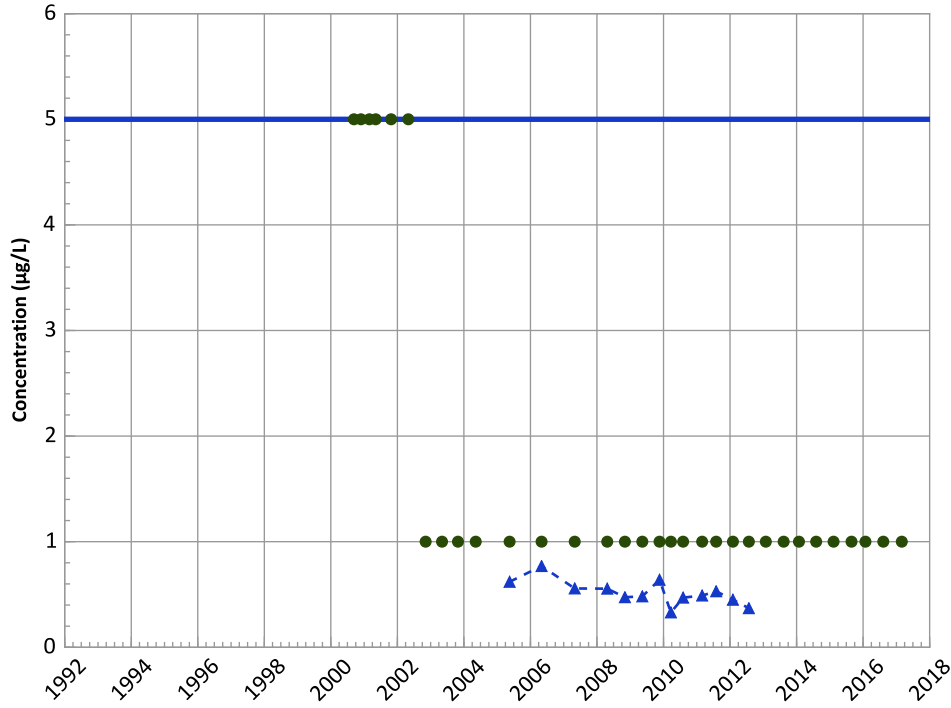


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/11/2000 to 03/01/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1047A in Perched Aquifer
USDOE/NNSA Pantex Plant

Trichloroethene Trend

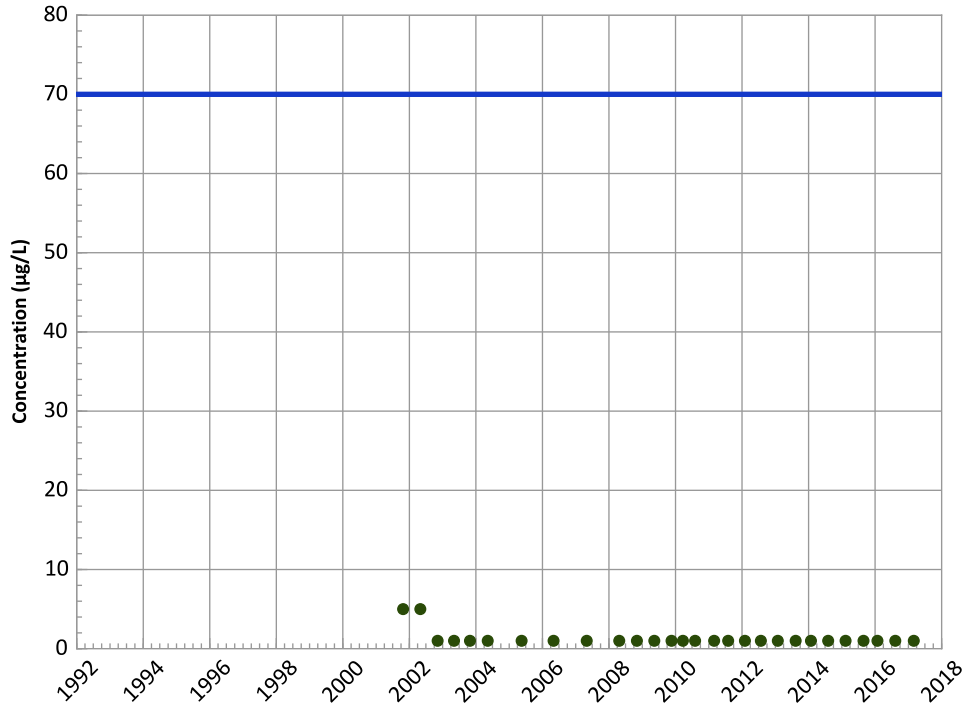


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

MAROS Linear Regression Method
Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

cis-1,2-Dichloroethene Trend

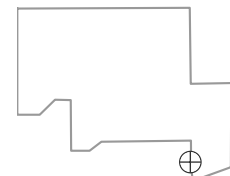


Concentration Trend

MAROS Mann-Kendall Method
Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method
Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

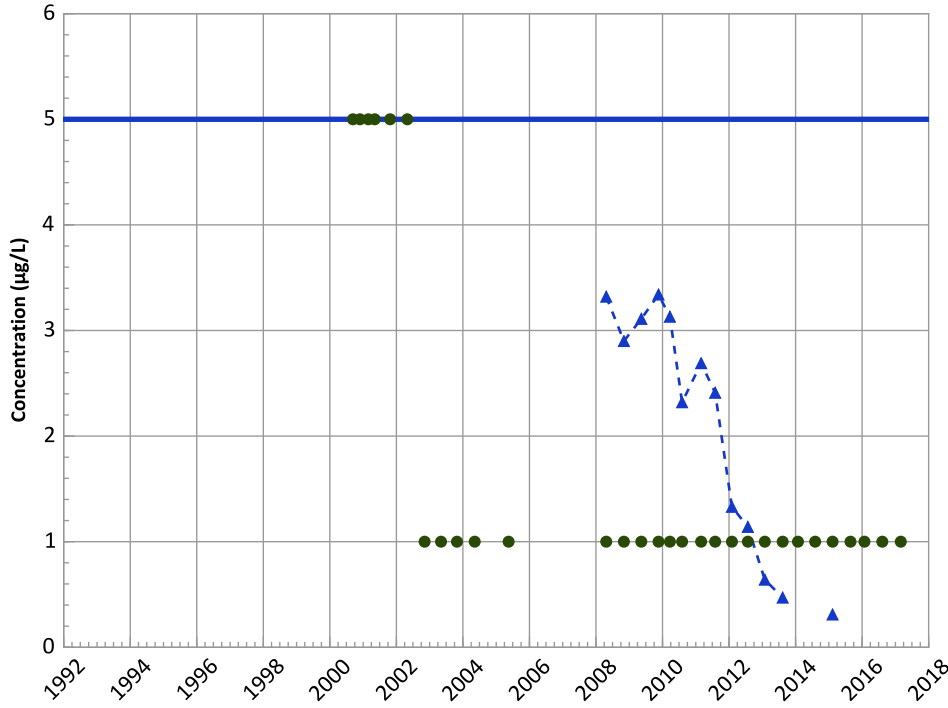


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/11/2000 to 03/01/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1047A in Perched Aquifer
USDOE/NNSA Pantex Plant

1,2-Dichloroethane Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

Decreasing

All Data

Decreasing

MAROS Linear Regression Method

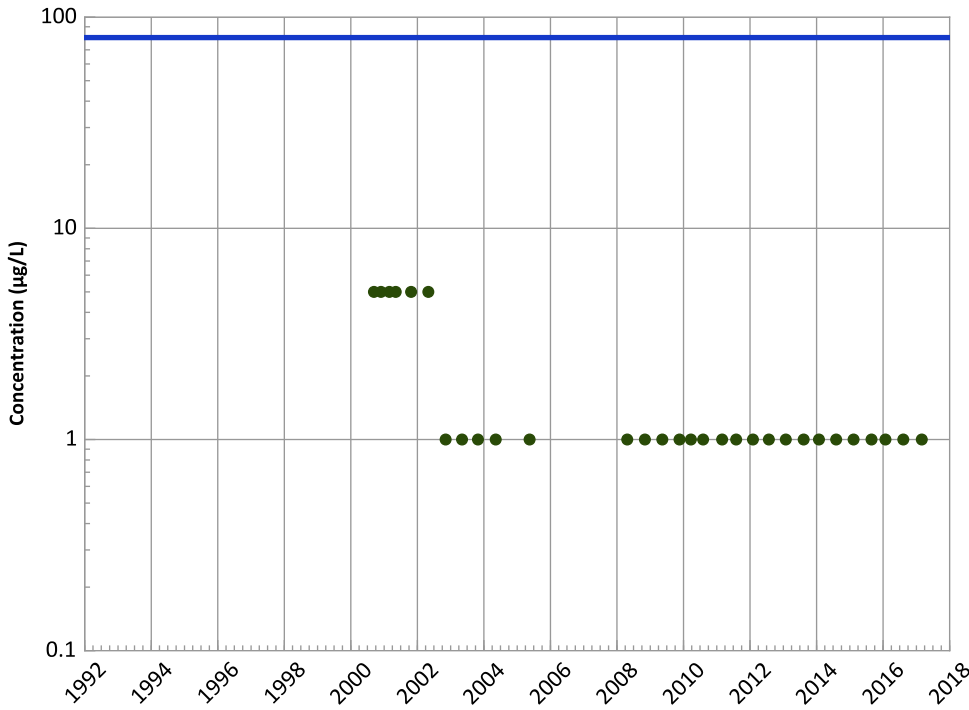
Data ():

Decreasing

All Data

Decreasing

Chloroform Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

All Non-Detect

All Data

All Non-Detect

All Non-Detect

MAROS Linear Regression Method

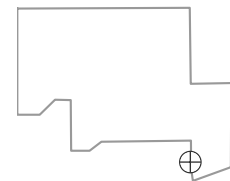
Data ():

All Non-Detect

All Data

All Non-Detect

Well Location

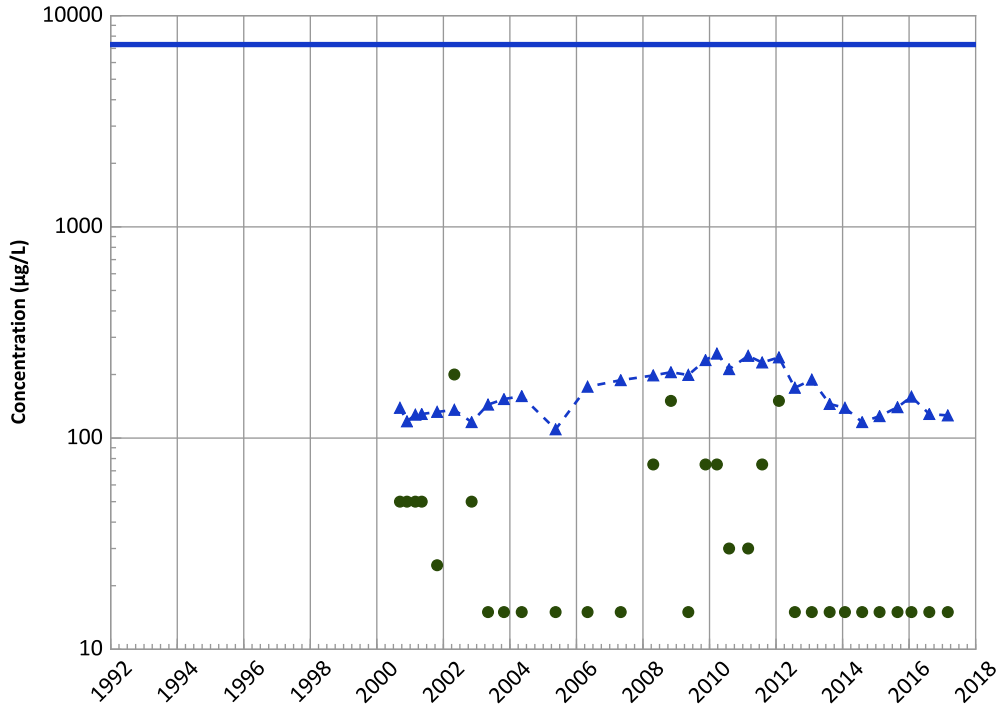


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/11/2000 to 03/01/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1047A in Perched Aquifer
USDOE/NNSA Pantex Plant

Boron Trend



Concentration Trend

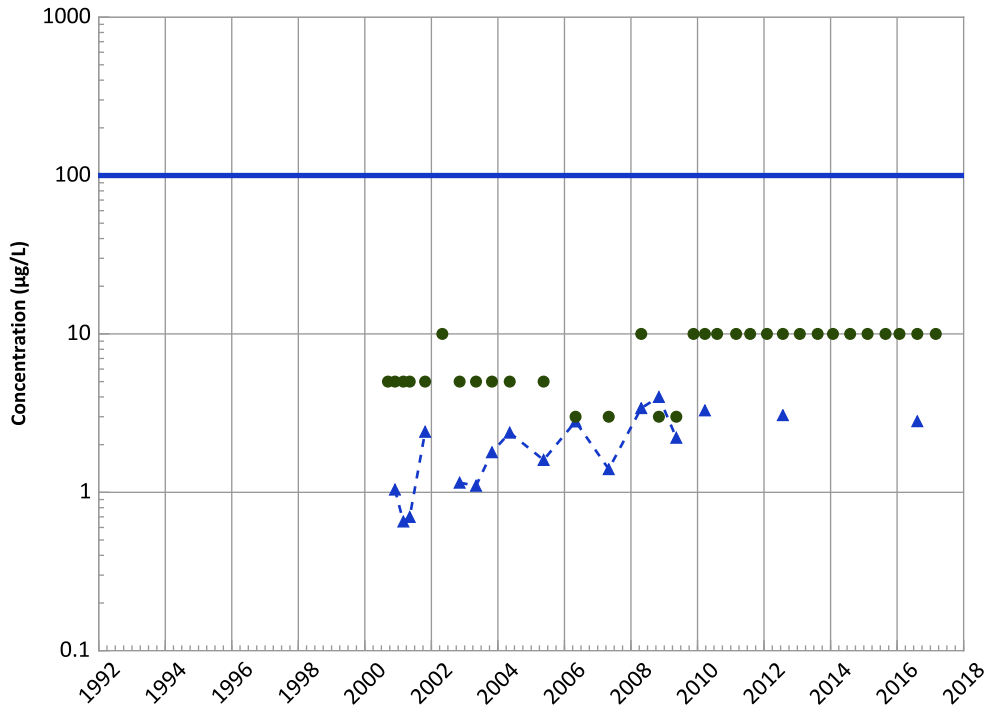
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
No Trend

MAROS Linear Regression Method

Data ():
Decreasing
All Data
No Trend

Chromium, Total Trend



Concentration Trend

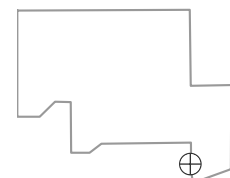
MAROS Mann-Kendall Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Increasing

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Increasing

Well Location

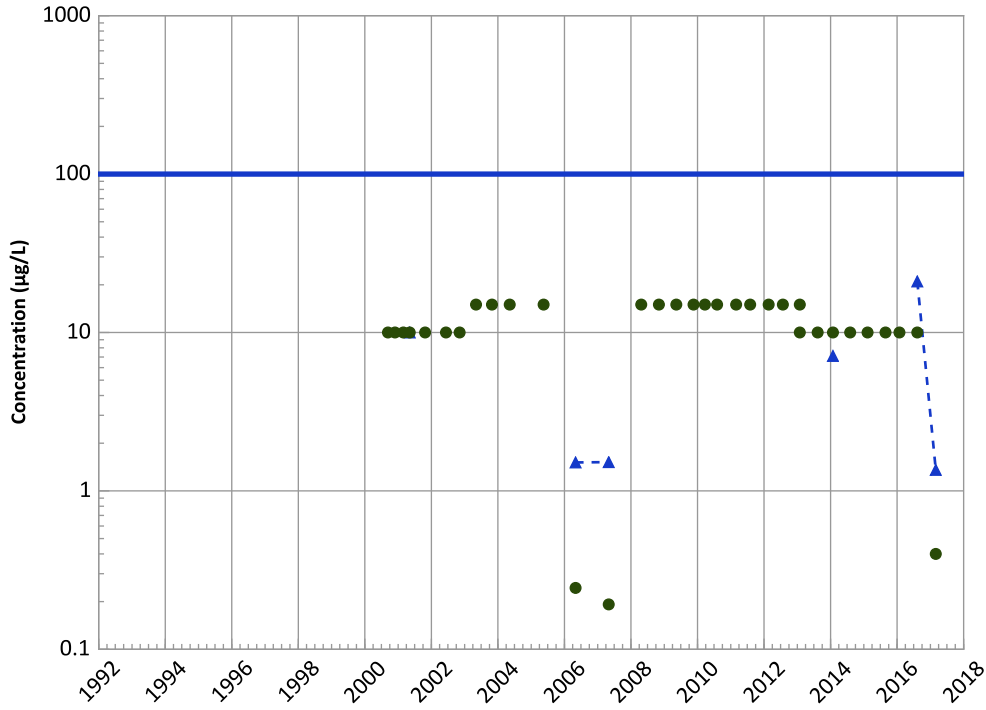


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/11/2000 to 03/01/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1047A in Perched Aquifer
USDOE/NNSA Pantex Plant

Chromium, Hexavalent Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Detections in Dataset)

All Data

No Trend

MAROS Linear Regression Method

Data ():

N/A (<4 Detections in Dataset)

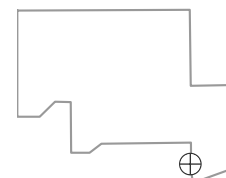
All Data

No Trend

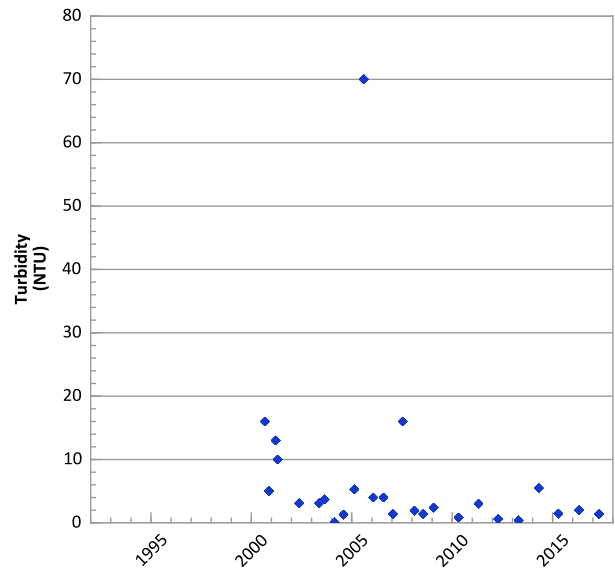
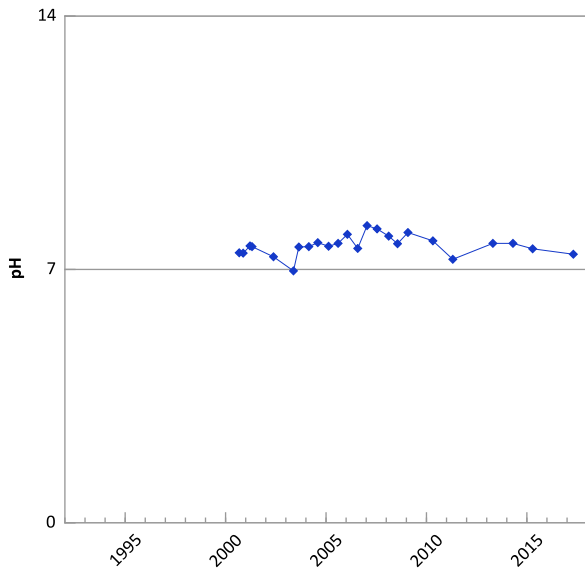
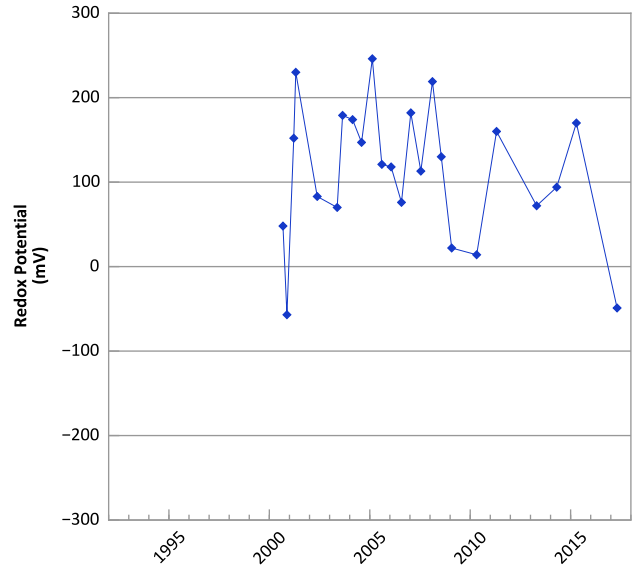
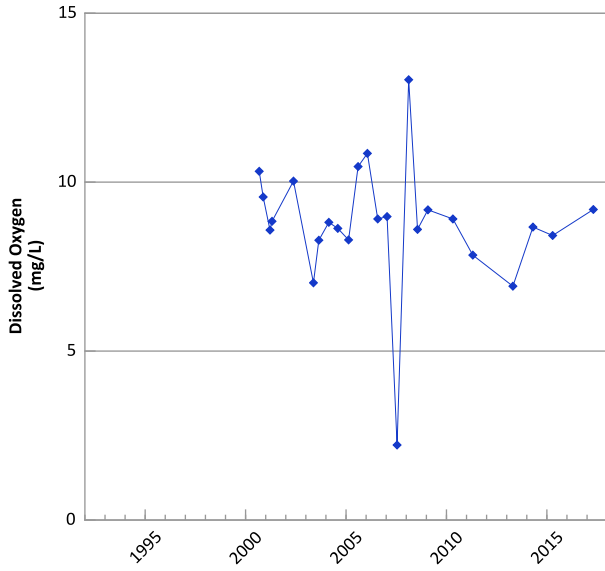
Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/11/2000 to 03/01/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

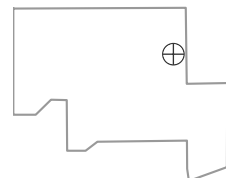


**PTX06-1048A in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



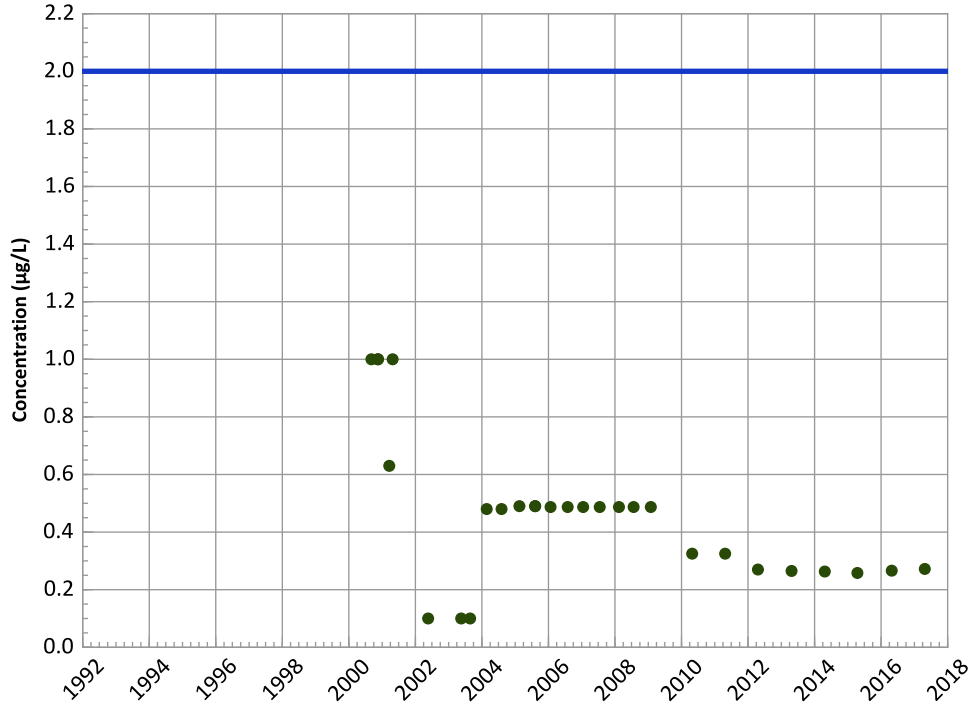
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 09/05/2000 to 04/25/2017
 Analysis Date: 03/21/2018

Well Location



PTX06-1048A in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

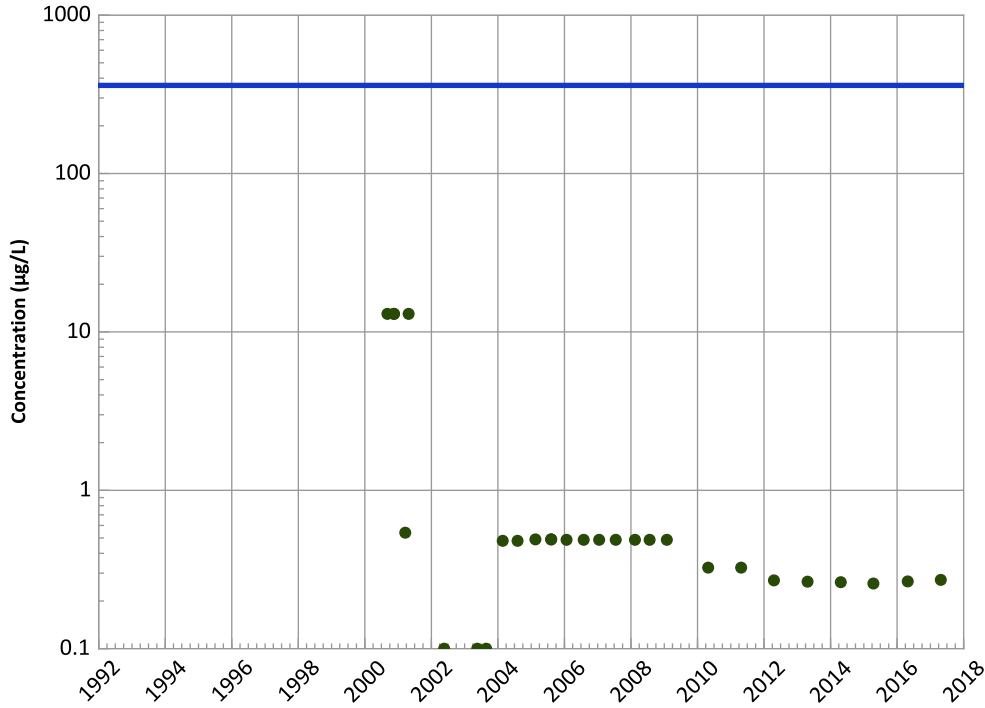
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

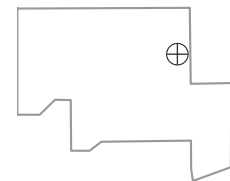
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

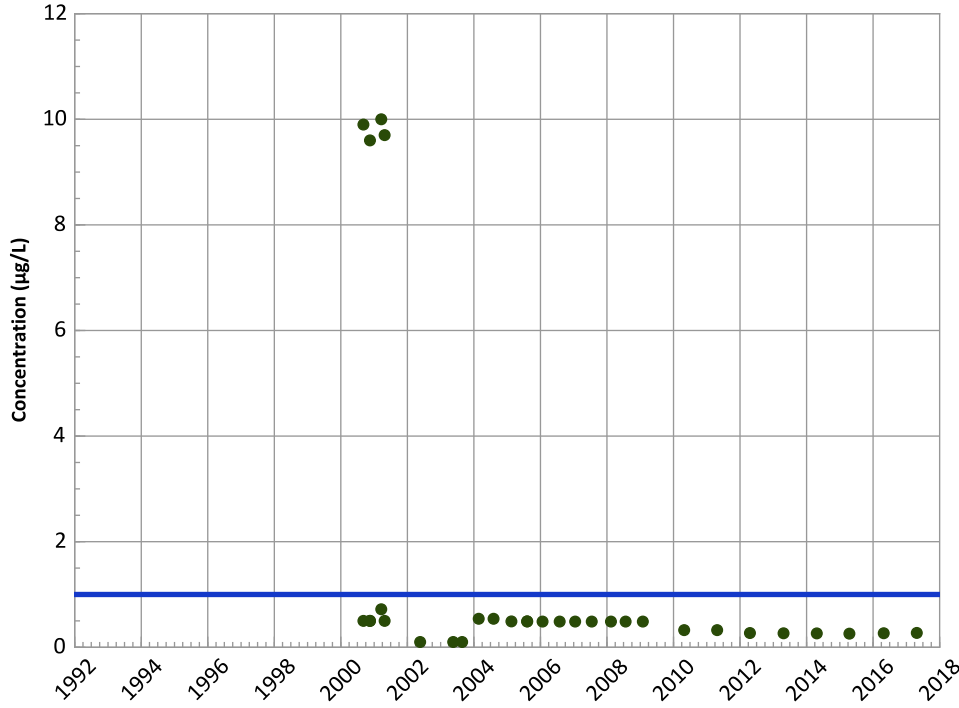


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/05/2000 to 04/25/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1048A in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

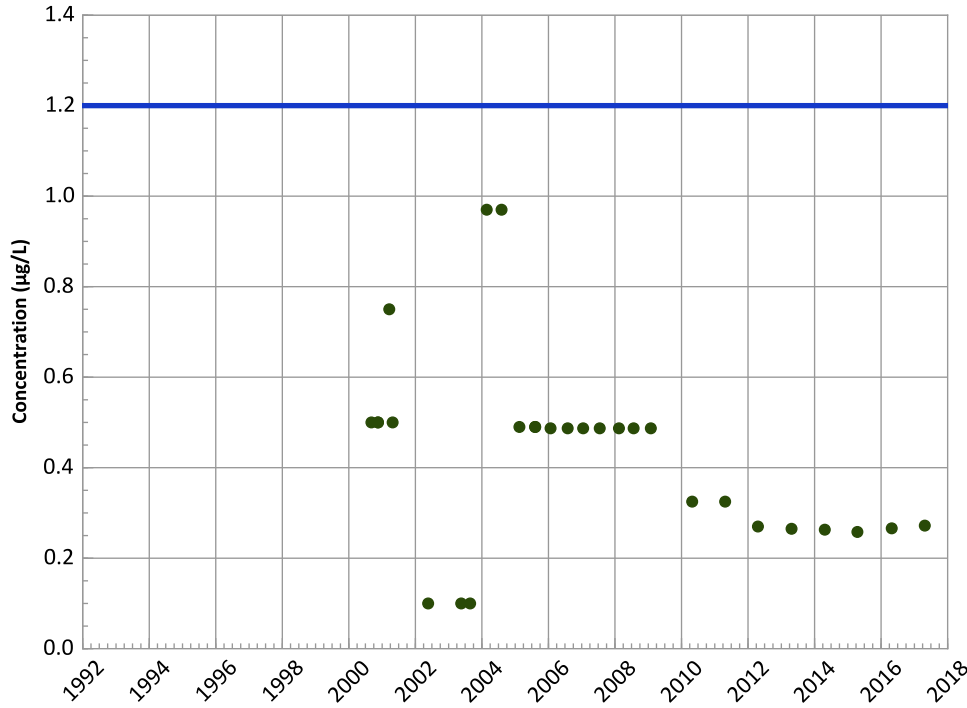
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

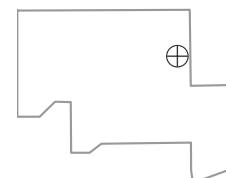
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

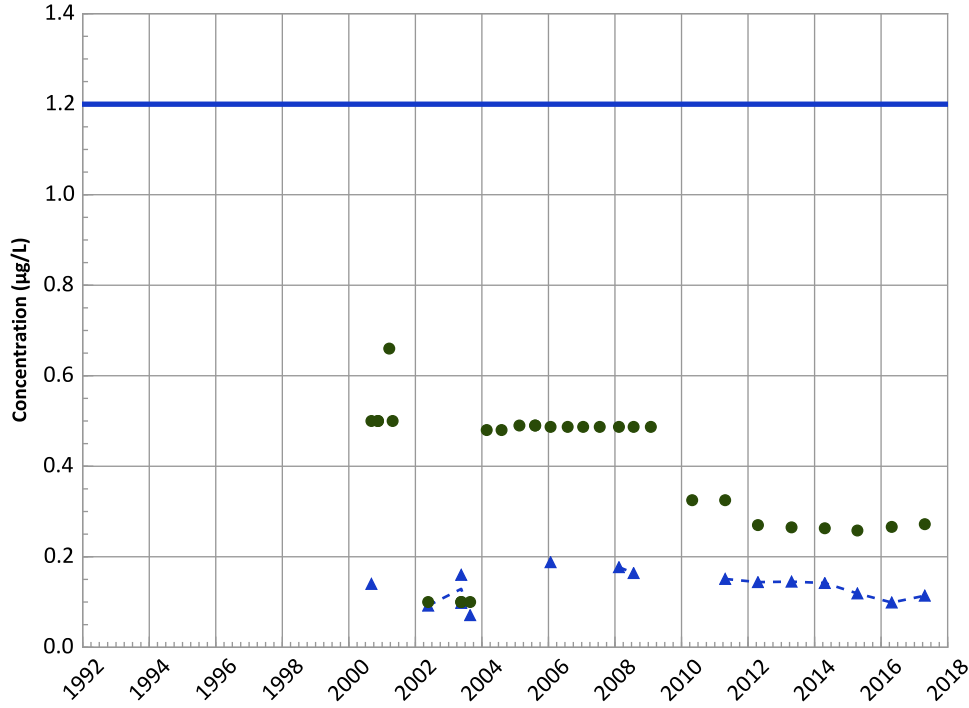


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/05/2000 to 04/25/2017
Analysis Date: 03/21/2018

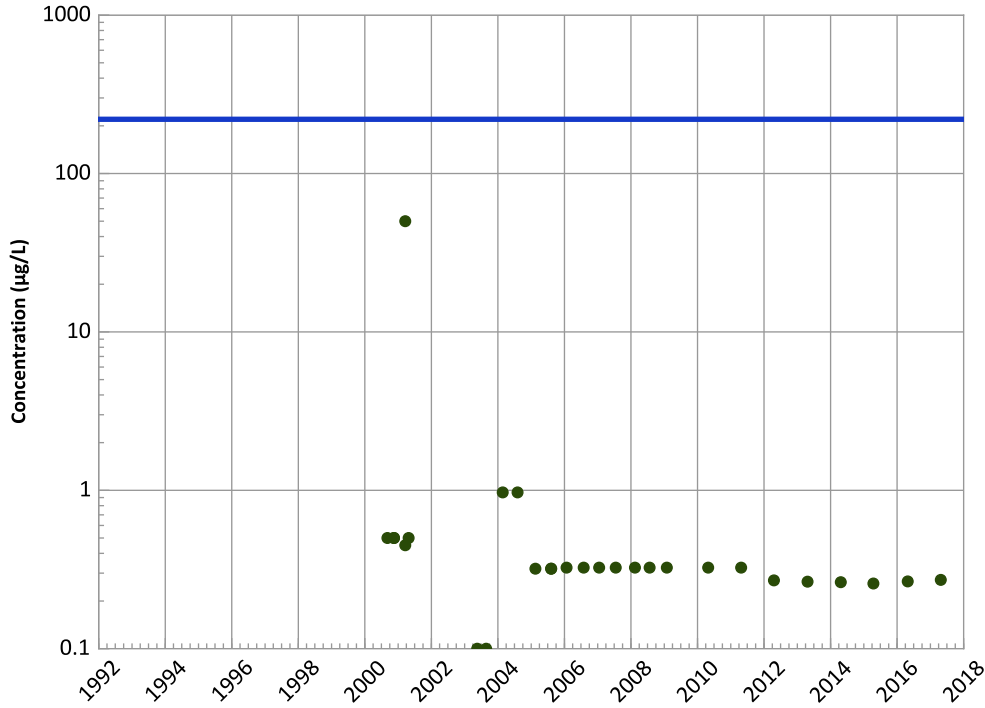
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1048A in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



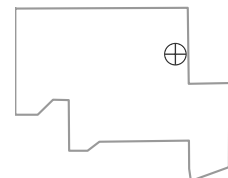
1,3,5-Trinitrobenzene Trend



Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 09/05/2000 to 04/25/2017
 Analysis Date: 03/21/2018

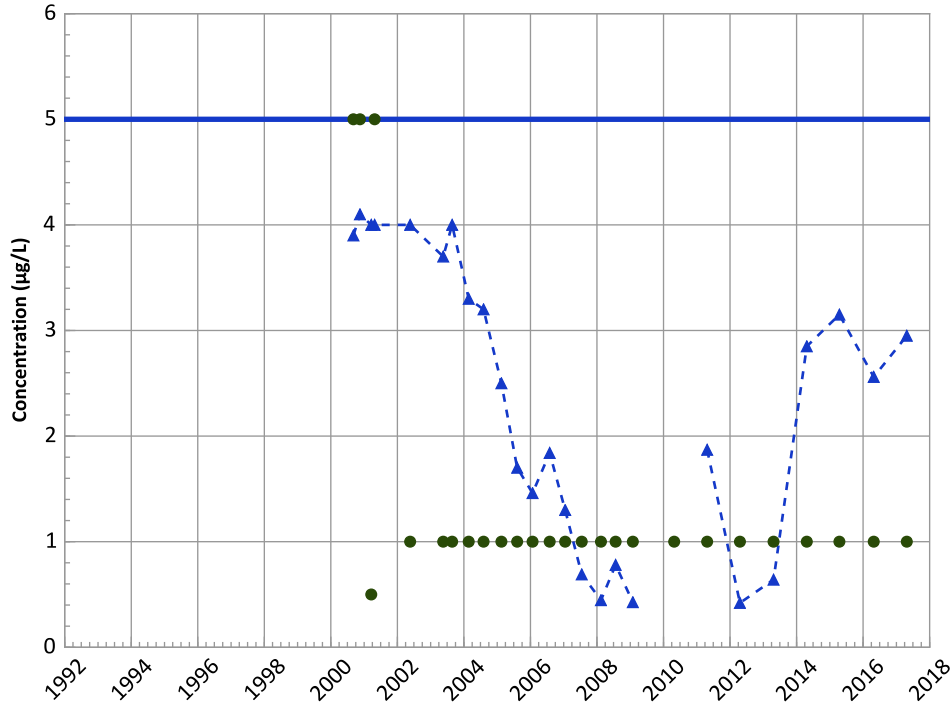
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1048A in Perched Aquifer
USDOE/NNSA Pantex Plant

Trichloroethene Trend



Concentration Trend

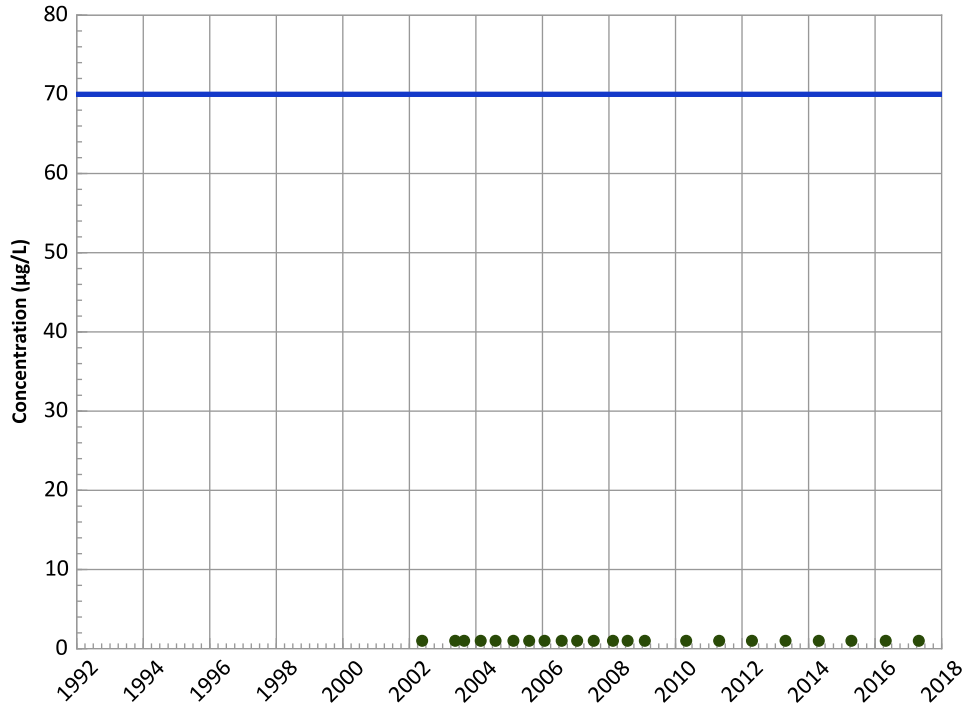
MAROS Mann-Kendall Method

Data ():
No Trend
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Decreasing

cis-1,2-Dichloroethene Trend



Concentration Trend

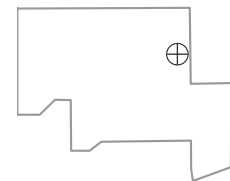
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

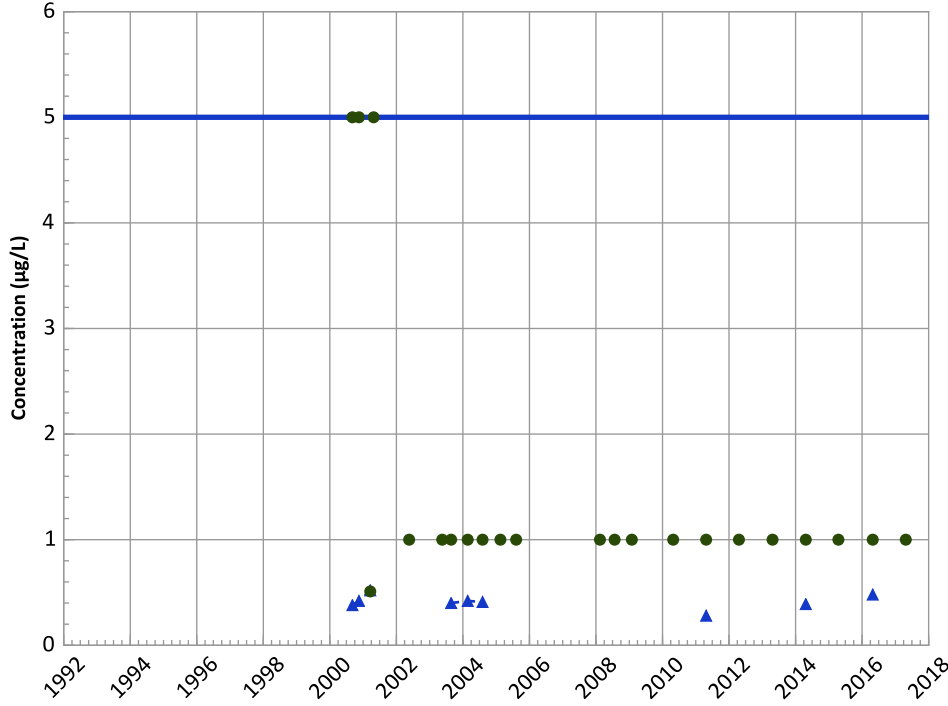


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/05/2000 to 04/25/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1048A in Perched Aquifer
USDOE/NNSA Pantex Plant

1,2-Dichloroethane Trend

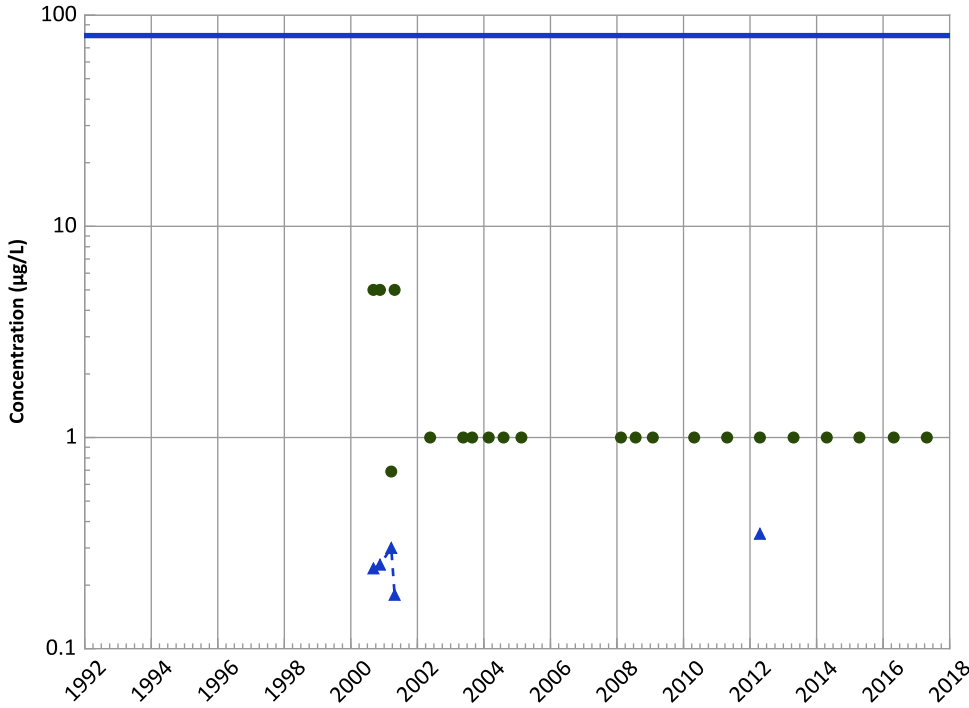


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

MAROS Linear Regression Method
Data ():
N/A (<4 Detections in Dataset)
All Data
Stable

Chloroform Trend

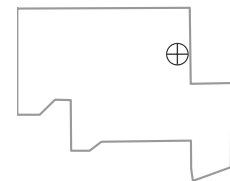


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Detections in Dataset)
All Data
Increasing

MAROS Linear Regression Method
Data ():
N/A (<4 Detections in Dataset)
All Data
No Trend

Well Location

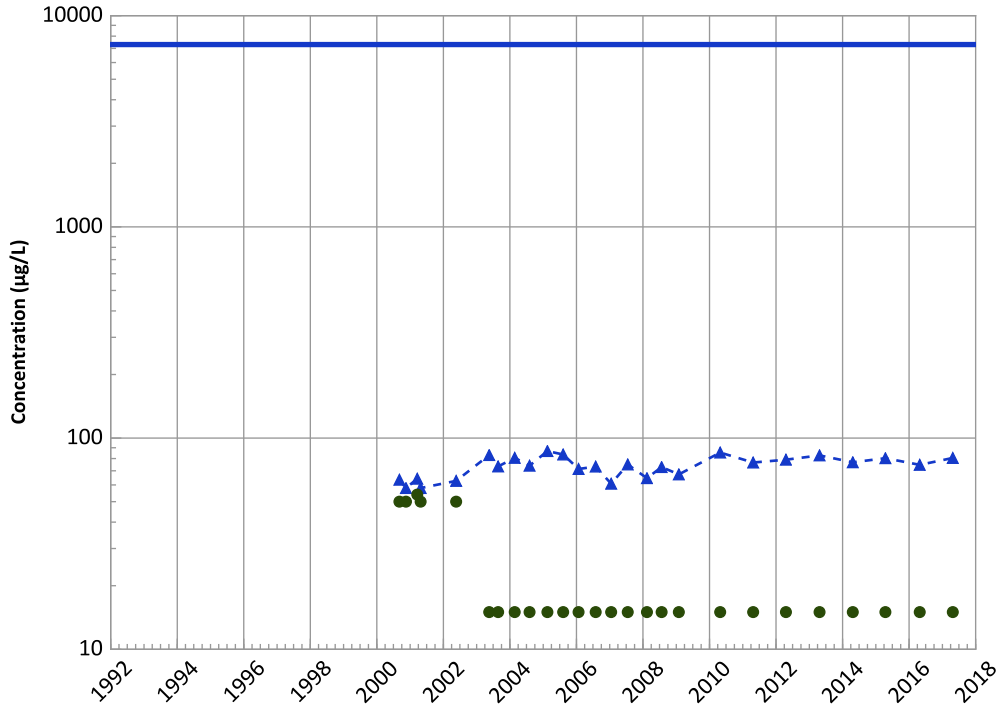


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/05/2000 to 04/25/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1048A in Perched Aquifer
USDOE/NNSA Pantex Plant

Boron Trend

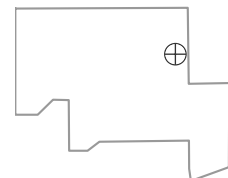


Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 Decreasing
 All Data
 Increasing
MAROS Linear Regression Method
 Data ():
 Stable
 All Data
 Increasing

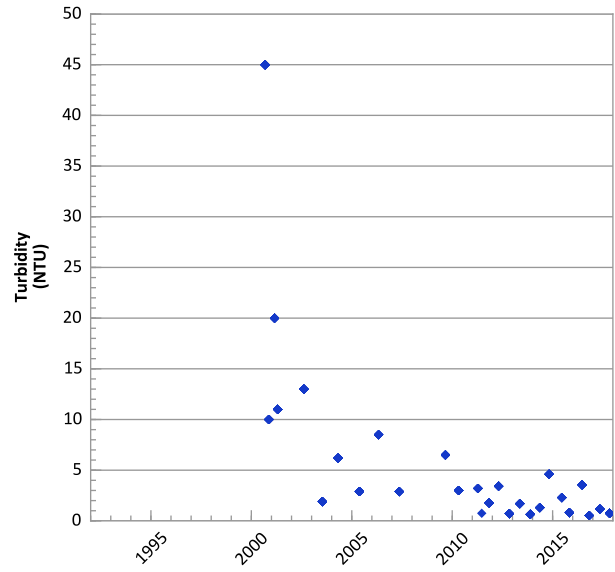
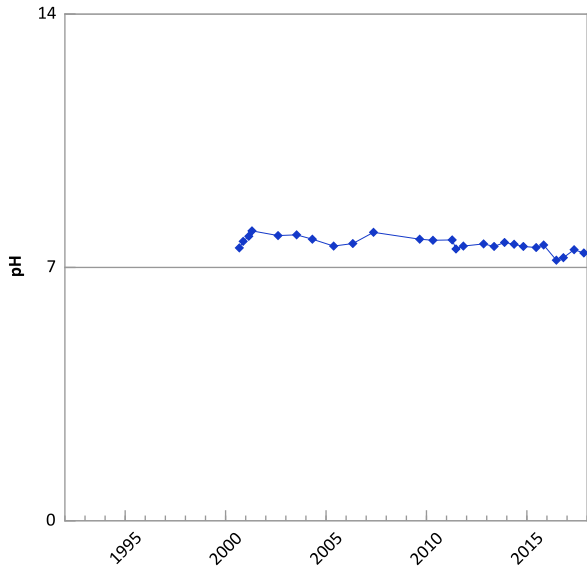
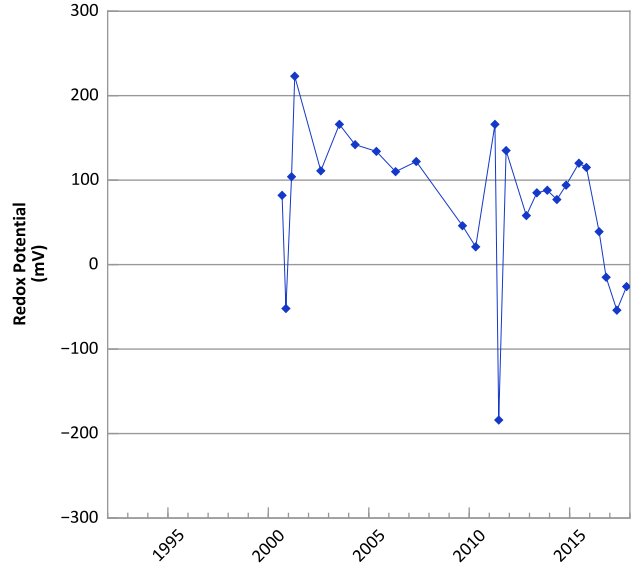
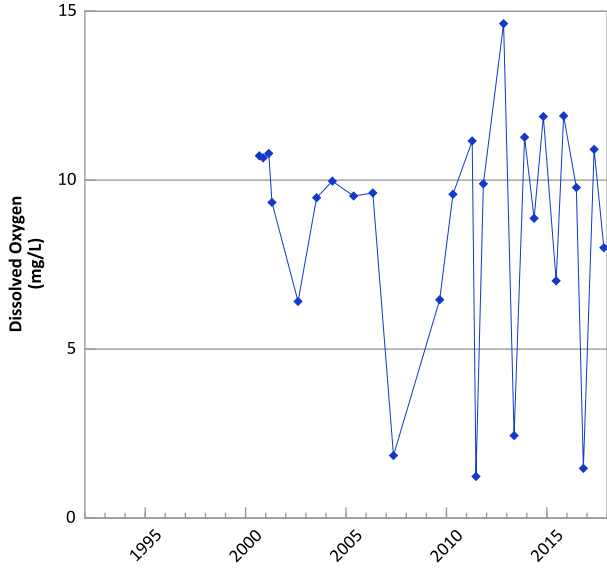
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 09/05/2000 to 04/25/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

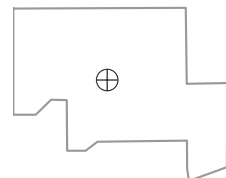


**PTX06-1049 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



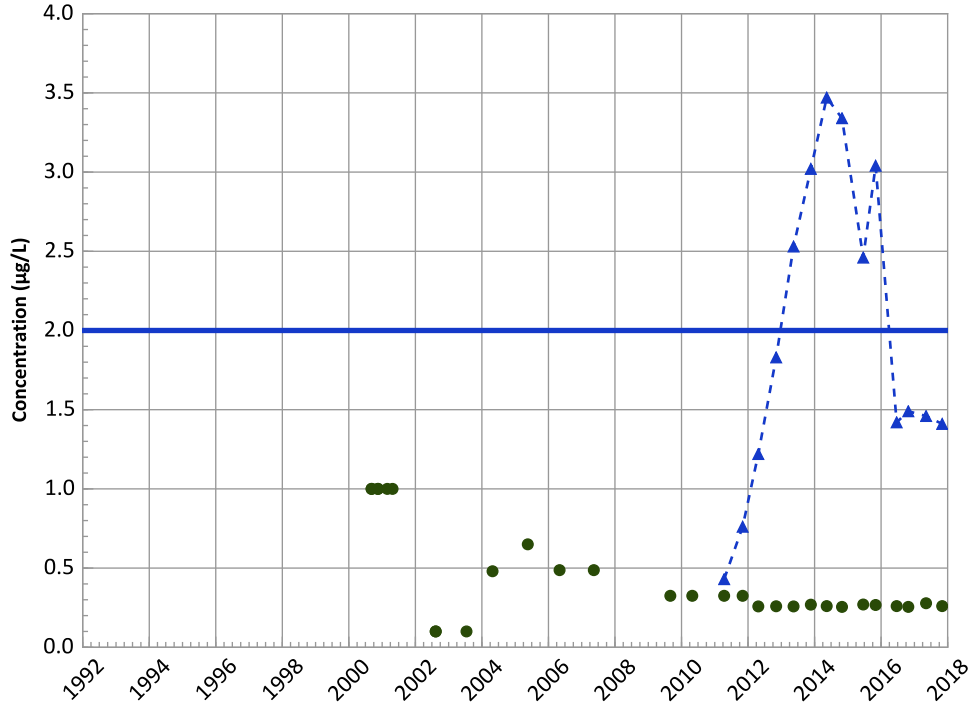
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 09/07/2000 to 11/02/2017
 Analysis Date: 03/21/2018

Well Location



PTX06-1049 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

Increasing

All Data

Increasing

MAROS Linear Regression Method

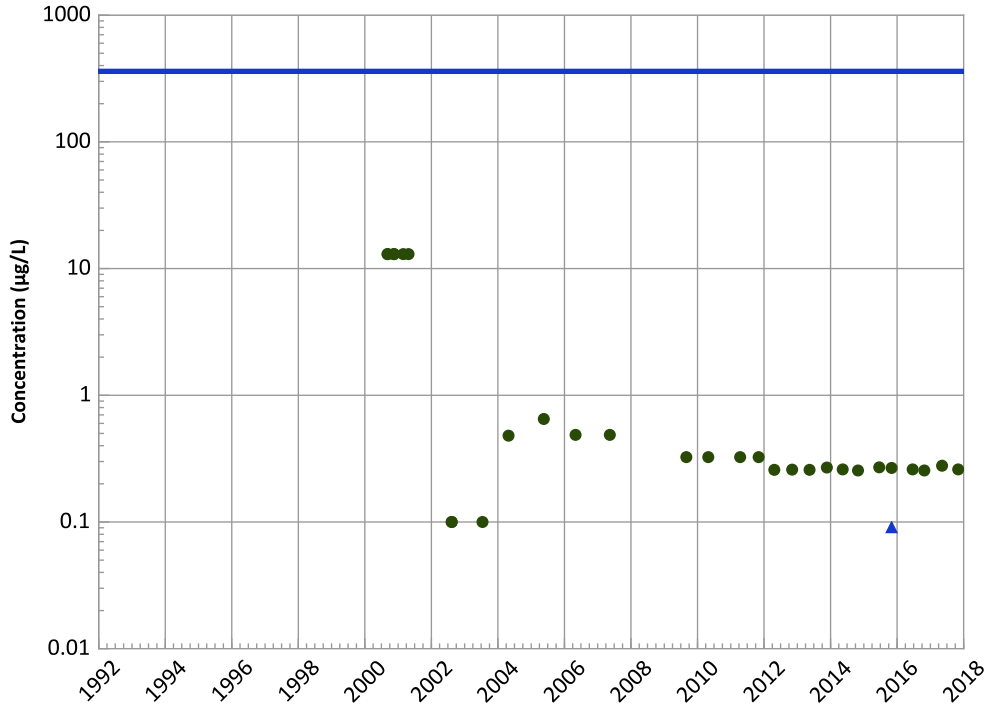
Data ():

Increasing

All Data

No Trend

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

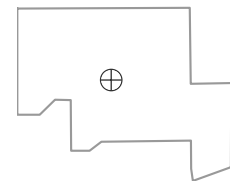
Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

Well Location

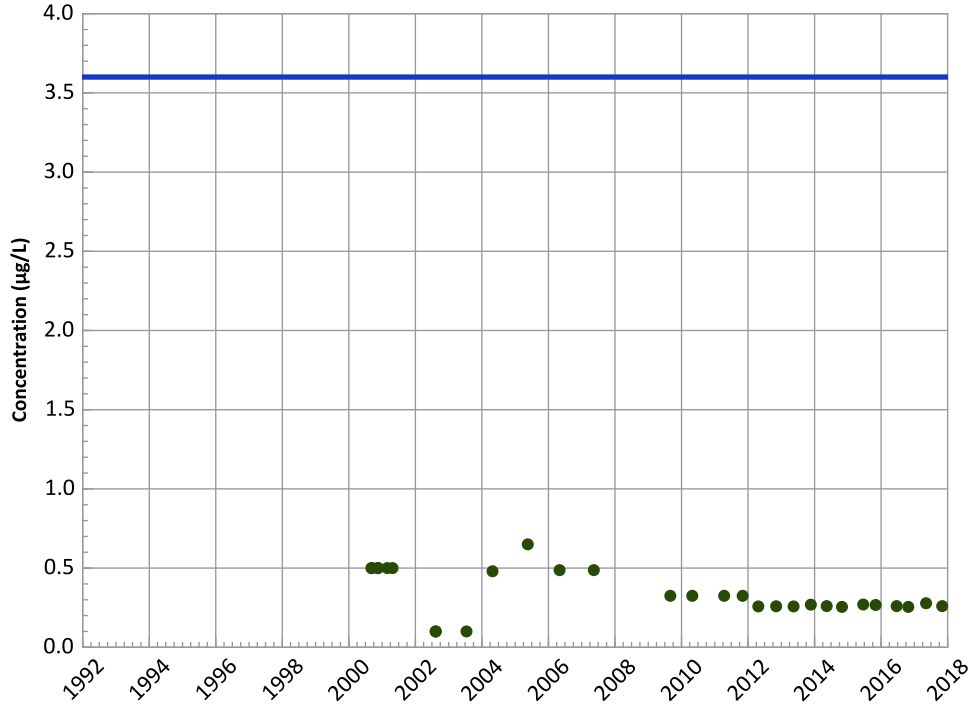


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/07/2000 to 11/02/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1049 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

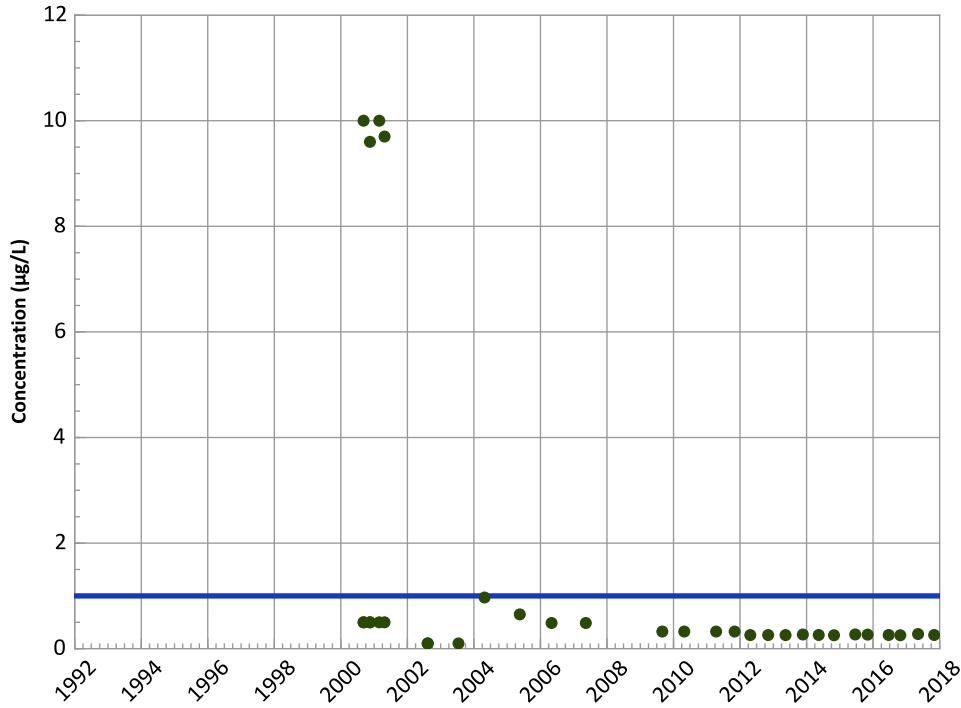
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

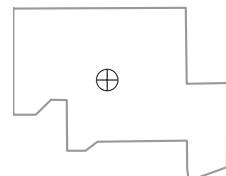
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

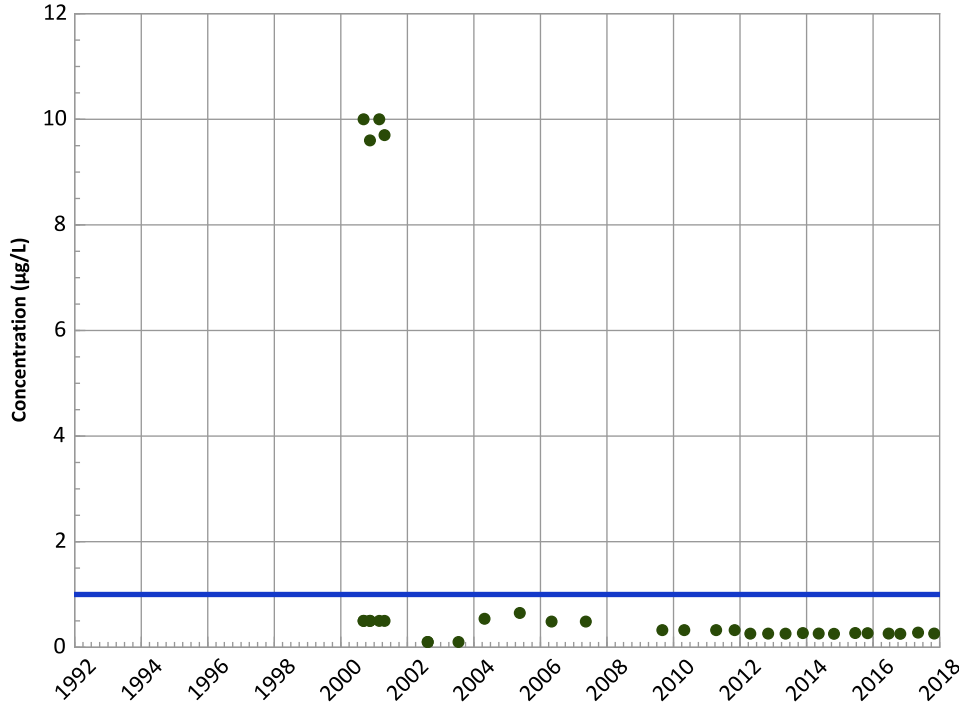


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/07/2000 to 11/02/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1049 in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

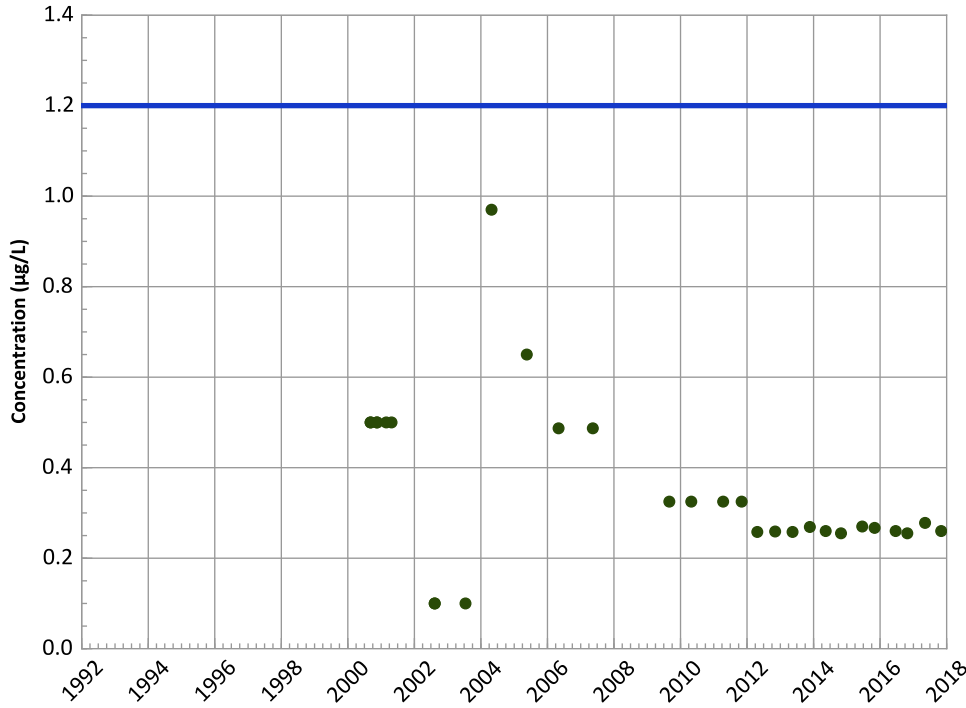
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

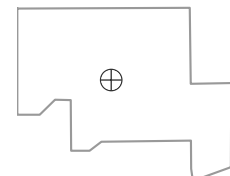
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

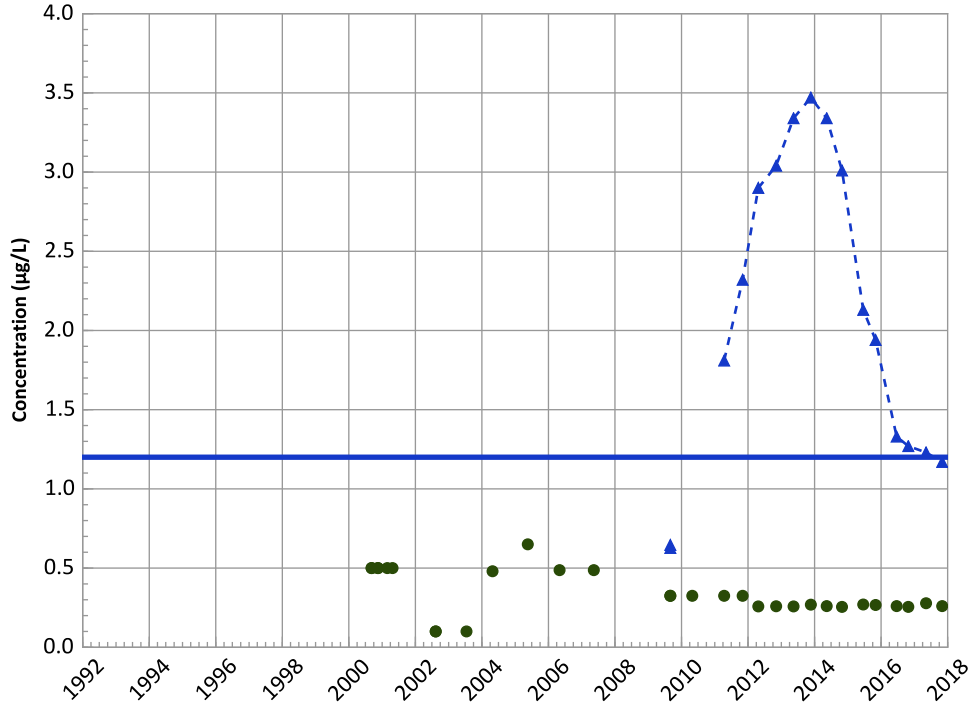


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/07/2000 to 11/02/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1049 in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

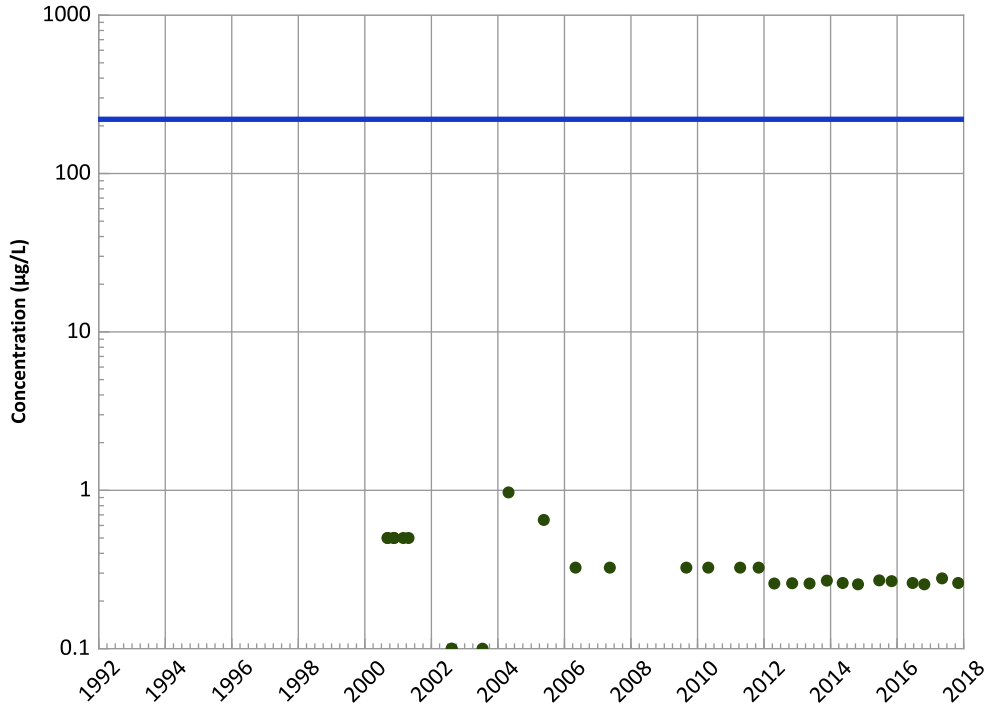
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Stable

1,3,5-Trinitrobenzene Trend



Concentration Trend

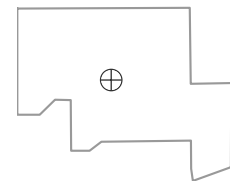
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

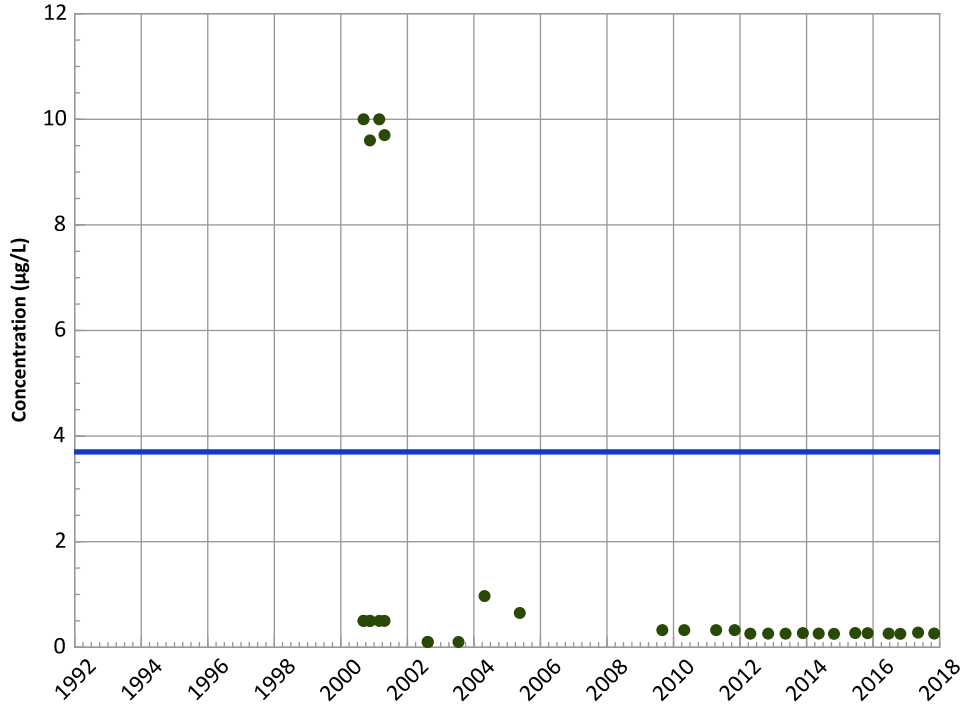


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/07/2000 to 11/02/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1049 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

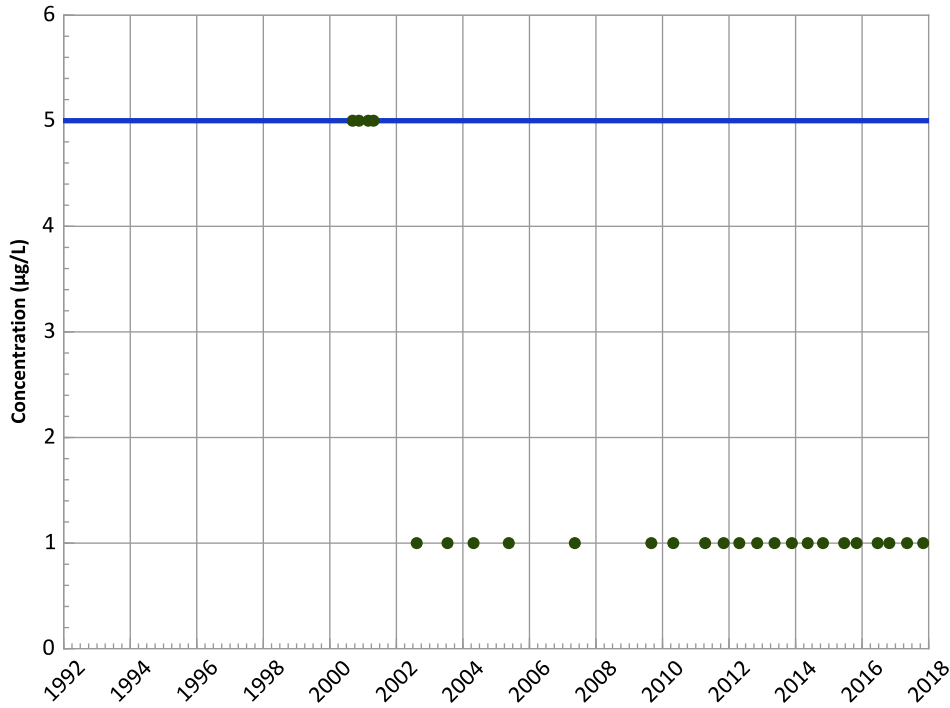
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Tetrachloroethylene (PCE) Trend



Concentration Trend

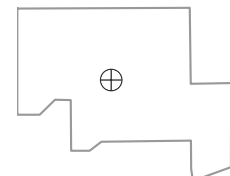
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

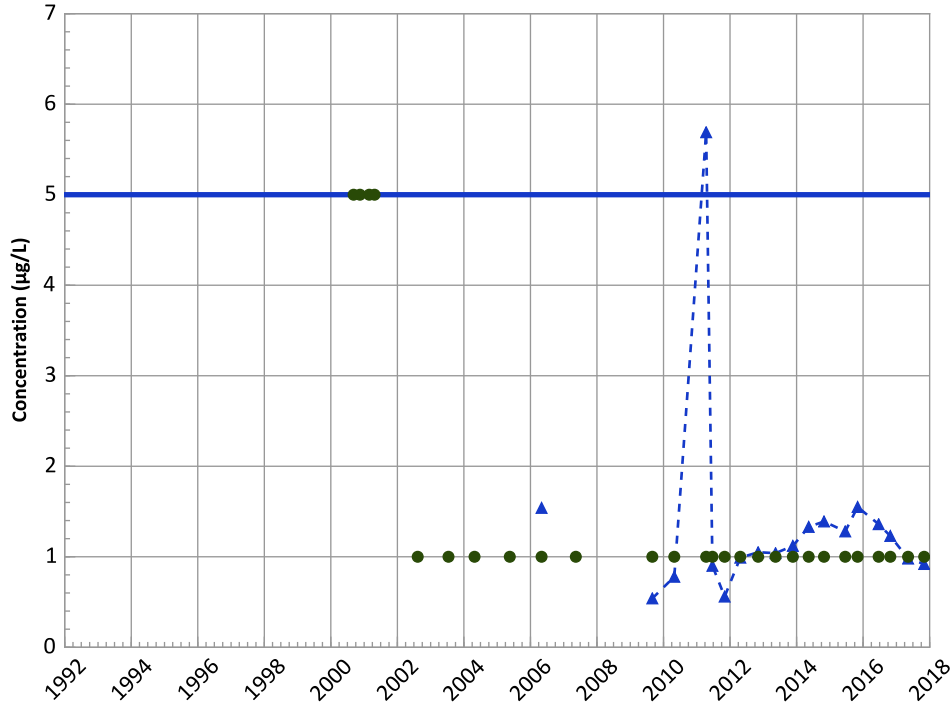


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/07/2000 to 11/02/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1049 in Perched Aquifer
USDOE/NNSA Pantex Plant

Trichloroethene Trend



Concentration Trend

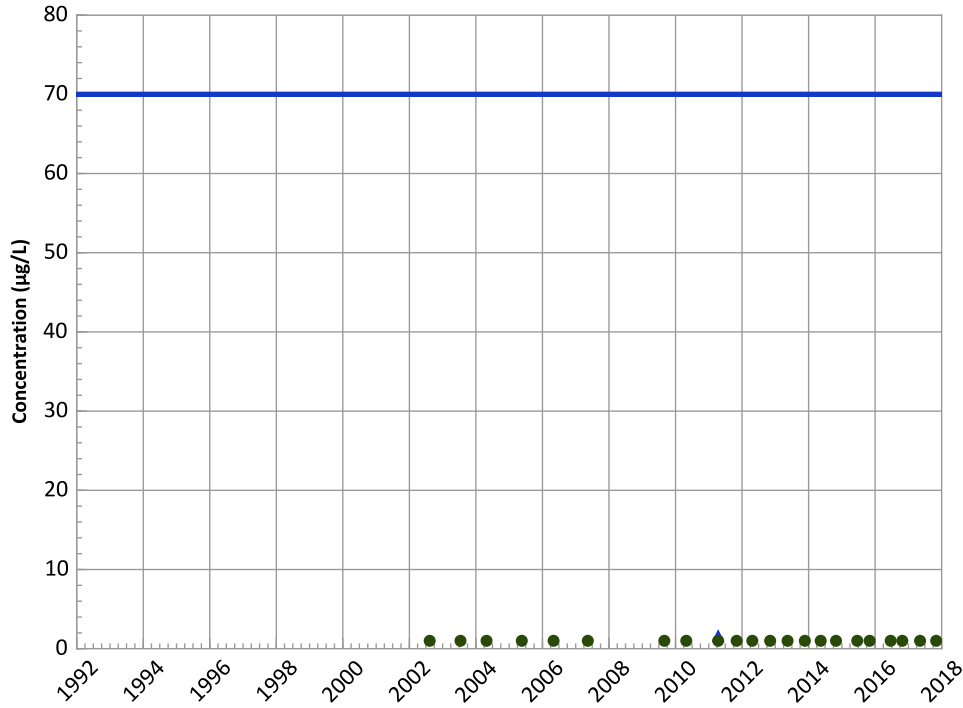
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
No Trend

MAROS Linear Regression Method

Data ():
Increasing
All Data
No Trend

cis-1,2-Dichloroethene Trend



Concentration Trend

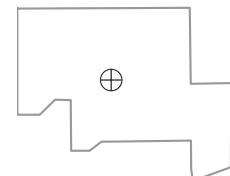
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

Well Location

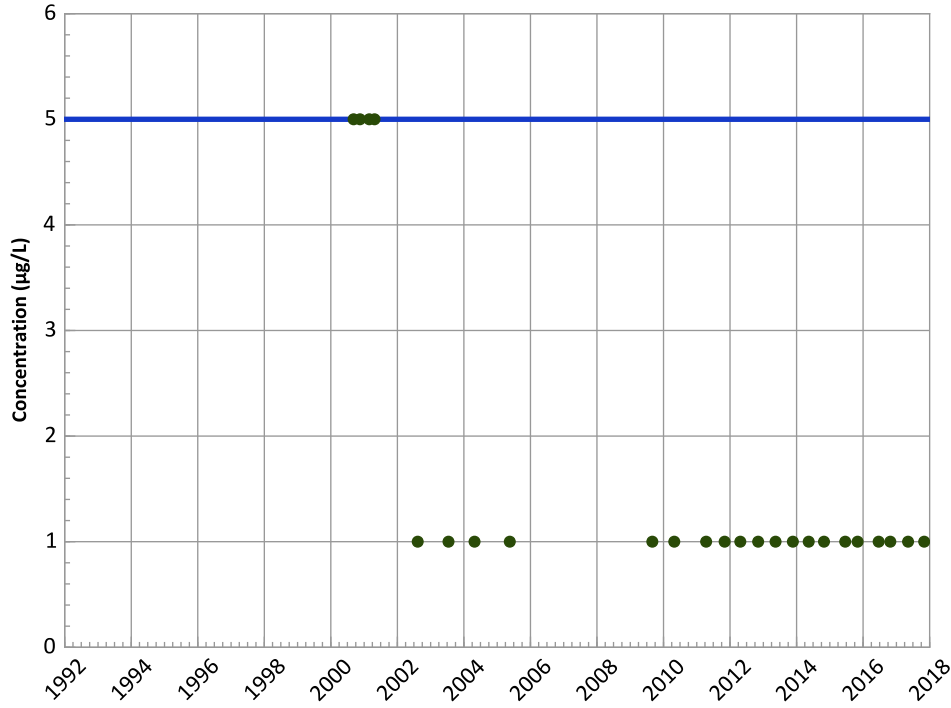


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/07/2000 to 11/02/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1049 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,2-Dichloroethane Trend



Concentration Trend

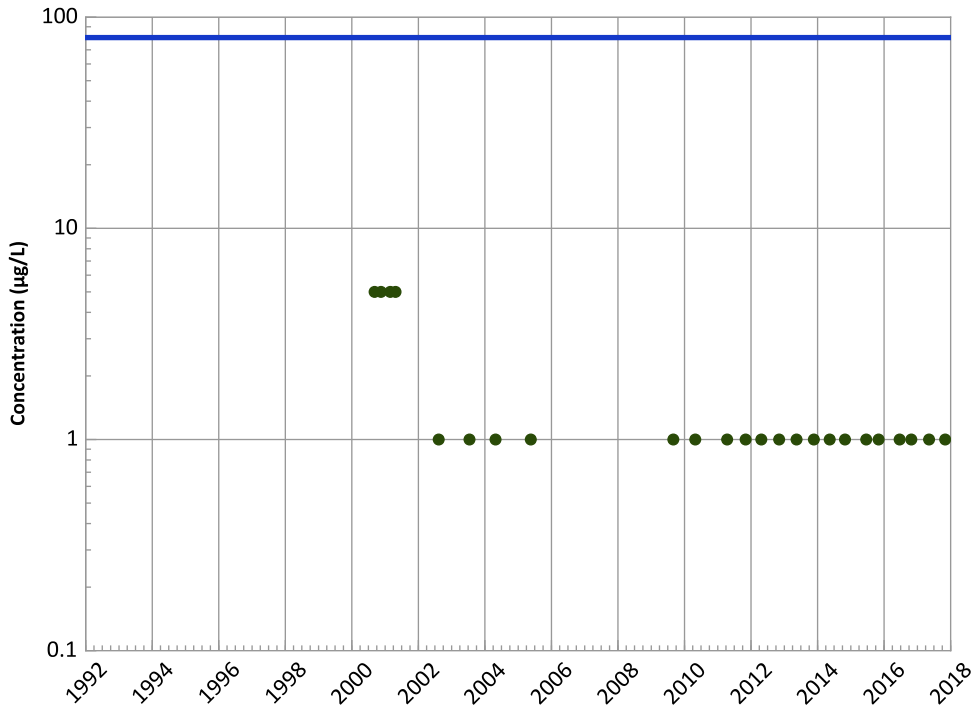
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Chloroform Trend



Concentration Trend

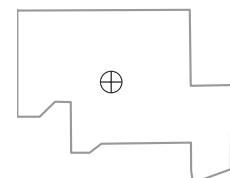
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

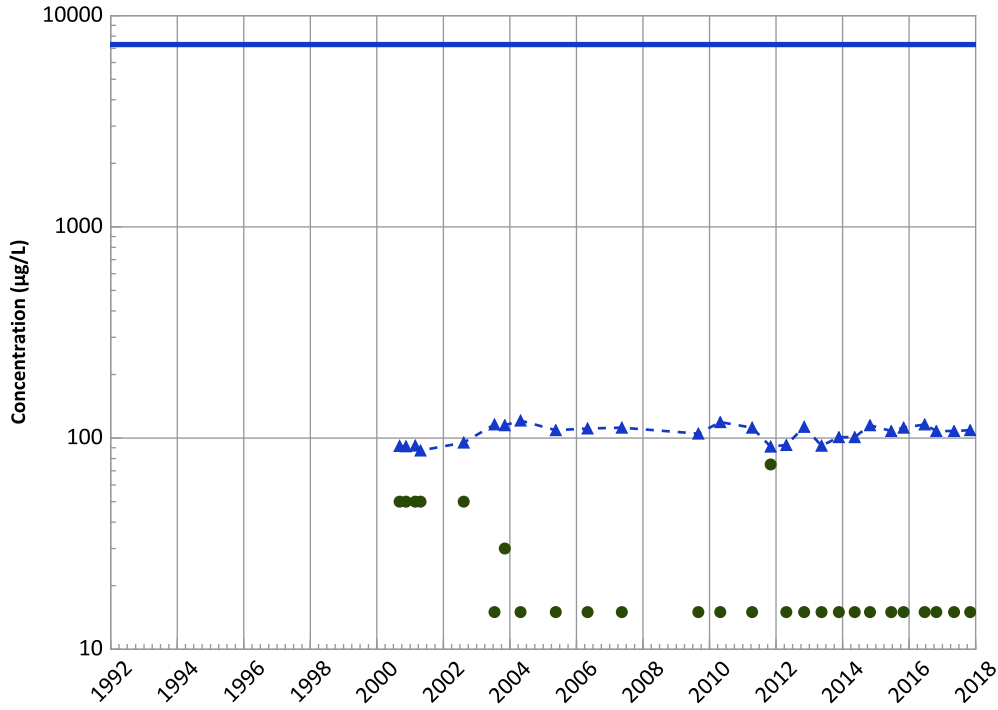
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/07/2000 to 11/02/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1049 in Perched Aquifer
 USDOE/NNSA Pantex Plant
 Boron Trend

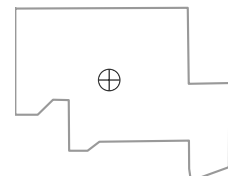


Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 Probably Increasing
 All Data
 No Trend
MAROS Linear Regression Method
 Data ():
 Increasing
 All Data
 Probably Increasing

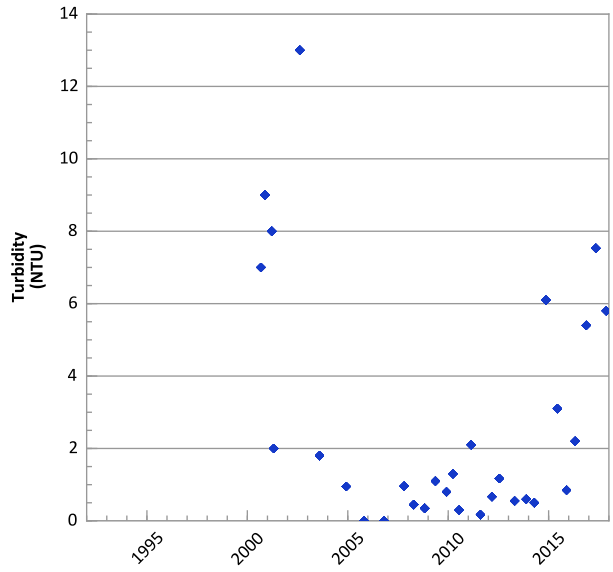
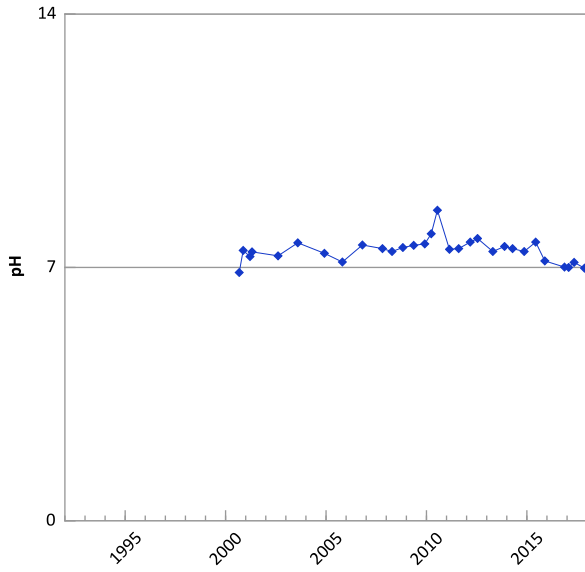
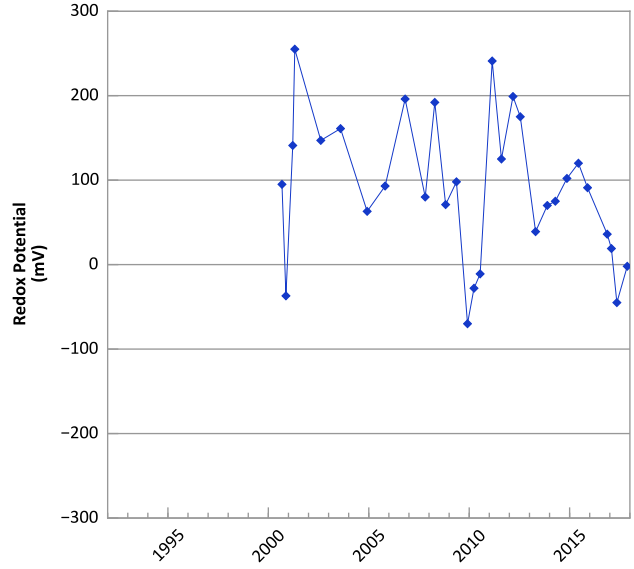
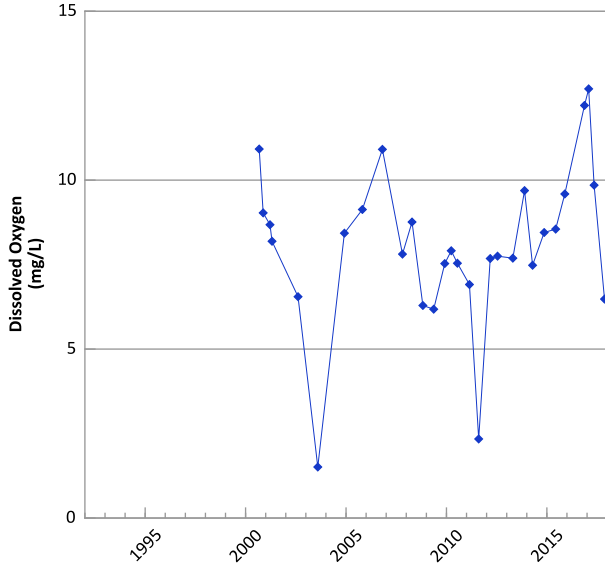
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 09/07/2000 to 11/02/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

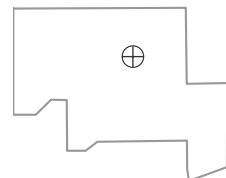


**PTX06-1050 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



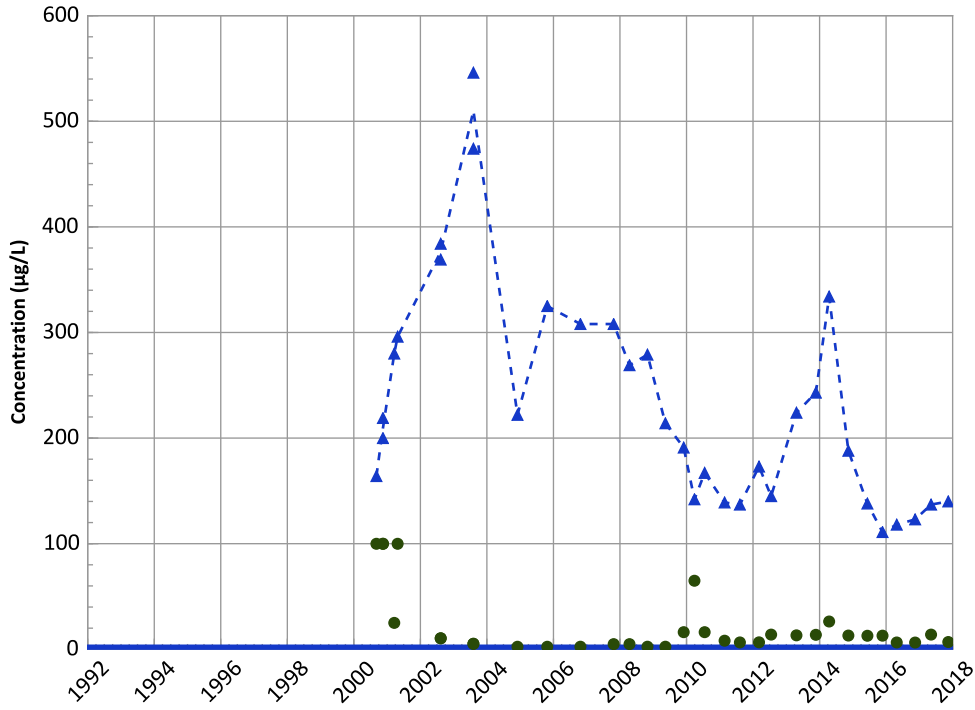
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 09/05/2000 to 11/14/2017
 Analysis Date: 03/21/2018

Well Location



PTX06-1050 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

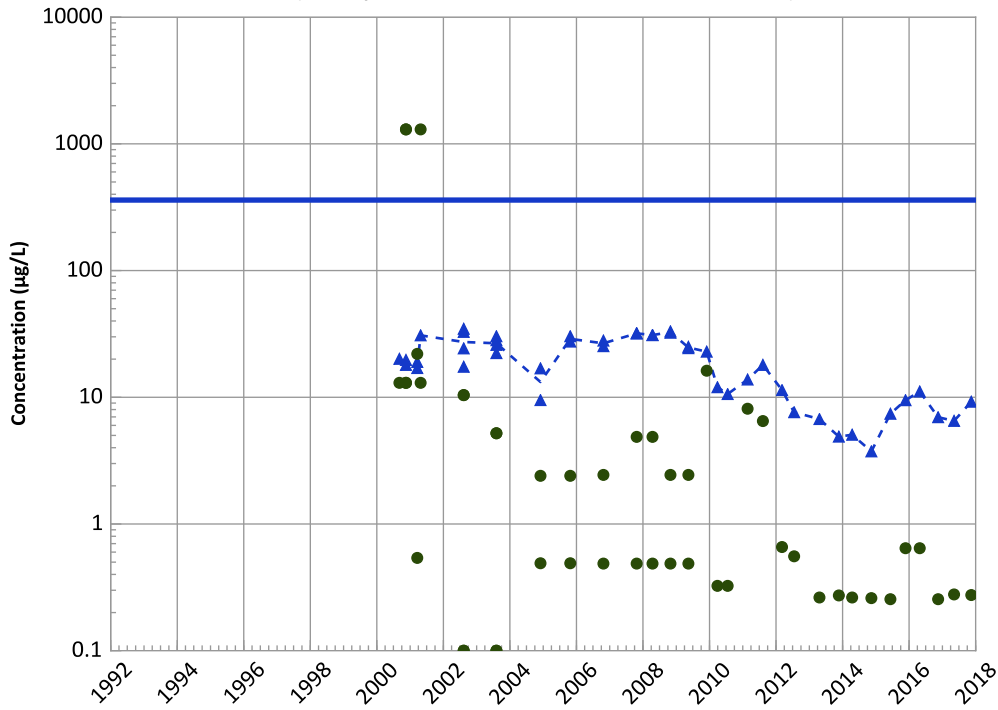
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Probably Decreasing
All Data
Decreasing

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

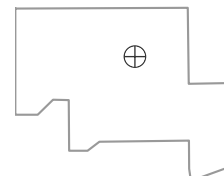
MAROS Linear Regression Method

Data ():
No Trend
All Data
Decreasing

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/05/2000 to 11/14/2017
Analysis Date: 03/21/2018

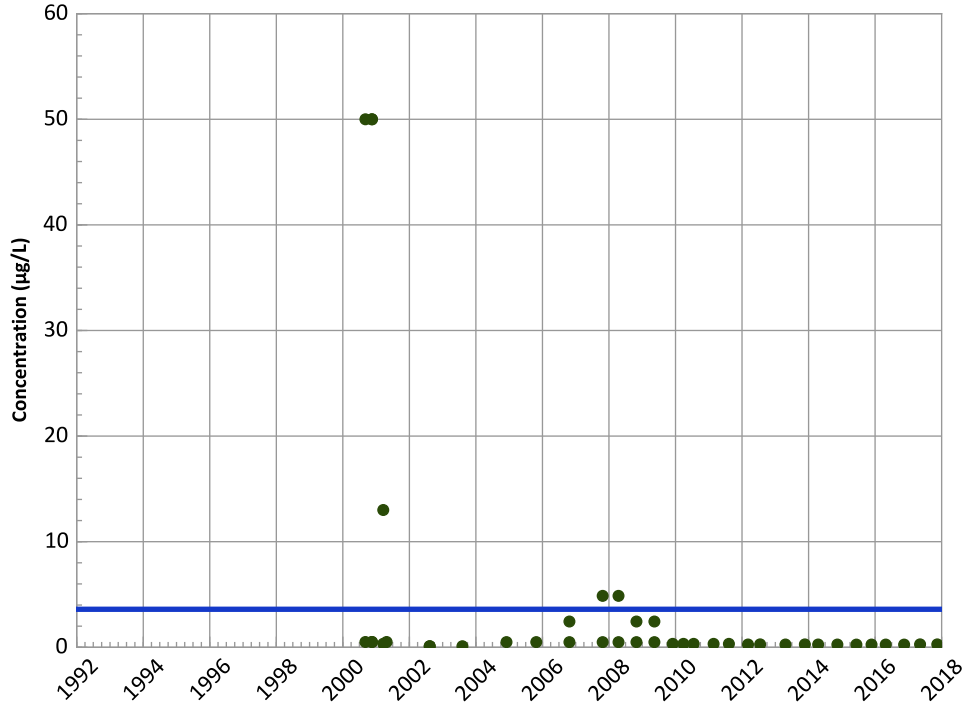
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1050 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

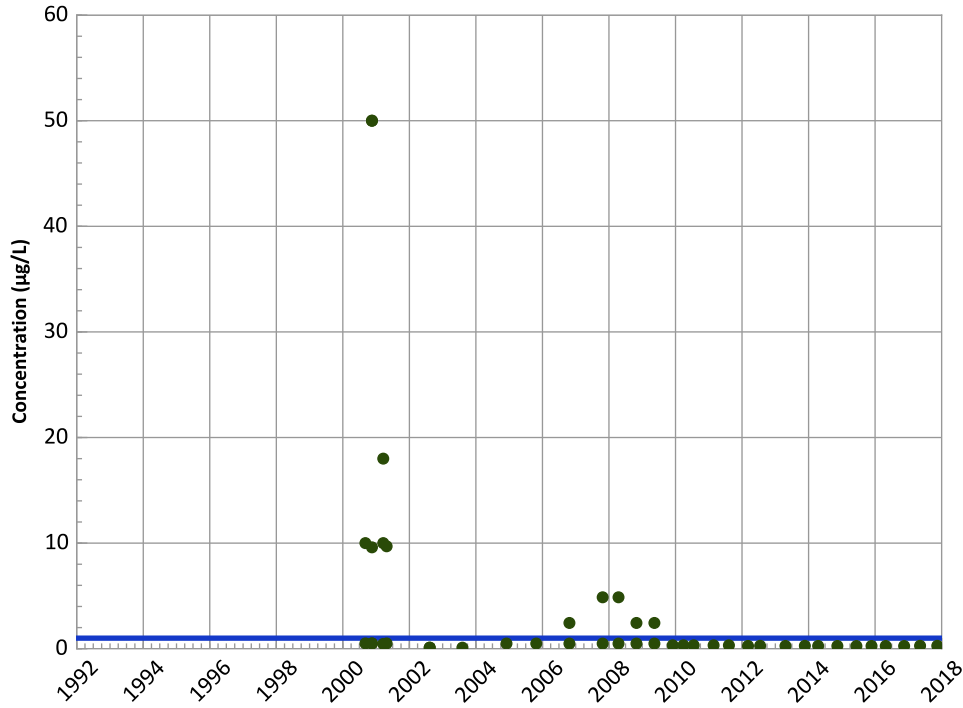
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

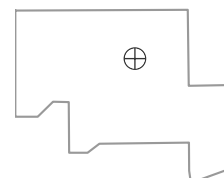
MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/05/2000 to 11/14/2017
Analysis Date: 03/21/2018

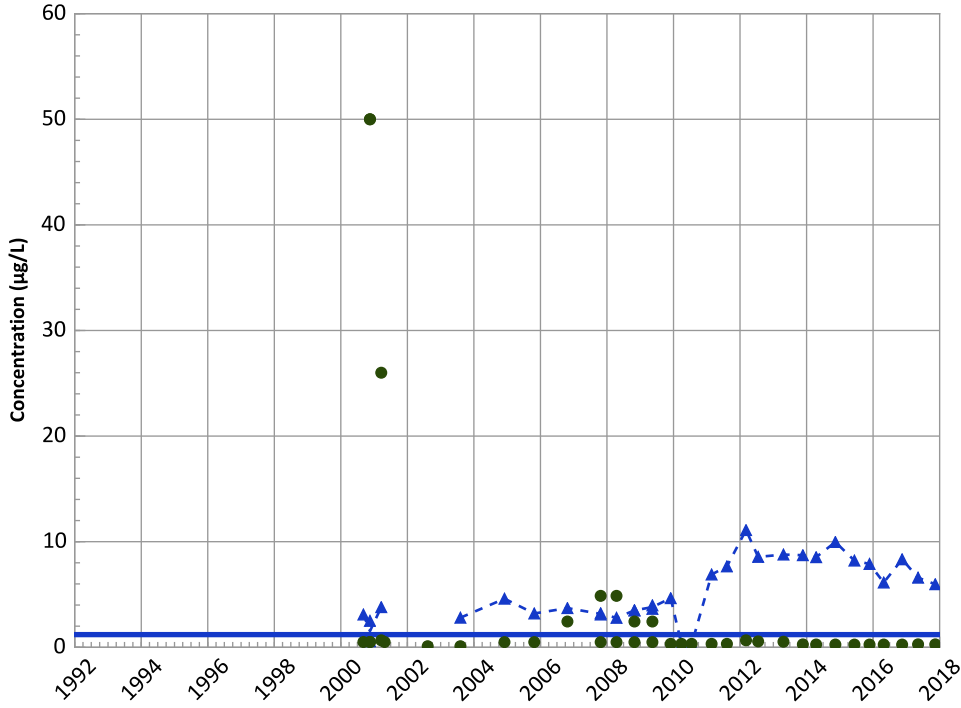
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1050 in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

Decreasing

All Data

Increasing

MAROS Linear Regression Method

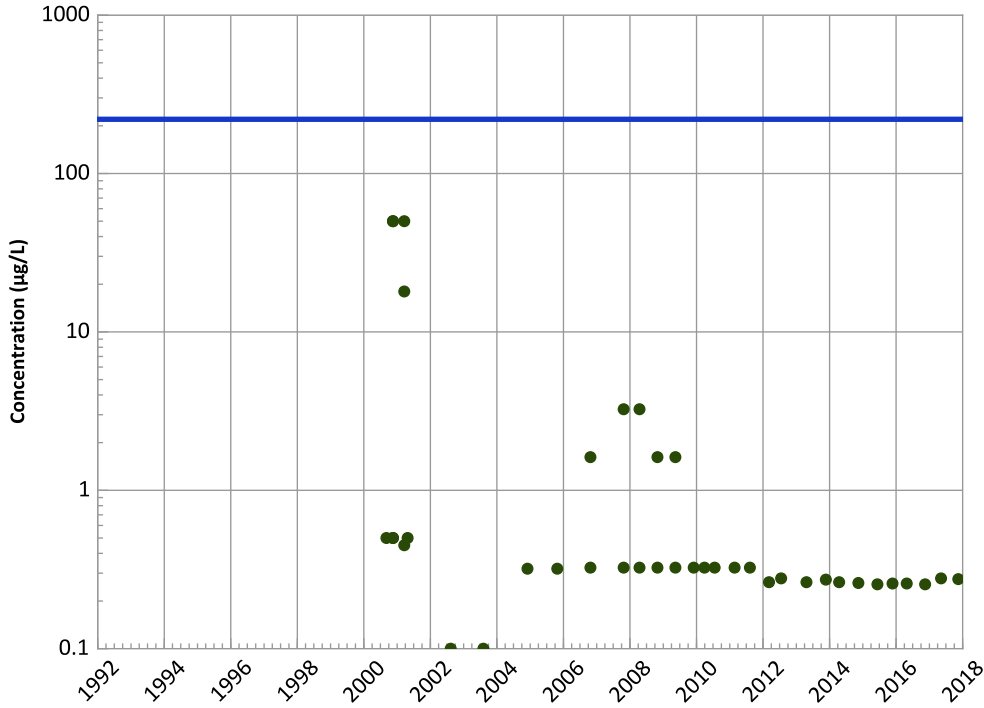
Data ():

Decreasing

All Data

Increasing

1,3,5-Trinitrobenzene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

All Non-Detect

All Data

All Non-Detect

MAROS Linear Regression Method

Data ():

All Non-Detect

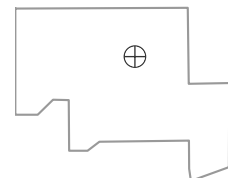
All Data

All Non-Detect

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/05/2000 to 11/14/2017
Analysis Date: 03/21/2018

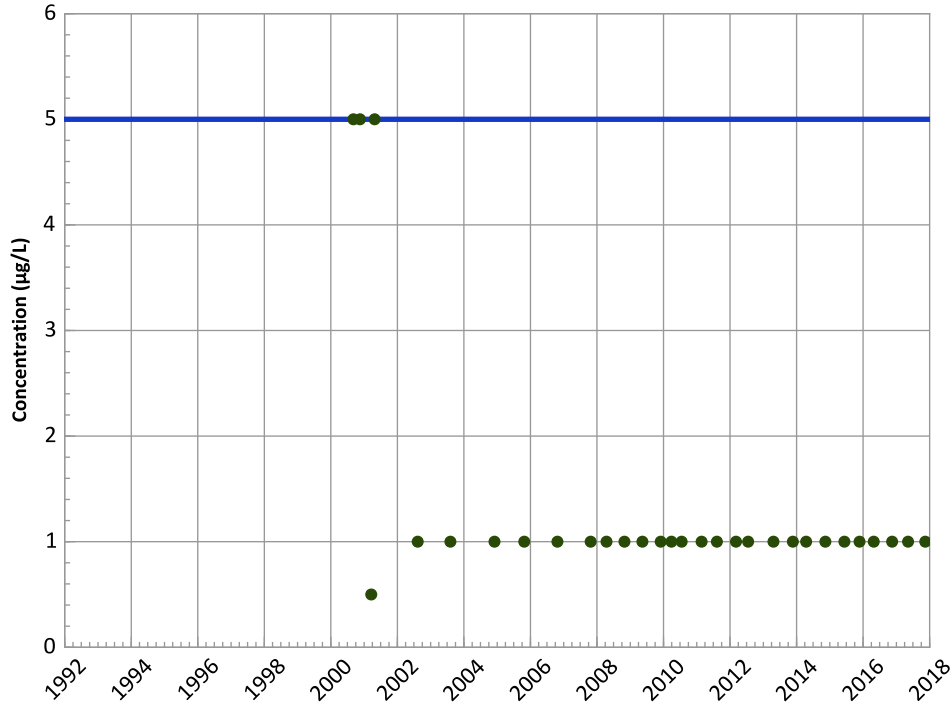
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1050 in Perched Aquifer
USDOE/NNSA Pantex Plant

Trichloroethene Trend



Concentration Trend

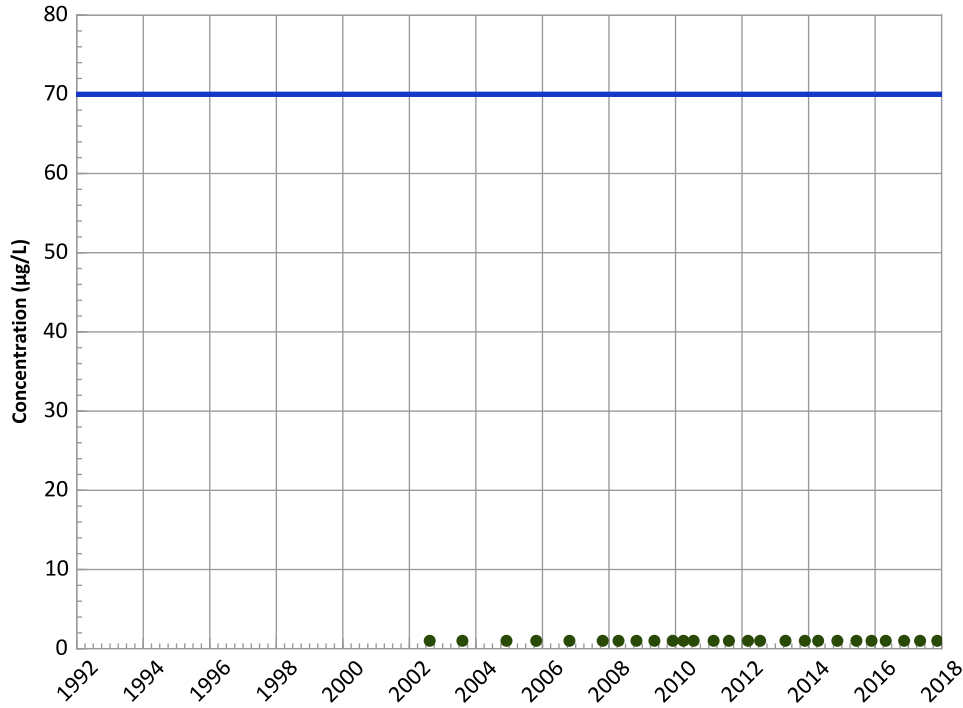
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

cis-1,2-Dichloroethene Trend



Concentration Trend

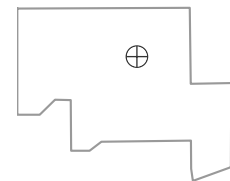
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

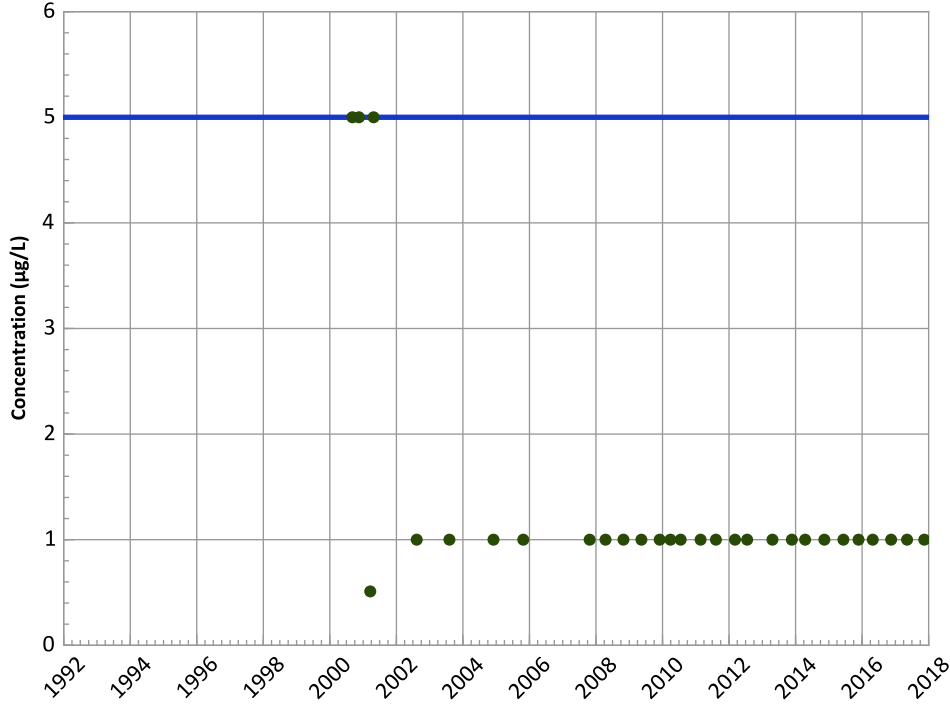


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/05/2000 to 11/14/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1050 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,2-Dichloroethane Trend



Concentration Trend

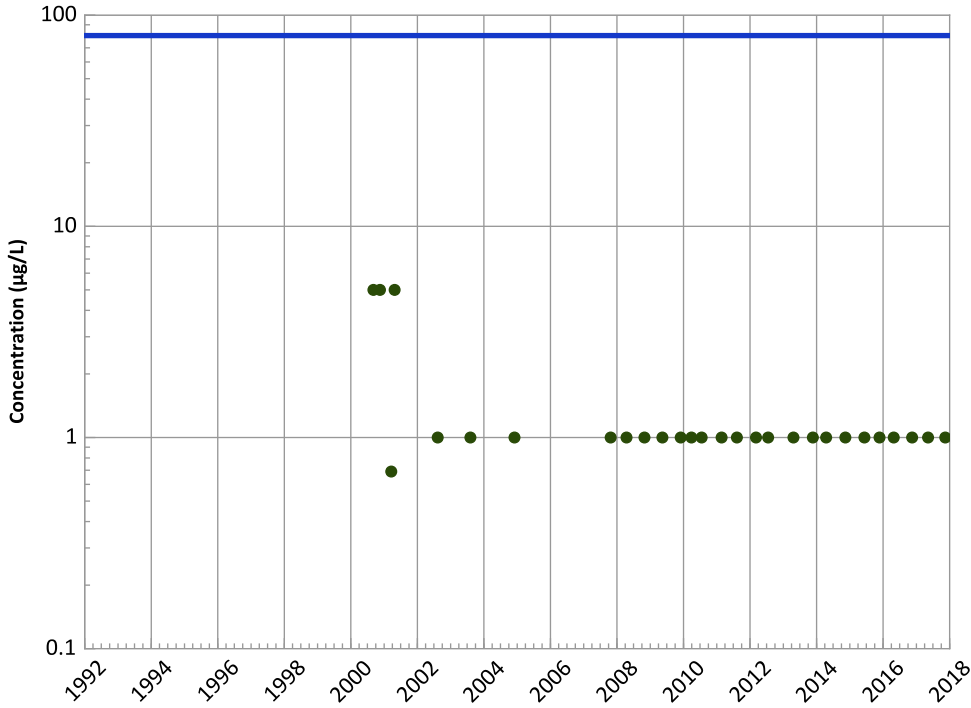
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Chloroform Trend



Concentration Trend

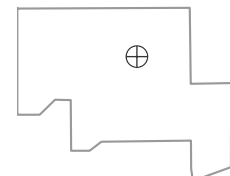
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

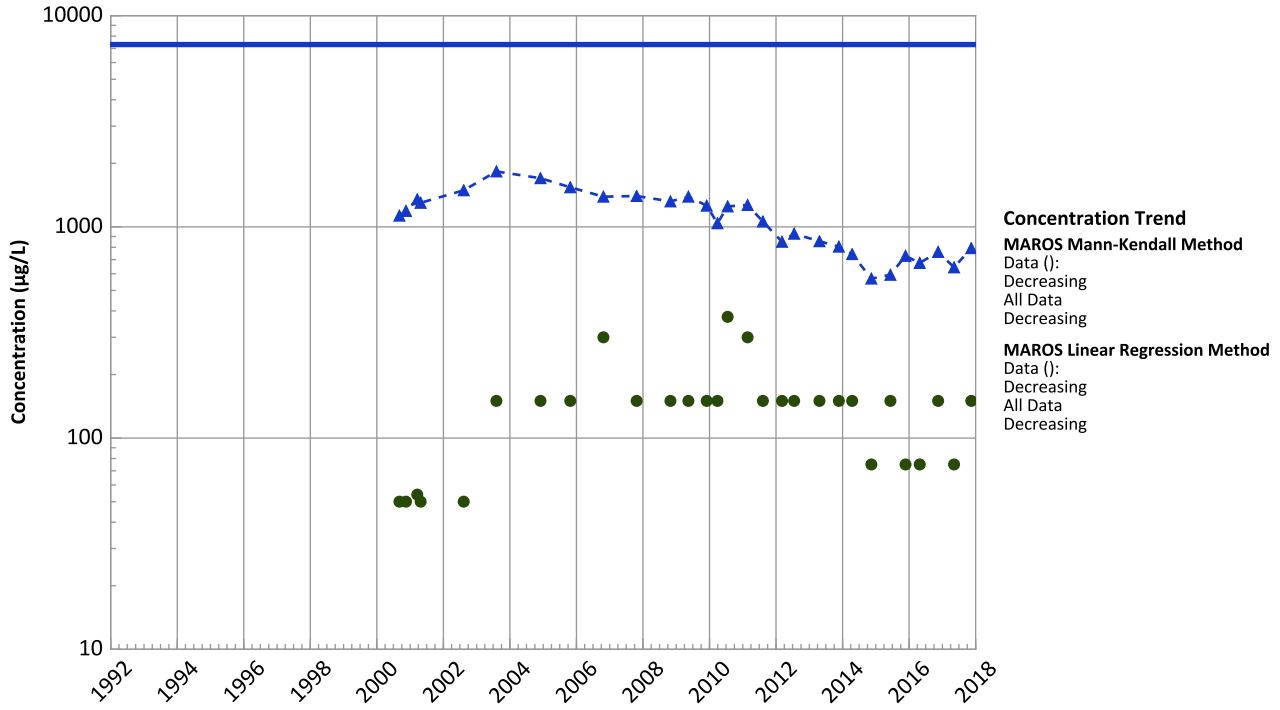


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/05/2000 to 11/14/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1050 in Perched Aquifer
USDOE/NNSA Pantex Plant

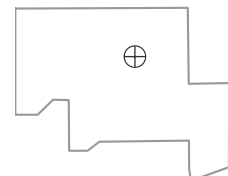
Boron Trend



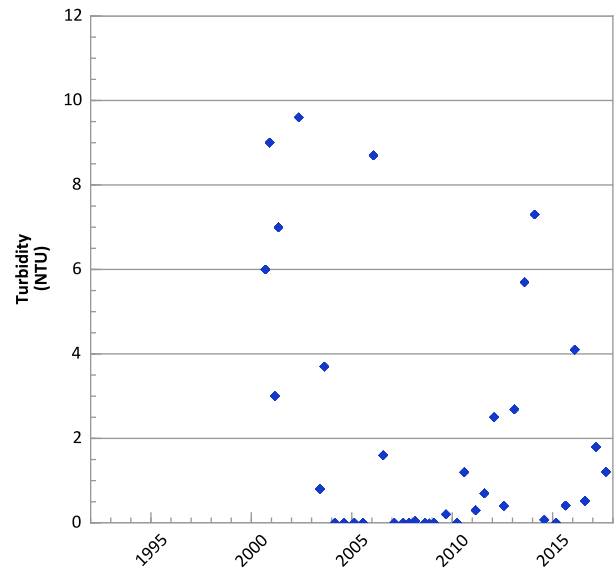
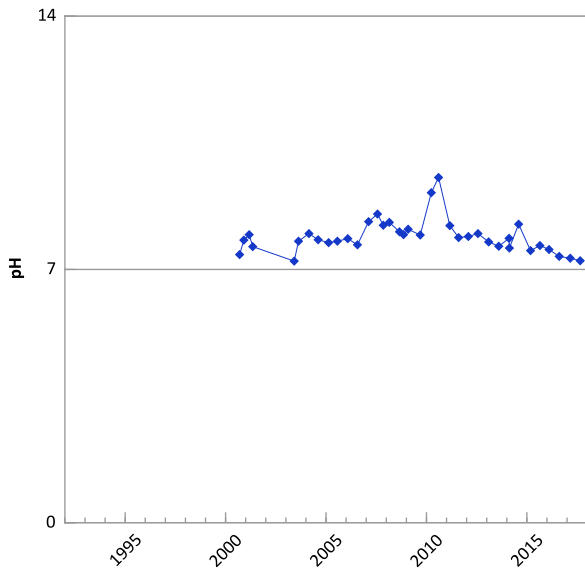
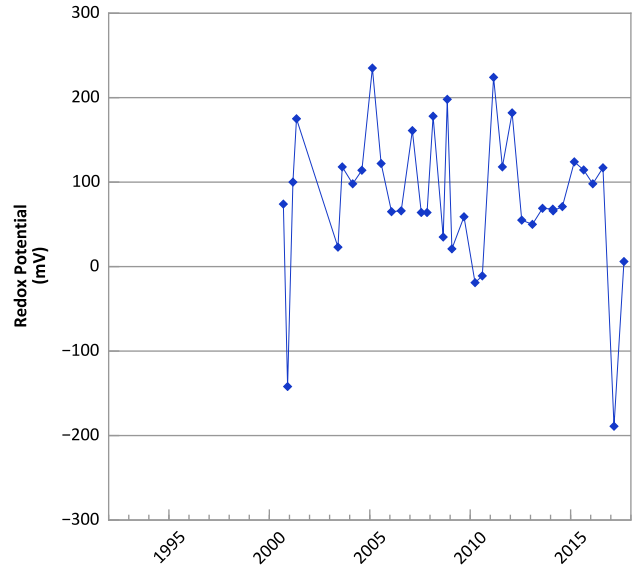
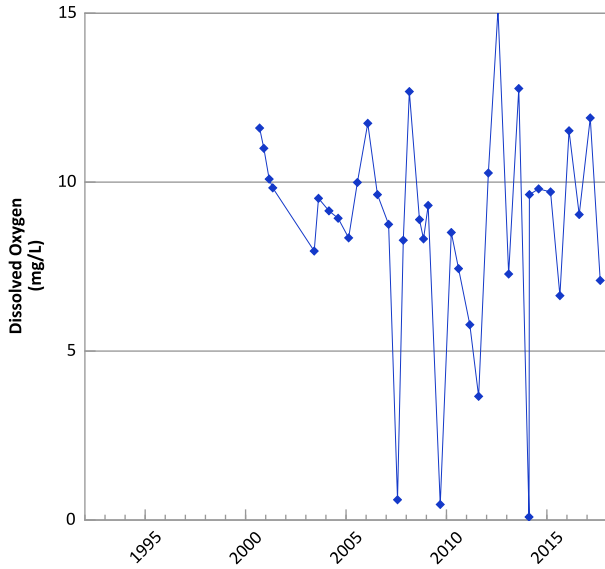
Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/05/2000 to 11/14/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

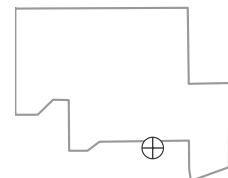


**PTX06-1052 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



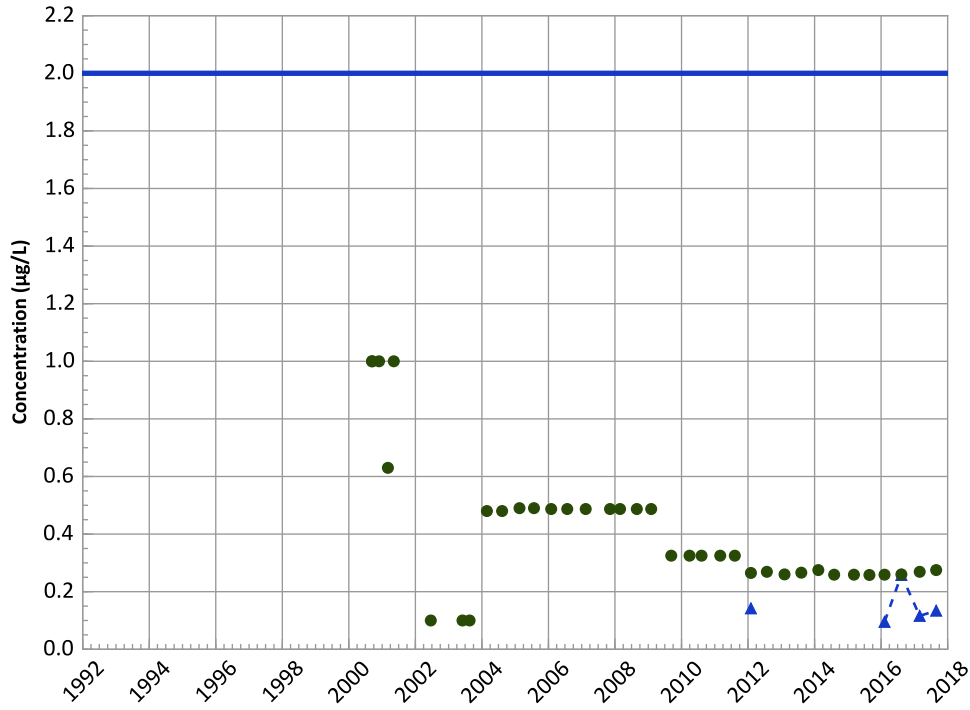
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 09/12/2000 to 08/28/2017
 Analysis Date: 03/21/2018

Well Location



PTX06-1052 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Detections in Dataset)

All Data

Decreasing

MAROS Linear Regression Method

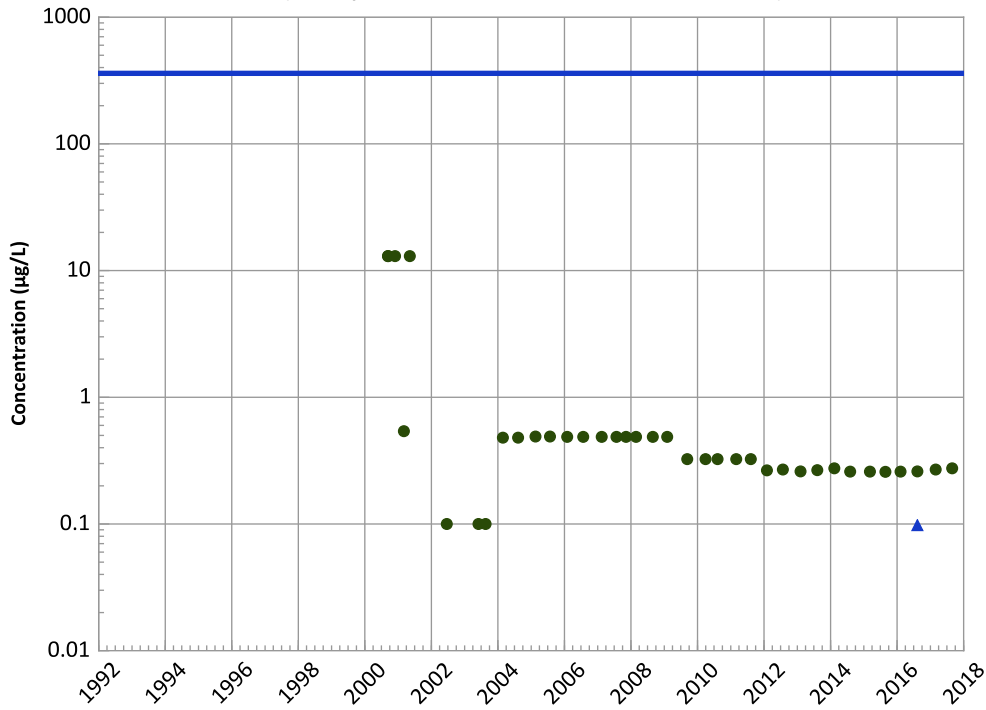
Data ():

N/A (<4 Detections in Dataset)

All Data

Decreasing

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

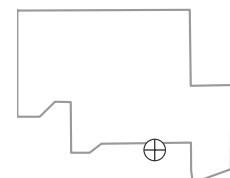
Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

Well Location

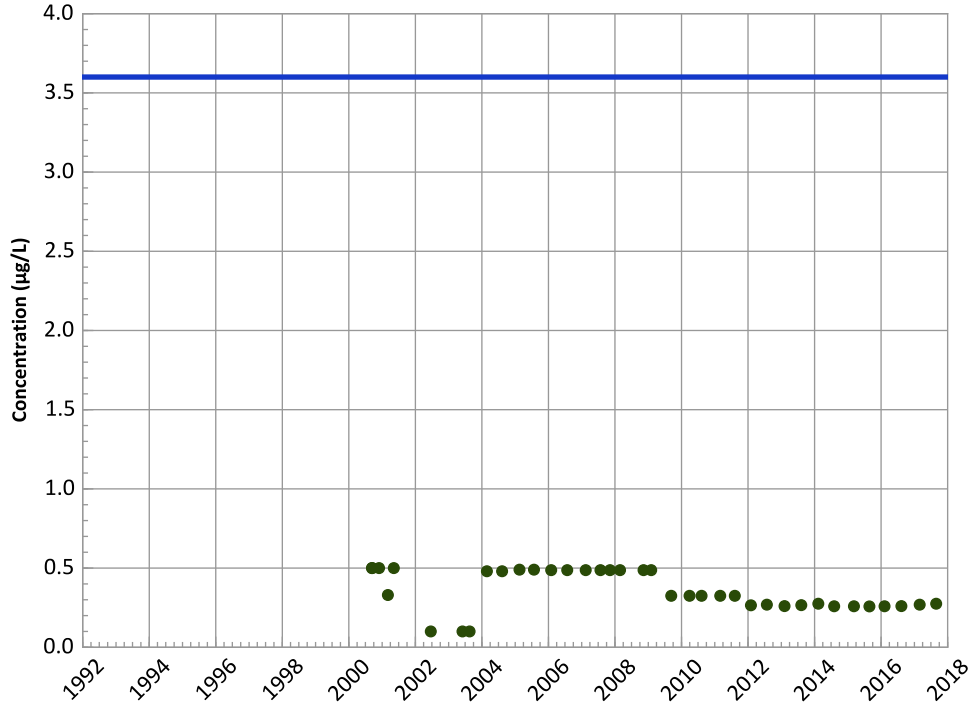


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/12/2000 to 08/28/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1052 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

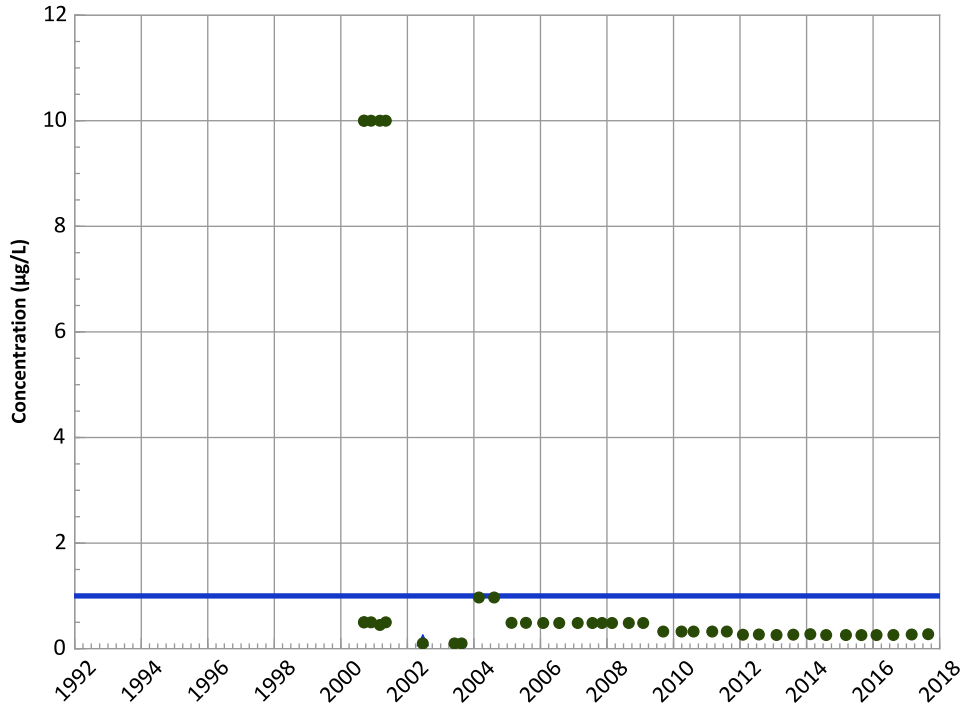
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

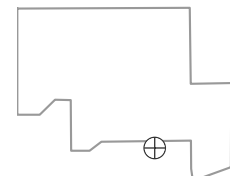
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

Well Location

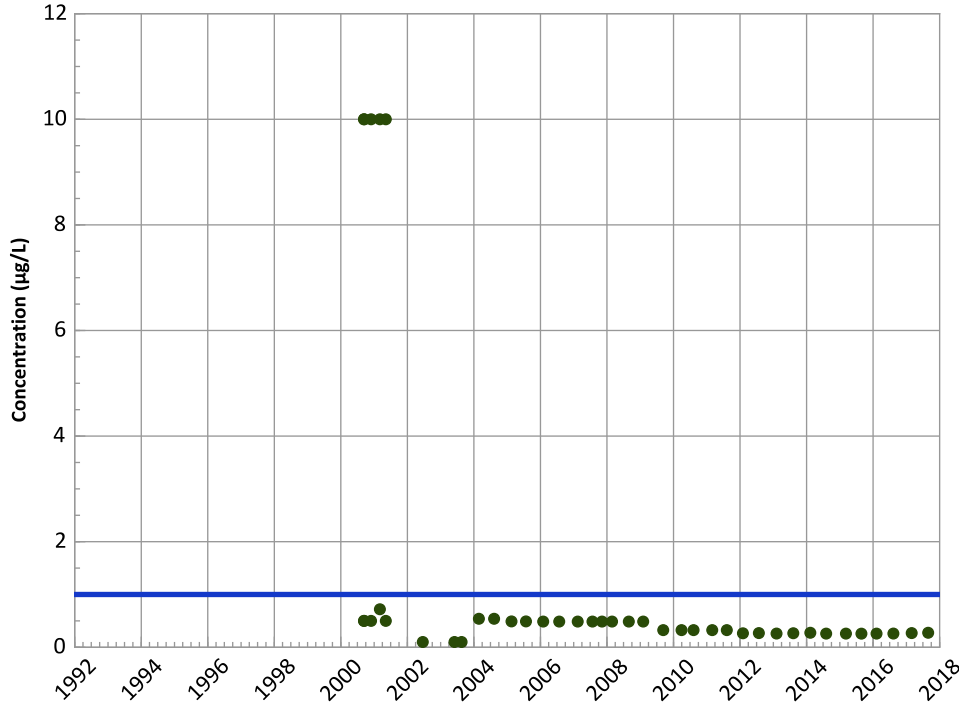


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/12/2000 to 08/28/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1052 in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

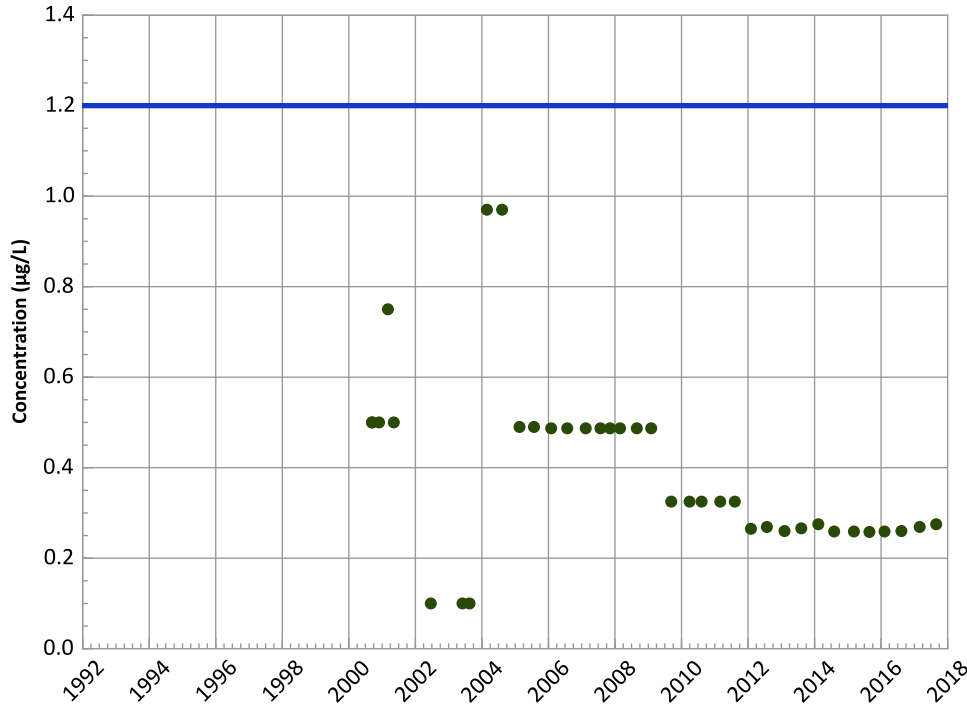
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

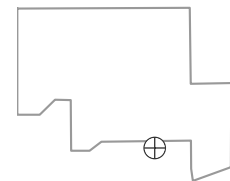
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

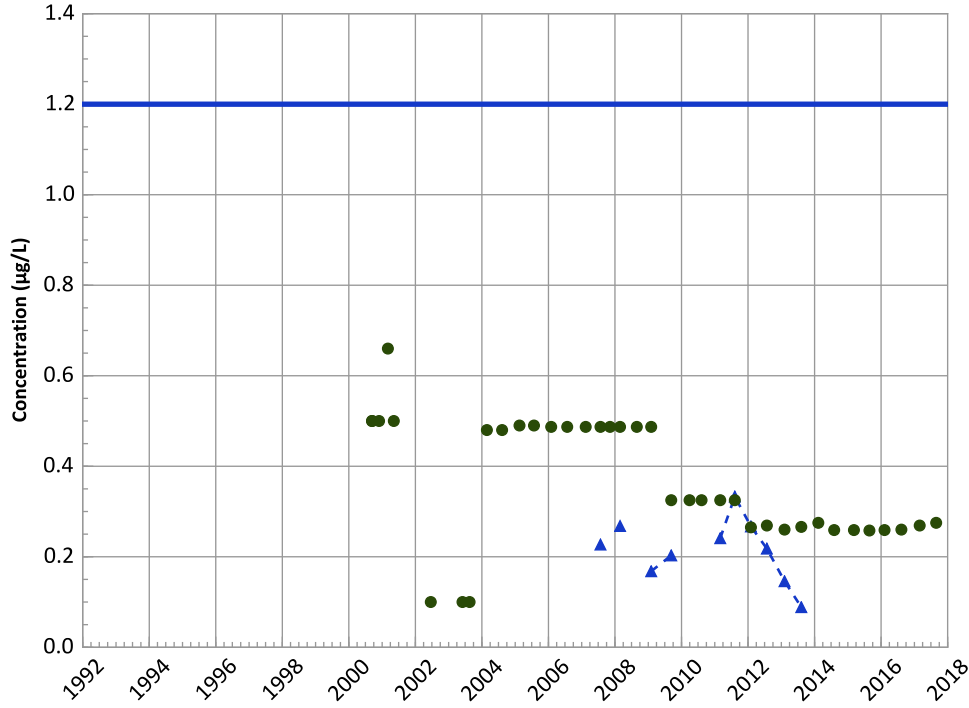


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/12/2000 to 08/28/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1052 in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

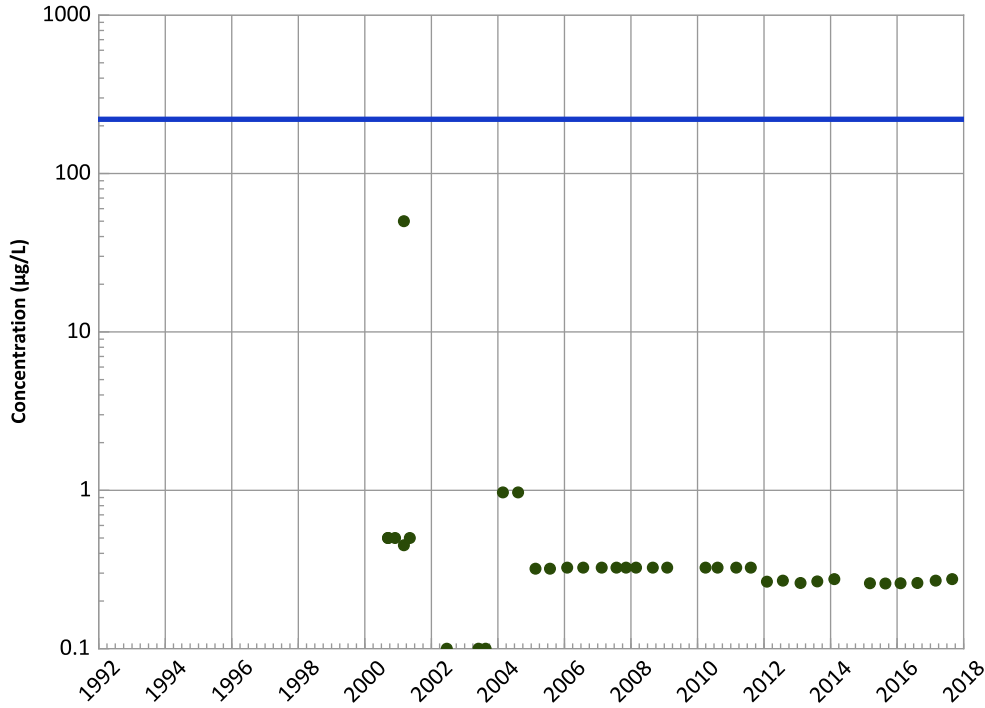
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Stable

1,3,5-Trinitrobenzene Trend



Concentration Trend

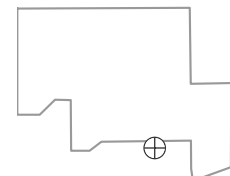
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

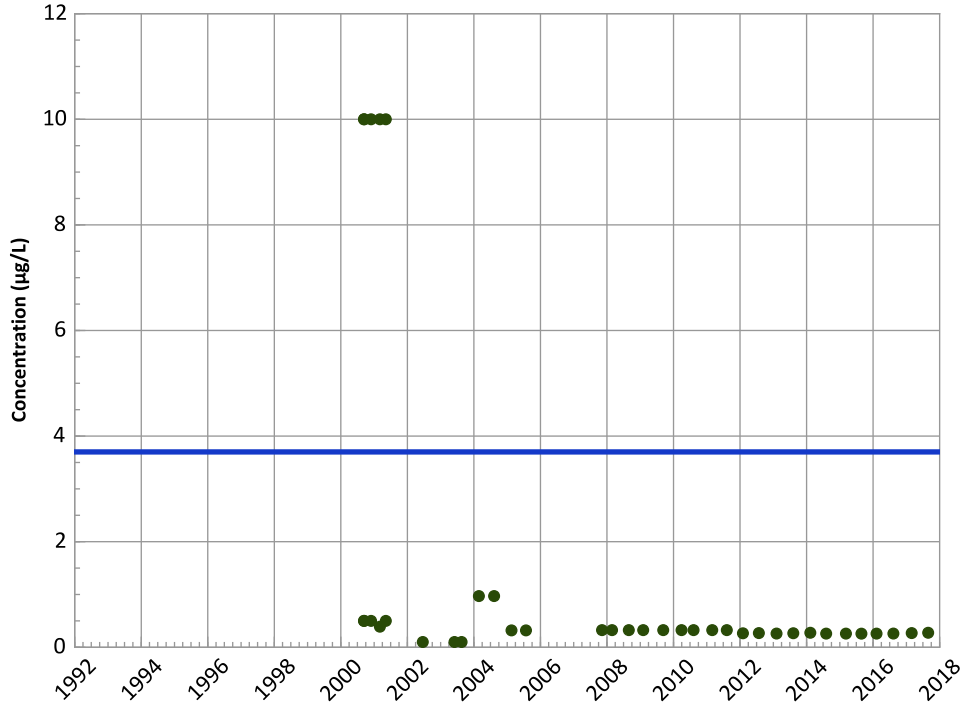


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/12/2000 to 08/28/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1052 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

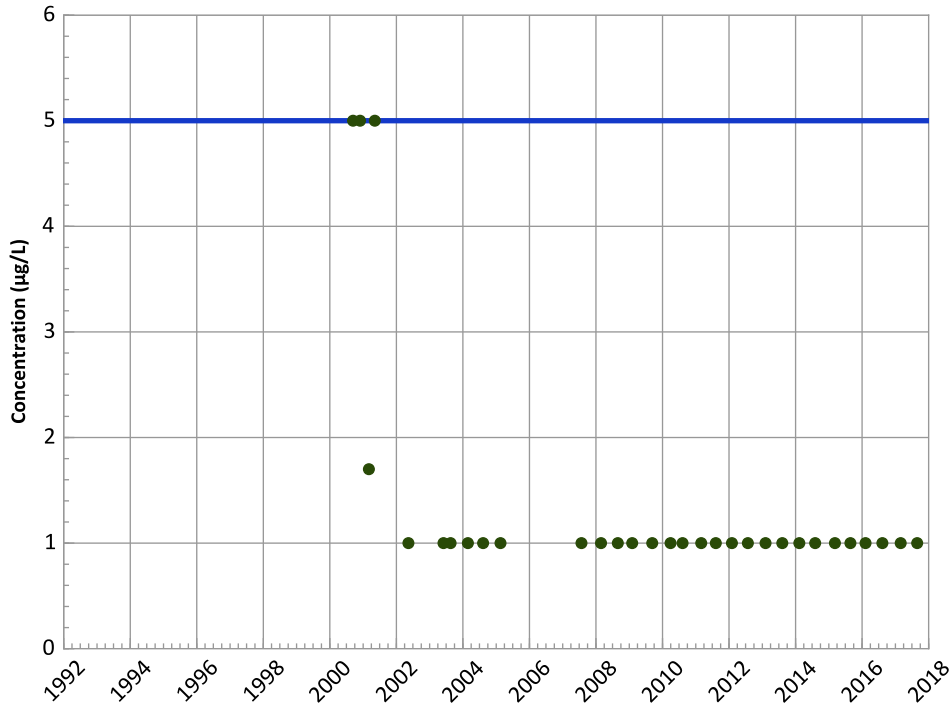
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Tetrachloroethylene (PCE) Trend



Concentration Trend

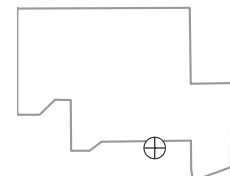
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

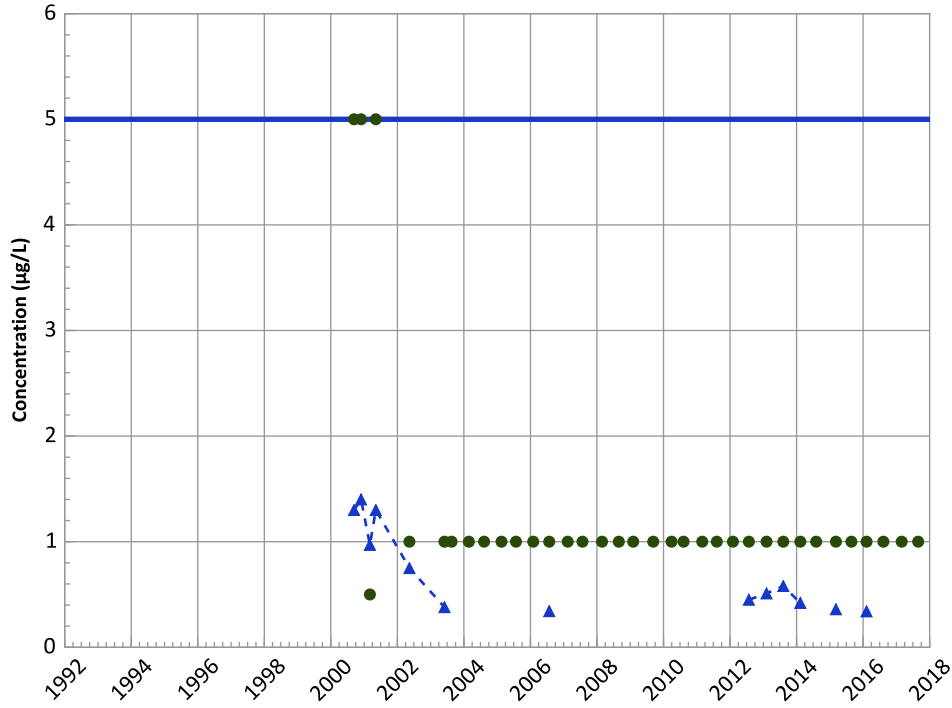


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/12/2000 to 08/28/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1052 in Perched Aquifer
USDOE/NNSA Pantex Plant

Trichloroethene Trend



Concentration Trend

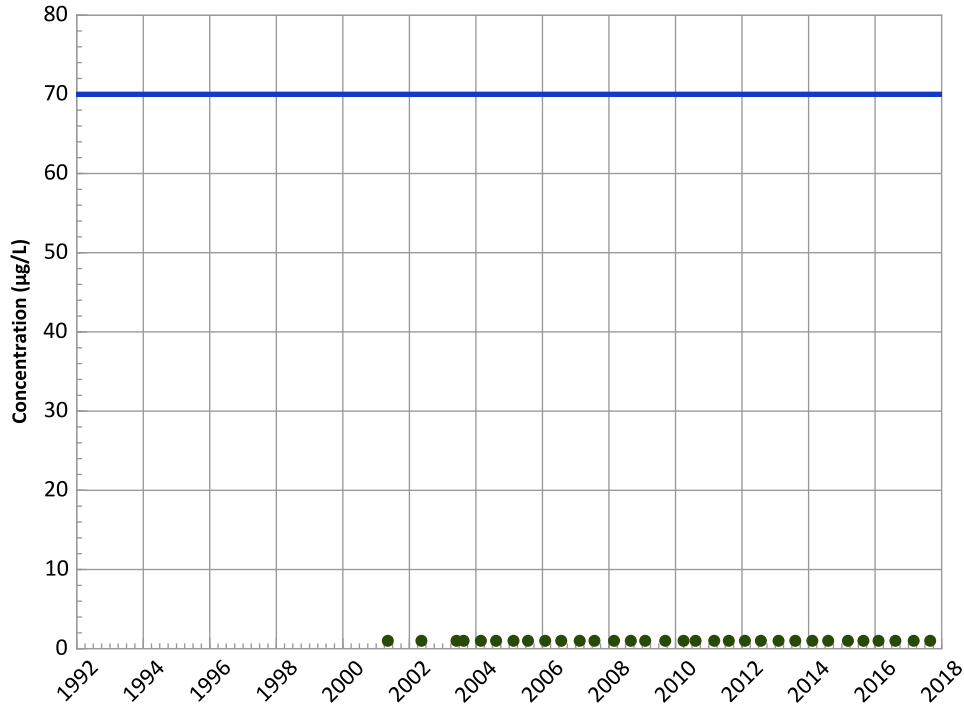
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

cis-1,2-Dichloroethene Trend



Concentration Trend

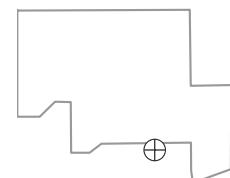
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

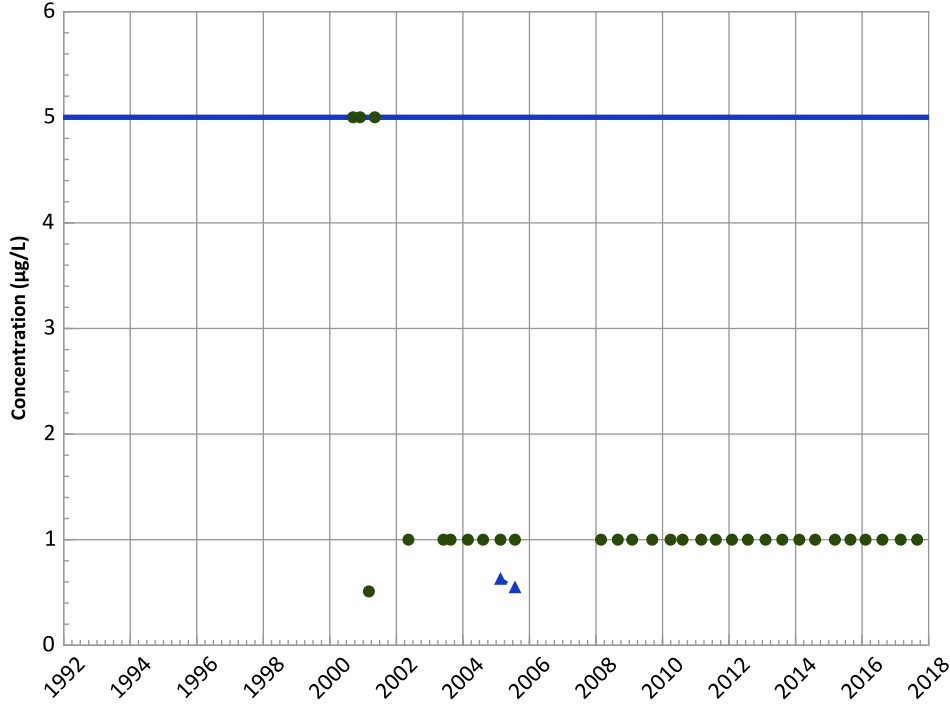


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/12/2000 to 08/28/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1052 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,2-Dichloroethane Trend



Concentration Trend

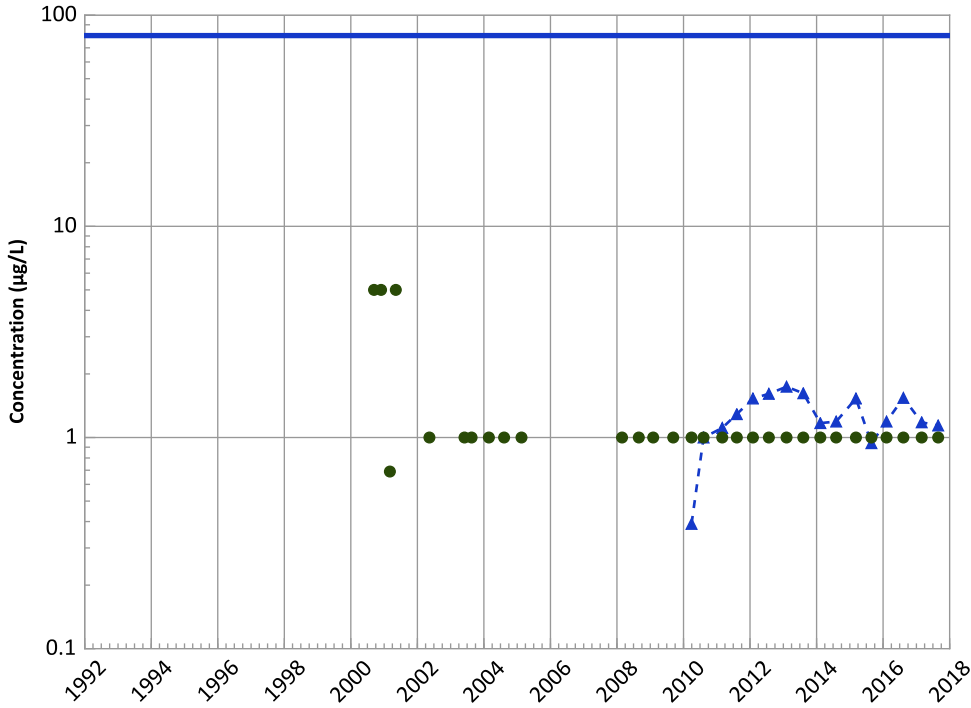
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

Chloroform Trend



Concentration Trend

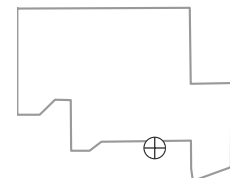
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Probably Decreasing
All Data
No Trend

Well Location

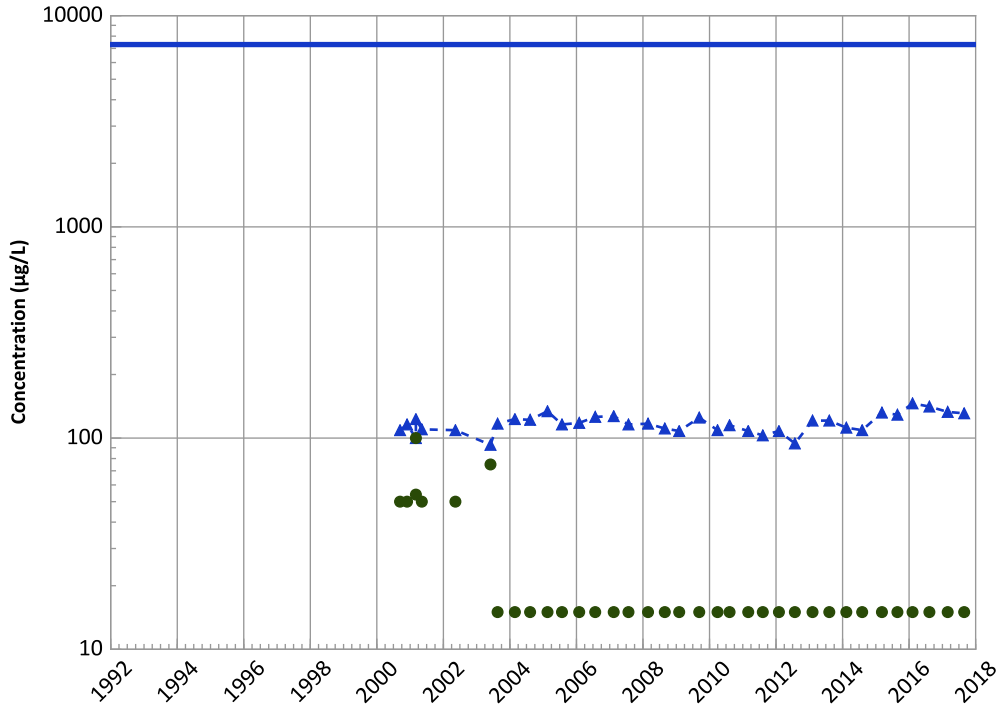


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/12/2000 to 08/28/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1052 in Perched Aquifer
USDOE/NNSA Pantex Plant

Boron Trend



Concentration Trend

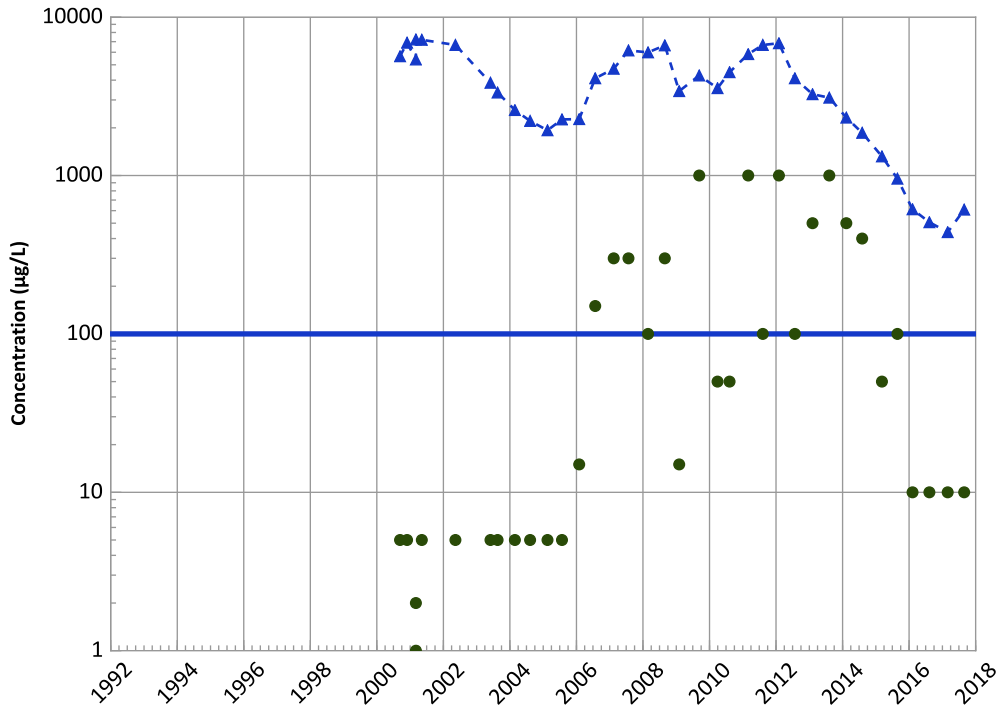
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

Chromium, Total Trend



Concentration Trend

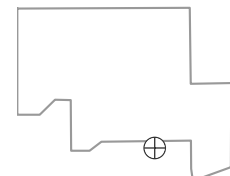
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

Well Location

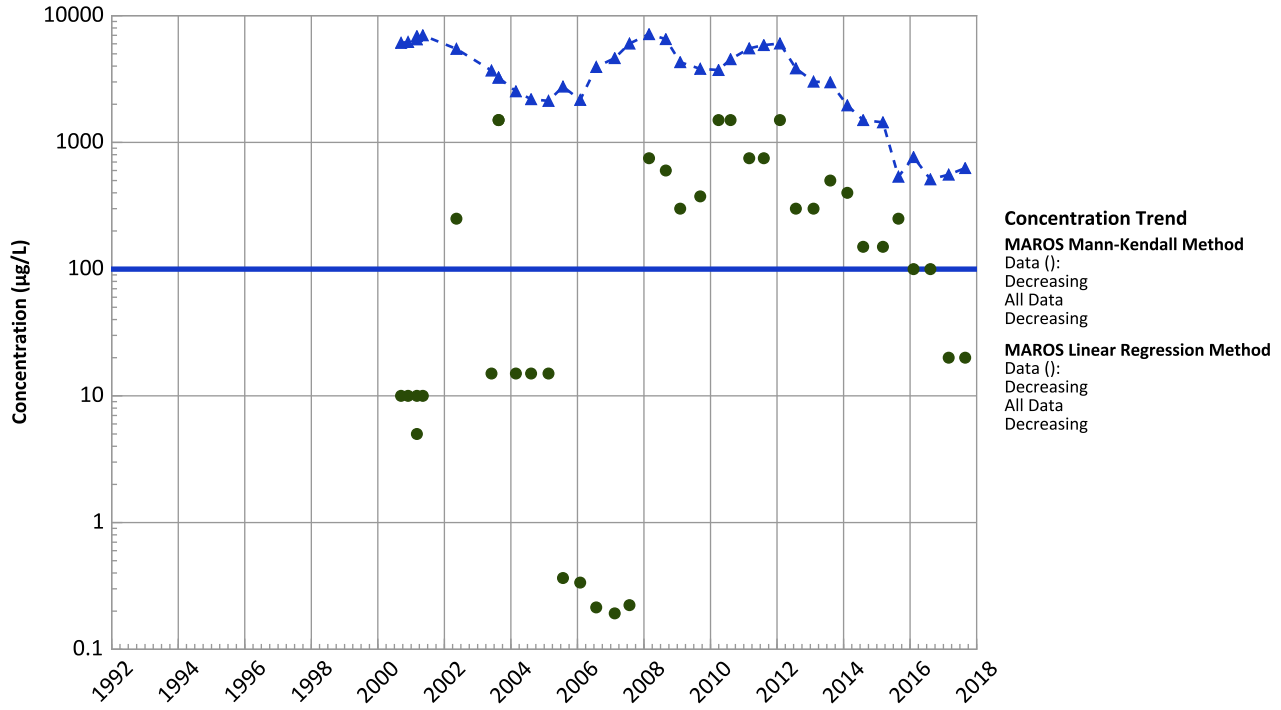


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/12/2000 to 08/28/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1052 in Perched Aquifer
USDOE/NNSA Pantex Plant

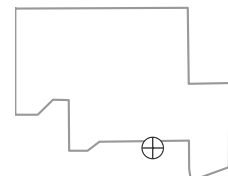
Chromium, Hexavalent Trend



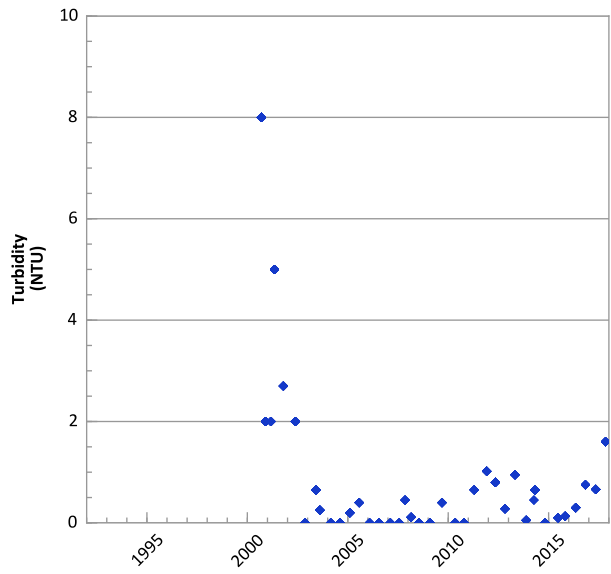
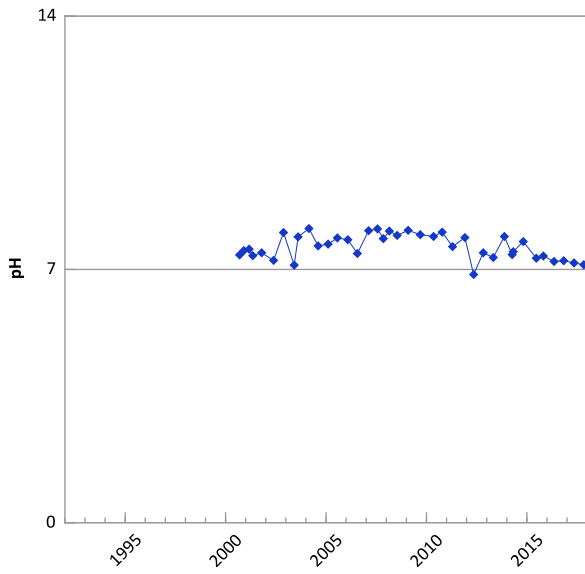
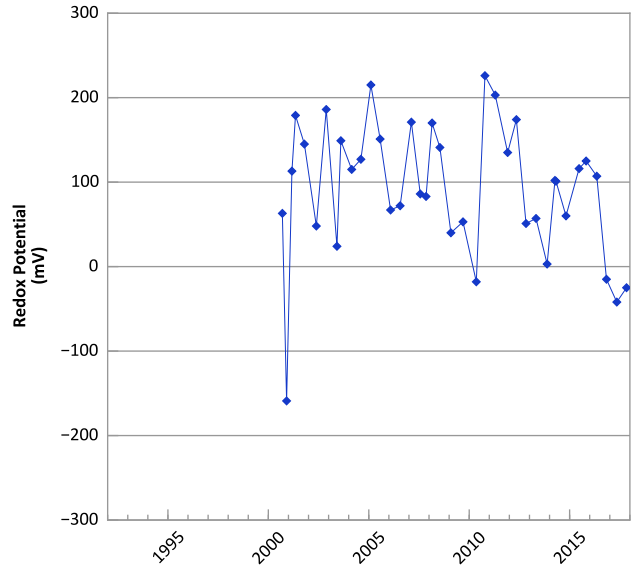
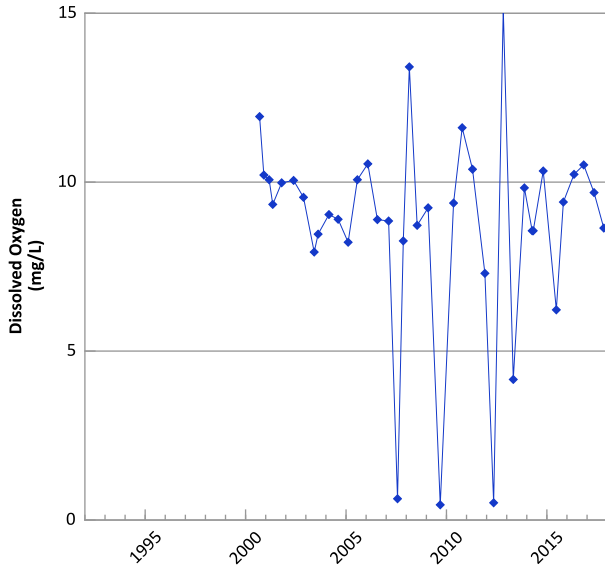
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 09/12/2000 to 08/28/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

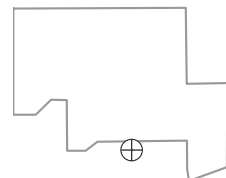


**PTX06-1053 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



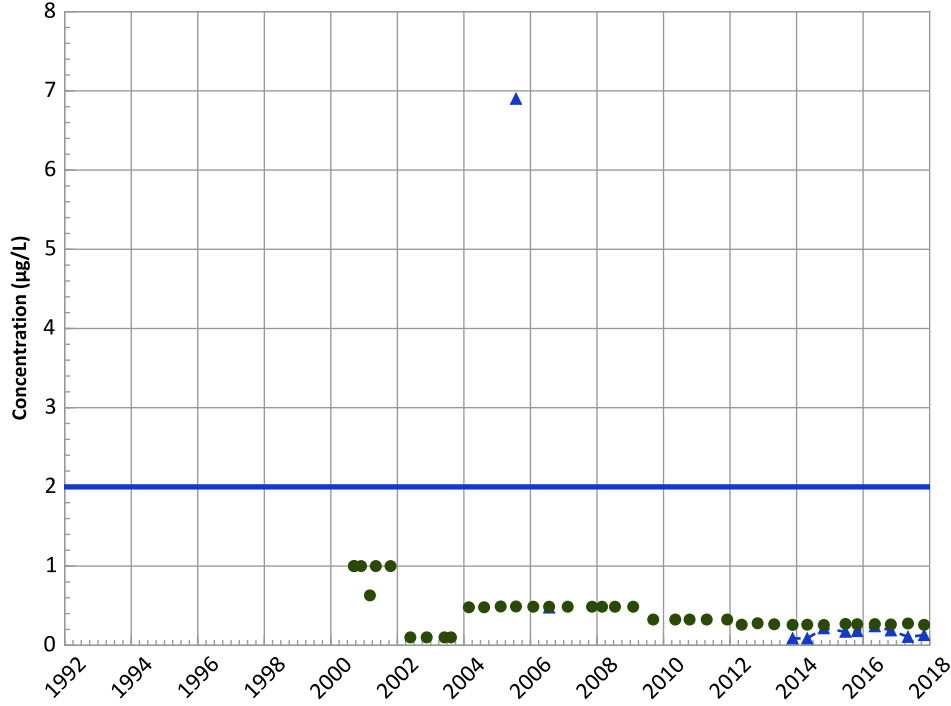
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 09/12/2000 to 11/01/2017
 Analysis Date: 03/21/2018

Well Location



PTX06-1053 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

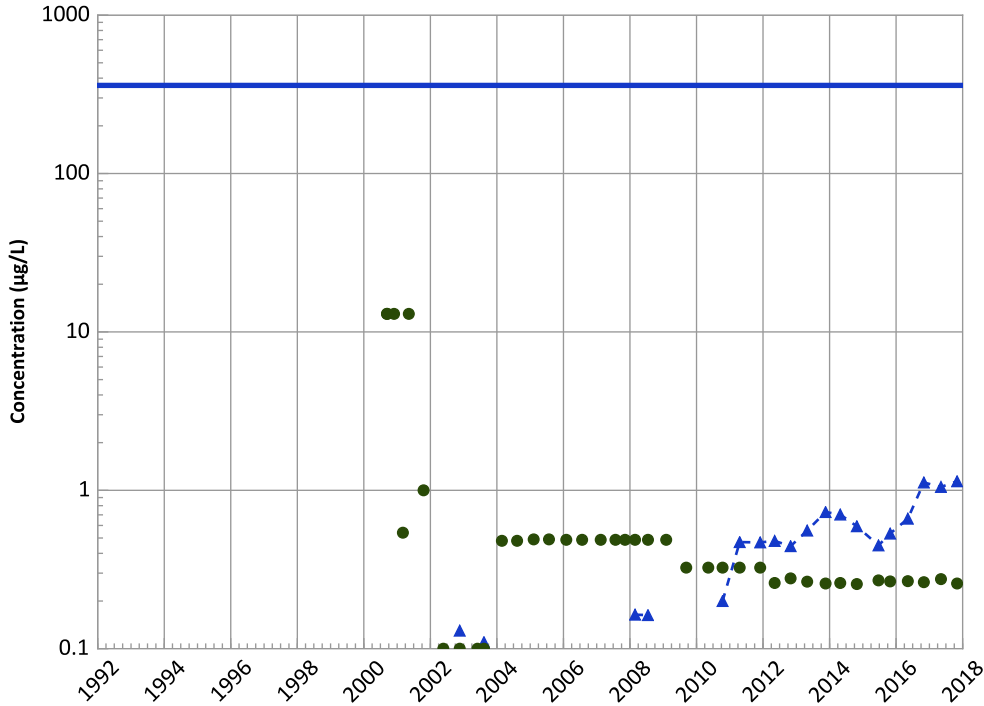
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Decreasing

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
No Trend
All Data
Increasing

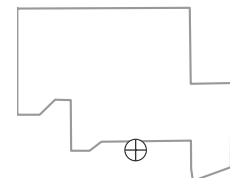
MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/12/2000 to 11/01/2017
Analysis Date: 03/21/2018

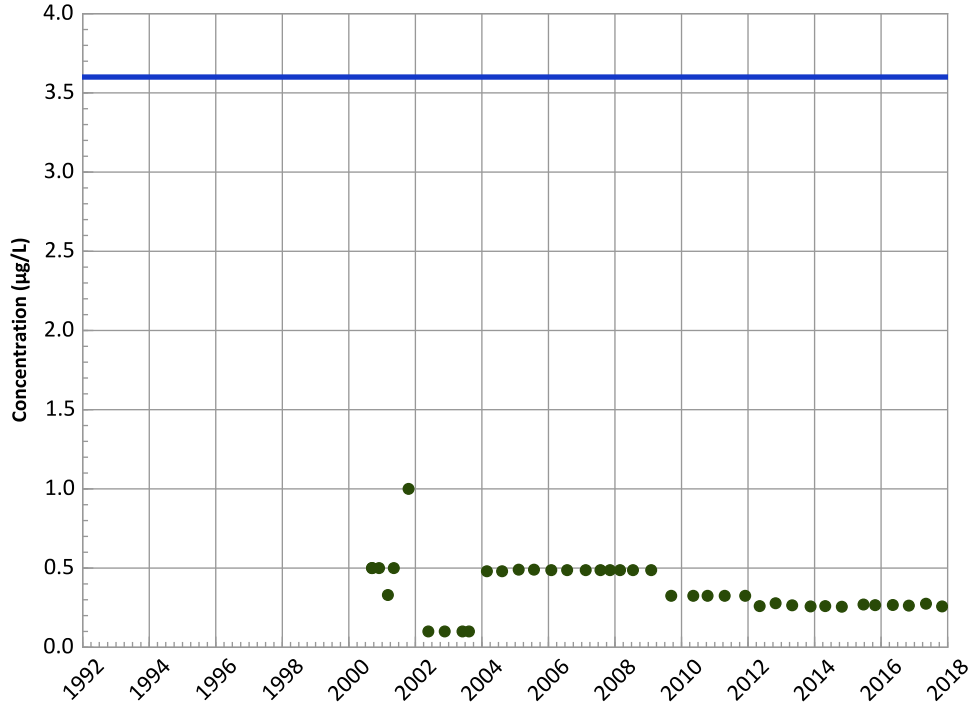
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1053 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

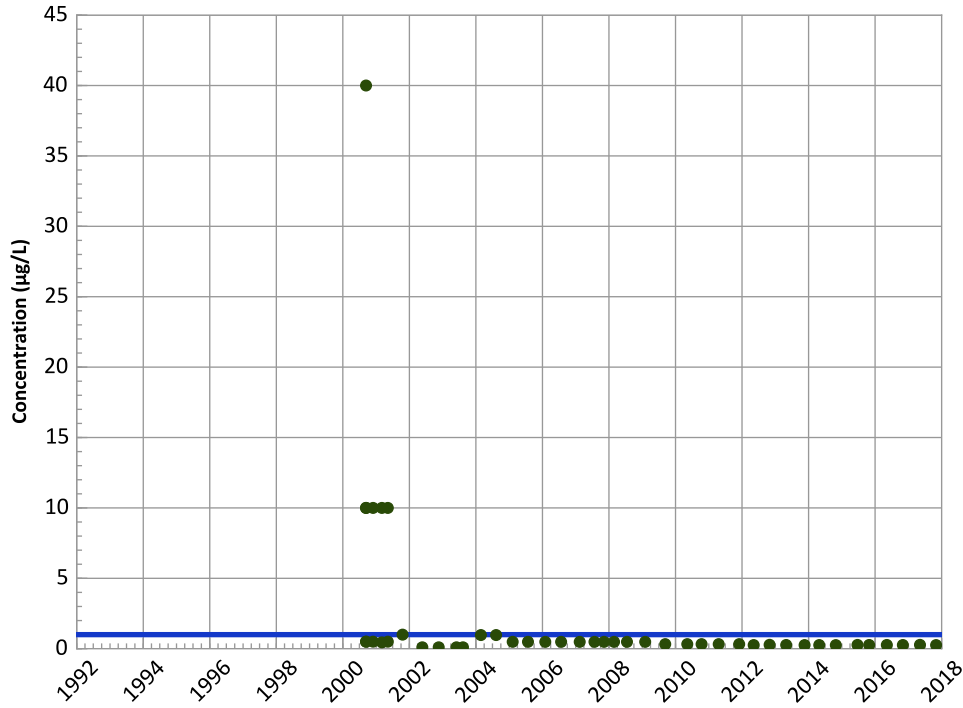
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

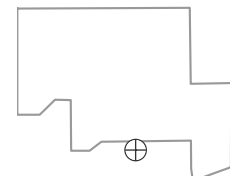
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

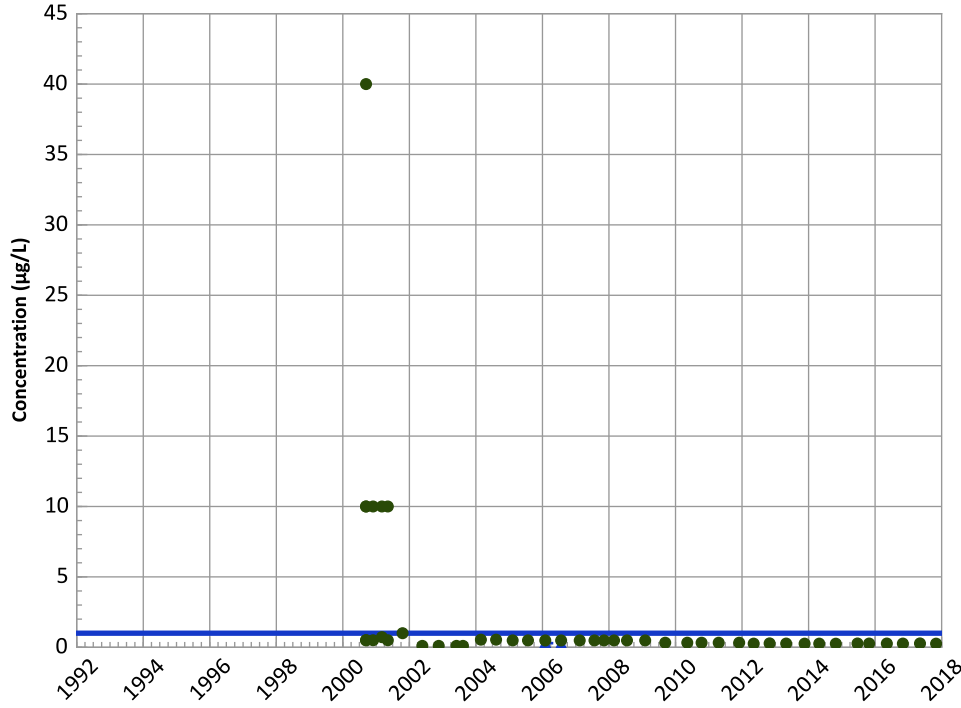


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/12/2000 to 11/01/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1053 in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

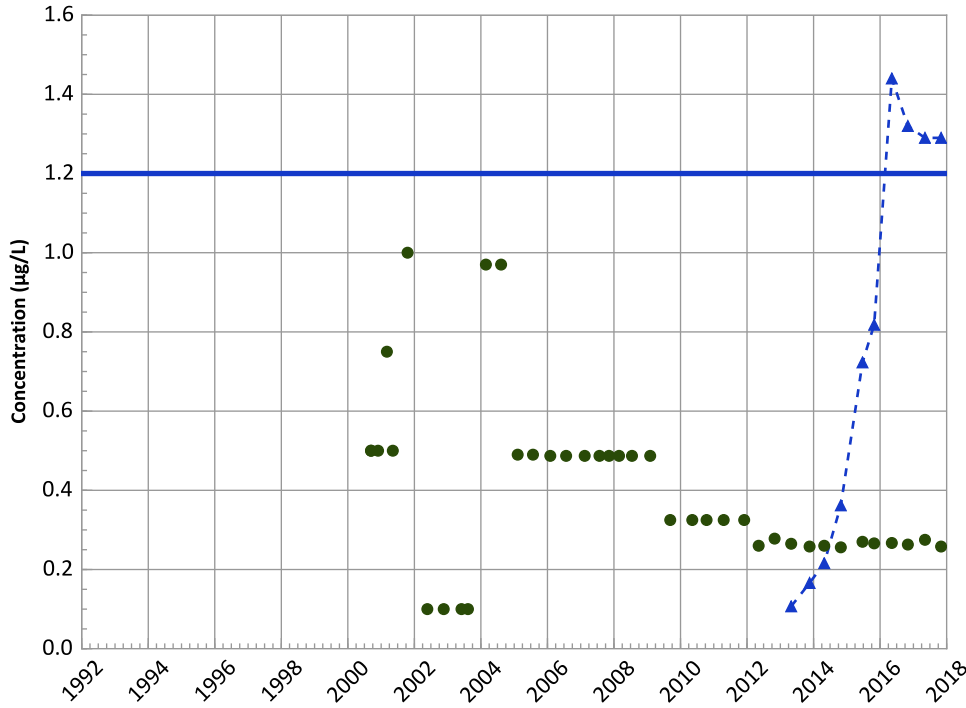
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

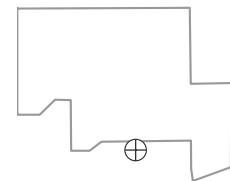
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
No Trend

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

Well Location

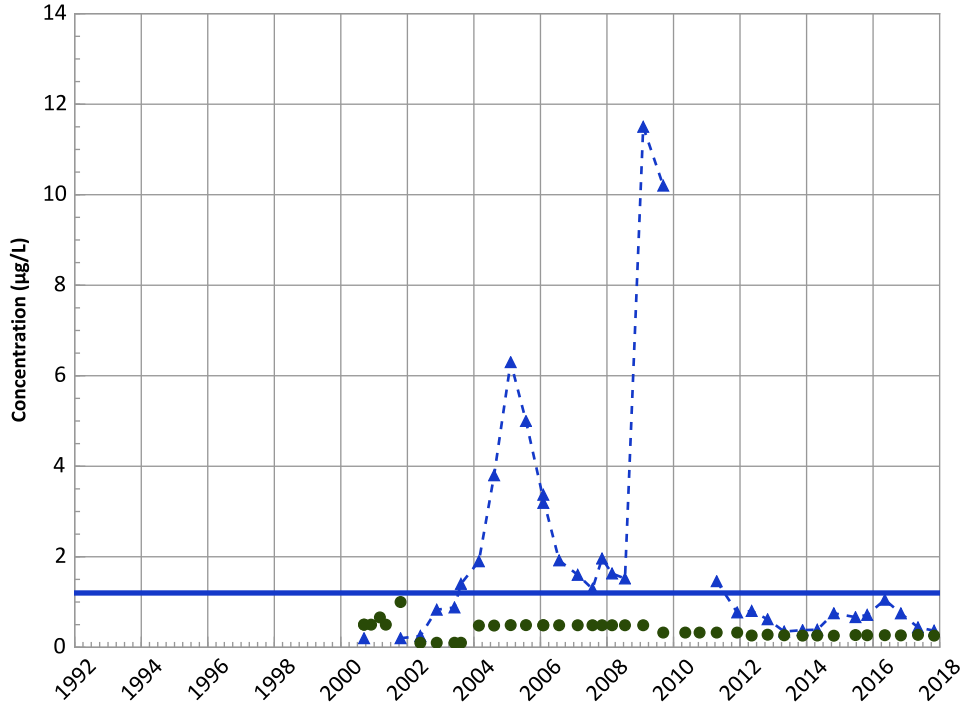


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/12/2000 to 11/01/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1053 in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

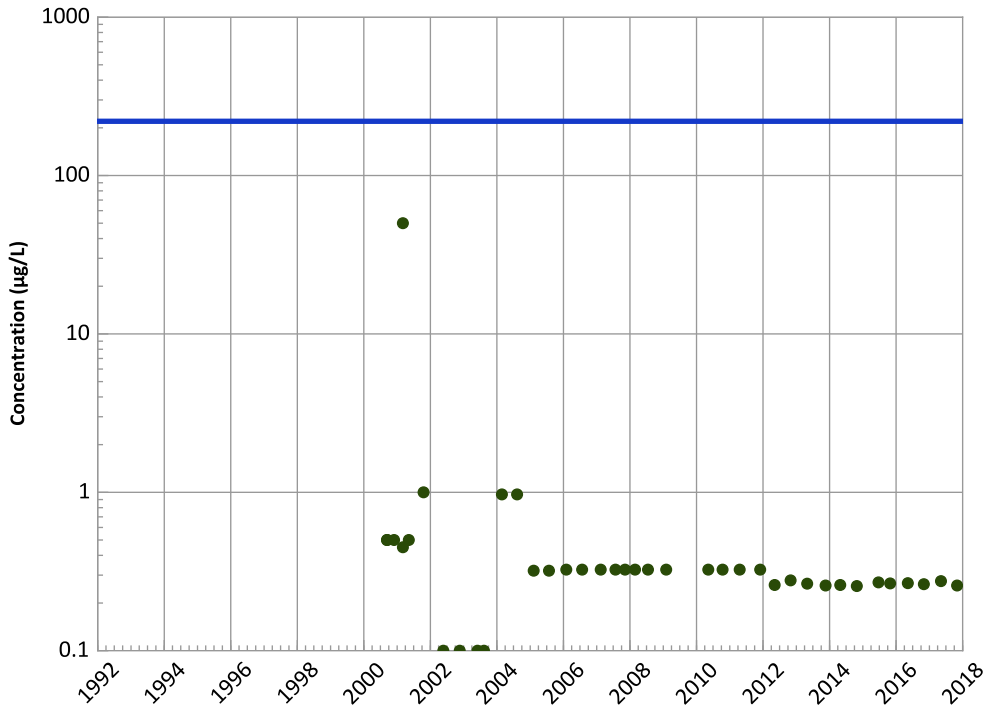
MAROS Mann-Kendall Method

Data ():
No Trend
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Probably Increasing
All Data
No Trend

1,3,5-Trinitrobenzene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

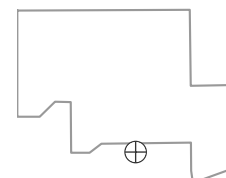
MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/12/2000 to 11/01/2017
Analysis Date: 03/21/2018

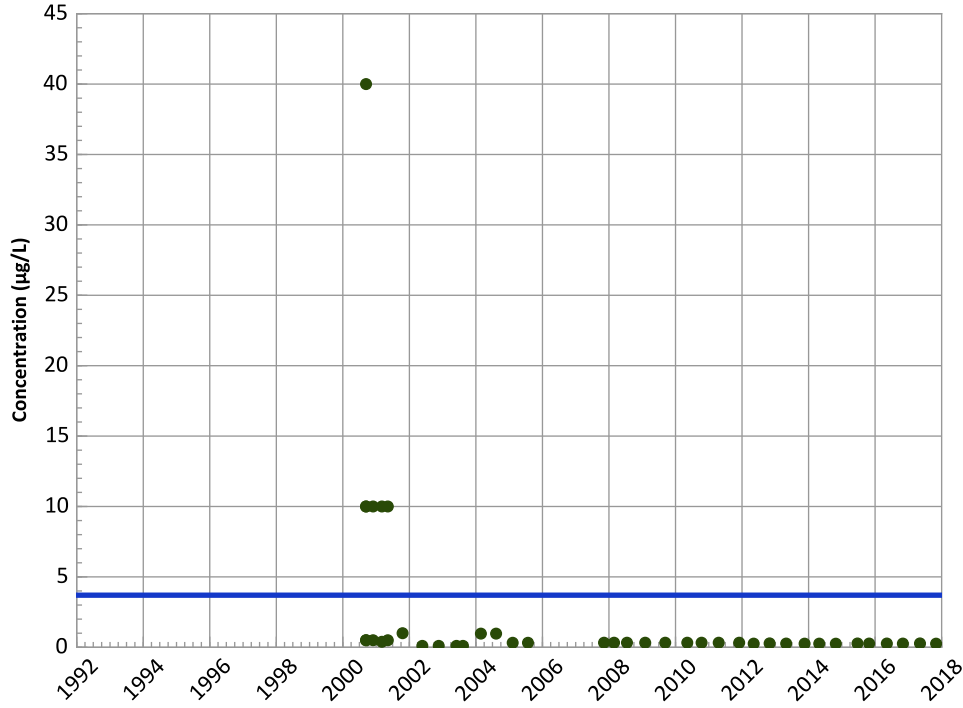
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1053 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

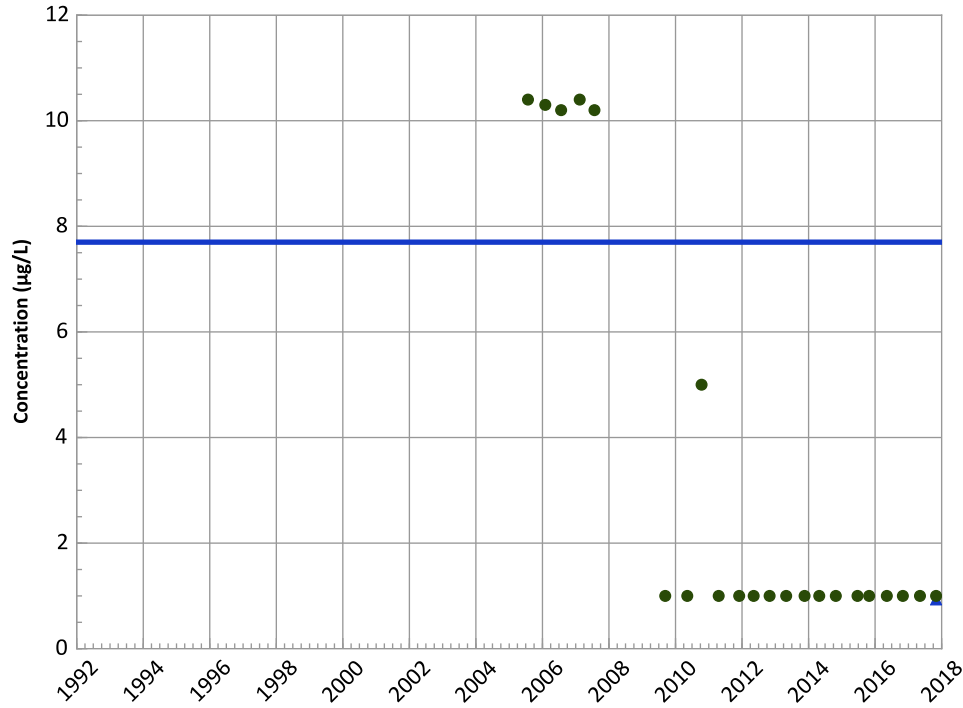
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,4-Dioxane (p-Dioxane) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

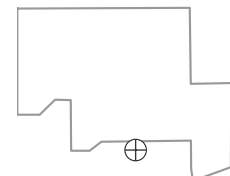
MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

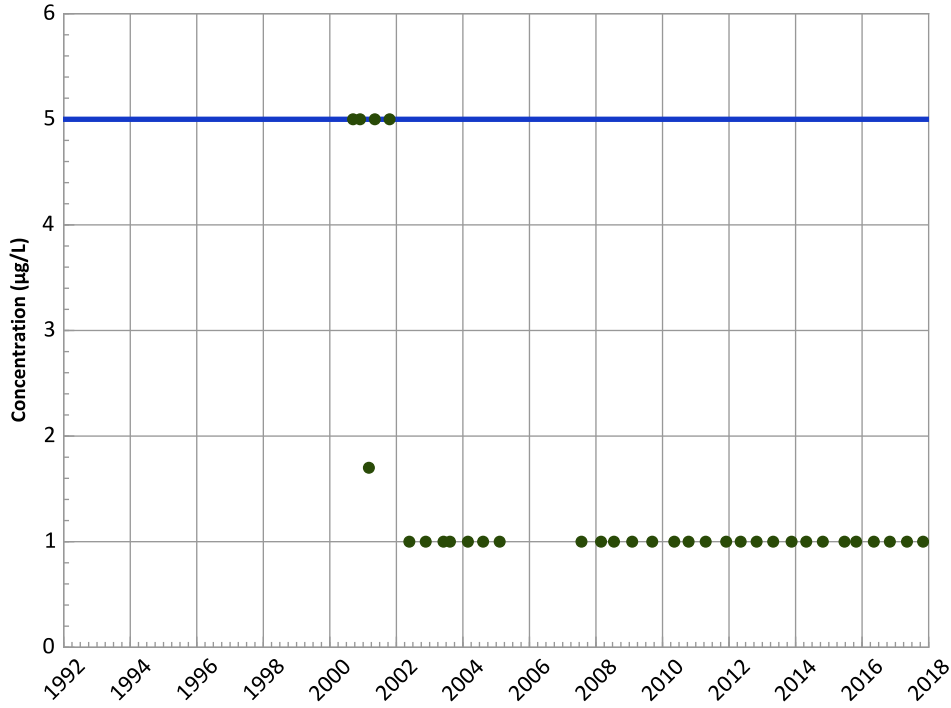
Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/12/2000 to 11/01/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



**PTX06-1053 in Perched Aquifer
USDOE/NNSA Pantex Plant
Tetrachloroethylene (PCE) Trend**



Concentration Trend

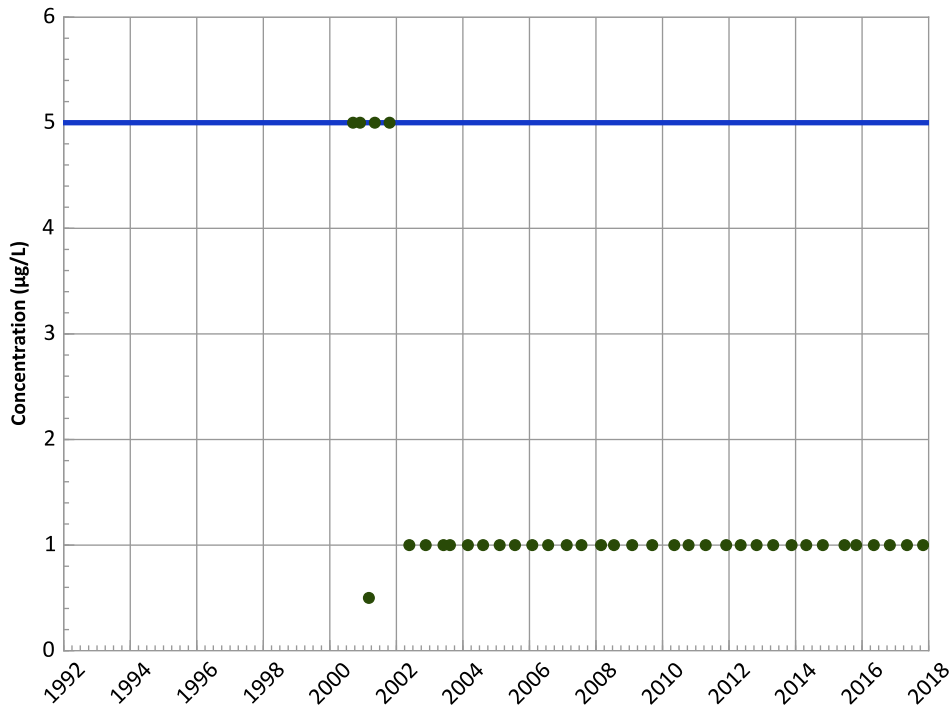
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Trichloroethene Trend



Concentration Trend

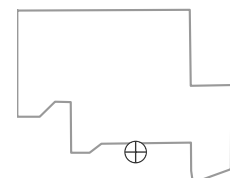
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

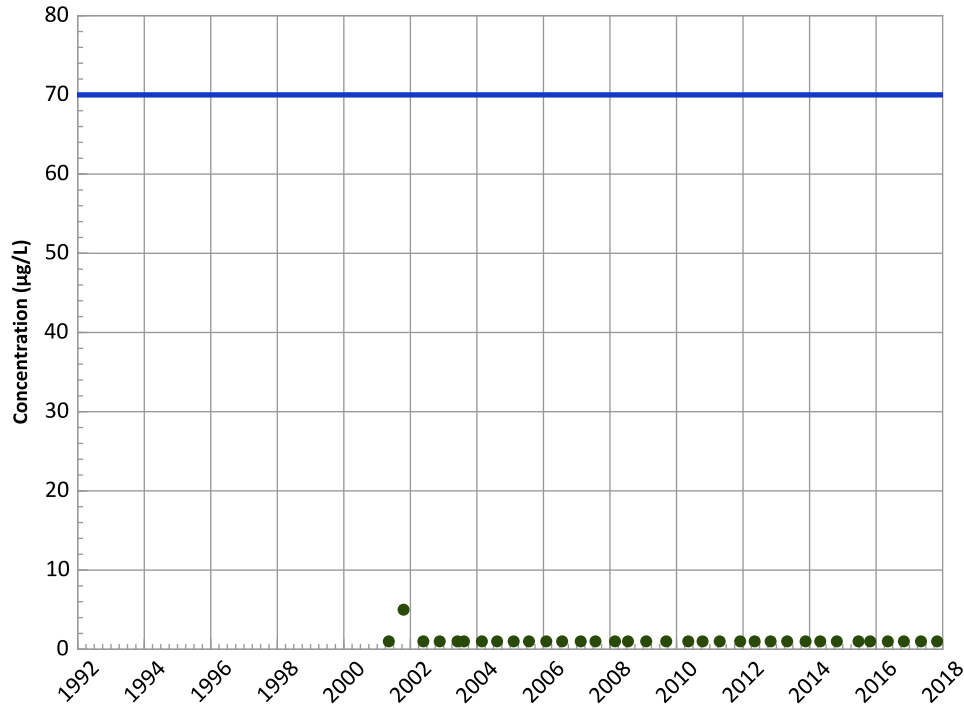
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/12/2000 to 11/01/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1053 in Perched Aquifer
USDOE/NNSA Pantex Plant
cis-1,2-Dichloroethene Trend**



Concentration Trend

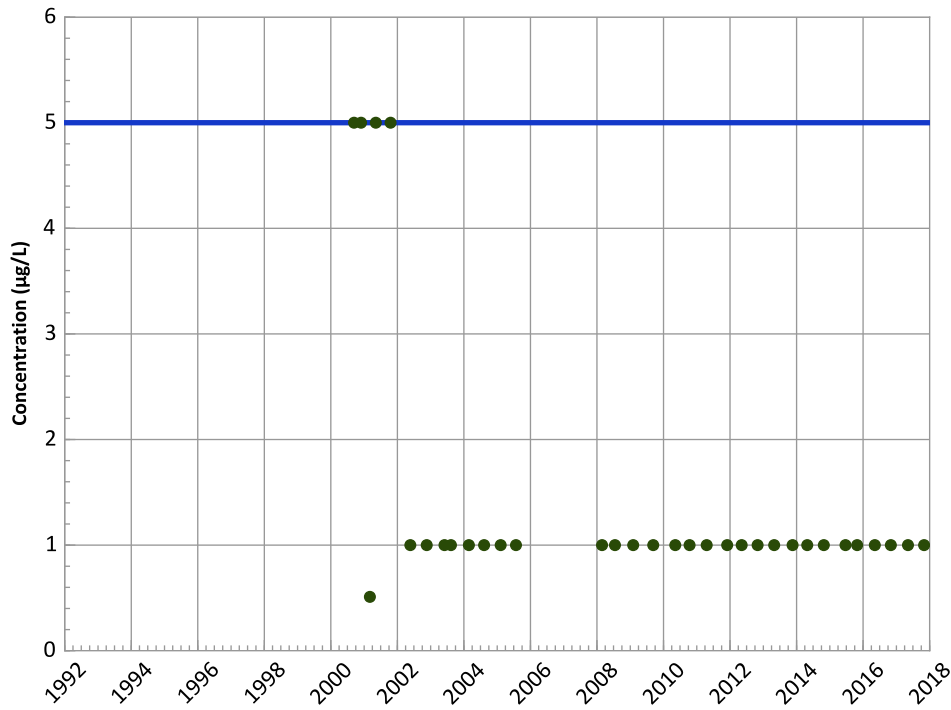
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,2-Dichloroethane Trend



Concentration Trend

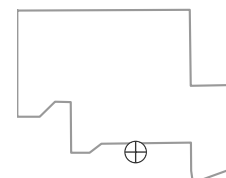
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

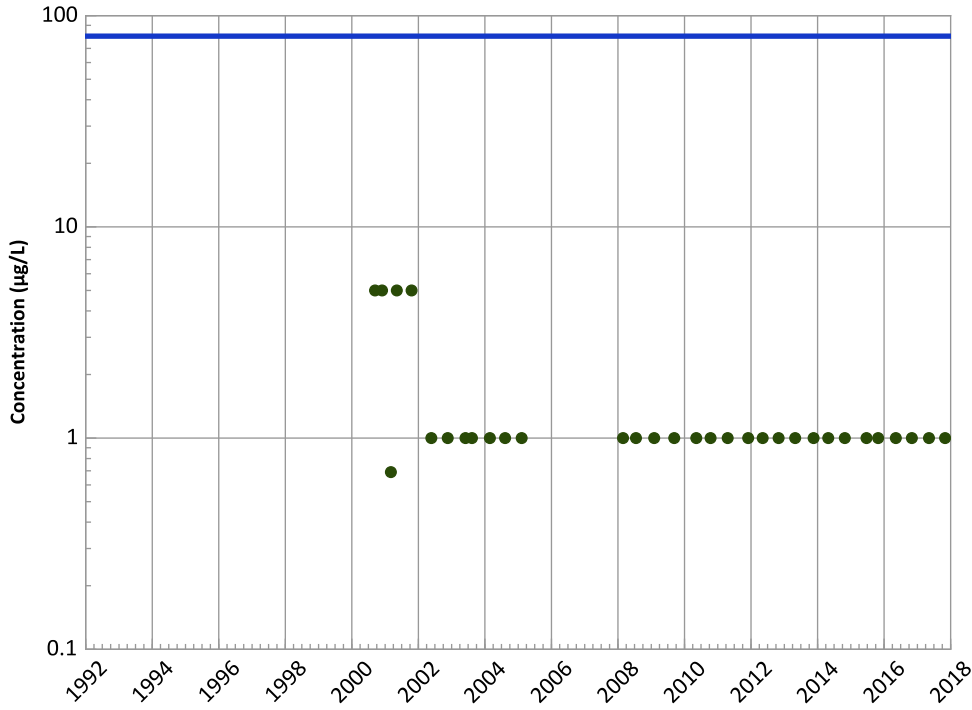
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/12/2000 to 11/01/2017
Analysis Date: 03/21/2018

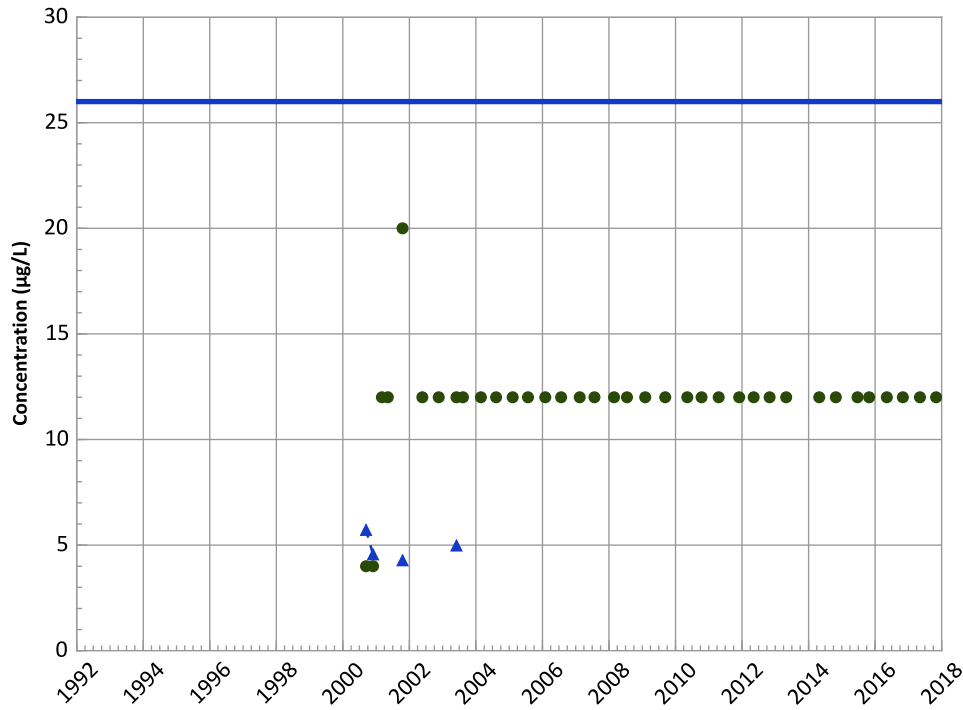
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1053 in Perched Aquifer
 USDOE/NNSA Pantex Plant
 Chloroform Trend



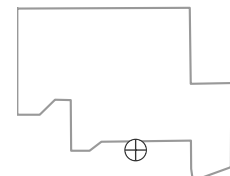
Concentration Trend
 MAROS Mann-Kendall Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect
 MAROS Linear Regression Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect

Perchlorate Trend



Concentration Trend
 MAROS Mann-Kendall Method
 Data ():
 All Non-Detect
 All Data
 Probably Increasing
 MAROS Linear Regression Method
 Data ():
 All Non-Detect
 All Data
 Stable

Well Location

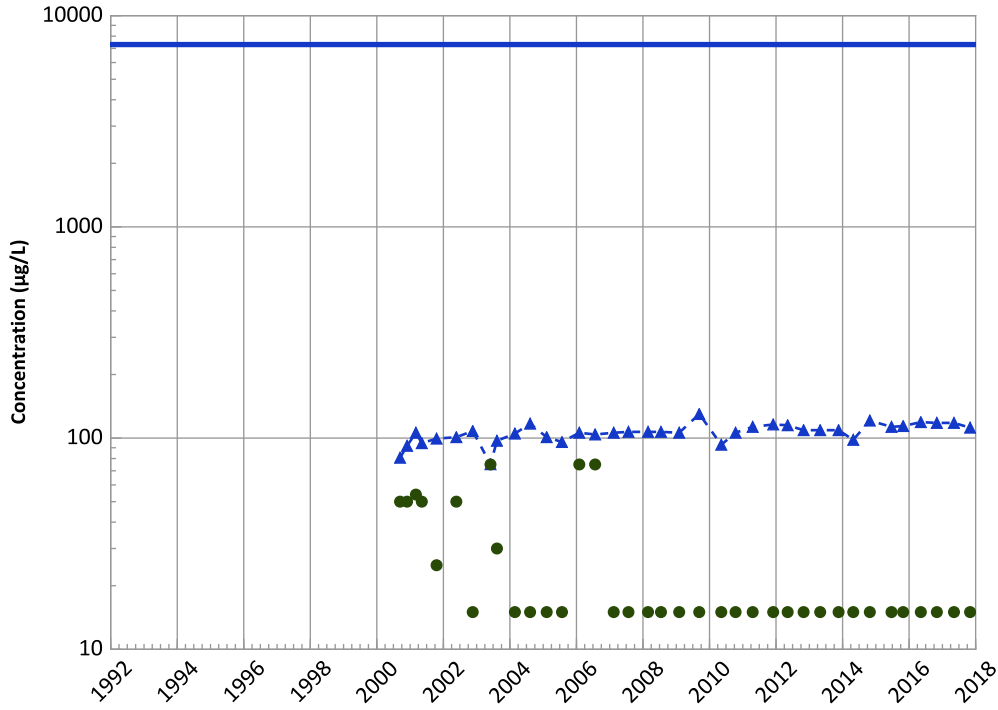


Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 09/12/2000 to 11/01/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1053 in Perched Aquifer
USDOE/NNSA Pantex Plant

Boron Trend



Concentration Trend

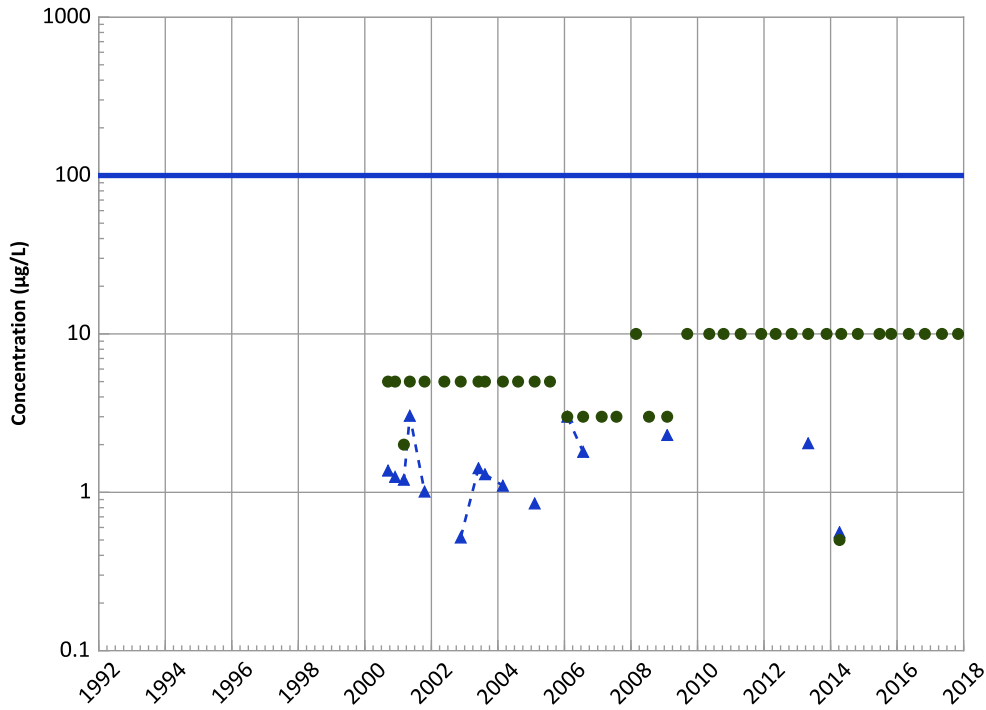
MAROS Mann-Kendall Method

Data ():
No Trend
All Data
Increasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
Increasing

Chromium, Total Trend



Concentration Trend

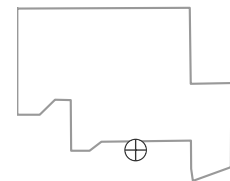
MAROS Mann-Kendall Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Increasing

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

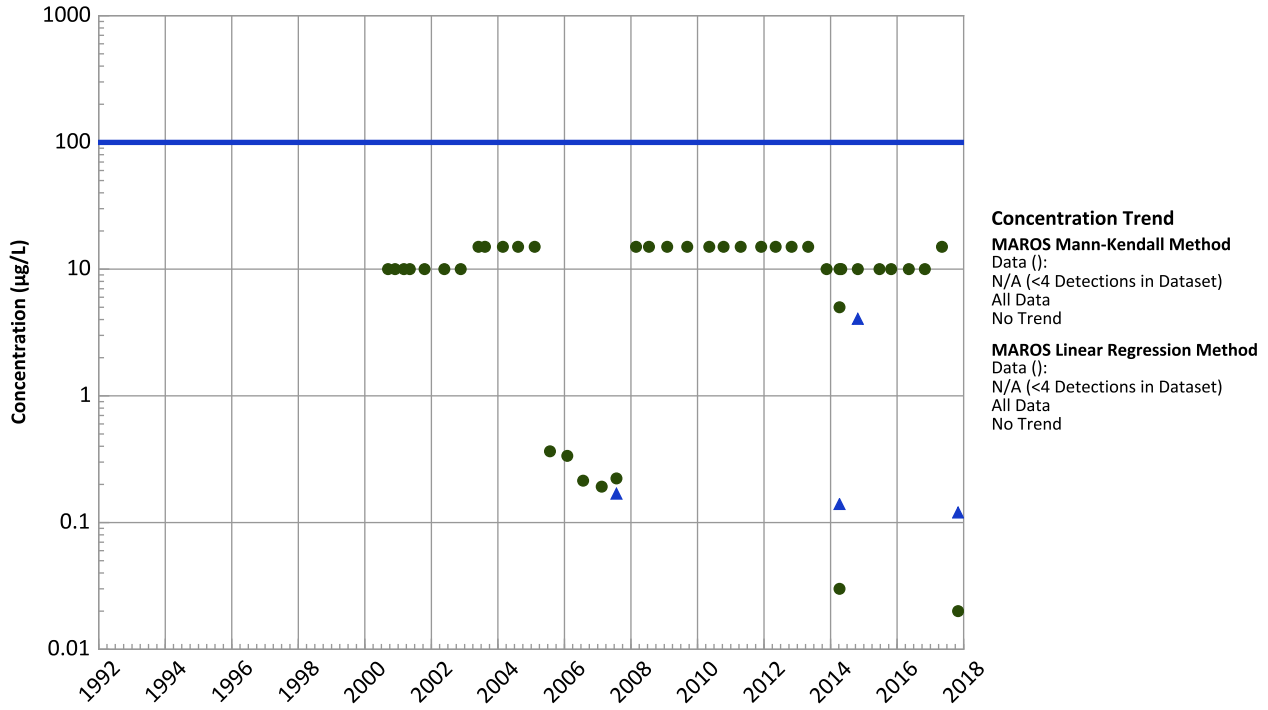
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/12/2000 to 11/01/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

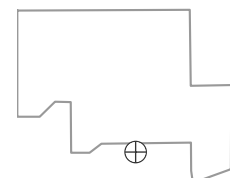
**PTX06-1053 in Perched Aquifer
USDOE/NNSA Pantex Plant
Chromium, Hexavalent Trend**



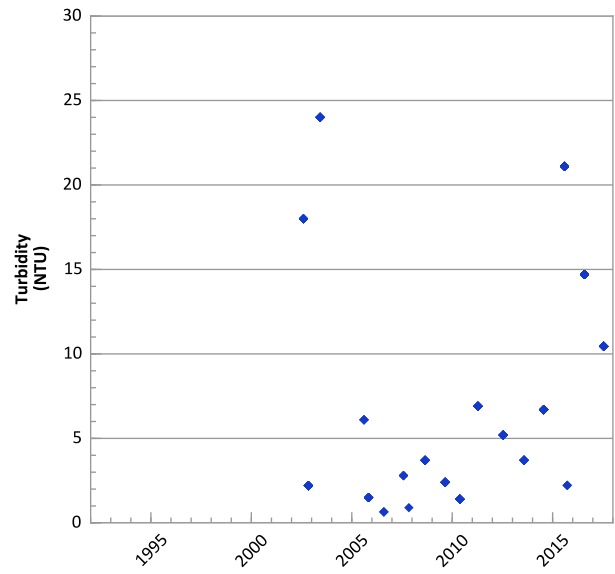
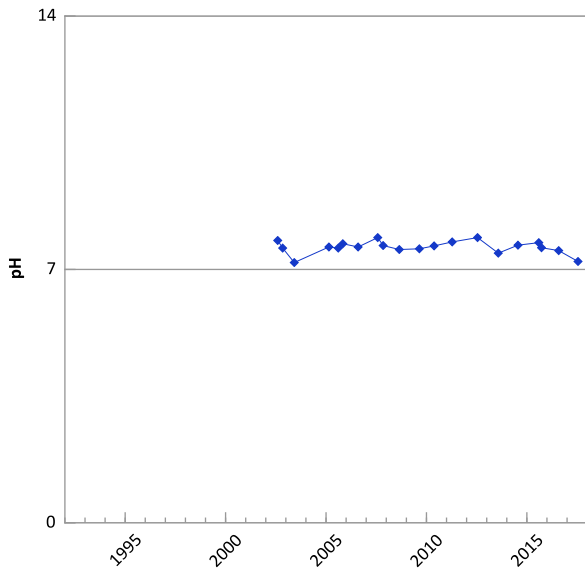
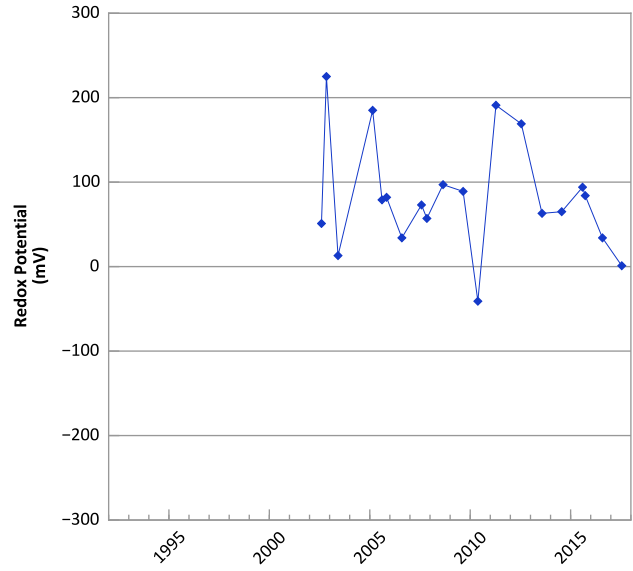
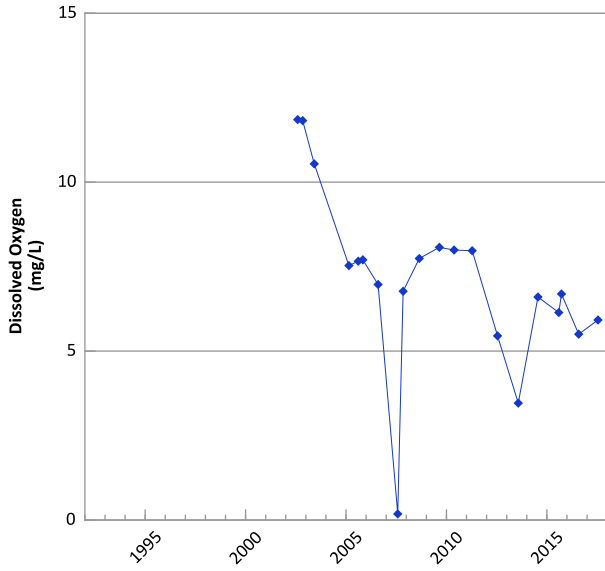
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 09/12/2000 to 11/01/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - - - Concentration Trend
- Groundwater Protection Standard

Well Location

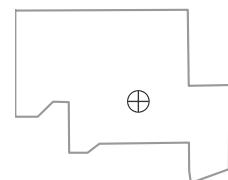


**PTX06-1077A in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



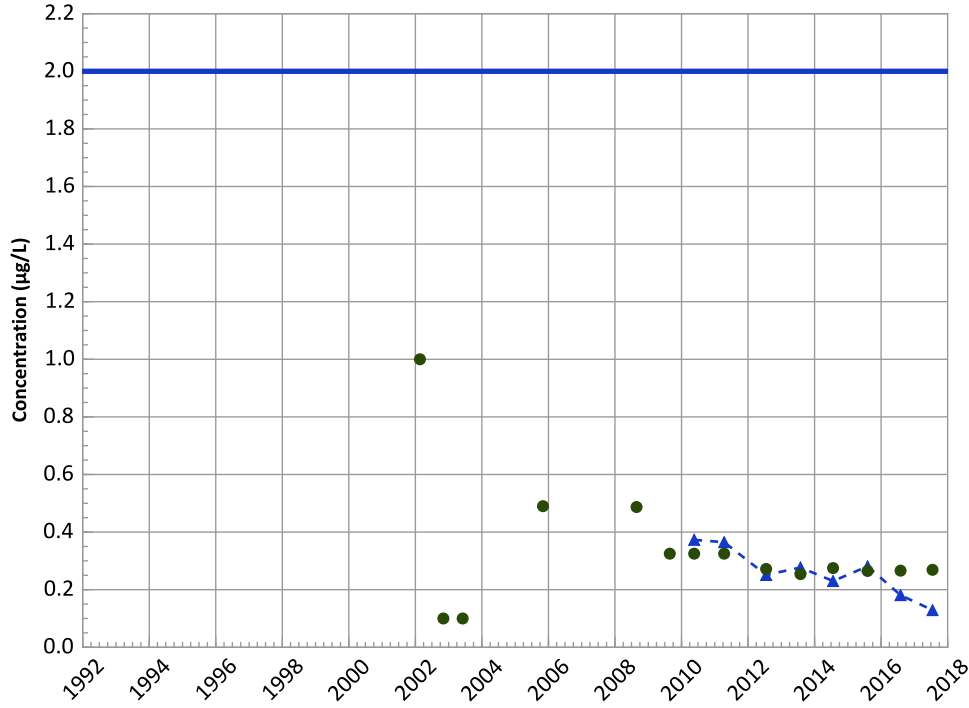
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 02/20/2002 to 07/19/2017
 Analysis Date: 03/21/2018

Well Location



PTX06-1077A in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

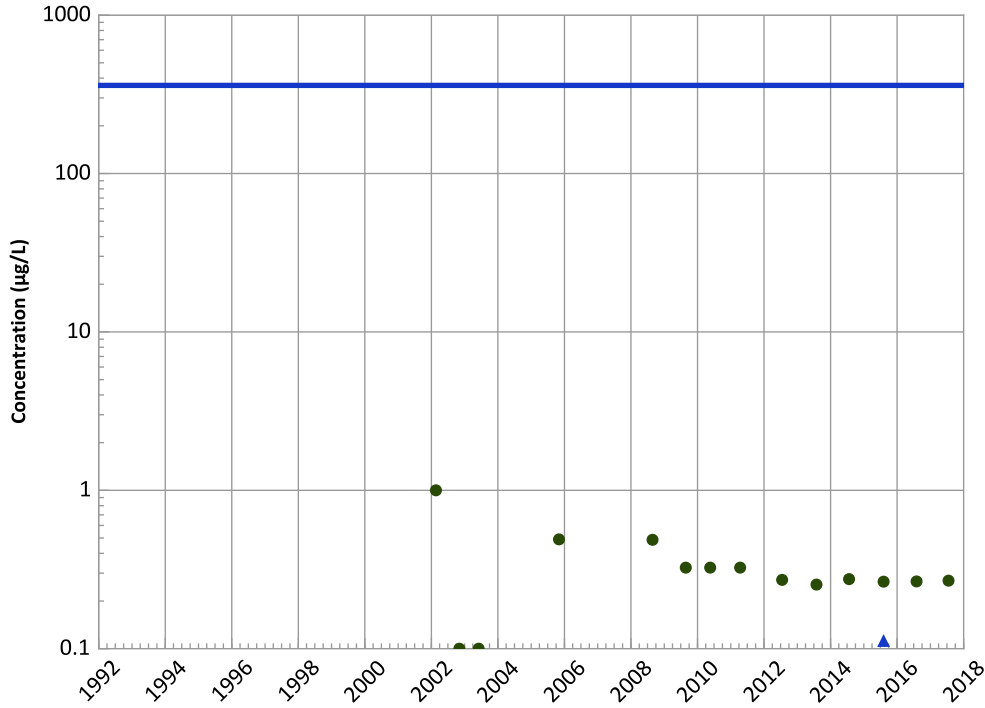
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Stable
All Data
Decreasing

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

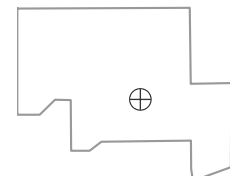
MAROS Mann-Kendall Method

Data ():
N/A (<4 Detections in Dataset)
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
N/A (<4 Detections in Dataset)

Well Location

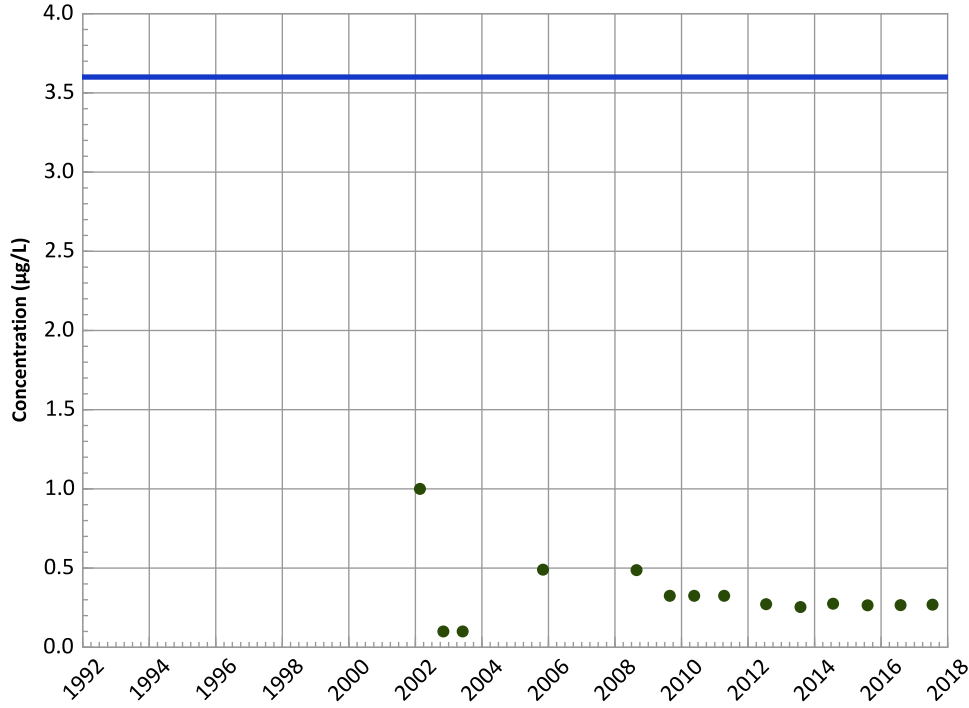


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 02/20/2002 to 07/19/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1077A in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

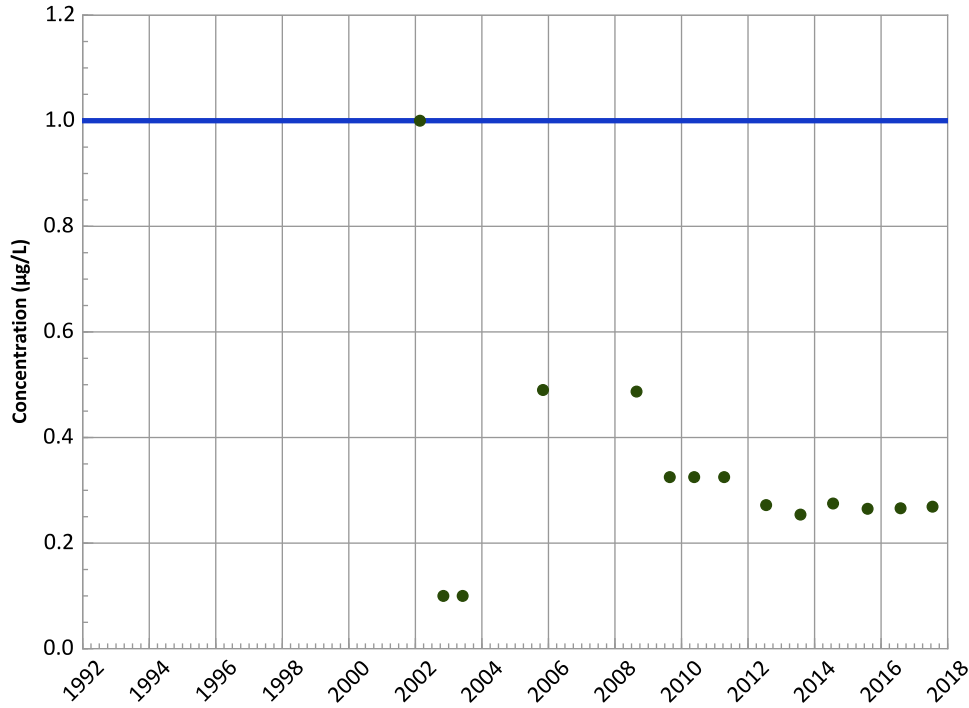
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

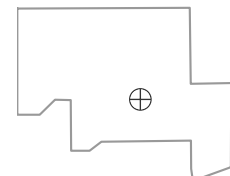
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

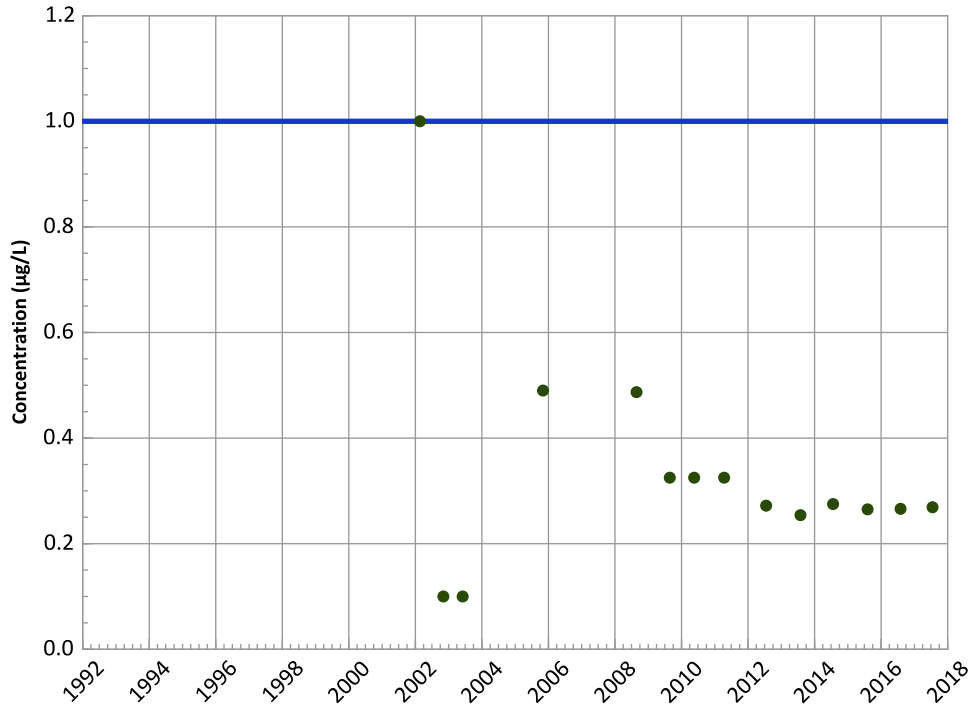


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 02/20/2002 to 07/19/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1077A in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

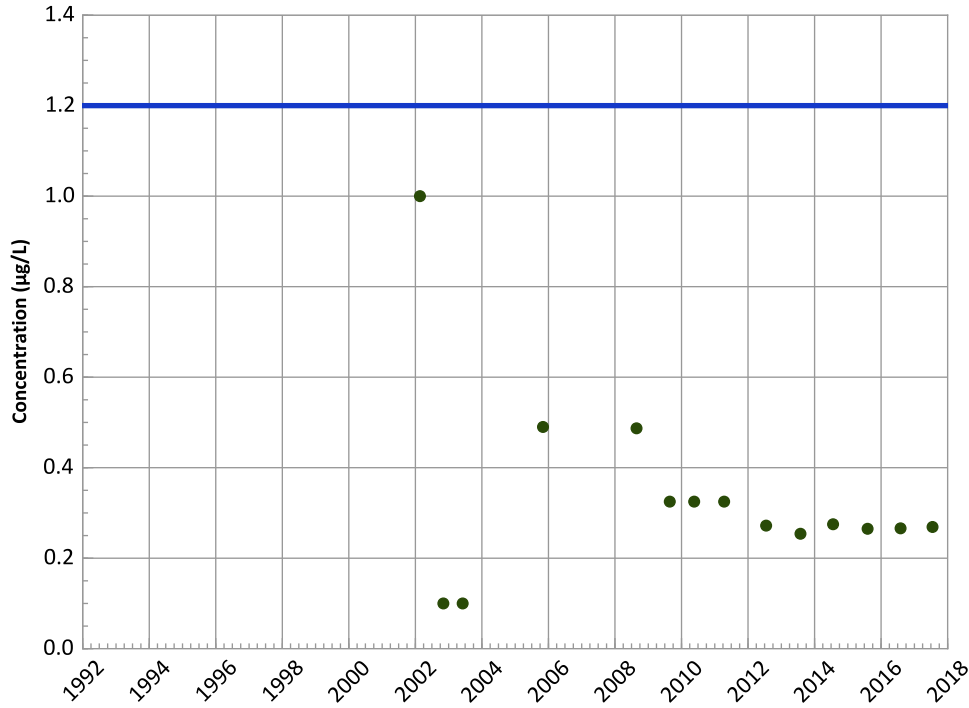
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

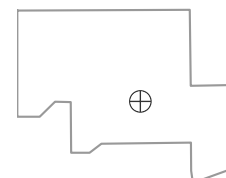
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

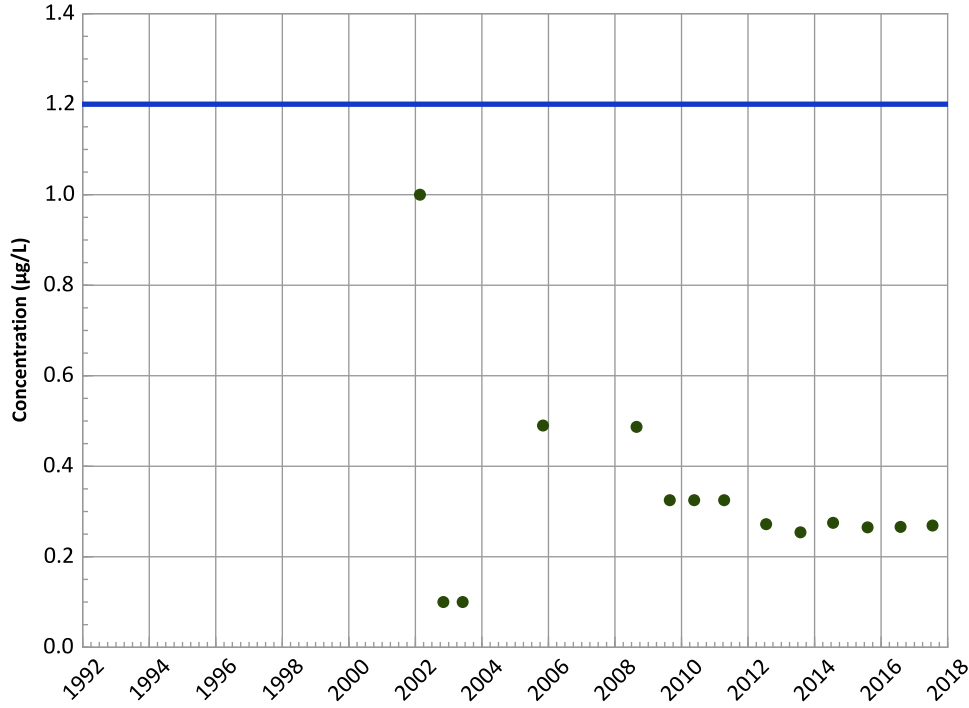


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 02/20/2002 to 07/19/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1077A in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

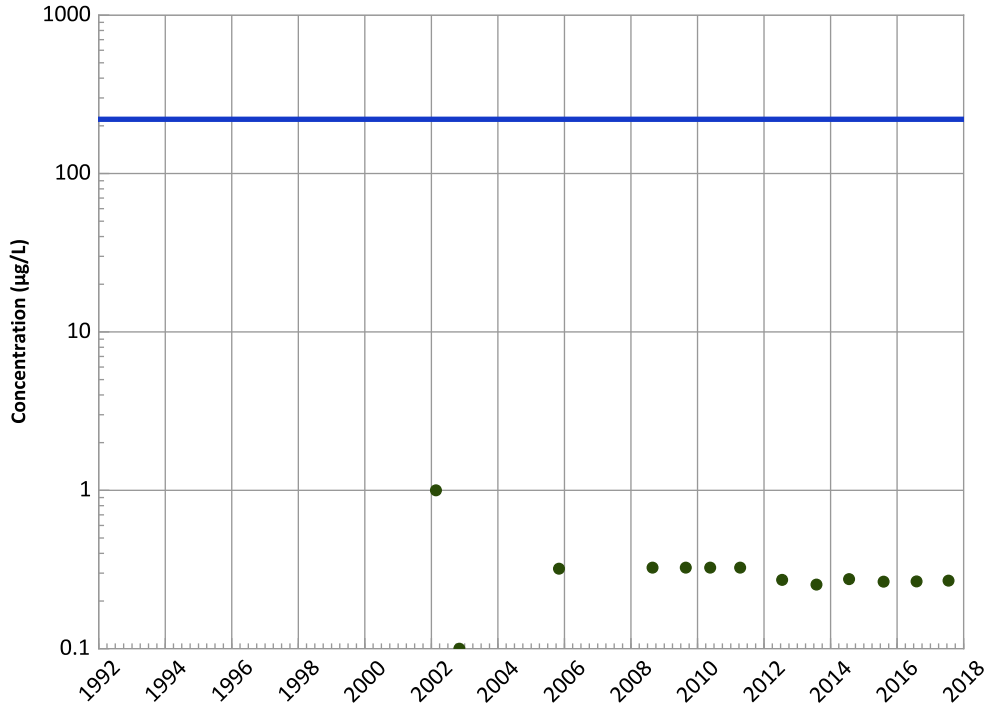
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,3,5-Trinitrobenzene Trend



Concentration Trend

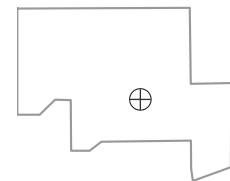
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

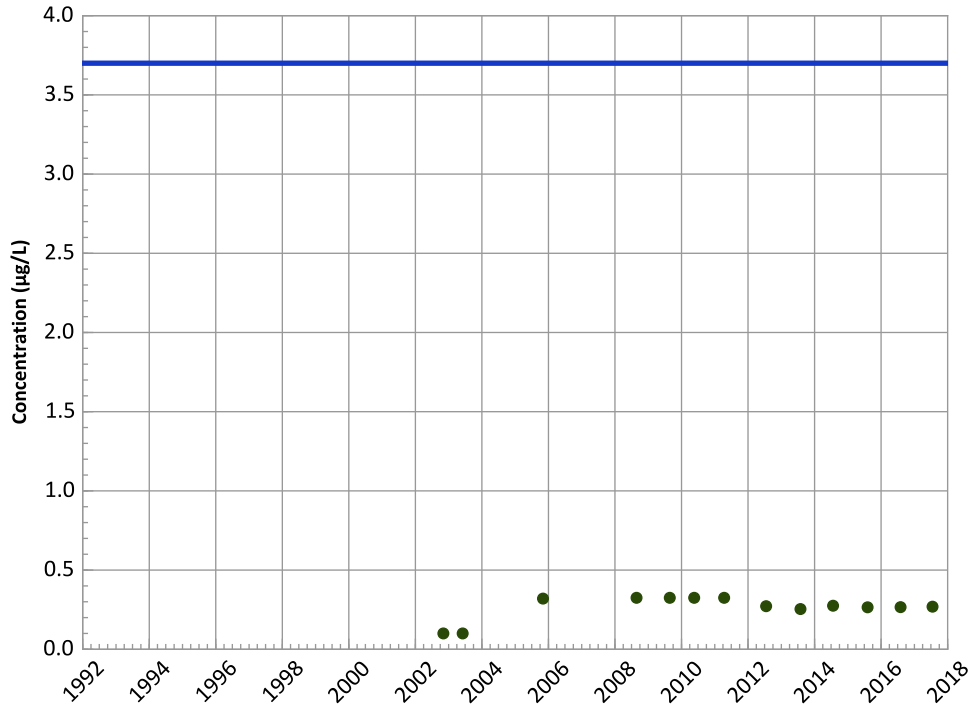


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 02/20/2002 to 07/19/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1077A in Perched Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

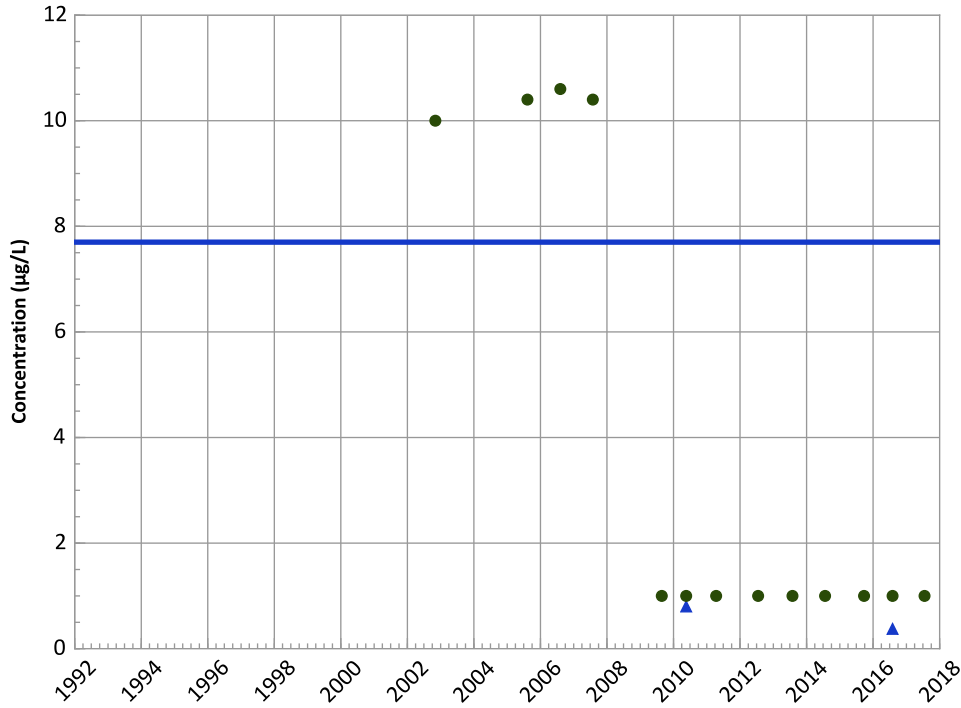
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,4-Dioxane (p-Dioxane) Trend



Concentration Trend

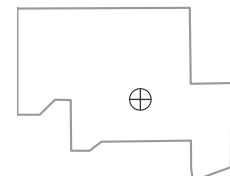
MAROS Mann-Kendall Method

Data ():
N/A (<4 Detections in Dataset)
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
N/A (<4 Detections in Dataset)

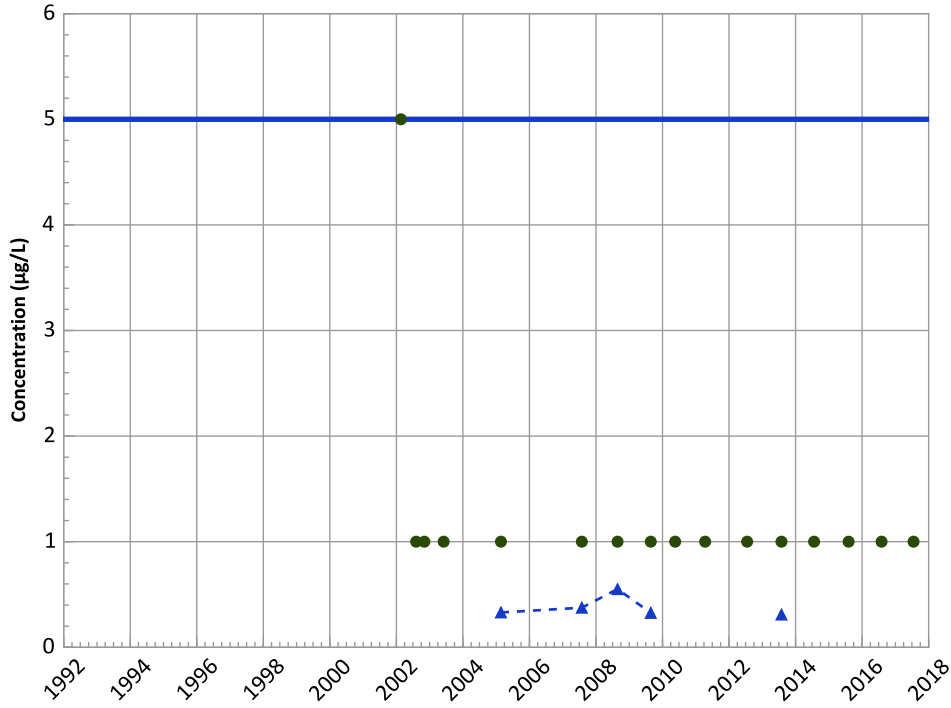
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 02/20/2002 to 07/19/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1077A in Perched Aquifer
USDOE/NNSA Pantex Plant
Tetrachloroethylene (PCE) Trend**

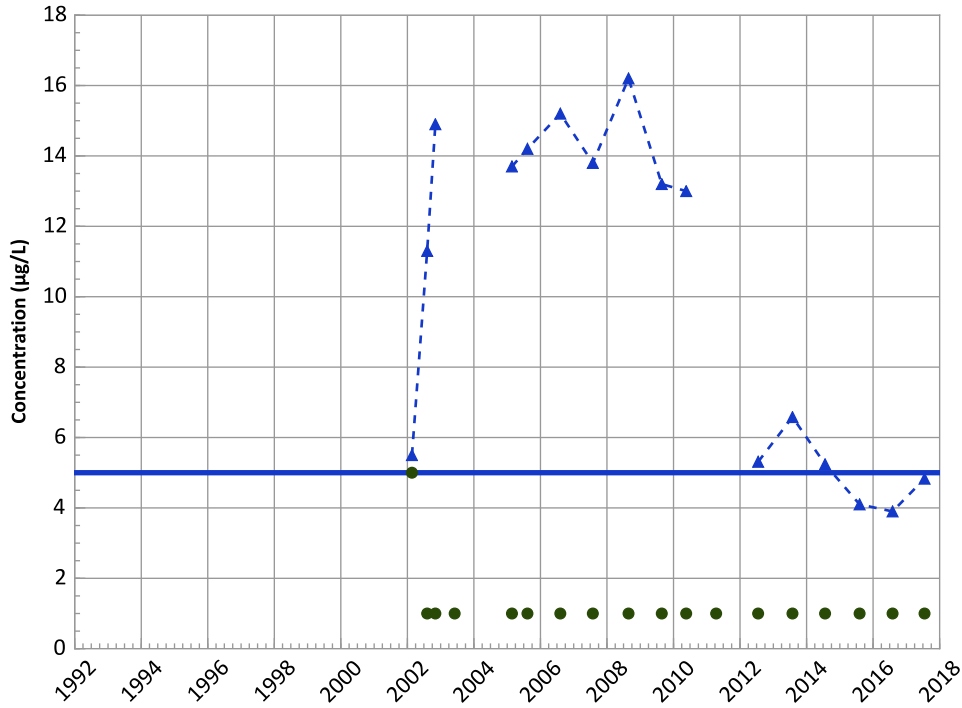


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

MAROS Linear Regression Method
Data ():
N/A (<4 Detections in Dataset)
All Data
Stable

Trichloroethene Trend

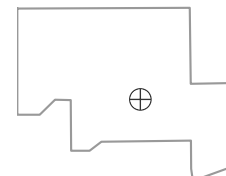


Concentration Trend

MAROS Mann-Kendall Method
Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method
Data ():
Decreasing
All Data
Decreasing

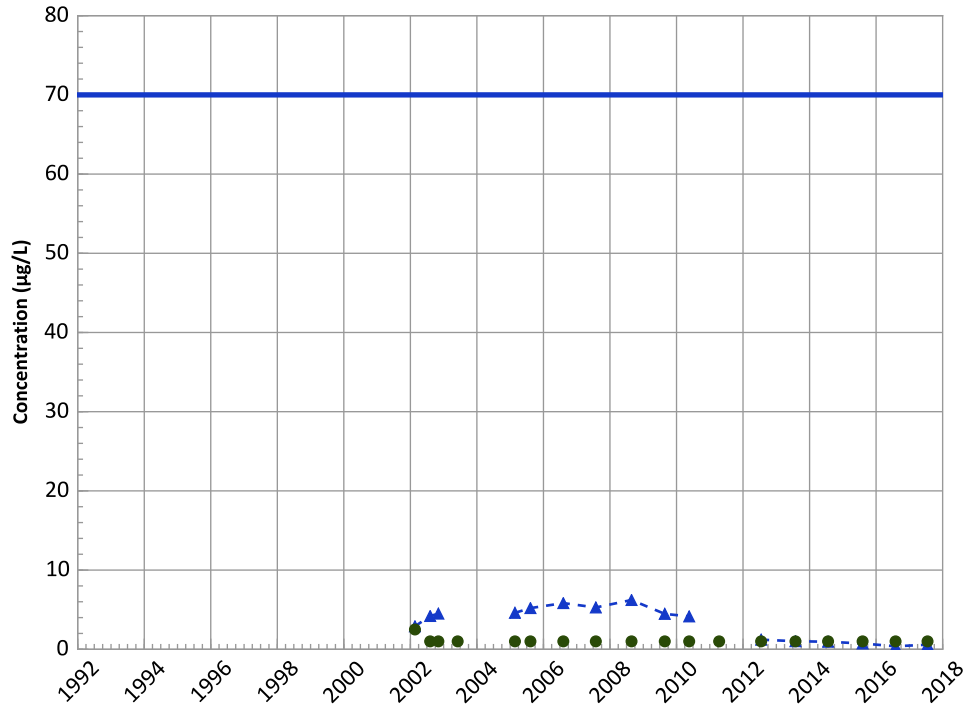
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 02/20/2002 to 07/19/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1077A in Perched Aquifer
USDOE/NNSA Pantex Plant
cis-1,2-Dichloroethene Trend**



Concentration Trend

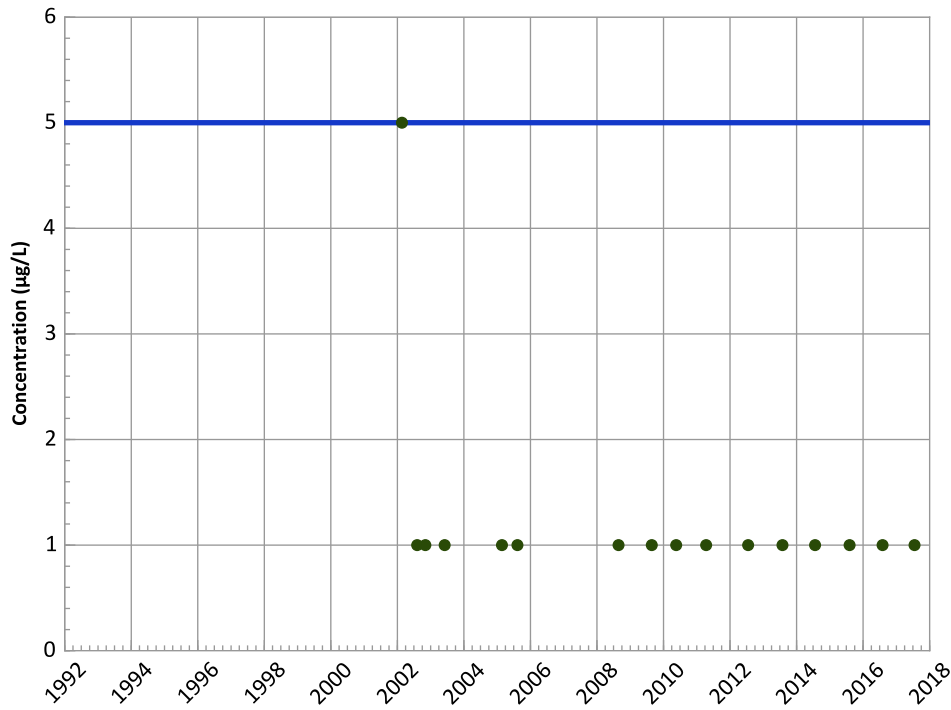
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

1,2-Dichloroethane Trend



Concentration Trend

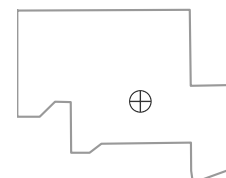
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

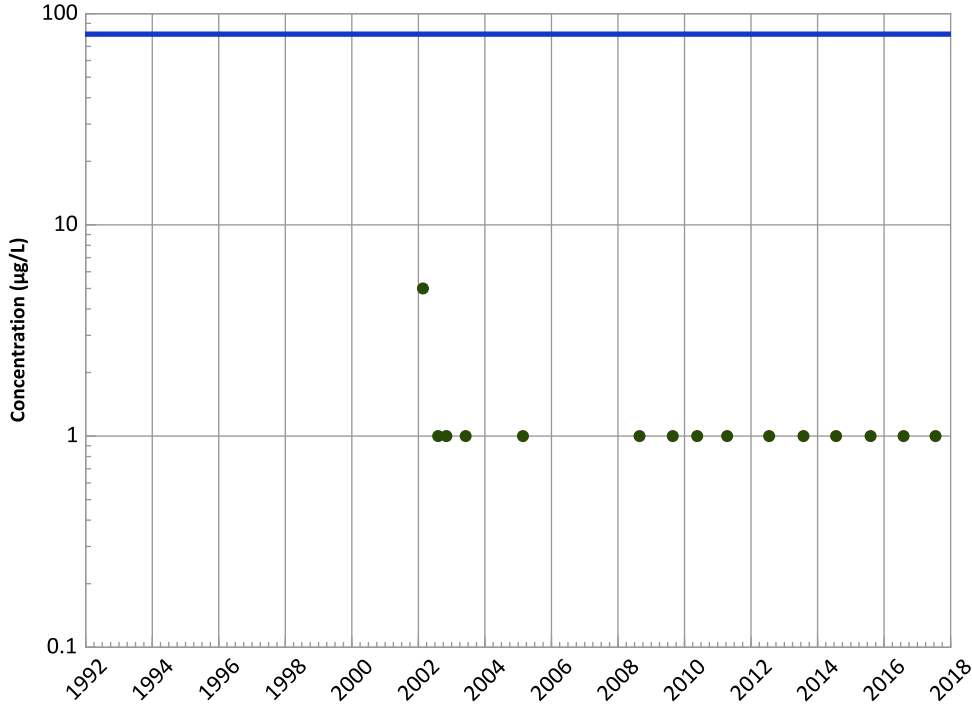


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 02/20/2002 to 07/19/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - - Concentration Trend
- Groundwater Protection Standard

PTX06-1077A in Perched Aquifer
USDOE/NNSA Pantex Plant

Chloroform Trend



Concentration Trend

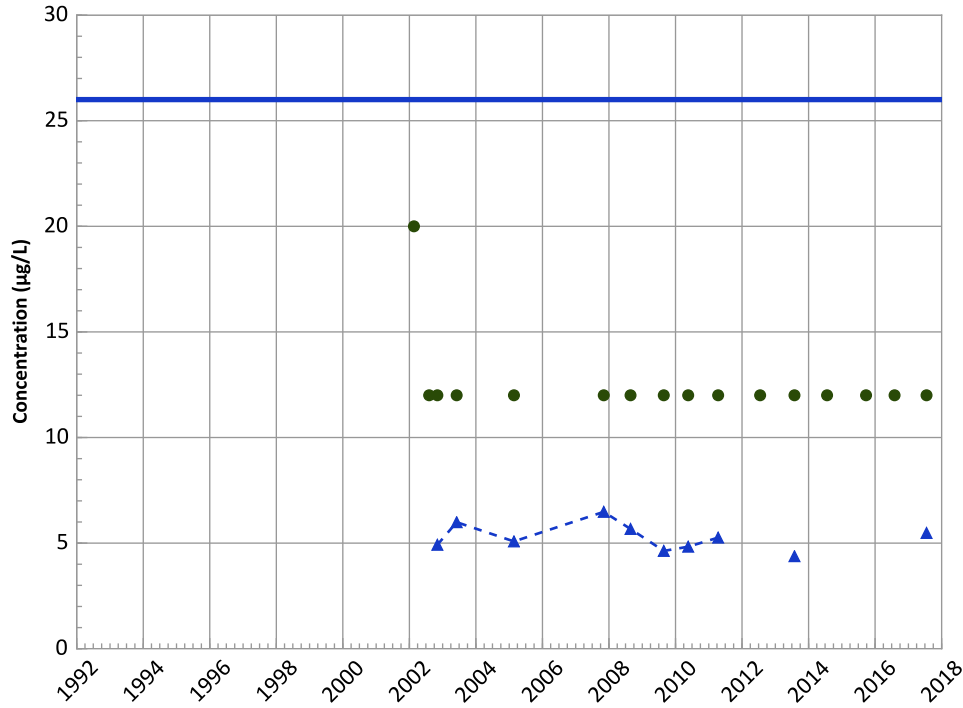
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Perchlorate Trend



Concentration Trend

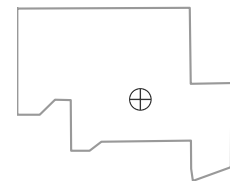
MAROS Mann-Kendall Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Stable

Well Location

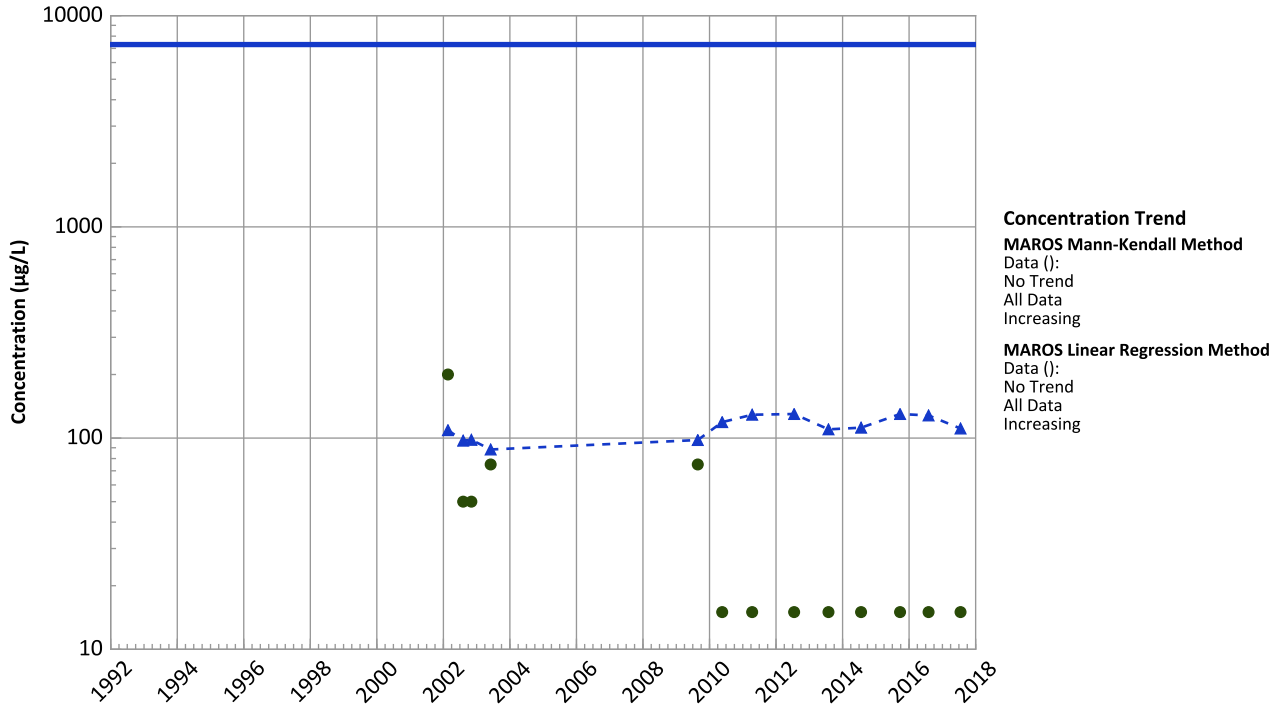


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 02/20/2002 to 07/19/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1077A in Perched Aquifer
USDOE/NNSA Pantex Plant

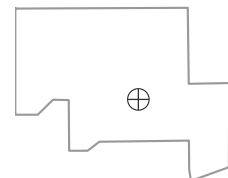
Boron Trend



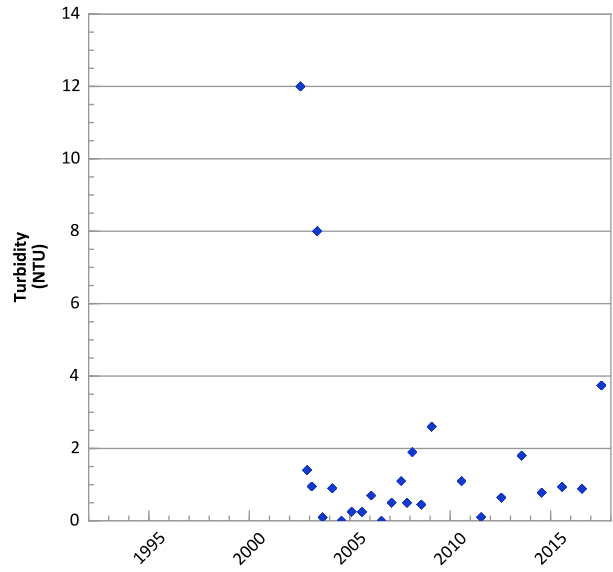
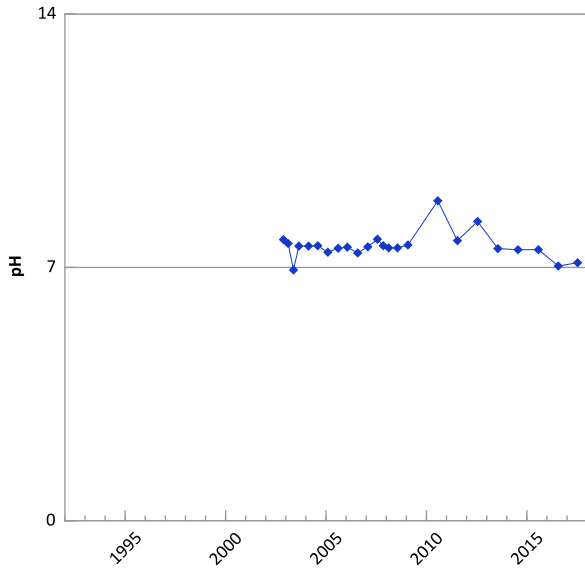
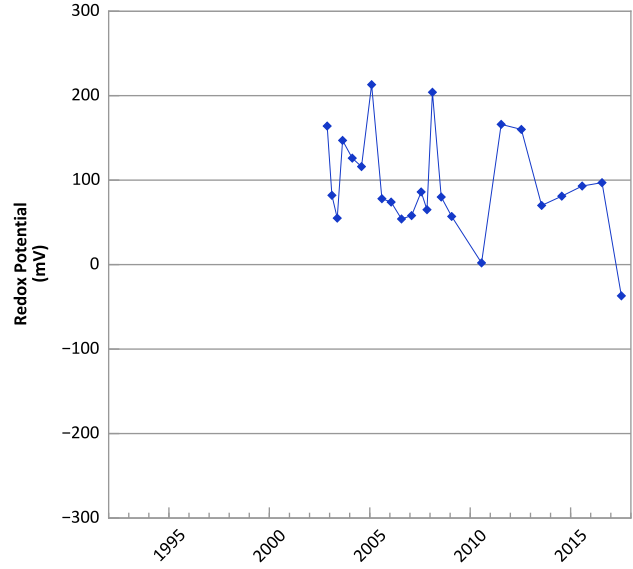
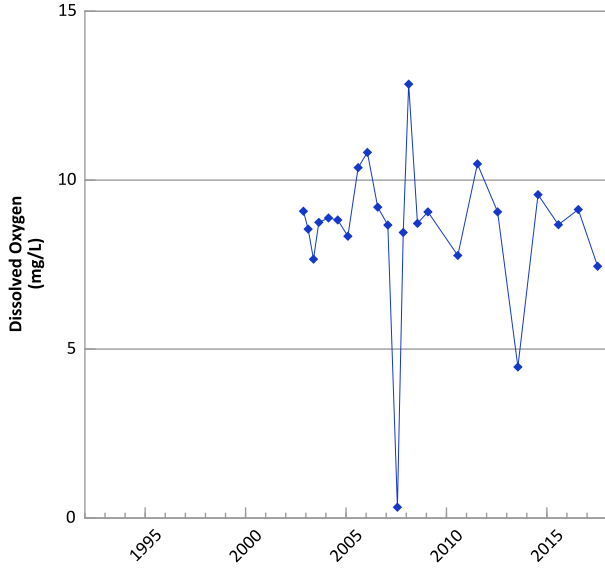
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 02/20/2002 to 07/19/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

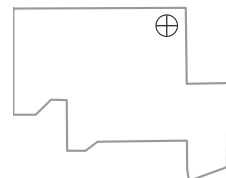


**PTX06-1081 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



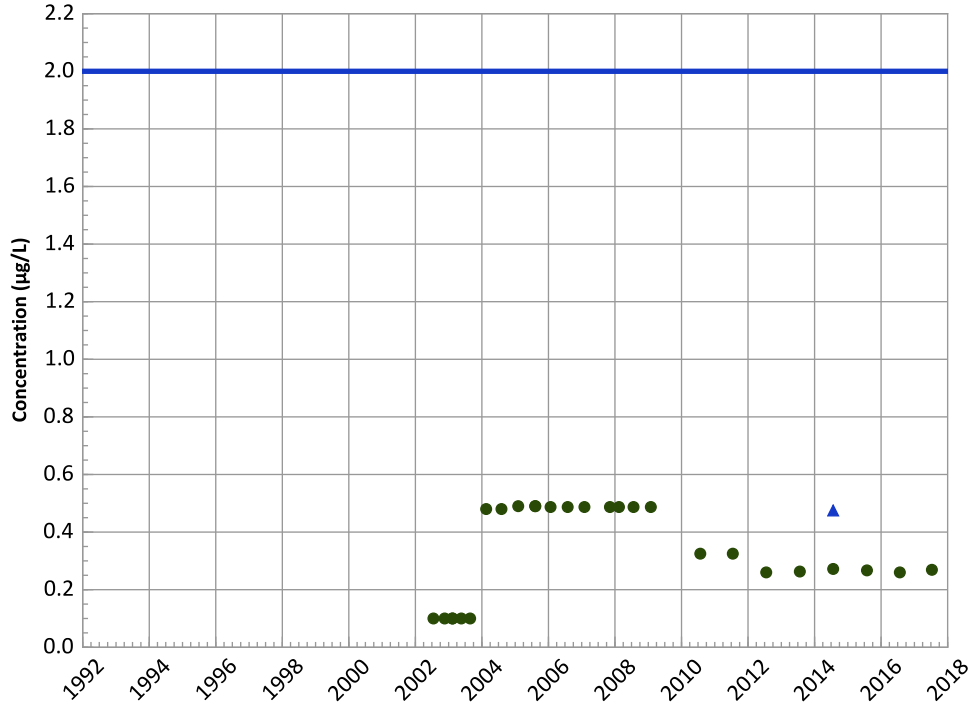
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 07/18/2002 to 07/12/2017
 Analysis Date: 03/21/2018

Well Location



PTX06-1081 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

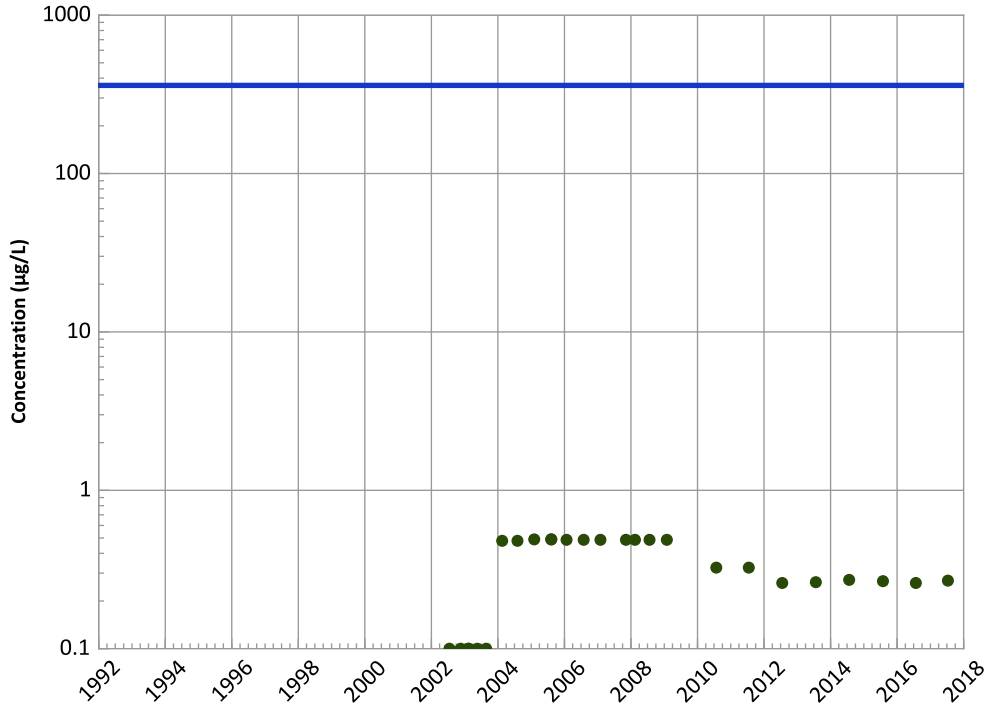
Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

All Non-Detect

All Data

All Non-Detect

MAROS Linear Regression Method

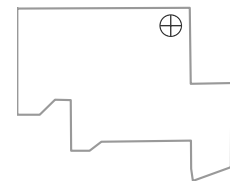
Data ():

All Non-Detect

All Data

All Non-Detect

Well Location

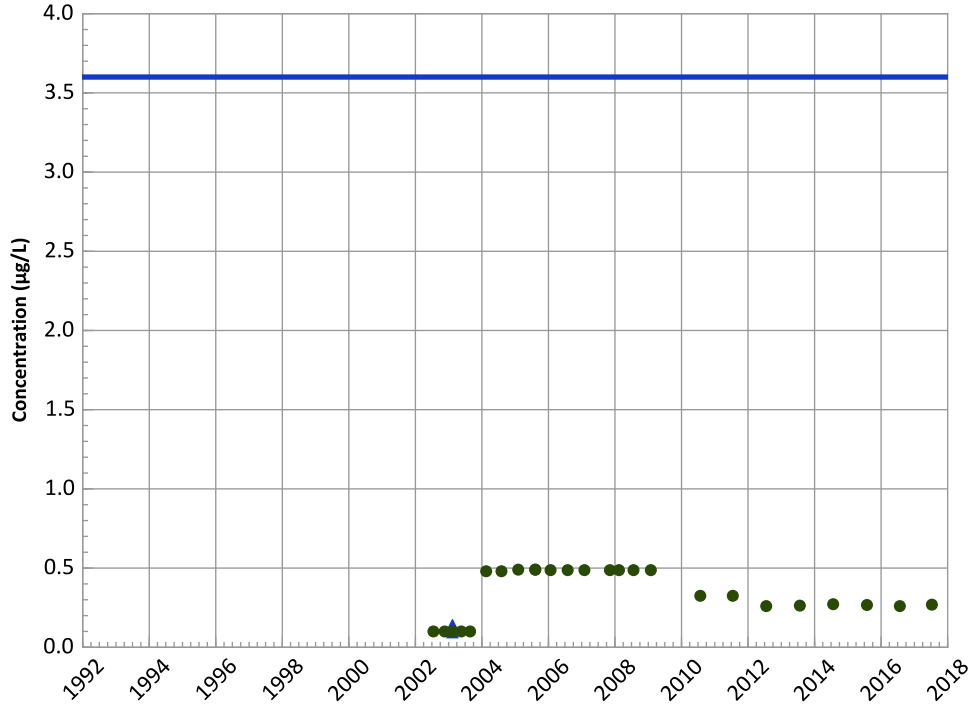


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 07/18/2002 to 07/12/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1081 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

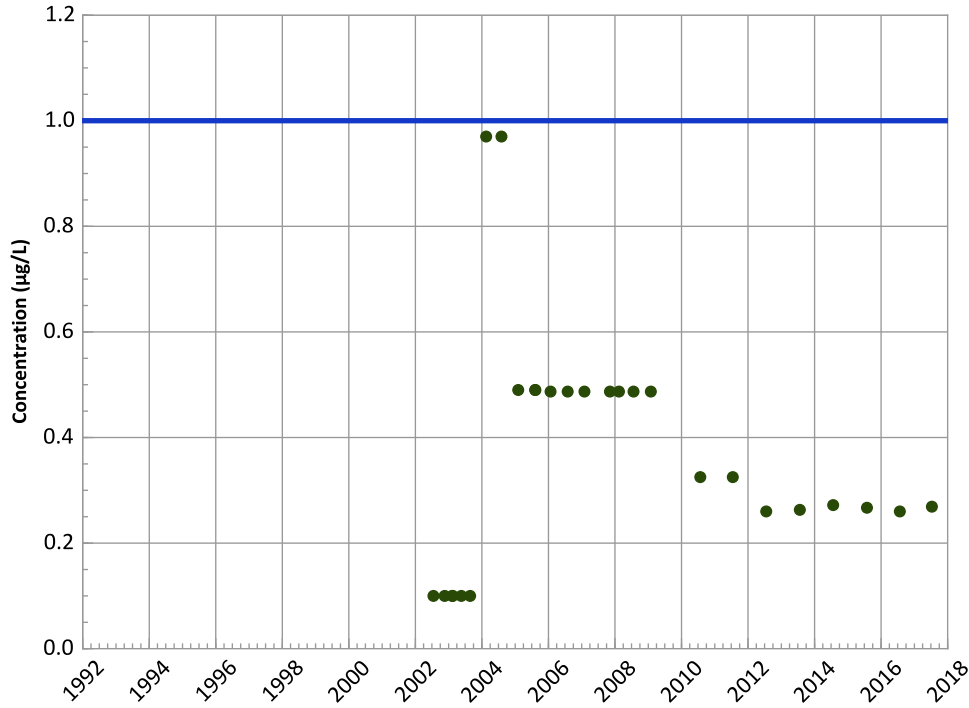
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

2,4-Dinitrotoluene Trend



Concentration Trend

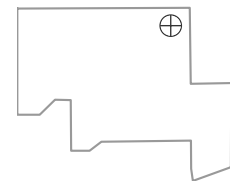
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

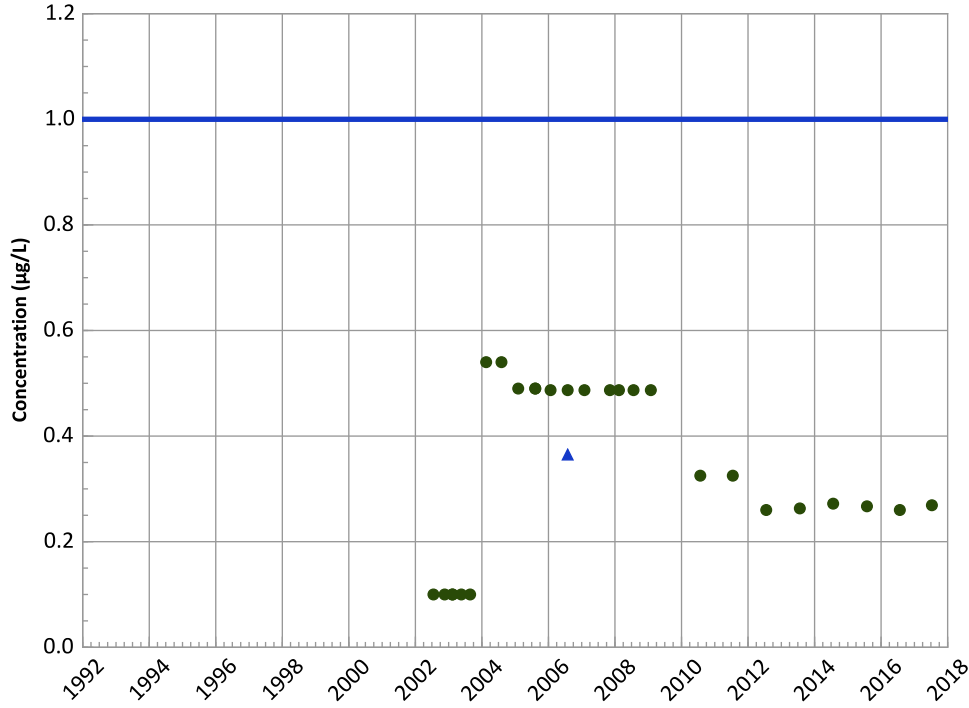


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 07/18/2002 to 07/12/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1081 in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

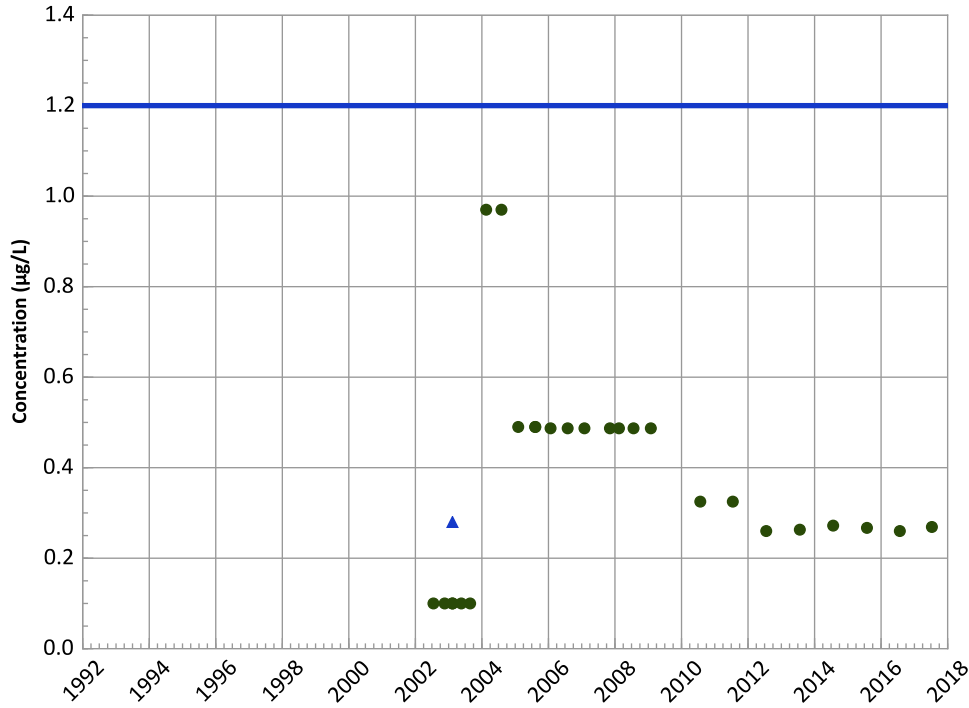
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

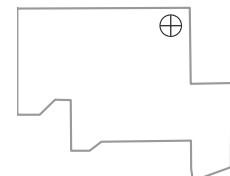
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

Well Location

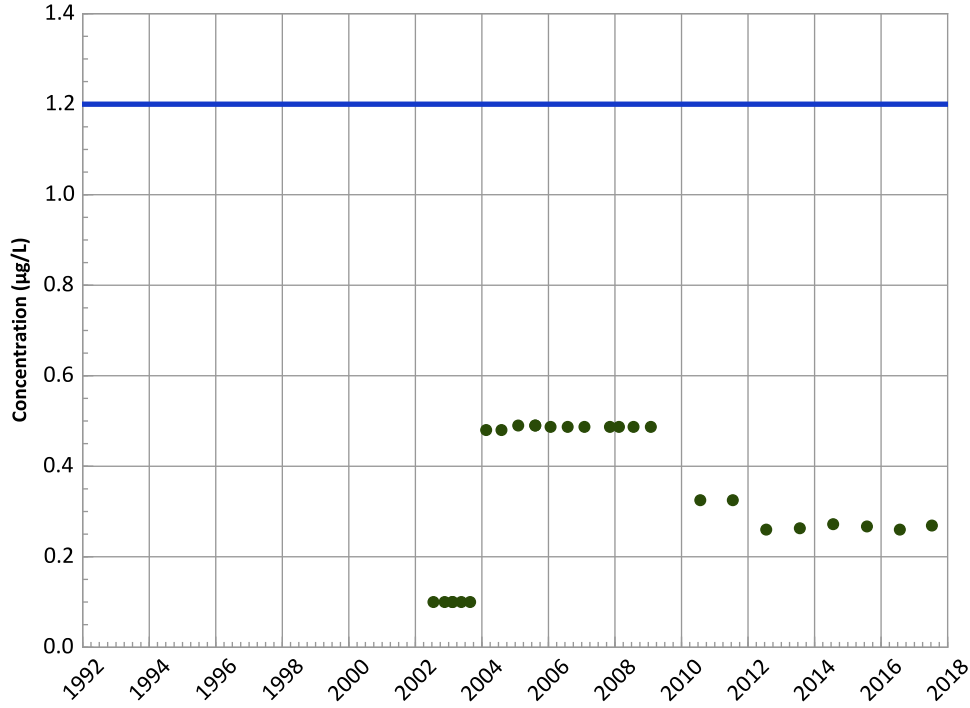


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 07/18/2002 to 07/12/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1081 in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

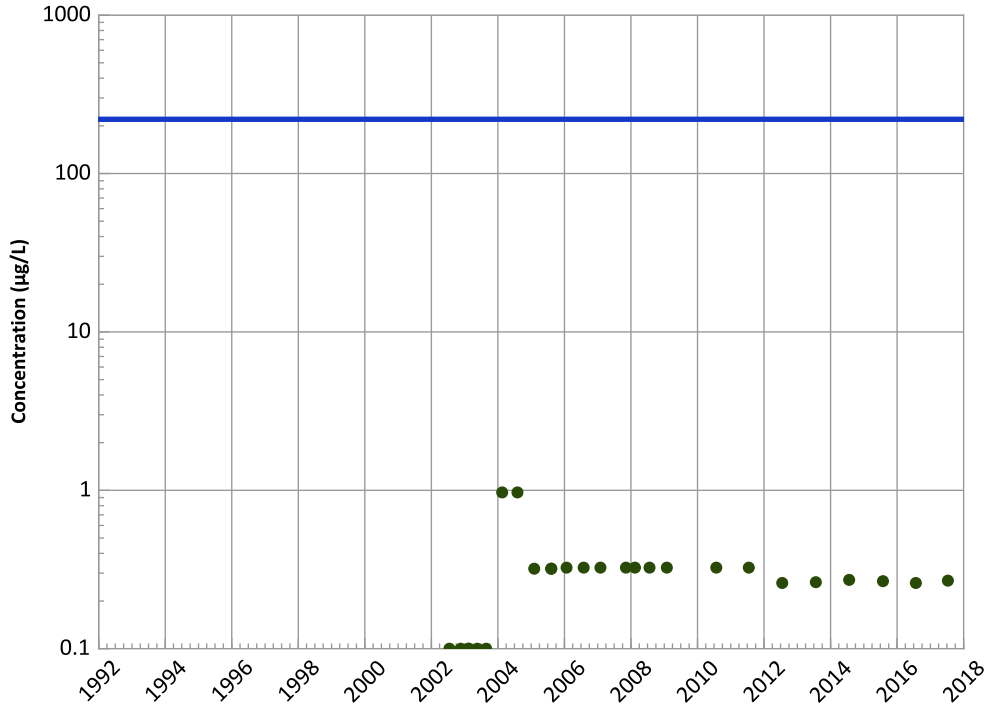
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,3,5-Trinitrobenzene Trend



Concentration Trend

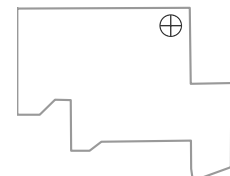
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

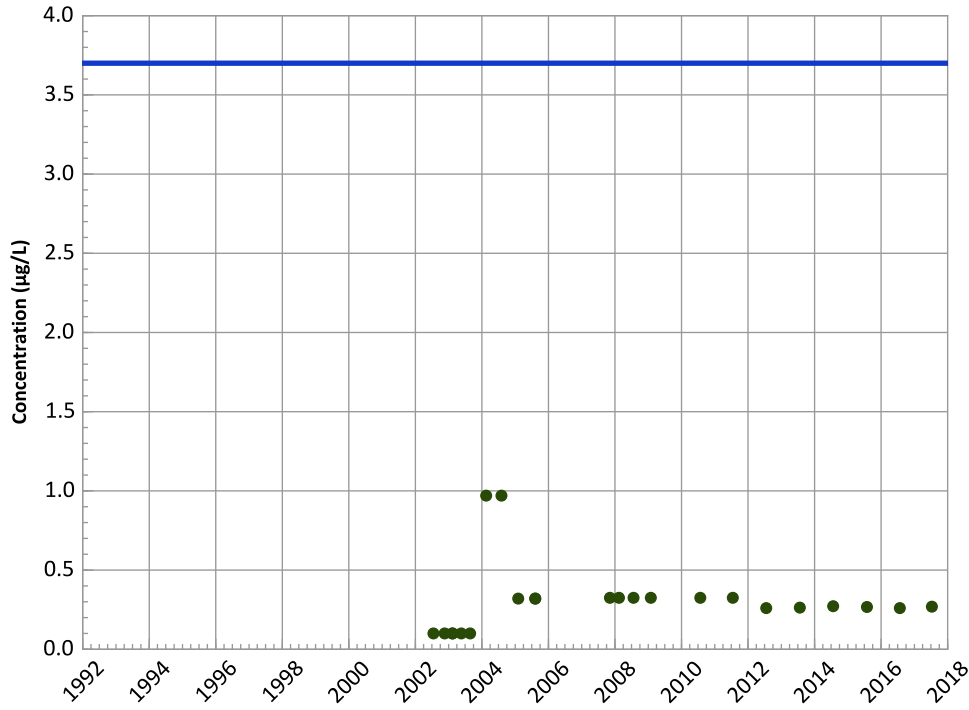


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 07/18/2002 to 07/12/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1081 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

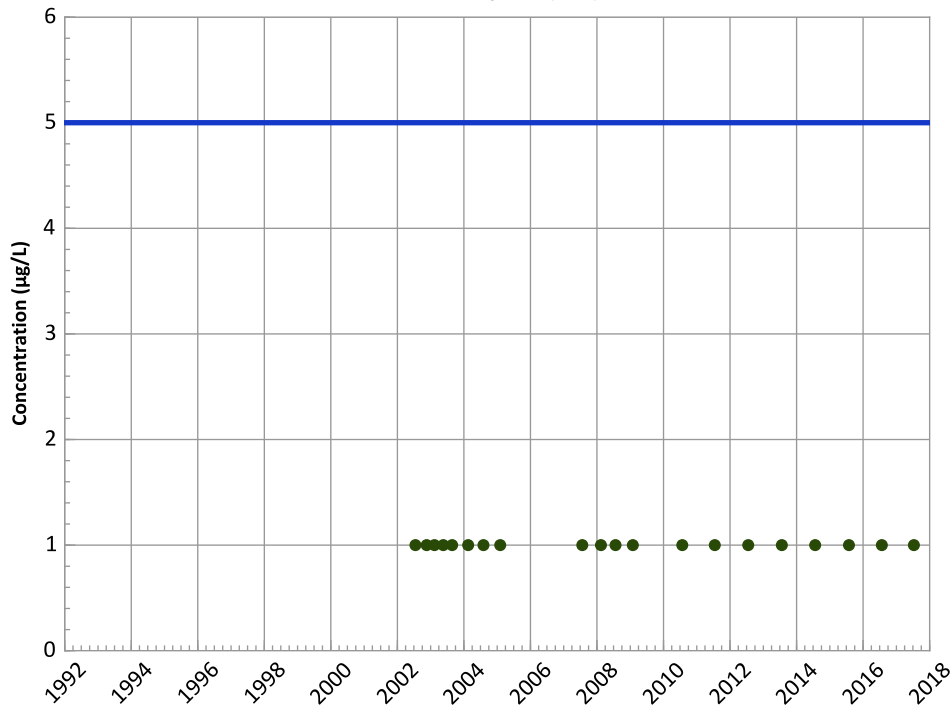
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Tetrachloroethylene (PCE) Trend



Concentration Trend

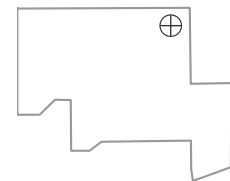
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

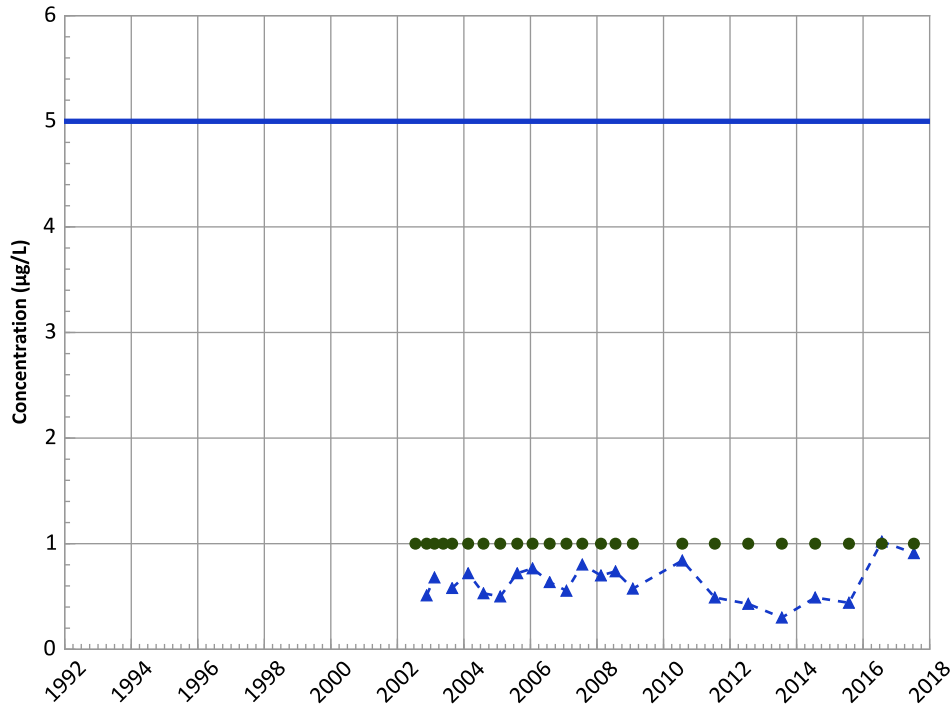


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 07/18/2002 to 07/12/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1081 in Perched Aquifer
USDOE/NNSA Pantex Plant

Trichloroethene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

No Trend

All Data

No Trend

MAROS Linear Regression Method

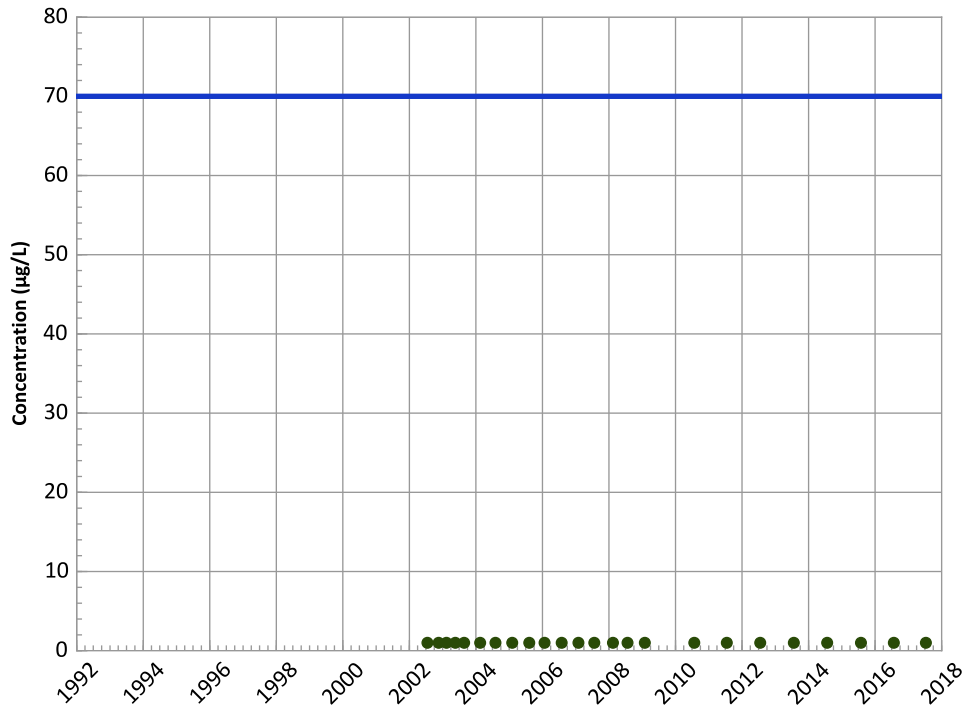
Data ():

Probably Increasing

All Data

Decreasing

cis-1,2-Dichloroethene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

All Non-Detect

All Data

All Non-Detect

MAROS Linear Regression Method

Data ():

All Non-Detect

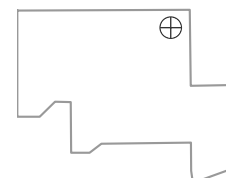
All Data

All Non-Detect

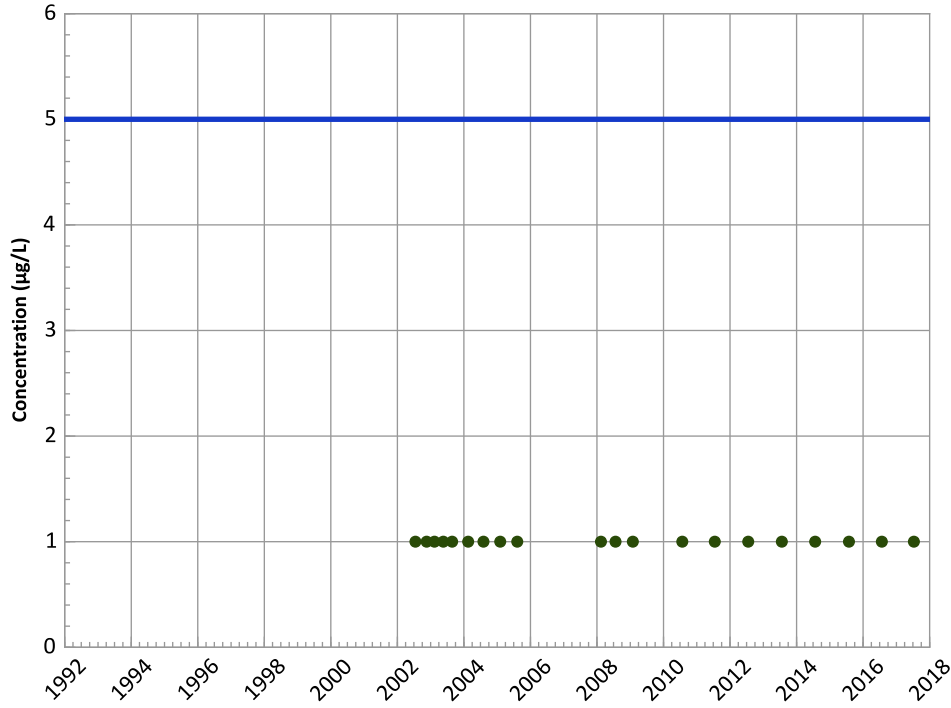
Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 07/18/2002 to 07/12/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



**PTX06-1081 in Perched Aquifer
USDOE/NNSA Pantex Plant
1,2-Dichloroethane Trend**



Concentration Trend

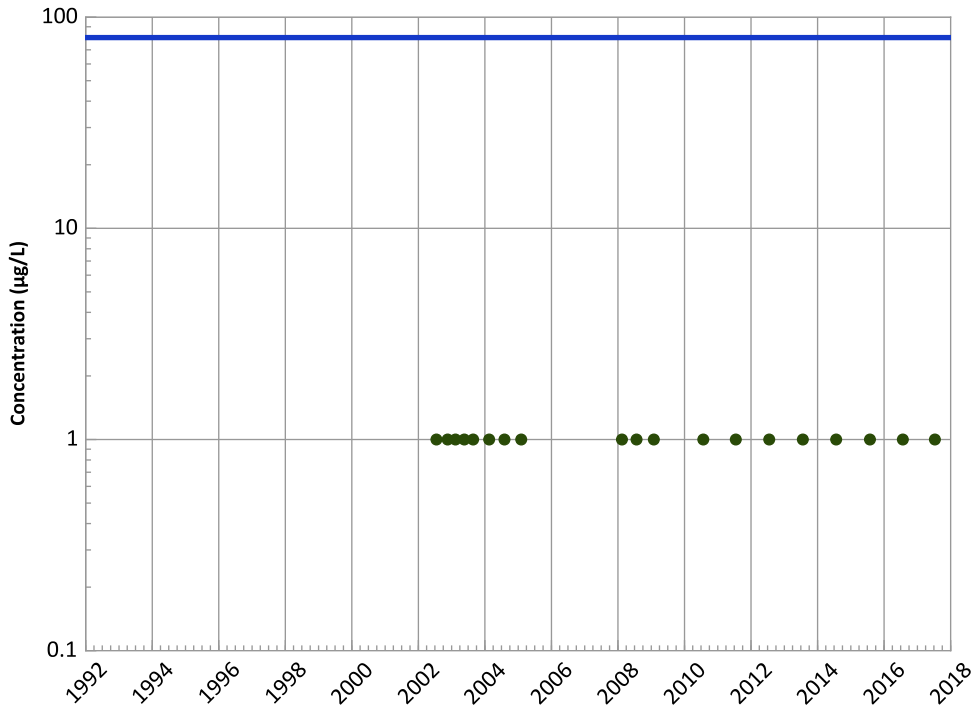
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Chloroform Trend



Concentration Trend

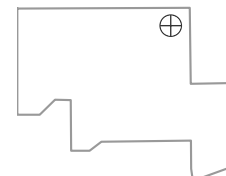
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

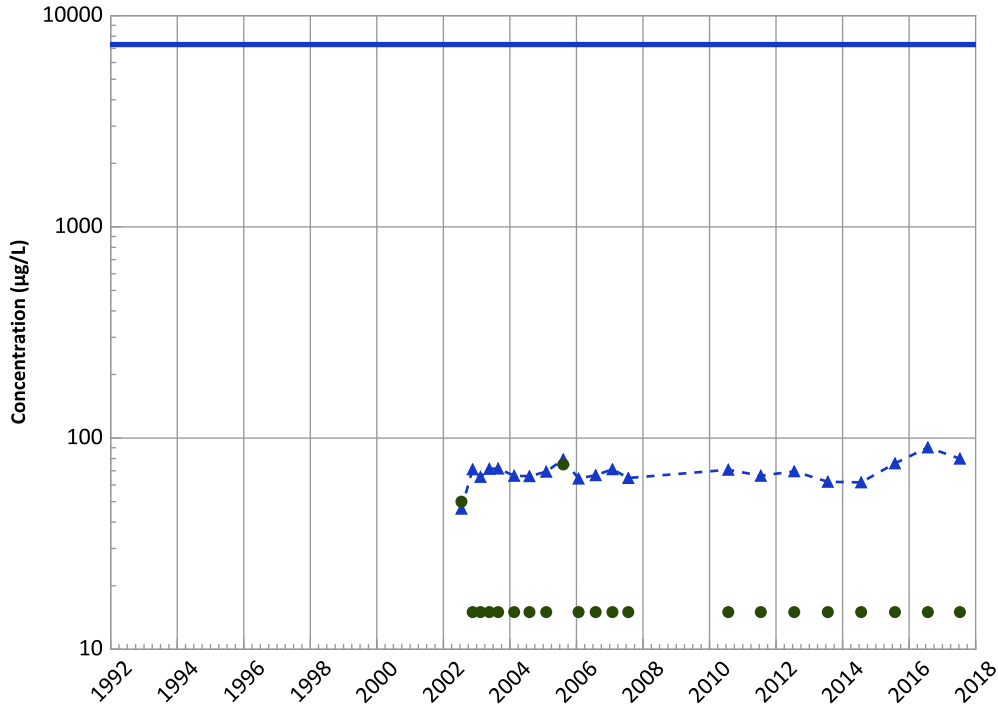
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 07/18/2002 to 07/12/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1081 in Perched Aquifer
USDOE/NNSA Pantex Plant
Boron Trend**

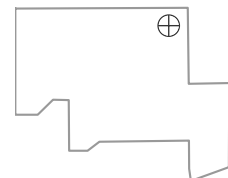


Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 No Trend
 All Data
 No Trend
MAROS Linear Regression Method
 Data ():
 Probably Increasing
 All Data
 Increasing

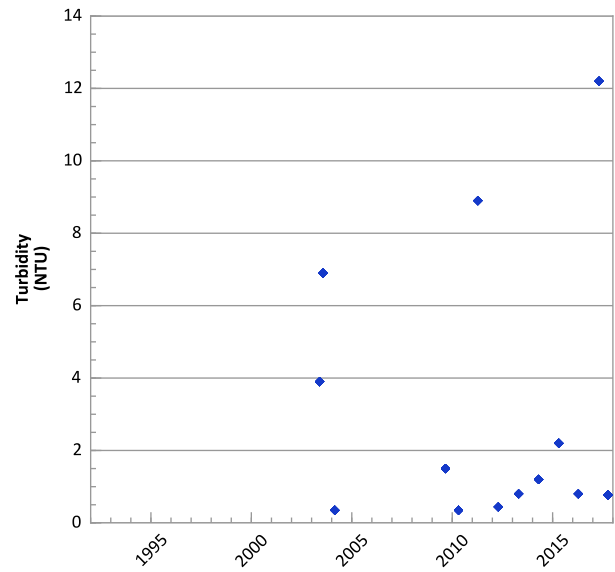
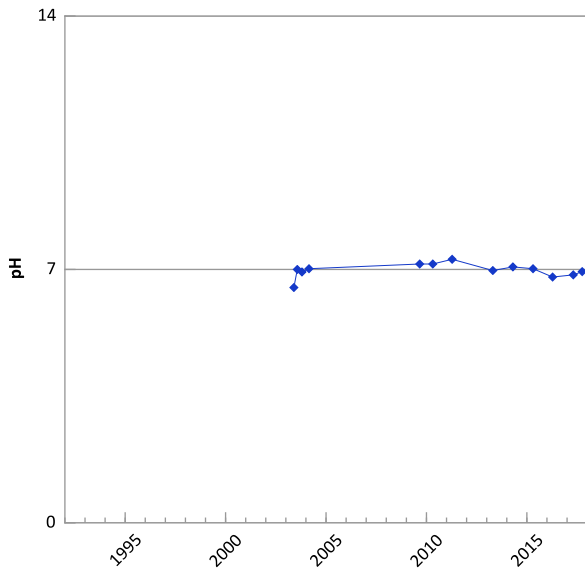
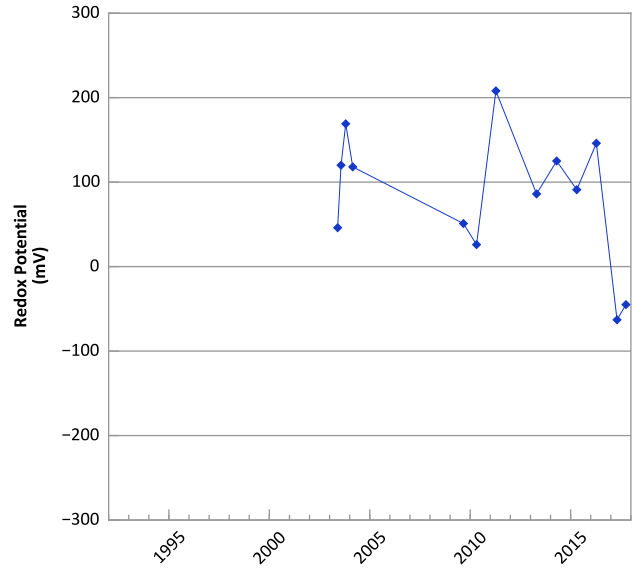
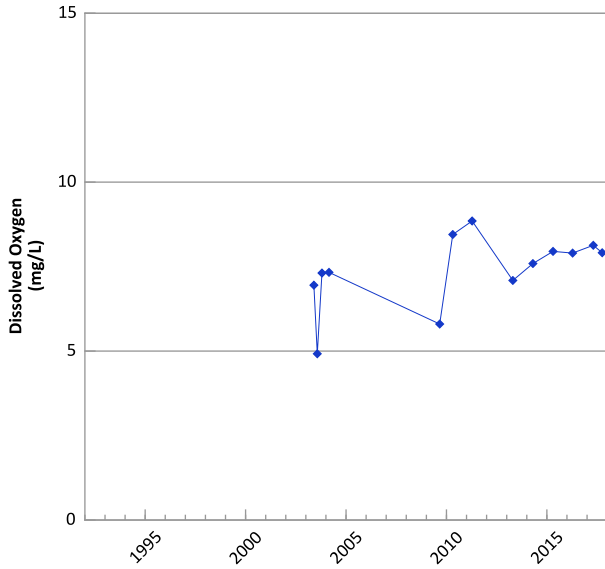
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 07/18/2002 to 07/12/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

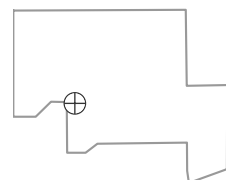


**PTX06-1085 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



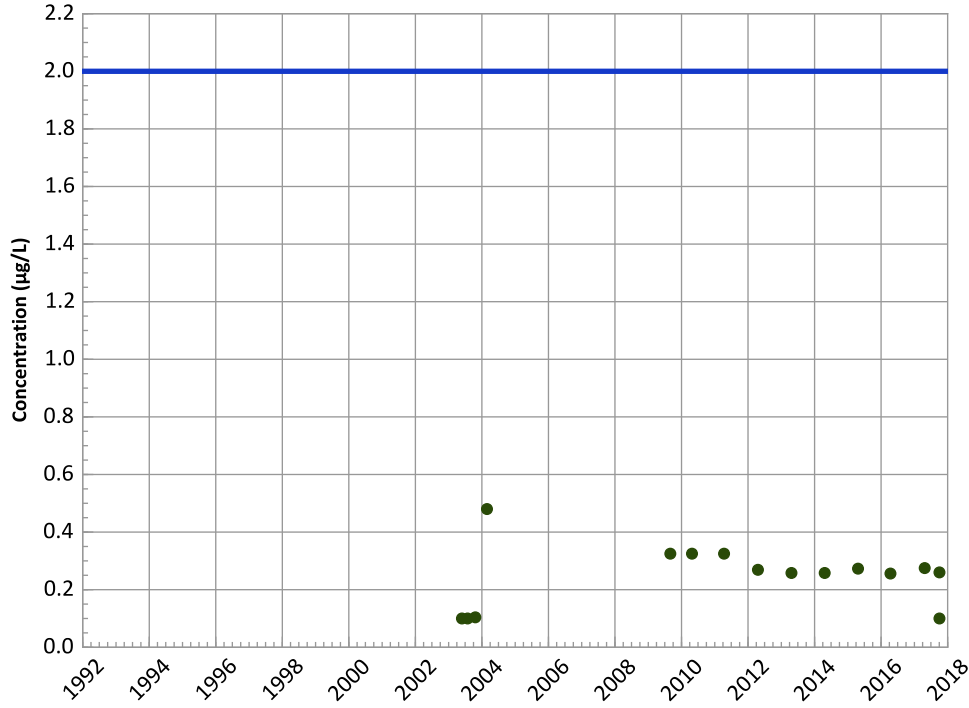
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 05/27/2003 to 10/03/2017
 Analysis Date: 03/21/2018

Well Location



PTX06-1085 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

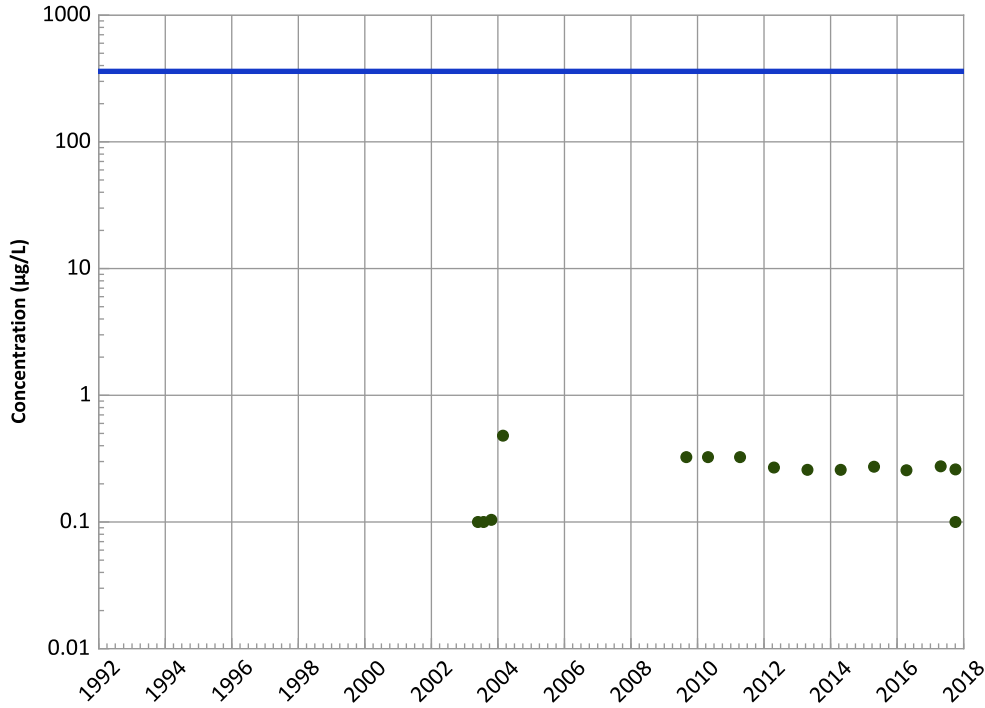
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

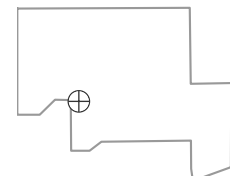
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

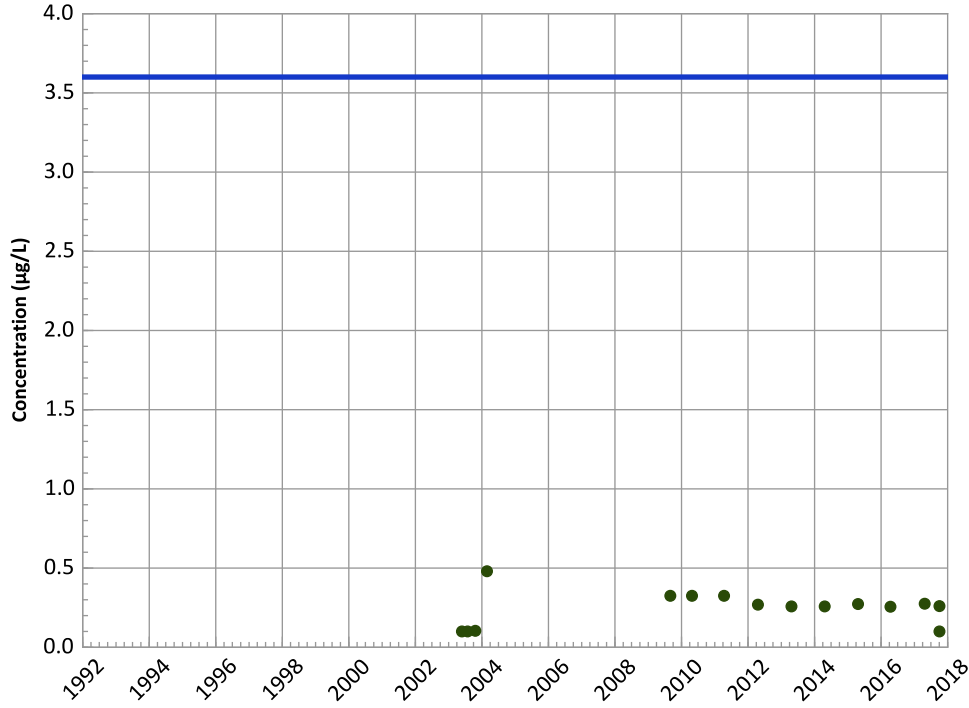


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 05/27/2003 to 10/03/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1085 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

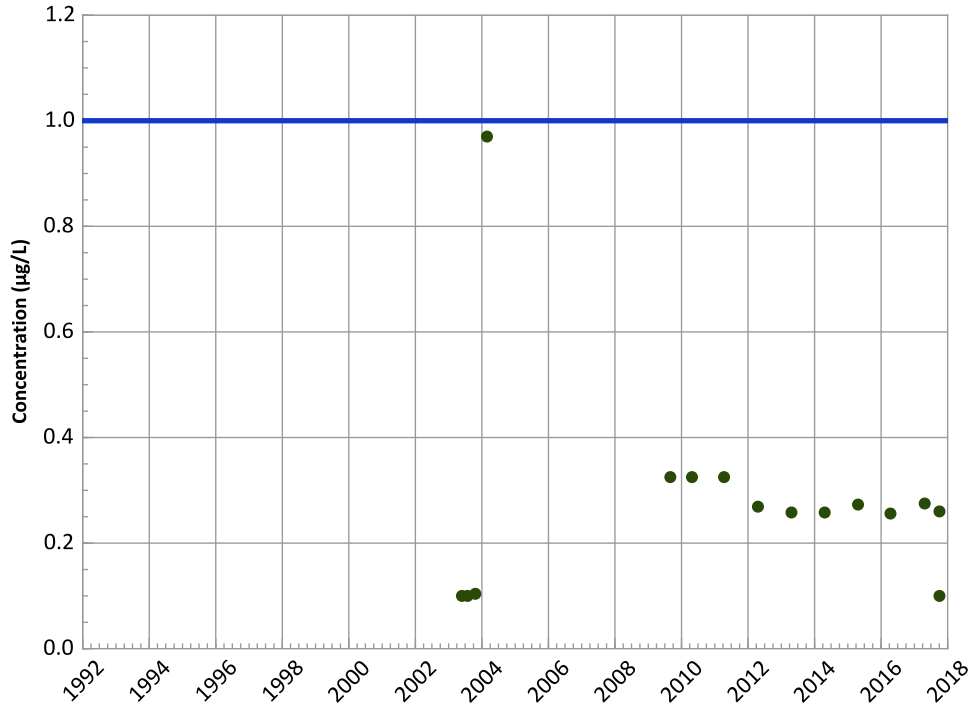
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

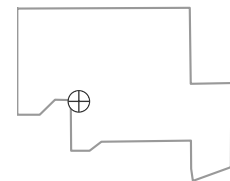
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

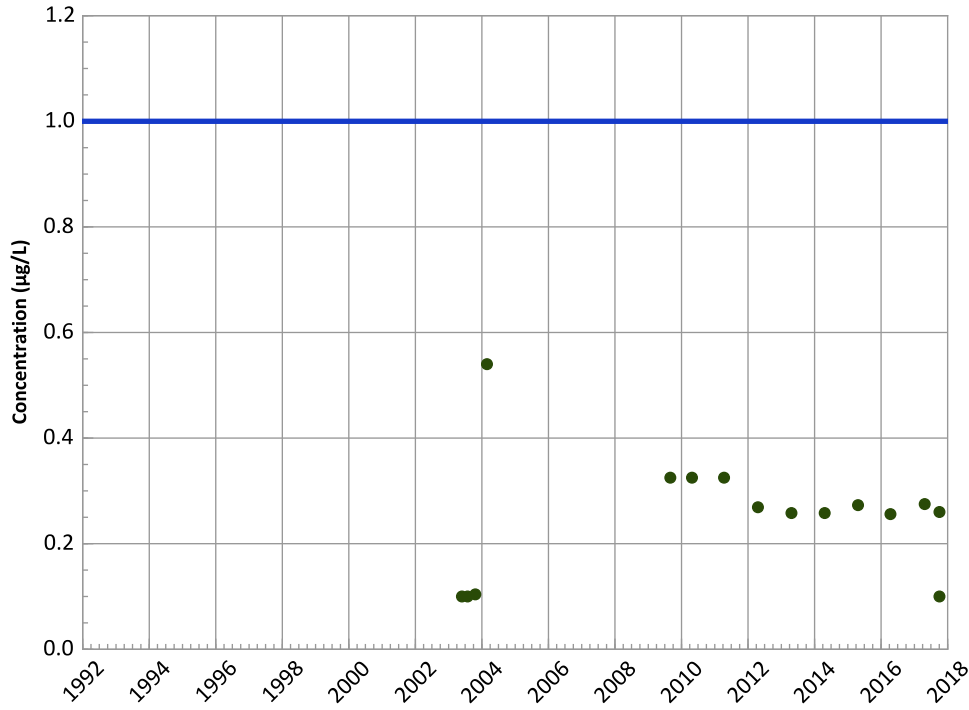


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 05/27/2003 to 10/03/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1085 in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

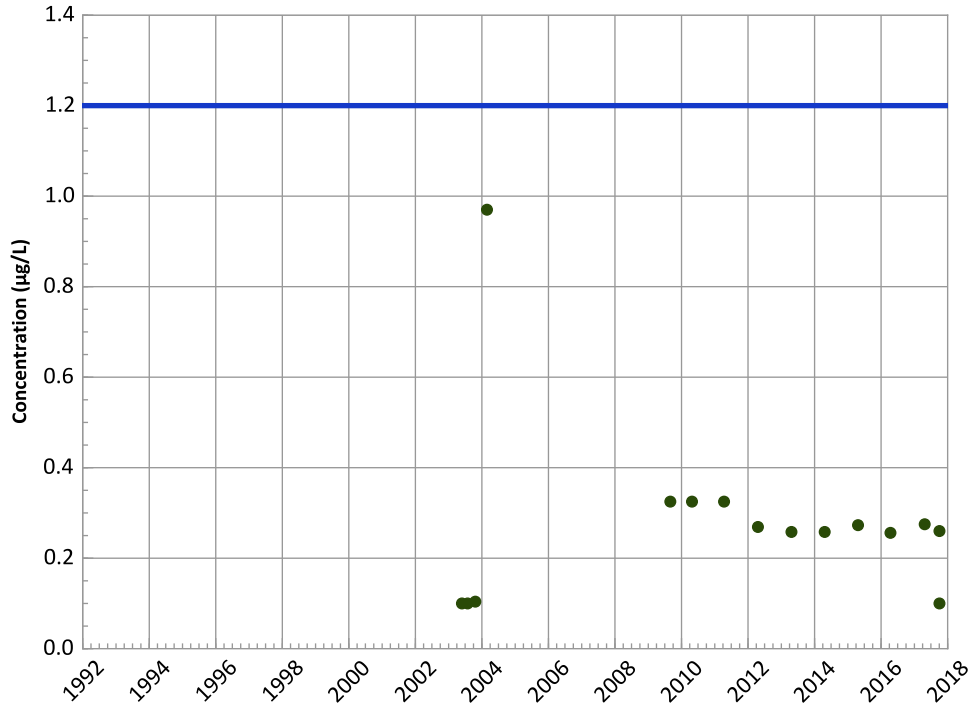
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

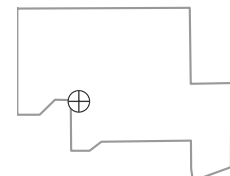
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

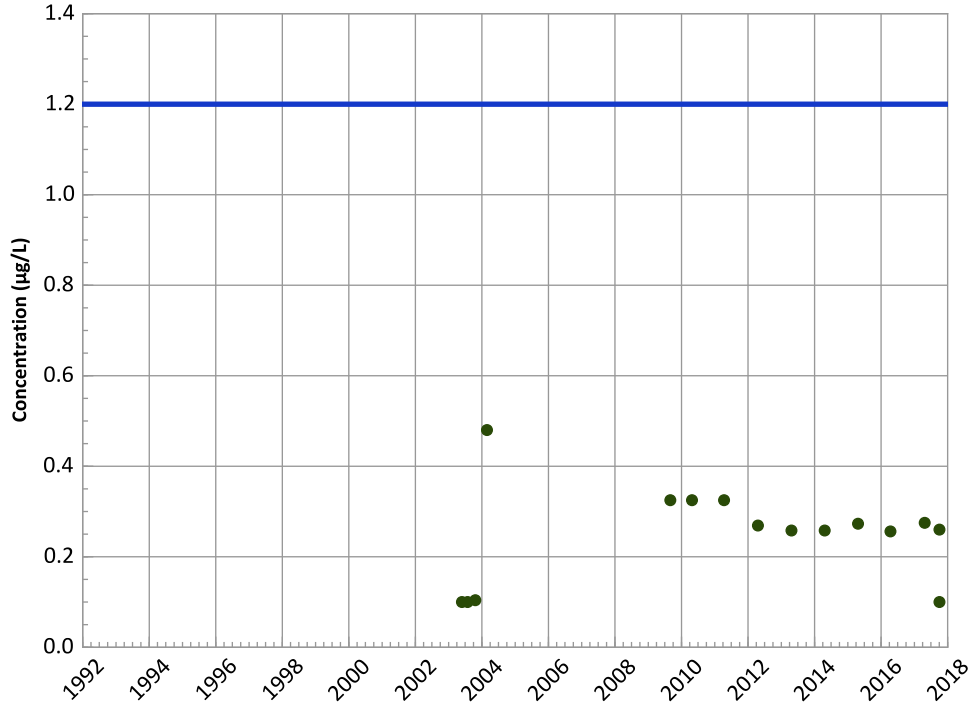


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 05/27/2003 to 10/03/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1085 in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

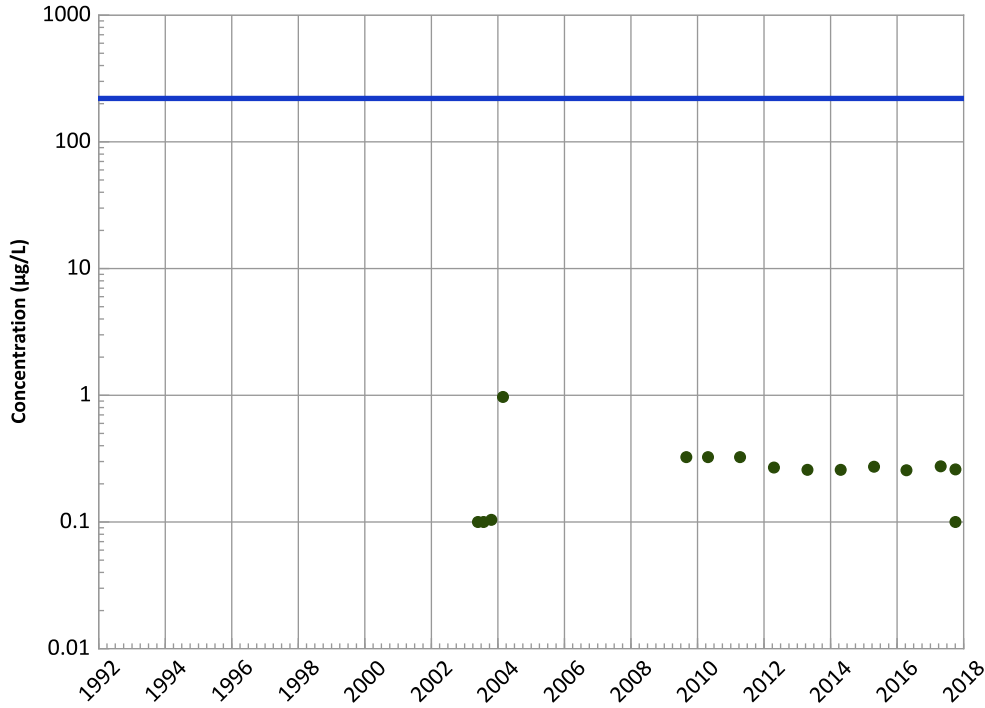
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,3,5-Trinitrobenzene Trend



Concentration Trend

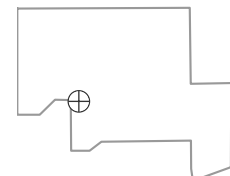
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

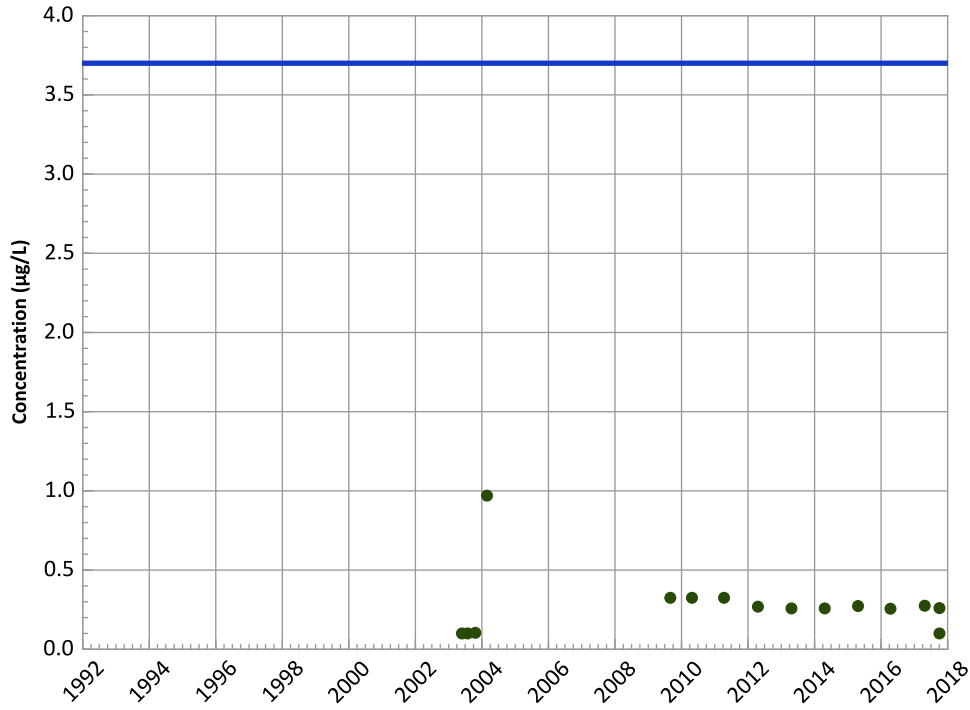


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 05/27/2003 to 10/03/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1085 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

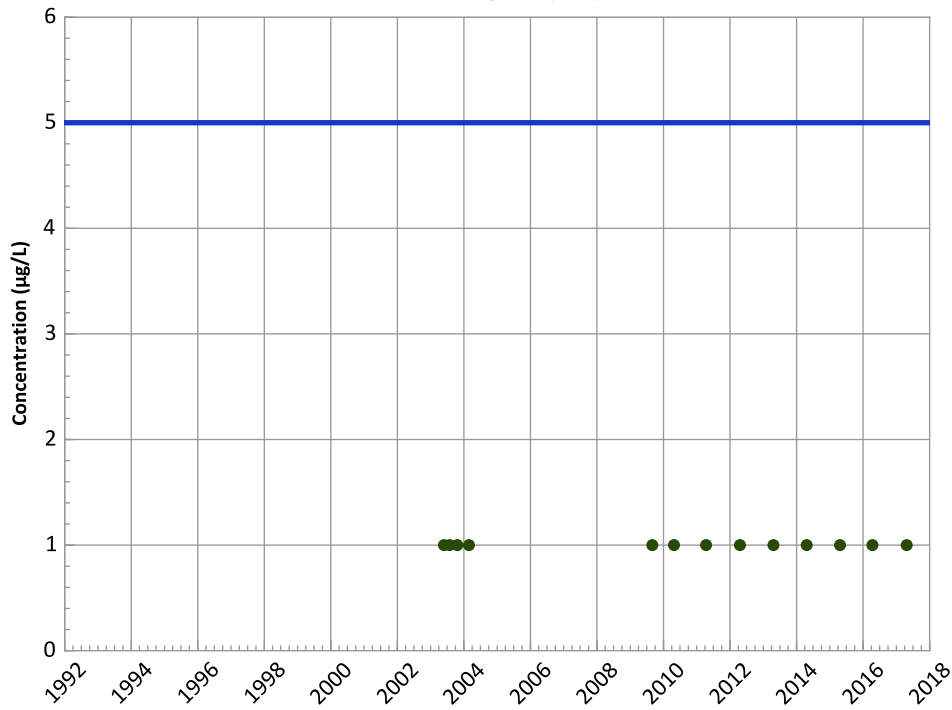
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Tetrachloroethylene (PCE) Trend



Concentration Trend

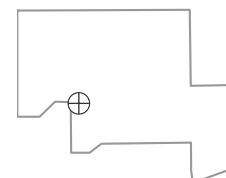
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

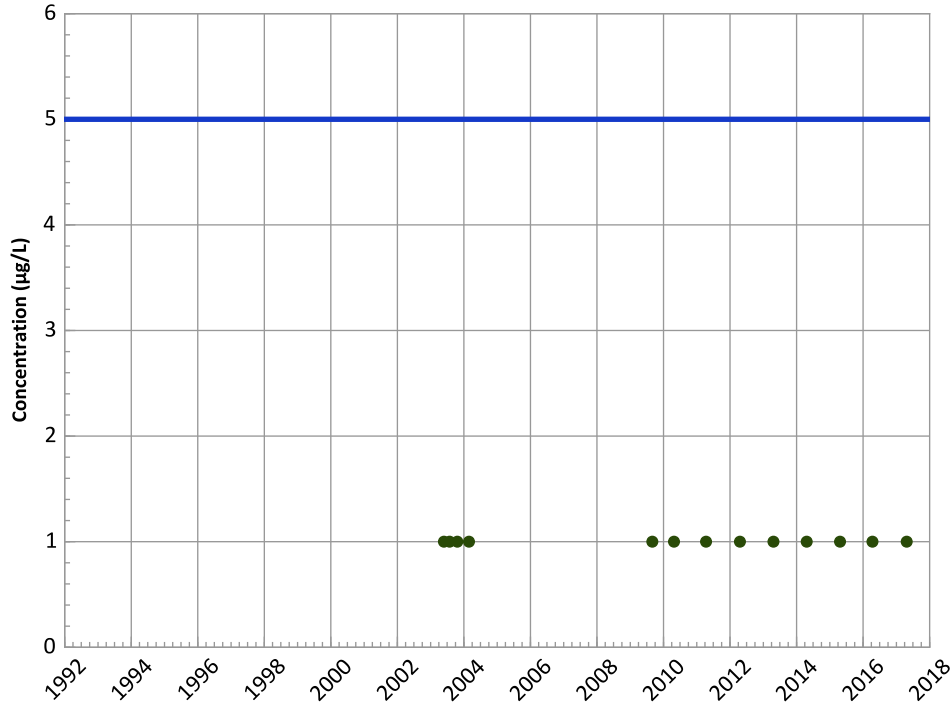


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 05/27/2003 to 10/03/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1085 in Perched Aquifer
USDOE/NNSA Pantex Plant

Trichloroethene Trend



Concentration Trend

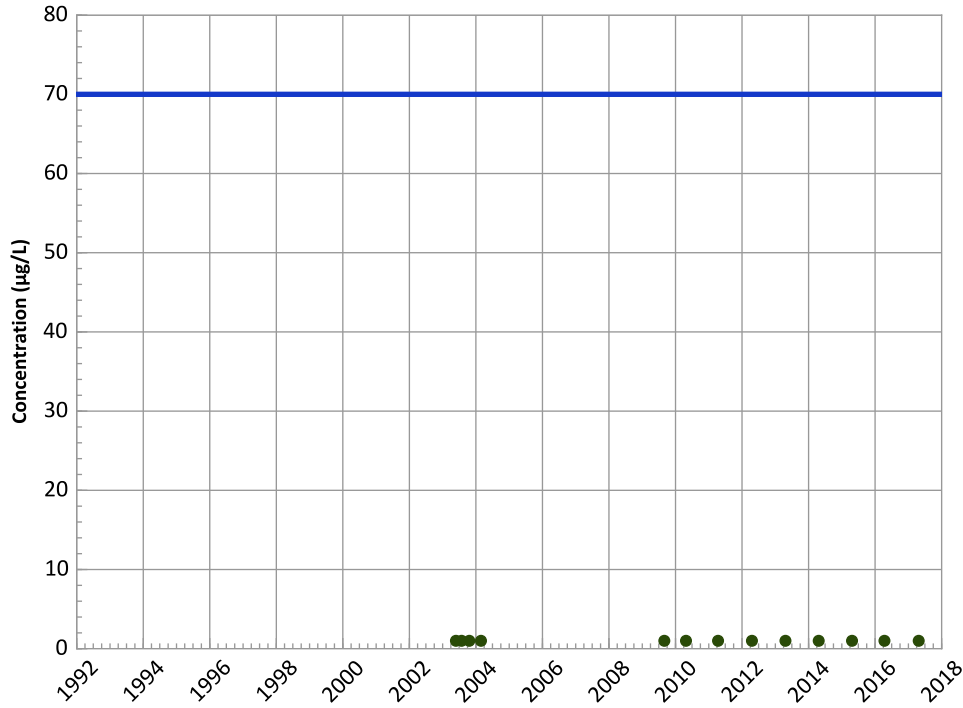
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

cis-1,2-Dichloroethene Trend



Concentration Trend

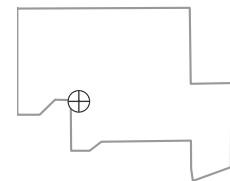
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

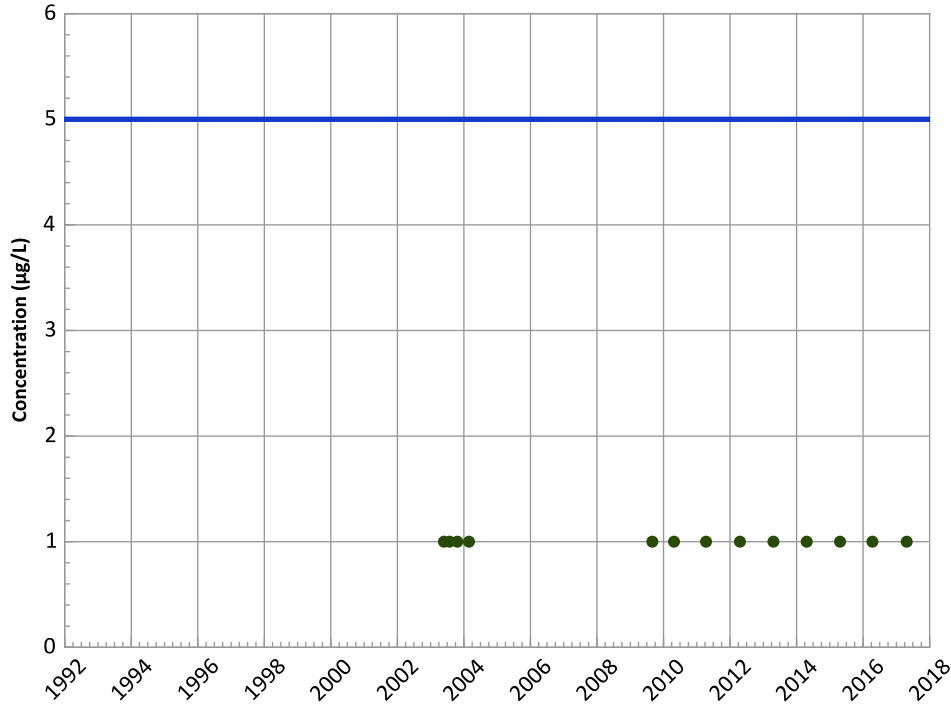
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 05/27/2003 to 10/03/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1085 in Perched Aquifer
USDOE/NNSA Pantex Plant
1,2-Dichloroethane Trend**



Concentration Trend

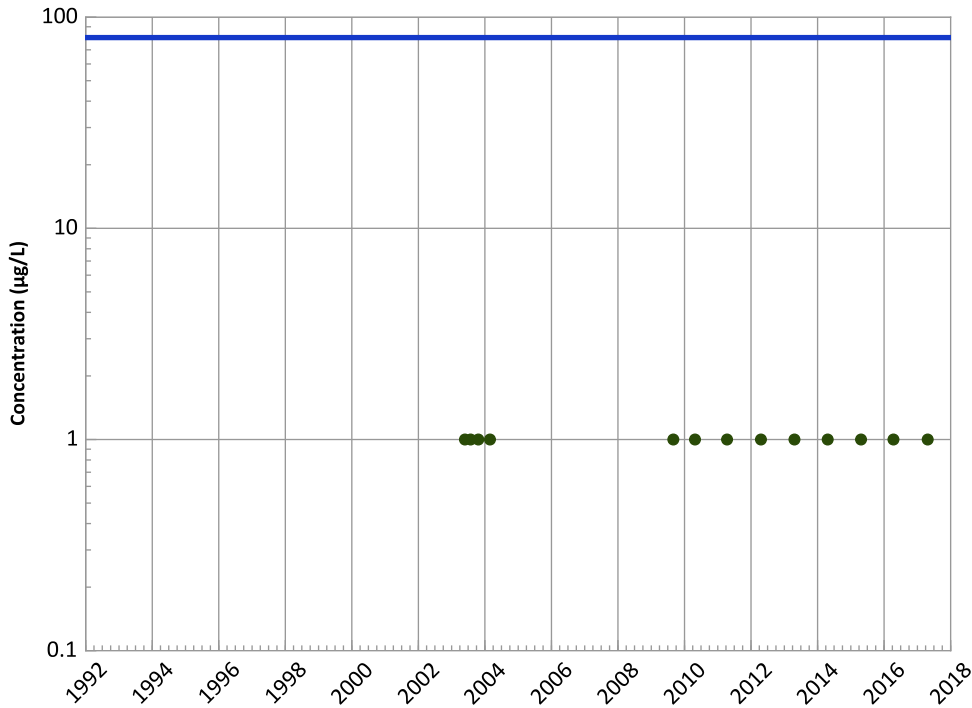
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Chloroform Trend



Concentration Trend

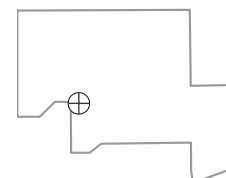
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

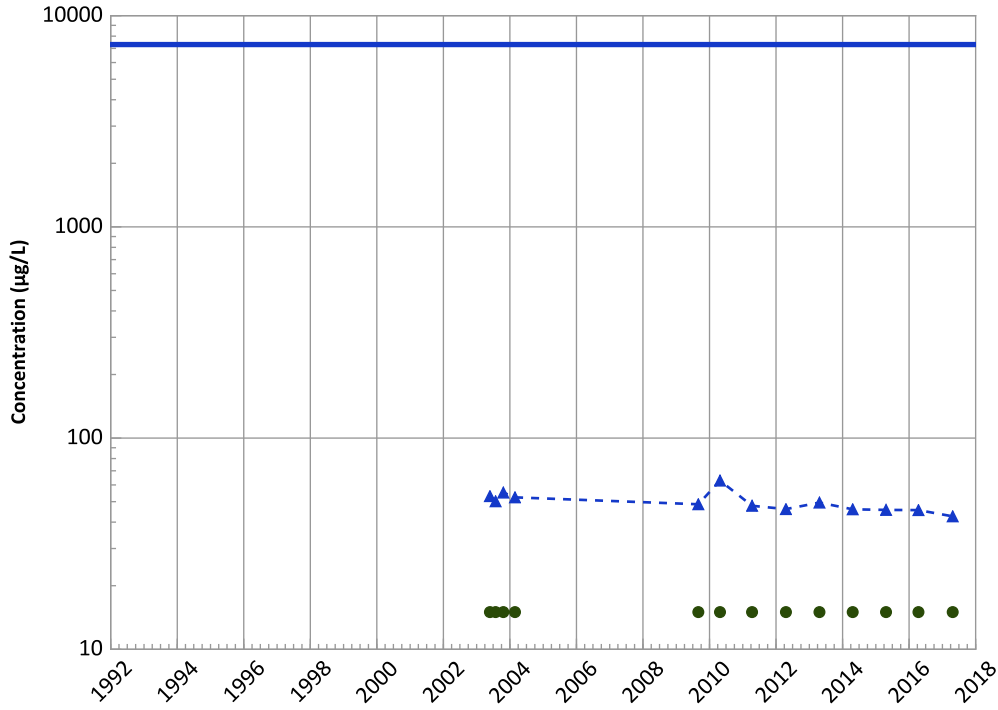
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 05/27/2003 to 10/03/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1085 in Perched Aquifer
 USDOE/NNSA Pantex Plant
 Boron Trend

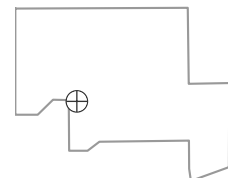


Concentration Trend
 MAROS Mann-Kendall Method
 Data ():
 Decreasing
 All Data
 Decreasing
 MAROS Linear Regression Method
 Data ():
 Stable
 All Data
 Decreasing

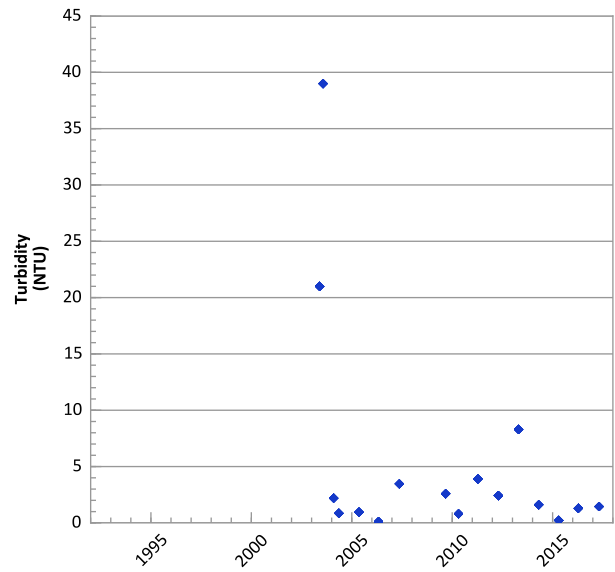
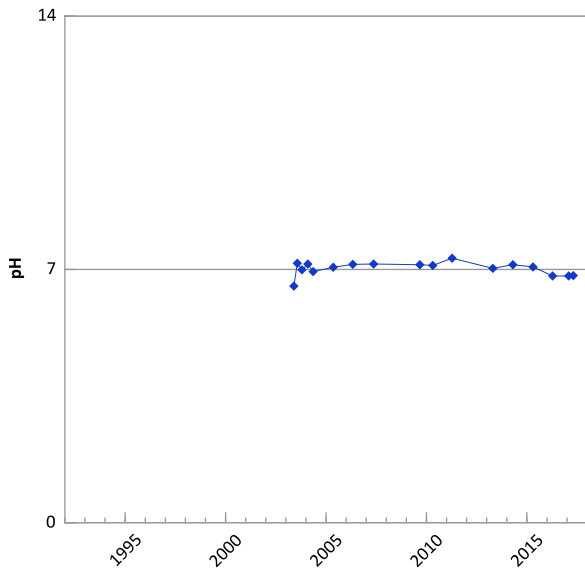
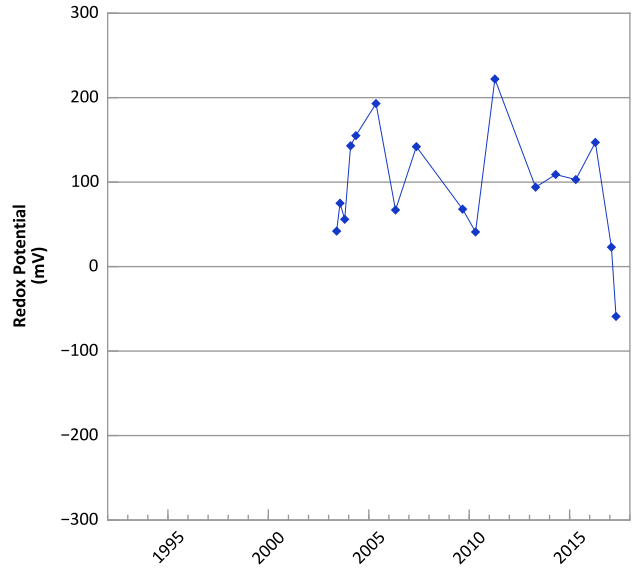
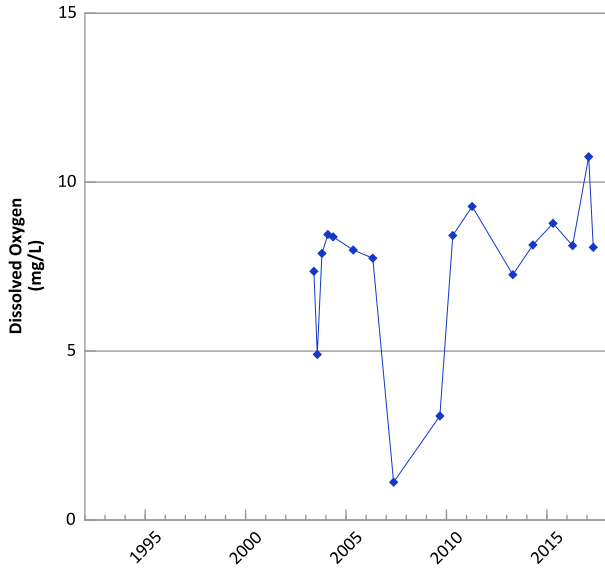
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 05/27/2003 to 10/03/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

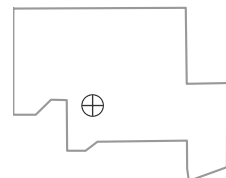


**PTX06-1086 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



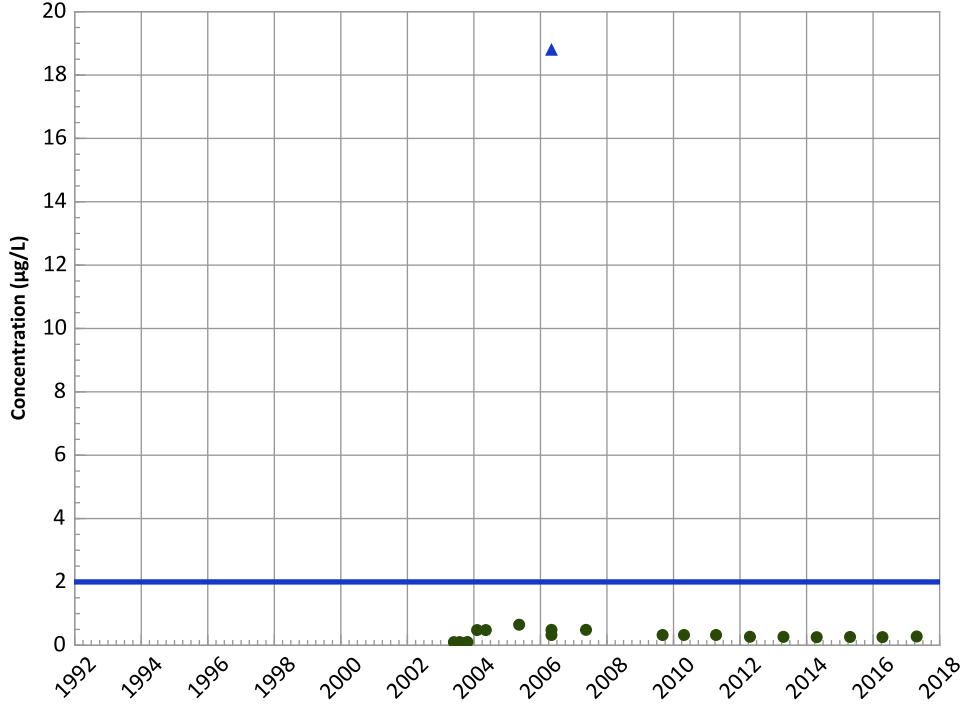
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 05/27/2003 to 04/24/2017
 Analysis Date: 03/21/2018

Well Location



PTX06-1086 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

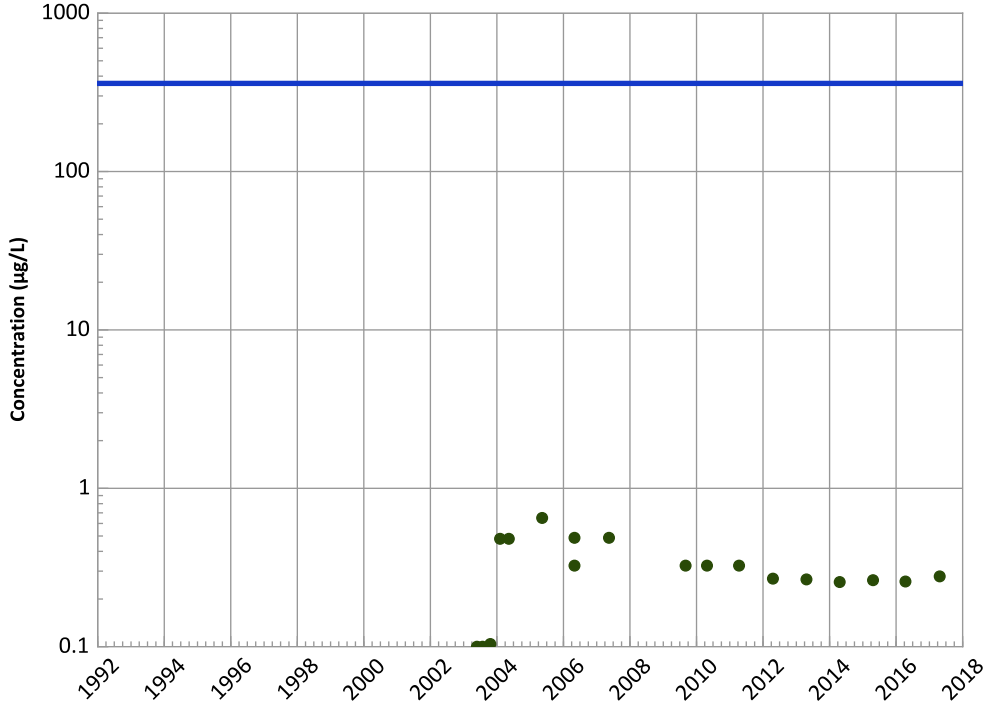
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

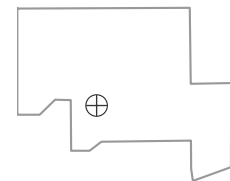
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

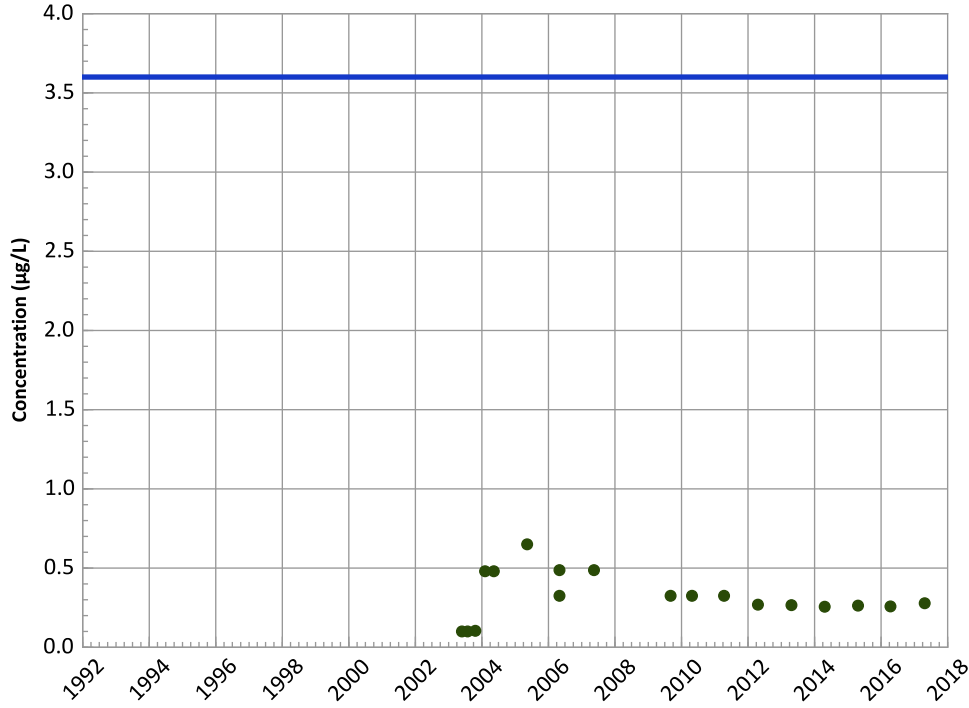


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 05/27/2003 to 04/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1086 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

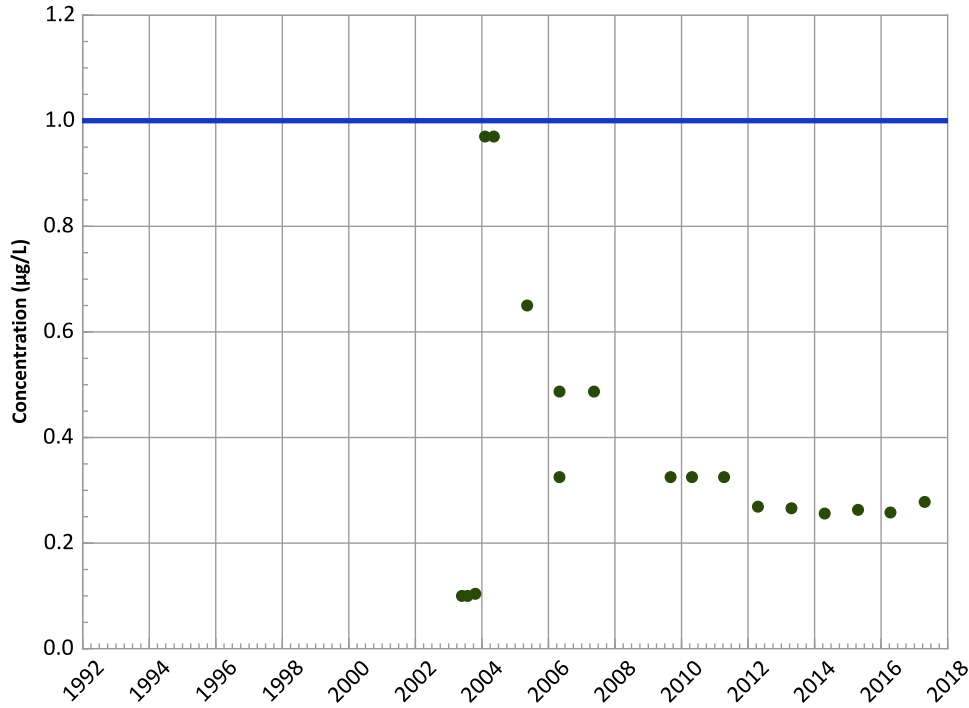
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

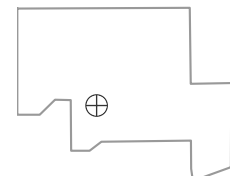
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

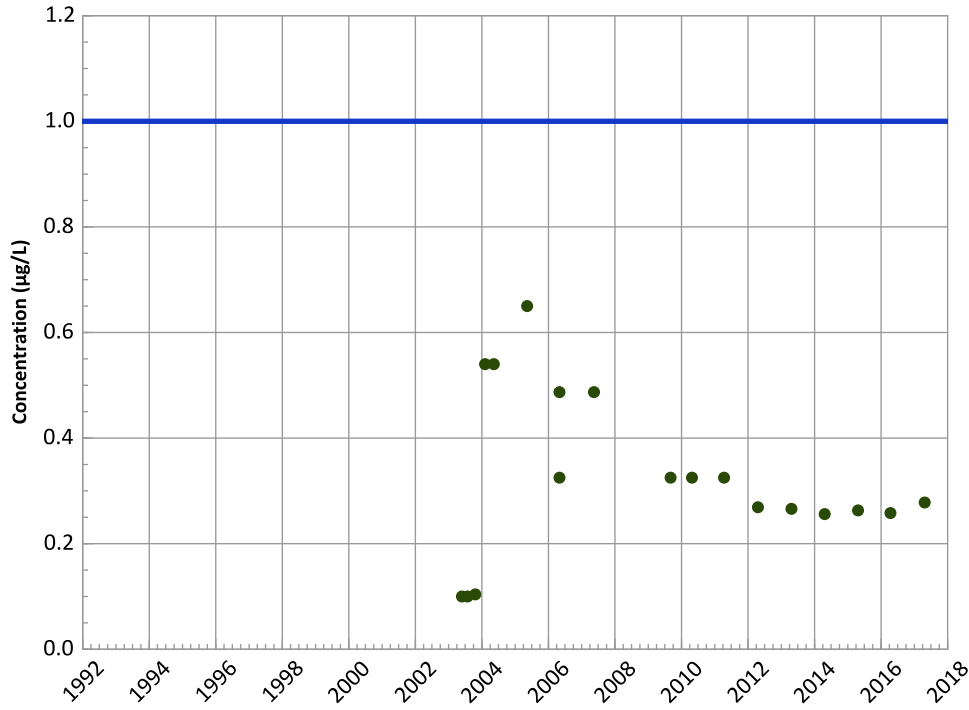


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 05/27/2003 to 04/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1086 in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

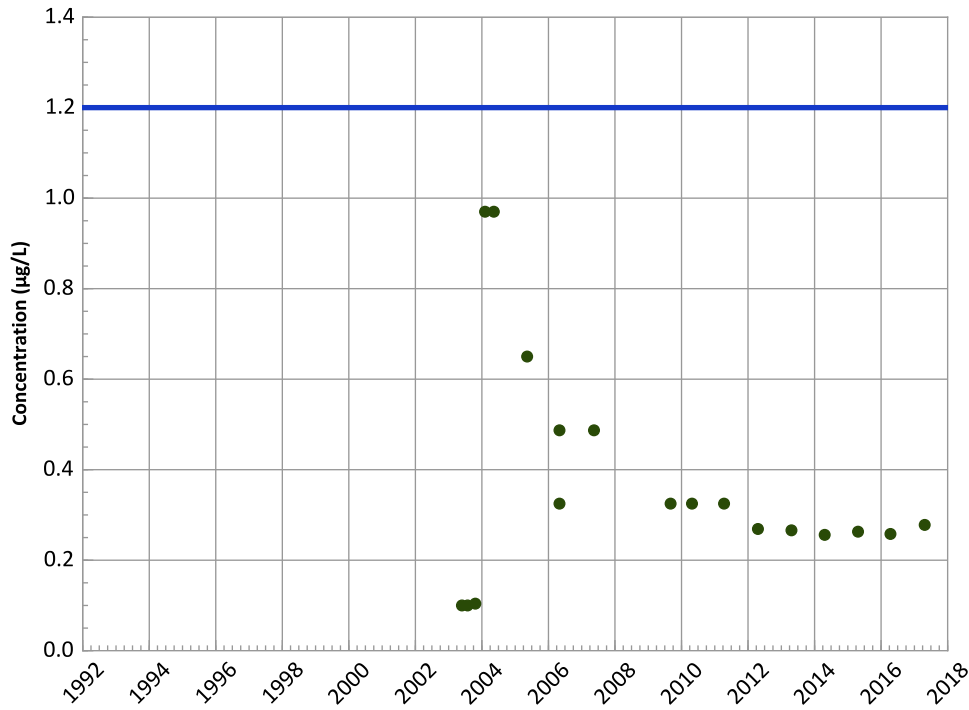
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

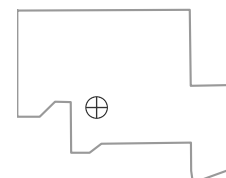
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

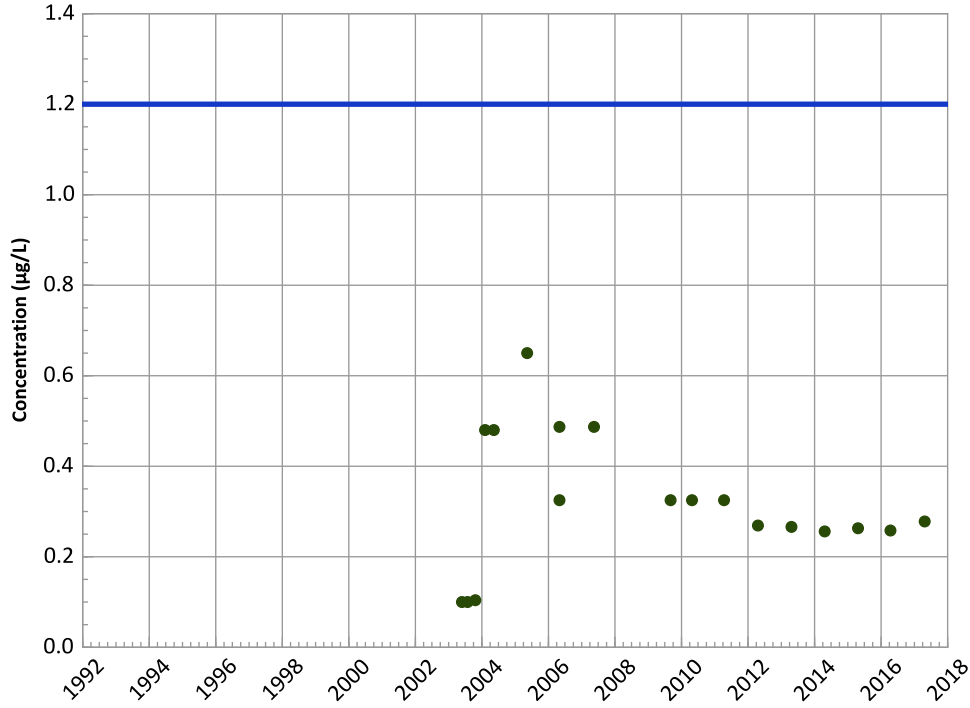


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 05/27/2003 to 04/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1086 in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

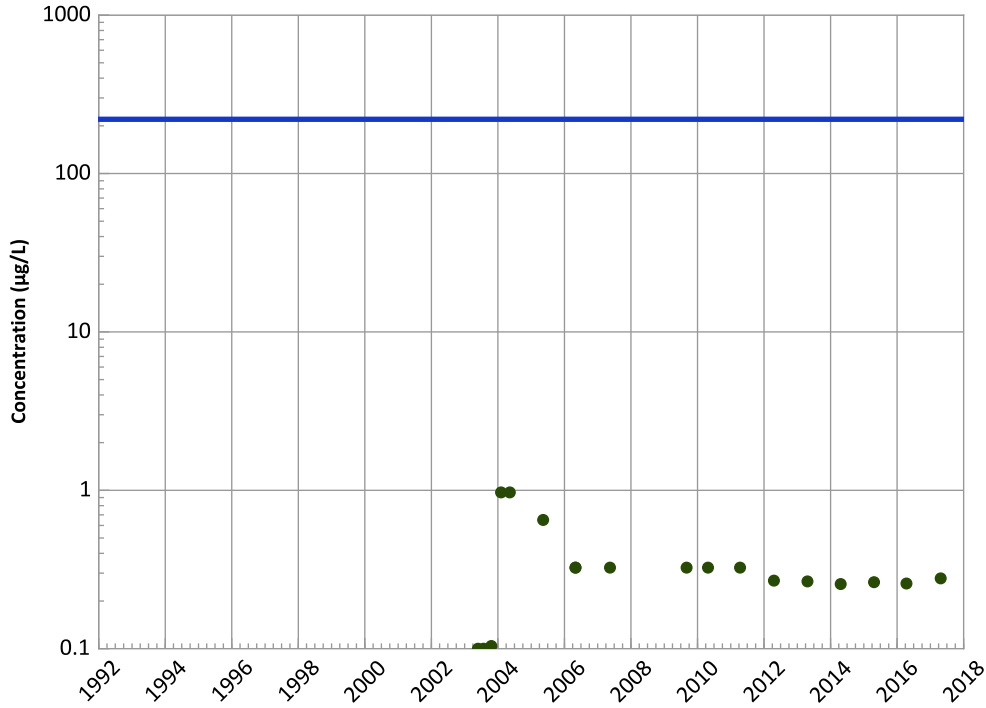
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,3,5-Trinitrobenzene Trend



Concentration Trend

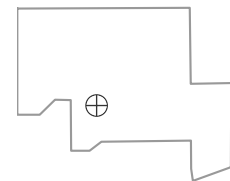
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

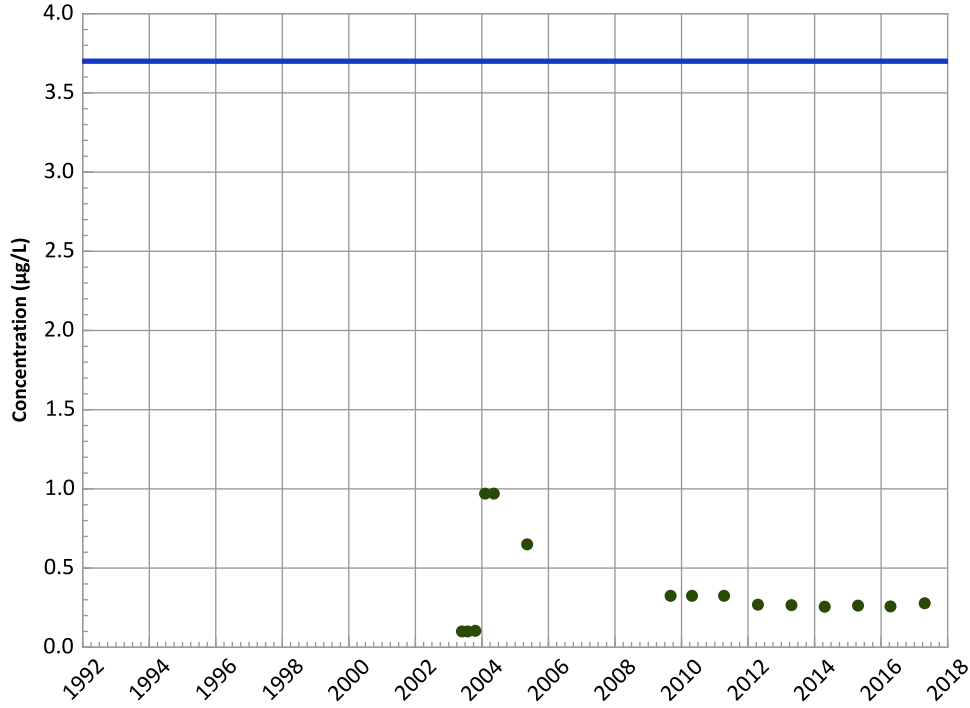


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 05/27/2003 to 04/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1086 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

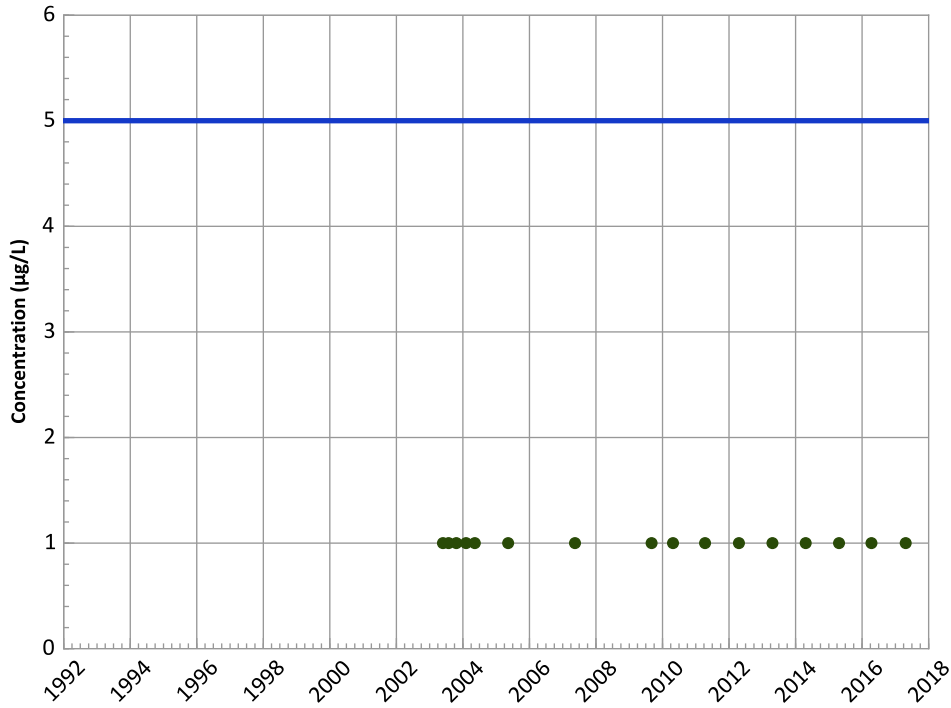
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Tetrachloroethylene (PCE) Trend



Concentration Trend

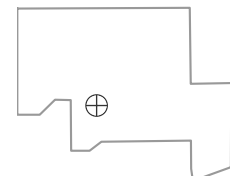
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

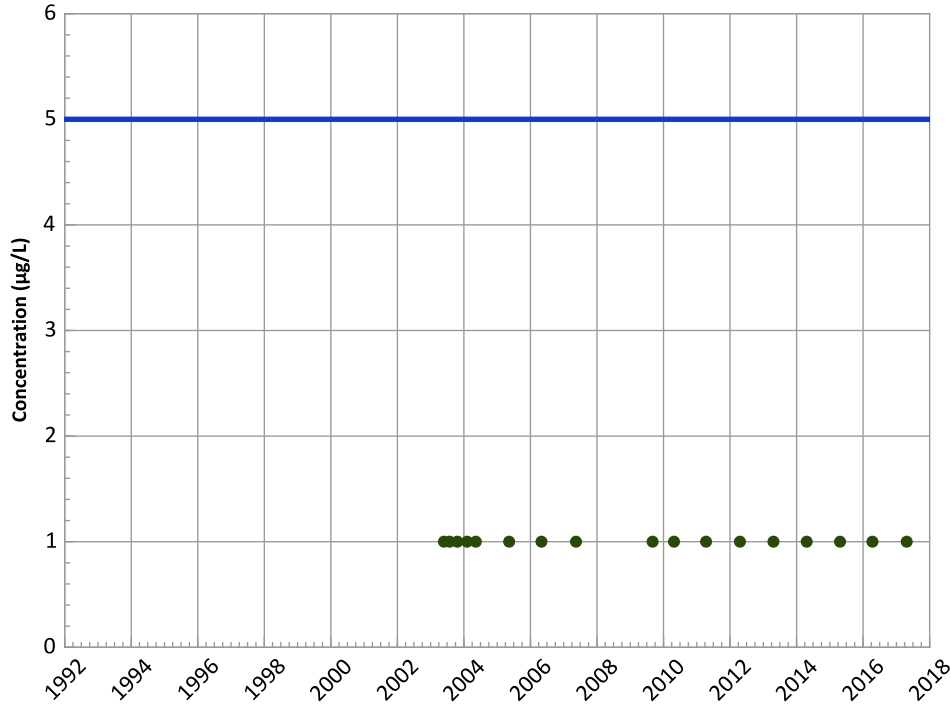


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 05/27/2003 to 04/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1086 in Perched Aquifer
USDOE/NNSA Pantex Plant

Trichloroethene Trend



Concentration Trend

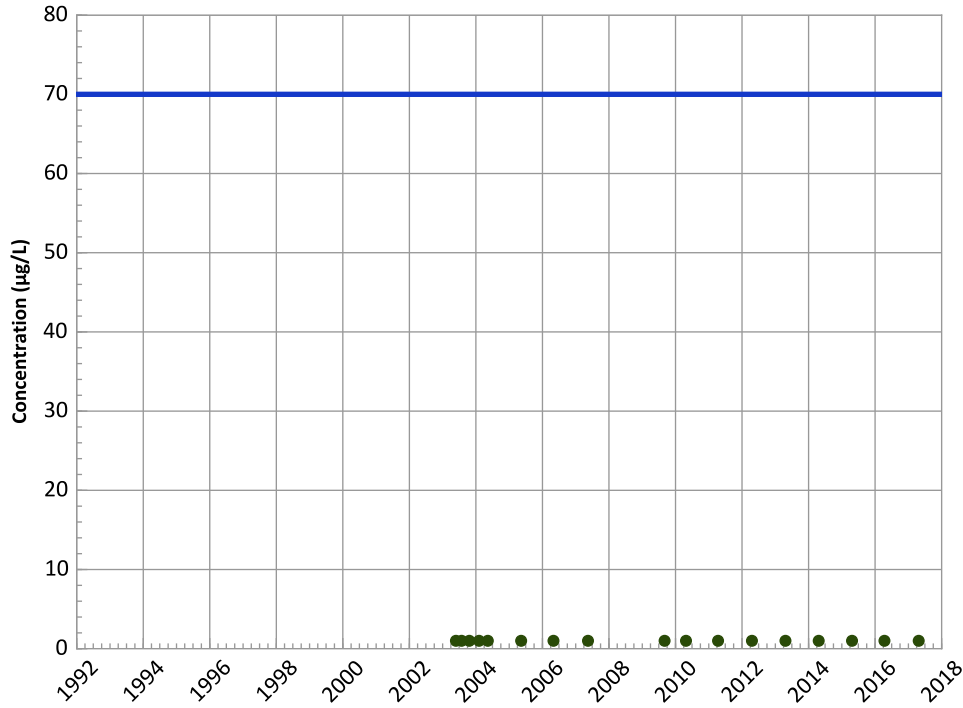
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

cis-1,2-Dichloroethene Trend



Concentration Trend

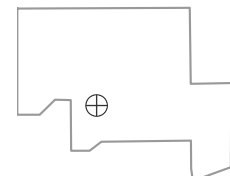
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

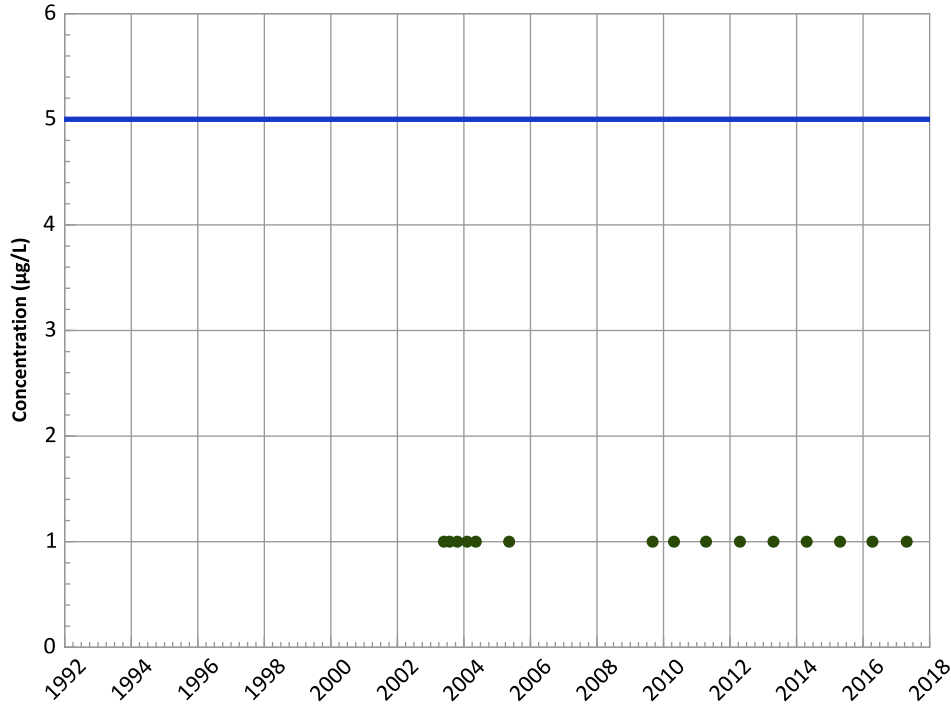
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 05/27/2003 to 04/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1086 in Perched Aquifer
USDOE/NNSA Pantex Plant
1,2-Dichloroethane Trend**



Concentration Trend

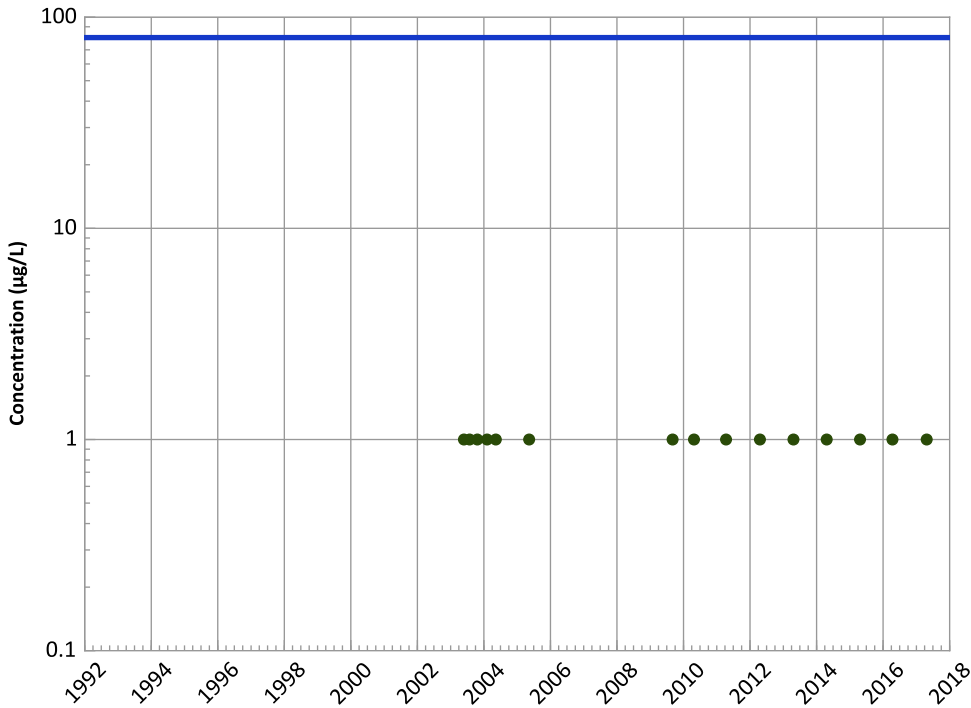
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Chloroform Trend



Concentration Trend

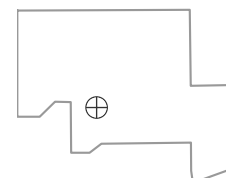
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

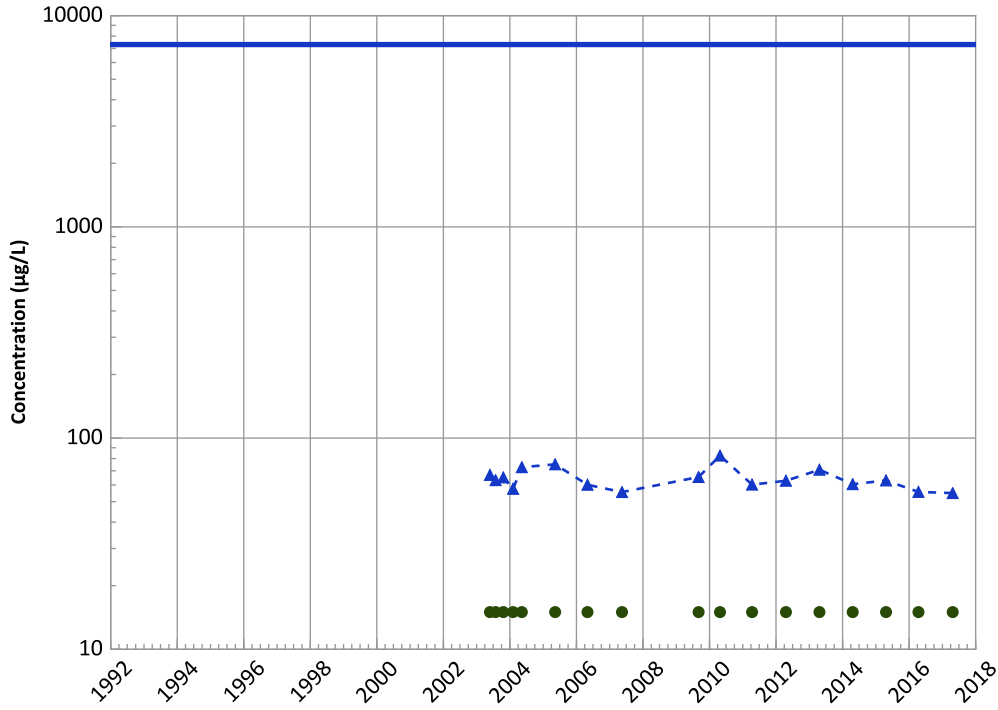
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 05/27/2003 to 04/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1086 in Perched Aquifer
USDOE/NNSA Pantex Plant
Boron Trend**

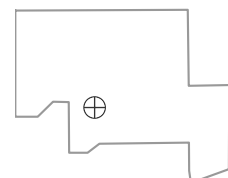


Concentration Trend
MAROS Mann-Kendall Method
 Data (): Decreasing
 All Data: Decreasing
MAROS Linear Regression Method
 Data (): Stable
 All Data: Stable

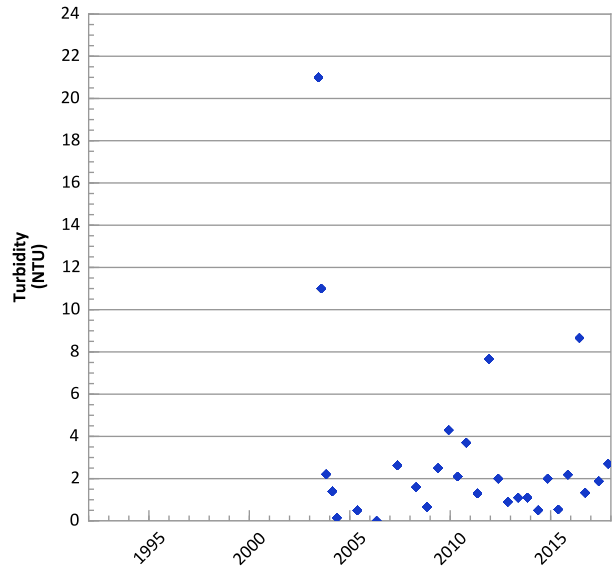
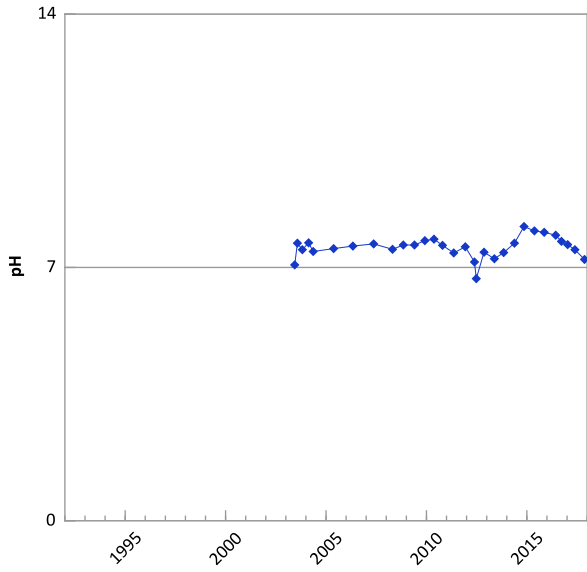
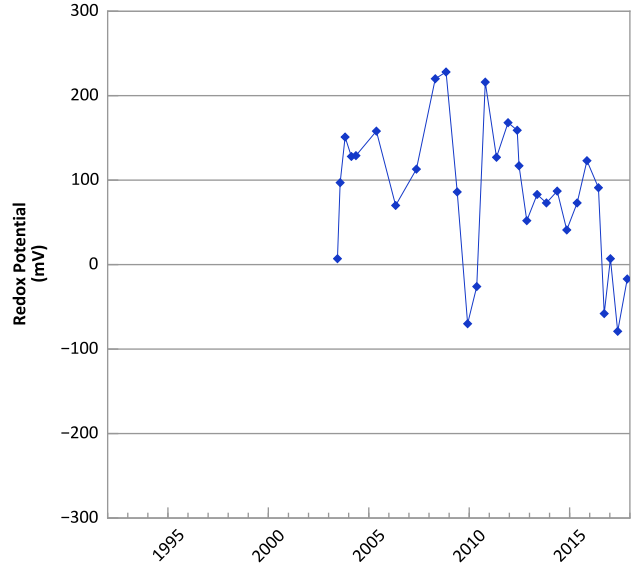
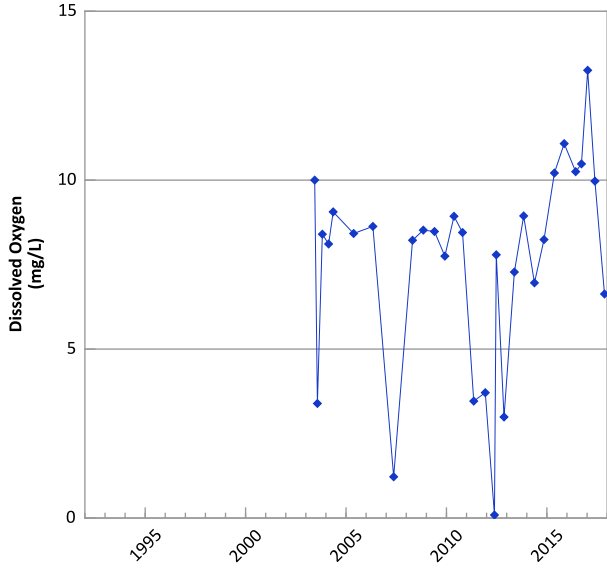
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 05/27/2003 to 04/24/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

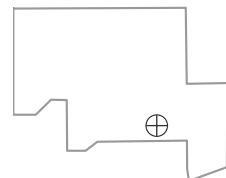


**PTX06-1088 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



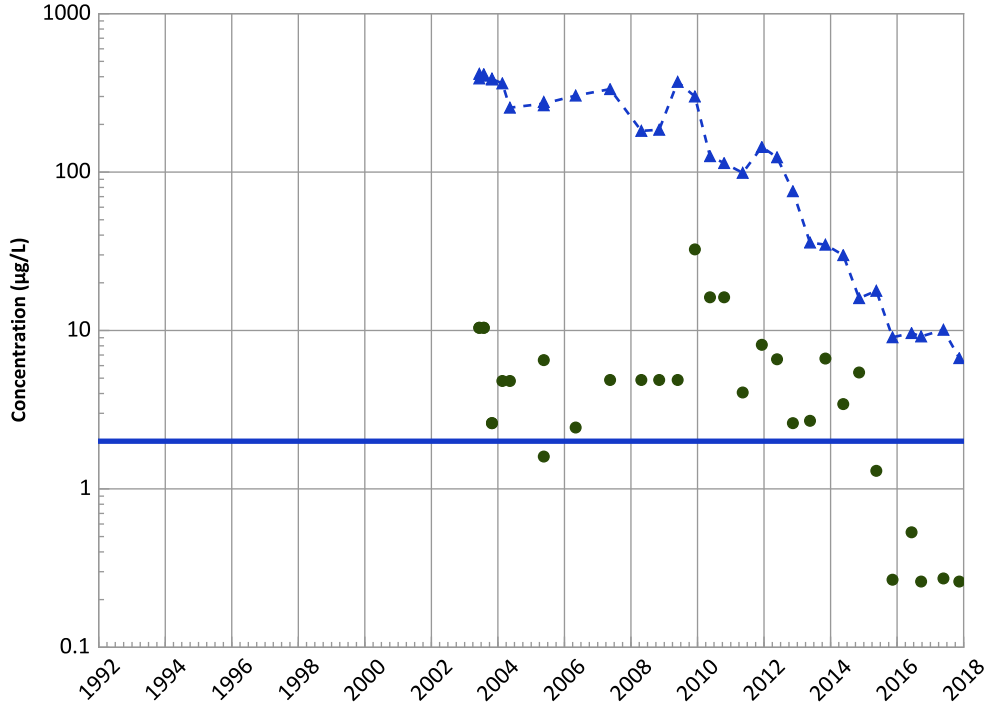
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 06/11/2003 to 11/14/2017
 Analysis Date: 03/21/2018

Well Location



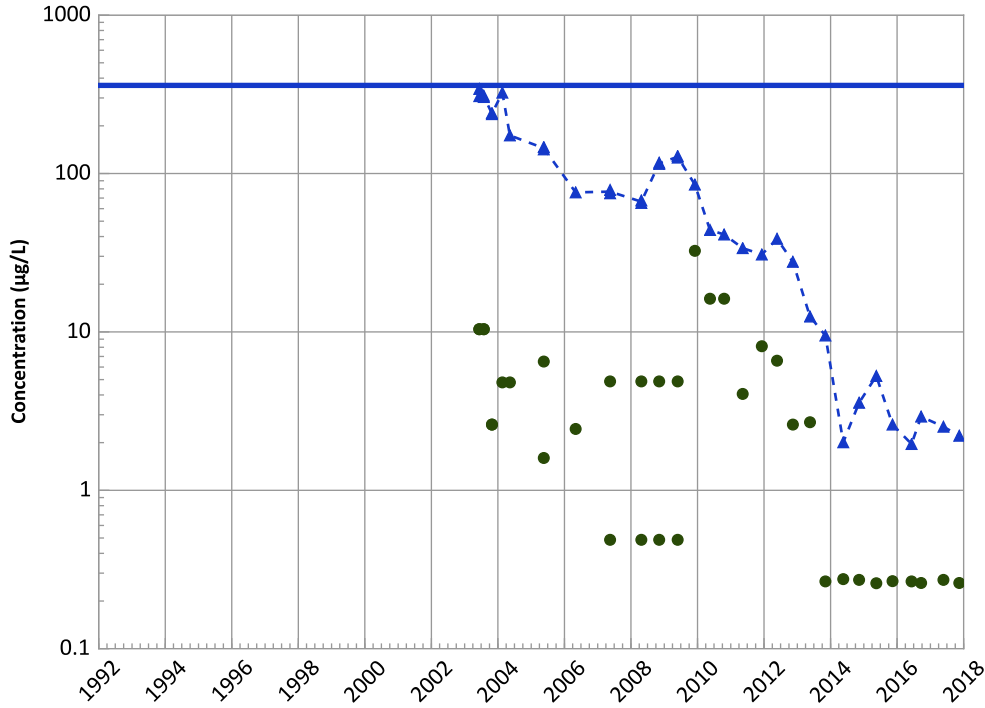
PTX06-1088 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



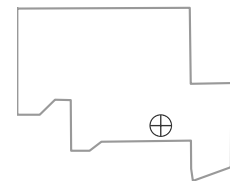
Concentration Trend
MAROS Mann-Kendall Method
 Data (): Decreasing
 All Data Decreasing
MAROS Linear Regression Method
 Data (): Decreasing
 All Data Decreasing

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend
MAROS Mann-Kendall Method
 Data (): Decreasing
 All Data Decreasing
MAROS Linear Regression Method
 Data (): Decreasing
 All Data Decreasing

Well Location

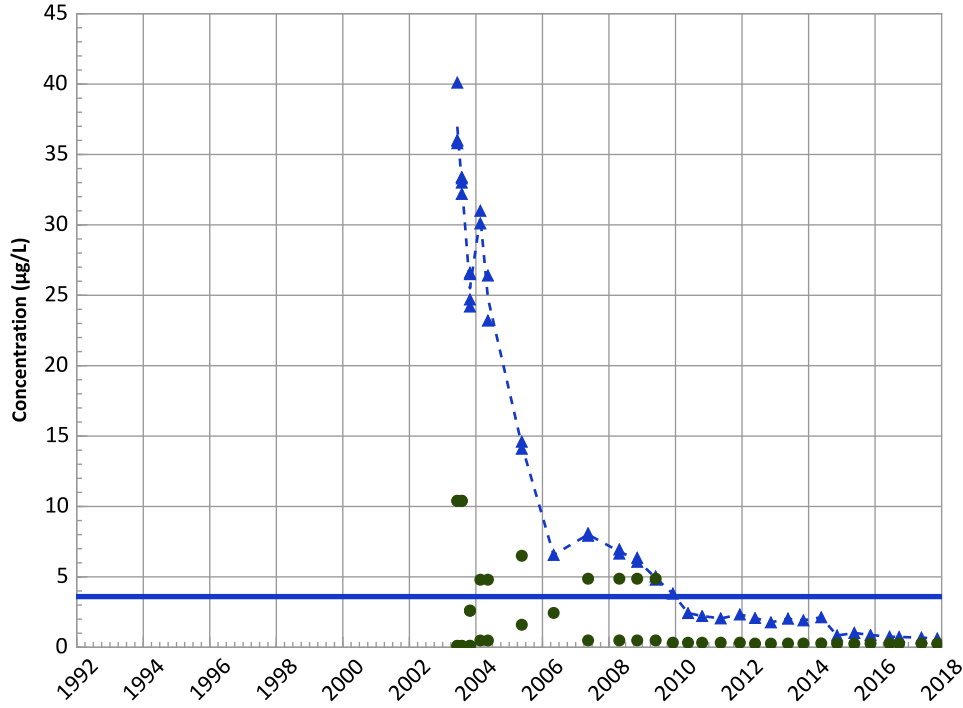


Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 06/11/2003 to 11/14/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1088 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

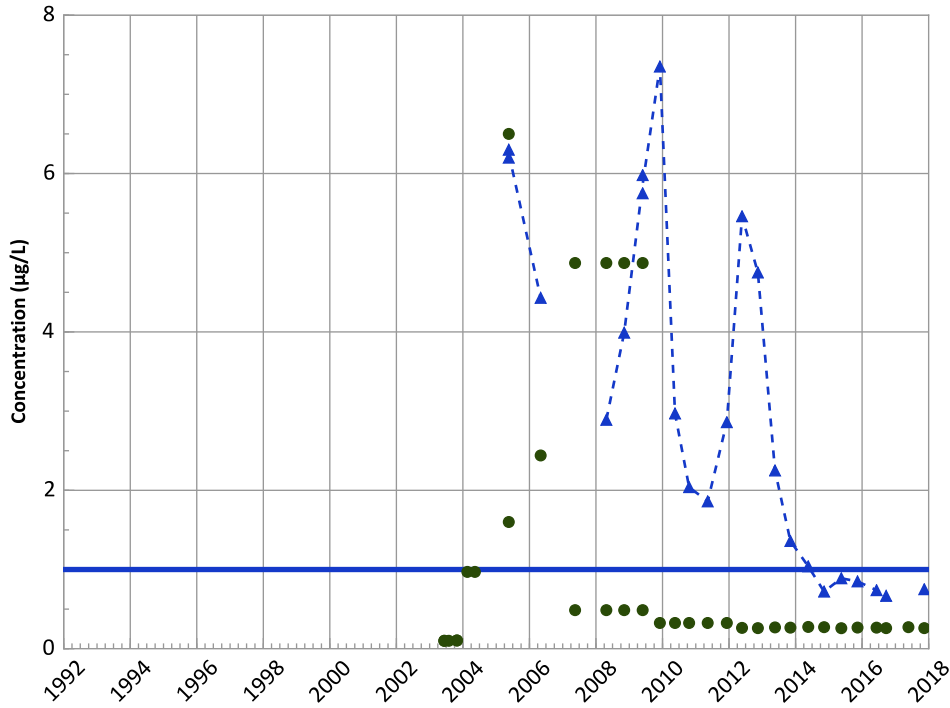
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

2,4-Dinitrotoluene Trend



Concentration Trend

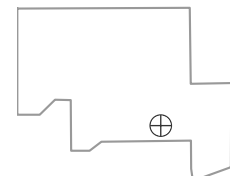
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

Well Location

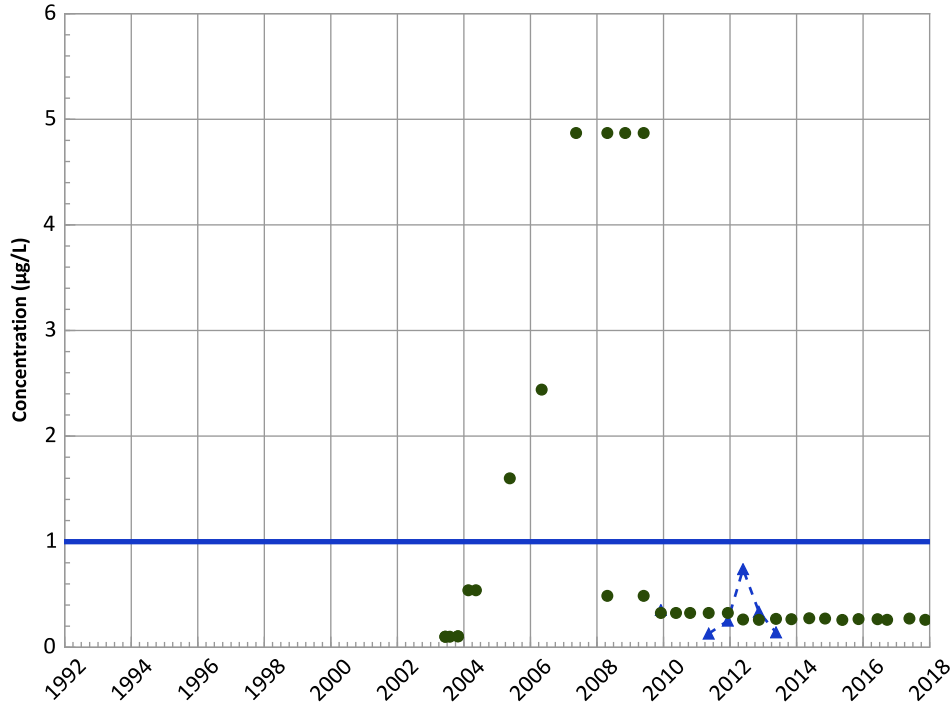


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/11/2003 to 11/14/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1088 in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend

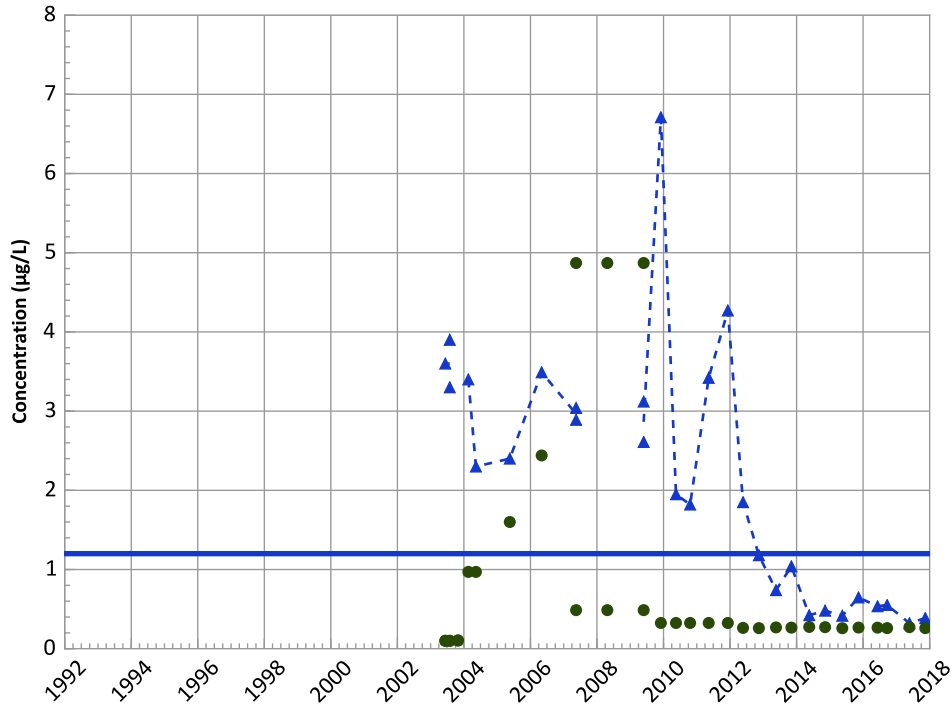


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

MAROS Linear Regression Method
Data ():
N/A (<4 Detections in Dataset)
All Data
Stable

2-Amino-4,6-Dinitrotoluene Trend

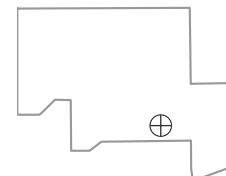


Concentration Trend

MAROS Mann-Kendall Method
Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method
Data ():
Decreasing
All Data
Decreasing

Well Location

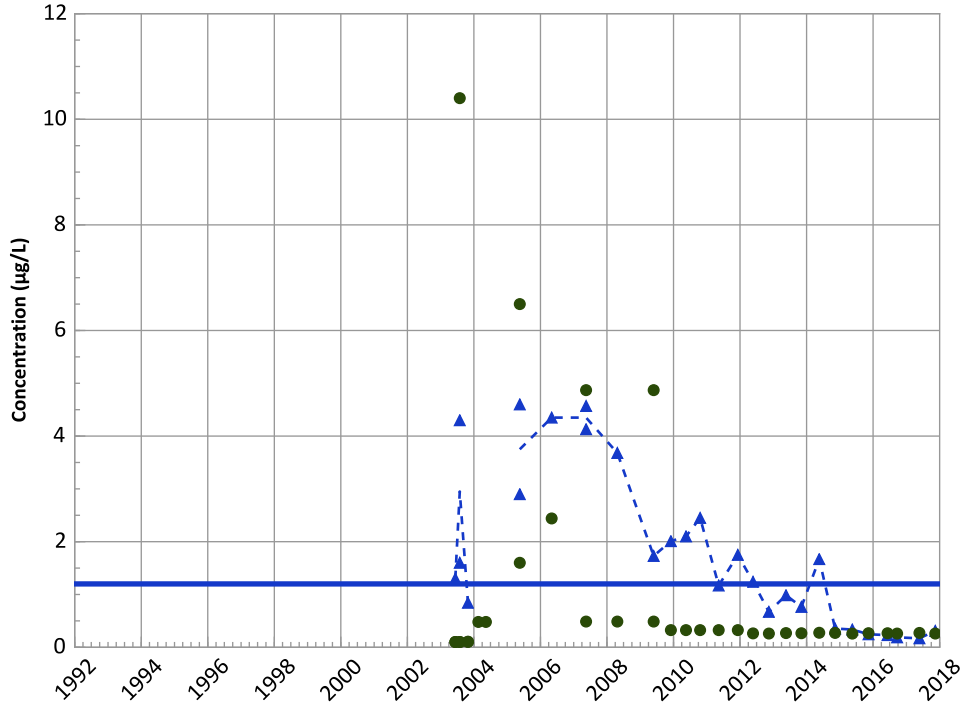


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/11/2003 to 11/14/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1088 in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

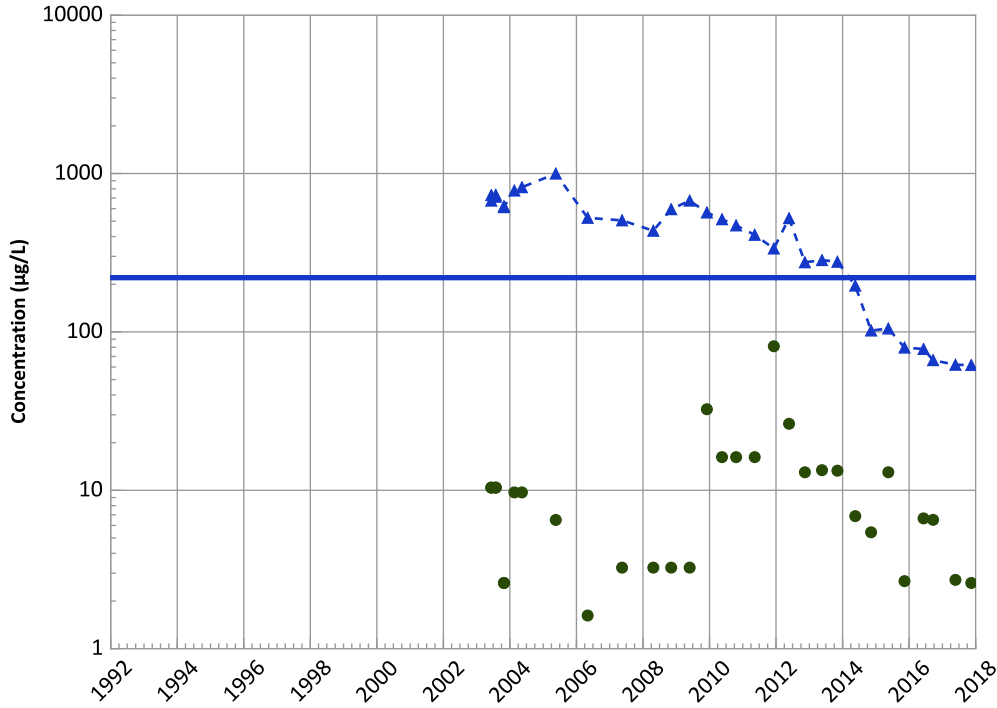
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

1,3,5-Trinitrobenzene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

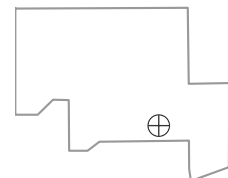
MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/11/2003 to 11/14/2017
Analysis Date: 03/21/2018

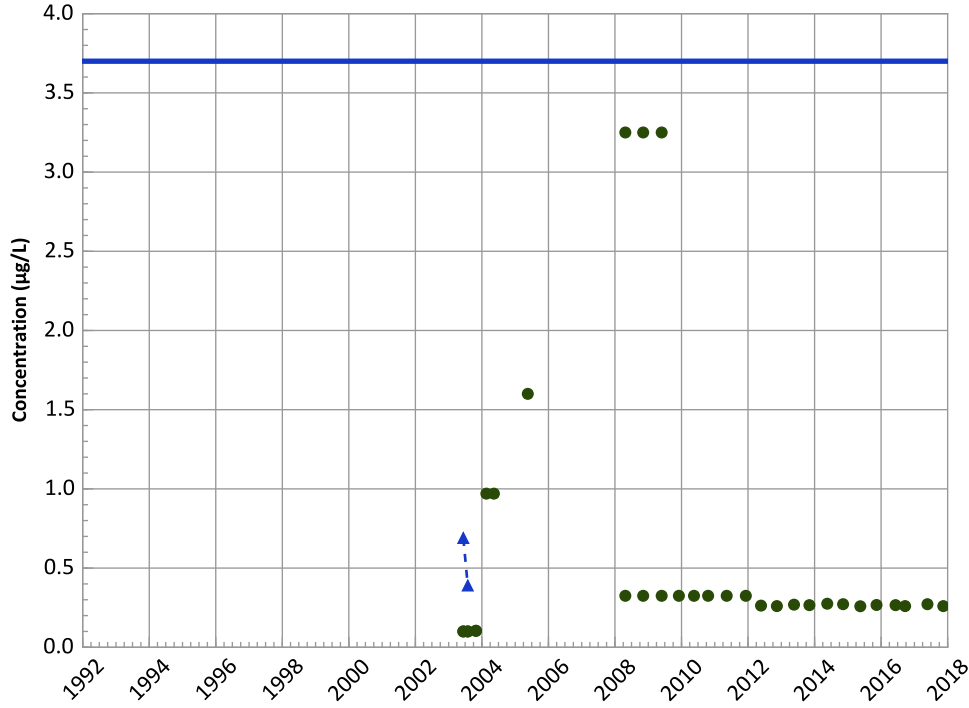
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1088 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

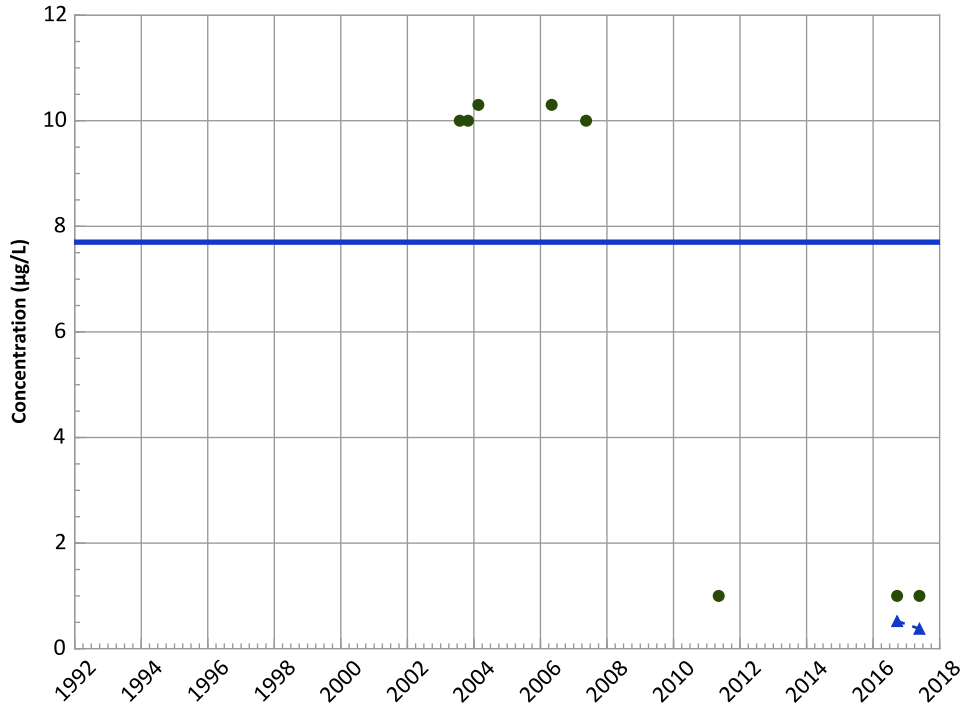
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

1,4-Dioxane (p-Dioxane) Trend



Concentration Trend

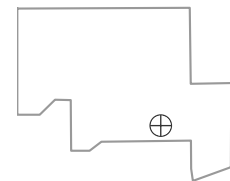
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
N/A (<4 Detections in Dataset)

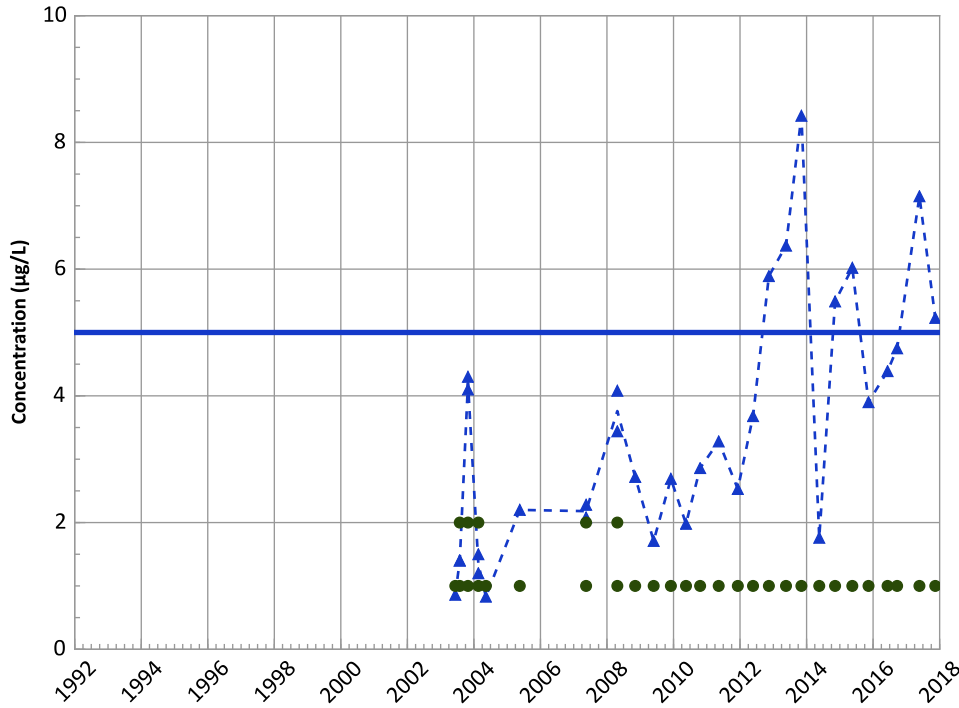
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/11/2003 to 11/14/2017
Analysis Date: 03/21/2018

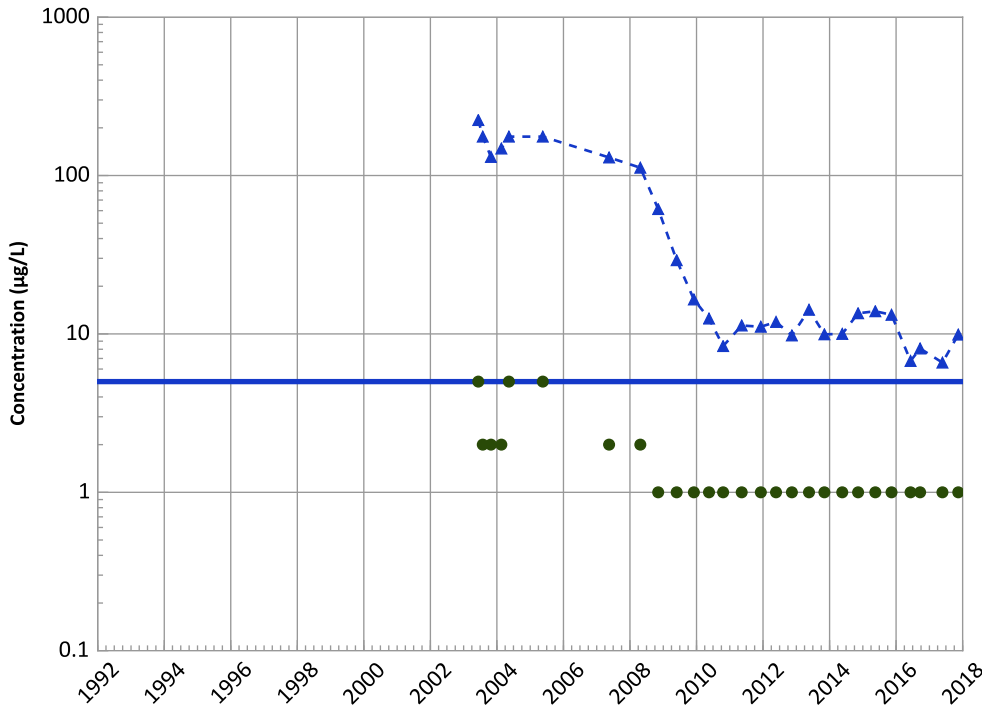
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1088 in Perched Aquifer
USDOE/NNSA Pantex Plant
Tetrachloroethylene (PCE) Trend**



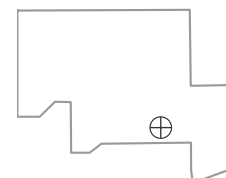
Concentration Trend
MAROS Mann-Kendall Method
 Data (): Decreasing
 All Data Increasing
MAROS Linear Regression Method
 Data (): Stable
 All Data Increasing

Trichloroethene Trend



Concentration Trend
MAROS Mann-Kendall Method
 Data (): Decreasing
 All Data Decreasing
MAROS Linear Regression Method
 Data (): Stable
 All Data Decreasing

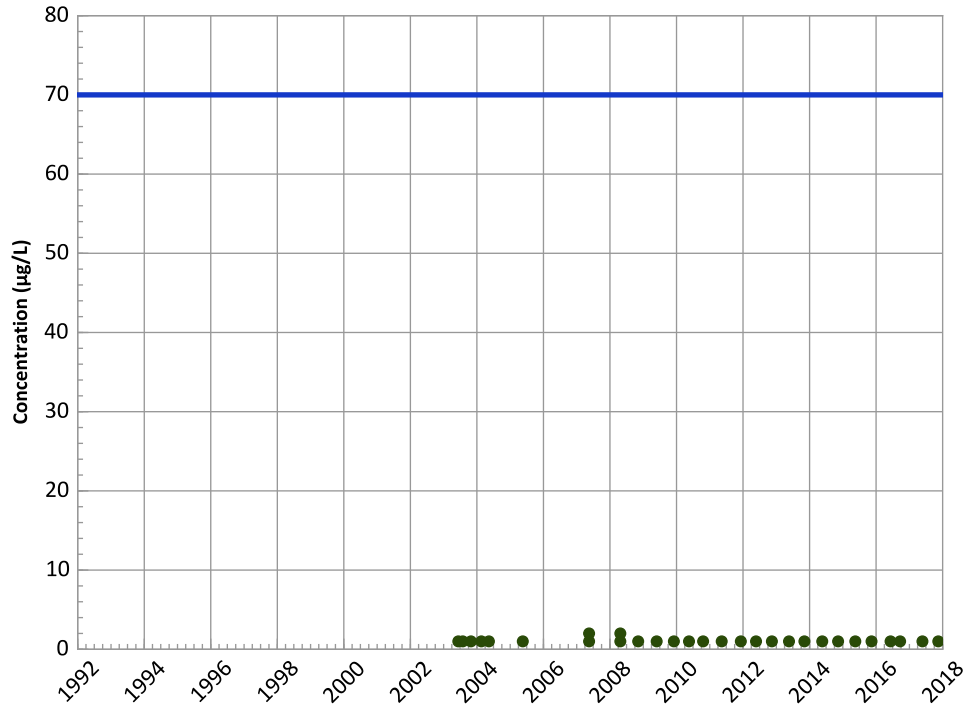
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 06/11/2003 to 11/14/2017
 Analysis Date: 03/21/2018

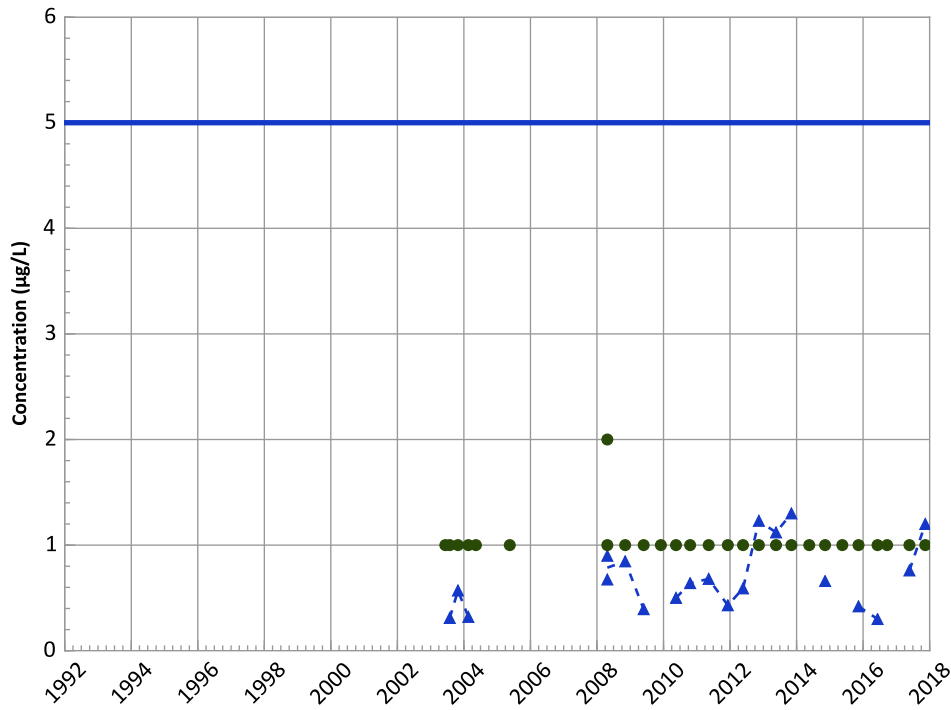
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1088 in Perched Aquifer
USDOE/NNSA Pantex Plant**
cis-1,2-Dichloroethene Trend



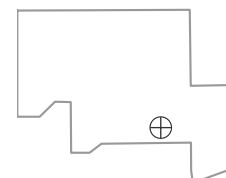
Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect
MAROS Linear Regression Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect

1,2-Dichloroethane Trend



Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 Decreasing
 All Data
 Probably Increasing
MAROS Linear Regression Method
 Data ():
 Decreasing
 All Data
 Increasing

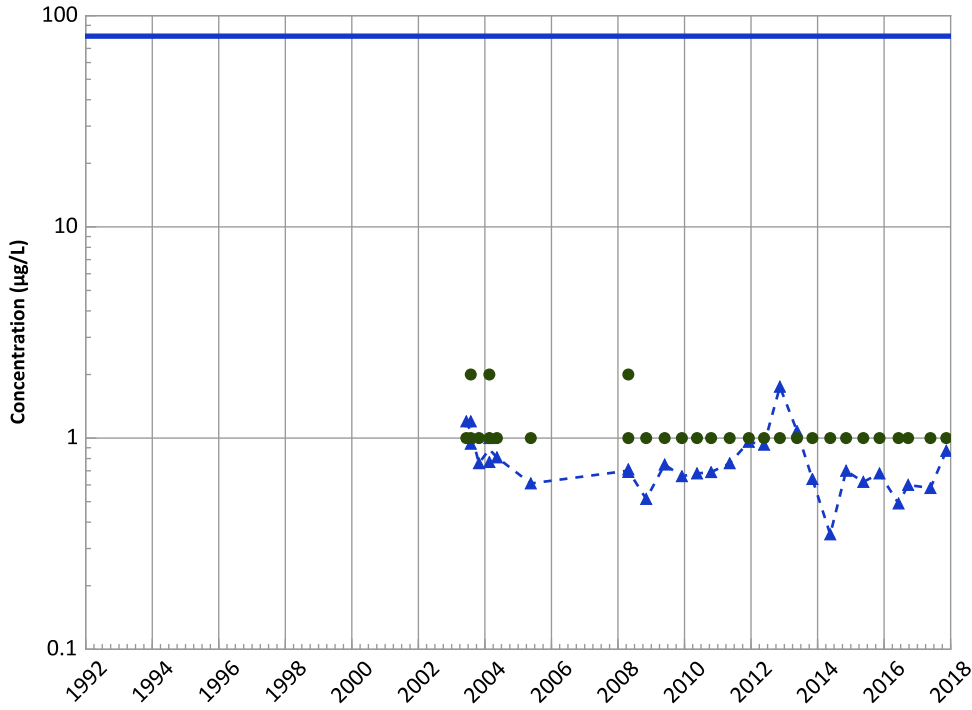
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 06/11/2003 to 11/14/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1088 in Perched Aquifer
 USDOE/NNSA Pantex Plant
 Chloroform Trend



Concentration Trend

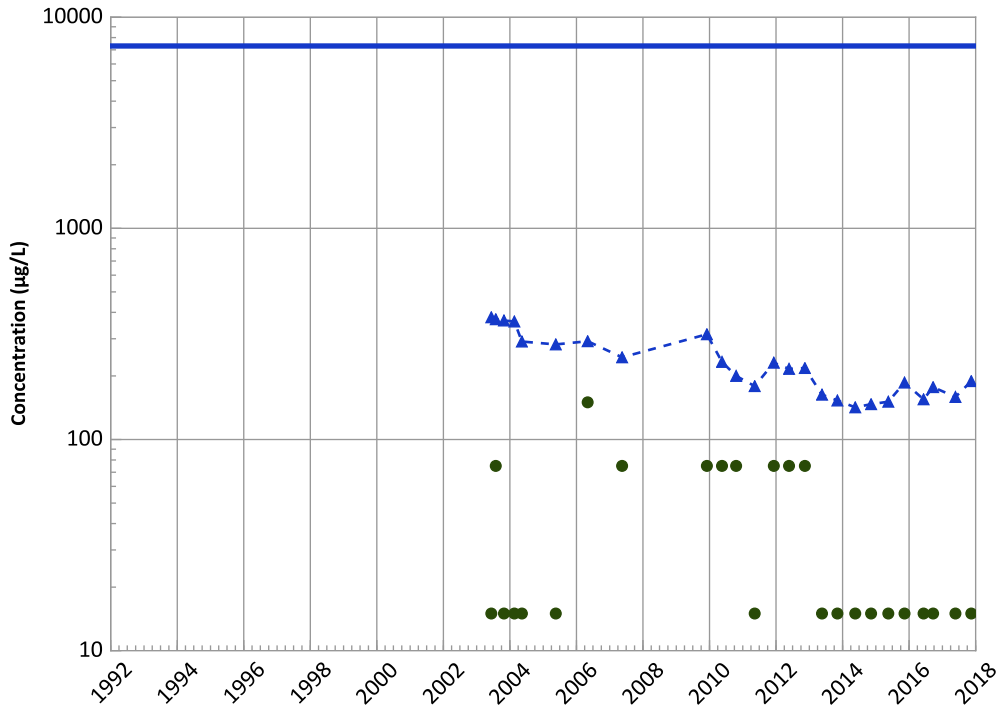
MAROS Mann-Kendall Method

Data ():
 Decreasing
 All Data
 Decreasing

MAROS Linear Regression Method

Data ():
 Decreasing
 All Data
 Probably Decreasing

Boron Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
 Decreasing
 All Data
 Decreasing

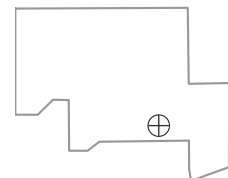
MAROS Linear Regression Method

Data ():
 Stable
 All Data
 Decreasing

Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 06/11/2003 to 11/14/2017
 Analysis Date: 03/21/2018

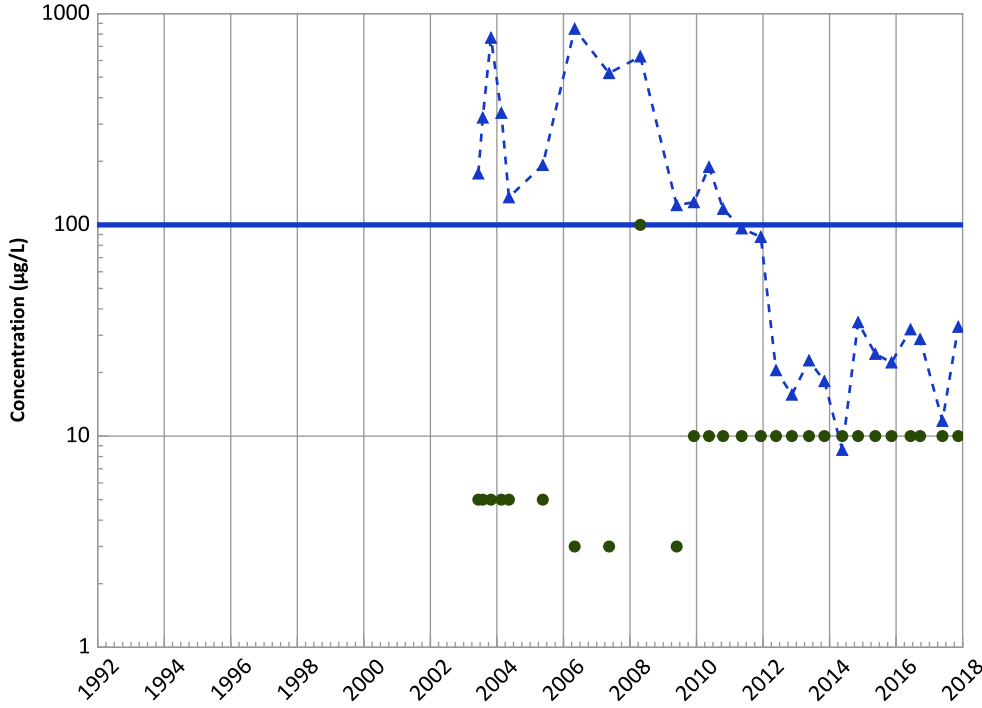
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1088 in Perched Aquifer
USDOE/NNSA Pantex Plant

Chromium, Total Trend



Concentration Trend

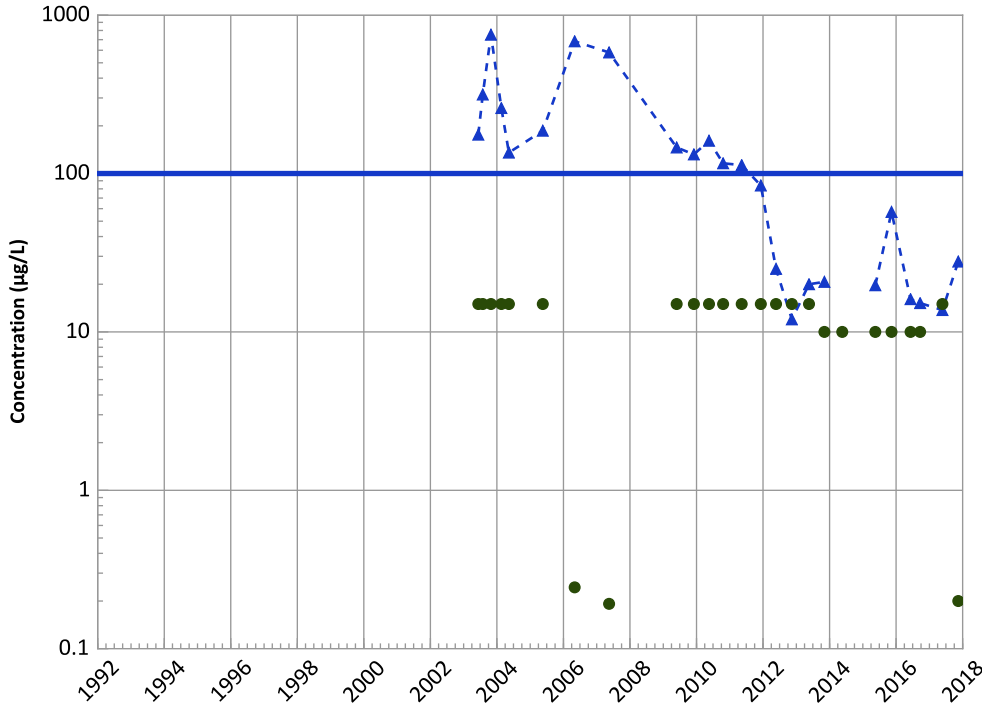
MAROS Mann-Kendall Method

Data ():
Probably Increasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Probably Increasing
All Data
Decreasing

Chromium, Hexavalent Trend



Concentration Trend

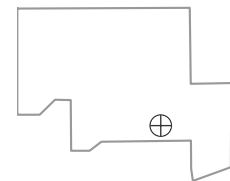
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
Decreasing

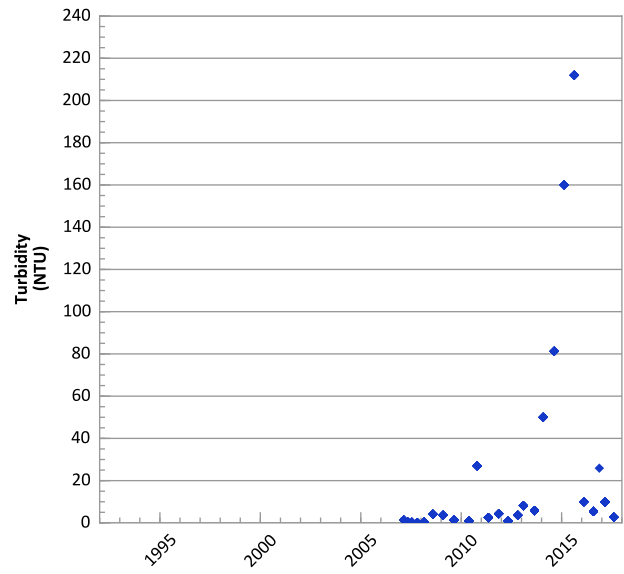
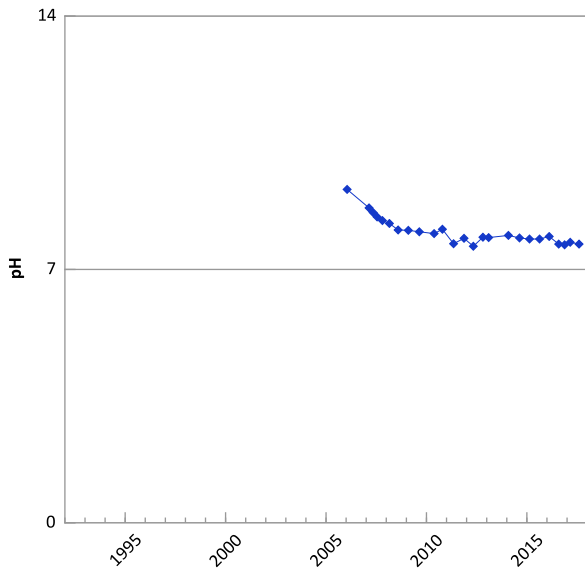
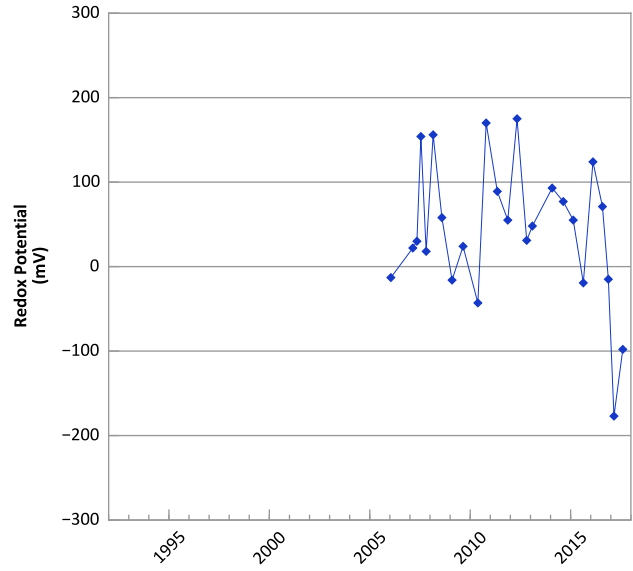
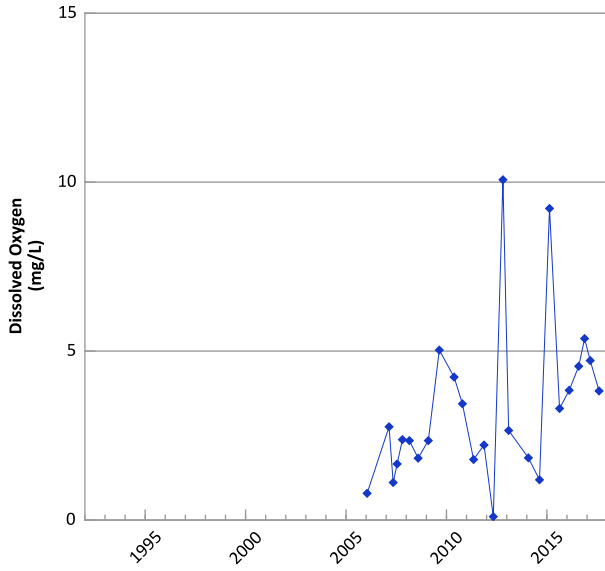
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/11/2003 to 11/14/2017
Analysis Date: 03/21/2018

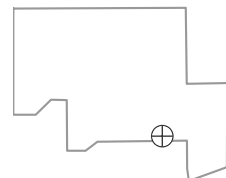
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1095A in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



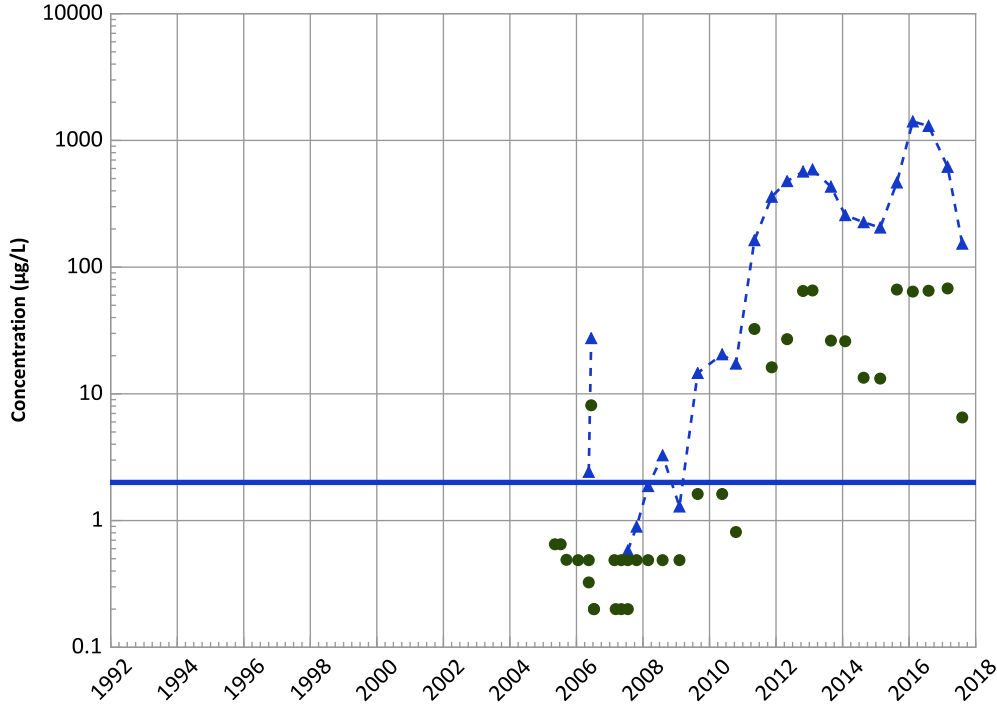
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 05/09/2005 to 08/07/2017
 Analysis Date: 03/21/2018

Well Location



PTX06-1095A in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

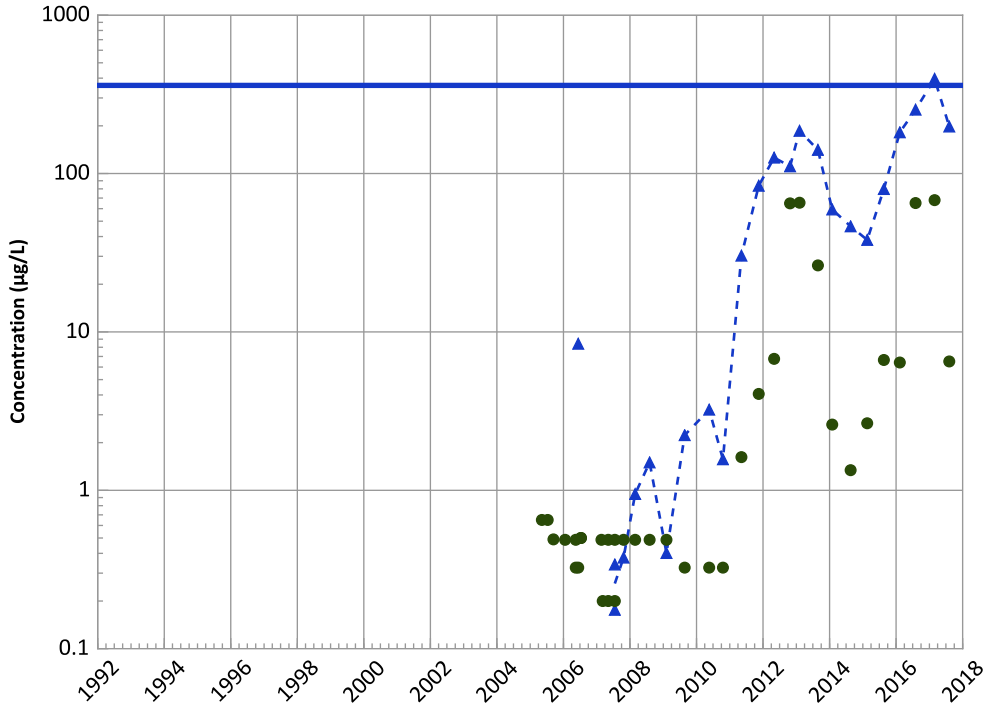
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
Increasing

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

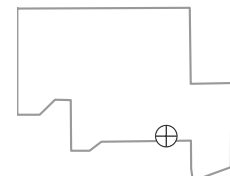
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
Increasing

Well Location

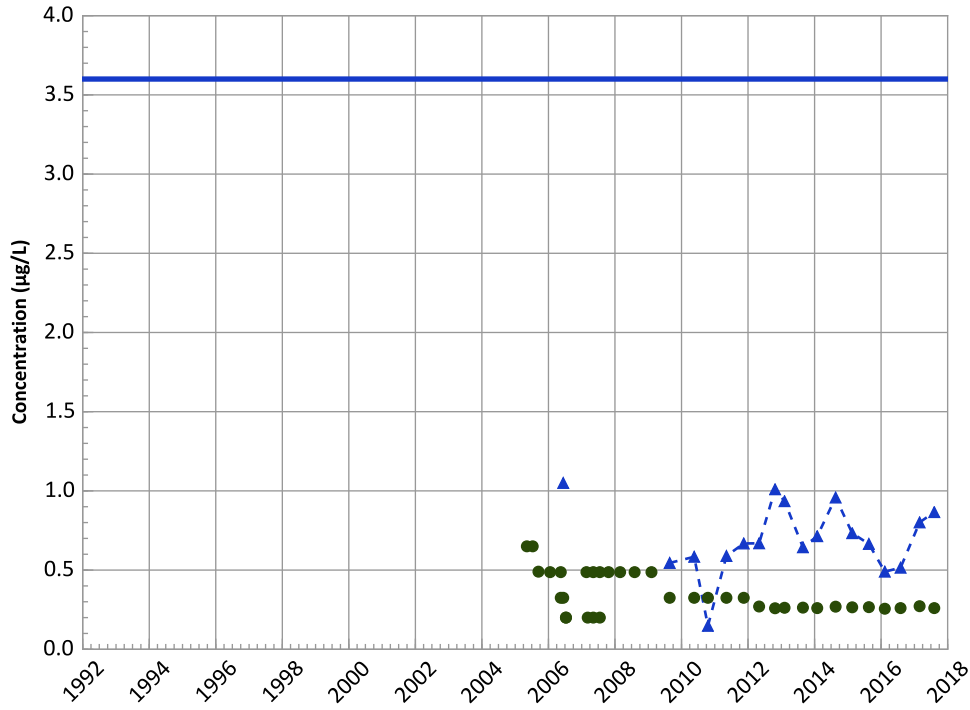


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 05/09/2005 to 08/07/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1095A in Perched Aquifer
USDOE/NSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

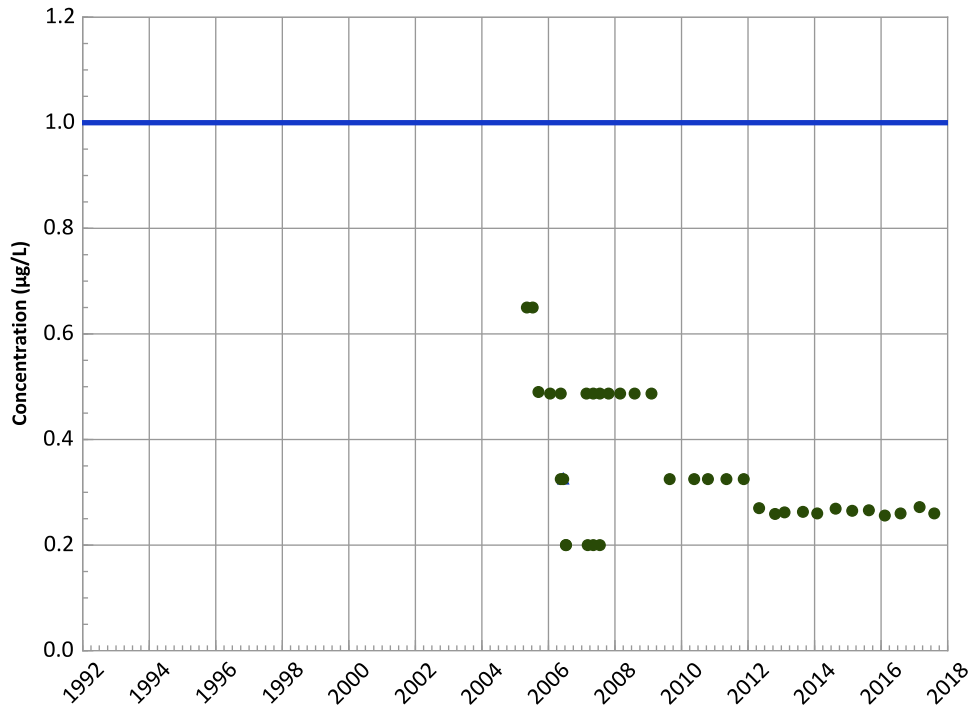
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
No Trend

2,4-Dinitrotoluene Trend



Concentration Trend

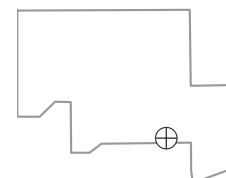
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

Well Location

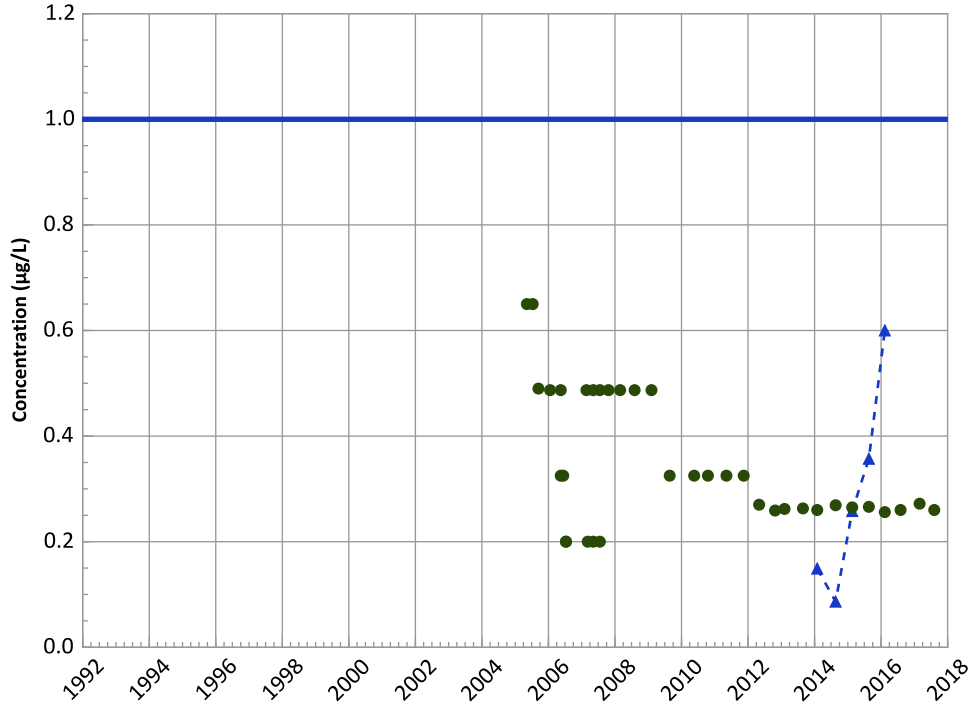


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 05/09/2005 to 08/07/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1095A in Perched Aquifer
USDOE/NSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

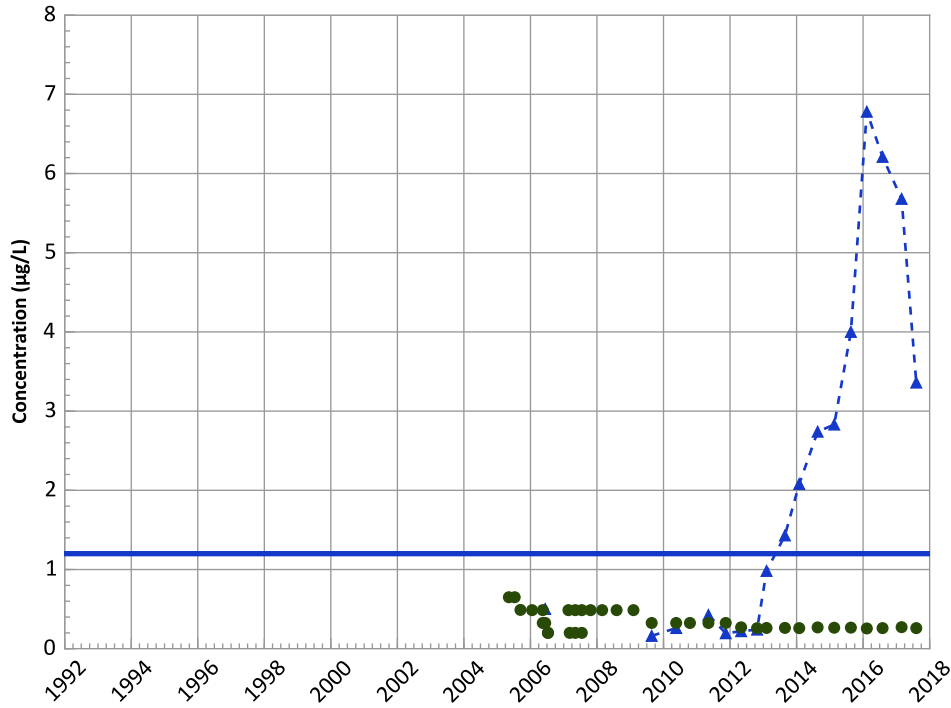
MAROS Mann-Kendall Method

Data ():
No Trend
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

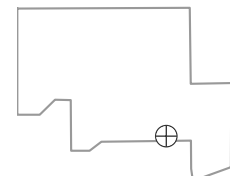
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

Well Location

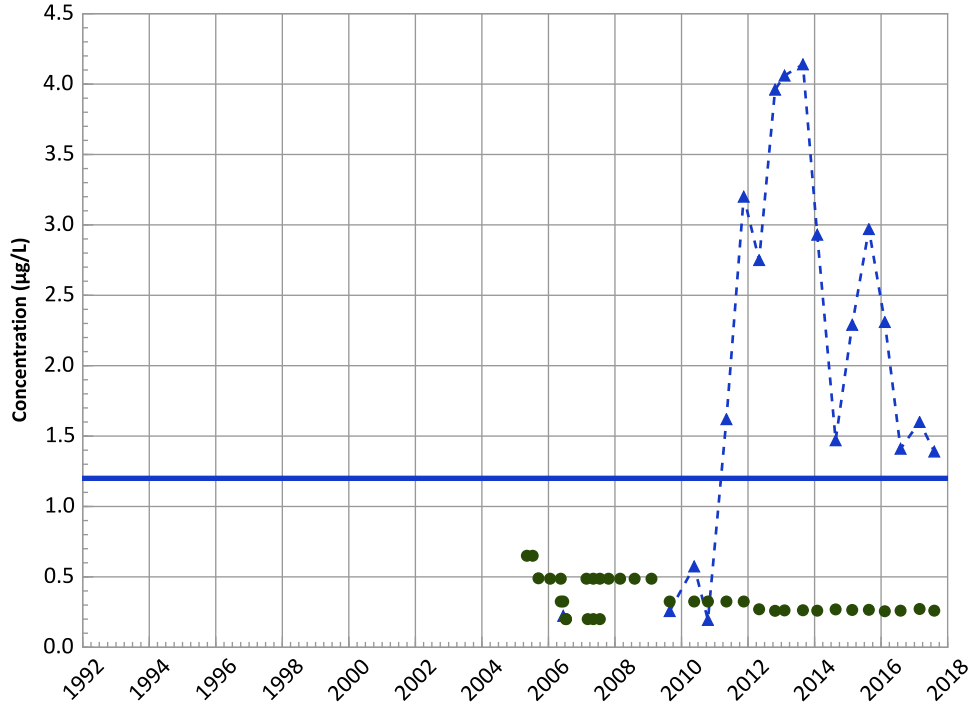


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 05/09/2005 to 08/07/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1095A in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

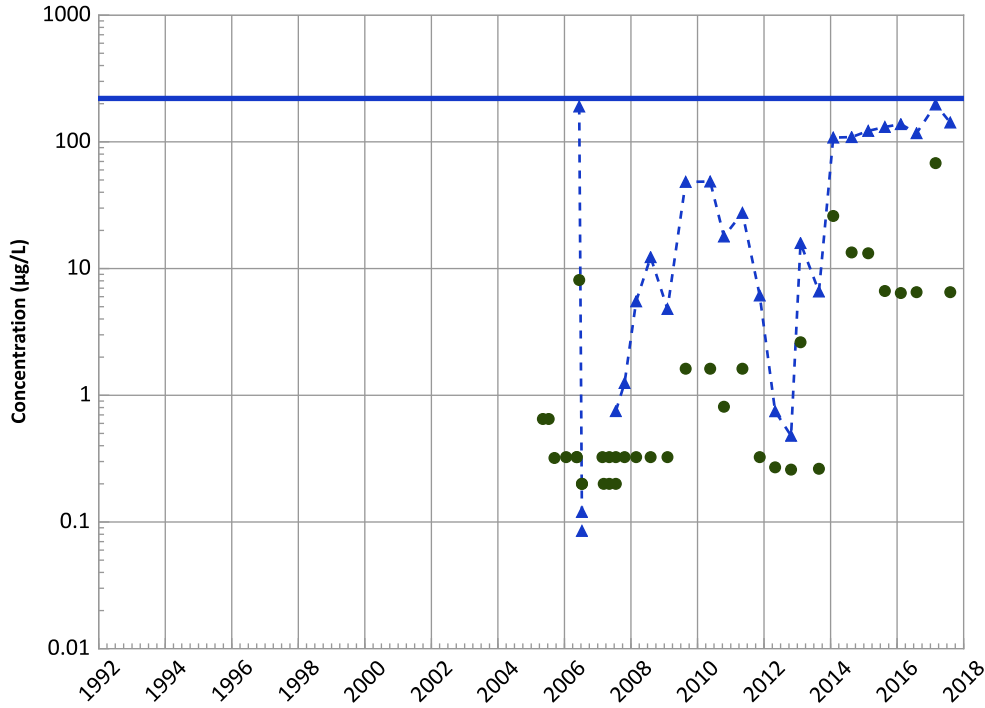
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Increasing

1,3,5-Trinitrobenzene Trend



Concentration Trend

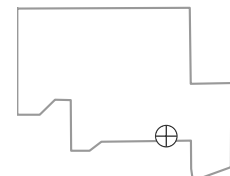
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

Well Location

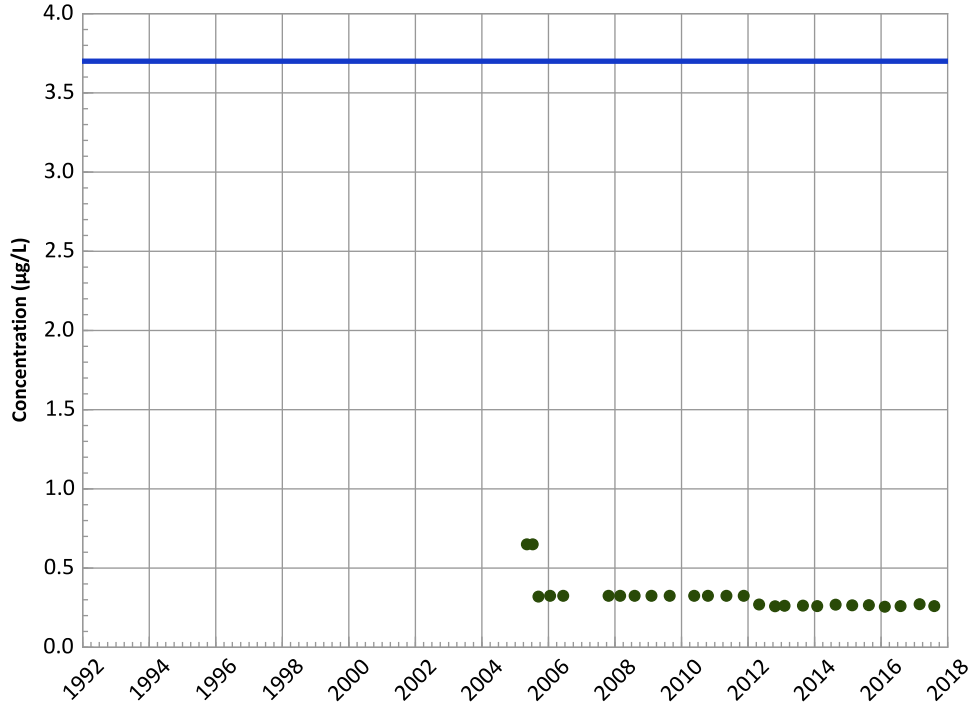


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 05/09/2005 to 08/07/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1095A in Perched Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

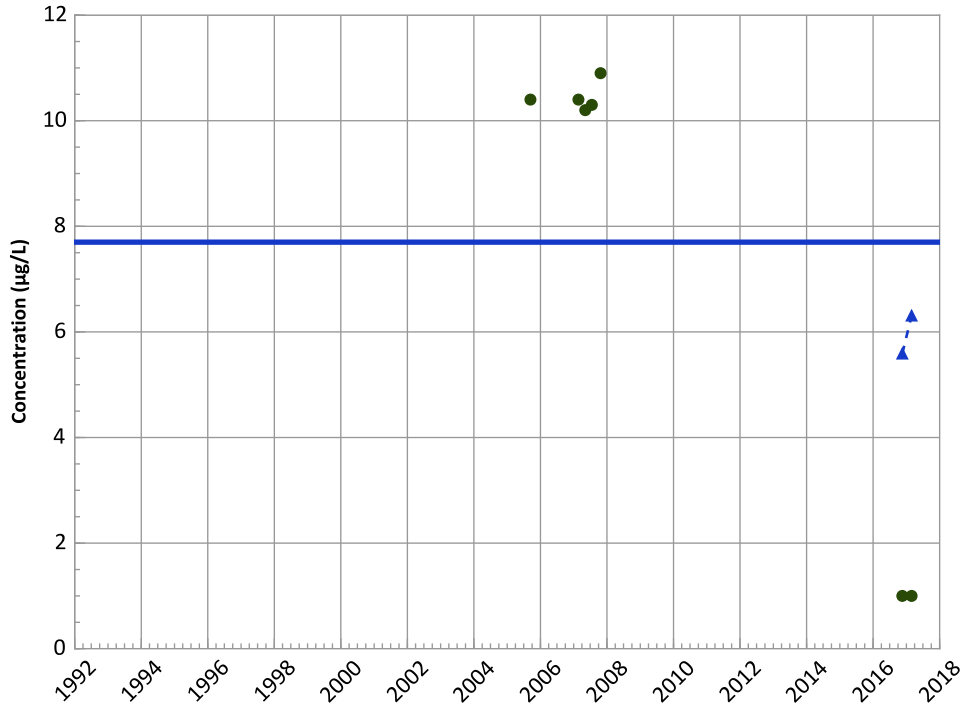
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,4-Dioxane (p-Dioxane) Trend



Concentration Trend

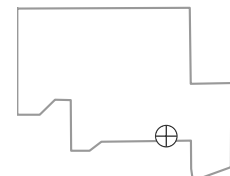
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
N/A (<4 Detections in Dataset)

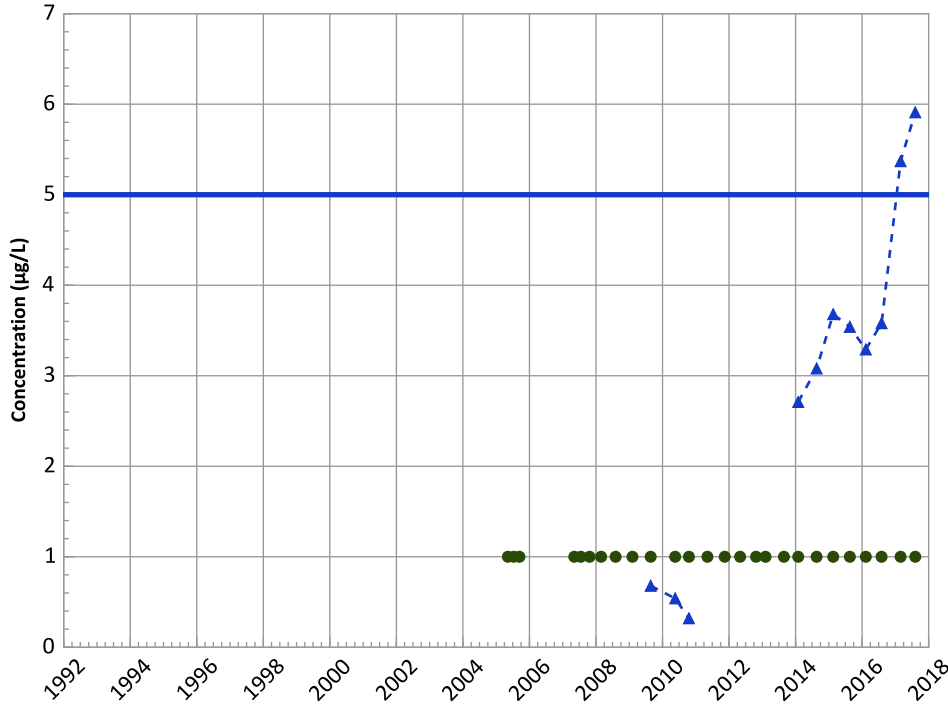
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 05/09/2005 to 08/07/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1095A in Perched Aquifer
USDOE/NNSA Pantex Plant
Tetrachloroethylene (PCE) Trend**



Concentration Trend

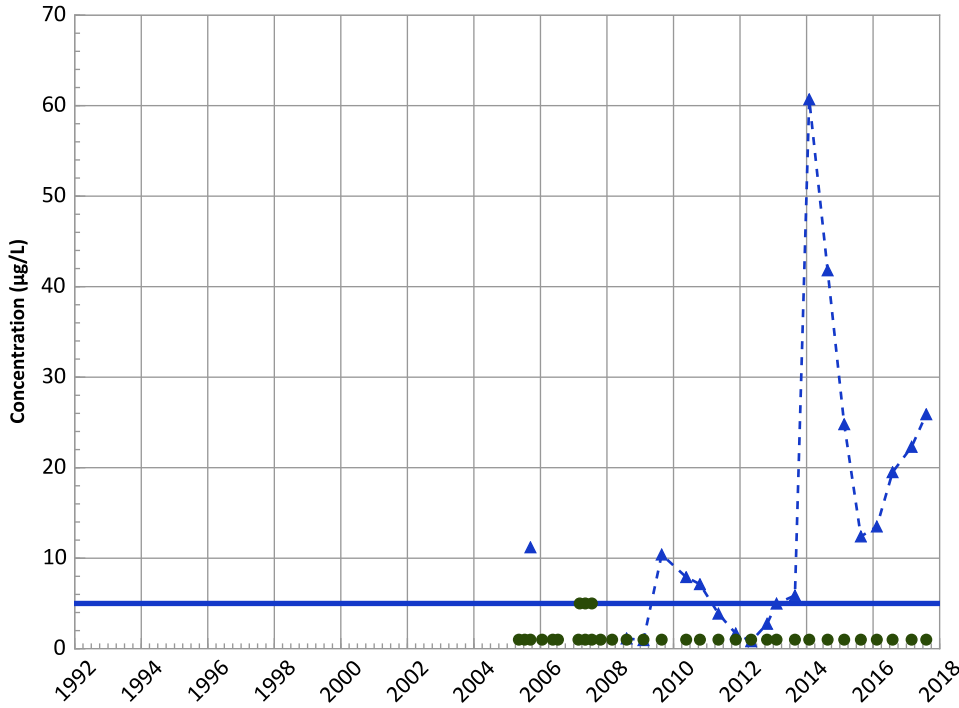
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Probably Increasing
All Data
Increasing

Trichloroethene Trend



Concentration Trend

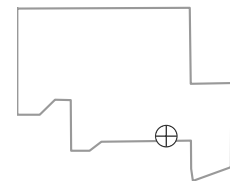
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

Well Location

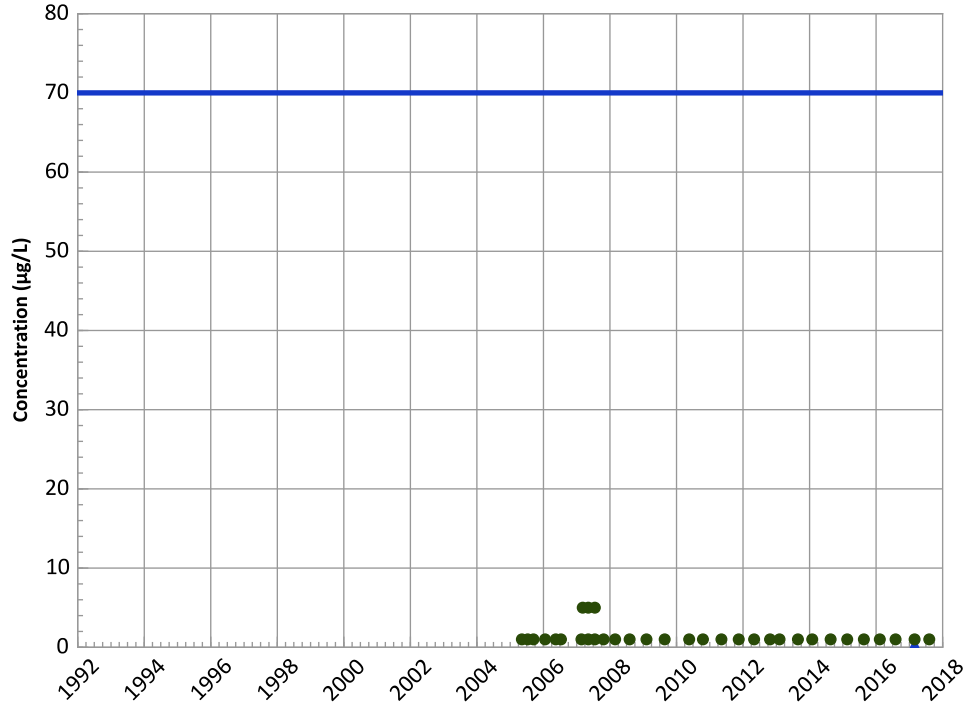


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 05/09/2005 to 08/07/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1095A in Perched Aquifer
USDOE/NNSA Pantex Plant

cis-1,2-Dichloroethene Trend



Concentration Trend

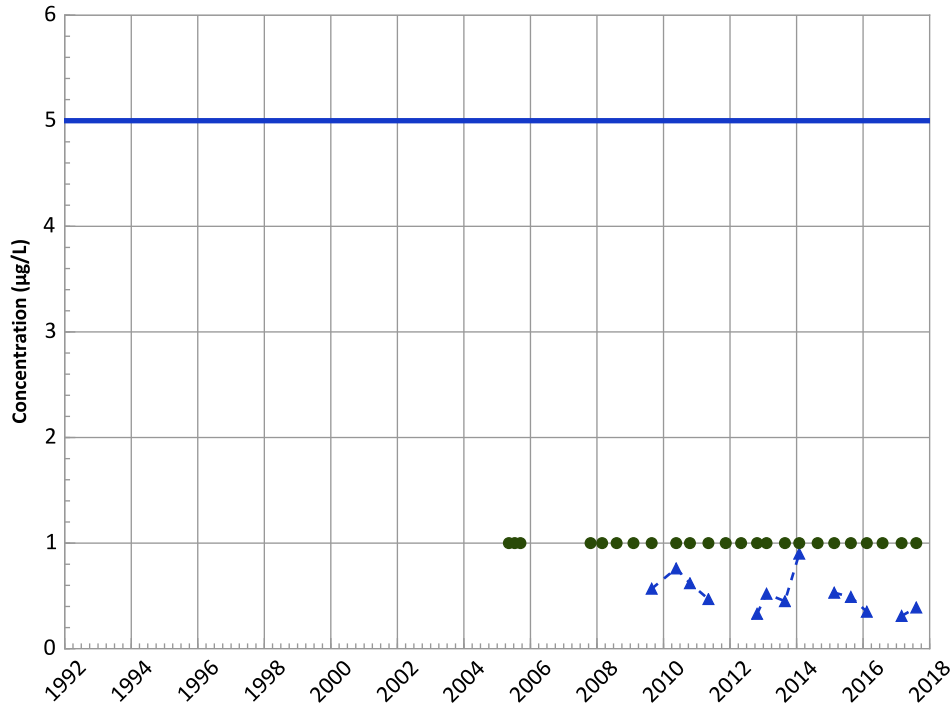
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

1,2-Dichloroethane Trend



Concentration Trend

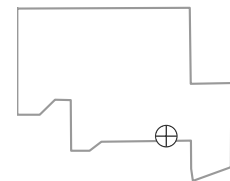
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Stable
All Data
Decreasing

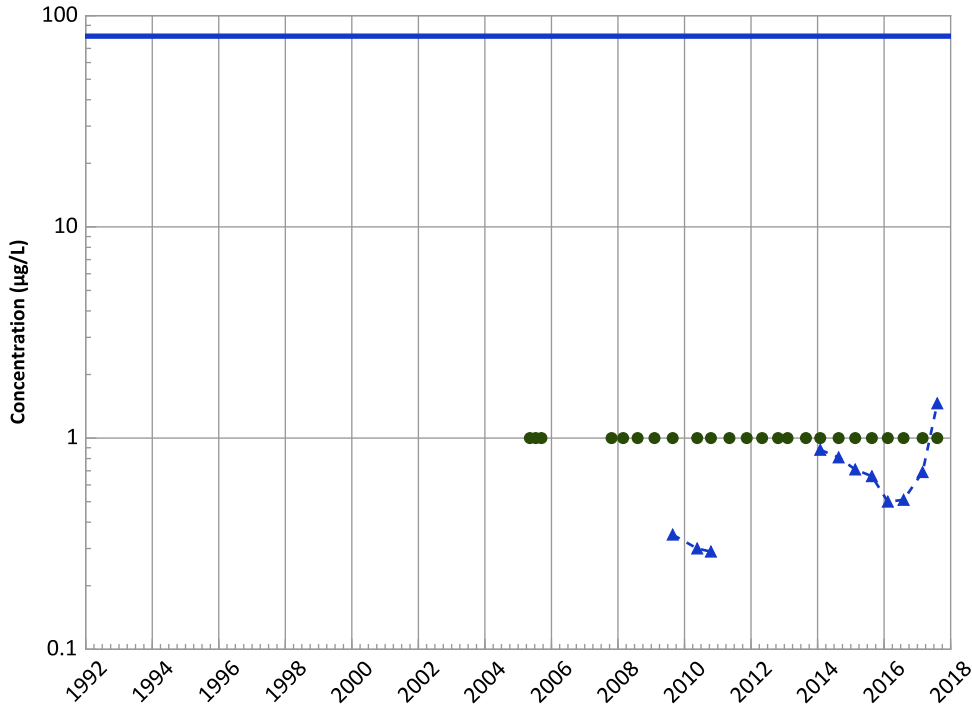
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 05/09/2005 to 08/07/2017
Analysis Date: 03/21/2018

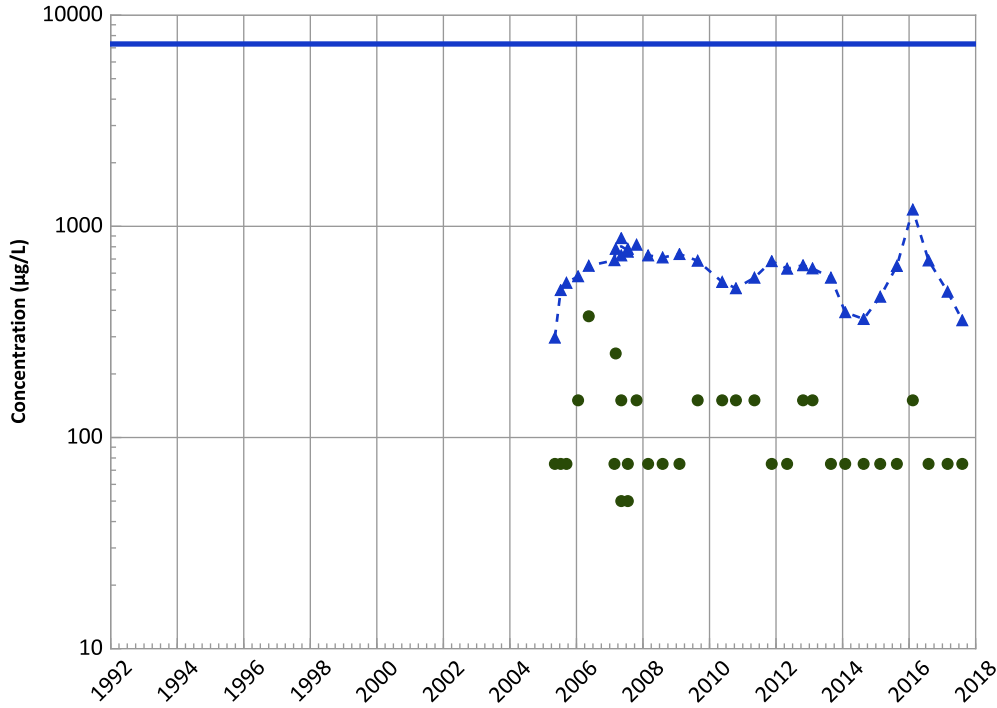
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1095A in Perched Aquifer
 USDOE/NNSA Pantex Plant
 Chloroform Trend



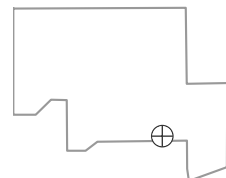
Concentration Trend
 MAROS Mann-Kendall Method
 Data ():
 Increasing
 All Data
 Increasing
 MAROS Linear Regression Method
 Data ():
 Decreasing
 All Data
 Increasing

Boron Trend



Concentration Trend
 MAROS Mann-Kendall Method
 Data ():
 Increasing
 All Data
 Decreasing
 MAROS Linear Regression Method
 Data ():
 No Trend
 All Data
 Stable

Well Location

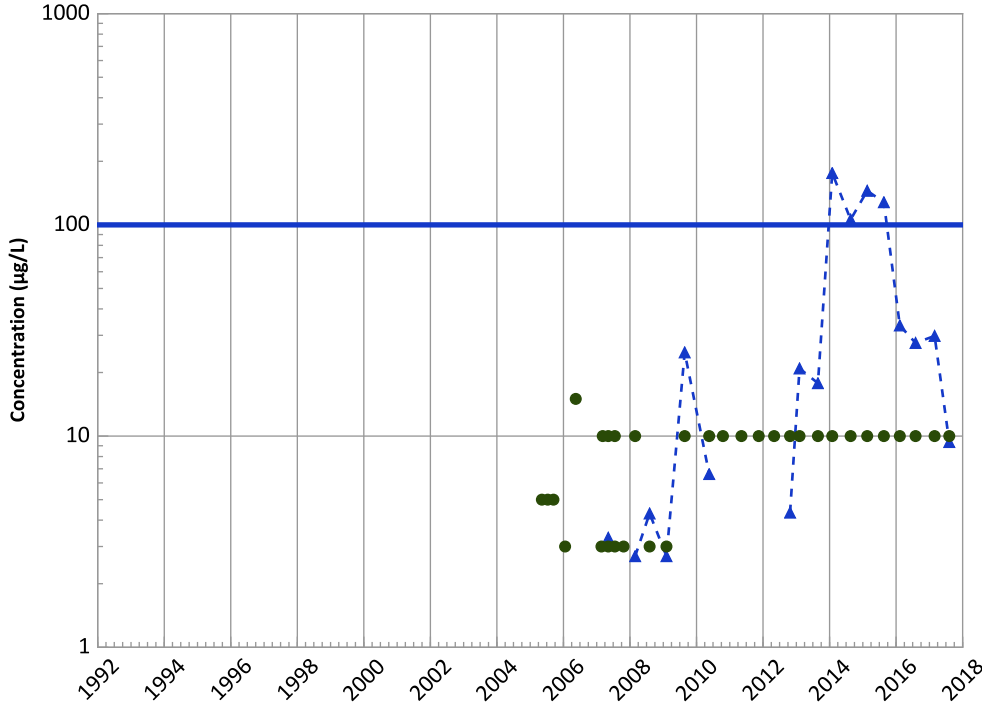


Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 05/09/2005 to 08/07/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1095A in Perched Aquifer
USDOE/NNSA Pantex Plant

Chromium, Total Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

No Trend

All Data

Increasing

MAROS Linear Regression Method

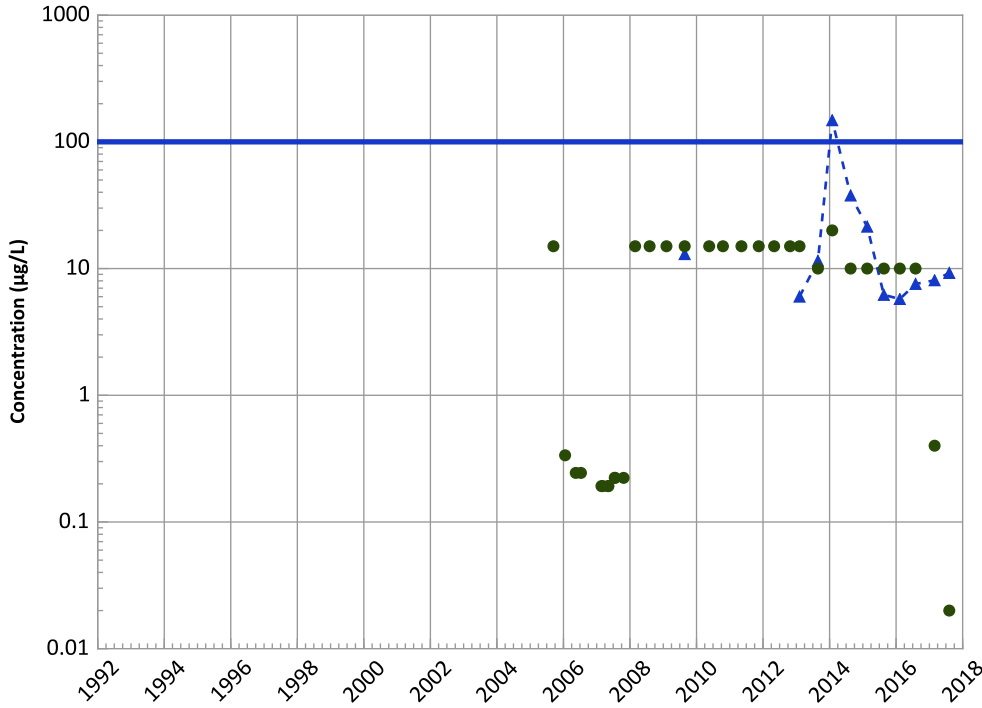
Data ():

No Trend

All Data

Increasing

Chromium, Hexavalent Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

Decreasing

All Data

Increasing

MAROS Linear Regression Method

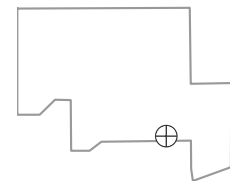
Data ():

No Trend

All Data

No Trend

Well Location

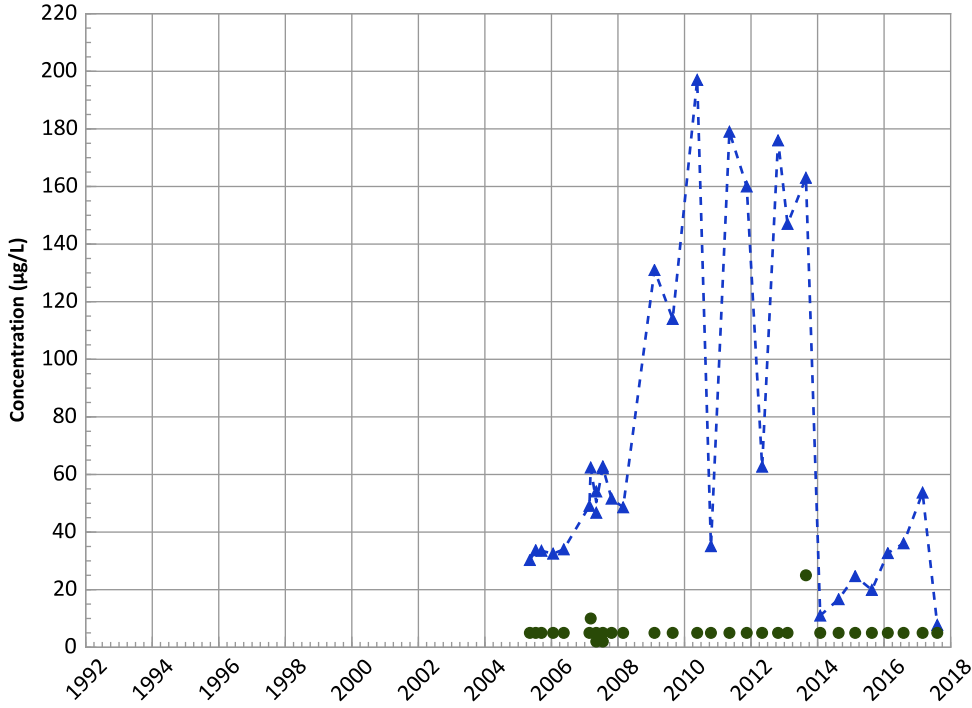


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 05/09/2005 to 08/07/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1095A in Perched Aquifer
USDOE/NSA Pantex Plant

Manganese Trend



Concentration Trend

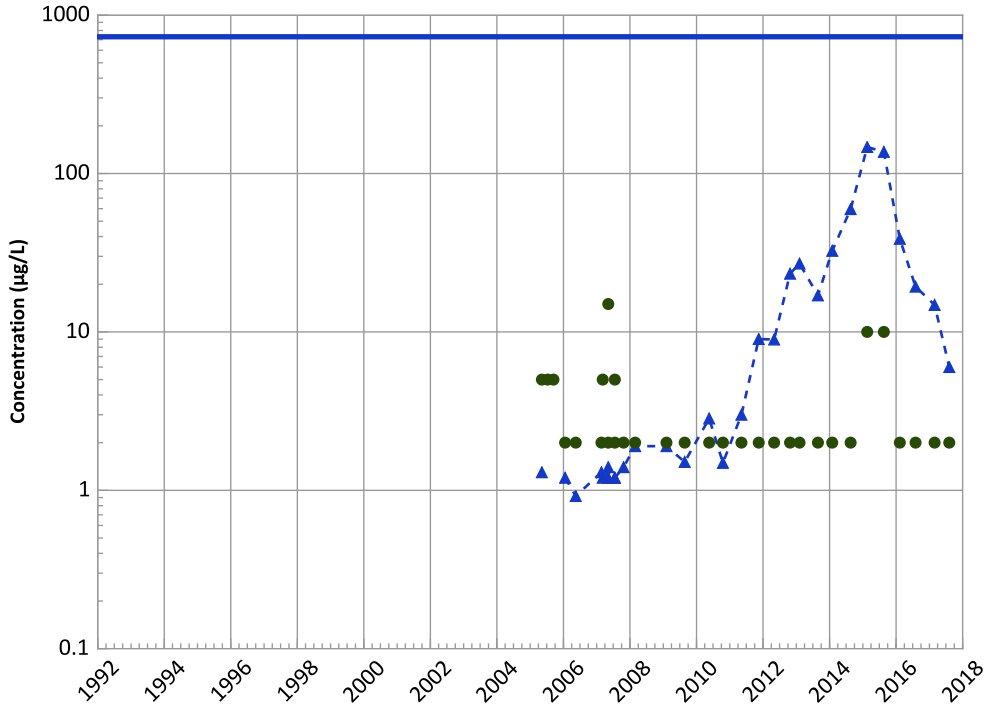
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
No Trend

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Stable

Nickel Trend



Concentration Trend

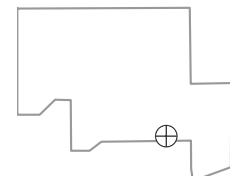
MAROS Mann-Kendall Method

Data ():
Probably Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Probably Increasing
All Data
Increasing

Well Location

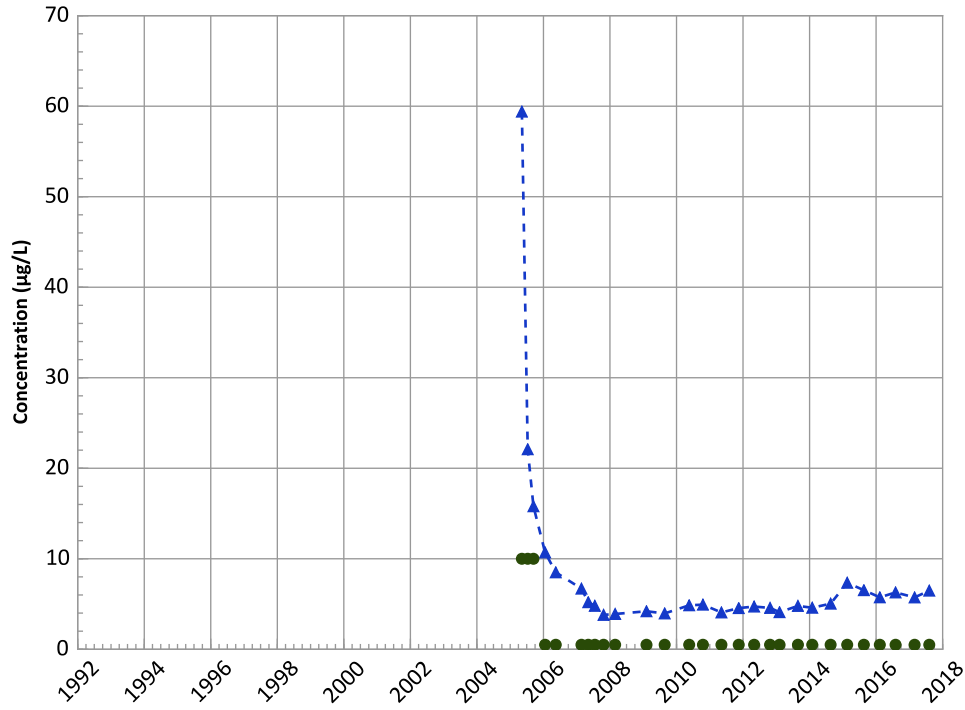


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 05/09/2005 to 08/07/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1095A in Perched Aquifer
USDOE/NNSA Pantex Plant

Molybdenum Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Decreasing

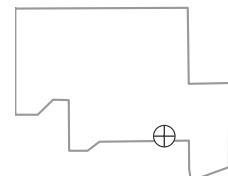
MAROS Linear Regression Method

Data ():
Increasing
All Data
Decreasing

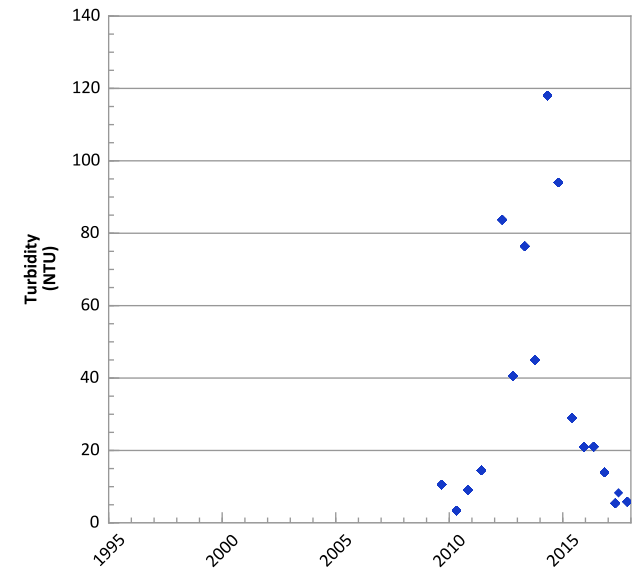
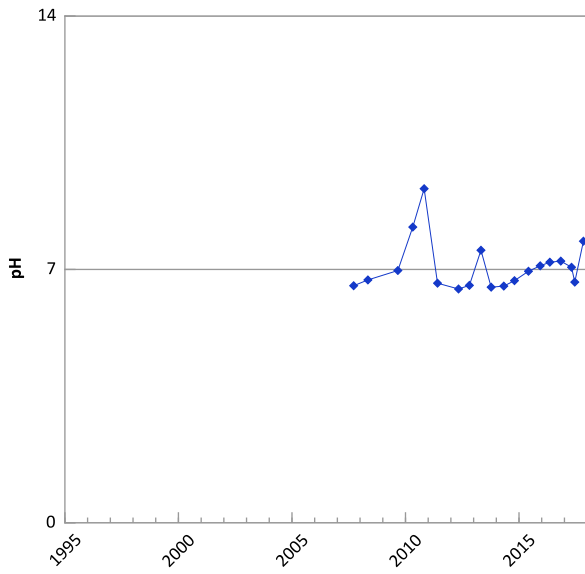
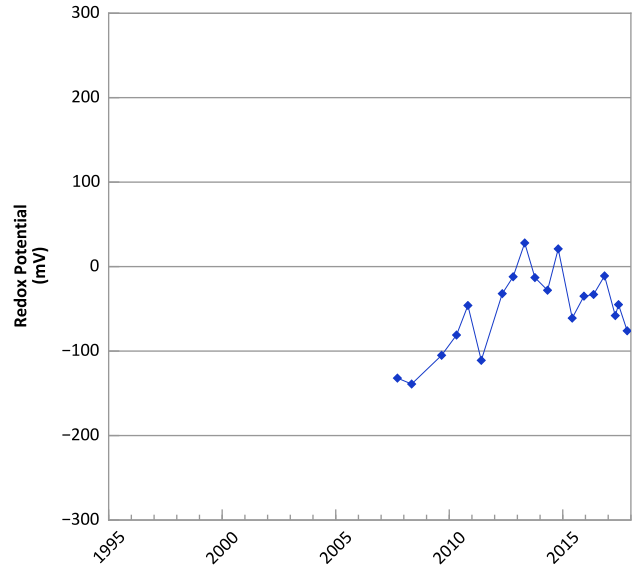
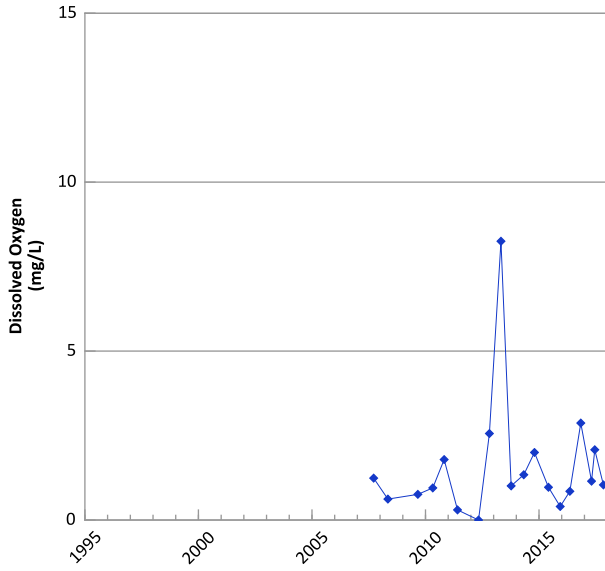
Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 05/09/2005 to 08/07/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

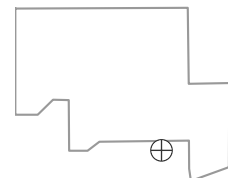


**PTX06-1098 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



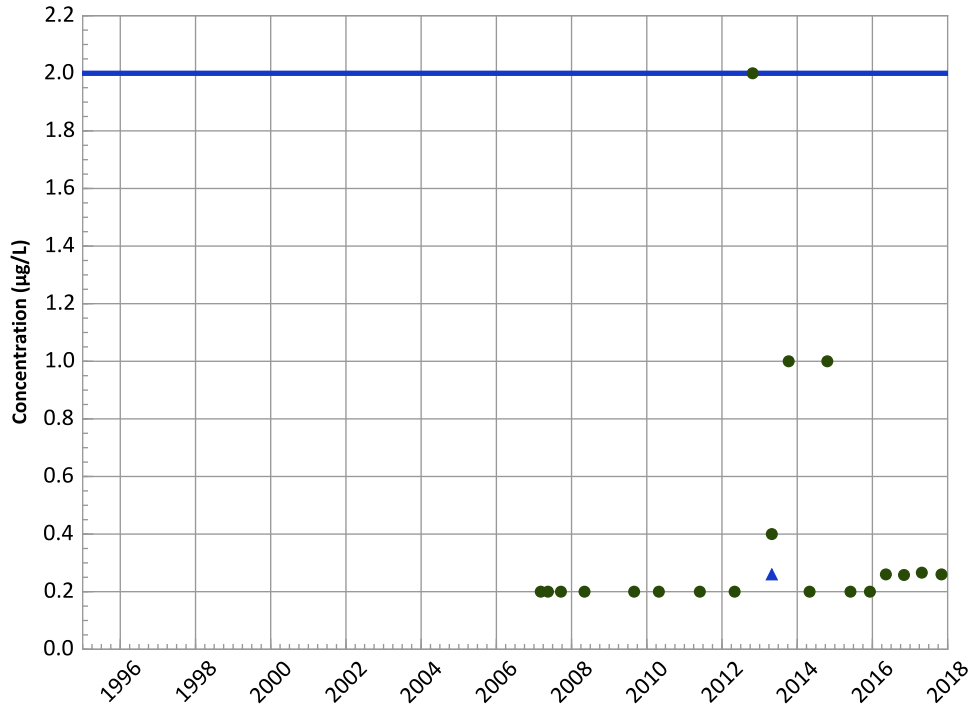
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 03/08/2007 to 11/02/2017
 Analysis Date: 03/21/2018

Well Location



PTX06-1098 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

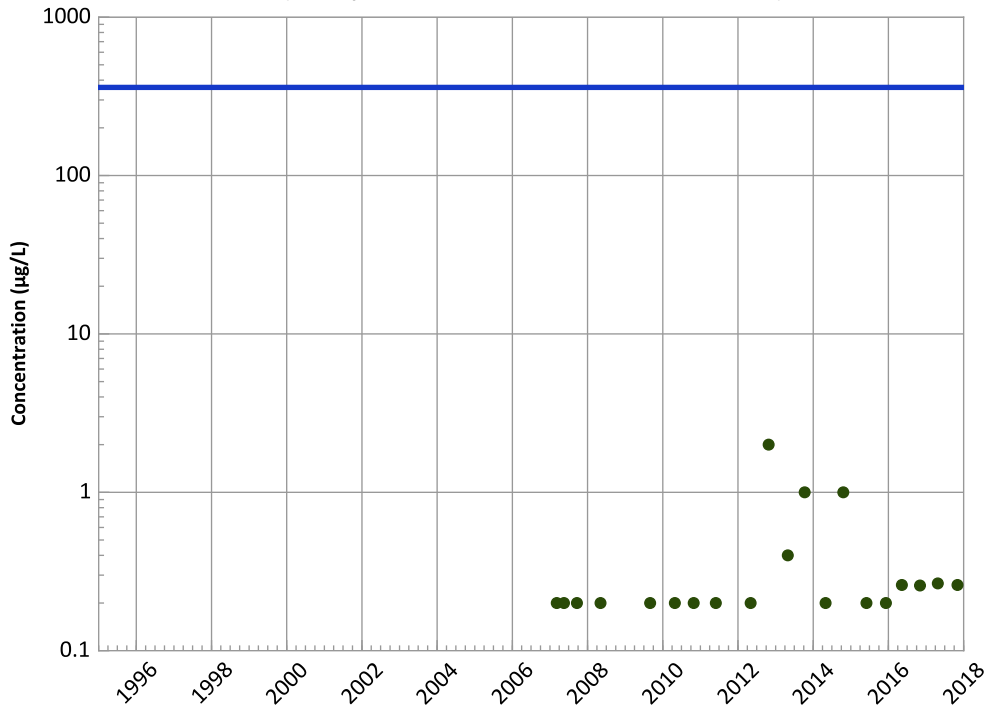
Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

All Non-Detect

All Data

All Non-Detect

MAROS Linear Regression Method

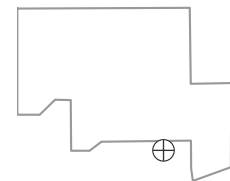
Data ():

All Non-Detect

All Data

All Non-Detect

Well Location

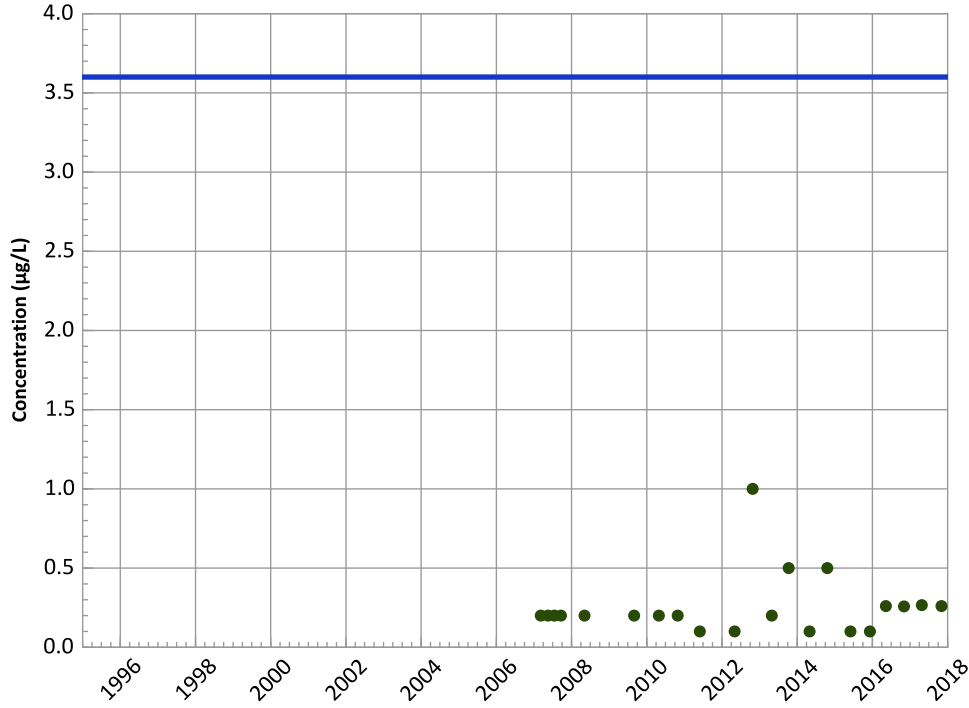


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/08/2007 to 11/02/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1098 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

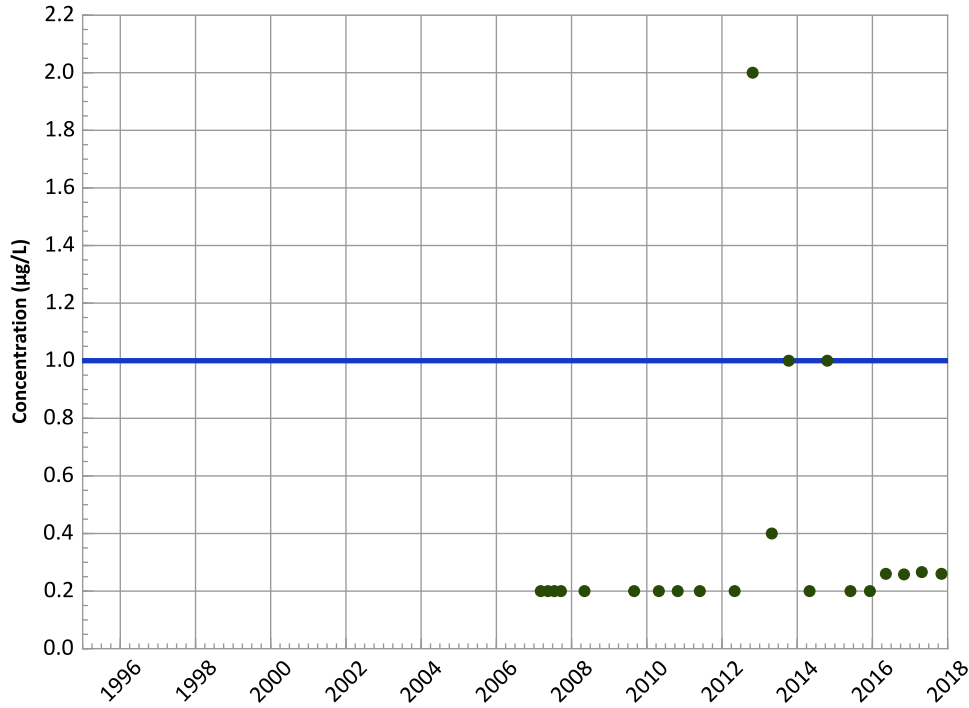
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

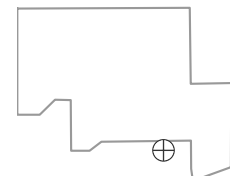
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

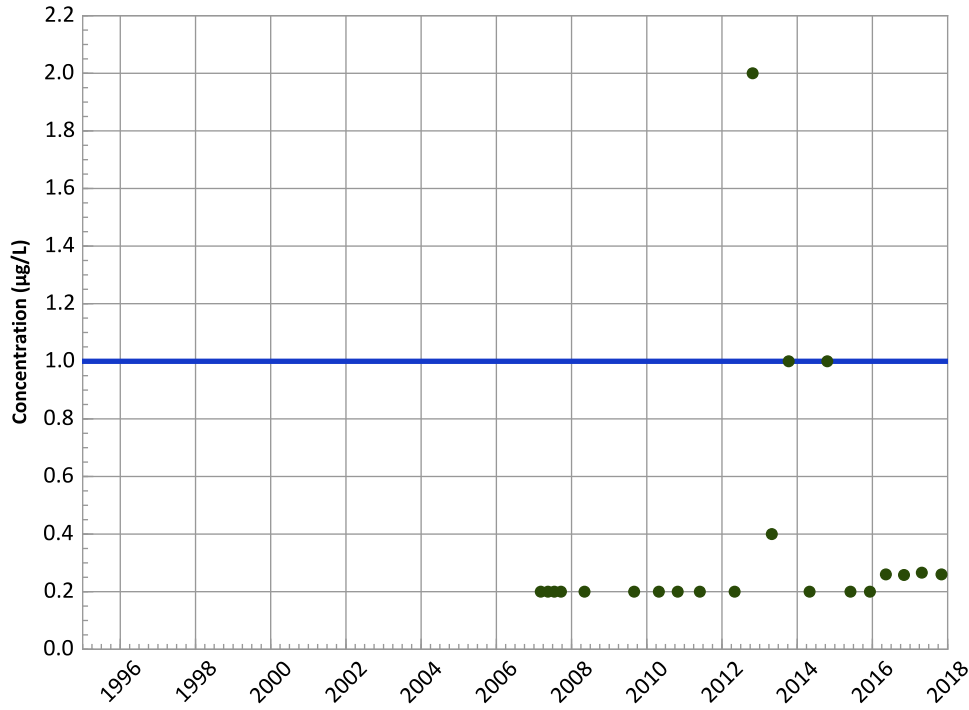


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/08/2007 to 11/02/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1098 in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

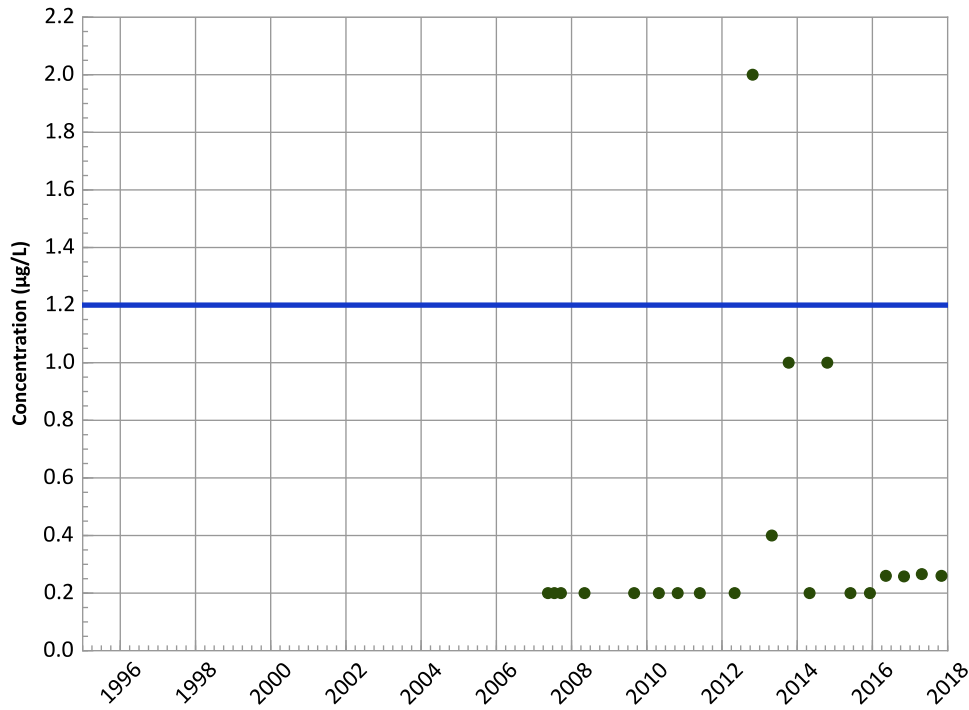
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

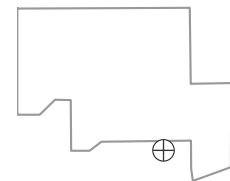
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

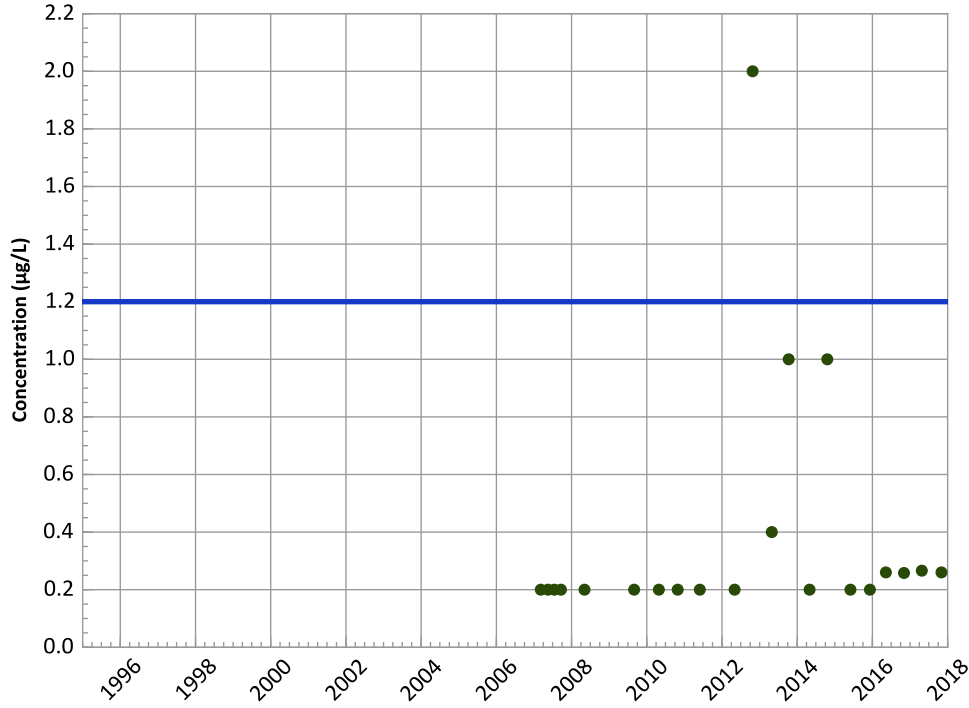


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/08/2007 to 11/02/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1098 in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

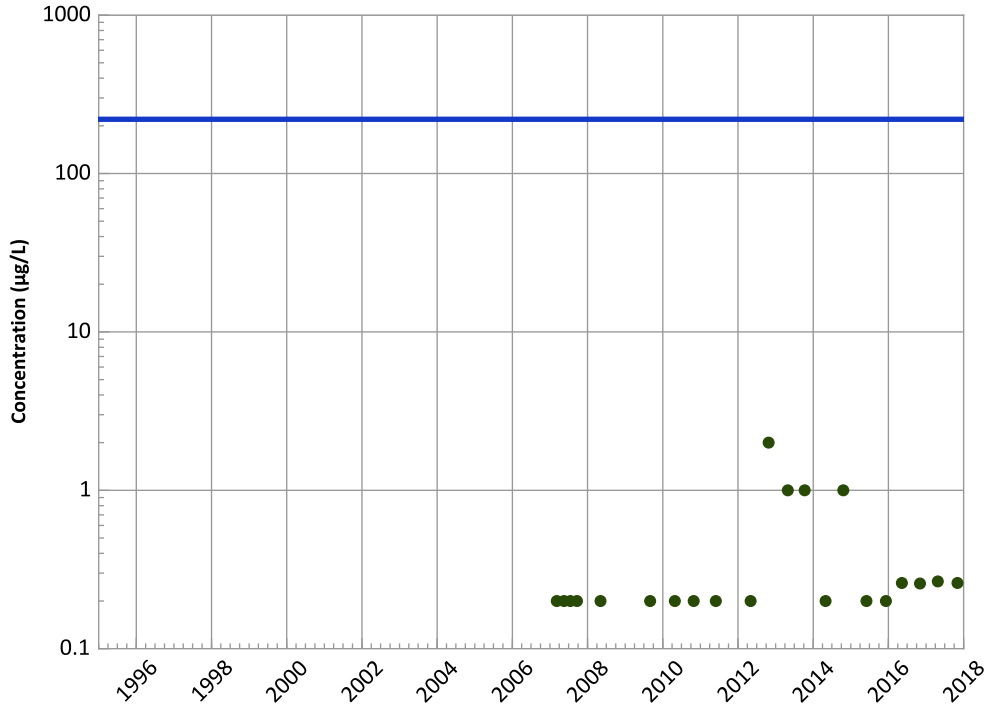
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,3,5-Trinitrobenzene Trend



Concentration Trend

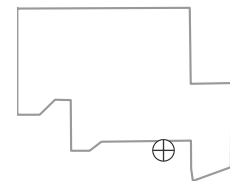
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

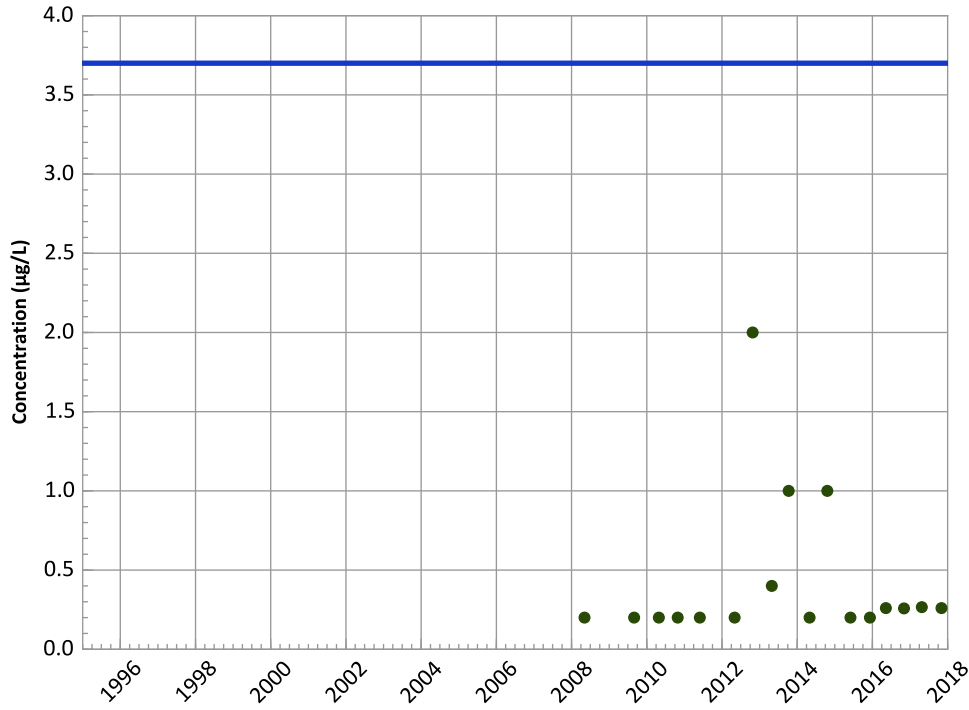
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/08/2007 to 11/02/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1098 in Perched Aquifer
USDOE/NNSA Pantex Plant
1,3-Dinitrobenzene Trend**



Concentration Trend

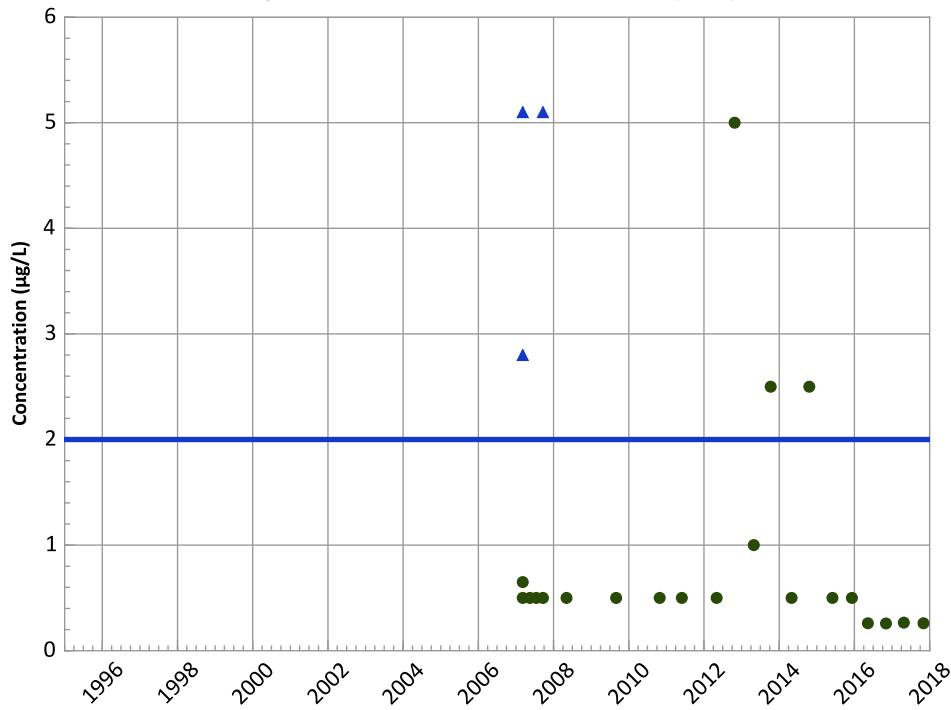
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Hexahydro-1-Nitroso-3,5-Dinitro-1,3,5-Triazine (MNX) Trend



Concentration Trend

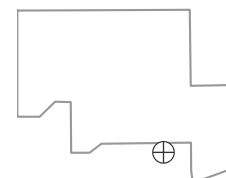
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

Well Location

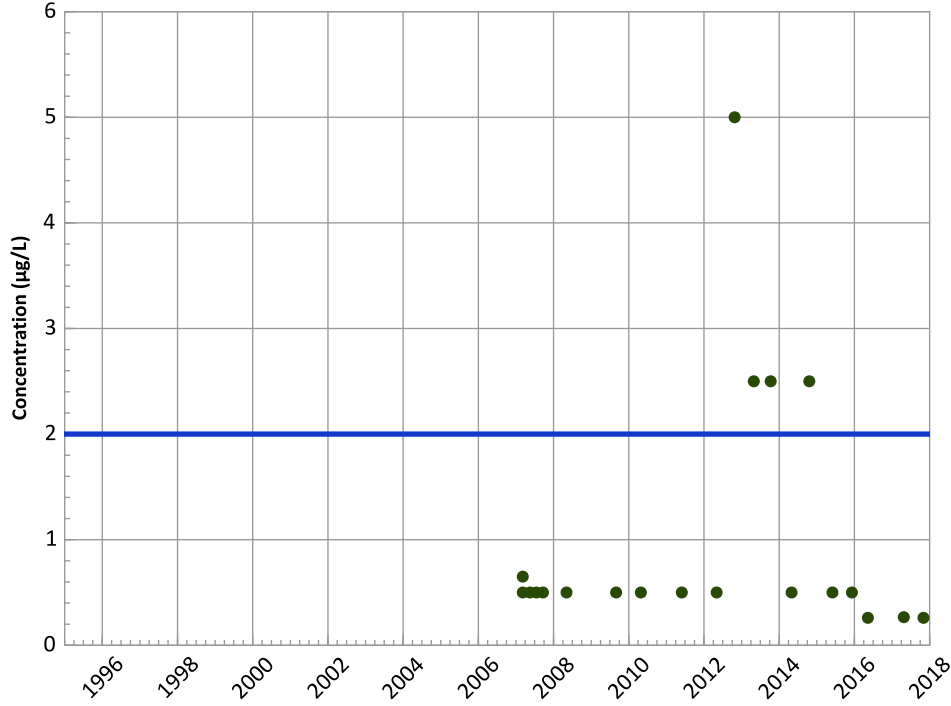


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/08/2007 to 11/02/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1098 in Perched Aquifer
USDOE/NNSA Pantex Plant

Hexahydro-1,3-Dinitroso-5-Nitro-1,3,5-Triazine (DNX) Trend



Concentration Trend

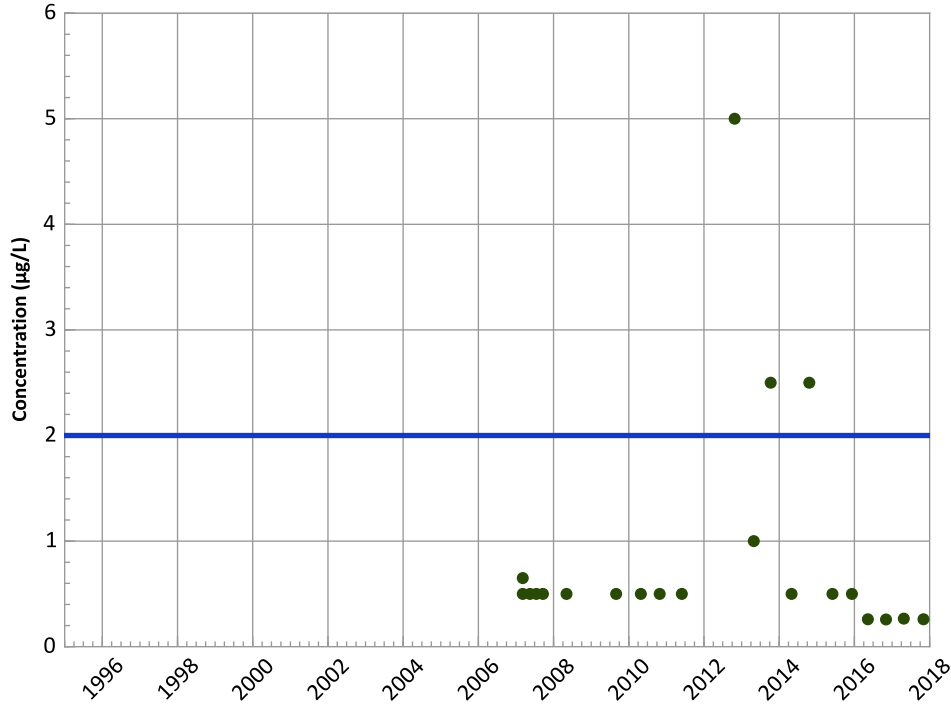
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Hexahydro-1,3,5-Trinitroso-1,3,5-Triazine (TNX) Trend



Concentration Trend

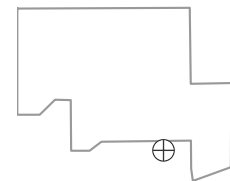
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

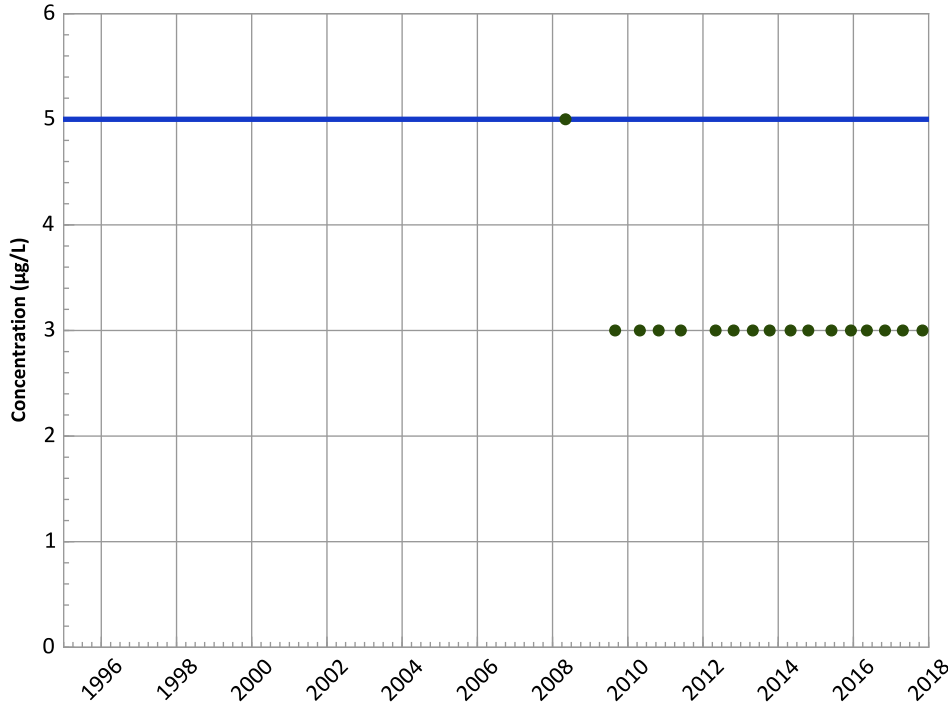
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/08/2007 to 11/02/2017
Analysis Date: 03/21/2018

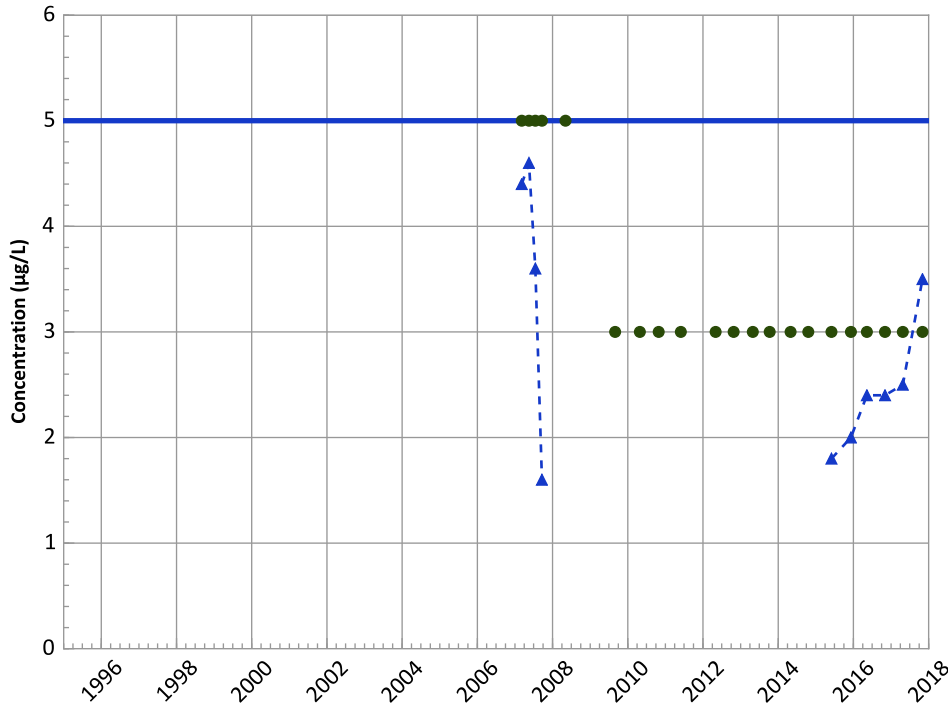
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1098 in Perched Aquifer
USDOE/NNSA Pantex Plant
Tetrachloroethylene (PCE) Trend**



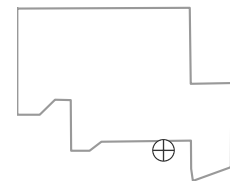
Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect
MAROS Linear Regression Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect

Trichloroethene Trend



Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 Increasing
 All Data
 No Trend
MAROS Linear Regression Method
 Data ():
 Increasing
 All Data
 Stable

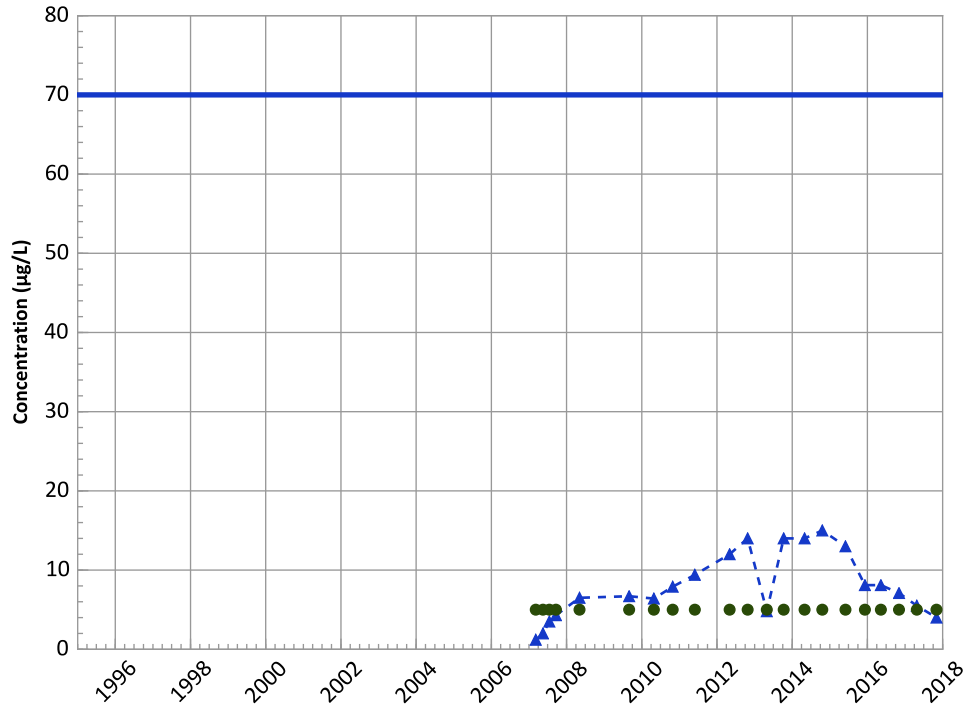
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 03/08/2007 to 11/02/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1098 in Perched Aquifer
USDOE/NNSA Pantex Plant**
cis-1,2-Dichloroethene Trend



Concentration Trend

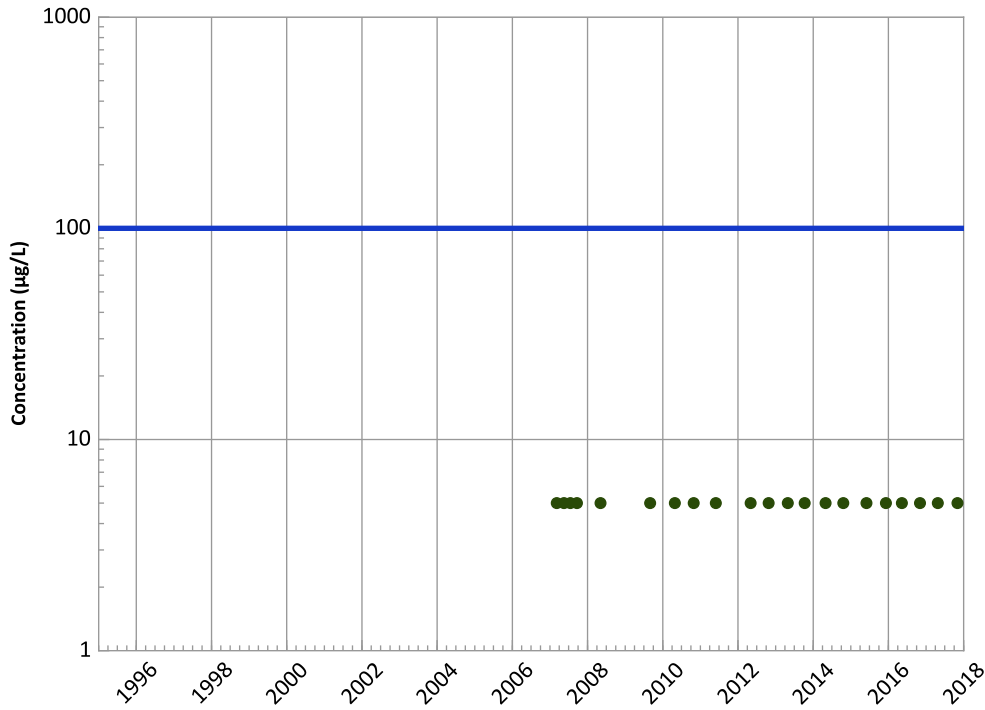
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Stable
All Data
Increasing

trans-1,2-Dichloroethene Trend



Concentration Trend

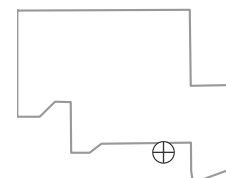
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

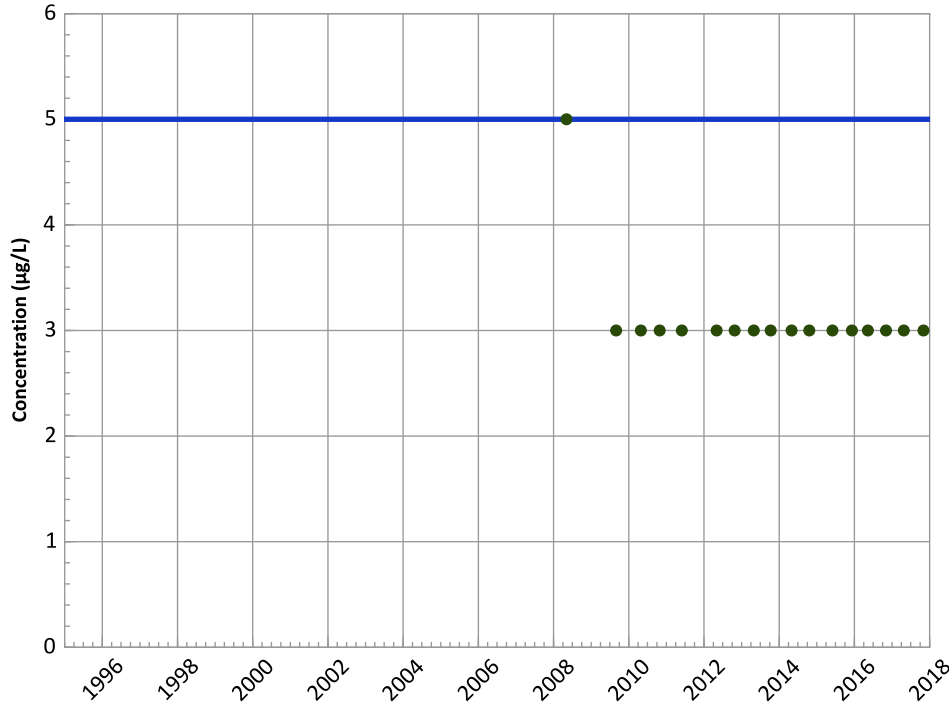
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/08/2007 to 11/02/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1098 in Perched Aquifer
USDOE/NNSA Pantex Plant
1,2-Dichloroethane Trend**



Concentration Trend

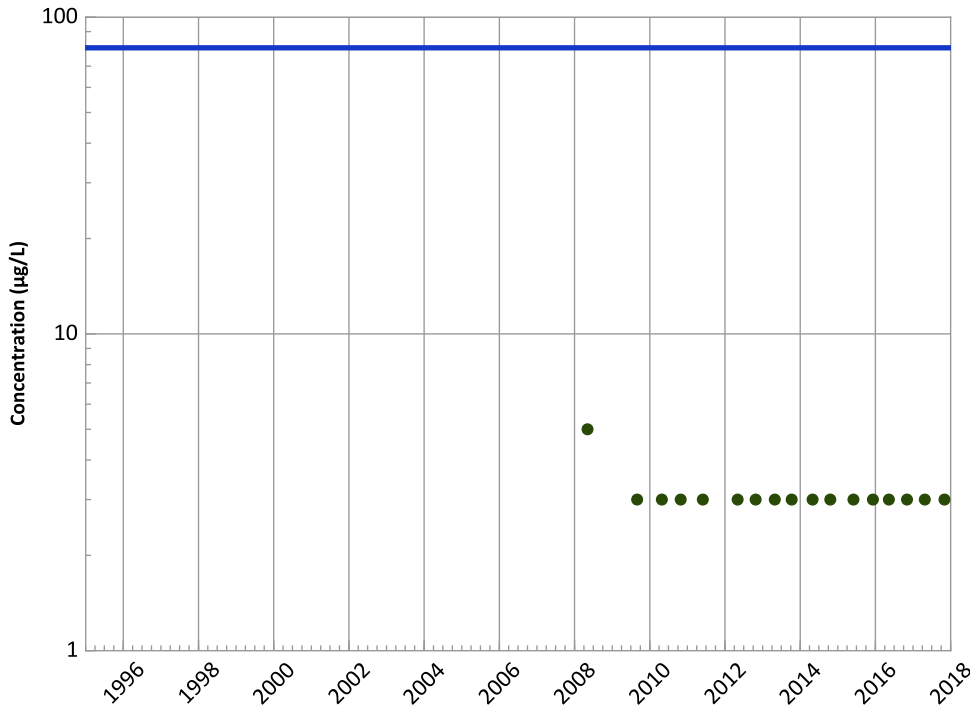
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Chloroform Trend



Concentration Trend

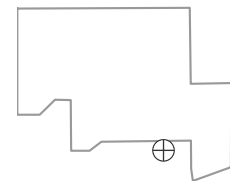
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

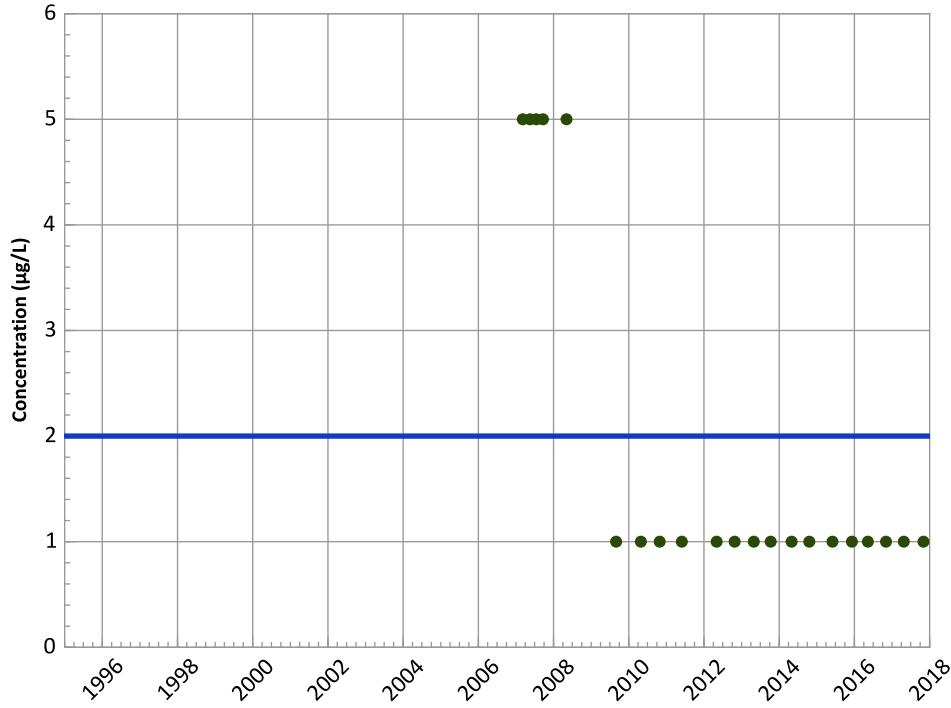
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/08/2007 to 11/02/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1098 in Perched Aquifer
USDOE/NNSA Pantex Plant
Vinyl Chloride Trend**



Concentration Trend

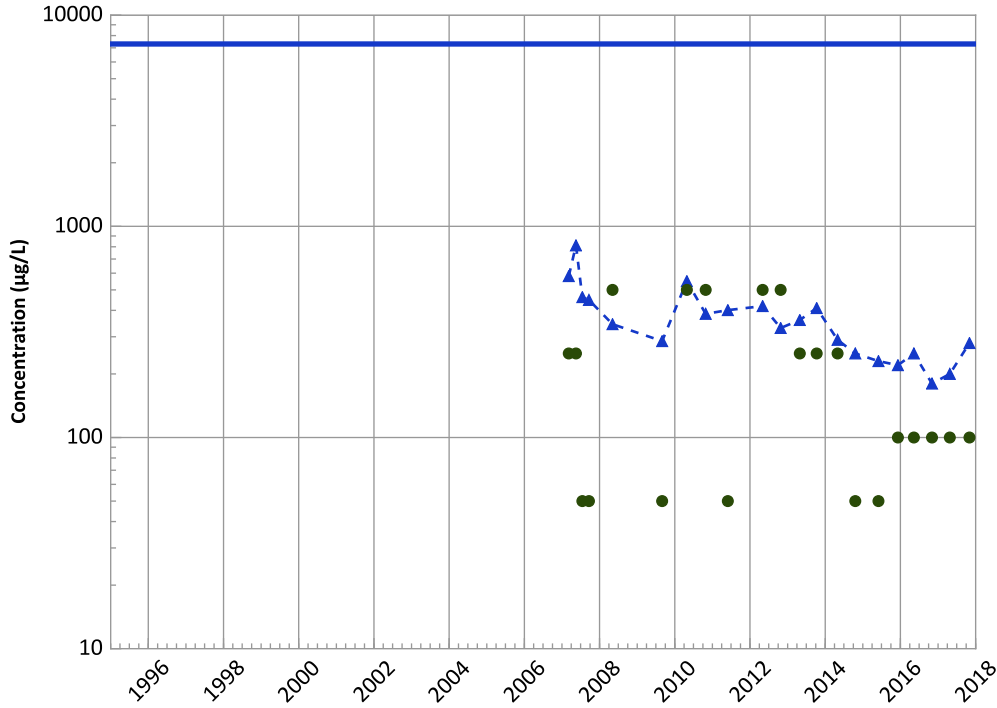
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Boron Trend



Concentration Trend

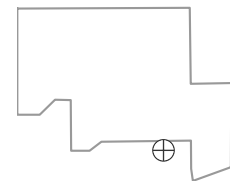
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

Well Location

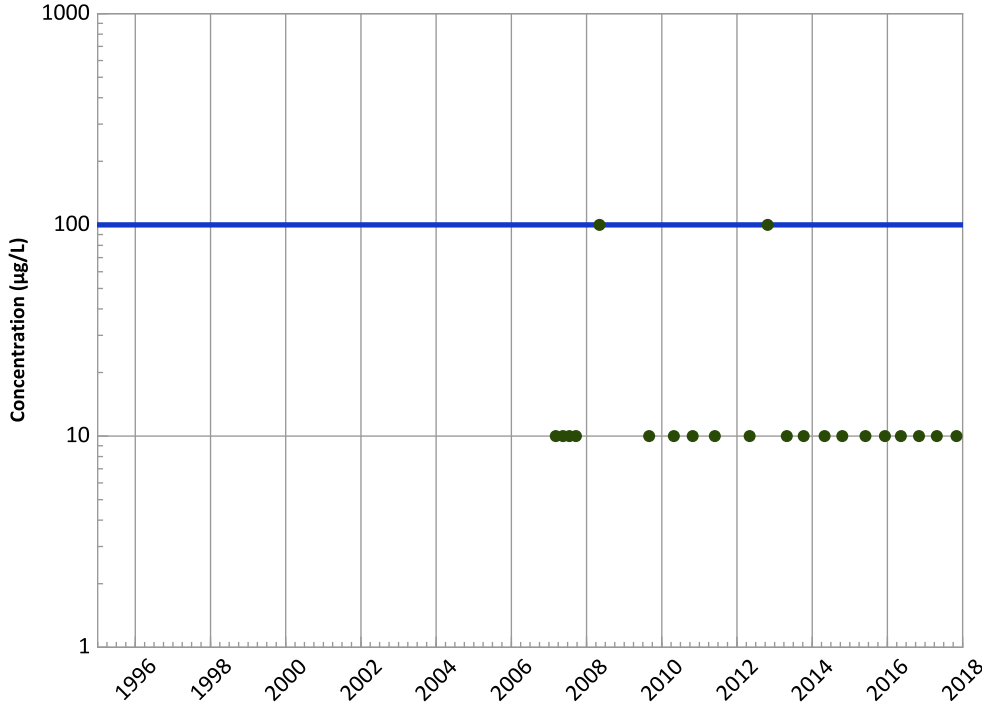


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/08/2007 to 11/02/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1098 in Perched Aquifer
USDOE/NNSA Pantex Plant

Chromium, Total Trend



Concentration Trend

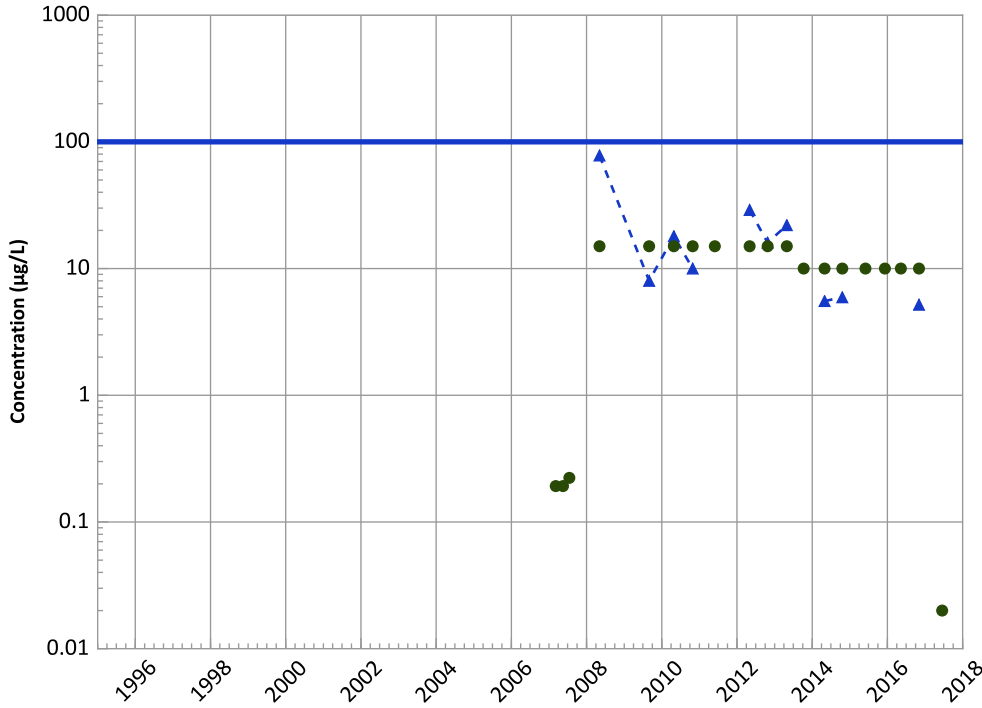
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Chromium, Hexavalent Trend



Concentration Trend

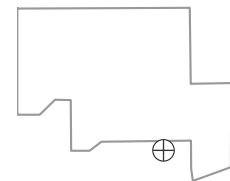
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

Well Location

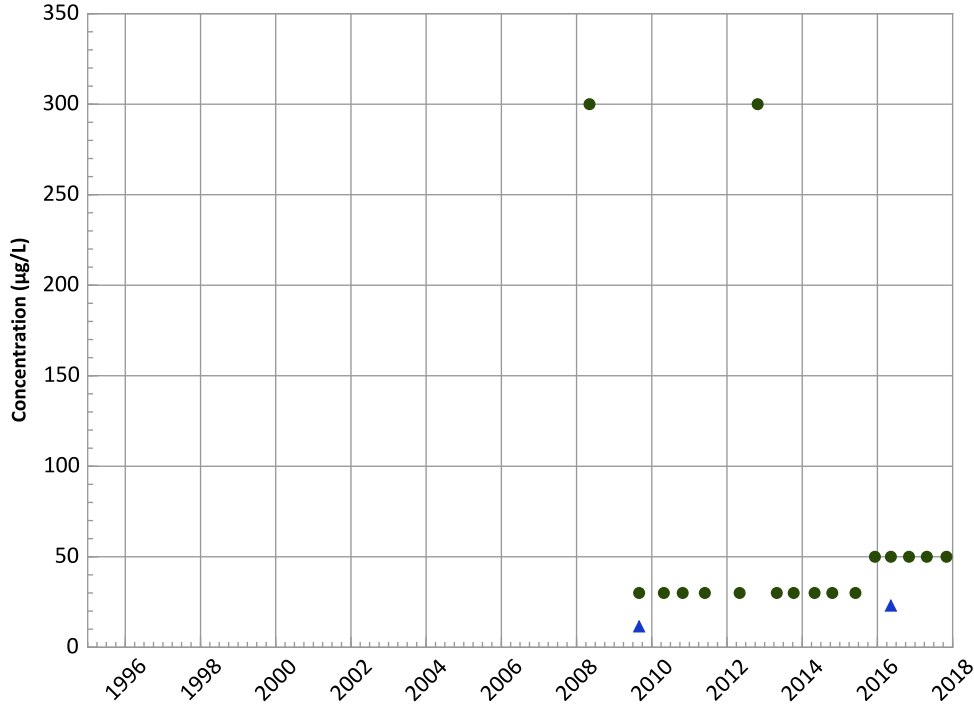


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/08/2007 to 11/02/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1098 in Perched Aquifer
USDOE/NNSA Pantex Plant

Aluminum Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

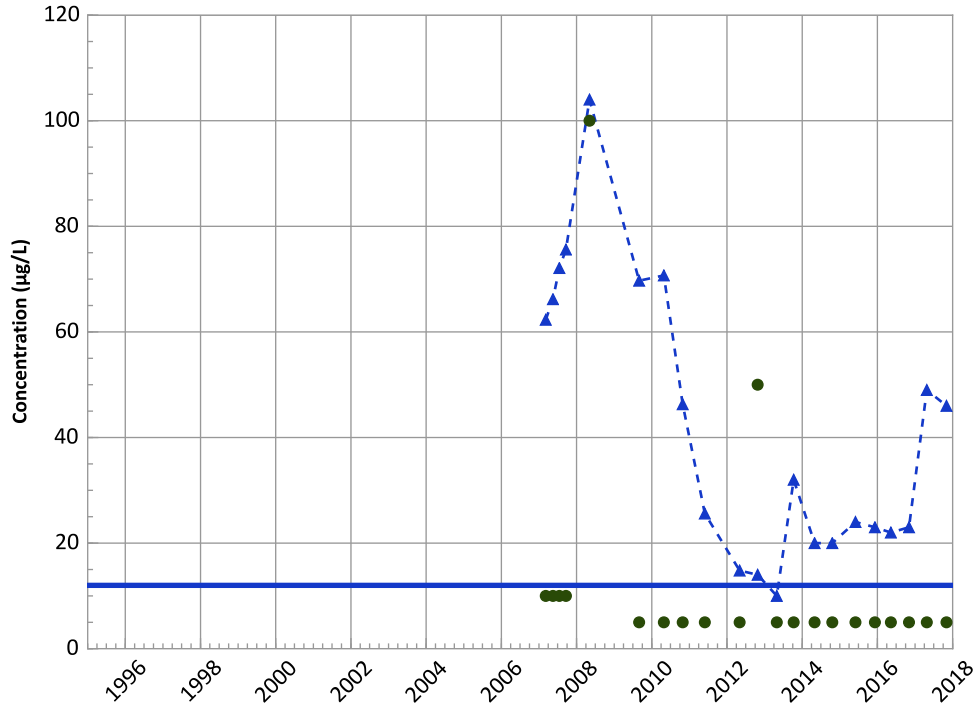
Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

Arsenic Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

Probably Increasing

All Data

Decreasing

MAROS Linear Regression Method

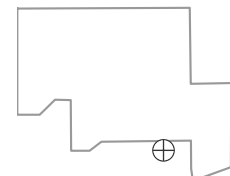
Data ():

Increasing

All Data

Decreasing

Well Location

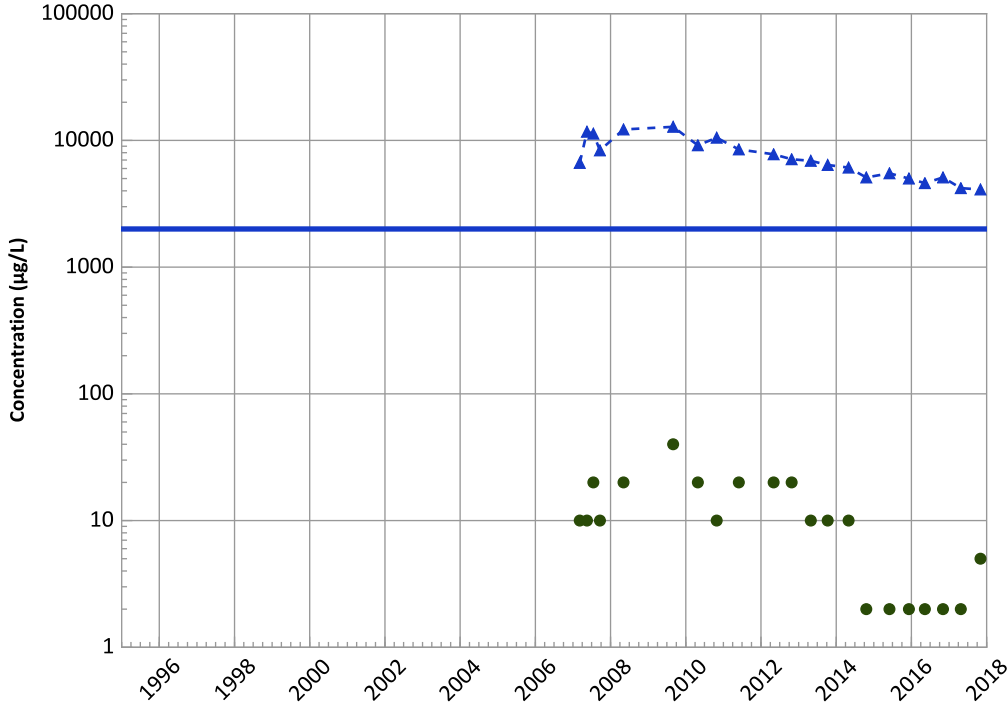


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/08/2007 to 11/02/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1098 in Perched Aquifer
USDOE/NNSA Pantex Plant

Barium Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

Decreasing

All Data

Decreasing

MAROS Linear Regression Method

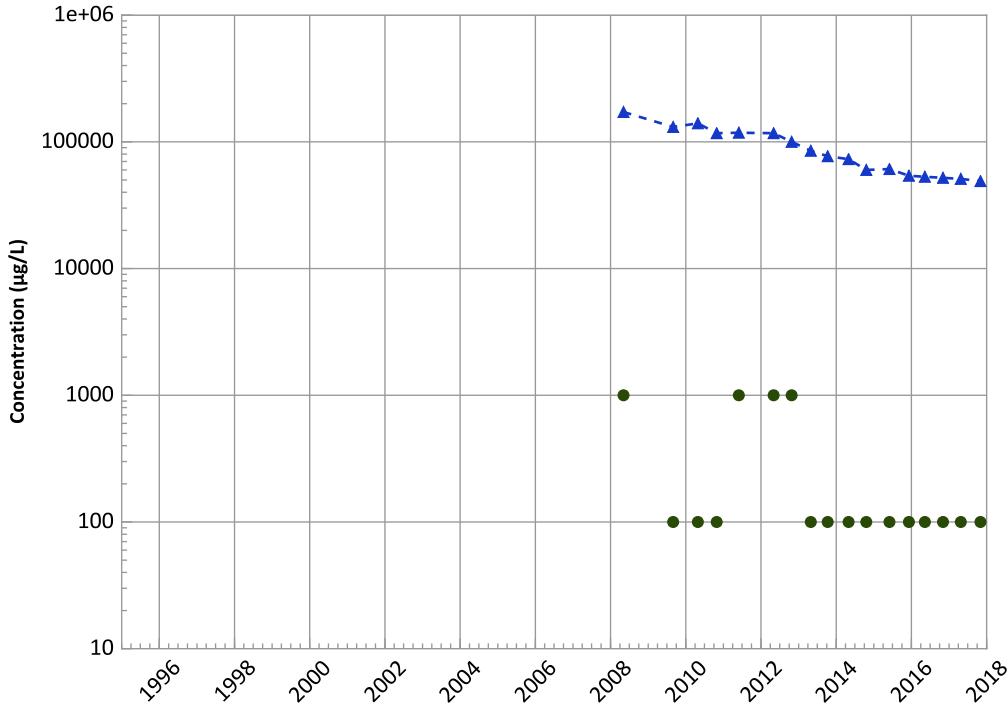
Data ():

Decreasing

All Data

Decreasing

Calcium Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

Decreasing

All Data

Decreasing

MAROS Linear Regression Method

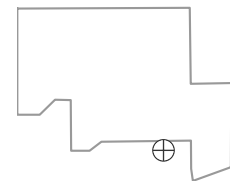
Data ():

Decreasing

All Data

Decreasing

Well Location

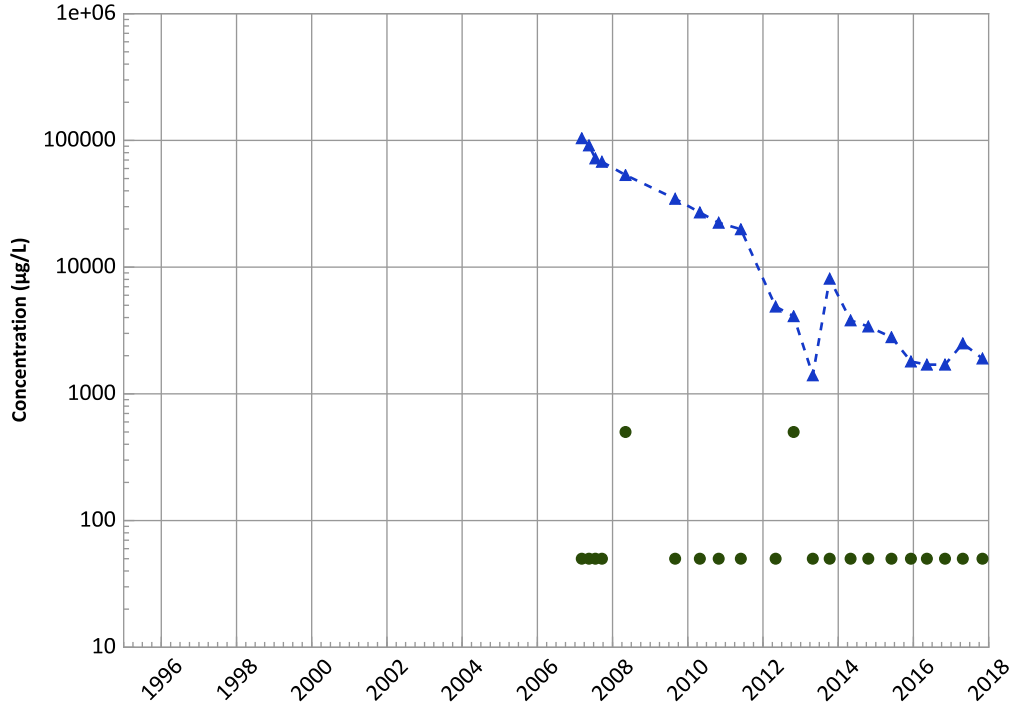


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/08/2007 to 11/02/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1098 in Perched Aquifer
USDOE/NNSA Pantex Plant

Iron Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

Decreasing

All Data

Decreasing

MAROS Linear Regression Method

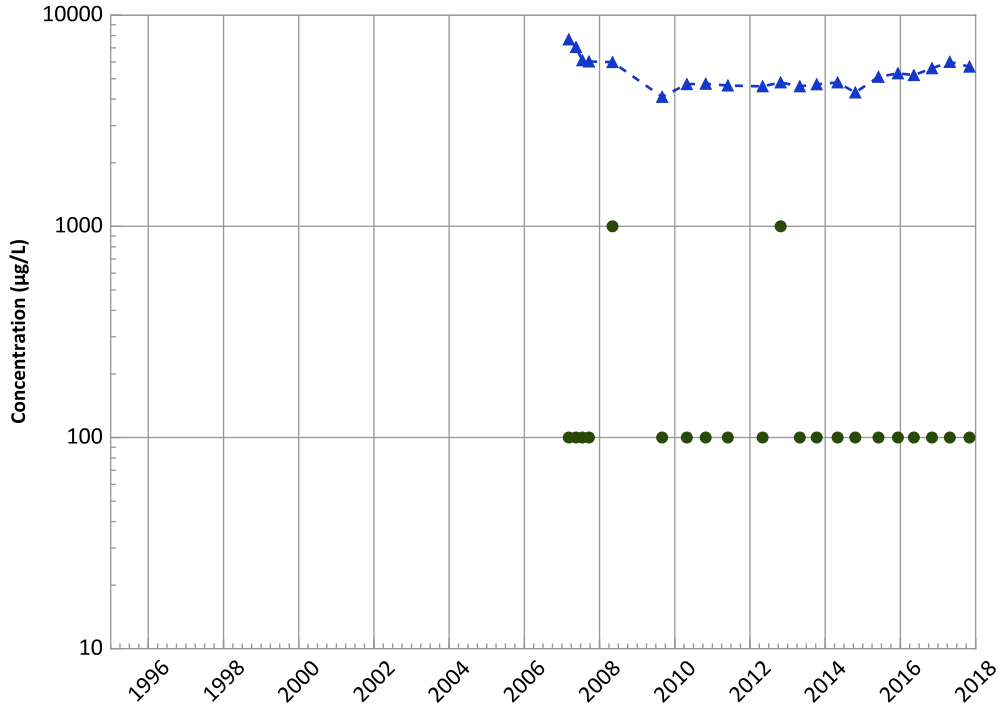
Data ():

Decreasing

All Data

Decreasing

Potassium Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

Increasing

All Data

Decreasing

MAROS Linear Regression Method

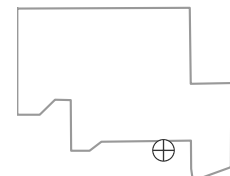
Data ():

Increasing

All Data

Probably Decreasing

Well Location

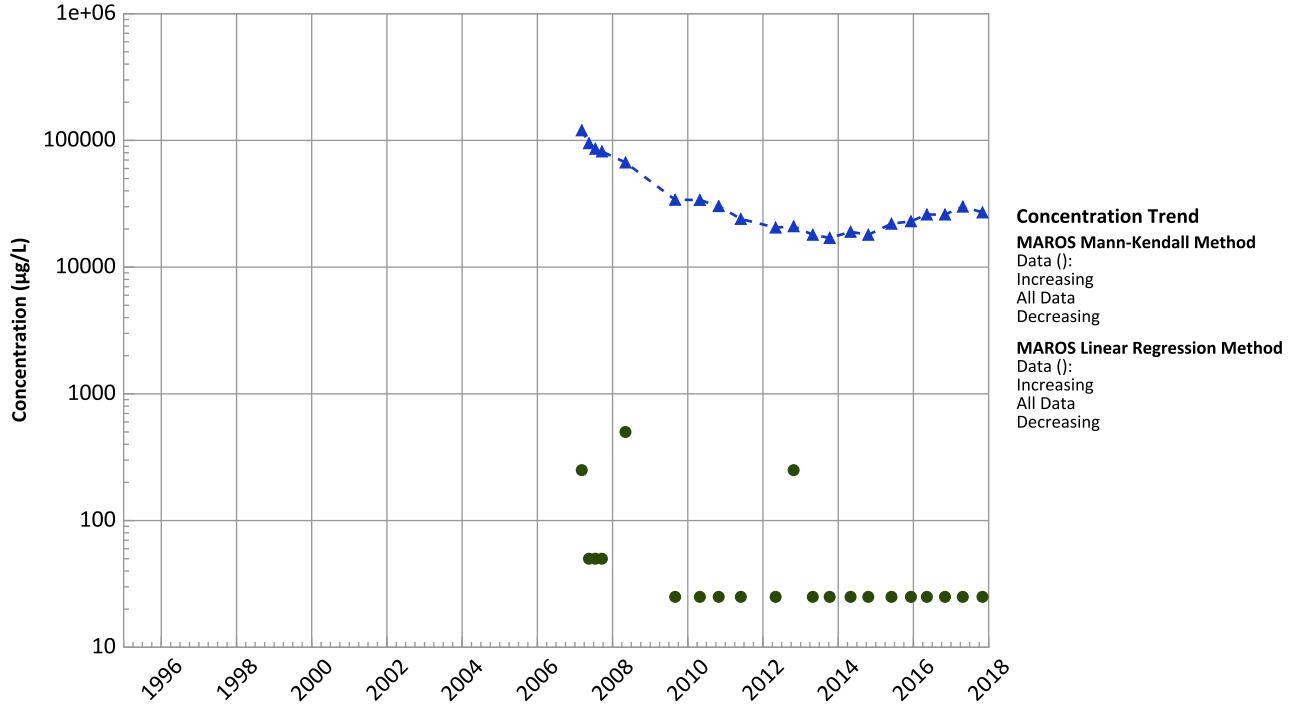


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/08/2007 to 11/02/2017
Analysis Date: 03/21/2018

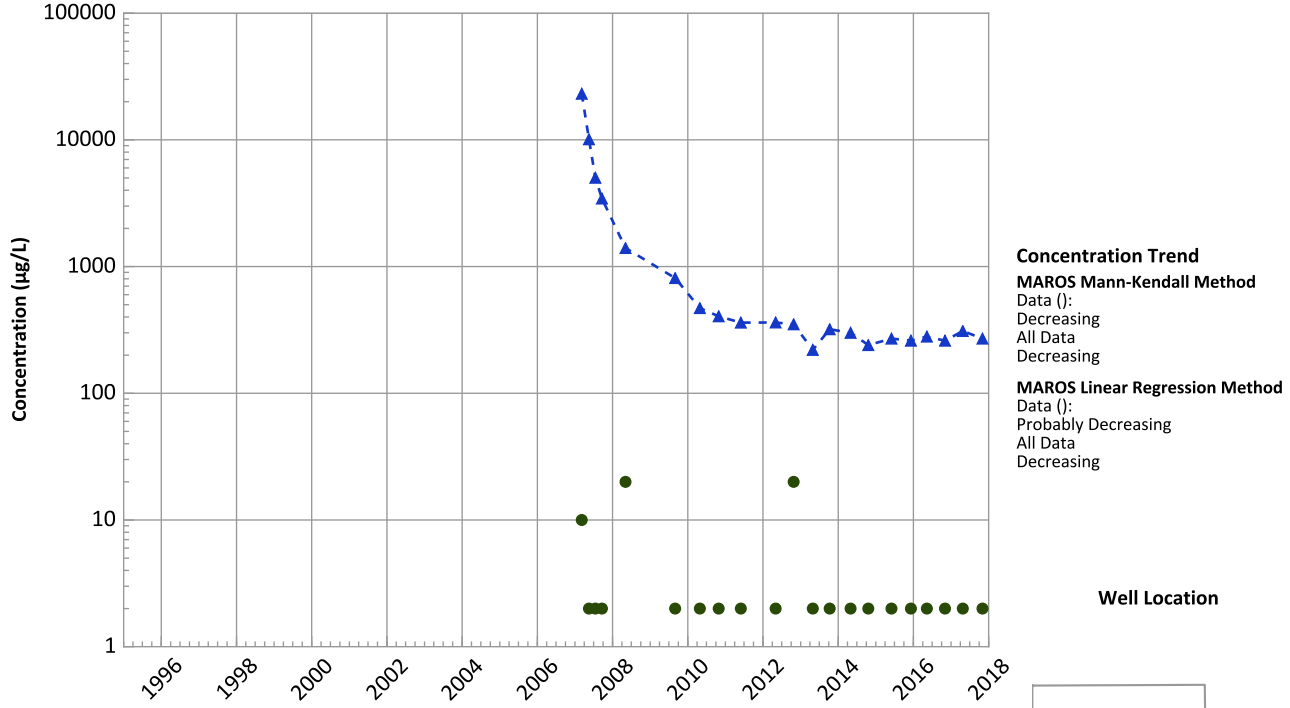
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1098 in Perched Aquifer
USDOE/NNSA Pantex Plant

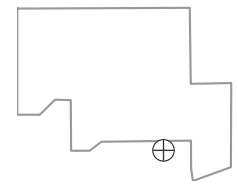
Magnesium Trend



Manganese Trend



Well Location

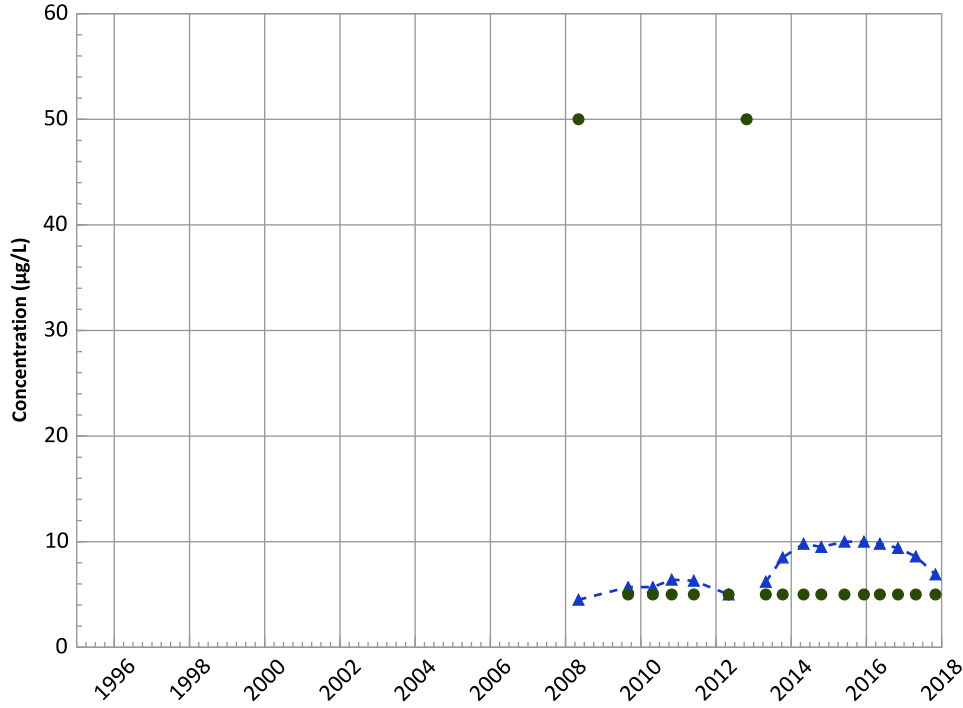


Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 03/08/2007 to 11/02/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1098 in Perched Aquifer
USDOE/NNSA Pantex Plant

Molybdenum Trend



Concentration Trend

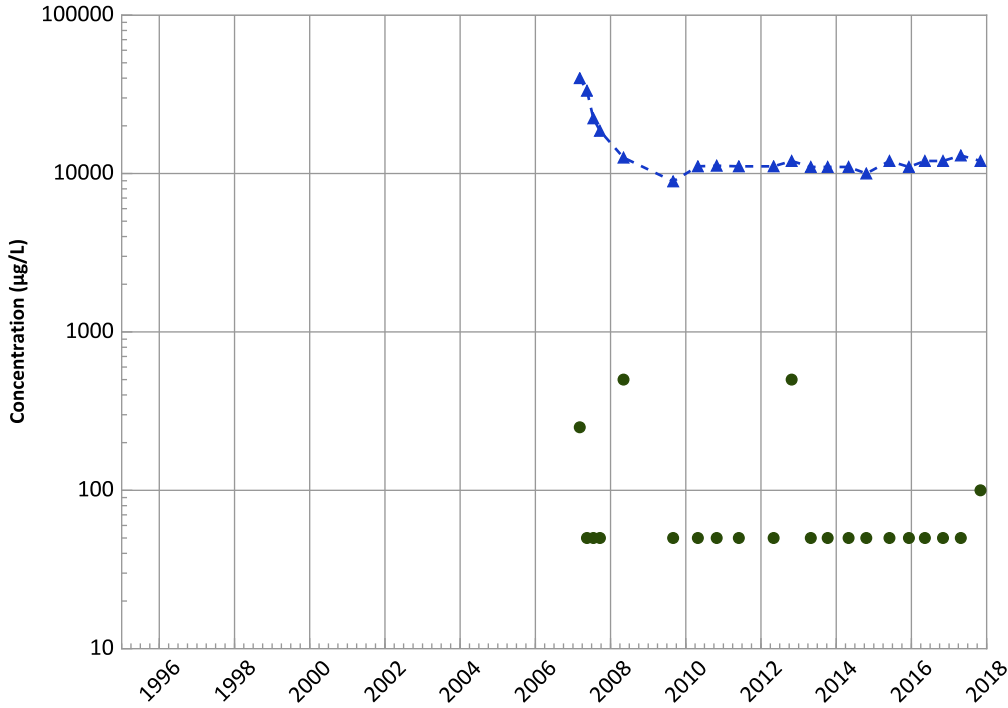
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

Sodium Trend



Concentration Trend

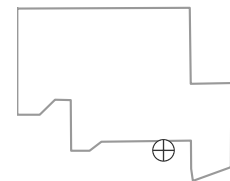
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
Decreasing

Well Location

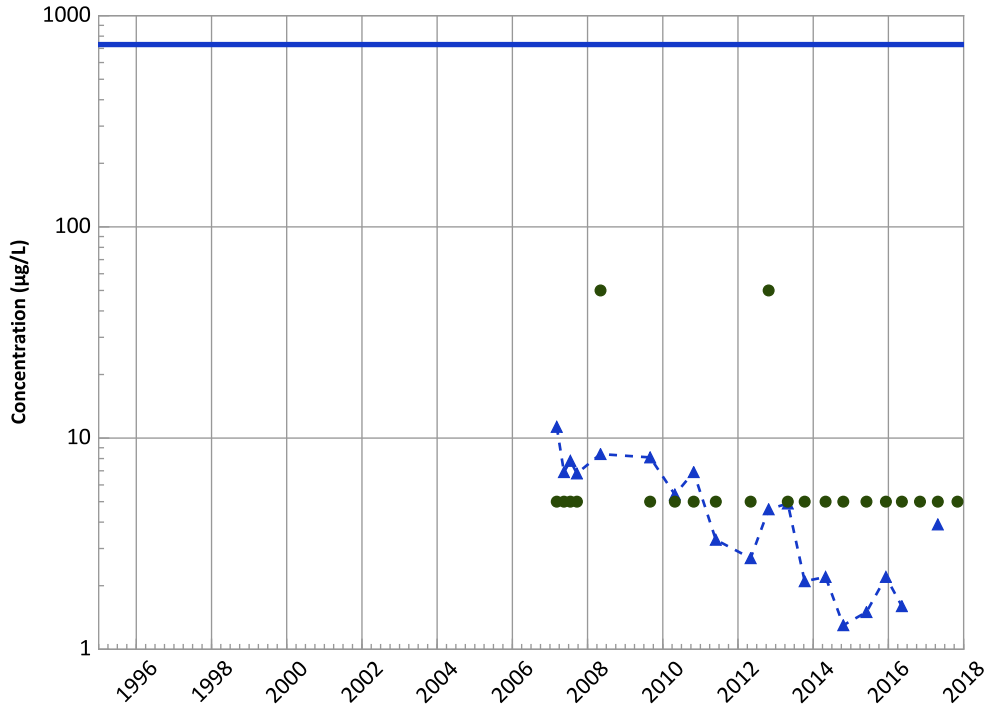


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/08/2007 to 11/02/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1098 in Perched Aquifer
USDOE/NNSA Pantex Plant

Nickel Trend



Concentration Trend

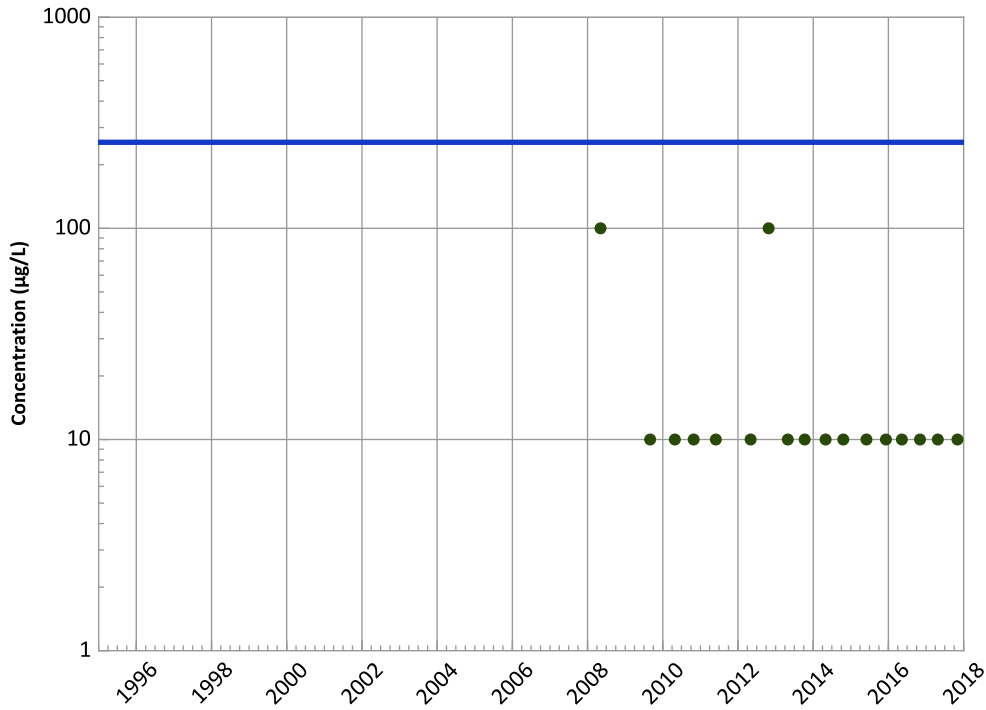
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

Vanadium Trend



Concentration Trend

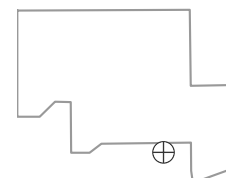
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

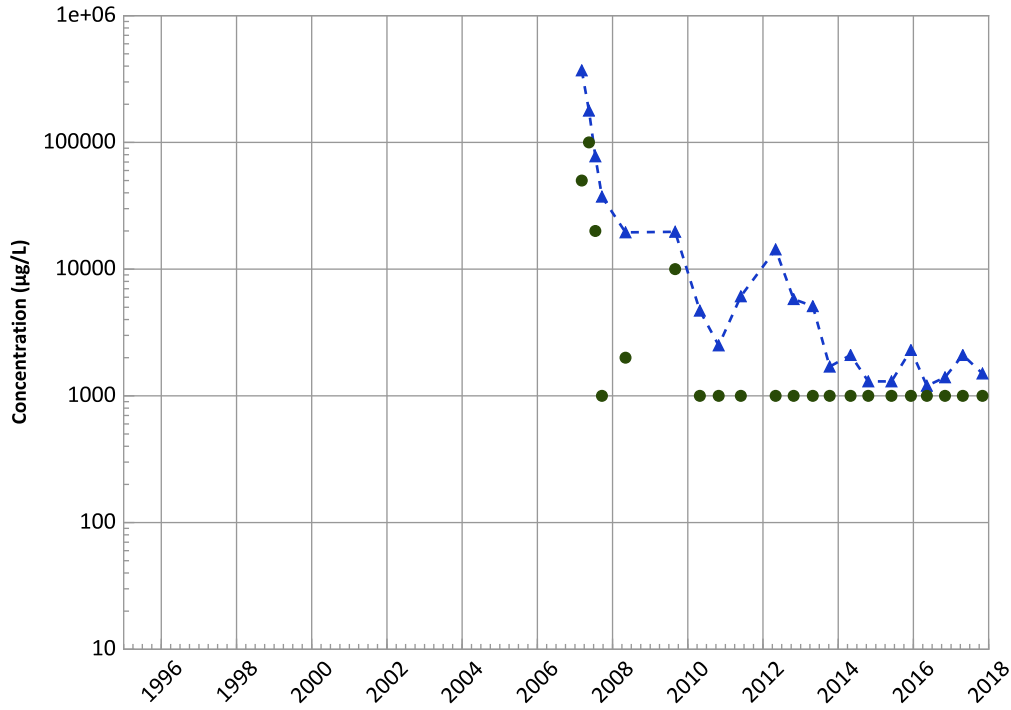


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/08/2007 to 11/02/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1098 in Perched Aquifer
USDOE/NNSA Pantex Plant

Total Organic Carbon Trend



Concentration Trend

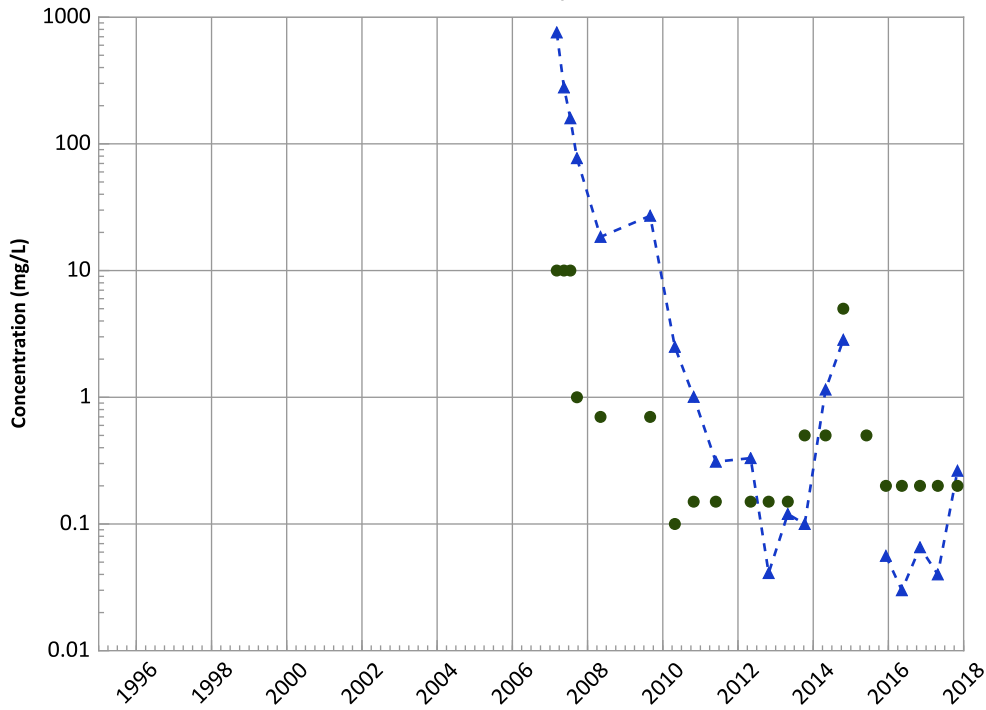
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

Total Volatile Fatty Acids Trend



Concentration Trend

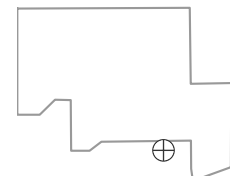
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
Decreasing

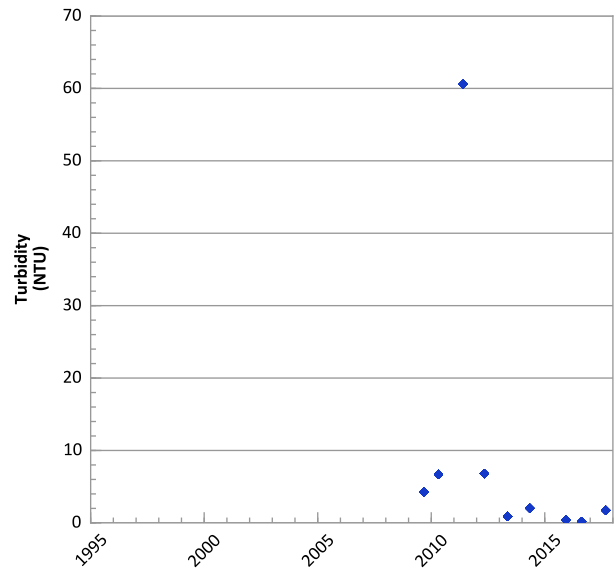
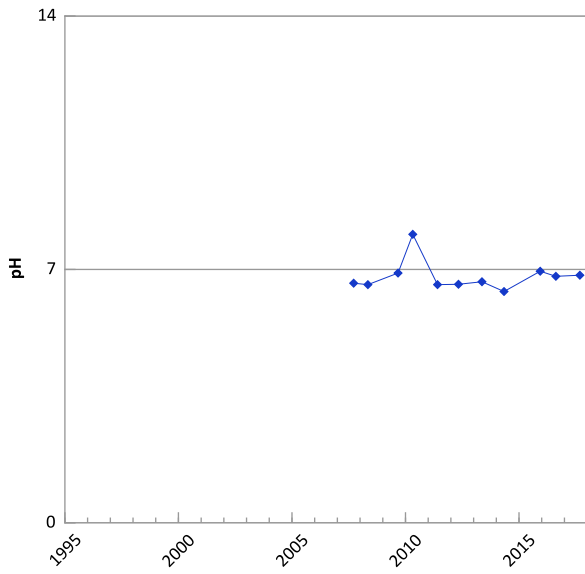
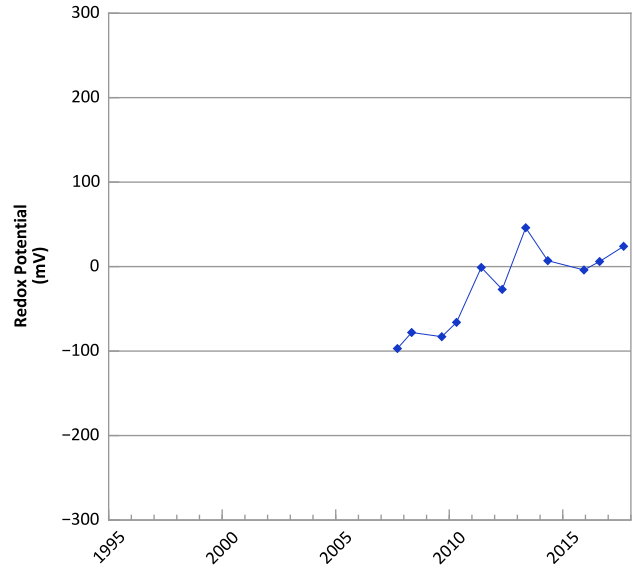
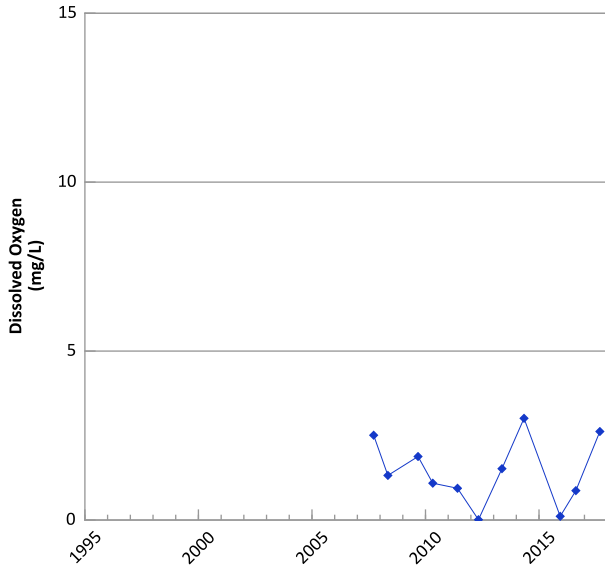
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/08/2007 to 11/02/2017
Analysis Date: 03/21/2018

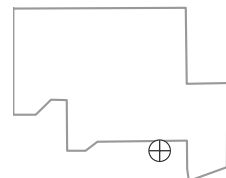
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1100 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



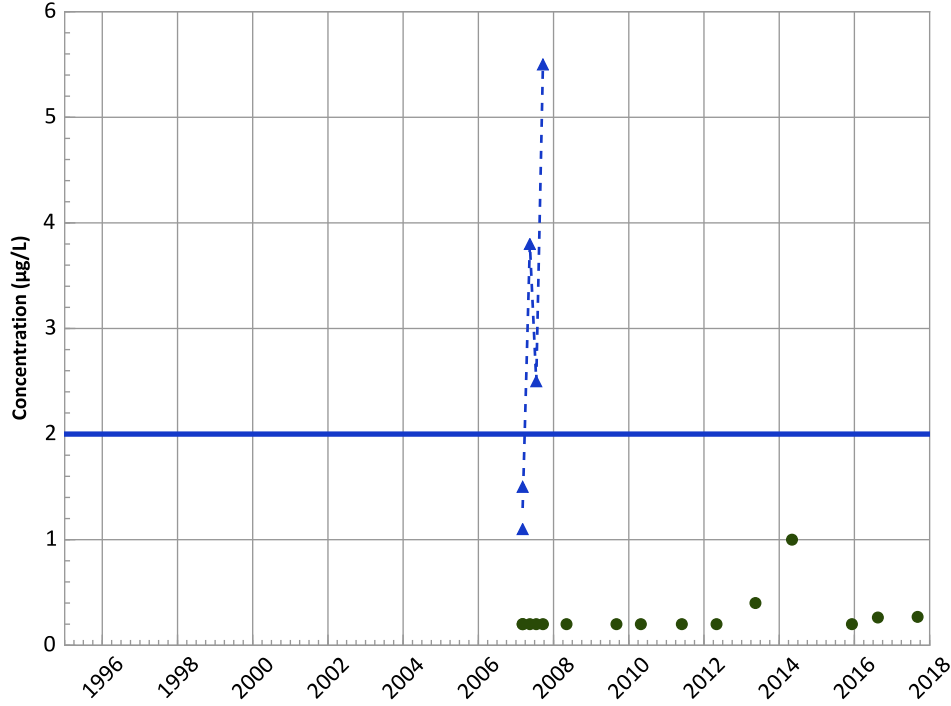
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 03/07/2007 to 09/06/2017
 Analysis Date: 03/21/2018

Well Location



PTX06-1100 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

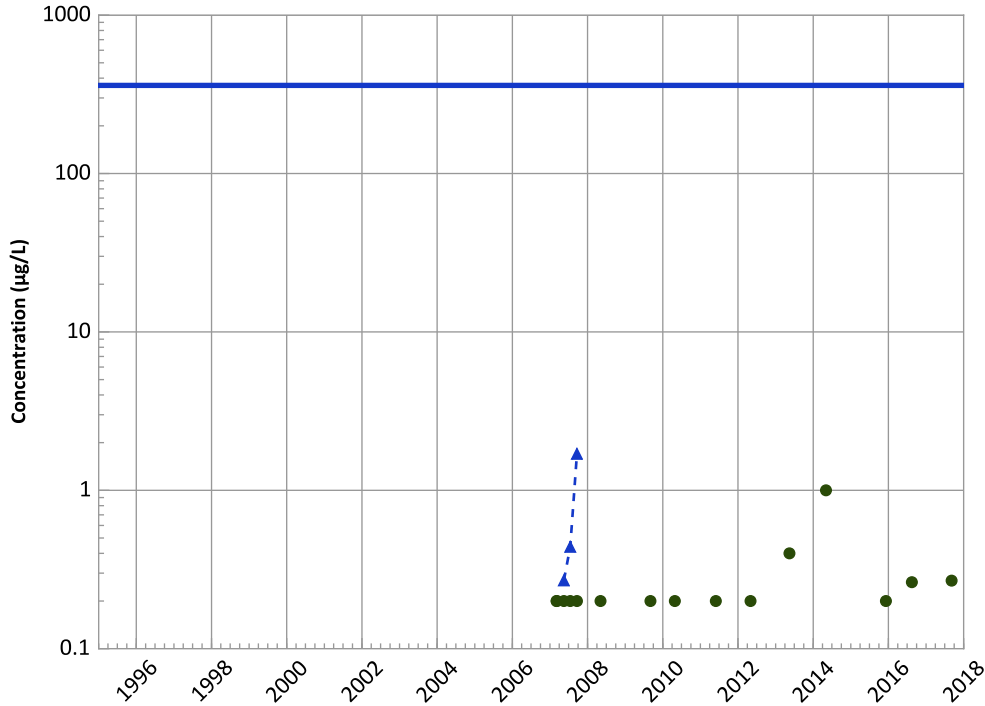
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
Decreasing

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
Probably Increasing

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

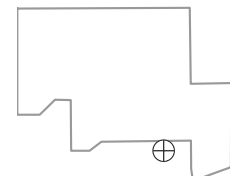
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

Well Location

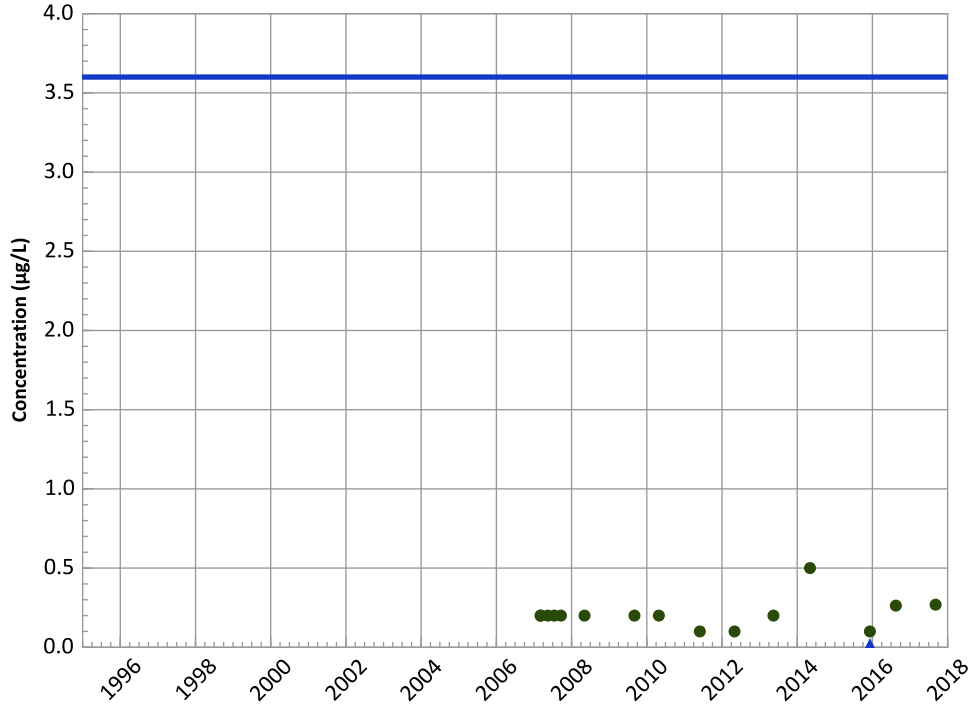


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/07/2007 to 09/06/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1100 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

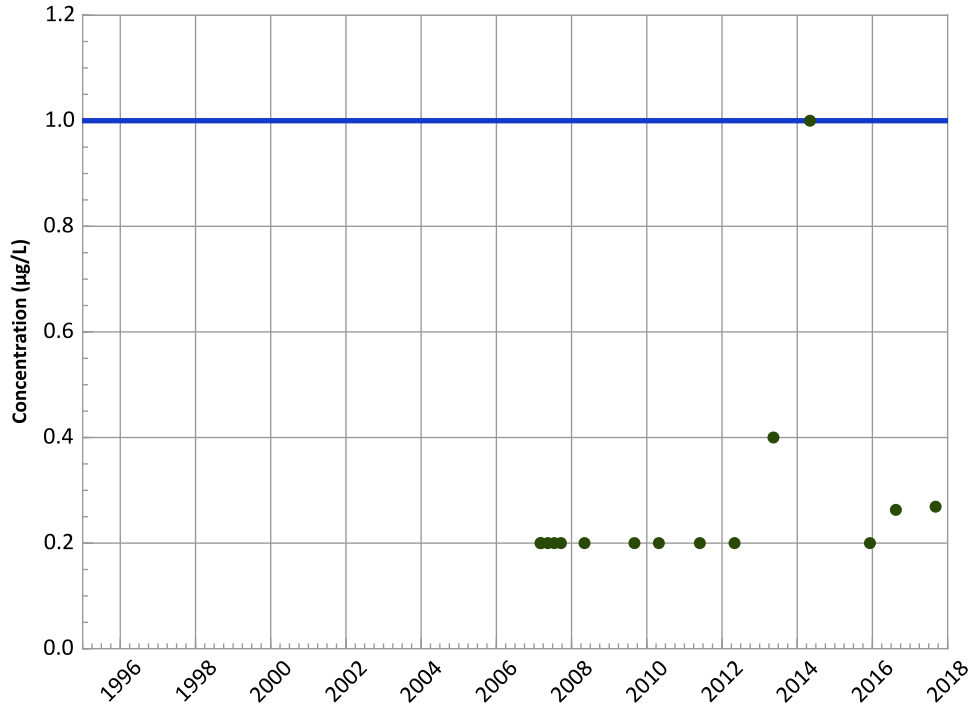
Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

2,4-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

All Non-Detect

All Data

All Non-Detect

MAROS Linear Regression Method

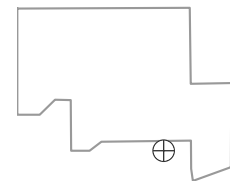
Data ():

All Non-Detect

All Data

All Non-Detect

Well Location

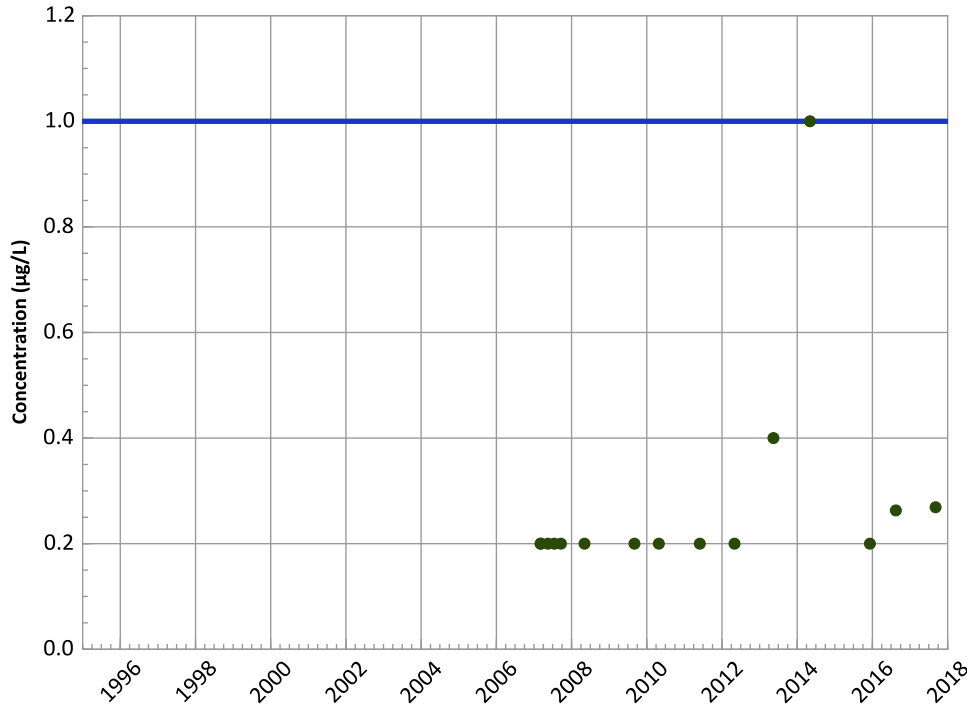


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/07/2007 to 09/06/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1100 in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

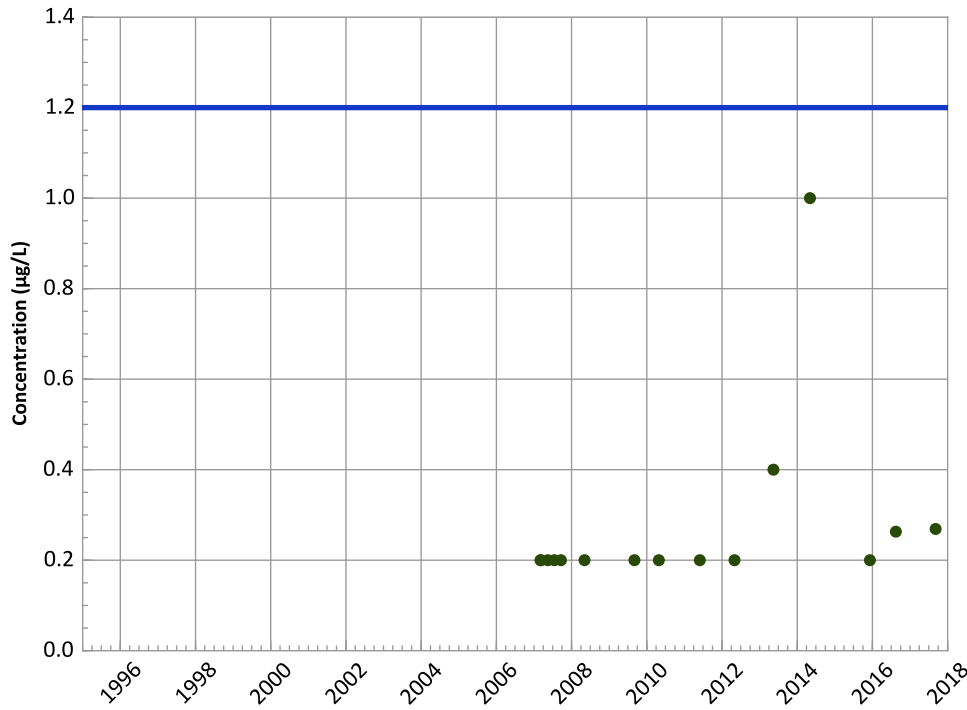
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

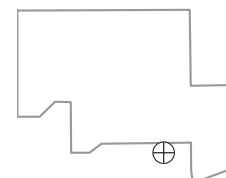
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

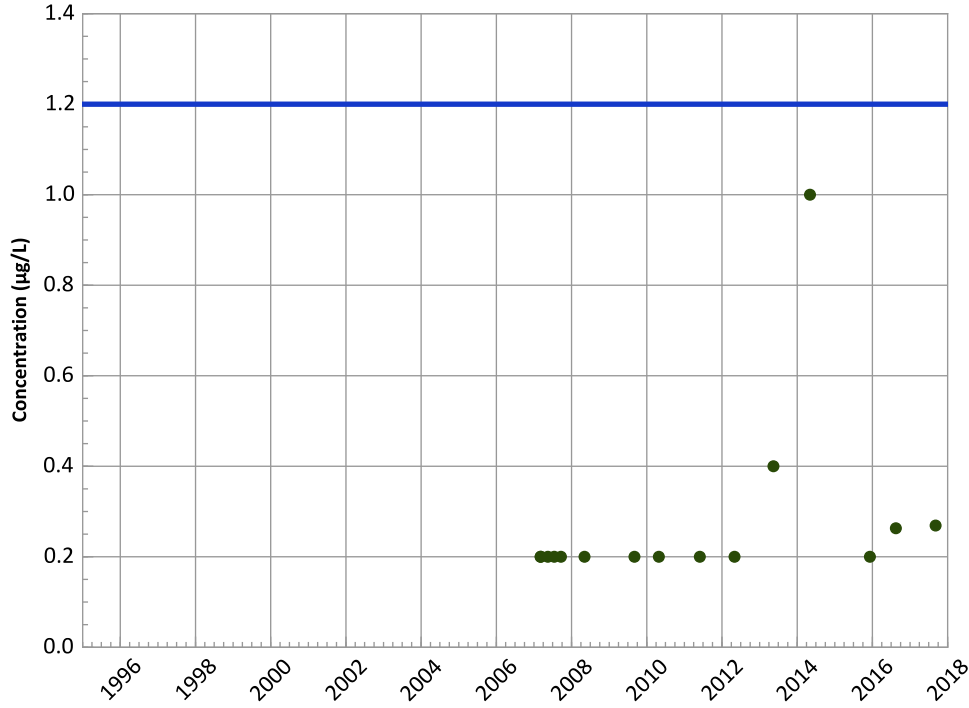


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/07/2007 to 09/06/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1100 in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

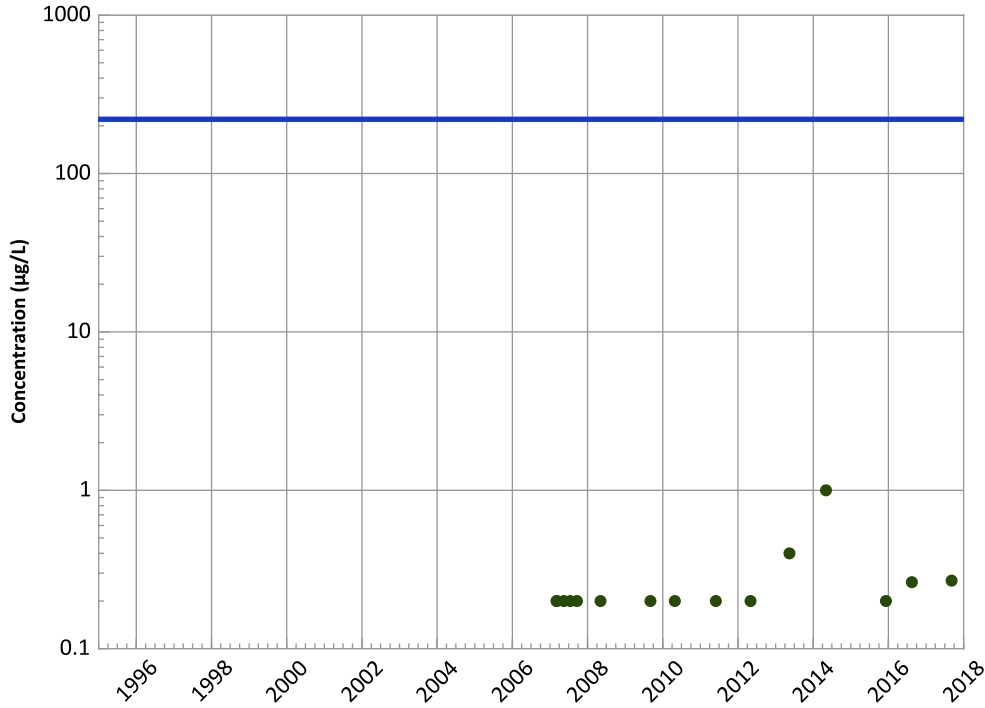
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,3,5-Trinitrobenzene Trend



Concentration Trend

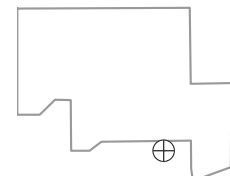
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

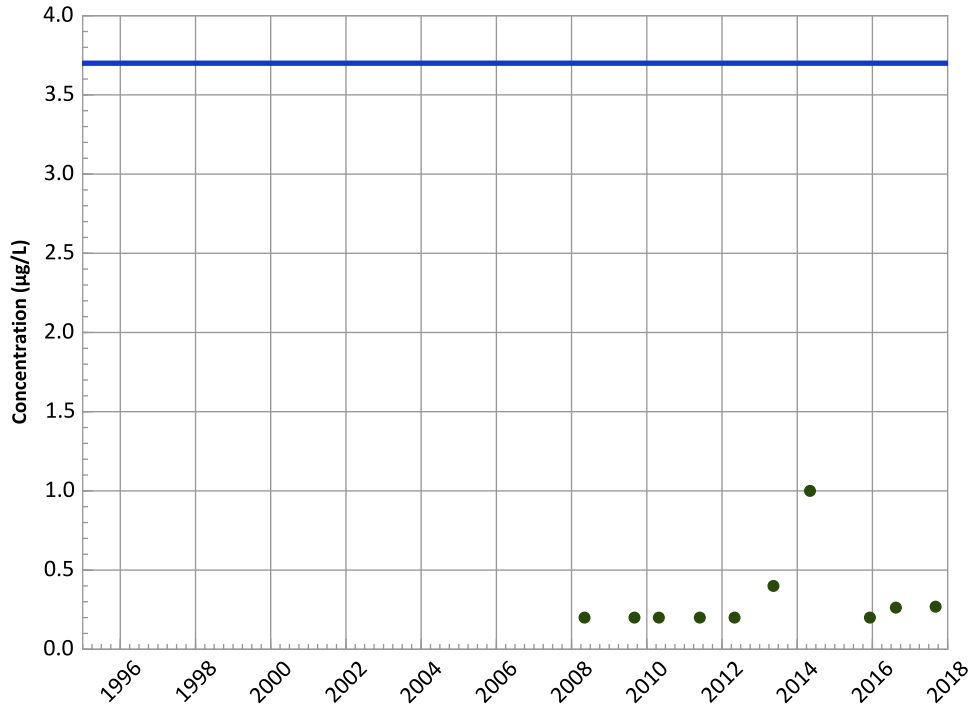
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/07/2007 to 09/06/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1100 in Perched Aquifer
USDOE/NNSA Pantex Plant
1,3-Dinitrobenzene Trend**



Concentration Trend

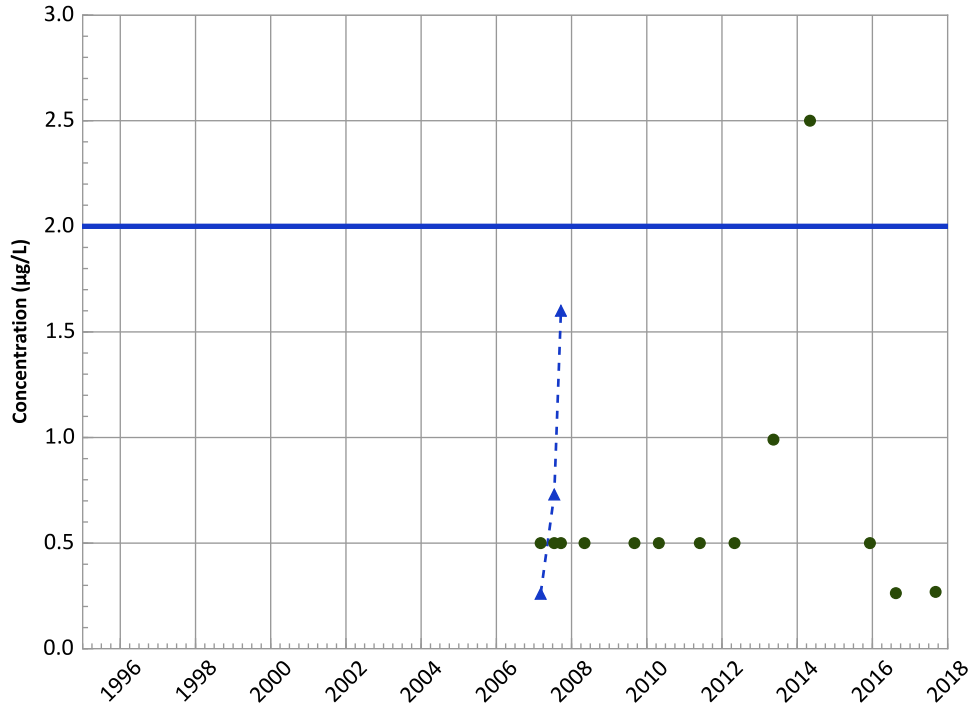
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Hexahydro-1-Nitroso-3,5-Dinitro-1,3,5-Triazine (MNX) Trend



Concentration Trend

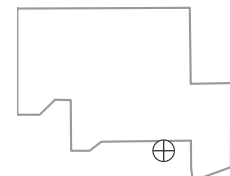
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

Well Location

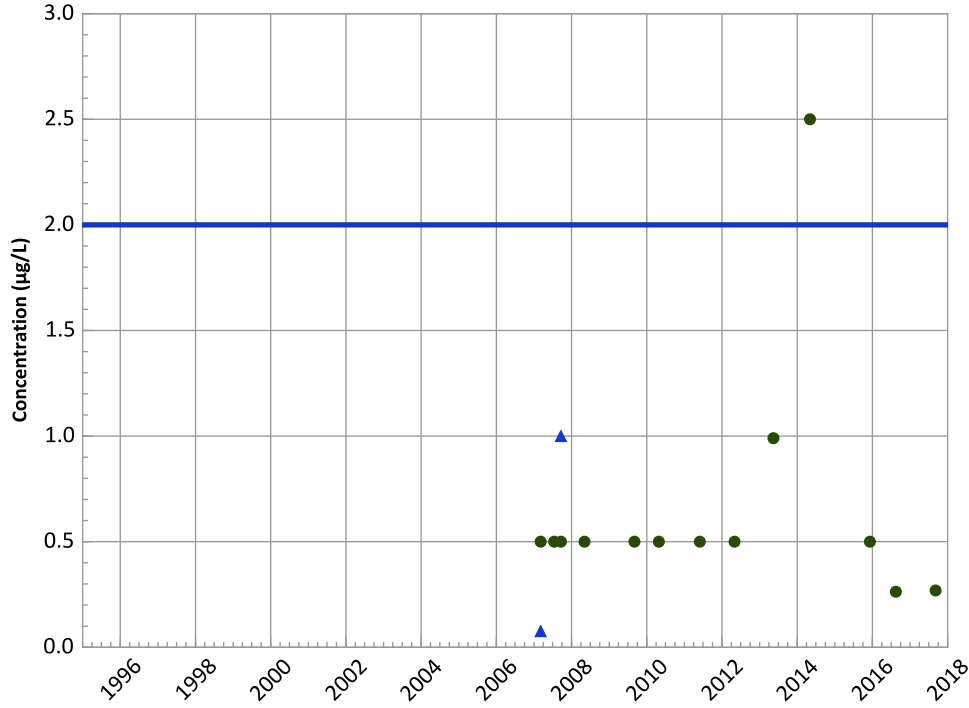


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/07/2007 to 09/06/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1100 in Perched Aquifer
USDOE/NNSA Pantex Plant

Hexahydro-1,3-Dinitroso-5-Nitro-1,3,5-Triazine (DNX) Trend



Concentration Trend

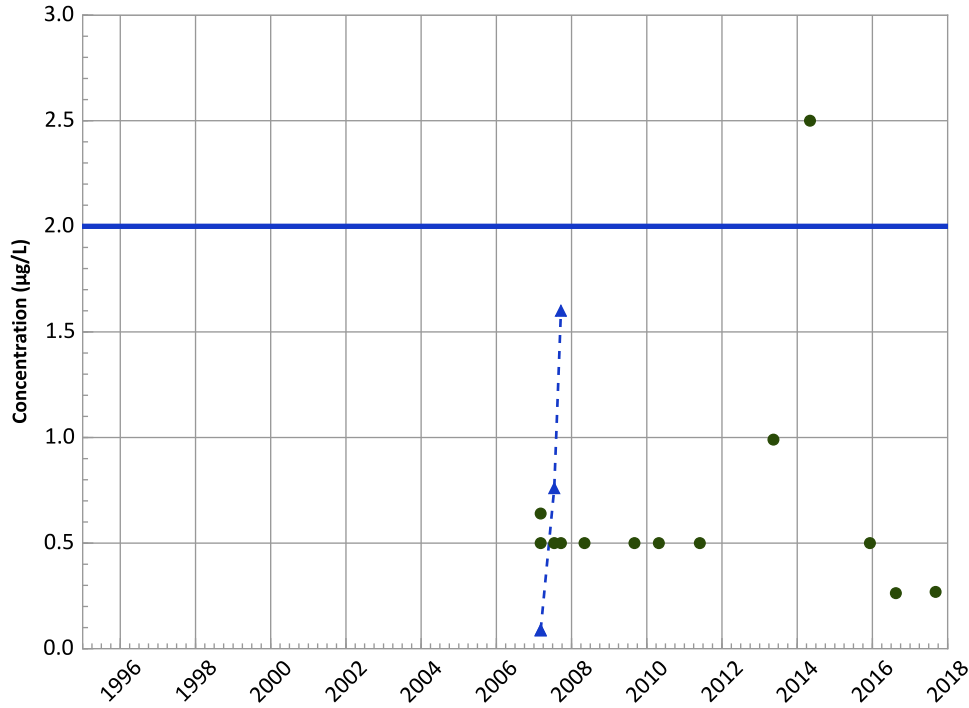
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

Hexahydro-1,3,5-Trinitroso-1,3,5-Triazine (TNX) Trend



Concentration Trend

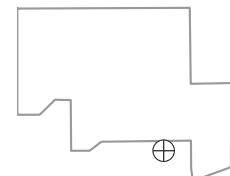
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

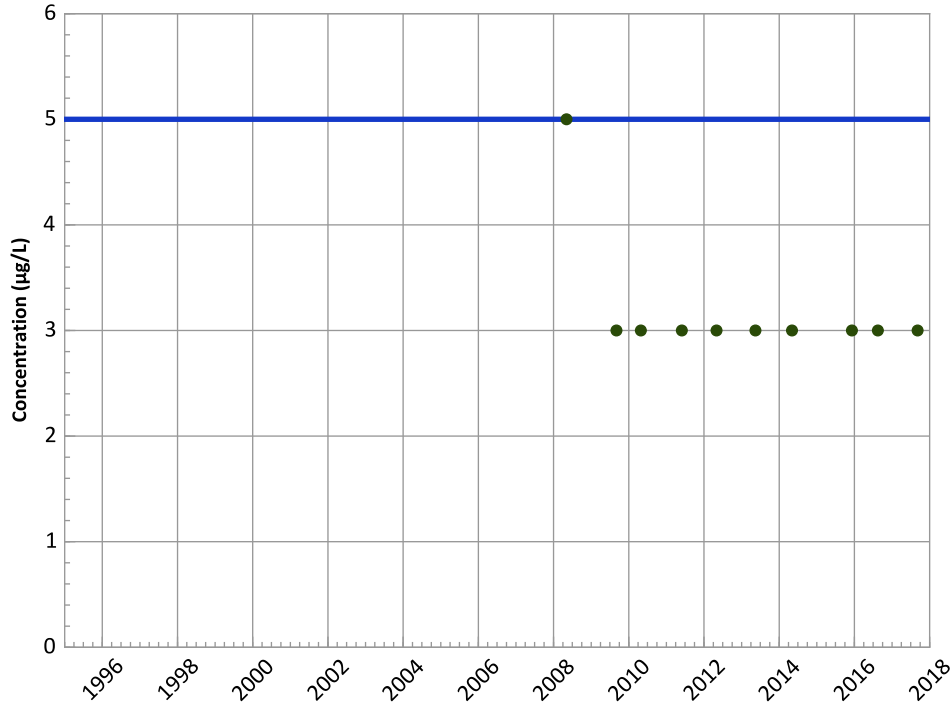
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/07/2007 to 09/06/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1100 in Perched Aquifer
USDOE/NNSA Pantex Plant
Tetrachloroethylene (PCE) Trend**



Concentration Trend

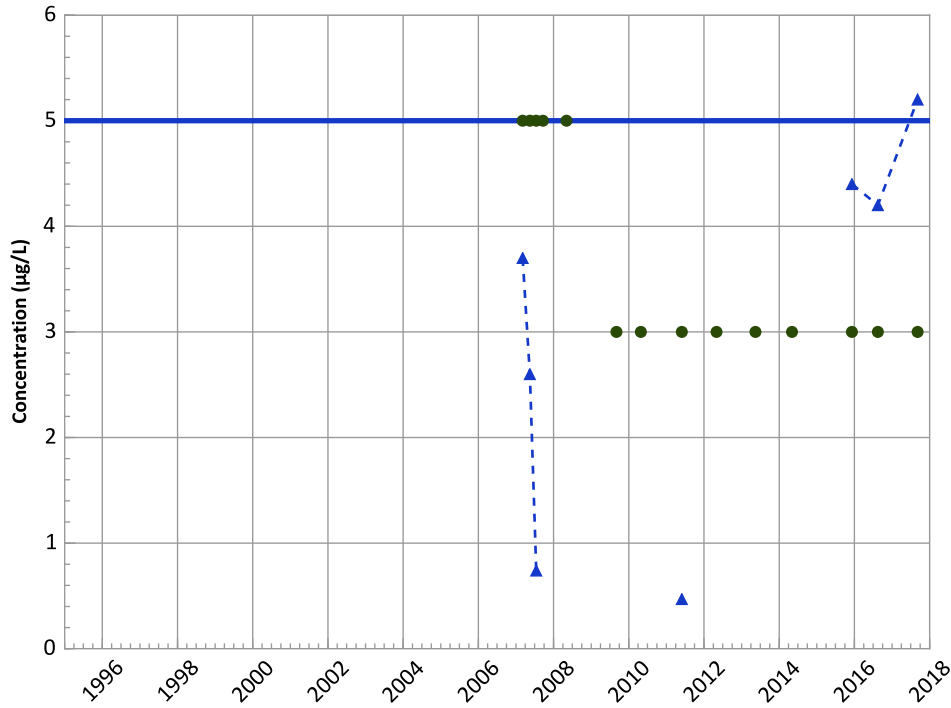
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Trichloroethene Trend



Concentration Trend

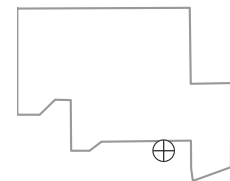
MAROS Mann-Kendall Method

Data ():
N/A (<4 Detections in Dataset)
All Data
No Trend

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
No Trend

Well Location

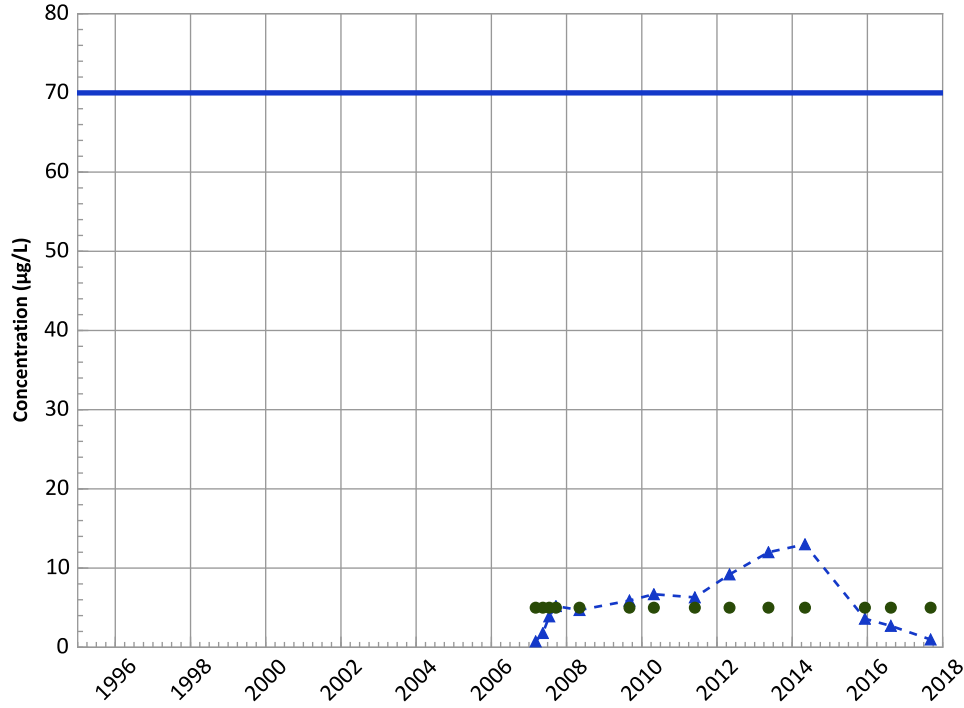


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/07/2007 to 09/06/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1100 in Perched Aquifer
USDOE/NNSA Pantex Plant

cis-1,2-Dichloroethene Trend



Concentration Trend

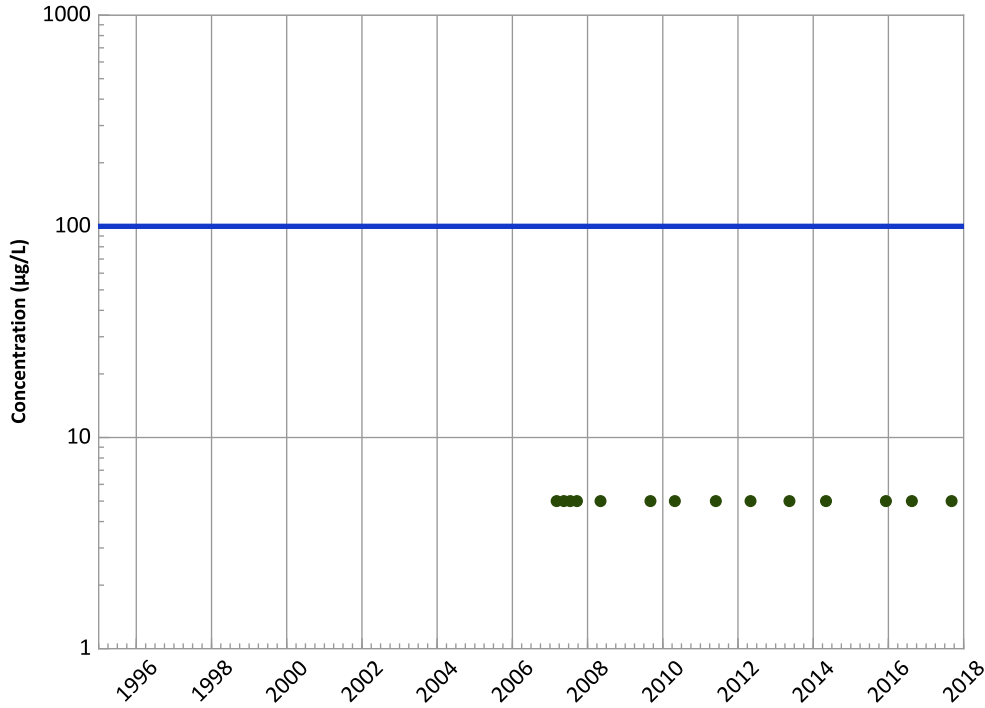
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Probably Increasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
No Trend

trans-1,2-Dichloroethene Trend



Concentration Trend

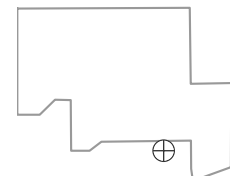
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

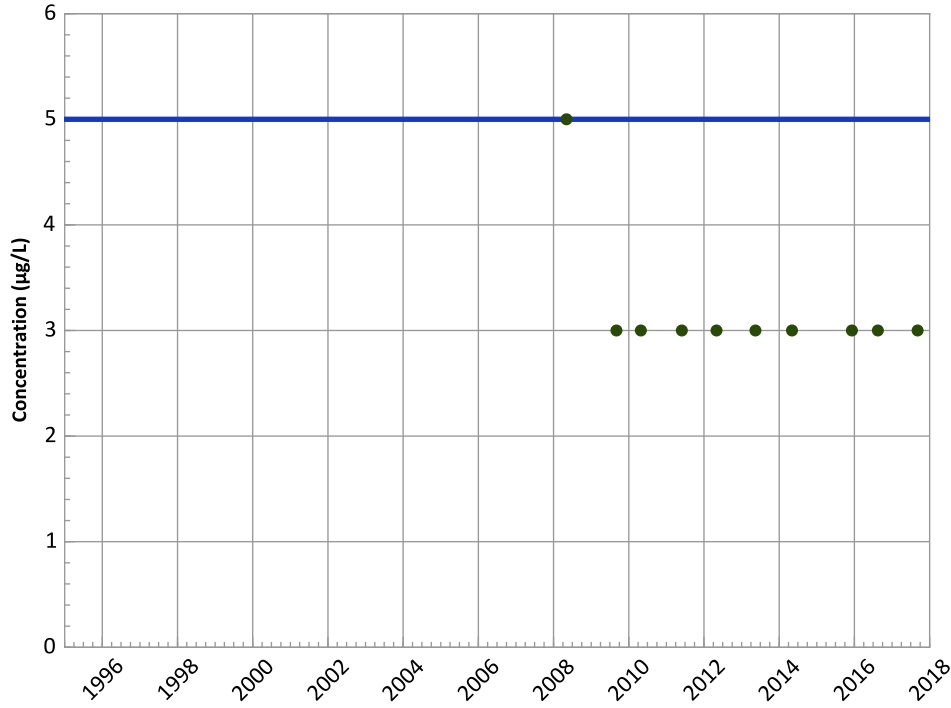
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/07/2007 to 09/06/2017
Analysis Date: 03/21/2018

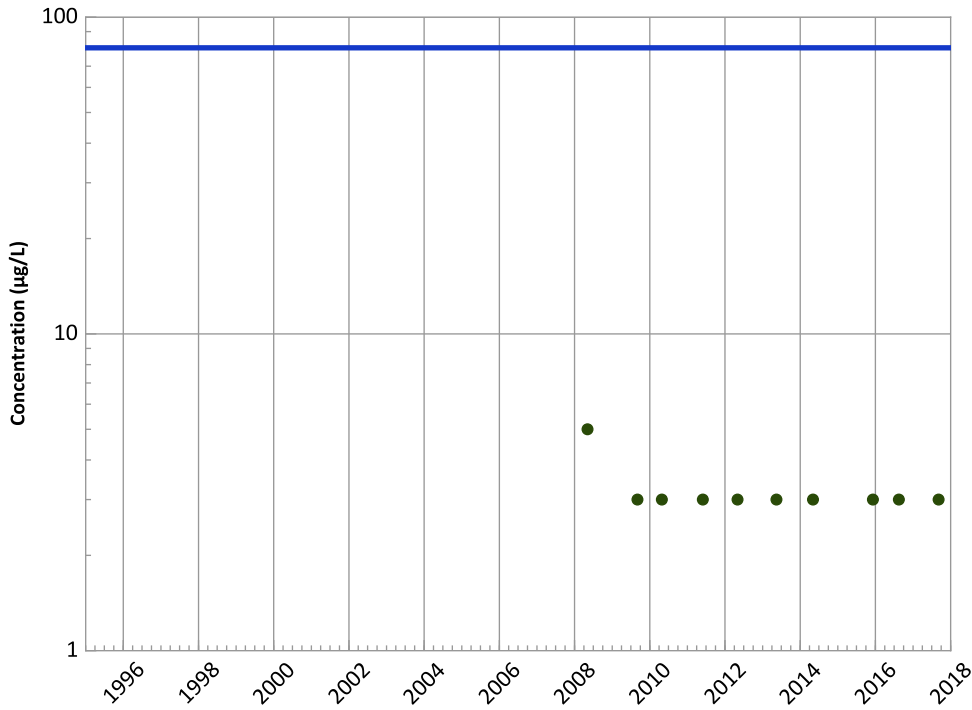
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1100 in Perched Aquifer
USDOE/NNSA Pantex Plant
1,2-Dichloroethane Trend**



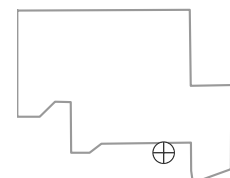
Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect
MAROS Linear Regression Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect

Chloroform Trend



Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect
MAROS Linear Regression Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect

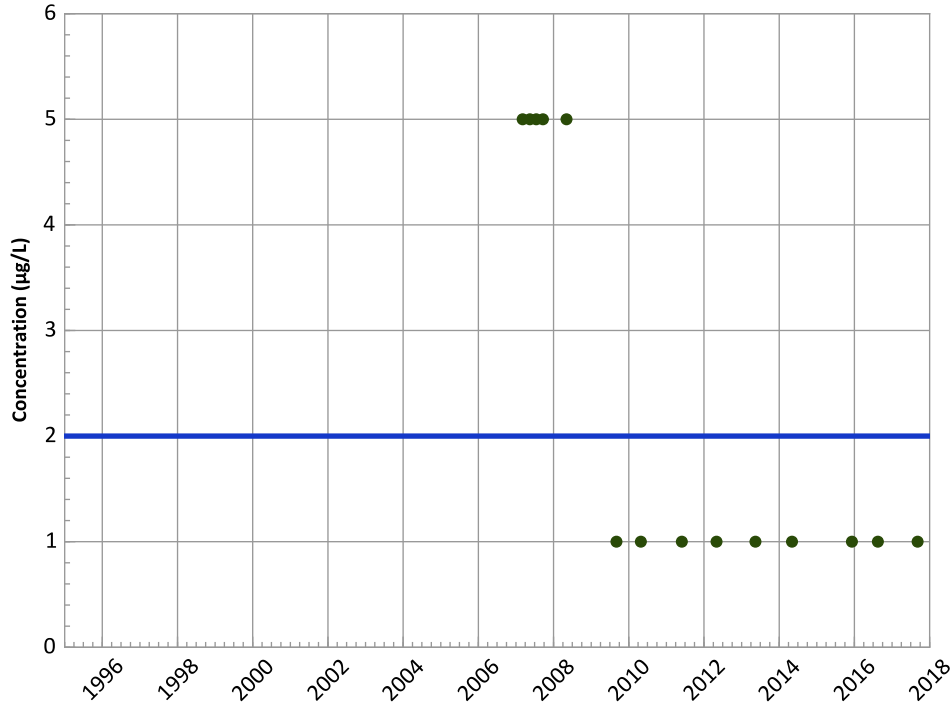
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 03/07/2007 to 09/06/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1100 in Perched Aquifer
USDOE/NNSA Pantex Plant
Vinyl Chloride Trend**



Concentration Trend

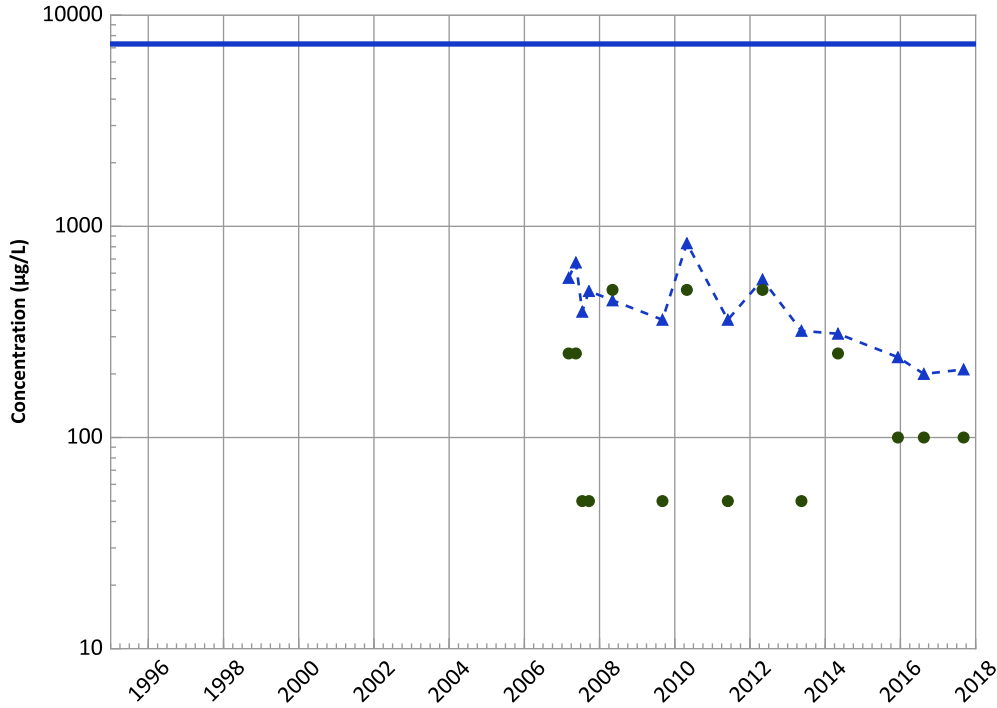
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Boron Trend



Concentration Trend

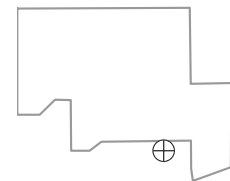
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

Well Location

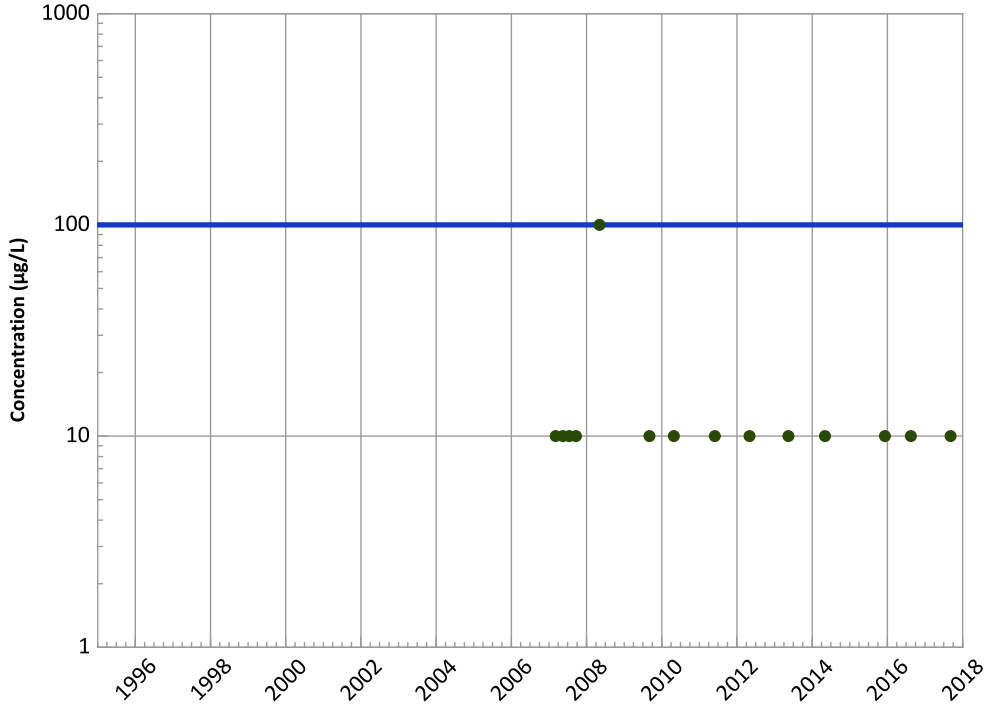


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/07/2007 to 09/06/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1100 in Perched Aquifer
USDOE/NNSA Pantex Plant

Chromium, Total Trend



Concentration Trend

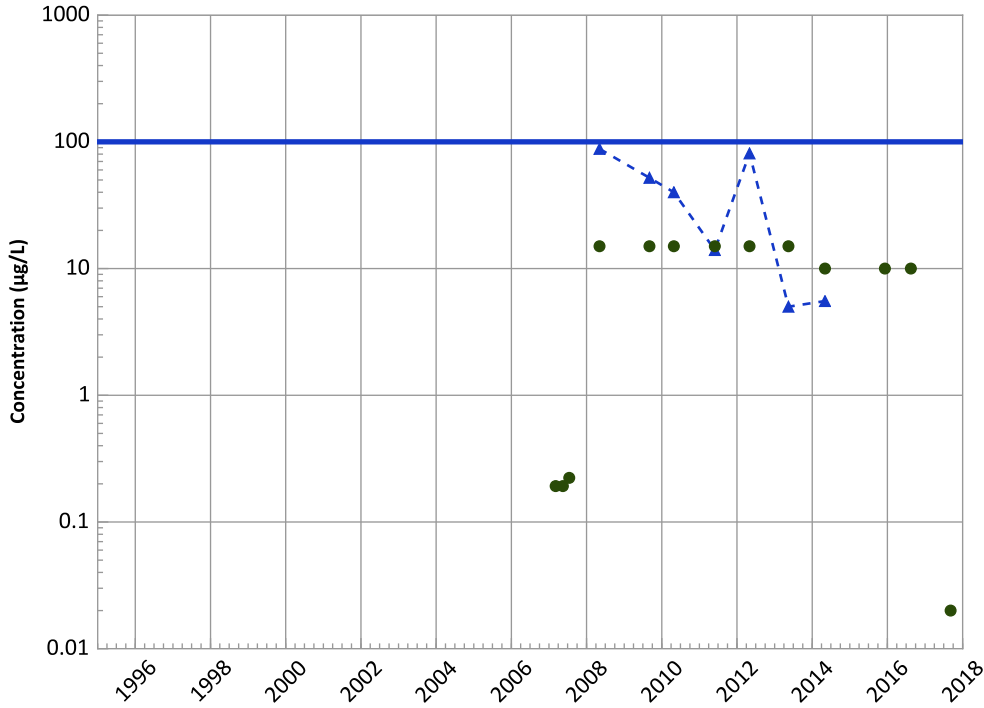
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Chromium, Hexavalent Trend



Concentration Trend

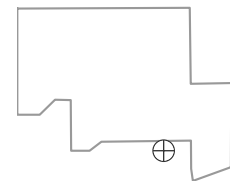
MAROS Mann-Kendall Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

Well Location

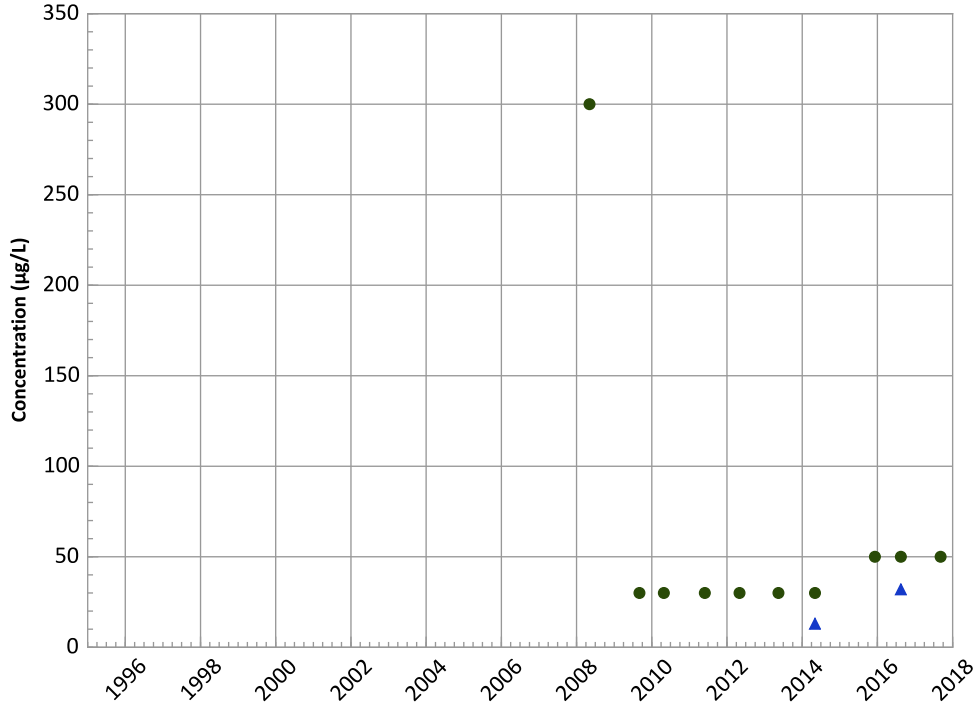


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/07/2007 to 09/06/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1100 in Perched Aquifer
USDOE/NNSA Pantex Plant

Aluminum Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

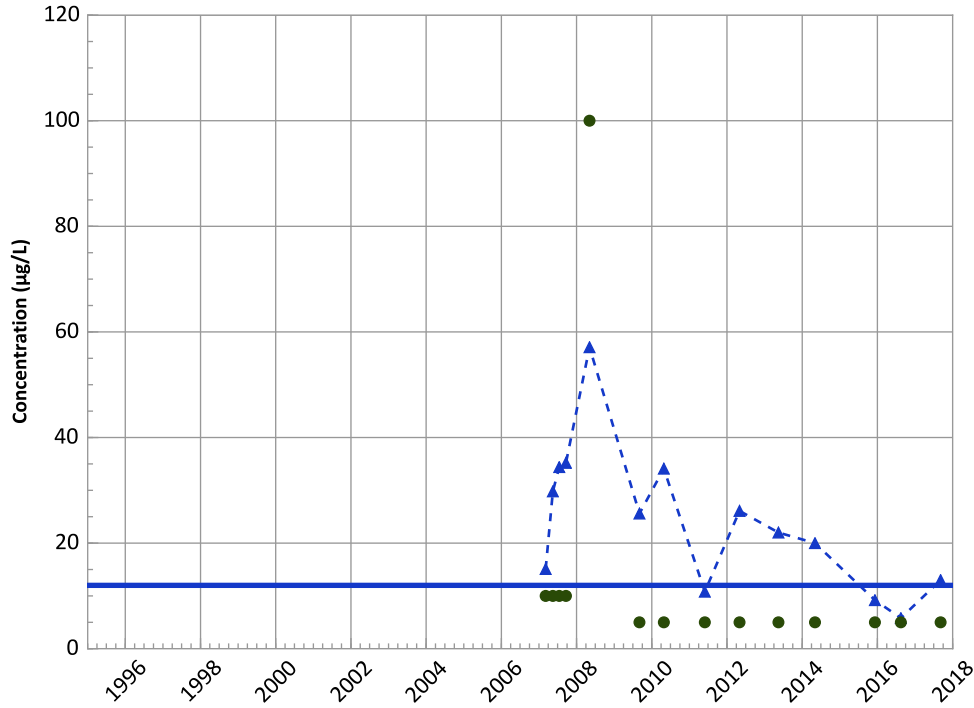
Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

Arsenic Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

Decreasing

All Data

Decreasing

MAROS Linear Regression Method

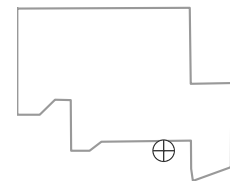
Data ():

Decreasing

All Data

Decreasing

Well Location

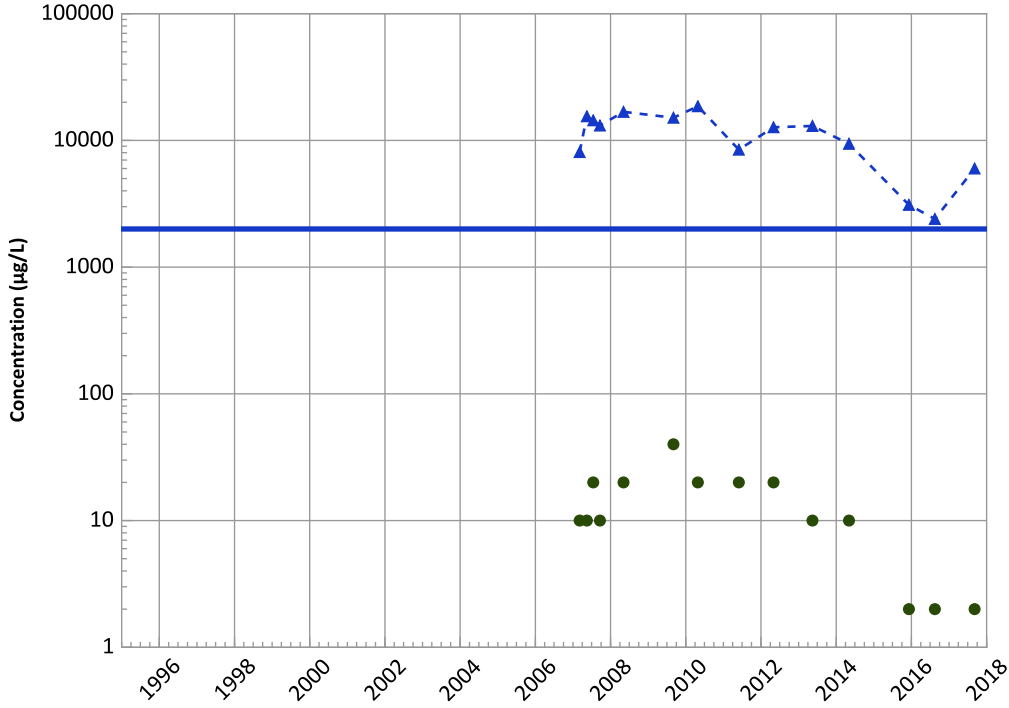


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/07/2007 to 09/06/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1100 in Perched Aquifer
USDOE/NNSA Pantex Plant

Barium Trend



Concentration Trend

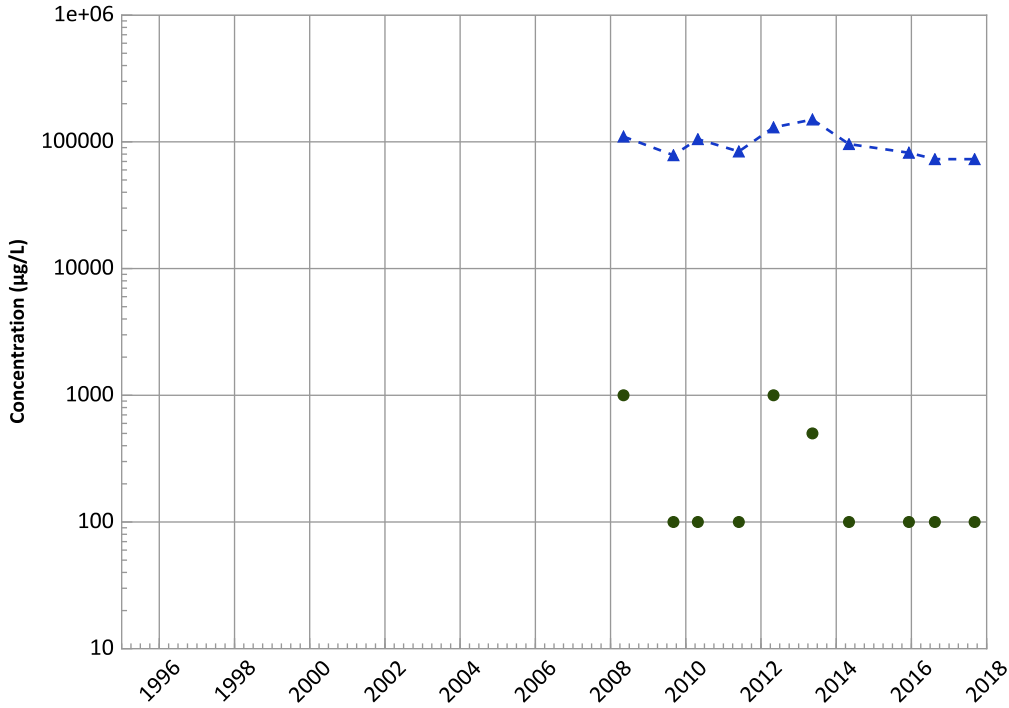
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

Calcium Trend



Concentration Trend

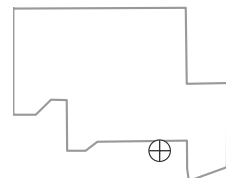
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Stable

Well Location

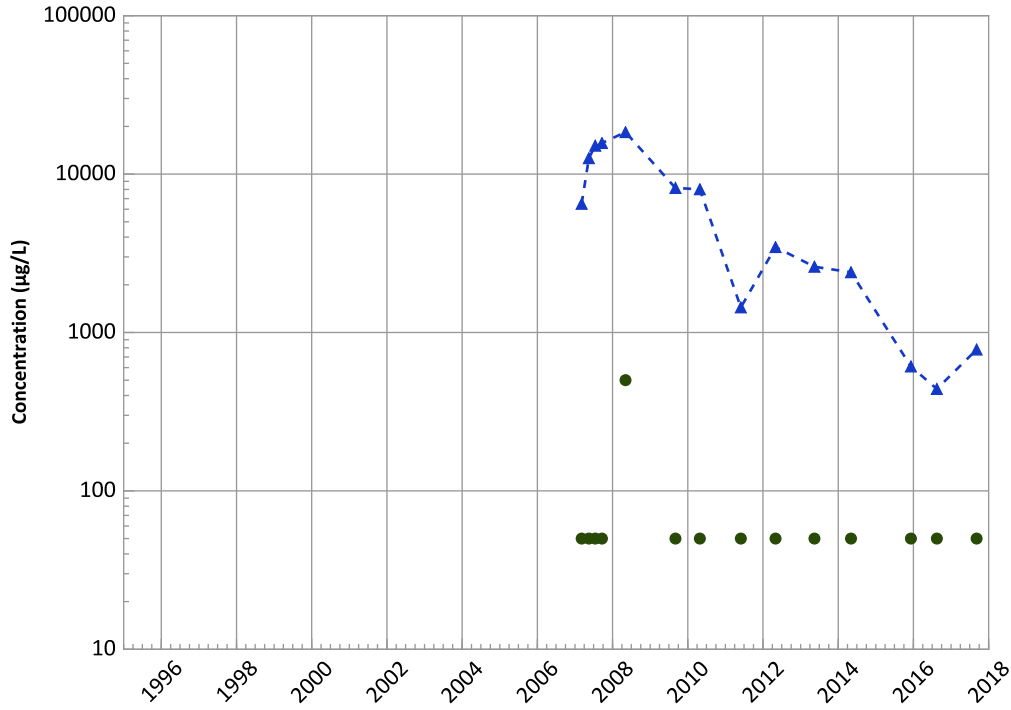


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/07/2007 to 09/06/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1100 in Perched Aquifer
USDOE/NNSA Pantex Plant

Iron Trend



Concentration Trend

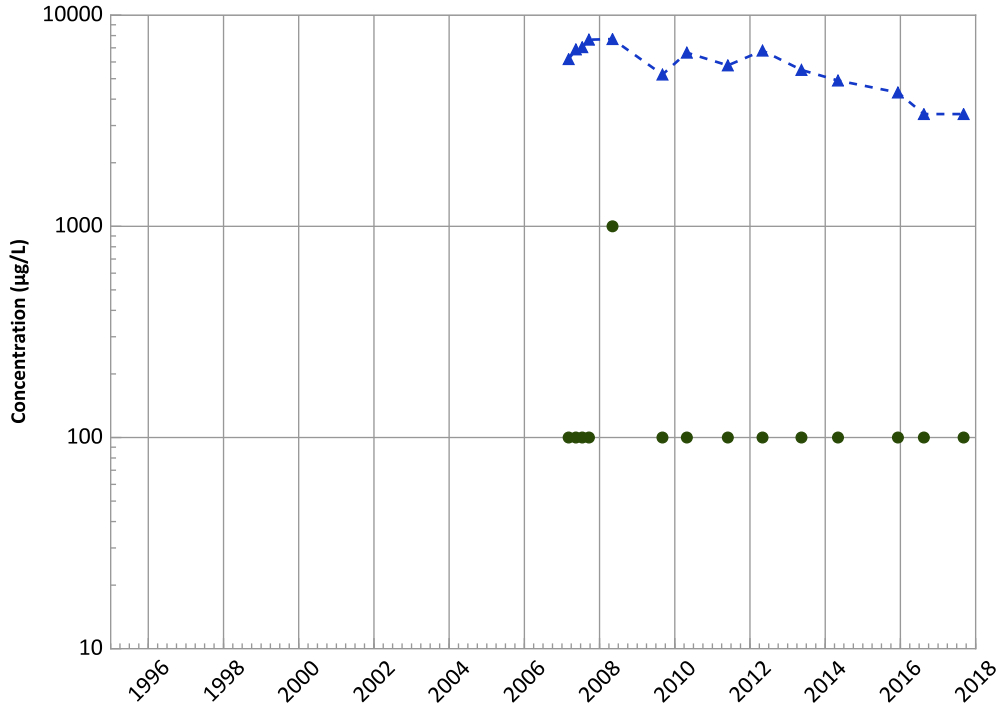
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

Potassium Trend



Concentration Trend

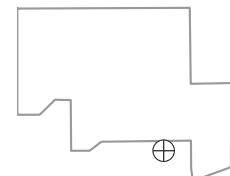
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

Well Location

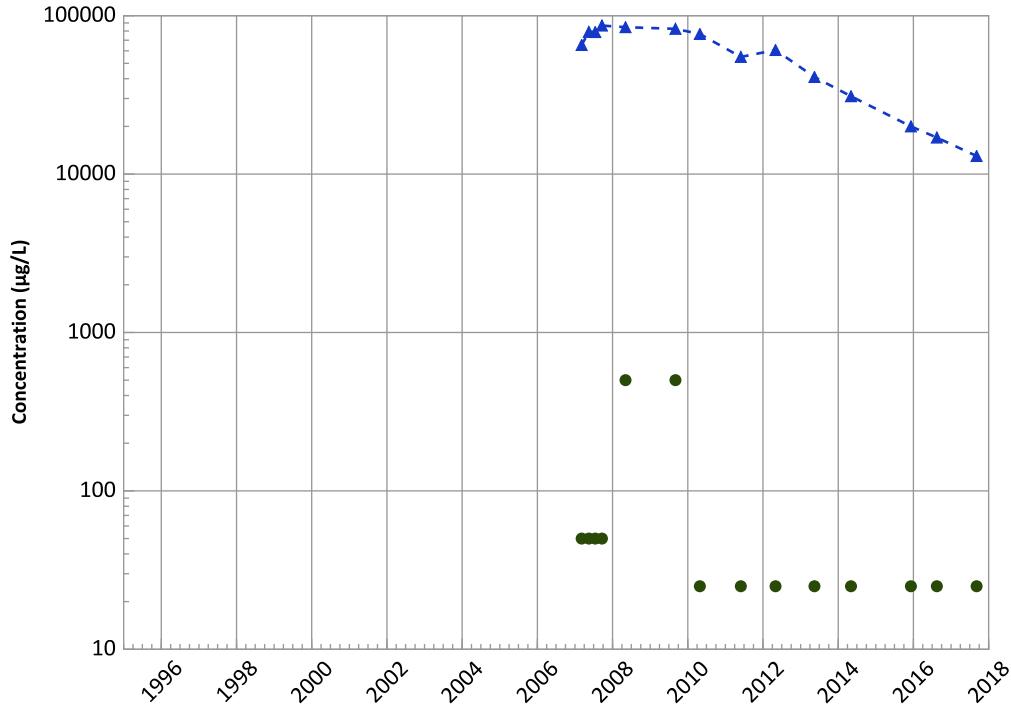


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/07/2007 to 09/06/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1100 in Perched Aquifer
USDOE/NNSA Pantex Plant

Magnesium Trend



Concentration Trend

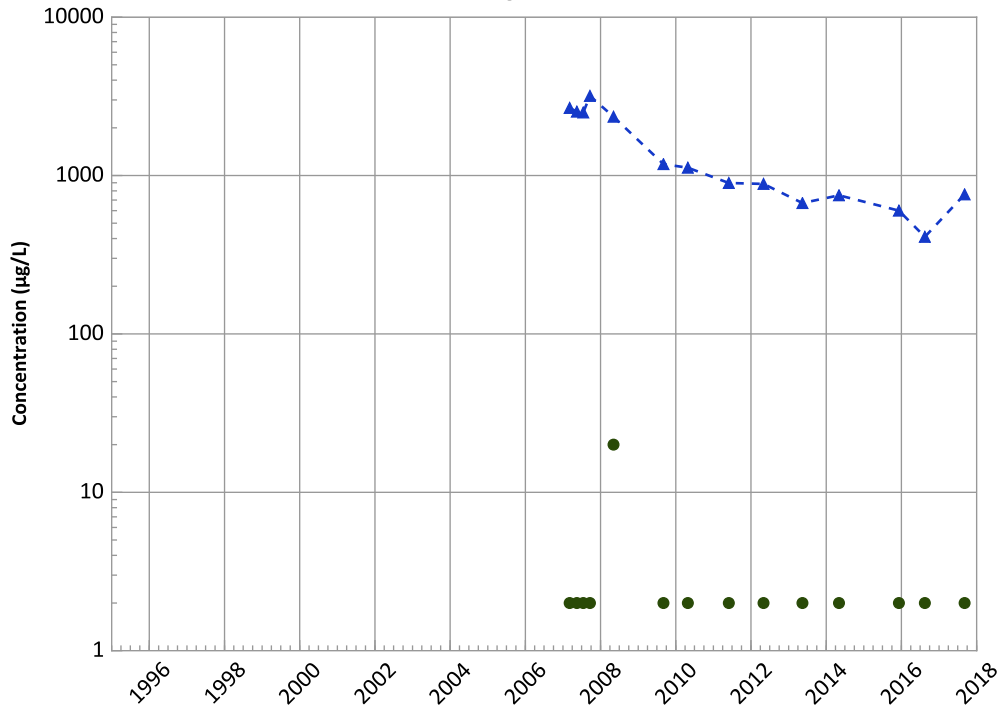
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

Manganese Trend



Concentration Trend

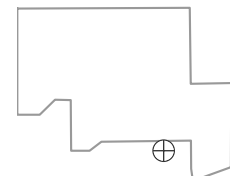
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

Well Location

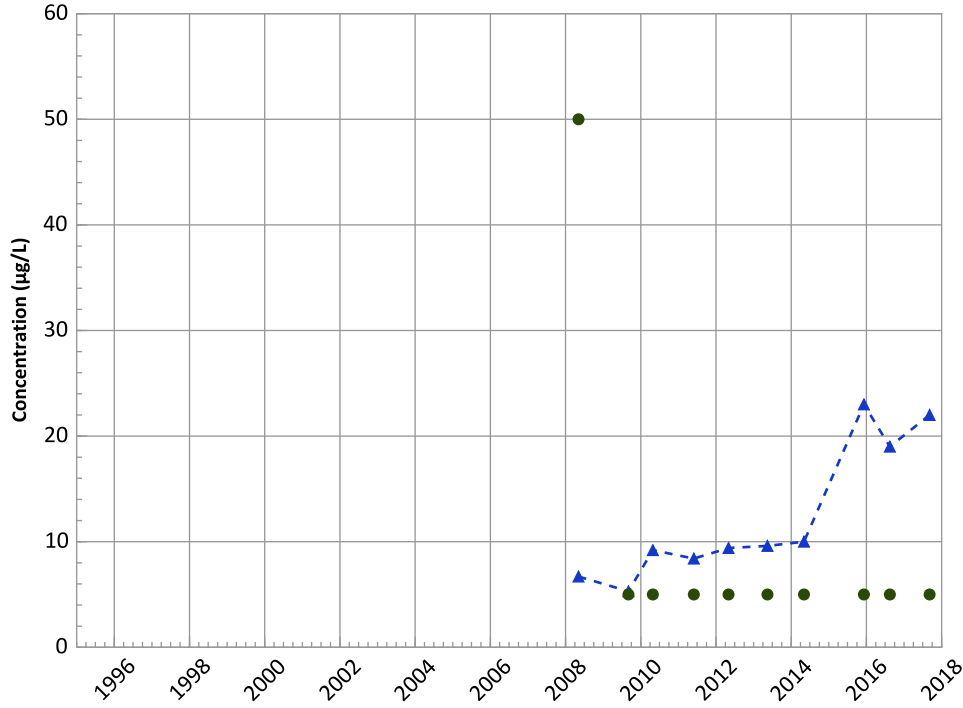


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/07/2007 to 09/06/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1100 in Perched Aquifer
USDOE/NNSA Pantex Plant

Molybdenum Trend



Concentration Trend

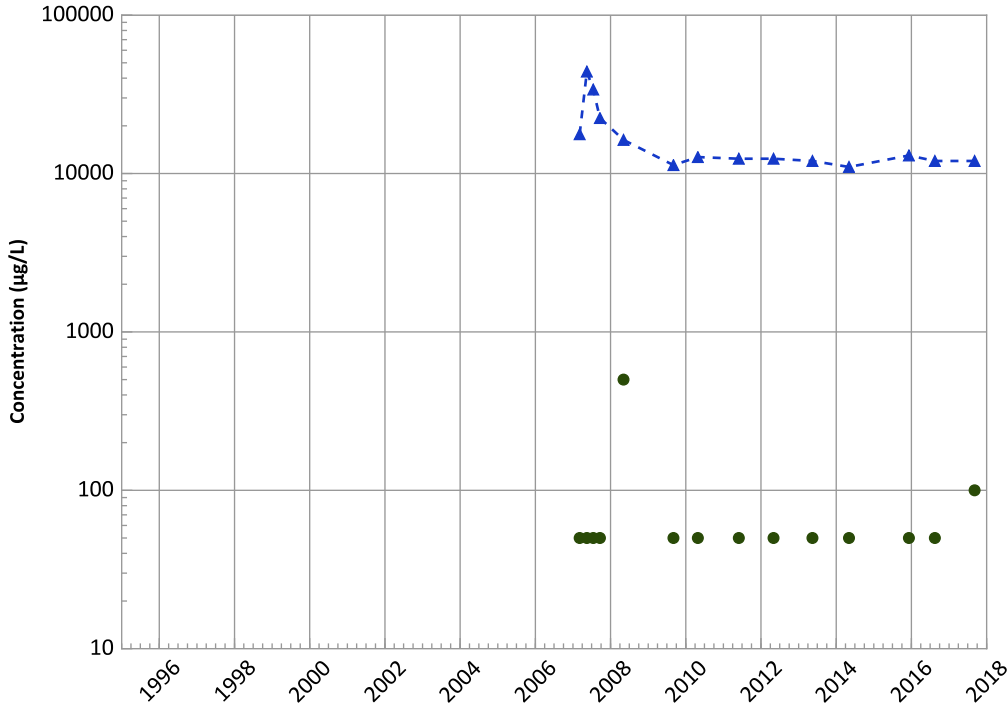
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

Sodium Trend



Concentration Trend

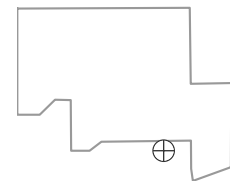
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
Decreasing

Well Location

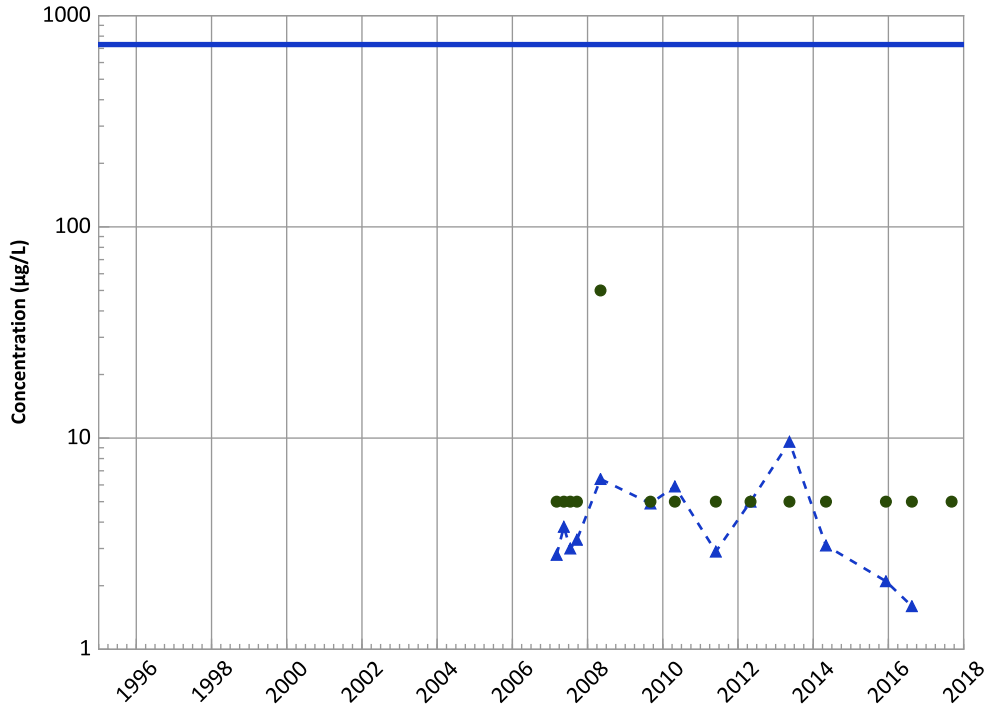


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/07/2007 to 09/06/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1100 in Perched Aquifer
USDOE/NNSA Pantex Plant

Nickel Trend



Concentration Trend

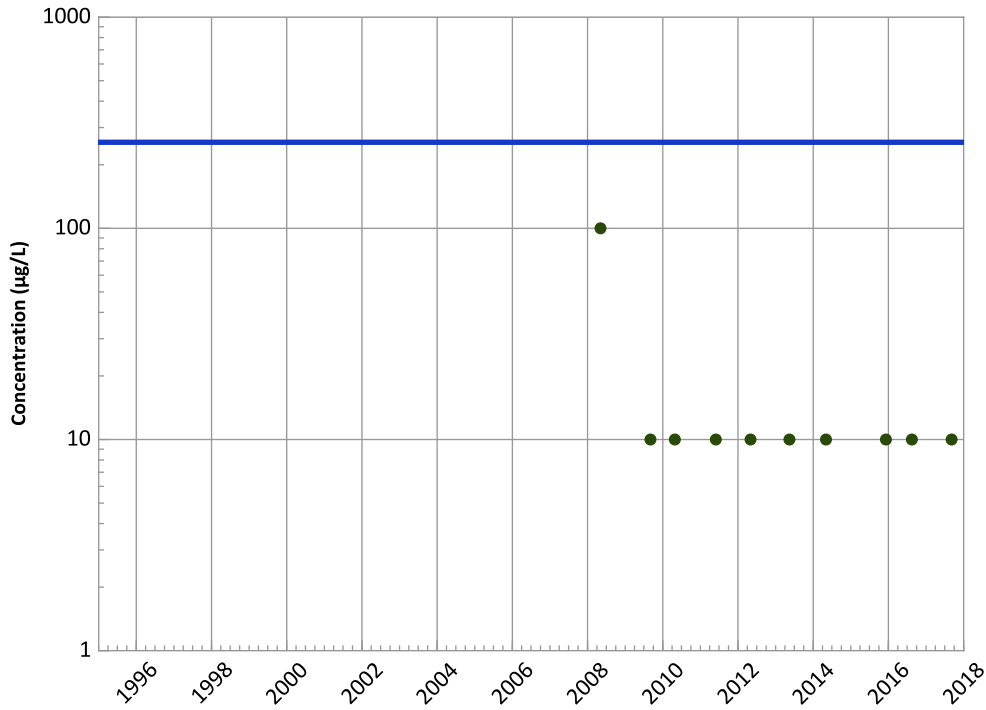
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Stable

Vanadium Trend



Concentration Trend

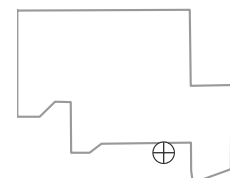
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

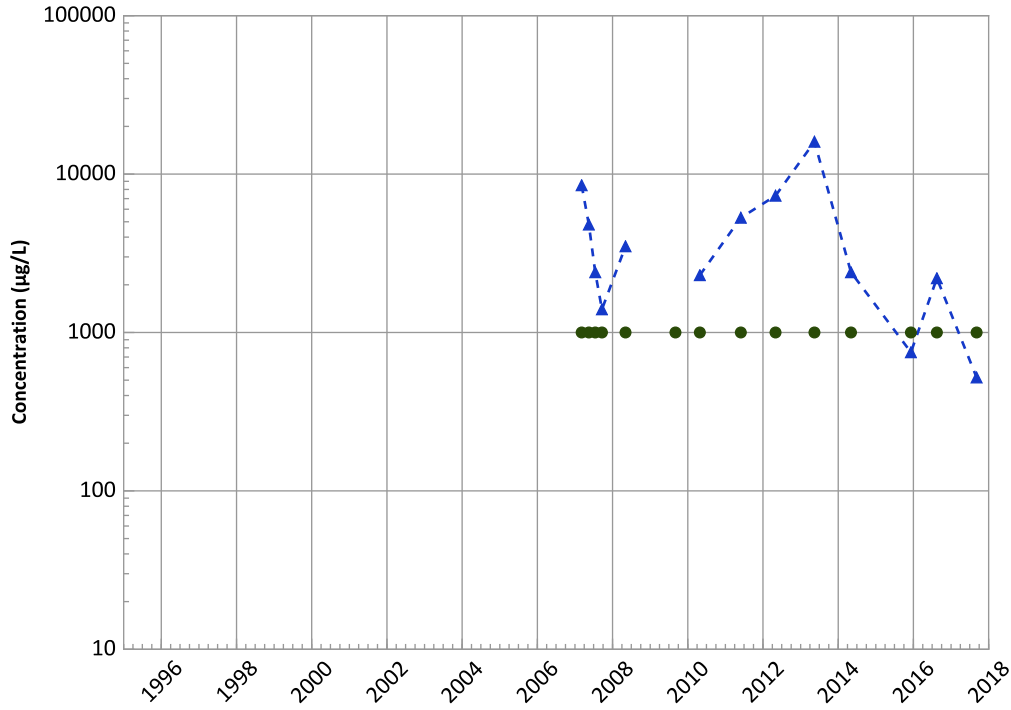


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/07/2007 to 09/06/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1100 in Perched Aquifer
USDOE/NNSA Pantex Plant

Total Organic Carbon Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

Decreasing

All Data

Decreasing

MAROS Linear Regression Method

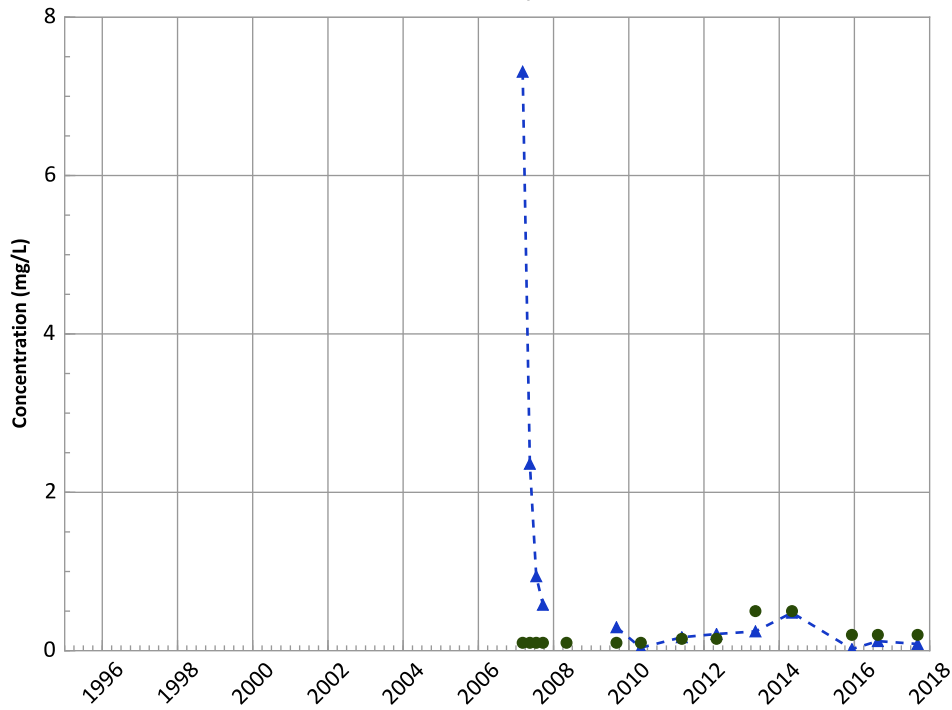
Data ():

Probably Decreasing

All Data

Probably Decreasing

Total Volatile Fatty Acids Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

Decreasing

All Data

Decreasing

MAROS Linear Regression Method

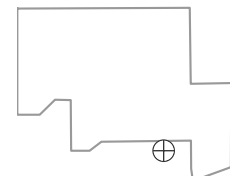
Data ():

Stable

All Data

Decreasing

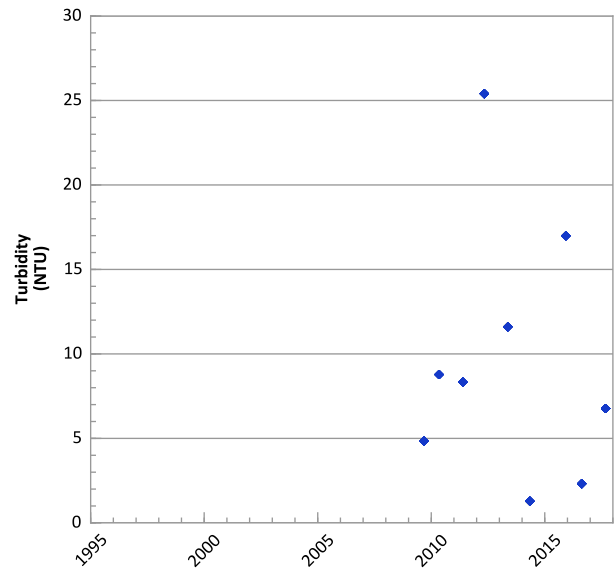
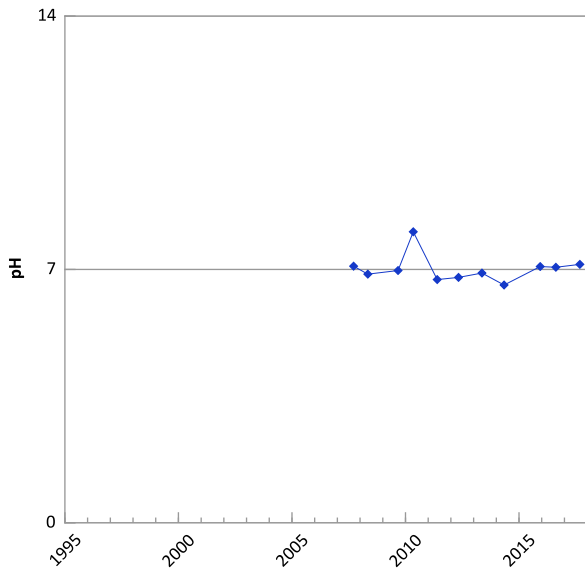
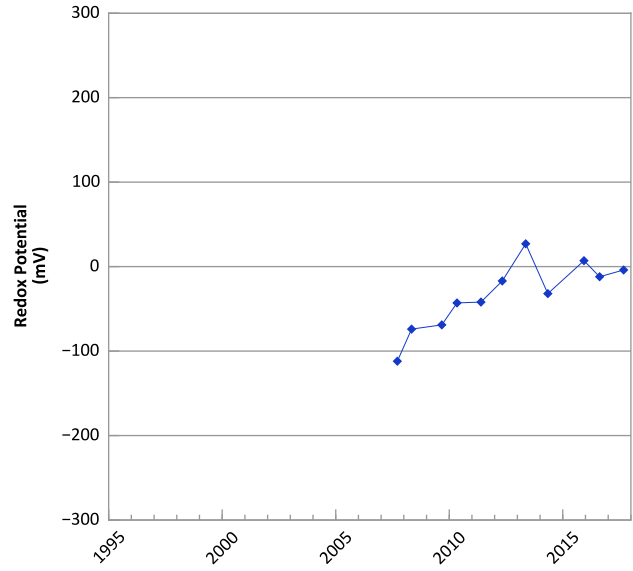
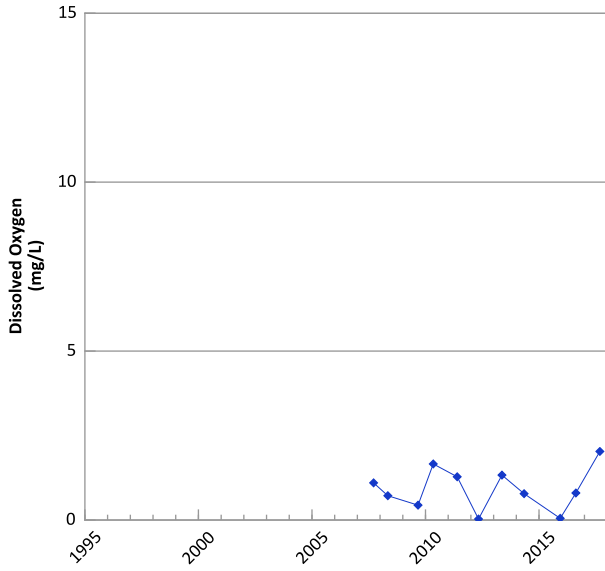
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/07/2007 to 09/06/2017
Analysis Date: 03/21/2018

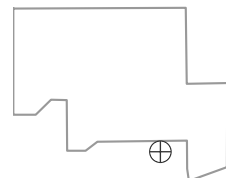
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1101 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



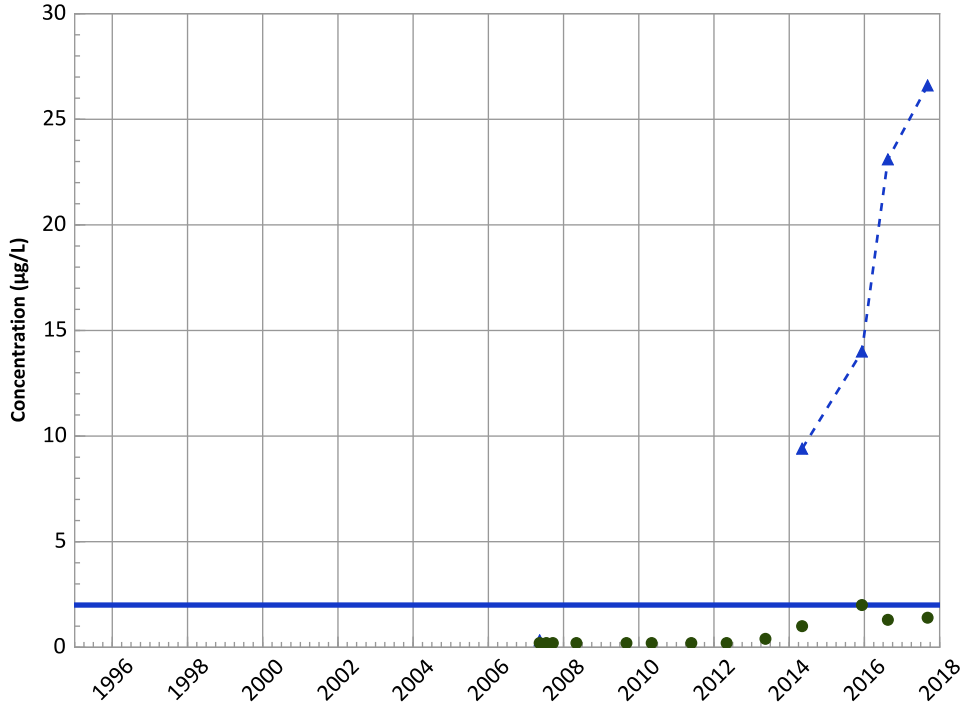
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 03/06/2007 to 09/06/2017
 Analysis Date: 03/21/2018

Well Location



PTX06-1101 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

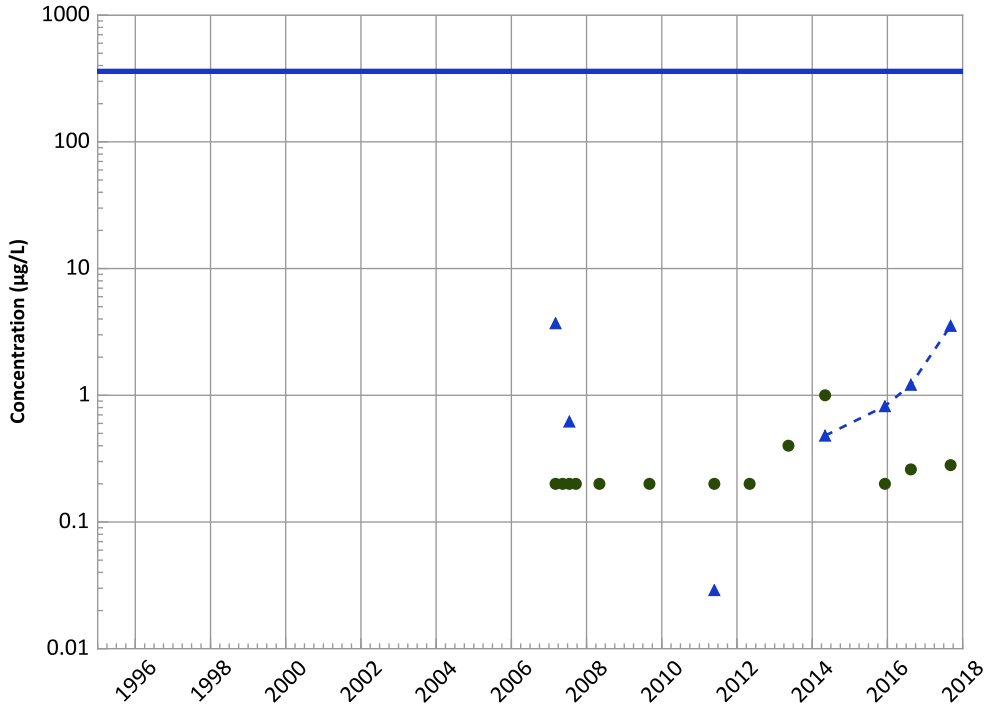
MAROS Mann-Kendall Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Increasing

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Increasing

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

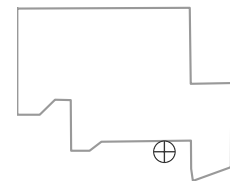
MAROS Mann-Kendall Method

Data ():
N/A (<4 Detections in Dataset)
All Data
No Trend

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
No Trend

Well Location

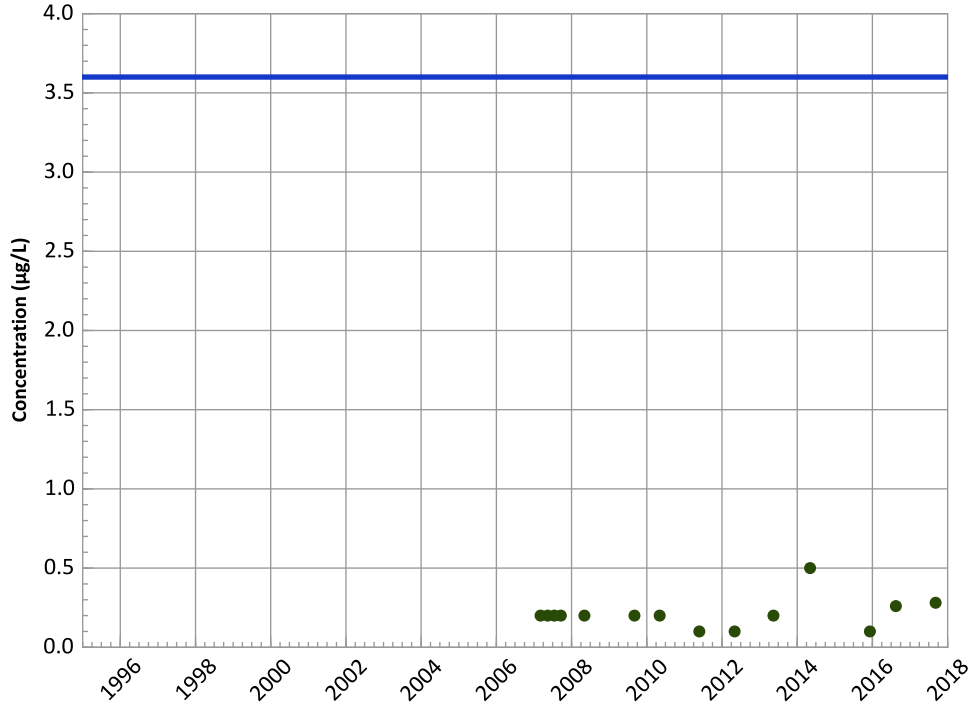


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/06/2007 to 09/06/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1101 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

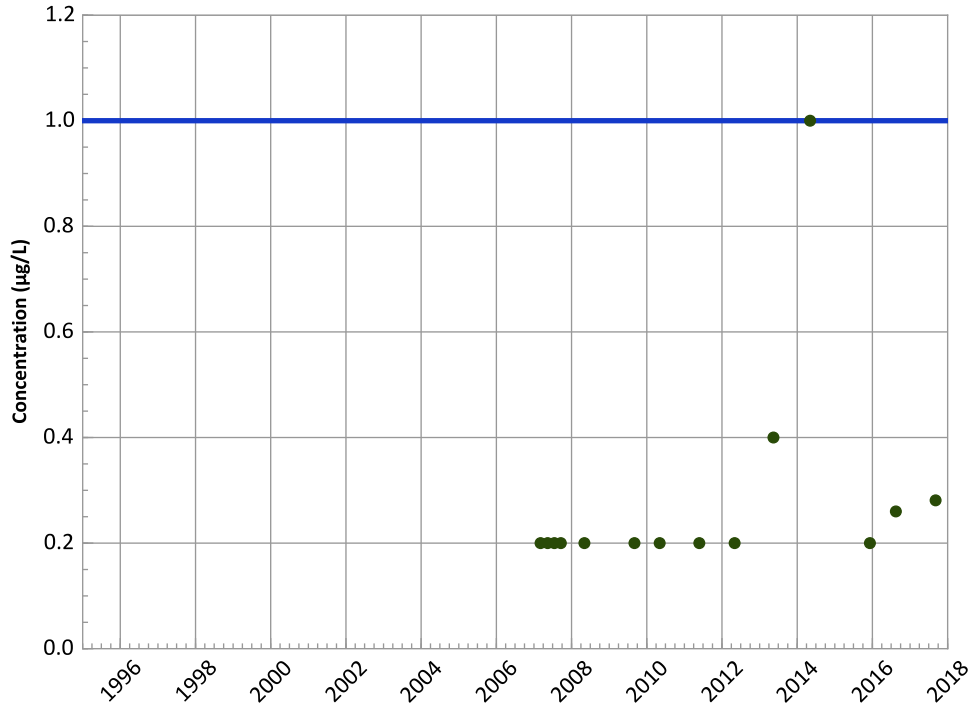
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

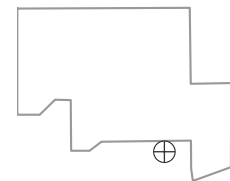
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

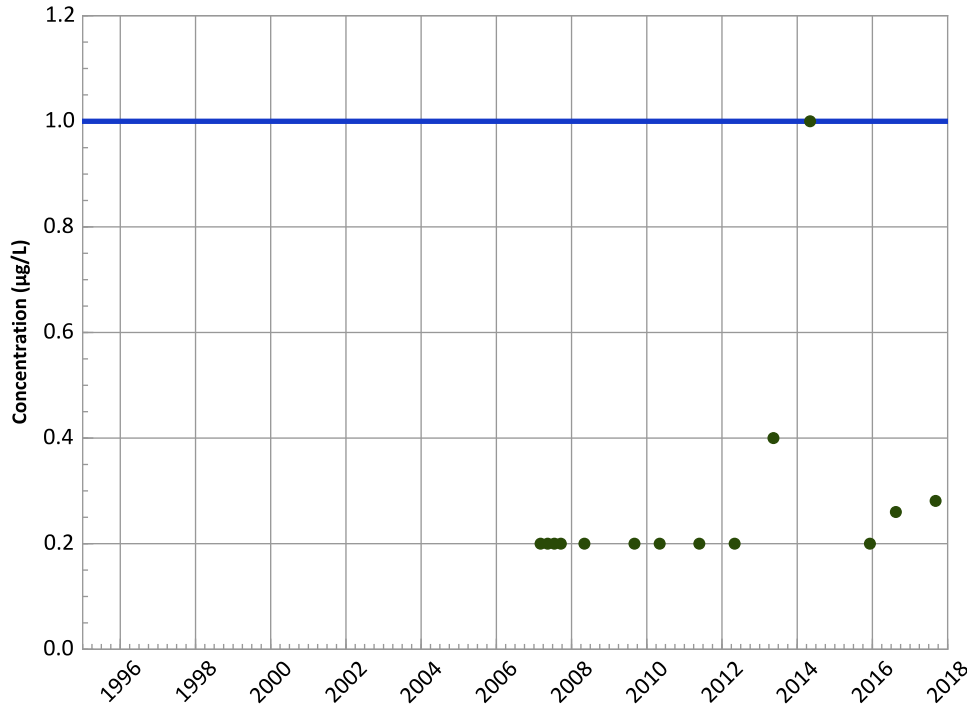


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/06/2007 to 09/06/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1101 in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

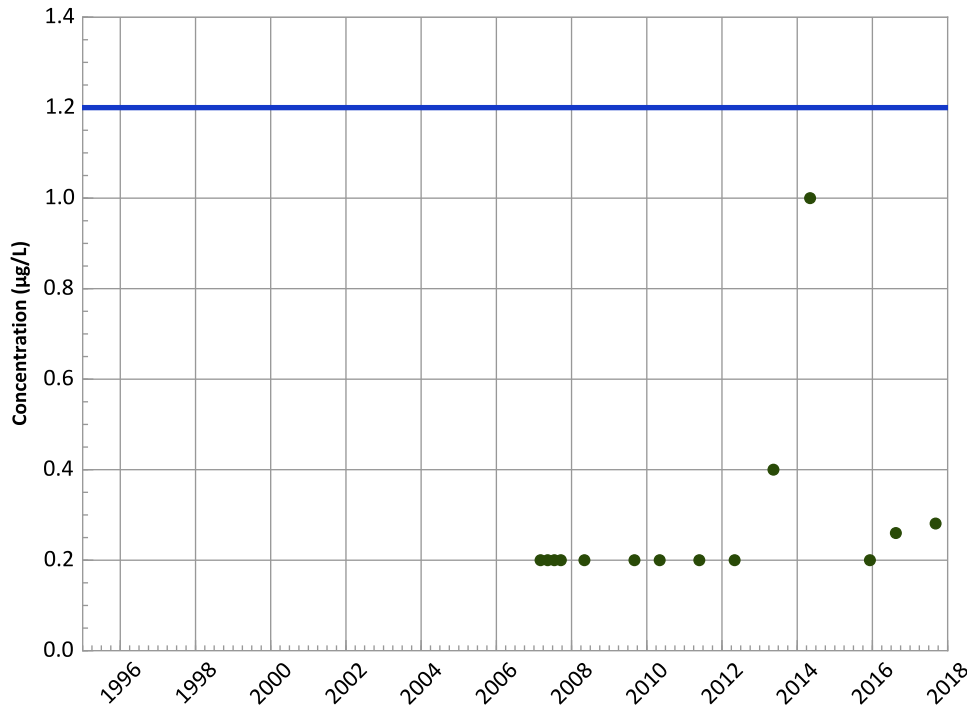
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

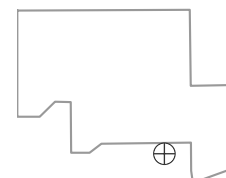
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

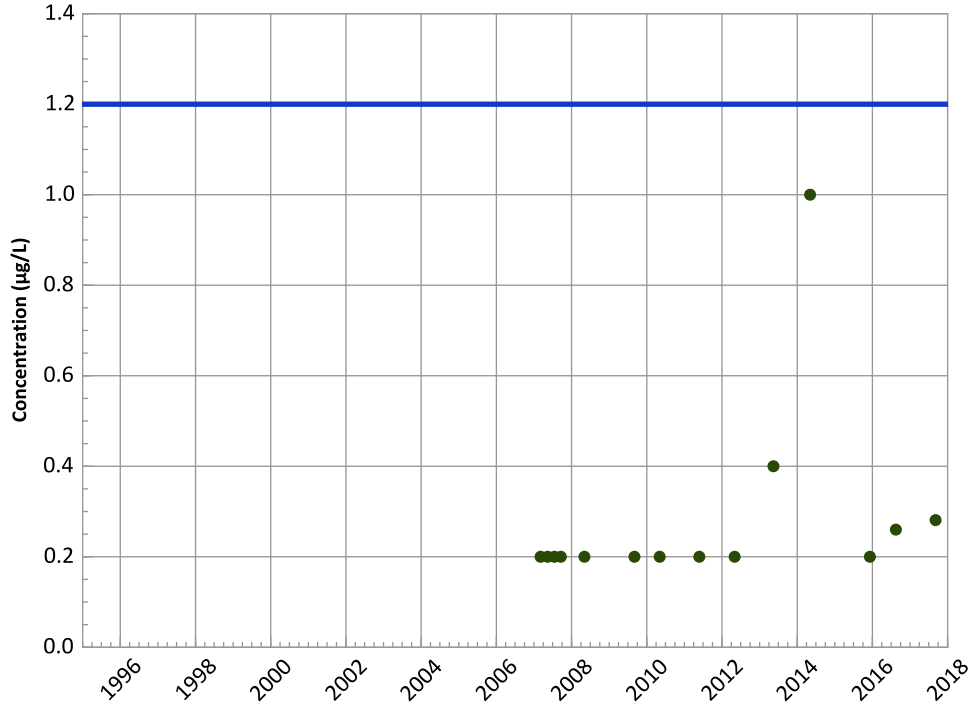


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/06/2007 to 09/06/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1101 in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

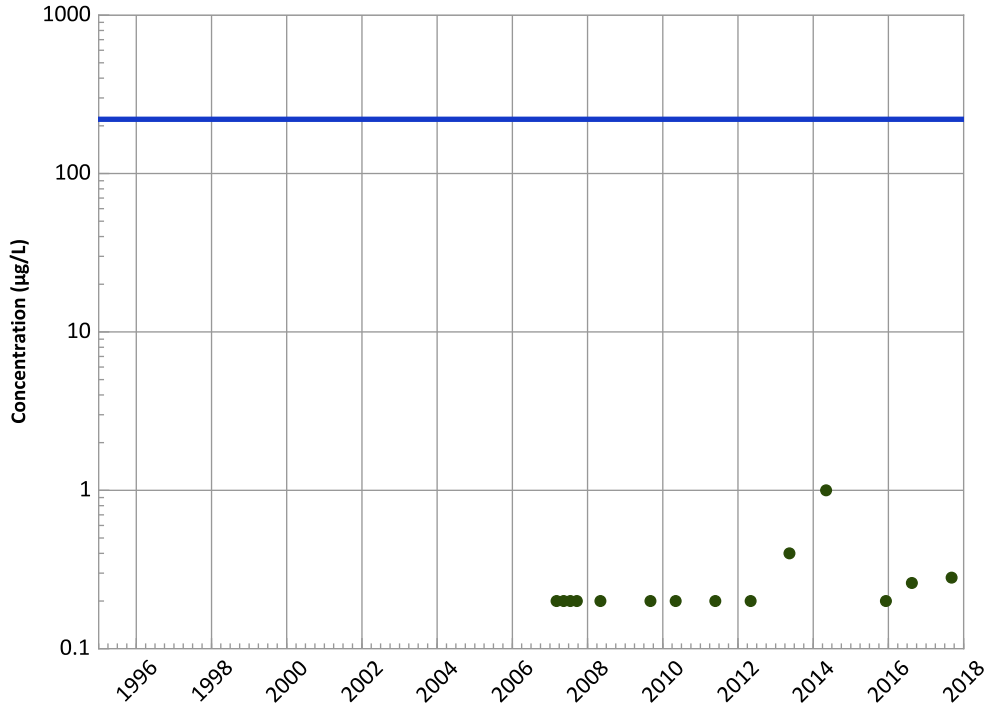
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,3,5-Trinitrobenzene Trend



Concentration Trend

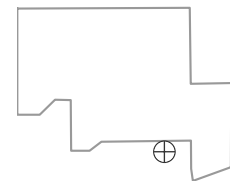
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

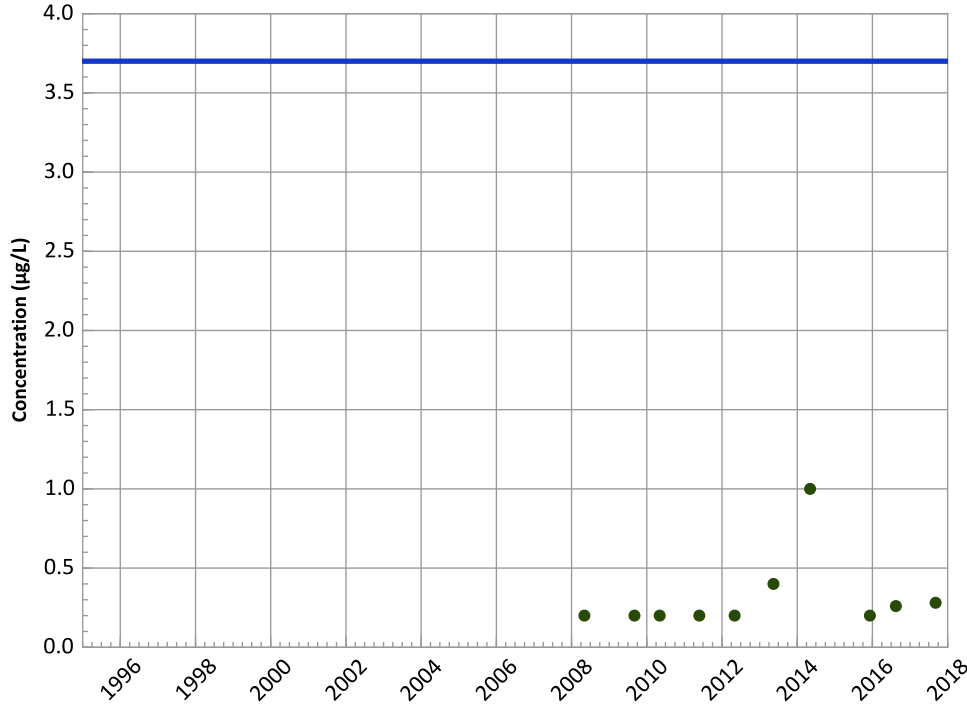


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/06/2007 to 09/06/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1101 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

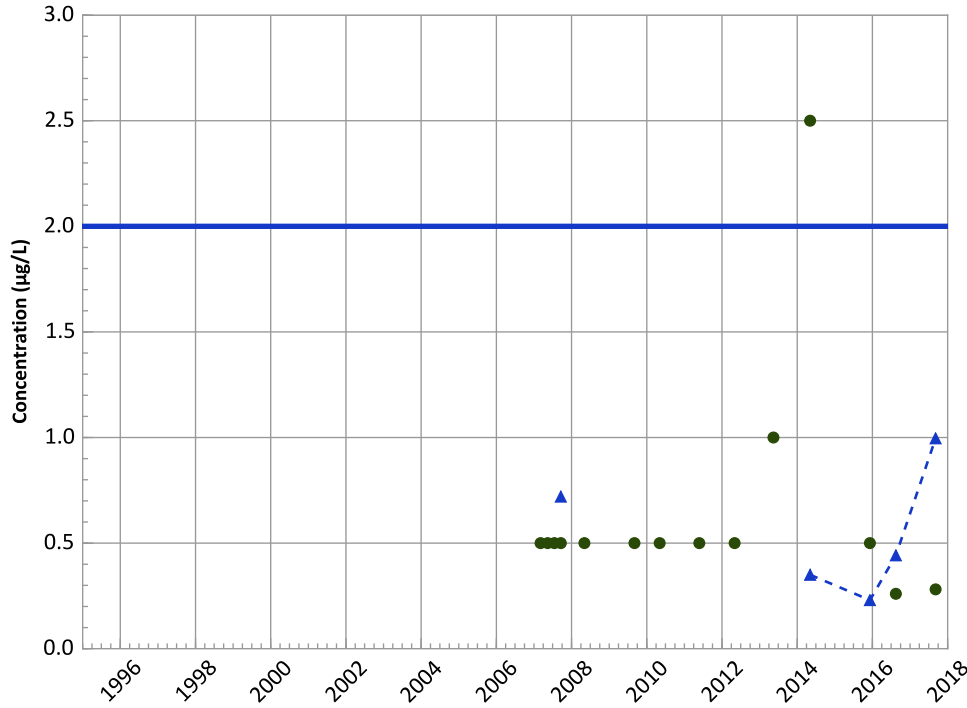
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Hexahydro-1-Nitroso-3,5-Dinitro-1,3,5-Triazine (MNX) Trend



Concentration Trend

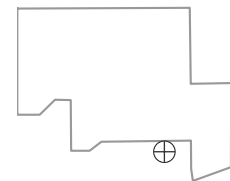
MAROS Mann-Kendall Method

Data ():
N/A (<4 Detections in Dataset)
All Data
No Trend

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Stable

Well Location

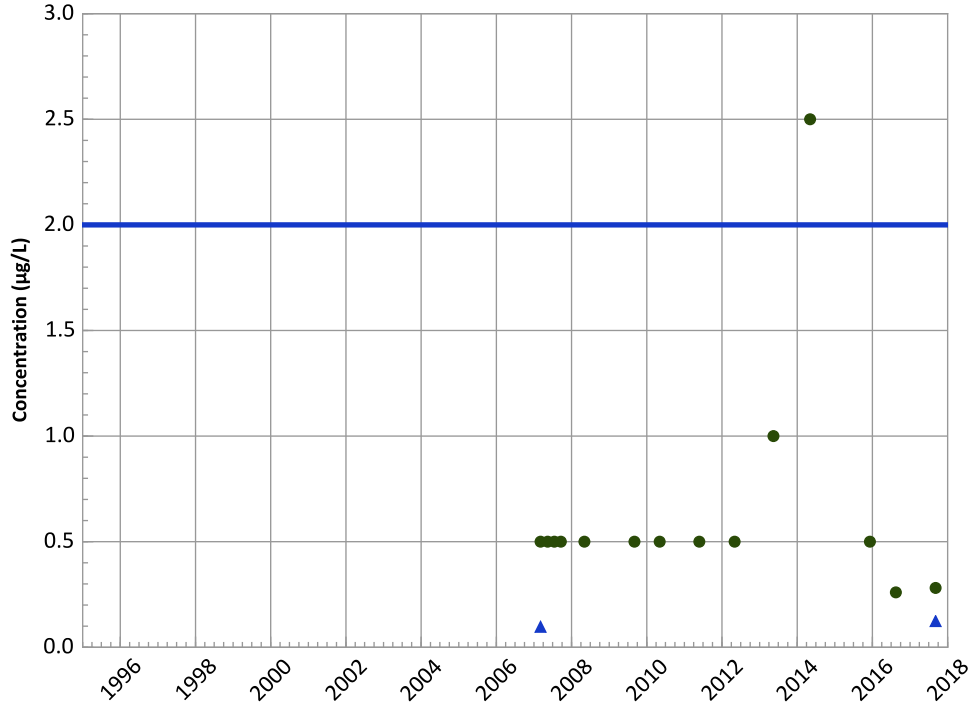


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/06/2007 to 09/06/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1101 in Perched Aquifer
USDOE/NNSA Pantex Plant

Hexahydro-1,3-Dinitroso-5-Nitro-1,3,5-Triazine (DNX) Trend



Concentration Trend

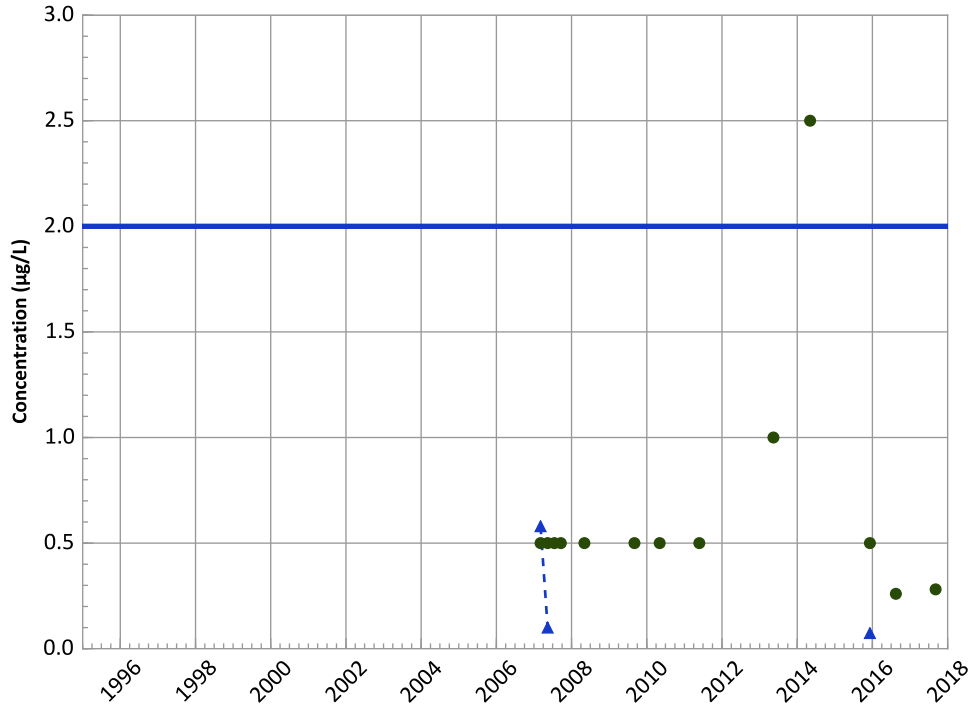
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

Hexahydro-1,3,5-Trinitroso-1,3,5-Triazine (TNX) Trend



Concentration Trend

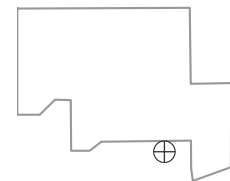
MAROS Mann-Kendall Method

Data ():
N/A (<4 Detections in Dataset)
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
N/A (<4 Detections in Dataset)

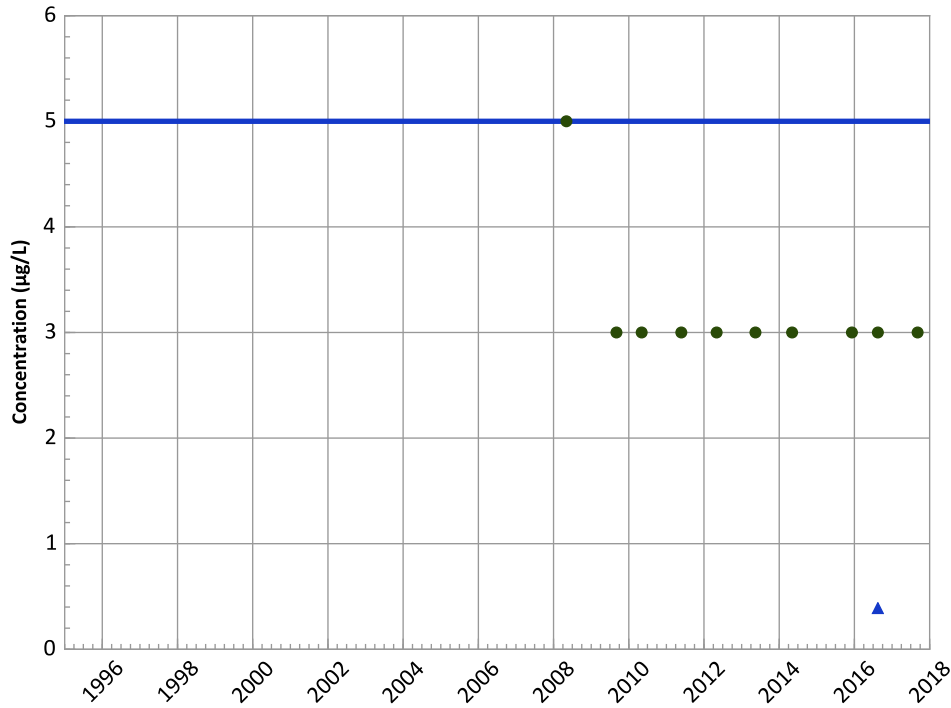
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/06/2007 to 09/06/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1101 in Perched Aquifer
USDOE/NNSA Pantex Plant
Tetrachloroethylene (PCE) Trend**



Concentration Trend

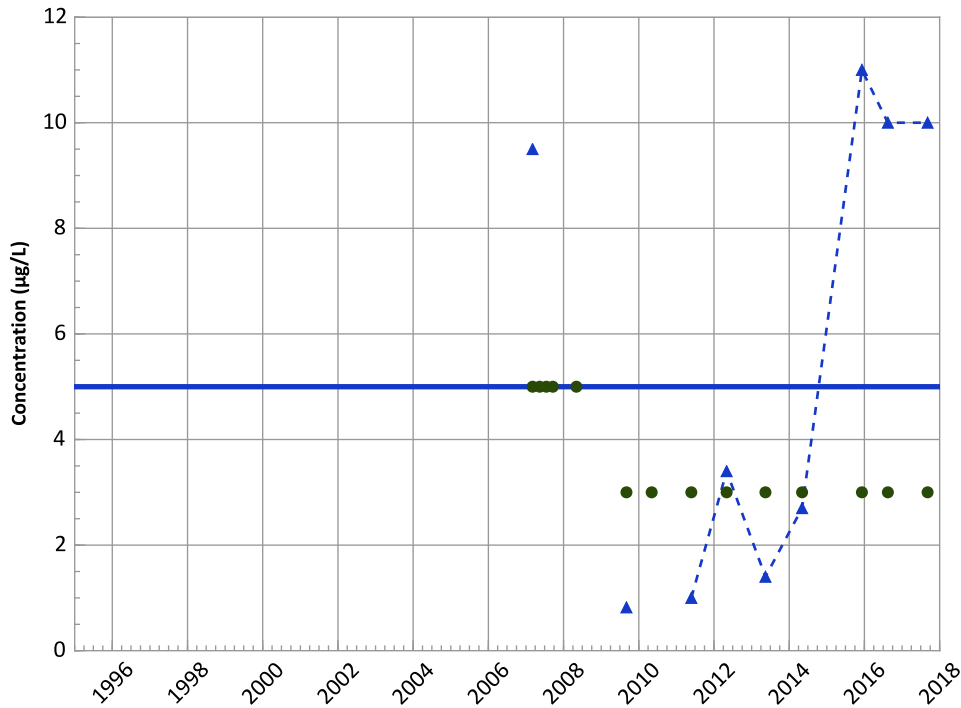
MAROS Mann-Kendall Method

Data ():
N/A (<4 Detections in Dataset)
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
N/A (<4 Detections in Dataset)

Trichloroethene Trend



Concentration Trend

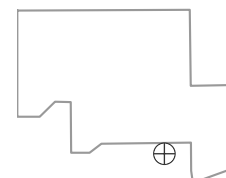
MAROS Mann-Kendall Method

Data ():
No Trend
All Data
No Trend

MAROS Linear Regression Method

Data ():
Probably Increasing
All Data
No Trend

Well Location

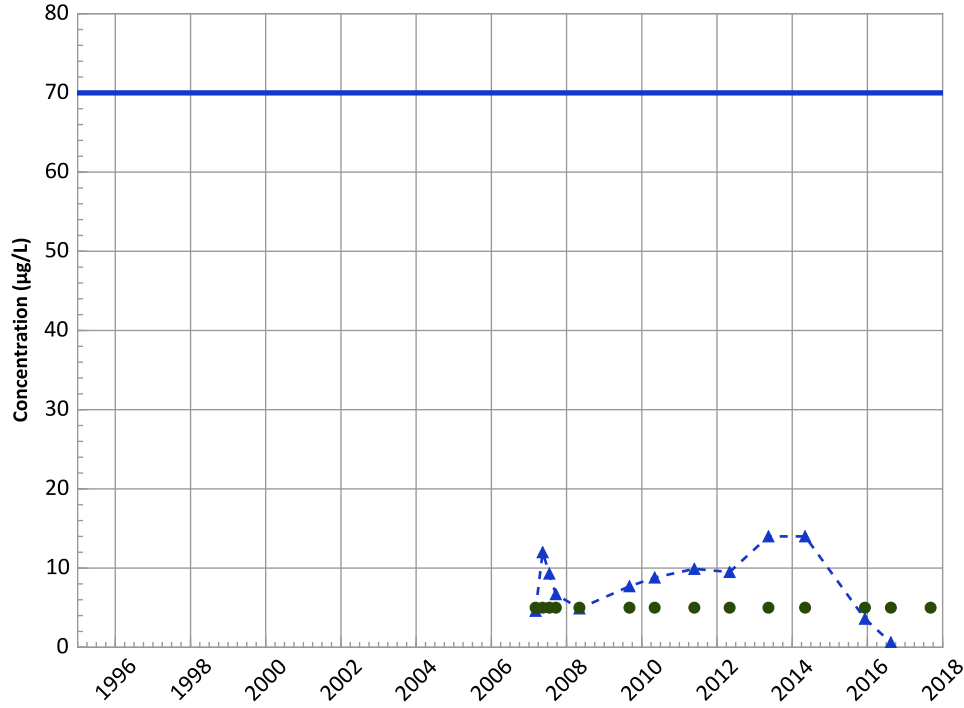


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/06/2007 to 09/06/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1101 in Perched Aquifer
USDOE/NNSA Pantex Plant

cis-1,2-Dichloroethene Trend



Concentration Trend

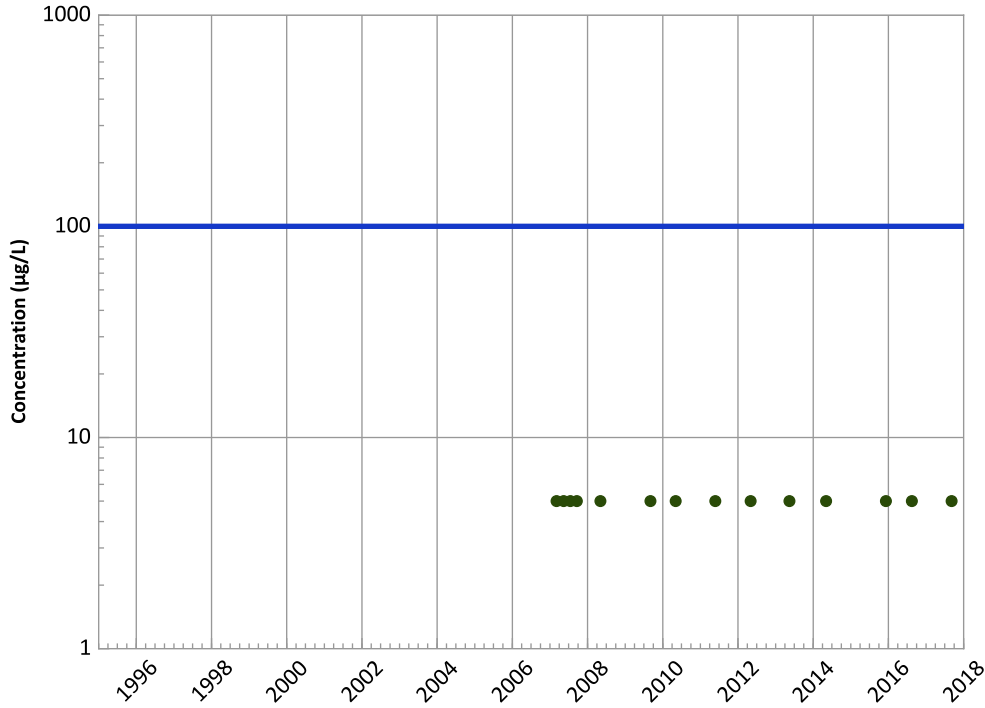
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Probably Decreasing

trans-1,2-Dichloroethene Trend



Concentration Trend

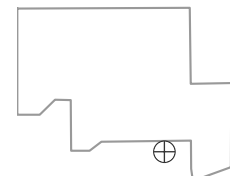
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

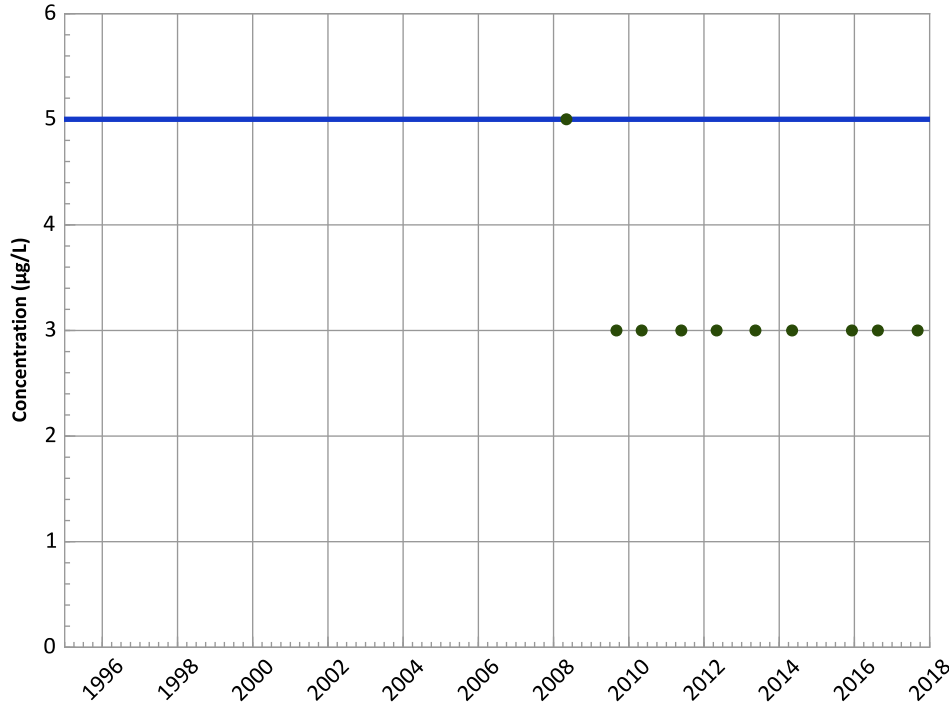
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/06/2007 to 09/06/2017
Analysis Date: 03/21/2018

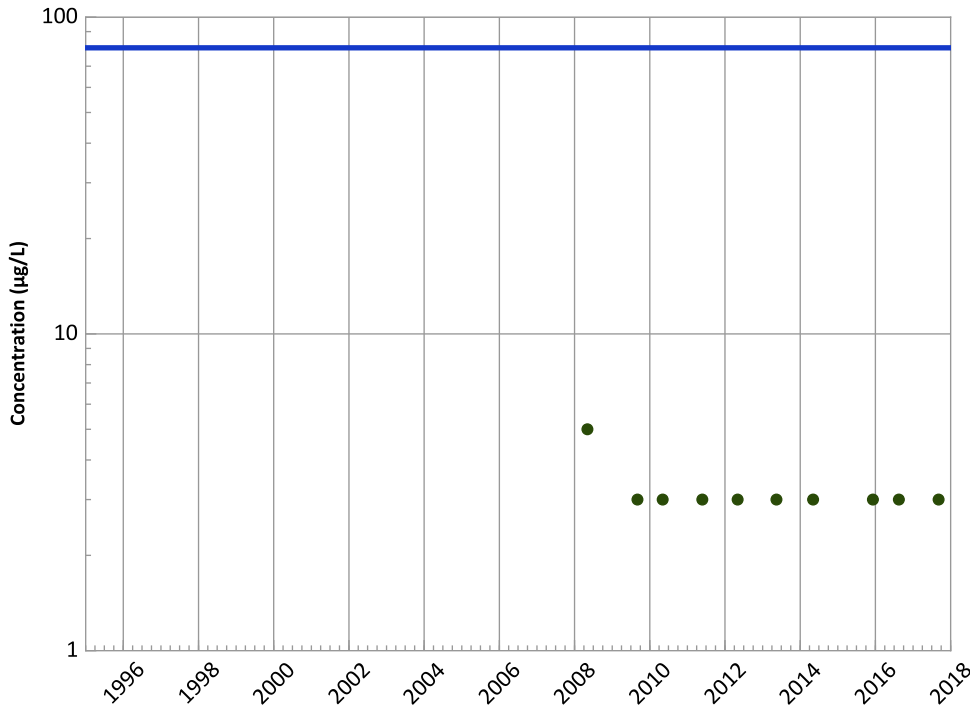
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1101 in Perched Aquifer
USDOE/NNSA Pantex Plant
1,2-Dichloroethane Trend**



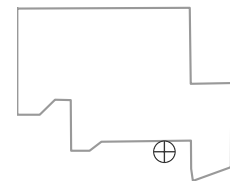
Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect
MAROS Linear Regression Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect

Chloroform Trend



Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect
MAROS Linear Regression Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect

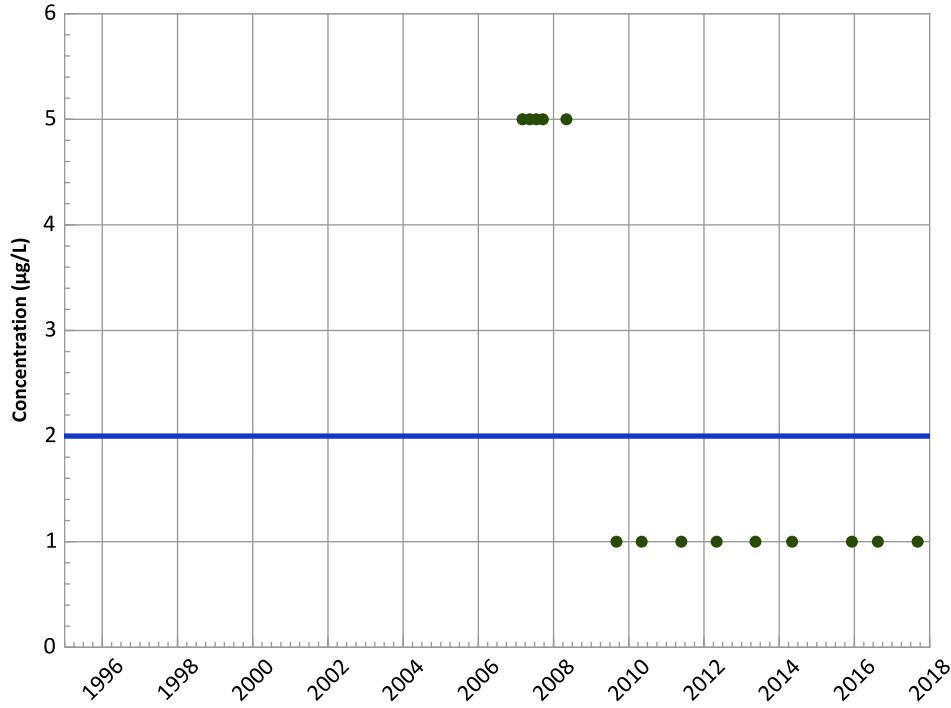
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 03/06/2007 to 09/06/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1101 in Perched Aquifer
USDOE/NNSA Pantex Plant
Vinyl Chloride Trend**



Concentration Trend

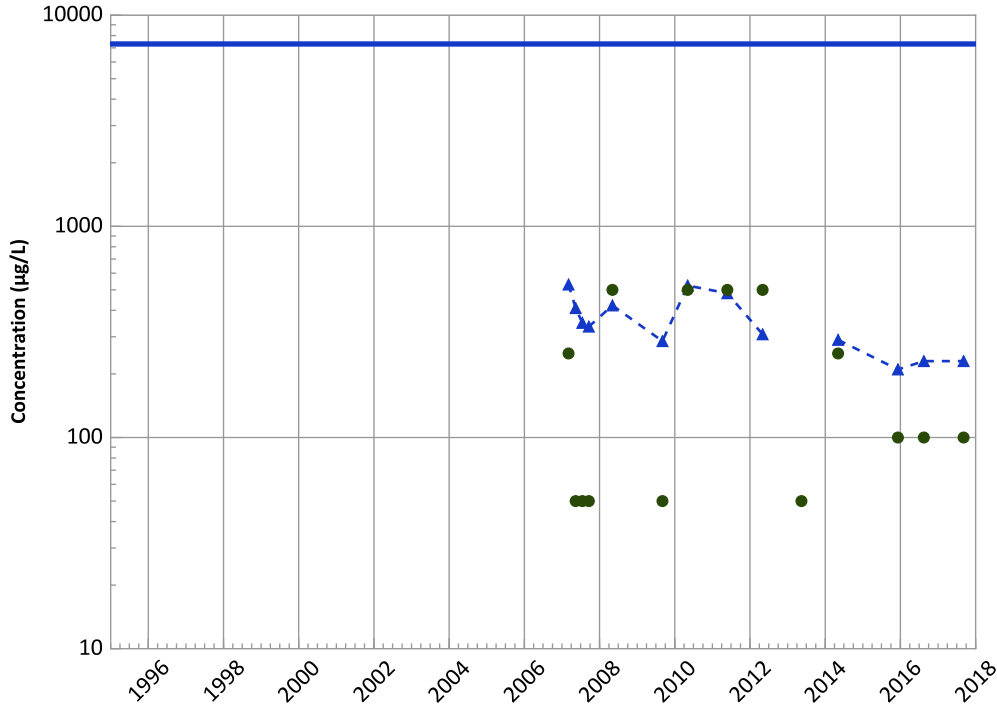
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Boron Trend



Concentration Trend

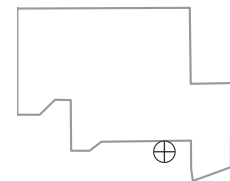
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Probably Decreasing
All Data
Decreasing

Well Location

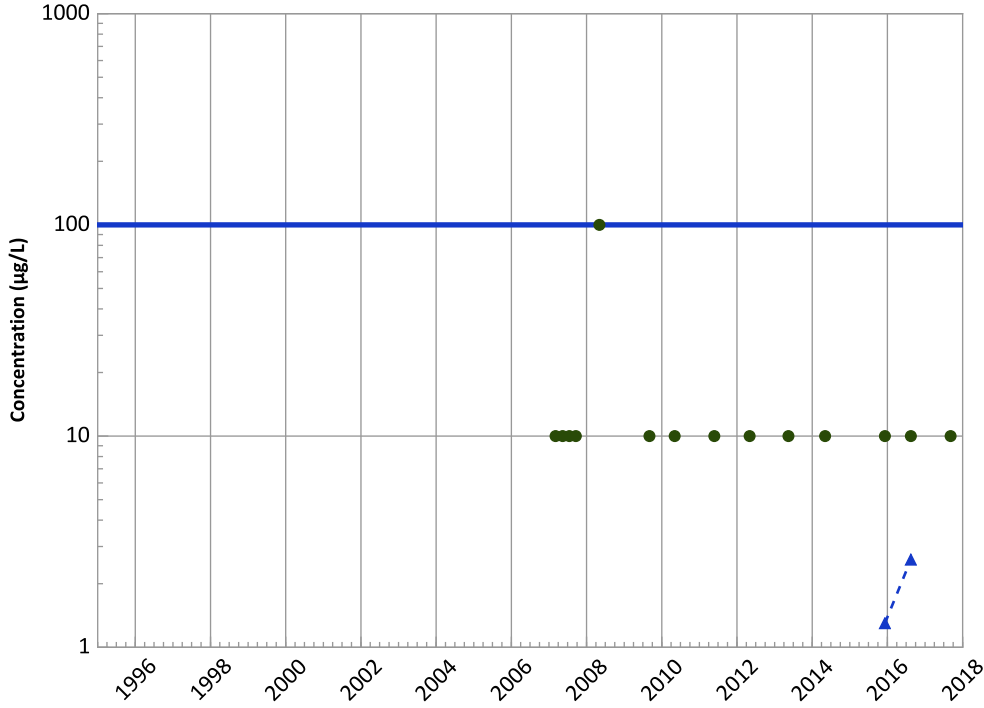


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/06/2007 to 09/06/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1101 in Perched Aquifer
USDOE/NNSA Pantex Plant

Chromium, Total Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

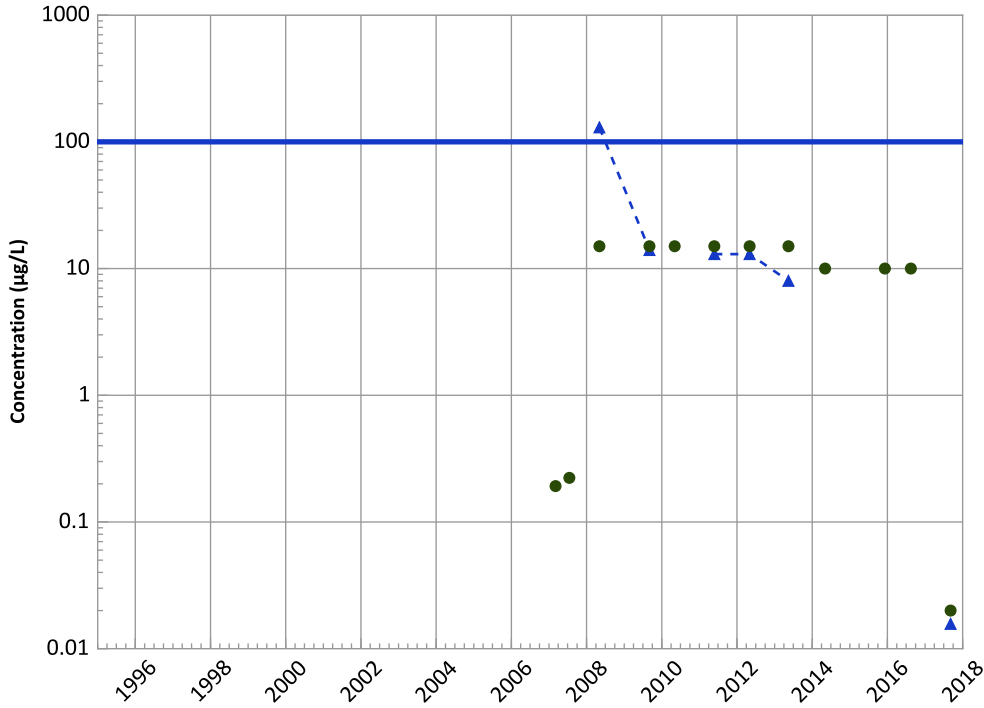
Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

Chromium, Hexavalent Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Detections in Dataset)

All Data

Decreasing

MAROS Linear Regression Method

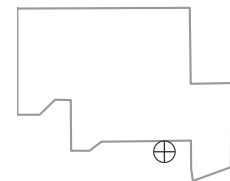
Data ():

N/A (<4 Detections in Dataset)

All Data

Decreasing

Well Location

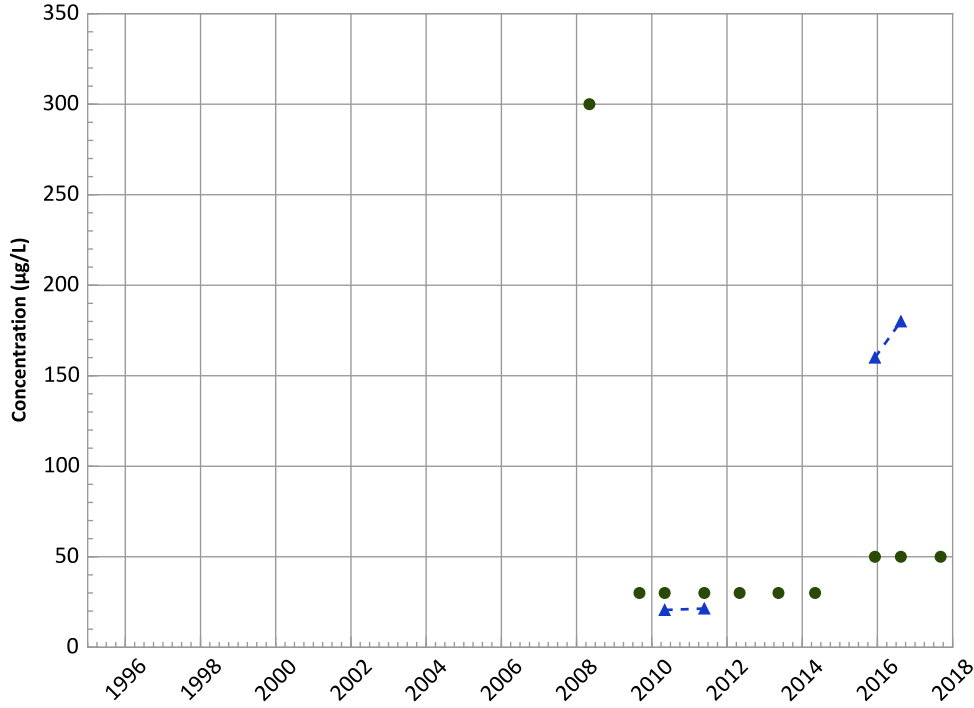


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/06/2007 to 09/06/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1101 in Perched Aquifer
USDOE/NNSA Pantex Plant

Aluminum Trend



Concentration Trend

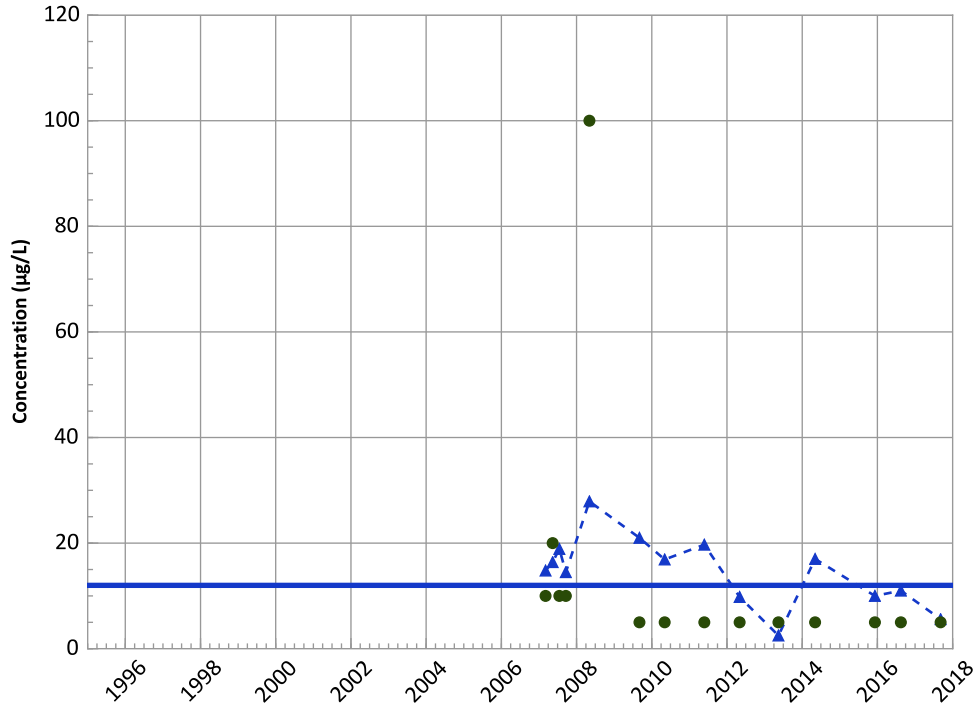
MAROS Mann-Kendall Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Increasing

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Increasing

Arsenic Trend



Concentration Trend

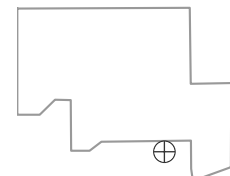
MAROS Mann-Kendall Method

Data ():
No Trend
All Data
Decreasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
Decreasing

Well Location

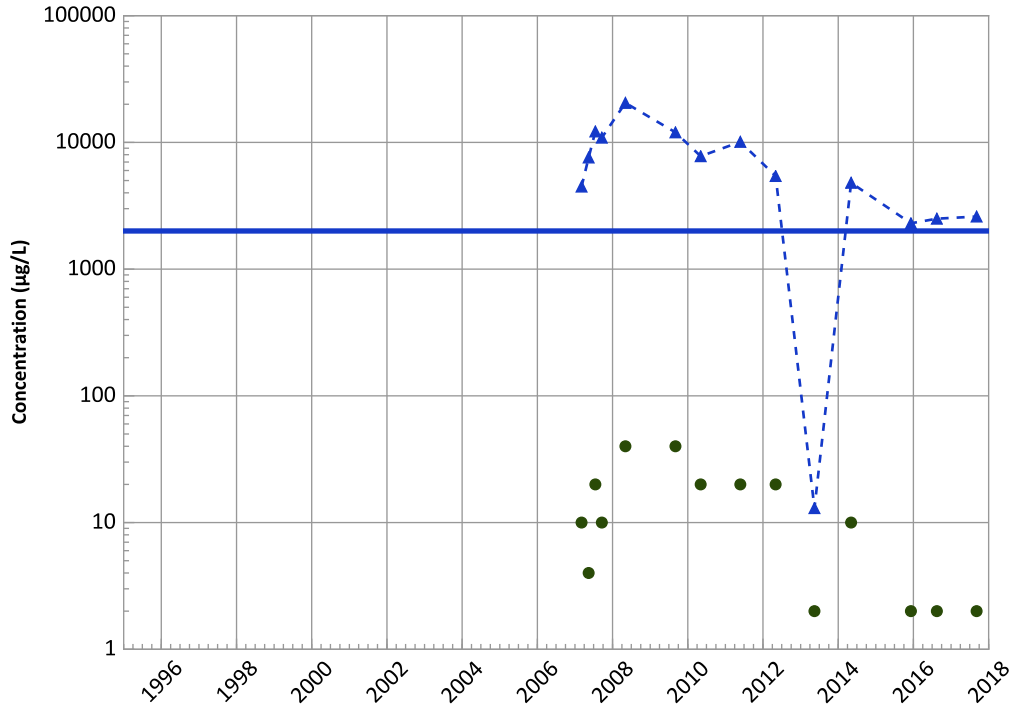


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/06/2007 to 09/06/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1101 in Perched Aquifer
USDOE/NNSA Pantex Plant

Barium Trend



Concentration Trend

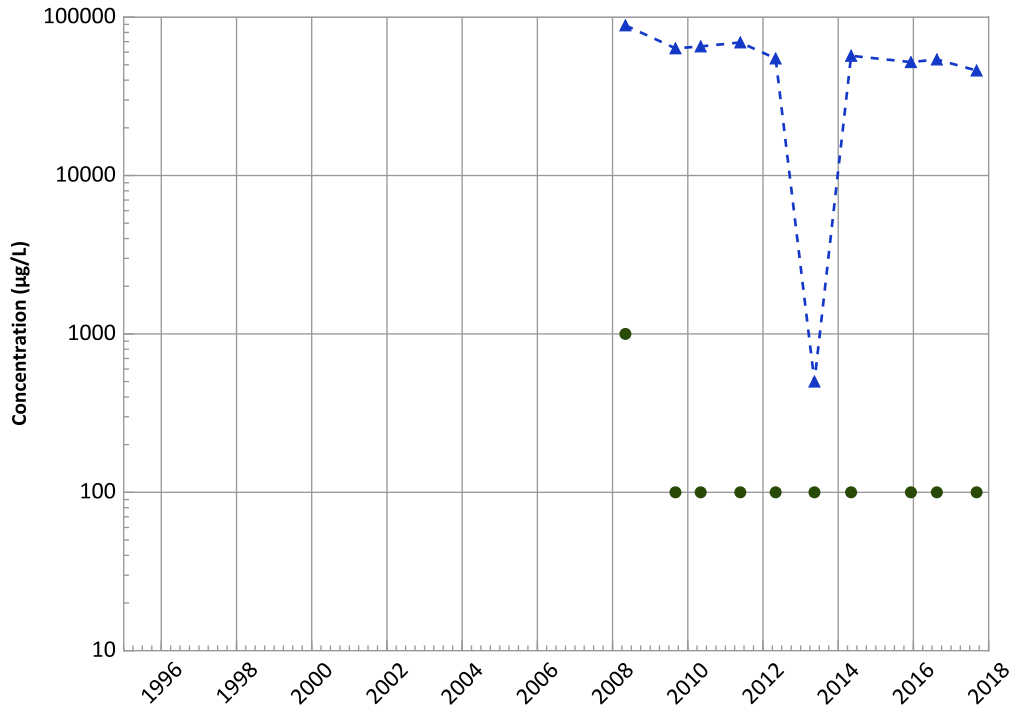
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
Probably Decreasing

Calcium Trend



Concentration Trend

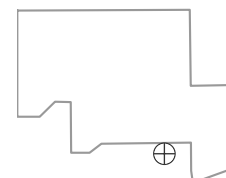
MAROS Mann-Kendall Method

Data ():
Stable
All Data
Decreasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
Stable

Well Location

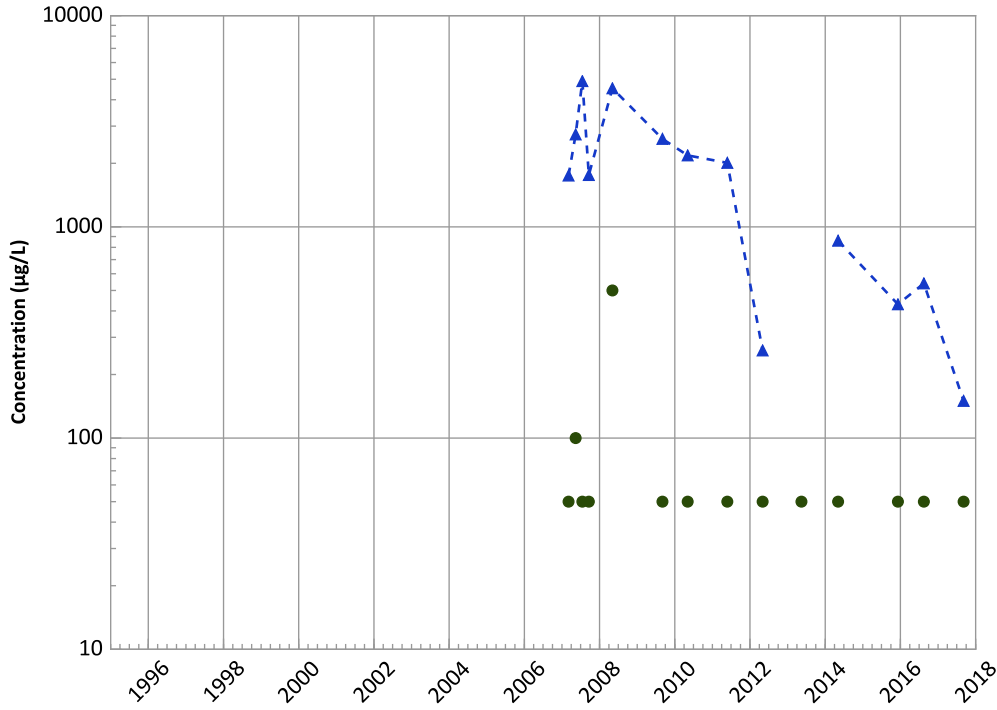


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/06/2007 to 09/06/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1101 in Perched Aquifer
USDOE/NNSA Pantex Plant

Iron Trend



Concentration Trend

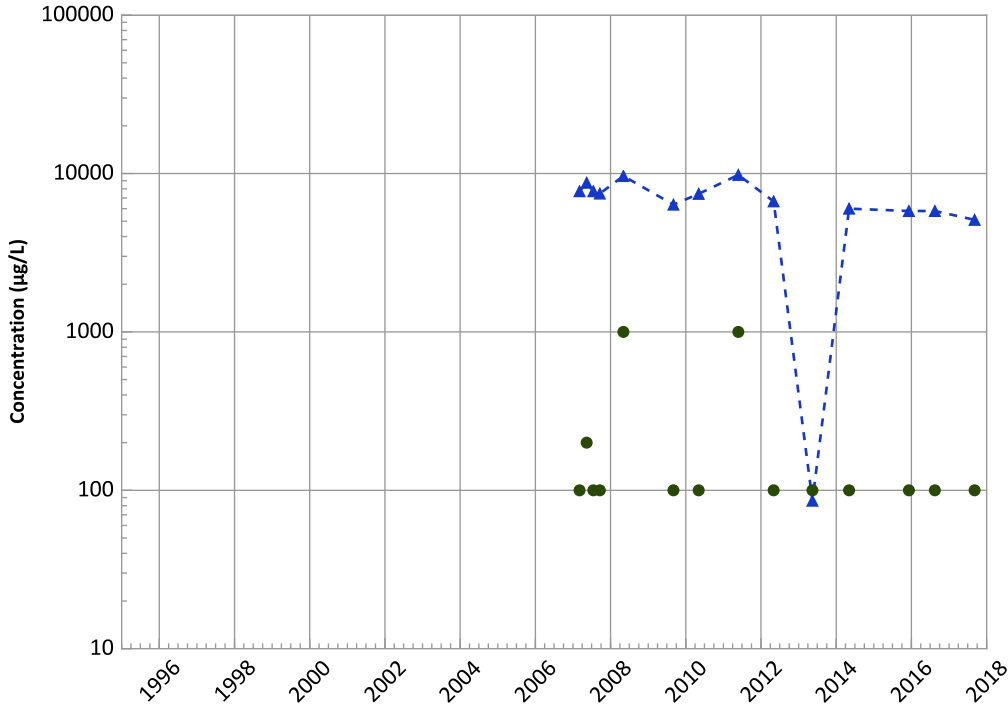
MAROS Mann-Kendall Method

Data ():
No Trend
All Data
Decreasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
Decreasing

Potassium Trend



Concentration Trend

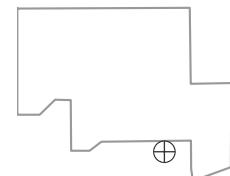
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
Stable

Well Location

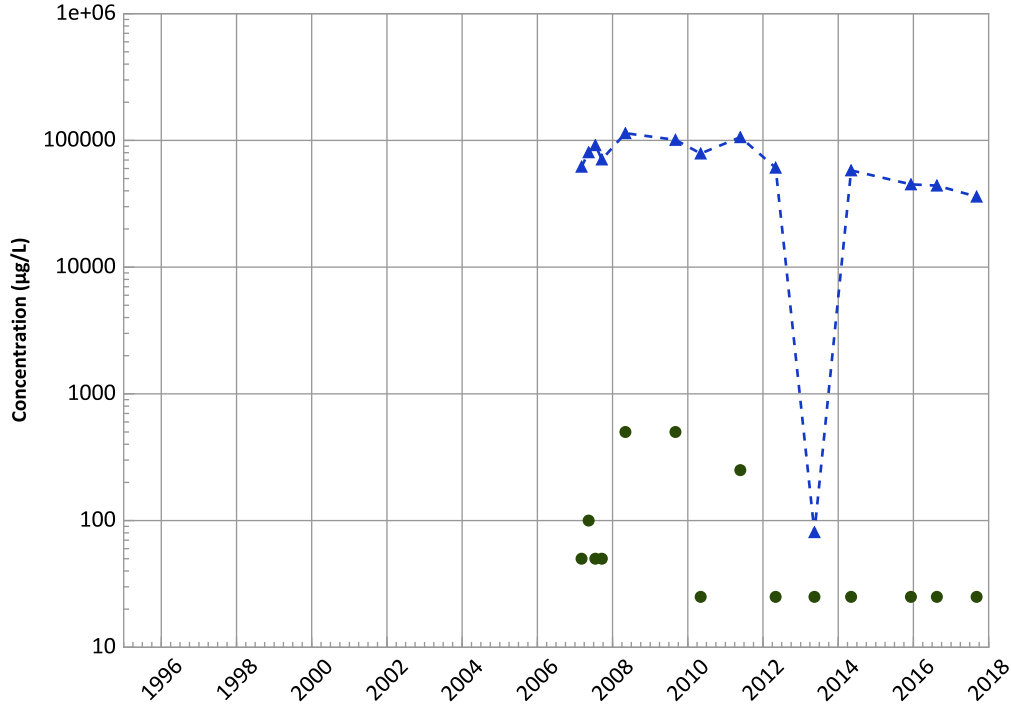


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/06/2007 to 09/06/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1101 in Perched Aquifer
USDOE/NNSA Pantex Plant

Magnesium Trend



Concentration Trend

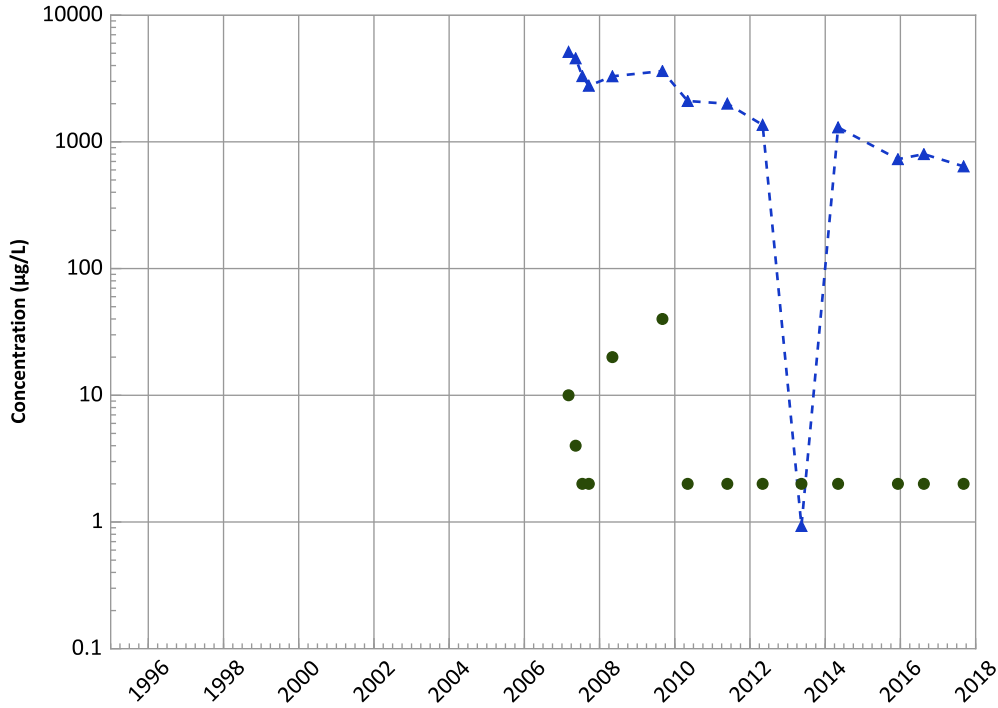
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
Stable

Manganese Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

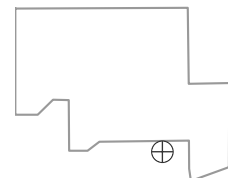
MAROS Linear Regression Method

Data ():
No Trend
All Data
Probably Decreasing

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/06/2007 to 09/06/2017
Analysis Date: 03/21/2018

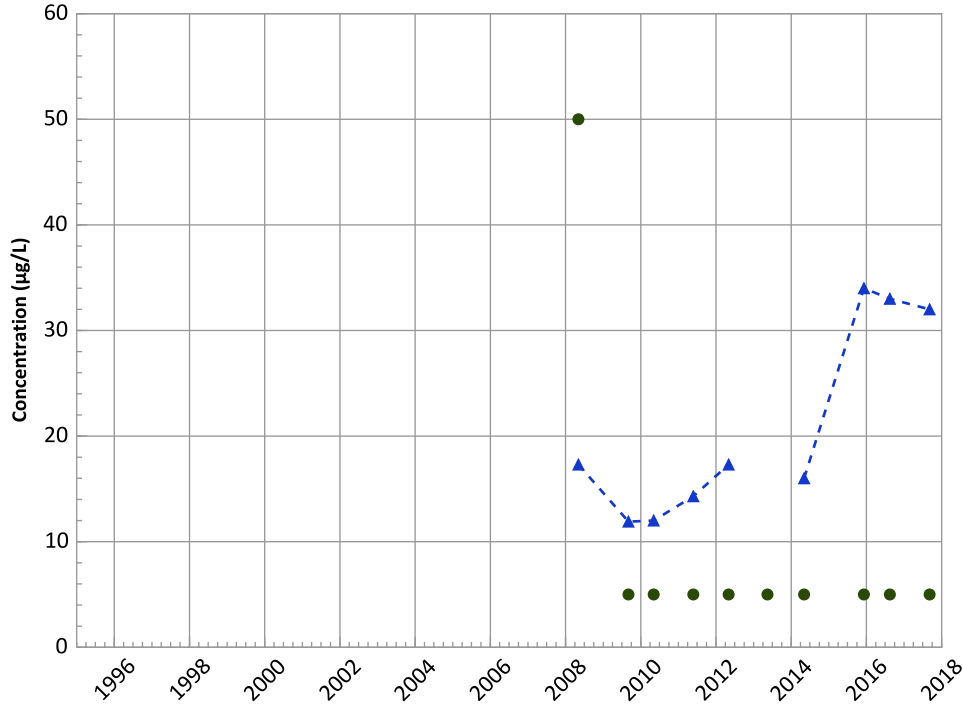
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1101 in Perched Aquifer
USDOE/NNSA Pantex Plant

Molybdenum Trend



Concentration Trend

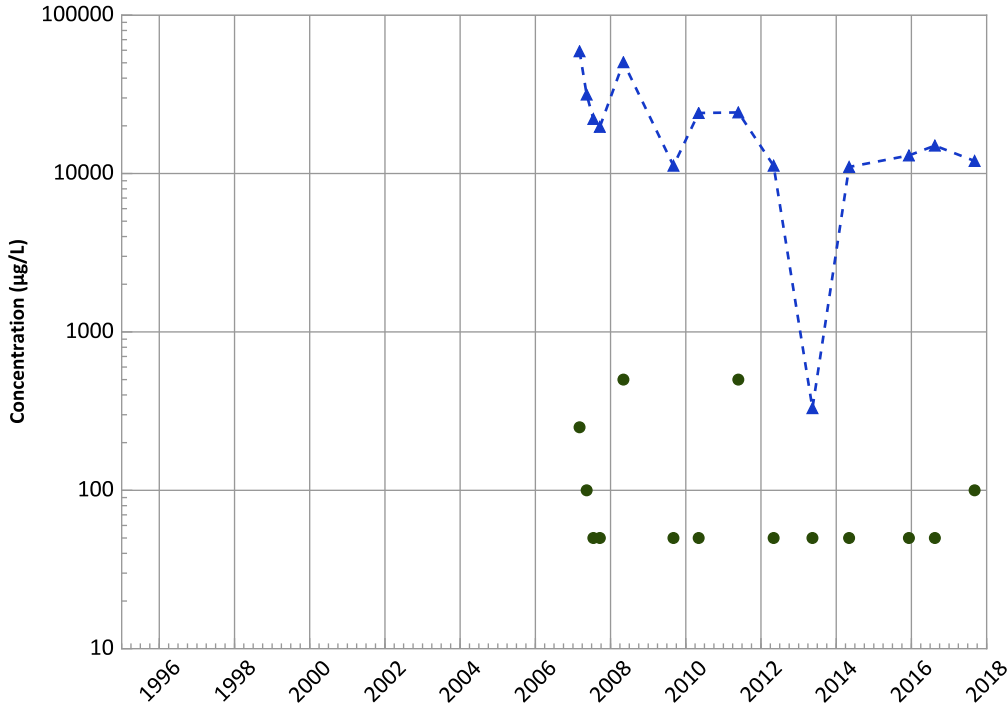
MAROS Mann-Kendall Method

Data ():
No Trend
All Data
Probably Increasing

MAROS Linear Regression Method

Data ():
Probably Increasing
All Data
Increasing

Sodium Trend



Concentration Trend

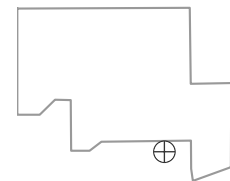
MAROS Mann-Kendall Method

Data ():
No Trend
All Data
Decreasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
Probably Decreasing

Well Location

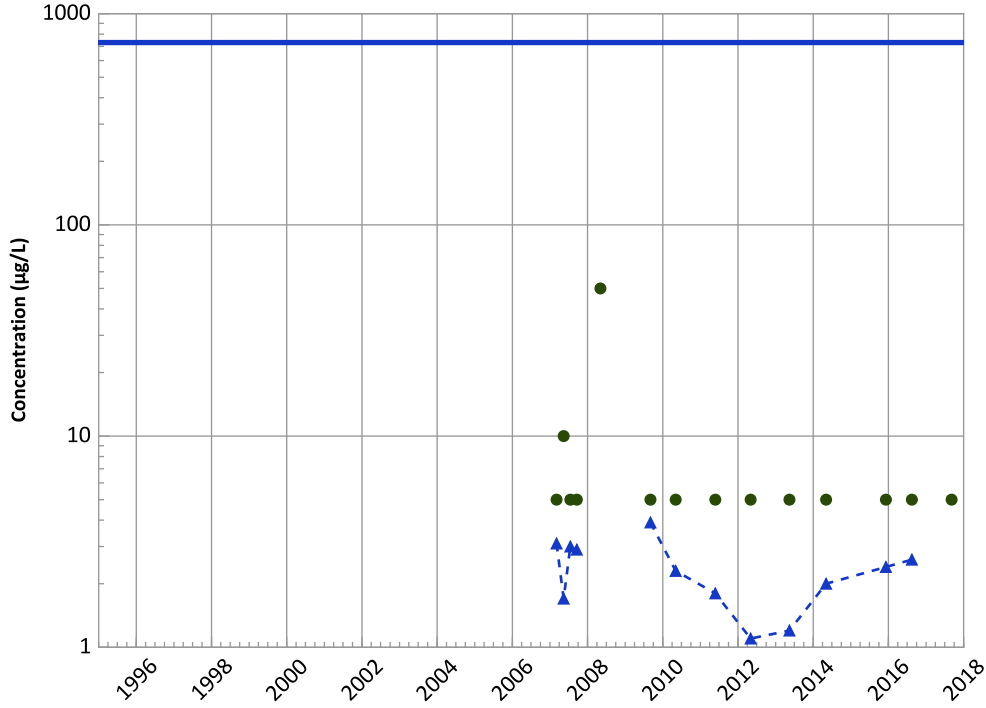


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/06/2007 to 09/06/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1101 in Perched Aquifer
USDOE/NNSA Pantex Plant

Nickel Trend



Concentration Trend

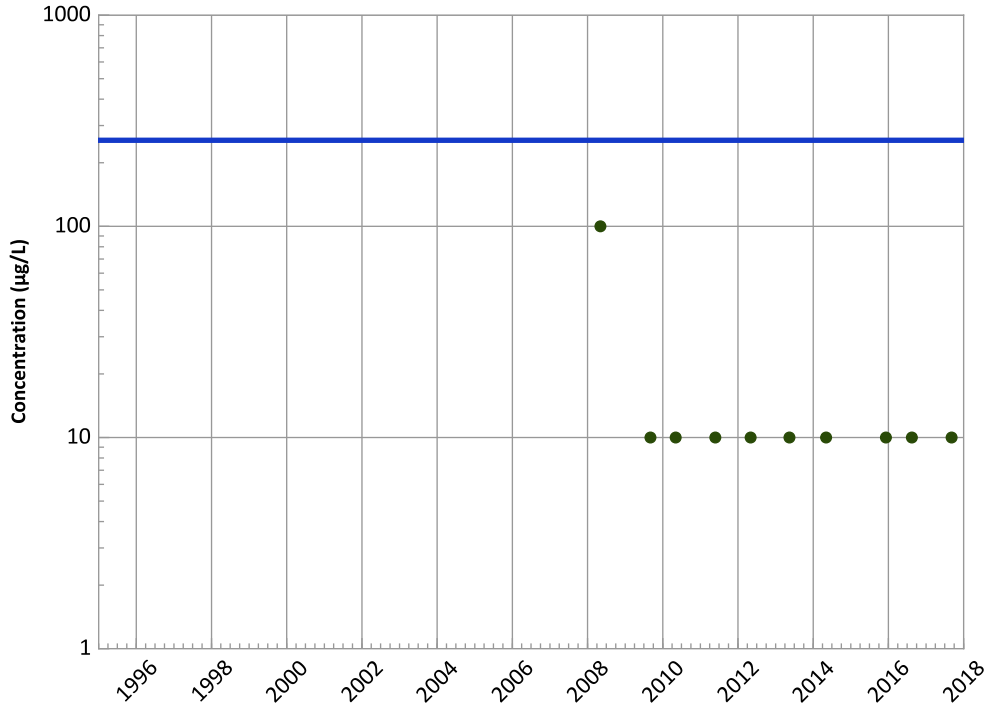
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Stable

Vanadium Trend



Concentration Trend

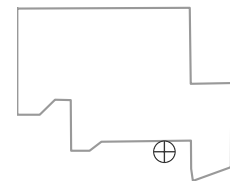
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

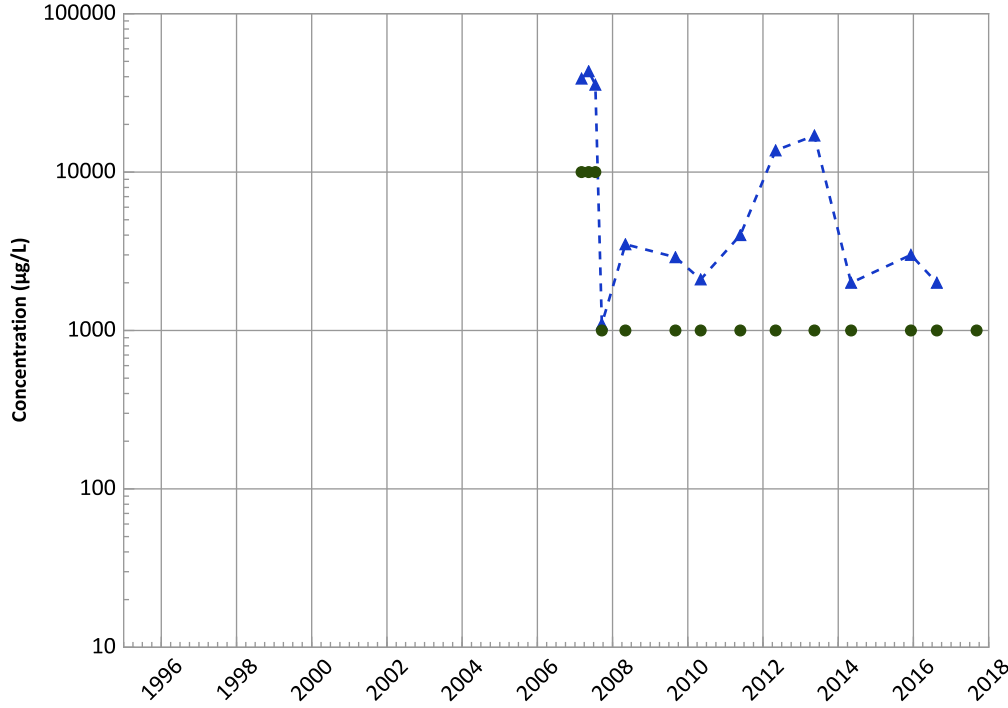


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/06/2007 to 09/06/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1101 in Perched Aquifer
USDOE/NNSA Pantex Plant

Total Organic Carbon Trend



Concentration Trend

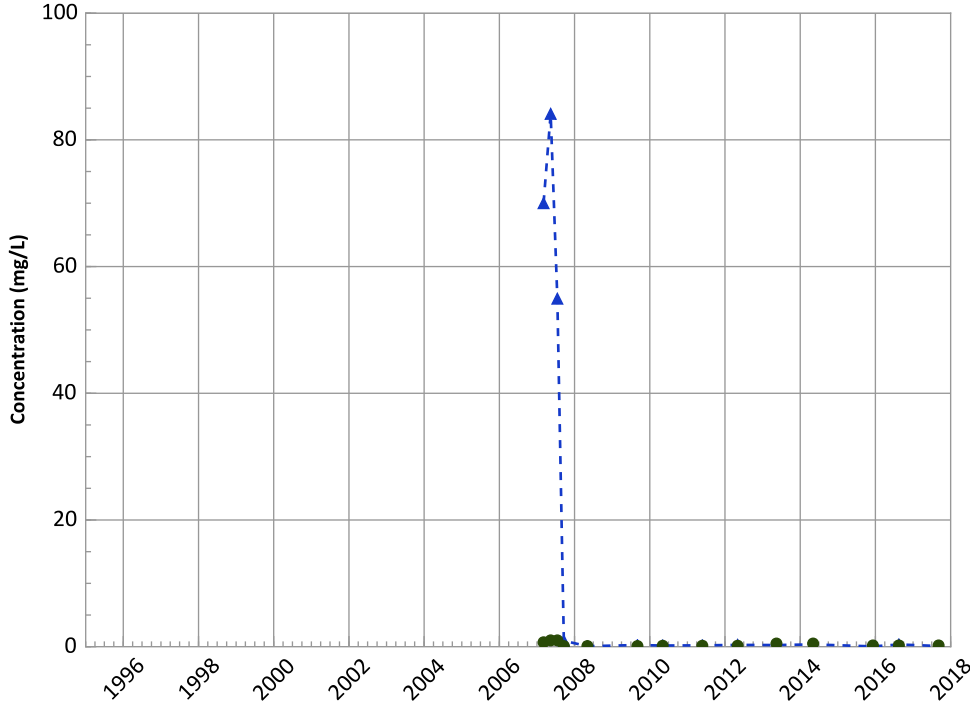
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Probably Decreasing

Total Volatile Fatty Acids Trend



Concentration Trend

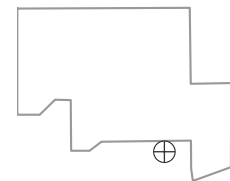
MAROS Mann-Kendall Method

Data ():
Stable
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Stable
All Data
Decreasing

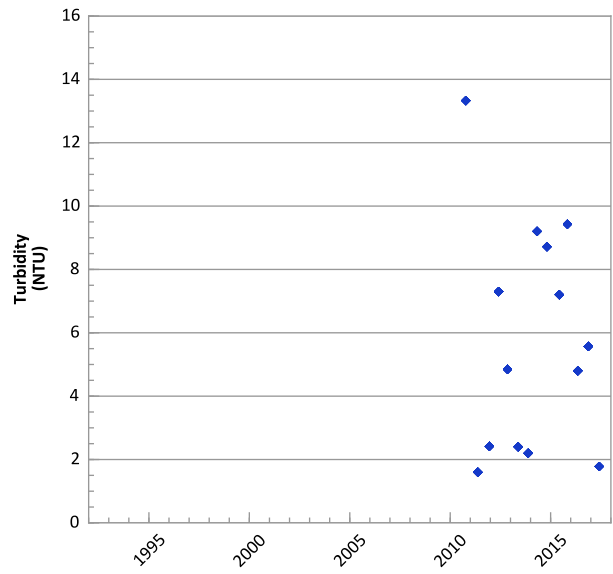
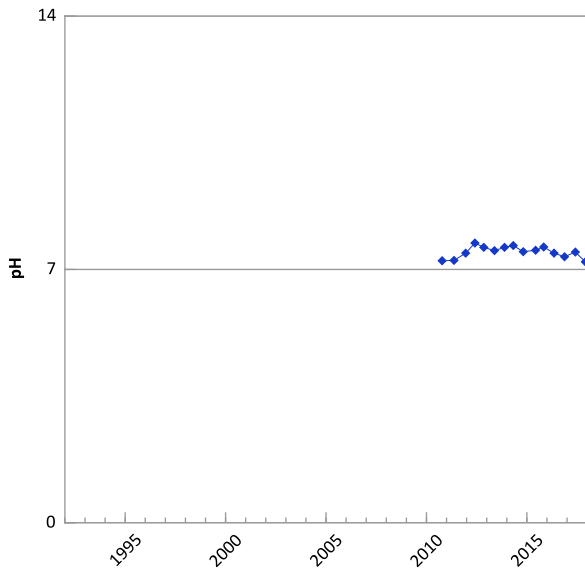
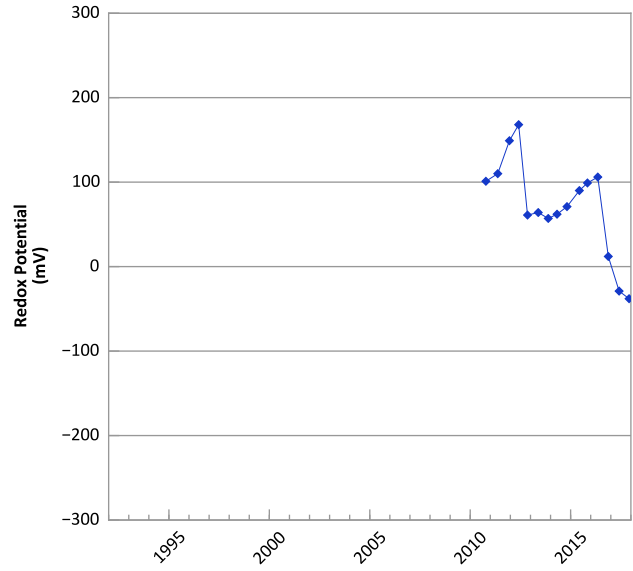
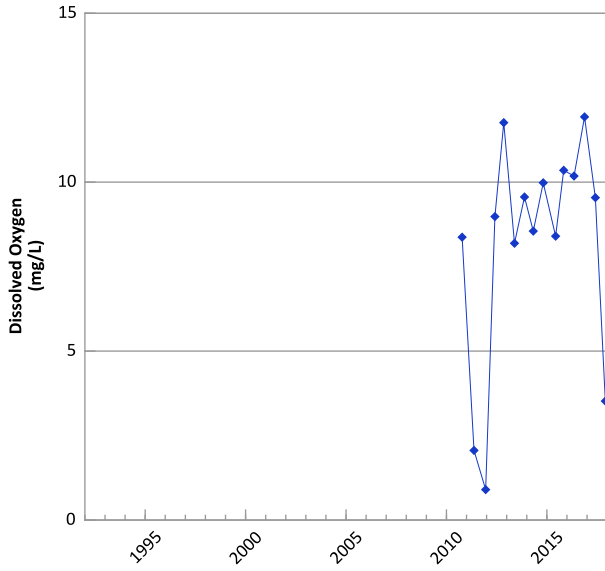
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/06/2007 to 09/06/2017
Analysis Date: 03/21/2018

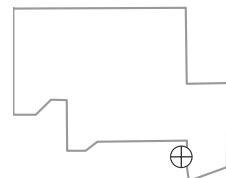
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1120 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



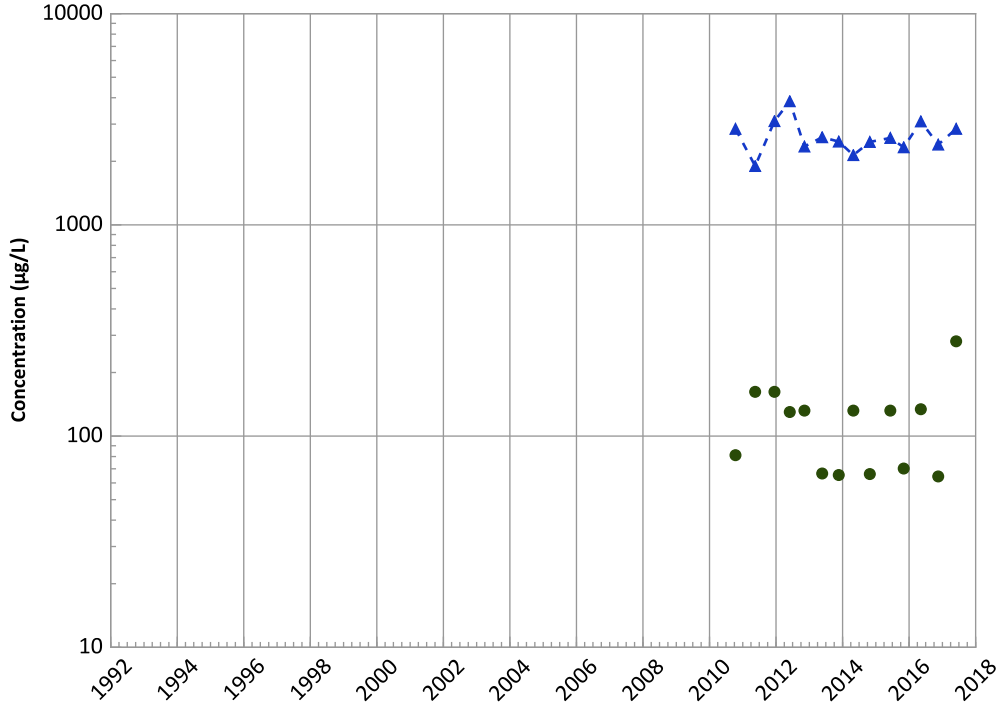
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 10/13/2010 to 06/01/2017
 Analysis Date: 03/21/2018

Well Location



PTX06-1120 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

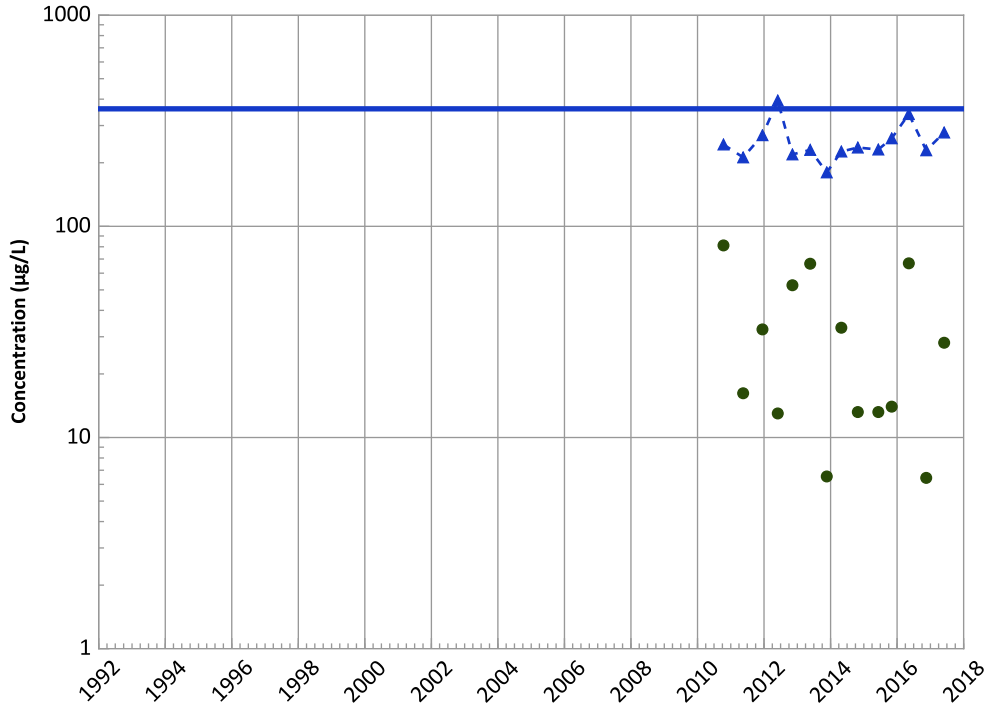
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Stable
All Data
Decreasing

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

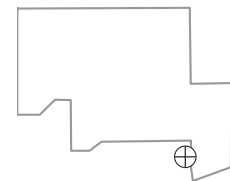
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
No Trend

MAROS Linear Regression Method

Data ():
Stable
All Data
No Trend

Well Location

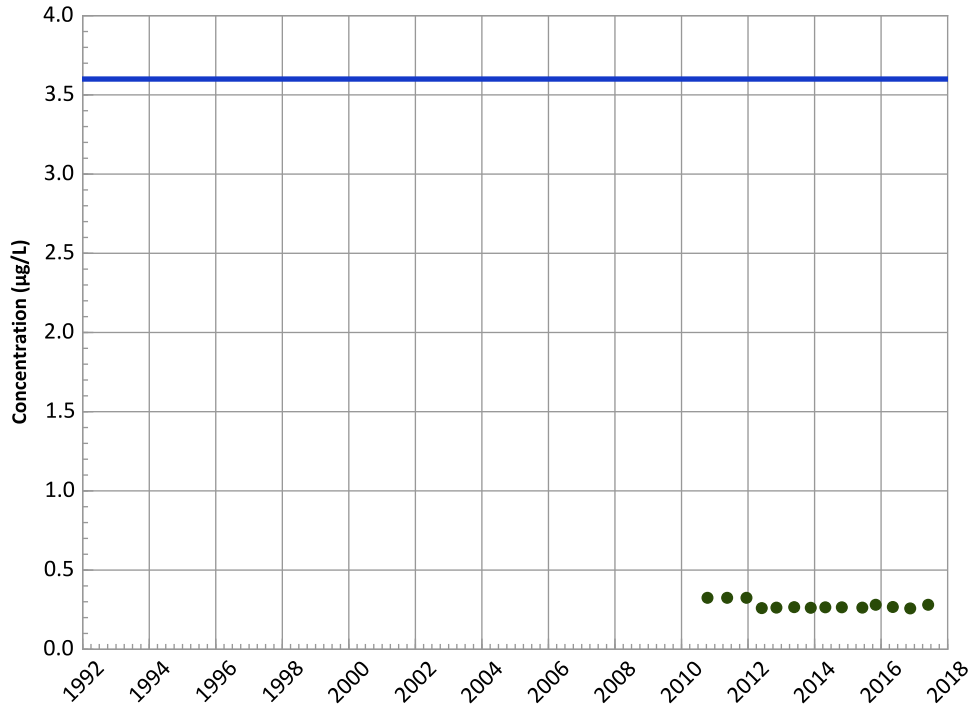


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/13/2010 to 06/01/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1120 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

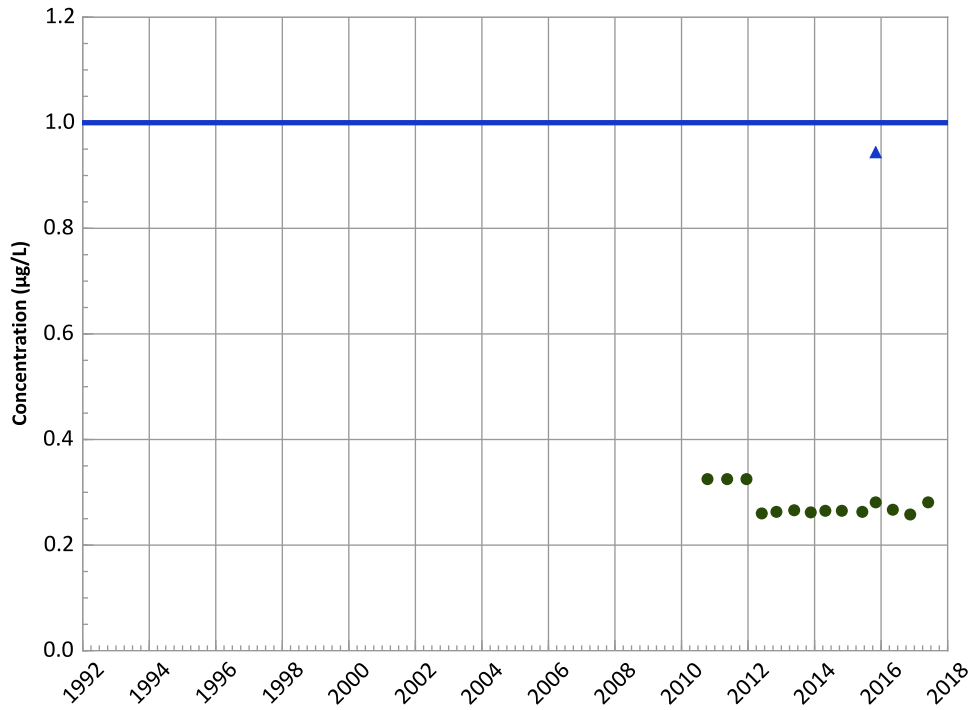
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

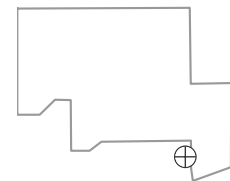
MAROS Mann-Kendall Method

Data ():
N/A (<4 Detections in Dataset)
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
N/A (<4 Detections in Dataset)

Well Location

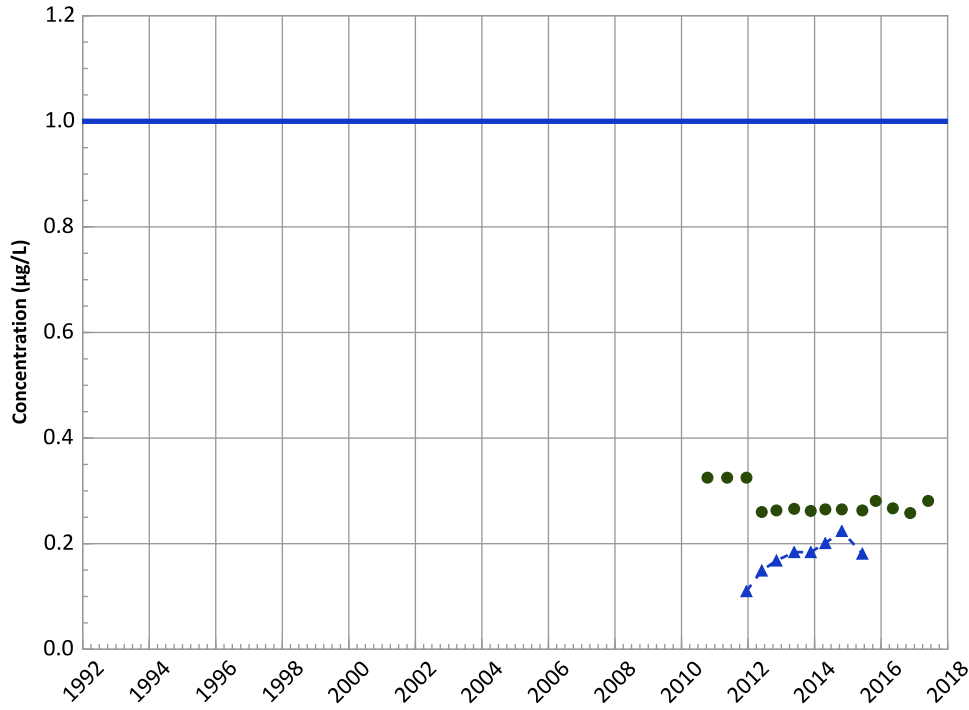


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/13/2010 to 06/01/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1120 in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

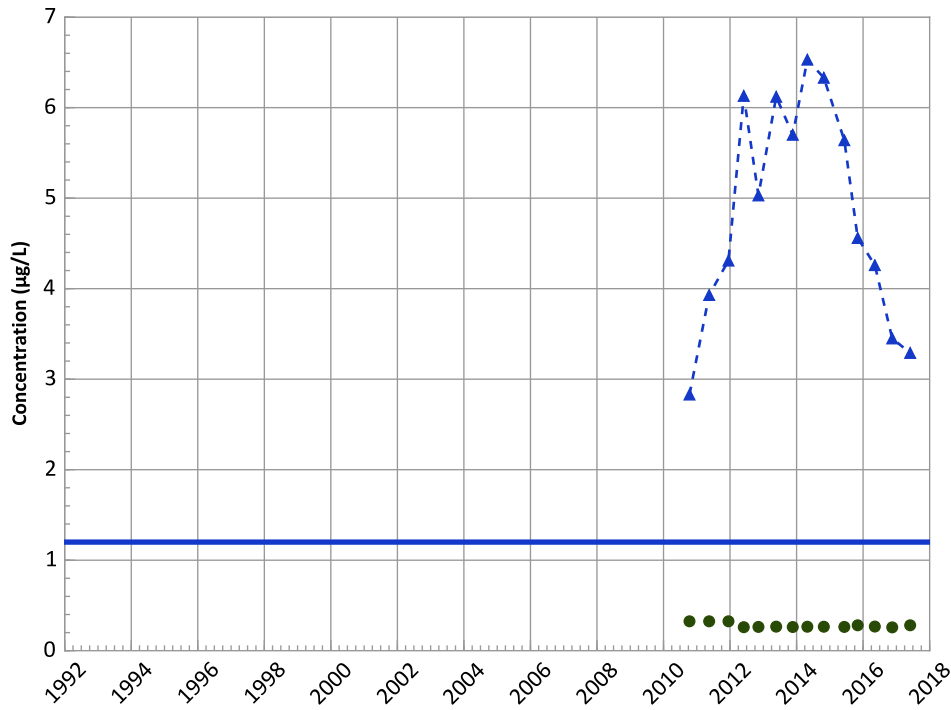
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

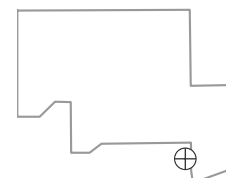
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

Well Location

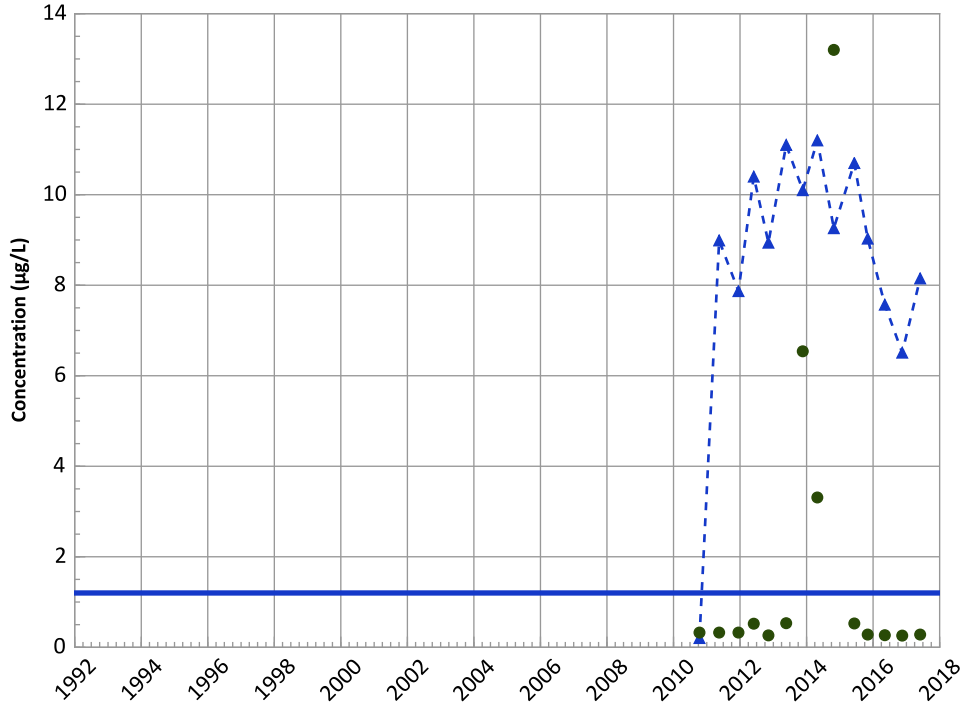


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/13/2010 to 06/01/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1120 in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

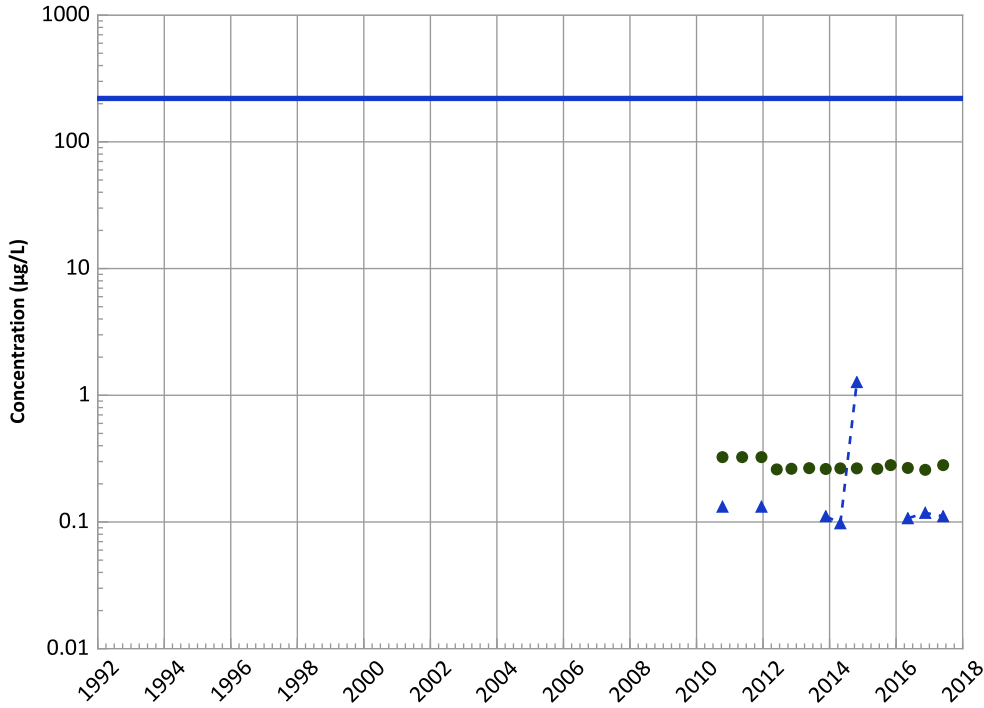
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Probably Increasing

1,3,5-Trinitrobenzene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

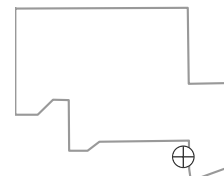
MAROS Linear Regression Method

Data ():
No Trend
All Data
No Trend

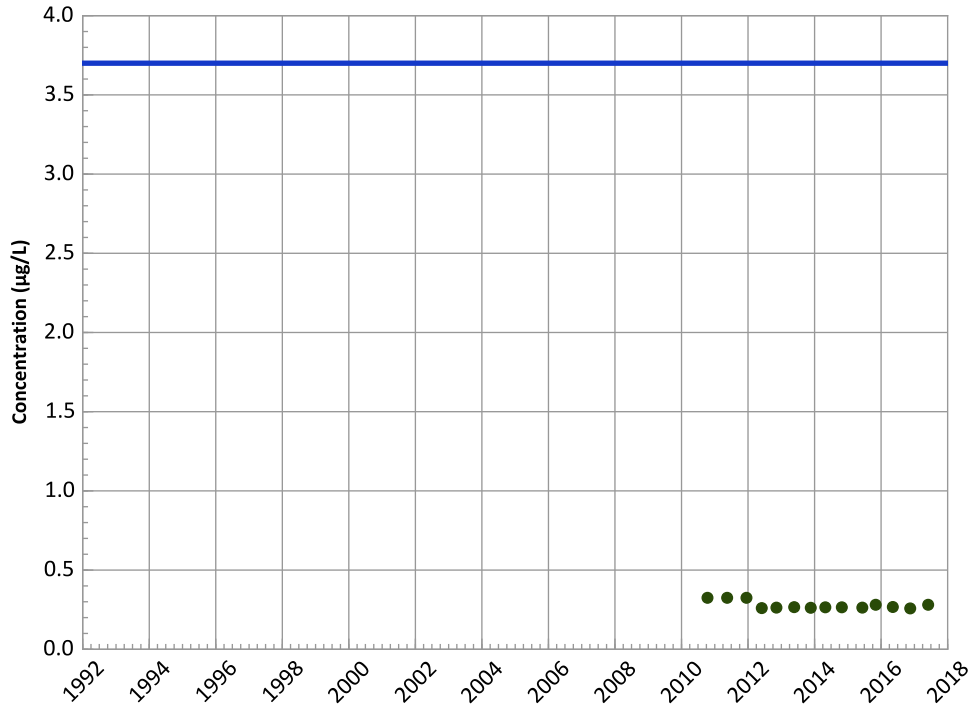
Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/13/2010 to 06/01/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



**PTX06-1120 in Perched Aquifer
USDOE/NNSA Pantex Plant
1,3-Dinitrobenzene Trend**



Concentration Trend

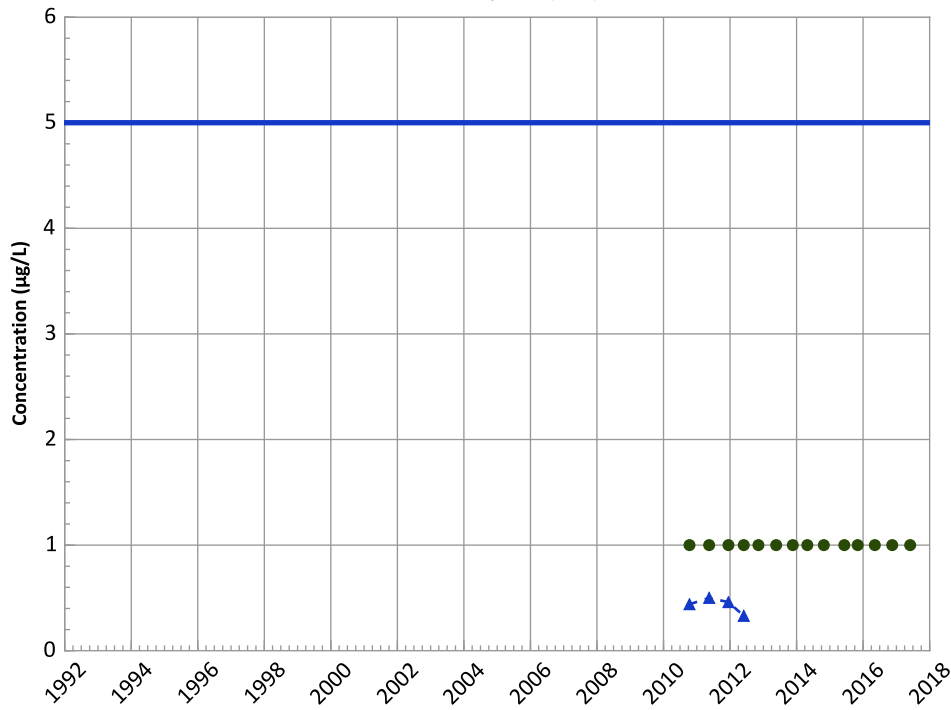
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Tetrachloroethylene (PCE) Trend



Concentration Trend

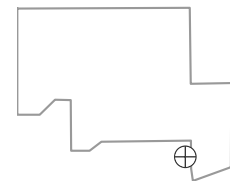
MAROS Mann-Kendall Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Probably Increasing

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Stable

Well Location

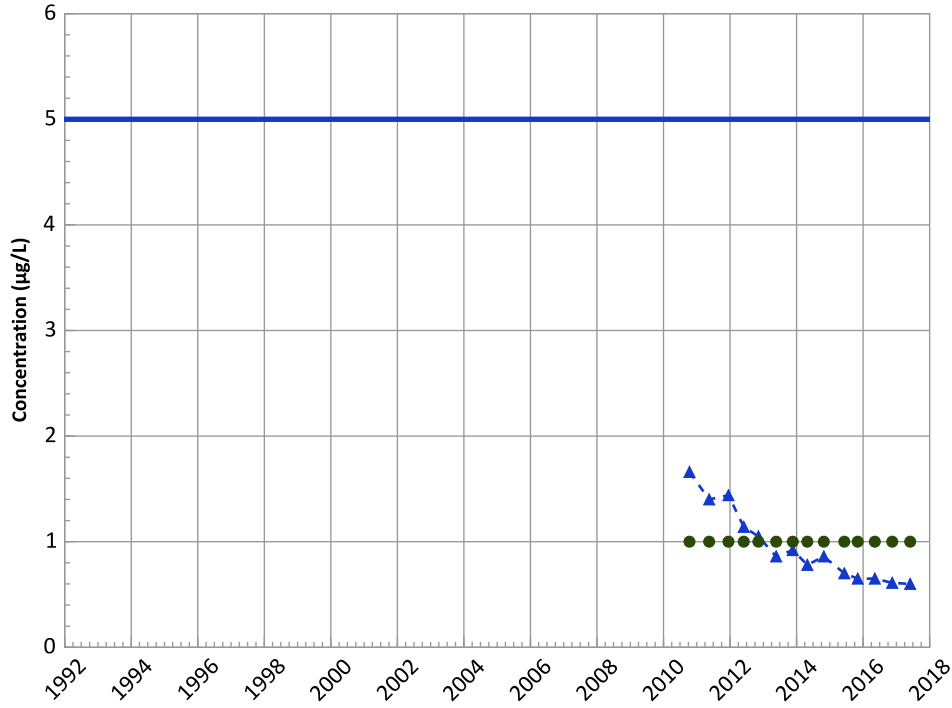


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/13/2010 to 06/01/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1120 in Perched Aquifer
USDOE/NNSA Pantex Plant

Trichloroethene Trend



Concentration Trend

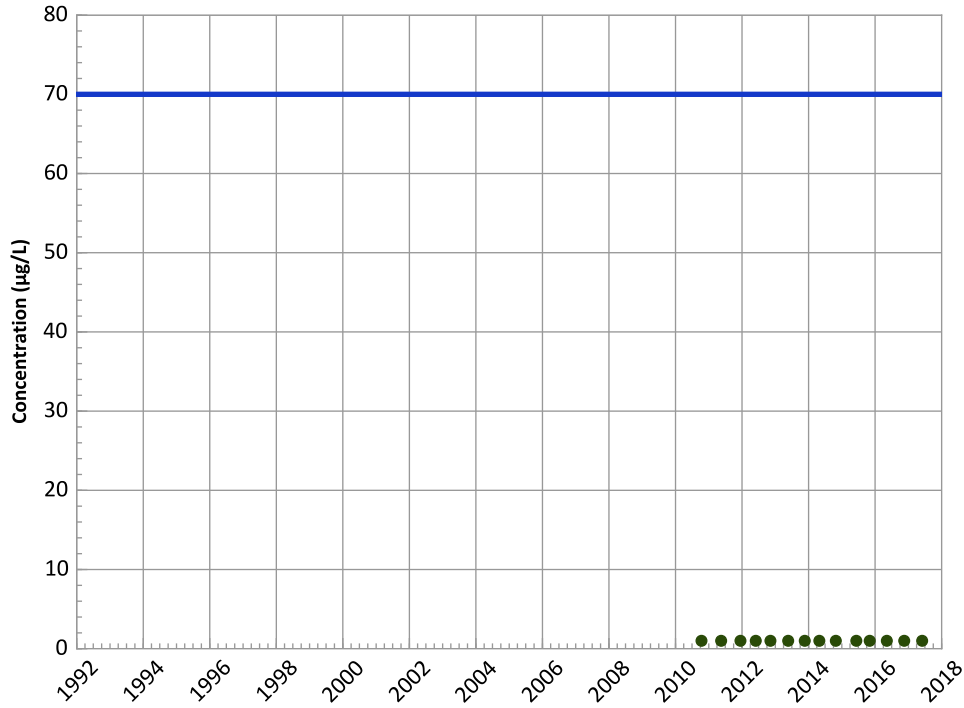
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

cis-1,2-Dichloroethene Trend



Concentration Trend

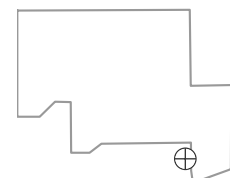
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

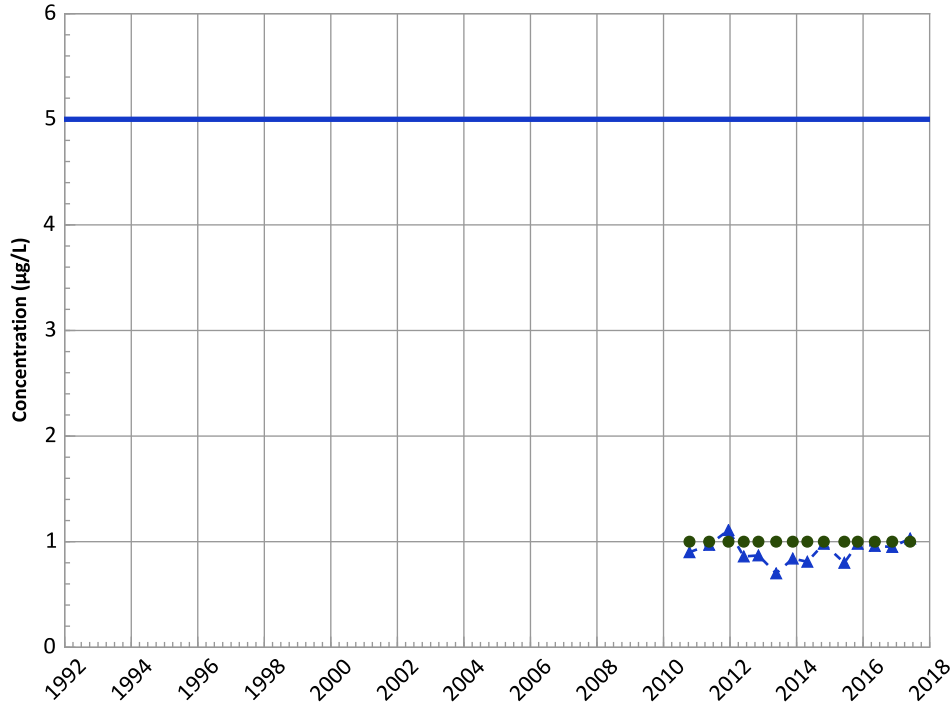
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/13/2010 to 06/01/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1120 in Perched Aquifer
USDOE/NNSA Pantex Plant
1,2-Dichloroethane Trend**



Concentration Trend

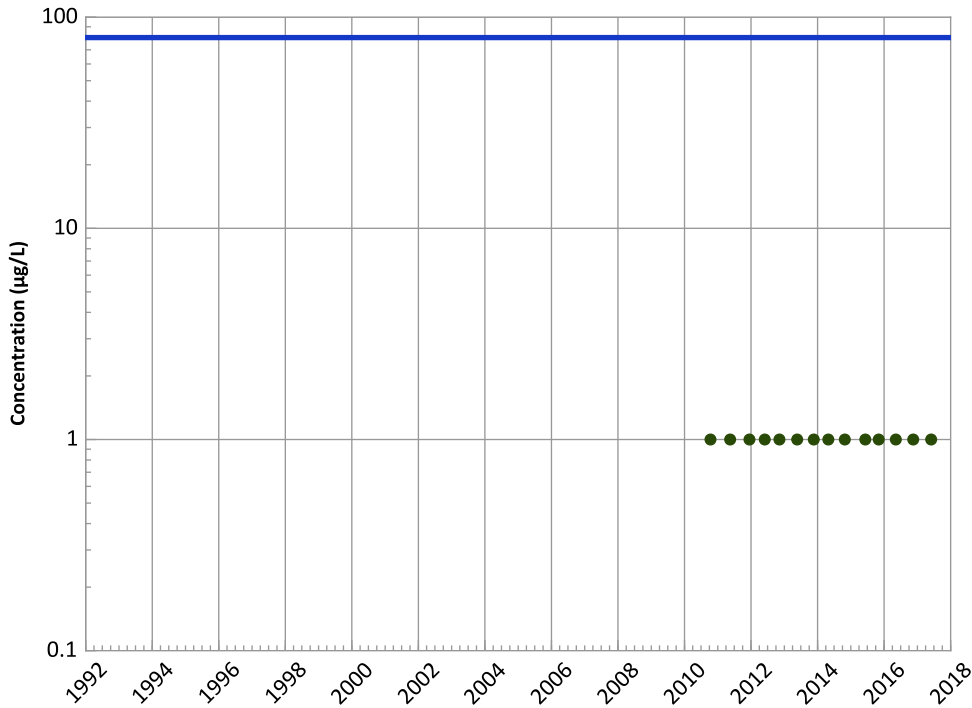
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
No Trend

MAROS Linear Regression Method

Data ():
Probably Increasing
All Data
No Trend

Chloroform Trend



Concentration Trend

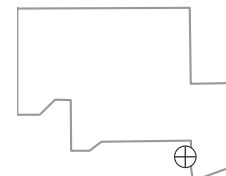
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

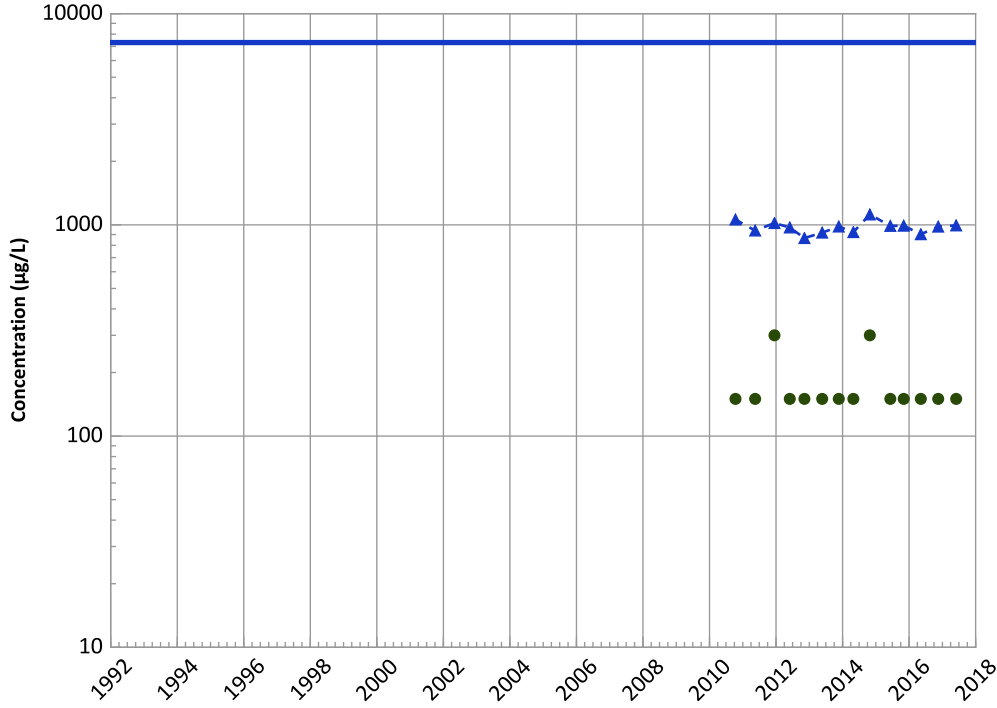


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/13/2010 to 06/01/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1120 in Perched Aquifer
USDOE/NNSA Pantex Plant

Boron Trend



Concentration Trend

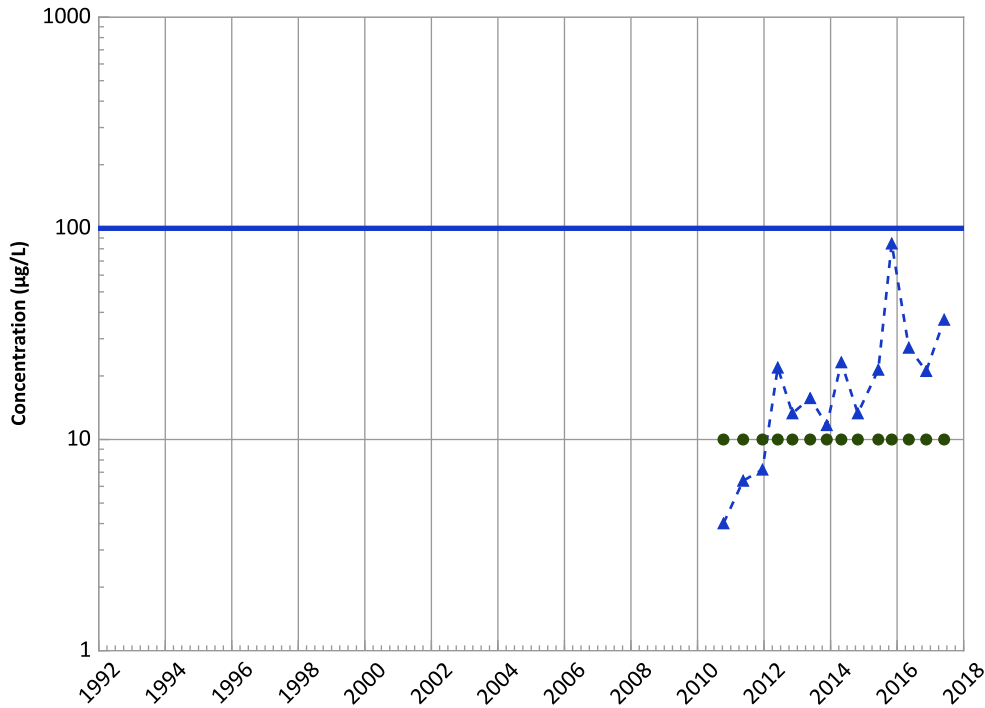
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
No Trend

MAROS Linear Regression Method

Data ():
No Trend
All Data
Decreasing

Chromium, Total Trend



Concentration Trend

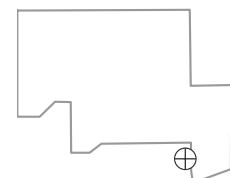
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Probably Increasing
All Data
Increasing

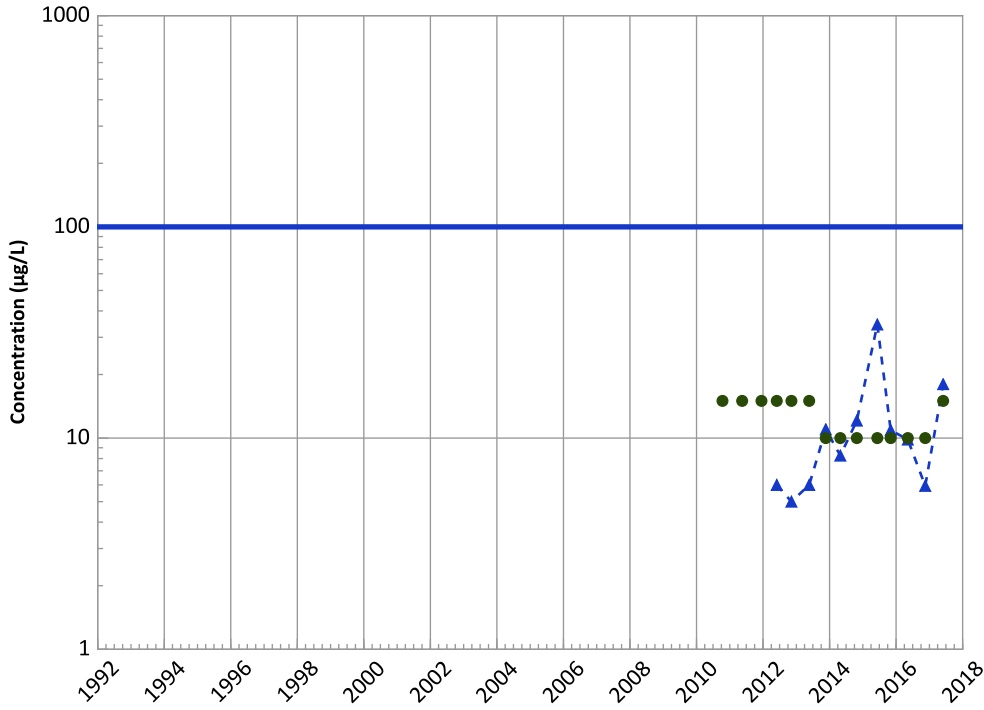
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/13/2010 to 06/01/2017
Analysis Date: 03/21/2018

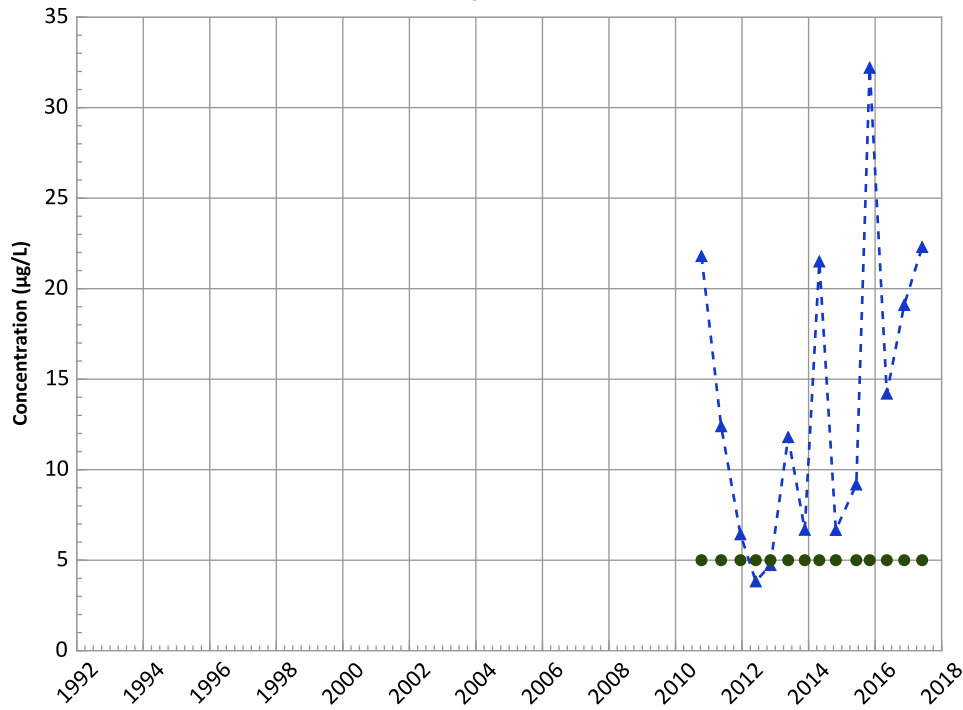
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1120 in Perched Aquifer
USDOE/NNSA Pantex Plant
Chromium, Hexavalent Trend**



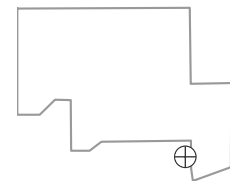
Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 Increasing
 All Data
 Probably Increasing
MAROS Linear Regression Method
 Data ():
 No Trend
 All Data
 Probably Increasing

Manganese Trend



Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 Increasing
 All Data
 Probably Increasing
MAROS Linear Regression Method
 Data ():
 Increasing
 All Data
 Probably Increasing

Well Location

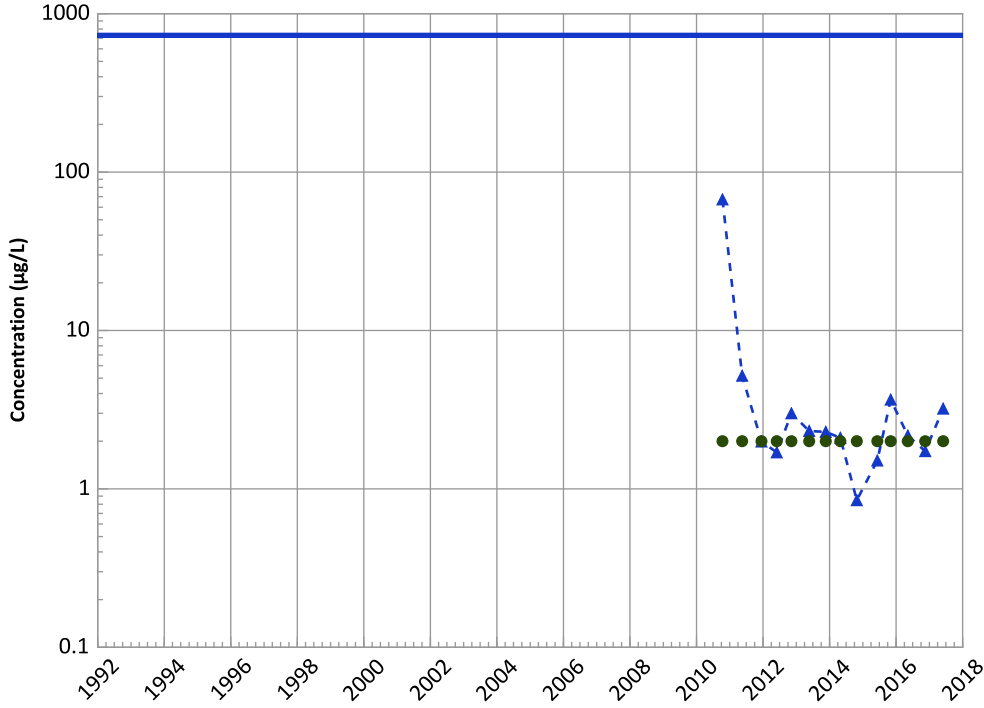


Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 10/13/2010 to 06/01/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1120 in Perched Aquifer
USDOE/NNSA Pantex Plant

Nickel Trend



Concentration Trend

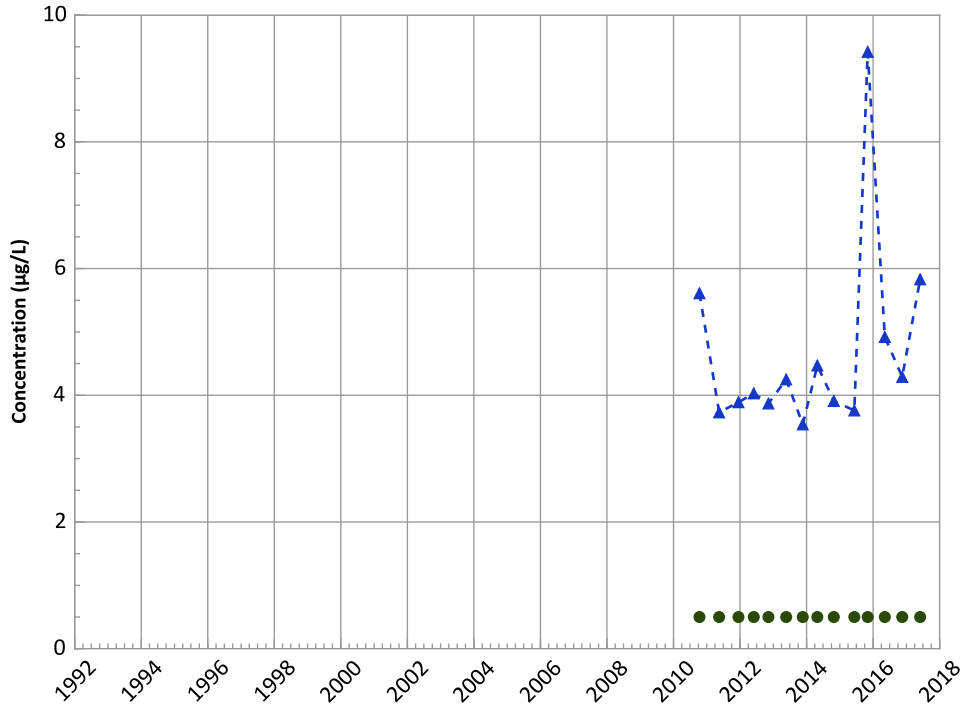
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Stable
All Data
Decreasing

Molybdenum Trend



Concentration Trend

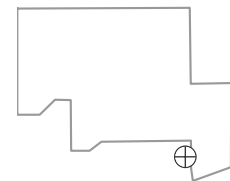
MAROS Mann-Kendall Method

Data ():
No Trend
All Data
Probably Increasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
No Trend

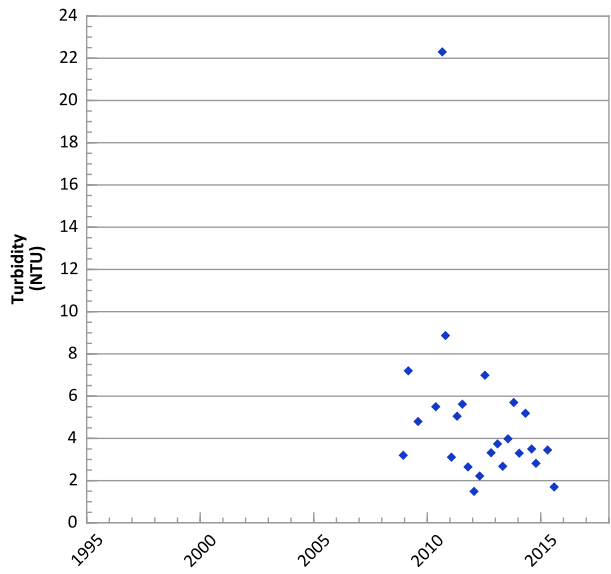
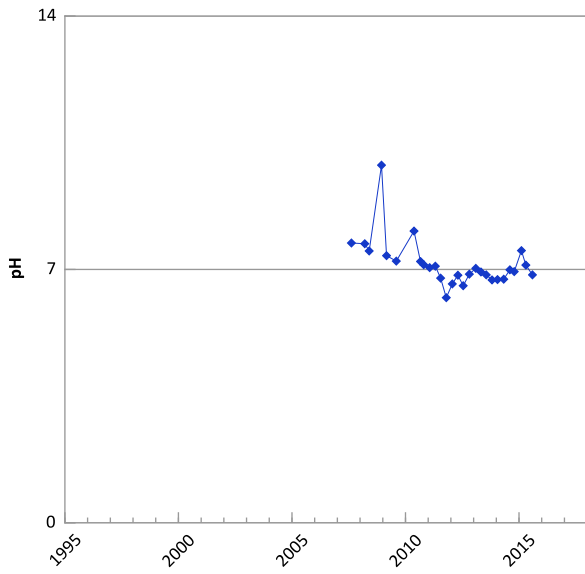
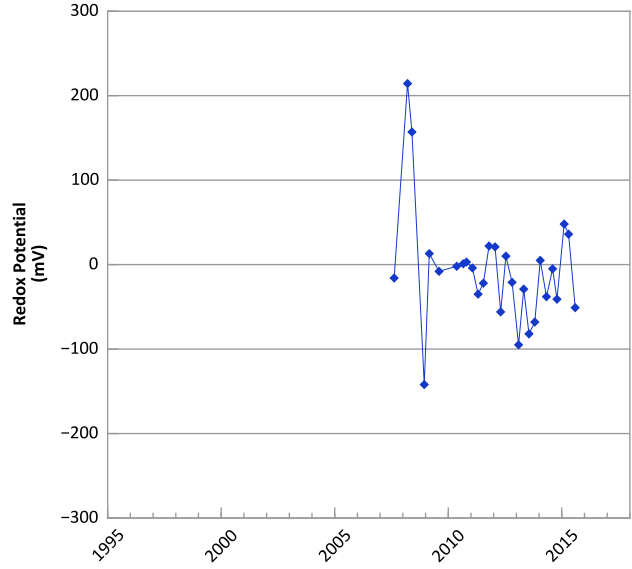
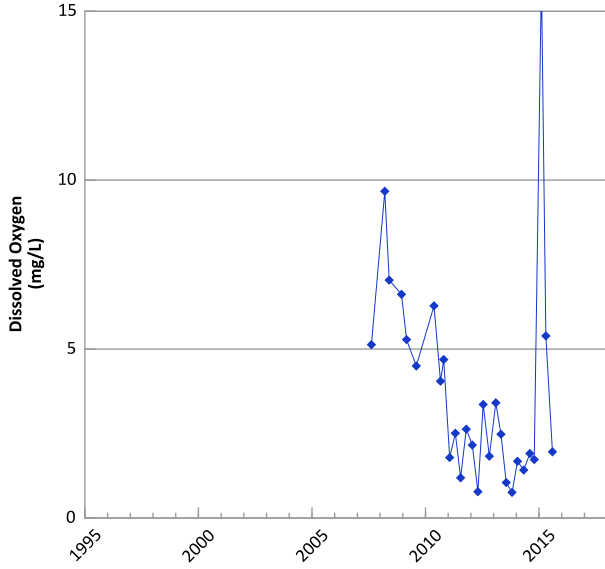
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/13/2010 to 06/01/2017
Analysis Date: 03/21/2018

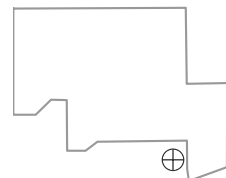
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1123 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



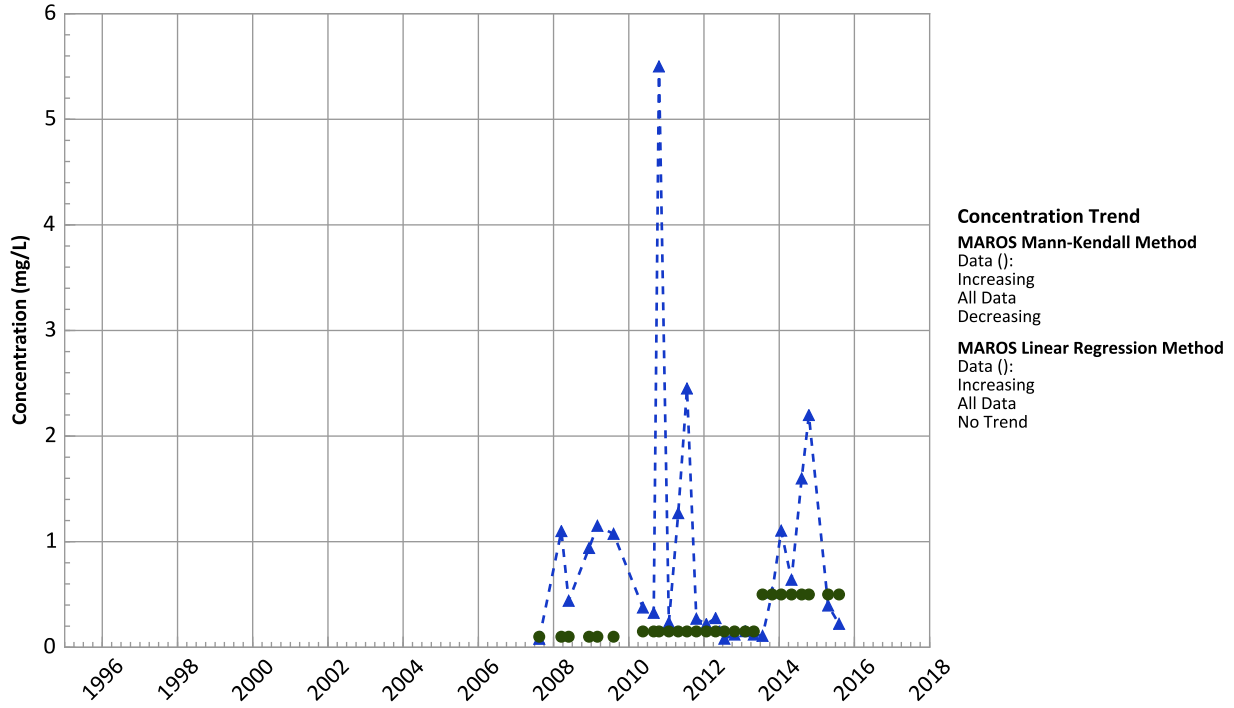
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 08/15/2007 to 08/05/2015
 Analysis Date: 03/21/2018

Well Location



PTX06-1123 in Perched Aquifer
USDOE/NNSA Pantex Plant

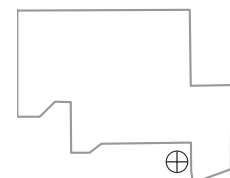
Total Volatile Fatty Acids Trend



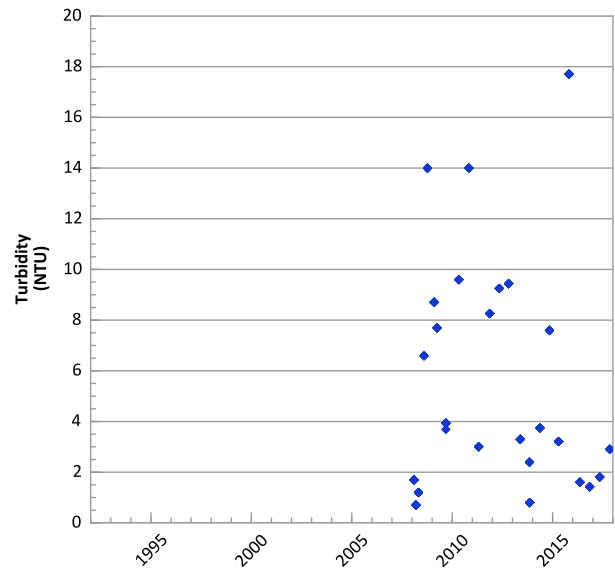
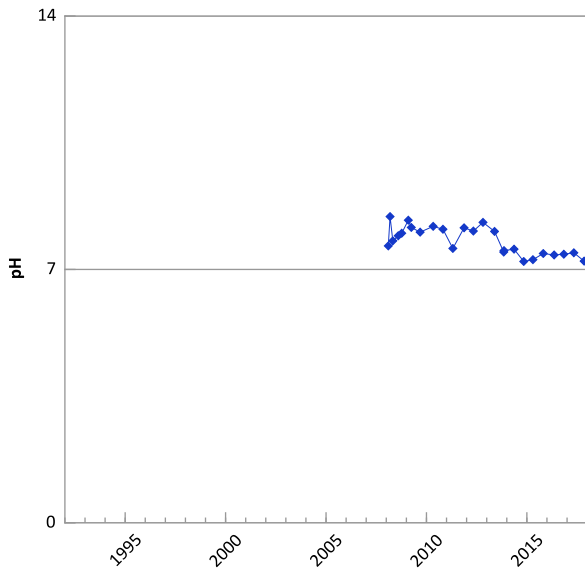
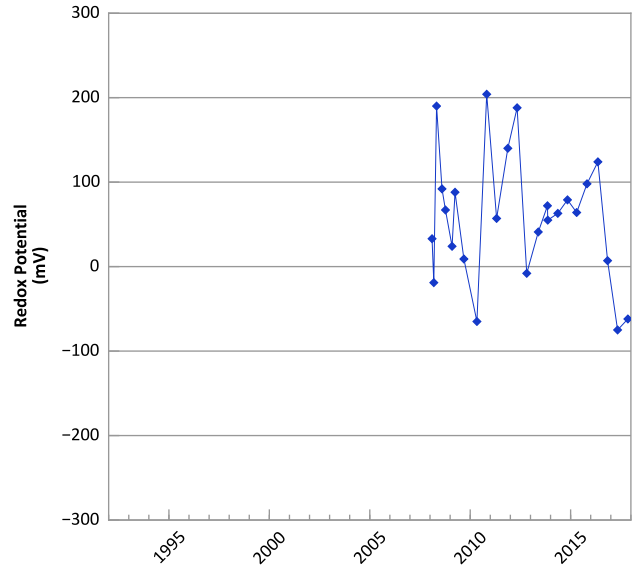
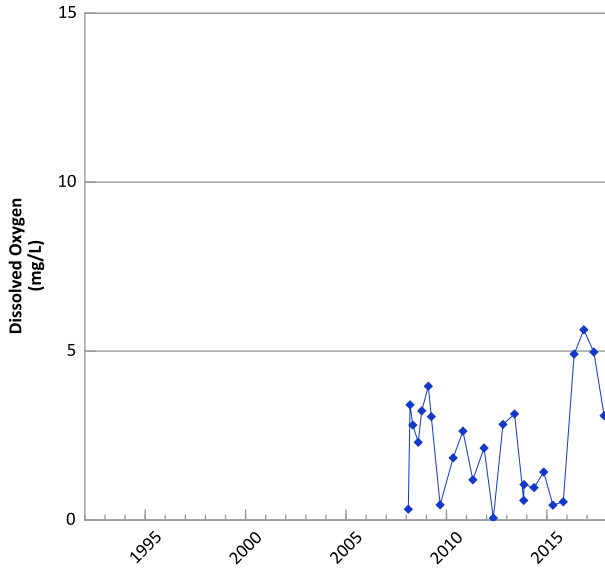
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 08/15/2007 to 08/05/2015
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

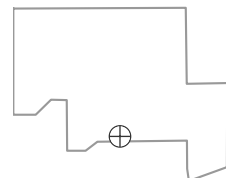


**PTX06-1126 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



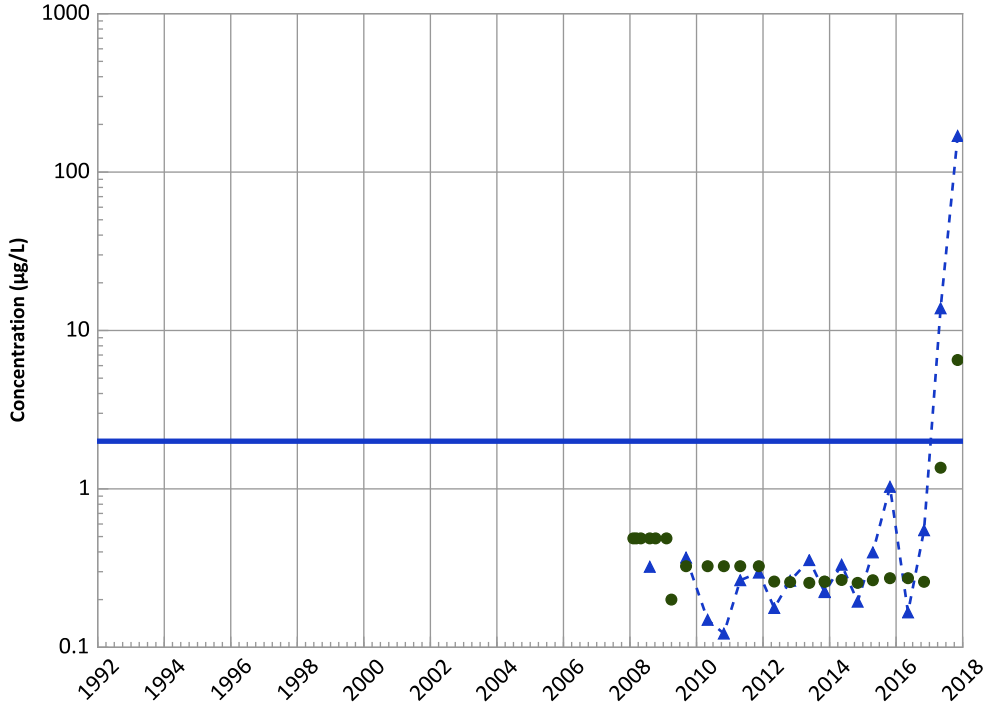
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 02/07/2008 to 11/07/2017
 Analysis Date: 03/21/2018

Well Location



PTX06-1126 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

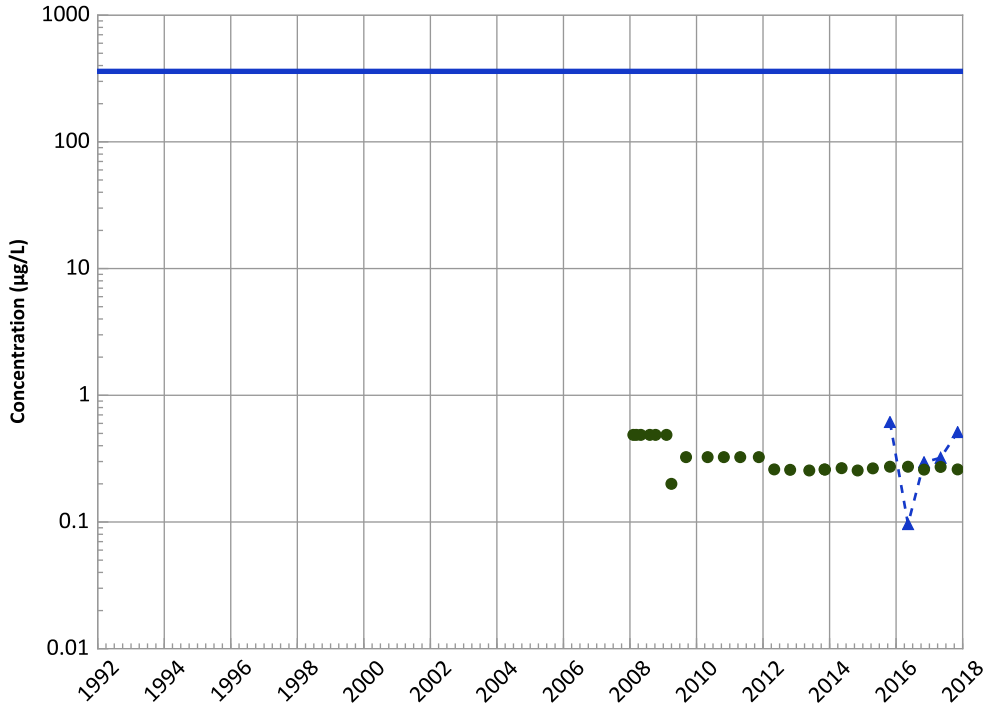
MAROS Mann-Kendall Method

Data ():
No Trend
All Data
Increasing

MAROS Linear Regression Method

Data ():
Probably Increasing
All Data
Increasing

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

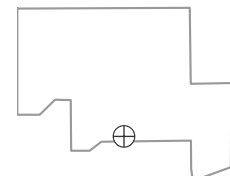
MAROS Mann-Kendall Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
No Trend

Well Location

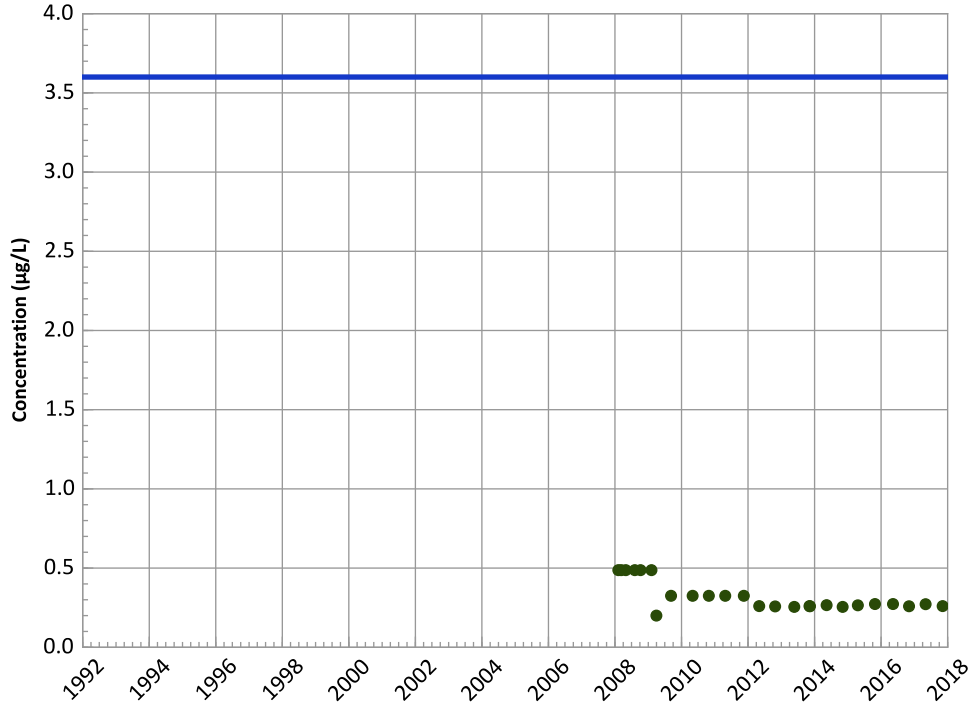


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 02/07/2008 to 11/07/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1126 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

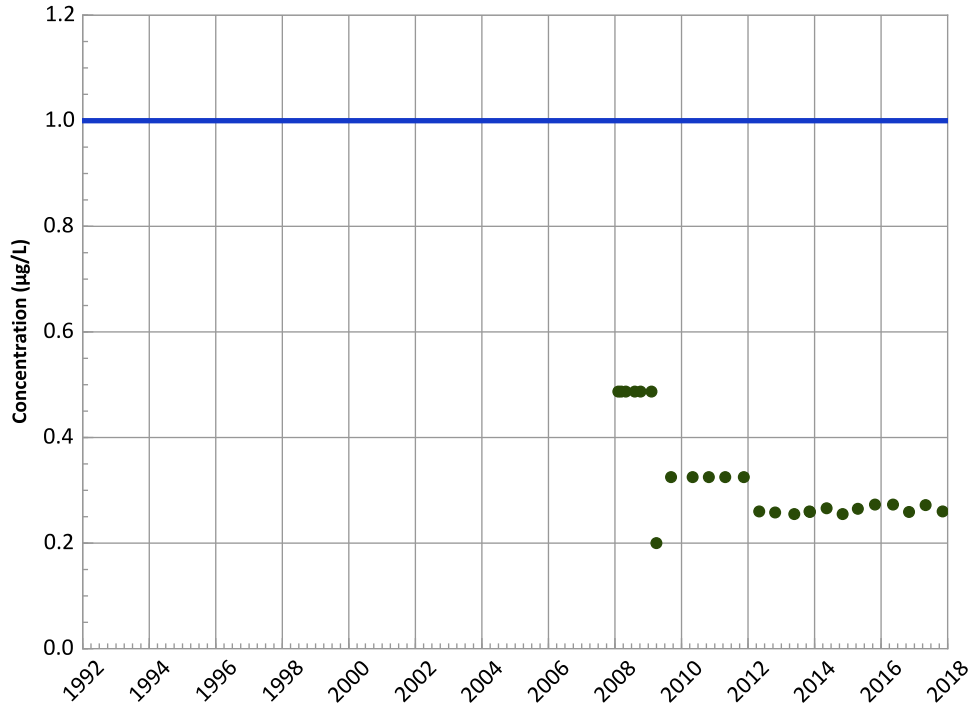
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

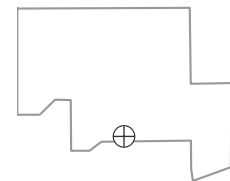
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

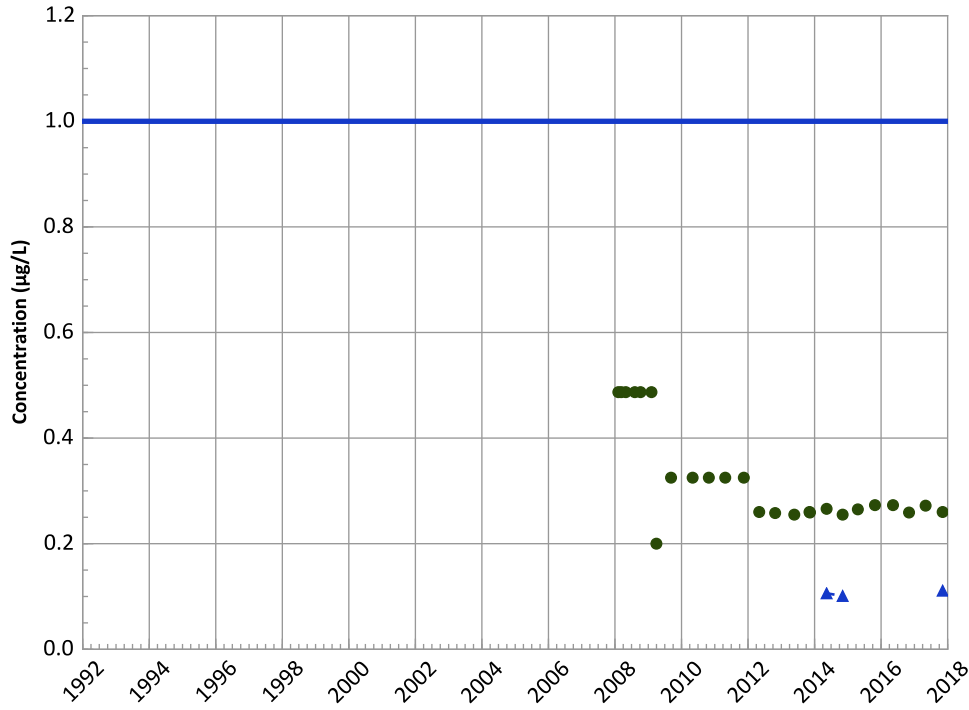


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 02/07/2008 to 11/07/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1126 in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

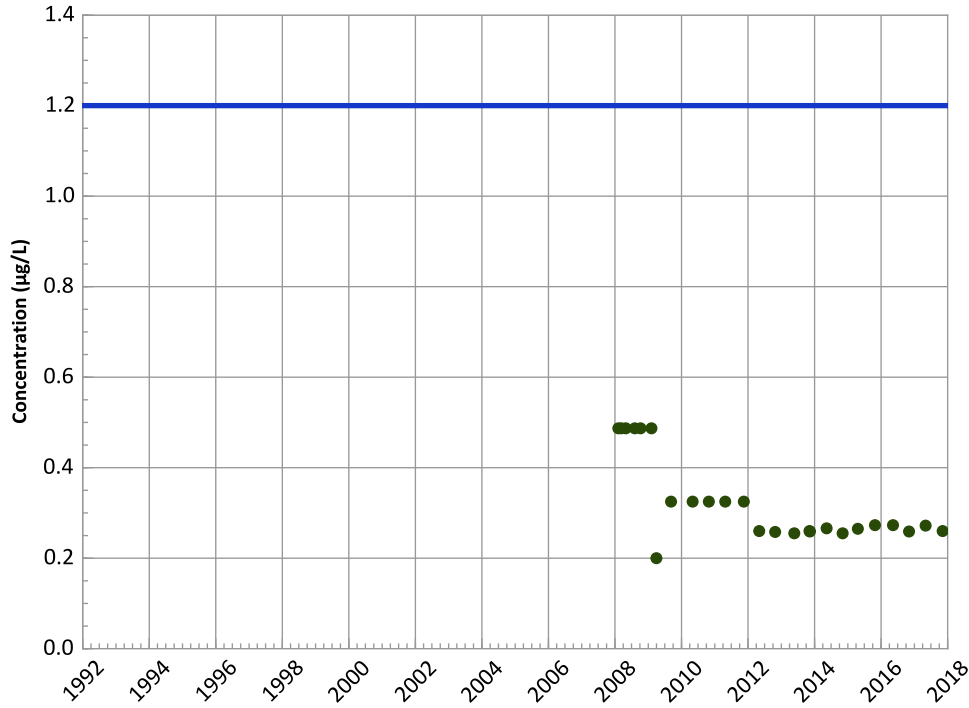
Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

All Non-Detect

All Data

All Non-Detect

All Non-Detect

MAROS Linear Regression Method

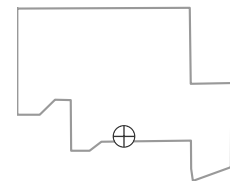
Data ():

All Non-Detect

All Data

All Non-Detect

Well Location

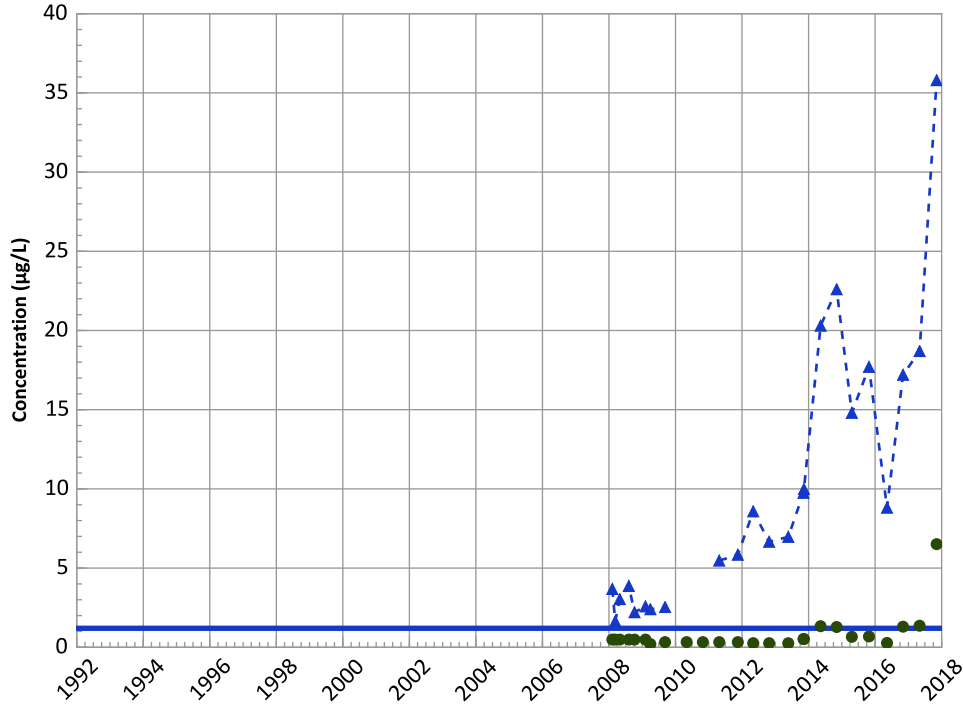


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 02/07/2008 to 11/07/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1126 in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

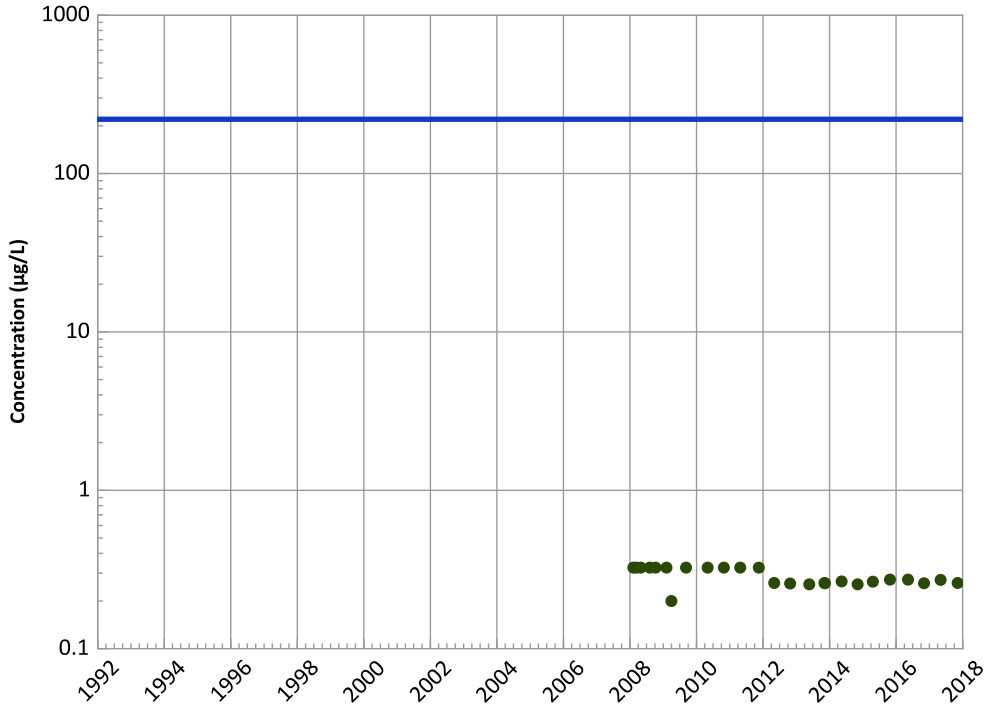
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

1,3,5-Trinitrobenzene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

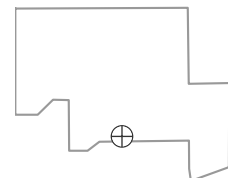
MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 02/07/2008 to 11/07/2017
Analysis Date: 03/21/2018

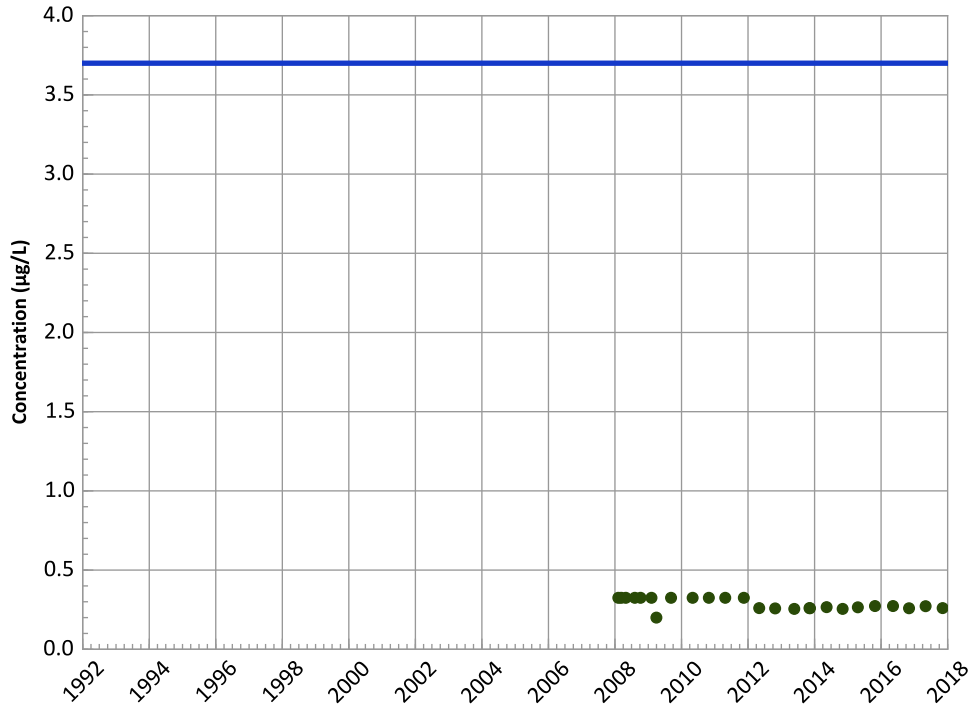
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1126 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

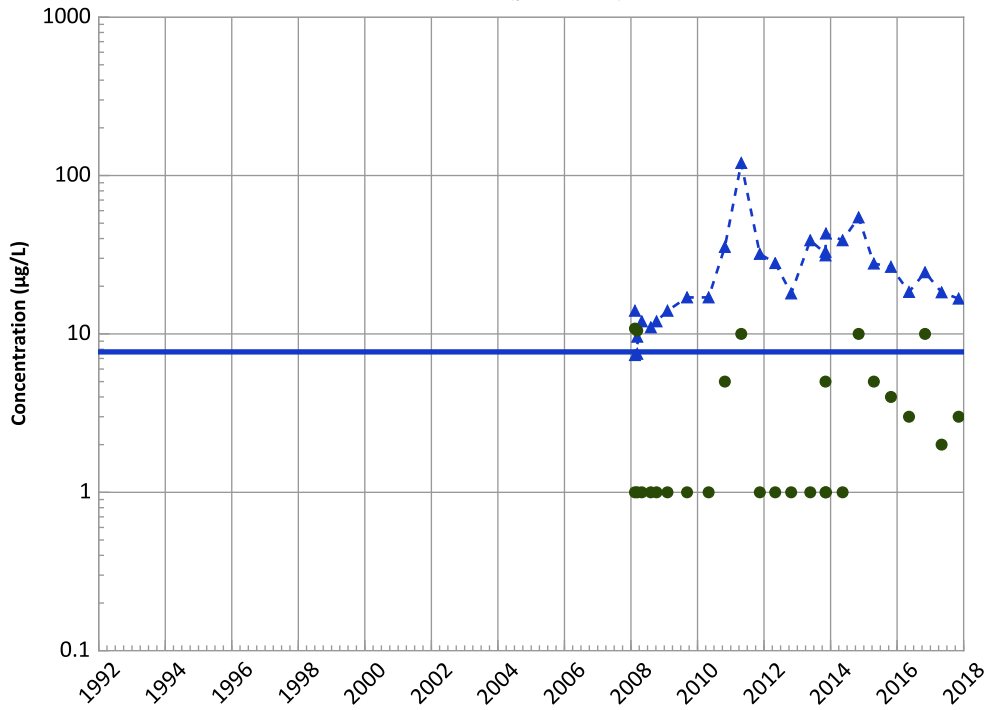
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,4-Dioxane (p-Dioxane) Trend



Concentration Trend

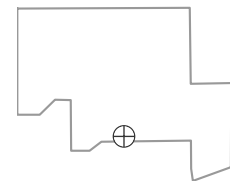
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Stable
All Data
Increasing

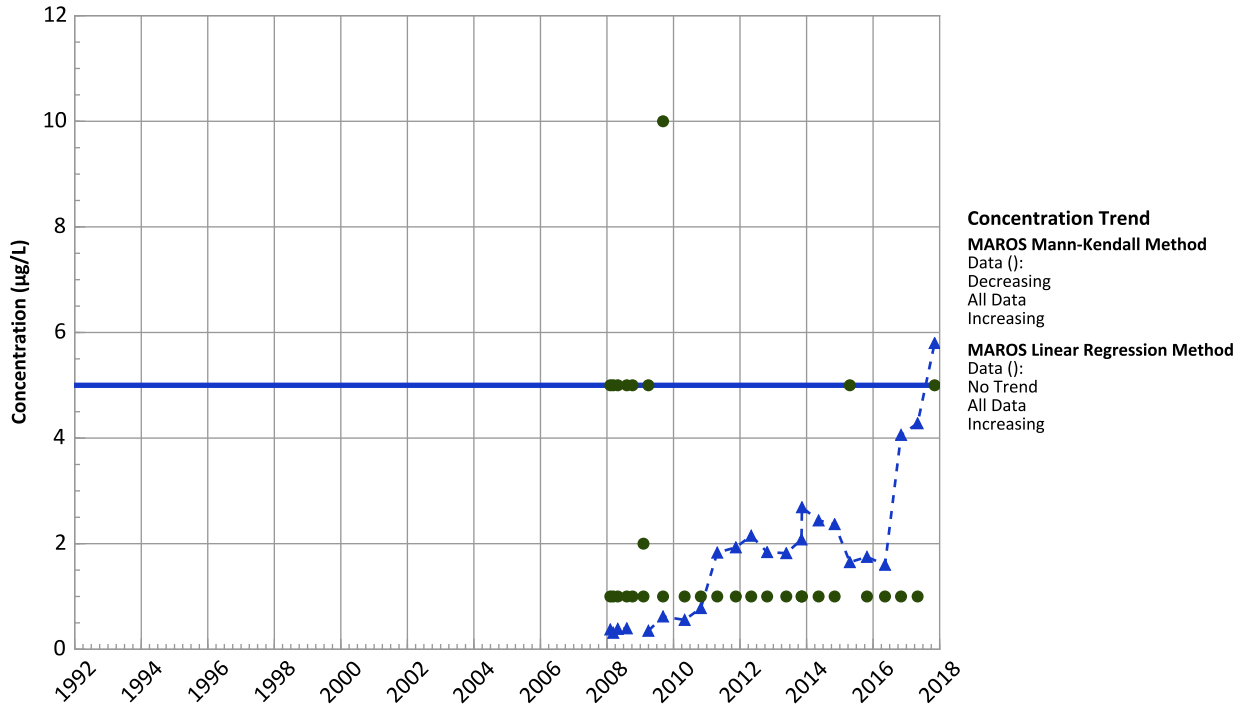
Well Location



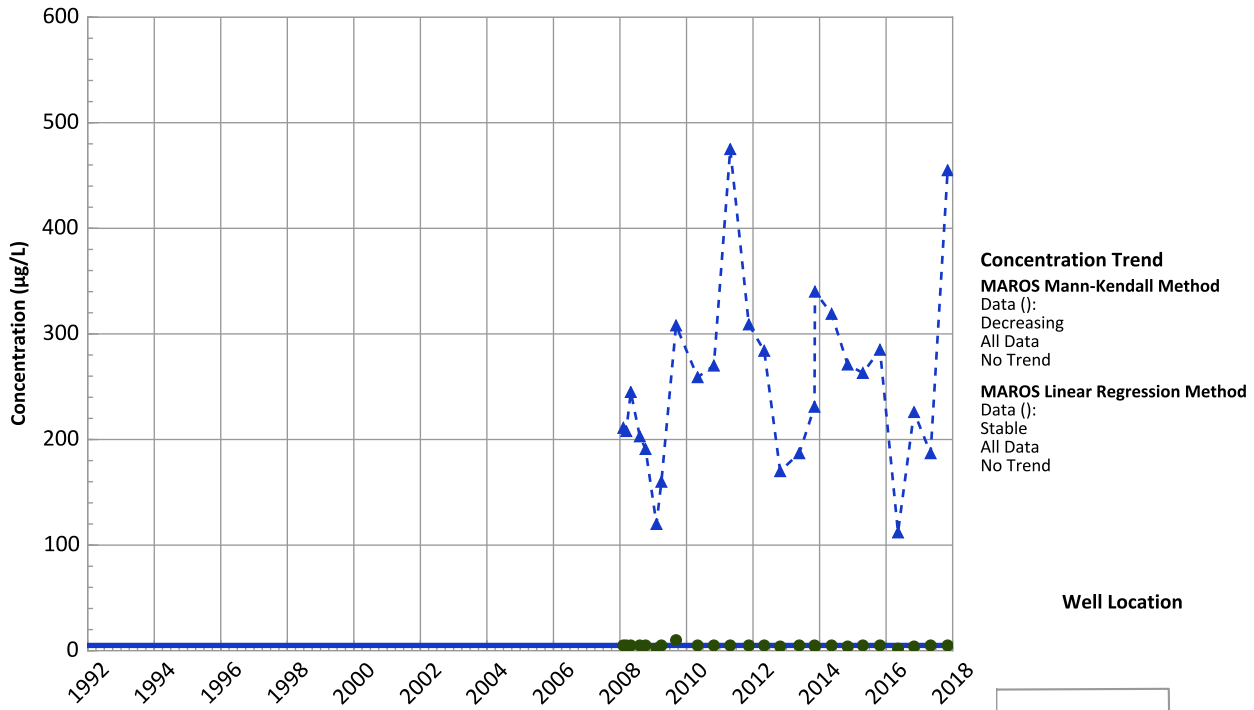
Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 02/07/2008 to 11/07/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

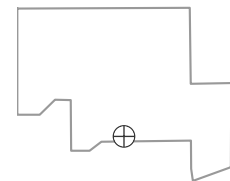
**PTX06-1126 in Perched Aquifer
USDOE/NNSA Pantex Plant
Tetrachloroethylene (PCE) Trend**



Trichloroethene Trend



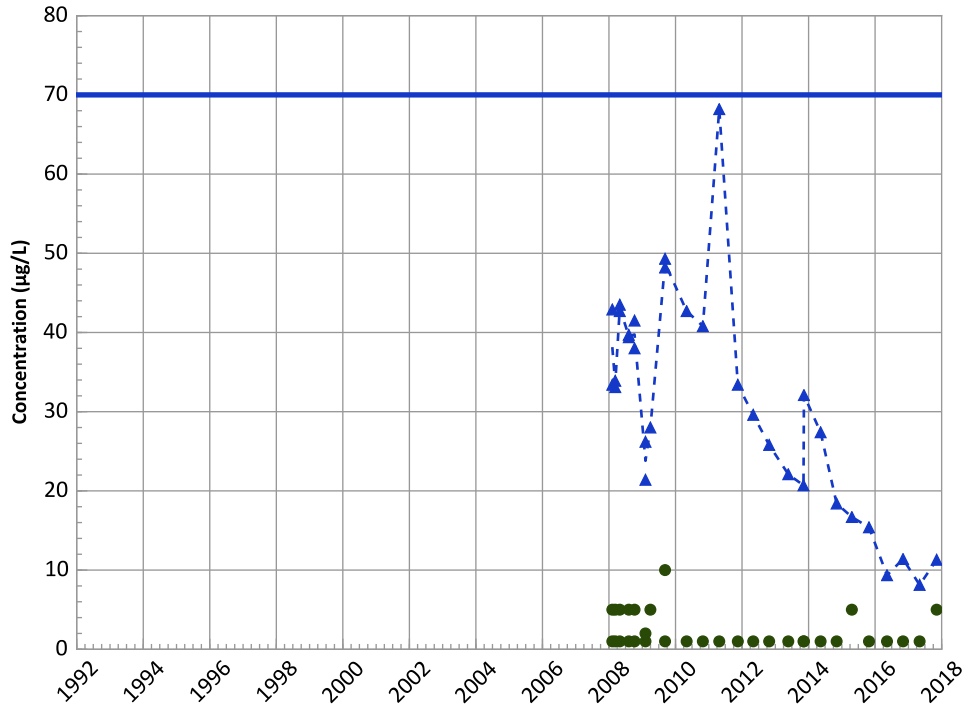
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 02/07/2008 to 11/07/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1126 in Perched Aquifer
USDOE/NNSA Pantex Plant
cis-1,2-Dichloroethene Trend**



Concentration Trend

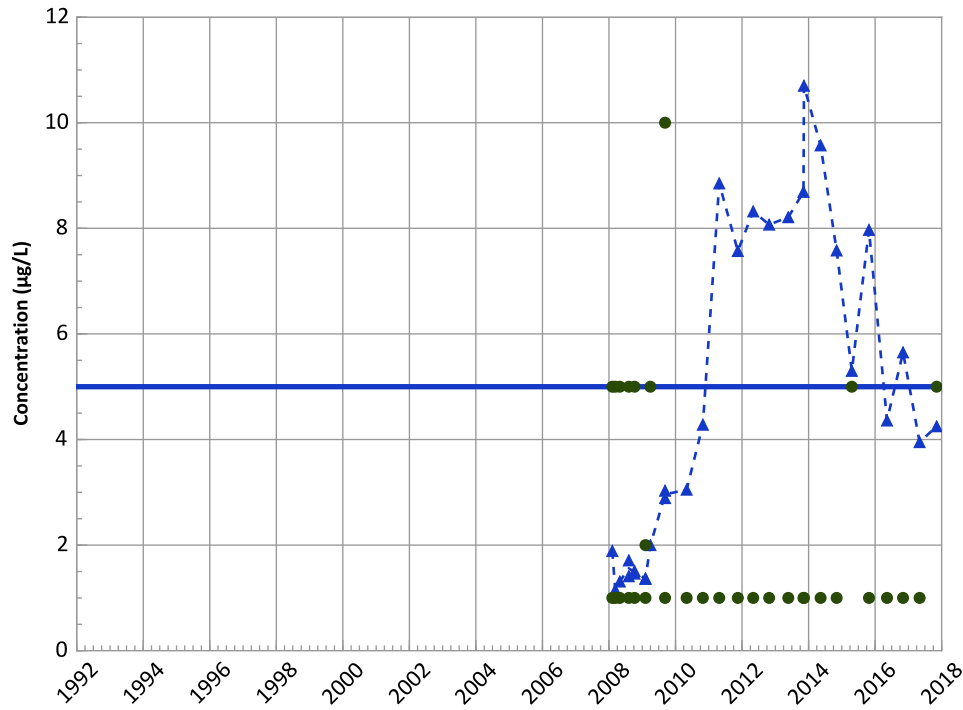
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

1,2-Dichloroethane Trend



Concentration Trend

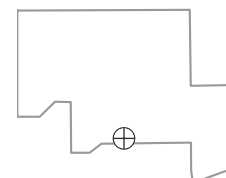
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Increasing

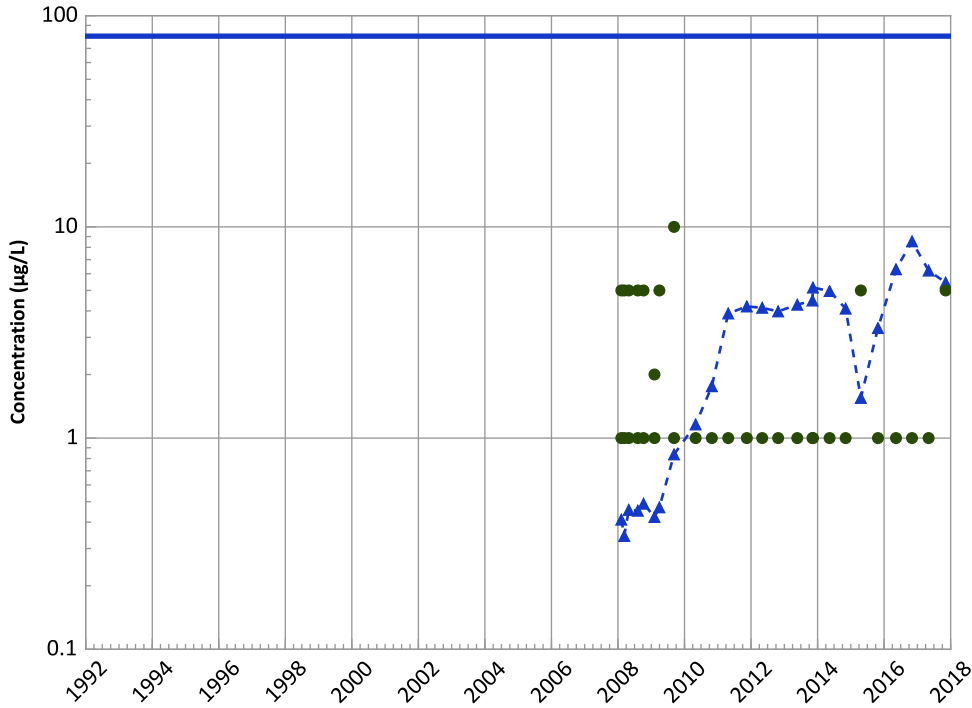
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 02/07/2008 to 11/07/2017
Analysis Date: 03/21/2018

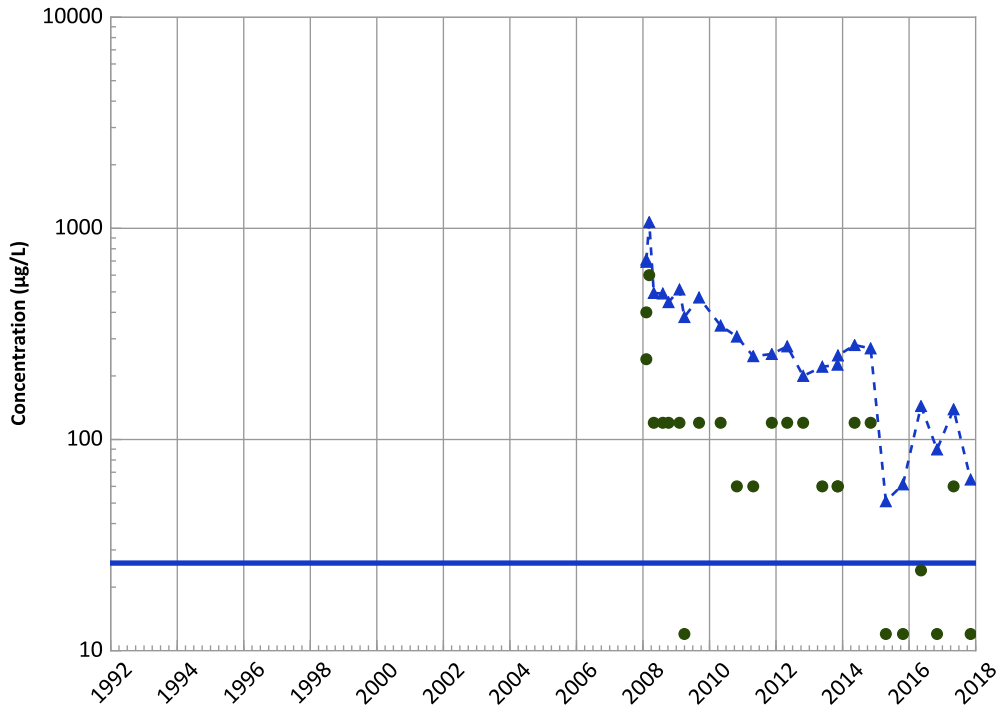
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1126 in Perched Aquifer
 USDOE/NNSA Pantex Plant
 Chloroform Trend



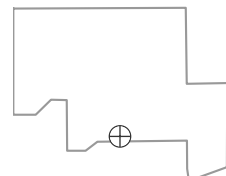
Concentration Trend
 MAROS Mann-Kendall Method
 Data ():
 No Trend
 All Data
 Increasing
 MAROS Linear Regression Method
 Data ():
 No Trend
 All Data
 Increasing

Perchlorate Trend



Concentration Trend
 MAROS Mann-Kendall Method
 Data ():
 Decreasing
 All Data
 Decreasing
 MAROS Linear Regression Method
 Data ():
 Decreasing
 All Data
 Decreasing

Well Location

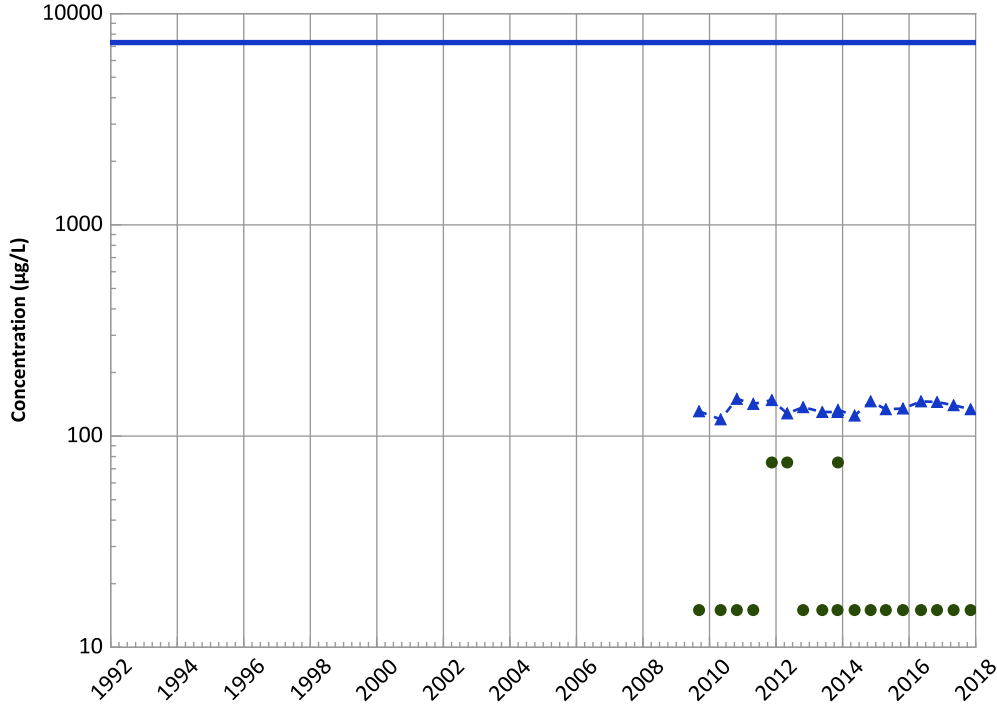


Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 02/07/2008 to 11/07/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1126 in Perched Aquifer
USDOE/NNSA Pantex Plant

Boron Trend



Concentration Trend

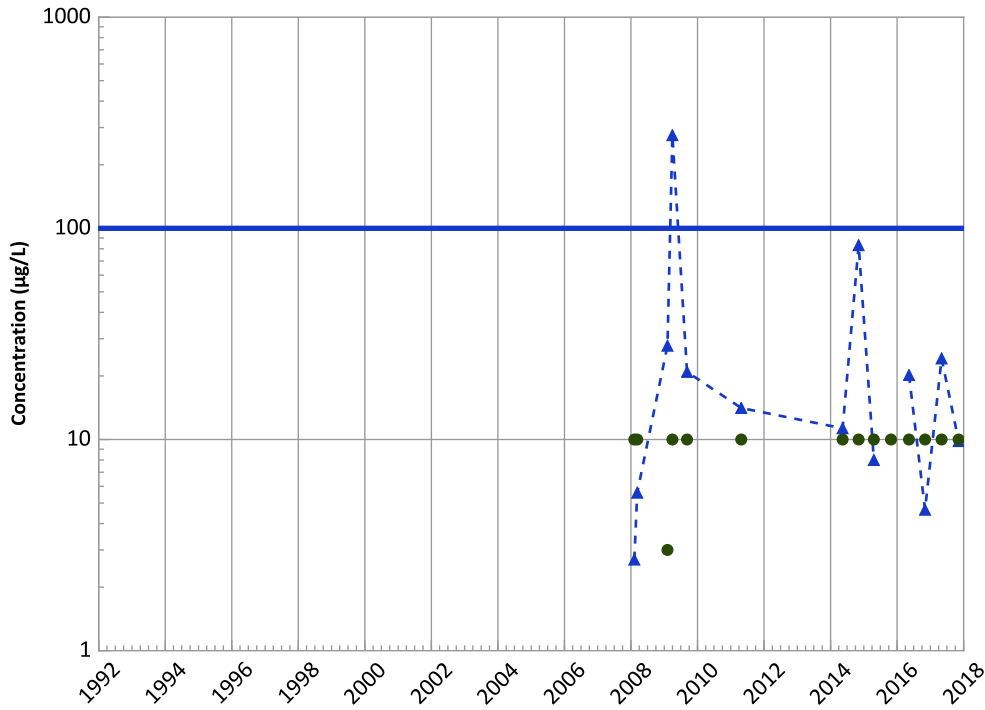
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
No Trend

MAROS Linear Regression Method

Data ():
Increasing
All Data
No Trend

Chromium, Total Trend



Concentration Trend

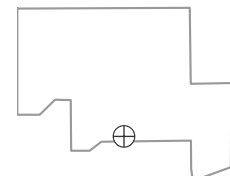
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
No Trend

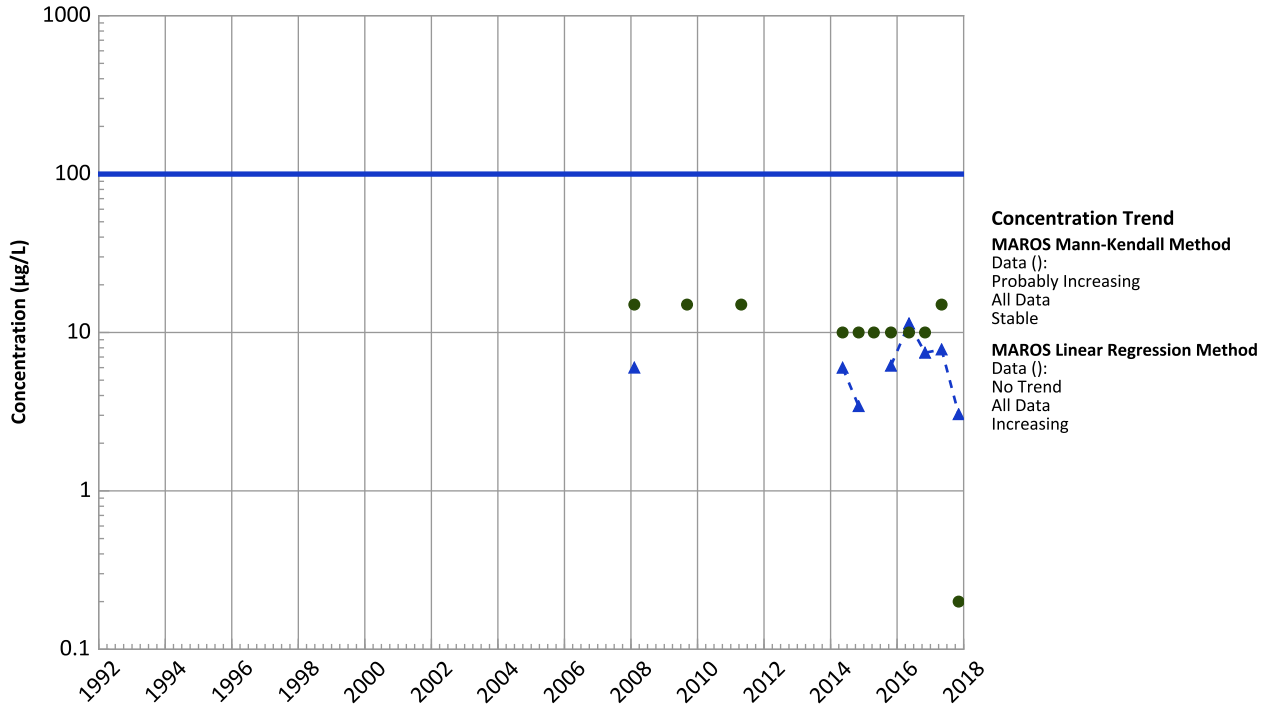
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 02/07/2008 to 11/07/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

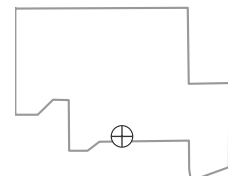
**PTX06-1126 in Perched Aquifer
USDOE/NNSA Pantex Plant
Chromium, Hexavalent Trend**



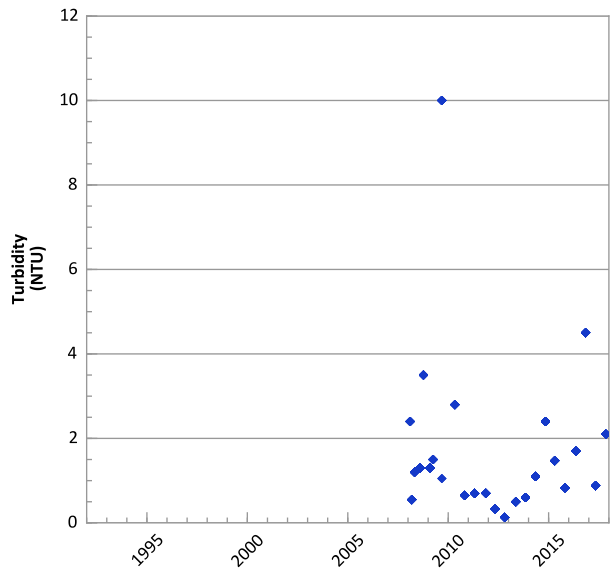
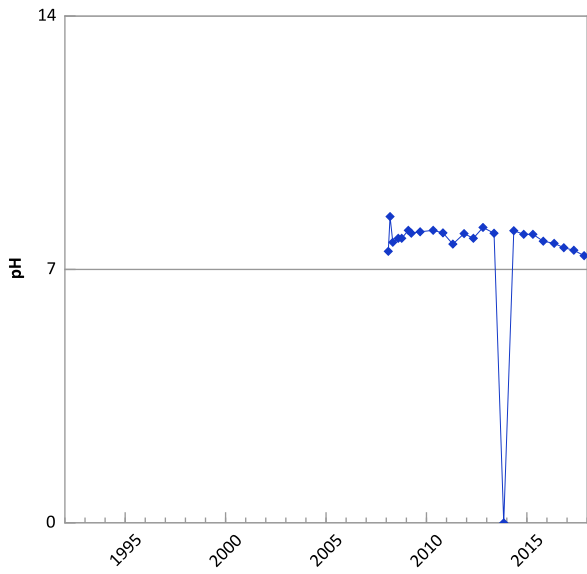
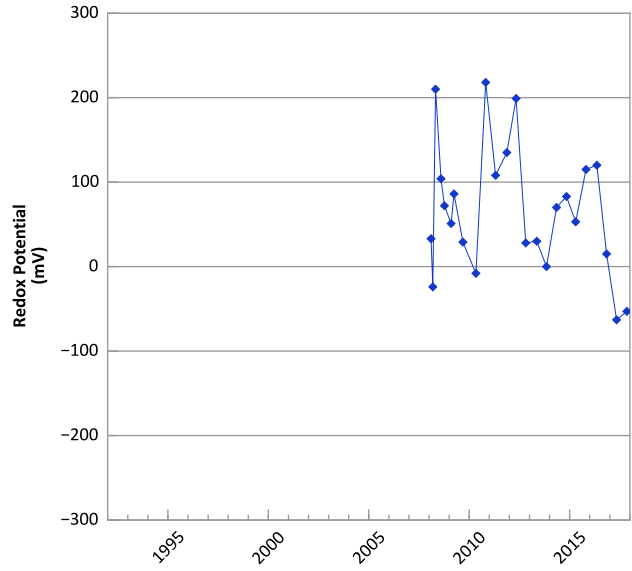
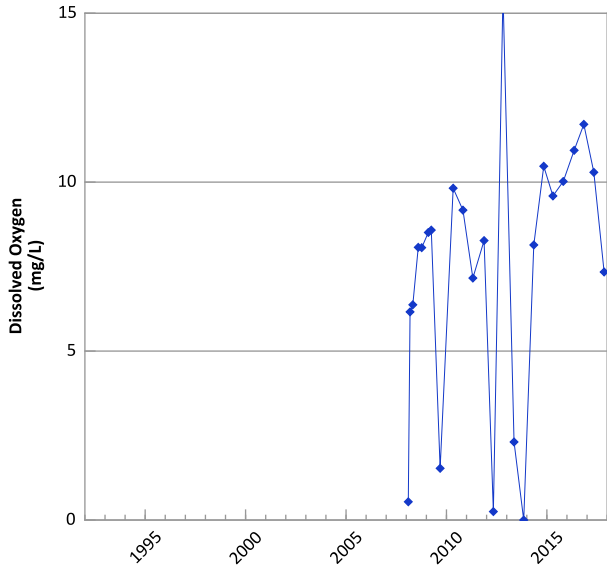
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 02/07/2008 to 11/07/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

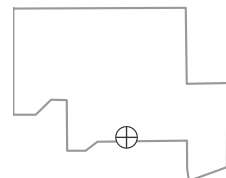


**PTX06-1127 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



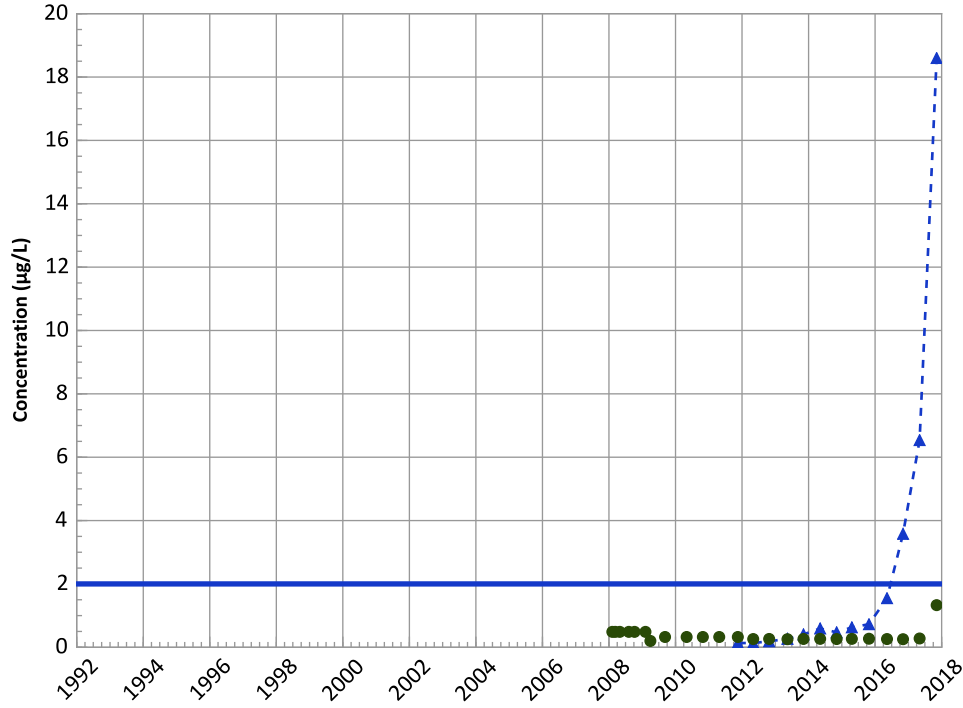
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 02/07/2008 to 11/07/2017
 Analysis Date: 03/21/2018

Well Location



PTX06-1127 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

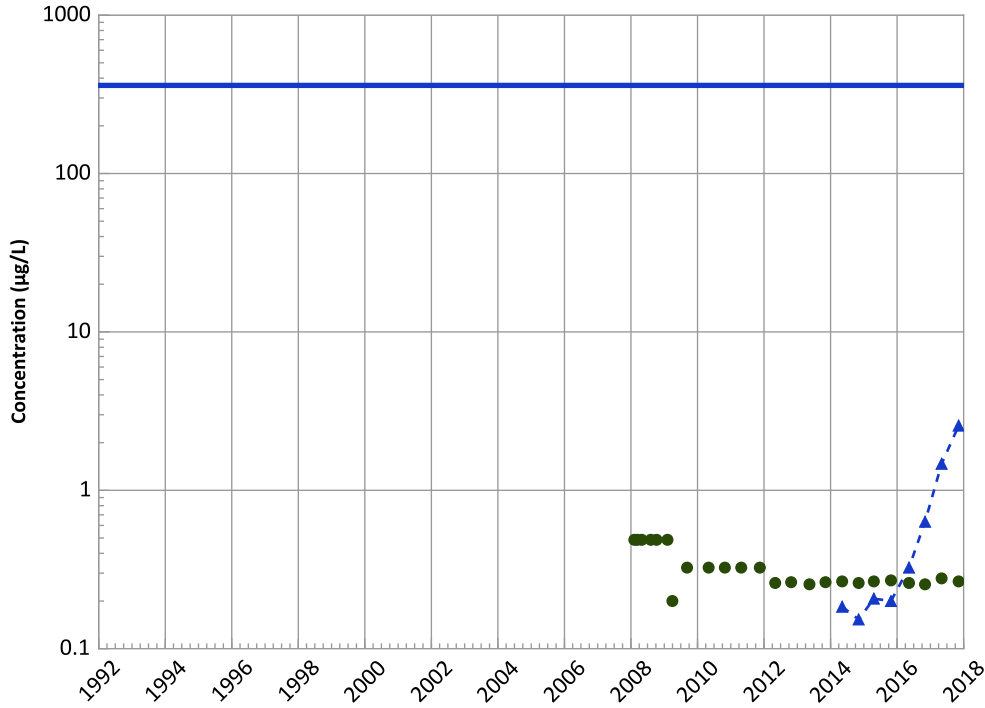
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

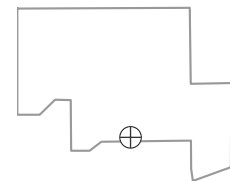
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
No Trend

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

Well Location

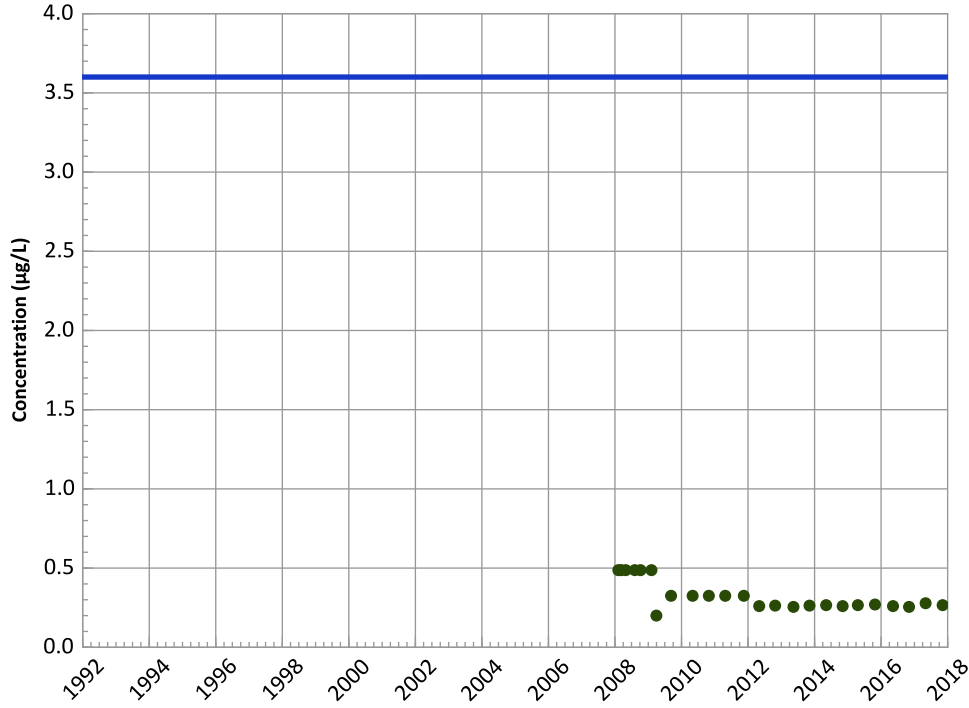


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 02/07/2008 to 11/07/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1127 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

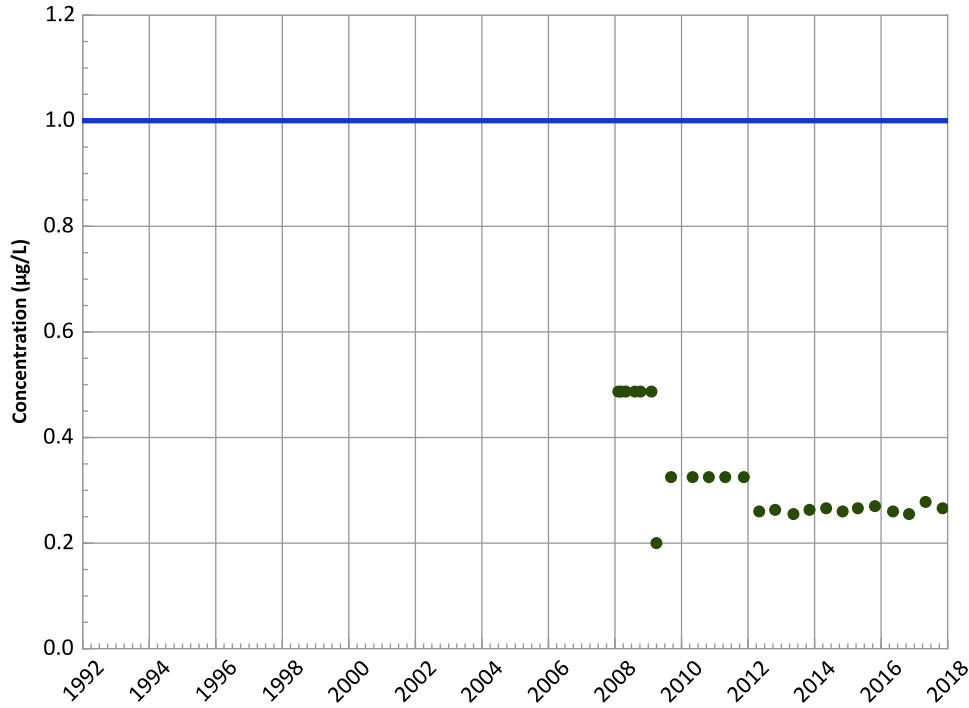
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

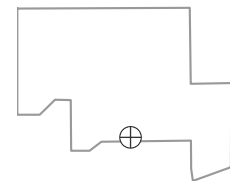
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

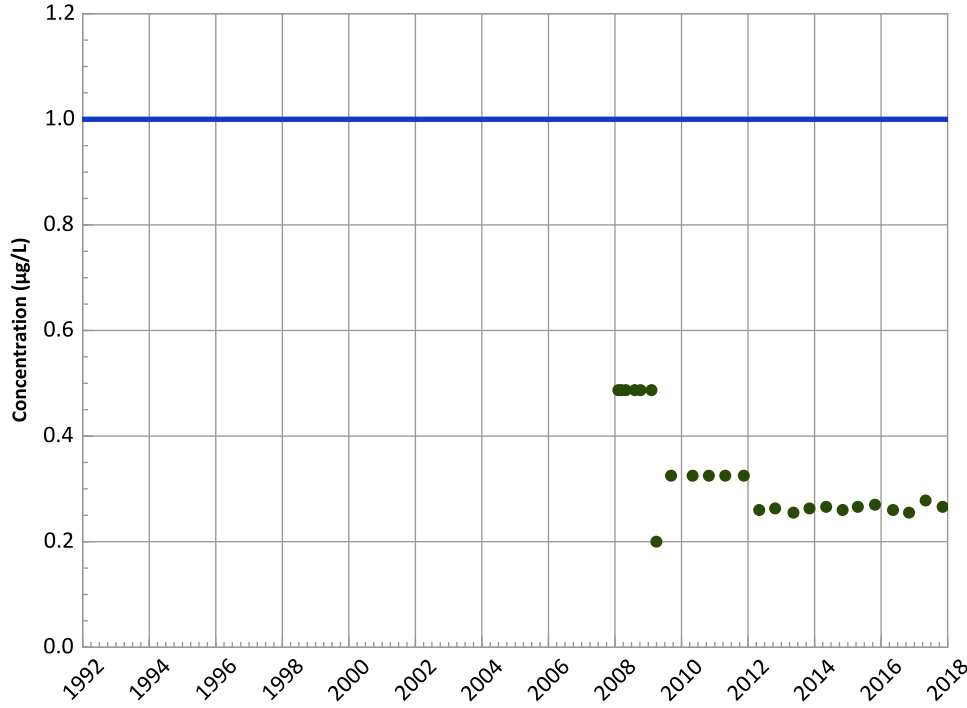


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 02/07/2008 to 11/07/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1127 in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

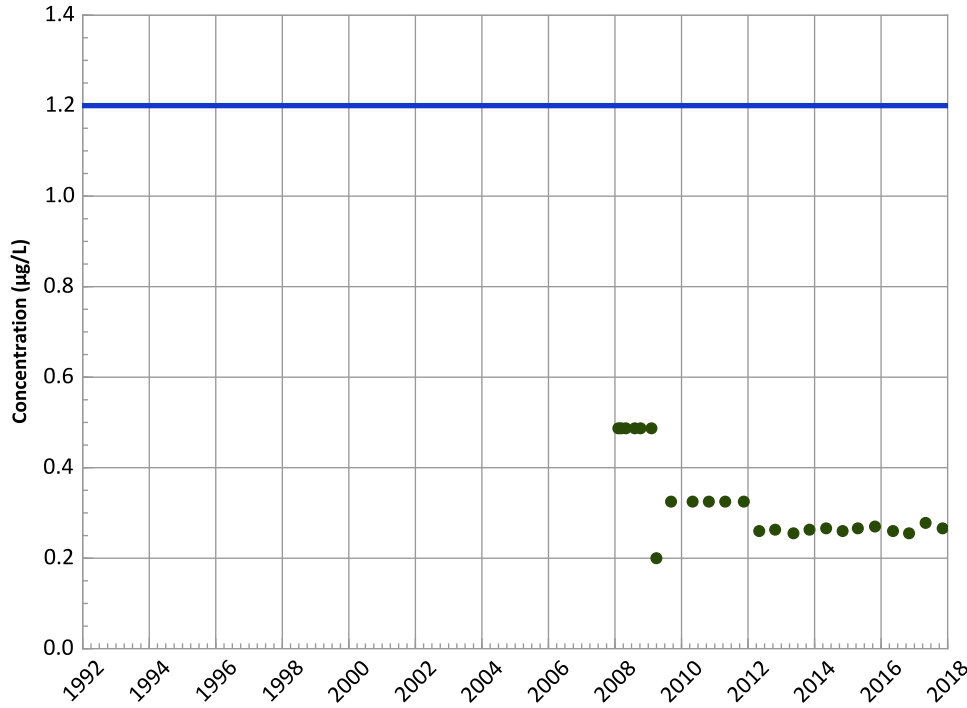
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

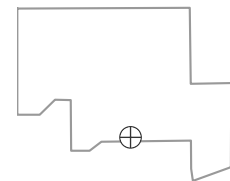
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

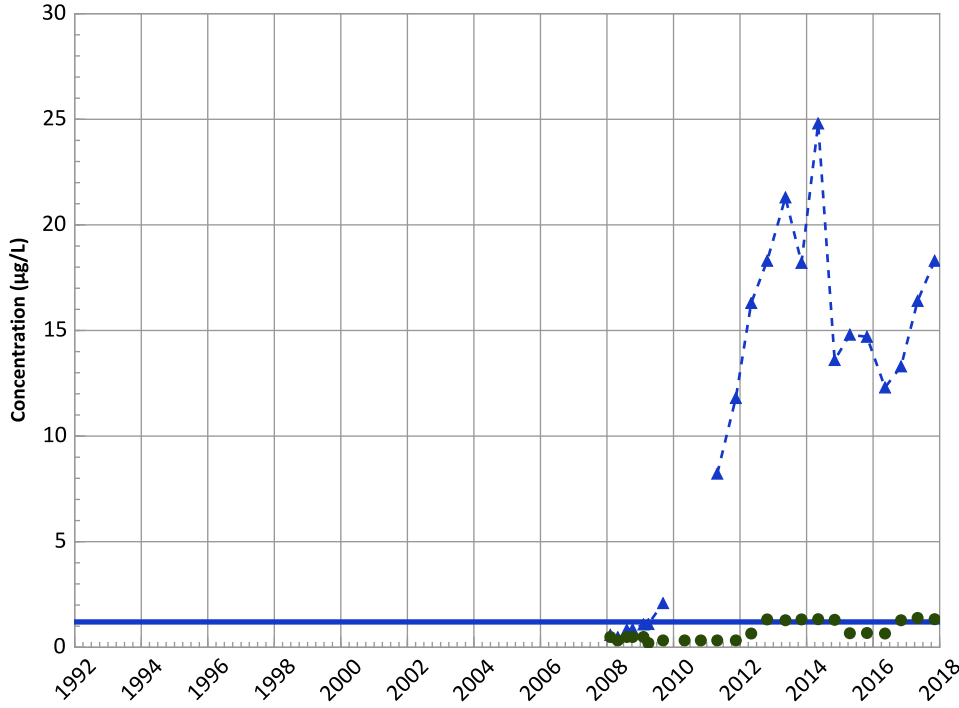


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 02/07/2008 to 11/07/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1127 in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

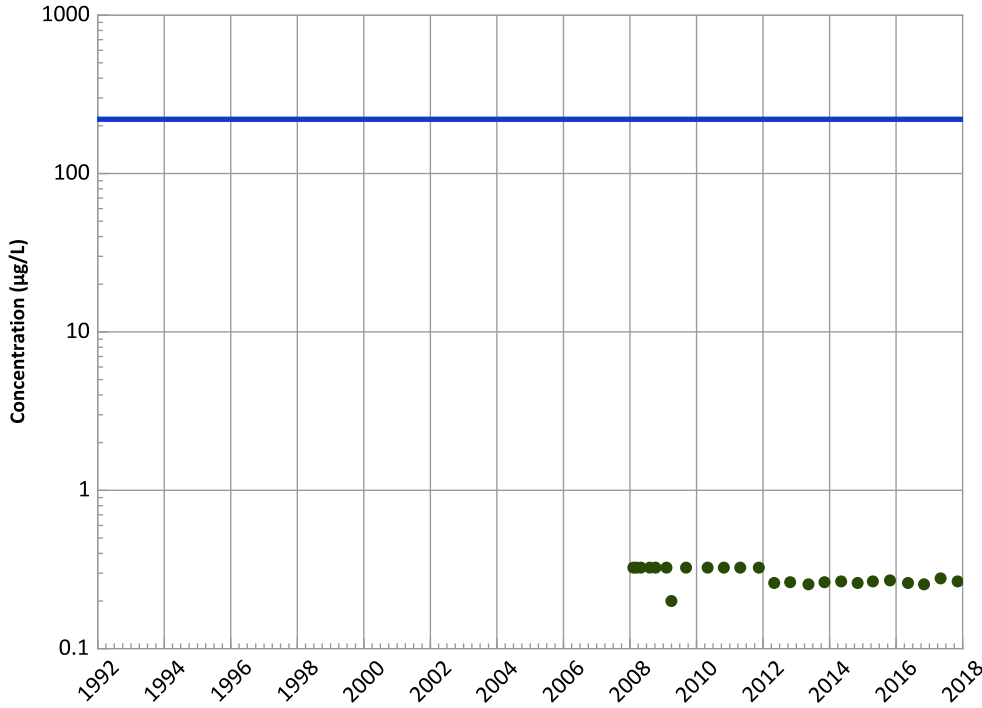
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Increasing

1,3,5-Trinitrobenzene Trend



Concentration Trend

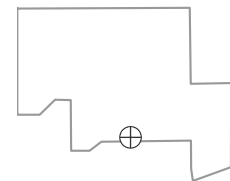
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

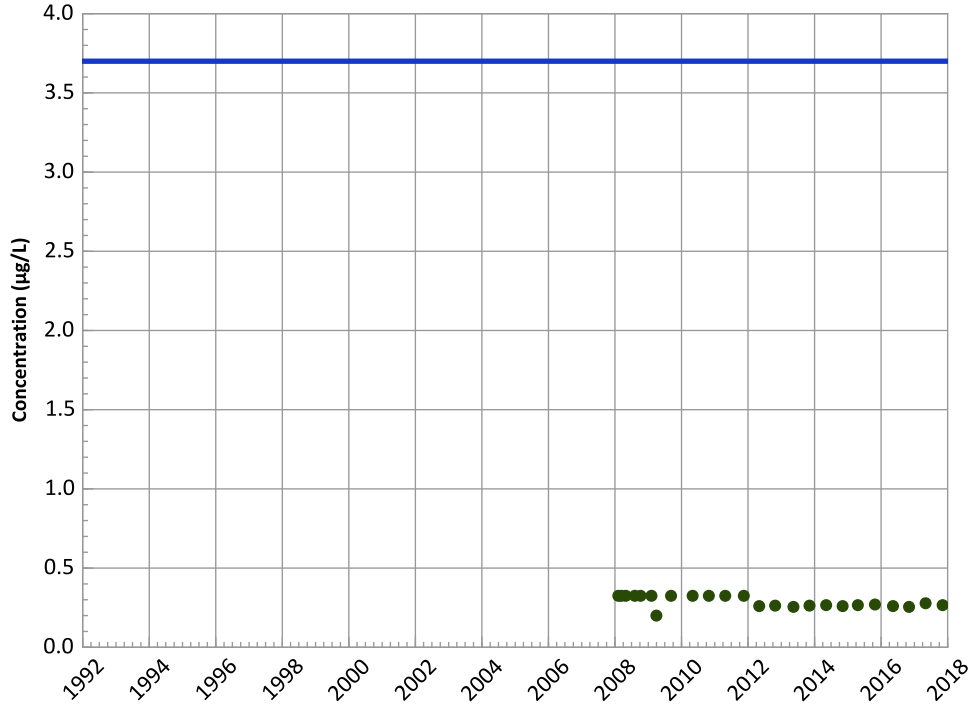


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 02/07/2008 to 11/07/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1127 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

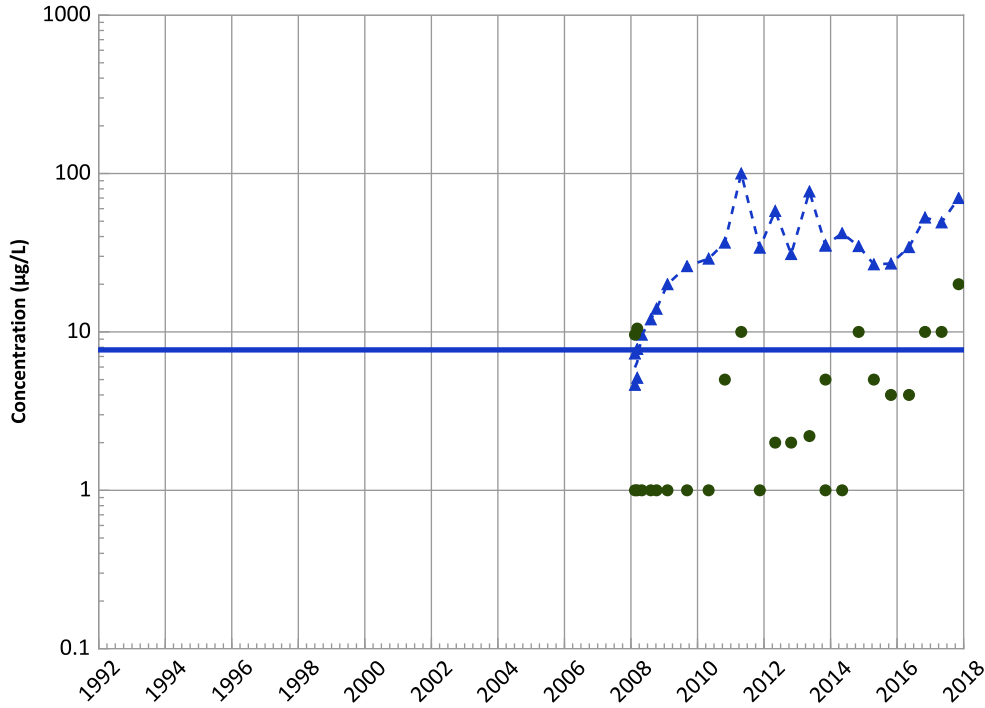
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,4-Dioxane (p-Dioxane) Trend



Concentration Trend

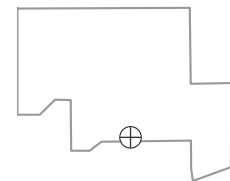
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Stable
All Data
Increasing

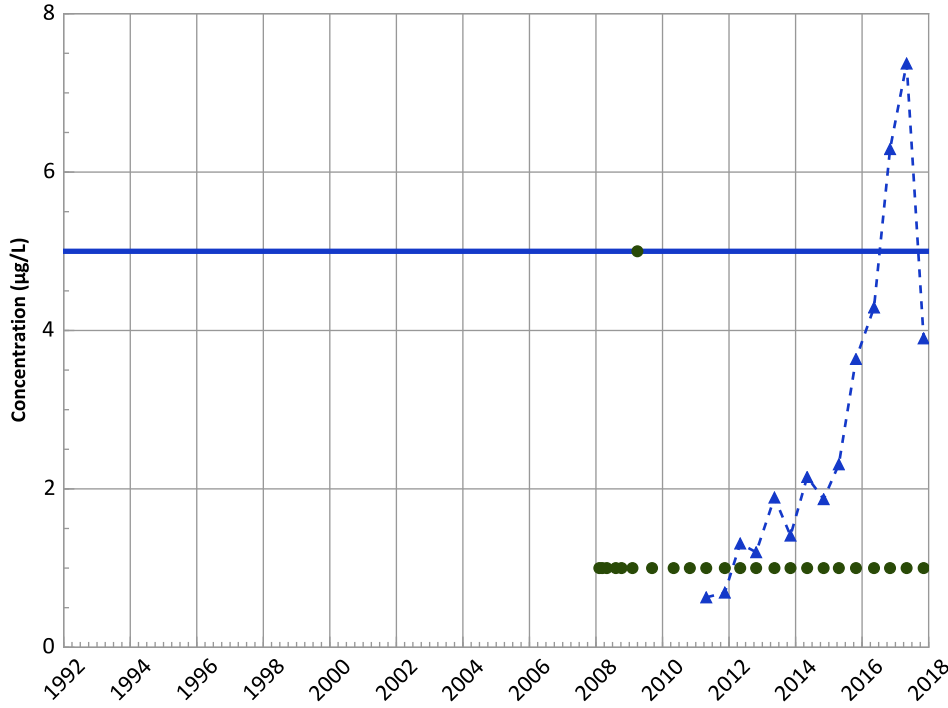
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 02/07/2008 to 11/07/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1127 in Perched Aquifer
USDOE/NNSA Pantex Plant
Tetrachloroethylene (PCE) Trend**



Concentration Trend

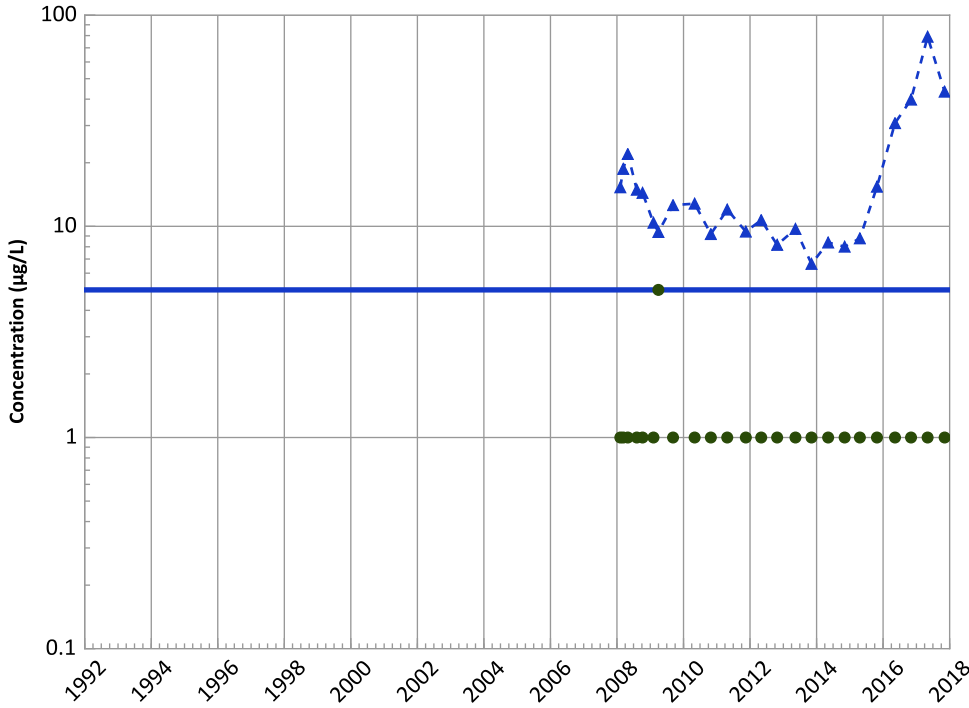
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

Trichloroethene Trend



Concentration Trend

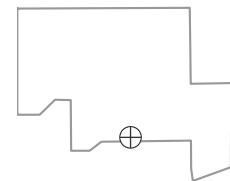
MAROS Mann-Kendall Method

Data ():
Probably Increasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

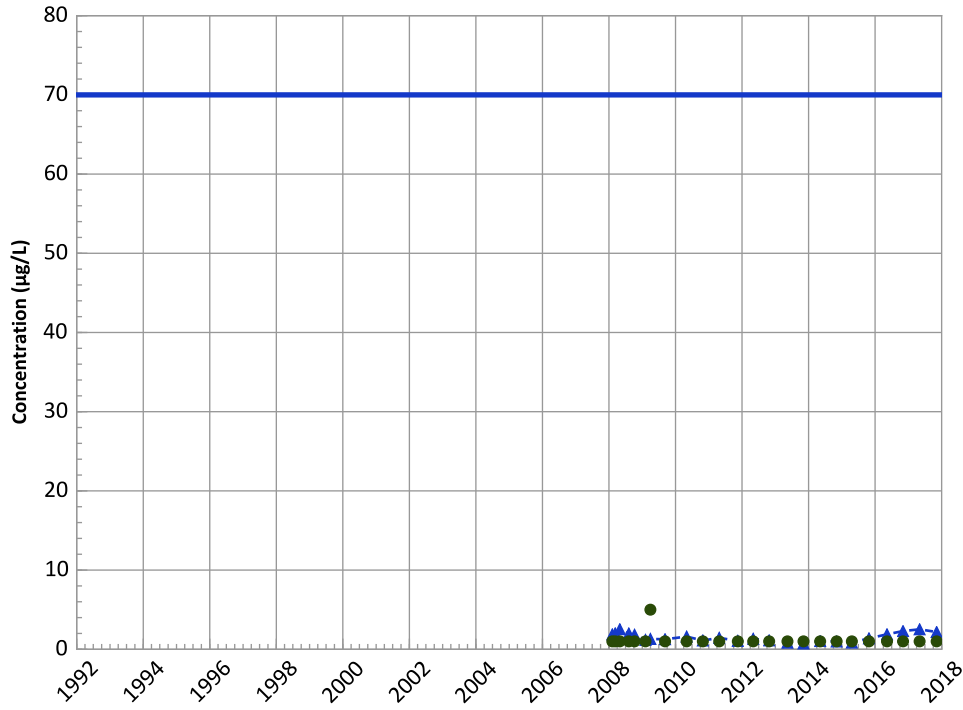
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 02/07/2008 to 11/07/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

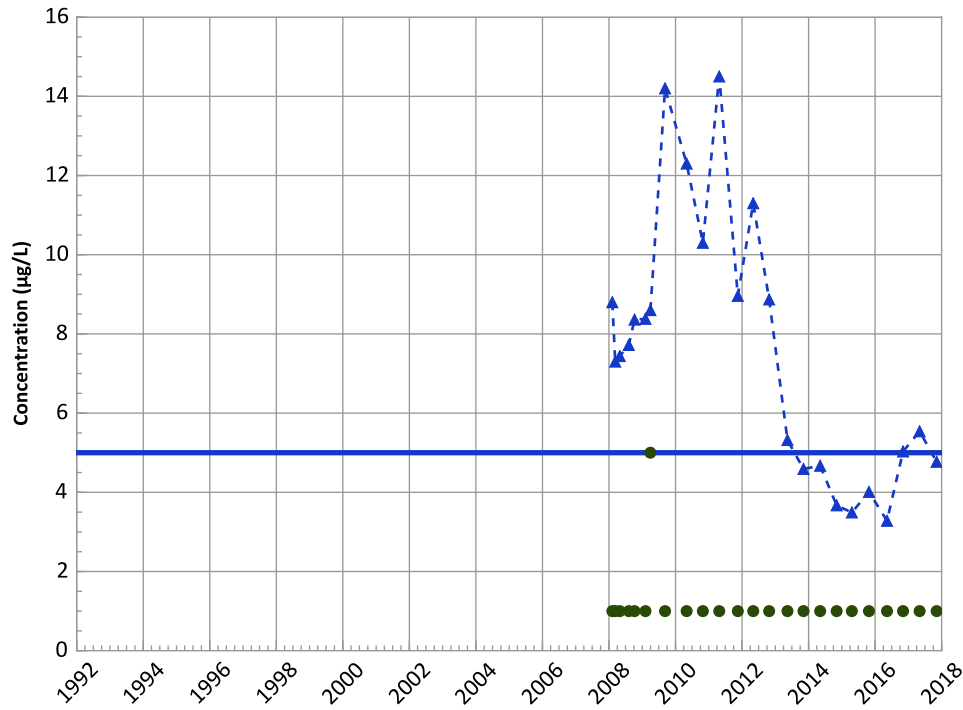
**PTX06-1127 in Perched Aquifer
USDOE/NNSA Pantex Plant
cis-1,2-Dichloroethene Trend**



Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 No Trend
 All Data
 Decreasing

MAROS Linear Regression Method
 Data ():
 Increasing
 All Data
 Stable

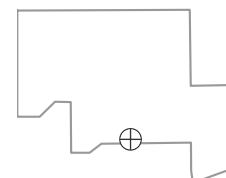
1,2-Dichloroethane Trend



Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 Decreasing
 All Data
 Decreasing

MAROS Linear Regression Method
 Data ():
 Decreasing
 All Data
 Decreasing

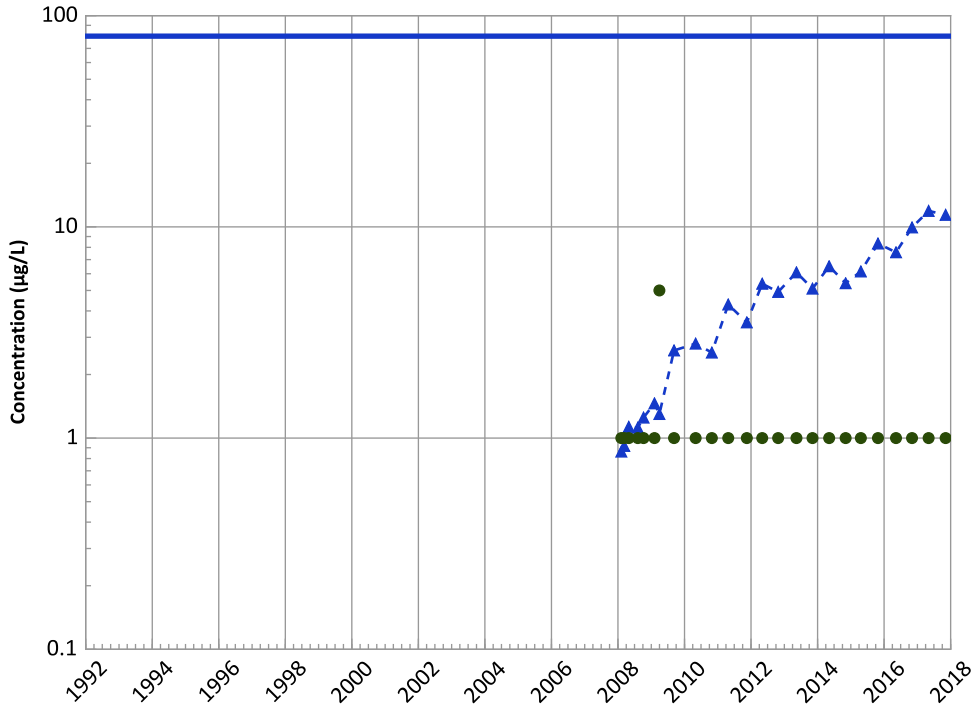
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 02/07/2008 to 11/07/2017
 Analysis Date: 03/21/2018

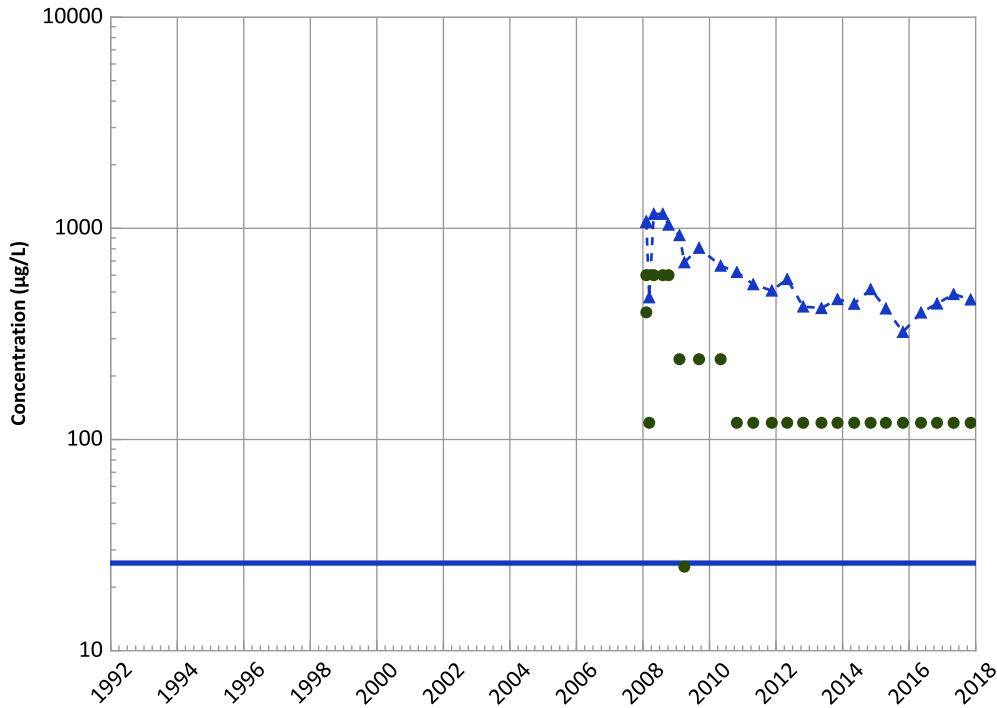
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1127 in Perched Aquifer
 USDOE/NNSA Pantex Plant
 Chloroform Trend



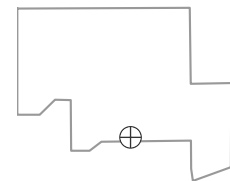
Concentration Trend
 MAROS Mann-Kendall Method
 Data (): Increasing
 All Data Increasing
 MAROS Linear Regression Method
 Data (): Increasing
 All Data Increasing

Perchlorate Trend



Concentration Trend
 MAROS Mann-Kendall Method
 Data (): Decreasing
 All Data Decreasing
 MAROS Linear Regression Method
 Data (): Probably Decreasing
 All Data Decreasing

Well Location

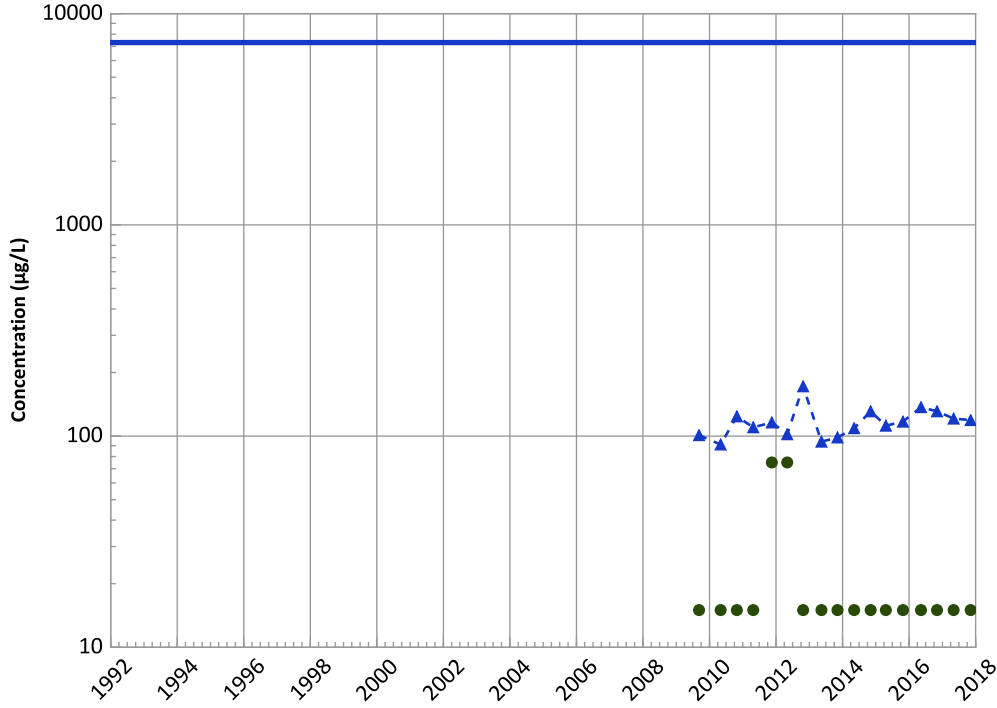


Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 02/07/2008 to 11/07/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1127 in Perched Aquifer
USDOE/NNSA Pantex Plant

Boron Trend



Concentration Trend

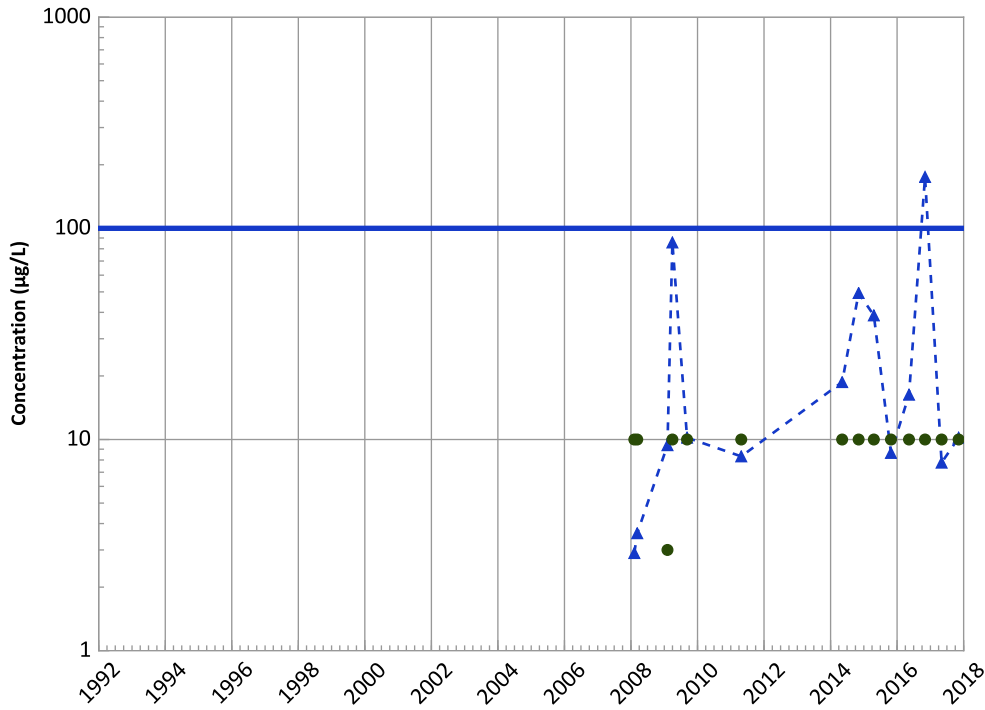
MAROS Mann-Kendall Method

Data ():
Probably Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
Probably Increasing

Chromium, Total Trend



Concentration Trend

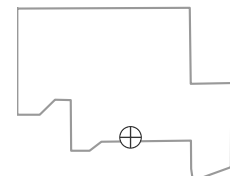
MAROS Mann-Kendall Method

Data ():
No Trend
All Data
No Trend

MAROS Linear Regression Method

Data ():
No Trend
All Data
Probably Increasing

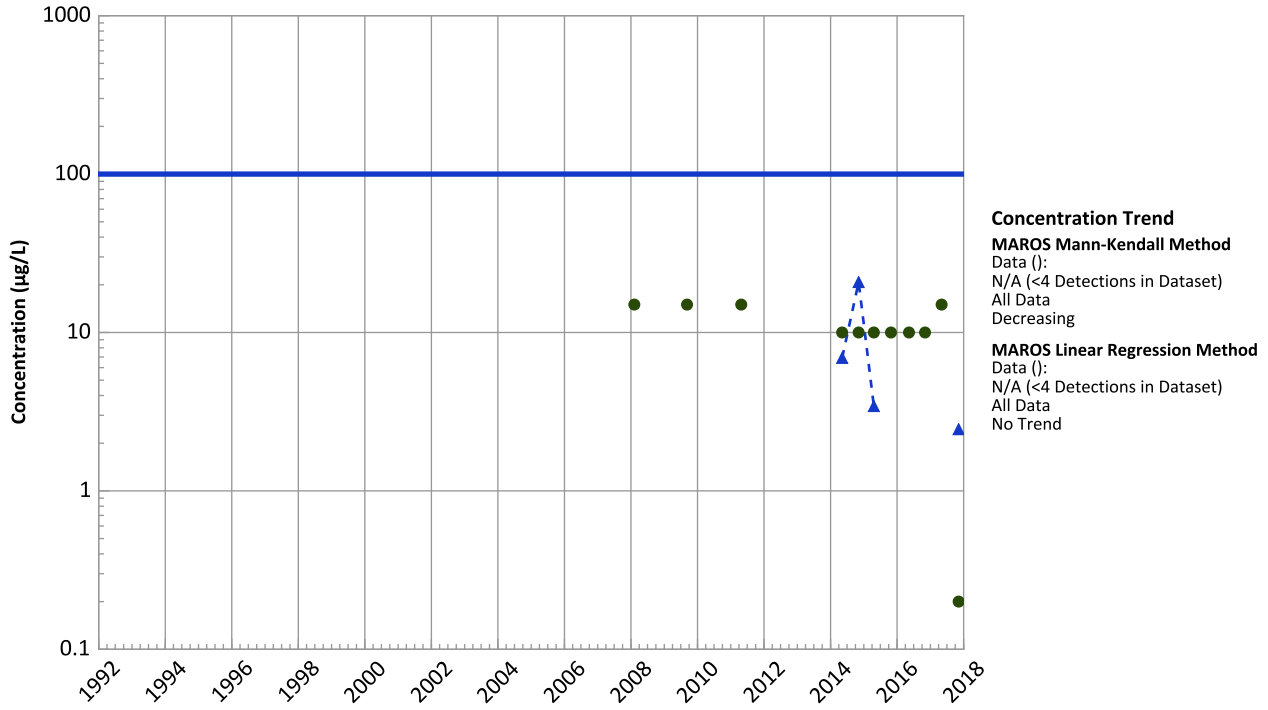
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 02/07/2008 to 11/07/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

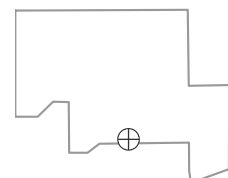
**PTX06-1127 in Perched Aquifer
USDOE/NNSA Pantex Plant
Chromium, Hexavalent Trend**



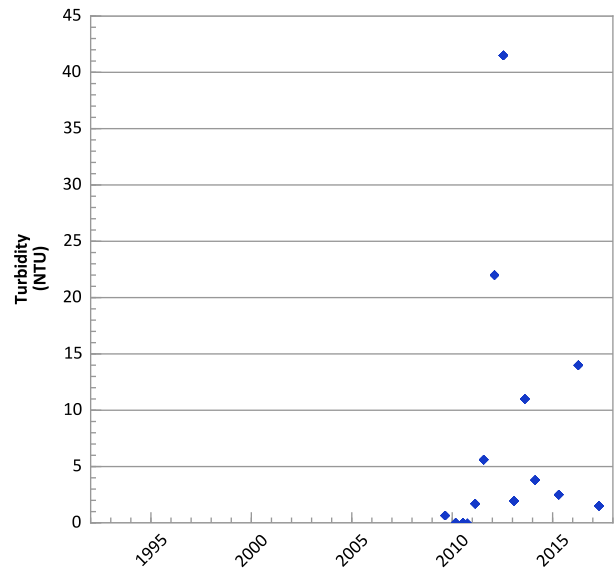
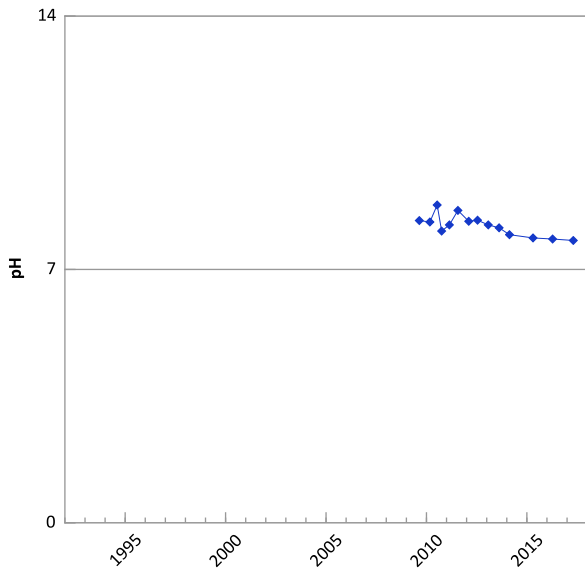
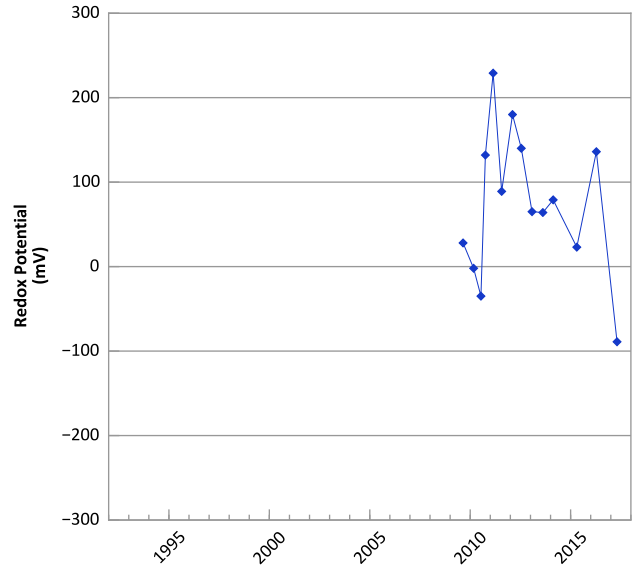
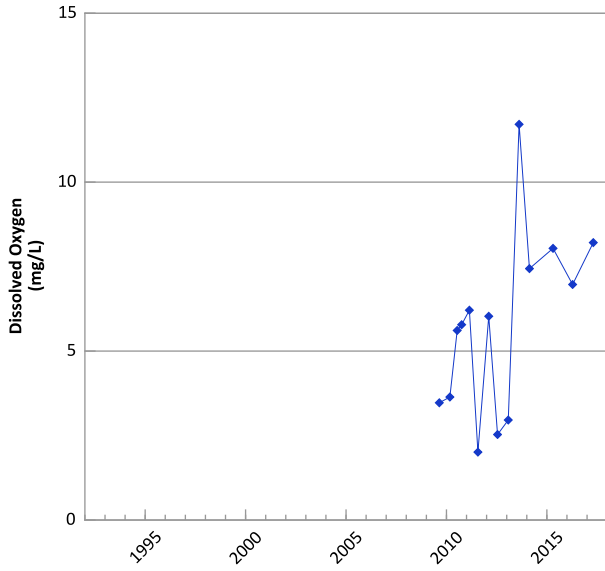
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 02/07/2008 to 11/07/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

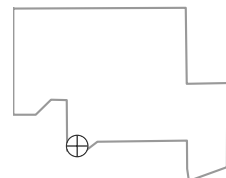


**PTX06-1131 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



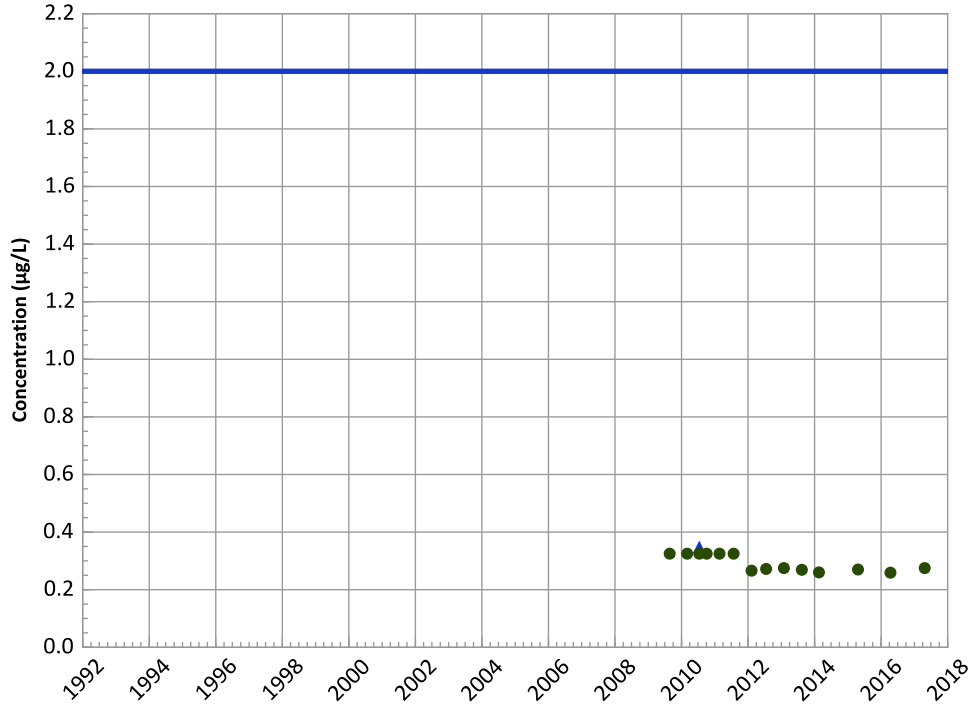
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 08/24/2009 to 04/24/2017
 Analysis Date: 03/21/2018

Well Location



PTX06-1131 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

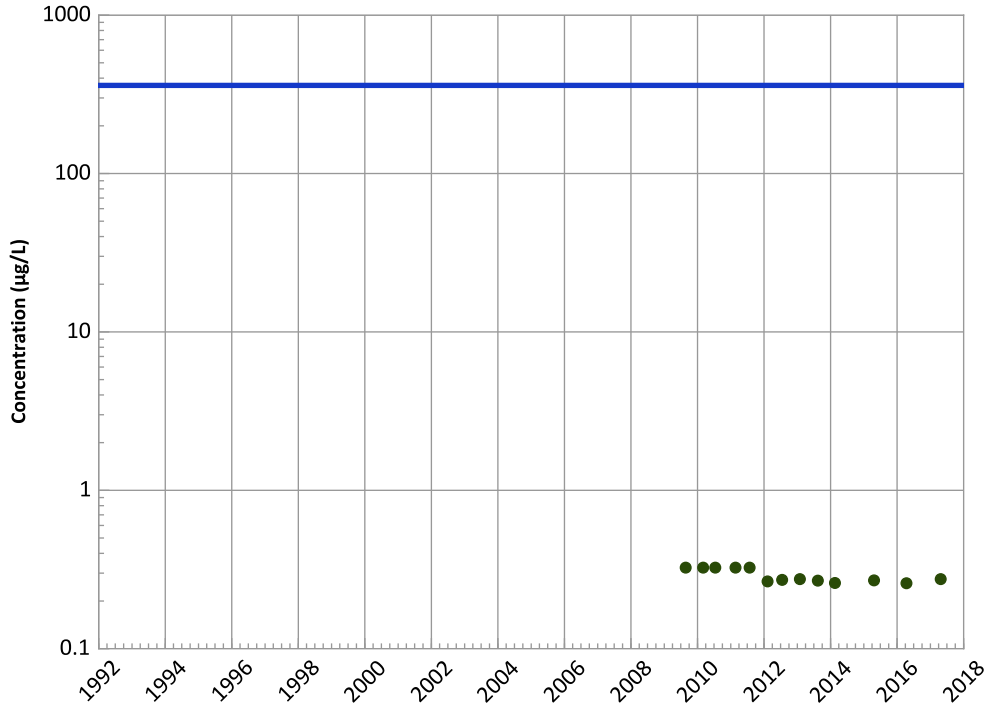
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

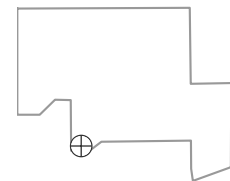
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

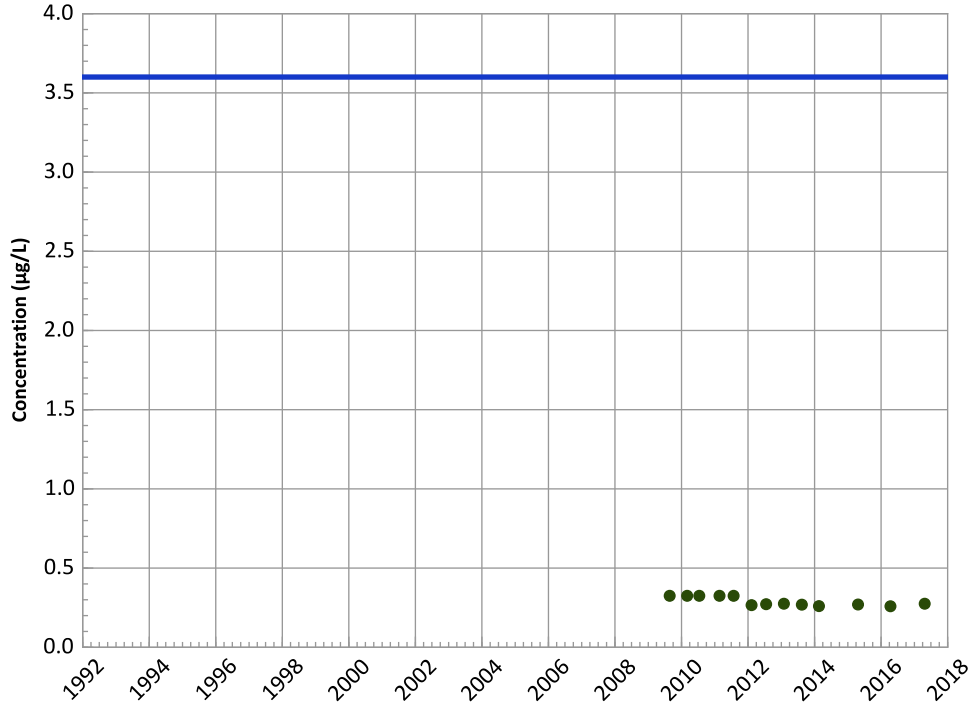


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/24/2009 to 04/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1131 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

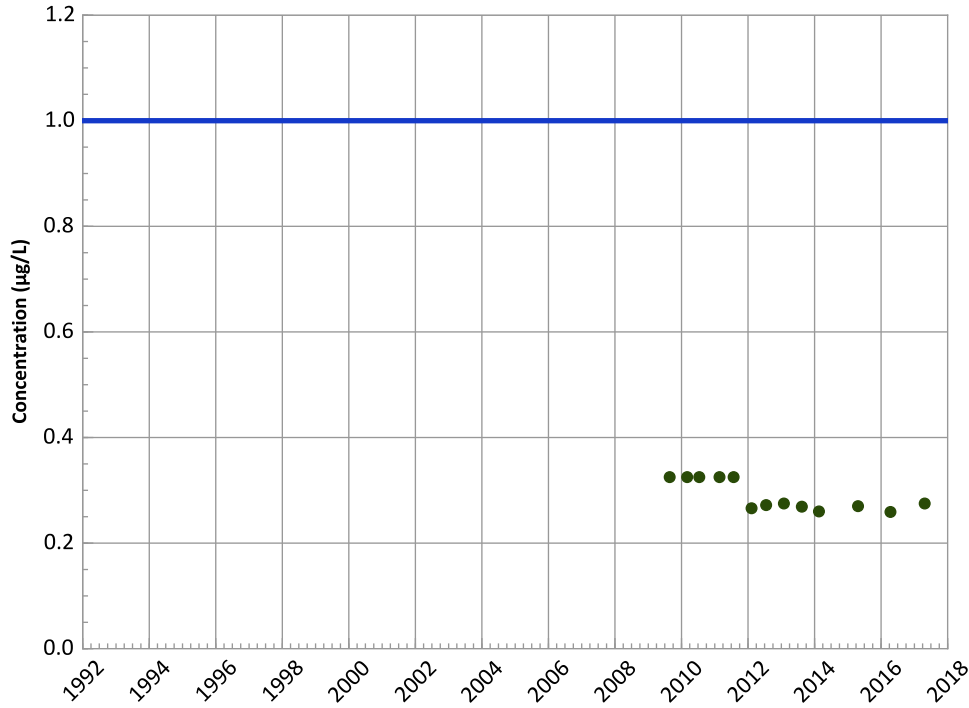
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

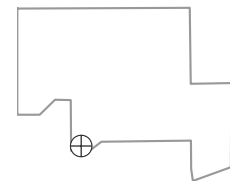
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

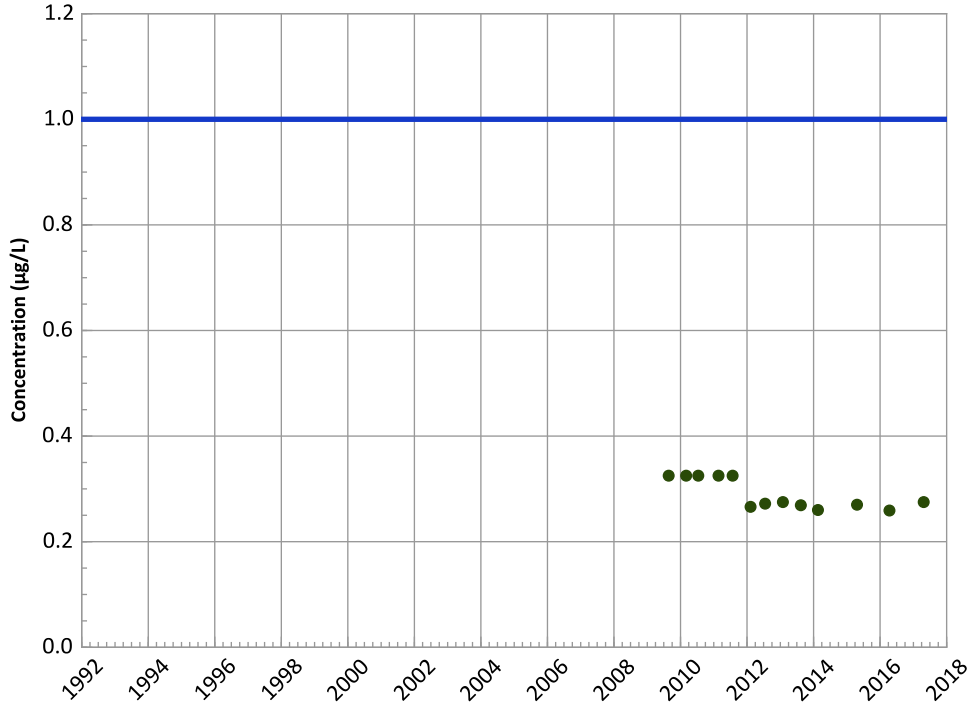


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/24/2009 to 04/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1131 in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

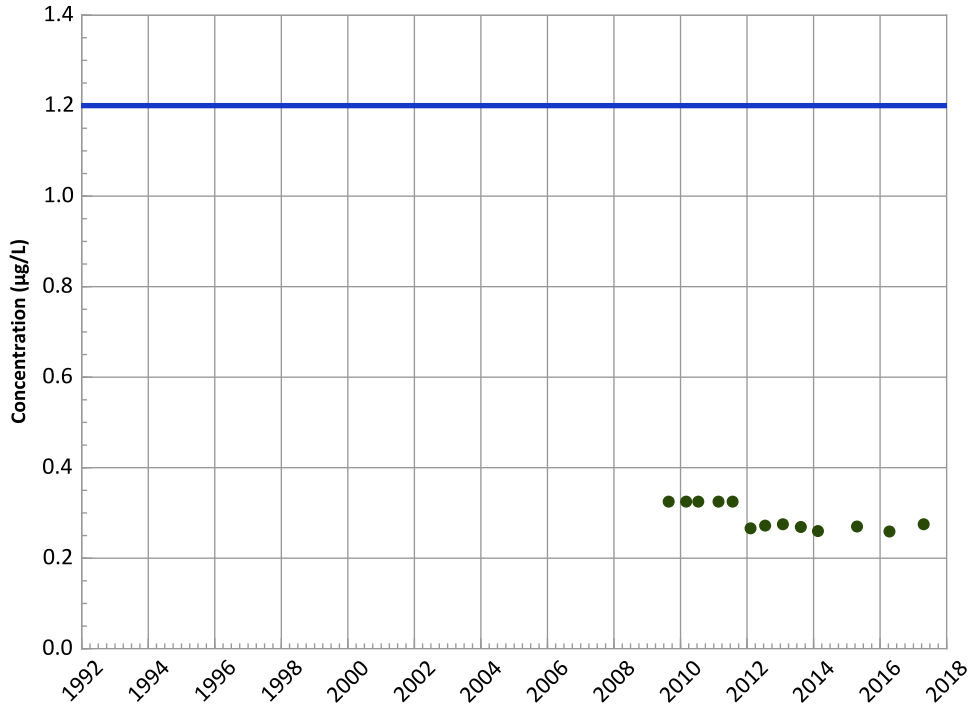
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

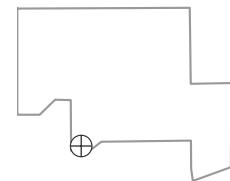
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

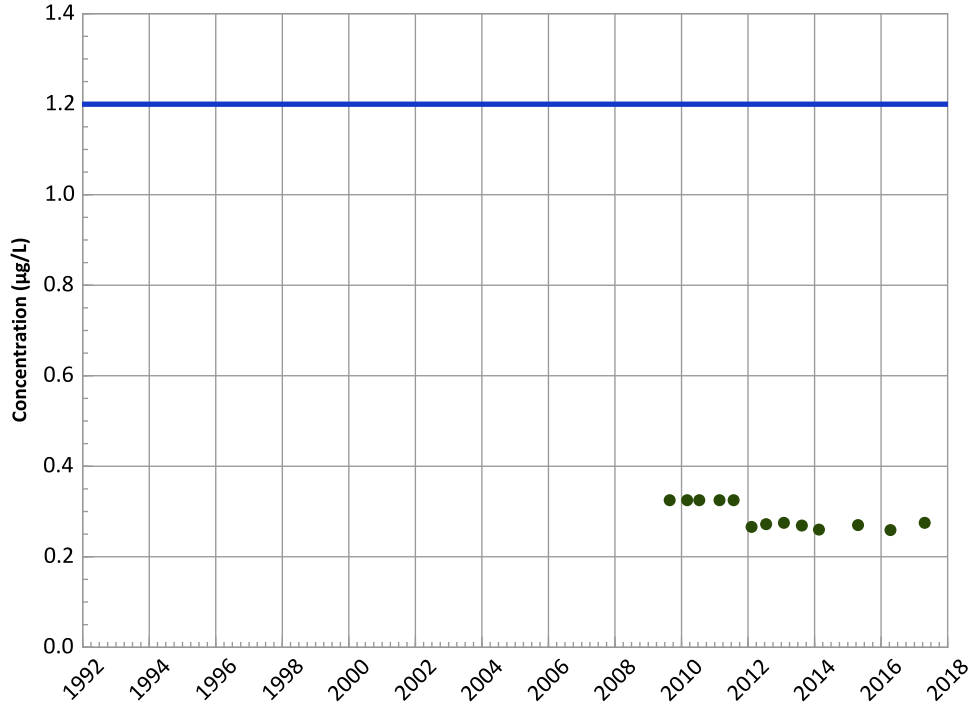


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/24/2009 to 04/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1131 in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

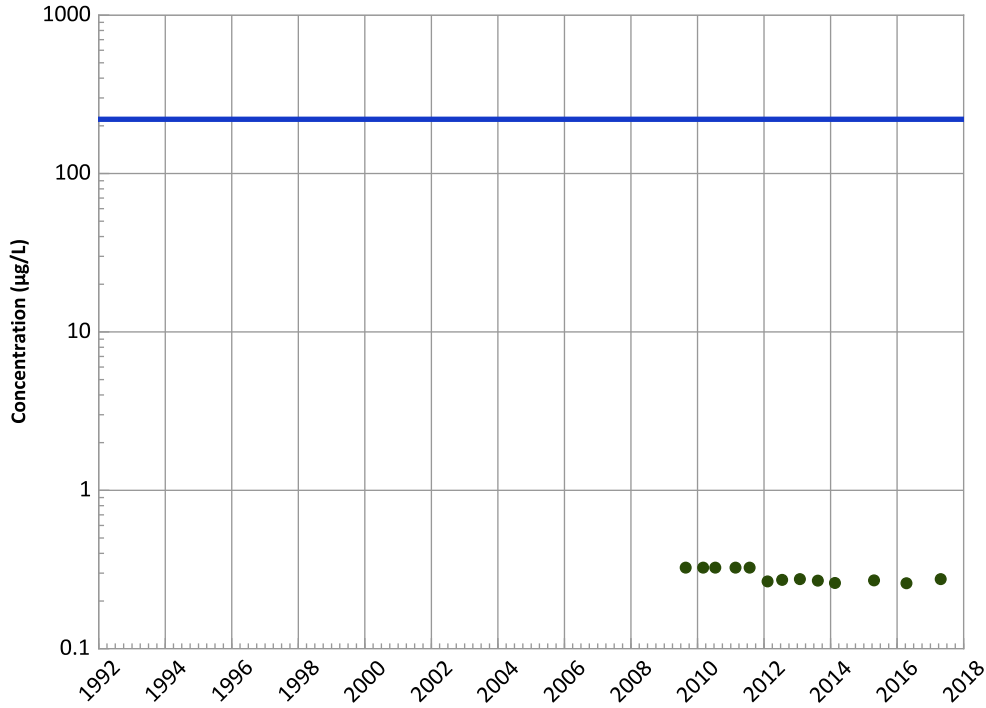
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,3,5-Trinitrobenzene Trend



Concentration Trend

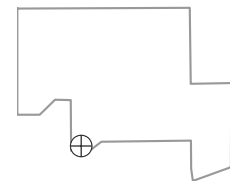
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

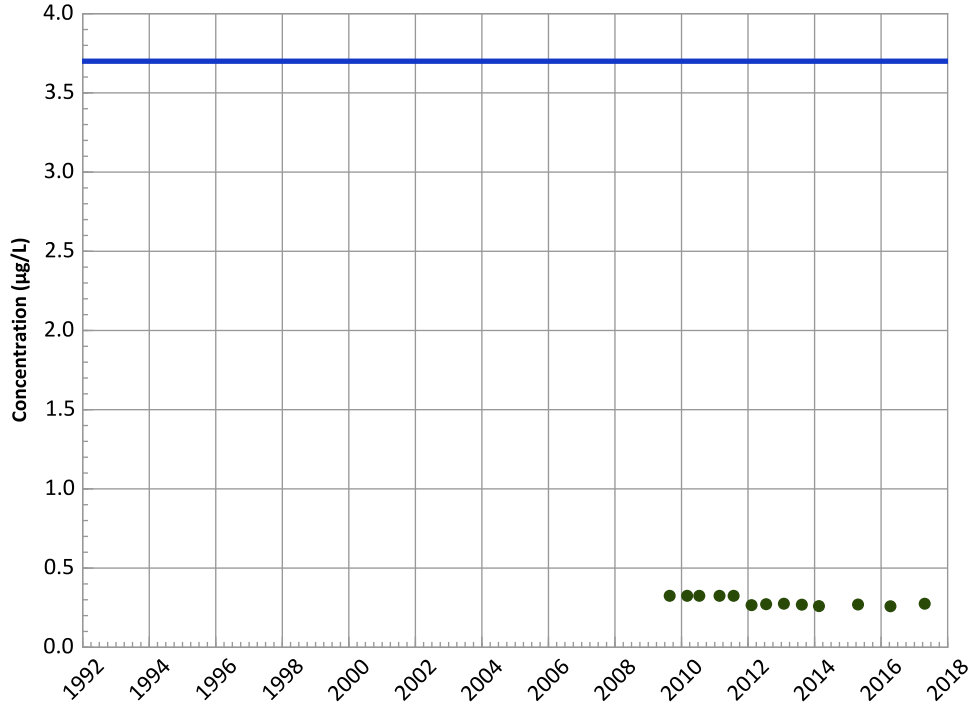


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/24/2009 to 04/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1131 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

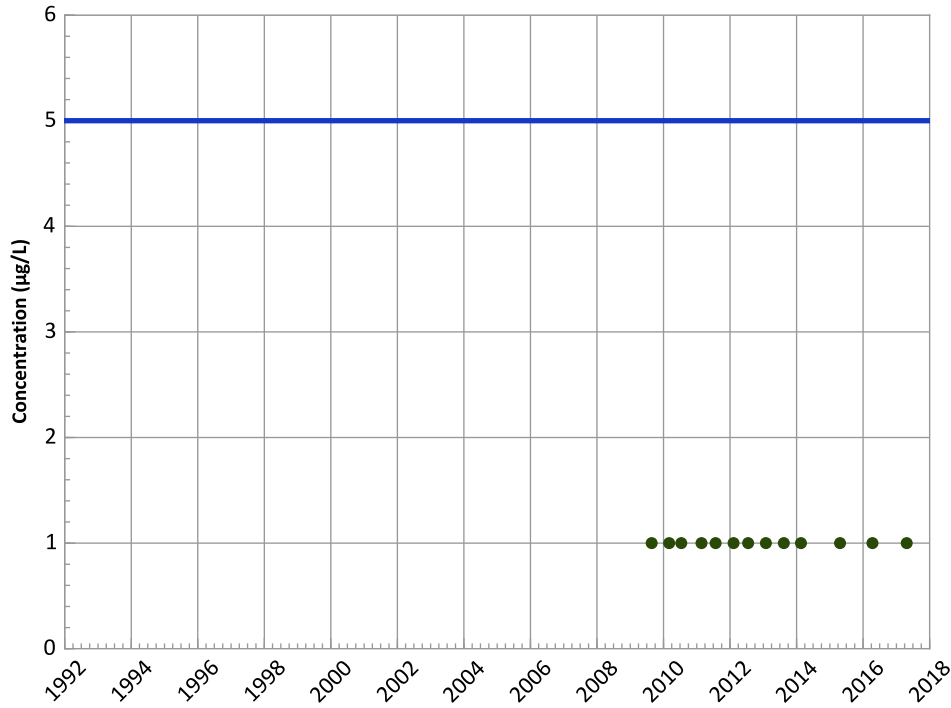
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Tetrachloroethylene (PCE) Trend



Concentration Trend

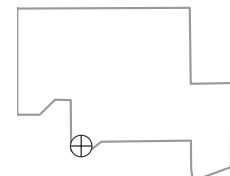
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

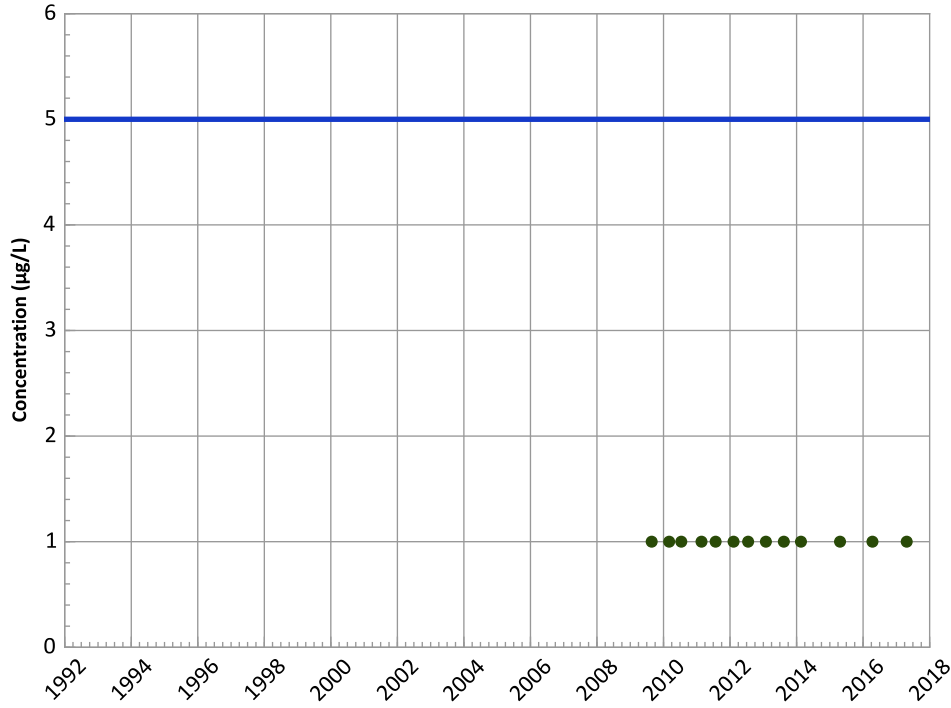


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/24/2009 to 04/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1131 in Perched Aquifer
USDOE/NNSA Pantex Plant

Trichloroethene Trend



Concentration Trend

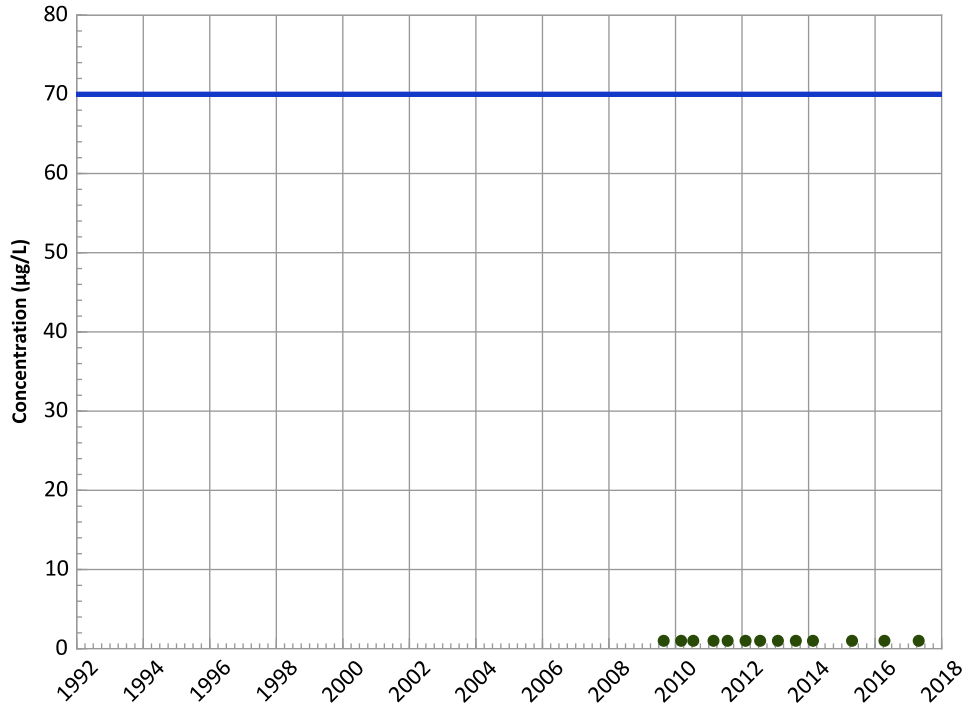
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

cis-1,2-Dichloroethene Trend



Concentration Trend

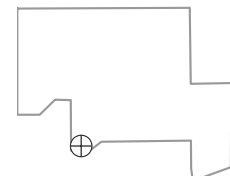
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

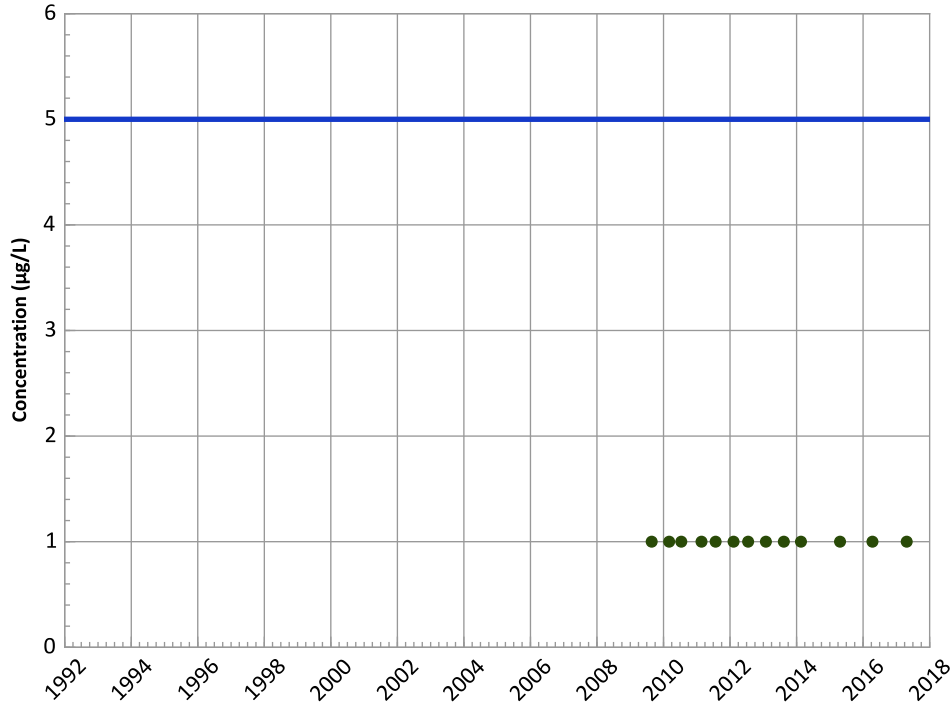
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/24/2009 to 04/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1131 in Perched Aquifer
USDOE/NNSA Pantex Plant
1,2-Dichloroethane Trend**



Concentration Trend

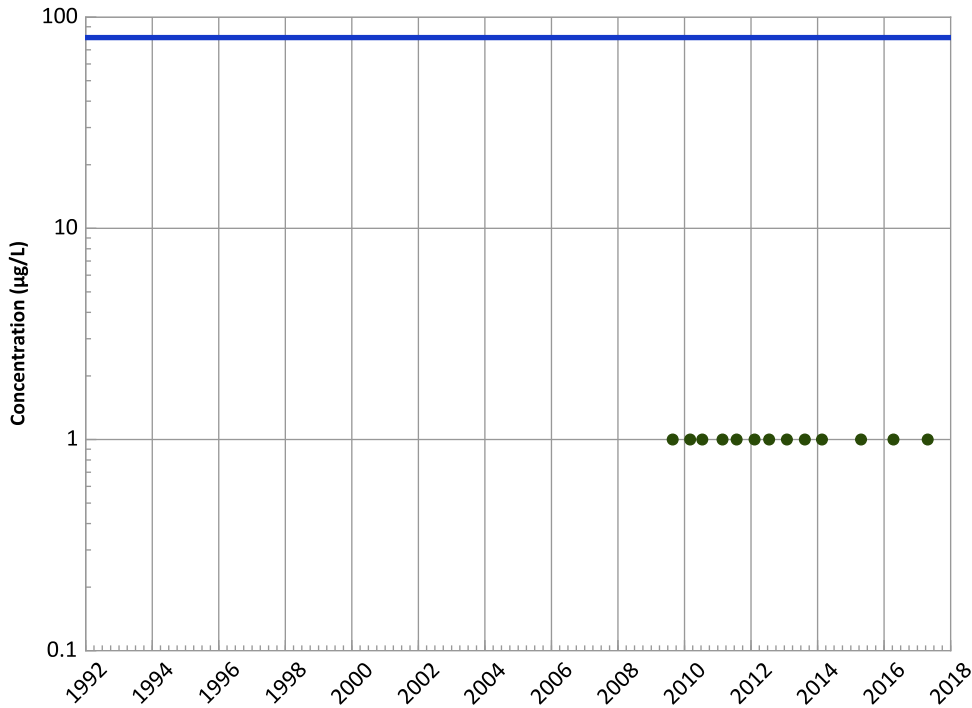
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Chloroform Trend



Concentration Trend

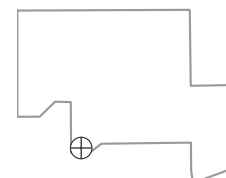
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

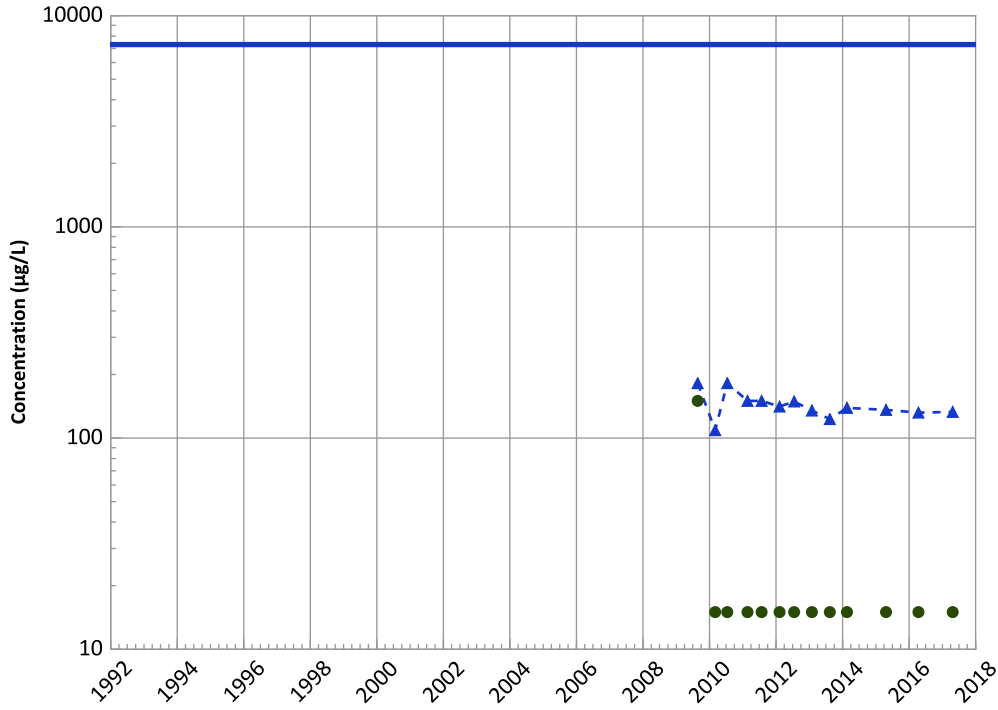
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/24/2009 to 04/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1131 in Perched Aquifer
USDOE/NNSA Pantex Plant
Boron Trend**

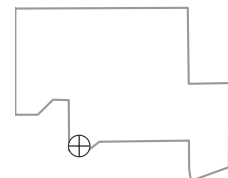


Concentration Trend
MAROS Mann-Kendall Method
 Data (): Decreasing
 All Data: Decreasing
MAROS Linear Regression Method
 Data (): Stable
 All Data: Probably Decreasing

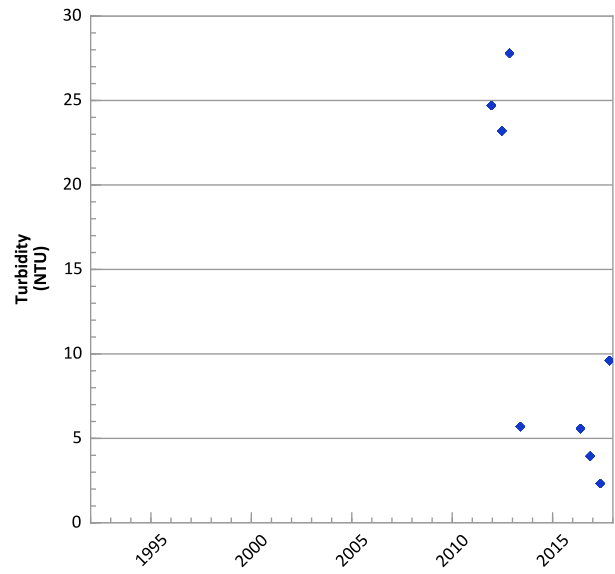
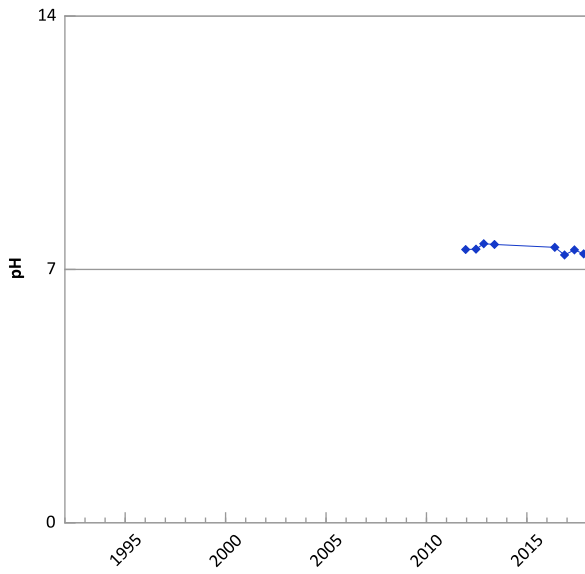
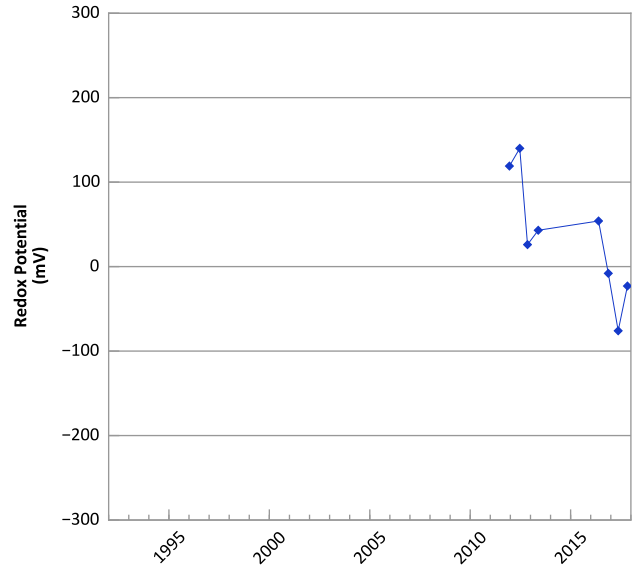
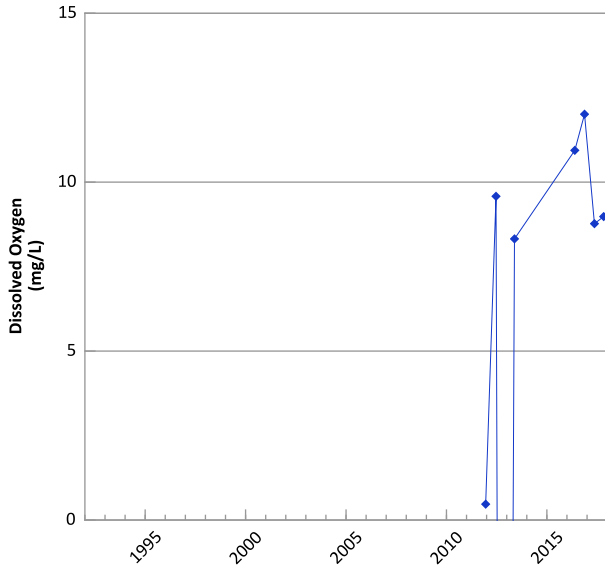
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 08/24/2009 to 04/24/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

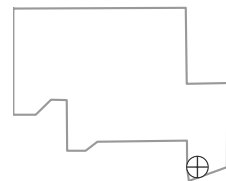


**PTX06-1133A in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



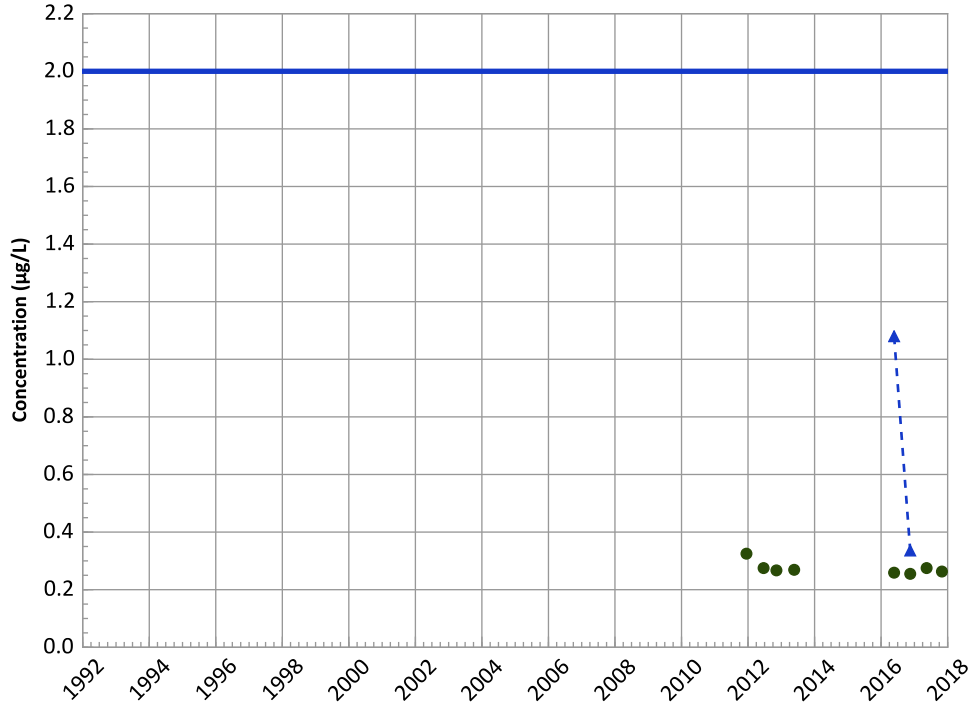
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 12/15/2011 to 10/30/2017
 Analysis Date: 03/21/2018

Well Location



PTX06-1133A in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

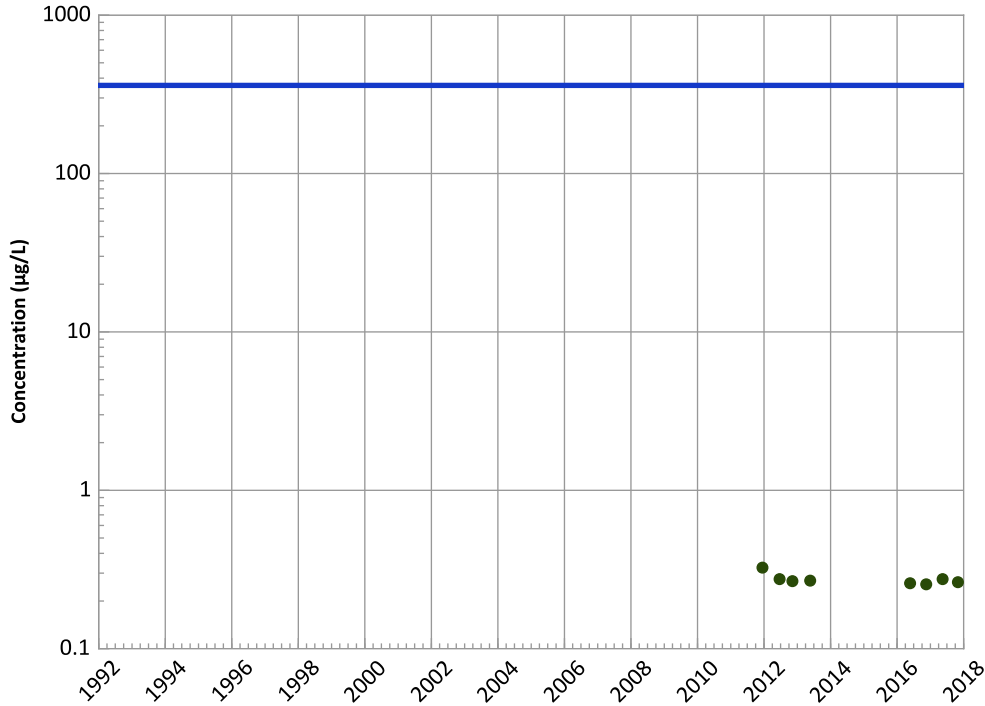
Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

All Non-Detect

All Data

All Non-Detect

MAROS Linear Regression Method

Data ():

All Non-Detect

All Data

All Non-Detect

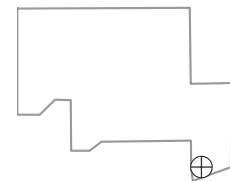
Query Date Range: 01/01/1992 to 12/31/2017

Data Date Range: 12/15/2011 to 10/30/2017

Analysis Date: 03/21/2018

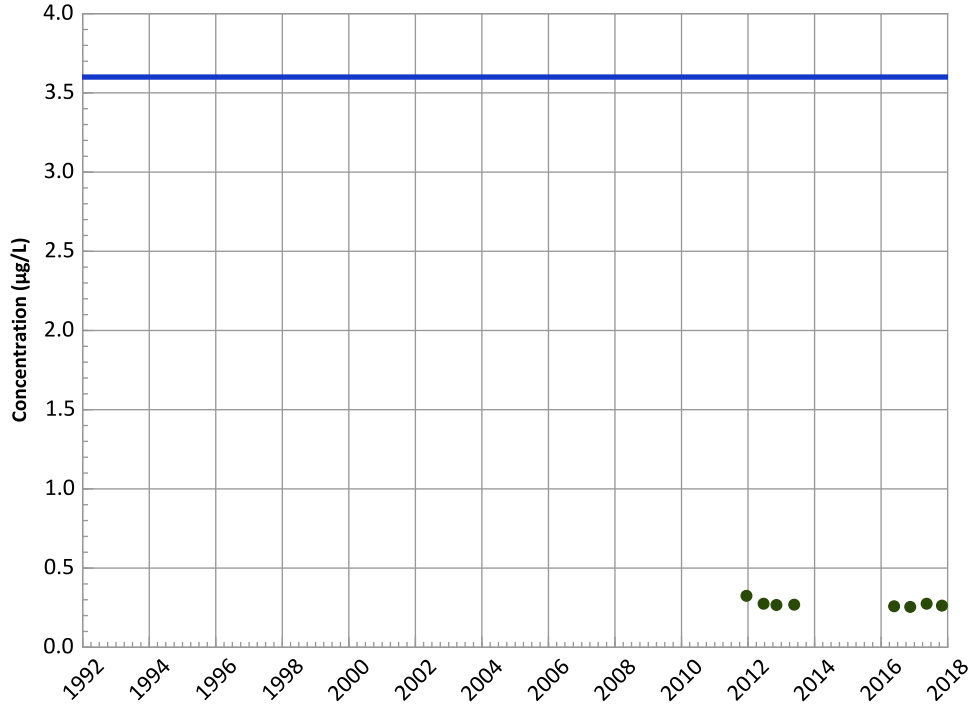
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1133A in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

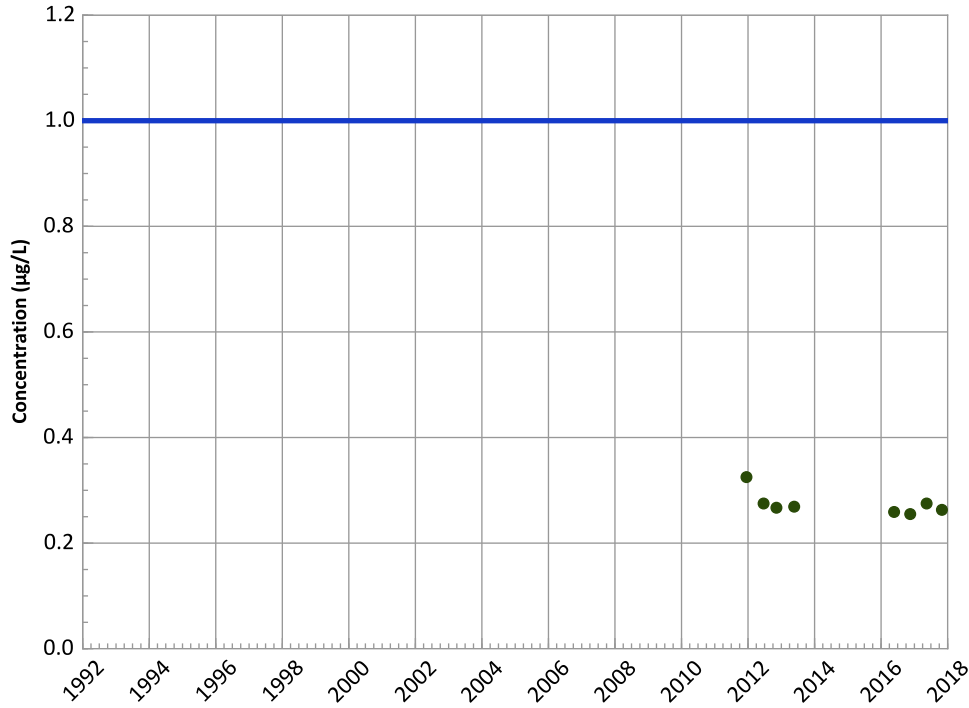
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

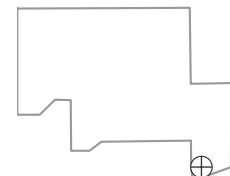
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

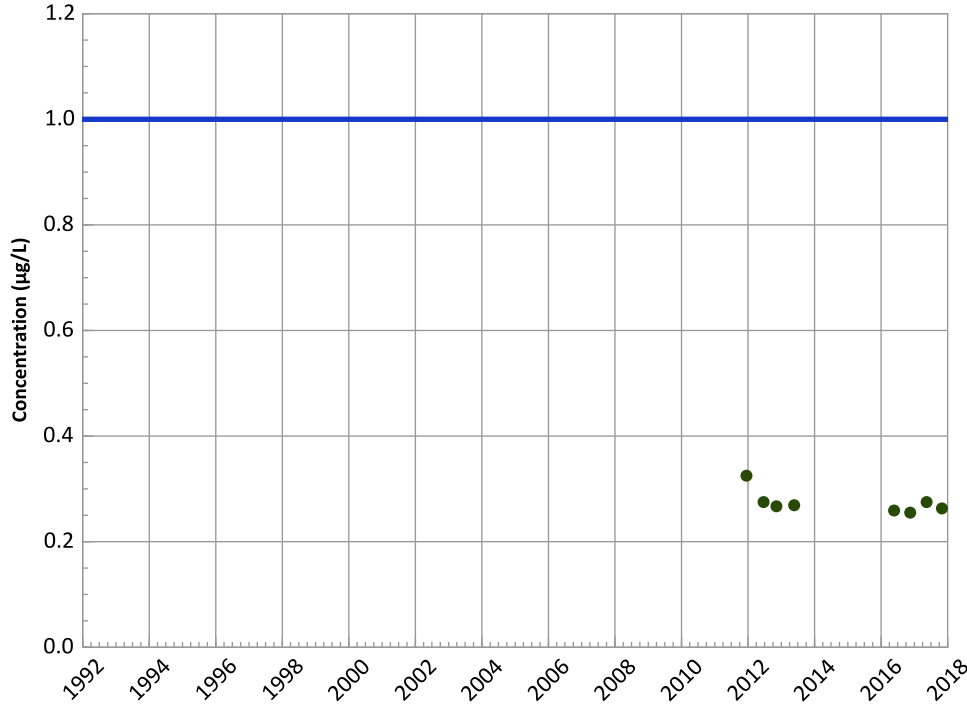


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/15/2011 to 10/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1133A in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

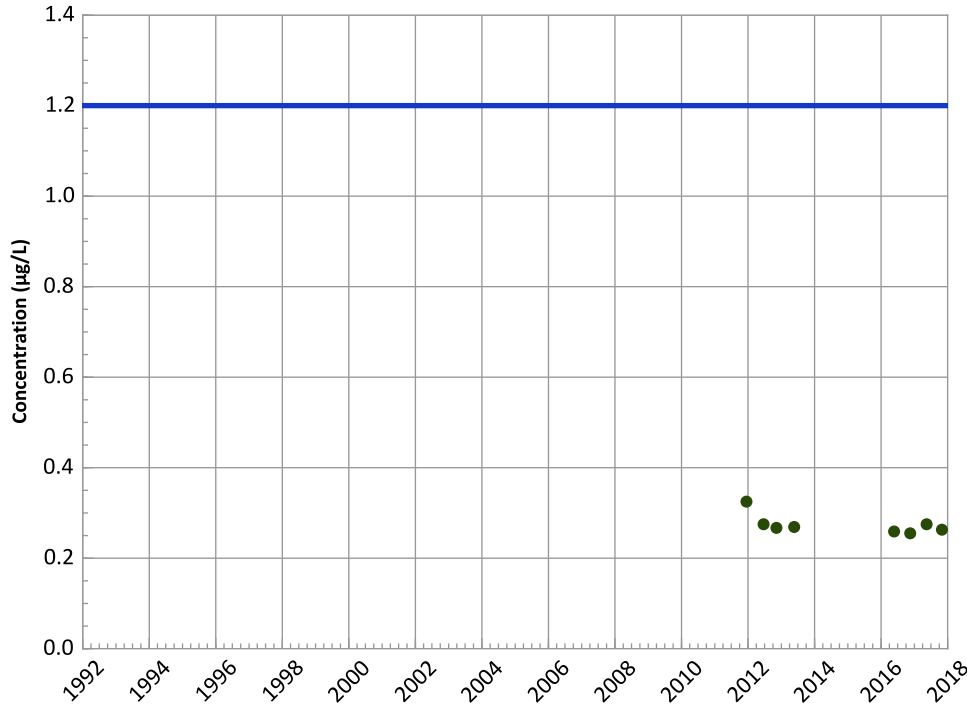
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

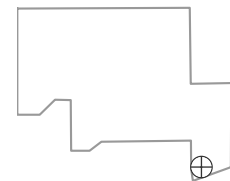
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

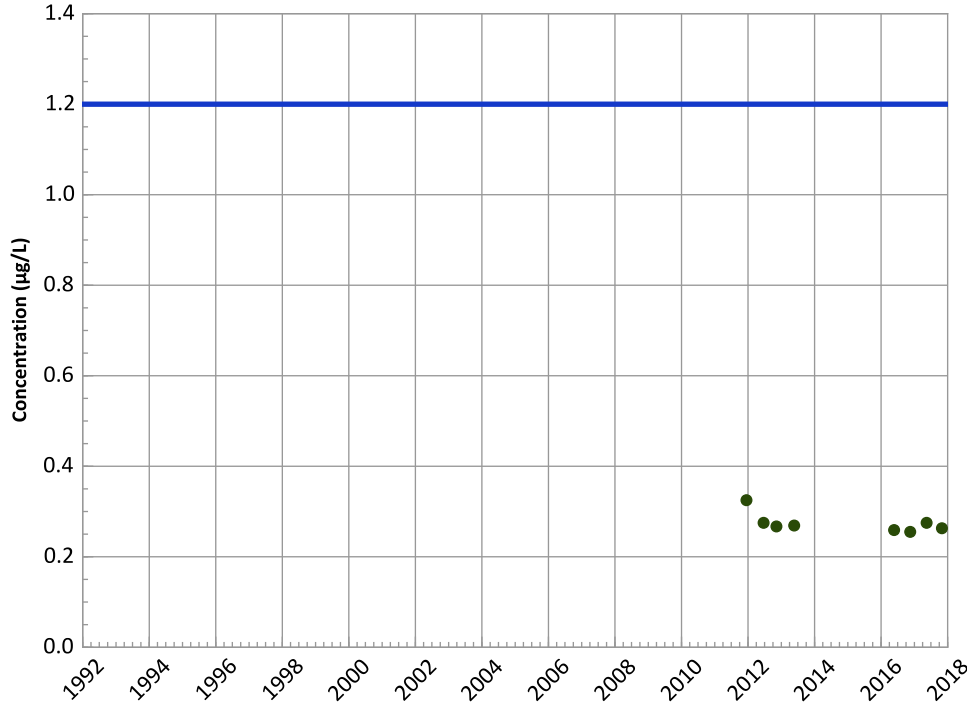


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/15/2011 to 10/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1133A in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

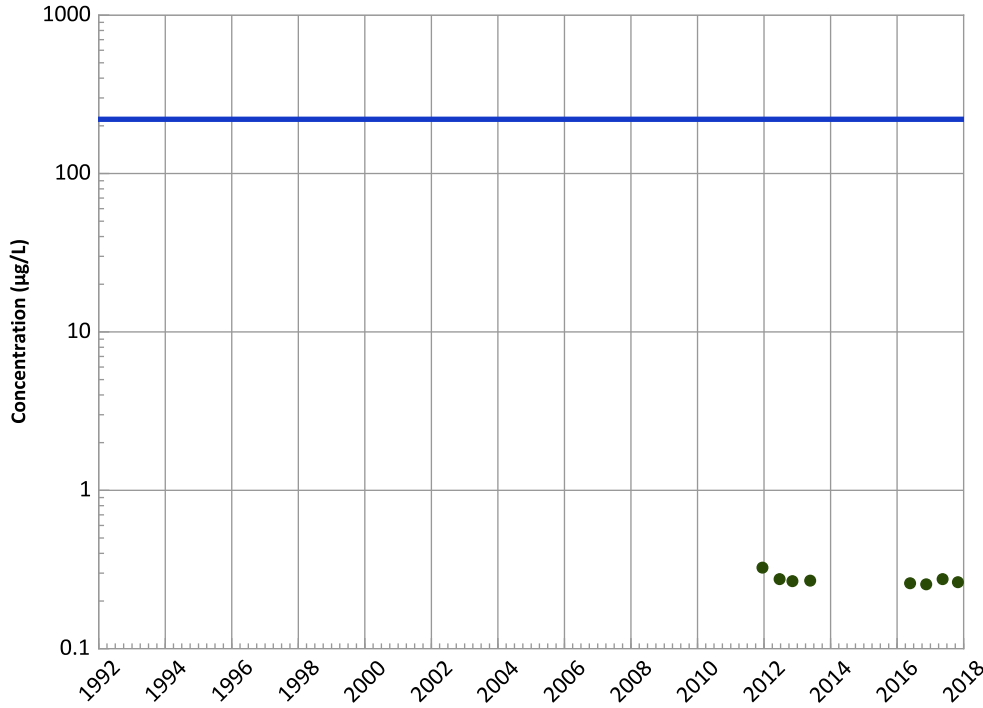
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,3,5-Trinitrobenzene Trend



Concentration Trend

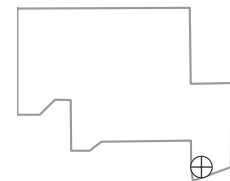
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

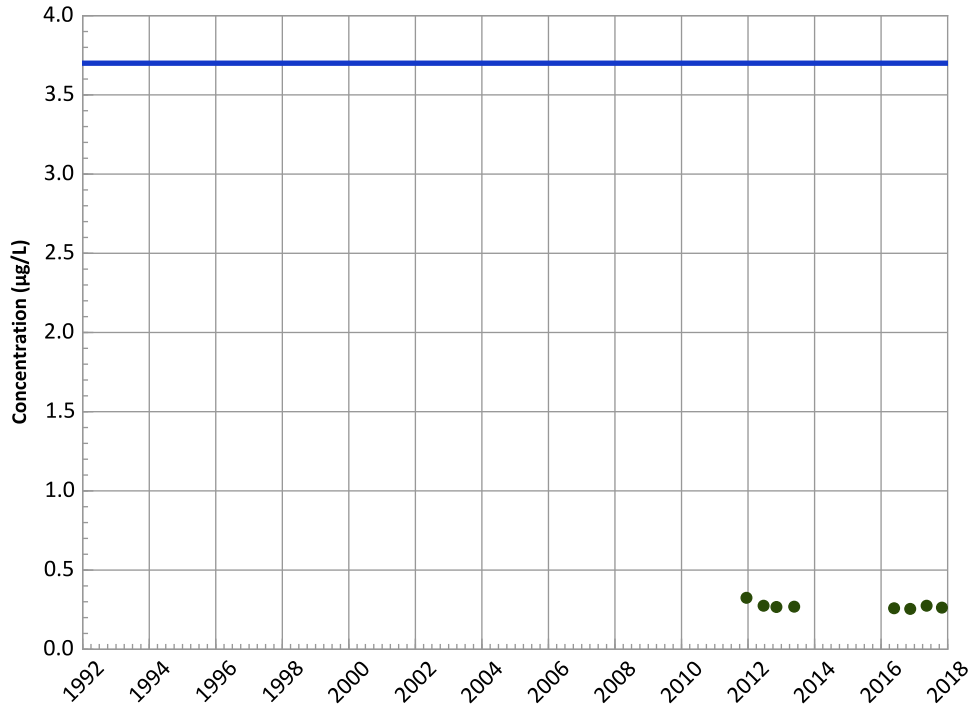


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/15/2011 to 10/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1133A in Perched Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

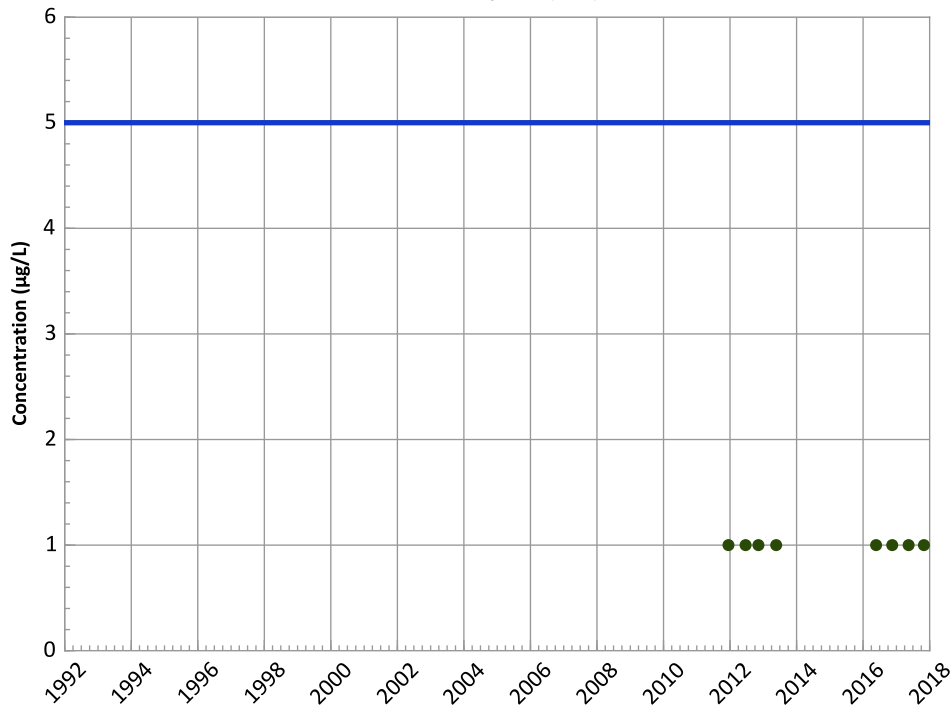
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Tetrachloroethylene (PCE) Trend



Concentration Trend

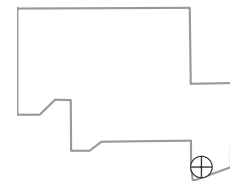
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

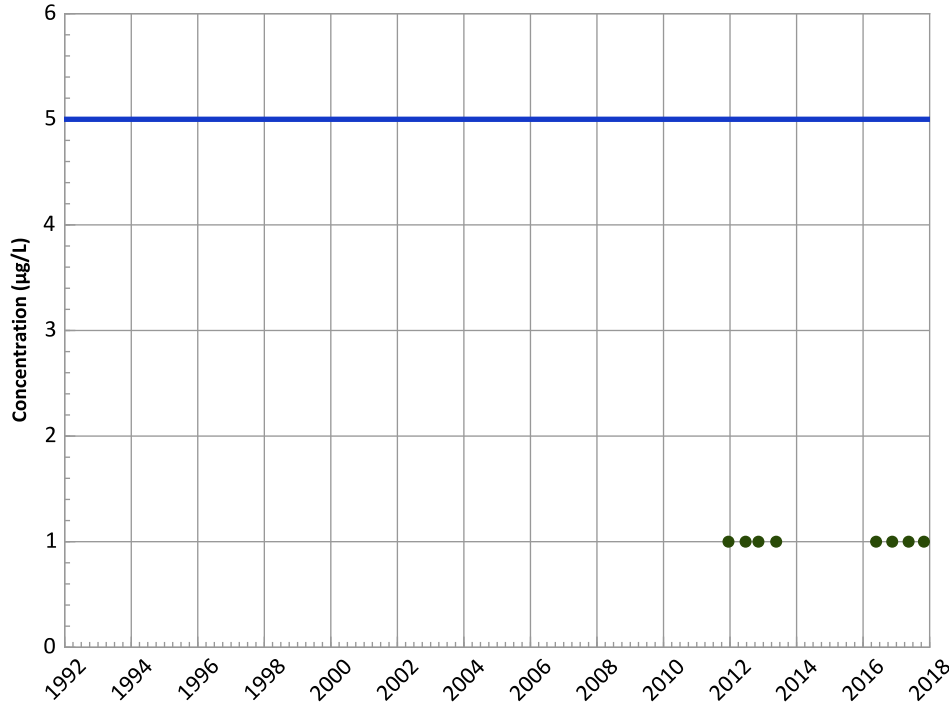


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/15/2011 to 10/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1133A in Perched Aquifer
USDOE/NNSA Pantex Plant

Trichloroethene Trend



Concentration Trend

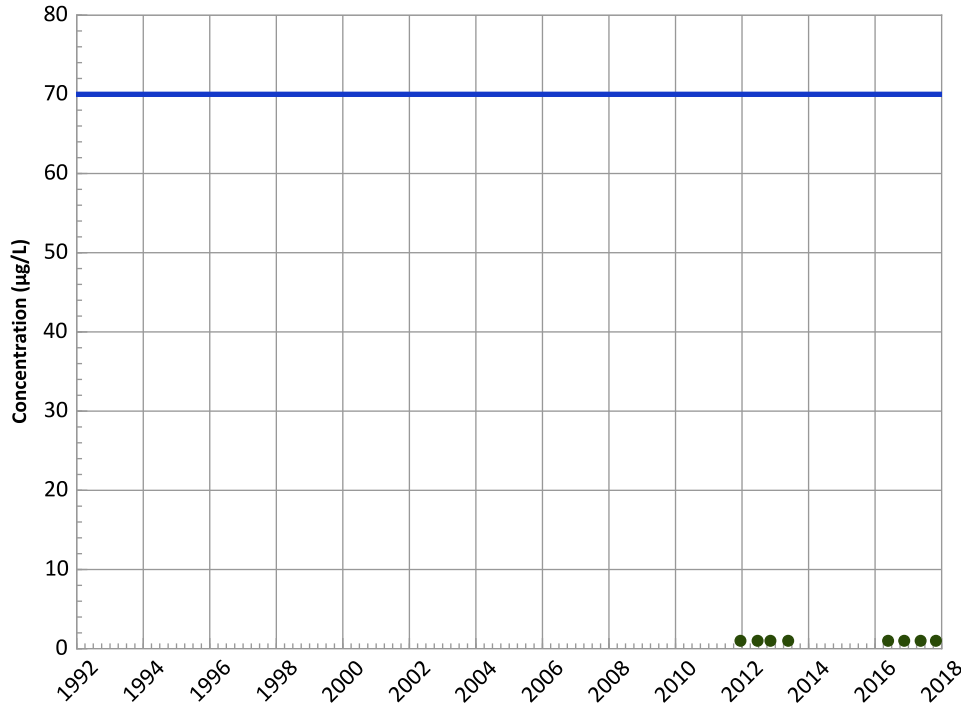
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

cis-1,2-Dichloroethene Trend



Concentration Trend

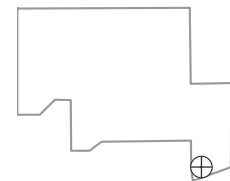
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

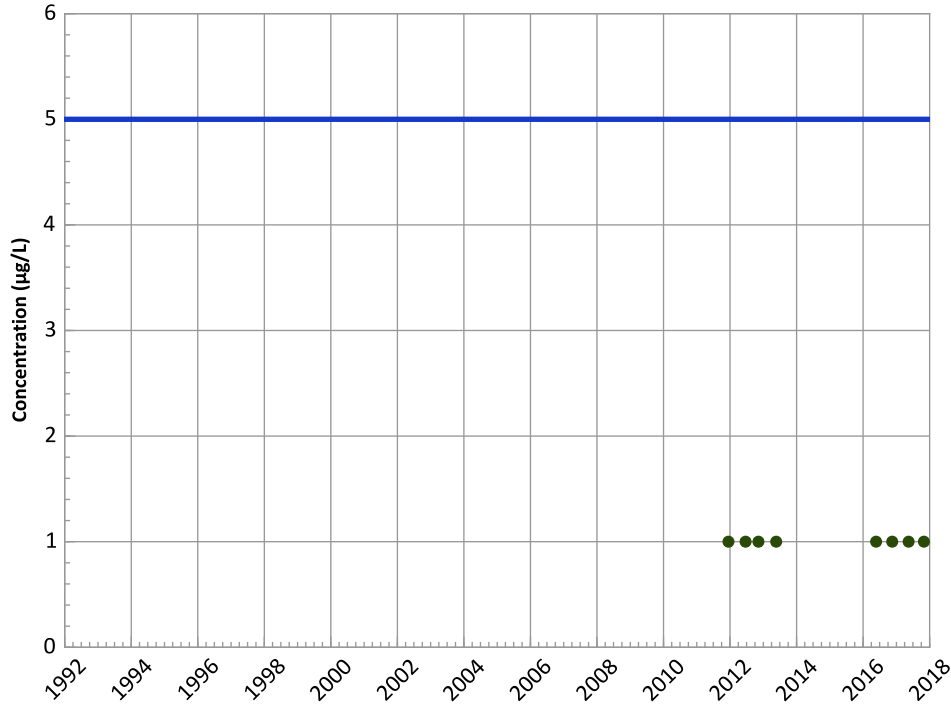


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/15/2011 to 10/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1133A in Perched Aquifer
USDOE/NNSA Pantex Plant

1,2-Dichloroethane Trend



Concentration Trend

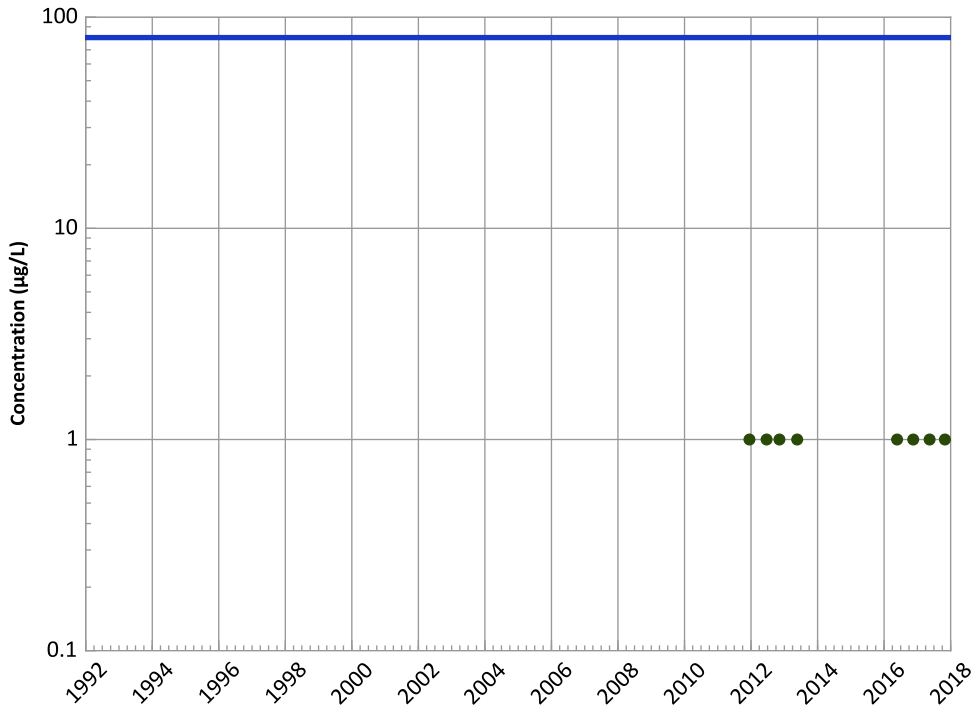
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Chloroform Trend



Concentration Trend

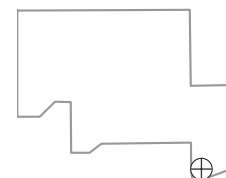
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

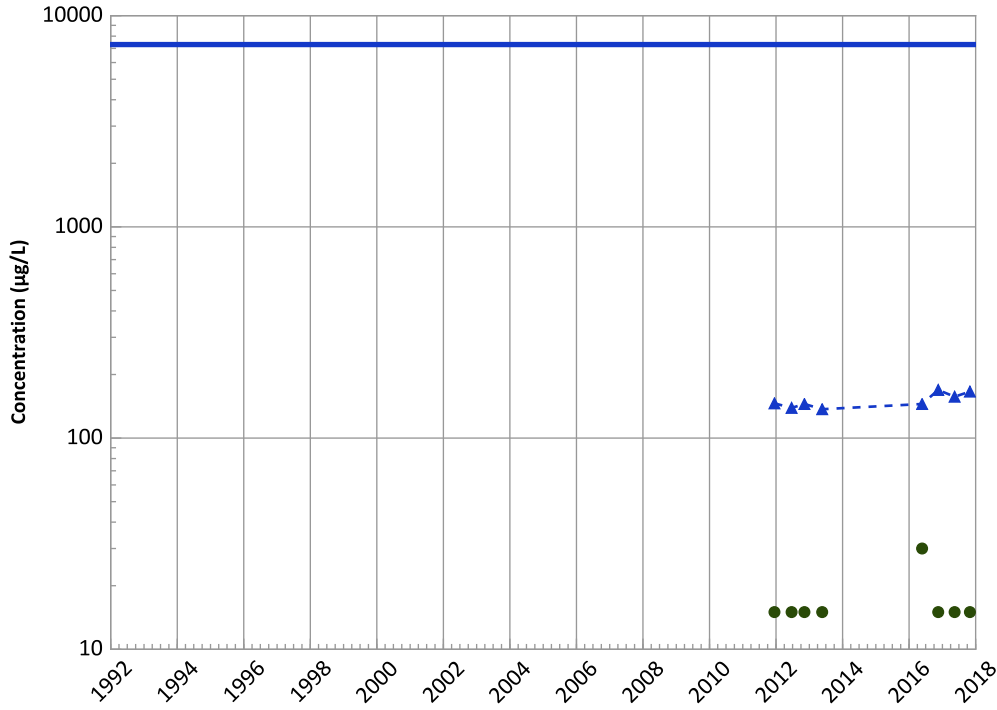


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/15/2011 to 10/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1133A in Perched Aquifer
USDOE/NNSA Pantex Plant

Boron Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

No Trend

All Data

No Trend

MAROS Linear Regression Method

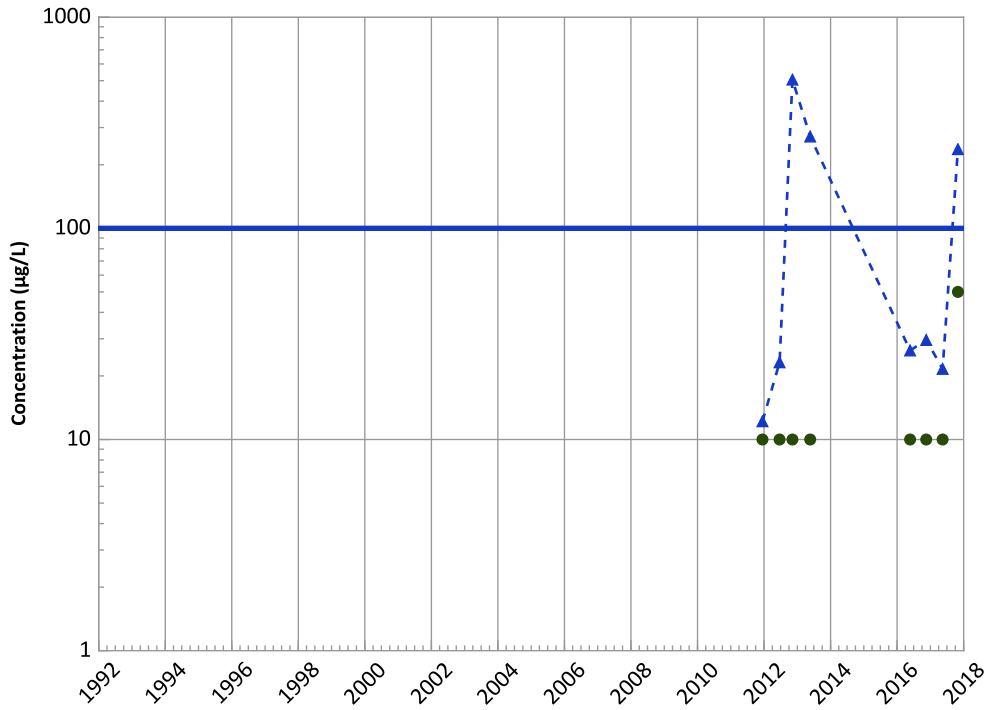
Data ():

Probably Increasing

All Data

Increasing

Chromium, Total Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

No Trend

All Data

No Trend

MAROS Linear Regression Method

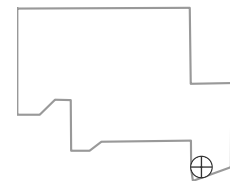
Data ():

No Trend

All Data

No Trend

Well Location

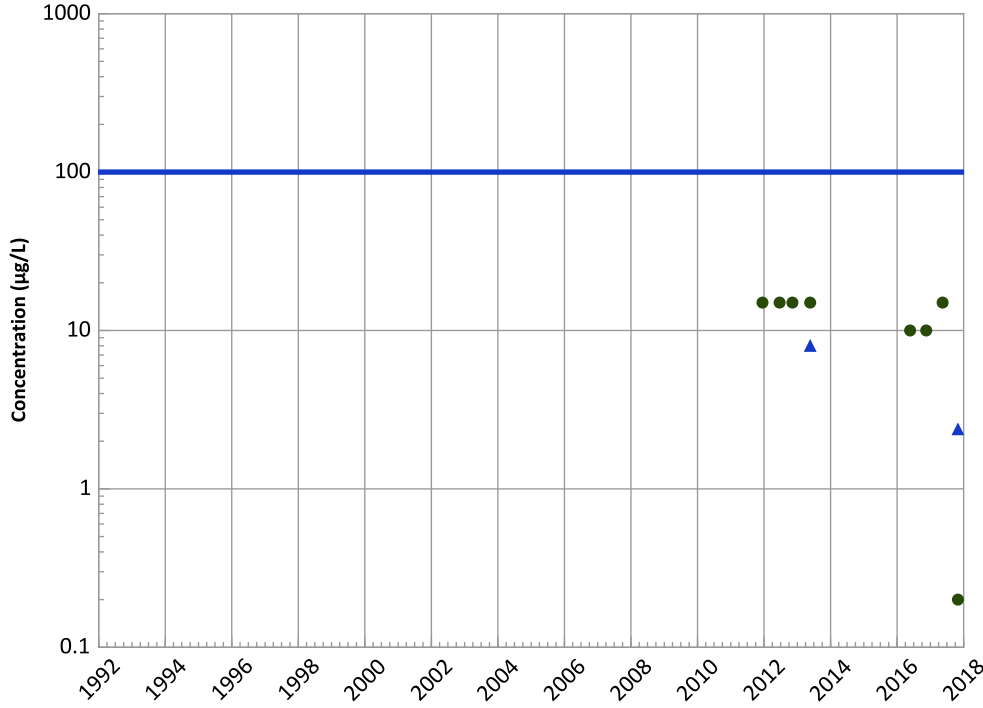


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/15/2011 to 10/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1133A in Perched Aquifer
USDOE/NNSA Pantex Plant

Chromium, Hexavalent Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

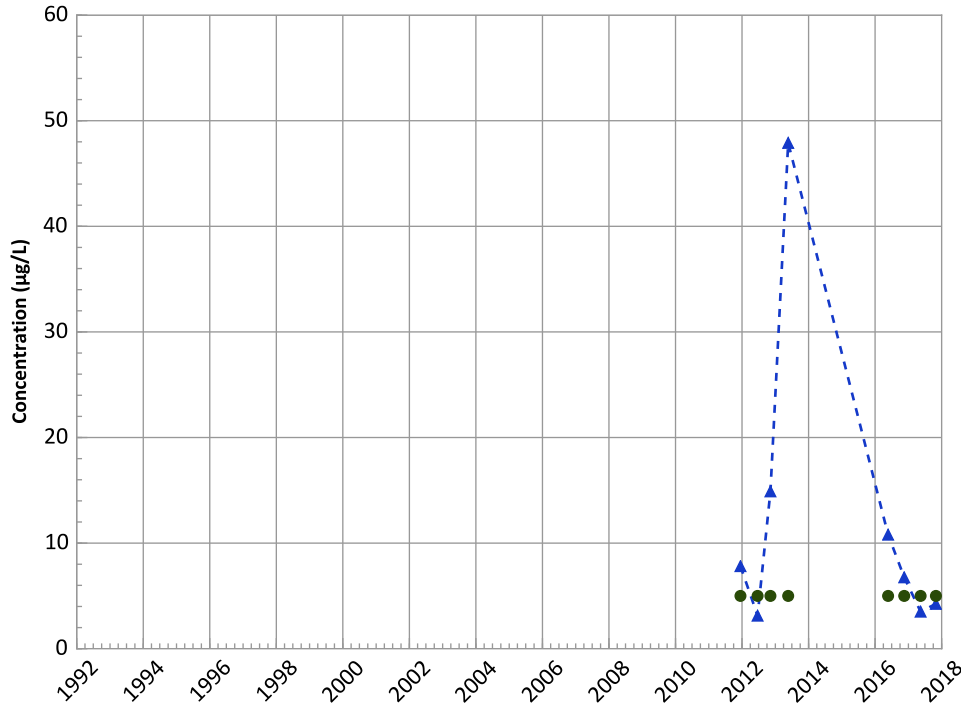
Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

Manganese Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

No Trend

All Data

Decreasing

MAROS Linear Regression Method

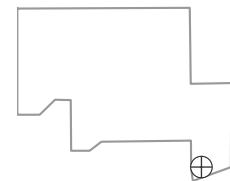
Data ():

No Trend

All Data

No Trend

Well Location

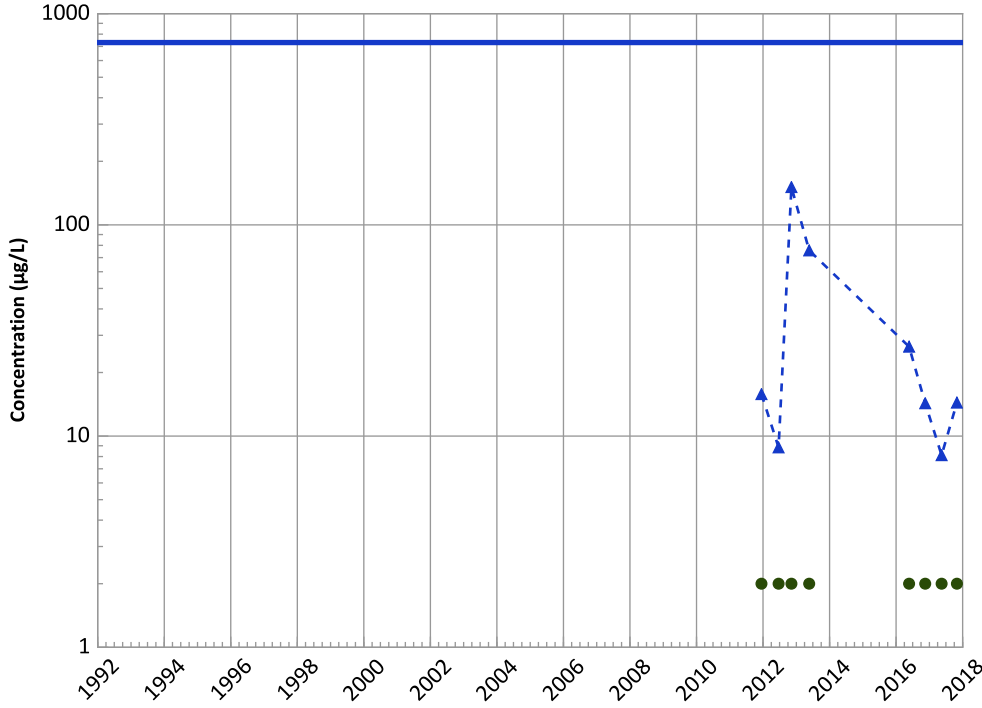


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/15/2011 to 10/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1133A in Perched Aquifer
USDOE/NNSA Pantex Plant

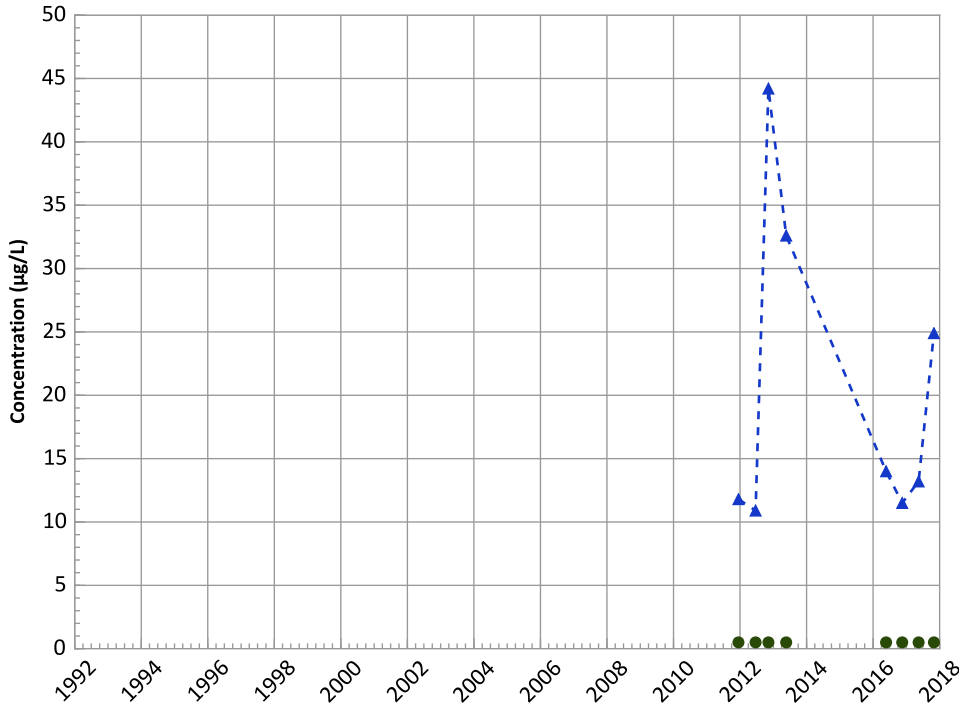
Nickel Trend



Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 Decreasing
 All Data
 Decreasing

MAROS Linear Regression Method
 Data ():
 No Trend
 All Data
 No Trend

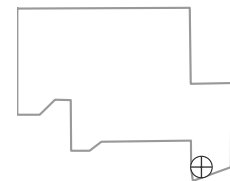
Molybdenum Trend



Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 Decreasing
 All Data
 No Trend

MAROS Linear Regression Method
 Data ():
 Stable
 All Data
 Stable

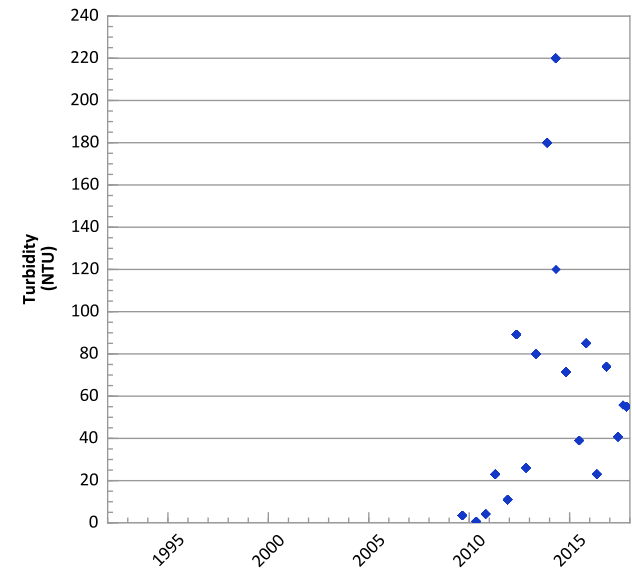
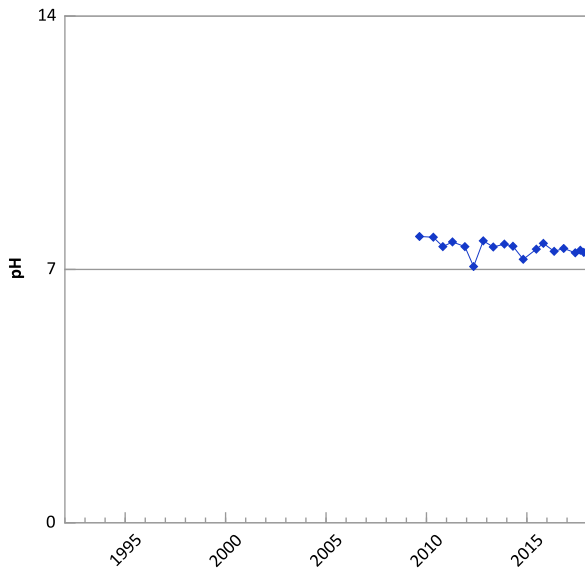
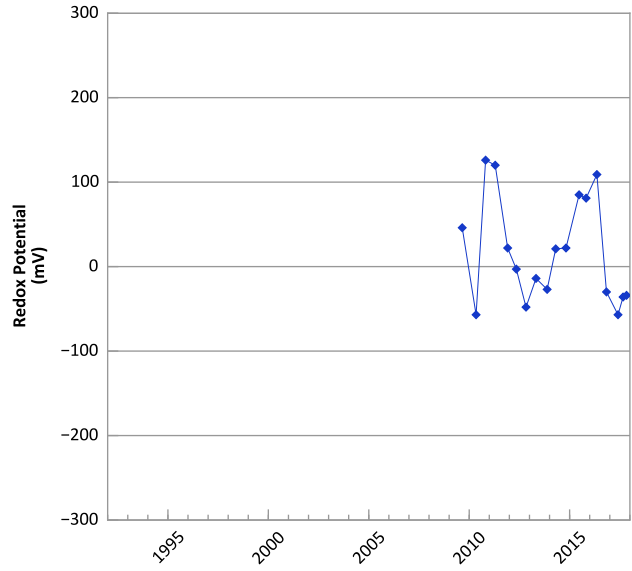
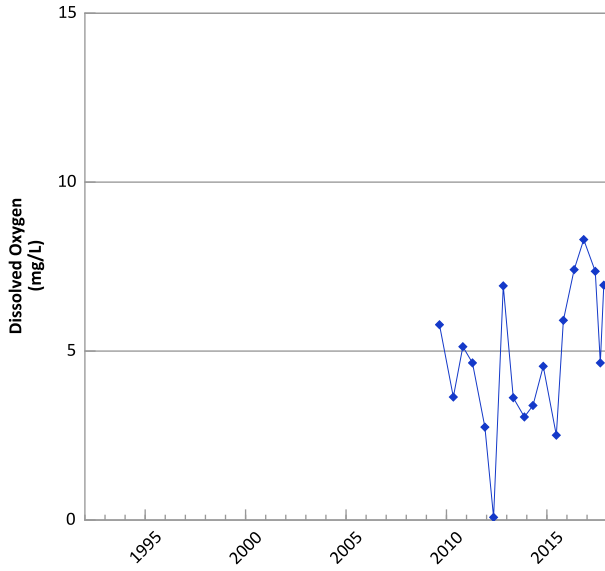
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 12/15/2011 to 10/30/2017
 Analysis Date: 03/21/2018

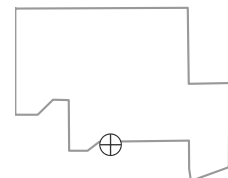
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1134 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



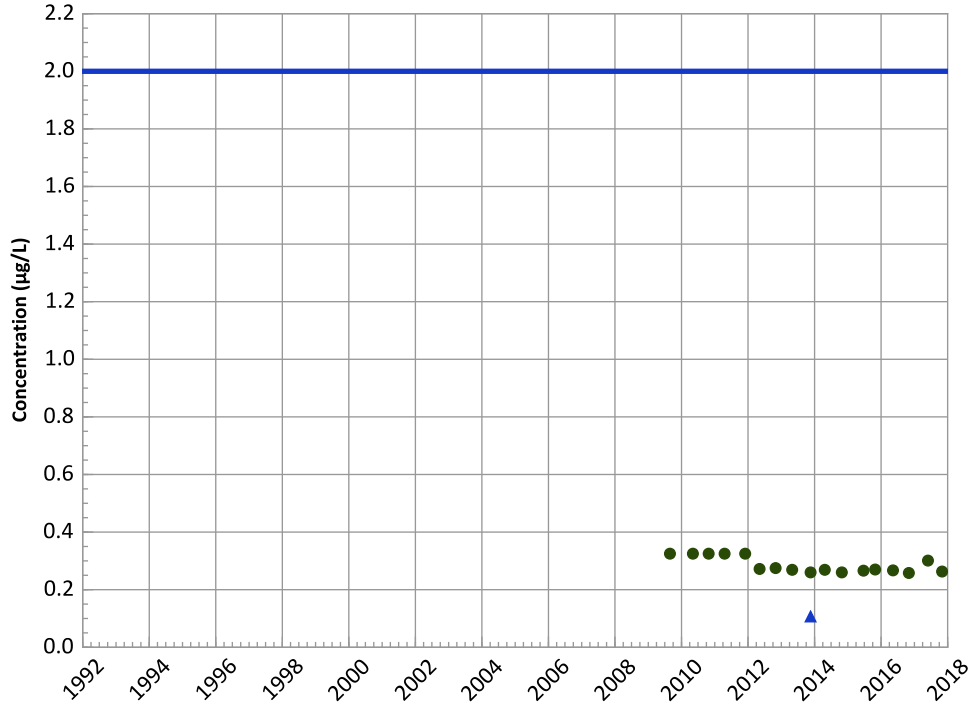
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 08/27/2009 to 11/01/2017
 Analysis Date: 03/21/2018

Well Location



PTX06-1134 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

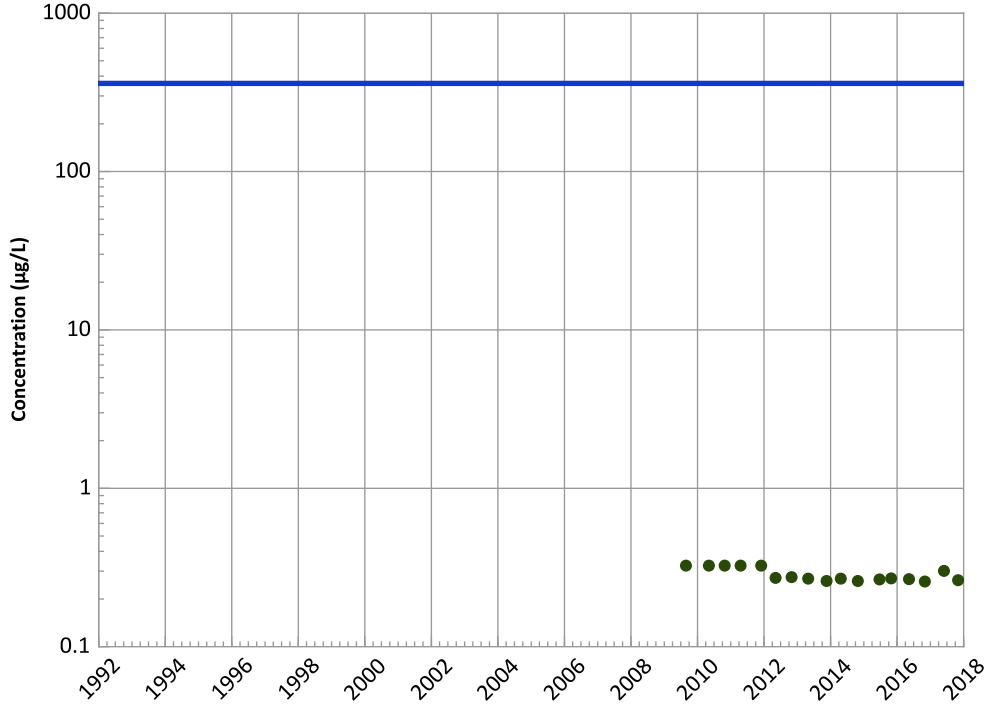
Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

All Non-Detect

All Data

All Non-Detect

MAROS Linear Regression Method

Data ():

All Non-Detect

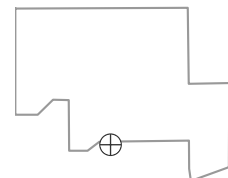
All Data

All Non-Detect

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/27/2009 to 11/01/2017
Analysis Date: 03/21/2018

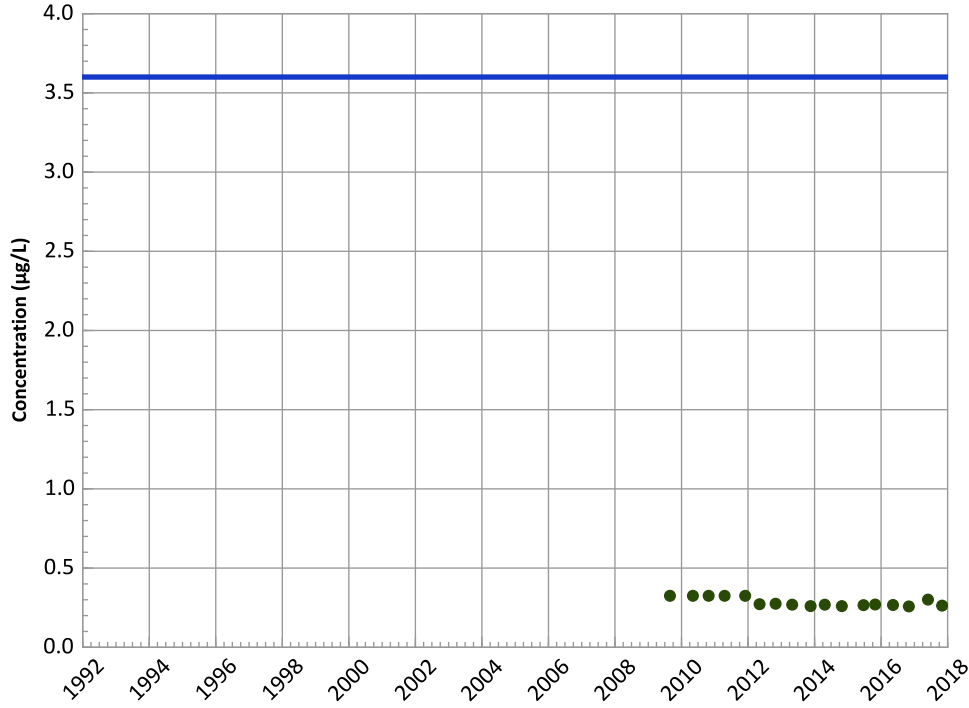
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1134 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

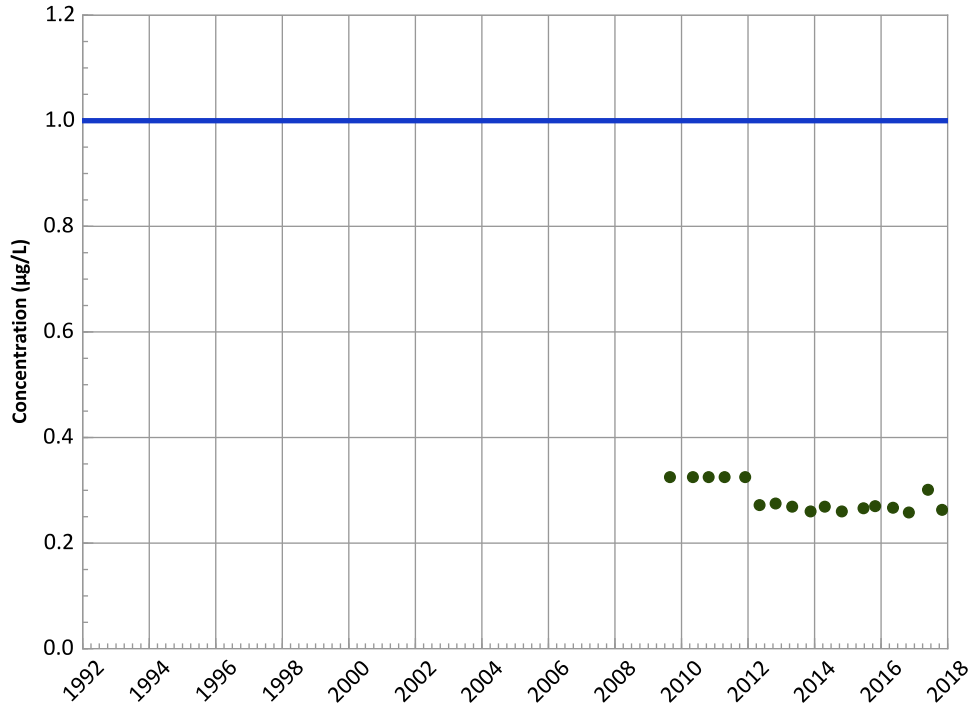
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

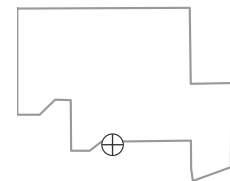
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

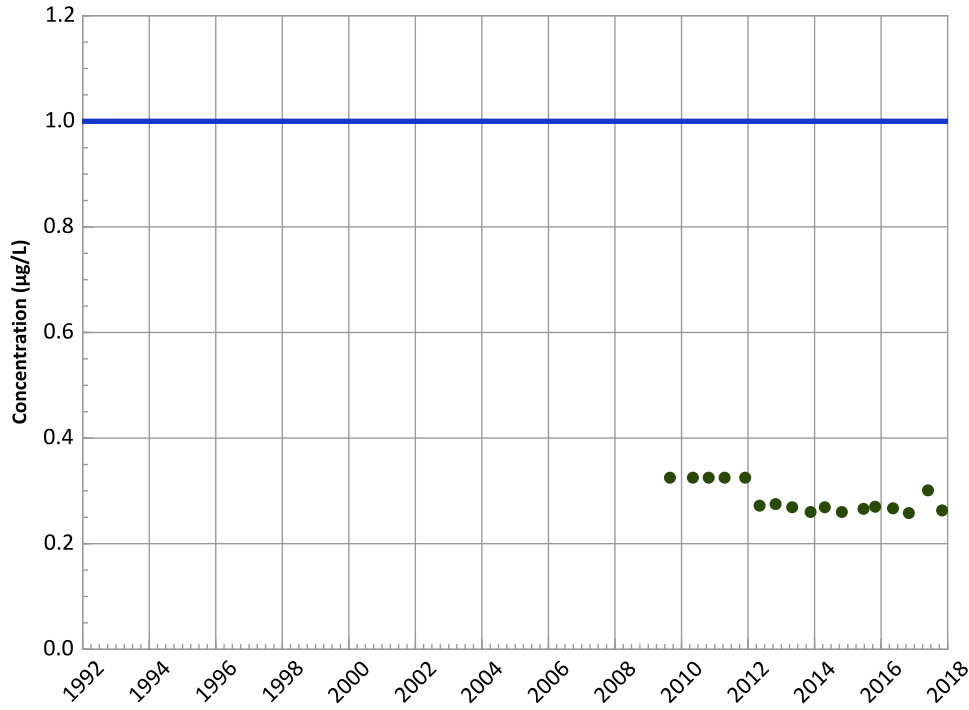


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/27/2009 to 11/01/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1134 in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

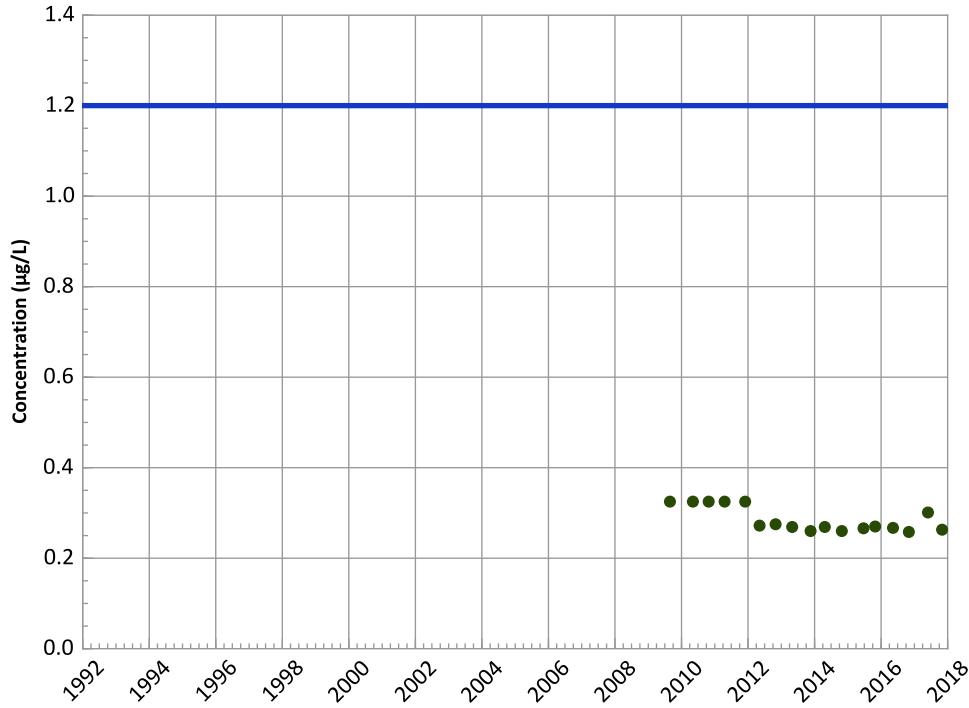
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

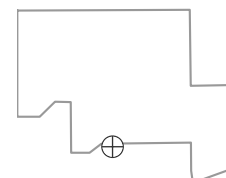
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

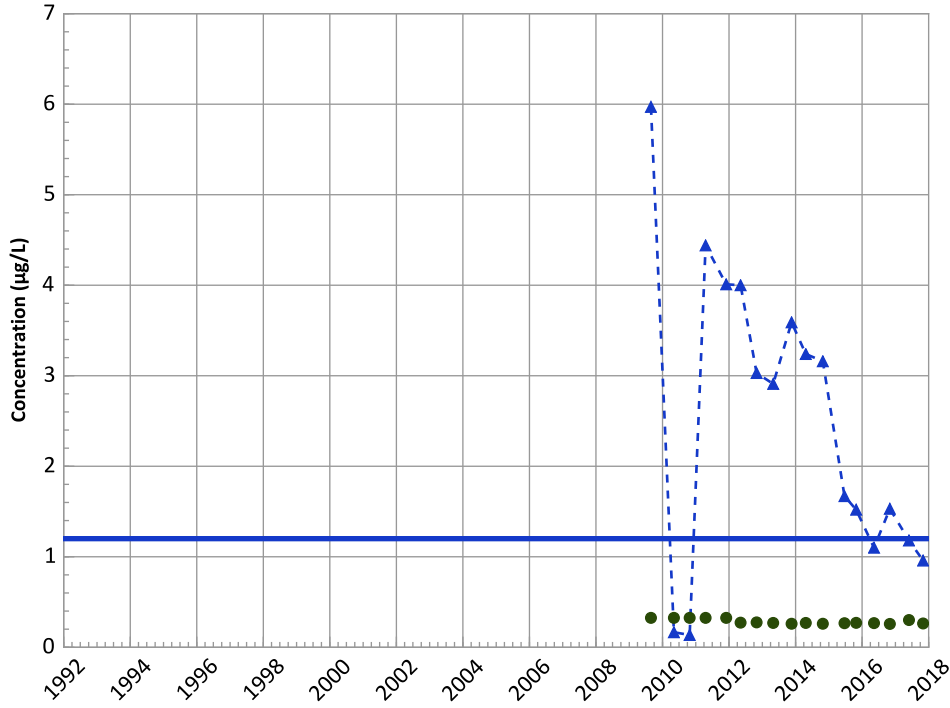


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/27/2009 to 11/01/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1134 in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

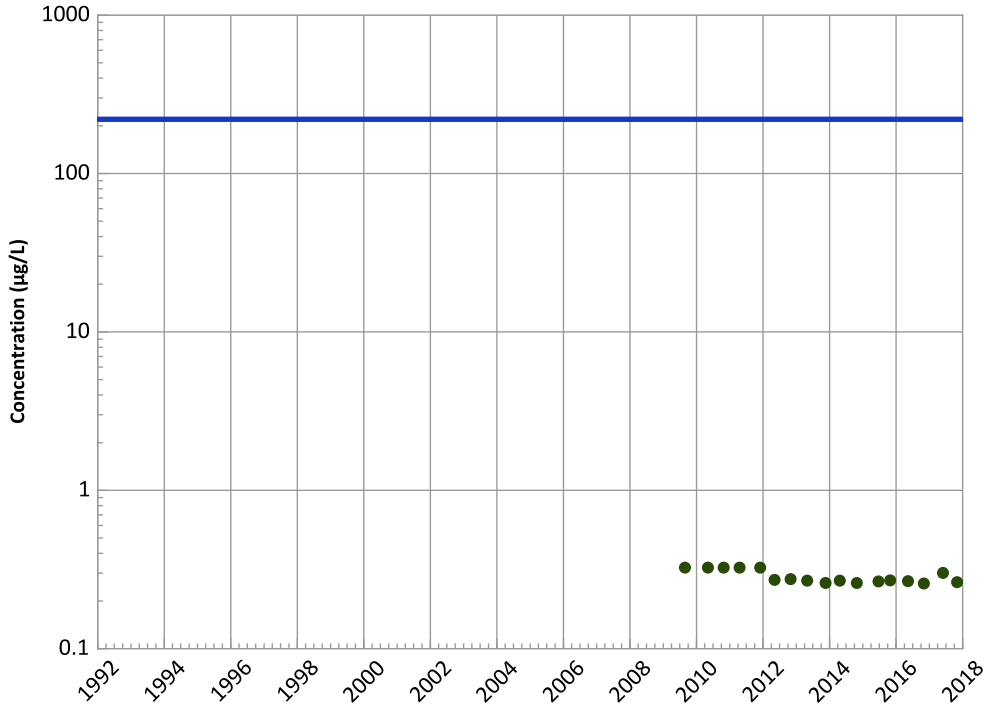
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

1,3,5-Trinitrobenzene Trend



Concentration Trend

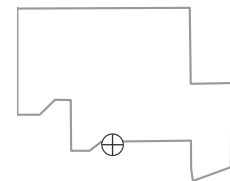
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

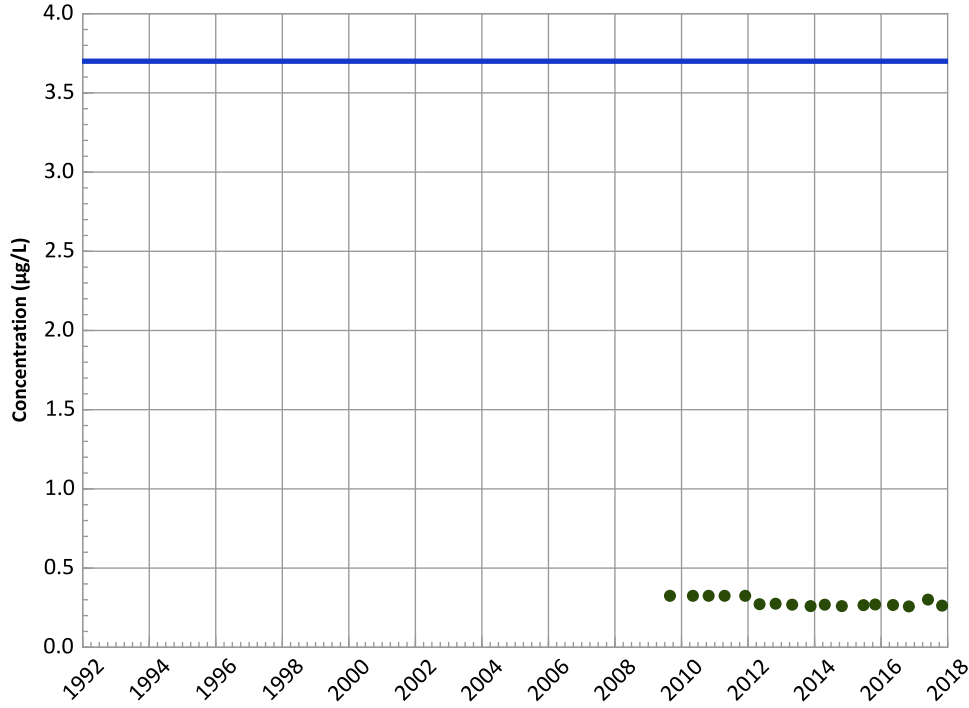


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/27/2009 to 11/01/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1134 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

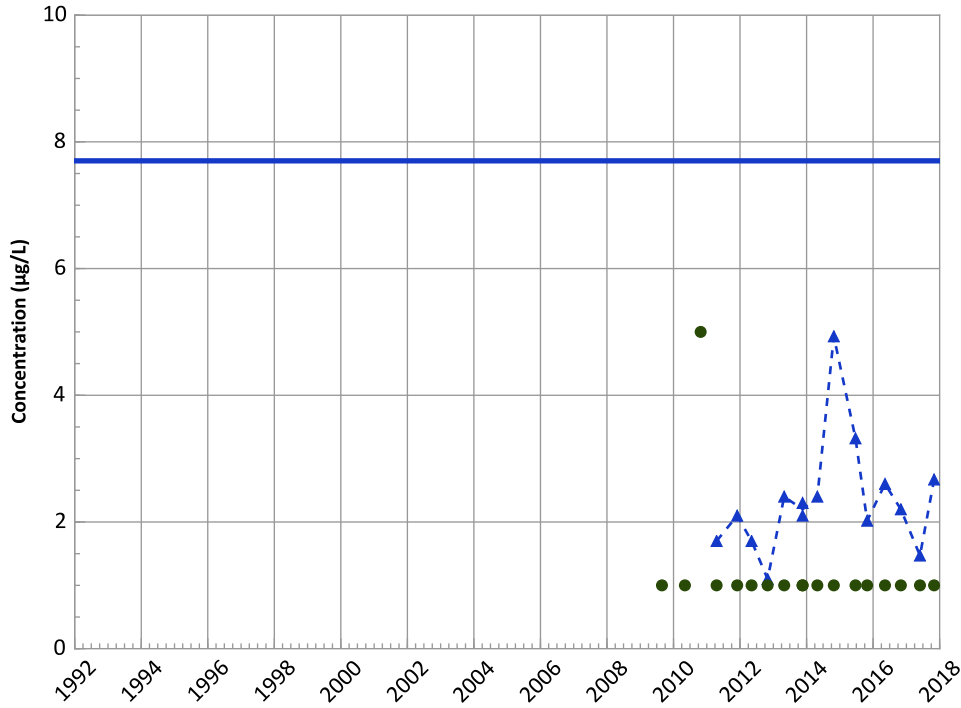
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,4-Dioxane (p-Dioxane) Trend



Concentration Trend

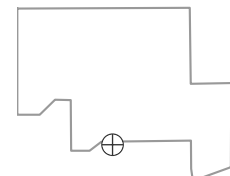
MAROS Mann-Kendall Method

Data ():
No Trend
All Data
Increasing

MAROS Linear Regression Method

Data ():
Probably Increasing
All Data
No Trend

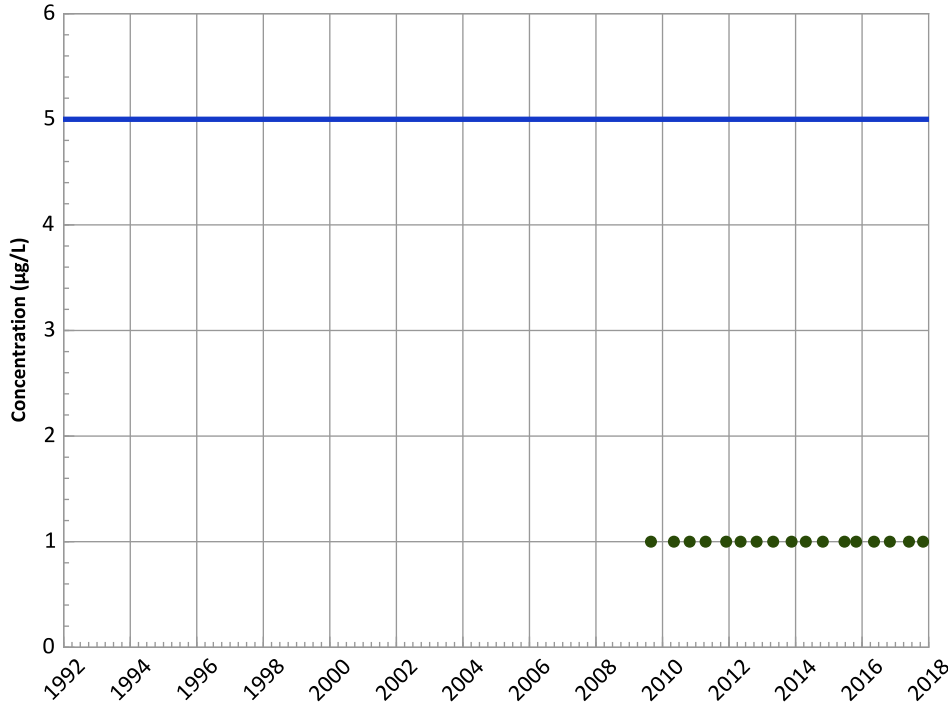
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/27/2009 to 11/01/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1134 in Perched Aquifer
USDOE/NNSA Pantex Plant
Tetrachloroethylene (PCE) Trend**



Concentration Trend

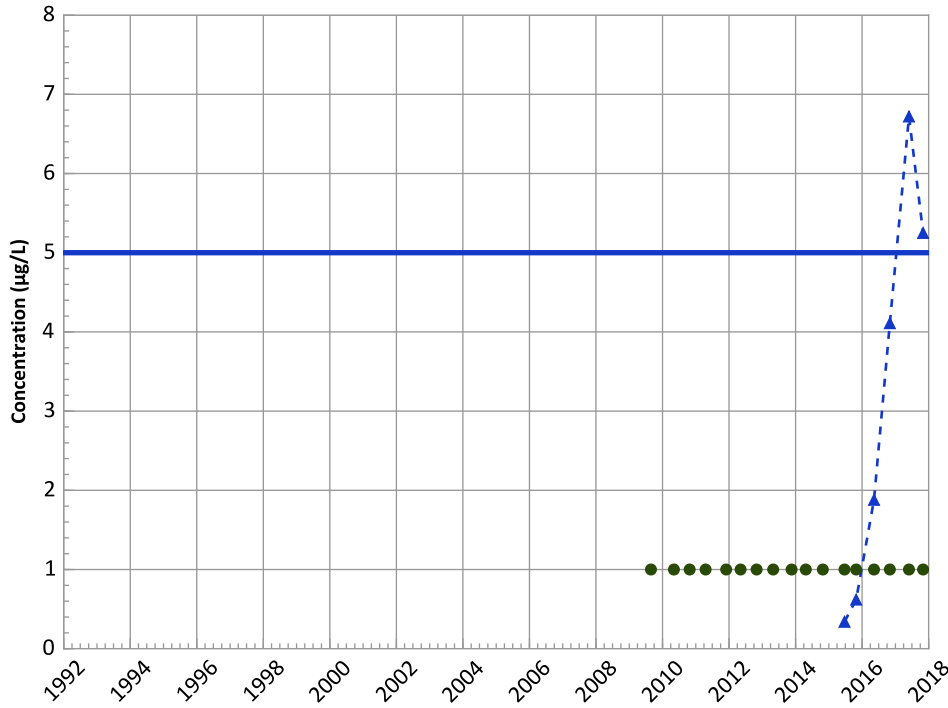
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Trichloroethene Trend



Concentration Trend

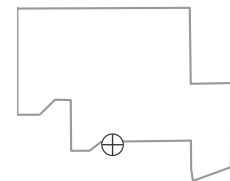
MAROS Mann-Kendall Method

Data ():
Probably Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

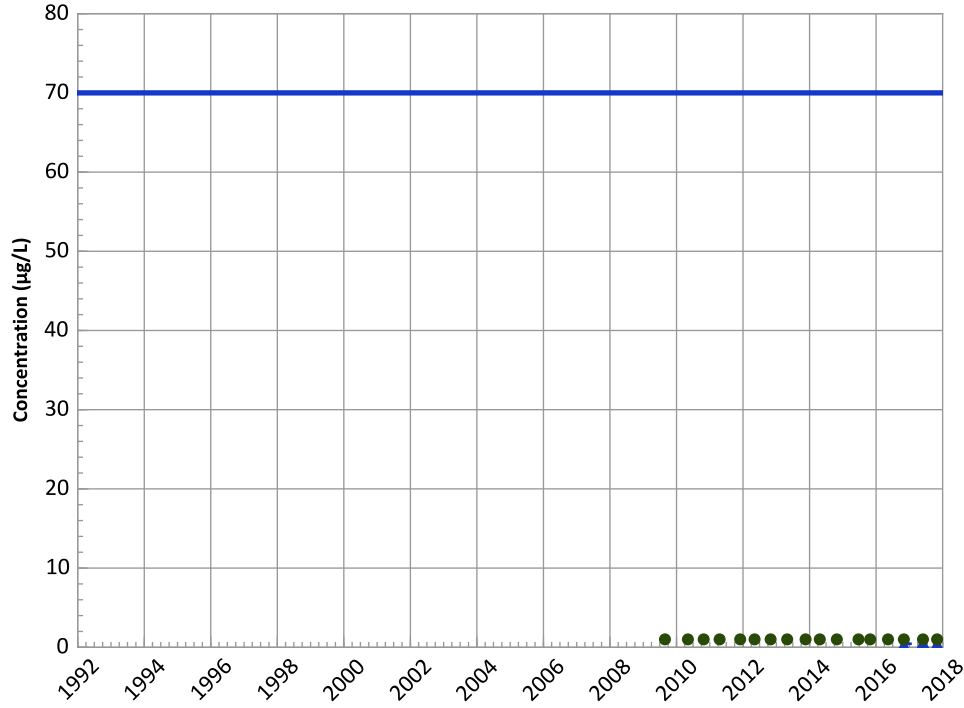
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/27/2009 to 11/01/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1134 in Perched Aquifer
USDOE/NNSA Pantex Plant
cis-1,2-Dichloroethene Trend**



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

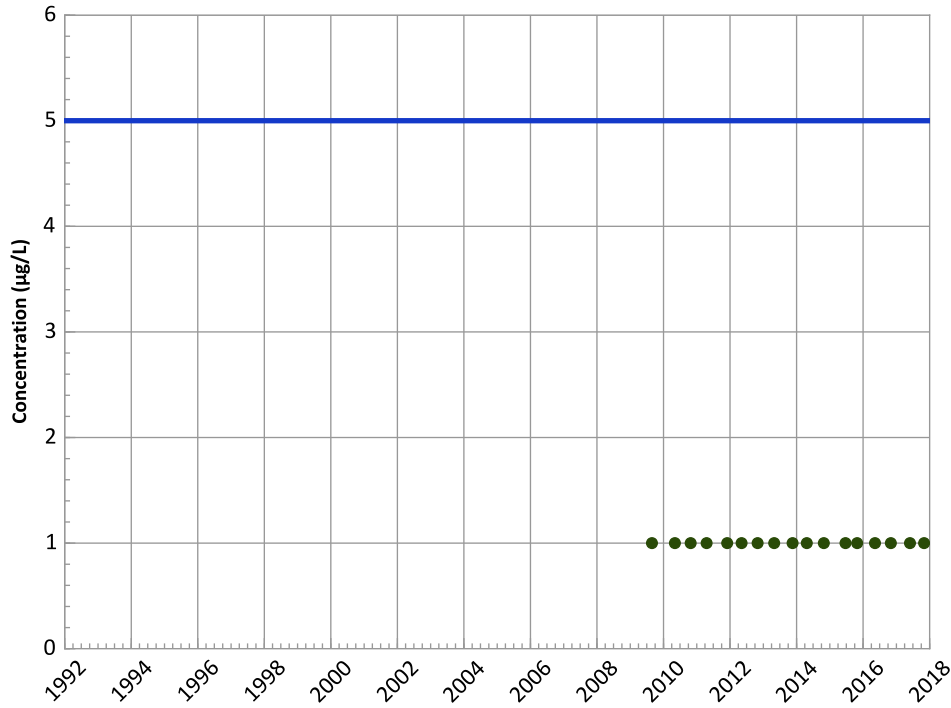
Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

1,2-Dichloroethane Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

All Non-Detect

All Data

All Non-Detect

MAROS Linear Regression Method

Data ():

All Non-Detect

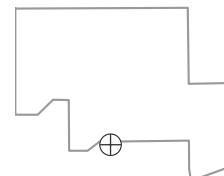
All Data

All Non-Detect

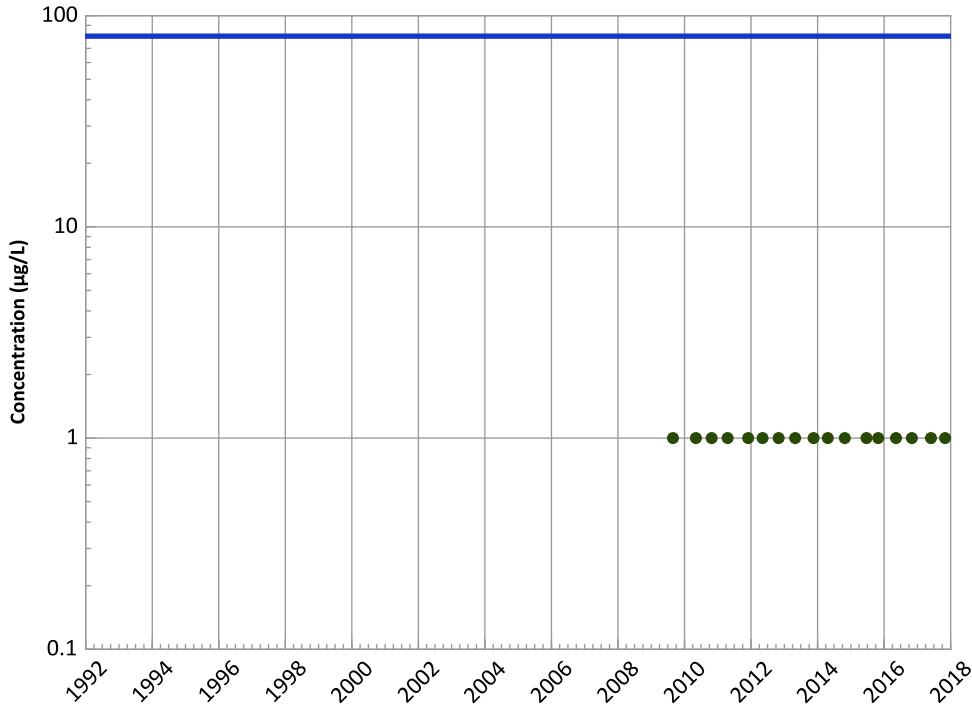
Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/27/2009 to 11/01/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1134 in Perched Aquifer
 USDOE/NNSA Pantex Plant
 Chloroform Trend



Concentration Trend

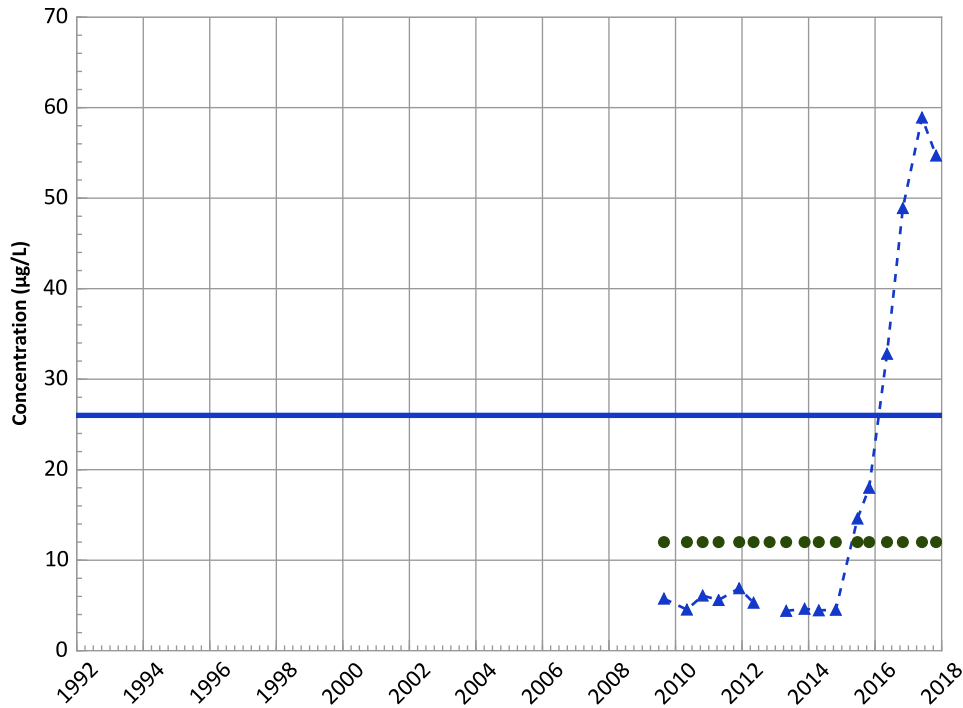
MAROS Mann-Kendall Method

Data ():
 All Non-Detect
 All Data
 All Non-Detect

MAROS Linear Regression Method

Data ():
 All Non-Detect
 All Data
 All Non-Detect

Perchlorate Trend



Concentration Trend

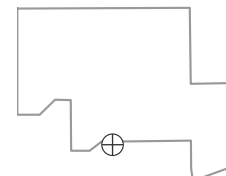
MAROS Mann-Kendall Method

Data ():
 Increasing
 All Data
 Increasing

MAROS Linear Regression Method

Data ():
 Increasing
 All Data
 Increasing

Well Location

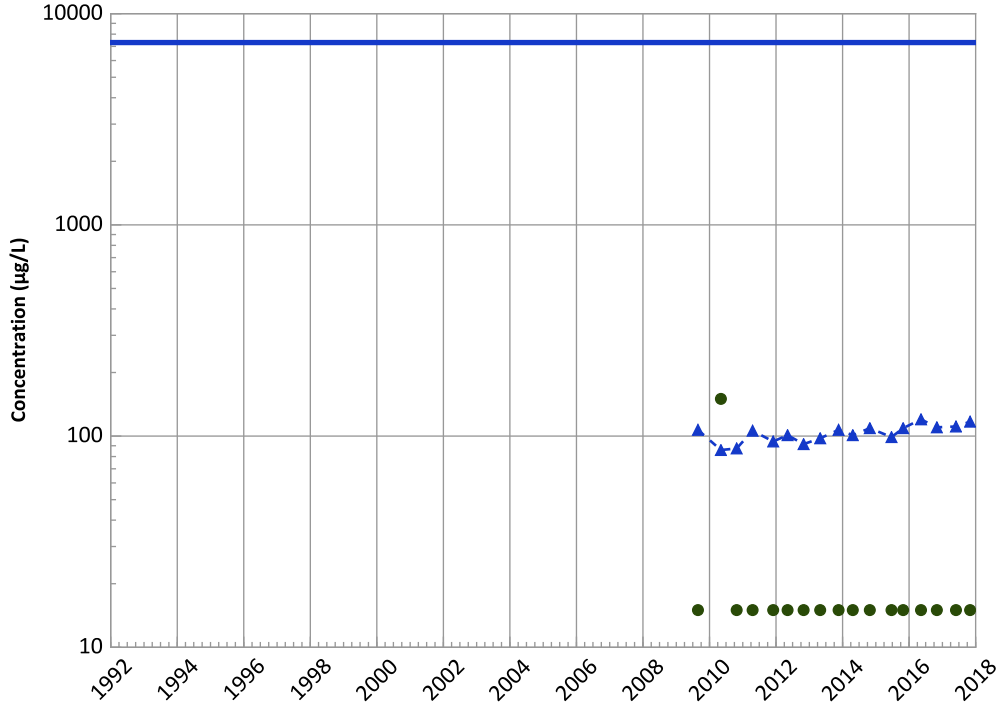


Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 08/27/2009 to 11/01/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1134 in Perched Aquifer
USDOE/NNSA Pantex Plant

Boron Trend



Concentration Trend

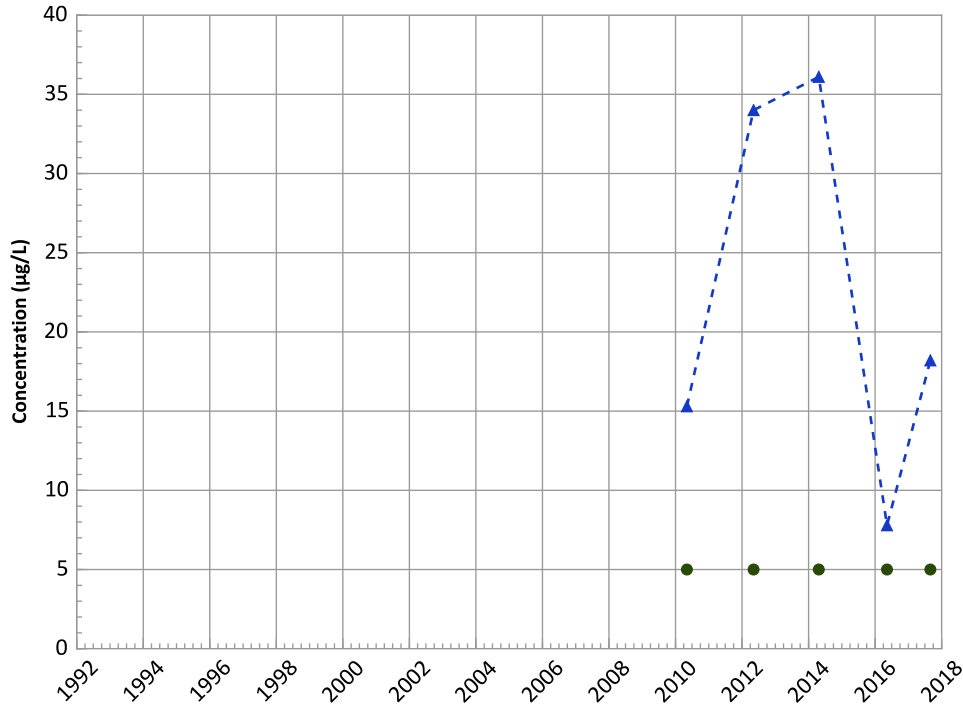
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

Manganese Trend



Concentration Trend

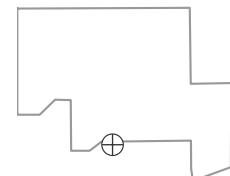
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
Stable

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Stable

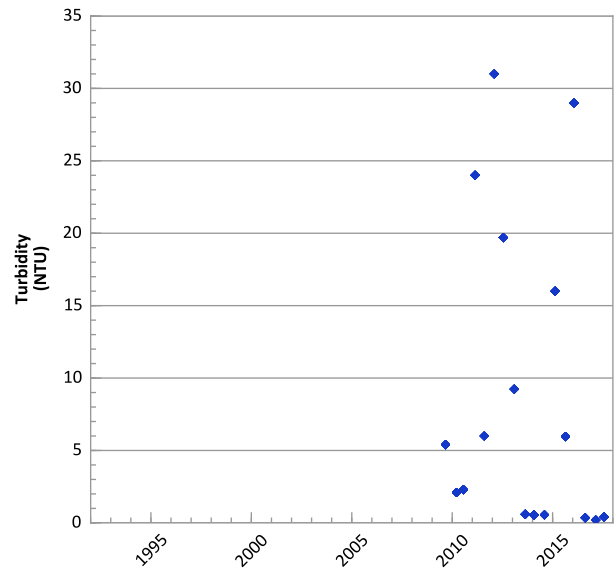
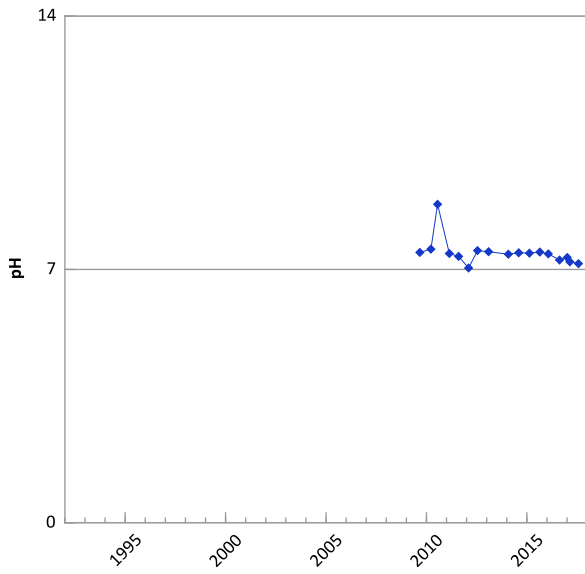
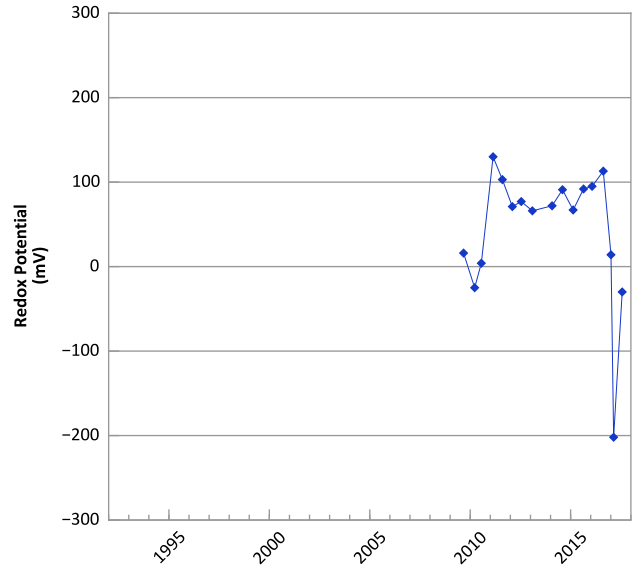
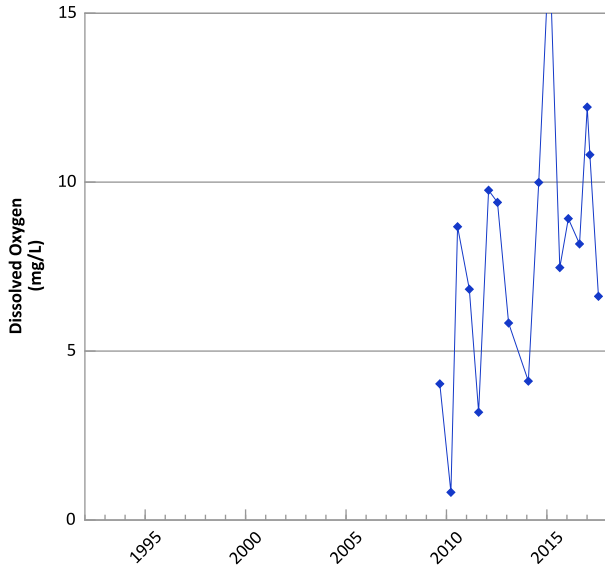
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/27/2009 to 11/01/2017
Analysis Date: 03/21/2018

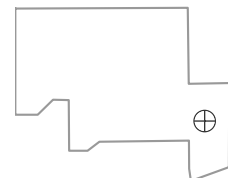
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1146 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



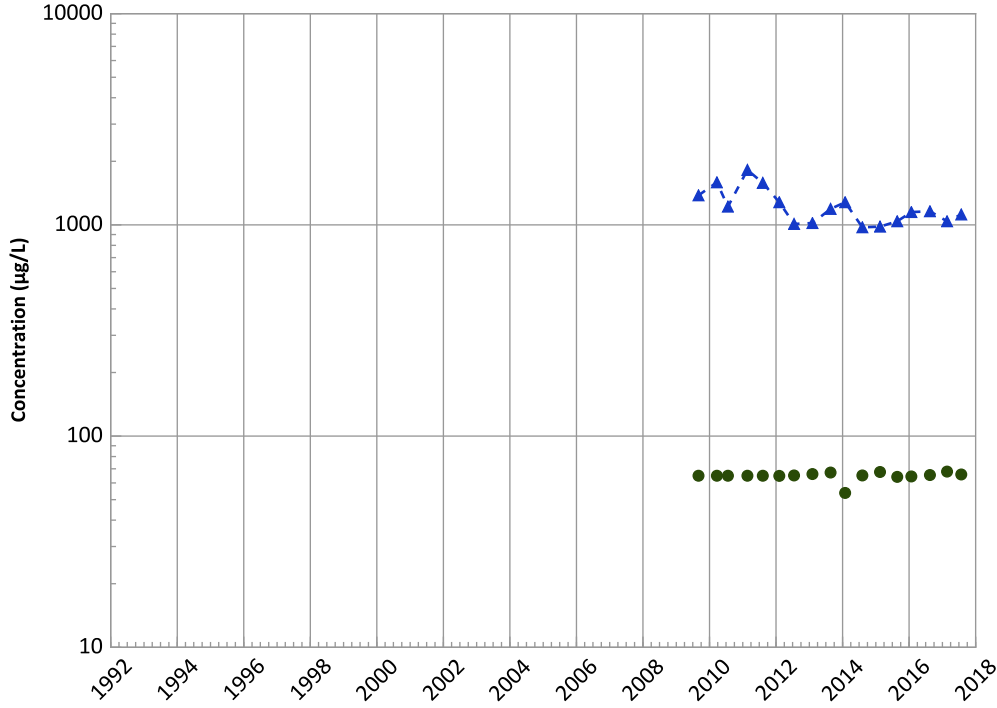
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 09/02/2009 to 07/27/2017
 Analysis Date: 03/21/2018

Well Location



PTX06-1146 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

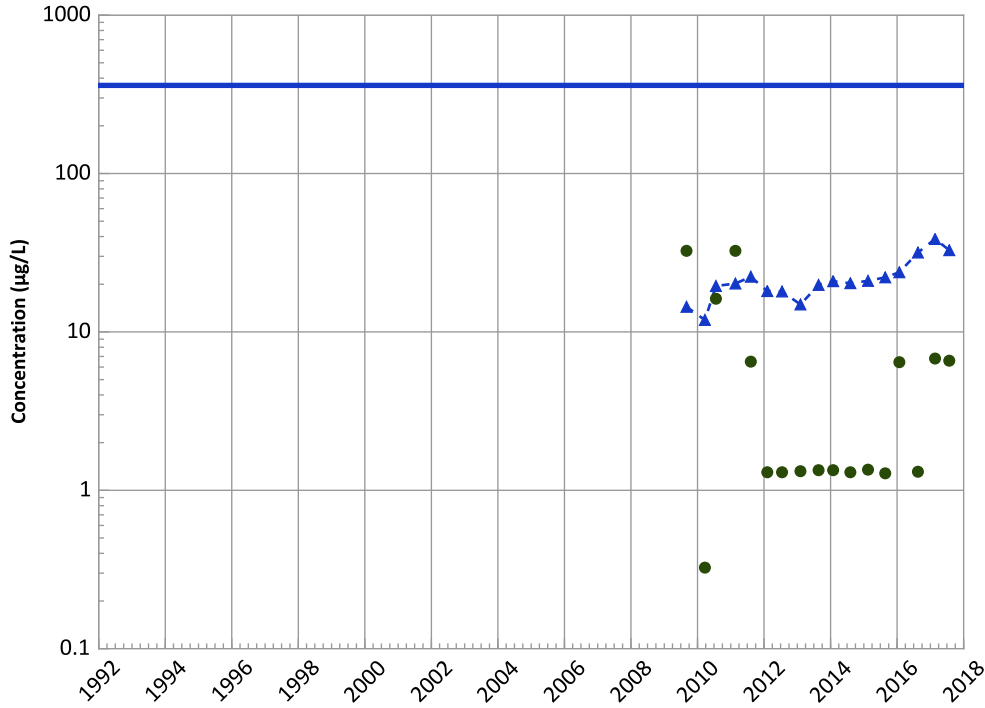
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Stable
All Data
Decreasing

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

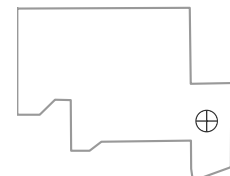
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

Well Location

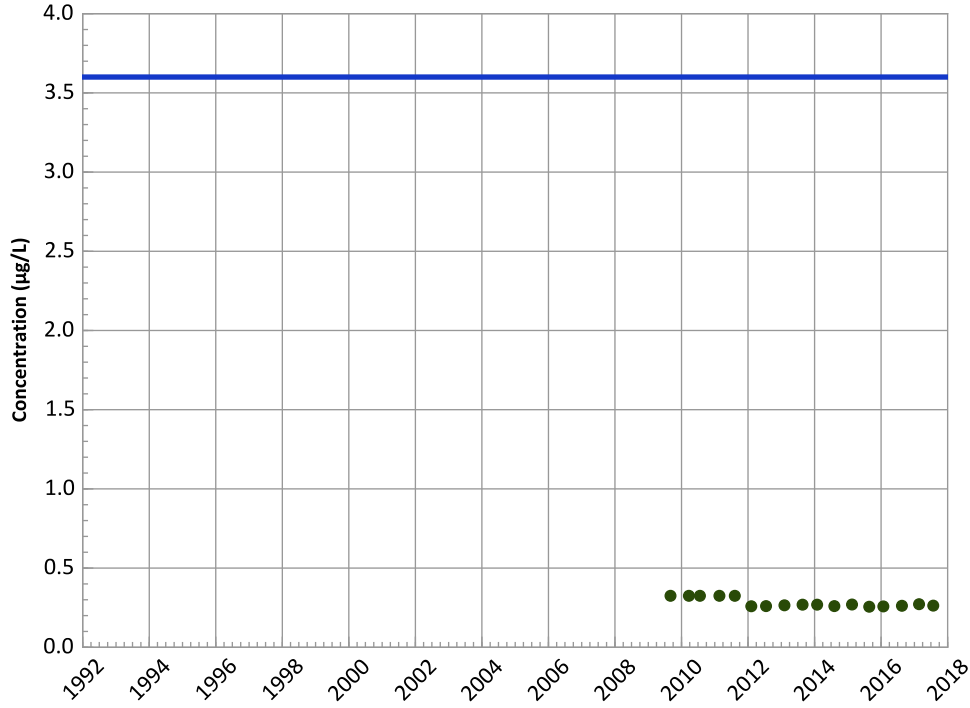


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/02/2009 to 07/27/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1146 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

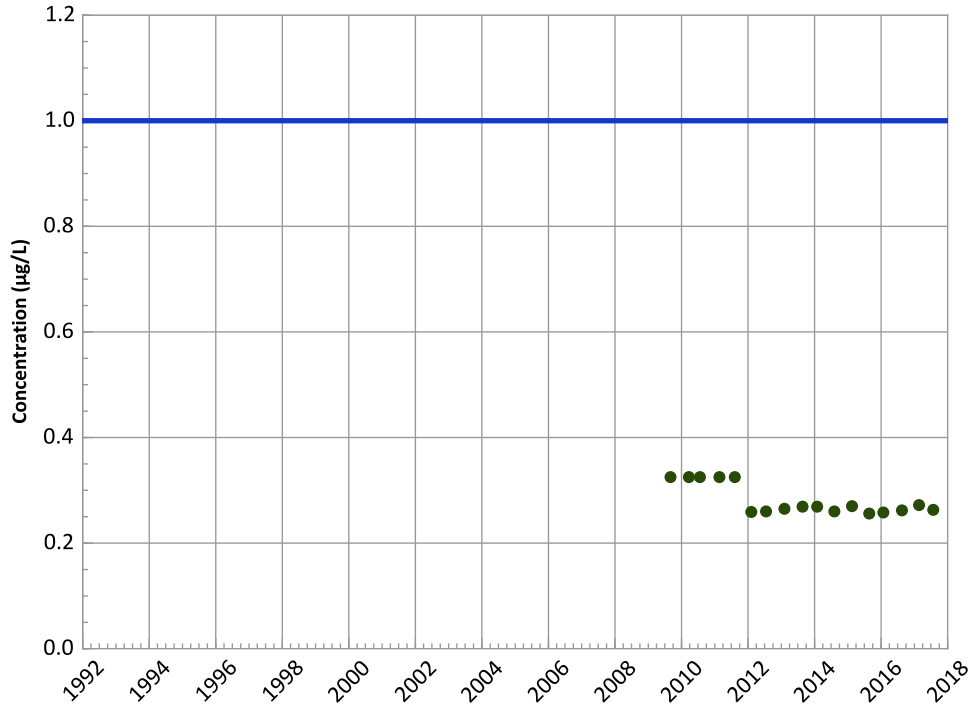
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

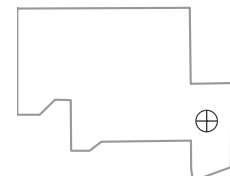
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

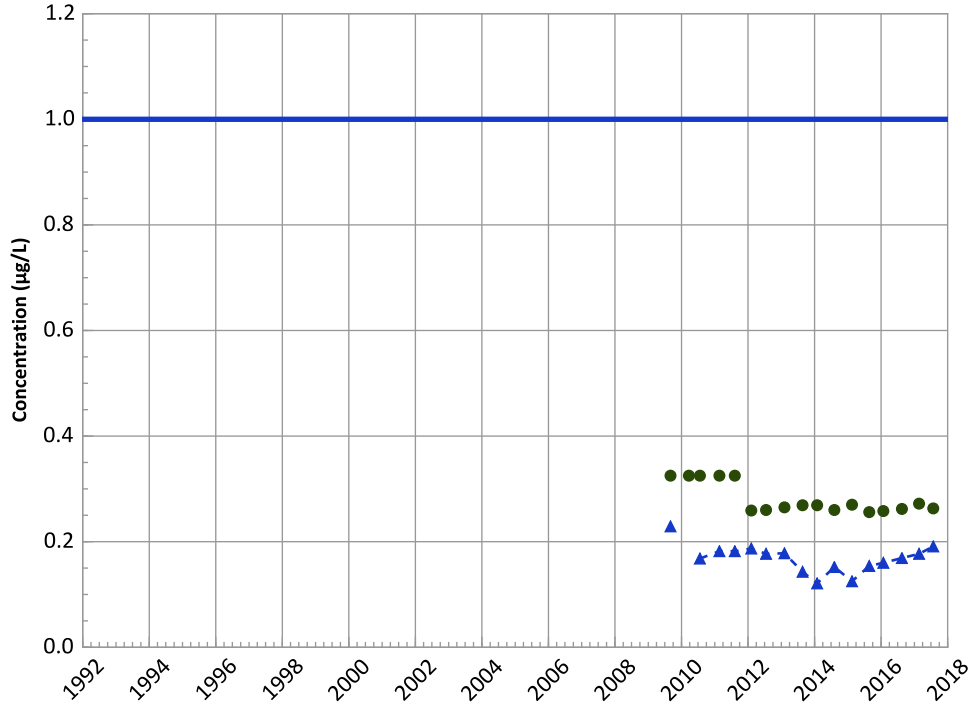


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/02/2009 to 07/27/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1146 in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

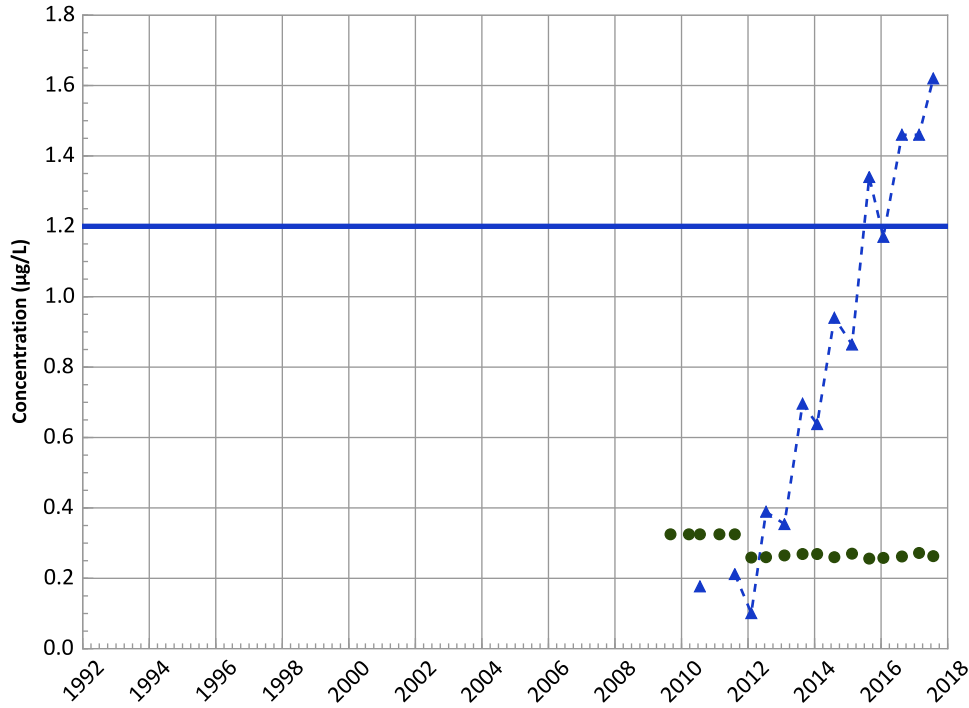
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Stable
All Data
Probably Decreasing

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

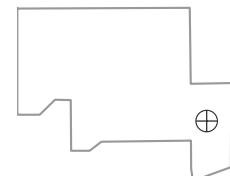
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

Well Location

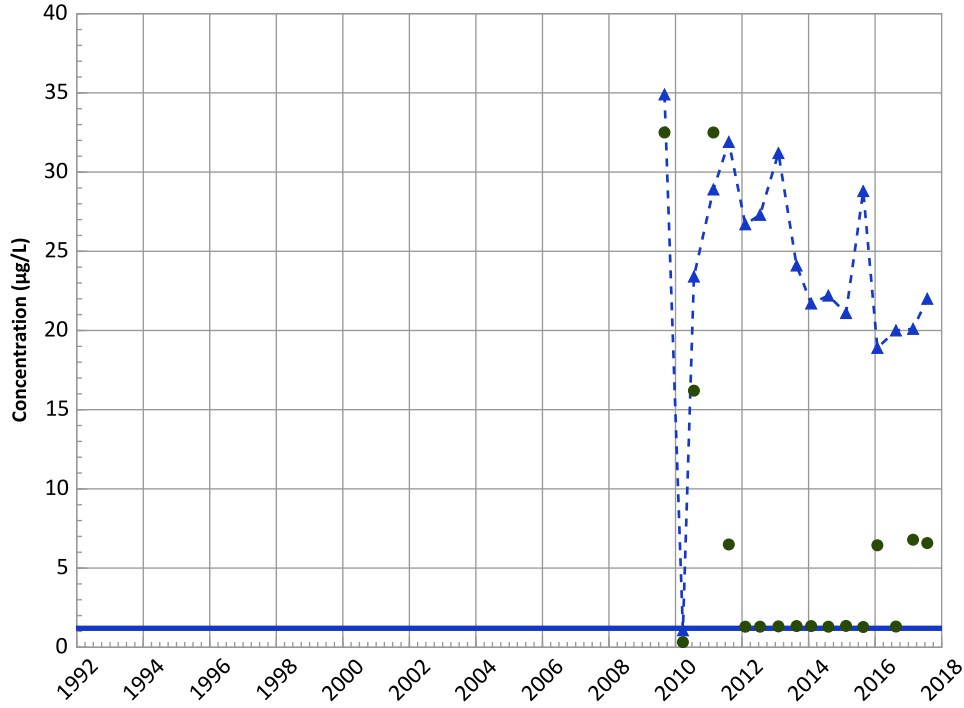


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/02/2009 to 07/27/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1146 in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

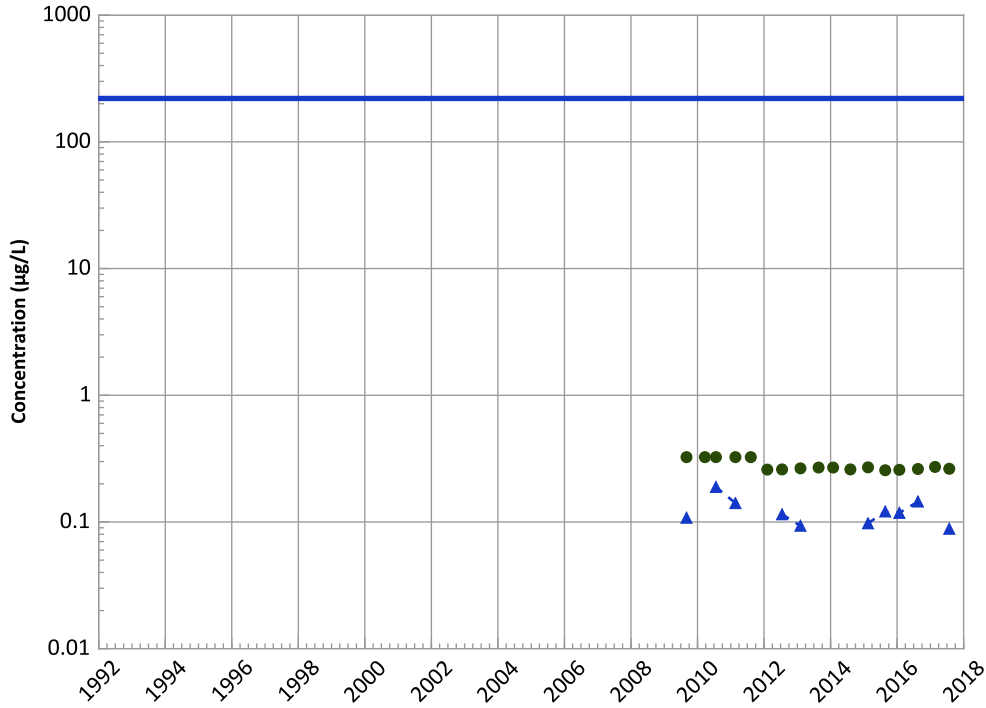
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
No Trend

1,3,5-Trinitrobenzene Trend



Concentration Trend

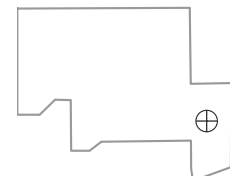
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Probably Increasing
All Data
Stable

Well Location

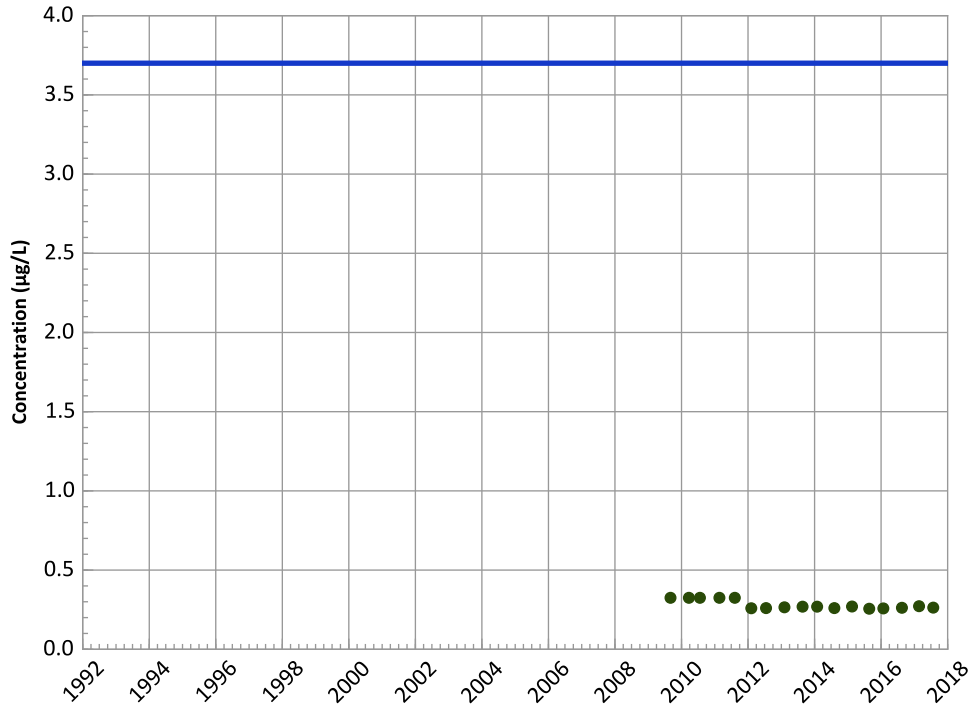


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/02/2009 to 07/27/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1146 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

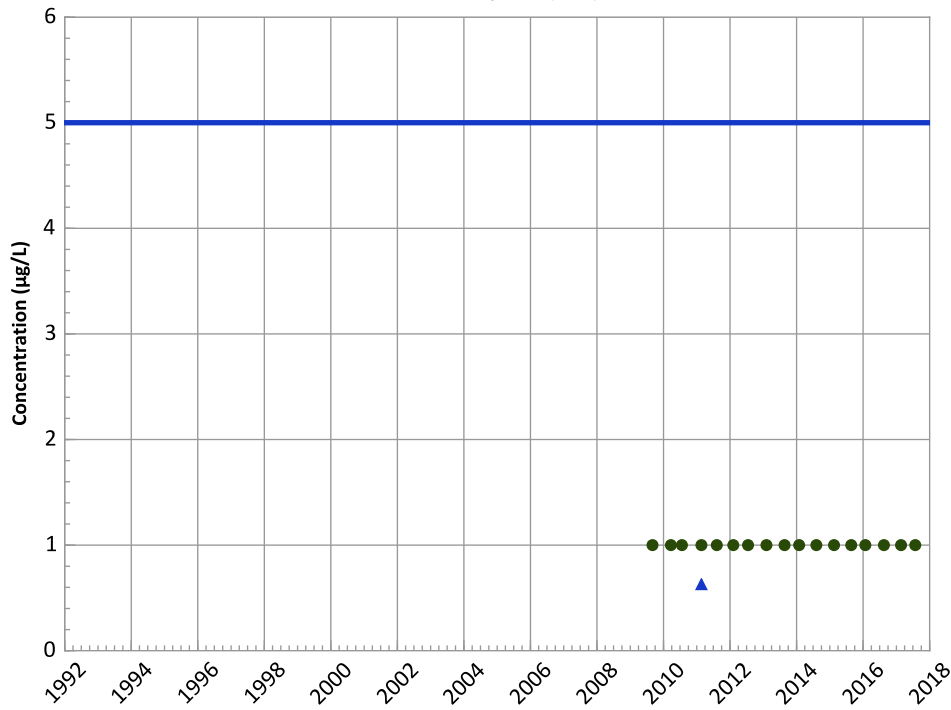
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Tetrachloroethylene (PCE) Trend



Concentration Trend

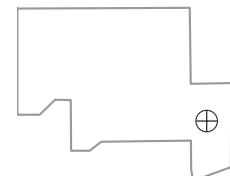
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

Well Location

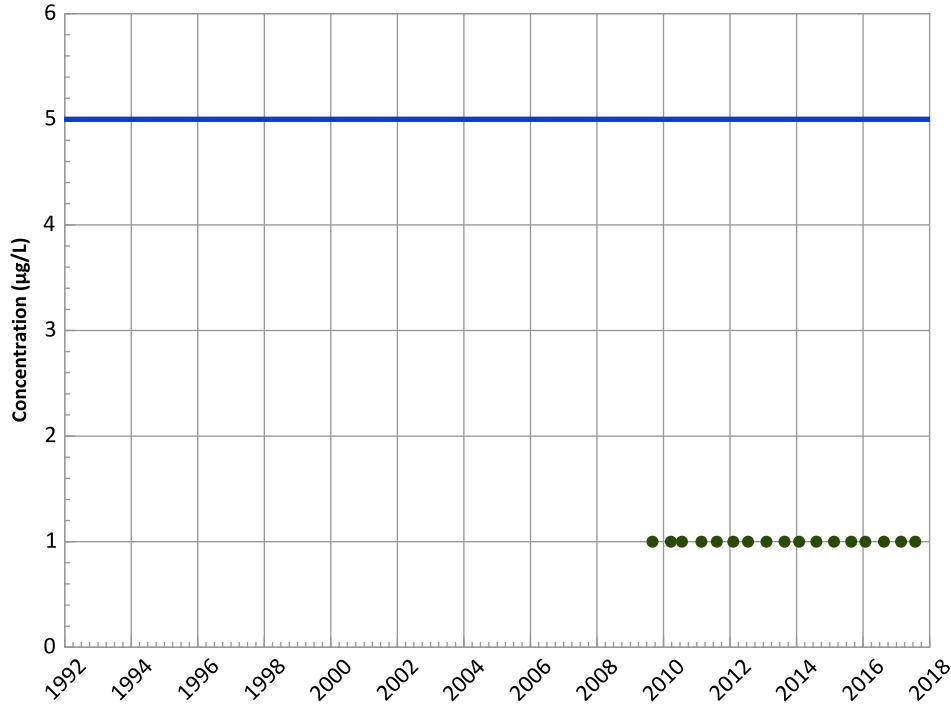


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/02/2009 to 07/27/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1146 in Perched Aquifer
USDOE/NNSA Pantex Plant

Trichloroethene Trend



Concentration Trend

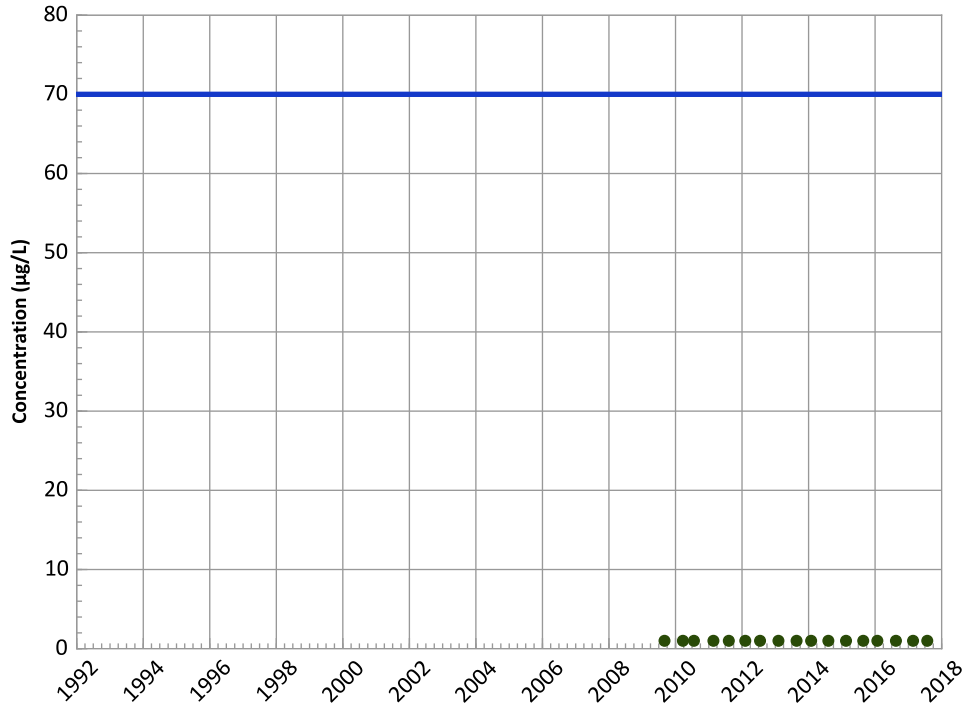
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

cis-1,2-Dichloroethene Trend



Concentration Trend

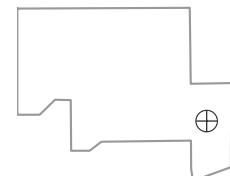
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

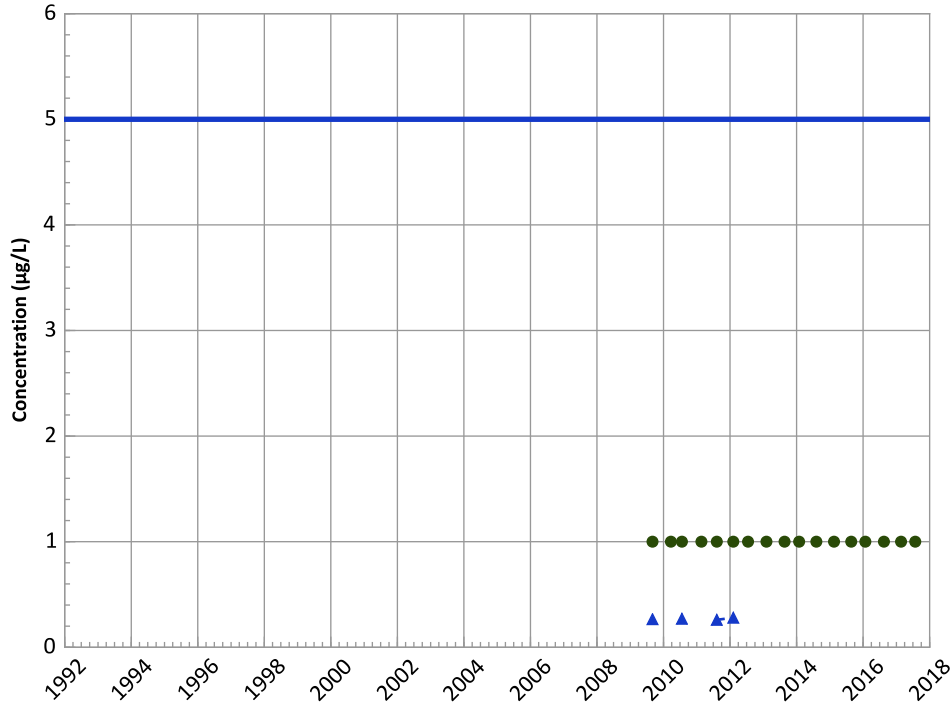
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/02/2009 to 07/27/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1146 in Perched Aquifer
USDOE/NNSA Pantex Plant
1,2-Dichloroethane Trend**

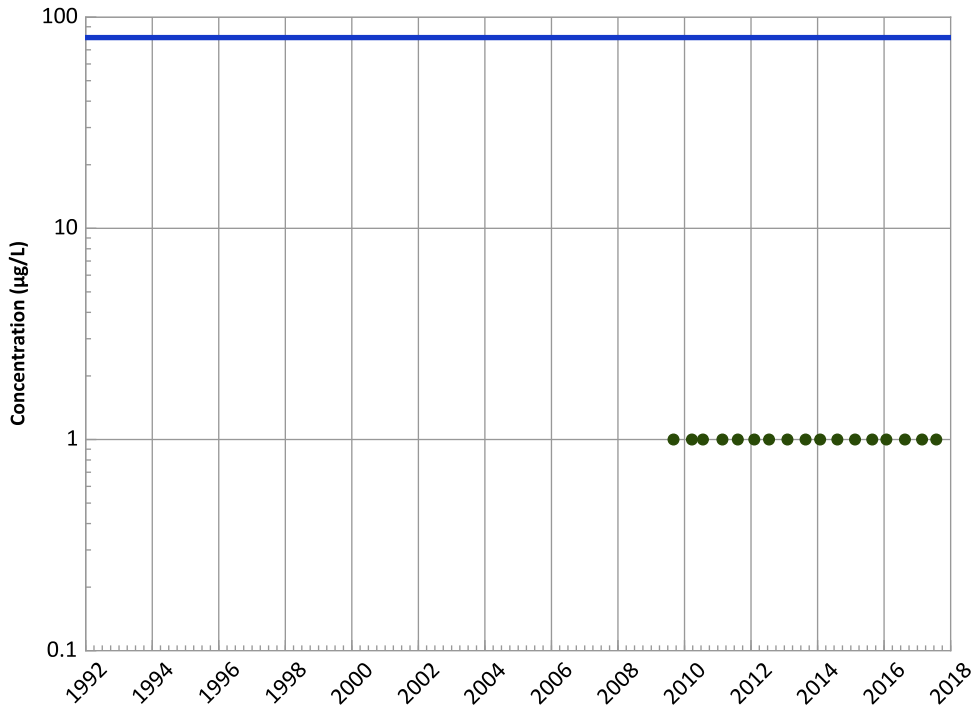


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Detections in Dataset)
All Data
Increasing

MAROS Linear Regression Method
Data ():
N/A (<4 Detections in Dataset)
All Data
No Trend

Chloroform Trend

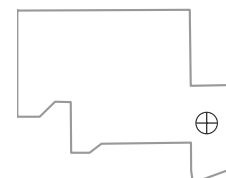


Concentration Trend

MAROS Mann-Kendall Method
Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method
Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

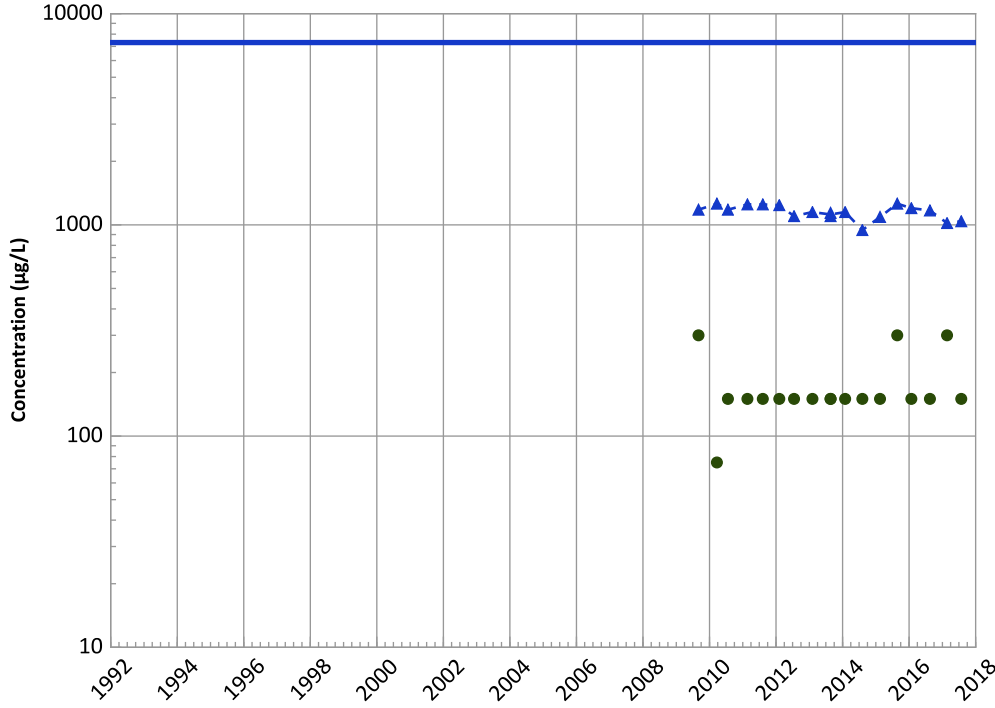


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/02/2009 to 07/27/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- Concentration Trend
- Groundwater Protection Standard

PTX06-1146 in Perched Aquifer
USDOE/NNSA Pantex Plant

Boron Trend



Concentration Trend

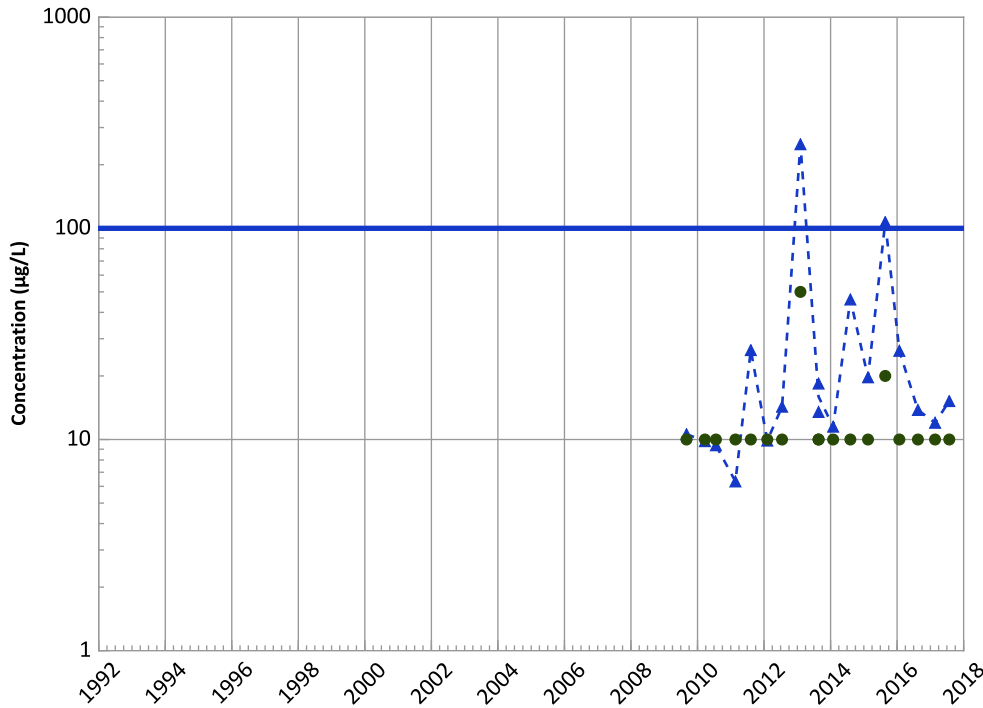
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Decreasing

Chromium, Total Trend



Concentration Trend

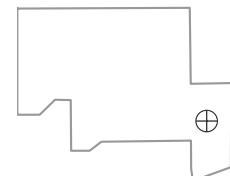
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Probably Increasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
No Trend

Well Location

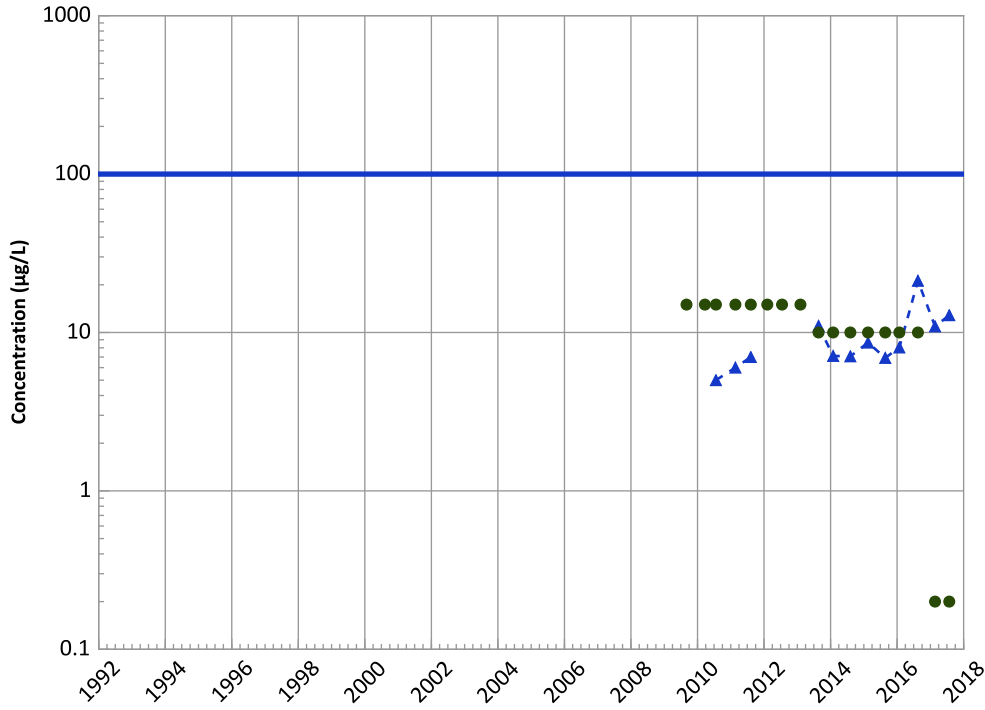


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/02/2009 to 07/27/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1146 in Perched Aquifer
USDOE/NNSA Pantex Plant

Chromium, Hexavalent Trend



Concentration Trend

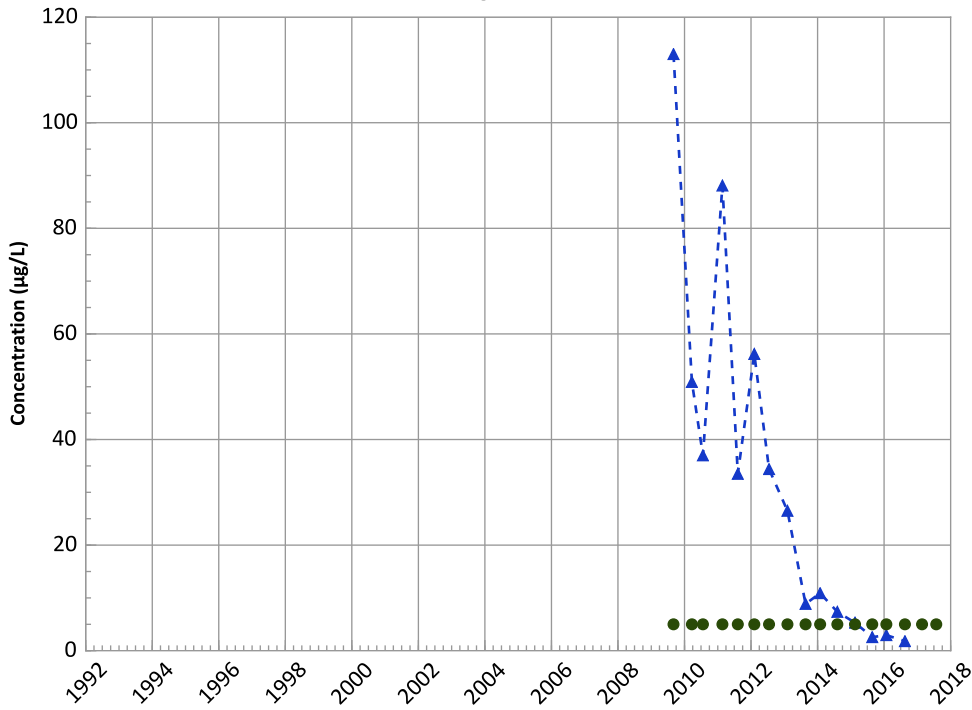
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
Increasing

Manganese Trend



Concentration Trend

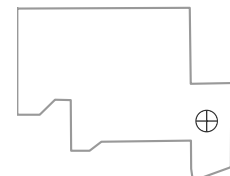
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

Well Location

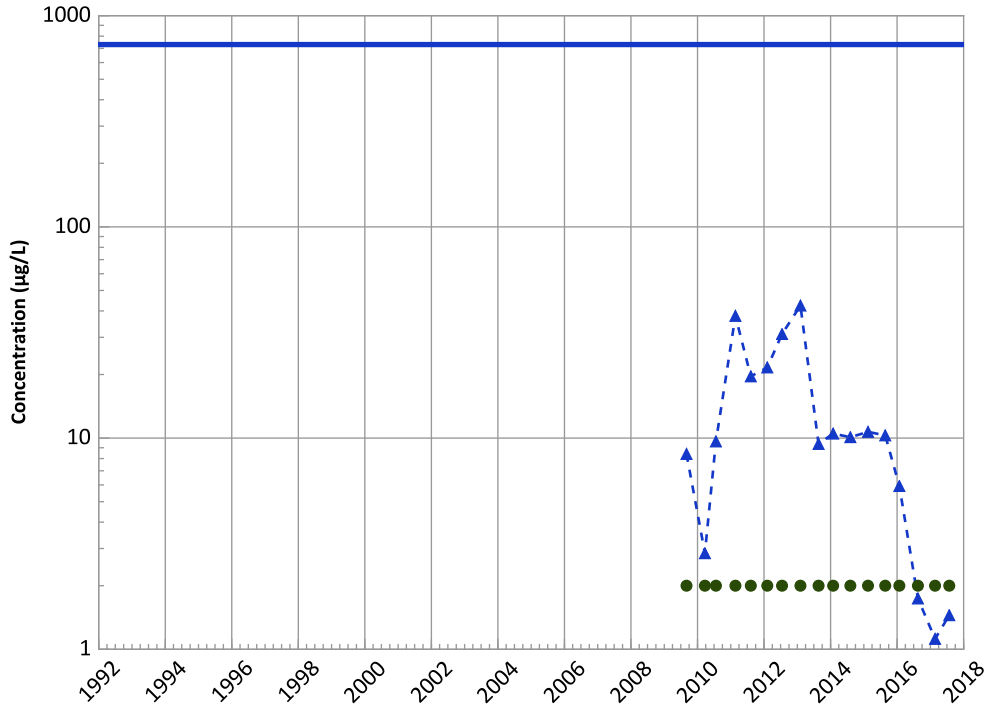


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/02/2009 to 07/27/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1146 in Perched Aquifer
USDOE/NNSA Pantex Plant

Nickel Trend



Concentration Trend

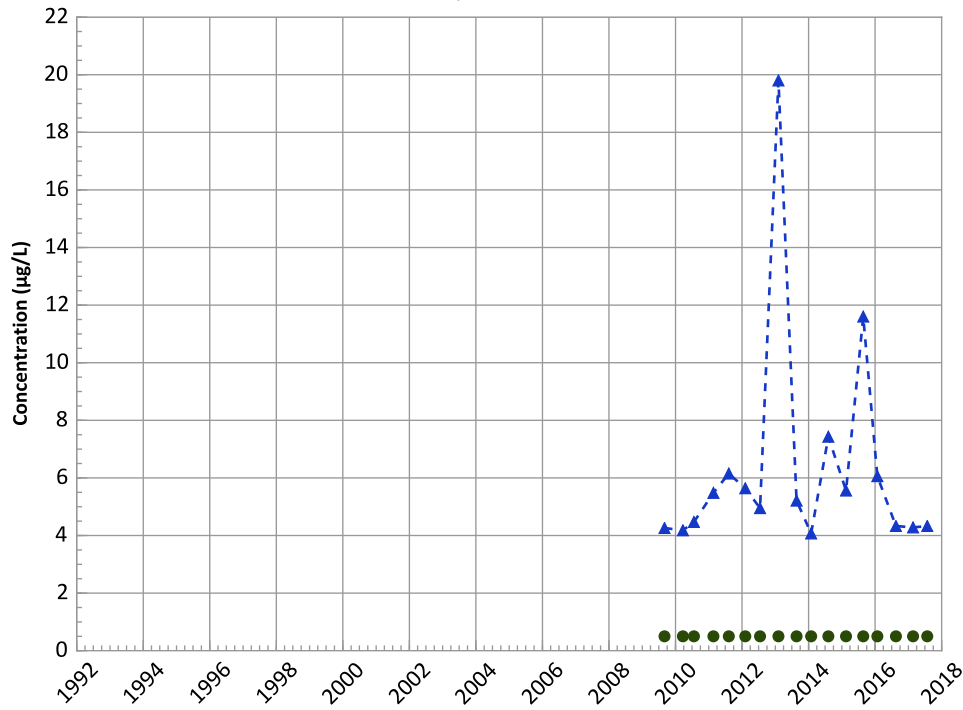
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

Molybdenum Trend



Concentration Trend

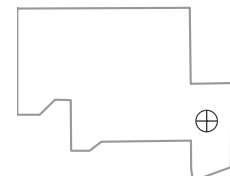
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
No Trend

MAROS Linear Regression Method

Data ():
Stable
All Data
No Trend

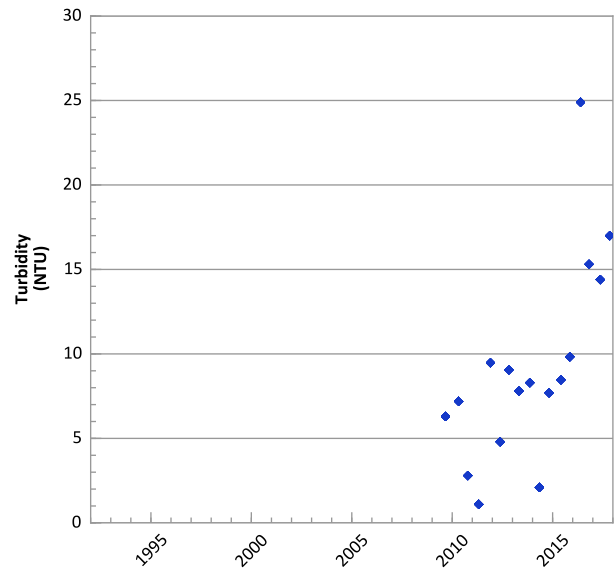
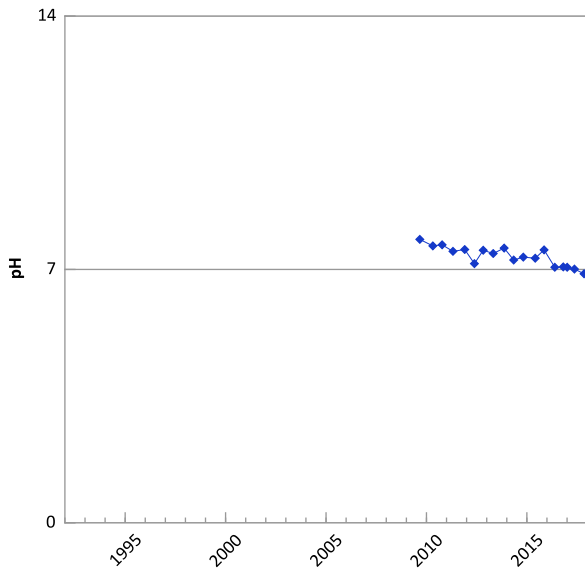
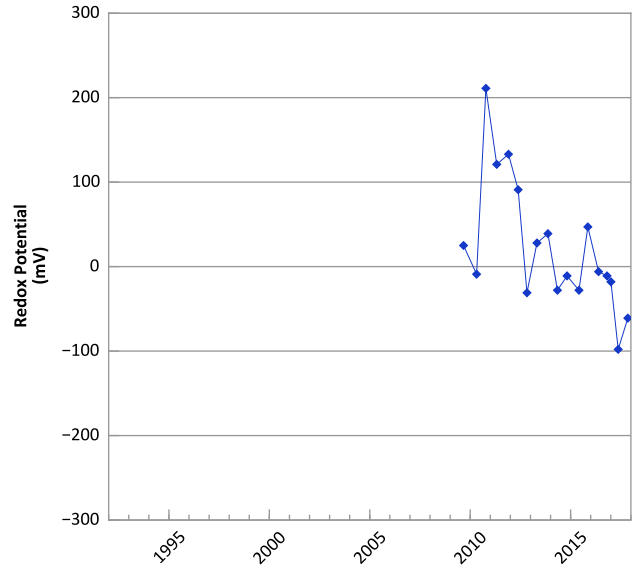
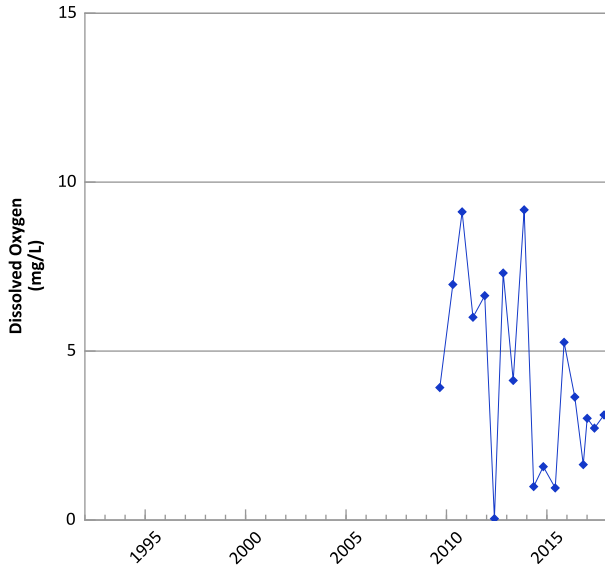
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/02/2009 to 07/27/2017
Analysis Date: 03/21/2018

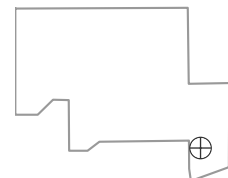
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1147 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



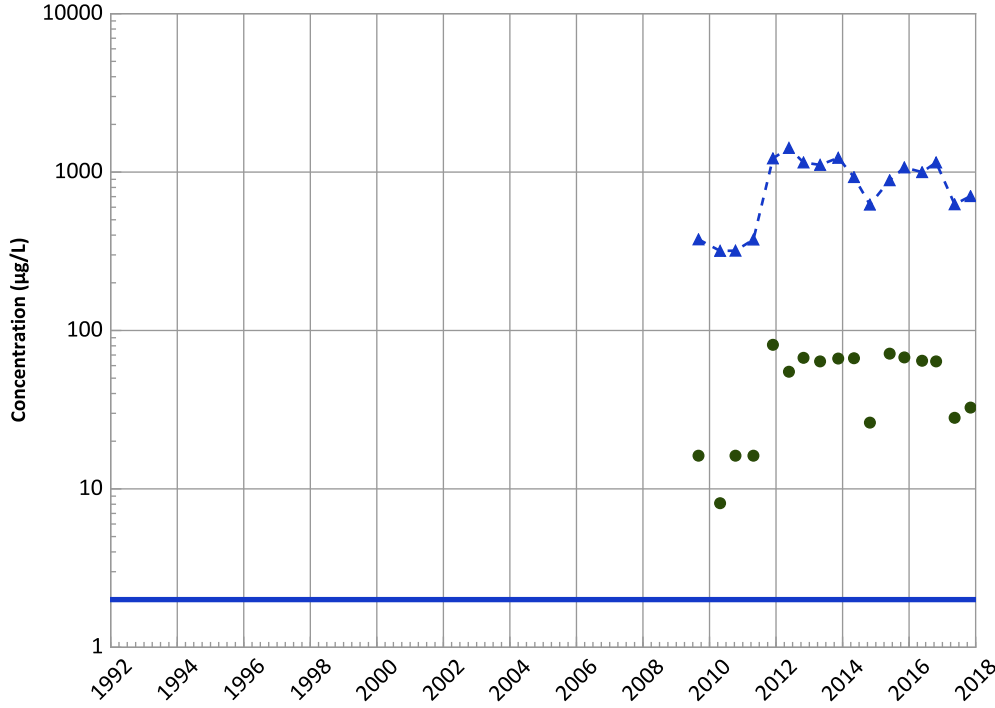
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 09/02/2009 to 11/06/2017
 Analysis Date: 03/21/2018

Well Location



PTX06-1147 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

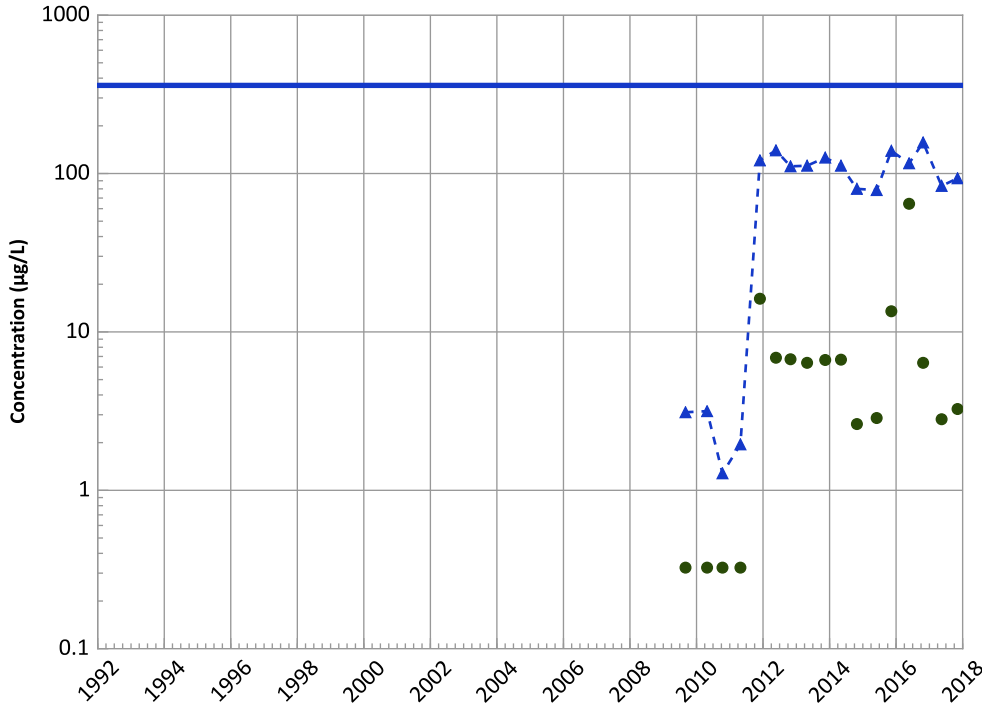
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
No Trend

MAROS Linear Regression Method

Data ():
Stable
All Data
Increasing

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

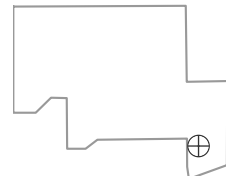
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Probably Increasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
Increasing

Well Location

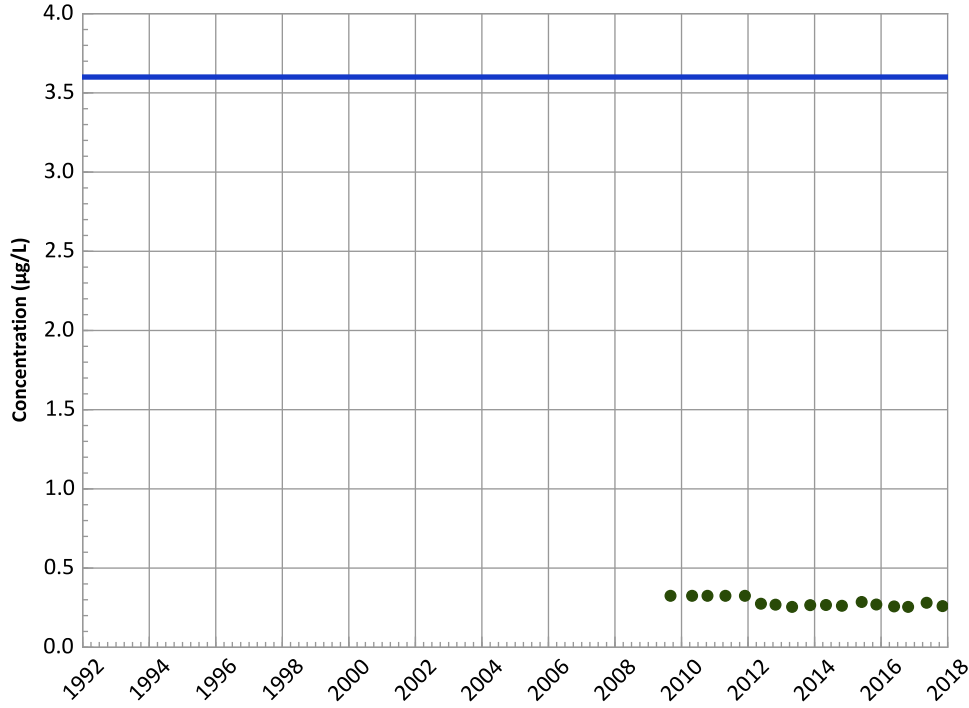


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/02/2009 to 11/06/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1147 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

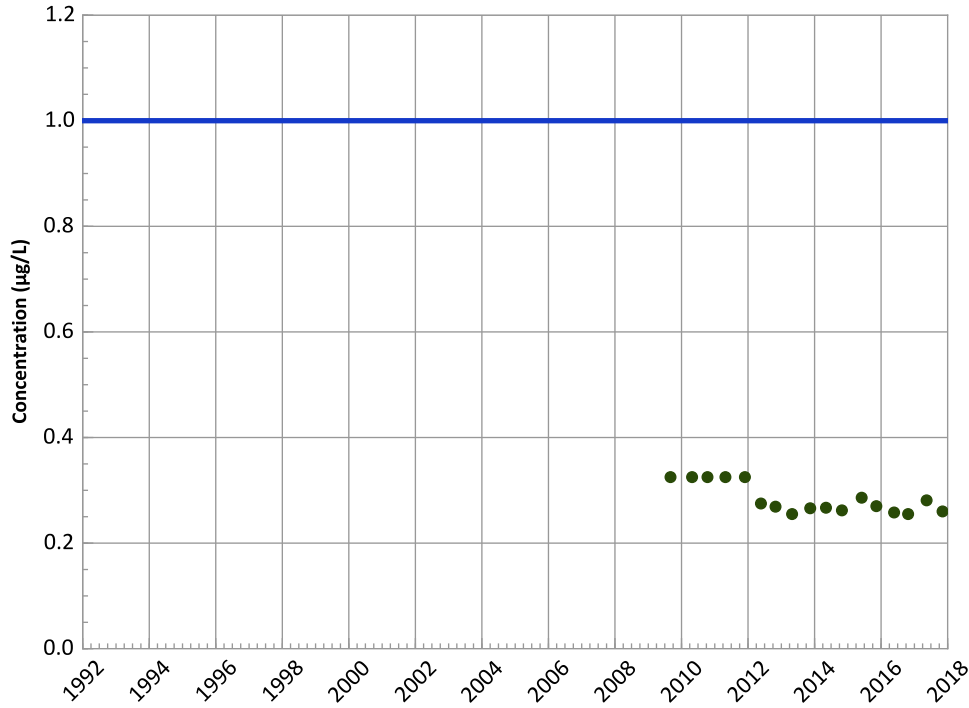
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

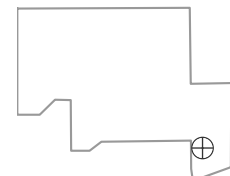
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

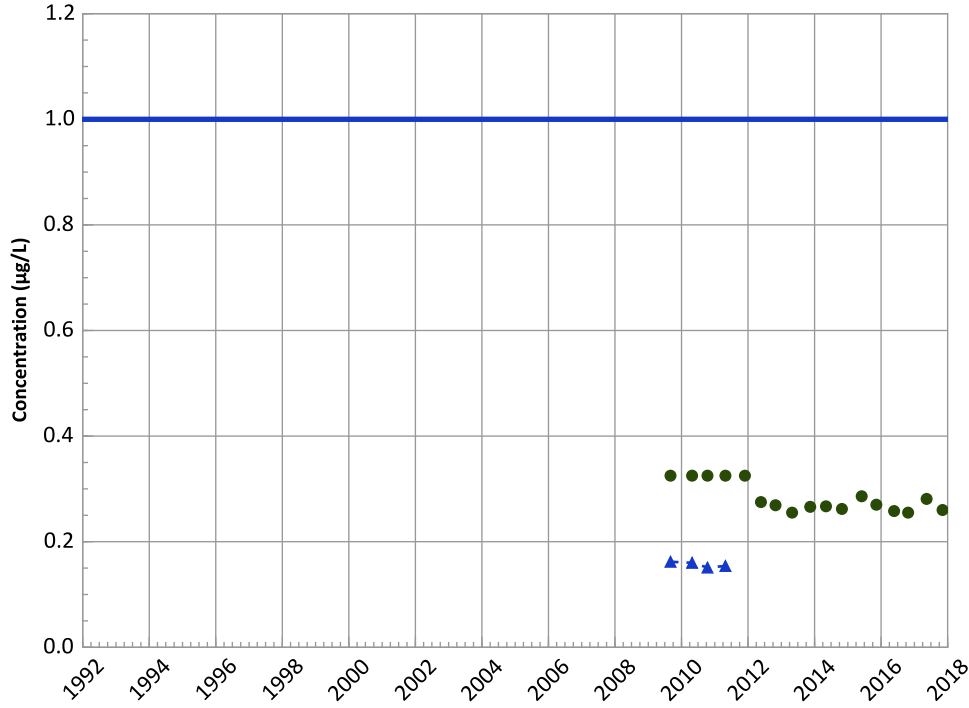


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/02/2009 to 11/06/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1147 in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

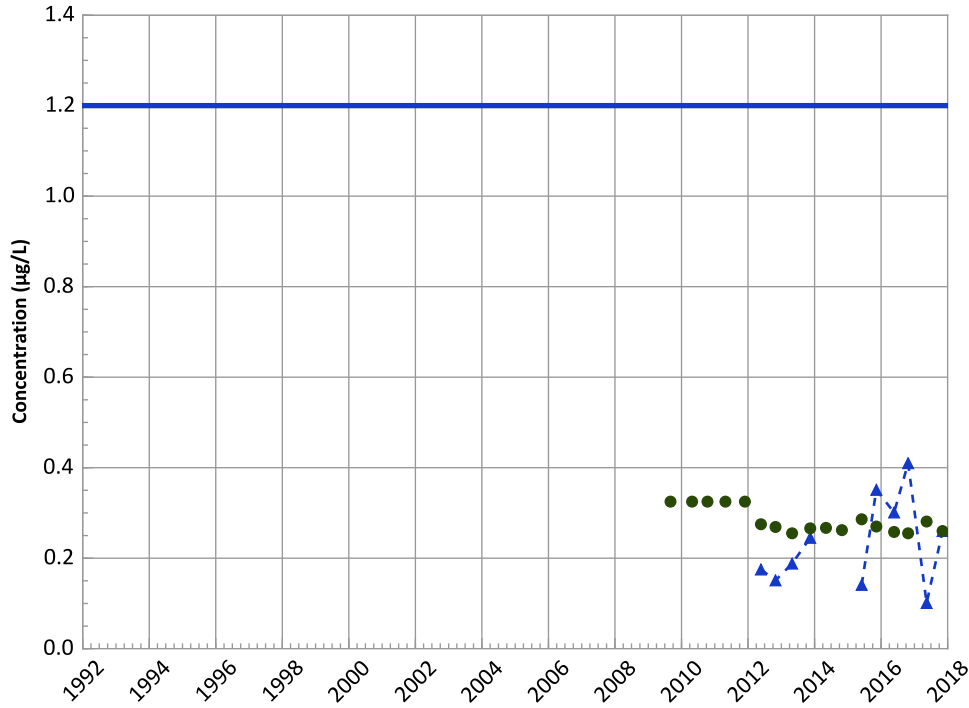
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
Decreasing

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
Probably Decreasing

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
No Trend
All Data
No Trend

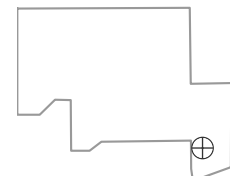
MAROS Linear Regression Method

Data ():
Increasing
All Data
No Trend

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/02/2009 to 11/06/2017
Analysis Date: 03/21/2018

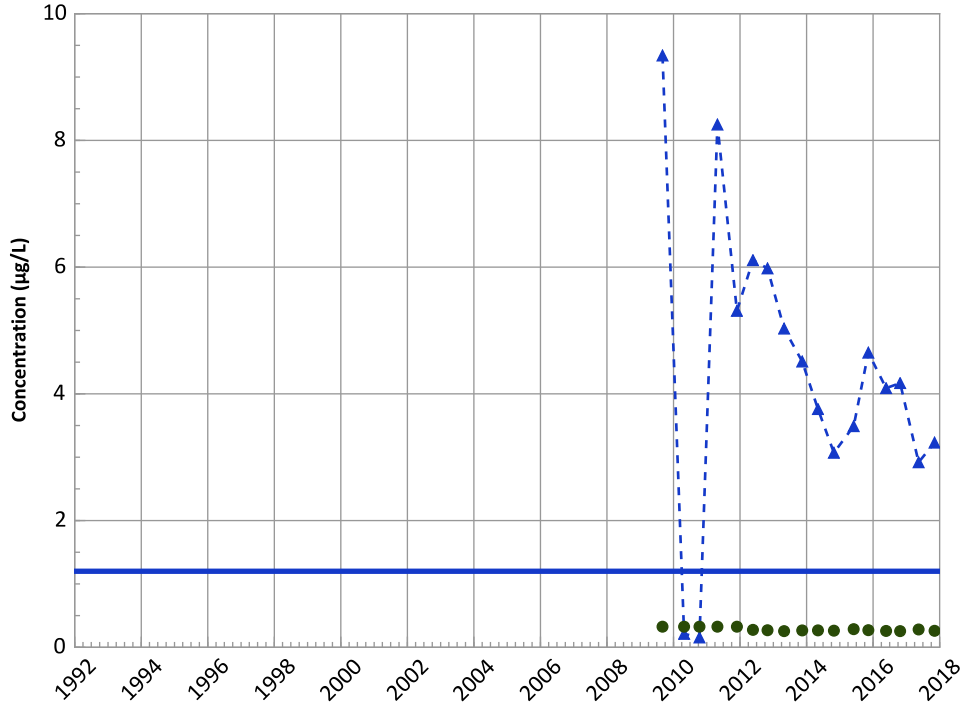
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1147 in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

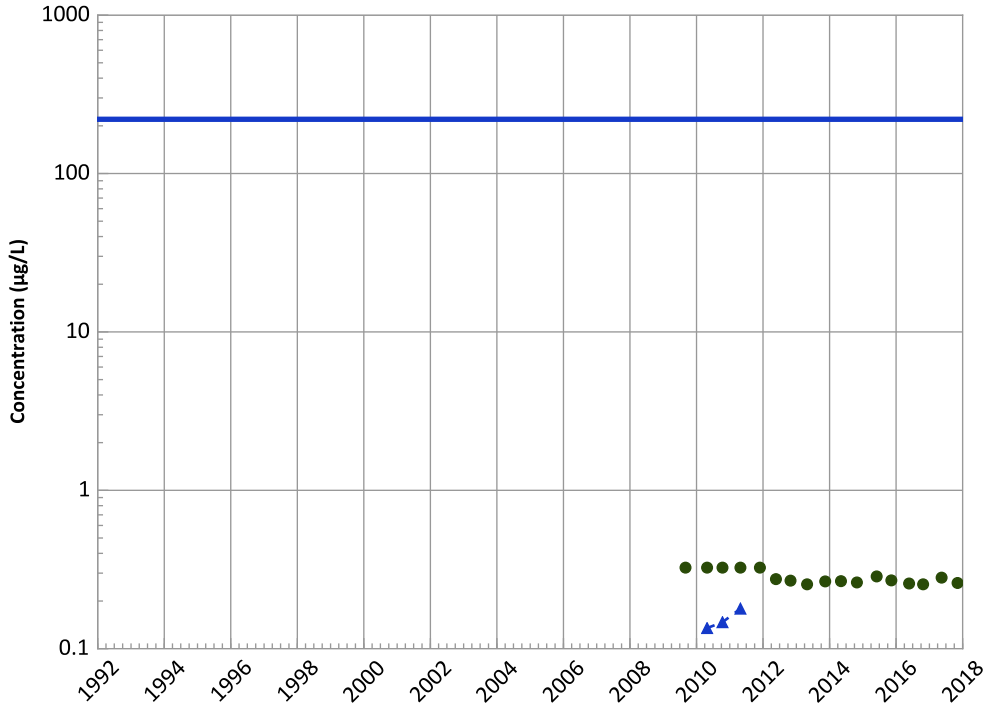
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
No Trend

1,3,5-Trinitrobenzene Trend



Concentration Trend

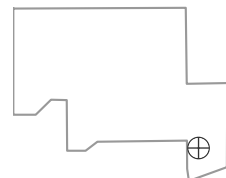
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

Well Location

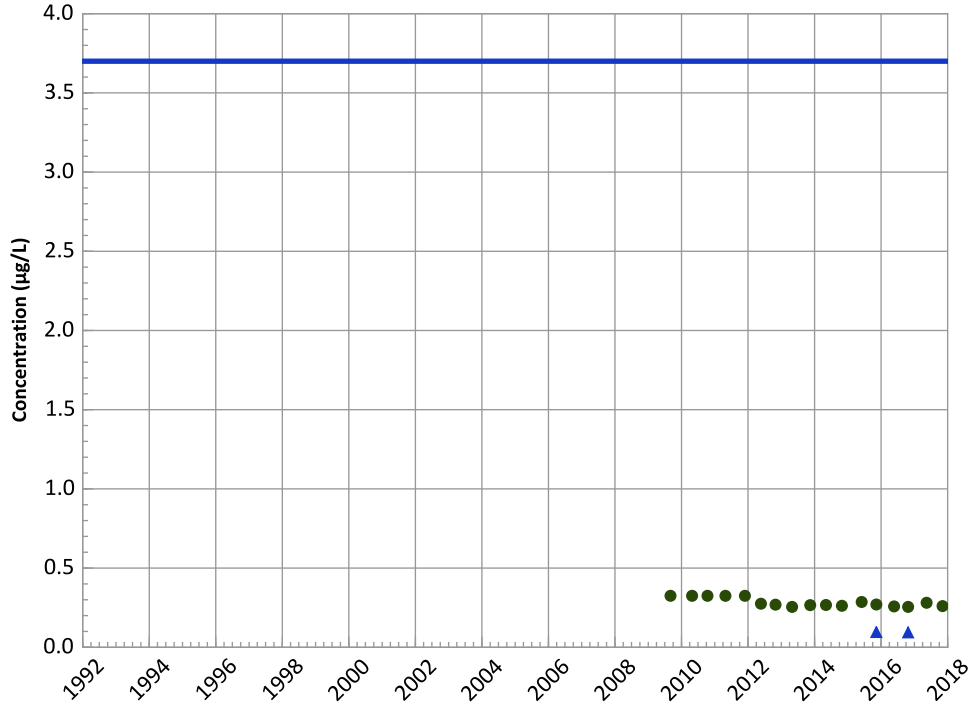


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/02/2009 to 11/06/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1147 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

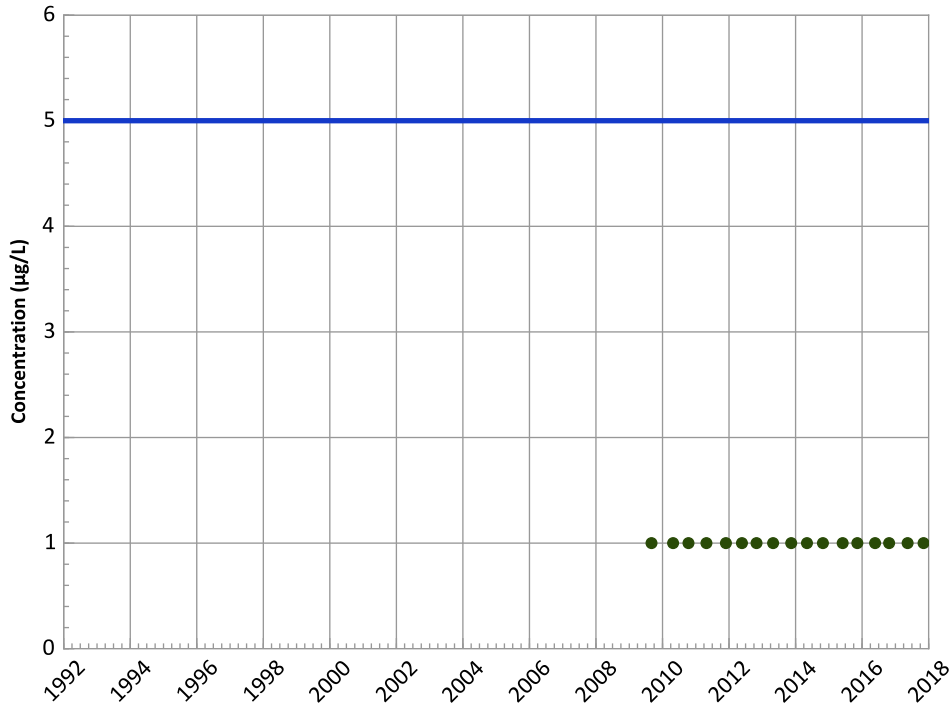
Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

Tetrachloroethylene (PCE) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

All Non-Detect

All Data

All Non-Detect

MAROS Linear Regression Method

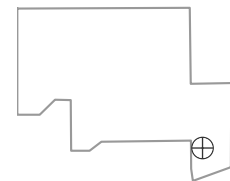
Data ():

All Non-Detect

All Data

All Non-Detect

Well Location

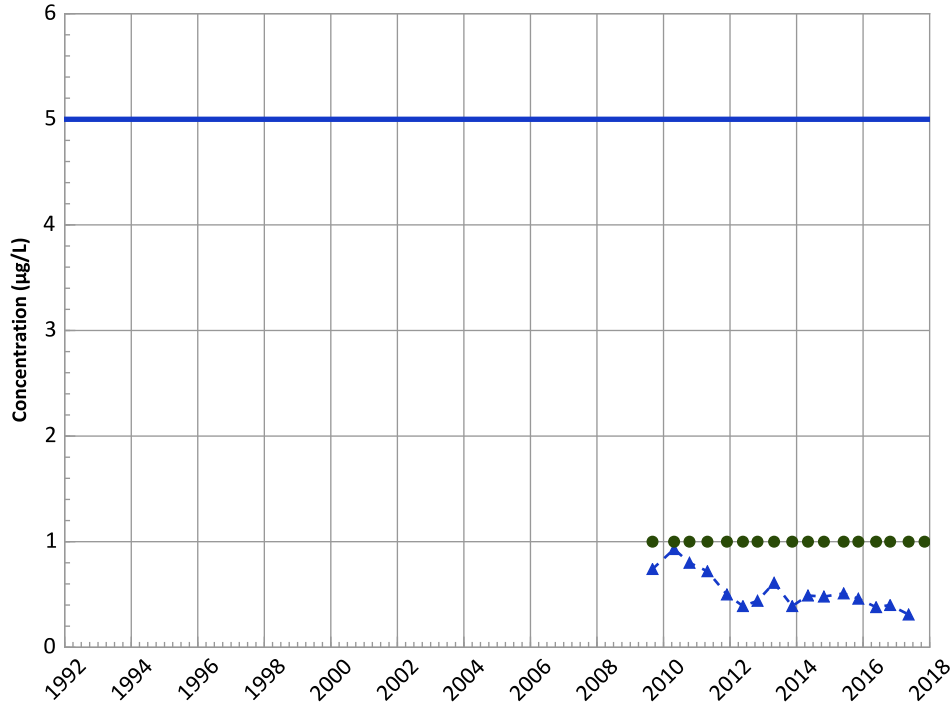


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/02/2009 to 11/06/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1147 in Perched Aquifer
USDOE/NNSA Pantex Plant

Trichloroethene Trend



Concentration Trend

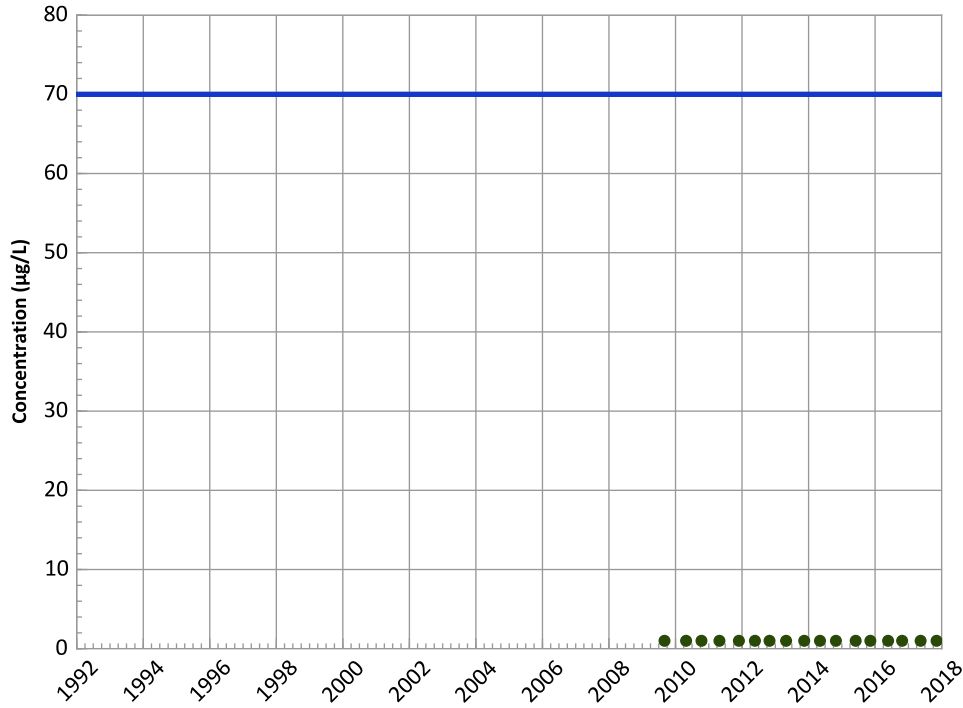
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Stable
All Data
Decreasing

cis-1,2-Dichloroethene Trend



Concentration Trend

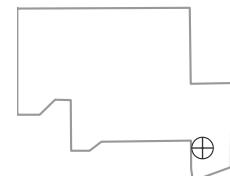
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

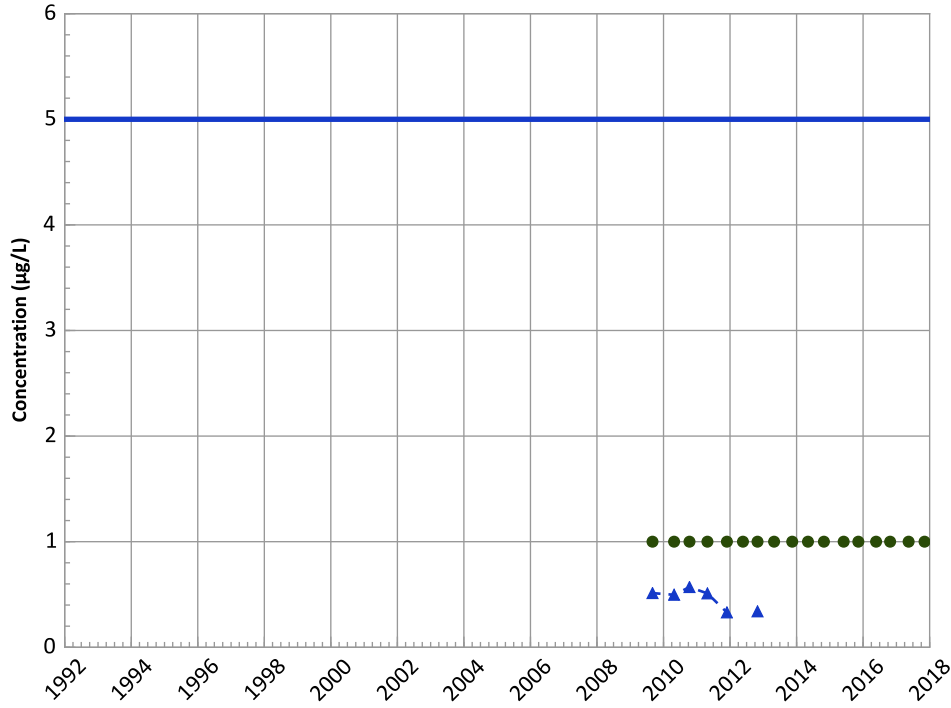
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/02/2009 to 11/06/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1147 in Perched Aquifer
USDOE/NNSA Pantex Plant
1,2-Dichloroethane Trend**

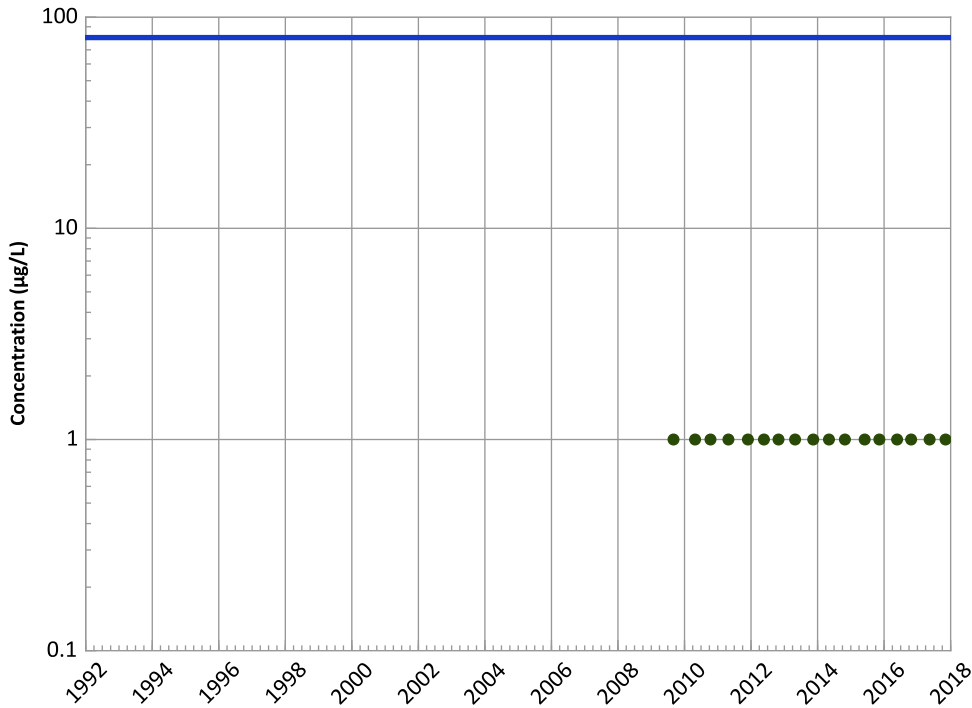


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

MAROS Linear Regression Method
Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

Chloroform Trend

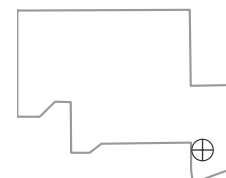


Concentration Trend

MAROS Mann-Kendall Method
Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method
Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

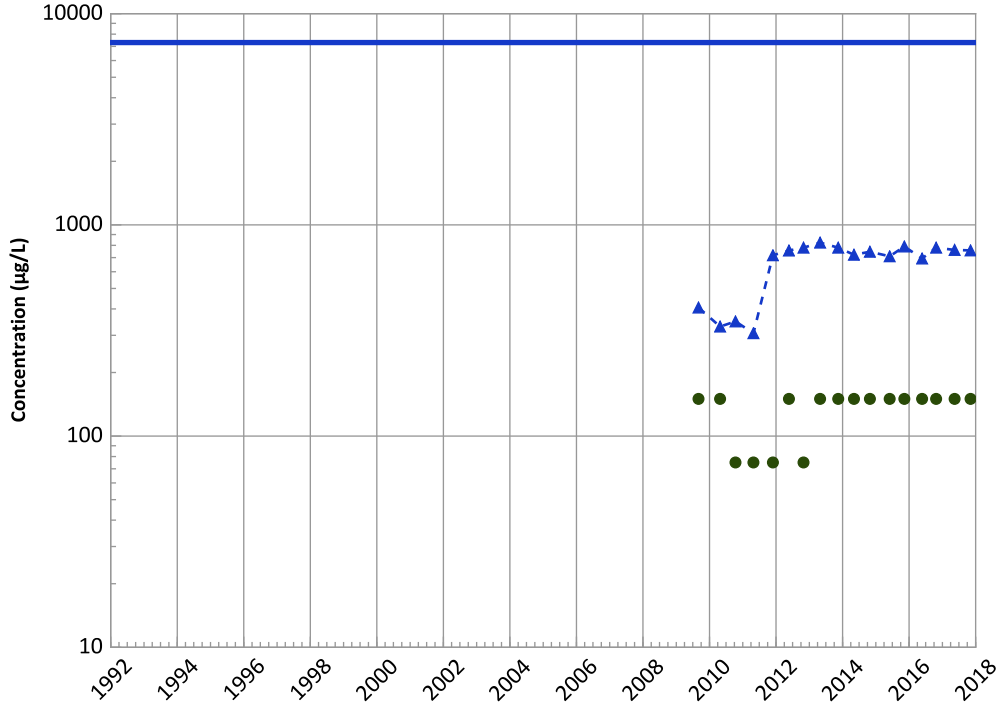


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/02/2009 to 11/06/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1147 in Perched Aquifer
USDOE/NNSA Pantex Plant

Boron Trend



Concentration Trend

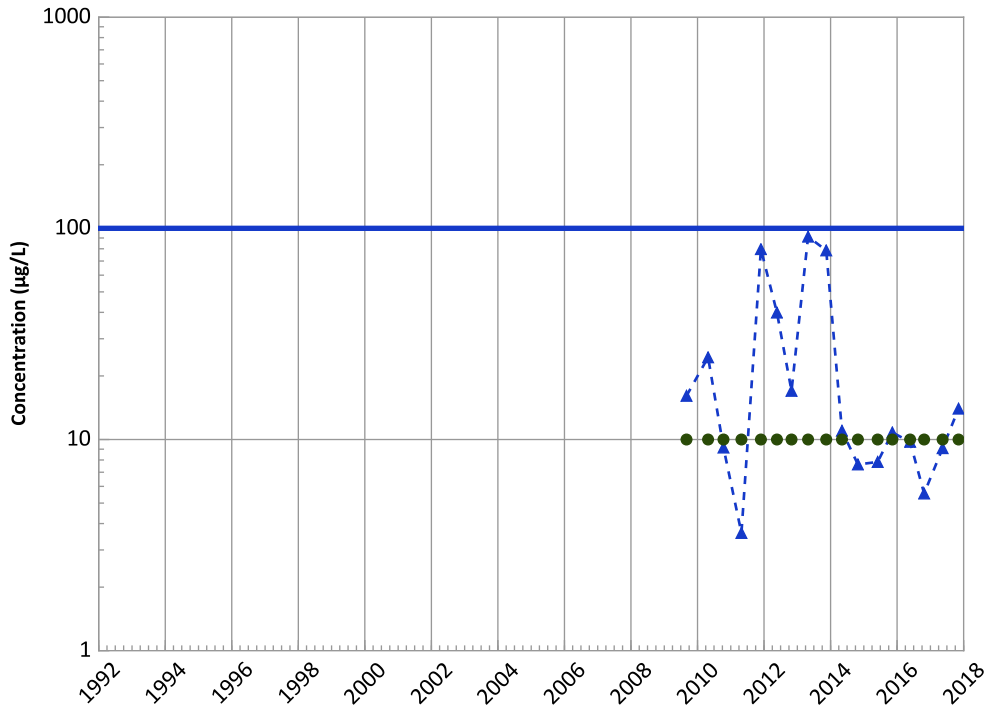
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Stable
All Data
Increasing

Chromium, Total Trend



Concentration Trend

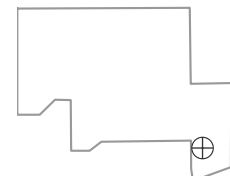
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
No Trend

Well Location

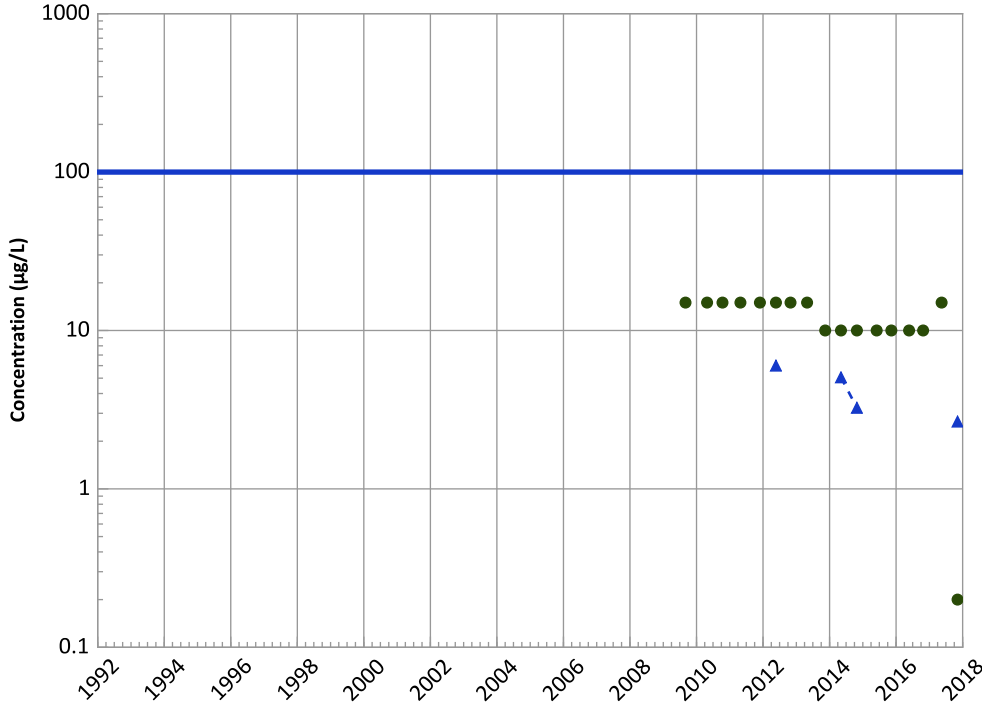


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/02/2009 to 11/06/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1147 in Perched Aquifer
USDOE/NNSA Pantex Plant

Chromium, Hexavalent Trend



Concentration Trend

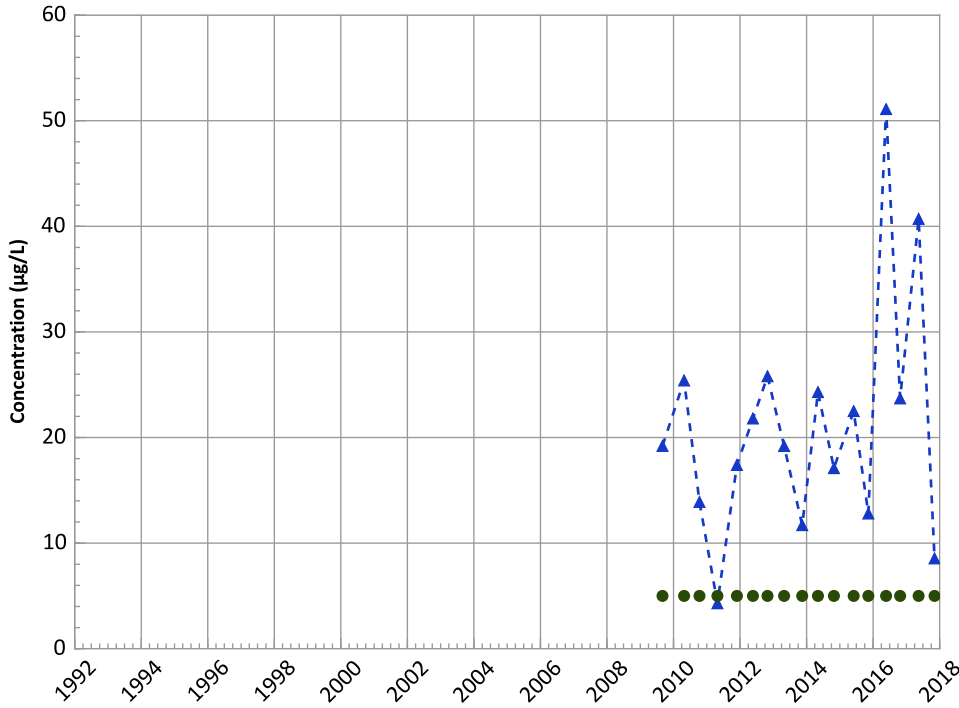
MAROS Mann-Kendall Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

Manganese Trend



Concentration Trend

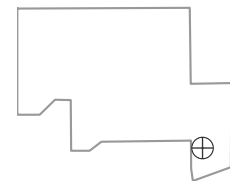
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
No Trend

MAROS Linear Regression Method

Data ():
No Trend
All Data
No Trend

Well Location

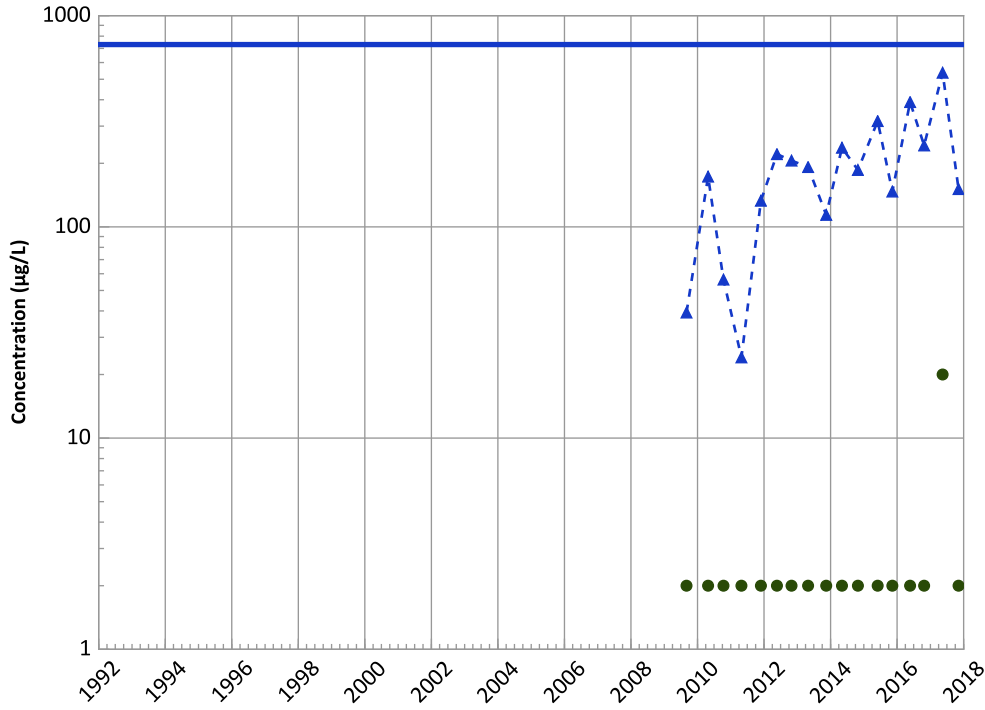


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/02/2009 to 11/06/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1147 in Perched Aquifer
USDOE/NNSA Pantex Plant

Nickel Trend



Concentration Trend

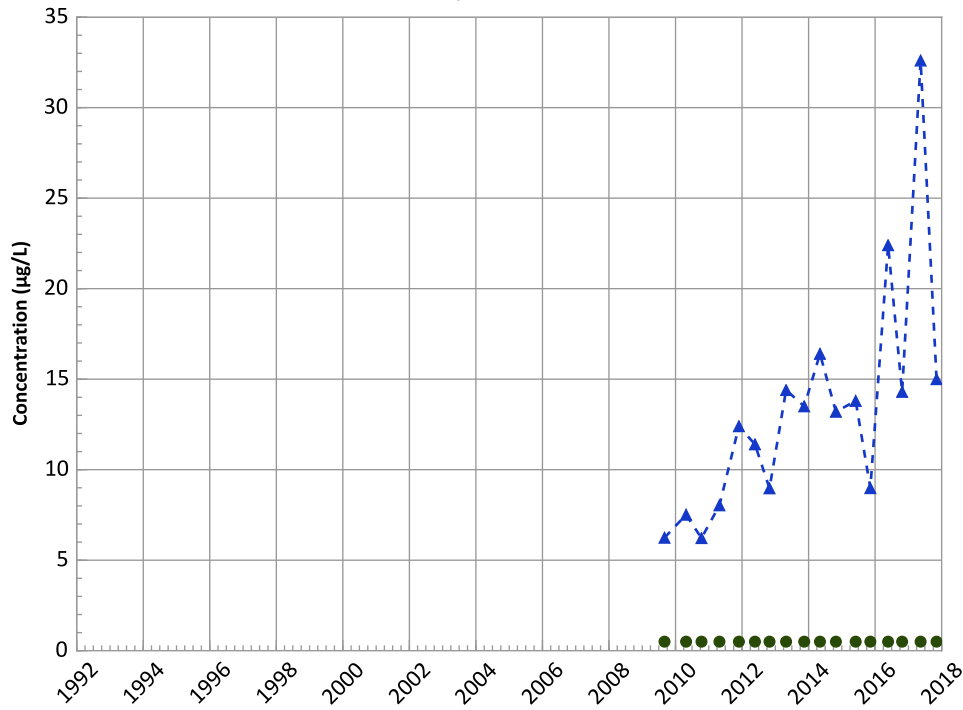
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
Increasing

Molybdenum Trend



Concentration Trend

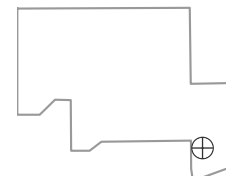
MAROS Mann-Kendall Method

Data ():
No Trend
All Data
Increasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
Increasing

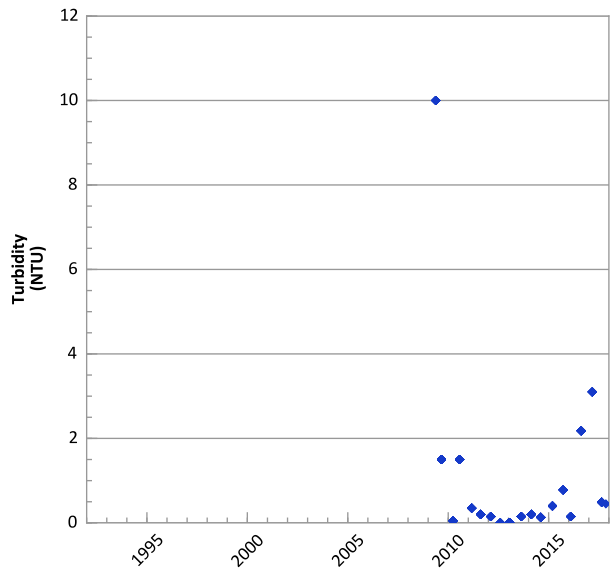
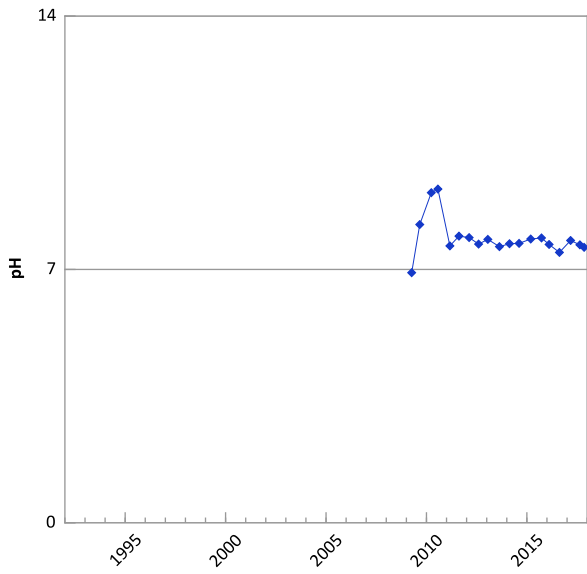
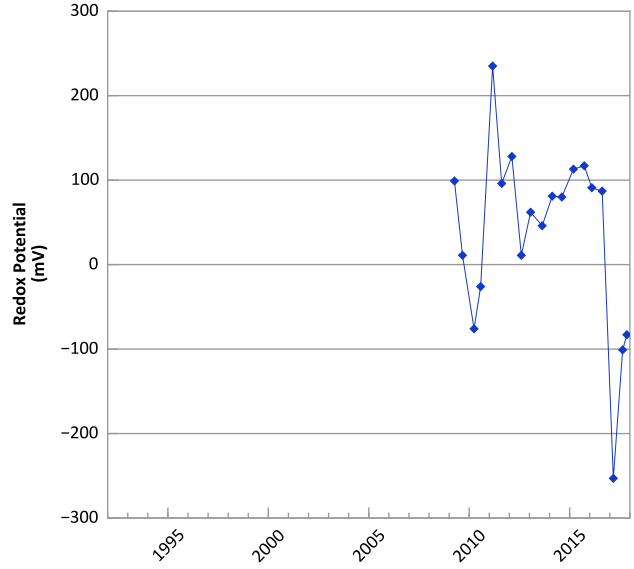
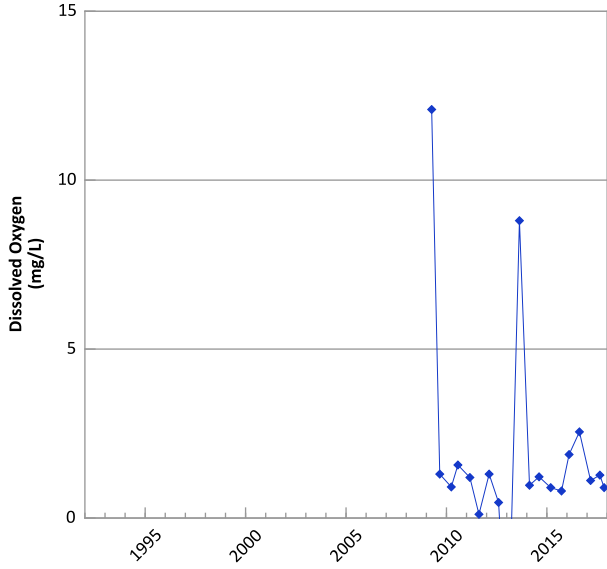
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/02/2009 to 11/06/2017
Analysis Date: 03/21/2018

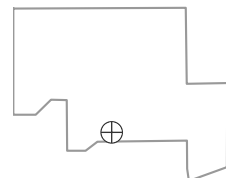
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1151 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters



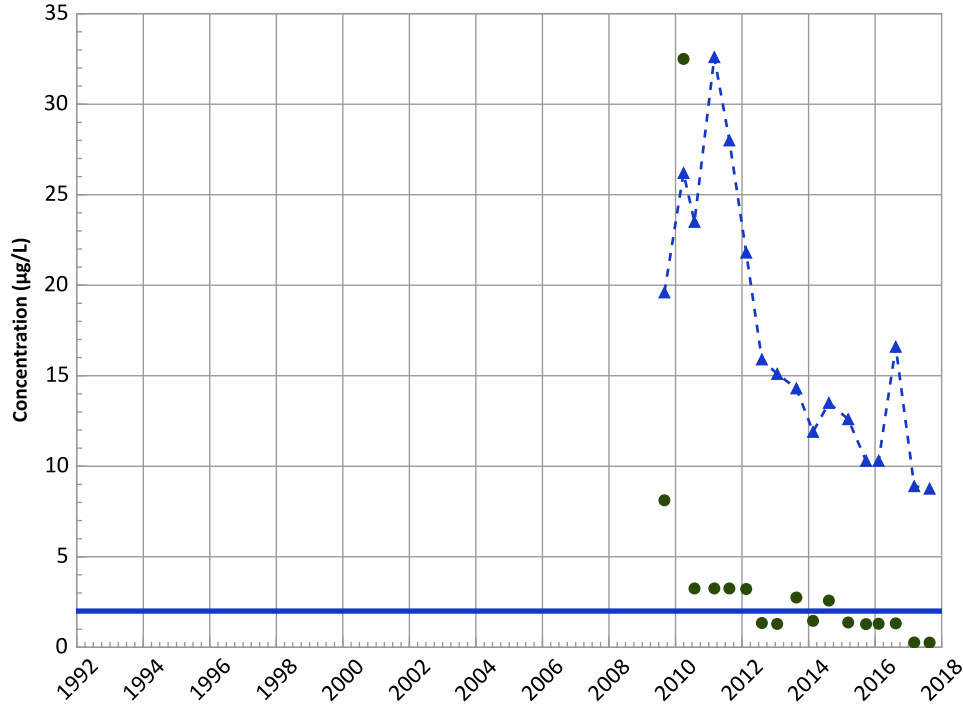
Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 05/20/2009 to 11/07/2017
Analysis Date: 03/21/2018

Well Location



PTX06-1151 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

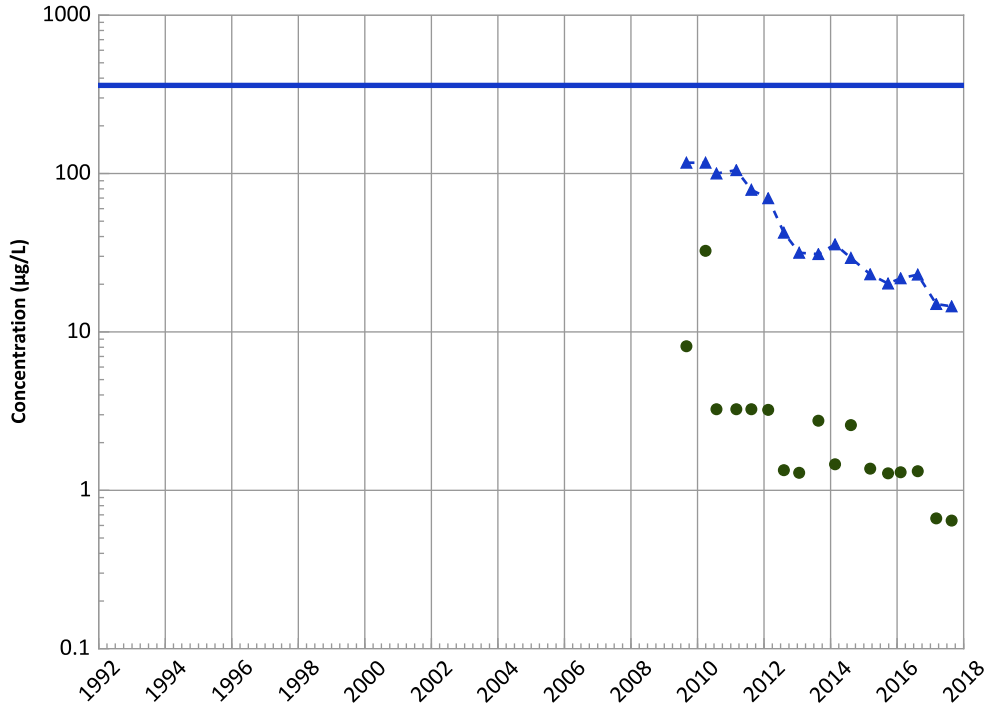
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

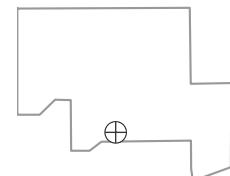
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

Well Location

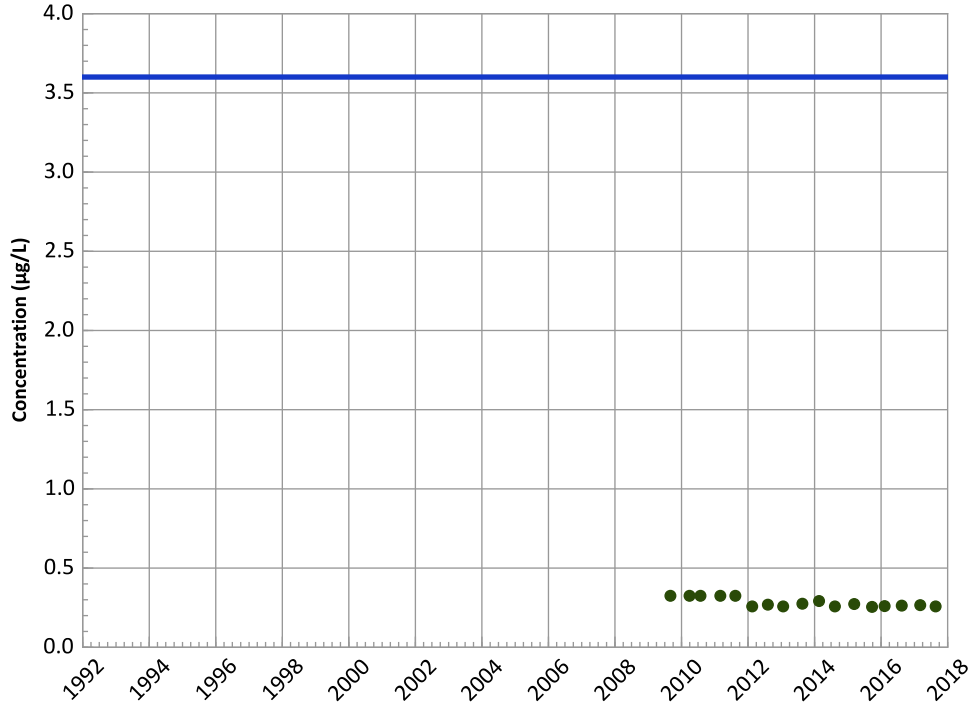


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 05/20/2009 to 11/07/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1151 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

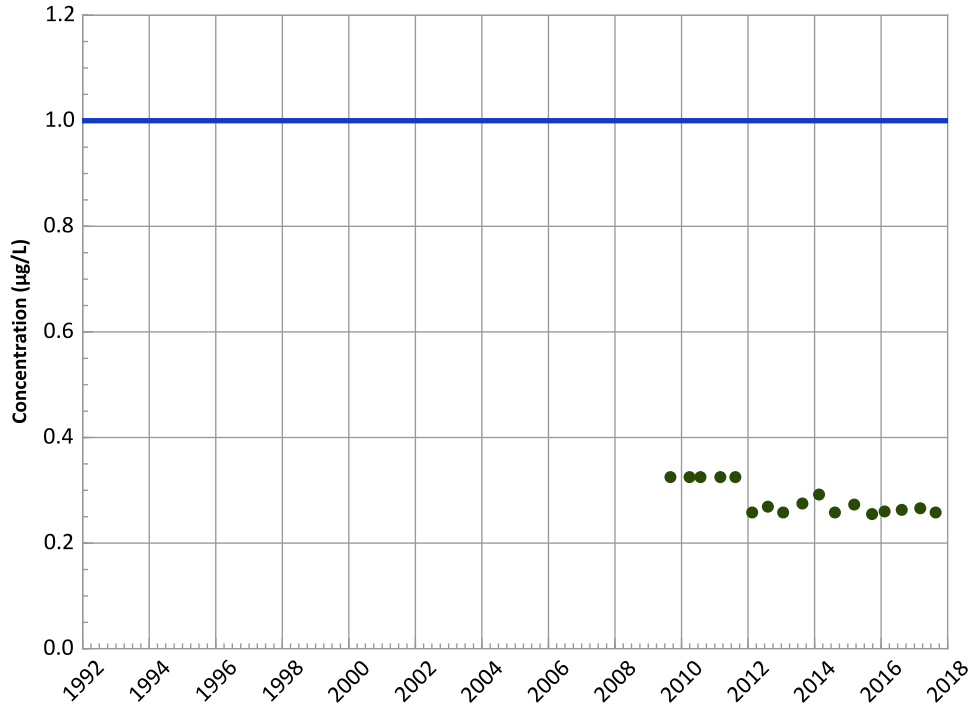
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

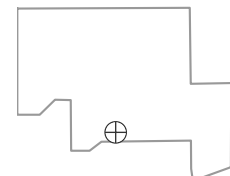
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

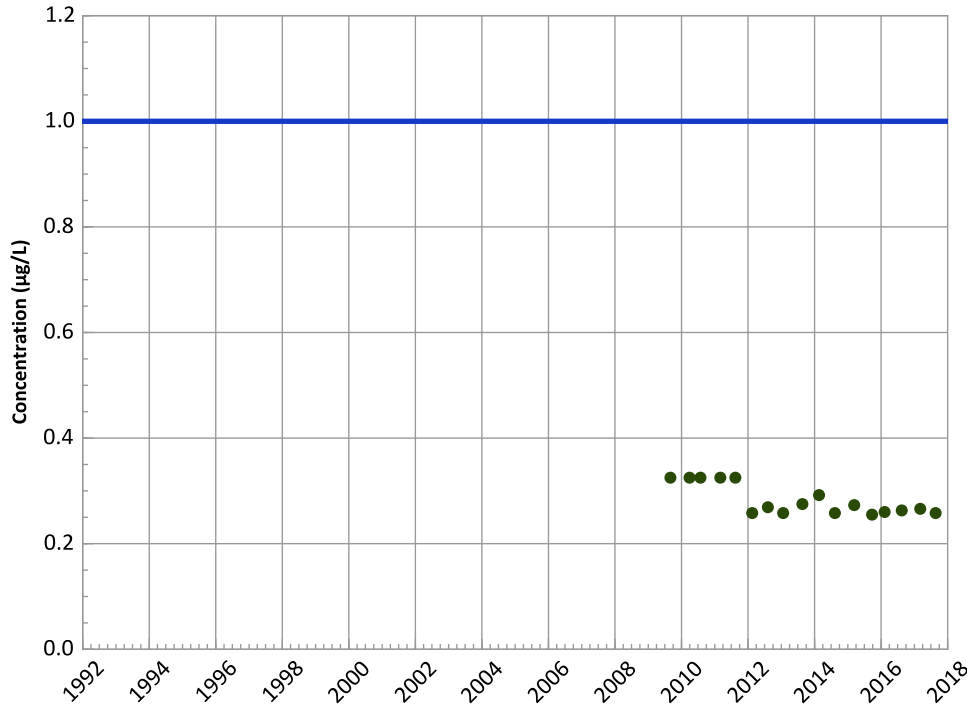


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 05/20/2009 to 11/07/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1151 in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

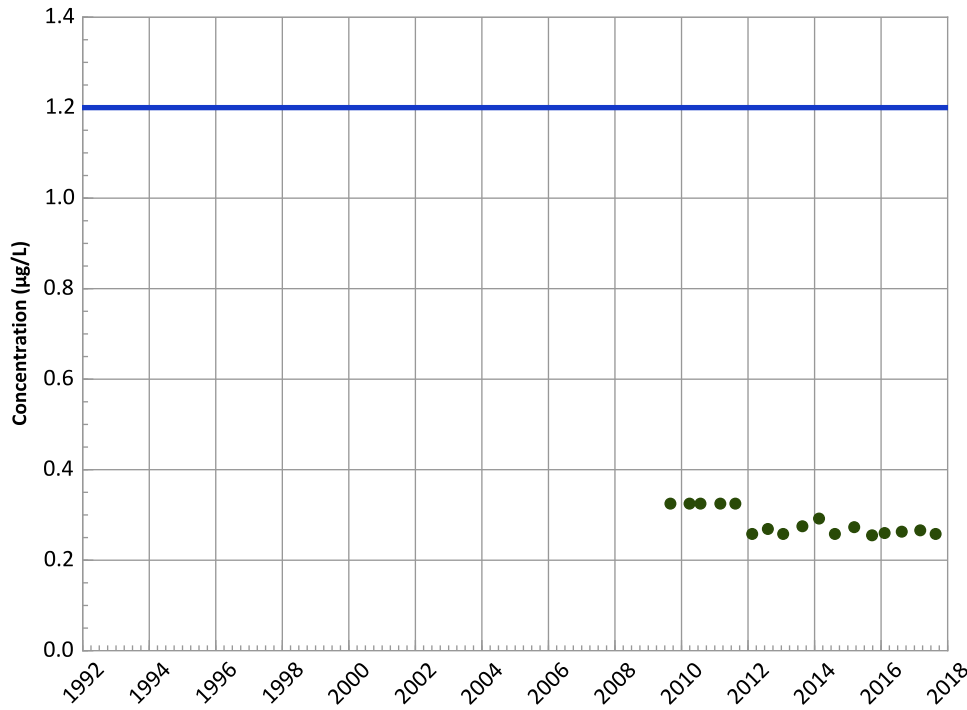
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

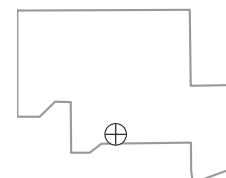
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

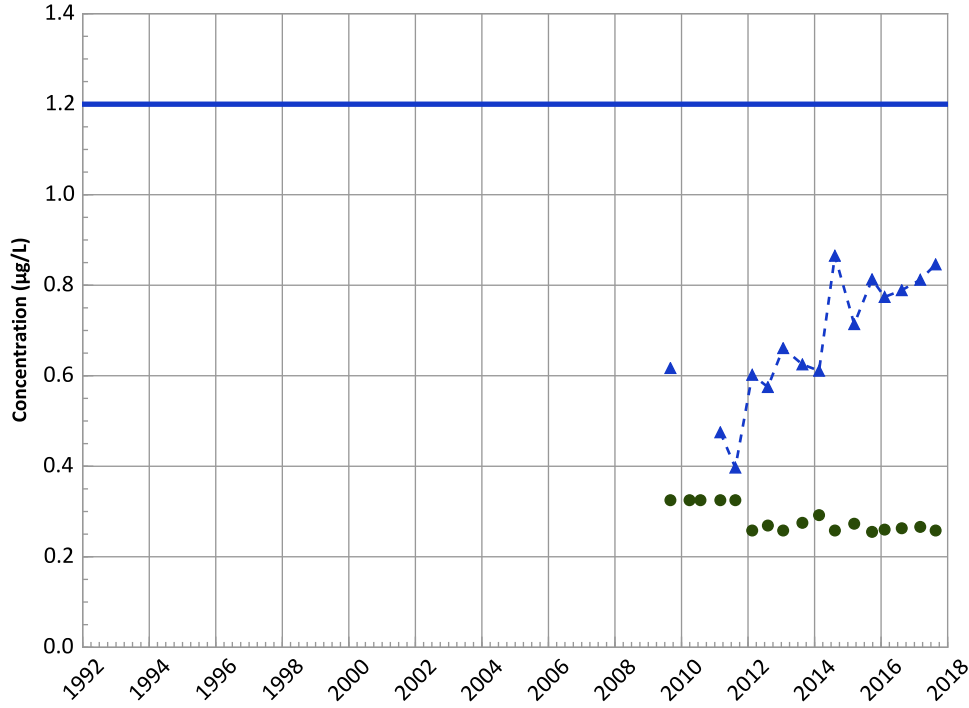


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 05/20/2009 to 11/07/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1151 in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

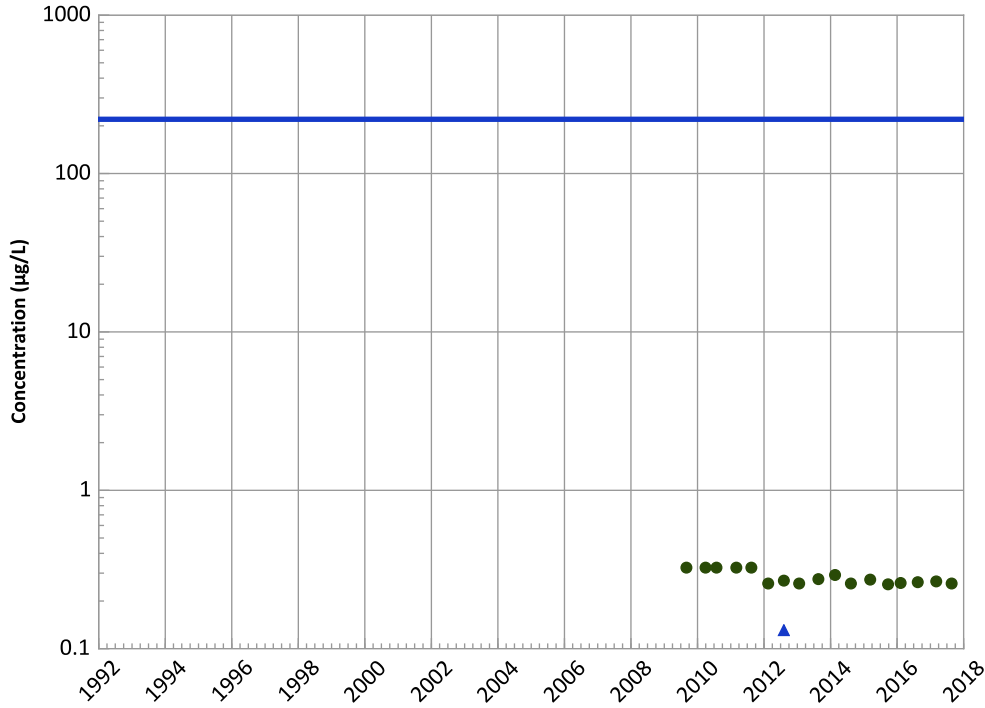
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

1,3,5-Trinitrobenzene Trend



Concentration Trend

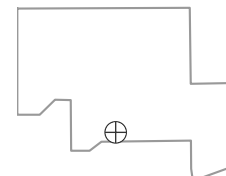
MAROS Mann-Kendall Method

Data ():
N/A (<4 Detections in Dataset)
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
N/A (<4 Detections in Dataset)

Well Location

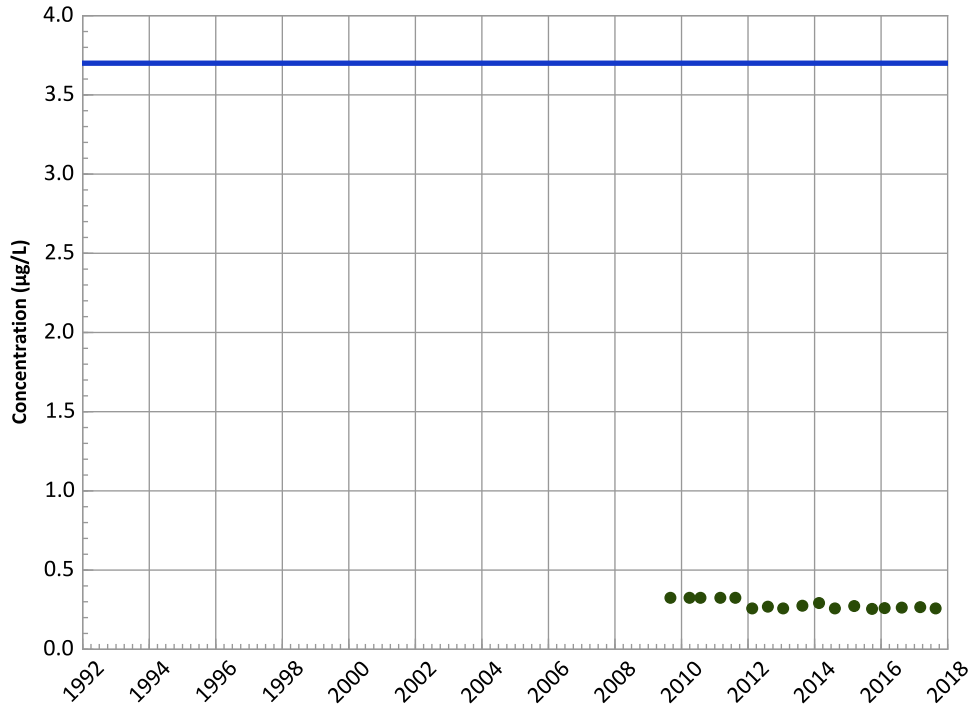


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 05/20/2009 to 11/07/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1151 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

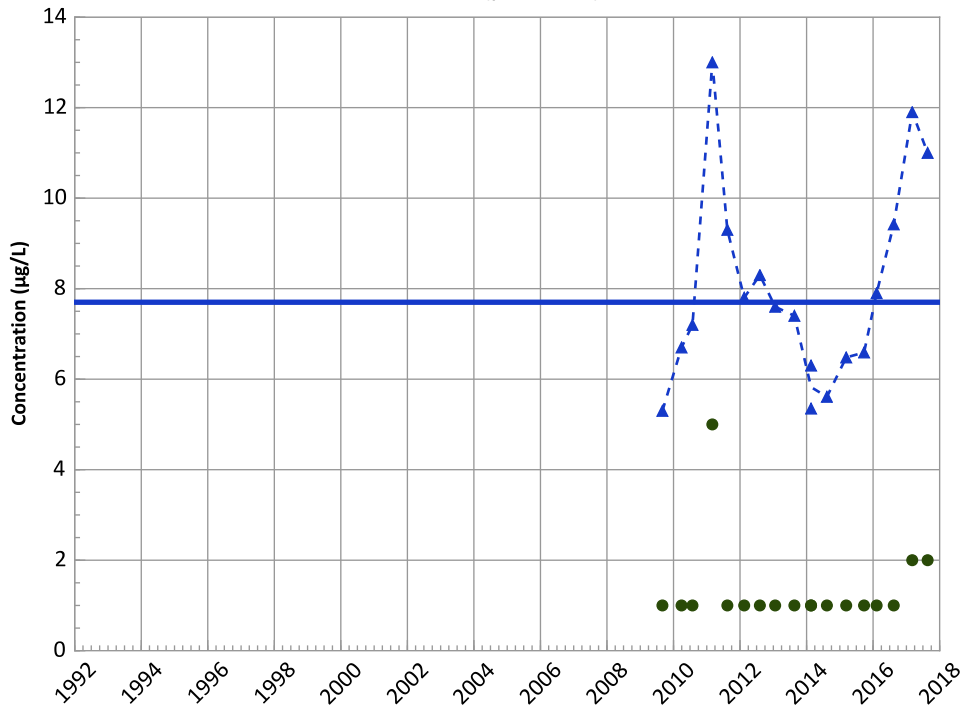
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,4-Dioxane (p-Dioxane) Trend



Concentration Trend

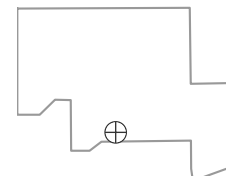
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
No Trend

MAROS Linear Regression Method

Data ():
Increasing
All Data
No Trend

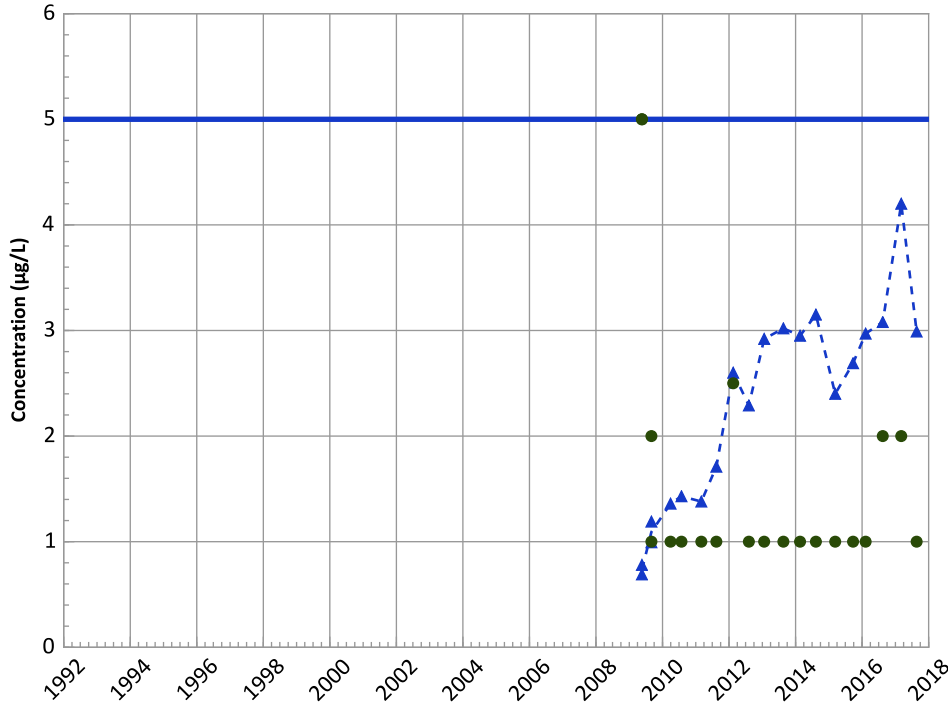
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 05/20/2009 to 11/07/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1151 in Perched Aquifer
USDOE/NNSA Pantex Plant
Tetrachloroethylene (PCE) Trend**



Concentration Trend

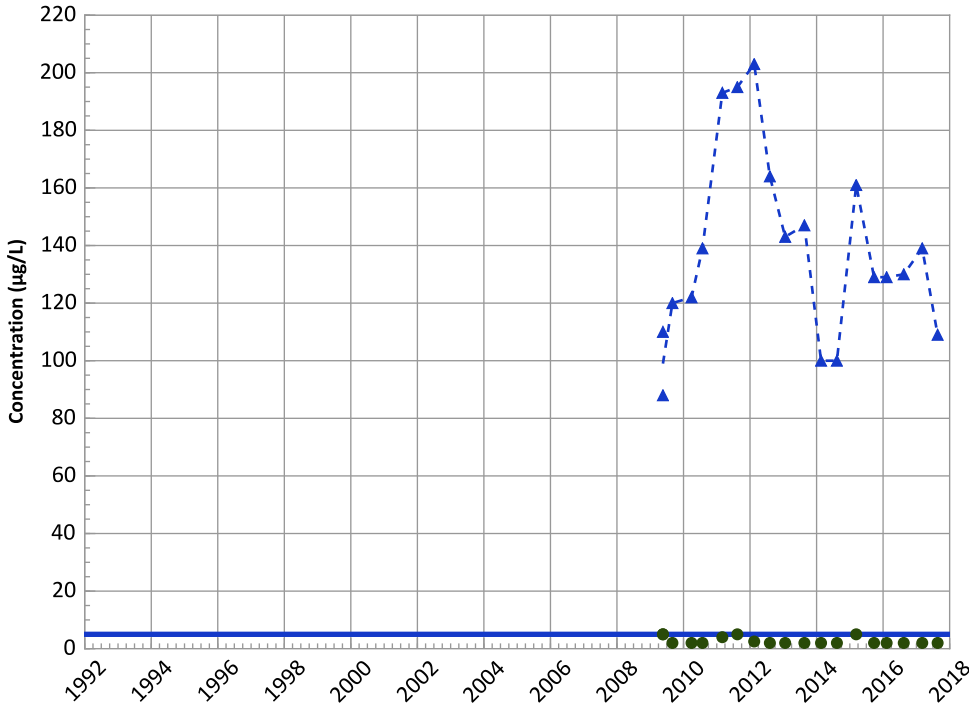
MAROS Mann-Kendall Method

Data ():
Probably Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
Increasing

Trichloroethene Trend



Concentration Trend

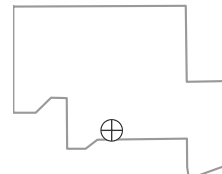
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Probably Decreasing
All Data
Stable

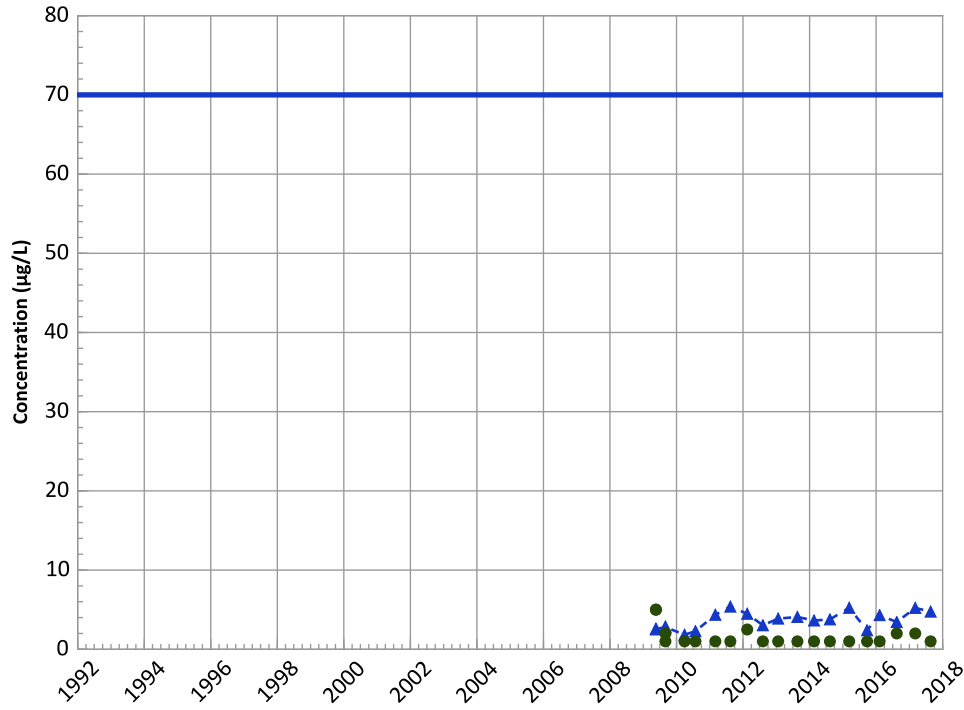
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 05/20/2009 to 11/07/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1151 in Perched Aquifer
USDOE/NNSA Pantex Plant
cis-1,2-Dichloroethene Trend**



Concentration Trend

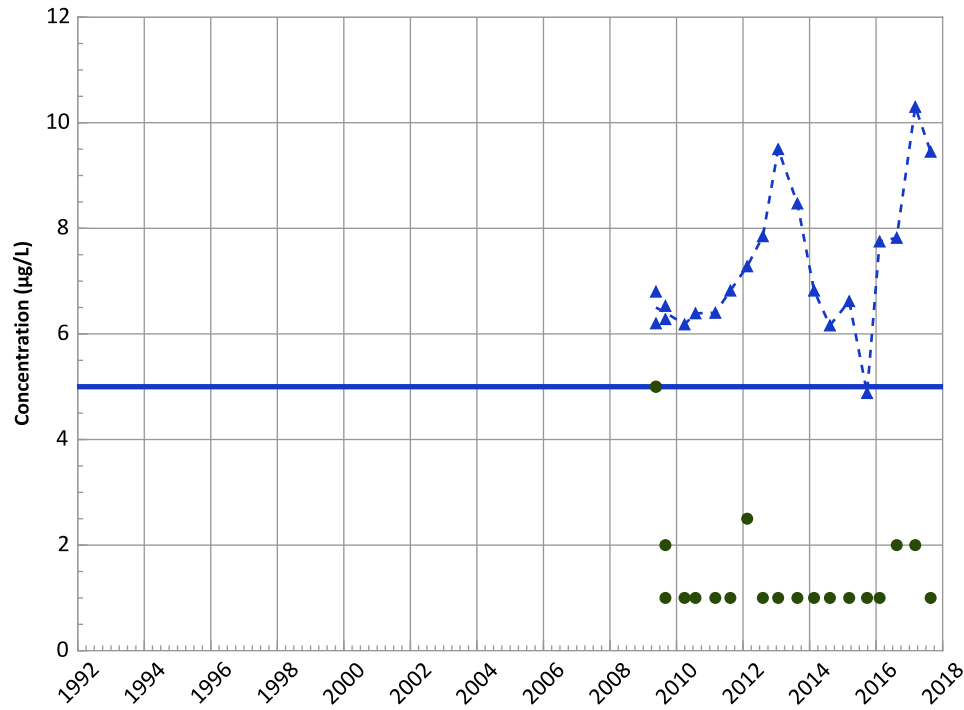
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Stable
All Data
Increasing

1,2-Dichloroethane Trend



Concentration Trend

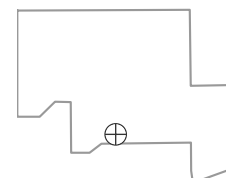
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Stable
All Data
Increasing

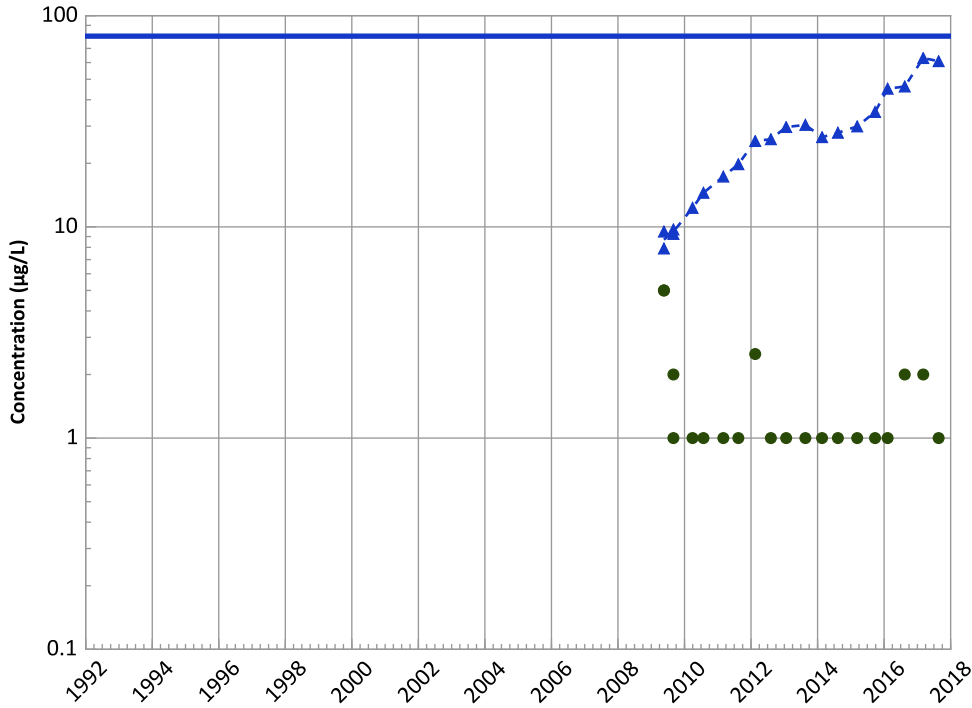
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 05/20/2009 to 11/07/2017
Analysis Date: 03/21/2018

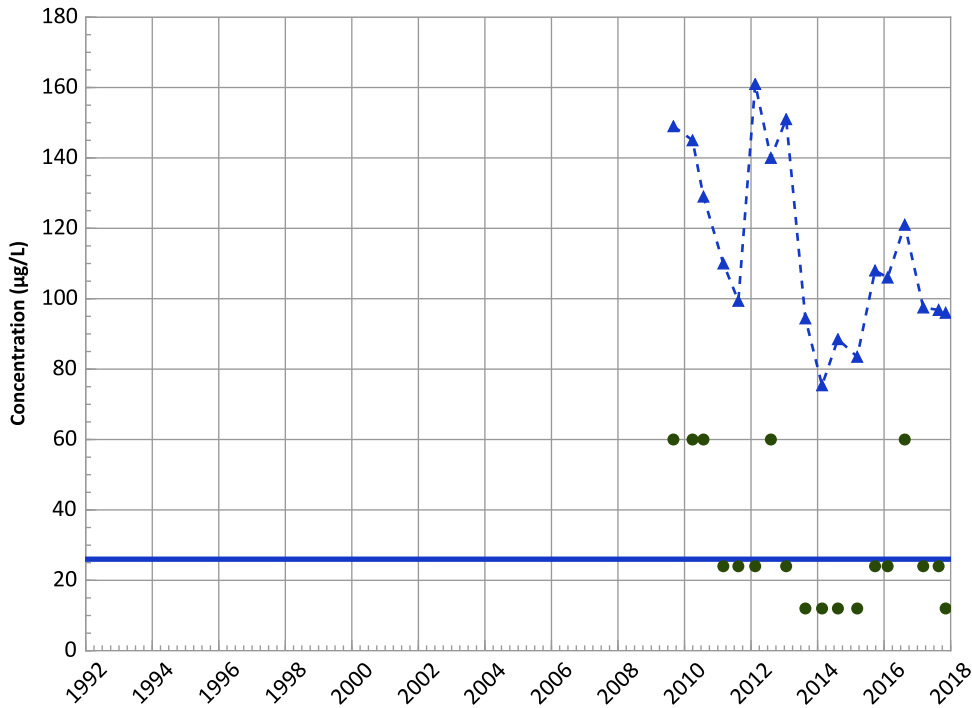
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1151 in Perched Aquifer
 USDOE/NNSA Pantex Plant
 Chloroform Trend



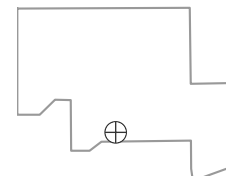
Concentration Trend
 MAROS Mann-Kendall Method
 Data ():
 Increasing
 All Data
 Increasing
 MAROS Linear Regression Method
 Data ():
 Increasing
 All Data
 Increasing

Perchlorate Trend



Concentration Trend
 MAROS Mann-Kendall Method
 Data ():
 Decreasing
 All Data
 Decreasing
 MAROS Linear Regression Method
 Data ():
 Probably Decreasing
 All Data
 Decreasing

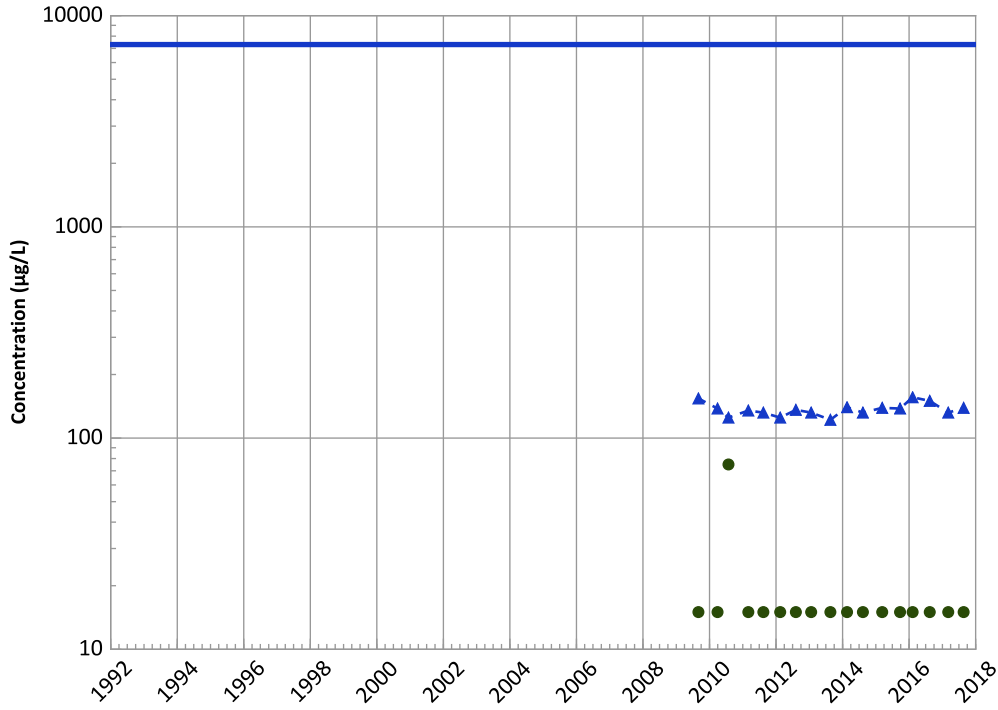
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 05/20/2009 to 11/07/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1151 in Perched Aquifer
 USDOE/NNSA Pantex Plant
 Boron Trend

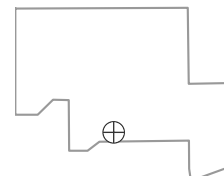


Concentration Trend
 MAROS Mann-Kendall Method
 Data ():
 Increasing
 All Data
 No Trend
 MAROS Linear Regression Method
 Data ():
 Increasing
 All Data
 No Trend

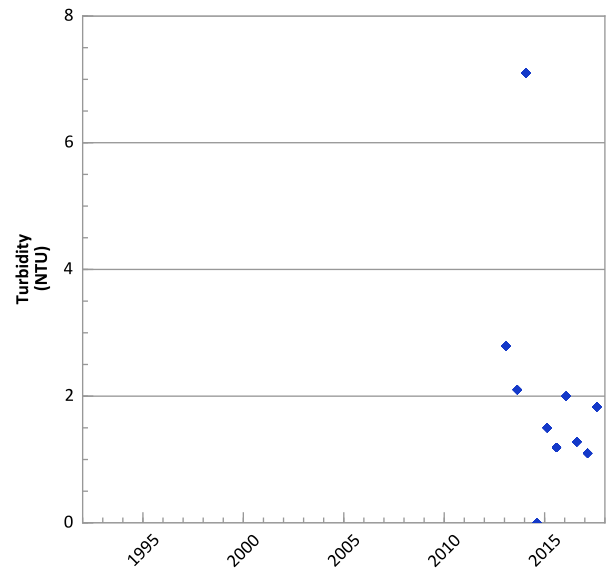
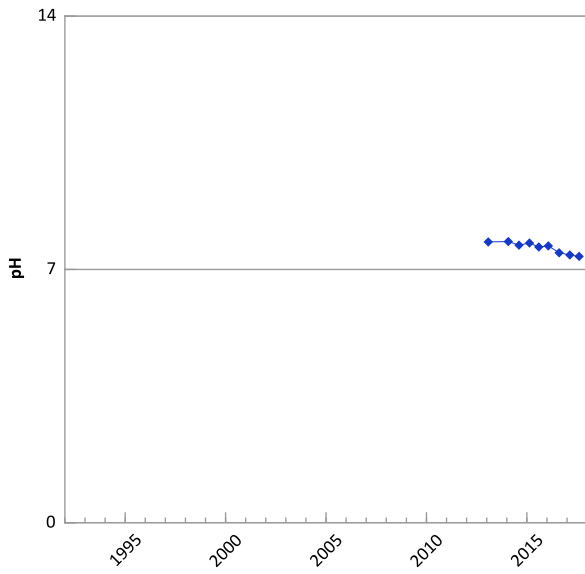
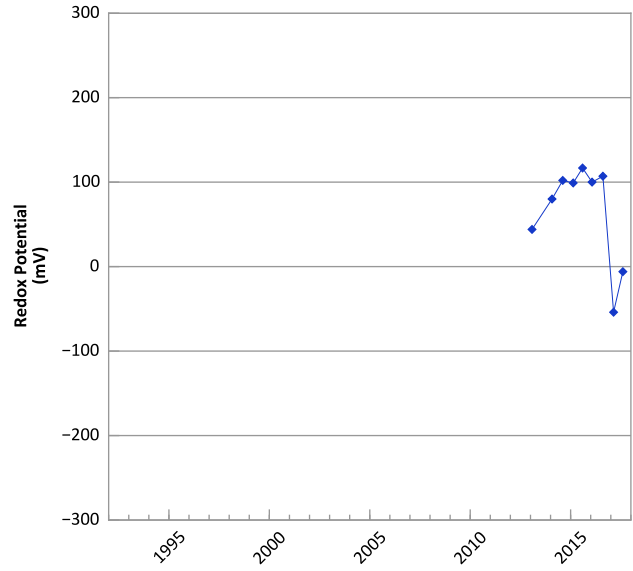
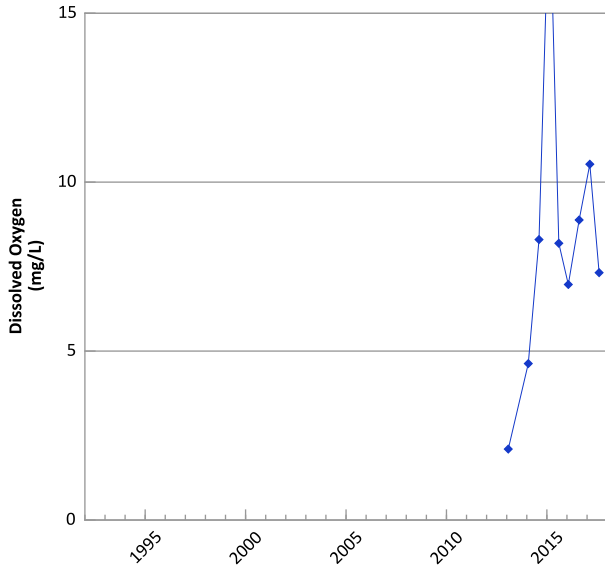
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 05/20/2009 to 11/07/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

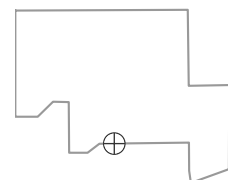


**PTX06-1159 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



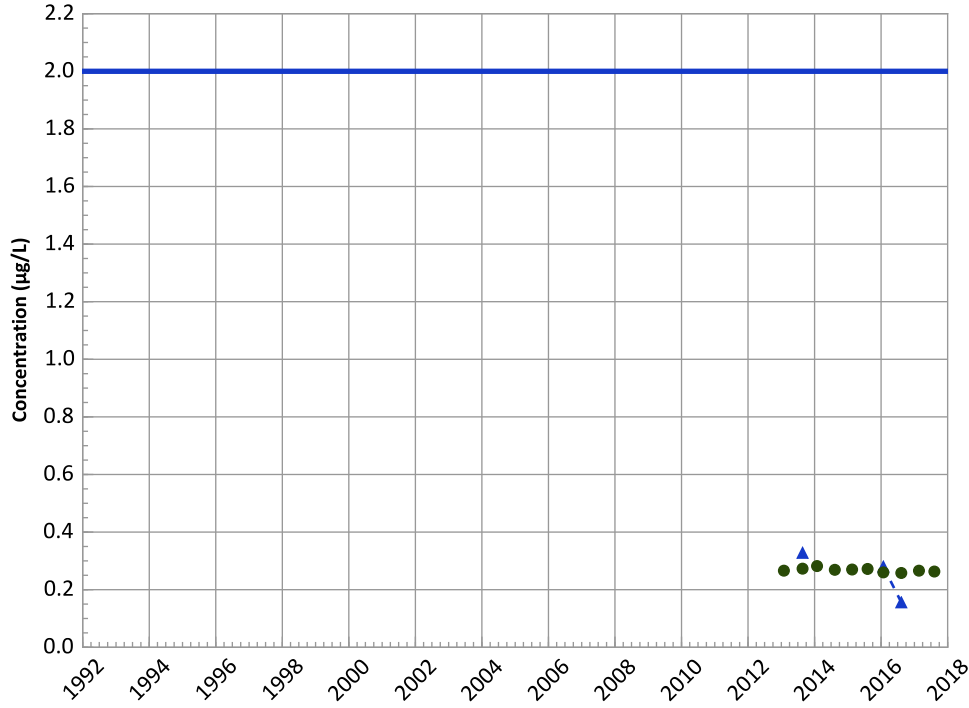
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 01/29/2013 to 08/08/2017
 Analysis Date: 03/21/2018

Well Location



PTX06-1159 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

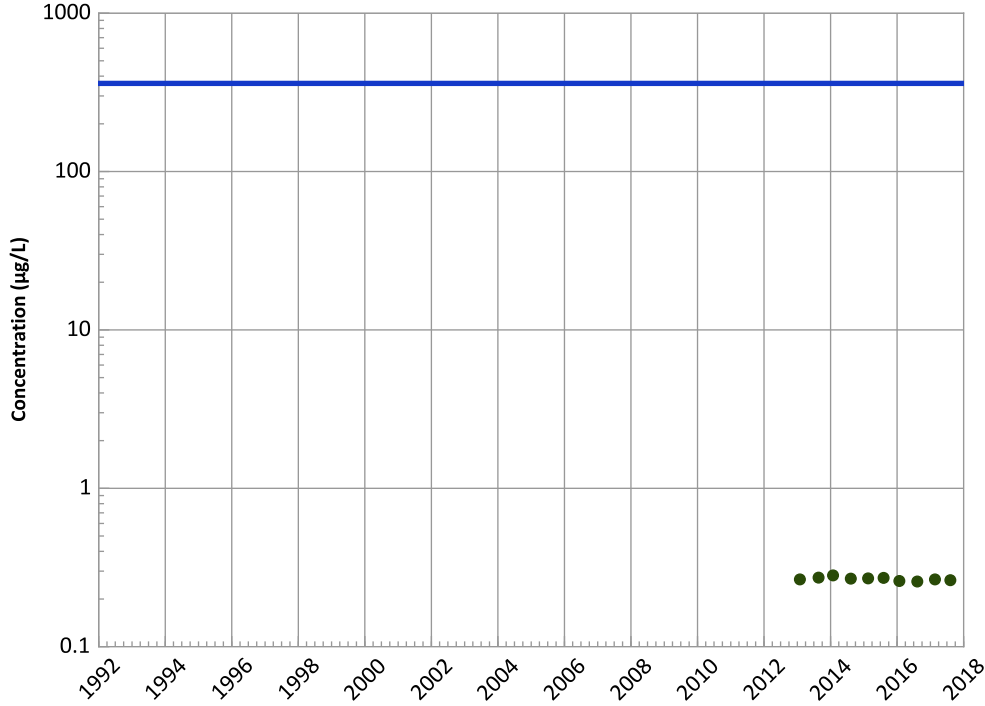
Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

All Non-Detect

All Data

All Non-Detect

MAROS Linear Regression Method

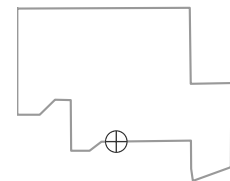
Data ():

All Non-Detect

All Data

All Non-Detect

Well Location

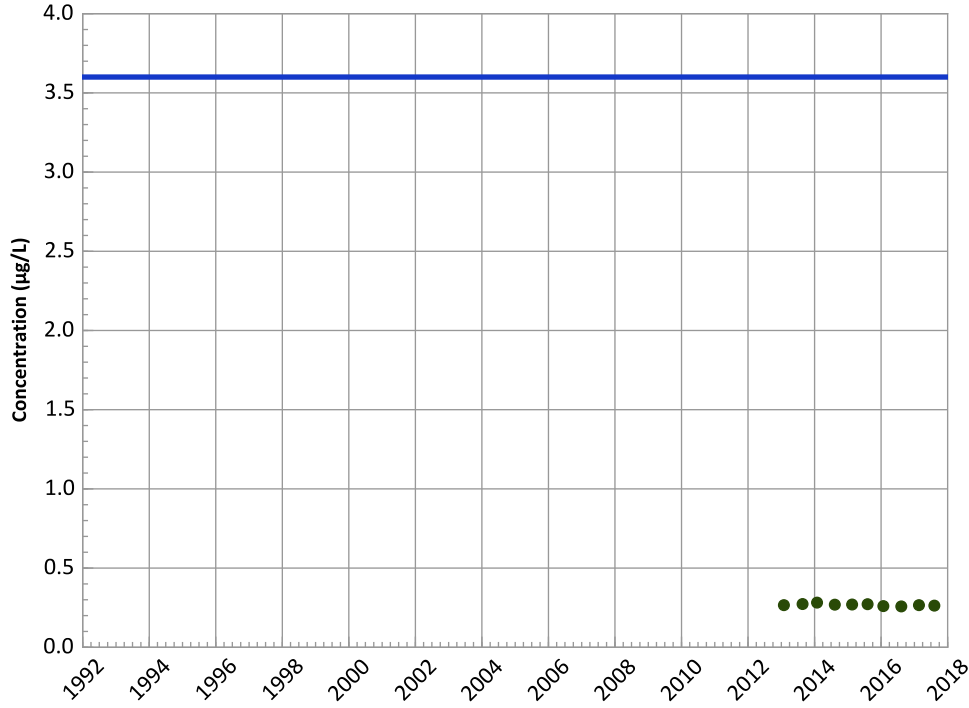


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 01/29/2013 to 08/08/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1159 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

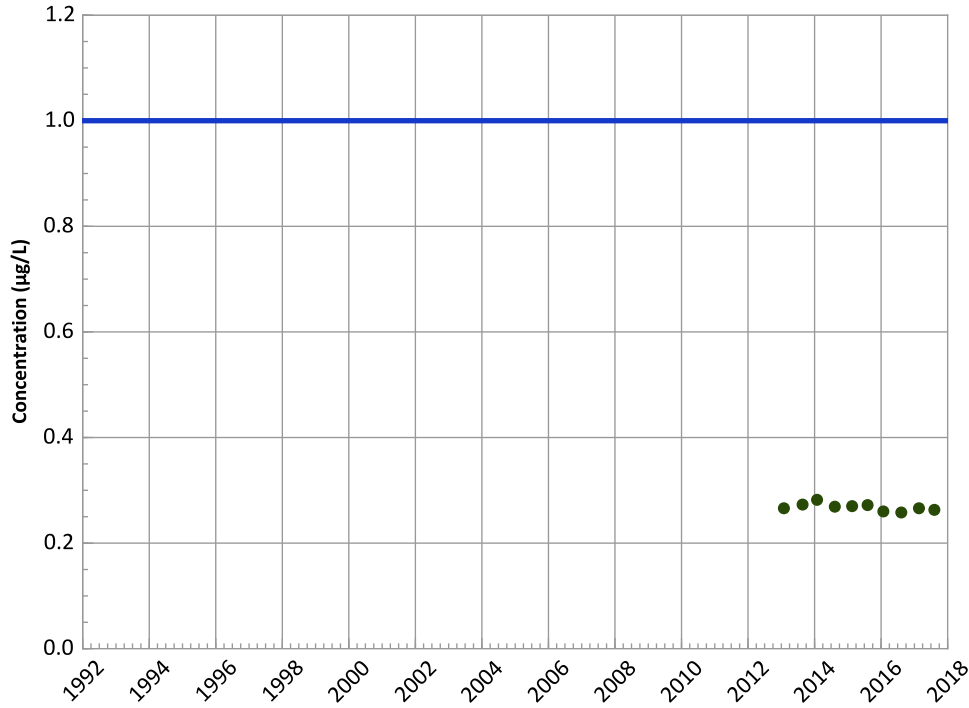
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

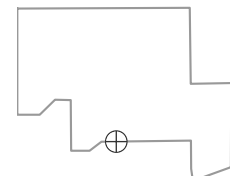
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

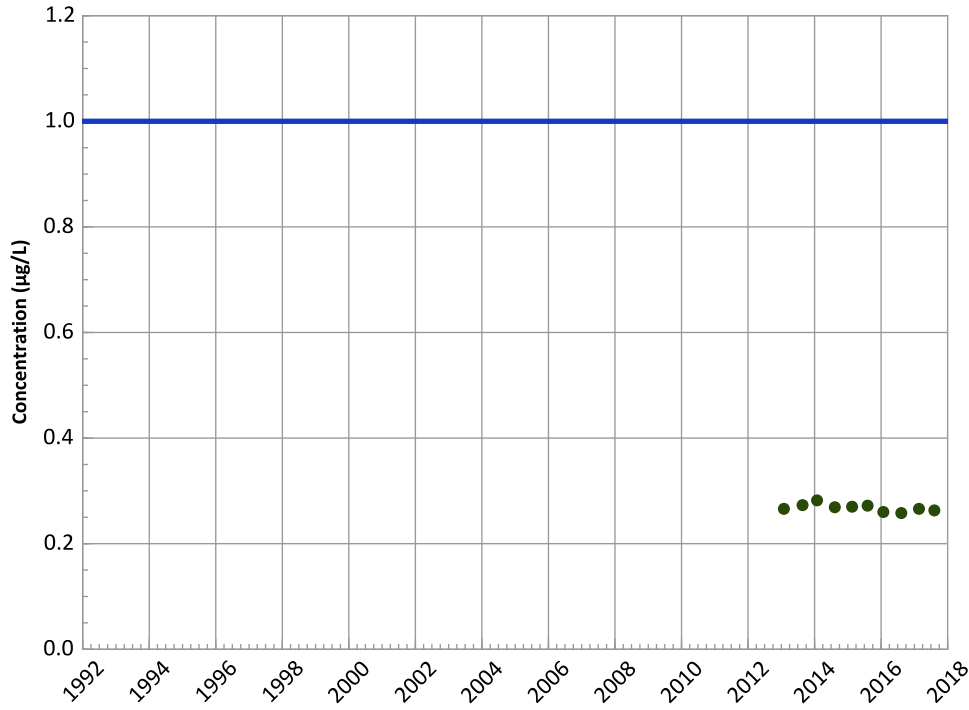


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 01/29/2013 to 08/08/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1159 in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

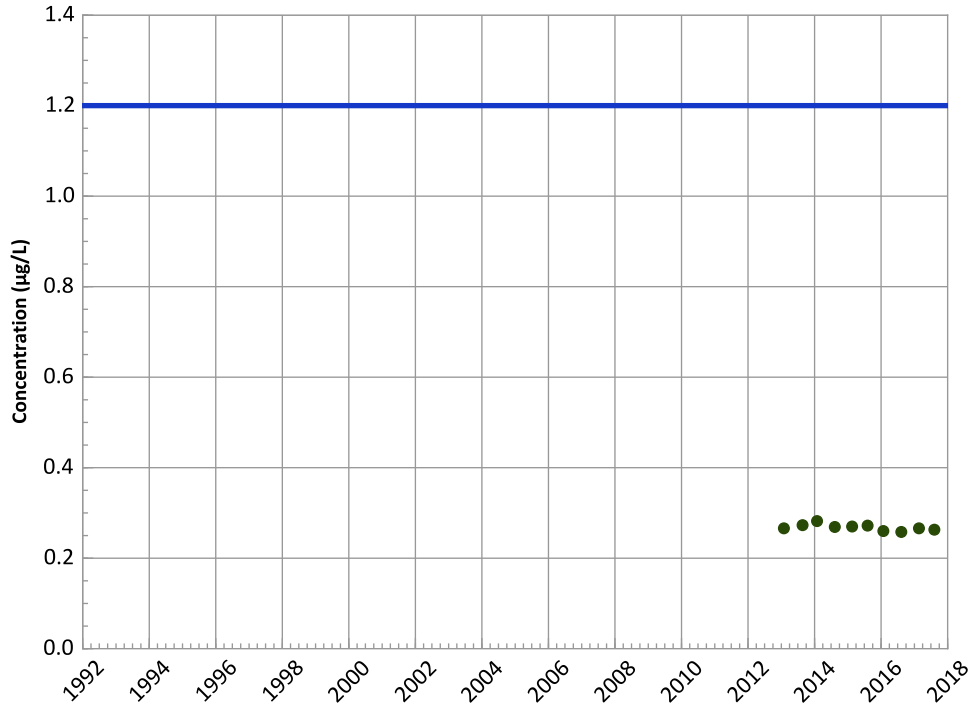
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

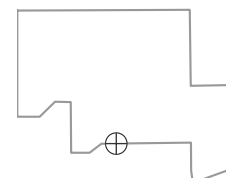
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

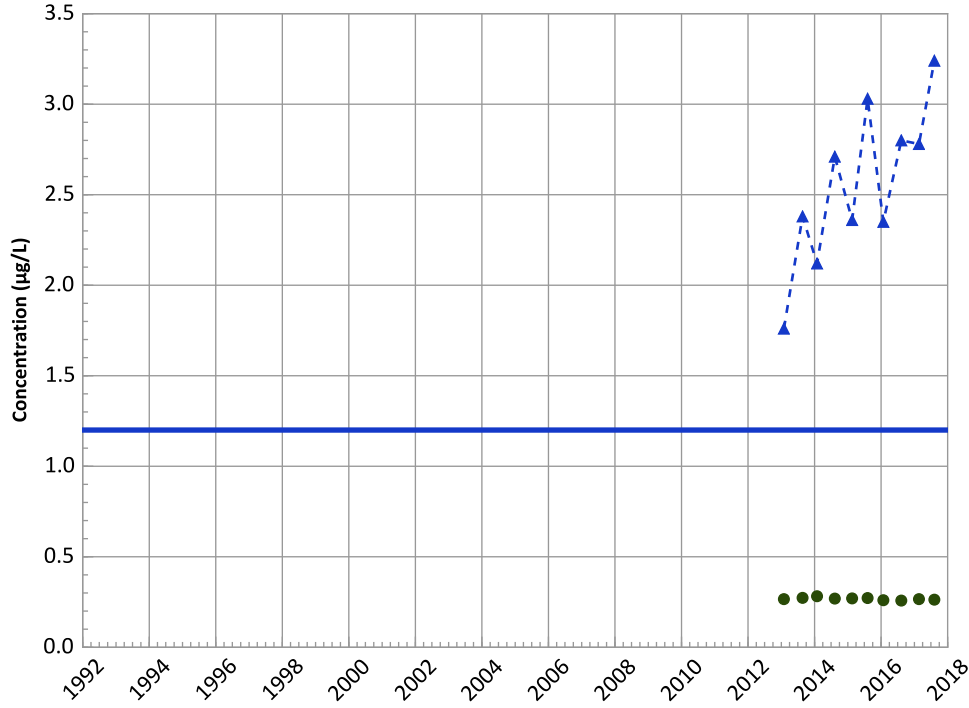


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 01/29/2013 to 08/08/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1159 in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

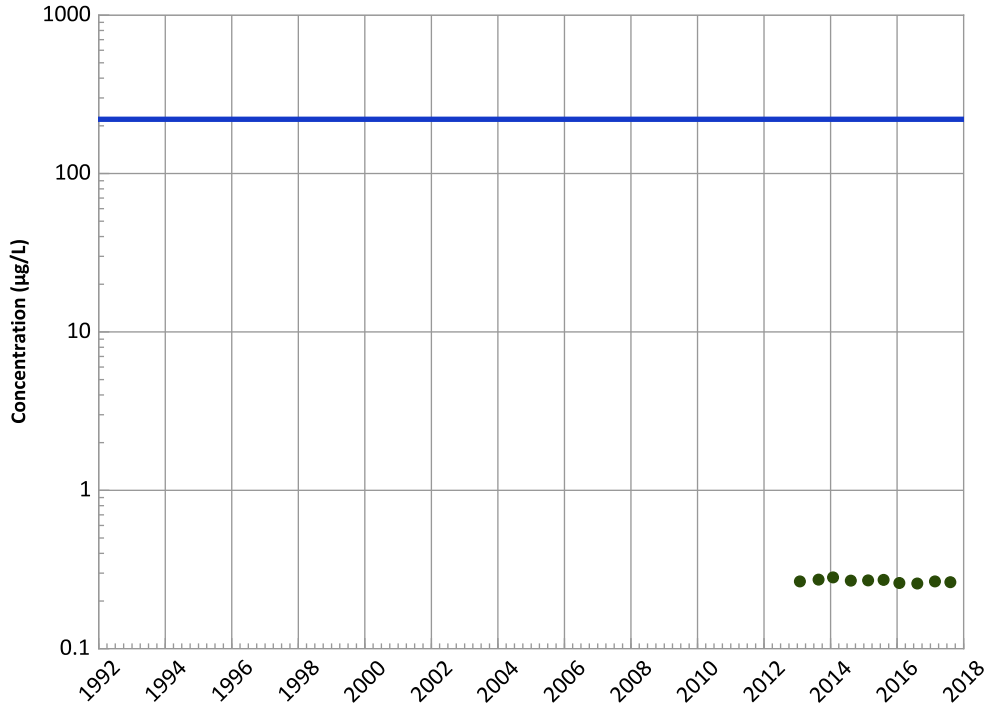
MAROS Mann-Kendall Method

Data ():
Probably Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

1,3,5-Trinitrobenzene Trend



Concentration Trend

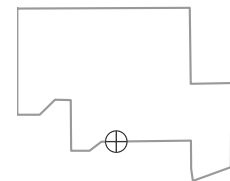
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

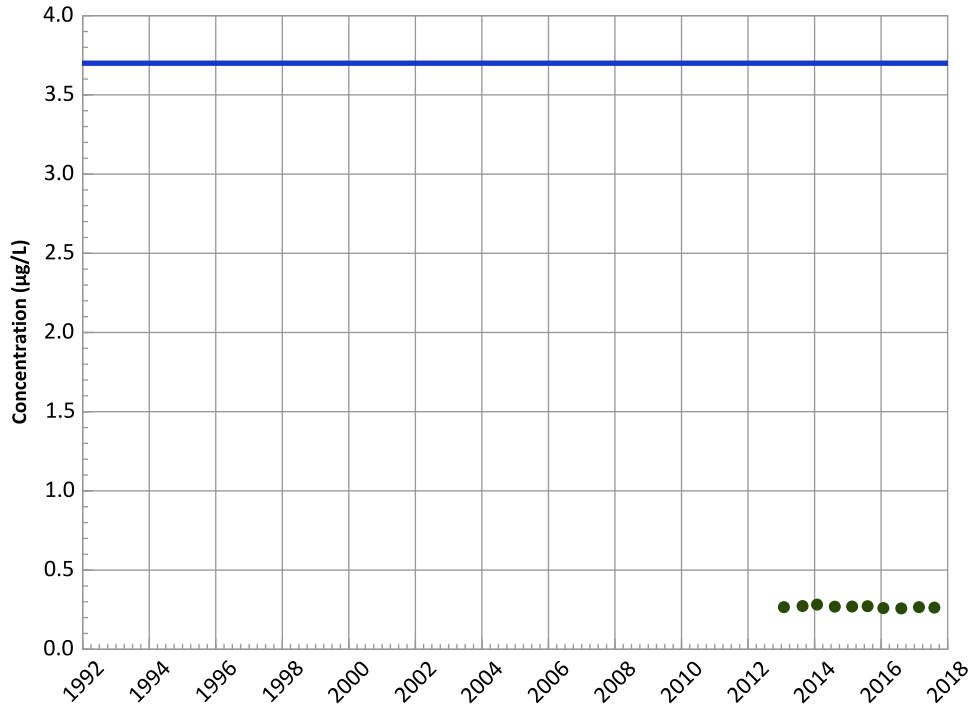


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 01/29/2013 to 08/08/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1159 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

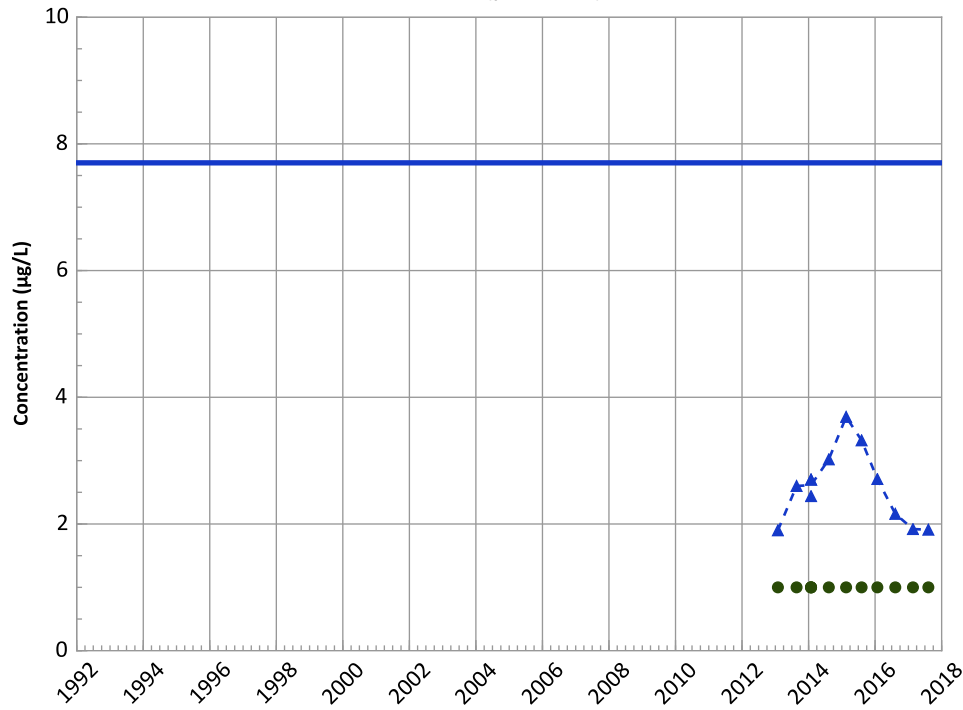
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,4-Dioxane (p-Dioxane) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
No Trend
All Data
Decreasing

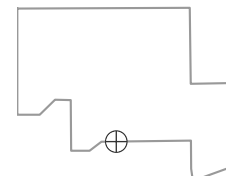
MAROS Linear Regression Method

Data ():
No Trend
All Data
Stable

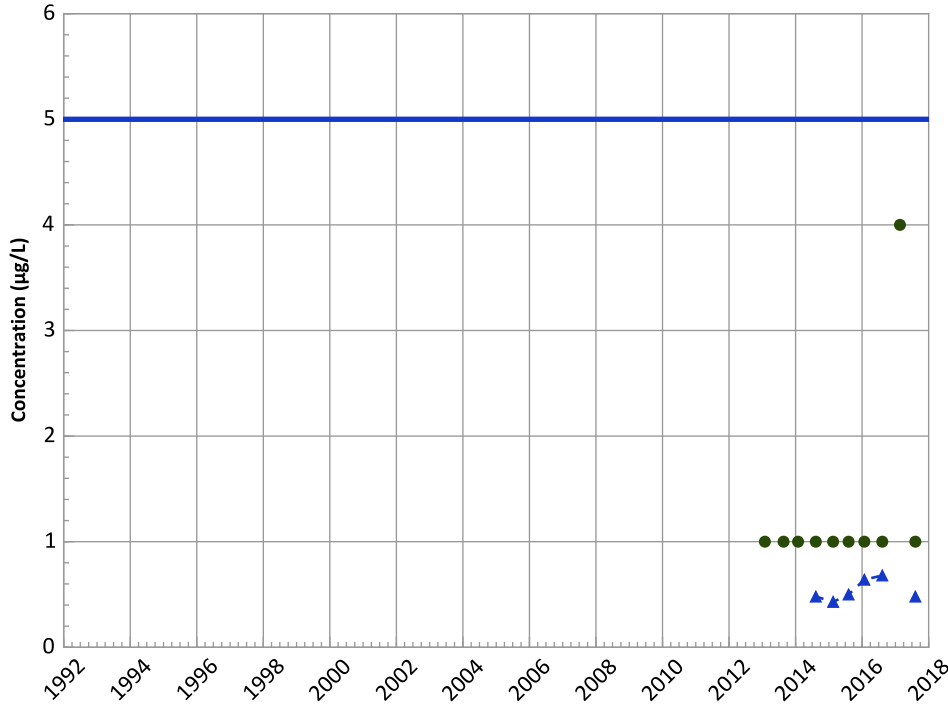
Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 01/29/2013 to 08/08/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



**PTX06-1159 in Perched Aquifer
USDOE/NNSA Pantex Plant
Tetrachloroethylene (PCE) Trend**



Concentration Trend

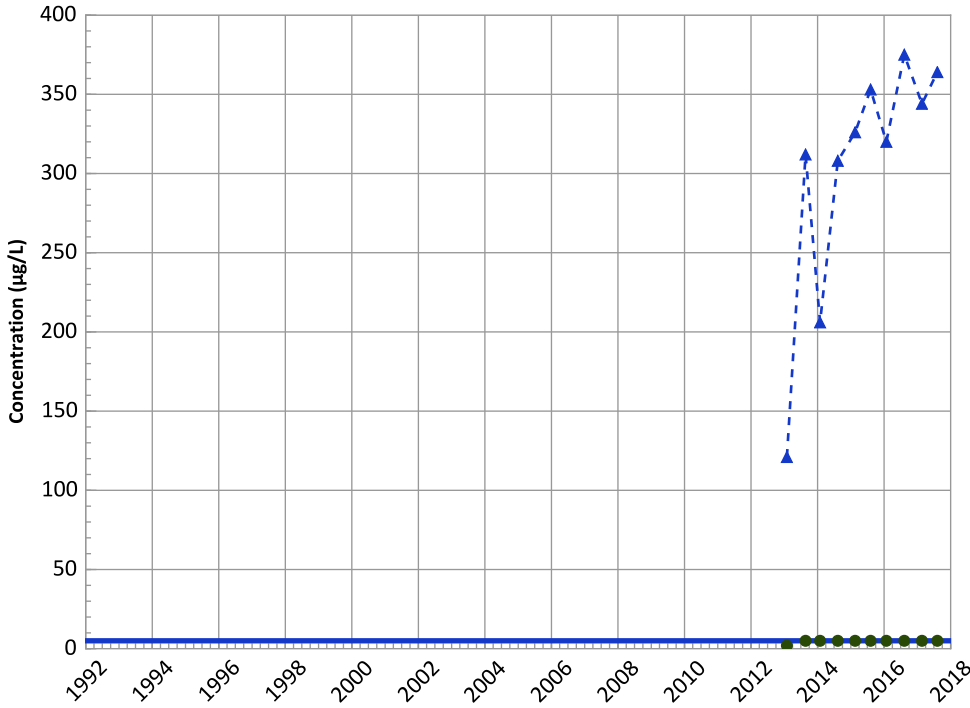
MAROS Mann-Kendall Method

Data ():
No Trend
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
No Trend

Trichloroethene Trend



Concentration Trend

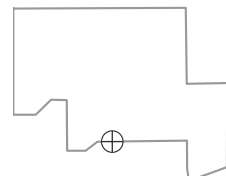
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

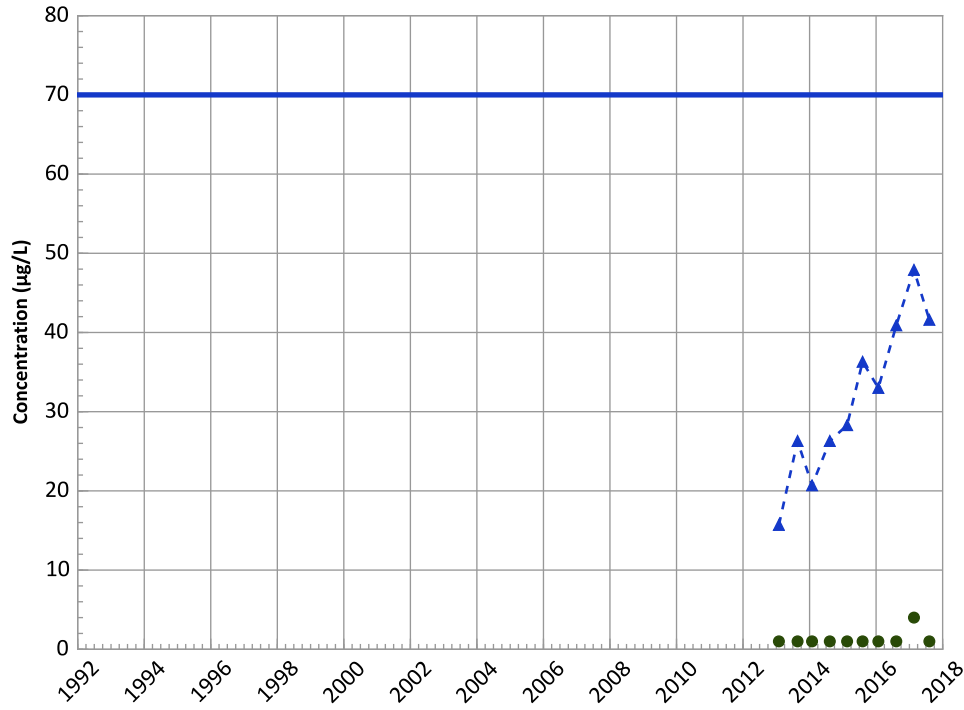
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 01/29/2013 to 08/08/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1159 in Perched Aquifer
USDOE/NNSA Pantex Plant**
cis-1,2-Dichloroethene Trend



Concentration Trend

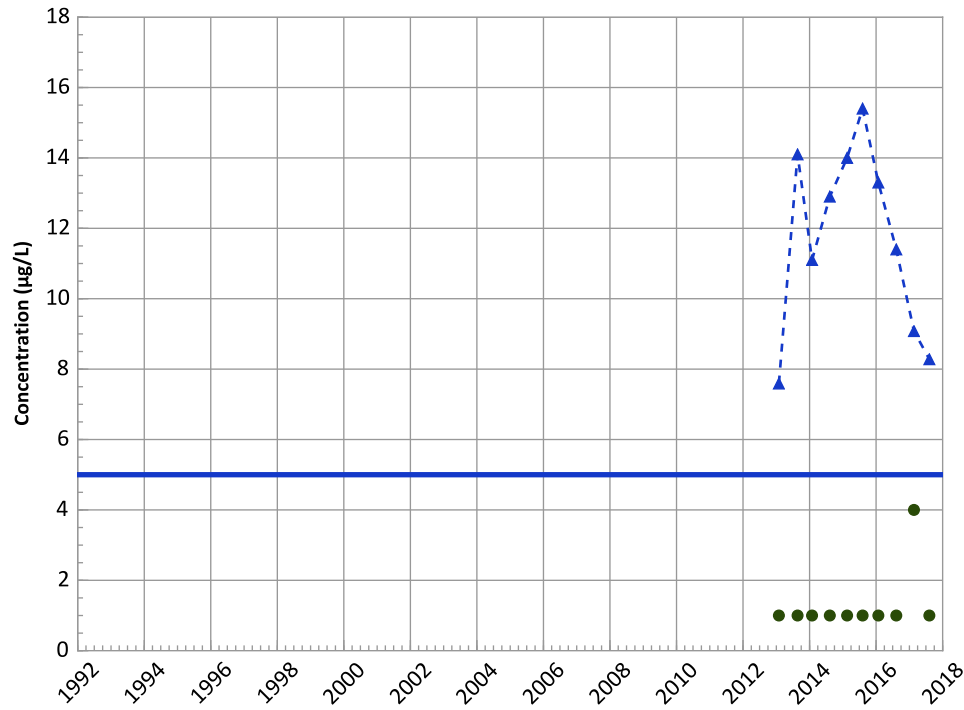
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

1,2-Dichloroethane Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
No Trend
All Data
Decreasing

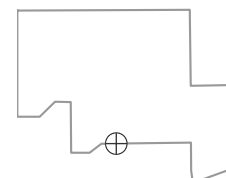
MAROS Linear Regression Method

Data ():
No Trend
All Data
Stable

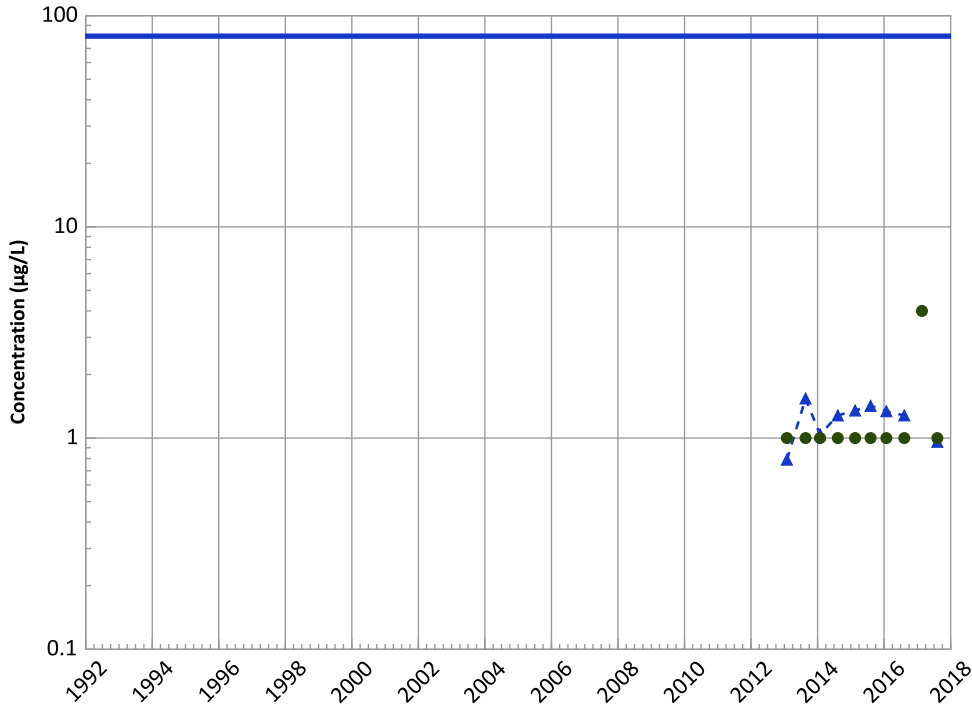
Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 01/29/2013 to 08/08/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



**PTX06-1159 in Perched Aquifer
USDOE/NNSA Pantex Plant
Chloroform Trend**



Concentration Trend

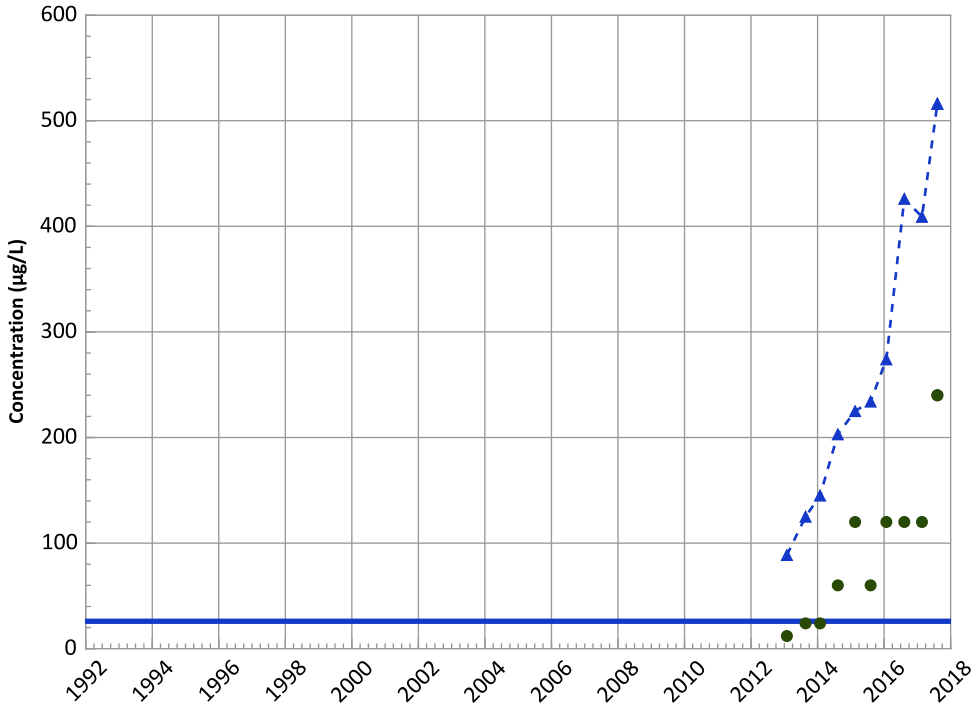
MAROS Mann-Kendall Method

Data ():
No Trend
All Data
Increasing

MAROS Linear Regression Method

Data ():
Probably Increasing
All Data
No Trend

Perchlorate Trend



Concentration Trend

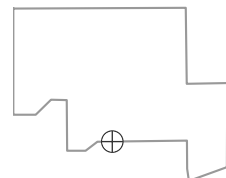
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

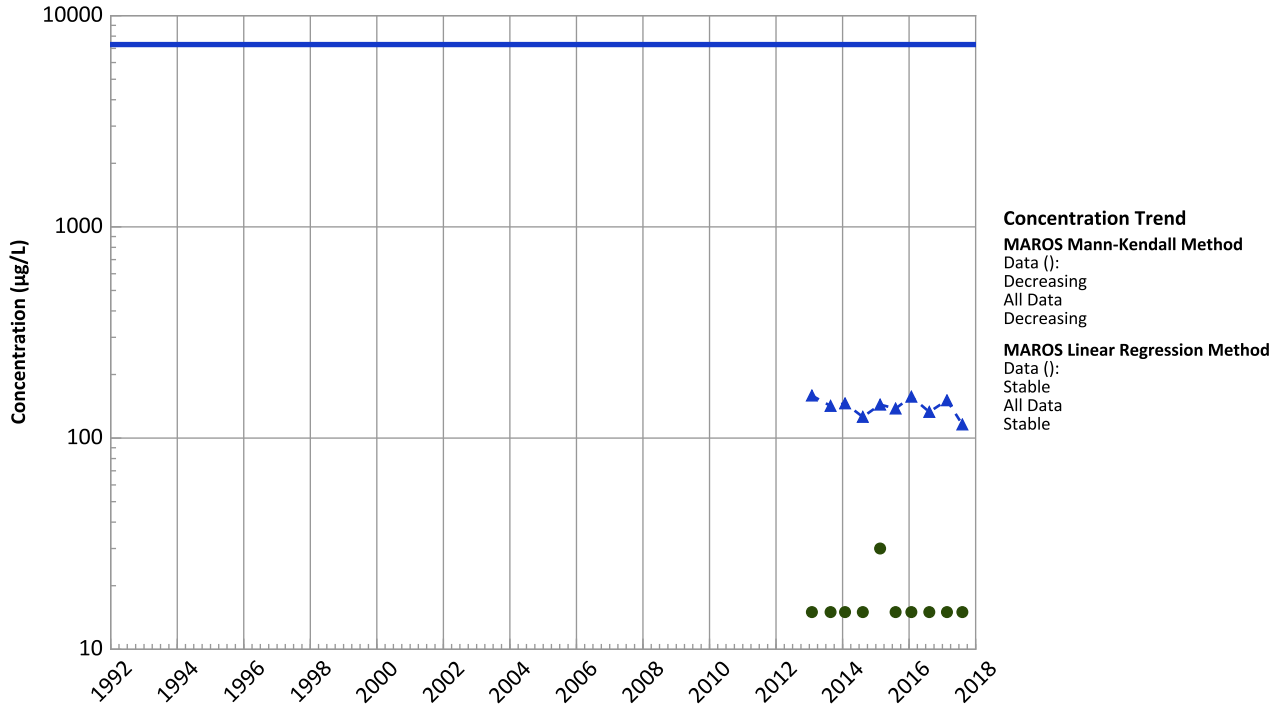
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 01/29/2013 to 08/08/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1159 in Perched Aquifer
USDOE/NNSA Pantex Plant
Boron Trend**

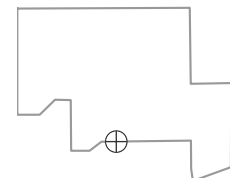


Concentration Trend
MAROS Mann-Kendall Method
 Data (): Decreasing
 All Data Decreasing
MAROS Linear Regression Method
 Data (): Stable
 All Data Stable

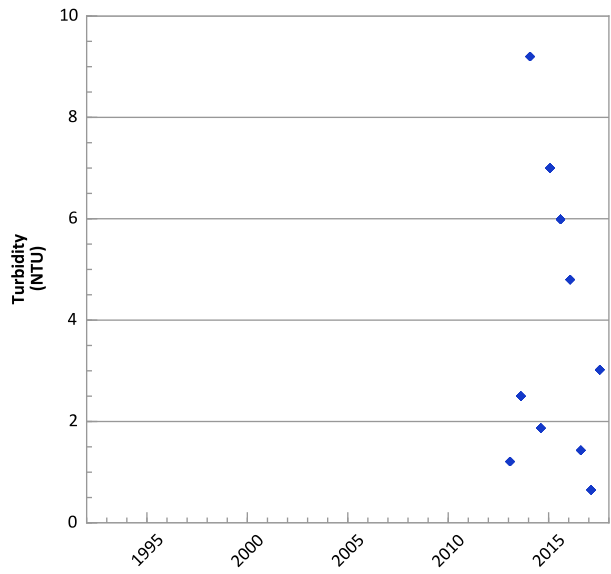
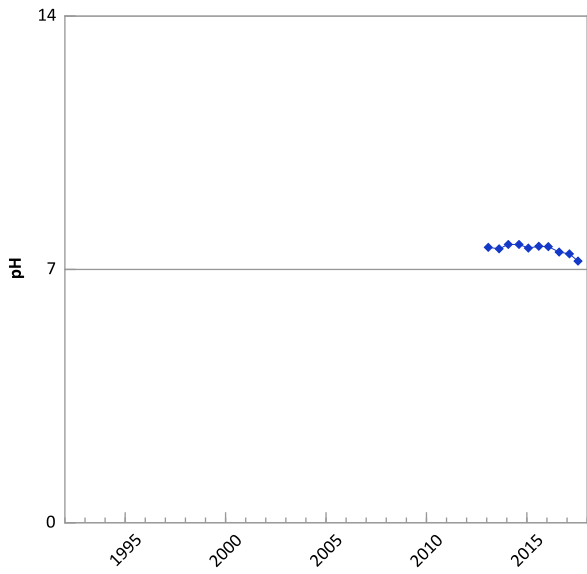
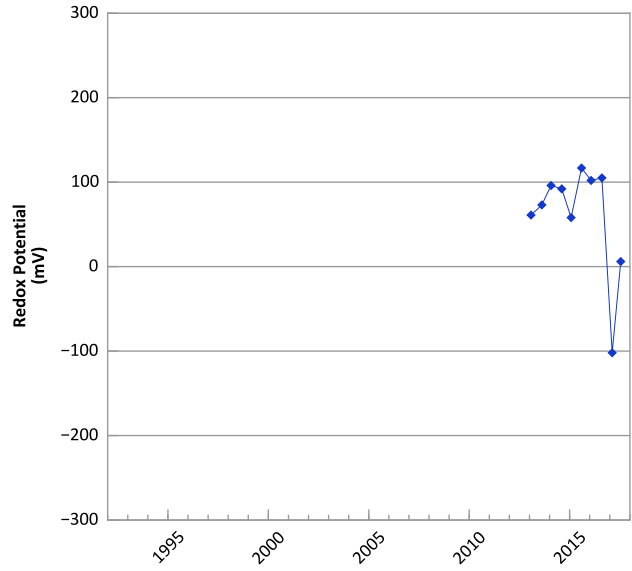
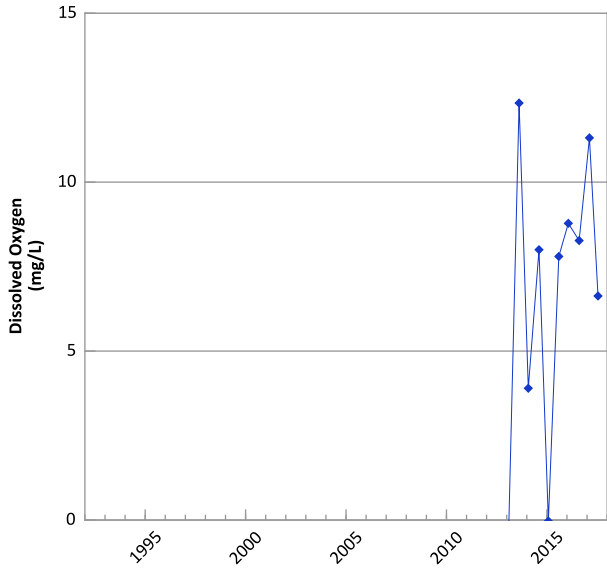
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 01/29/2013 to 08/08/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

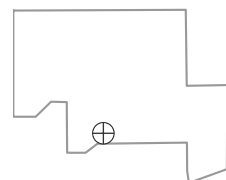


PTX06-1160 in Perched Aquifer
 USDOE/NNSA Pantex Plant
 Field Parameters



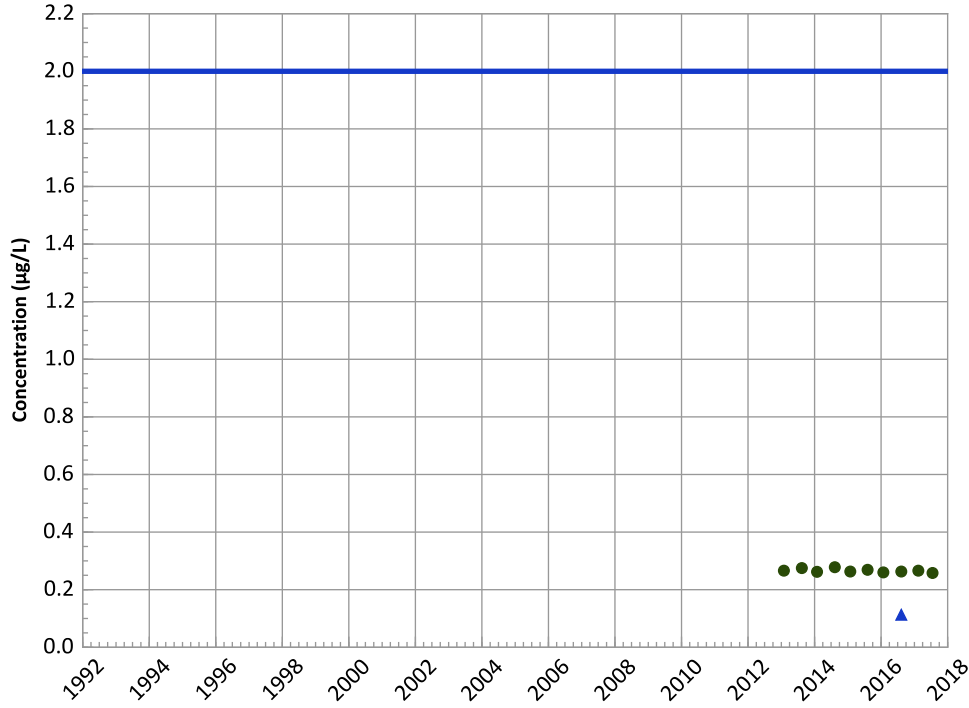
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 01/29/2013 to 07/19/2017
 Analysis Date: 03/21/2018

Well Location



PTX06-1160 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

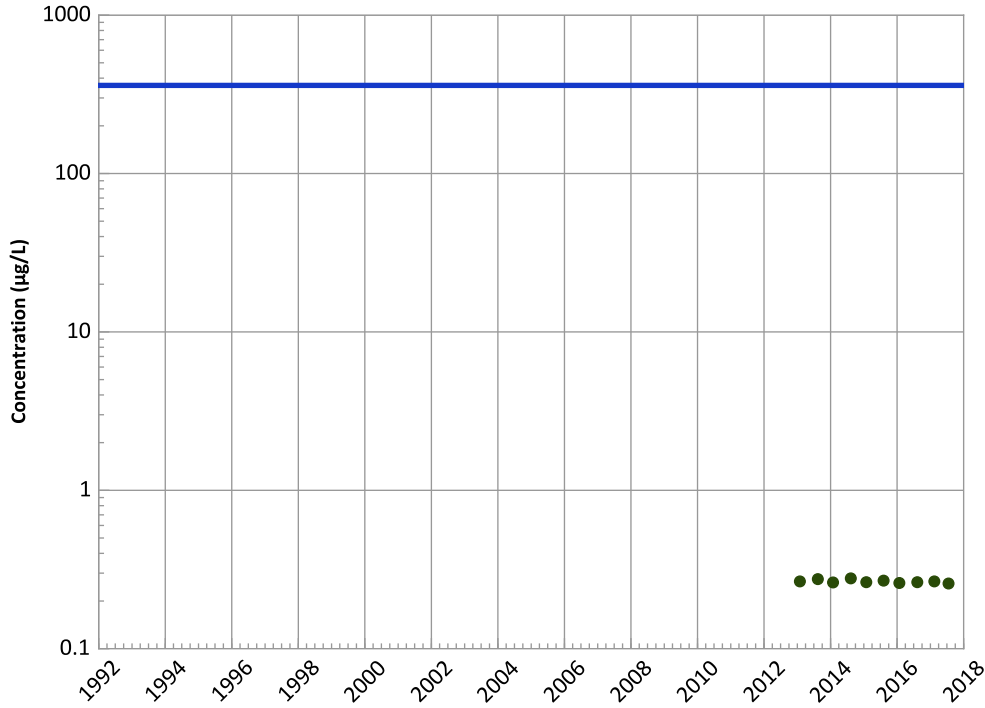
Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

All Non-Detect

All Data

All Non-Detect

MAROS Linear Regression Method

Data ():

All Non-Detect

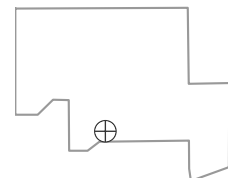
All Data

All Non-Detect

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 01/29/2013 to 07/19/2017
Analysis Date: 03/21/2018

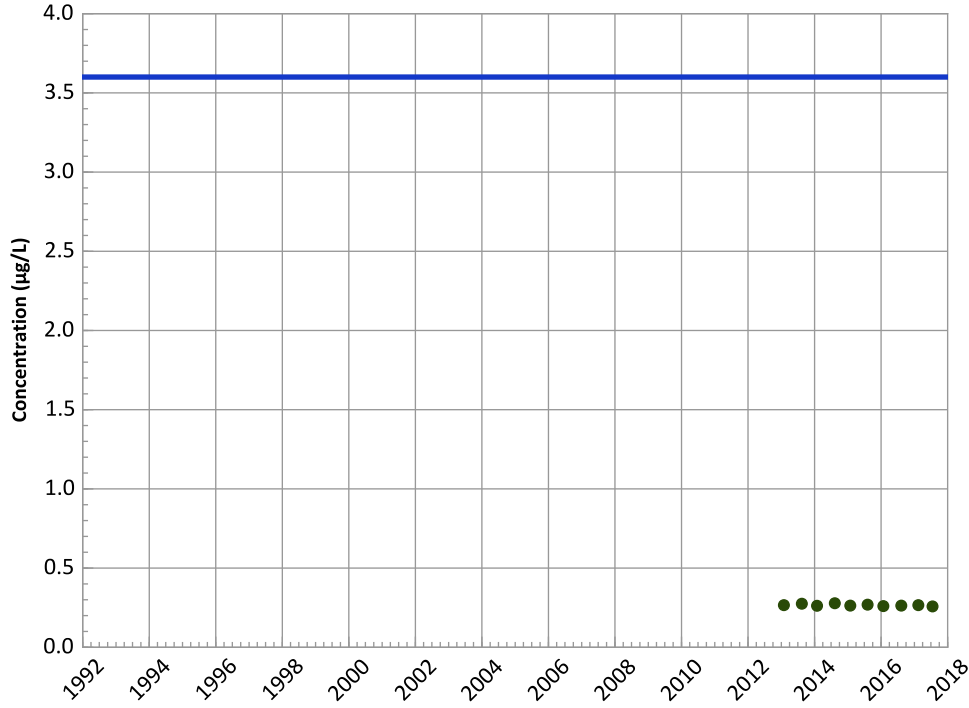
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1160 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

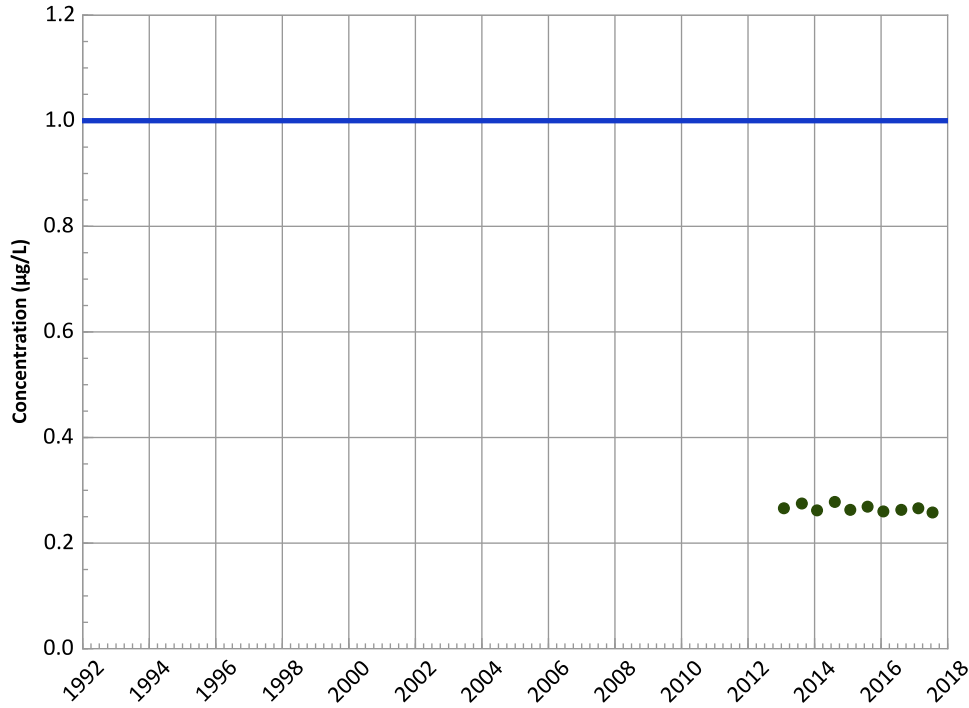
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

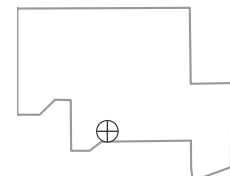
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

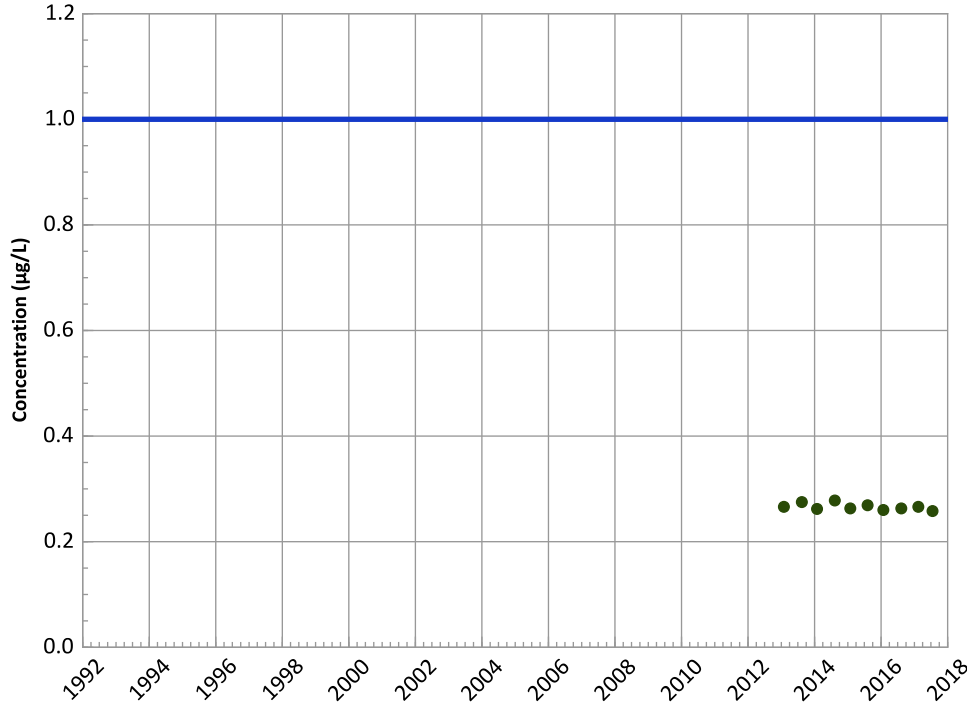


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 01/29/2013 to 07/19/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1160 in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

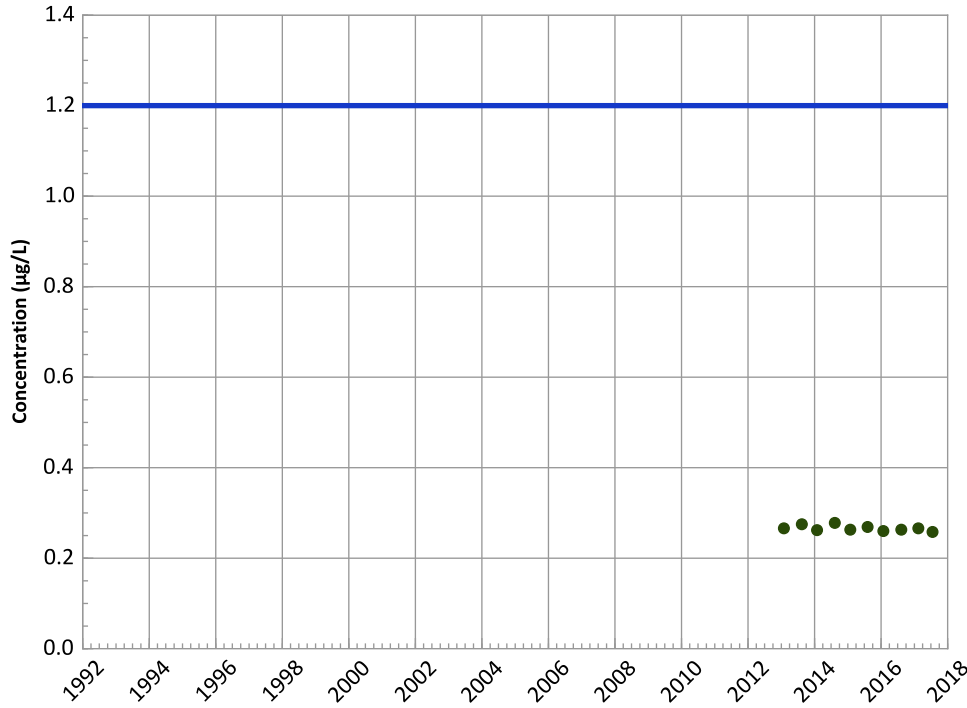
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

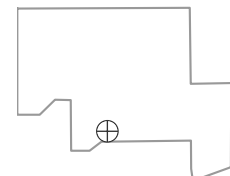
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

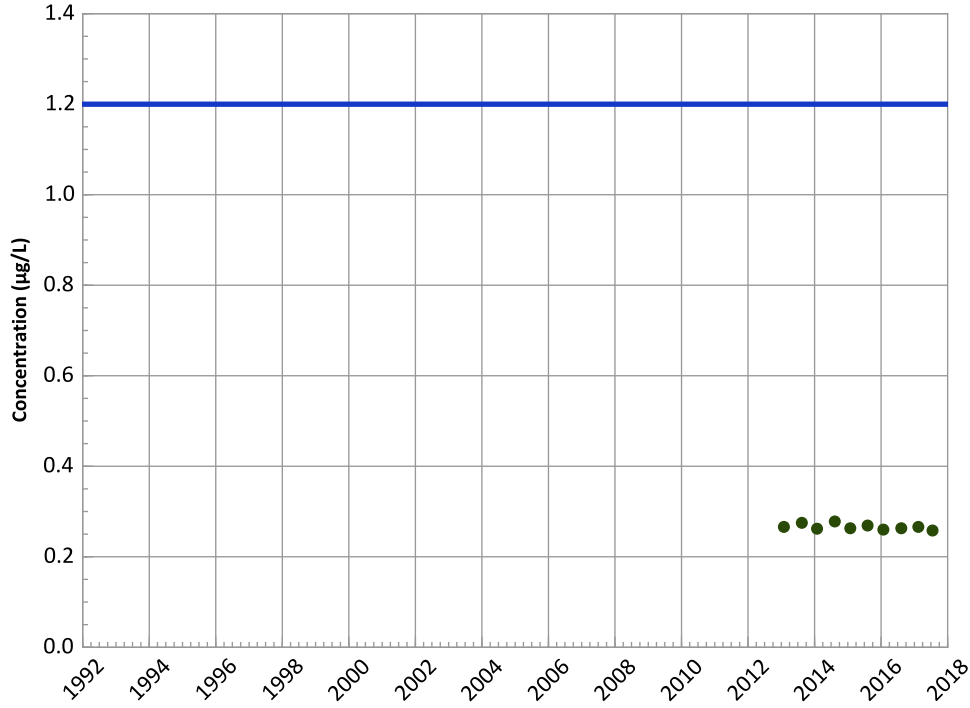


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 01/29/2013 to 07/19/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1160 in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

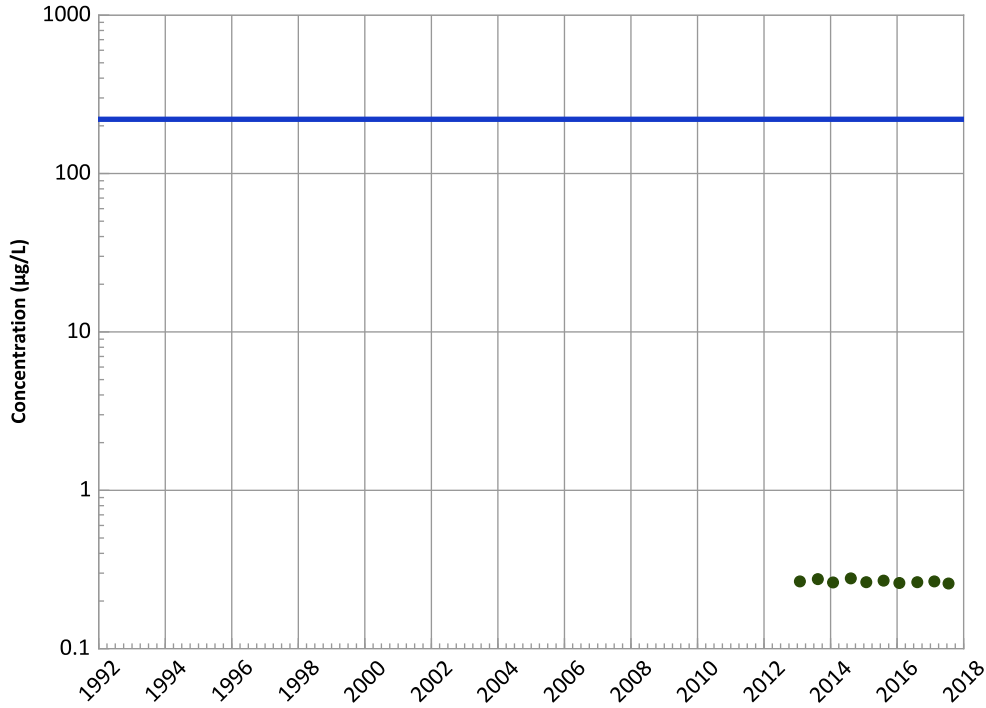
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,3,5-Trinitrobenzene Trend



Concentration Trend

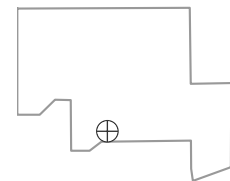
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

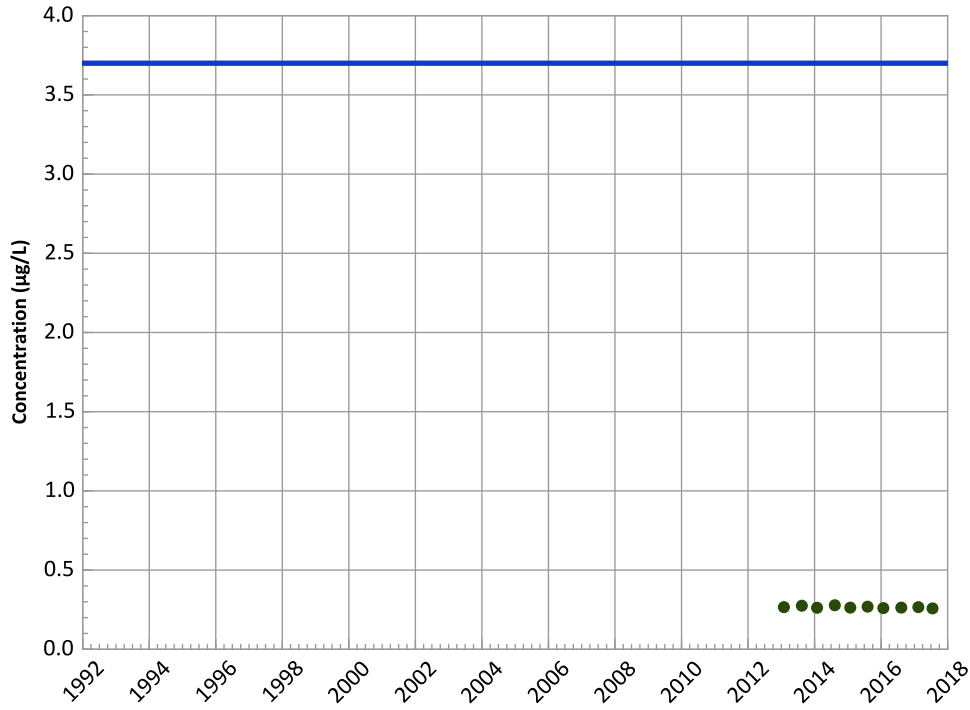


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 01/29/2013 to 07/19/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1160 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

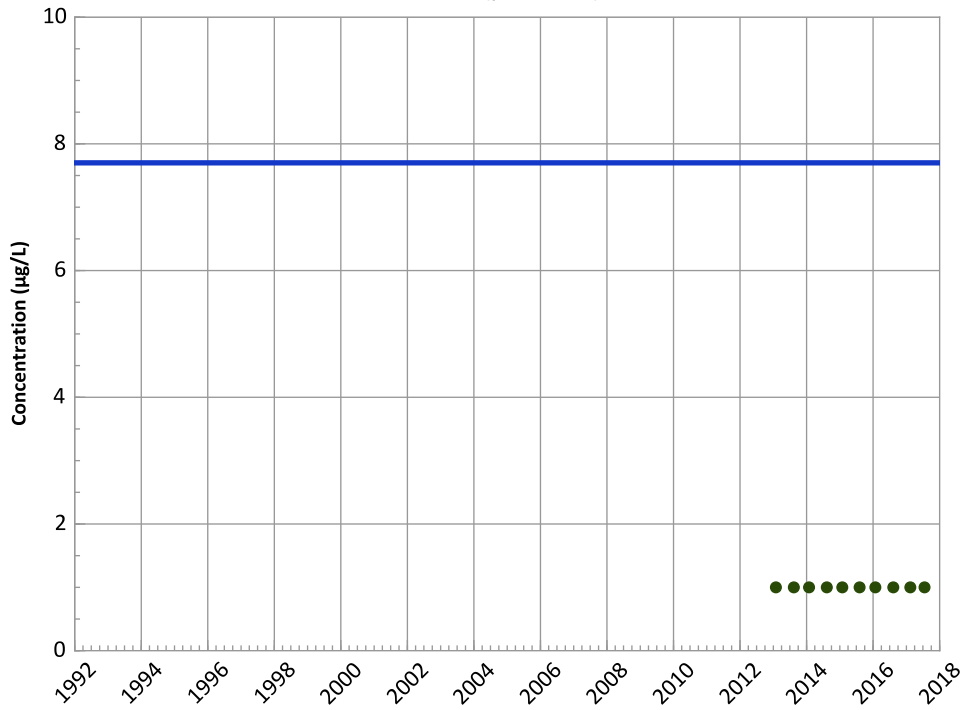
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,4-Dioxane (p-Dioxane) Trend



Concentration Trend

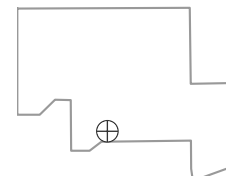
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

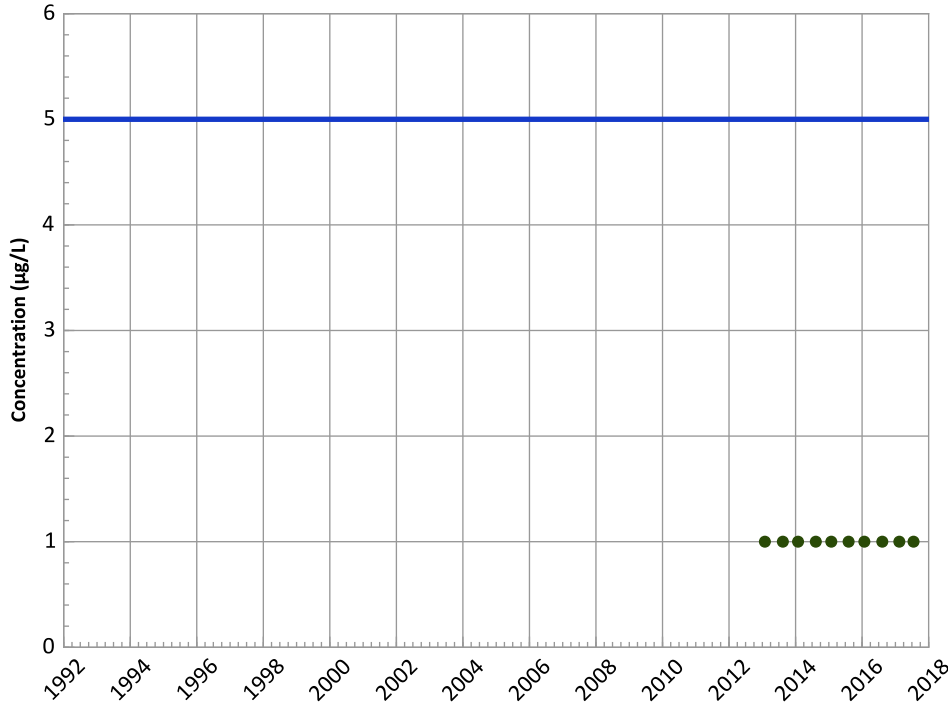
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 01/29/2013 to 07/19/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1160 in Perched Aquifer
USDOE/NNSA Pantex Plant
Tetrachloroethylene (PCE) Trend**



Concentration Trend

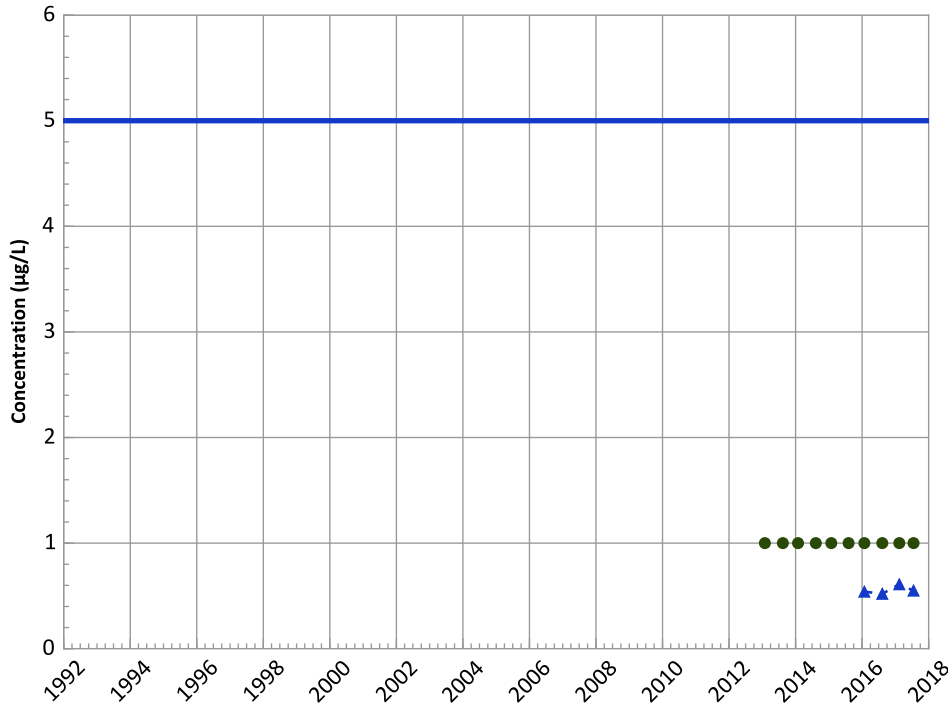
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Trichloroethene Trend



Concentration Trend

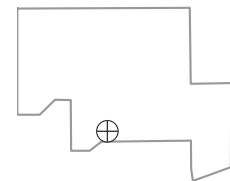
MAROS Mann-Kendall Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Increasing

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
No Trend

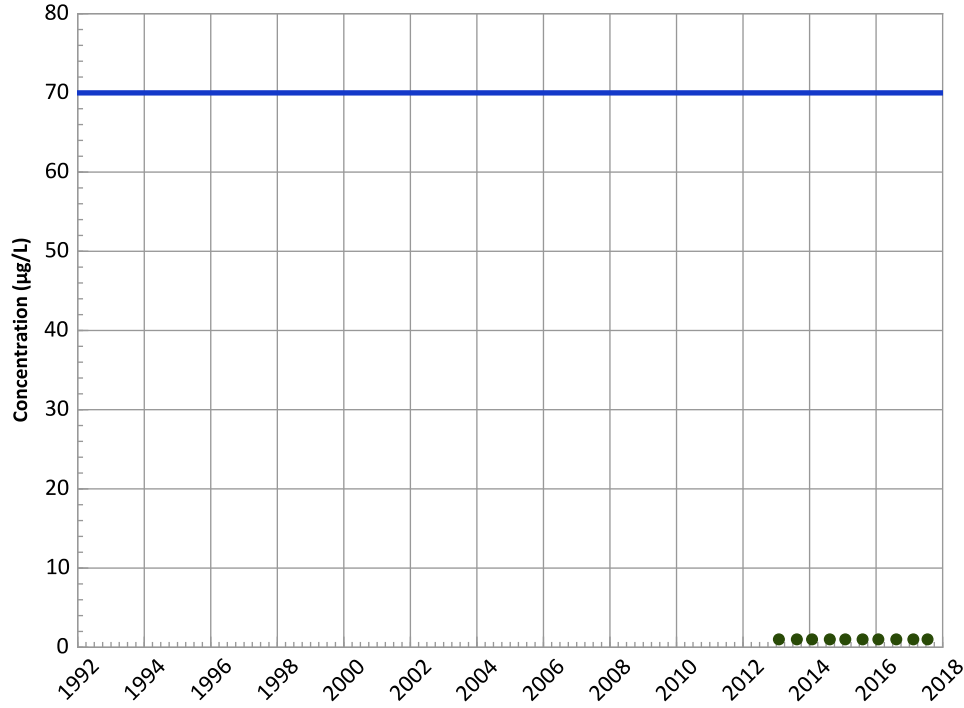
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 01/29/2013 to 07/19/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1160 in Perched Aquifer
USDOE/NNSA Pantex Plant
cis-1,2-Dichloroethene Trend**



Concentration Trend

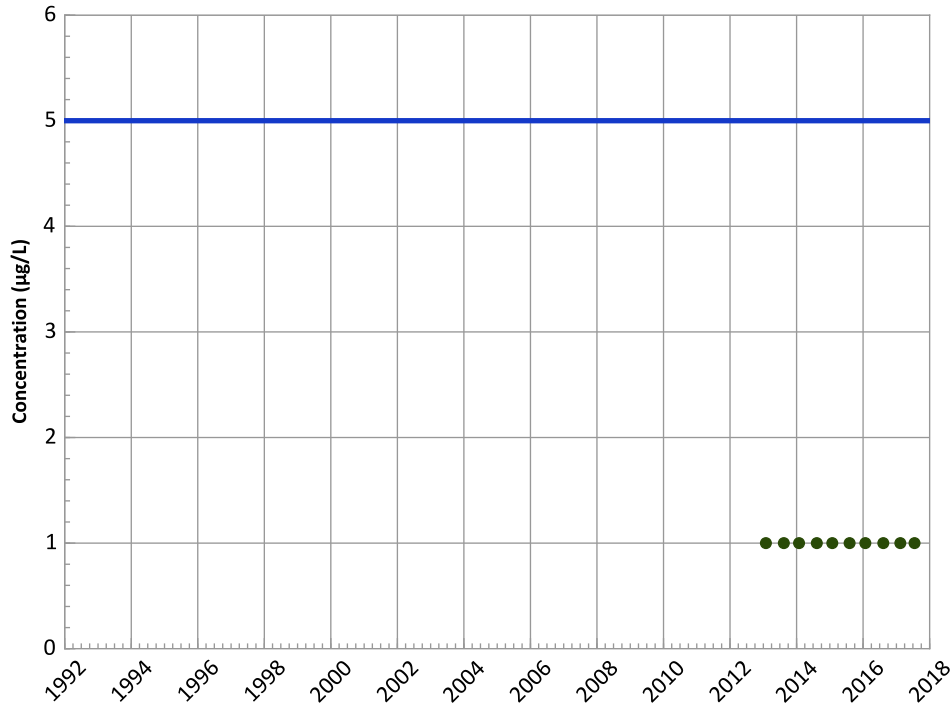
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,2-Dichloroethane Trend



Concentration Trend

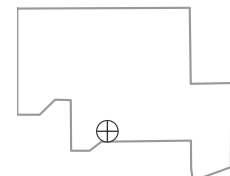
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

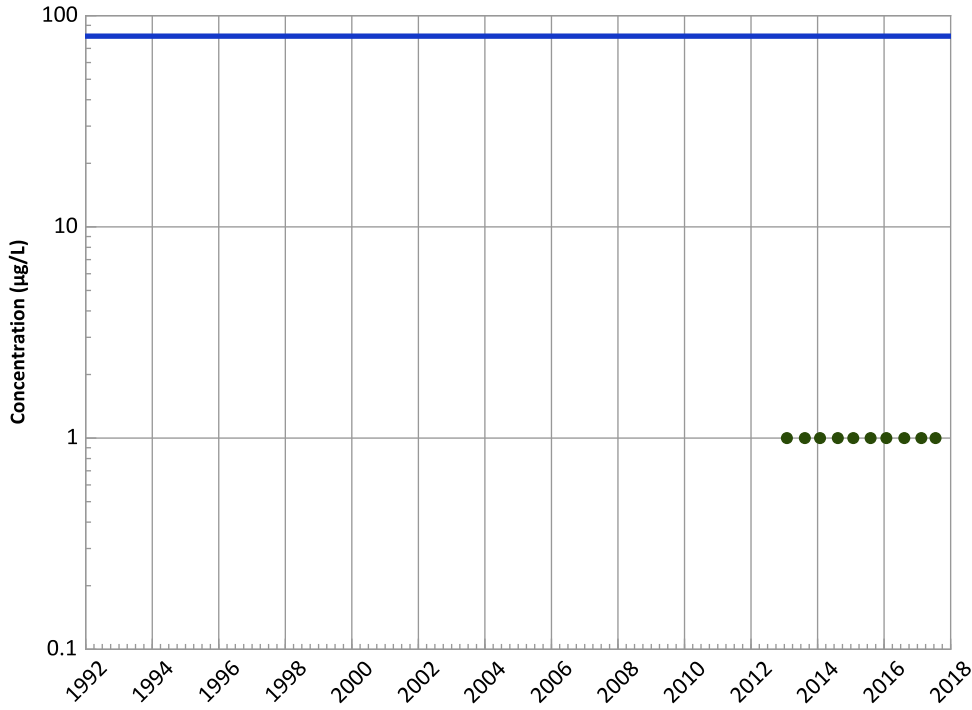
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 01/29/2013 to 07/19/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1160 in Perched Aquifer
 USDOE/NNSA Pantex Plant
 Chloroform Trend



Concentration Trend

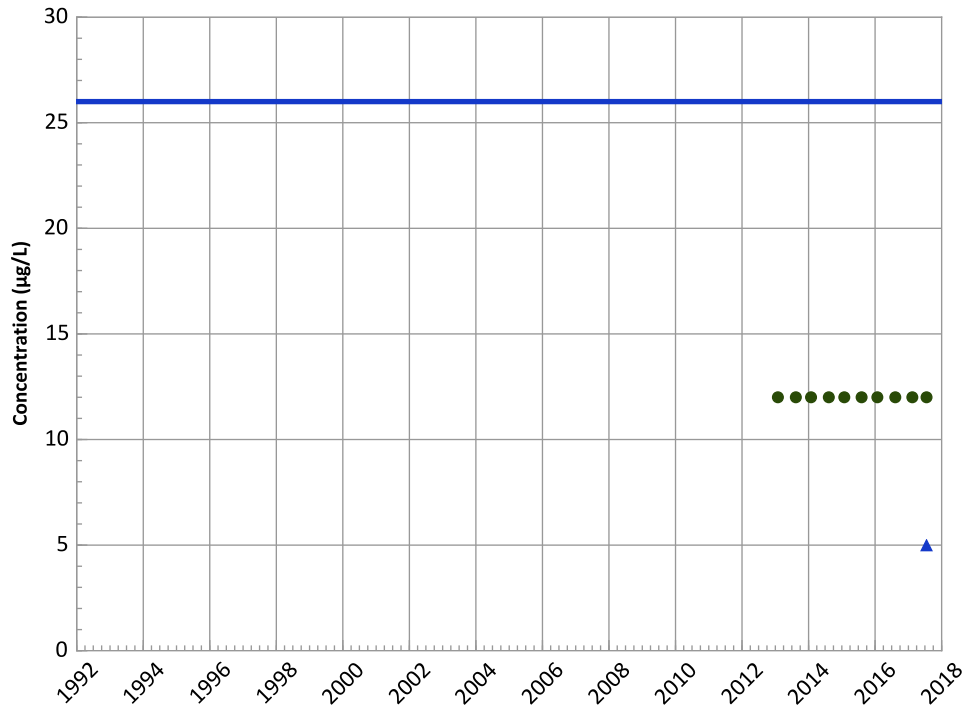
MAROS Mann-Kendall Method

Data ():
 All Non-Detect
 All Data
 All Non-Detect

MAROS Linear Regression Method

Data ():
 All Non-Detect
 All Data
 All Non-Detect

Perchlorate Trend



Concentration Trend

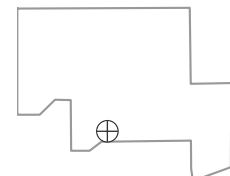
MAROS Mann-Kendall Method

Data ():
 All Non-Detect
 All Data
 N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
 All Non-Detect
 All Data
 N/A (<4 Detections in Dataset)

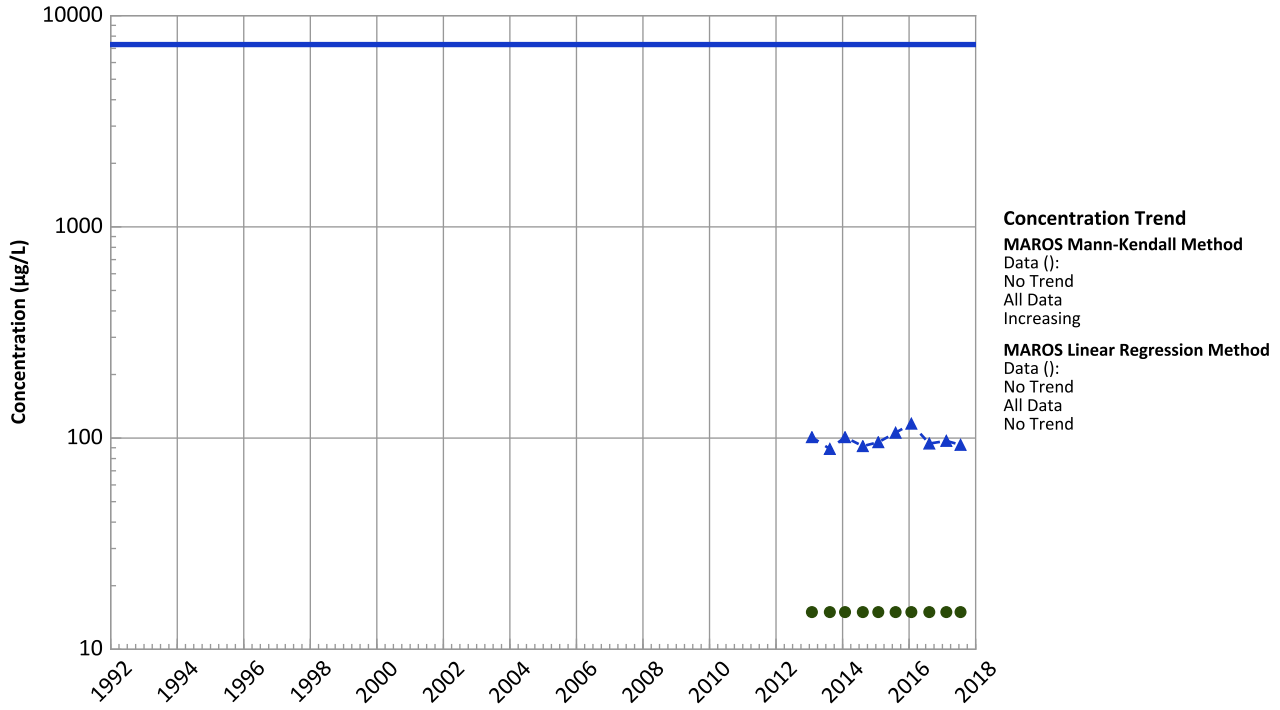
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 01/29/2013 to 07/19/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

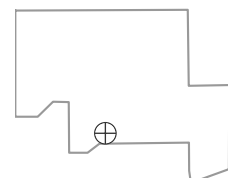
**PTX06-1160 in Perched Aquifer
USDOE/NNSA Pantex Plant
Boron Trend**



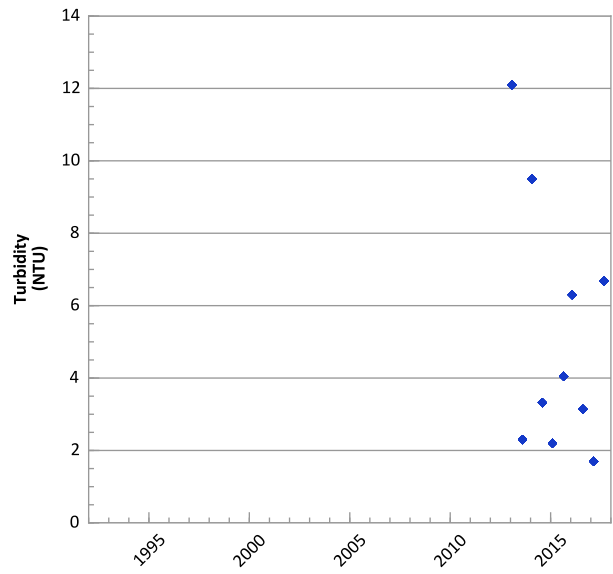
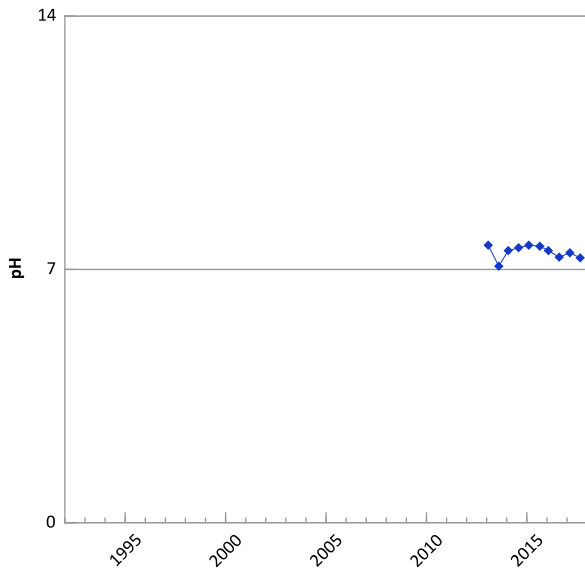
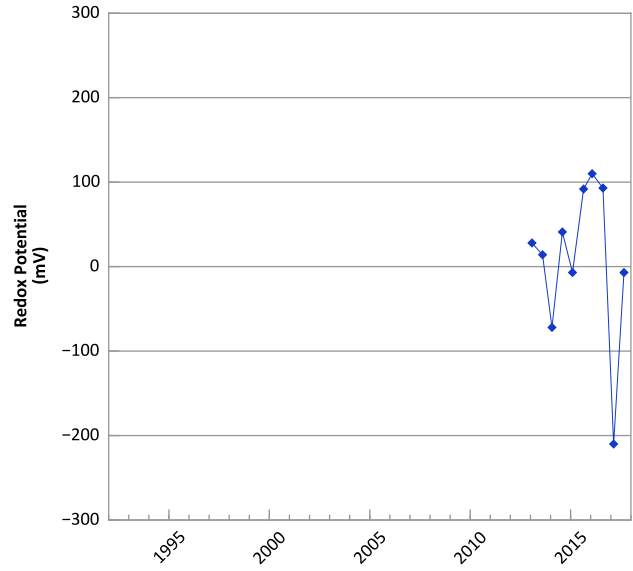
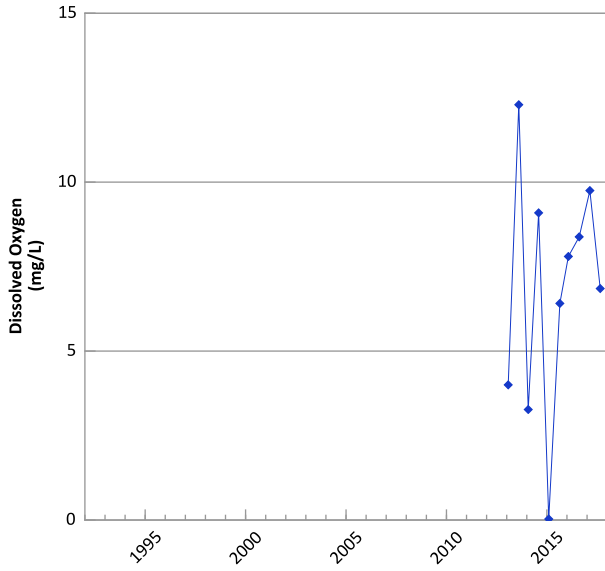
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 01/29/2013 to 07/19/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

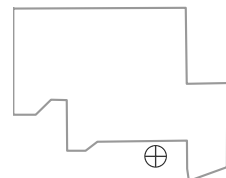


**PTX06-1166 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



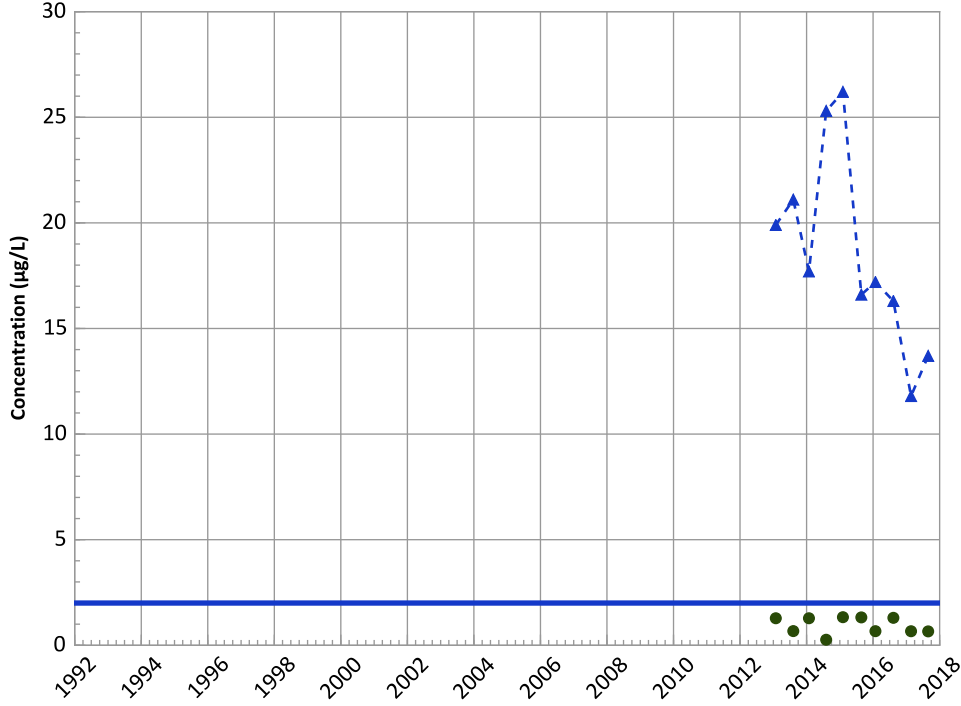
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 01/28/2013 to 08/28/2017
 Analysis Date: 03/21/2018

Well Location



PTX06-1166 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

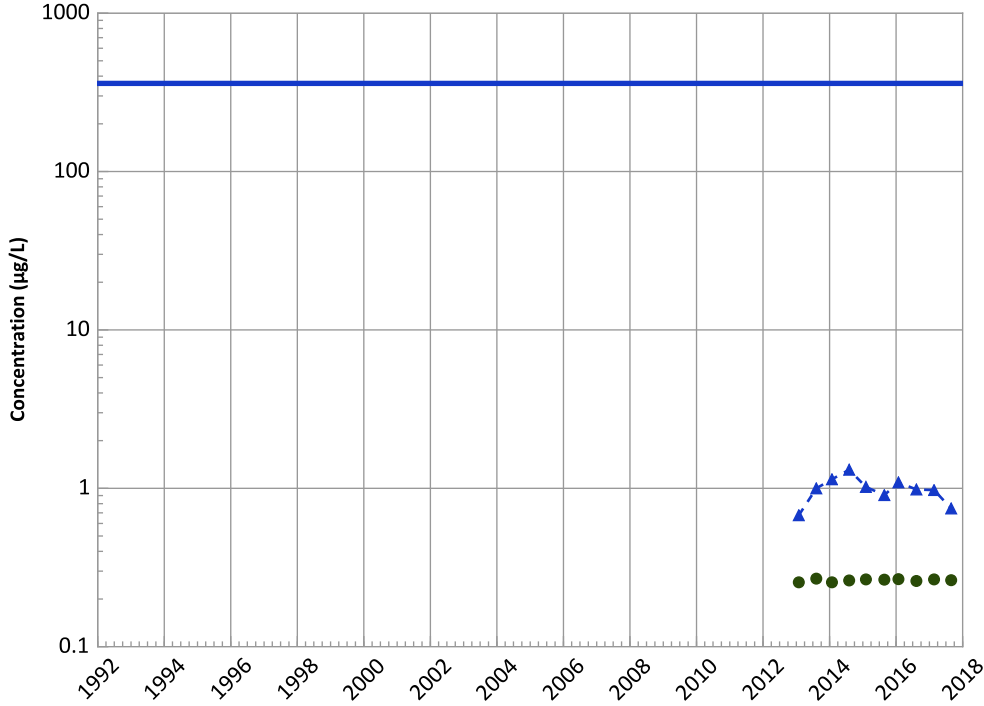
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Stable
All Data
Decreasing

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

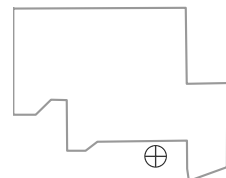
MAROS Mann-Kendall Method

Data ():
No Trend
All Data
Decreasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
Stable

Well Location

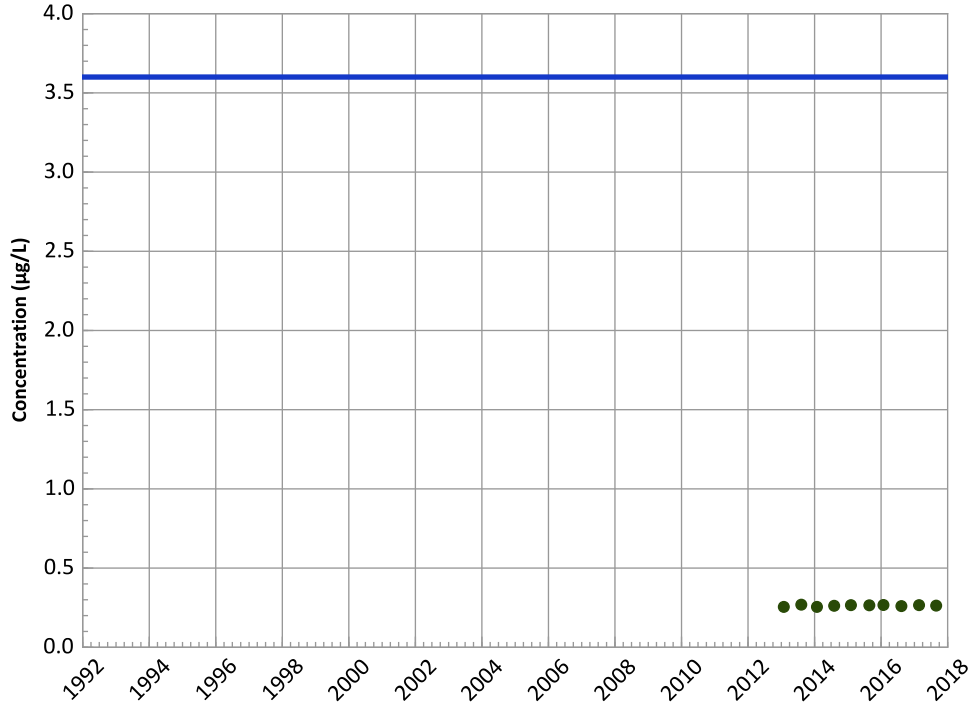


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 01/28/2013 to 08/28/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1166 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

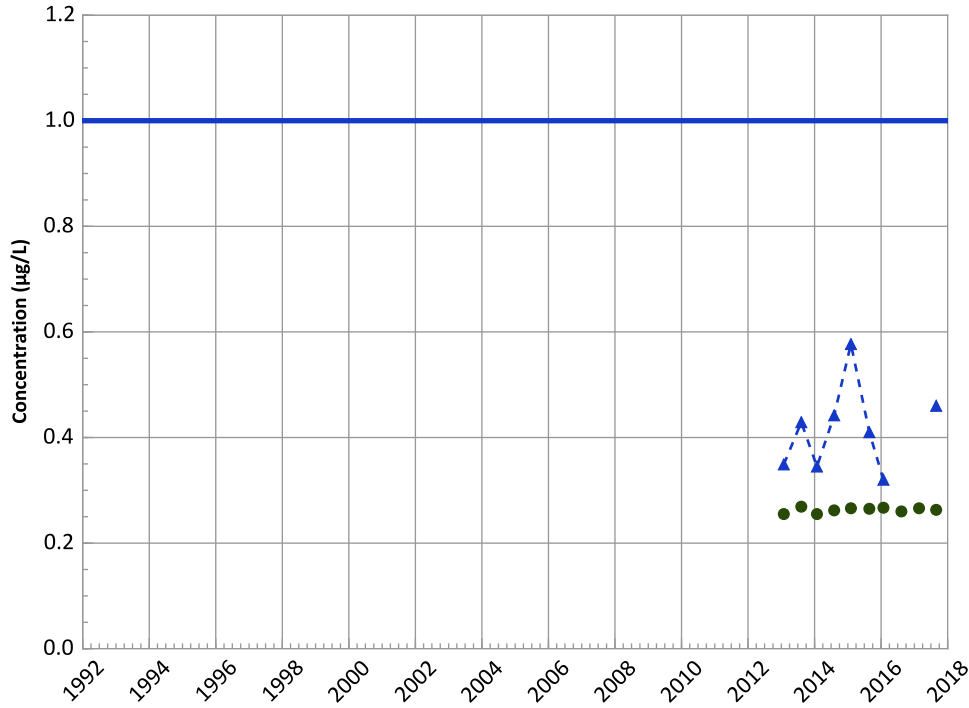
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

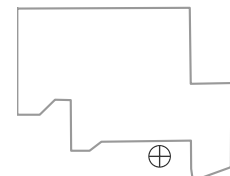
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
No Trend

Well Location

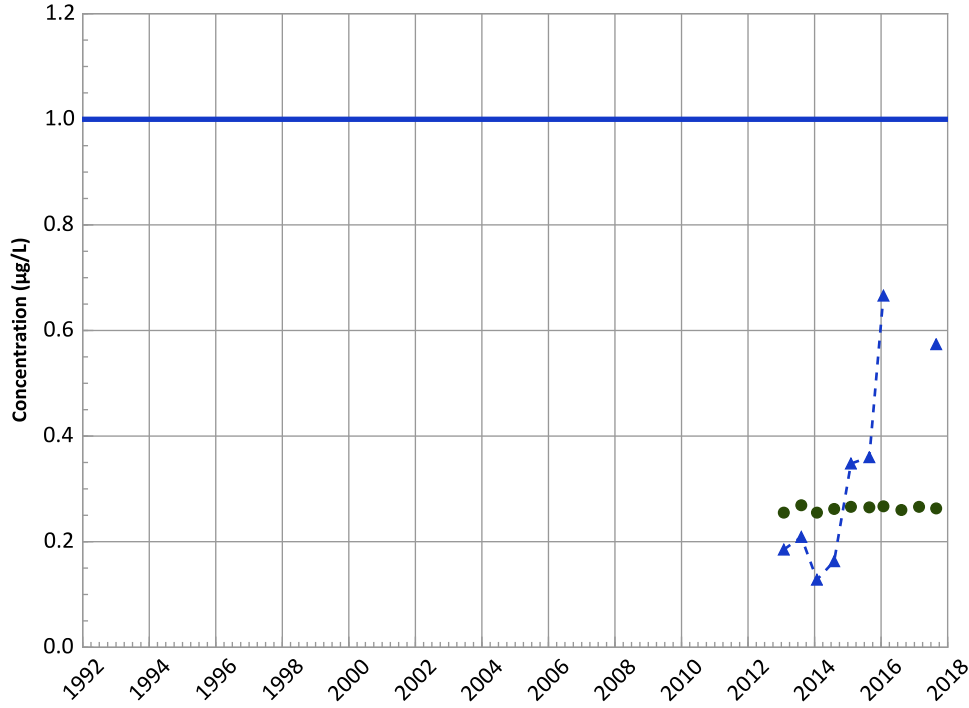


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 01/28/2013 to 08/28/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1166 in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

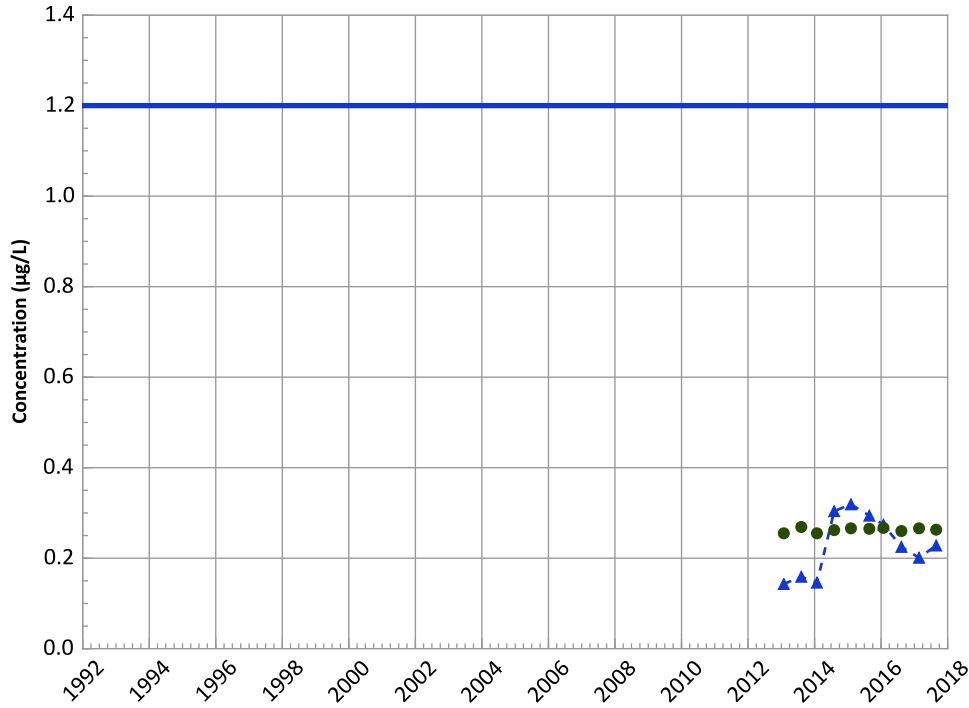
MAROS Mann-Kendall Method

Data ():
No Trend
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

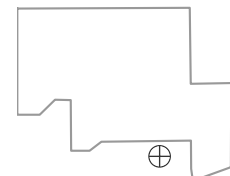
MAROS Mann-Kendall Method

Data ():
No Trend
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Probably Increasing

Well Location

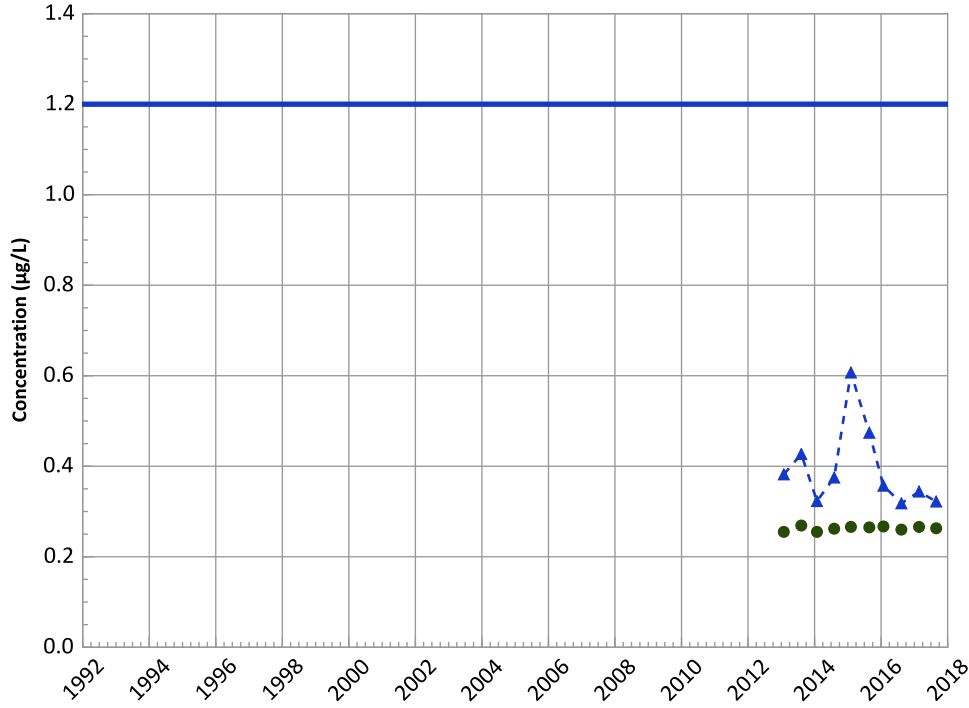


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 01/28/2013 to 08/28/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1166 in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

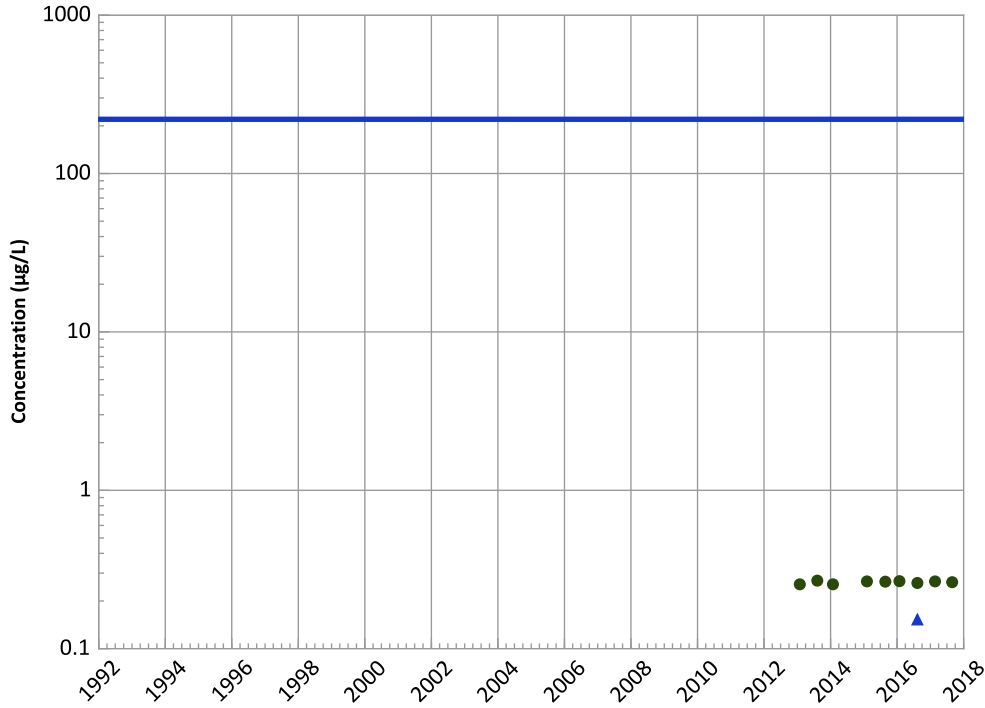
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Stable
All Data
Stable

1,3,5-Trinitrobenzene Trend



Concentration Trend

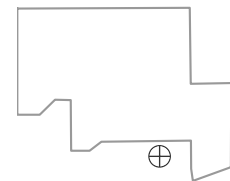
MAROS Mann-Kendall Method

Data ():
N/A (<4 Detections in Dataset)
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
N/A (<4 Detections in Dataset)

Well Location

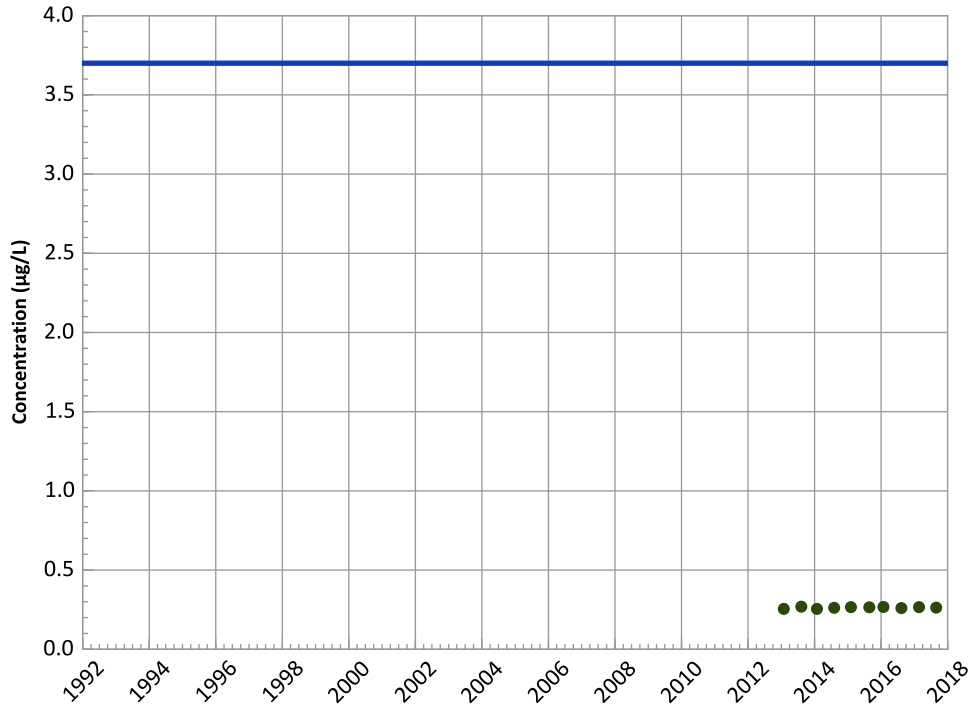


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 01/28/2013 to 08/28/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1166 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

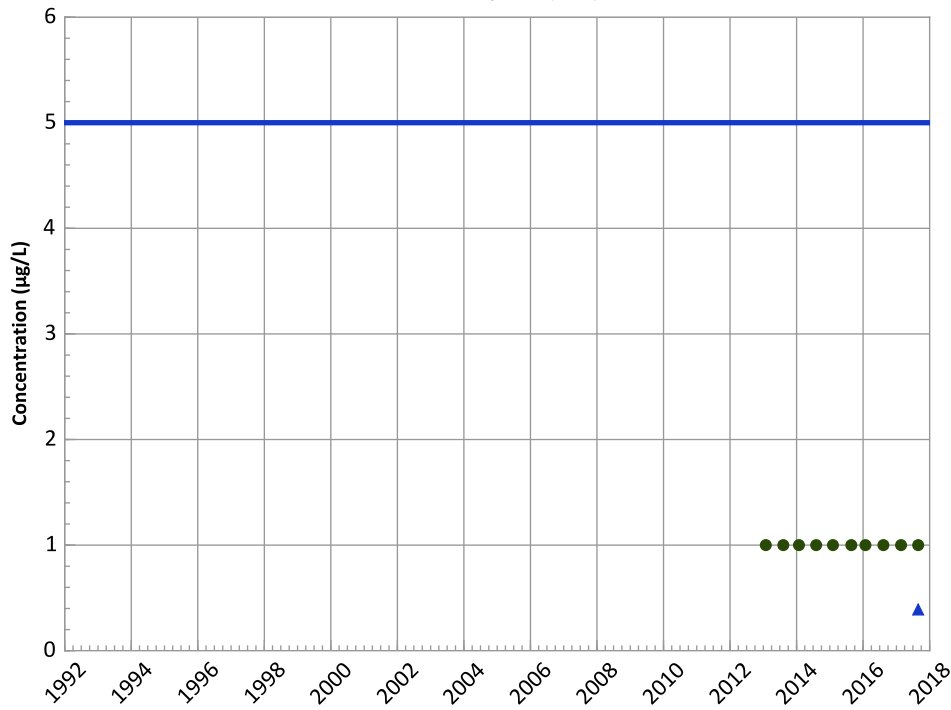
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Tetrachloroethylene (PCE) Trend



Concentration Trend

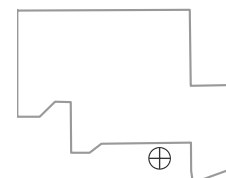
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

Well Location

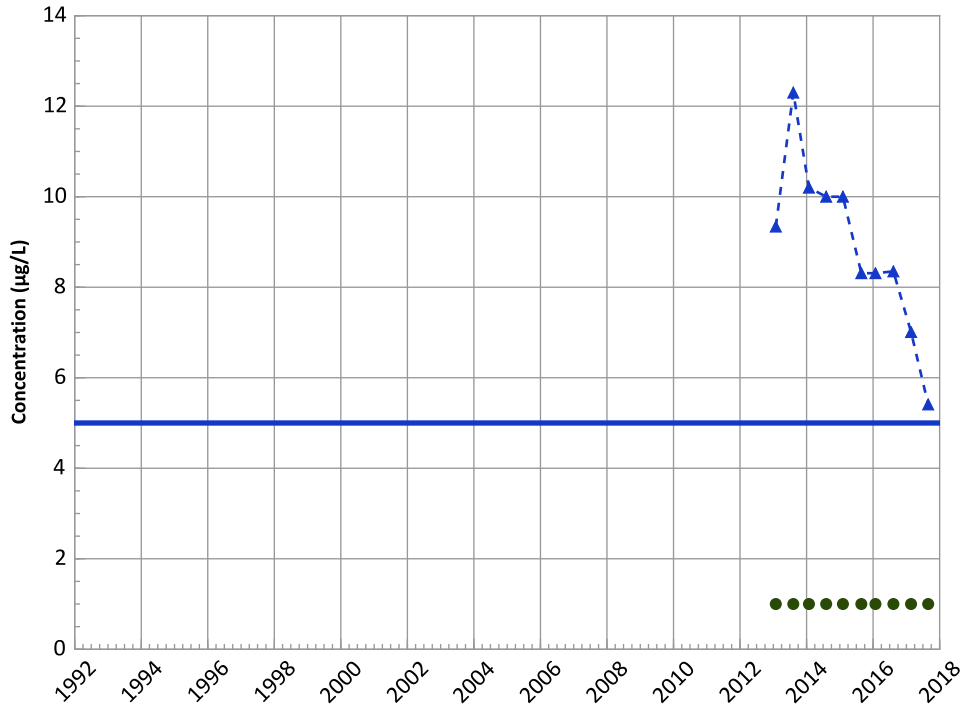


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 01/28/2013 to 08/28/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1166 in Perched Aquifer
USDOE/NNSA Pantex Plant

Trichloroethene Trend



Concentration Trend

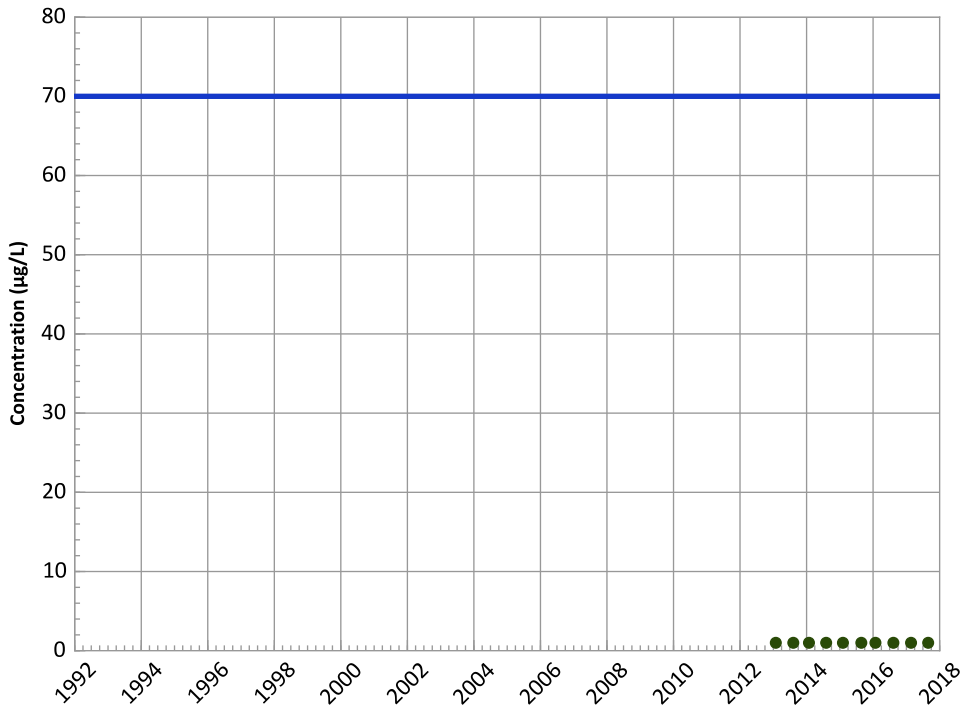
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

cis-1,2-Dichloroethene Trend



Concentration Trend

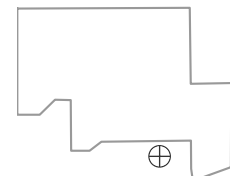
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

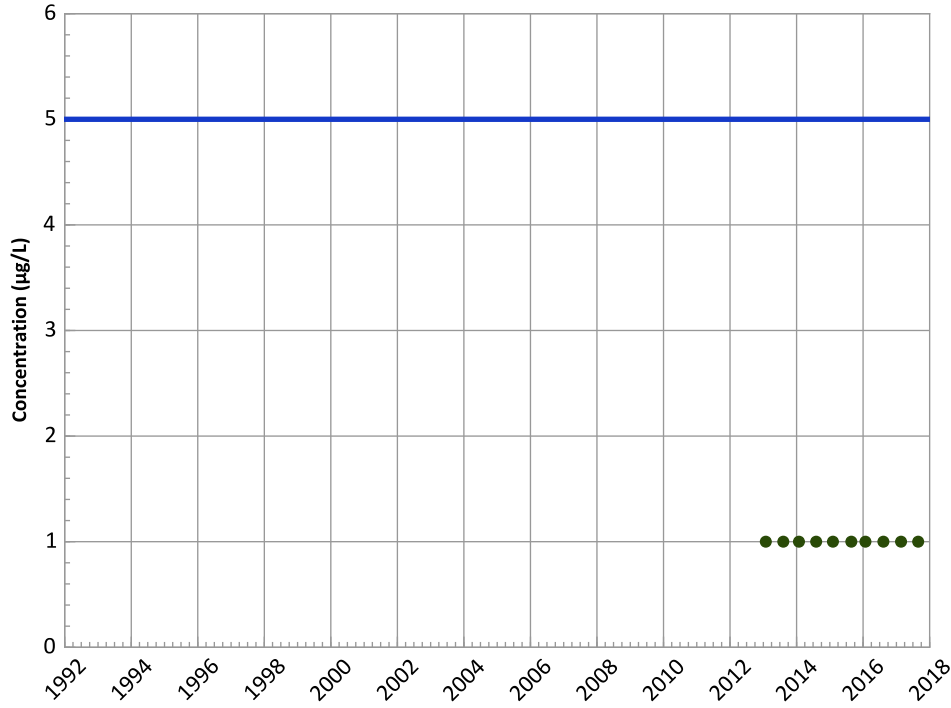
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 01/28/2013 to 08/28/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1166 in Perched Aquifer
USDOE/NNSA Pantex Plant
1,2-Dichloroethane Trend**



Concentration Trend

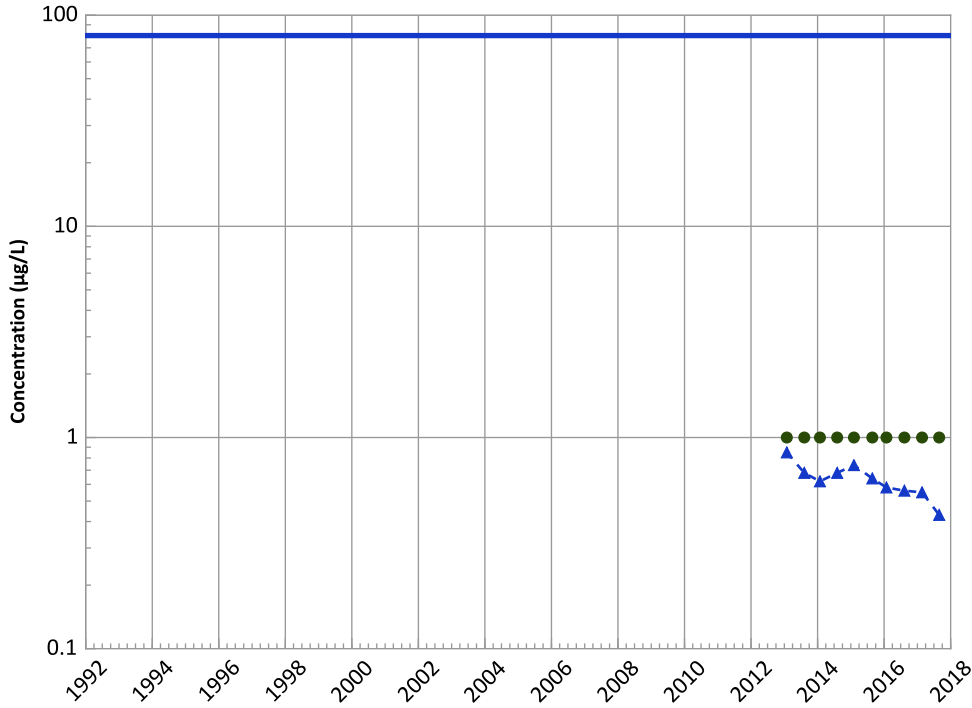
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Chloroform Trend



Concentration Trend

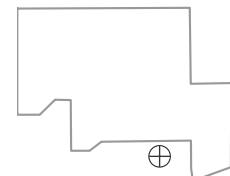
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

Well Location

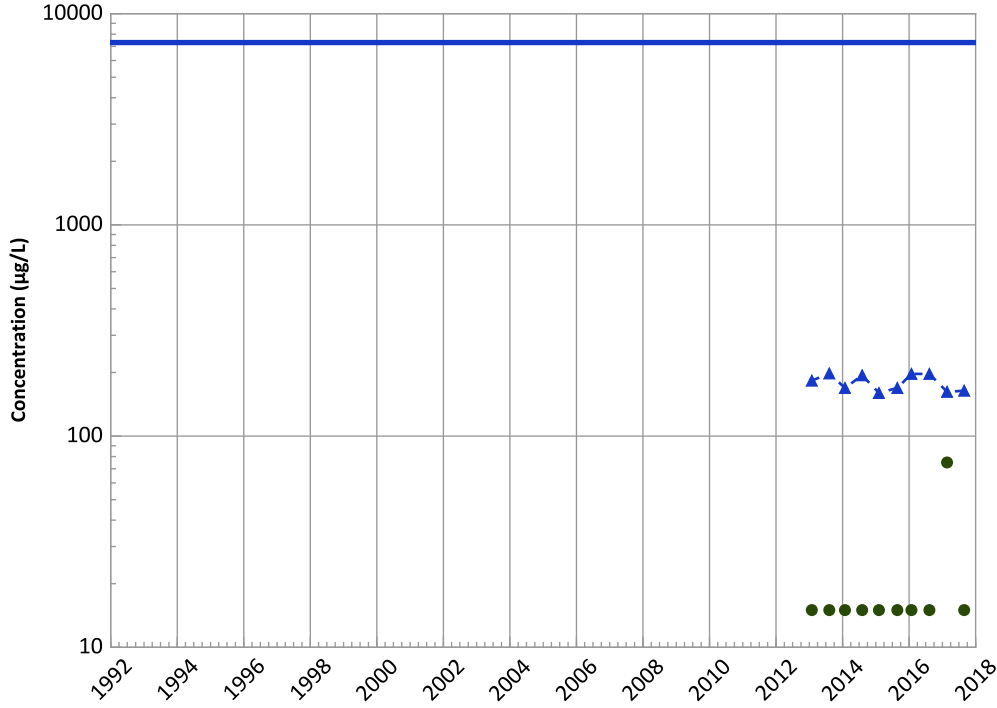


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 01/28/2013 to 08/28/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1166 in Perched Aquifer
USDOE/NNSA Pantex Plant

Boron Trend



Concentration Trend

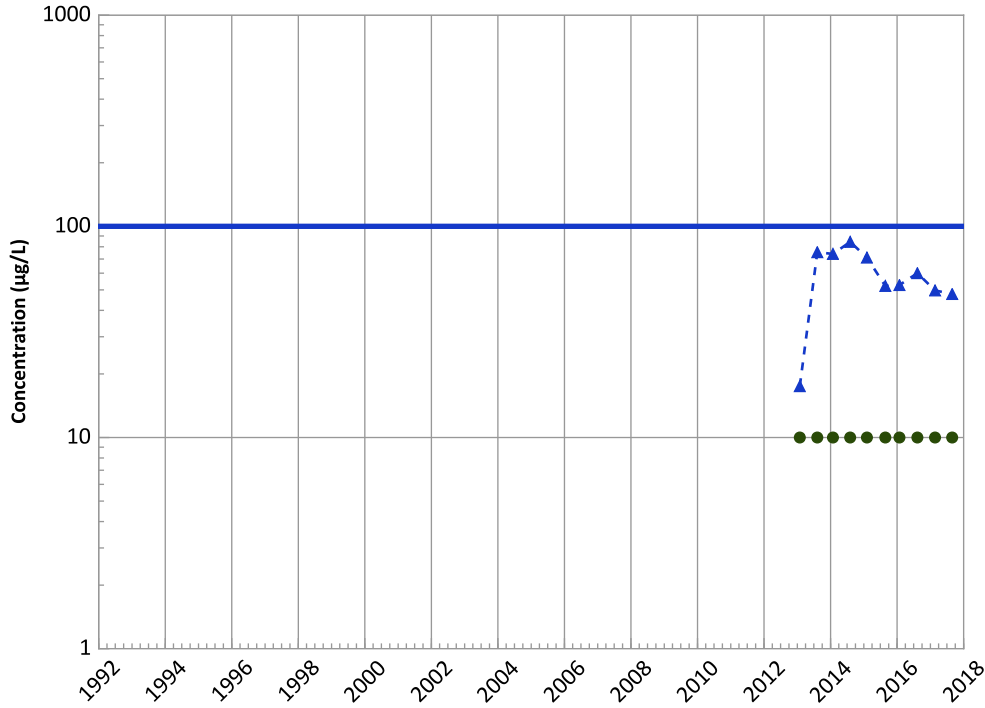
MAROS Mann-Kendall Method

Data ():
No Trend
All Data
Decreasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
Stable

Chromium, Total Trend



Concentration Trend

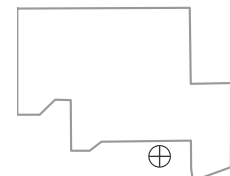
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
No Trend

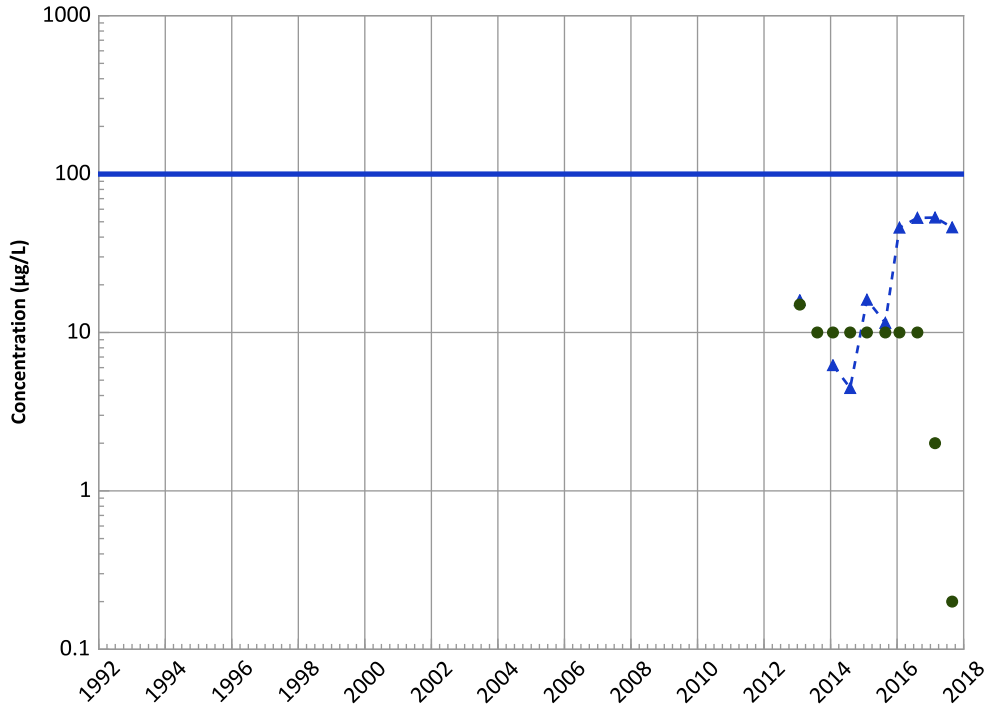
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 01/28/2013 to 08/28/2017
Analysis Date: 03/21/2018

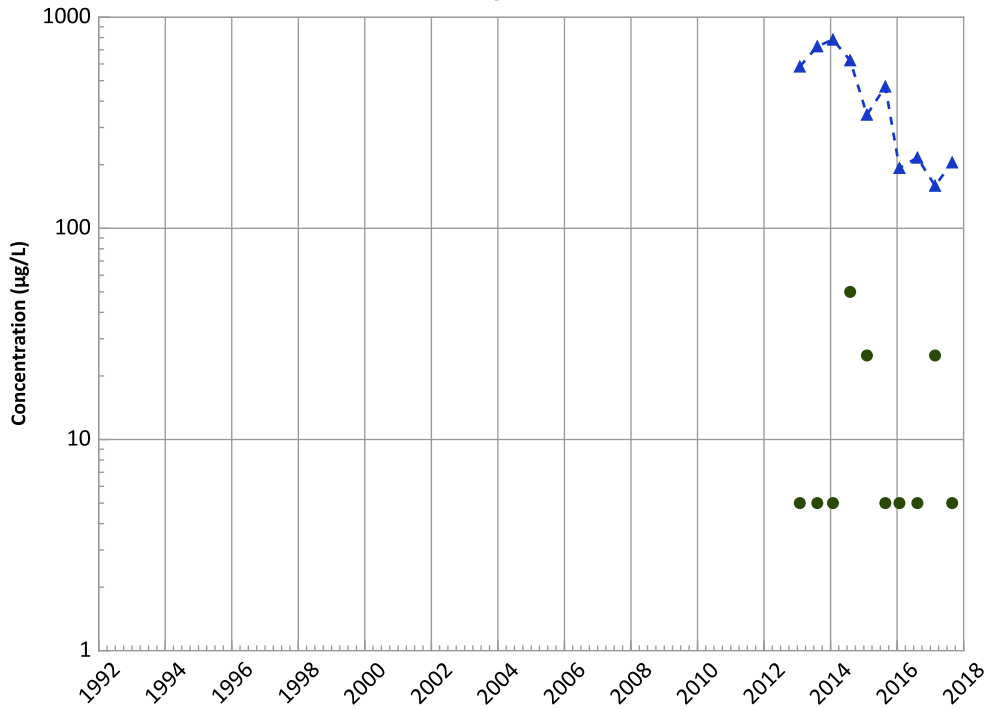
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1166 in Perched Aquifer
USDOE/NNSA Pantex Plant
Chromium, Hexavalent Trend**



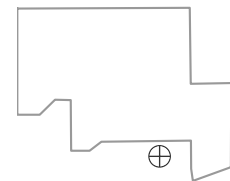
Concentration Trend
MAROS Mann-Kendall Method
 Data (): Probably Increasing
 All Data Increasing
MAROS Linear Regression Method
 Data (): Probably Increasing
 All Data Increasing

Manganese Trend



Concentration Trend
MAROS Mann-Kendall Method
 Data (): Decreasing
 All Data Decreasing
MAROS Linear Regression Method
 Data (): Decreasing
 All Data Decreasing

Well Location

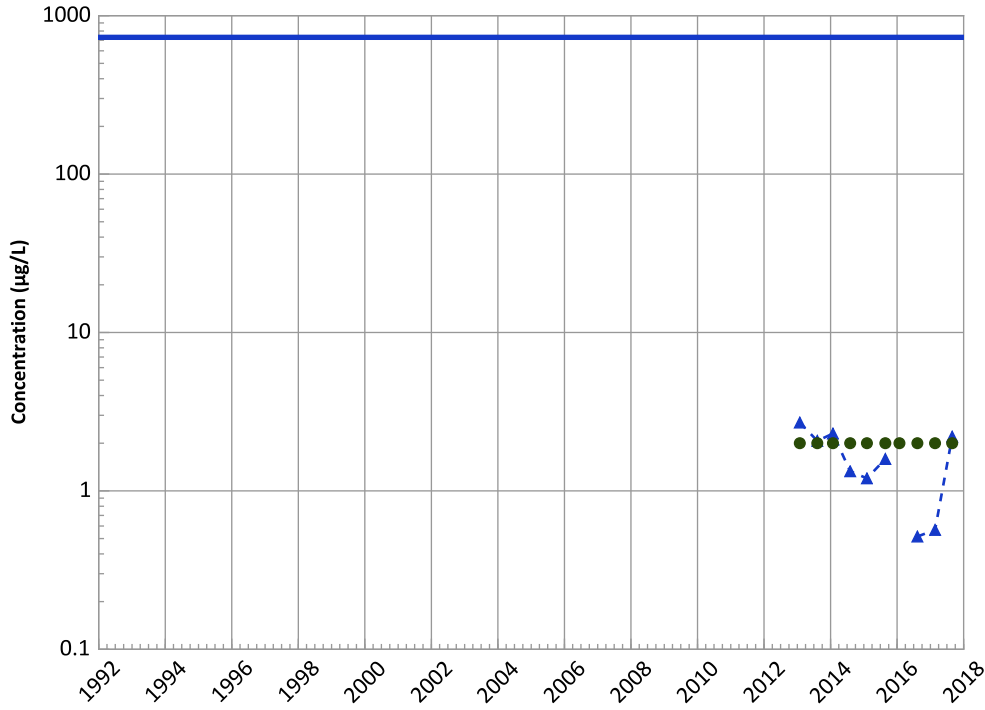


Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 01/28/2013 to 08/28/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1166 in Perched Aquifer
USDOE/NNSA Pantex Plant

Nickel Trend



Concentration Trend

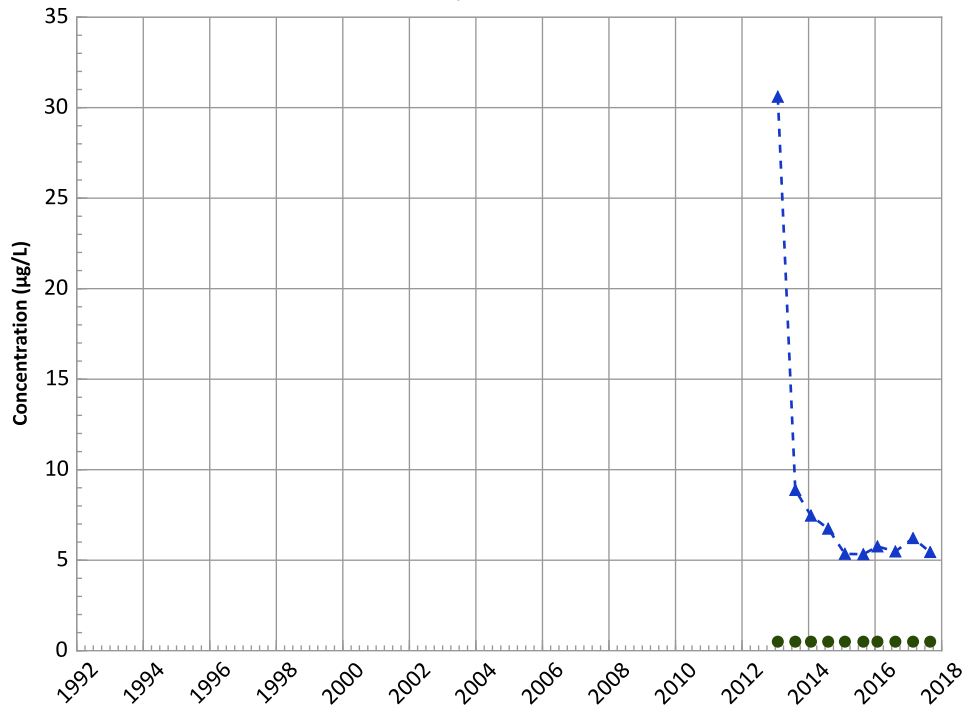
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

Molybdenum Trend



Concentration Trend

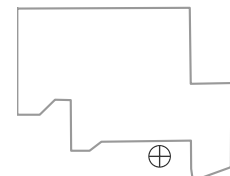
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

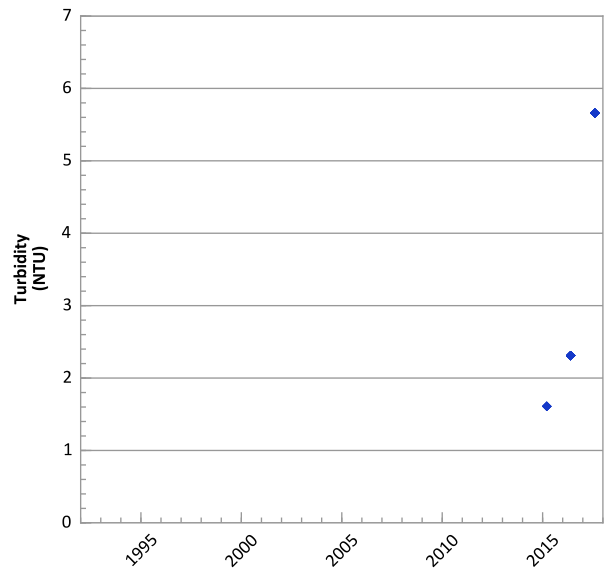
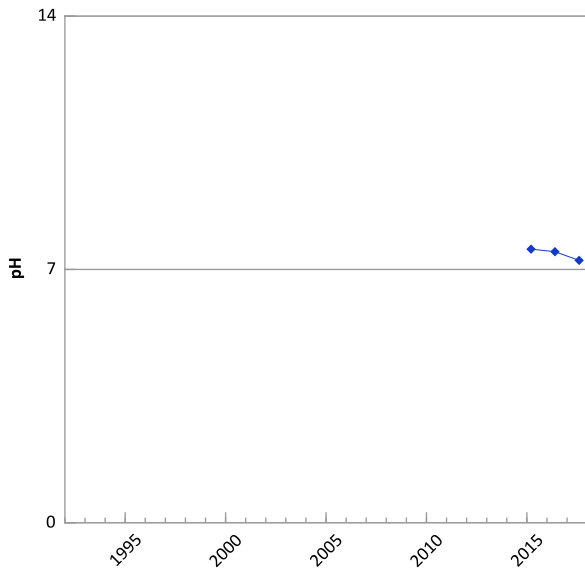
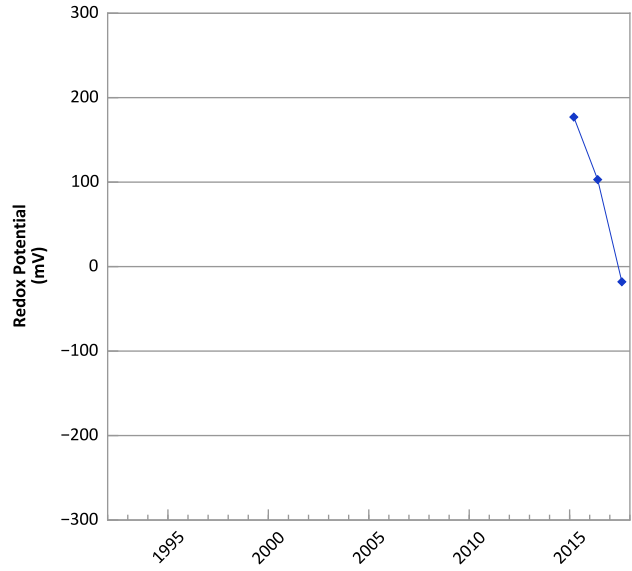
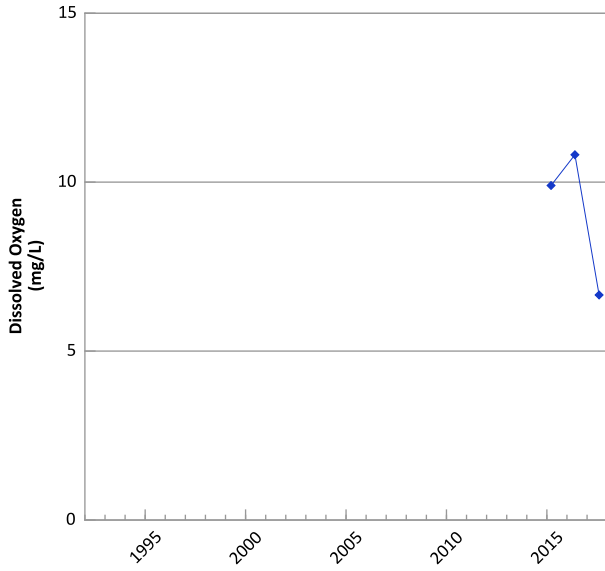
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 01/28/2013 to 08/28/2017
Analysis Date: 03/21/2018

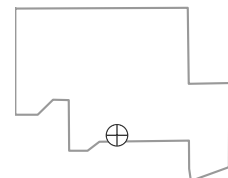
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1171 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



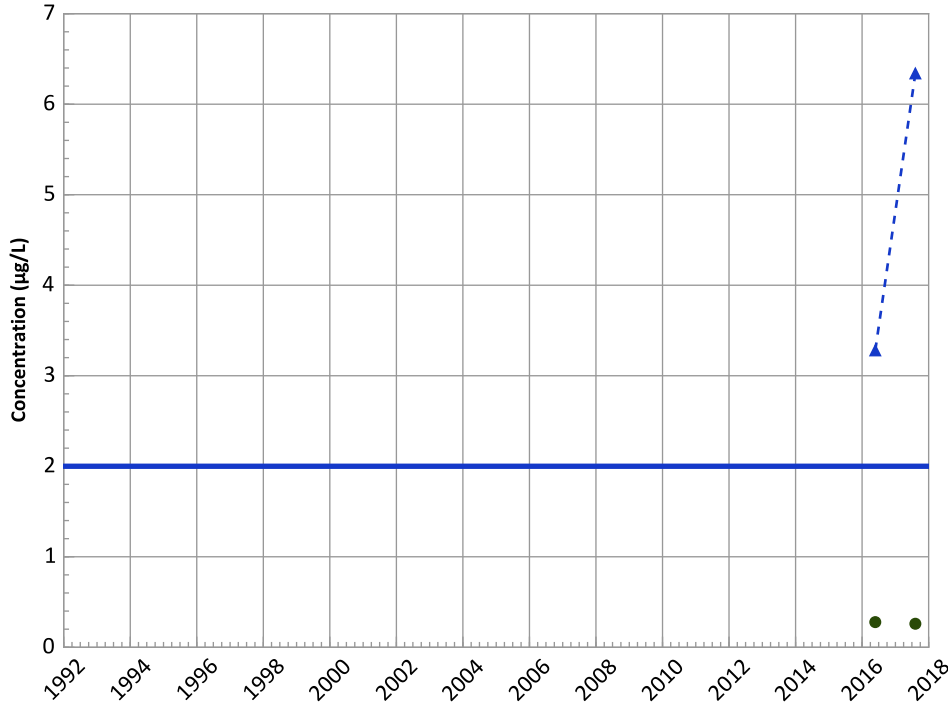
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 03/18/2015 to 08/08/2017
 Analysis Date: 03/21/2018

Well Location



PTX06-1171 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

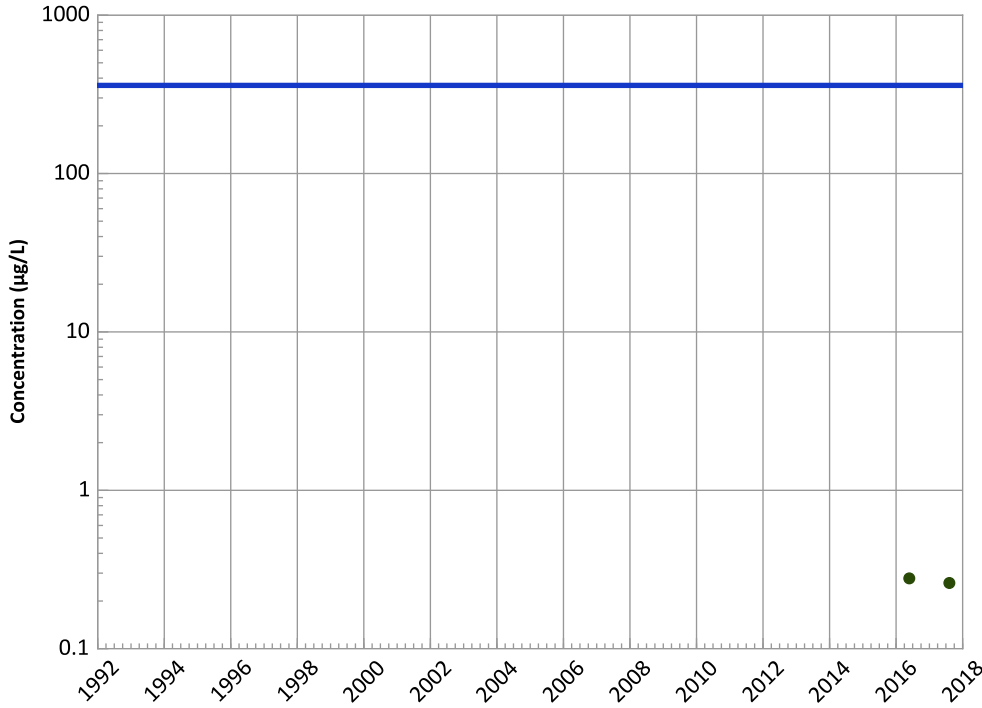
Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

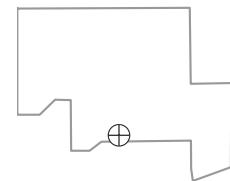
Data ():

N/A (<4 Samples in Dataset)

All Data

All Non-Detect

Well Location

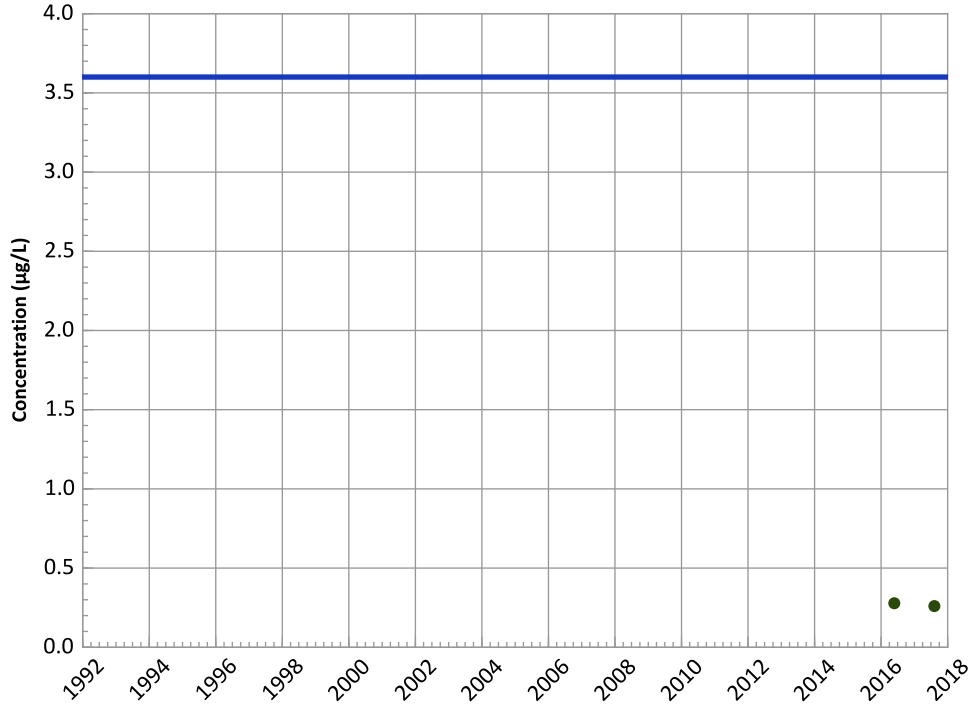


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/18/2015 to 08/08/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1171 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

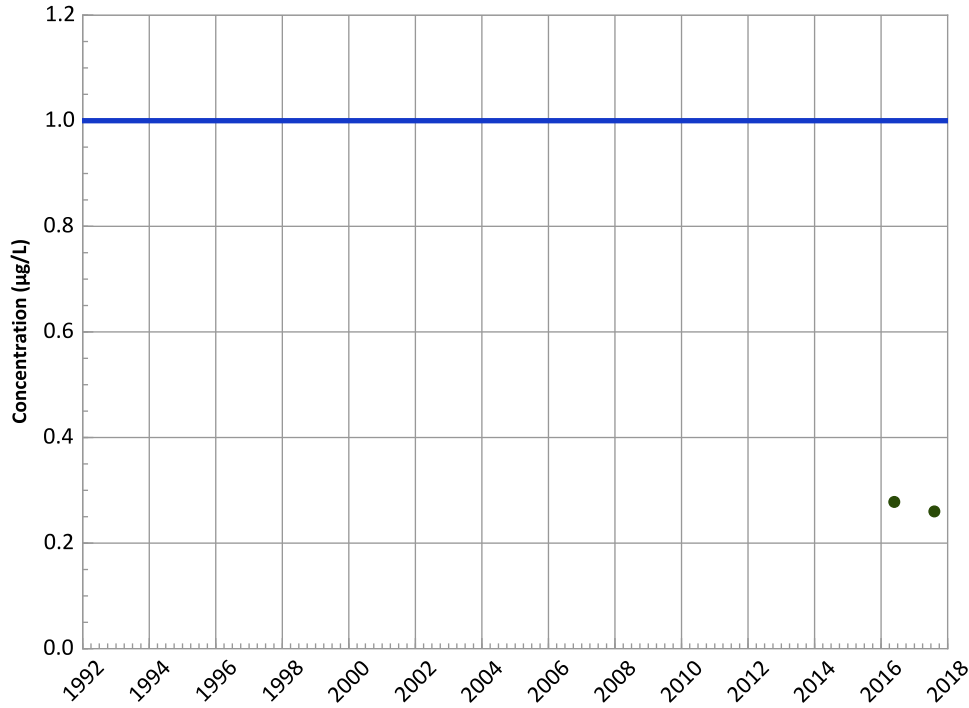
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

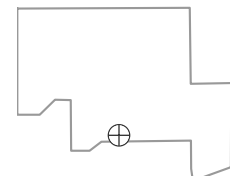
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

Well Location

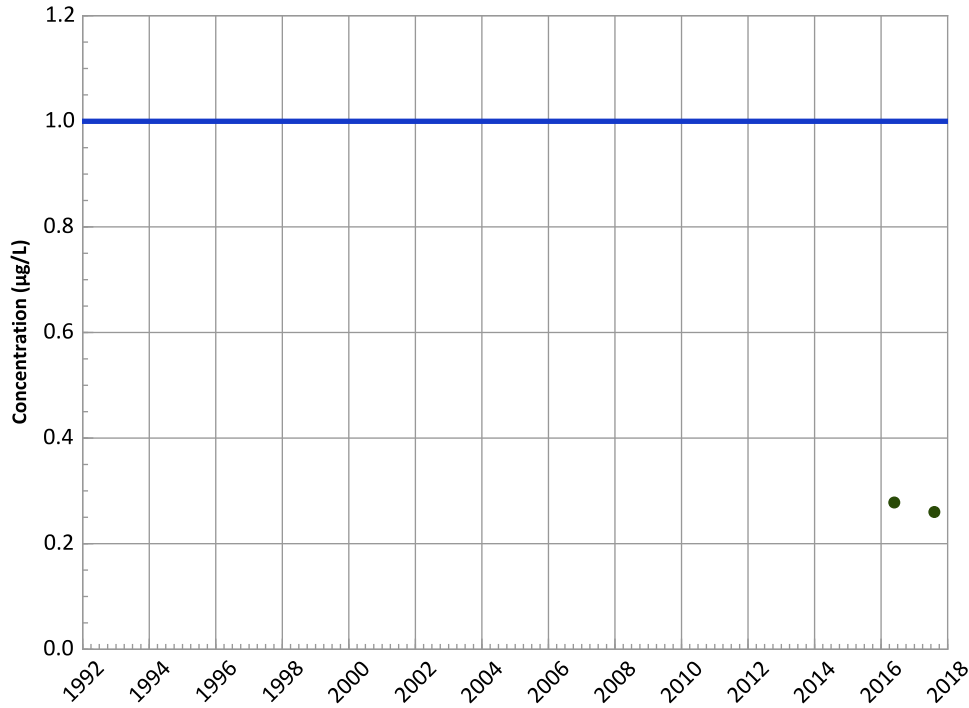


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/18/2015 to 08/08/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1171 in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

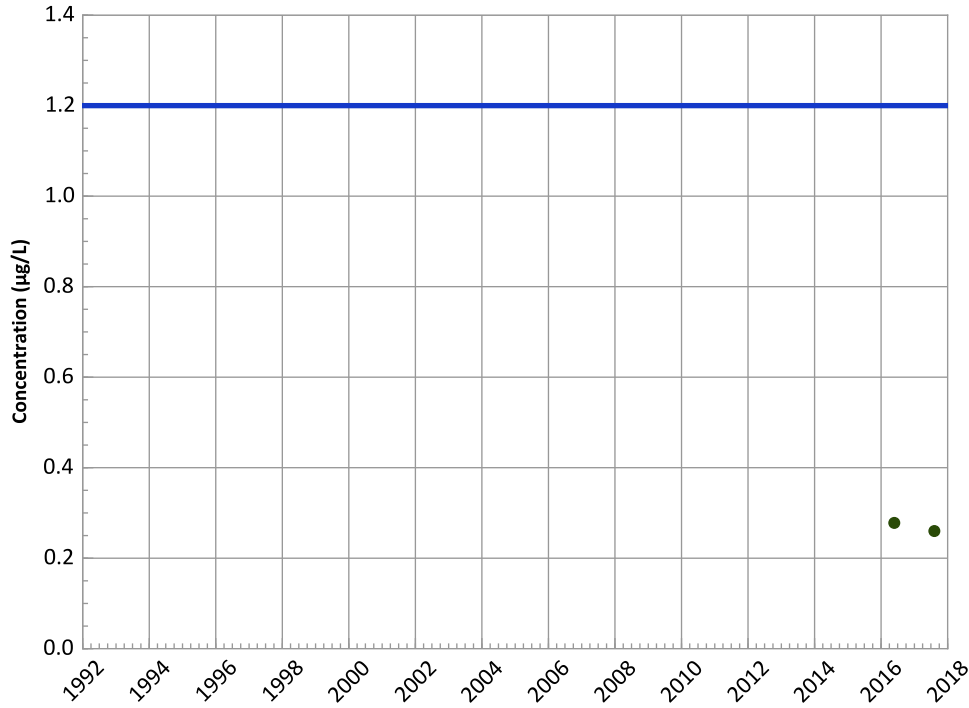
Data ():

N/A (<4 Samples in Dataset)

All Data

All Non-Detect

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

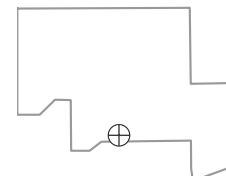
Data ():

N/A (<4 Samples in Dataset)

All Data

All Non-Detect

Well Location

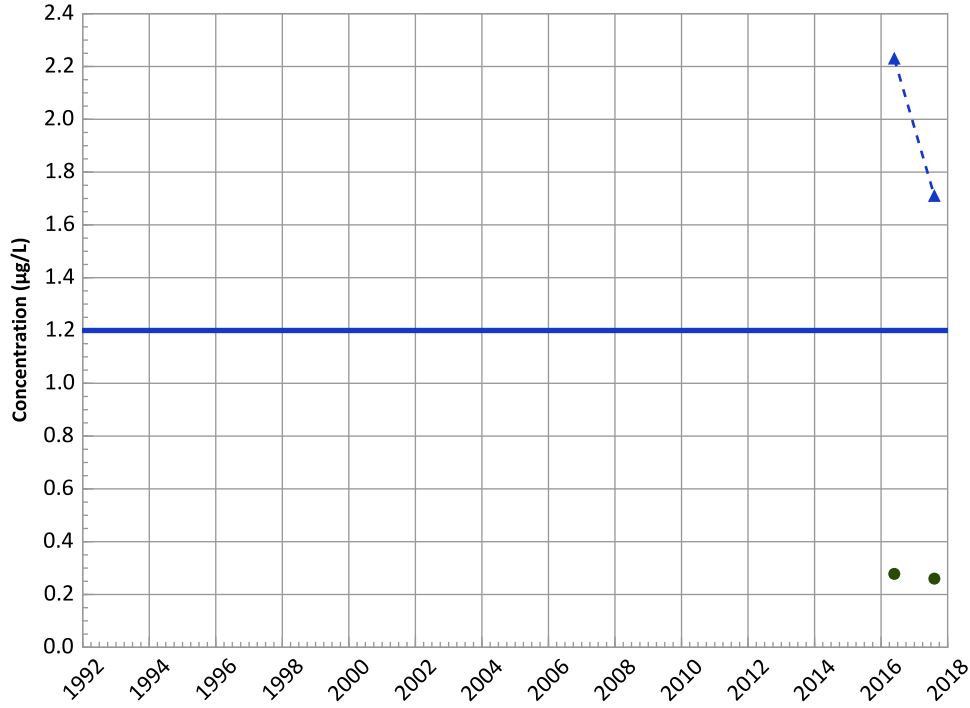


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/18/2015 to 08/08/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1171 in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

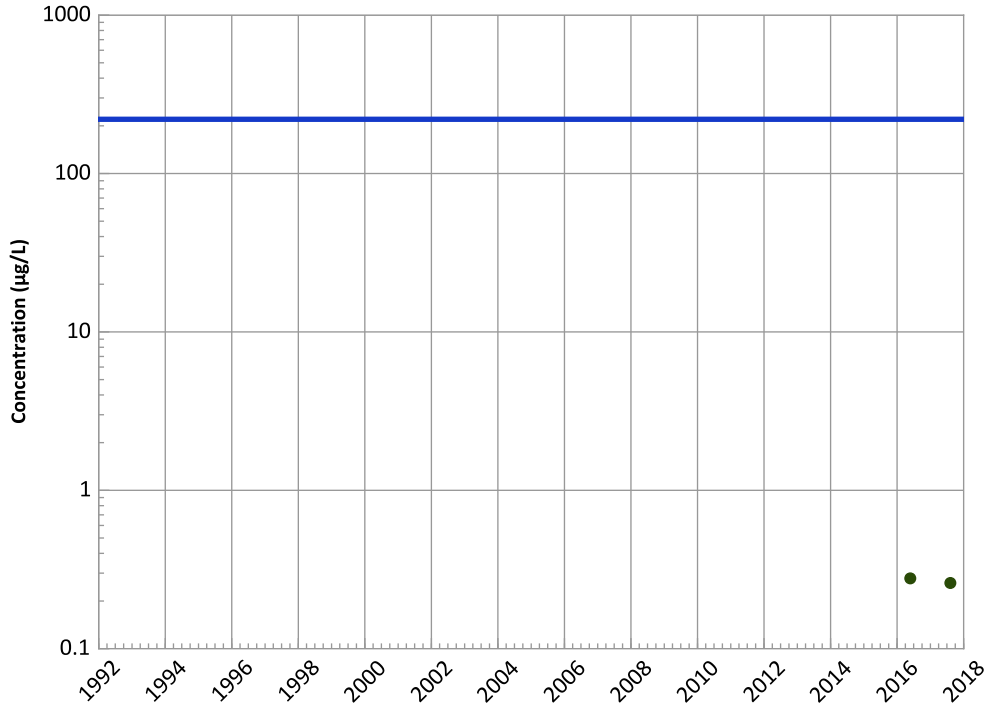
Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

1,3,5-Trinitrobenzene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

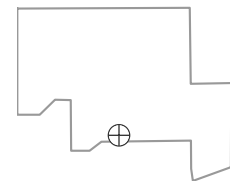
Data ():

N/A (<4 Samples in Dataset)

All Data

All Non-Detect

Well Location

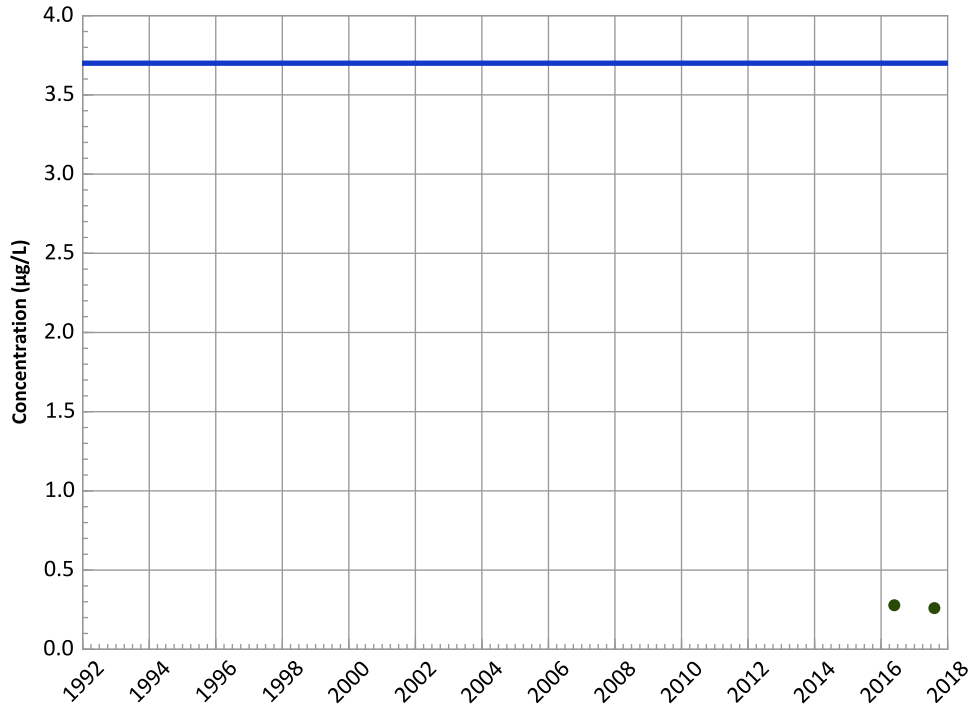


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/18/2015 to 08/08/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1171 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

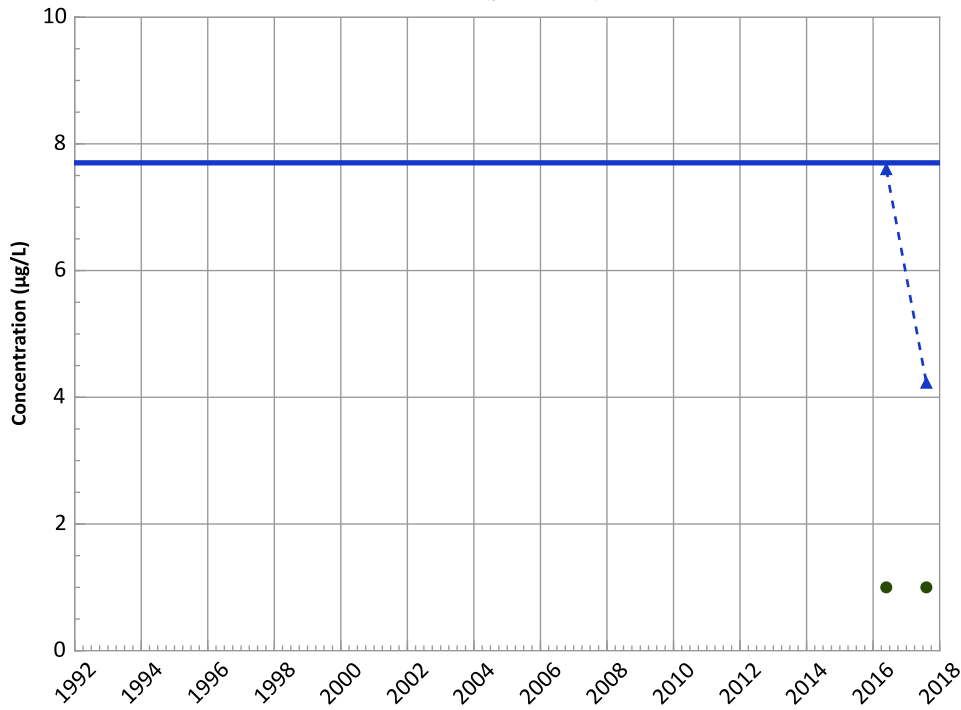
Data ():

N/A (<4 Samples in Dataset)

All Data

All Non-Detect

1,4-Dioxane (p-Dioxane) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

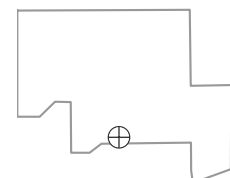
Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

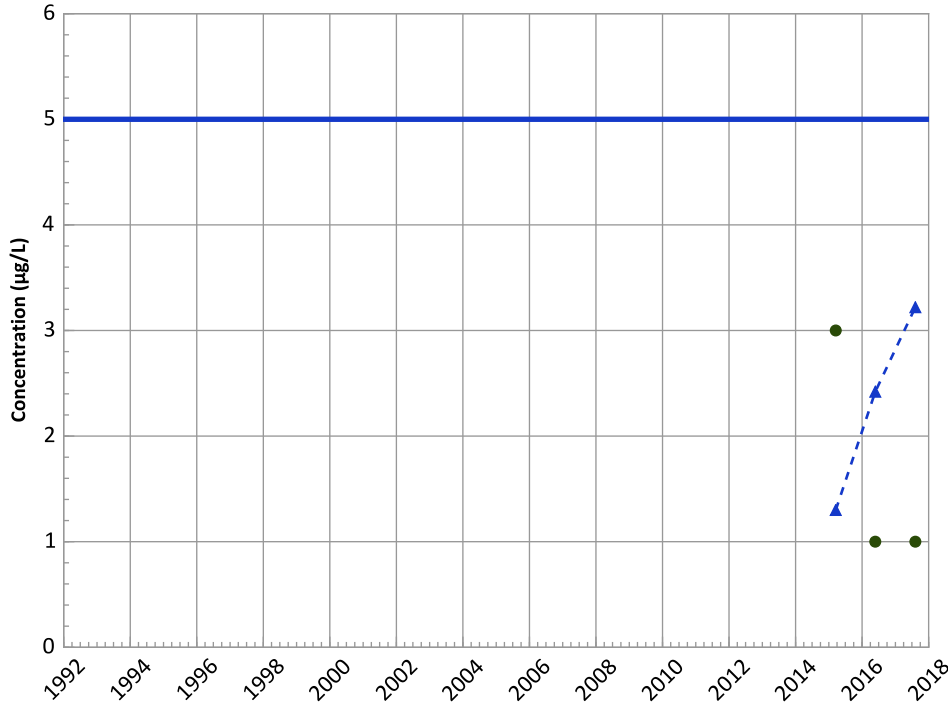
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/18/2015 to 08/08/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1171 in Perched Aquifer
USDOE/NNSA Pantex Plant
Tetrachloroethylene (PCE) Trend**



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

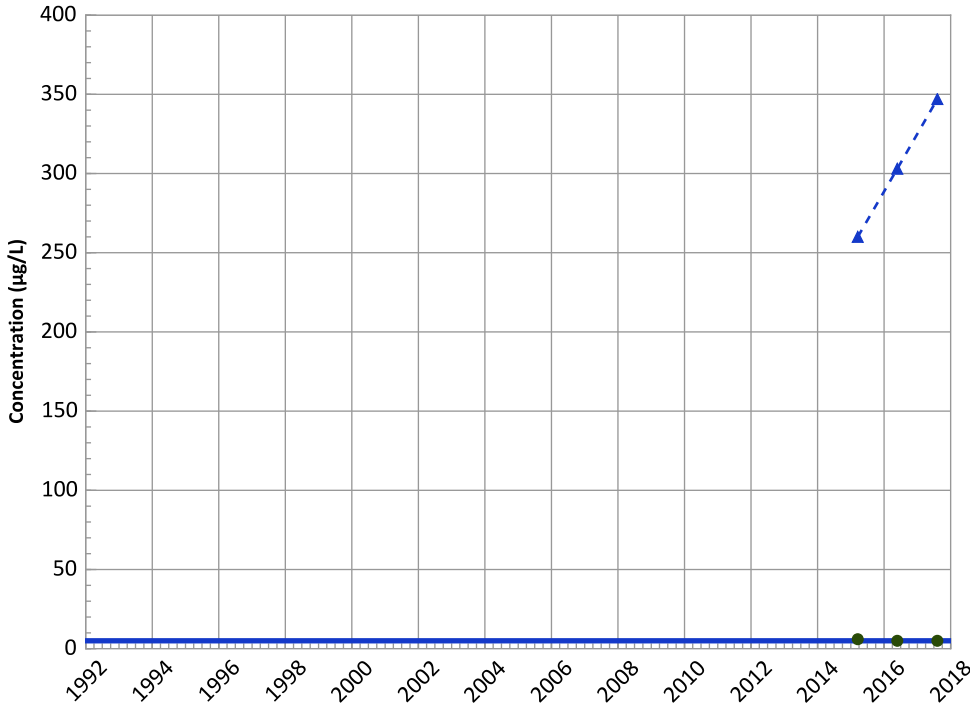
Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

Trichloroethene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

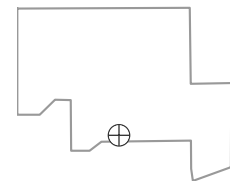
Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

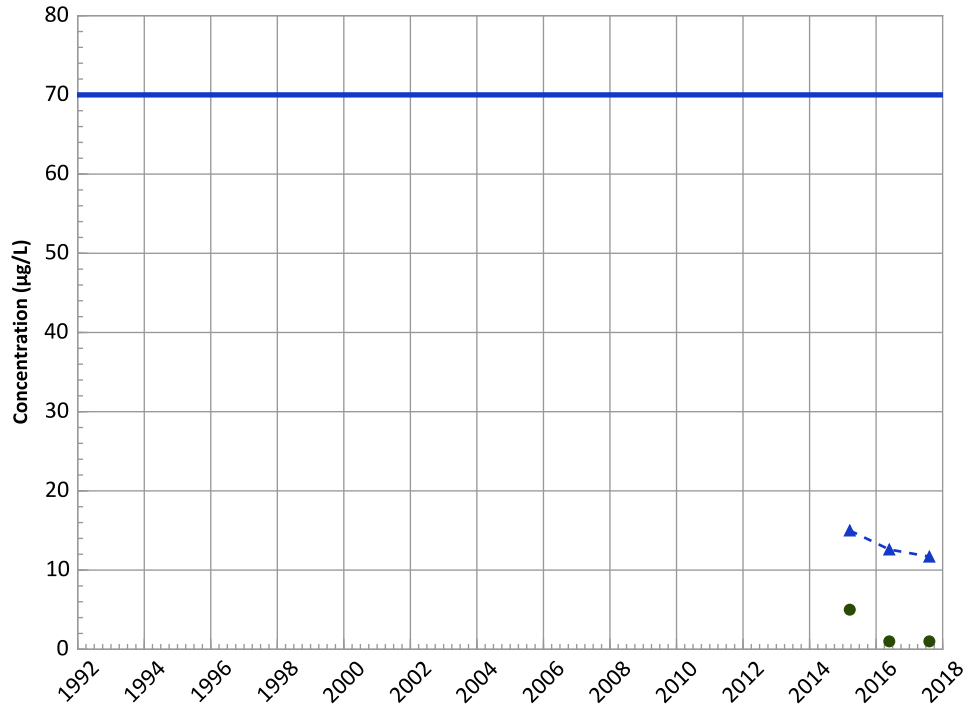
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/18/2015 to 08/08/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1171 in Perched Aquifer
USDOE/NNSA Pantex Plant**
cis-1,2-Dichloroethene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

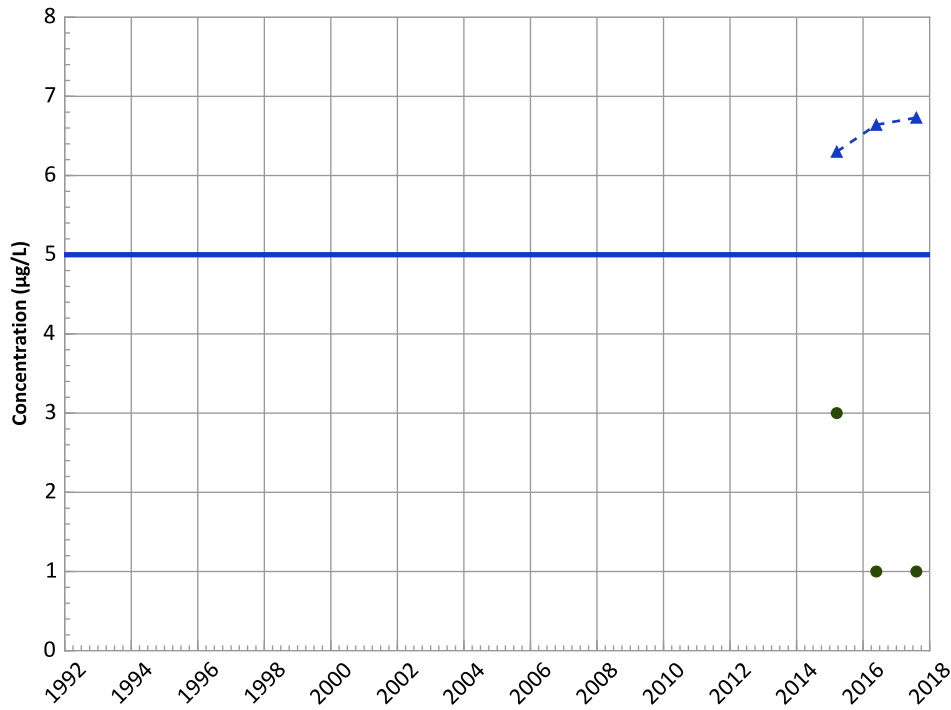
Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

1,2-Dichloroethane Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

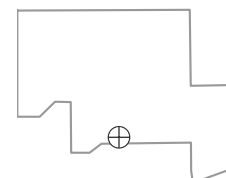
Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

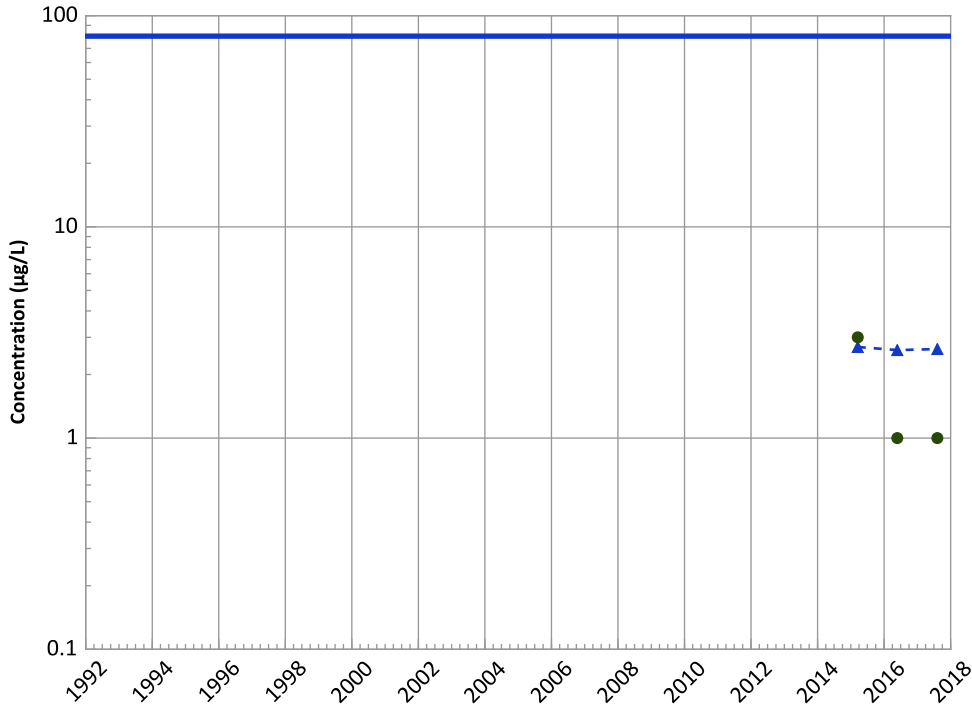
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/18/2015 to 08/08/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1171 in Perched Aquifer
USDOE/NNSA Pantex Plant
Chloroform Trend**



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

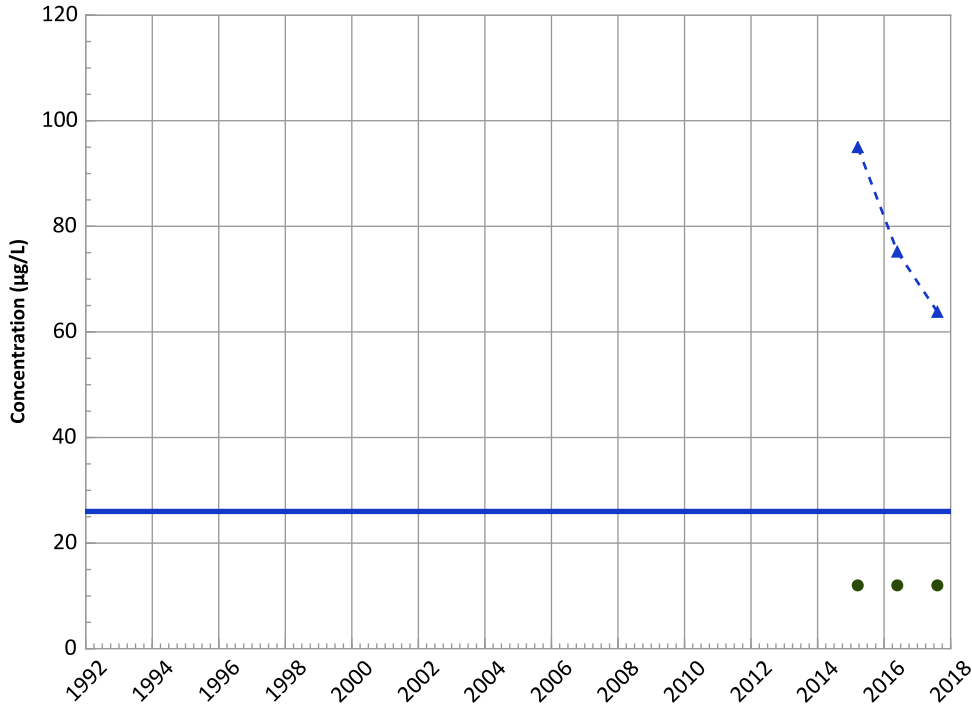
Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

Perchlorate Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

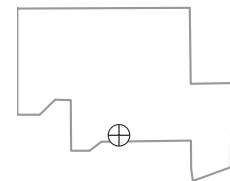
Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

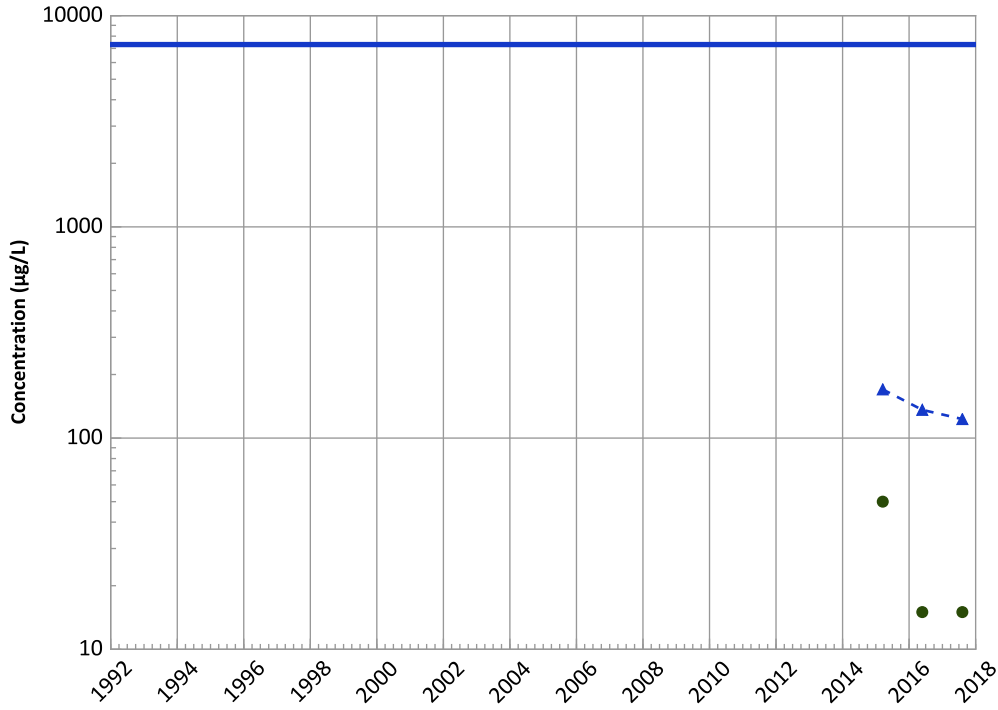
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/18/2015 to 08/08/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1171 in Perched Aquifer
USDOE/NNSA Pantex Plant
Boron Trend**



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

Data ():

N/A (<4 Detections in Dataset)

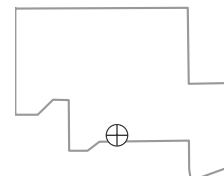
All Data

N/A (<4 Detections in Dataset)

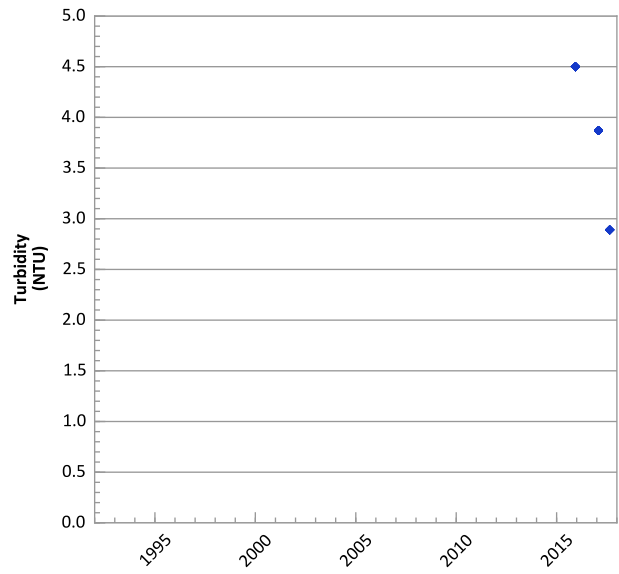
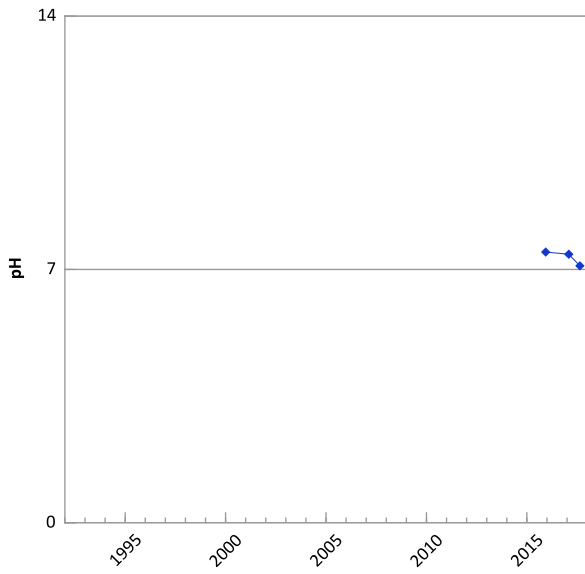
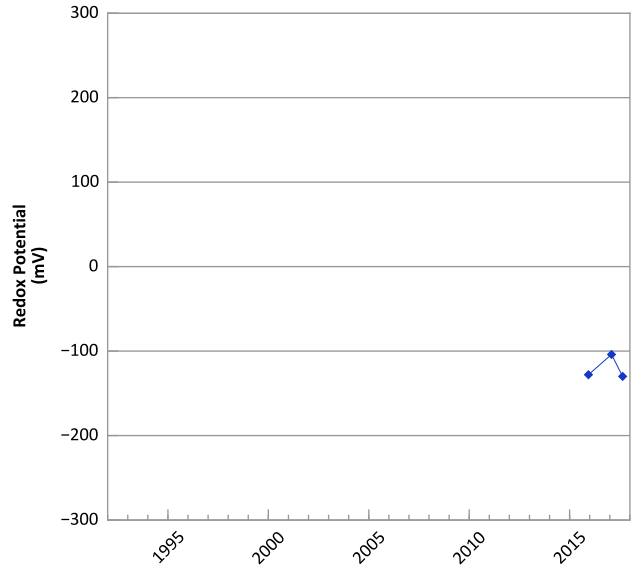
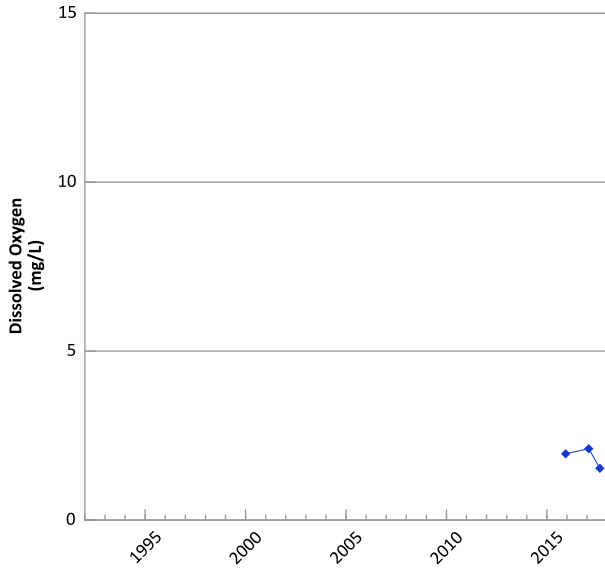
Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 03/18/2015 to 08/08/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

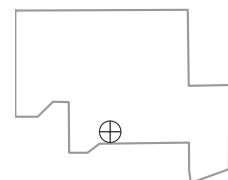


**PTX06-1180 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



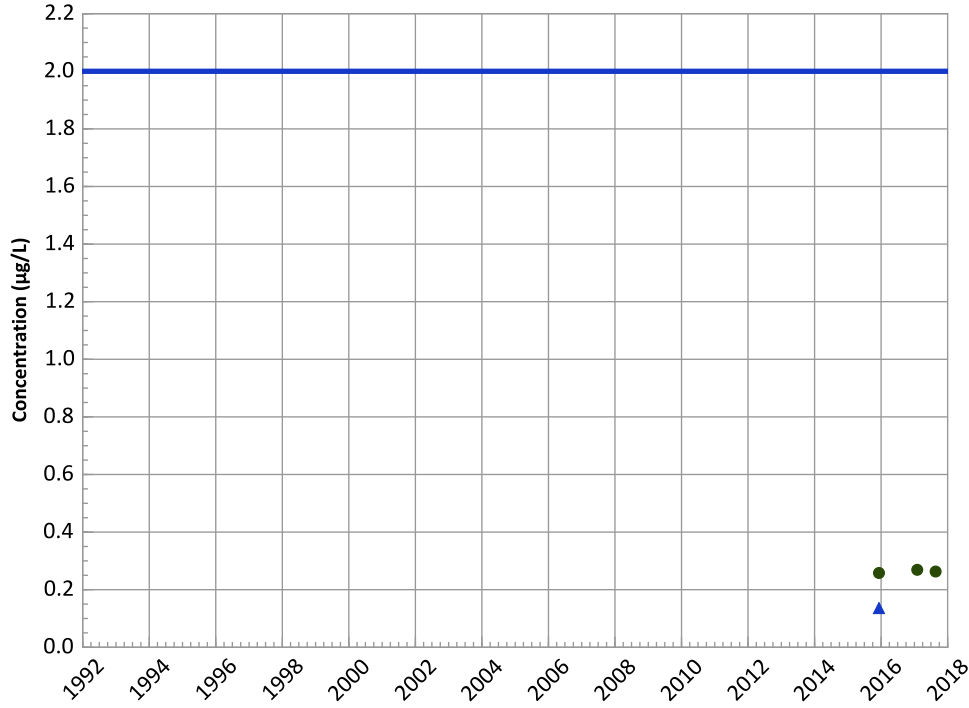
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 12/09/2015 to 08/22/2017
 Analysis Date: 03/21/2018

Well Location



PTX06-1180 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

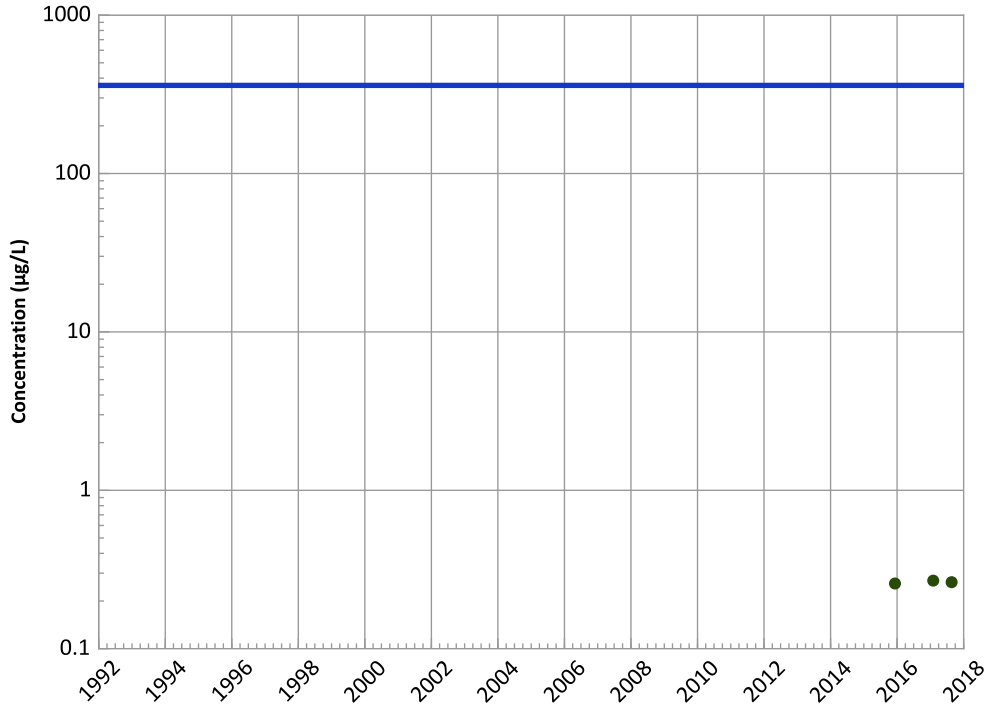
Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

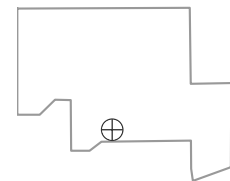
Data ():

N/A (<4 Samples in Dataset)

All Data

All Non-Detect

Well Location

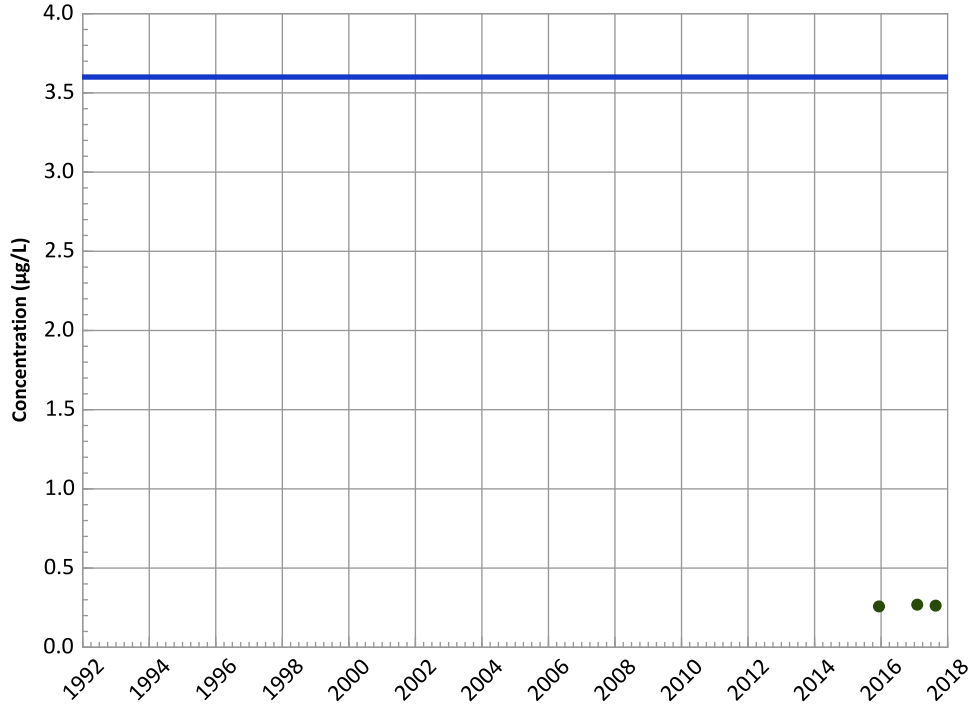


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/09/2015 to 08/22/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1180 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

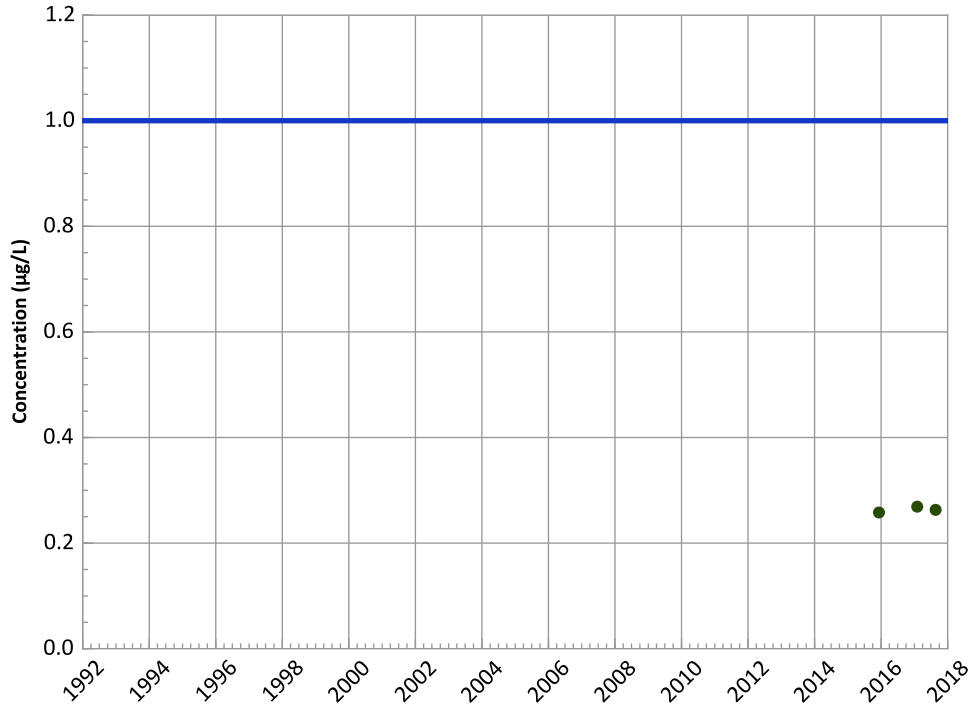
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

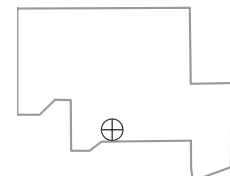
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

Well Location

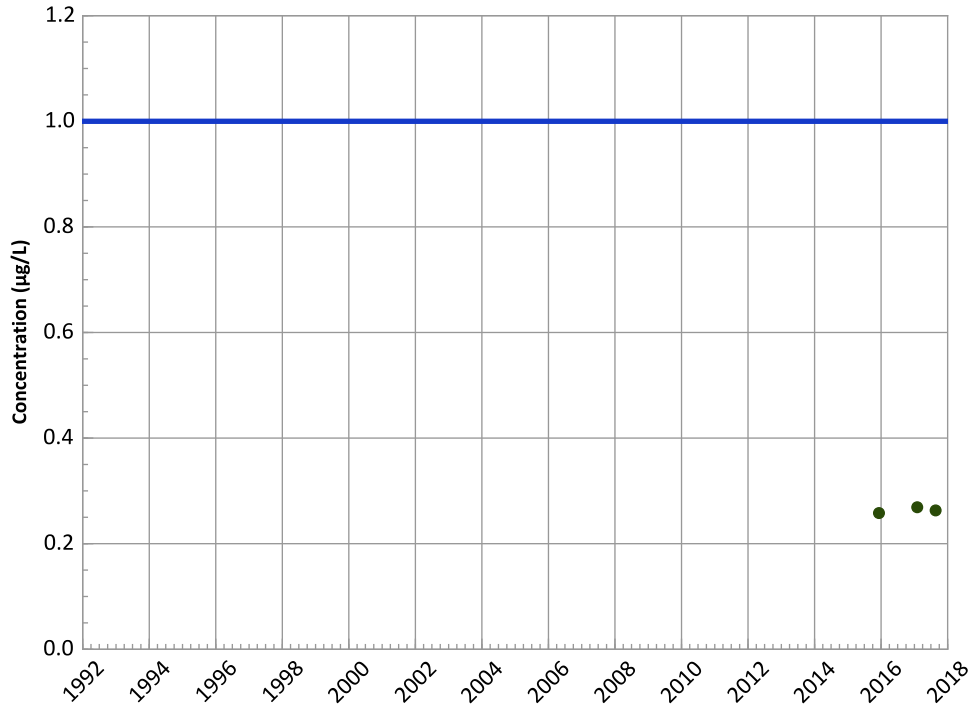


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/09/2015 to 08/22/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1180 in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

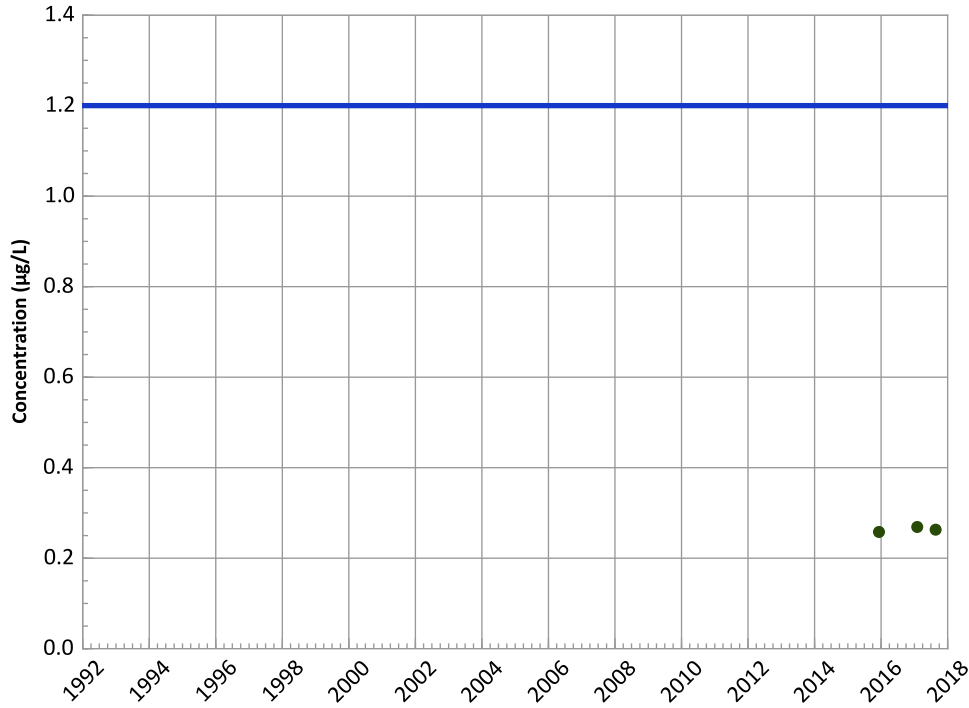
Data ():

N/A (<4 Samples in Dataset)

All Data

All Non-Detect

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

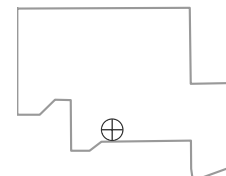
Data ():

N/A (<4 Samples in Dataset)

All Data

All Non-Detect

Well Location

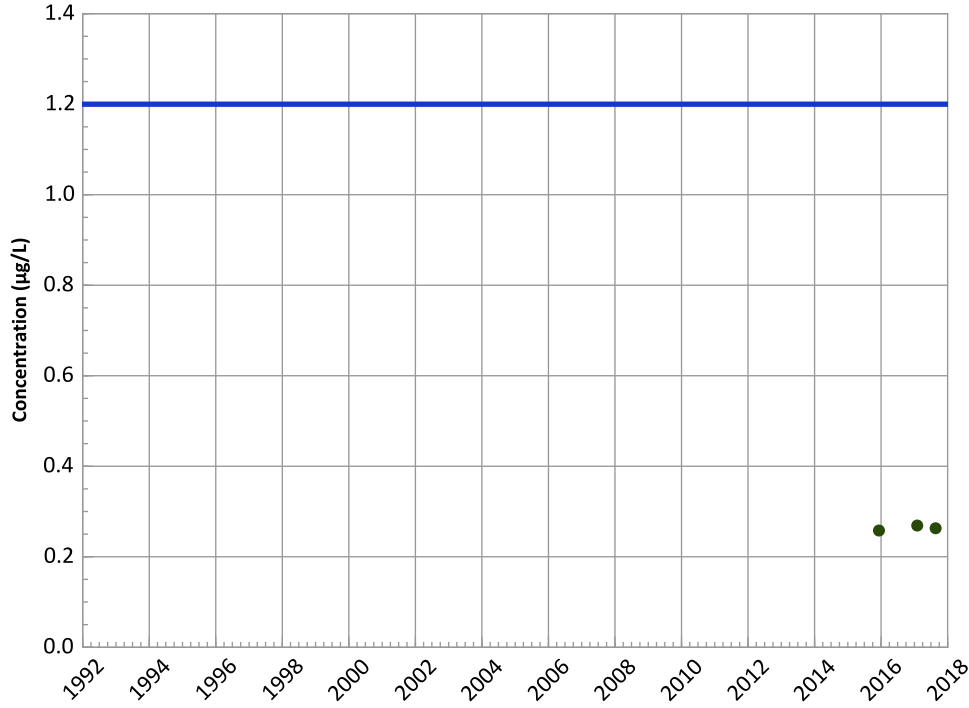


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/09/2015 to 08/22/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1180 in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

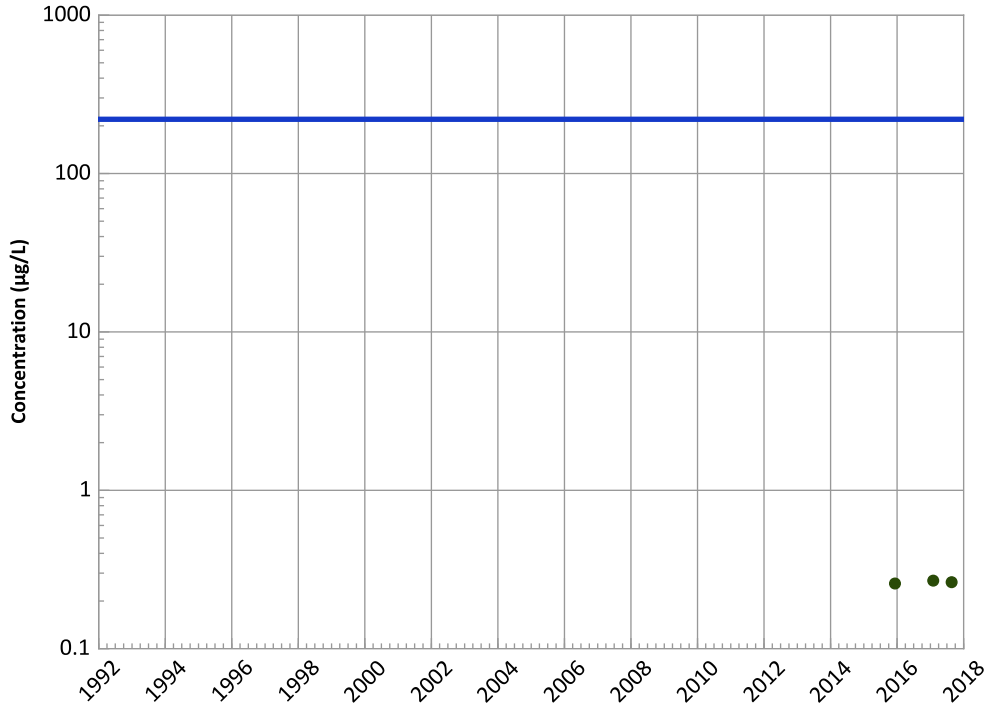
Data ():

N/A (<4 Samples in Dataset)

All Data

All Non-Detect

1,3,5-Trinitrobenzene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

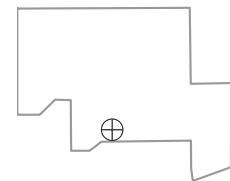
Data ():

N/A (<4 Samples in Dataset)

All Data

All Non-Detect

Well Location

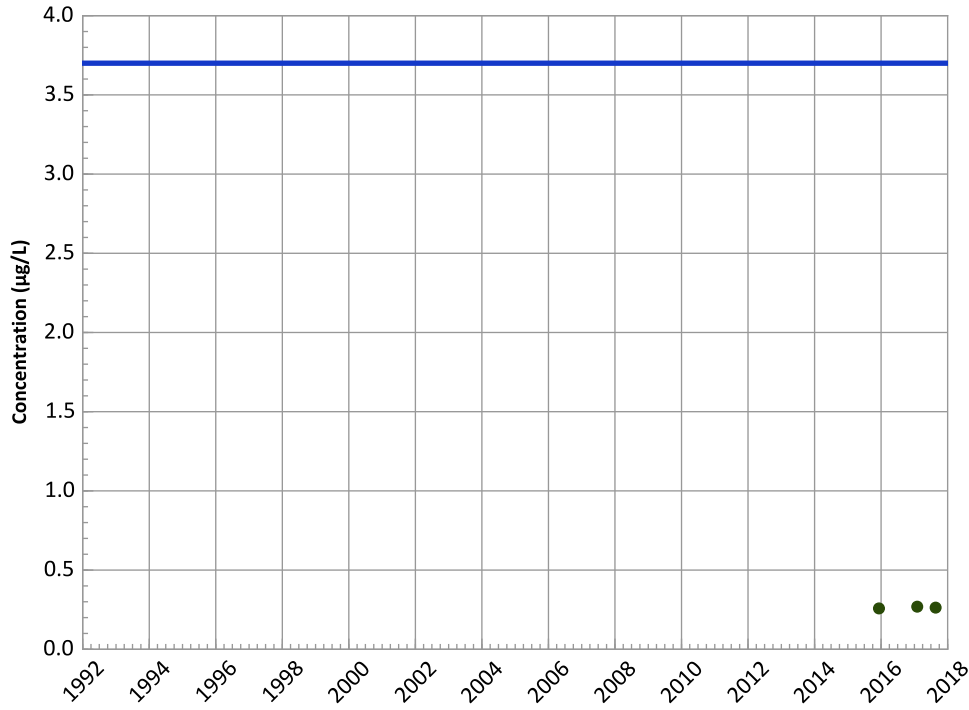


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/09/2015 to 08/22/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1180 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

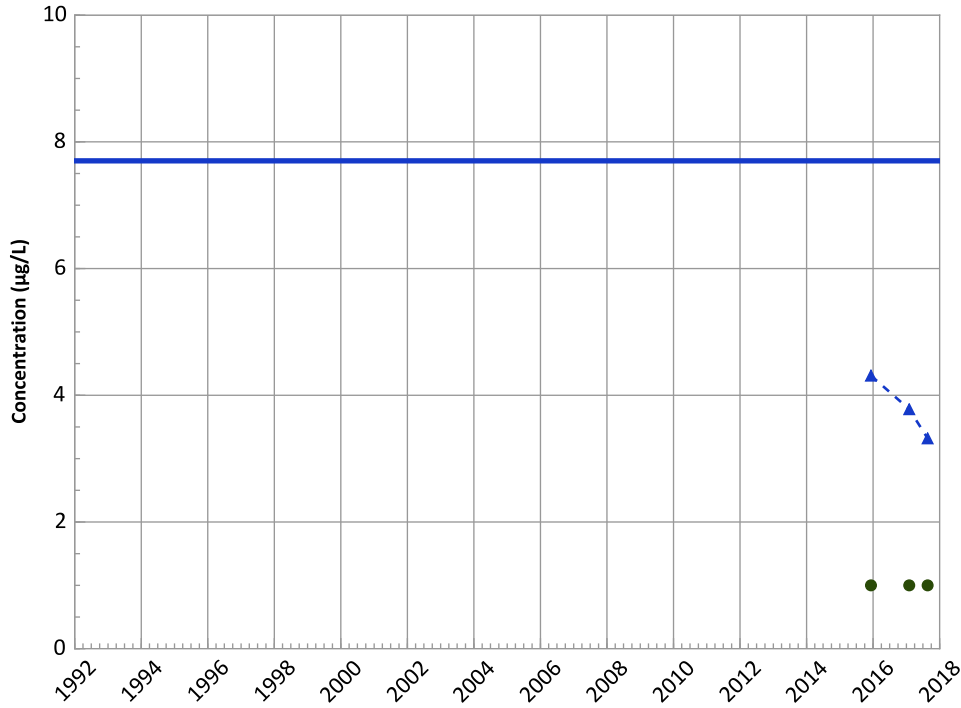
Data ():

N/A (<4 Samples in Dataset)

All Data

All Non-Detect

1,4-Dioxane (p-Dioxane) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

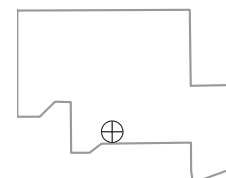
Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

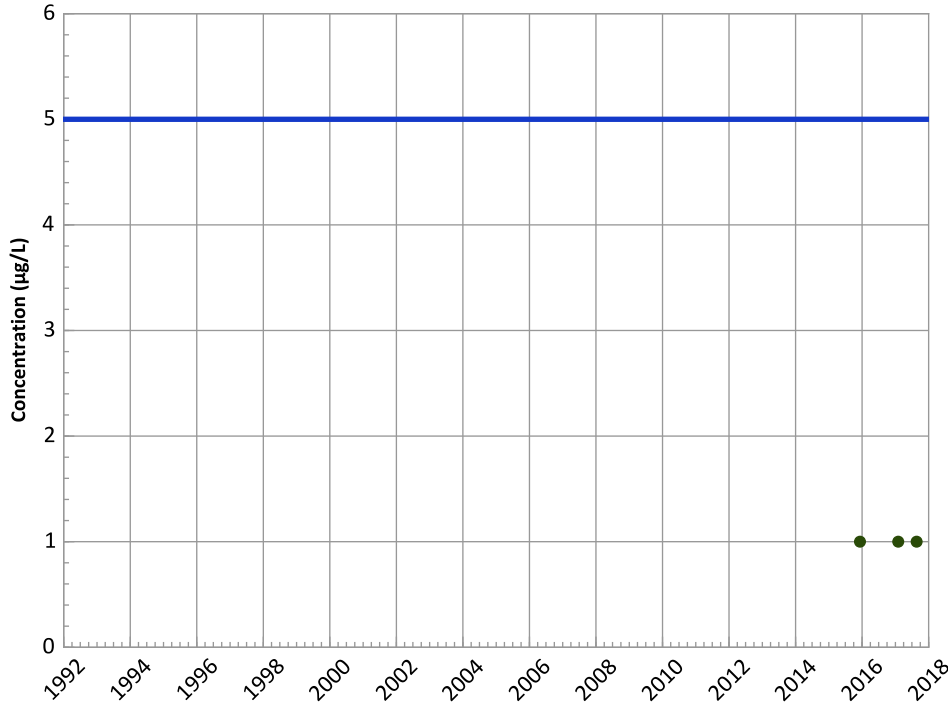
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/09/2015 to 08/22/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1180 in Perched Aquifer
USDOE/NNSA Pantex Plant
Tetrachloroethylene (PCE) Trend**



Concentration Trend

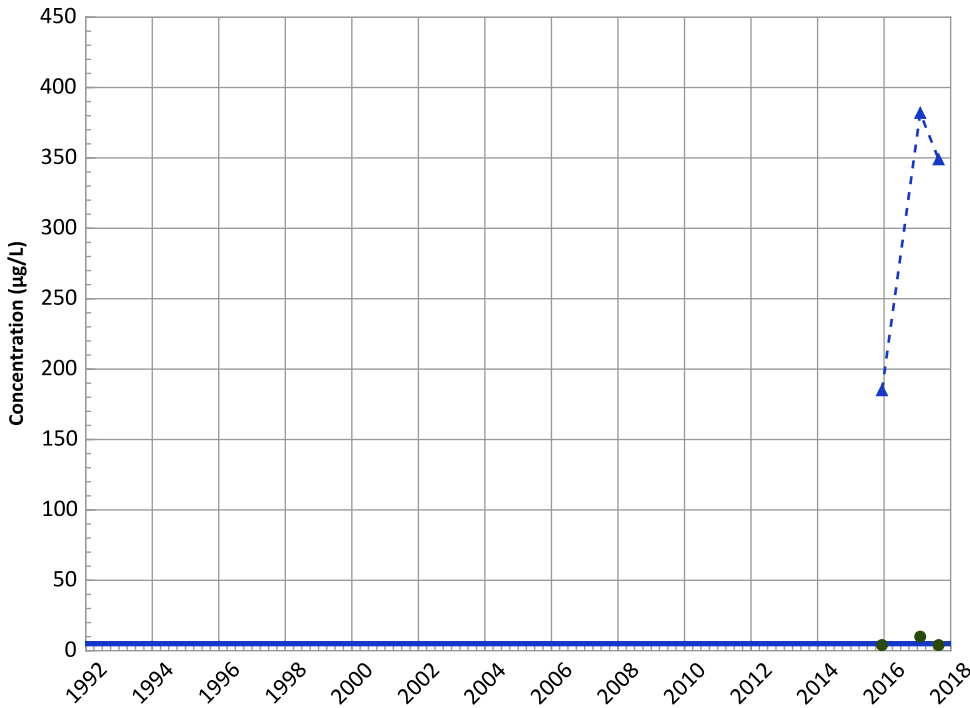
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

Trichloroethene Trend



Concentration Trend

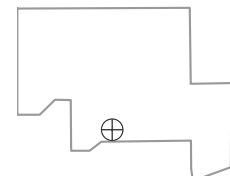
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
N/A (<4 Detections in Dataset)

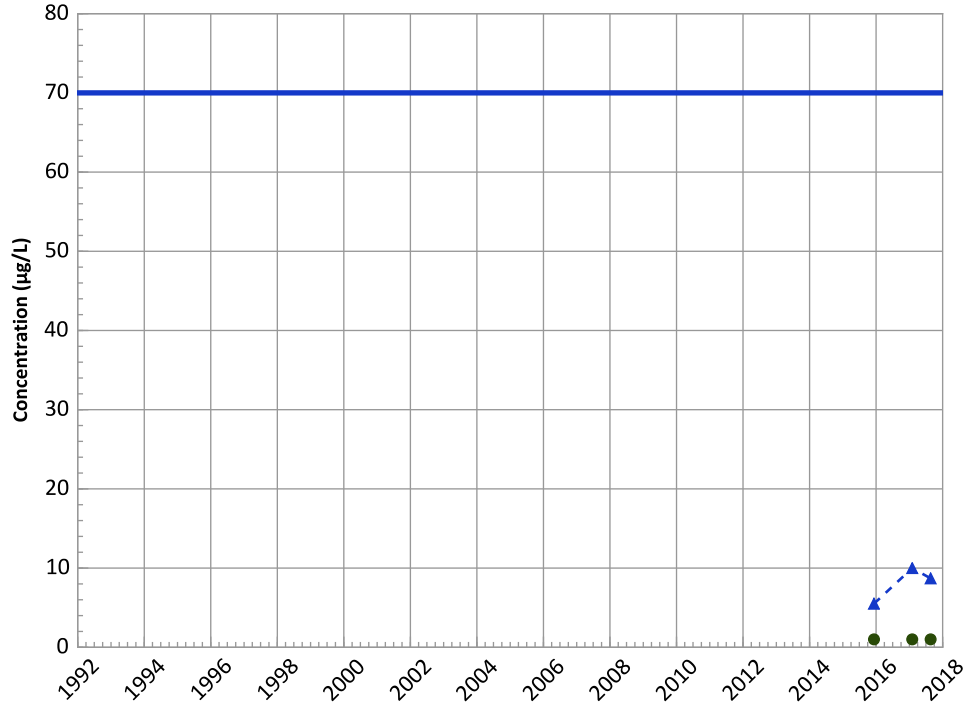
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/09/2015 to 08/22/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1180 in Perched Aquifer
USDOE/NNSA Pantex Plant
cis-1,2-Dichloroethene Trend**



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

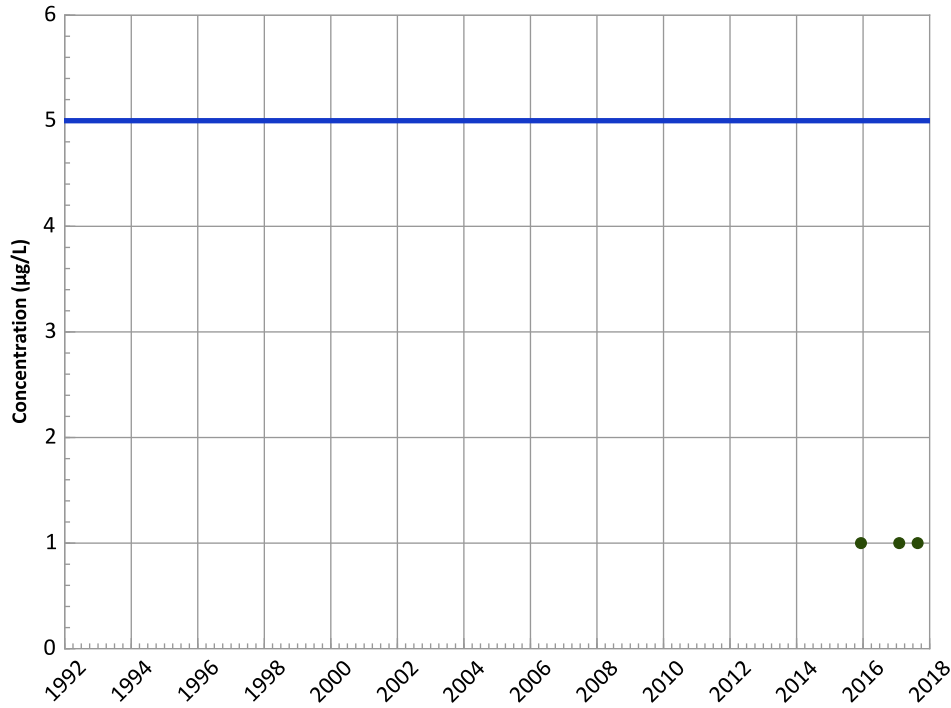
Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

1,2-Dichloroethane Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

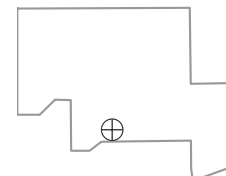
Data ():

N/A (<4 Samples in Dataset)

All Data

All Non-Detect

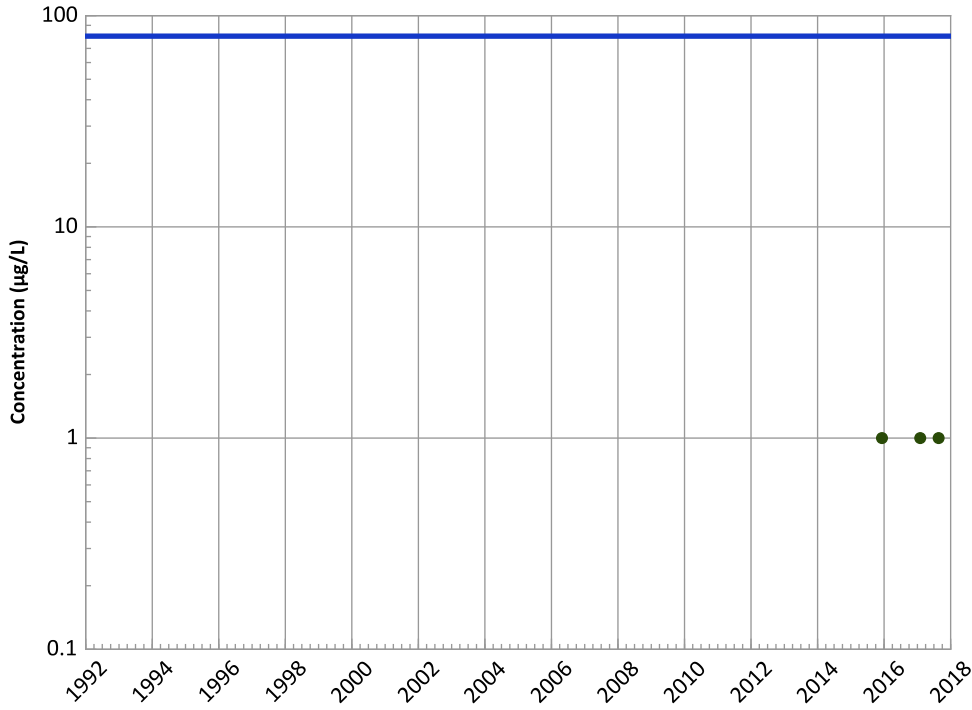
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/09/2015 to 08/22/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1180 in Perched Aquifer
USDOE/NNSA Pantex Plant
Chloroform Trend**

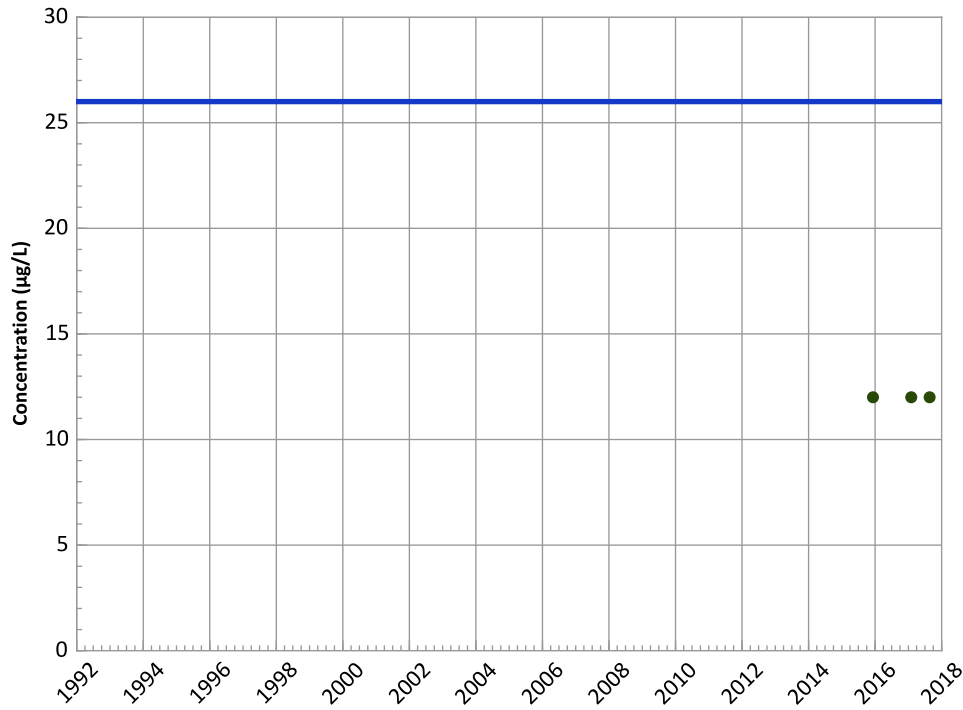


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Samples in Dataset)
All Data
N/A (<4 Samples in Dataset)

MAROS Linear Regression Method
Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

Perchlorate Trend

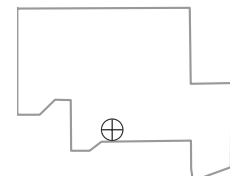


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Samples in Dataset)
All Data
N/A (<4 Samples in Dataset)

MAROS Linear Regression Method
Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

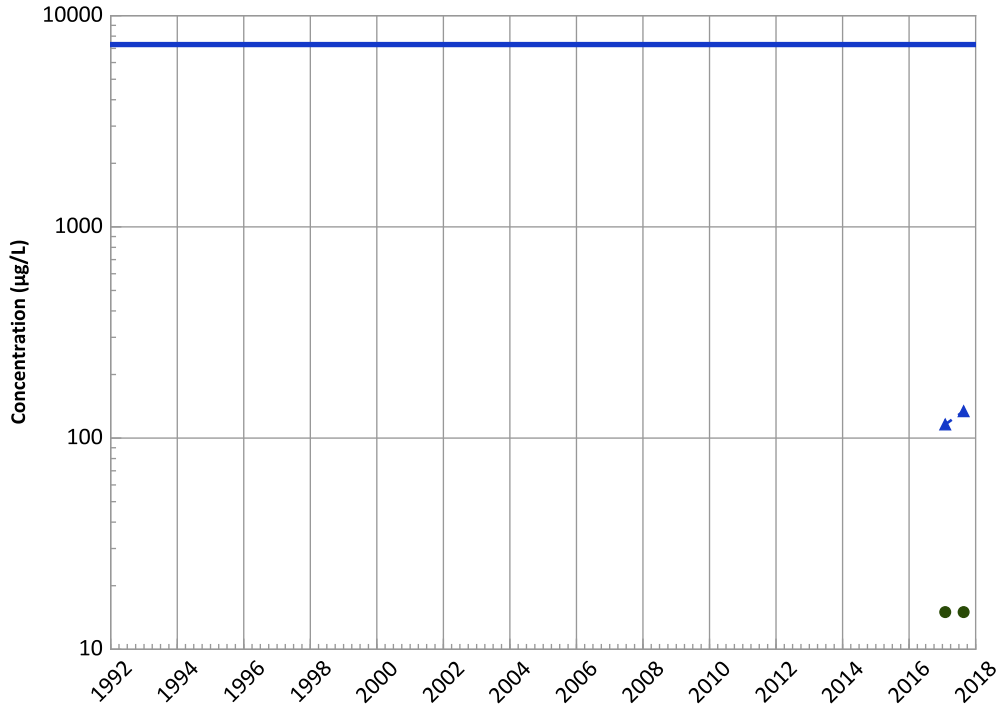
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/09/2015 to 08/22/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- Concentration Trend
- Groundwater Protection Standard

**PTX06-1180 in Perched Aquifer
USDOE/NNSA Pantex Plant
Boron Trend**



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

Data ():

N/A (<4 Samples in Dataset)

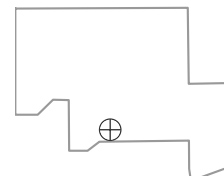
All Data

N/A (<4 Detections in Dataset)

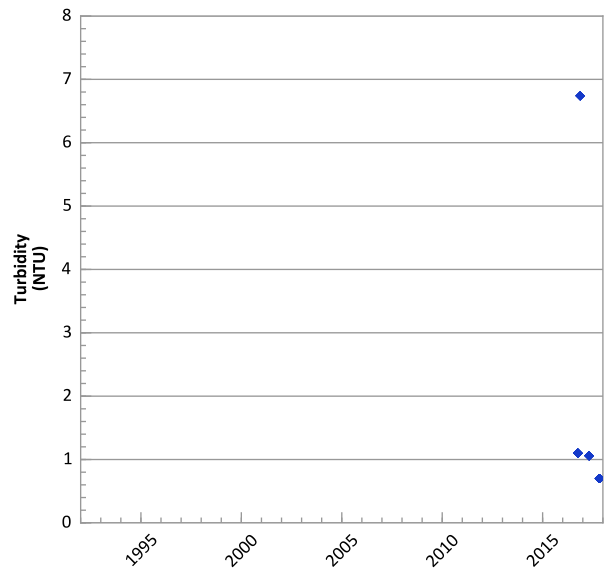
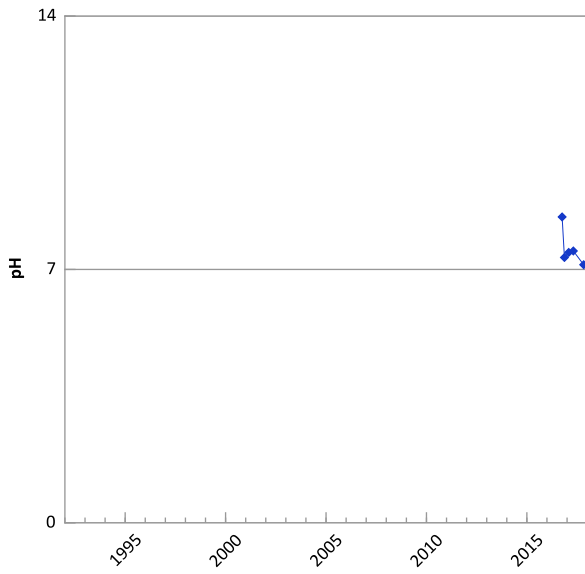
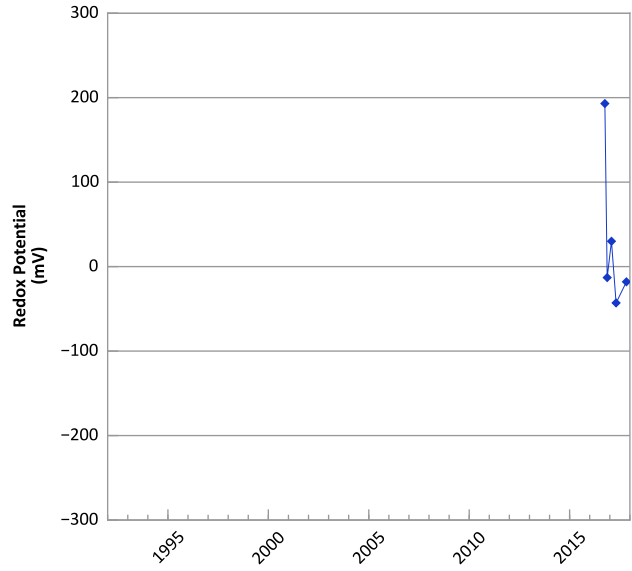
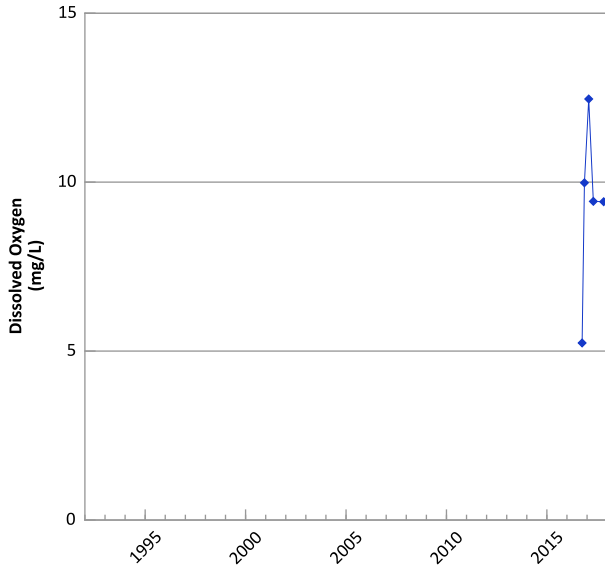
Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/09/2015 to 08/22/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

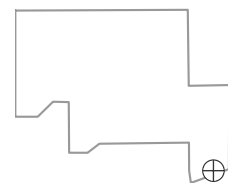


**PTX06-1182 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



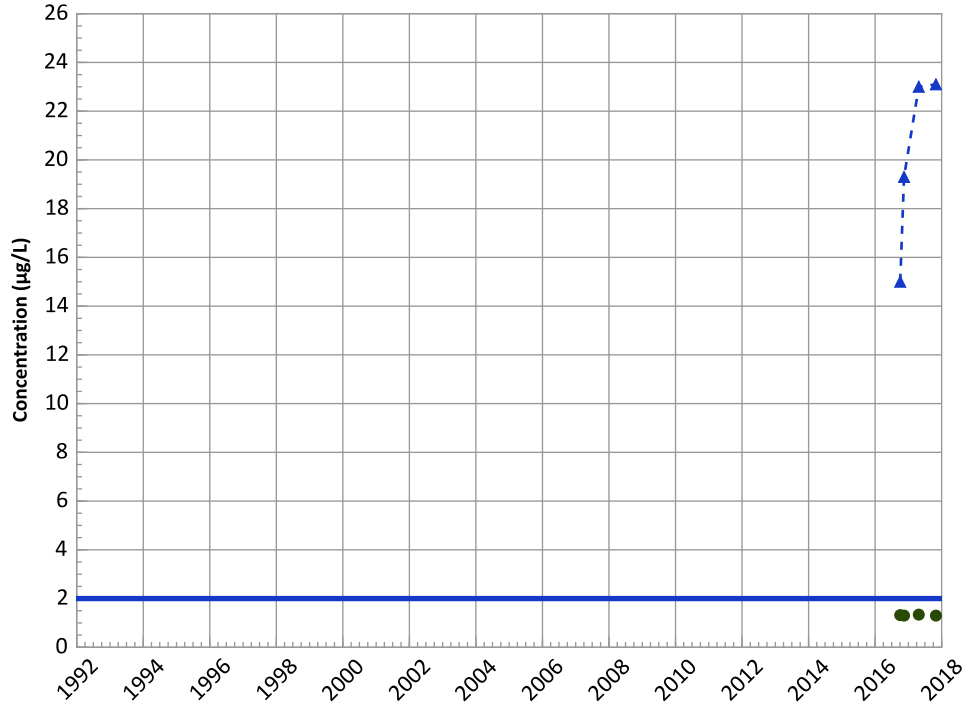
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 10/03/2016 to 10/30/2017
 Analysis Date: 03/21/2018

Well Location



PTX06-1182 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

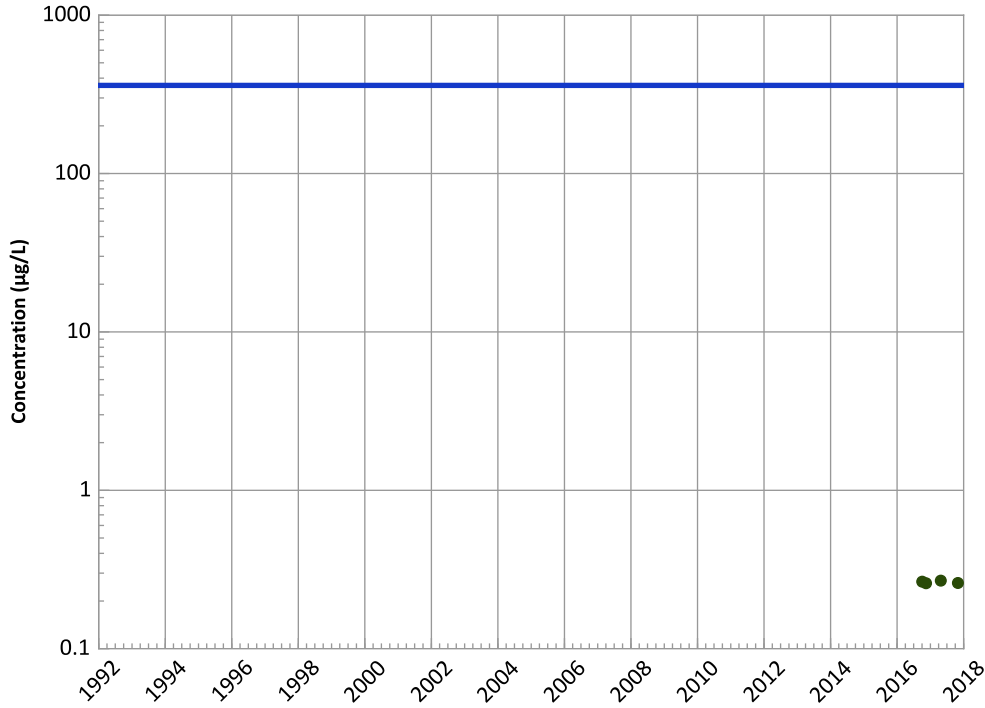
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
Increasing

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Probably Increasing

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

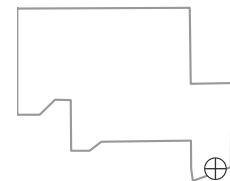
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

Well Location

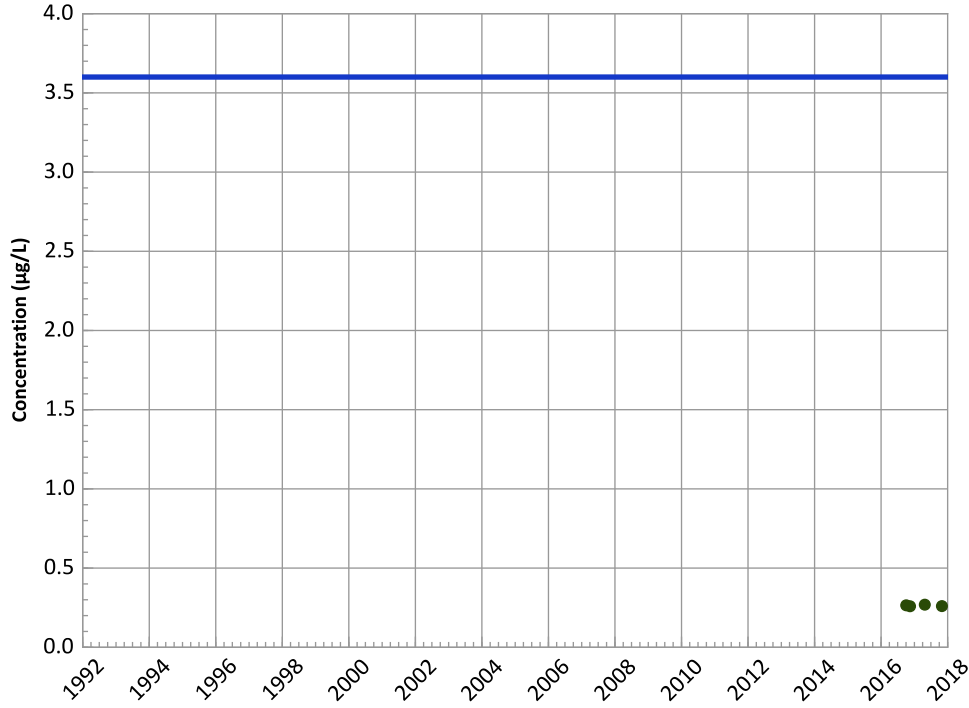


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/03/2016 to 10/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1182 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

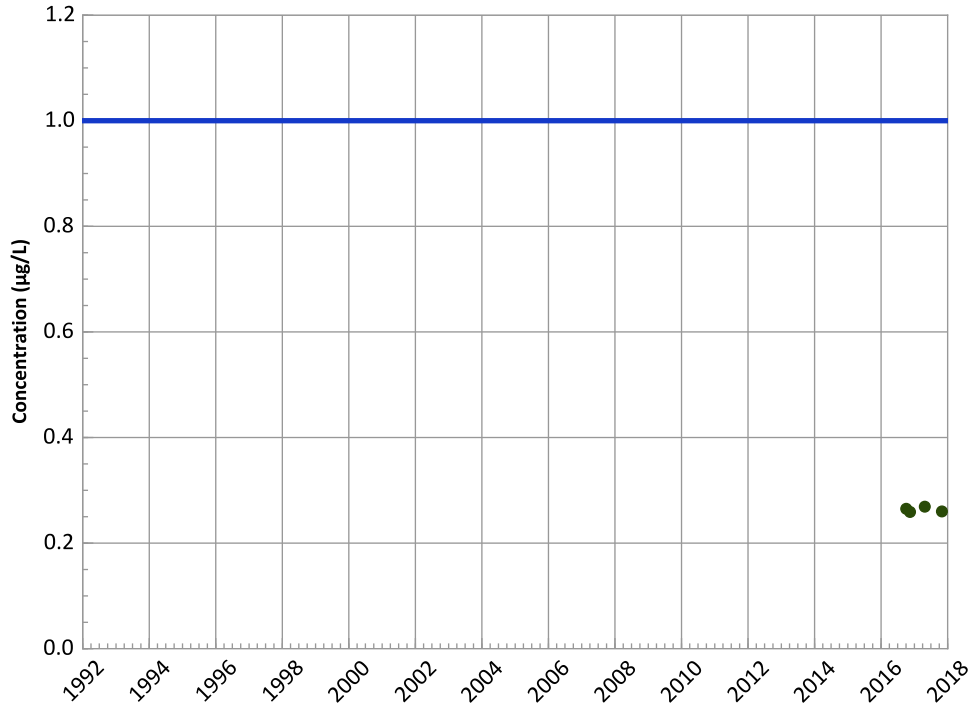
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

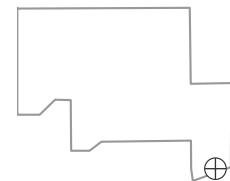
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

Well Location

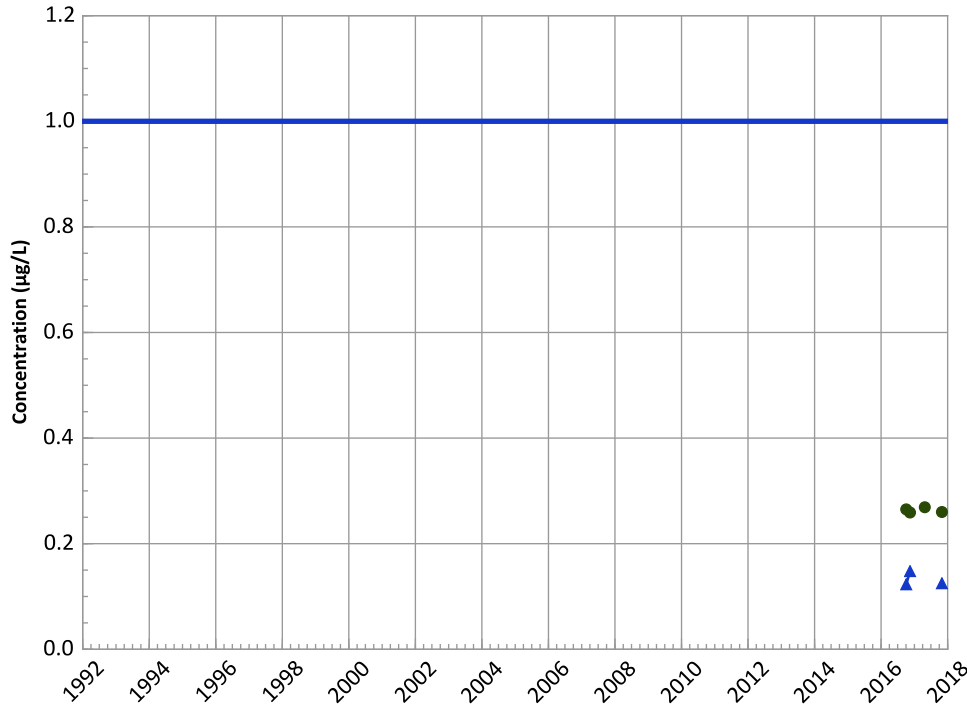


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/03/2016 to 10/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1182 in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

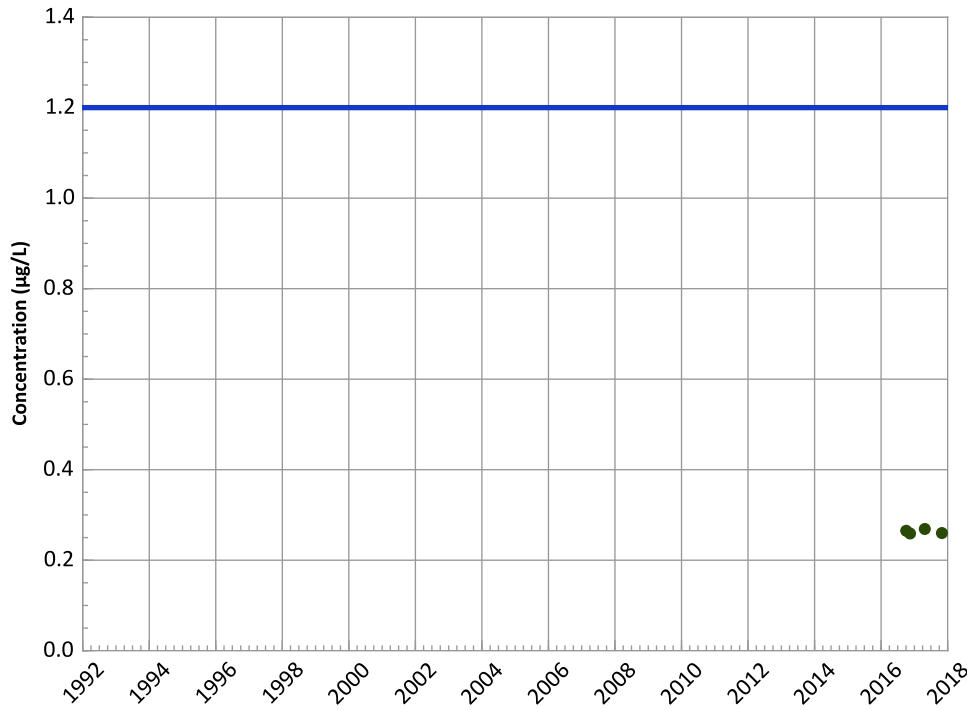
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
N/A (<4 Detections in Dataset)

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

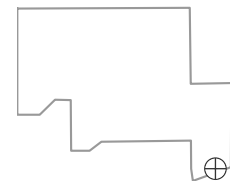
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

Well Location

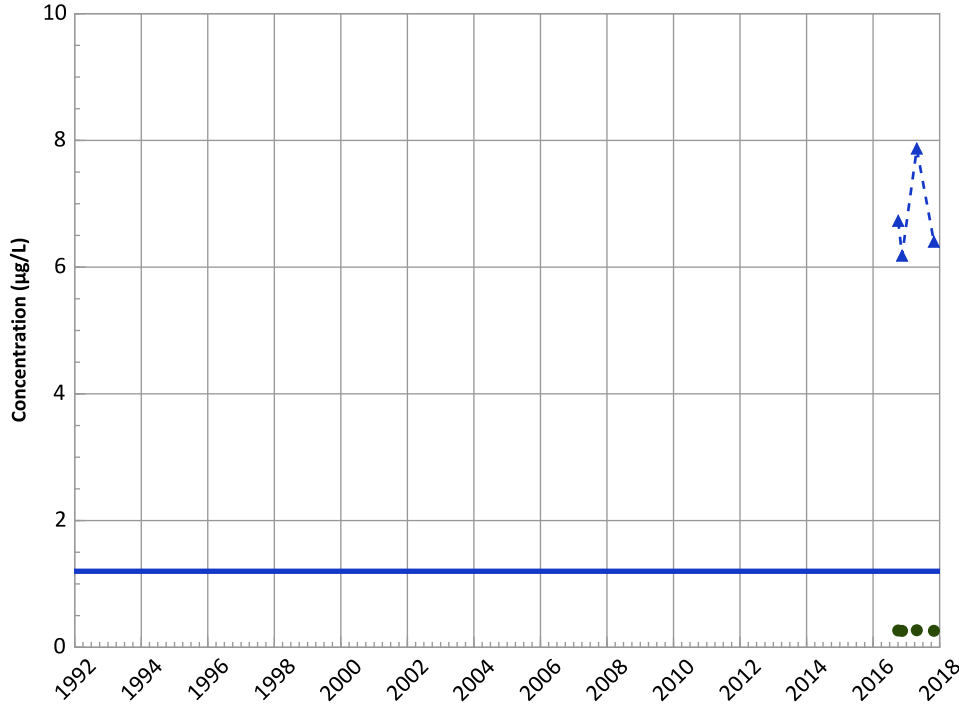


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/03/2016 to 10/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1182 in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

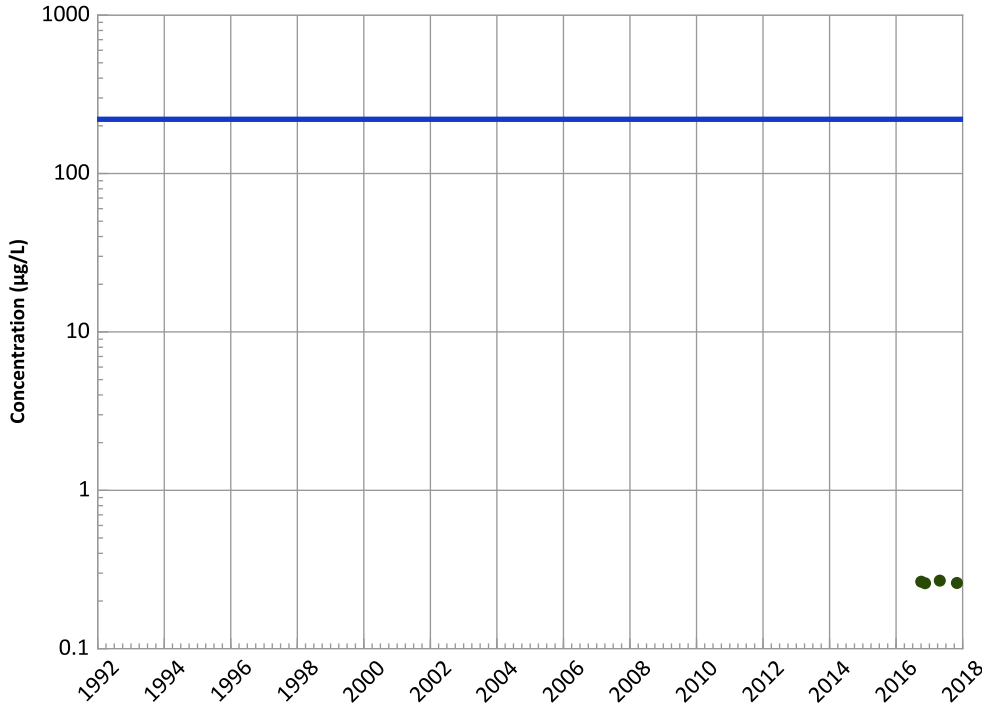
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
Stable

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
No Trend

1,3,5-Trinitrobenzene Trend



Concentration Trend

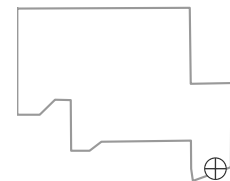
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

Well Location

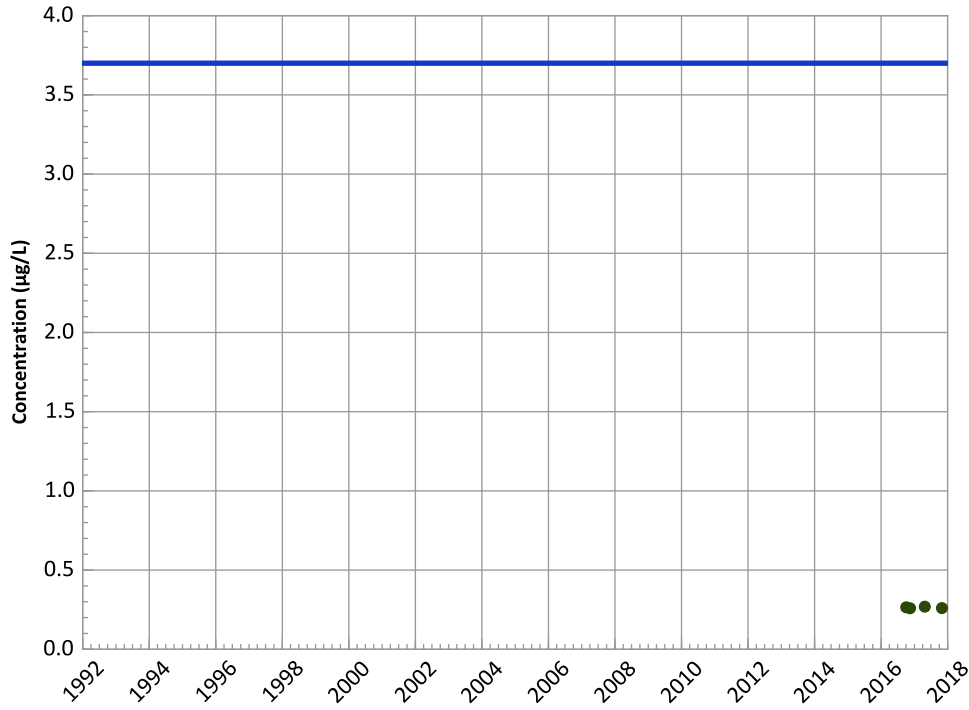


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/03/2016 to 10/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1182 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend

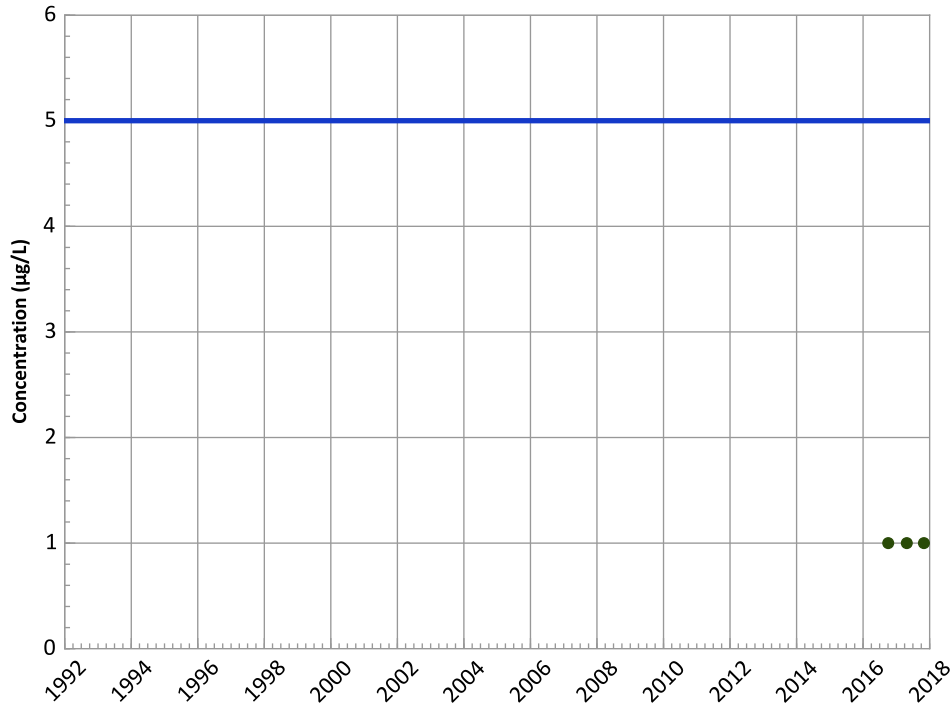


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

MAROS Linear Regression Method
Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

Tetrachloroethylene (PCE) Trend

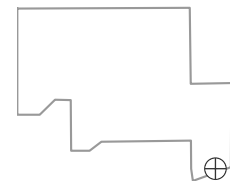


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Samples in Dataset)
All Data
N/A (<4 Samples in Dataset)

MAROS Linear Regression Method
Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

Well Location

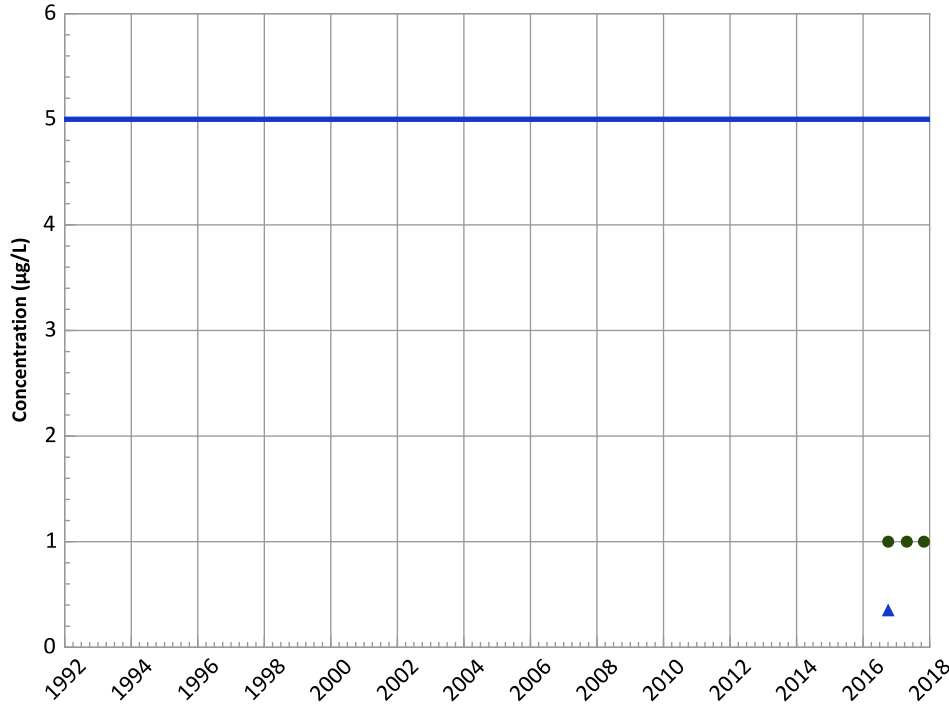


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/03/2016 to 10/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1182 in Perched Aquifer
USDOE/NNSA Pantex Plant

Trichloroethene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

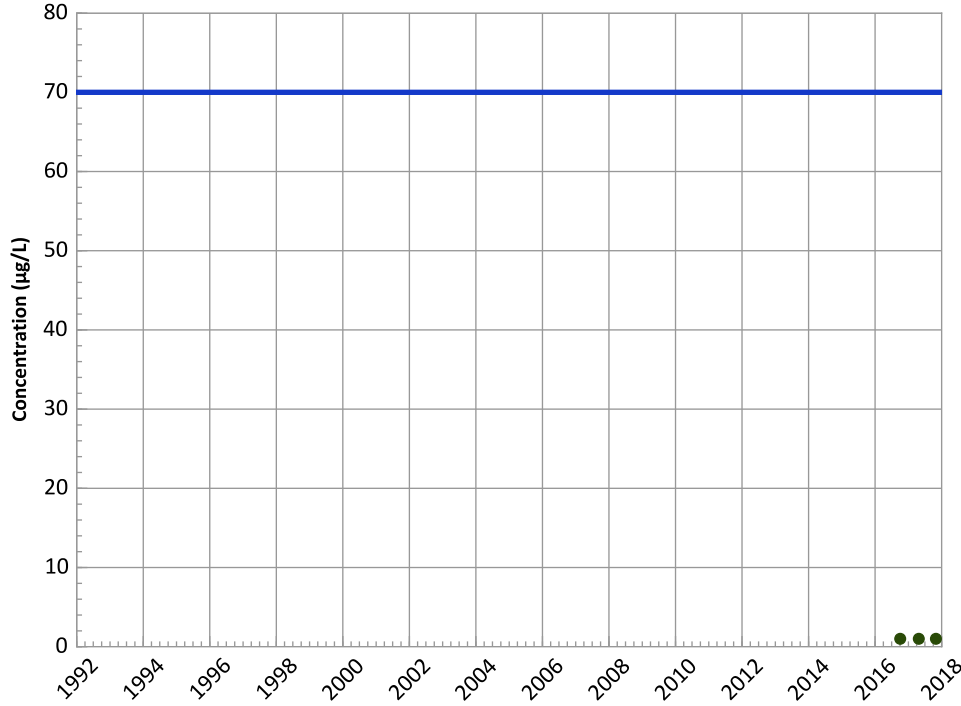
Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

cis-1,2-Dichloroethene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

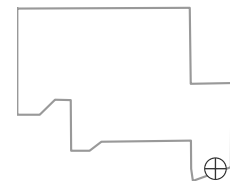
Data ():

N/A (<4 Samples in Dataset)

All Data

All Non-Detect

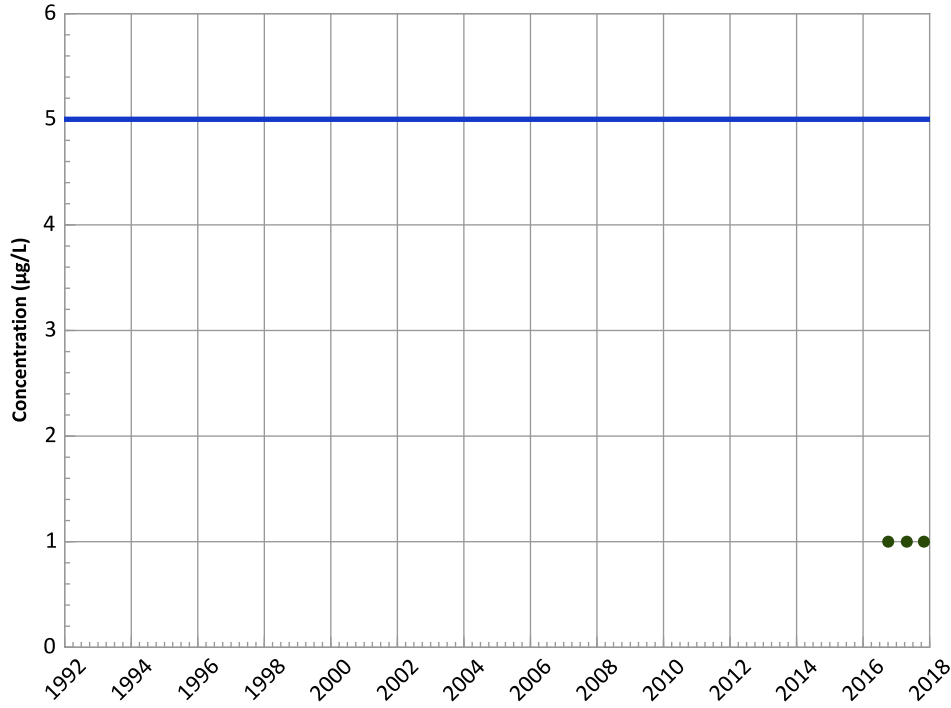
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/03/2016 to 10/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1182 in Perched Aquifer
USDOE/NNSA Pantex Plant
1,2-Dichloroethane Trend**



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

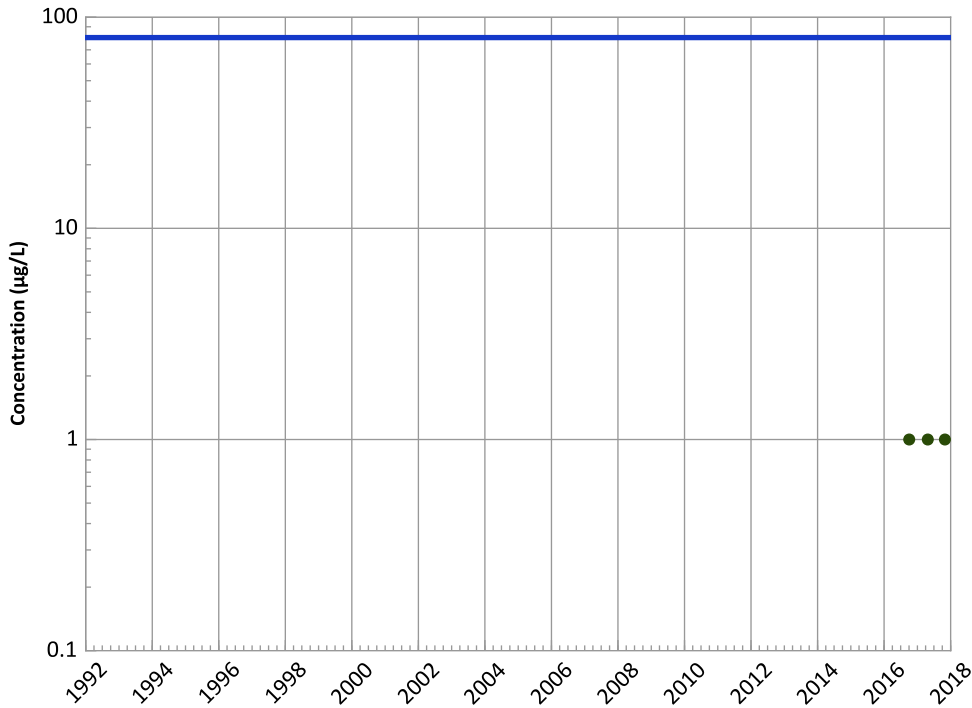
Data ():

N/A (<4 Samples in Dataset)

All Data

All Non-Detect

Chloroform Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

Data ():

N/A (<4 Samples in Dataset)

All Data

All Non-Detect

Well Location

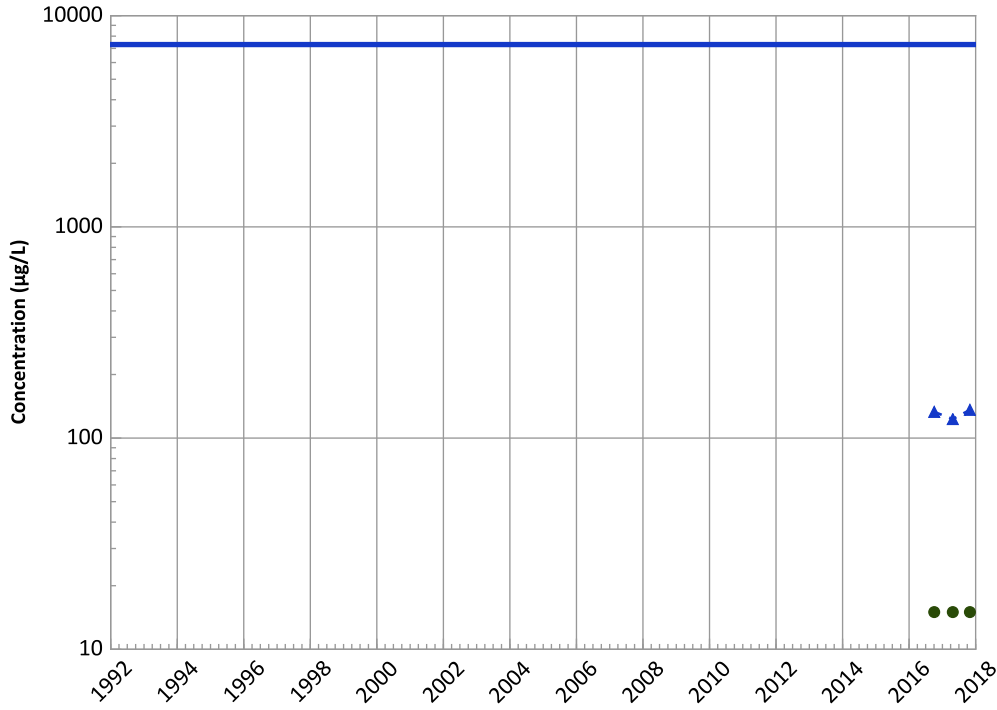


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/03/2016 to 10/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1182 in Perched Aquifer
USDOE/NNSA Pantex Plant

Boron Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

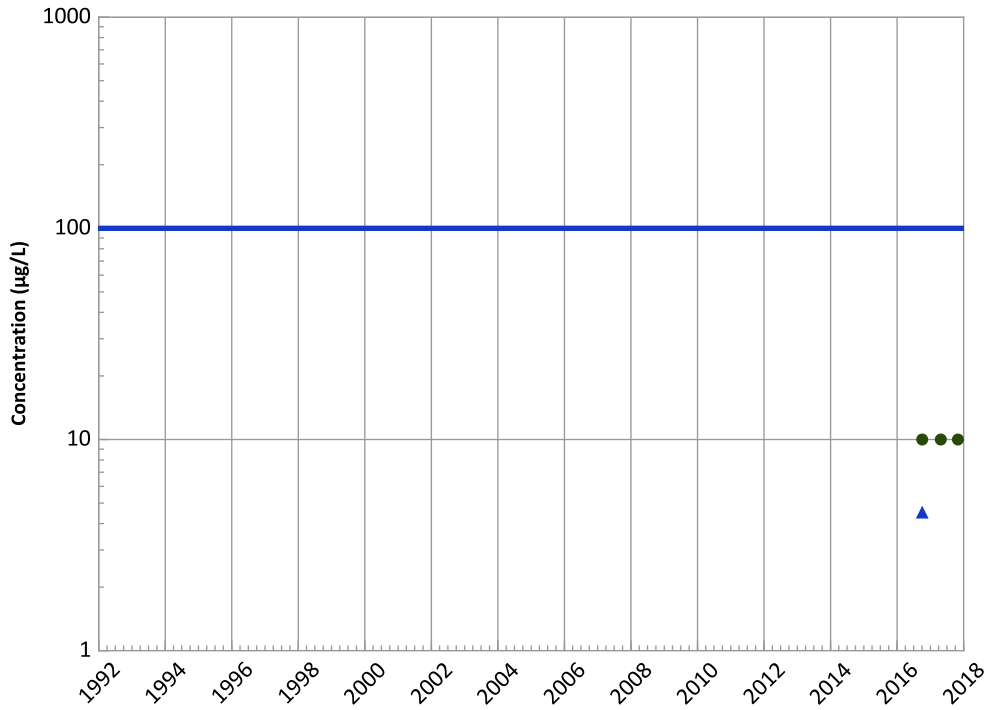
Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

Chromium, Total Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

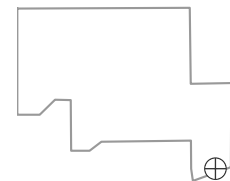
Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

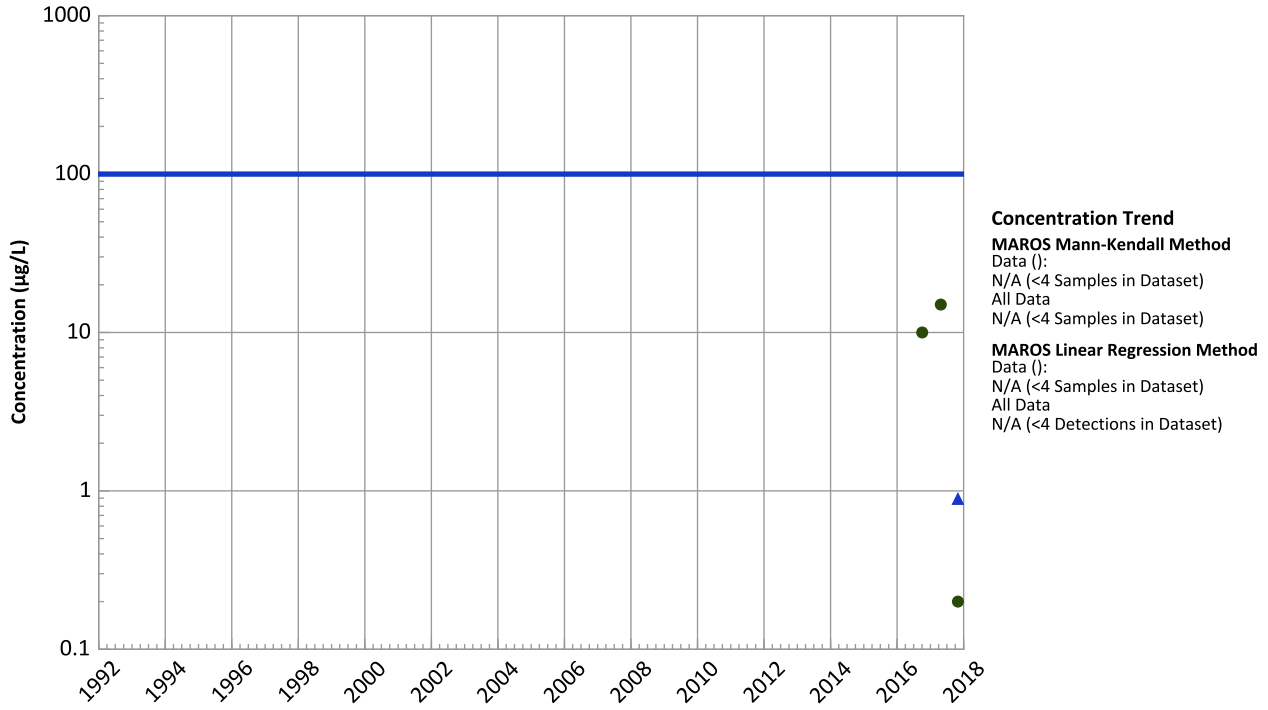
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/03/2016 to 10/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1182 in Perched Aquifer
USDOE/NNSA Pantex Plant
Chromium, Hexavalent Trend**



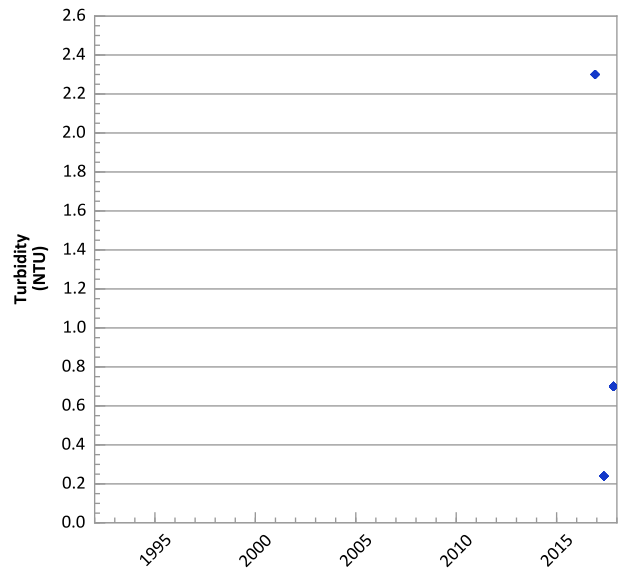
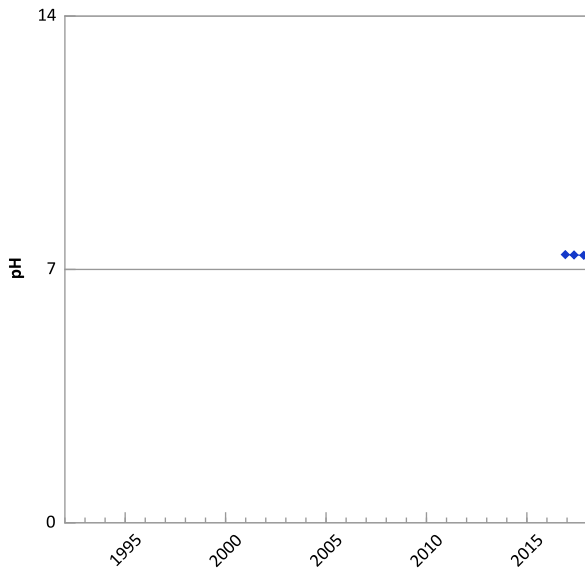
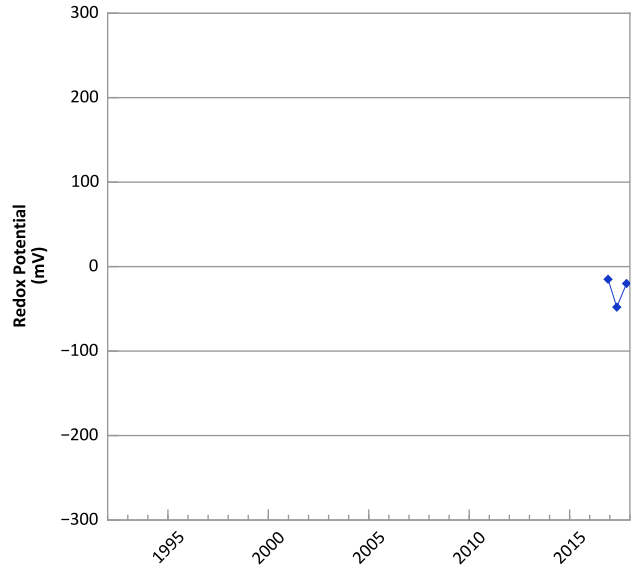
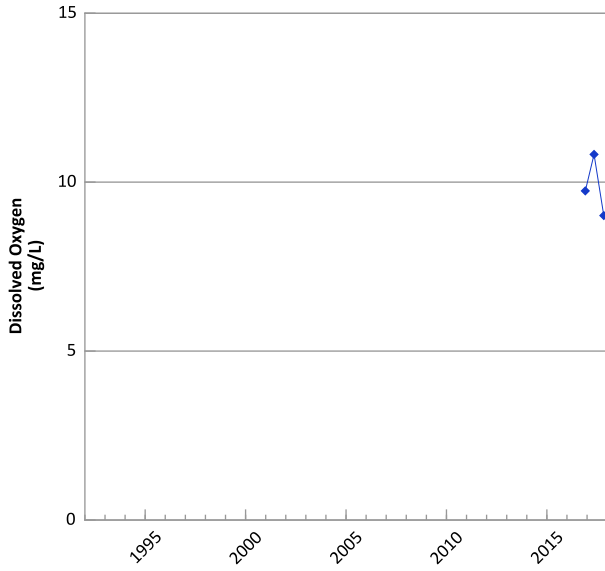
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 10/03/2016 to 10/30/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

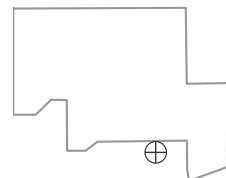


PTX06-1183 in Perched Aquifer
 USDOE/NNSA Pantex Plant
 Field Parameters



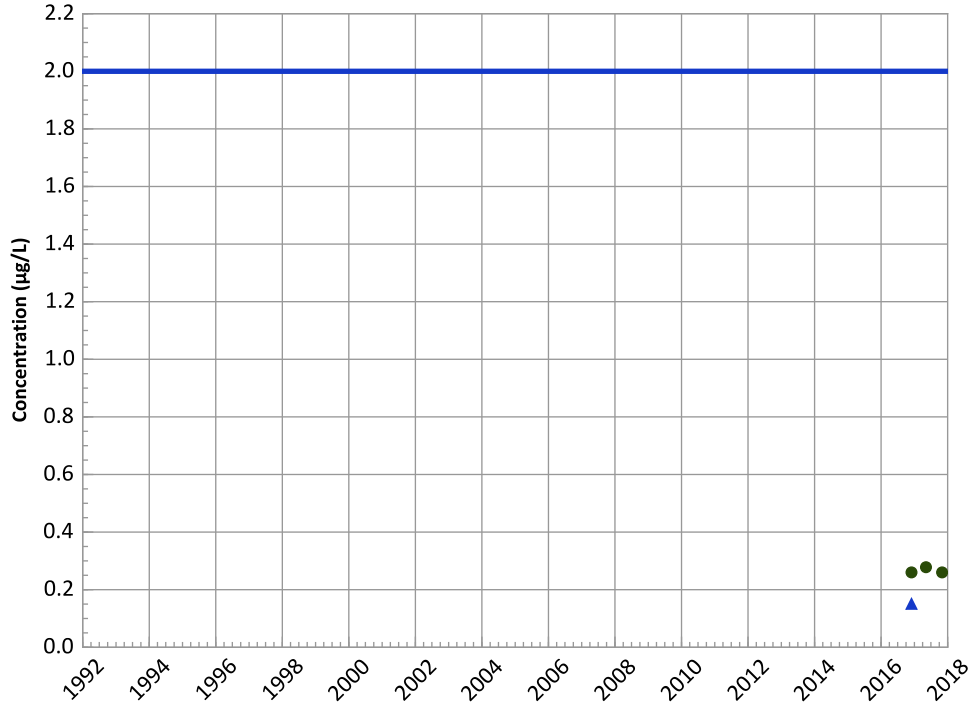
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 11/30/2016 to 11/01/2017
 Analysis Date: 03/21/2018

Well Location



PTX06-1183 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

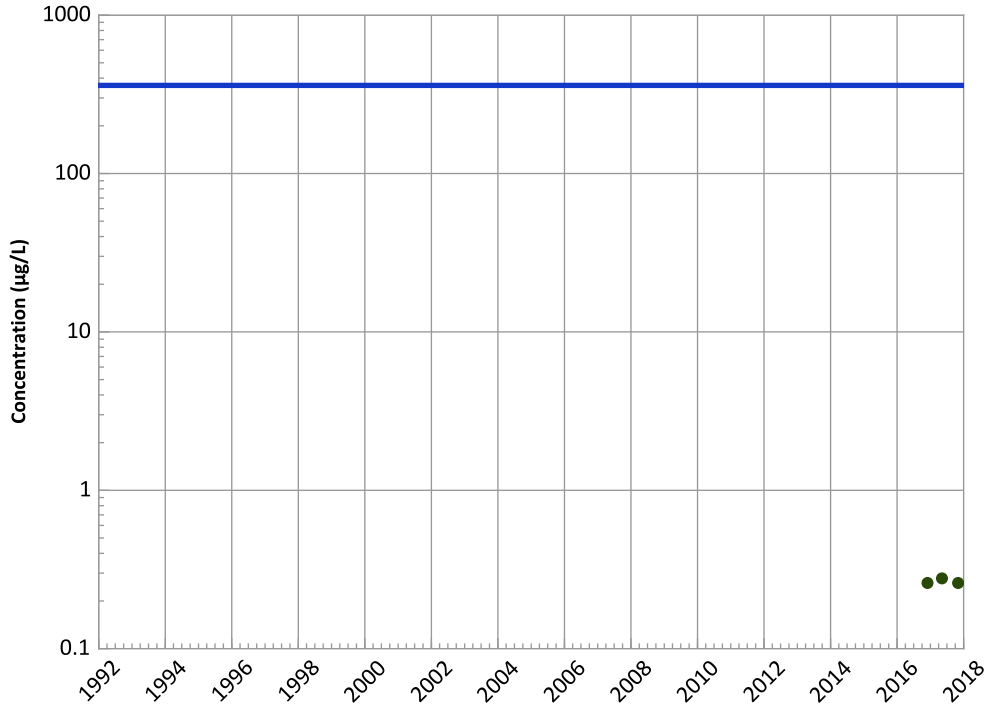
Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

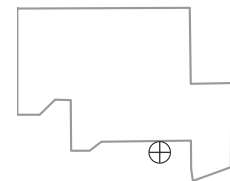
Data ():

N/A (<4 Samples in Dataset)

All Data

All Non-Detect

Well Location

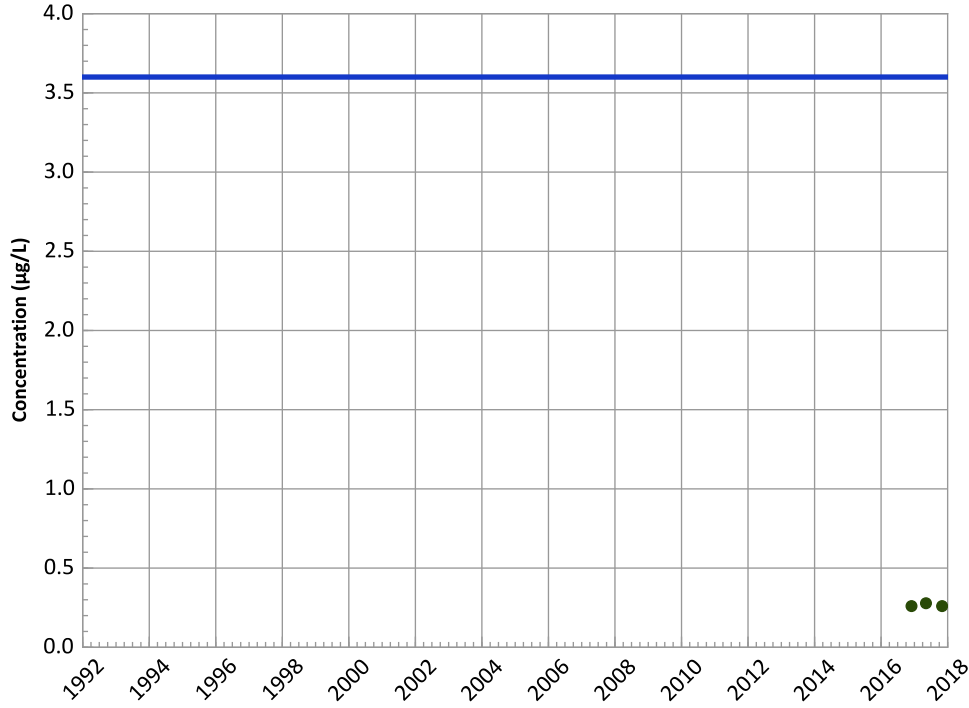


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/30/2016 to 11/01/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1183 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

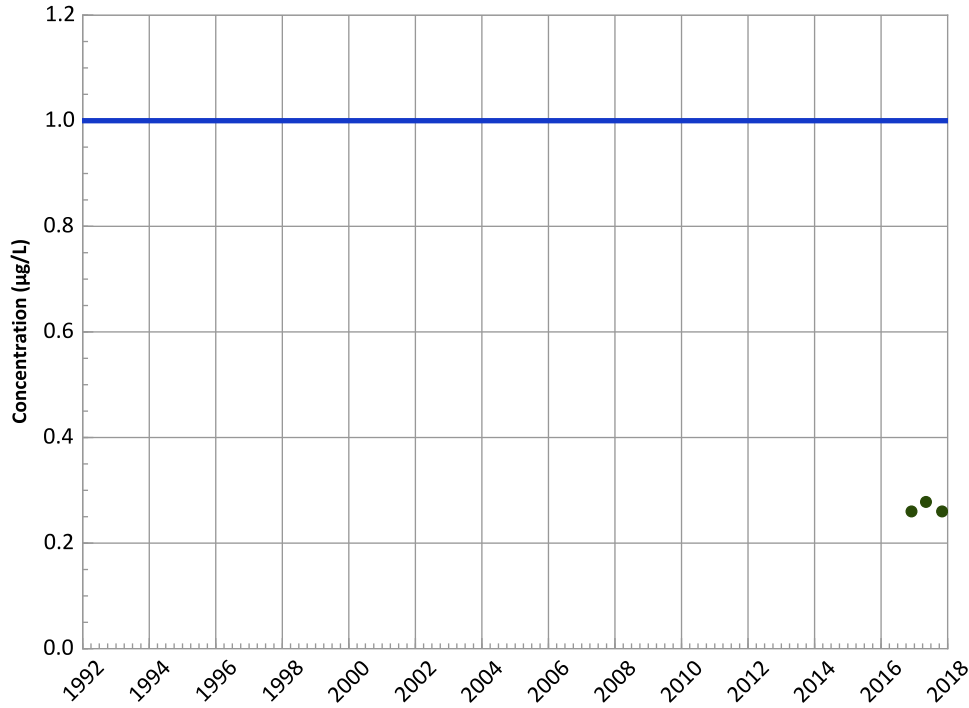
Data ():

N/A (<4 Samples in Dataset)

All Data

All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

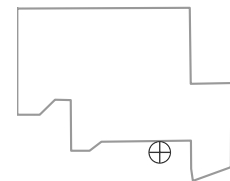
Data ():

N/A (<4 Samples in Dataset)

All Data

All Non-Detect

Well Location

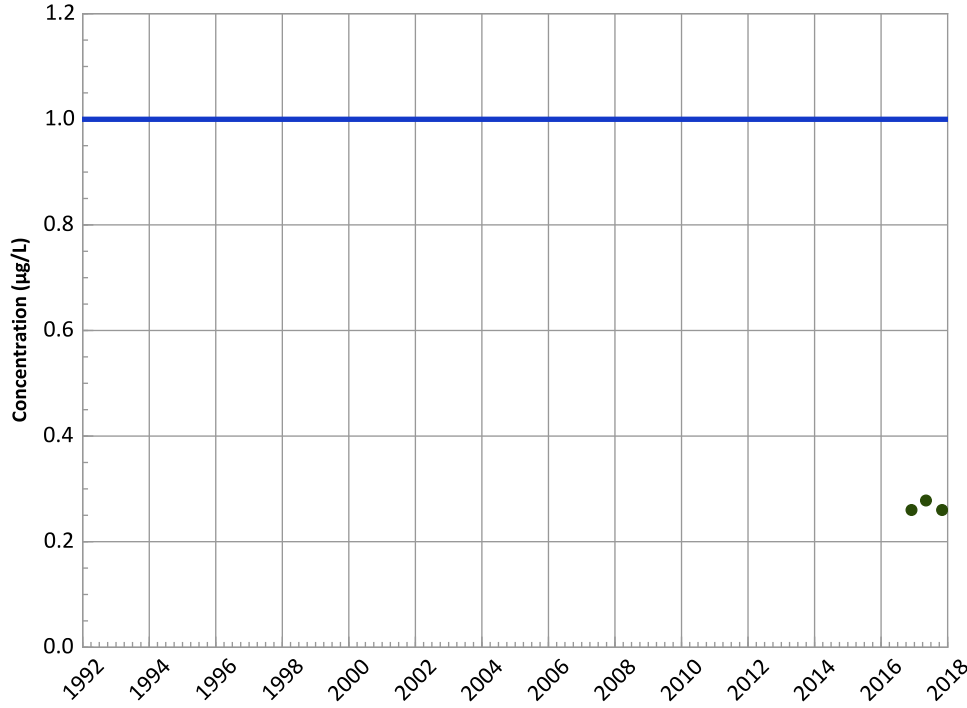


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/30/2016 to 11/01/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1183 in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

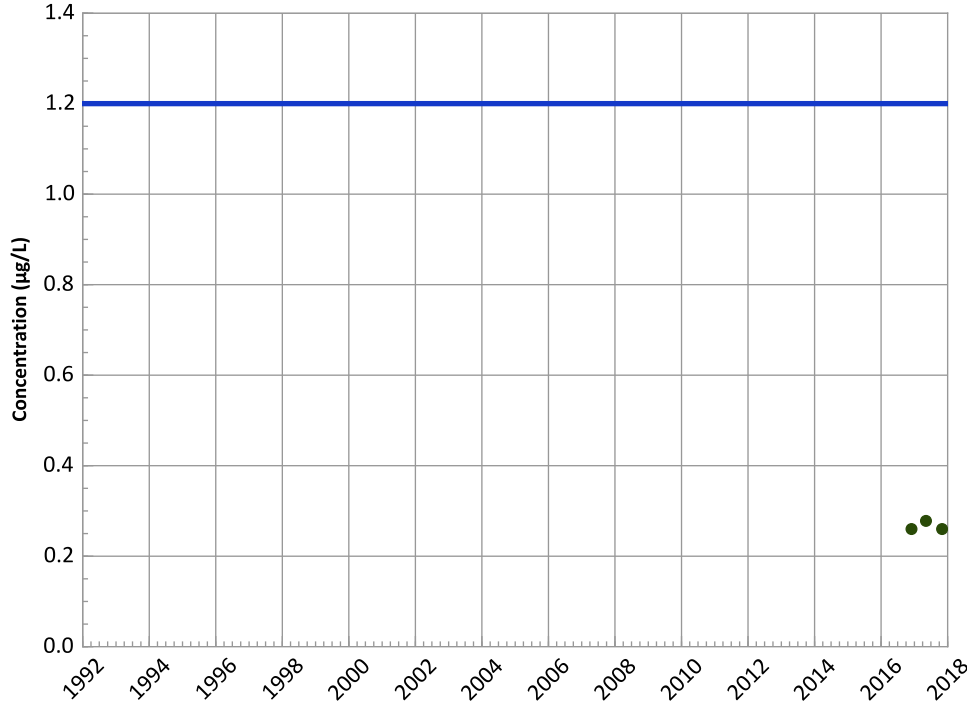
Data ():

N/A (<4 Samples in Dataset)

All Data

All Non-Detect

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

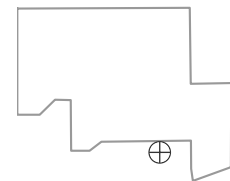
Data ():

N/A (<4 Samples in Dataset)

All Data

All Non-Detect

Well Location

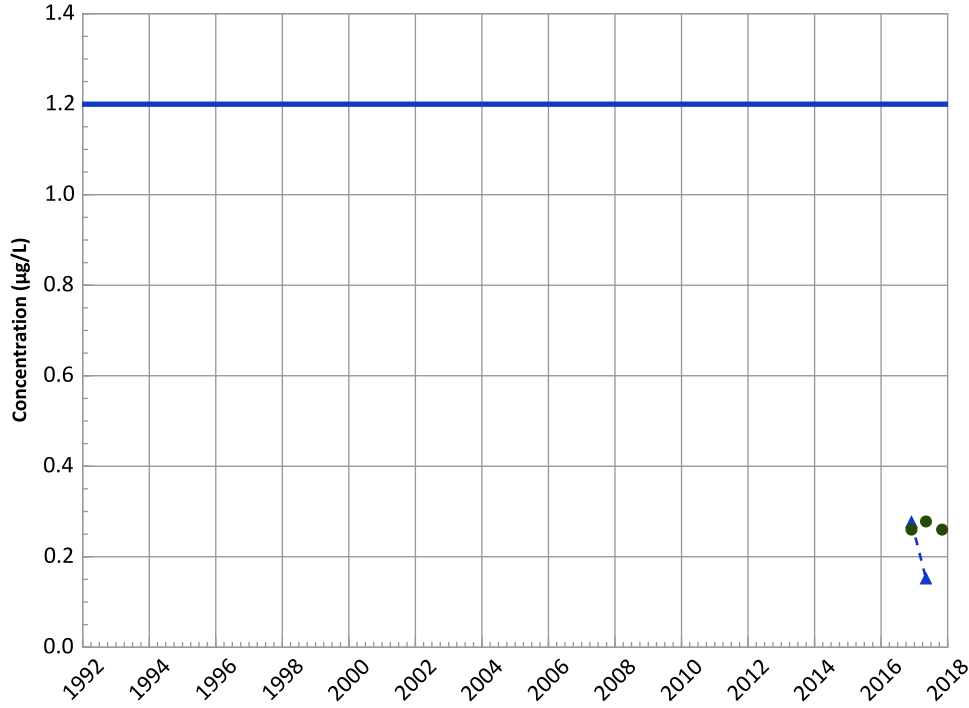


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/30/2016 to 11/01/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1183 in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

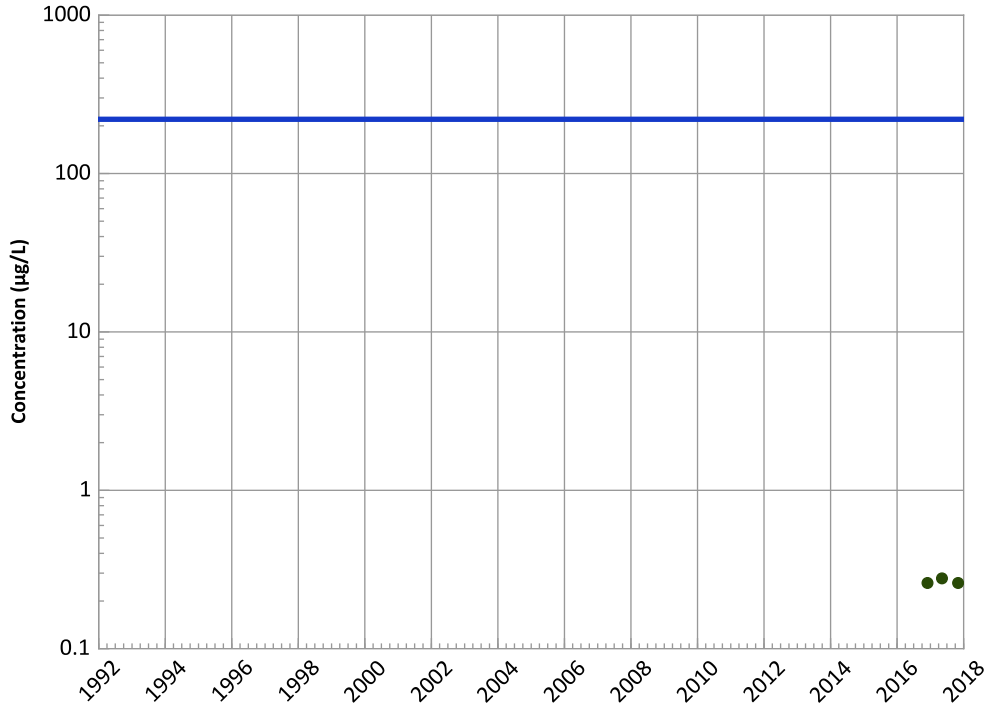
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
N/A (<4 Detections in Dataset)

1,3,5-Trinitrobenzene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
N/A (<4 Samples in Dataset)

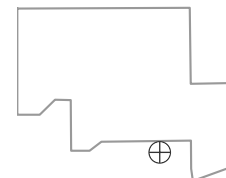
MAROS Linear Regression Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/30/2016 to 11/01/2017
Analysis Date: 03/21/2018

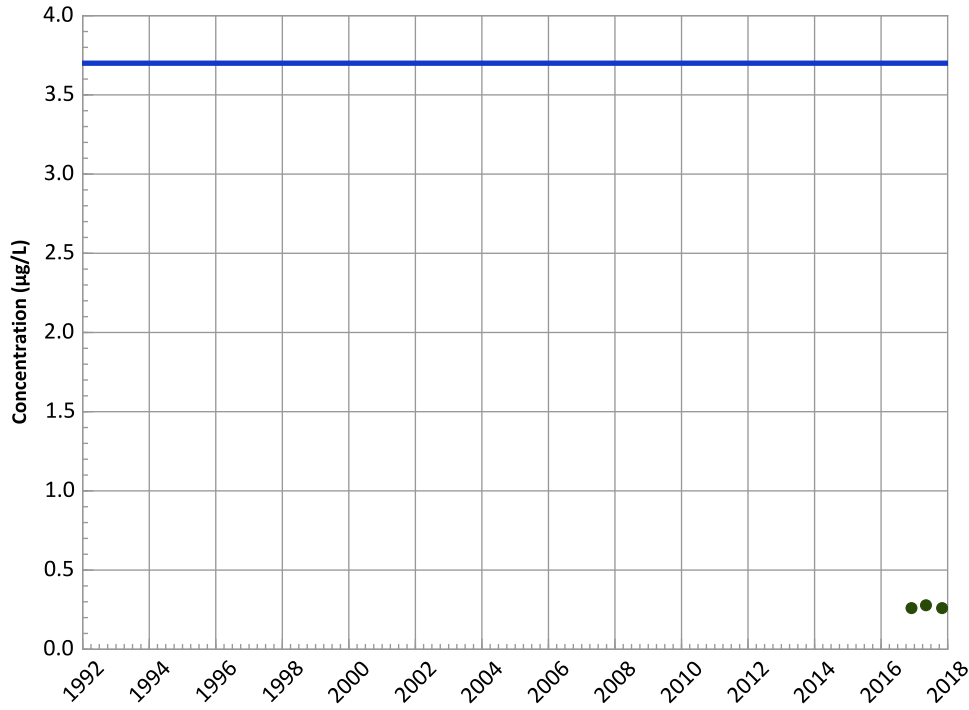
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1183 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

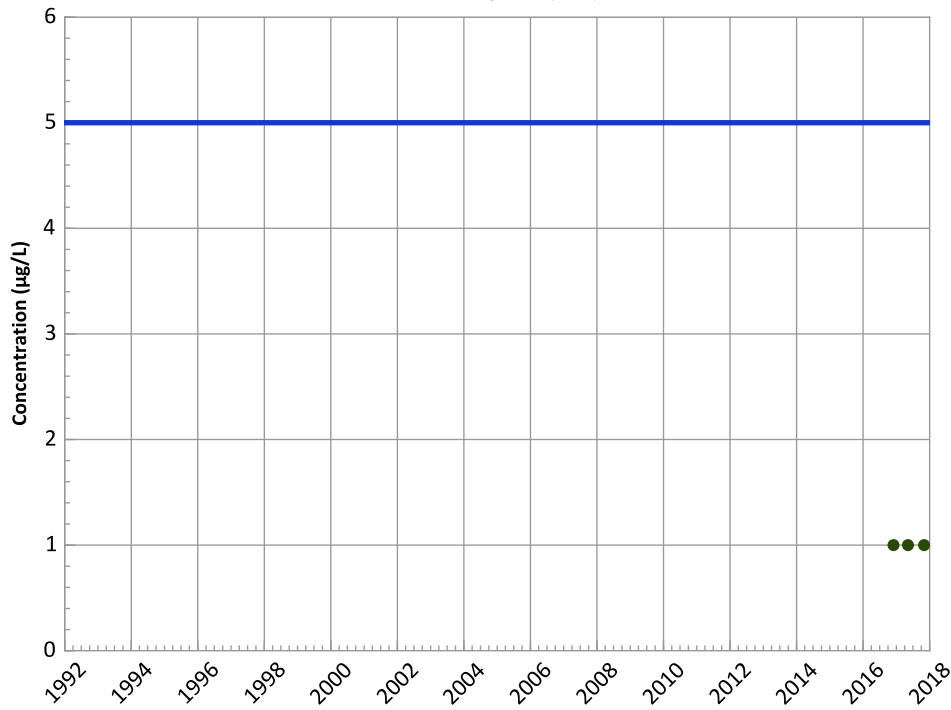
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

Tetrachloroethylene (PCE) Trend



Concentration Trend

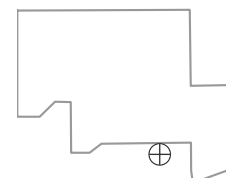
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

Well Location

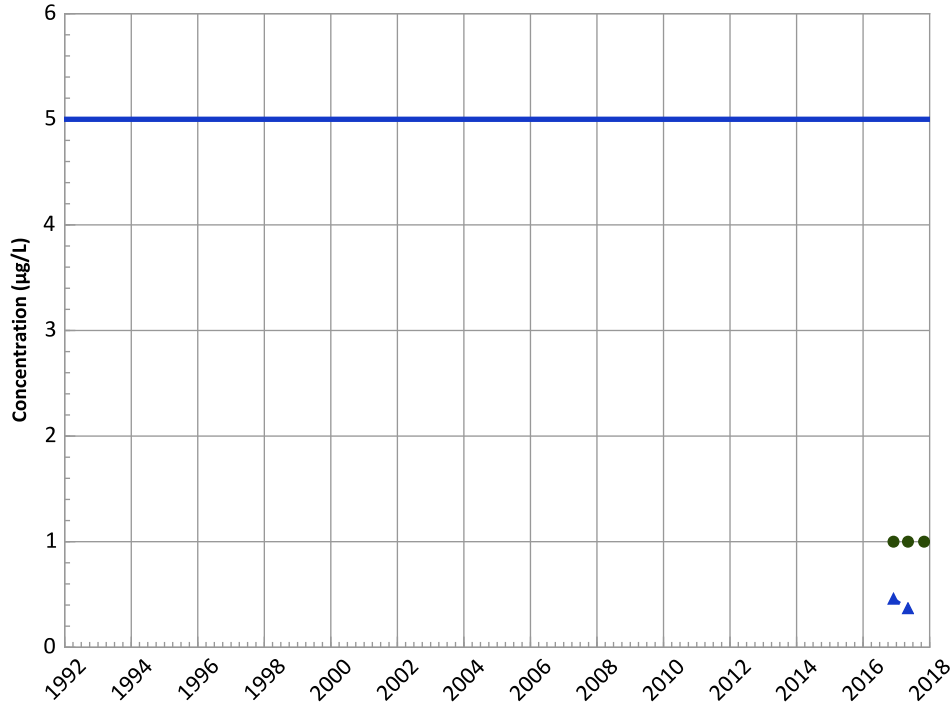


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/30/2016 to 11/01/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1183 in Perched Aquifer
USDOE/NNSA Pantex Plant

Trichloroethene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

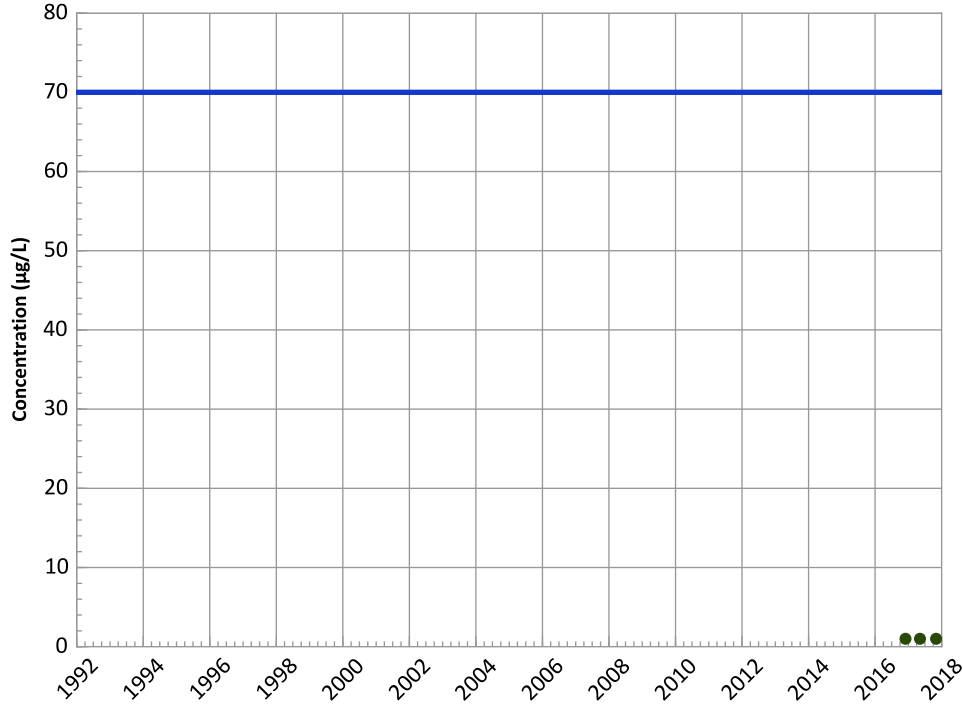
Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

cis-1,2-Dichloroethene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

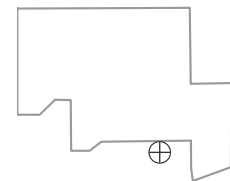
Data ():

N/A (<4 Samples in Dataset)

All Data

All Non-Detect

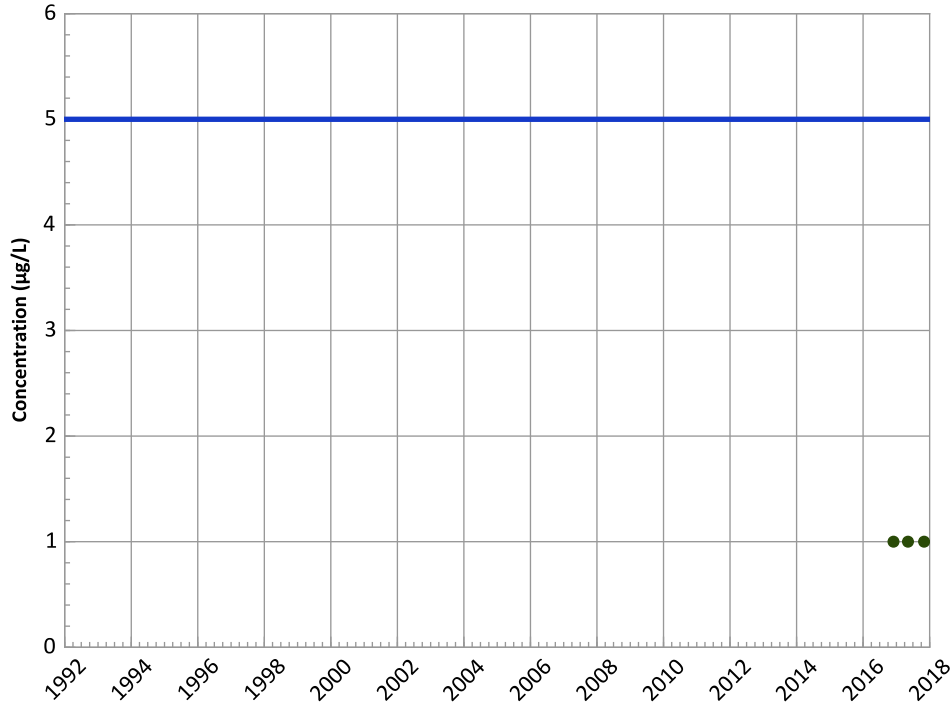
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/30/2016 to 11/01/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1183 in Perched Aquifer
USDOE/NNSA Pantex Plant
1,2-Dichloroethane Trend**



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

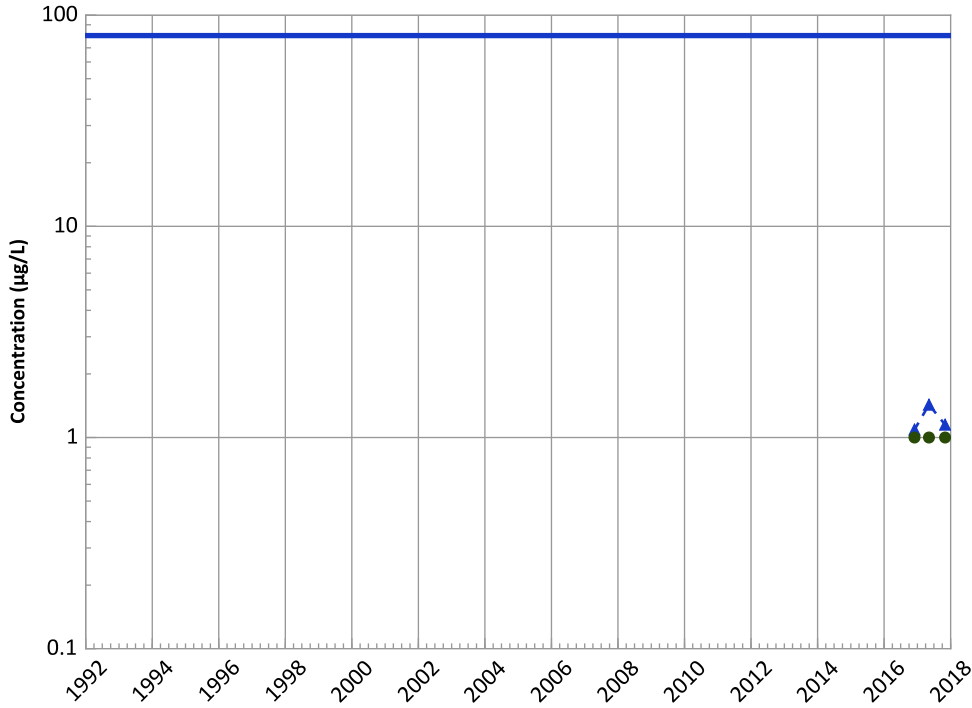
Data ():

N/A (<4 Samples in Dataset)

All Data

All Non-Detect

Chloroform Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

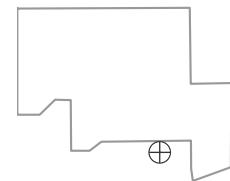
Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

Well Location

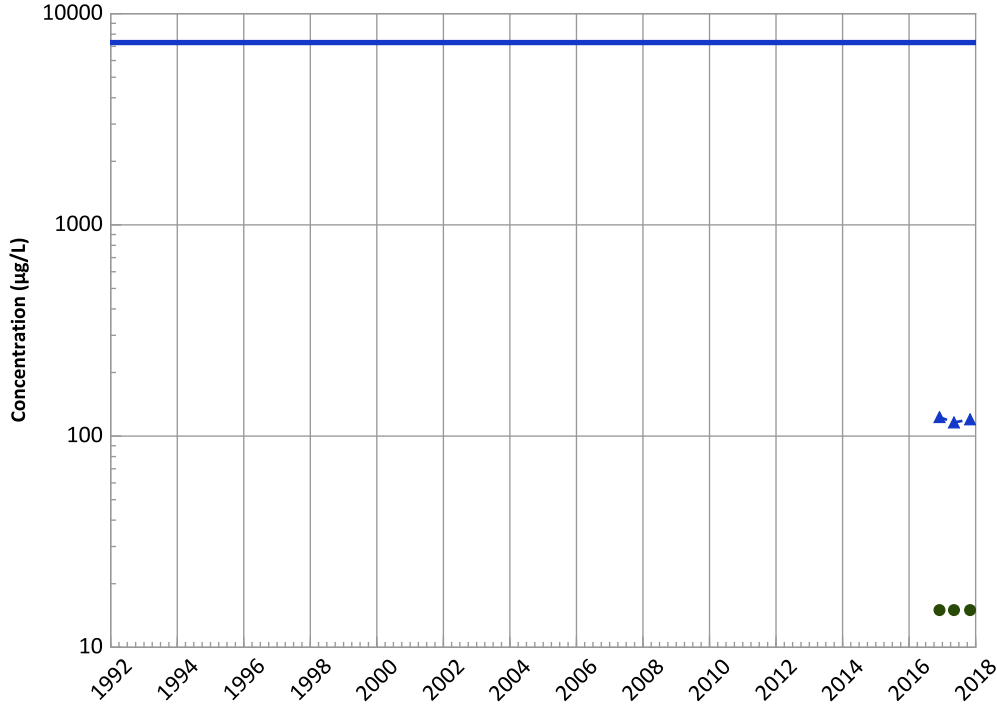


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/30/2016 to 11/01/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1183 in Perched Aquifer
USDOE/NNSA Pantex Plant

Boron Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

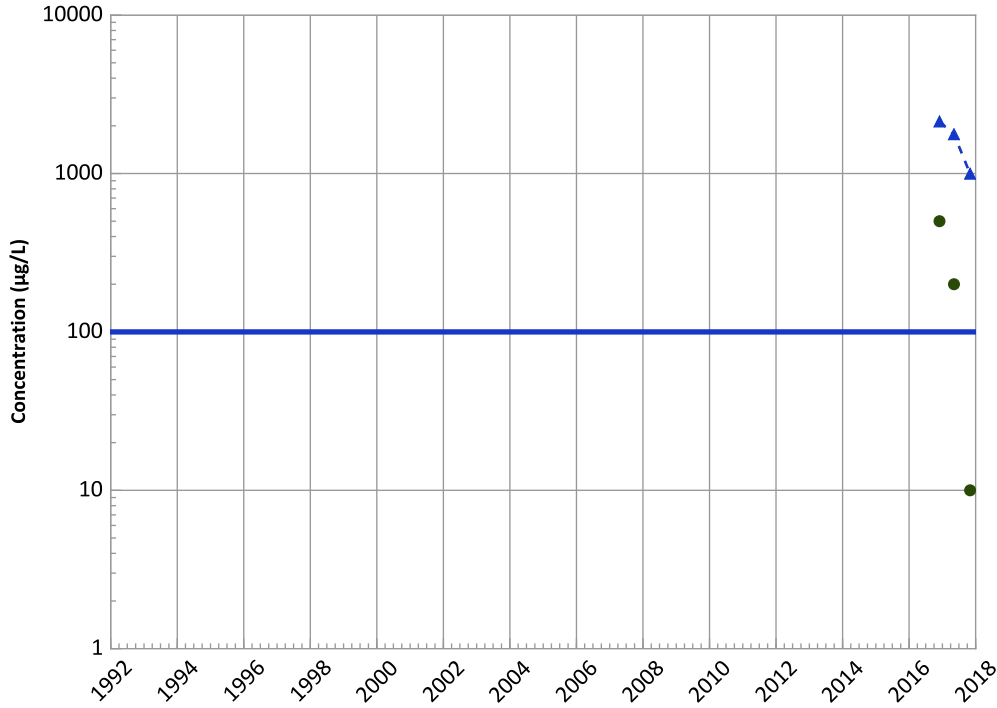
Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

Chromium, Total Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

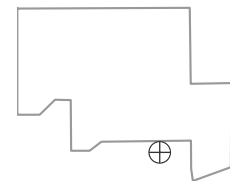
Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

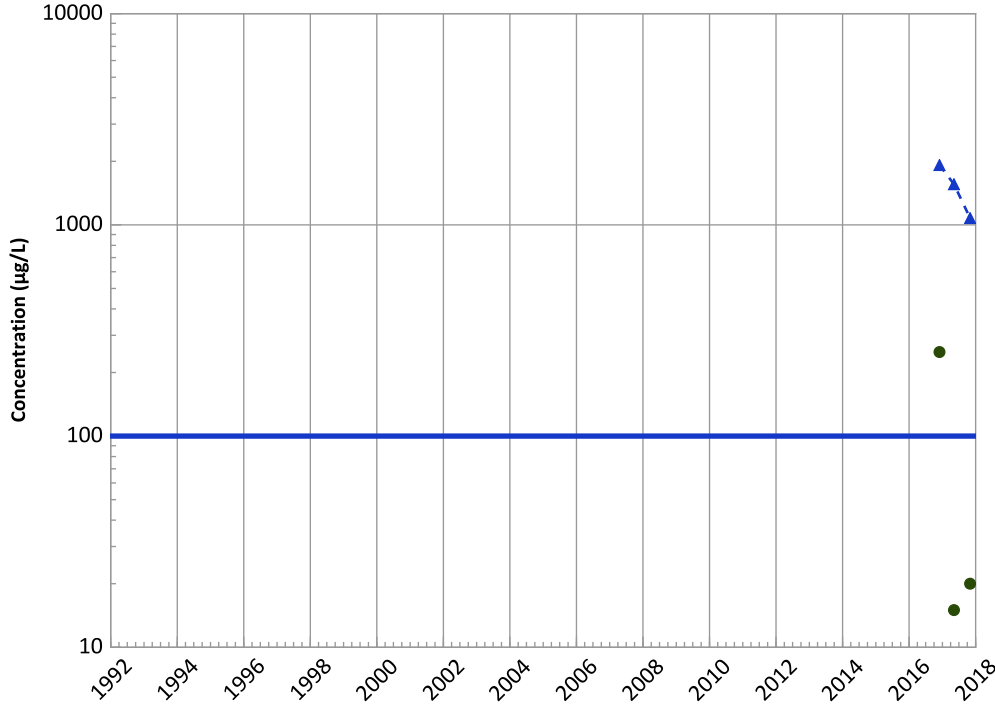
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/30/2016 to 11/01/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1183 in Perched Aquifer
USDOE/NNSA Pantex Plant
Chromium, Hexavalent Trend**



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

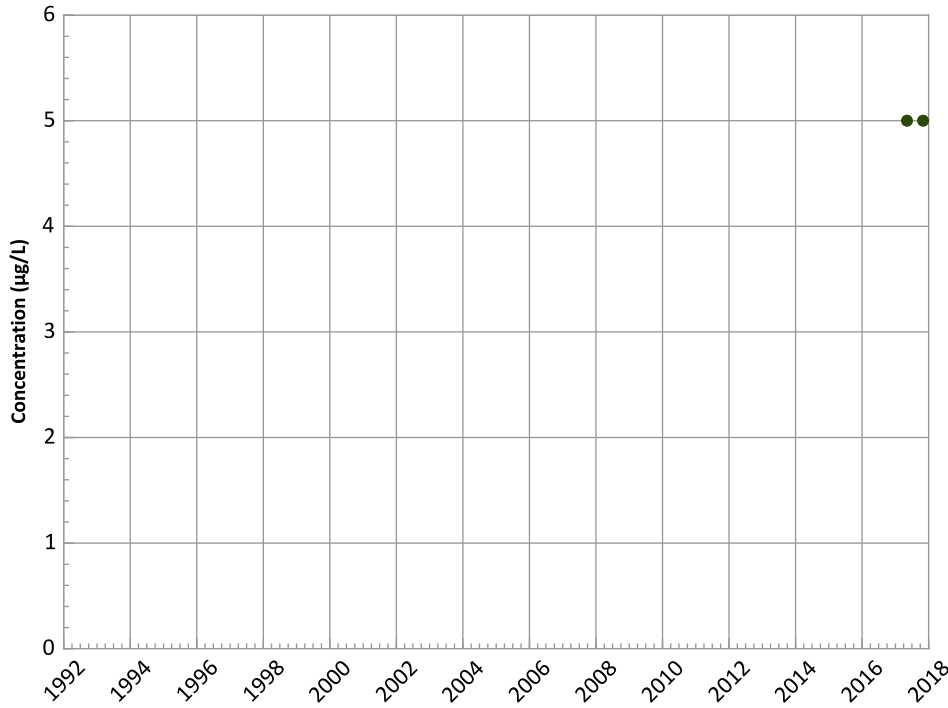
Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

Manganese Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

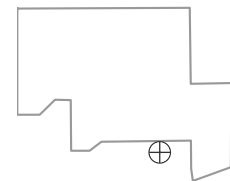
Data ():

N/A (<4 Samples in Dataset)

All Data

All Non-Detect

Well Location

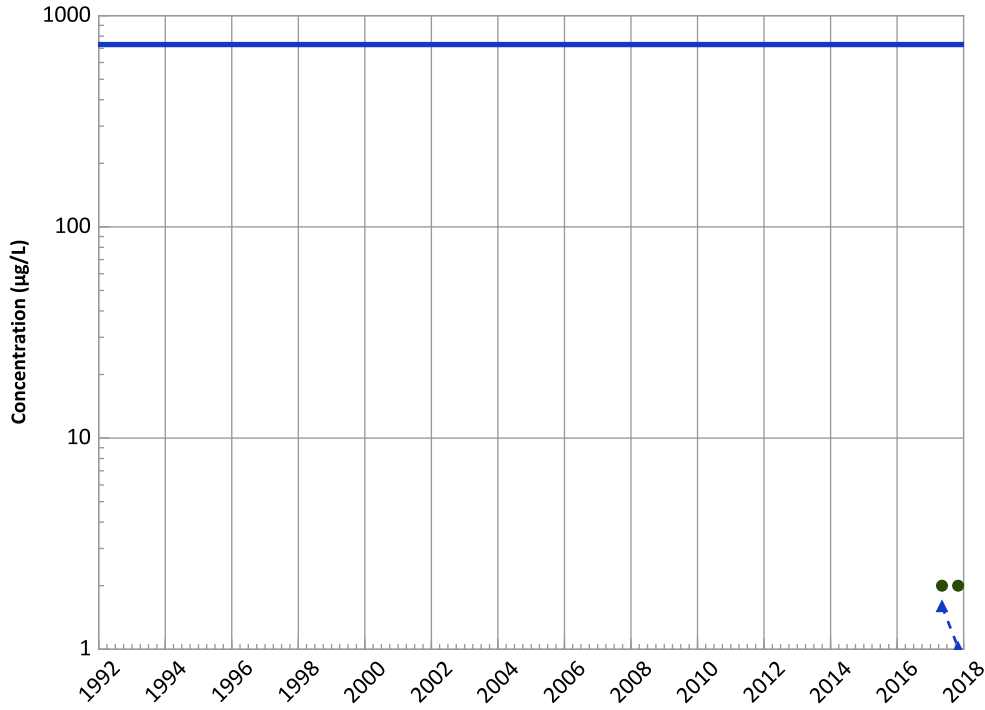


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/30/2016 to 11/01/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1183 in Perched Aquifer
USDOE/NNSA Pantex Plant

Nickel Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

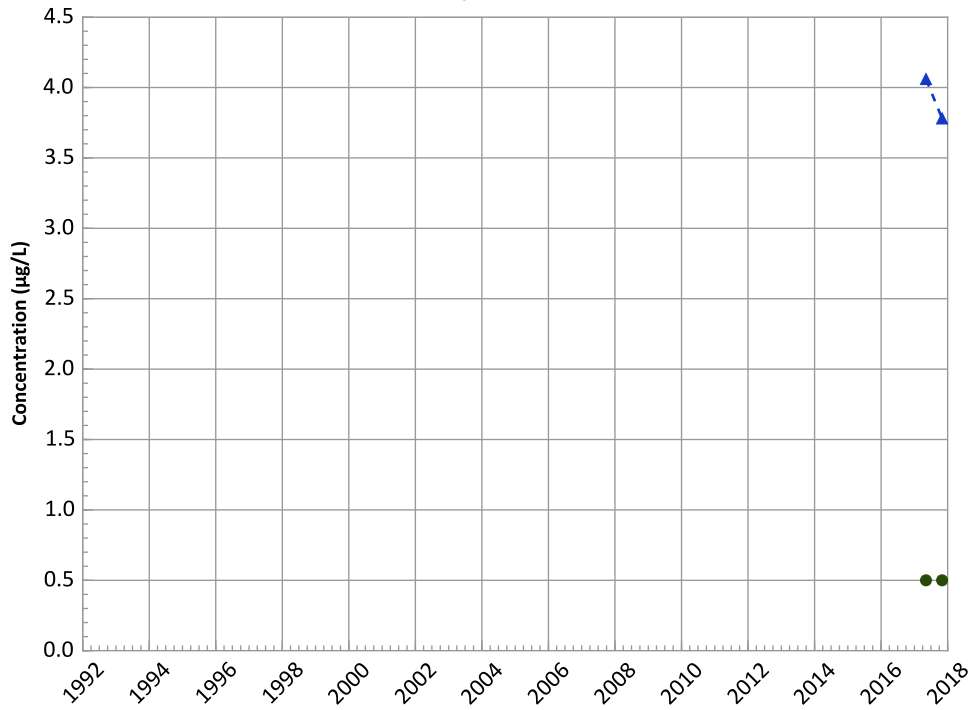
Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Detections in Dataset)

Molybdenum Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

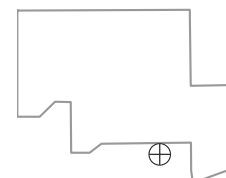
Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Detections in Dataset)

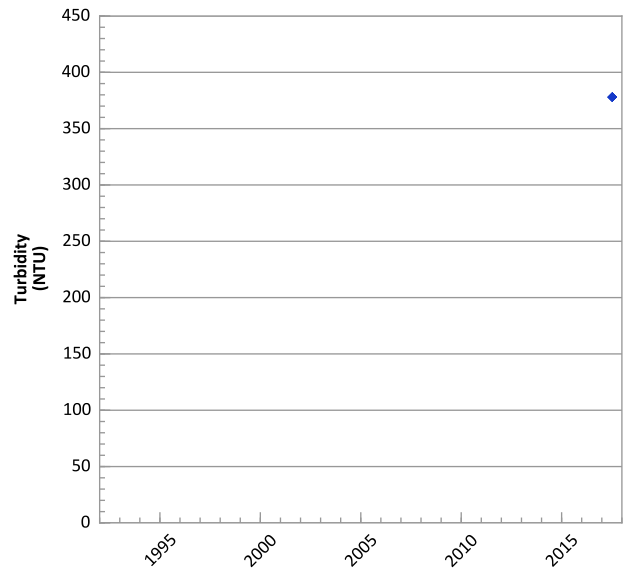
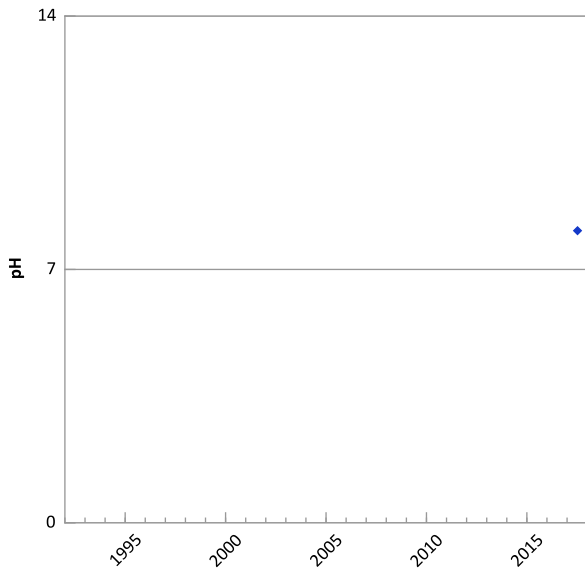
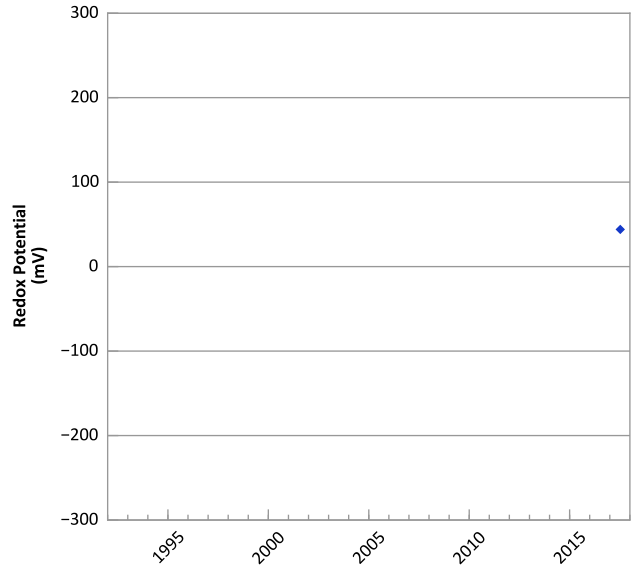
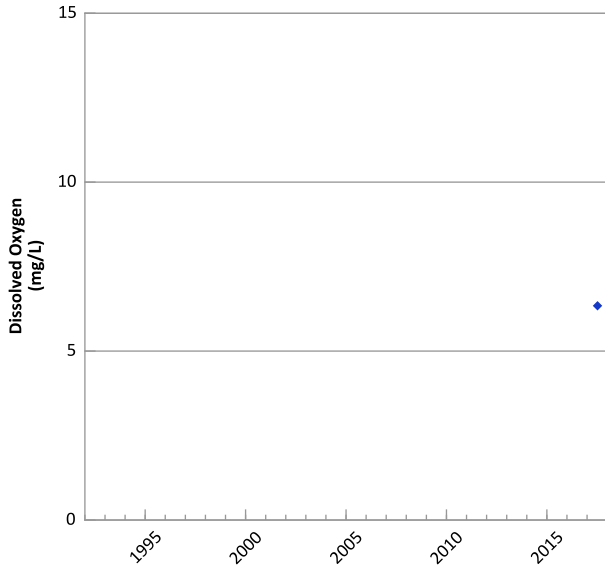
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/30/2016 to 11/01/2017
Analysis Date: 03/21/2018

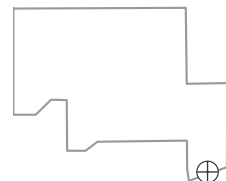
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1184 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters



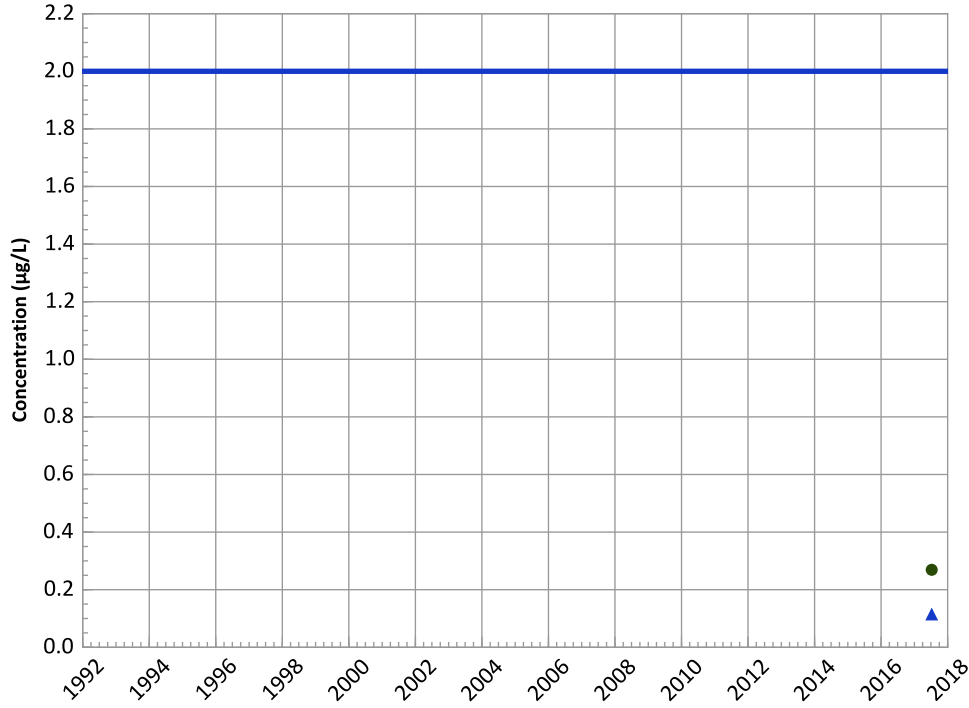
Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 07/10/2017 to 07/10/2017
Analysis Date: 03/21/2018

Well Location



PTX06-1184 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

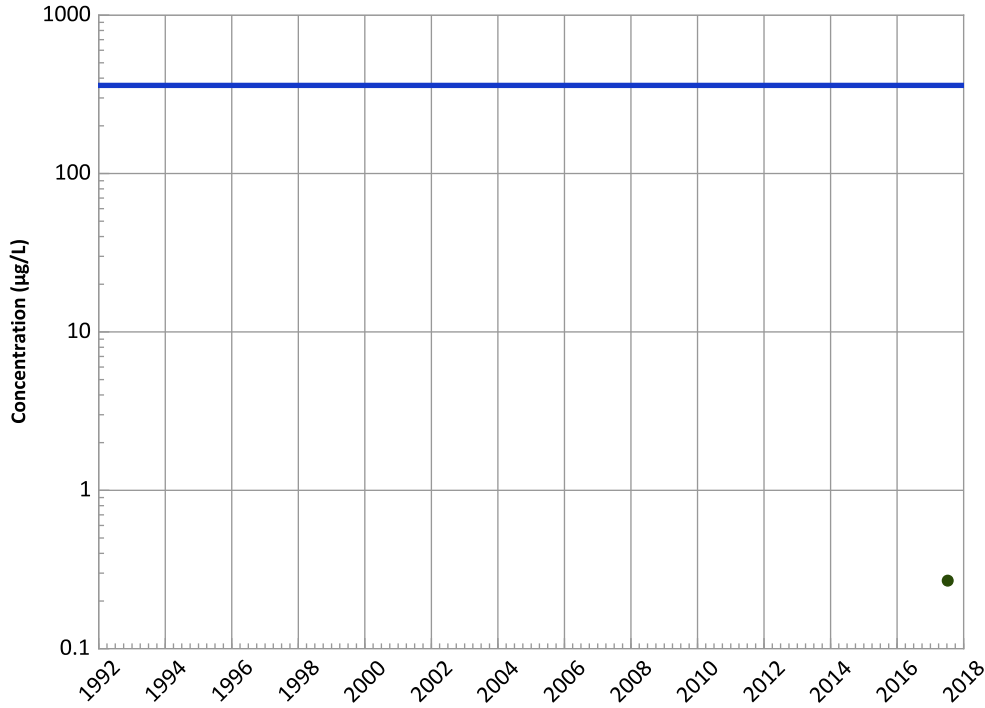
Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Detections in Dataset)

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

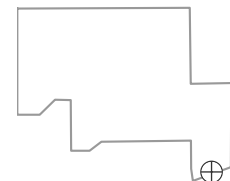
Data ():

N/A (<4 Samples in Dataset)

All Data

All Non-Detect

Well Location

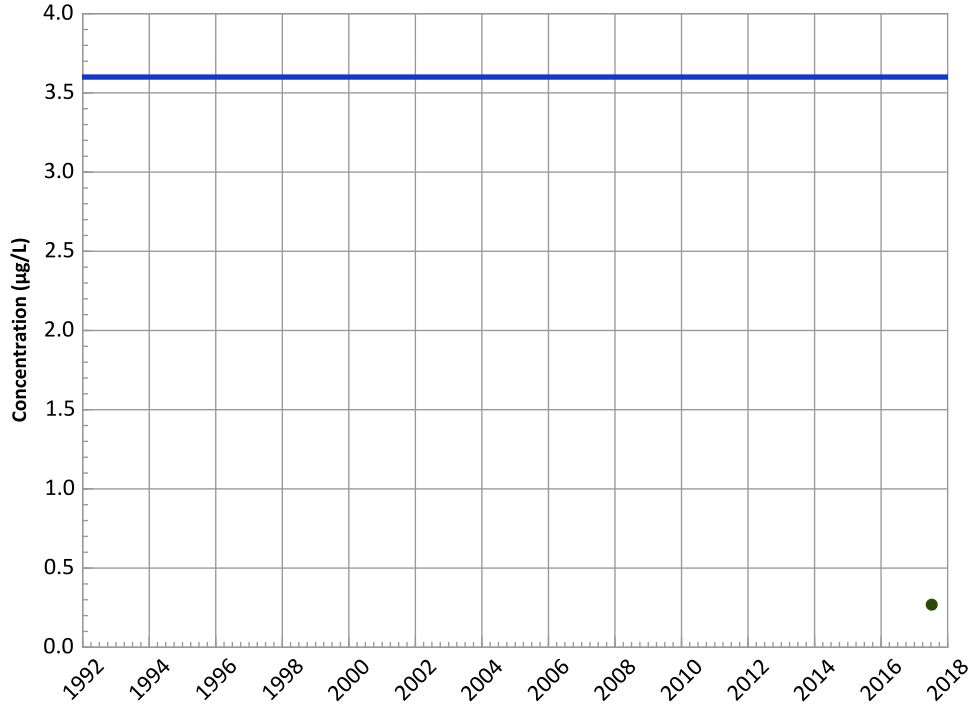


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 07/10/2017 to 07/10/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1184 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

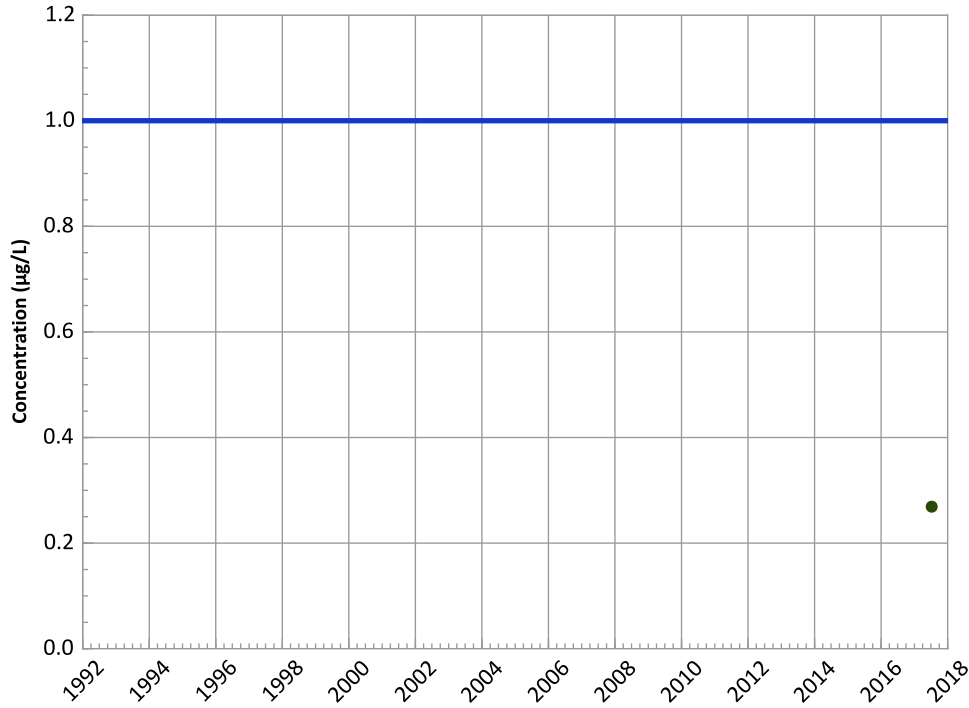
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

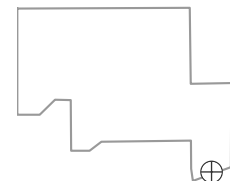
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

Well Location

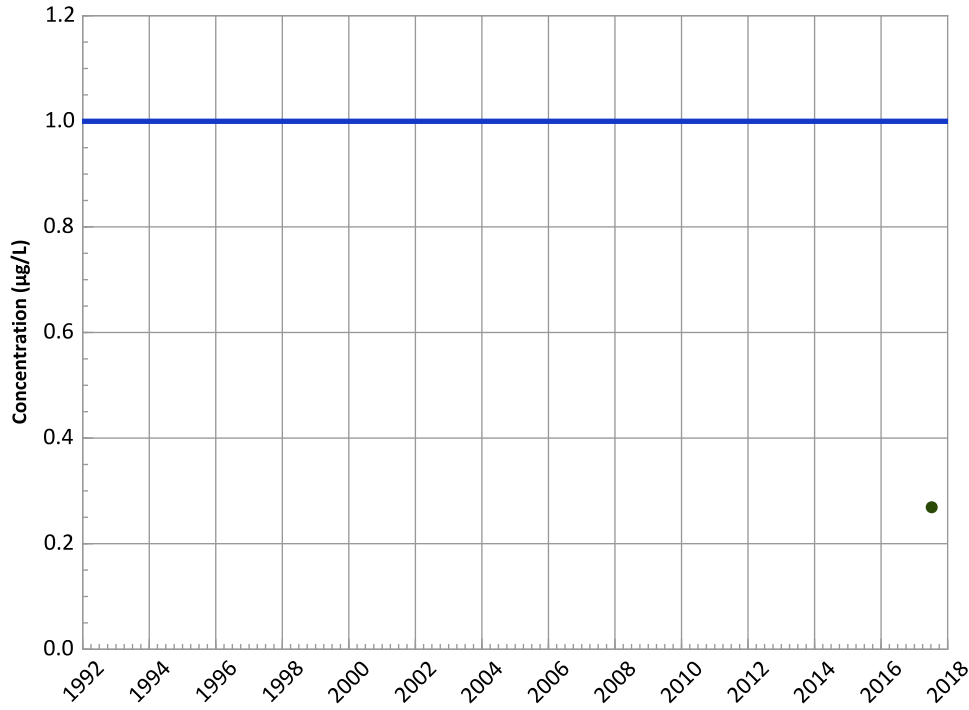


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 07/10/2017 to 07/10/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1184 in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

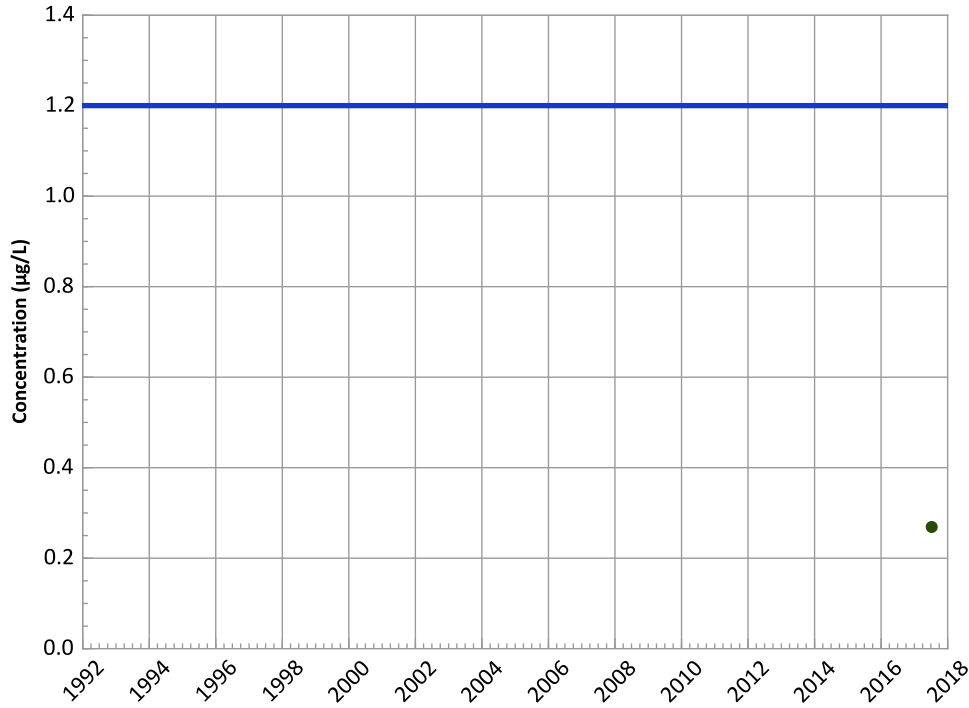
Data ():

N/A (<4 Samples in Dataset)

All Data

All Non-Detect

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

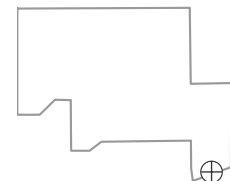
Data ():

N/A (<4 Samples in Dataset)

All Data

All Non-Detect

Well Location

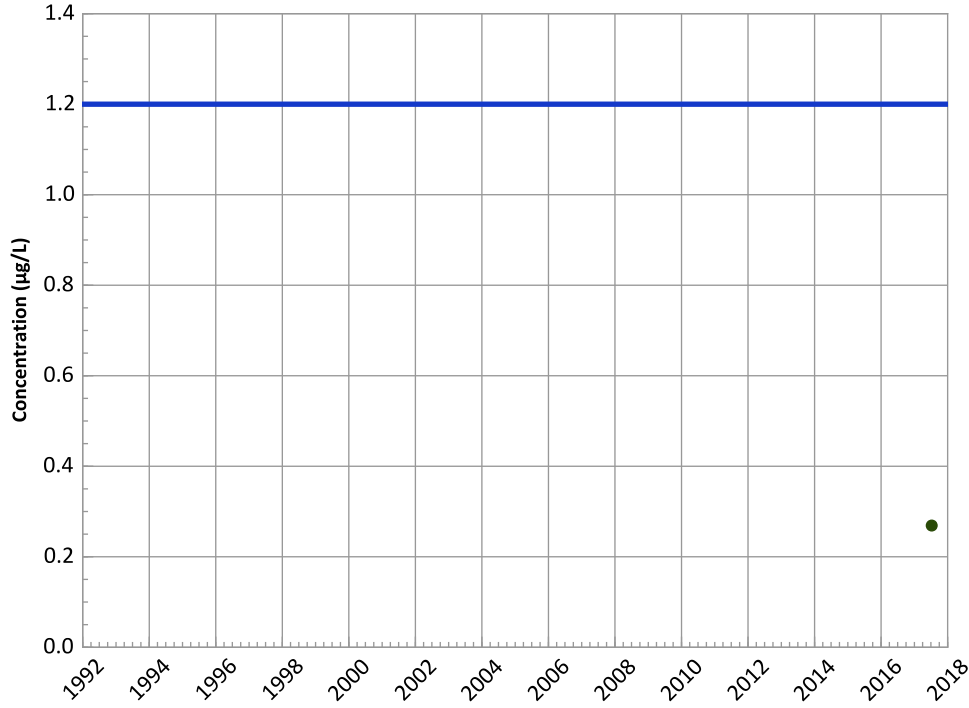


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 07/10/2017 to 07/10/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1184 in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

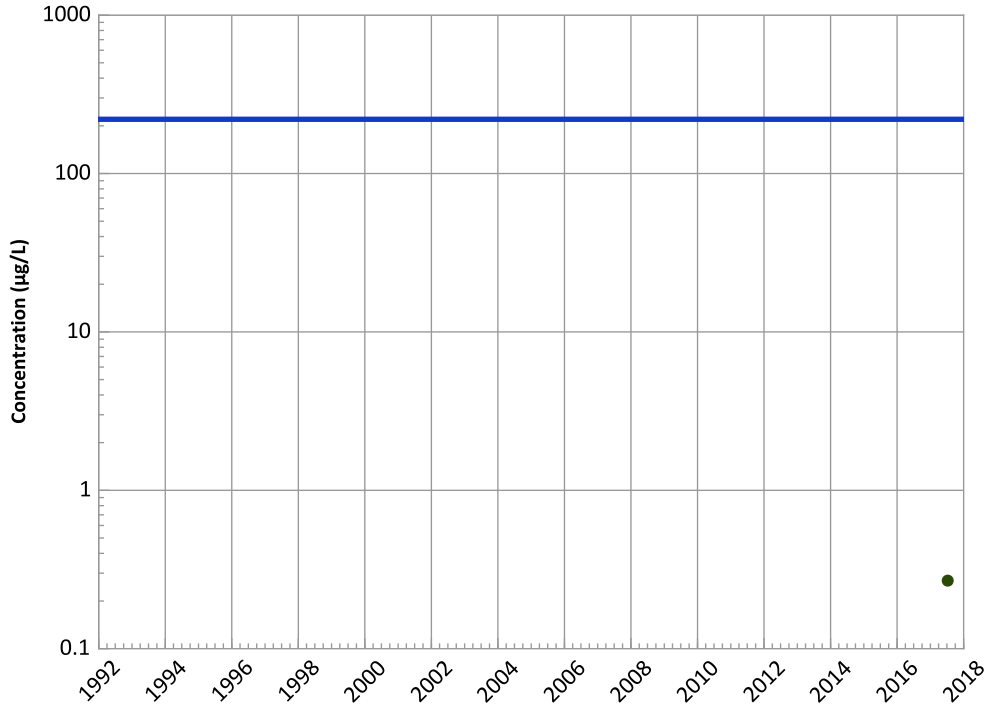
Data ():

N/A (<4 Samples in Dataset)

All Data

All Non-Detect

1,3,5-Trinitrobenzene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

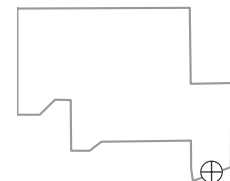
Data ():

N/A (<4 Samples in Dataset)

All Data

All Non-Detect

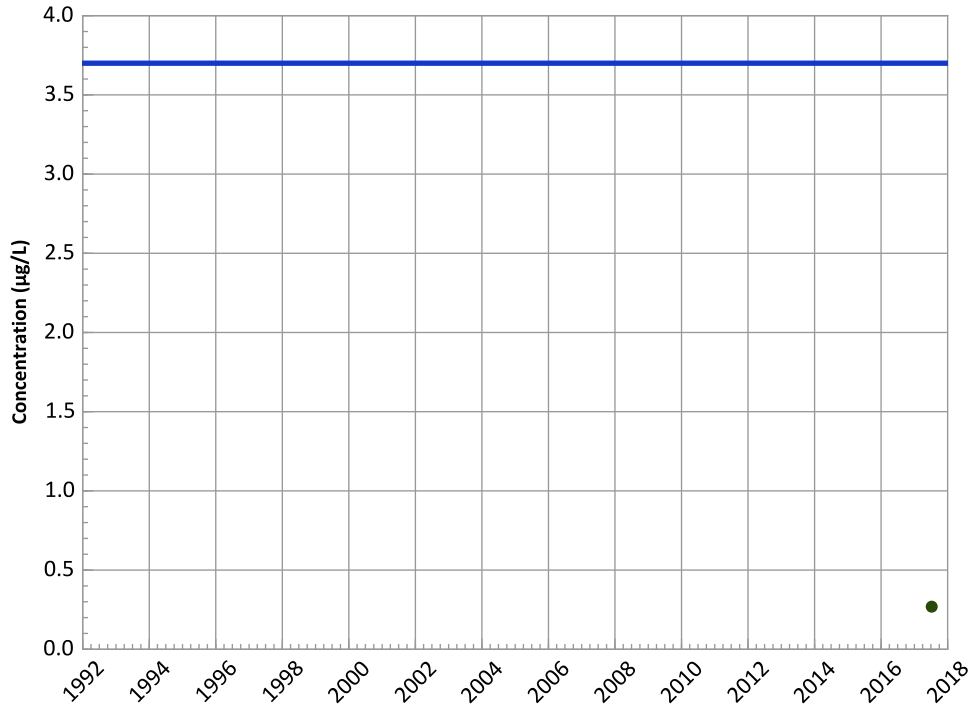
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 07/10/2017 to 07/10/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1184 in Perched Aquifer
USDOE/NNSA Pantex Plant
1,3-Dinitrobenzene Trend**



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

Data ():

N/A (<4 Samples in Dataset)

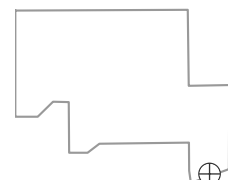
All Data

All Non-Detect

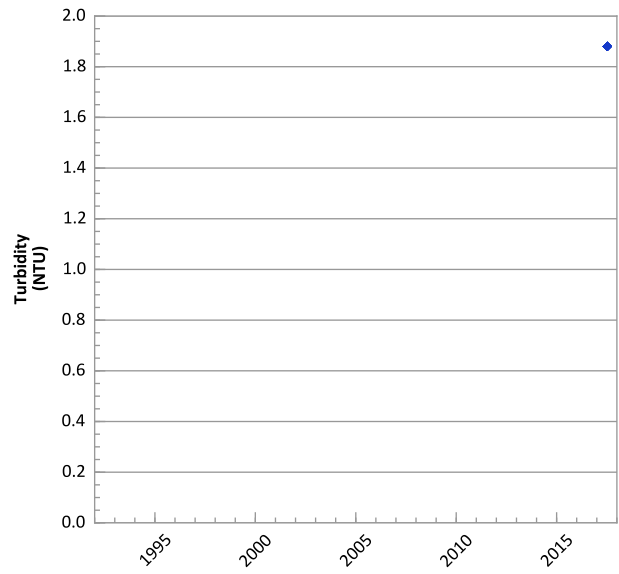
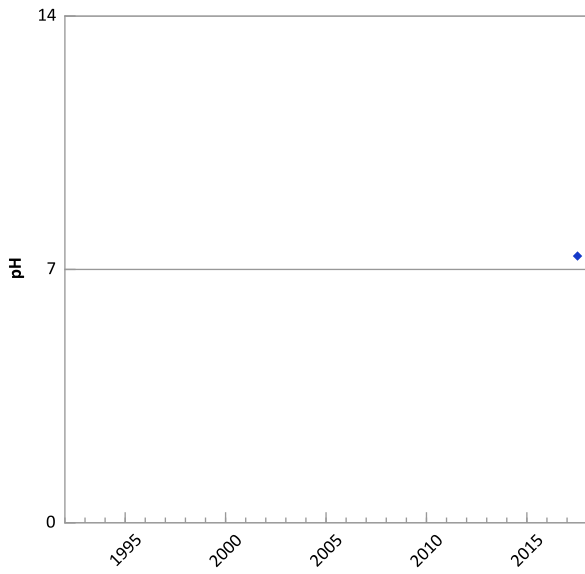
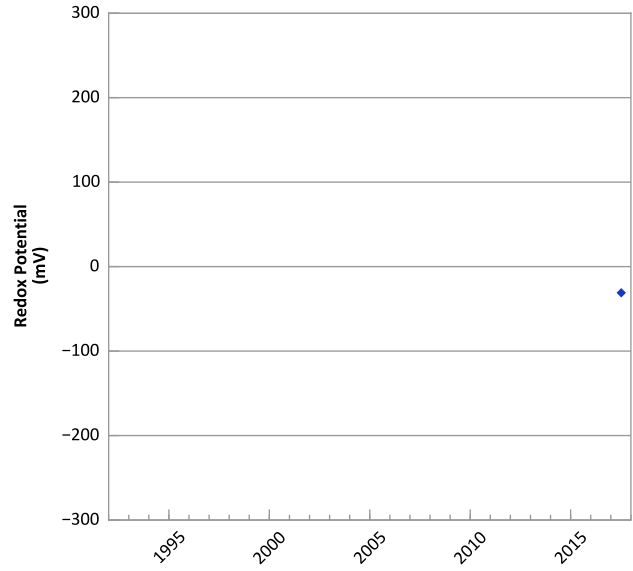
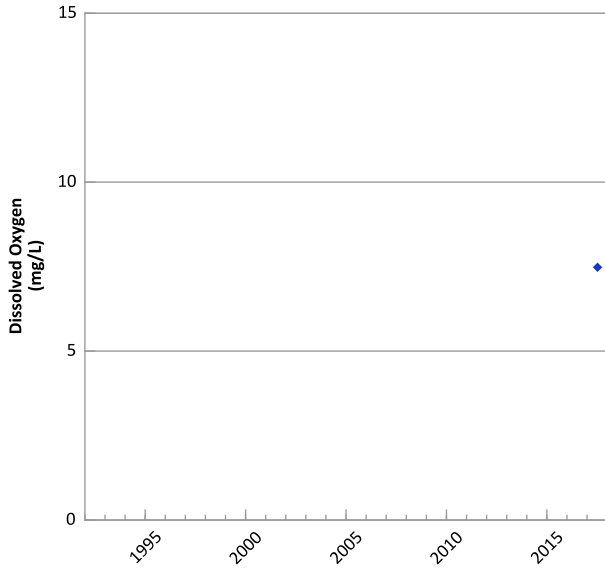
Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 07/10/2017 to 07/10/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1185 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters



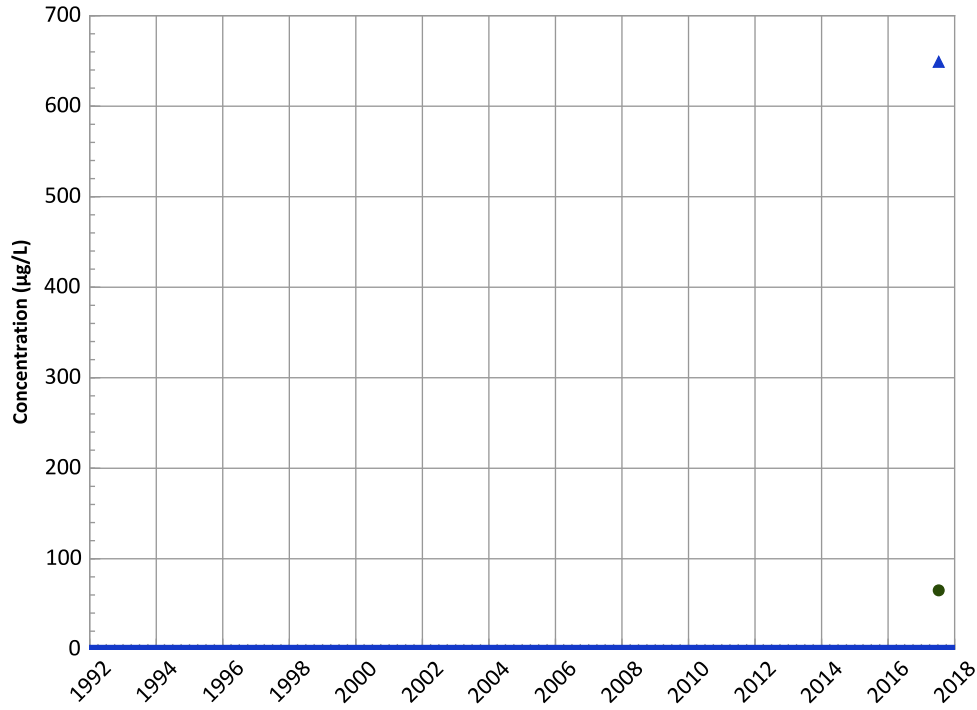
Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 07/10/2017 to 07/10/2017
Analysis Date: 03/21/2018

Well Location



PTX06-1185 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

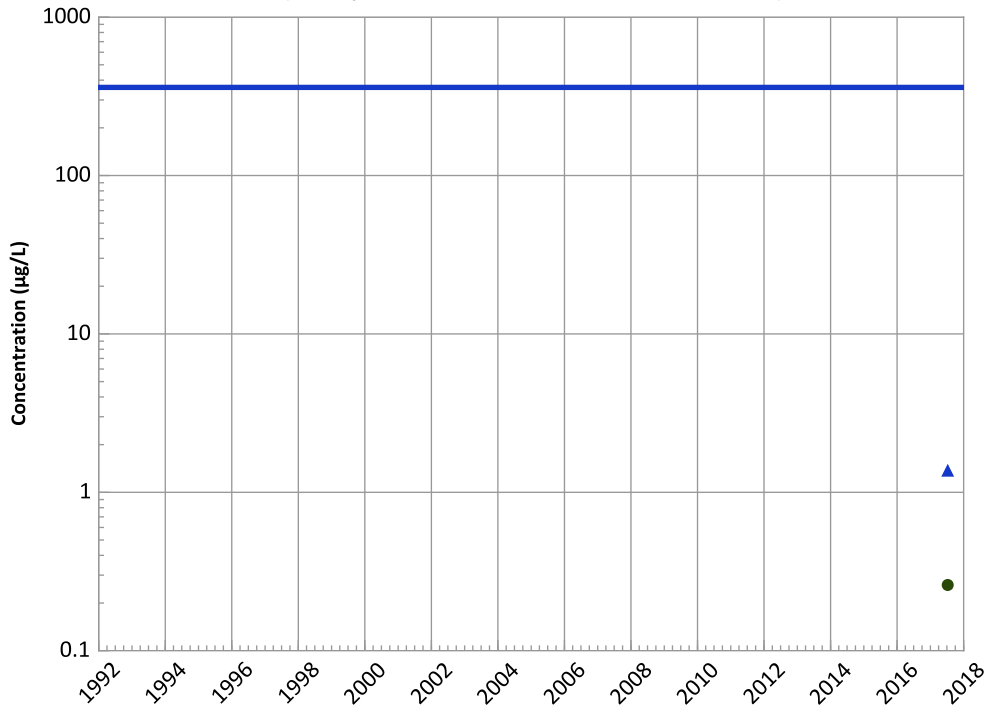
Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Detections in Dataset)

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

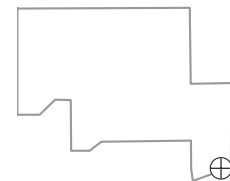
Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Detections in Dataset)

Well Location

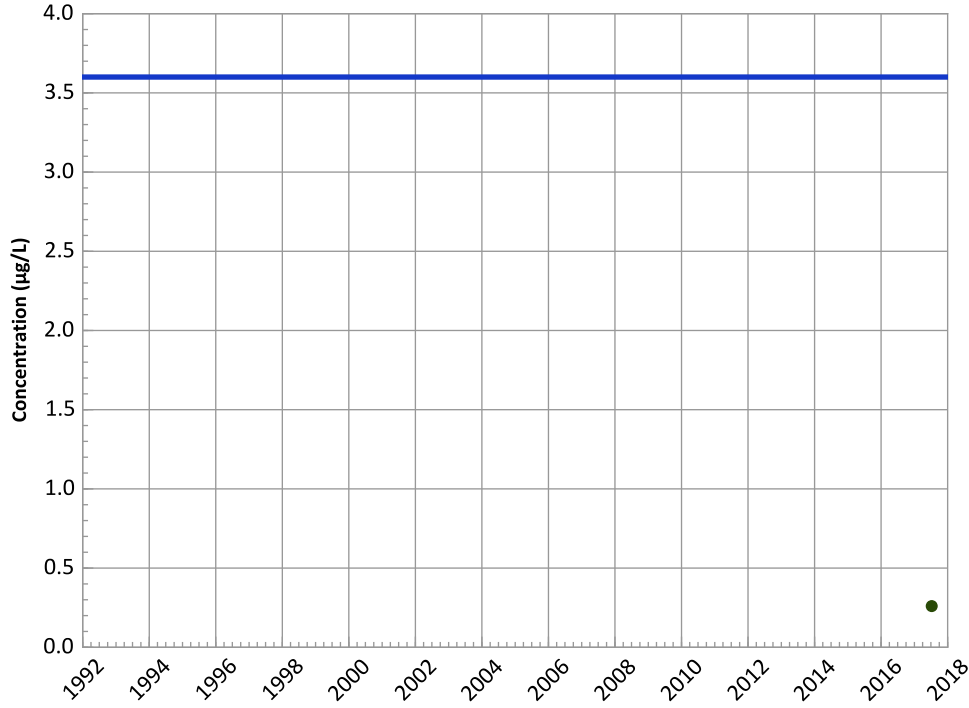


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 07/10/2017 to 07/10/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1185 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

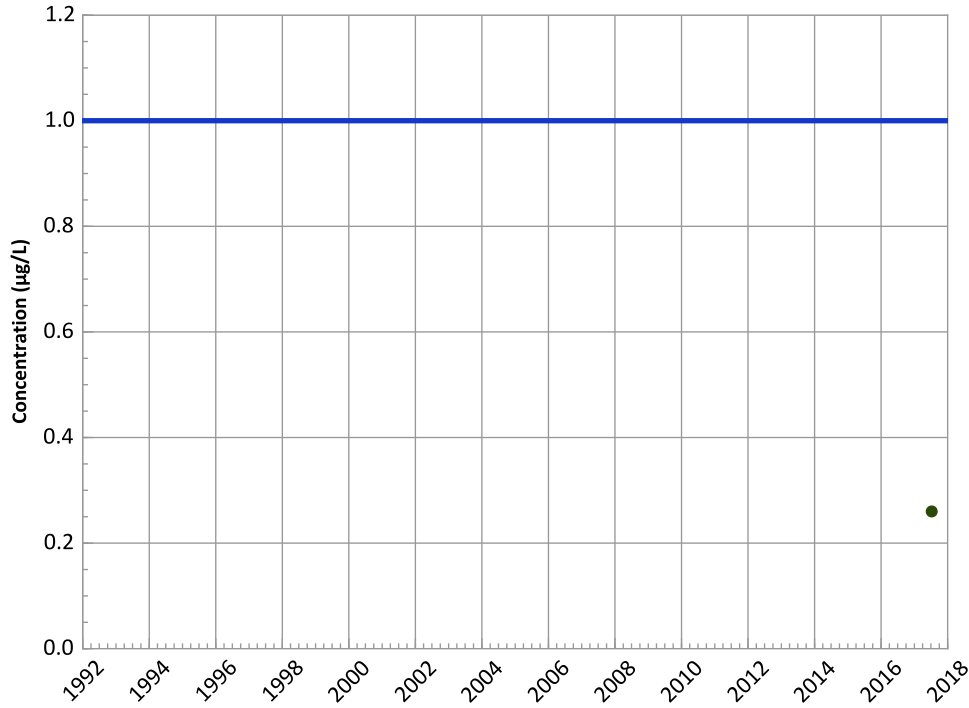
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

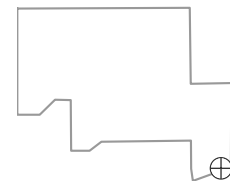
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

Well Location

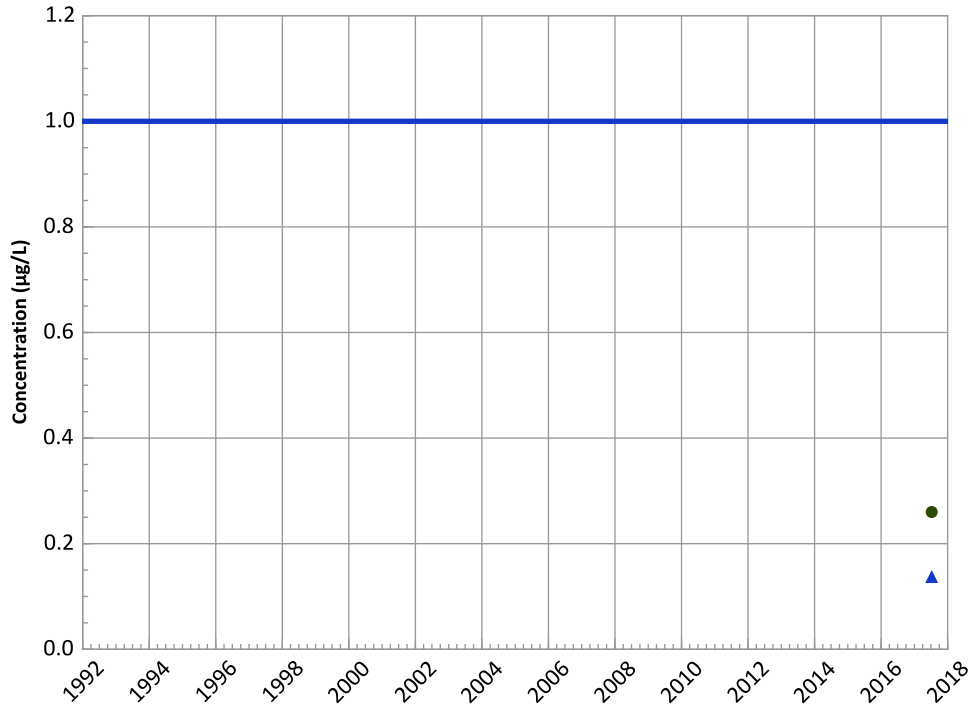


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 07/10/2017 to 07/10/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1185 in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

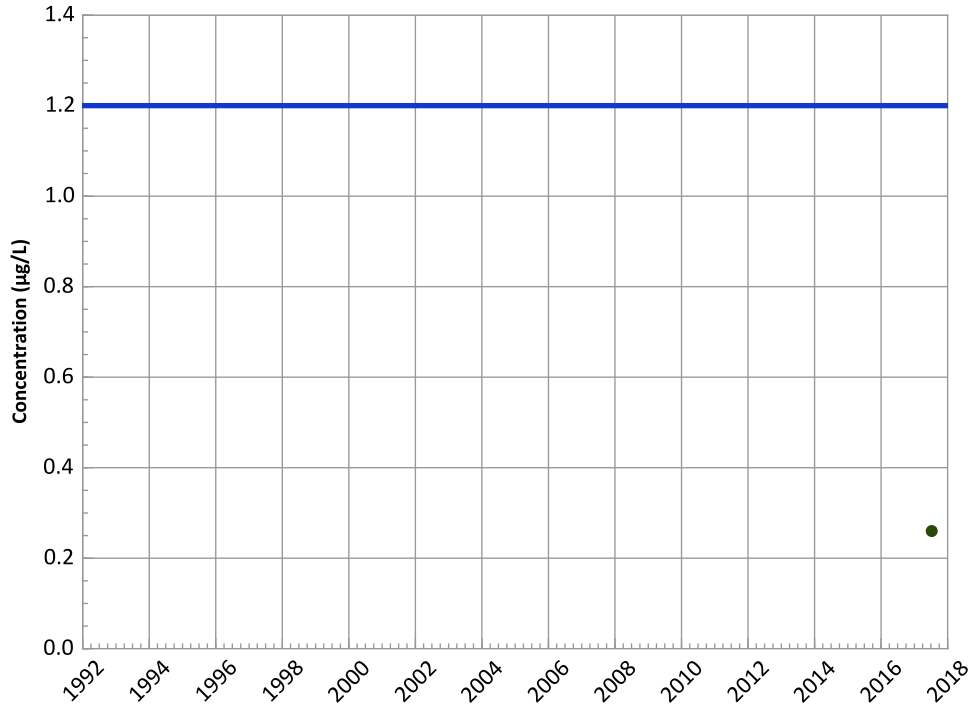
Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Detections in Dataset)

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

Data ():

N/A (<4 Samples in Dataset)

All Data

All Non-Detect

Well Location

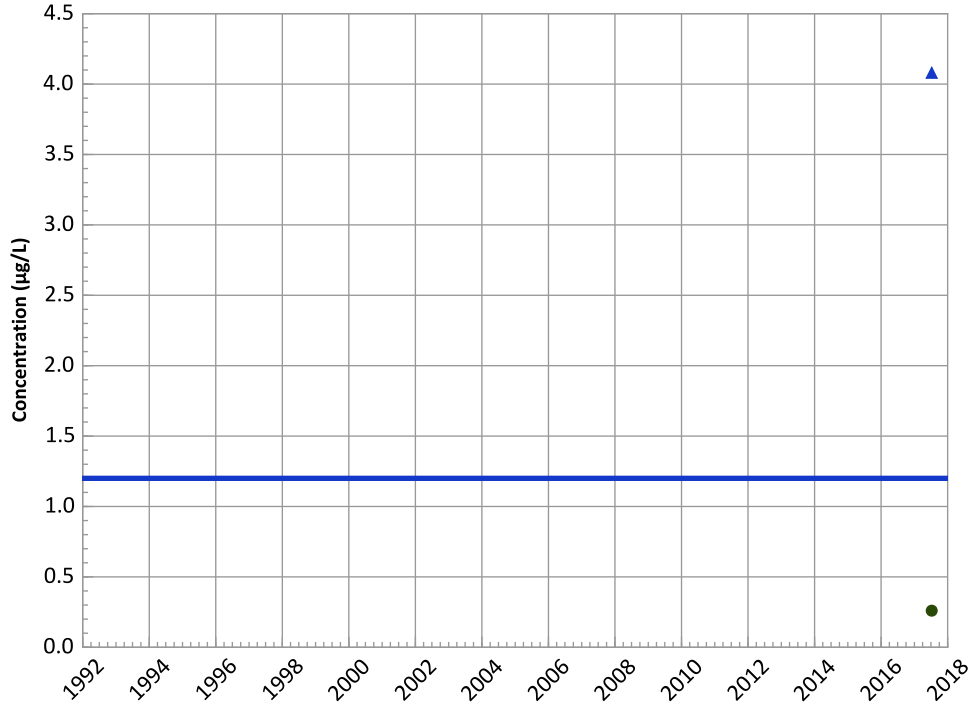


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 07/10/2017 to 07/10/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1185 in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

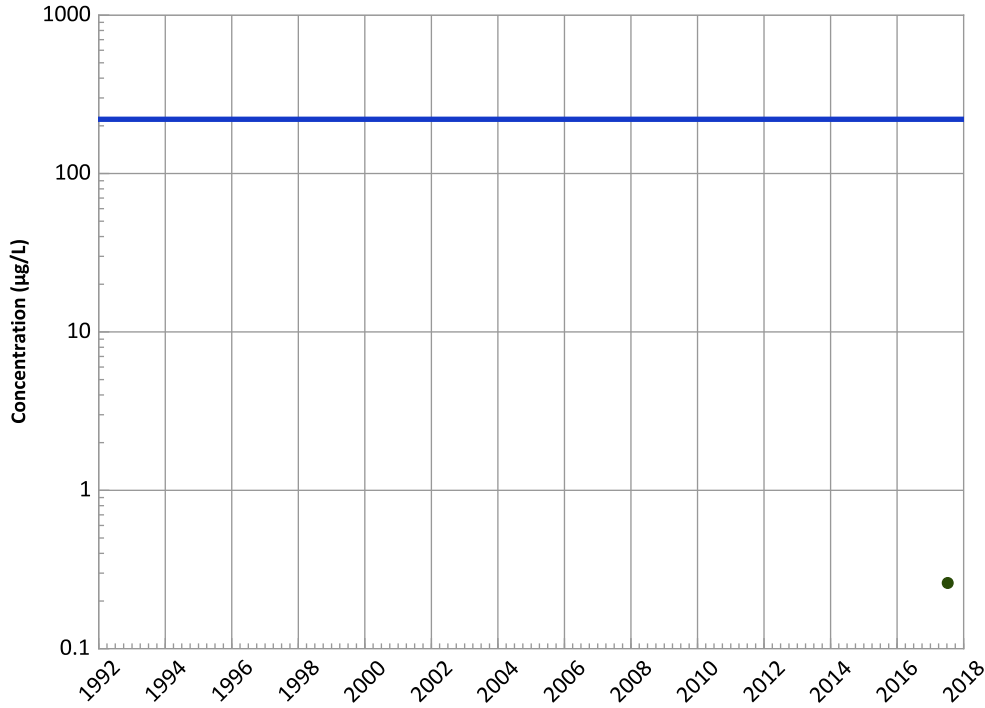
Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Detections in Dataset)

1,3,5-Trinitrobenzene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

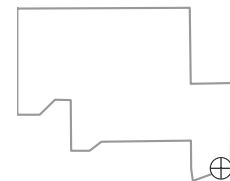
Data ():

N/A (<4 Samples in Dataset)

All Data

All Non-Detect

Well Location

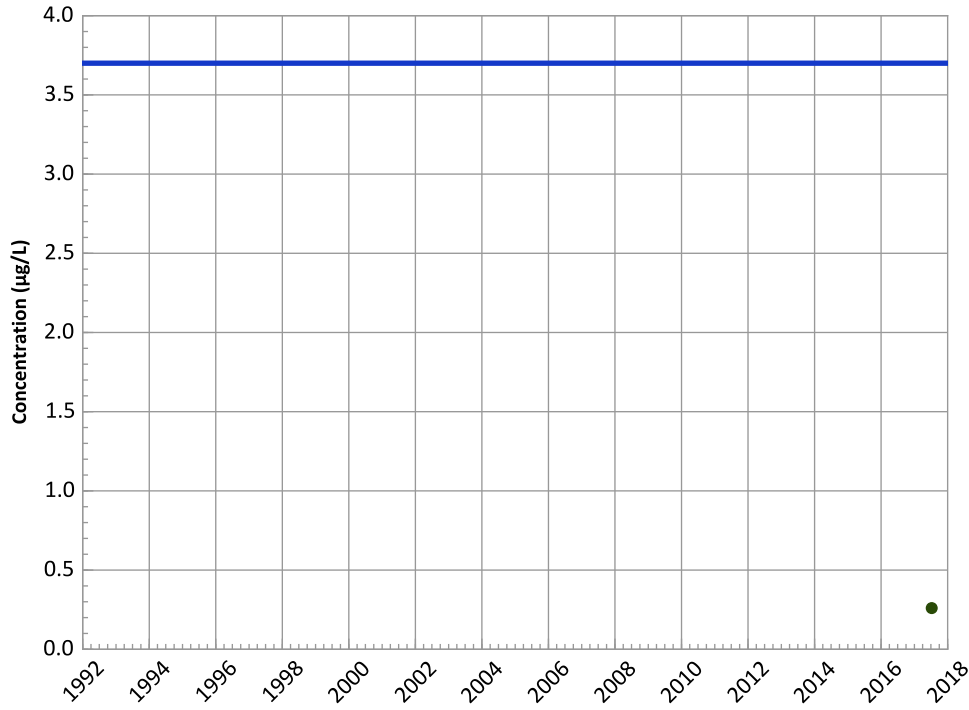


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 07/10/2017 to 07/10/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1185 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

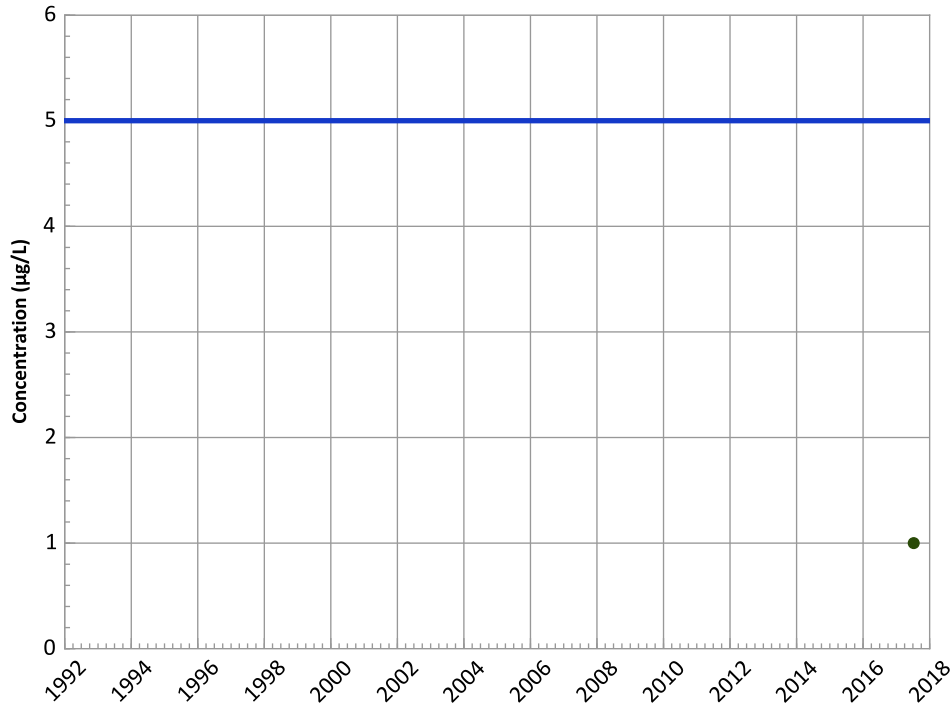
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

Tetrachloroethylene (PCE) Trend



Concentration Trend

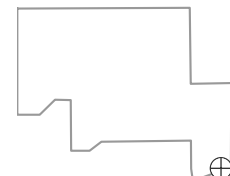
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

Well Location

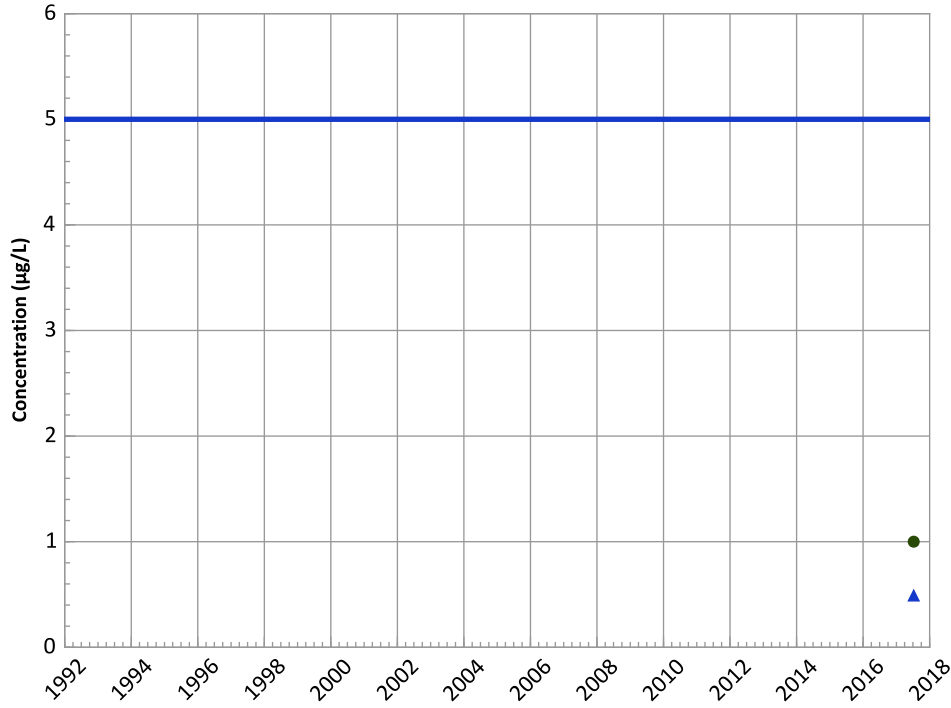


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 07/10/2017 to 07/10/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1185 in Perched Aquifer
USDOE/NNSA Pantex Plant

Trichloroethene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

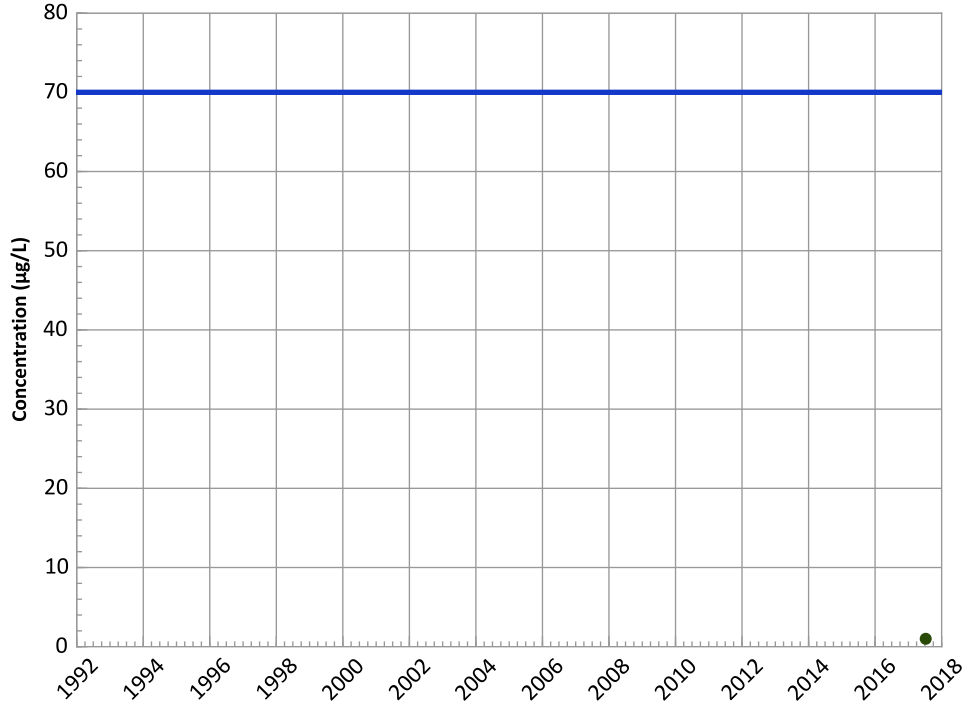
Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Detections in Dataset)

cis-1,2-Dichloroethene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

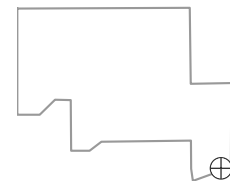
Data ():

N/A (<4 Samples in Dataset)

All Data

All Non-Detect

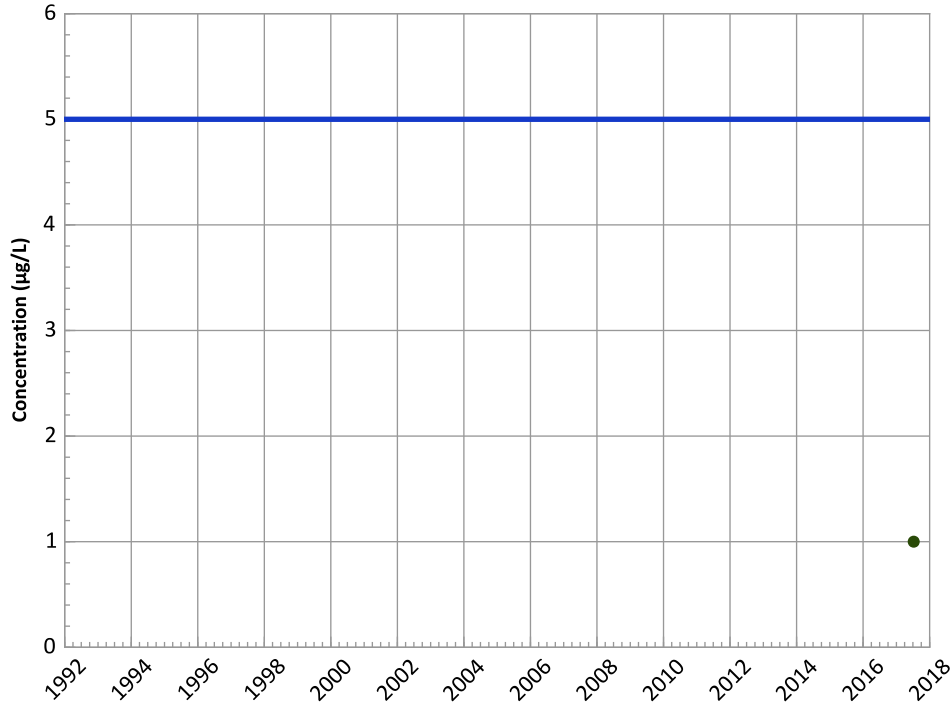
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 07/10/2017 to 07/10/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1185 in Perched Aquifer
USDOE/NNSA Pantex Plant
1,2-Dichloroethane Trend**



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

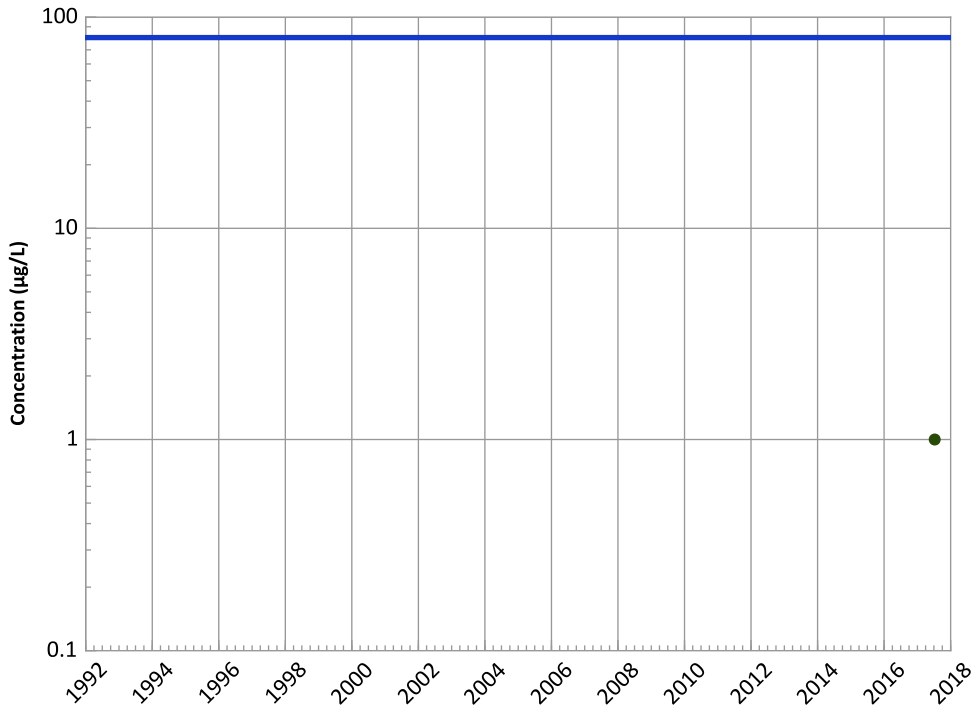
Data ():

N/A (<4 Samples in Dataset)

All Data

All Non-Detect

Chloroform Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

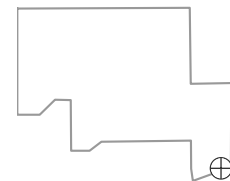
Data ():

N/A (<4 Samples in Dataset)

All Data

All Non-Detect

Well Location

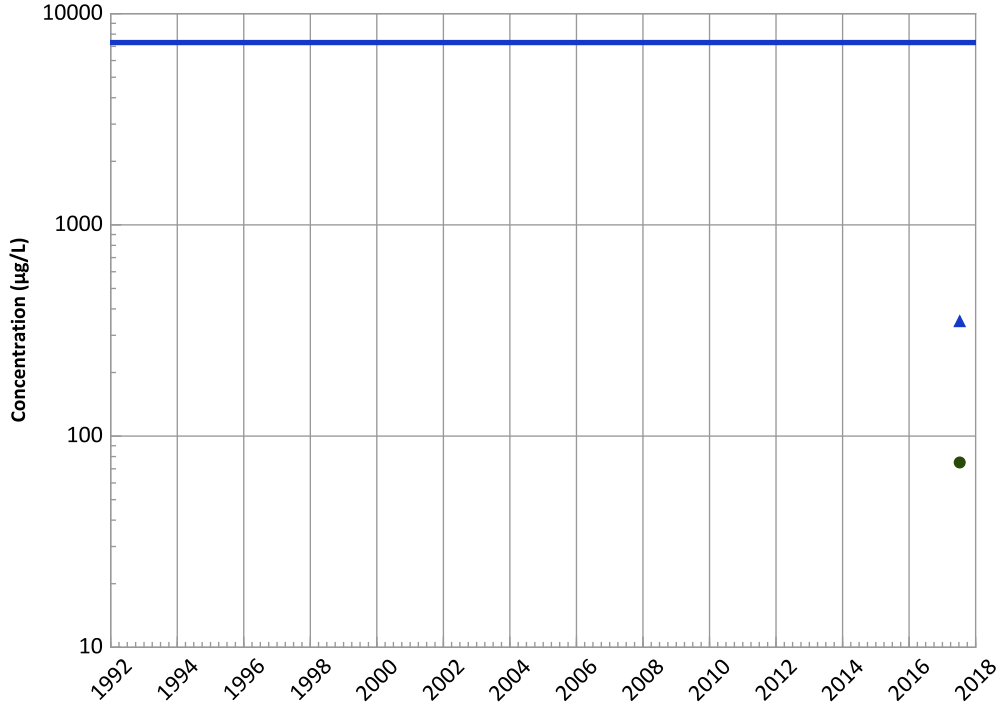


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 07/10/2017 to 07/10/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1185 in Perched Aquifer
USDOE/NNSA Pantex Plant

Boron Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

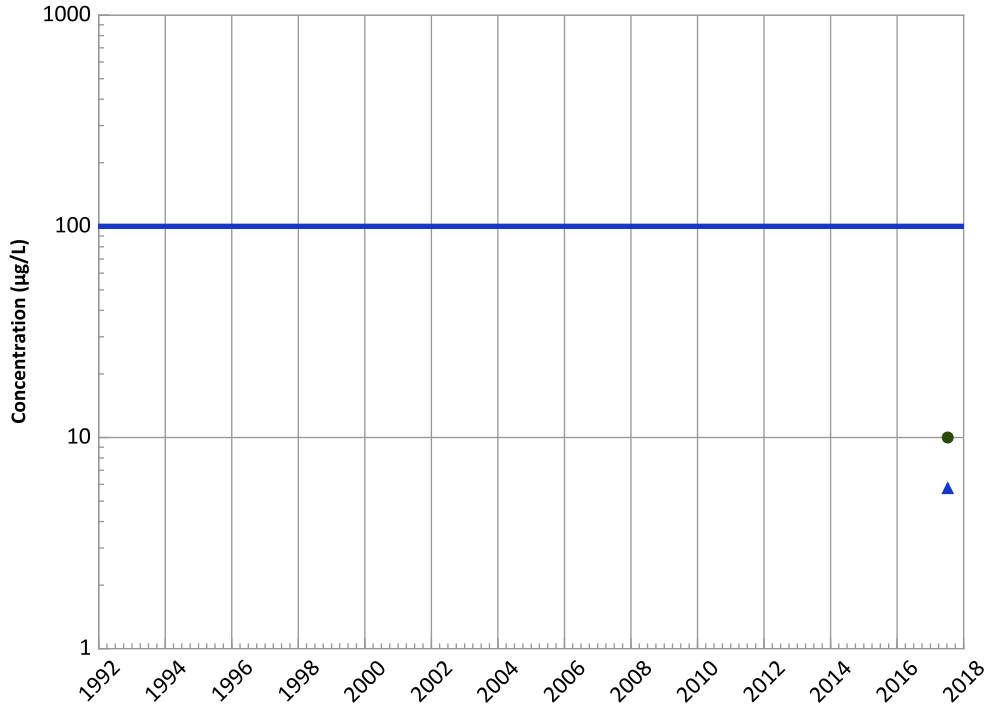
Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Detections in Dataset)

Chromium, Total Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

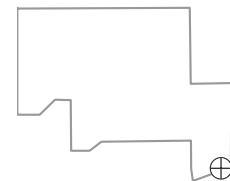
Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Detections in Dataset)

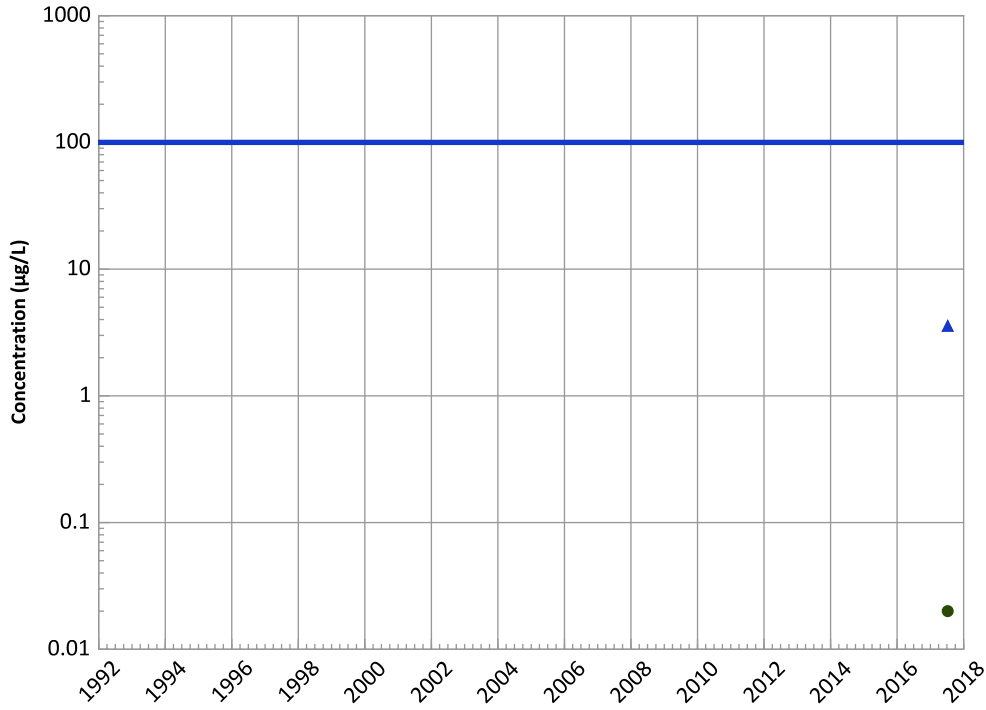
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 07/10/2017 to 07/10/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1185 in Perched Aquifer
USDOE/NNSA Pantex Plant
Chromium, Hexavalent Trend**



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

Data ():

N/A (<4 Samples in Dataset)

All Data

N/A (<4 Detections in Dataset)

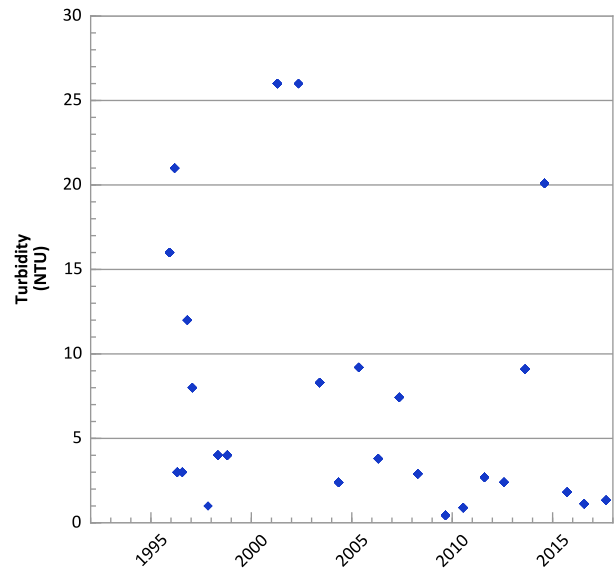
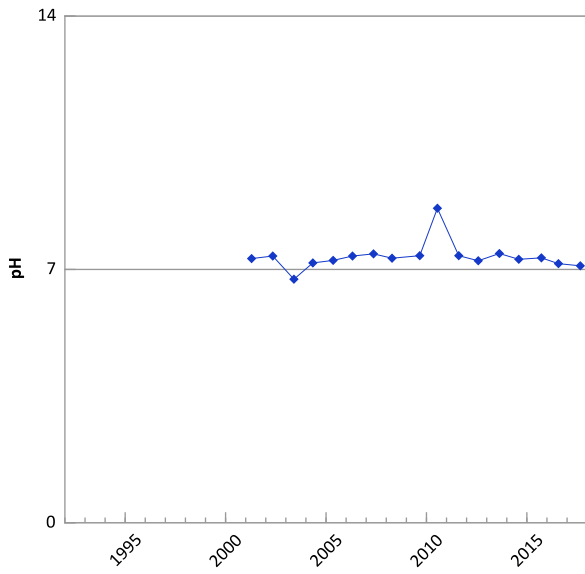
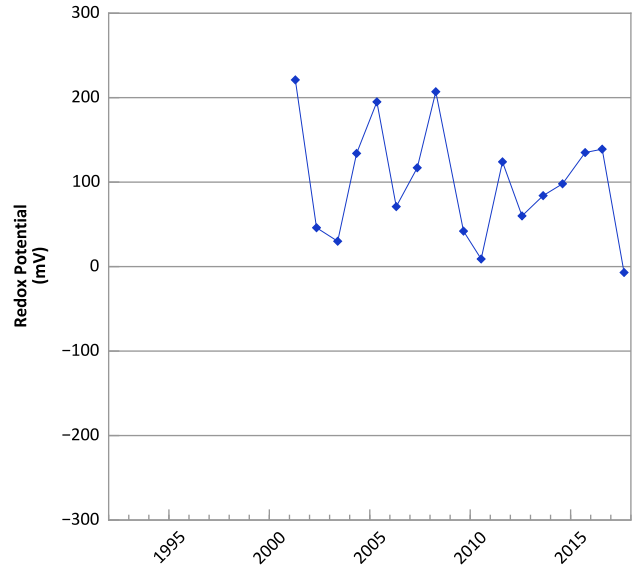
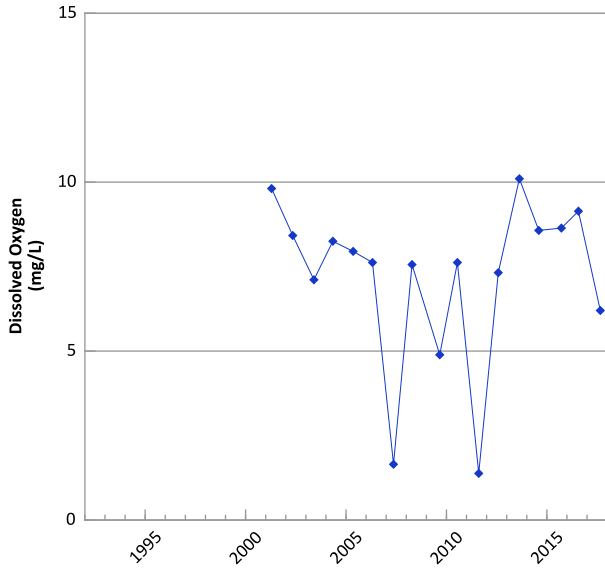
Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 07/10/2017 to 07/10/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

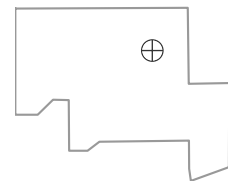


**PTX07-1003 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



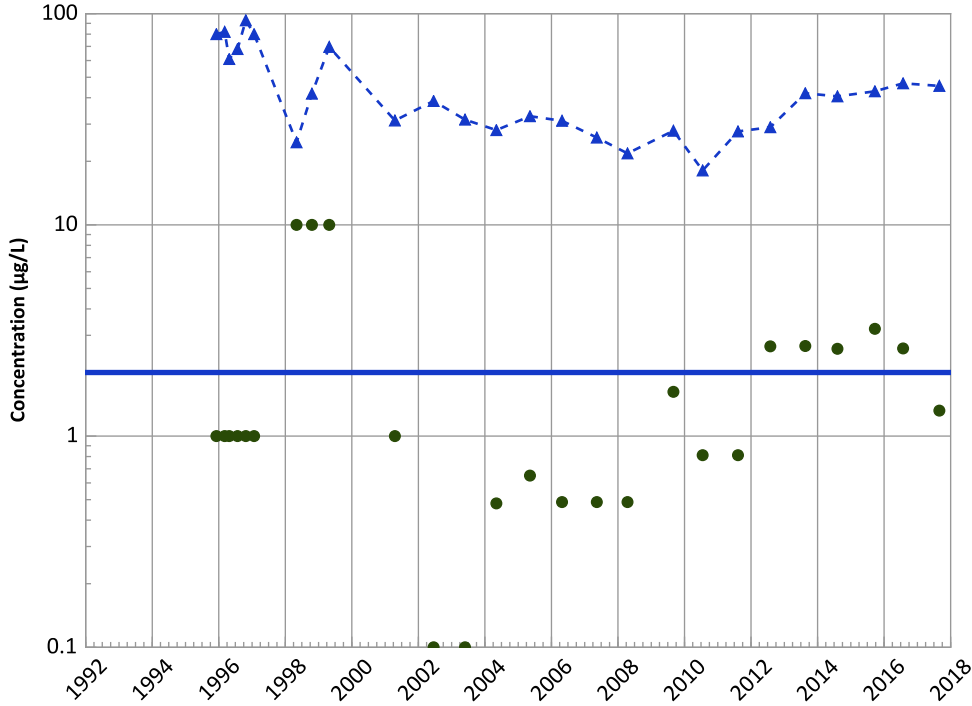
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 12/06/1995 to 08/30/2017
 Analysis Date: 03/21/2018

Well Location



PTX07-1003 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

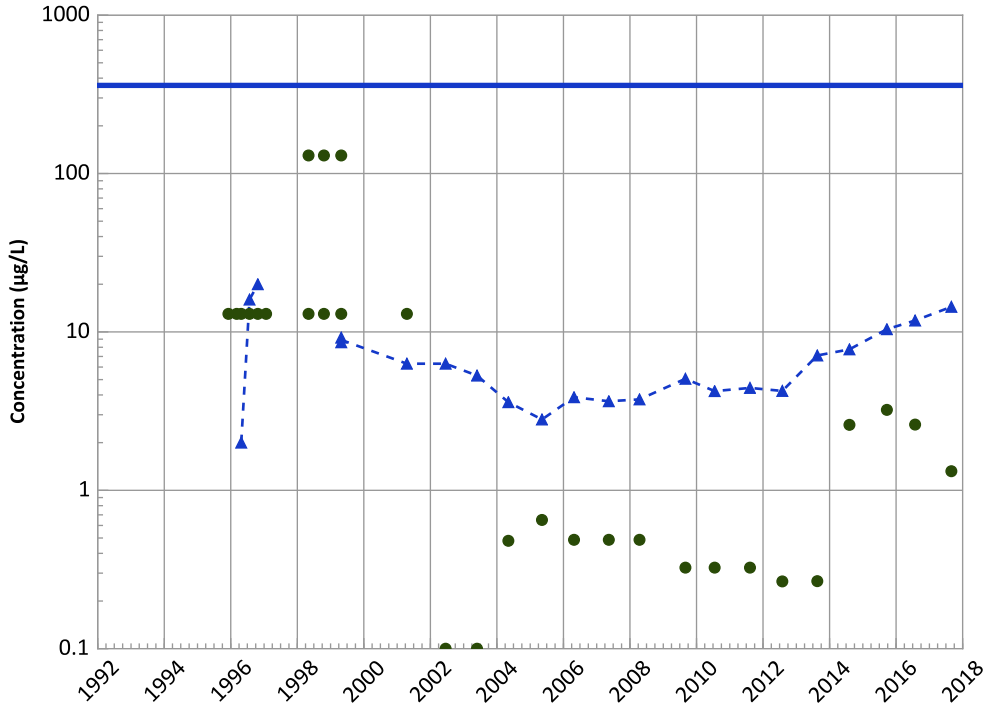
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Decreasing

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

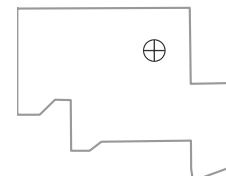
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
No Trend

MAROS Linear Regression Method

Data ():
Increasing
All Data
No Trend

Well Location

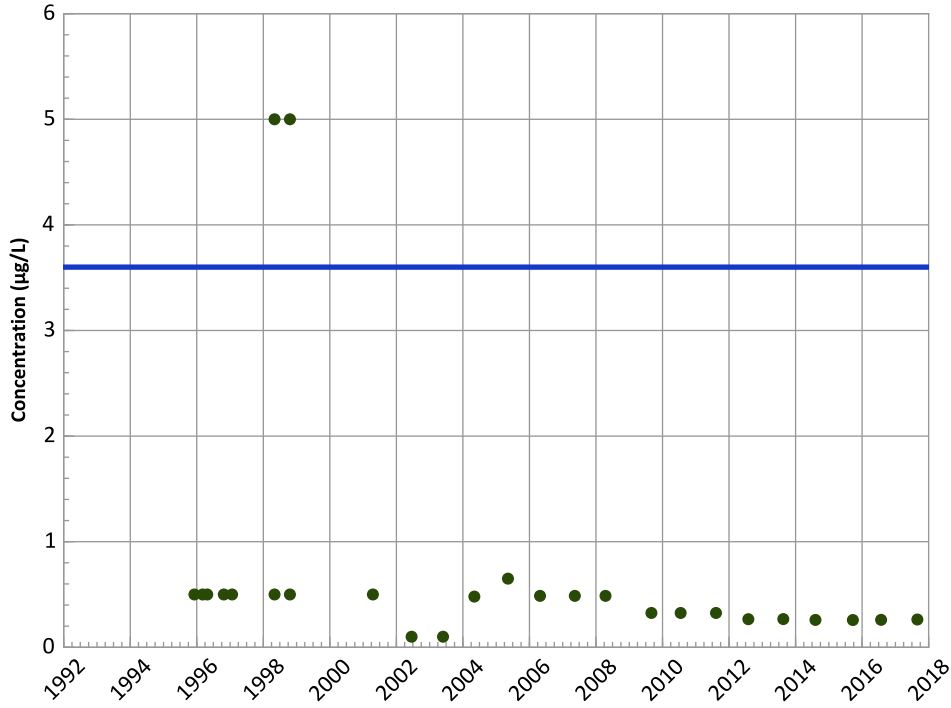


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/06/1995 to 08/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX07-1003 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

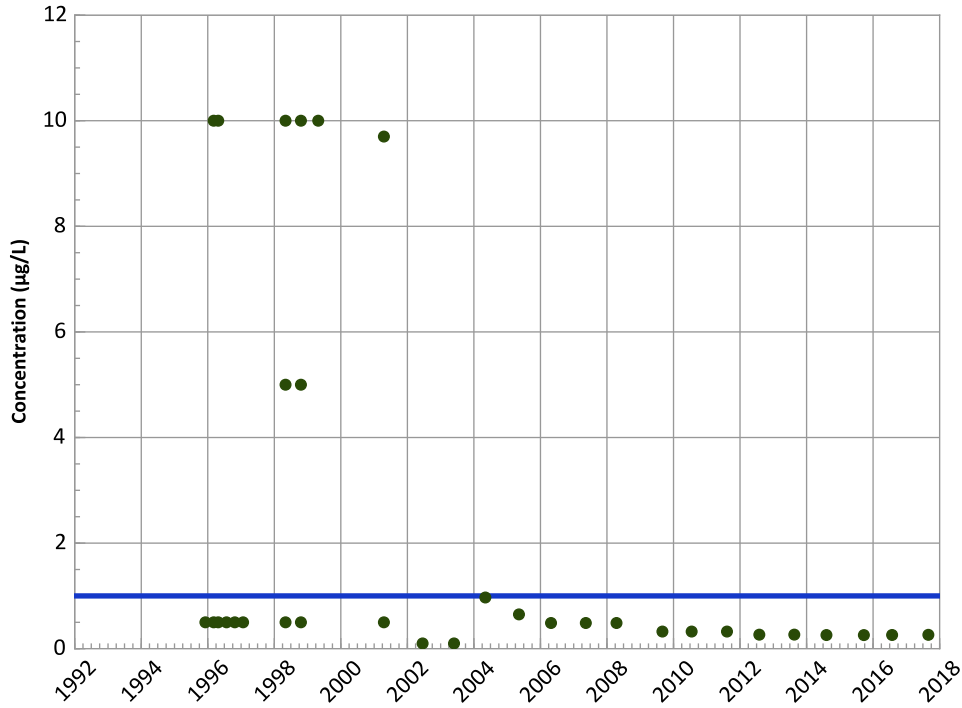
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

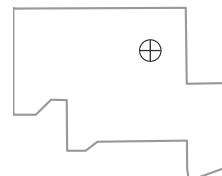
MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/06/1995 to 08/30/2017
Analysis Date: 03/21/2018

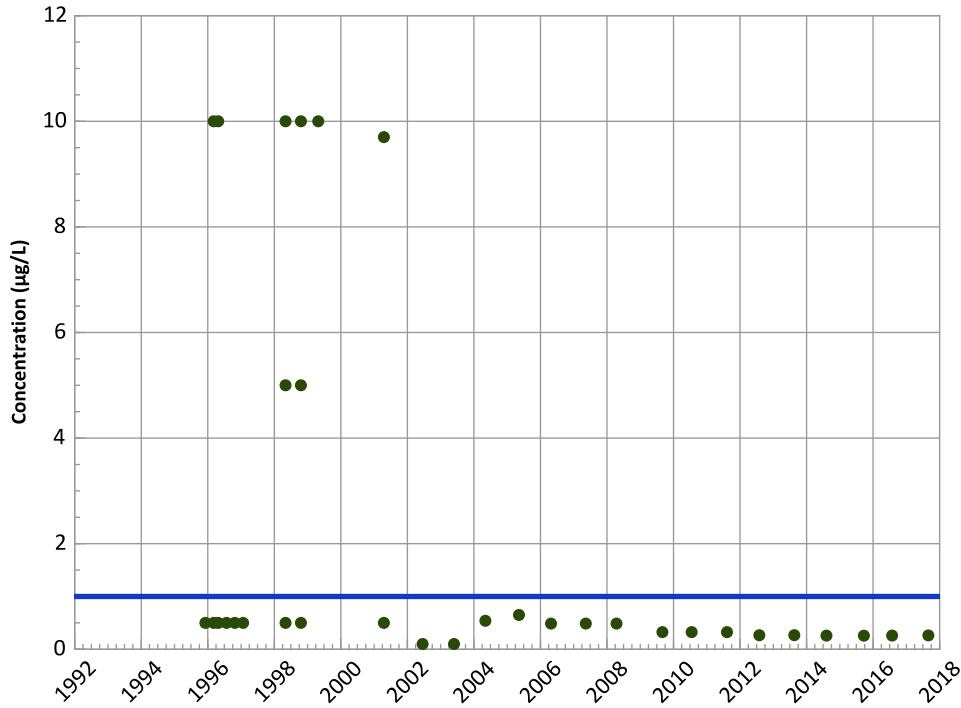
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX07-1003 in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

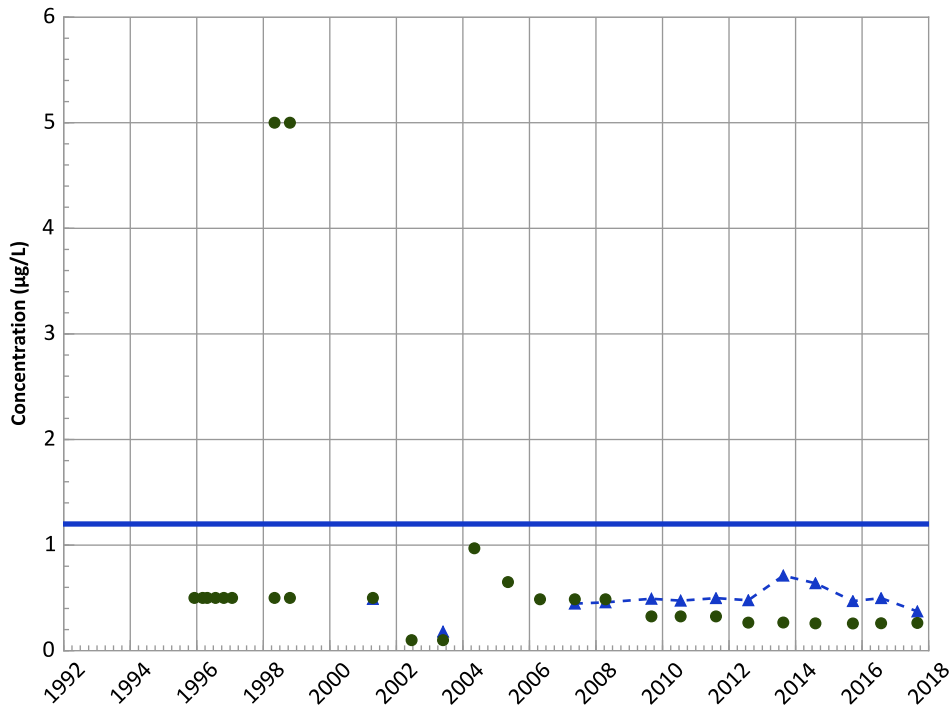
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Increasing

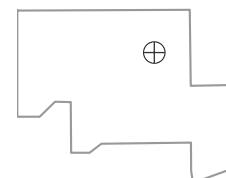
MAROS Linear Regression Method

Data ():
Stable
All Data
Probably Increasing

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/06/1995 to 08/30/2017
Analysis Date: 03/21/2018

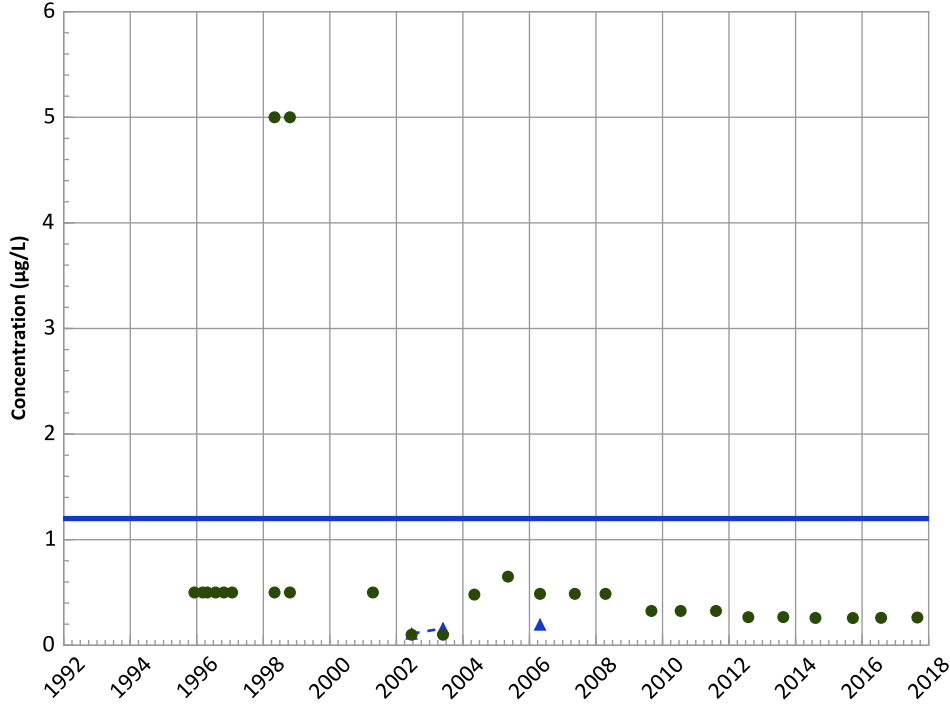
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX07-1003 in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

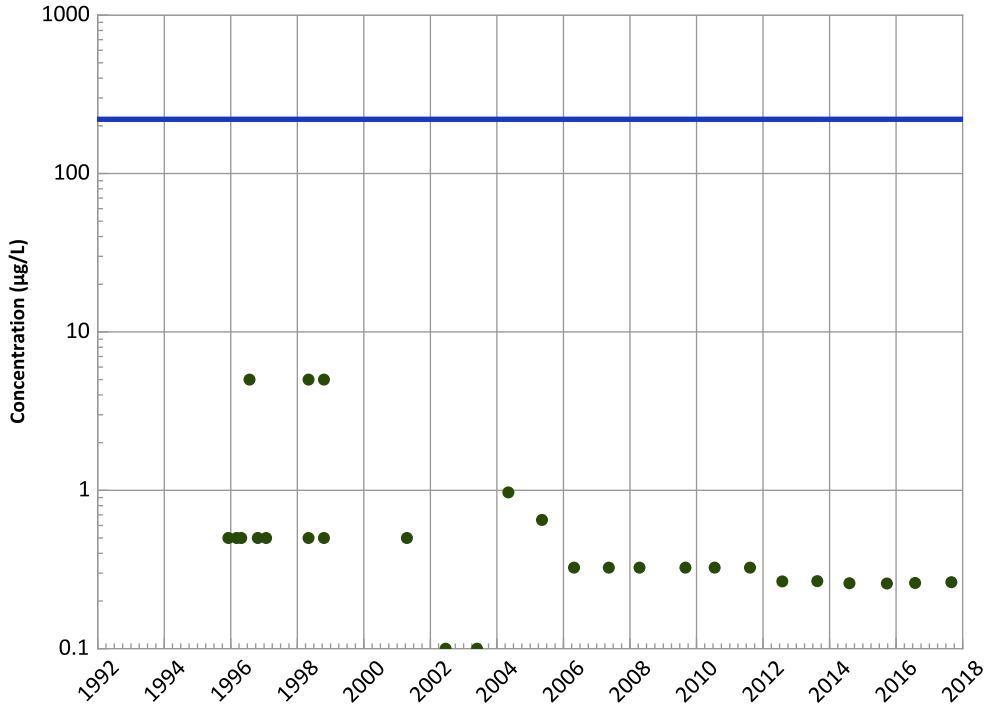
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

1,3,5-Trinitrobenzene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

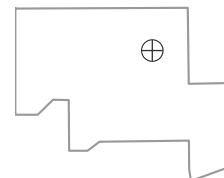
MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/06/1995 to 08/30/2017
Analysis Date: 03/21/2018

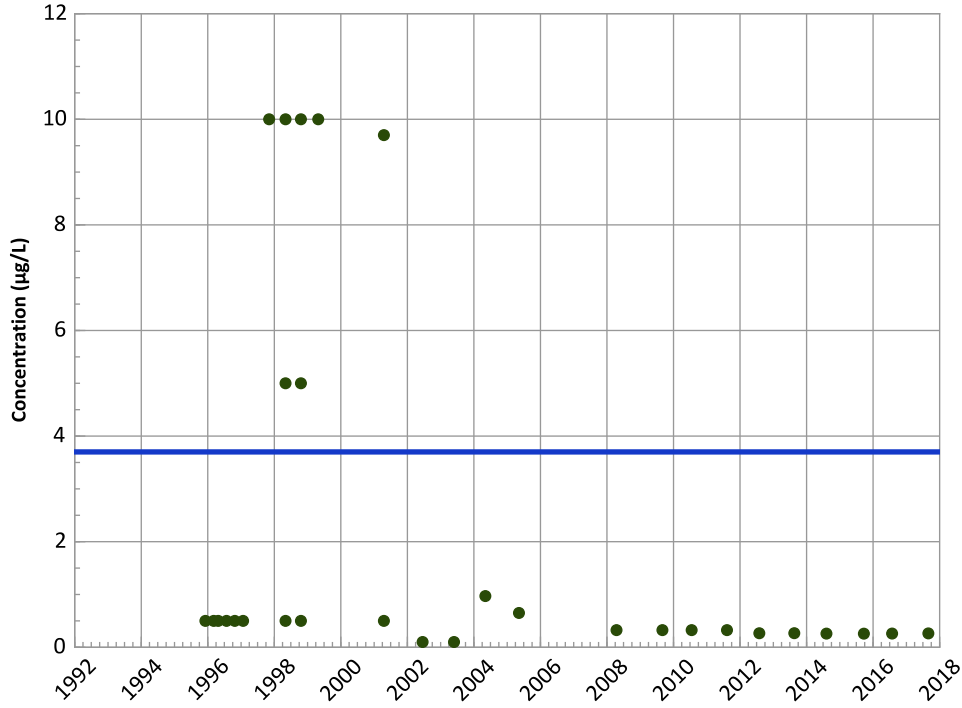
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX07-1003 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

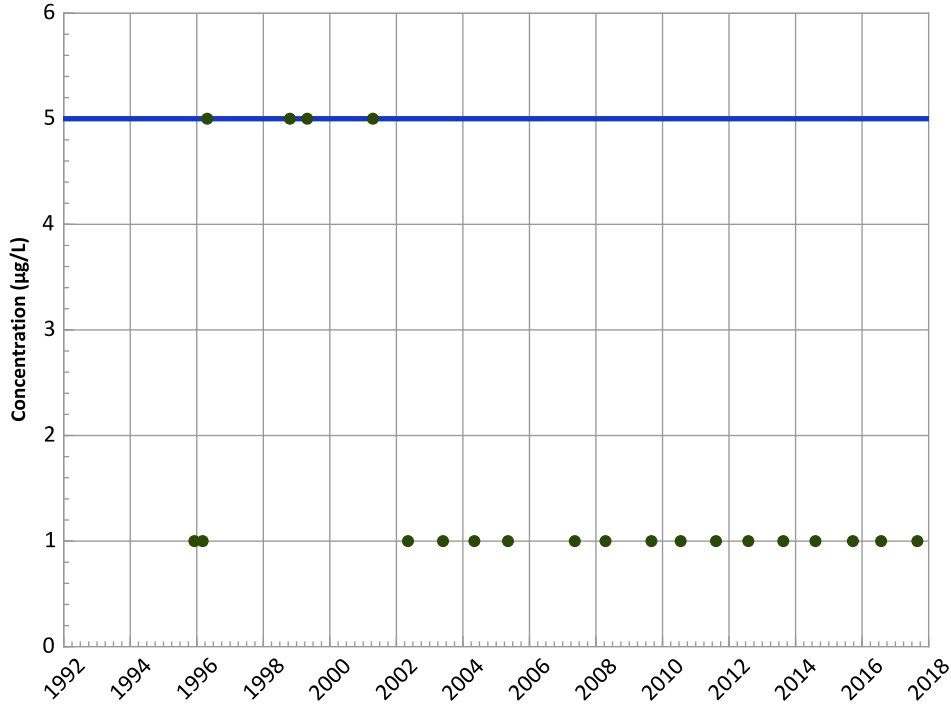
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Tetrachloroethylene (PCE) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

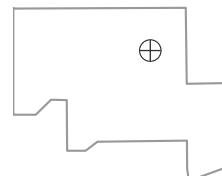
MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/06/1995 to 08/30/2017
Analysis Date: 03/21/2018

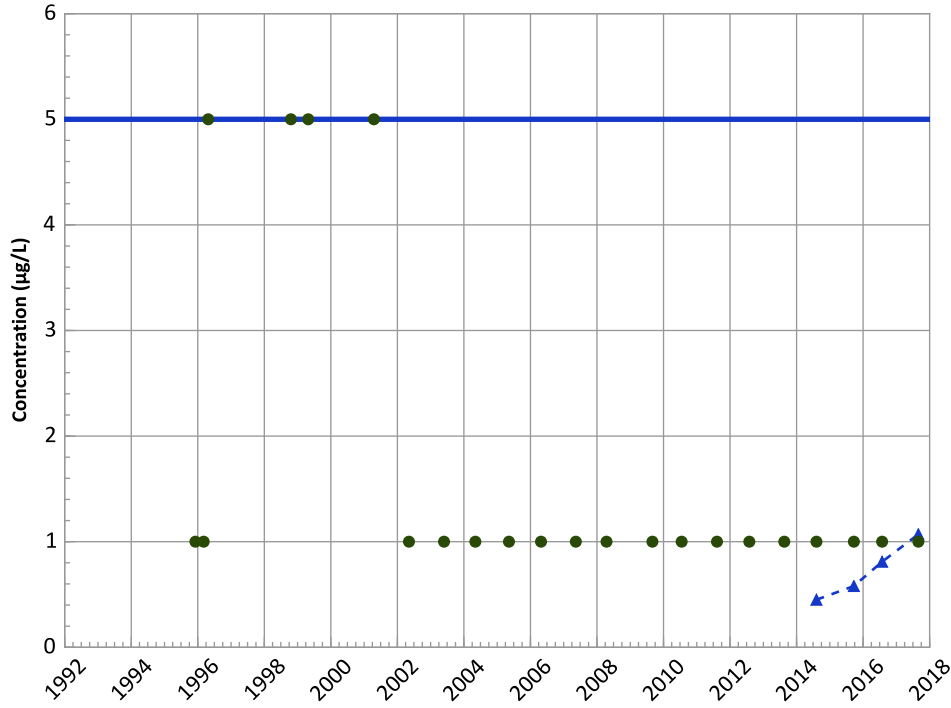
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX07-1003 in Perched Aquifer
USDOE/NNSA Pantex Plant

Trichloroethene Trend

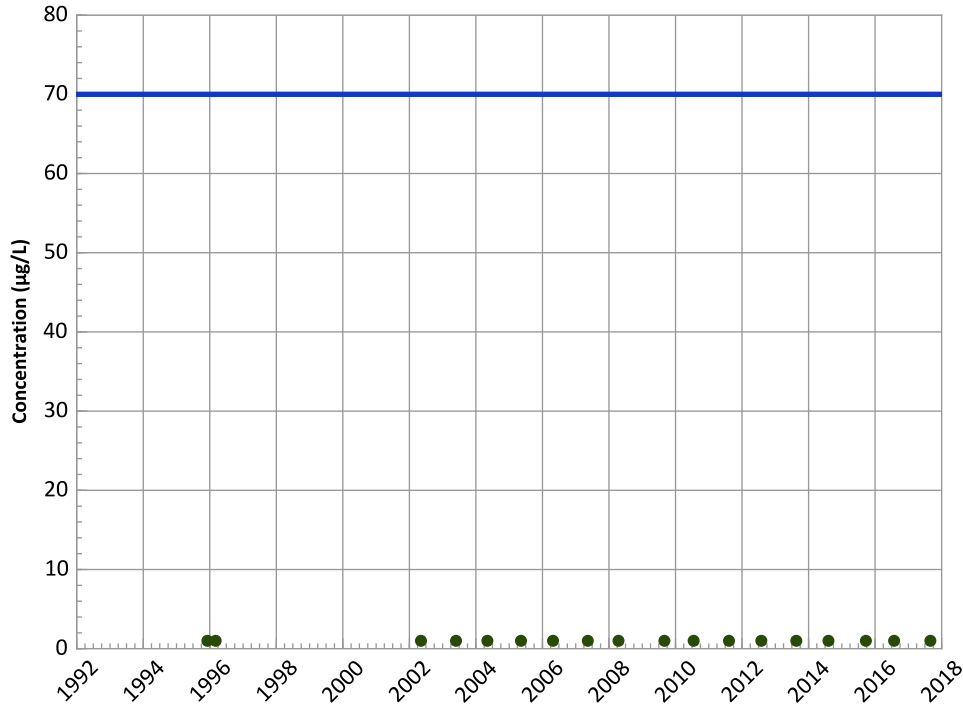


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

MAROS Linear Regression Method
Data ():
N/A (<4 Detections in Dataset)
All Data
Increasing

cis-1,2-Dichloroethene Trend

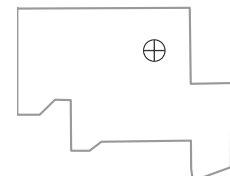


Concentration Trend

MAROS Mann-Kendall Method
Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method
Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

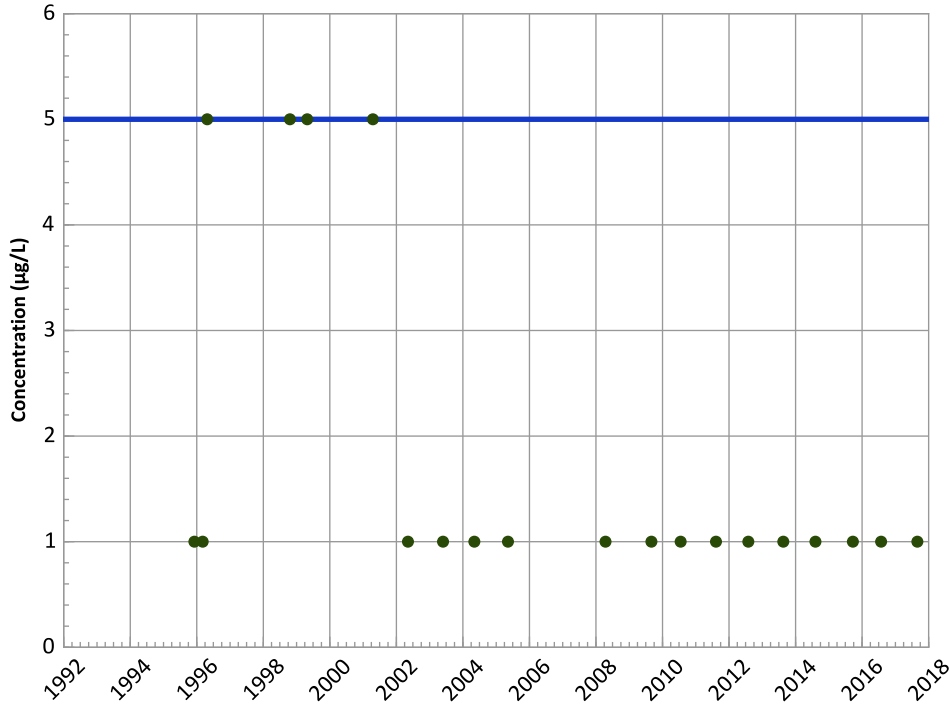


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/06/1995 to 08/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX07-1003 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,2-Dichloroethane Trend



Concentration Trend

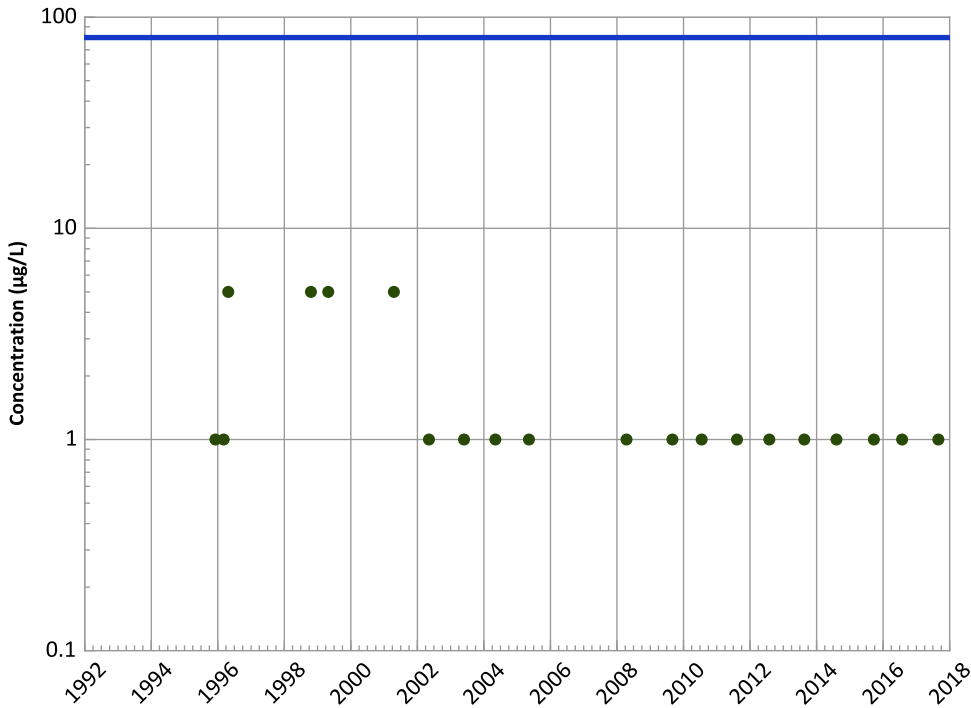
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Chloroform Trend



Concentration Trend

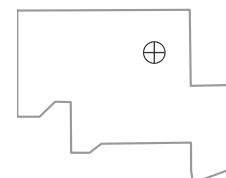
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

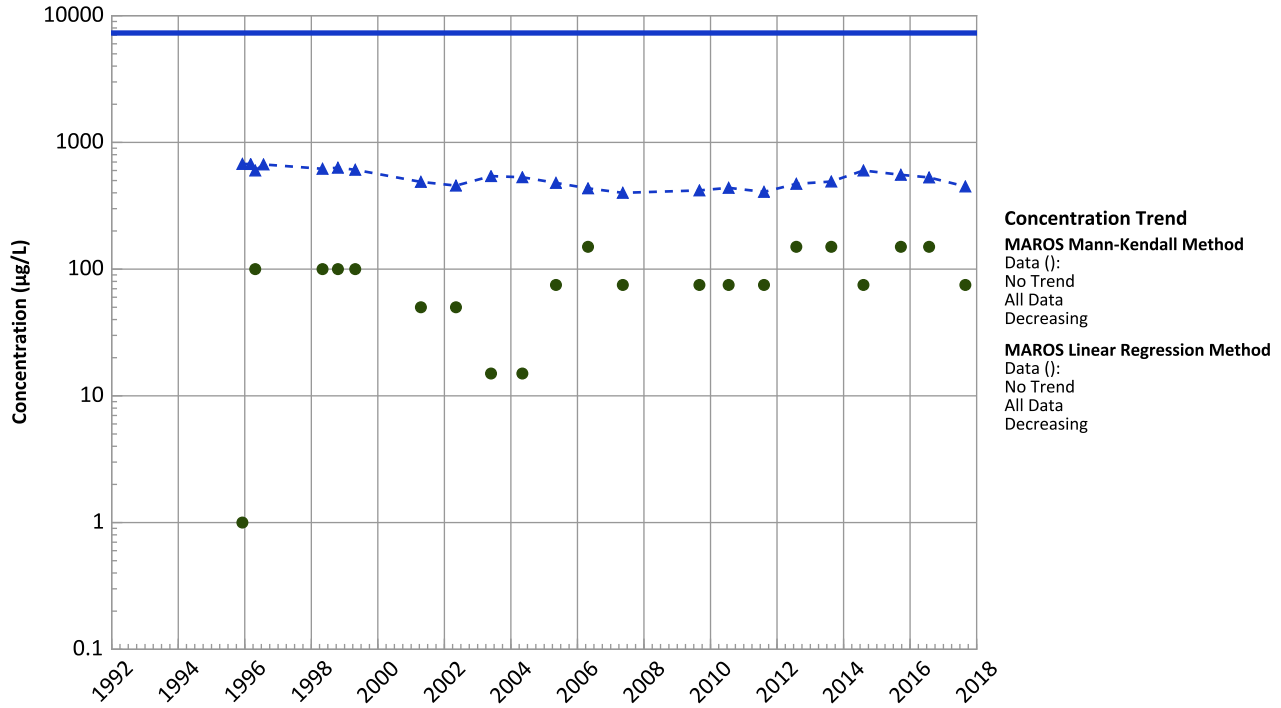


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/06/1995 to 08/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX07-1003 in Perched Aquifer
USDOE/NNSA Pantex Plant

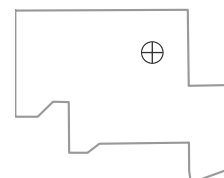
Boron Trend



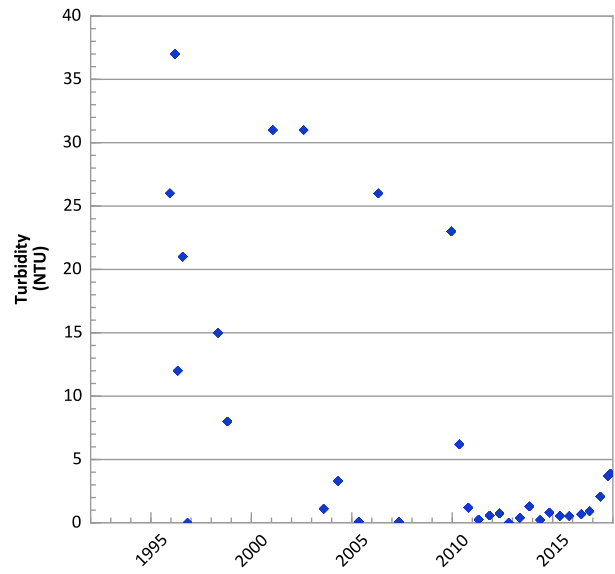
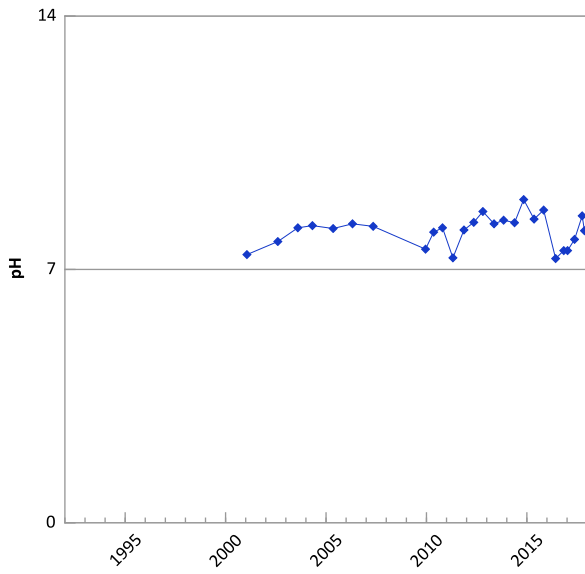
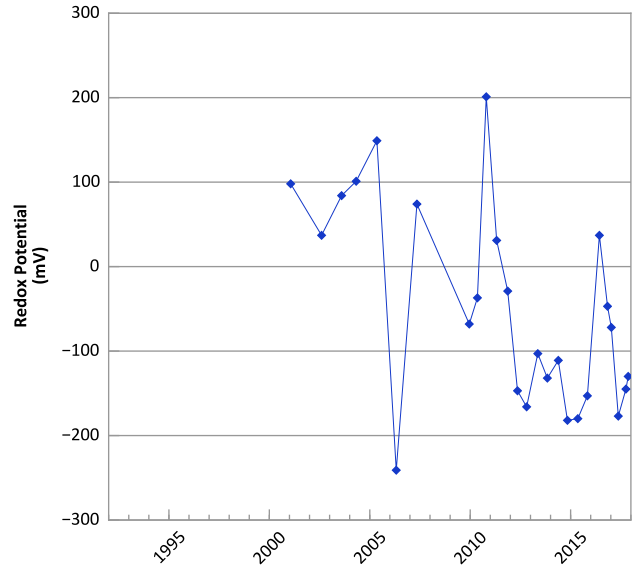
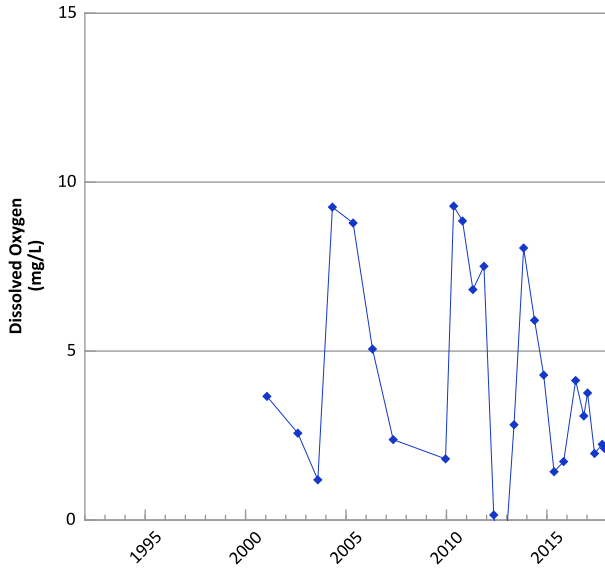
Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/06/1995 to 08/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

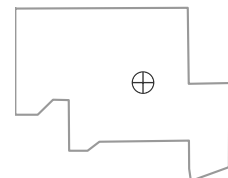


**PTX07-1P02 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



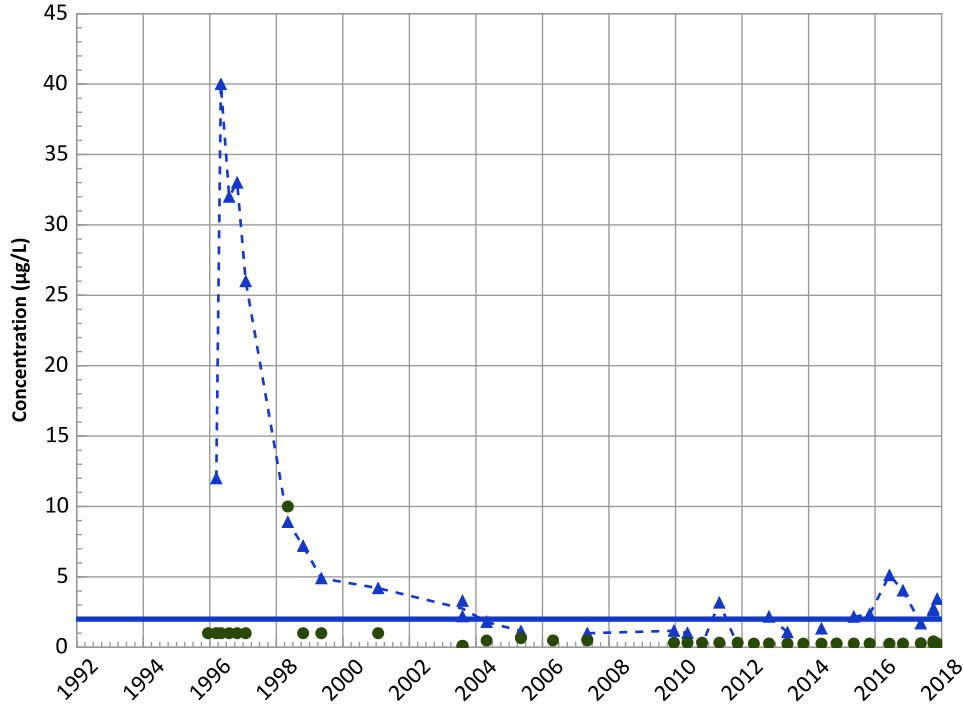
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 12/13/1995 to 11/13/2017
 Analysis Date: 03/21/2018

Well Location



PTX07-1P02 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

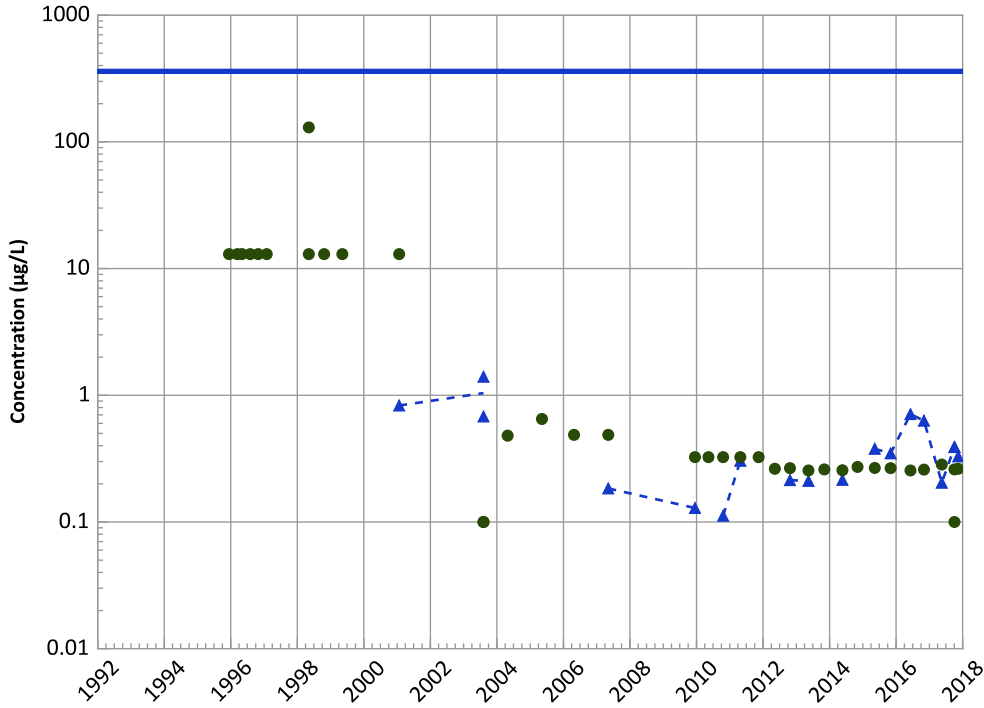
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Decreasing

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

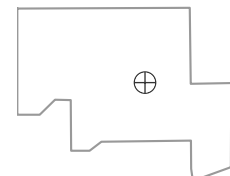
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Stable

Well Location

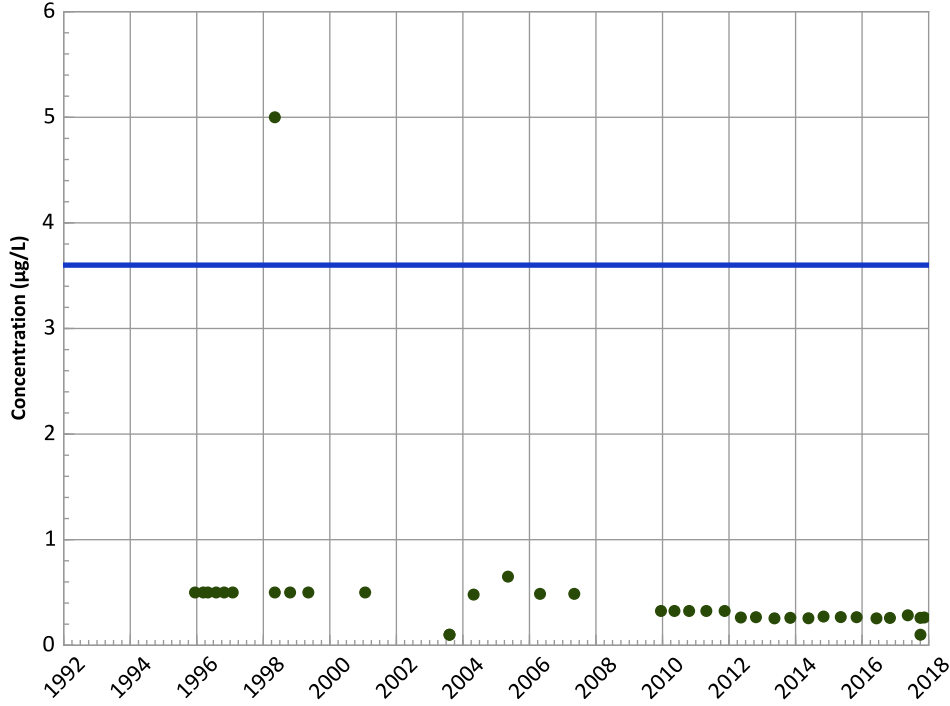


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/13/1995 to 11/13/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX07-1P02 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

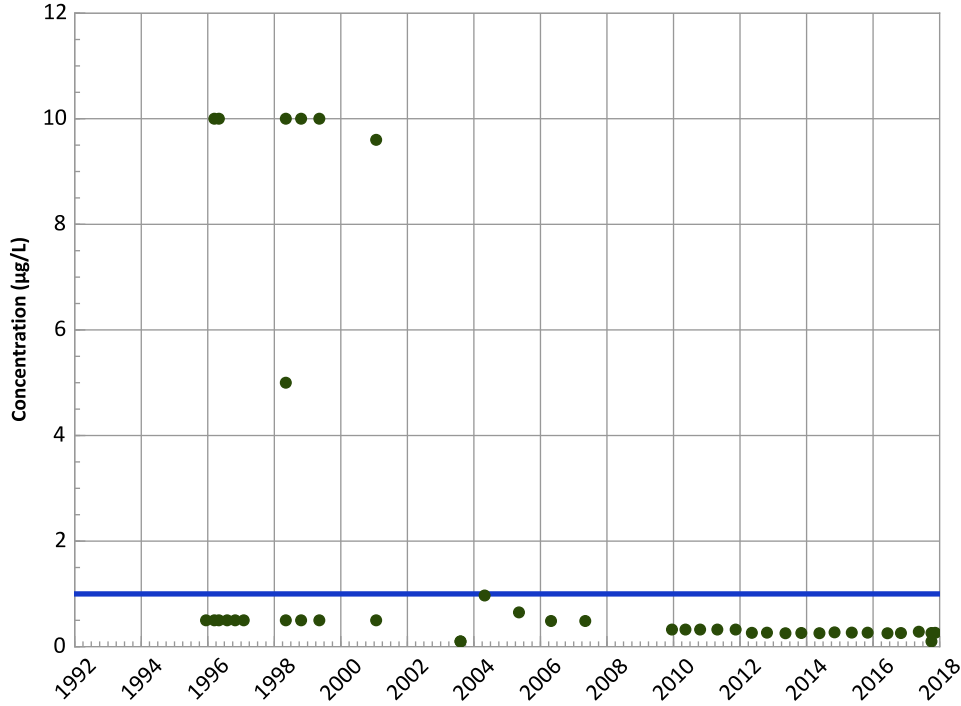
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

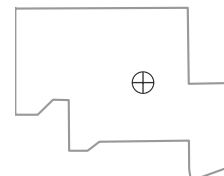
MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/13/1995 to 11/13/2017
Analysis Date: 03/21/2018

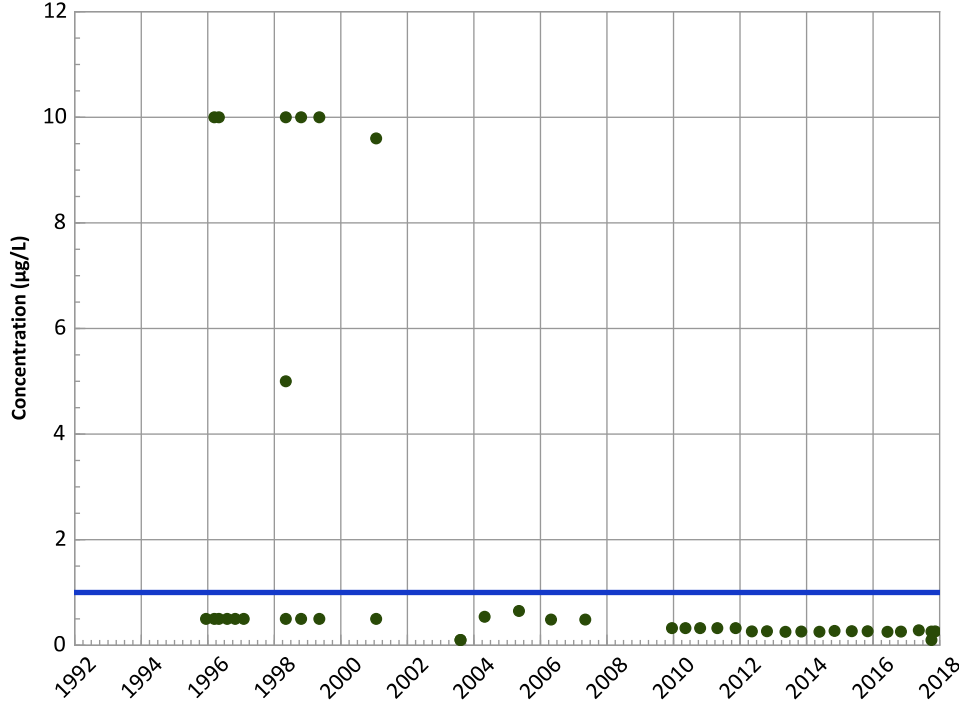
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX07-1P02 in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

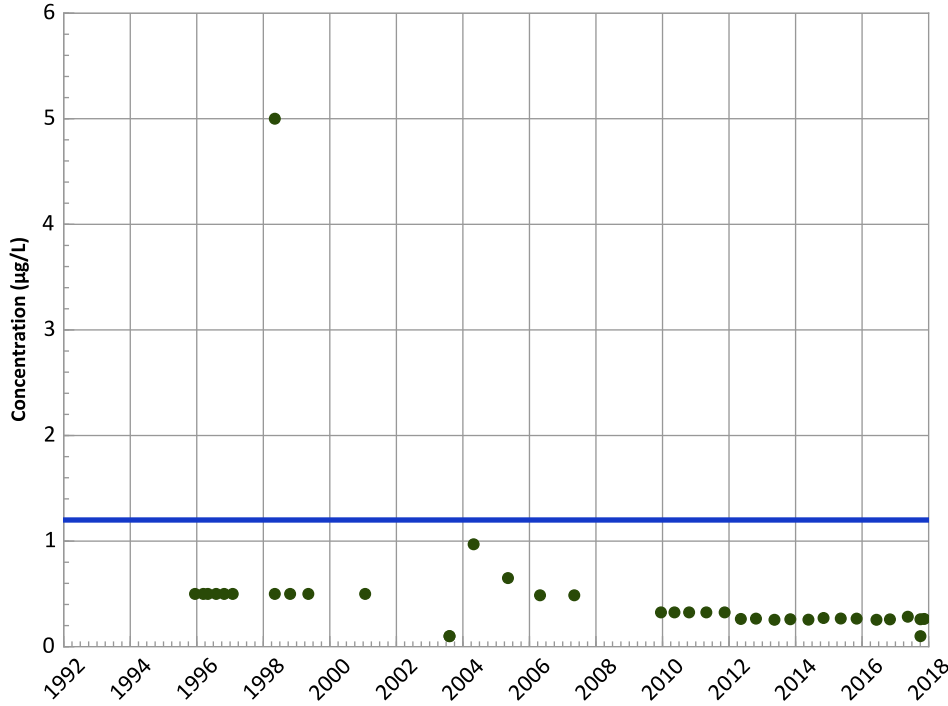
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

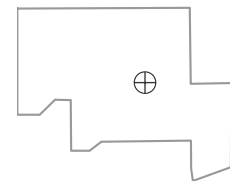
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

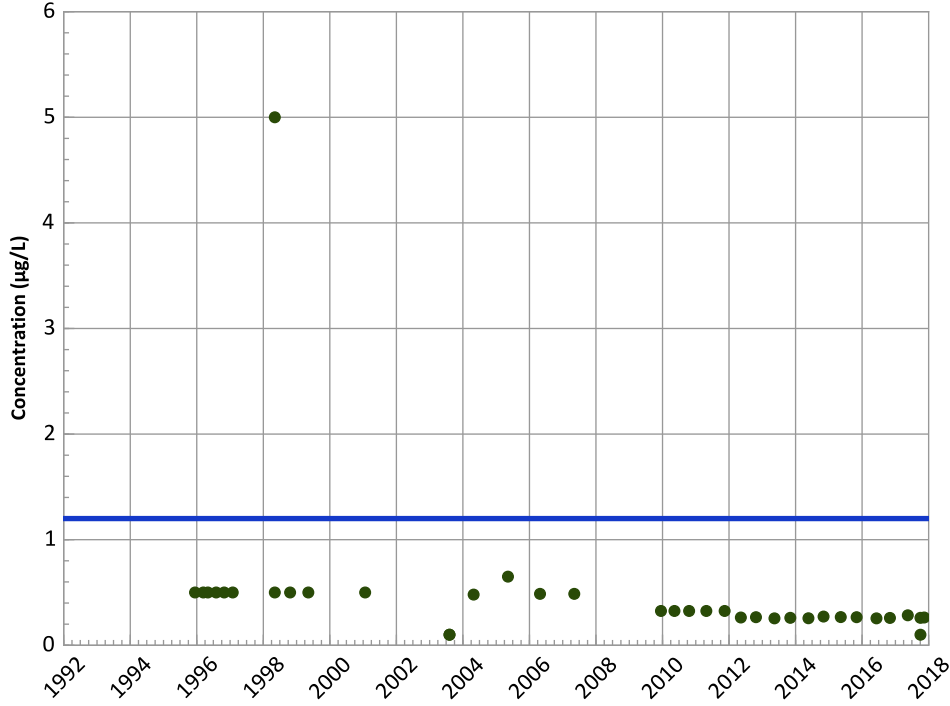


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/13/1995 to 11/13/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX07-1P02 in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

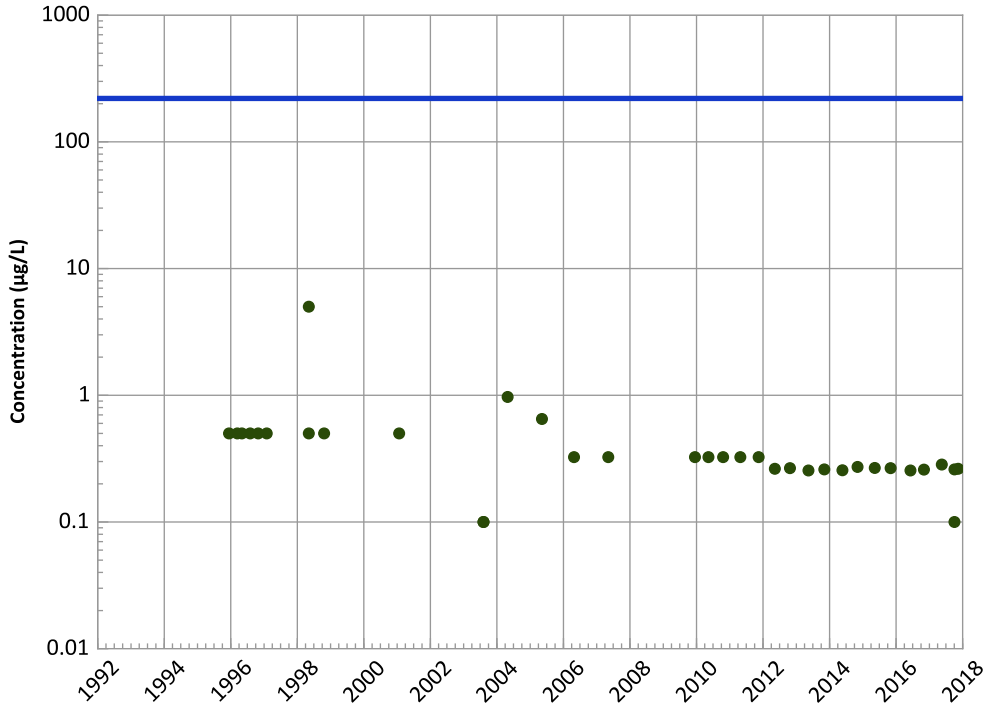
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,3,5-Trinitrobenzene Trend



Concentration Trend

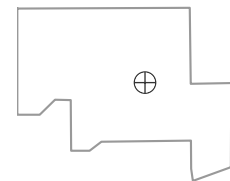
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

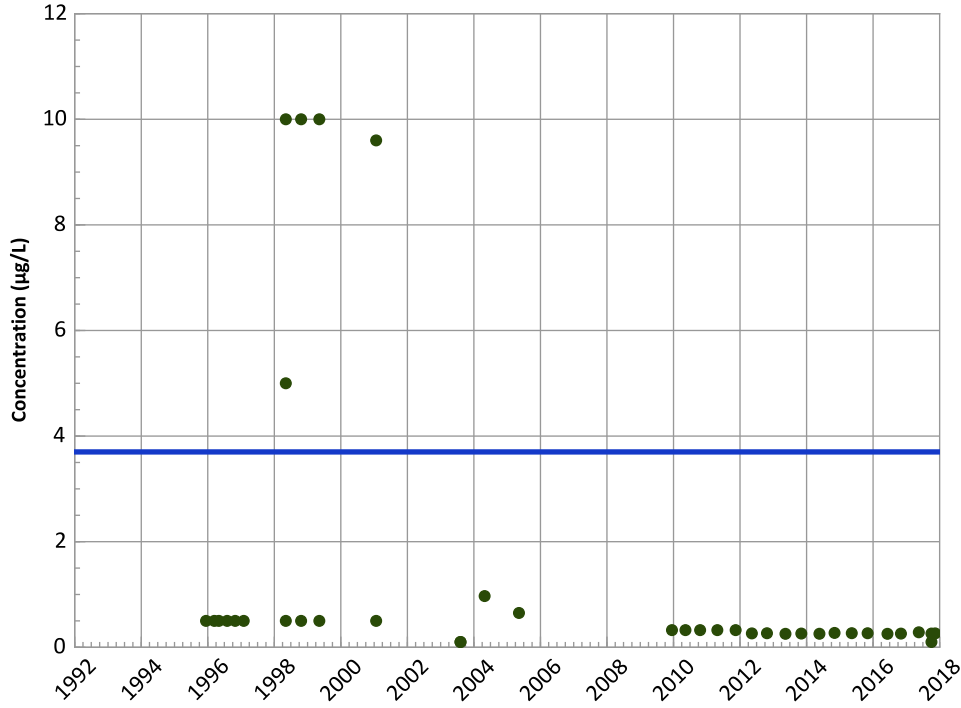


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/13/1995 to 11/13/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX07-1P02 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

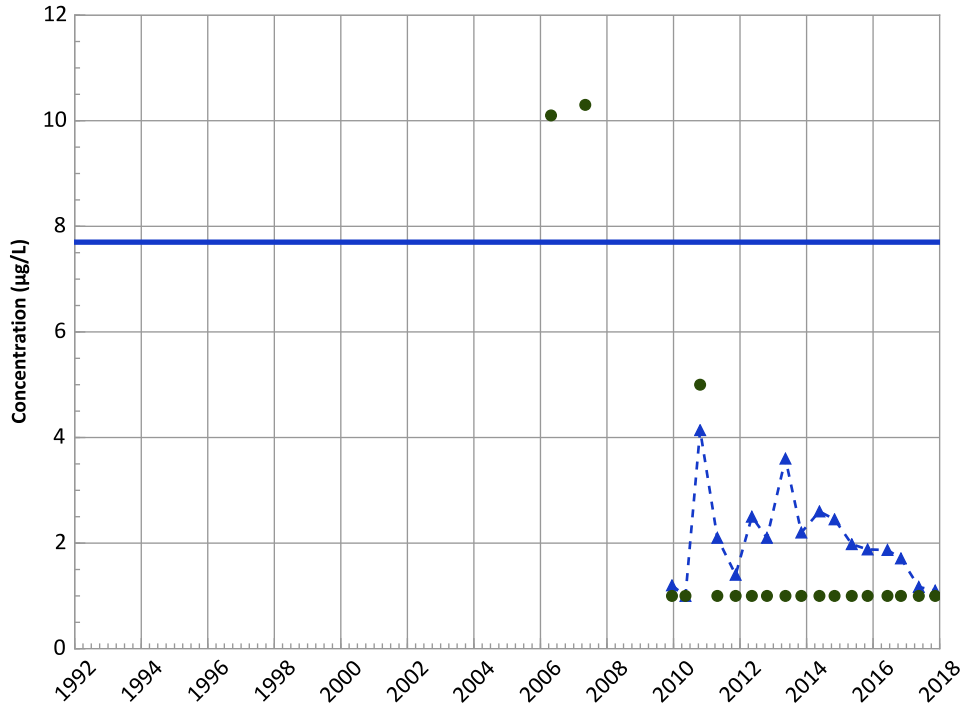
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,4-Dioxane (p-Dioxane) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

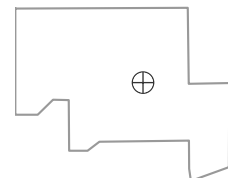
MAROS Linear Regression Method

Data ():
Decreasing
All Data
Stable

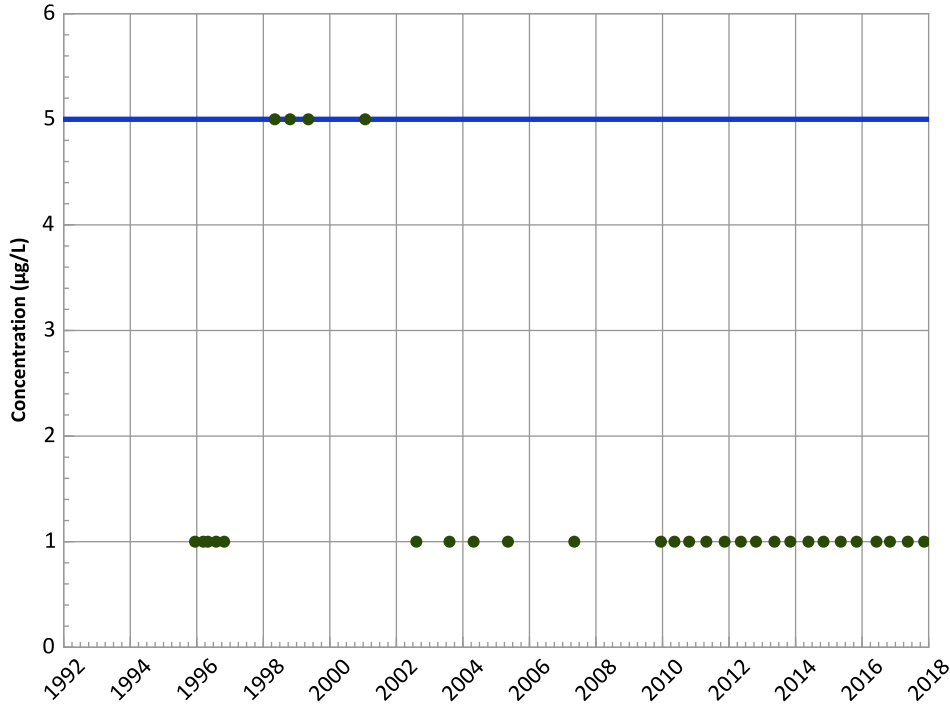
Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/13/1995 to 11/13/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



**PTX07-1P02 in Perched Aquifer
USDOE/NNSA Pantex Plant
Tetrachloroethylene (PCE) Trend**



Concentration Trend

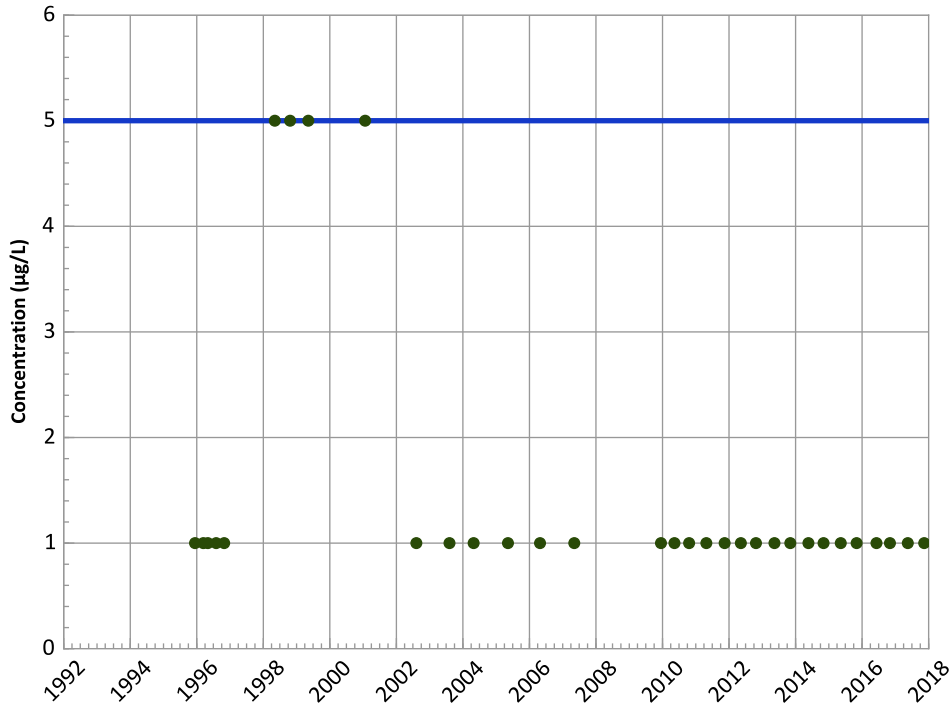
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Trichloroethene Trend



Concentration Trend

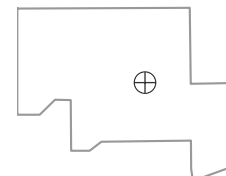
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

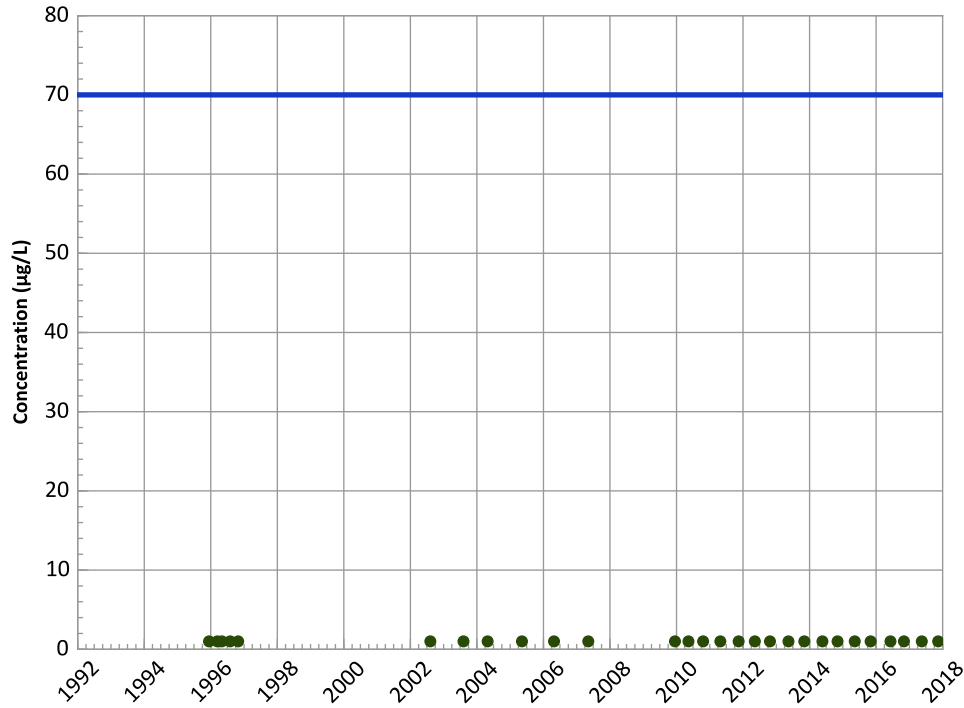
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/13/1995 to 11/13/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX07-1P02 in Perched Aquifer
USDOE/NNSA Pantex Plant
cis-1,2-Dichloroethene Trend**



Concentration Trend

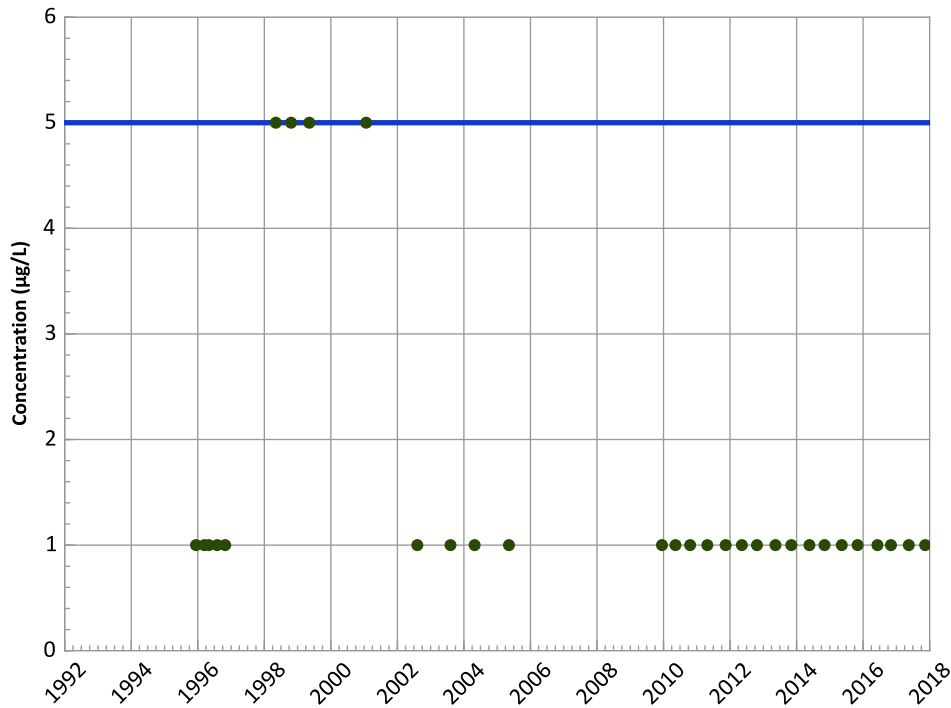
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,2-Dichloroethane Trend



Concentration Trend

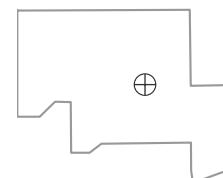
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

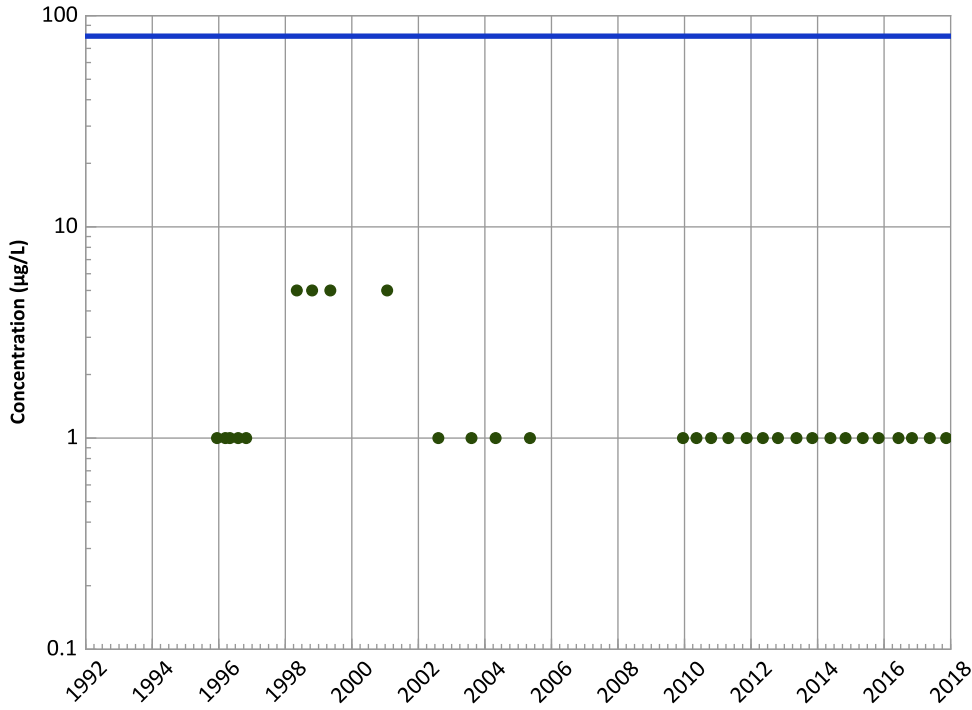
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/13/1995 to 11/13/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX07-1P02 in Perched Aquifer
USDOE/NNSA Pantex Plant
Chloroform Trend**



Concentration Trend

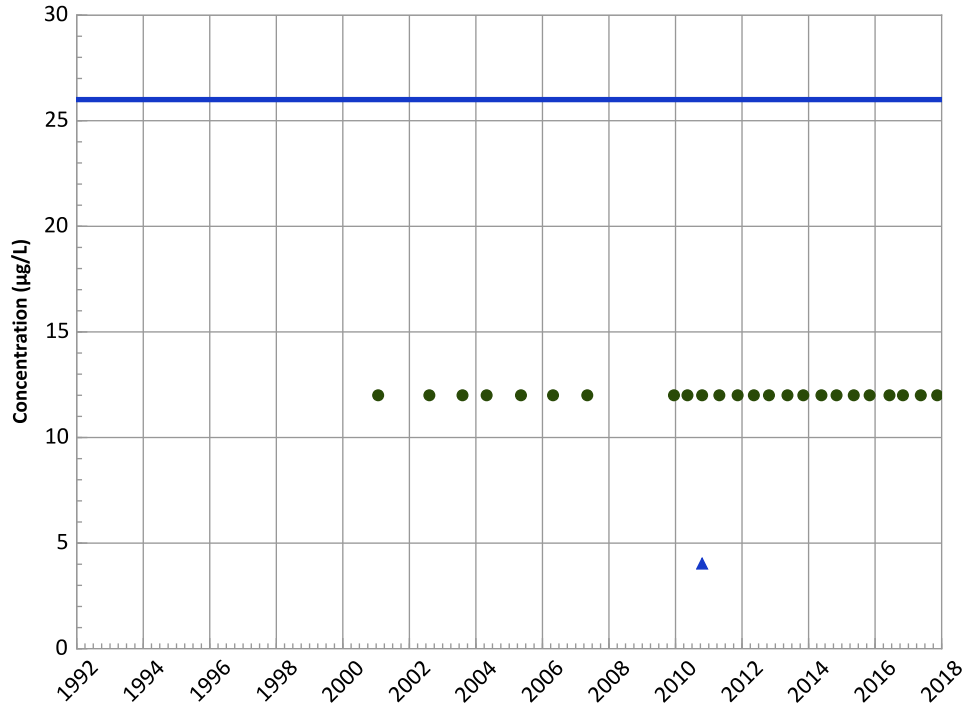
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Perchlorate Trend



Concentration Trend

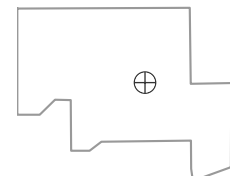
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

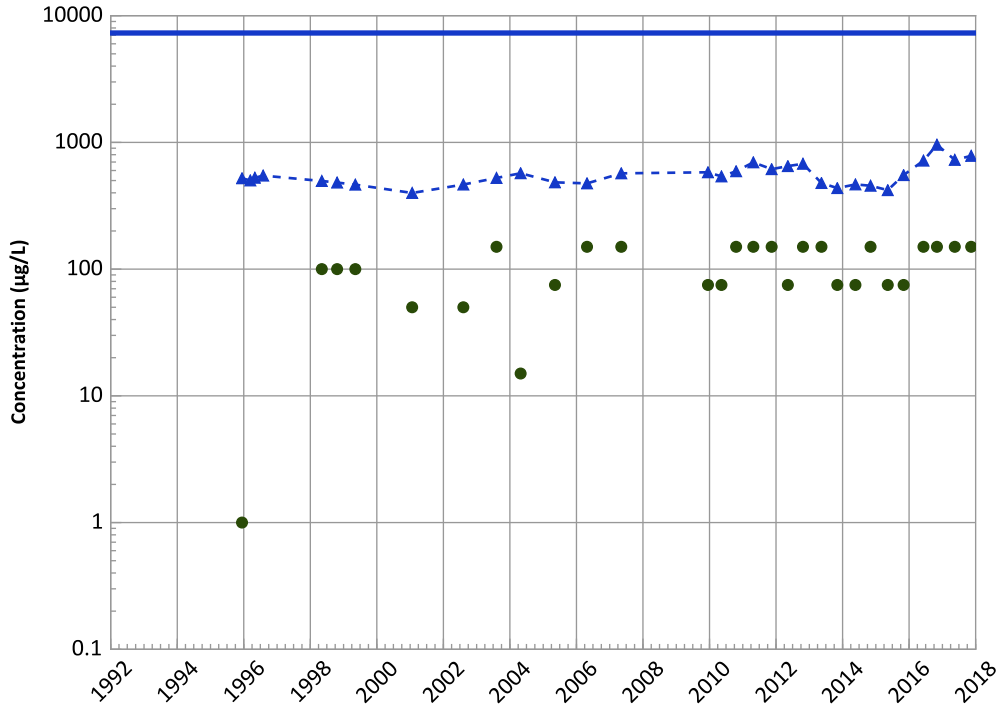
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/13/1995 to 11/13/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX07-1P02 in Perched Aquifer
 USDOE/NNSA Pantex Plant
 Boron Trend

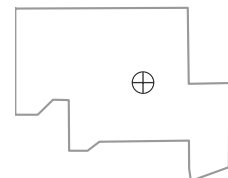


Concentration Trend
 MAROS Mann-Kendall Method
 Data ():
 Increasing
 All Data
 Increasing
 MAROS Linear Regression Method
 Data ():
 No Trend
 All Data
 Increasing

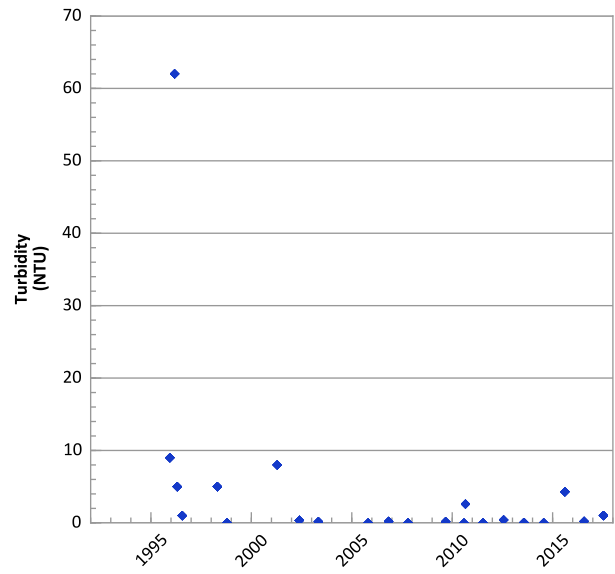
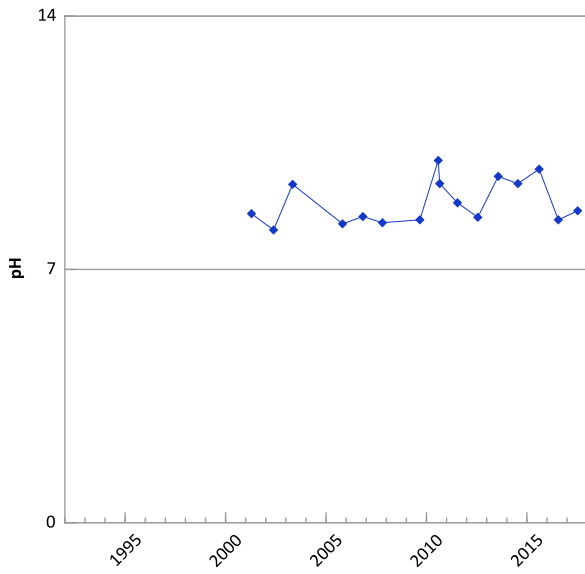
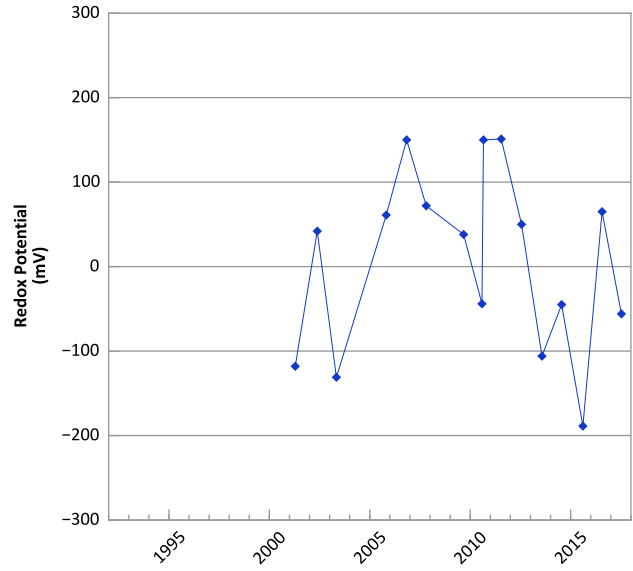
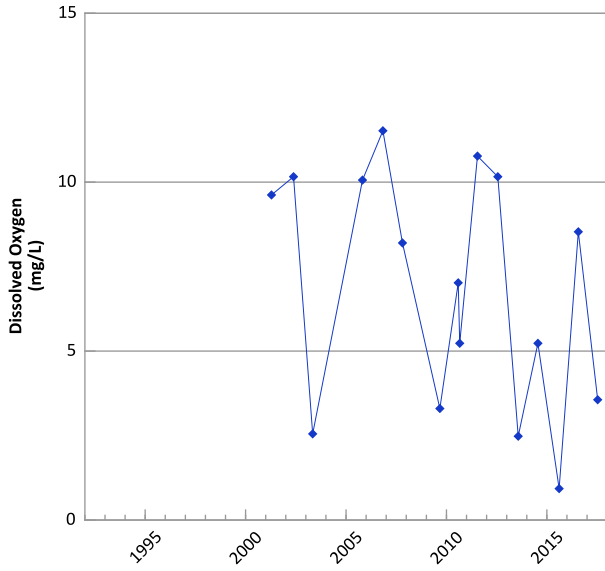
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 12/13/1995 to 11/13/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

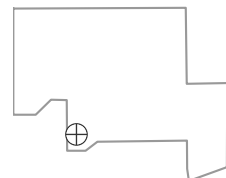


**PTX07-1Q01 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



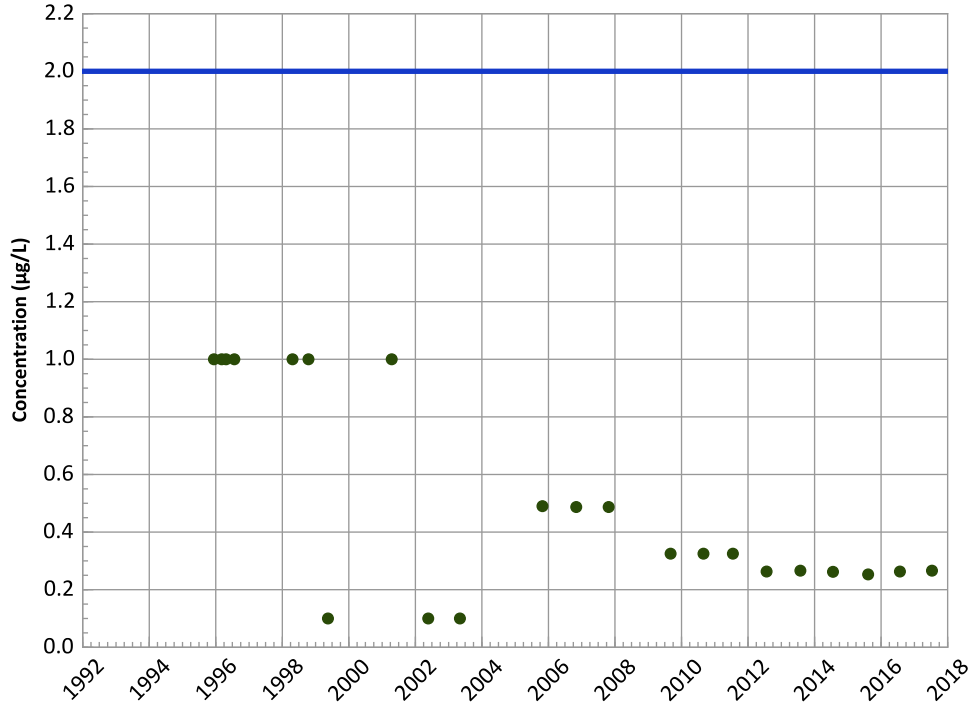
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 12/12/1995 to 07/13/2017
 Analysis Date: 03/21/2018

Well Location



PTX07-1Q01 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

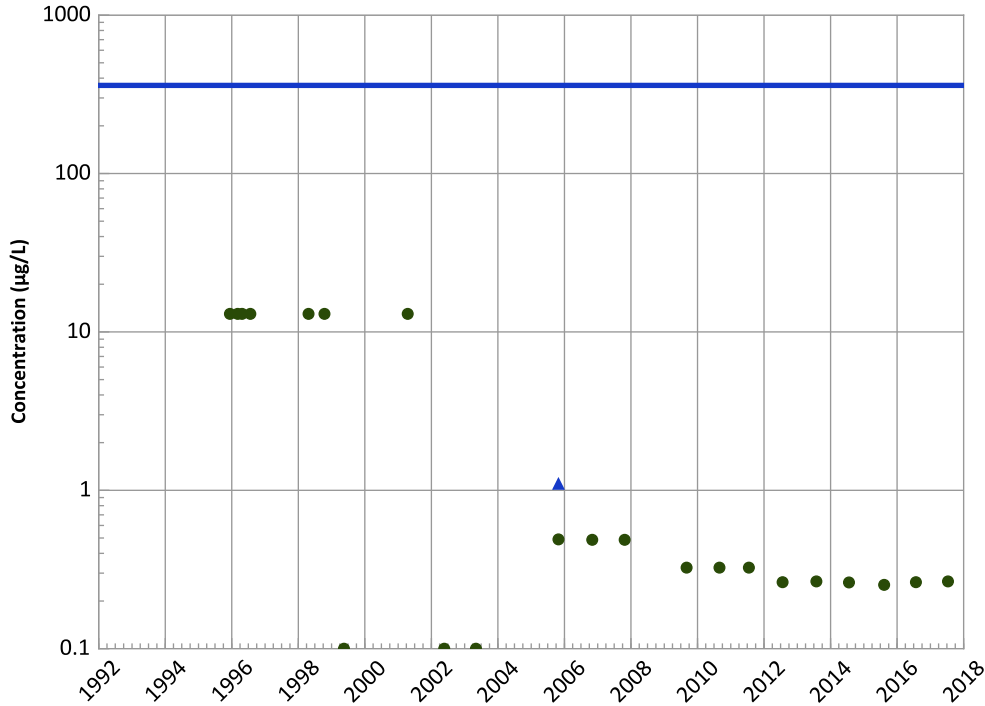
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

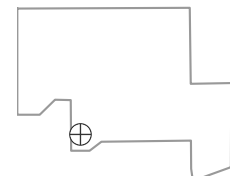
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

Well Location

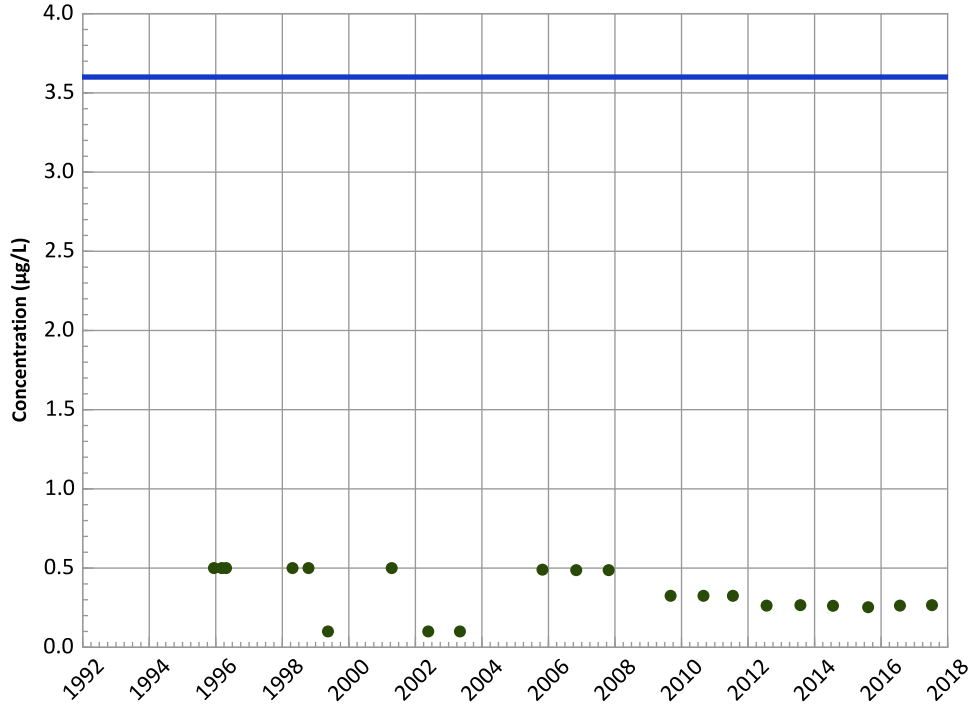


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/12/1995 to 07/13/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX07-1Q01 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

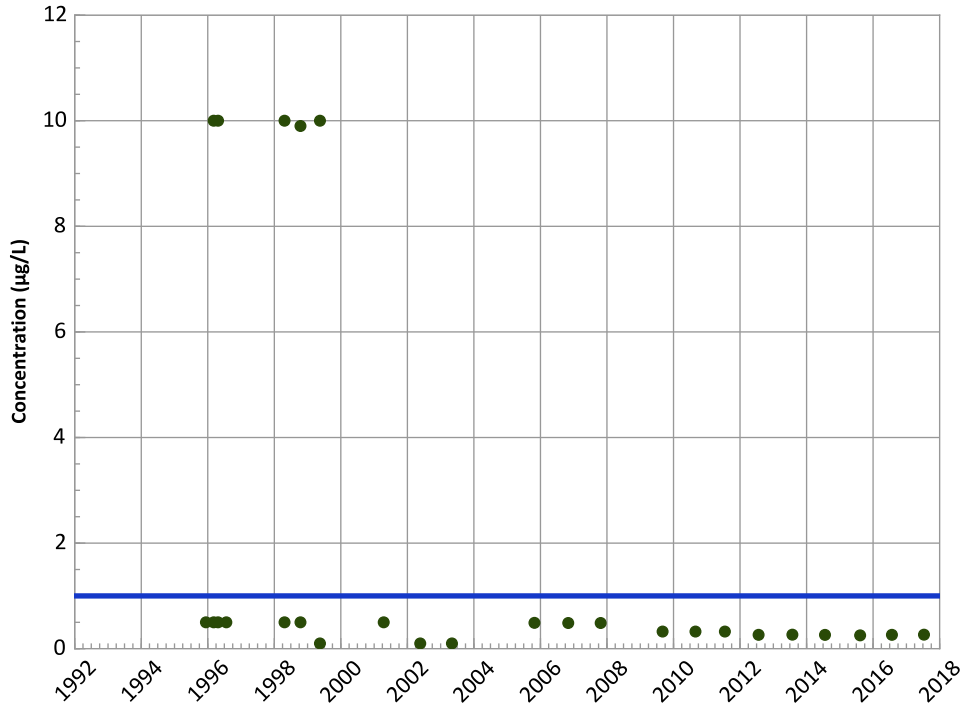
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

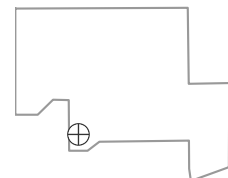
MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/12/1995 to 07/13/2017
Analysis Date: 03/21/2018

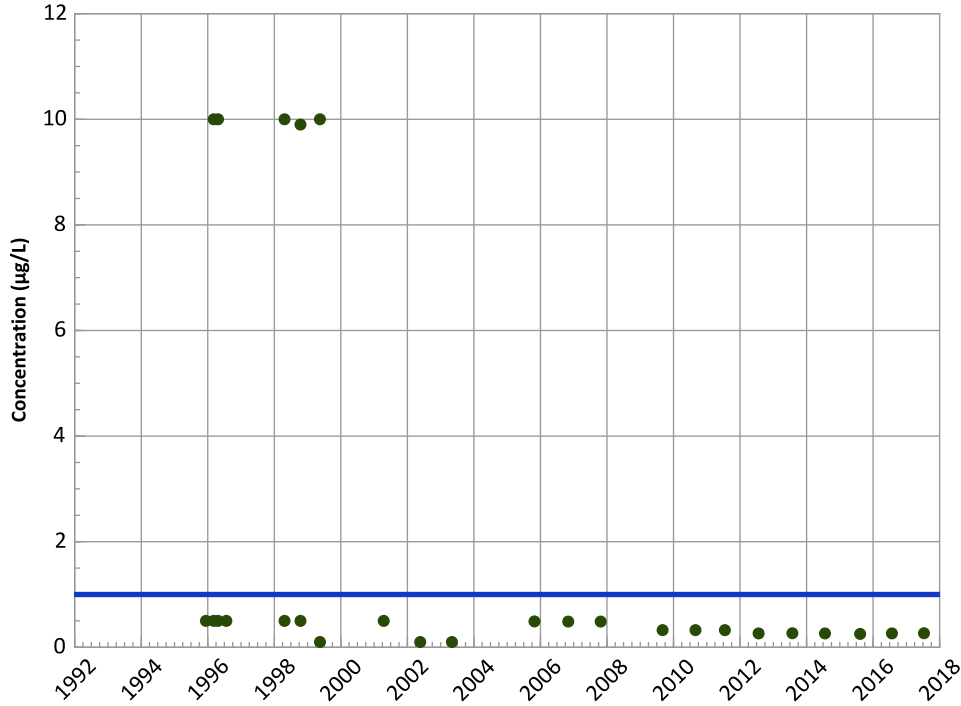
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX07-1Q01 in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

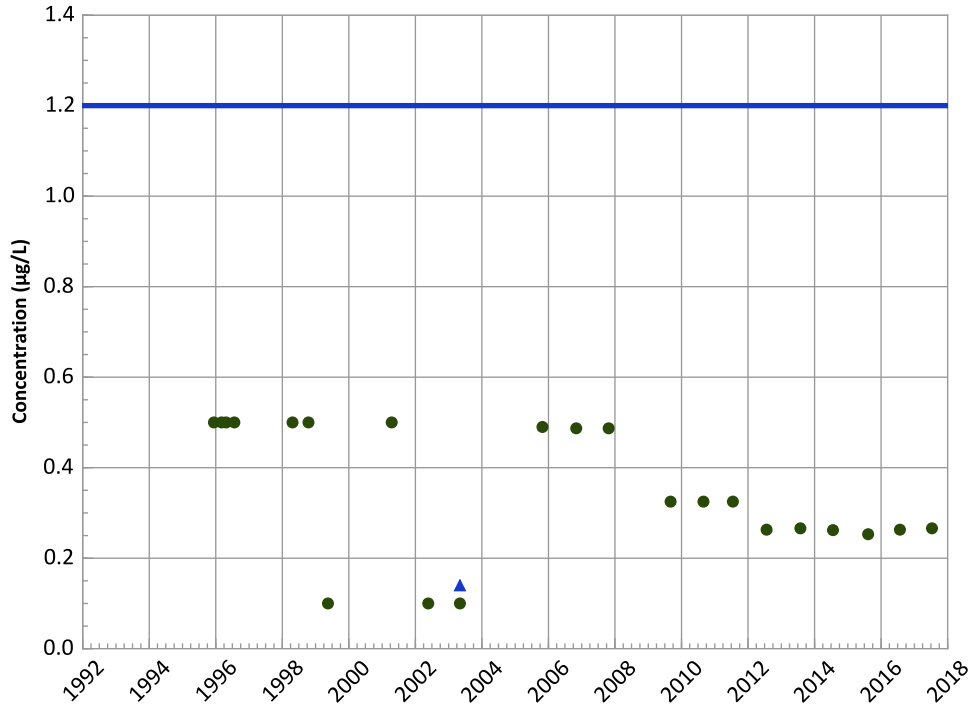
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

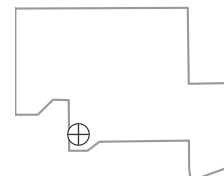
MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/12/1995 to 07/13/2017
Analysis Date: 03/21/2018

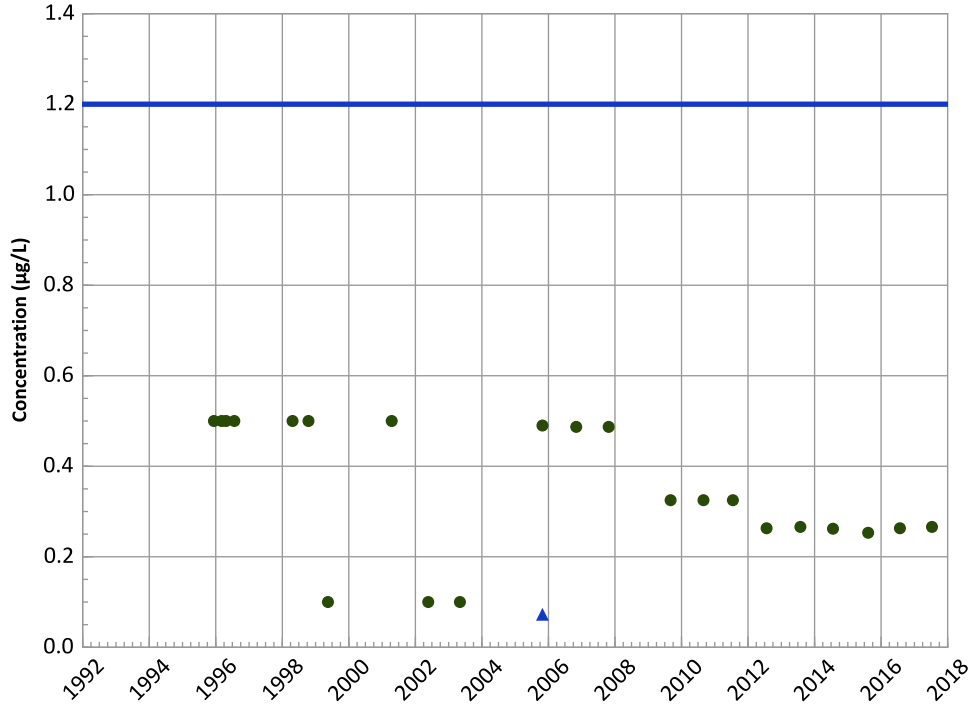
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX07-1Q01 in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

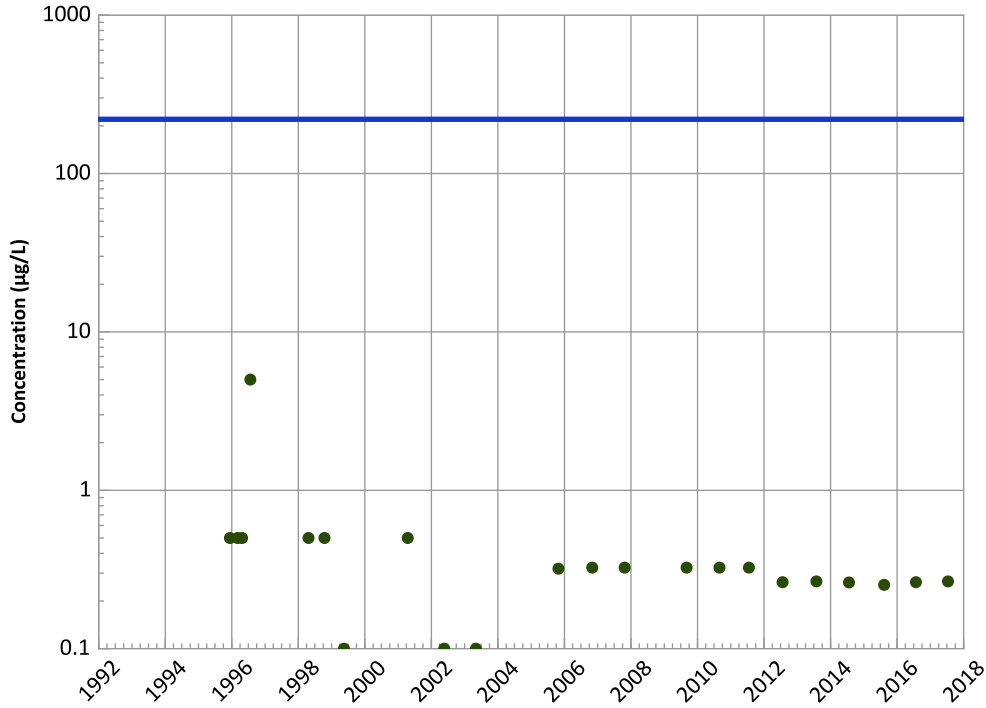
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

1,3,5-Trinitrobenzene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

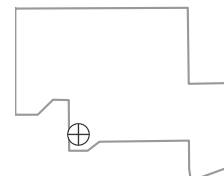
MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/12/1995 to 07/13/2017
Analysis Date: 03/21/2018

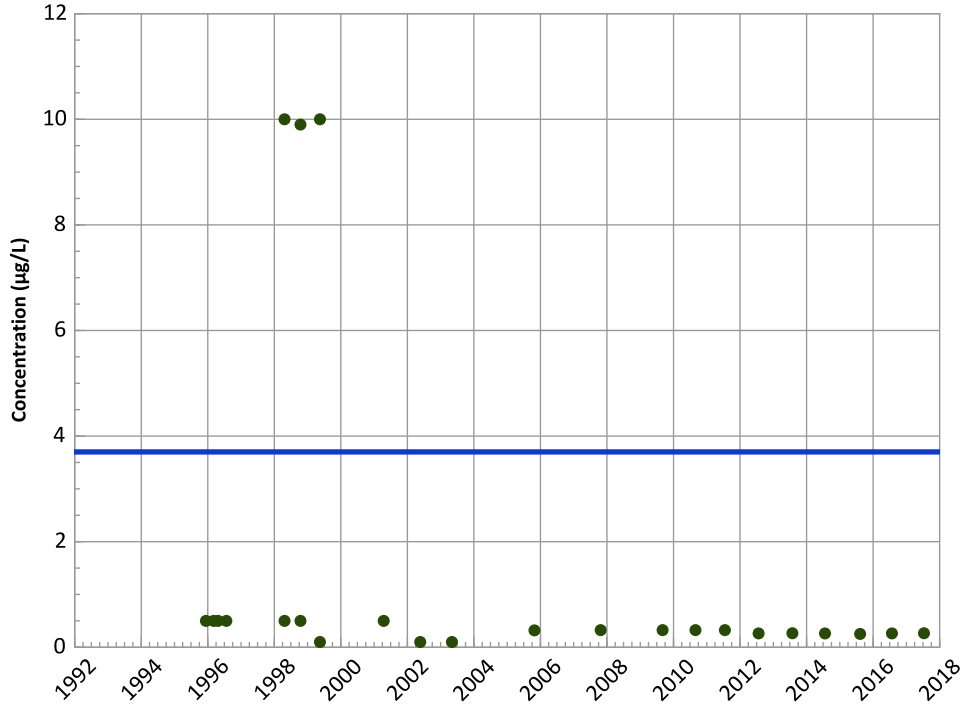
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX07-1Q01 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

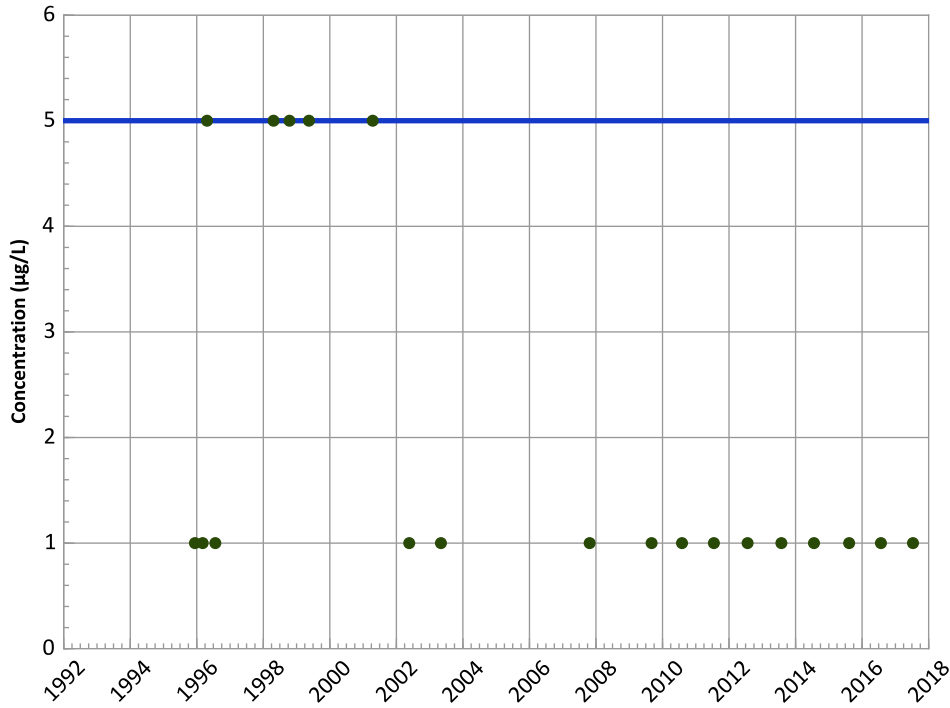
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Tetrachloroethylene (PCE) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

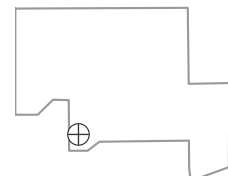
MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/12/1995 to 07/13/2017
Analysis Date: 03/21/2018

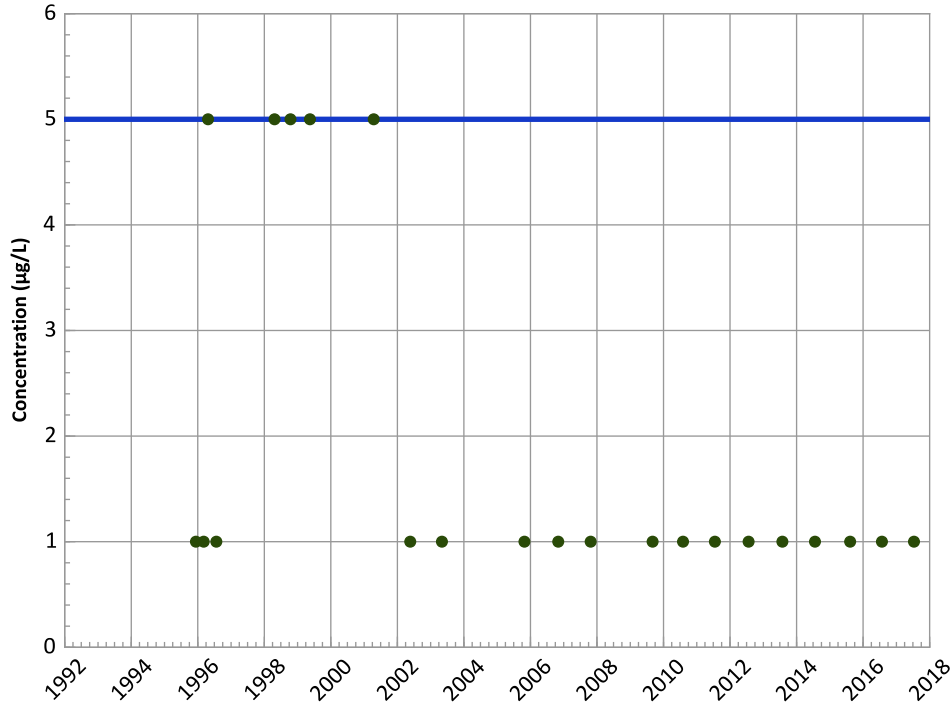
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX07-1Q01 in Perched Aquifer
USDOE/NNSA Pantex Plant

Trichloroethene Trend



Concentration Trend

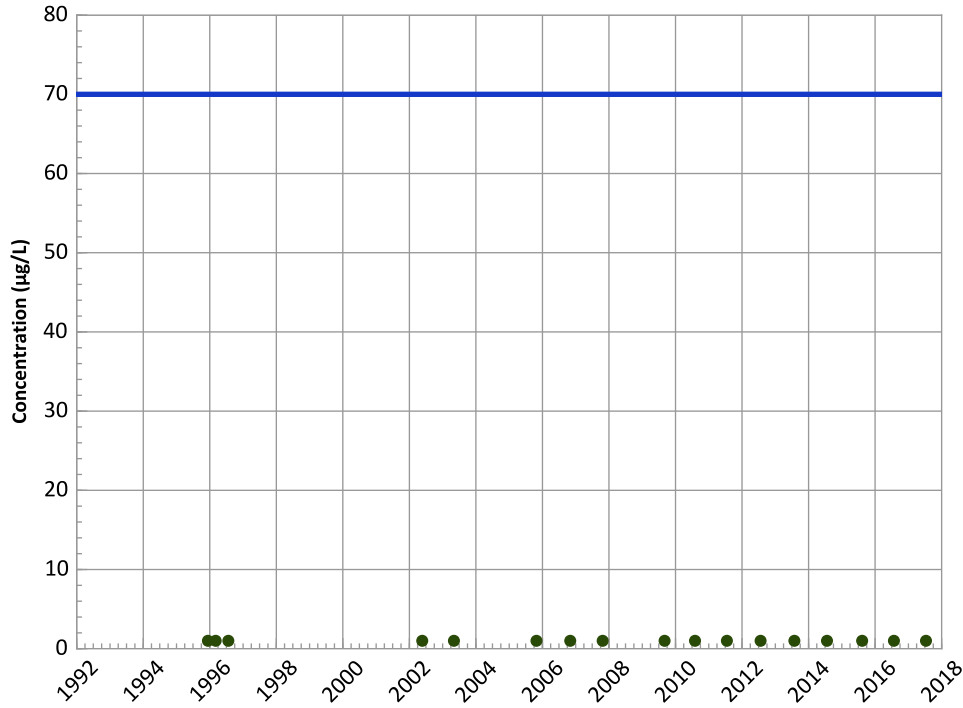
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

cis-1,2-Dichloroethene Trend



Concentration Trend

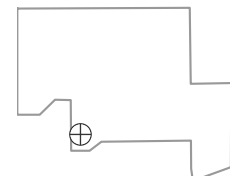
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

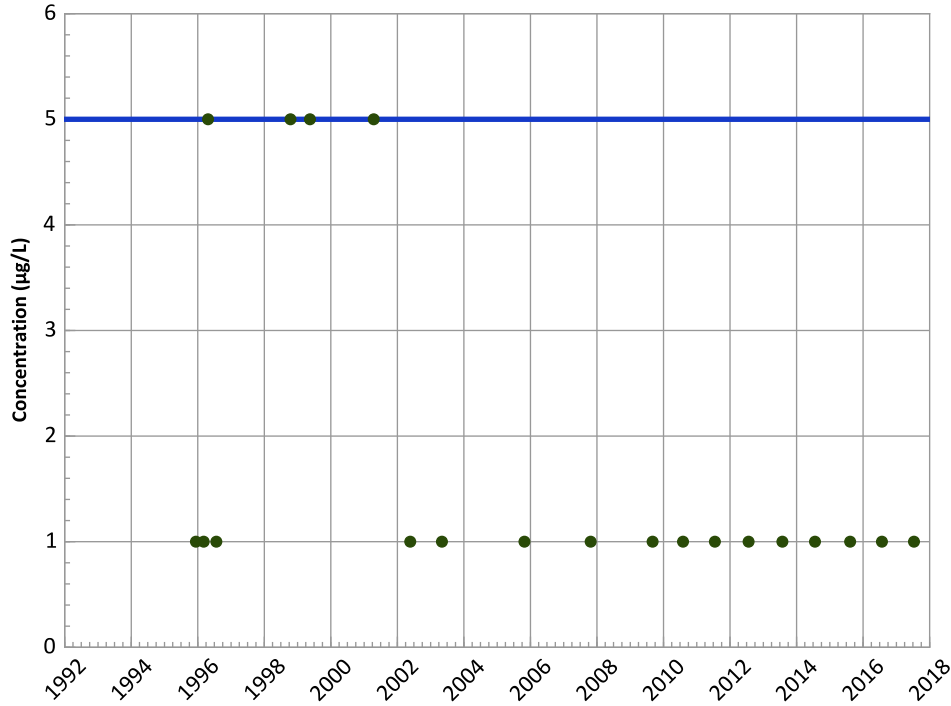


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/12/1995 to 07/13/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX07-1Q01 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,2-Dichloroethane Trend



Concentration Trend

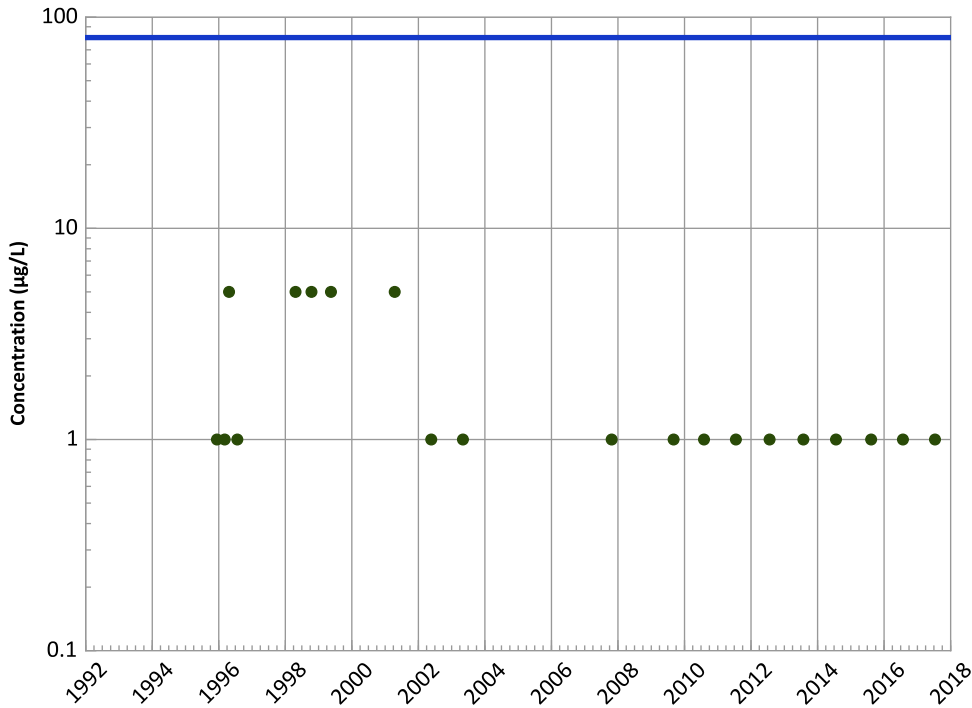
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Chloroform Trend



Concentration Trend

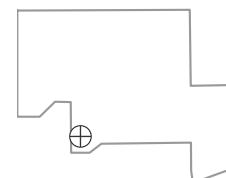
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

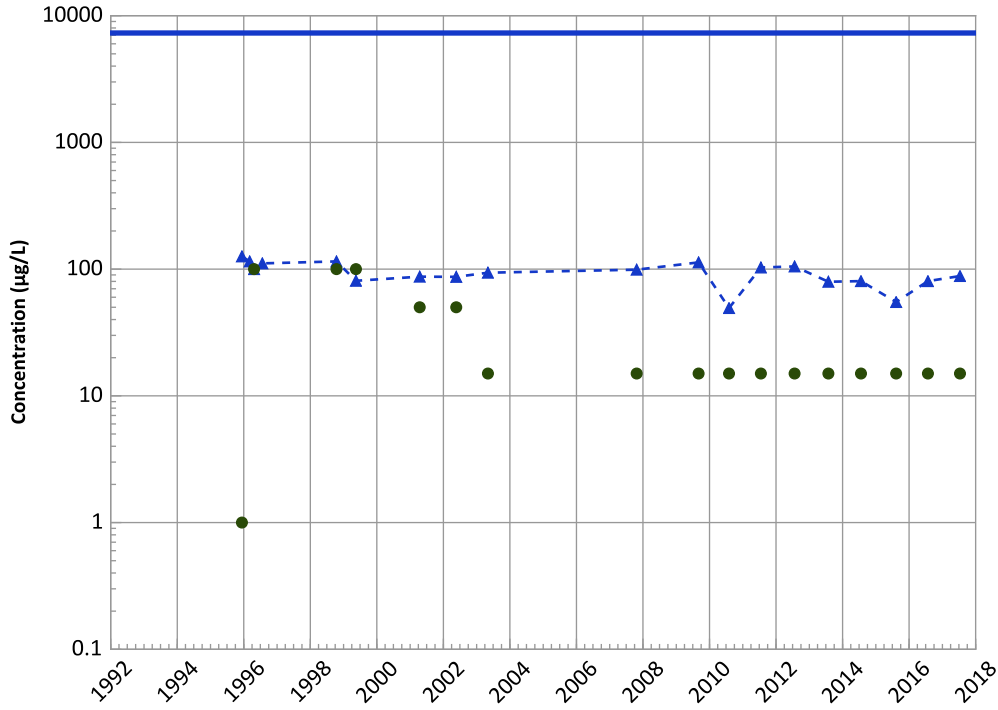


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/12/1995 to 07/13/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX07-1Q01 in Perched Aquifer
USDOE/NNSA Pantex Plant

Boron Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

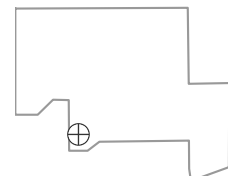
MAROS Linear Regression Method

Data ():
Stable
All Data
Decreasing

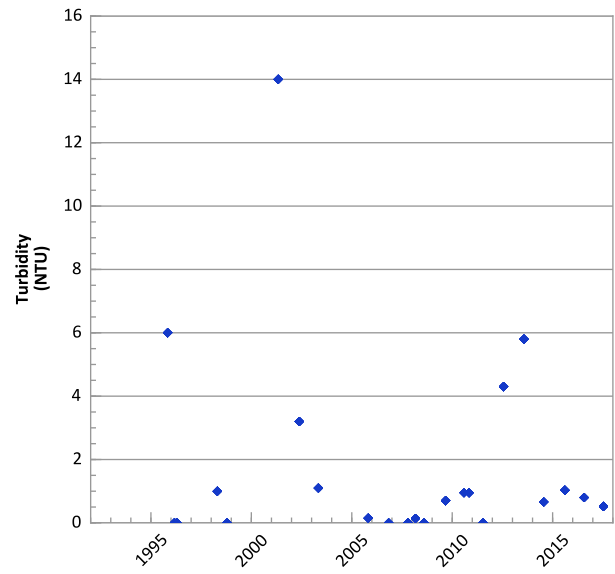
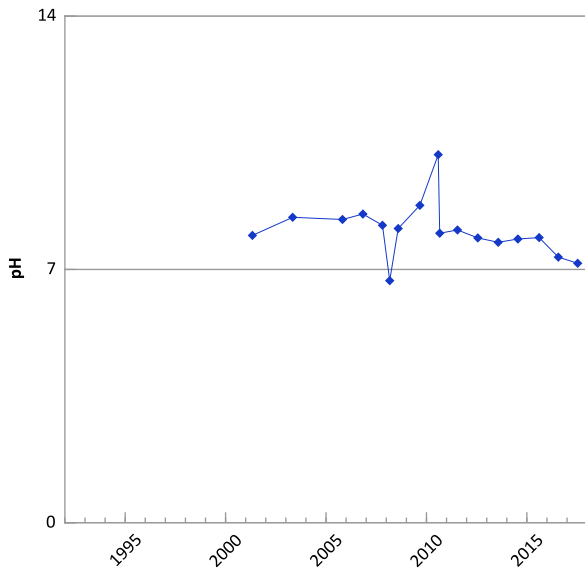
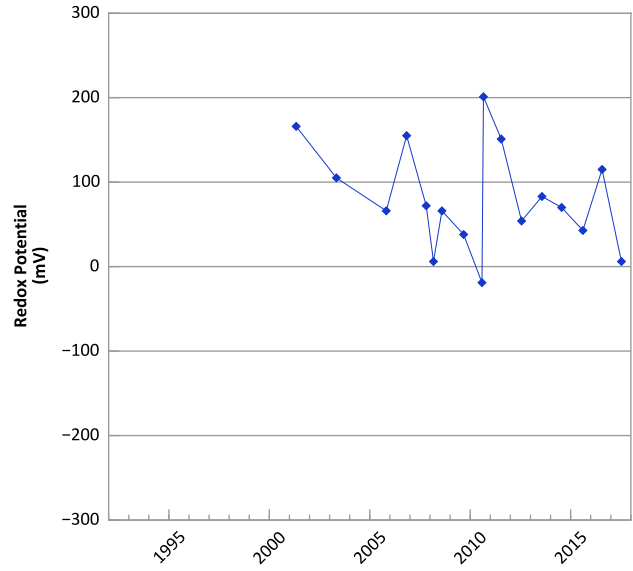
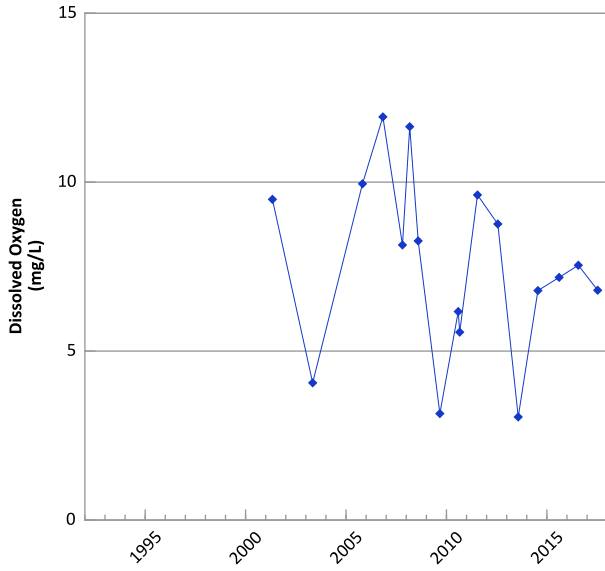
Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/12/1995 to 07/13/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

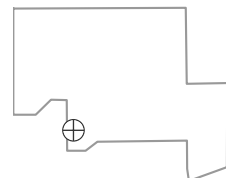


**PTX07-1Q02 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



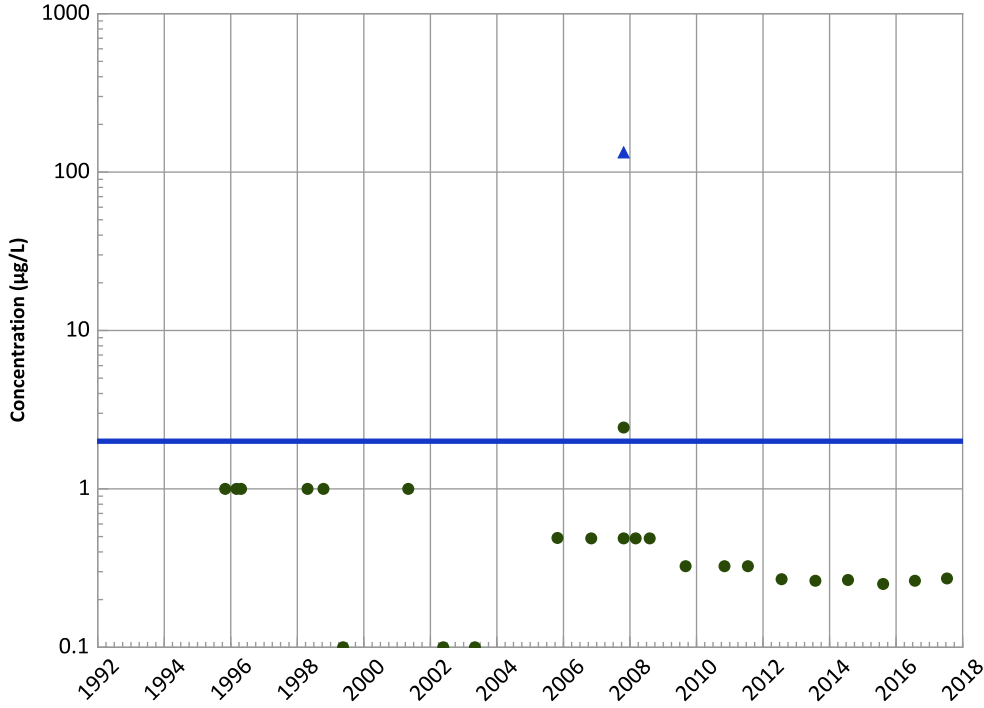
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 11/01/1995 to 07/13/2017
 Analysis Date: 03/21/2018

Well Location



PTX07-1Q02 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

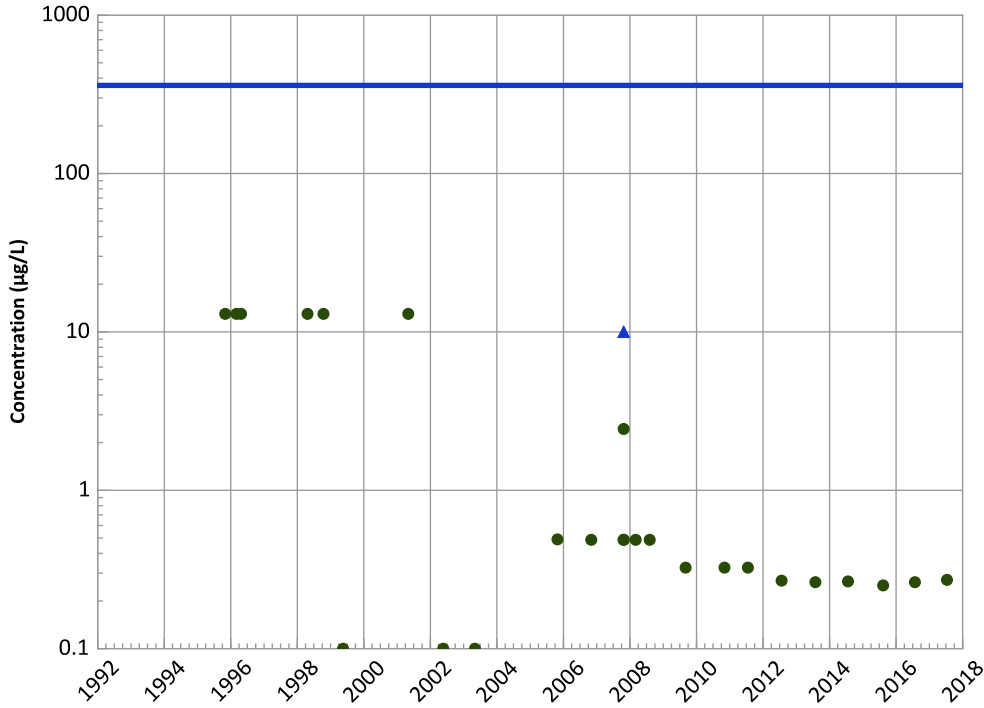
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

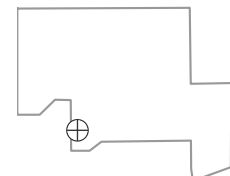
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

Well Location

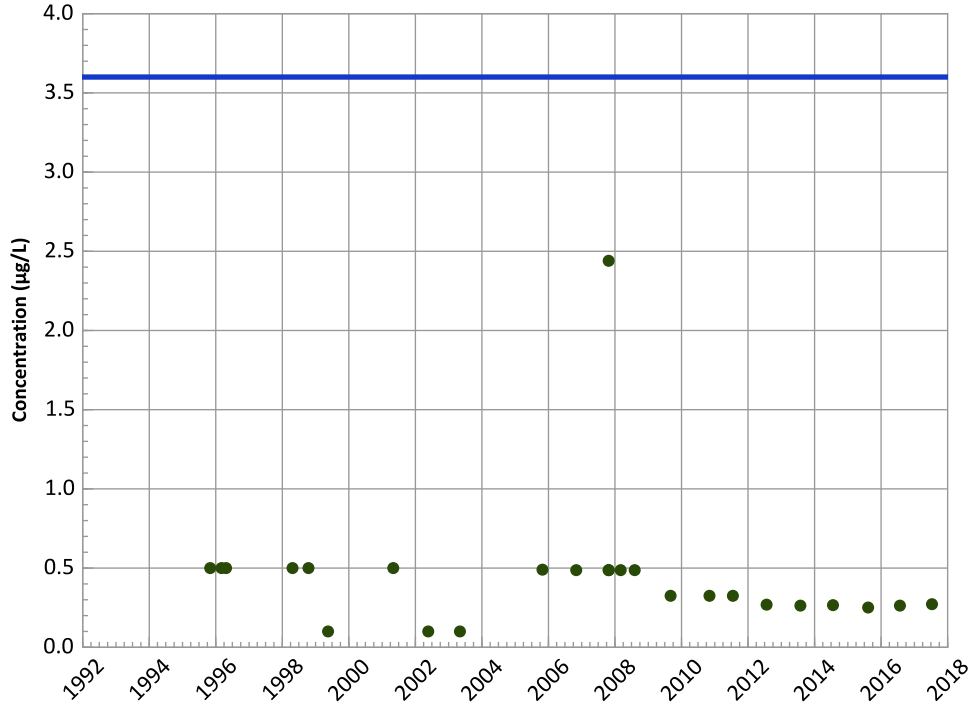


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/01/1995 to 07/13/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX07-1Q02 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

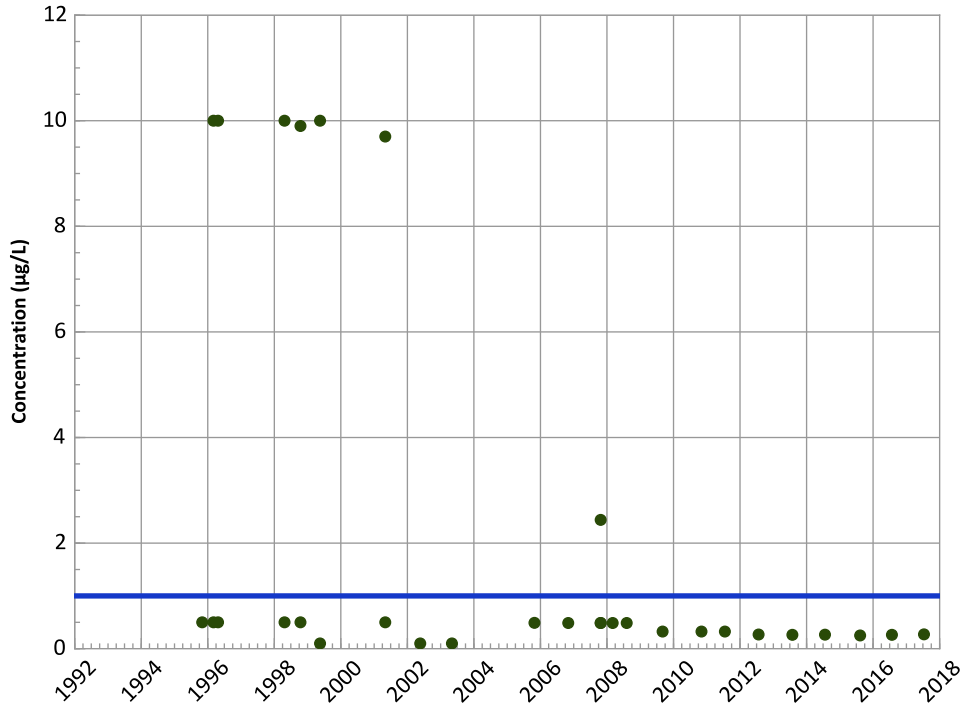
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

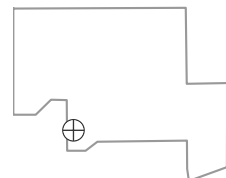
MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/01/1995 to 07/13/2017
Analysis Date: 03/21/2018

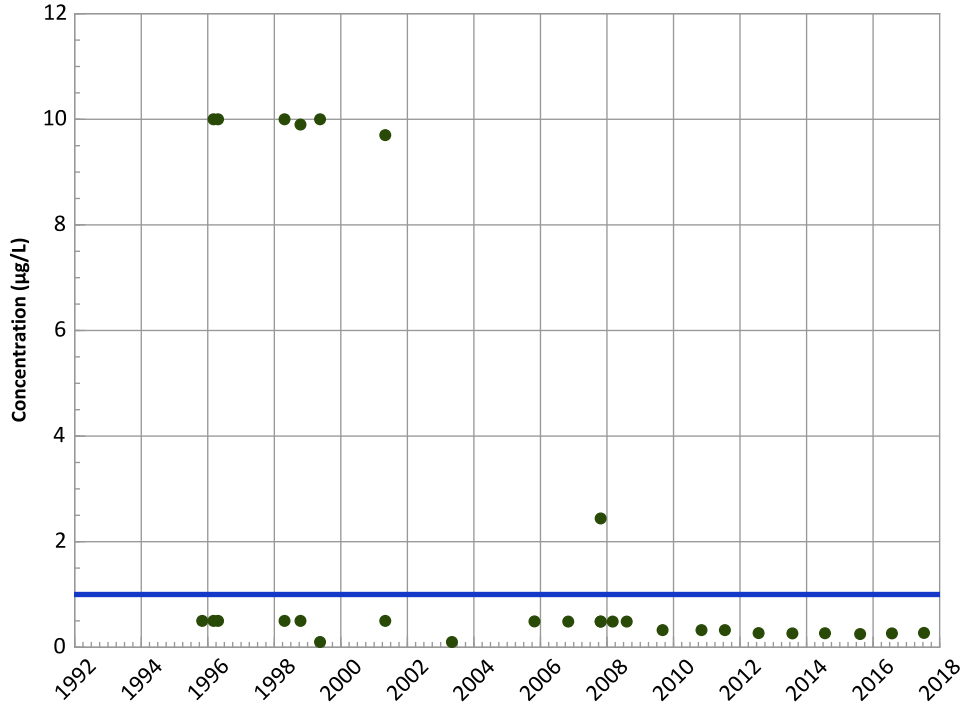
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX07-1Q02 in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

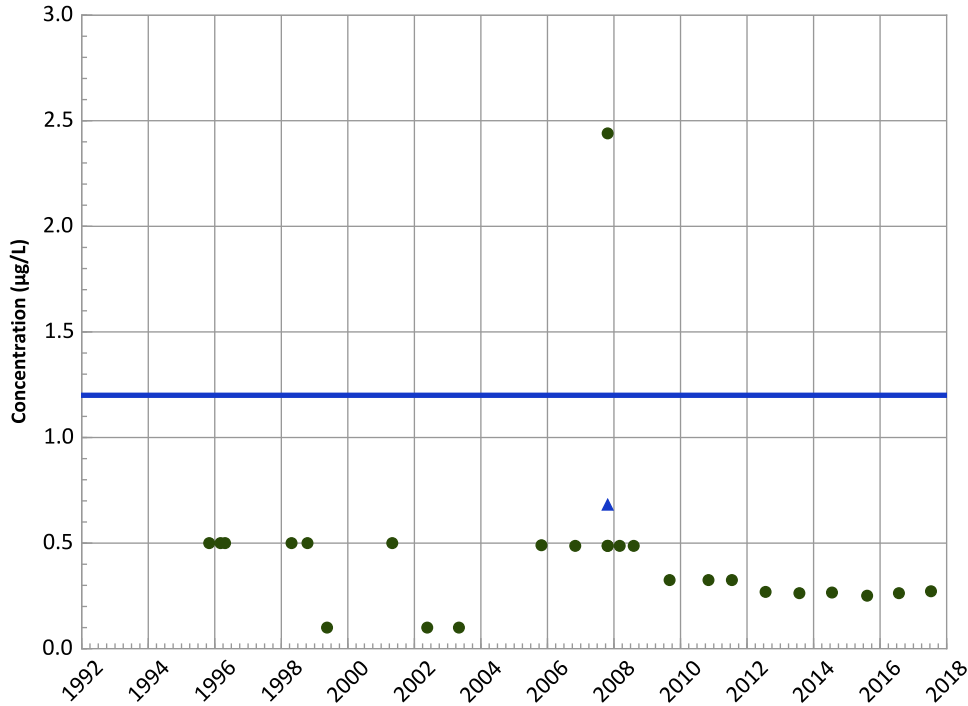
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

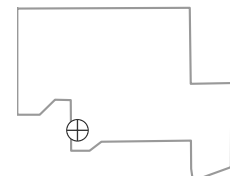
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

Well Location

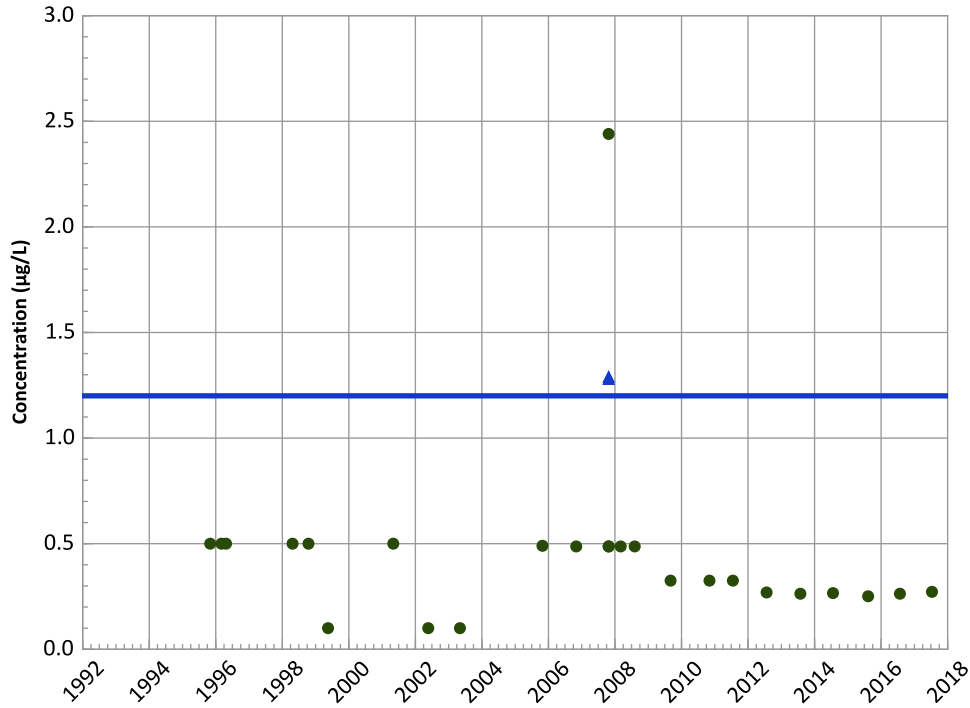


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/01/1995 to 07/13/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX07-1Q02 in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

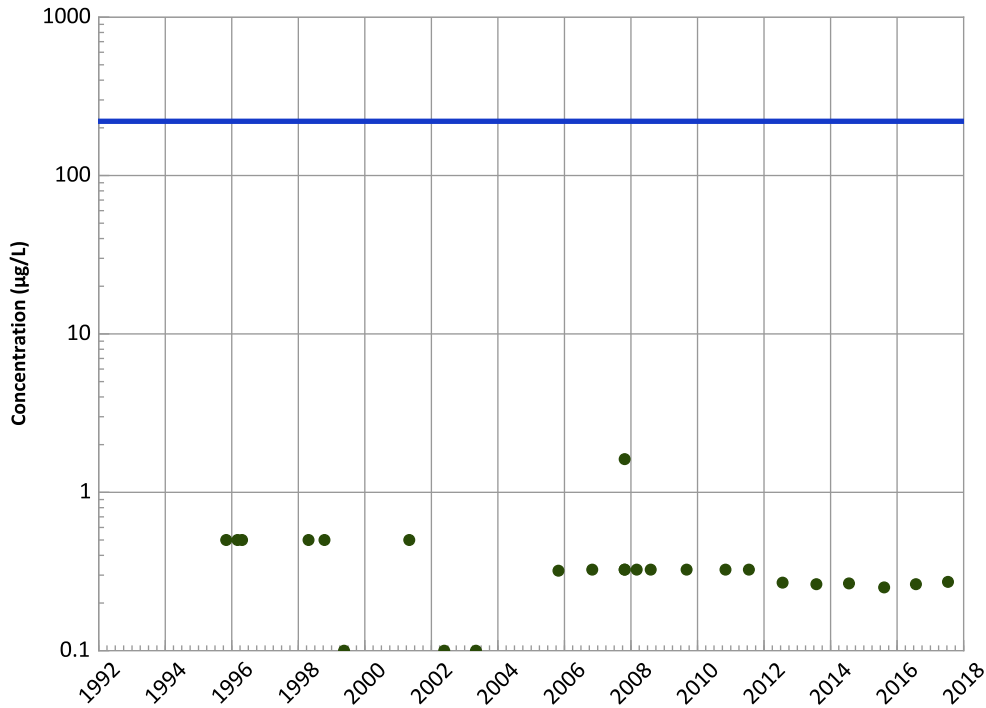
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

1,3,5-Trinitrobenzene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

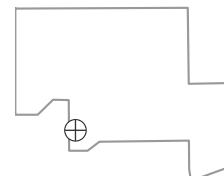
MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/01/1995 to 07/13/2017
Analysis Date: 03/21/2018

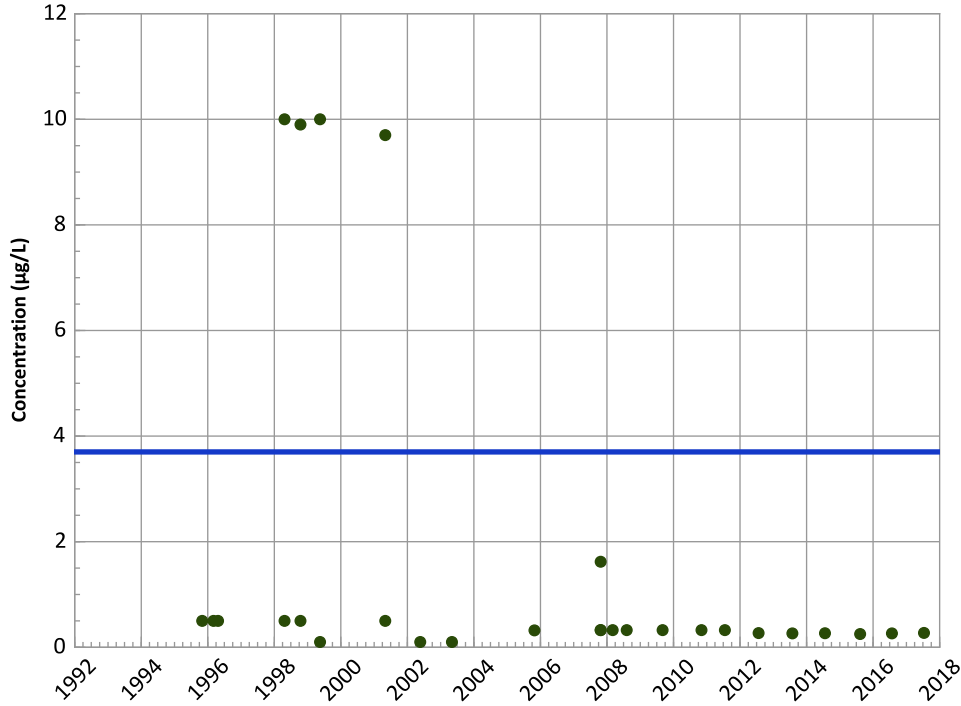
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX07-1Q02 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

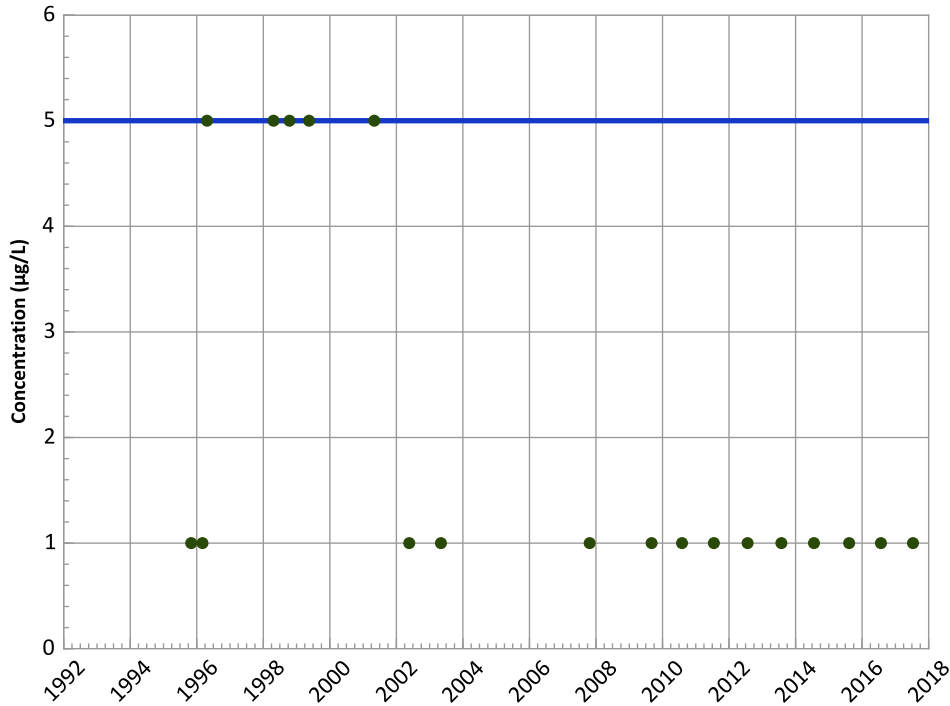
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Tetrachloroethylene (PCE) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

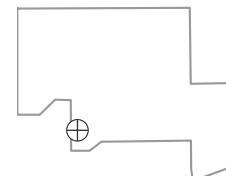
MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/01/1995 to 07/13/2017
Analysis Date: 03/21/2018

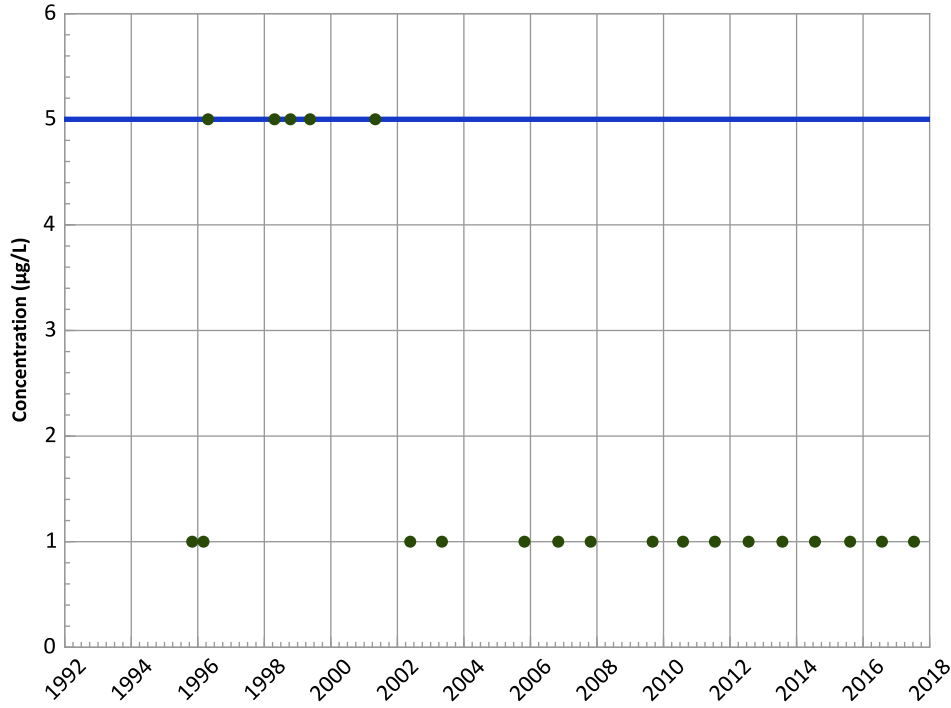
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX07-1Q02 in Perched Aquifer
USDOE/NNSA Pantex Plant

Trichloroethene Trend



Concentration Trend

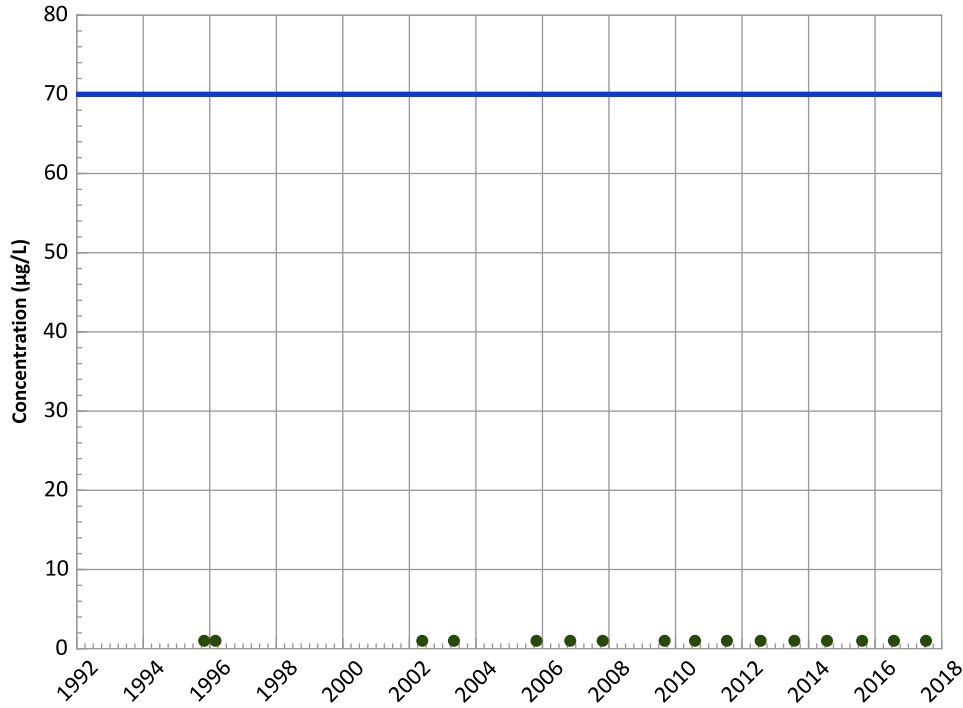
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

cis-1,2-Dichloroethene Trend



Concentration Trend

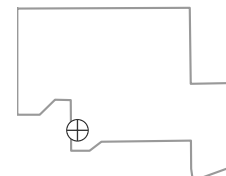
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

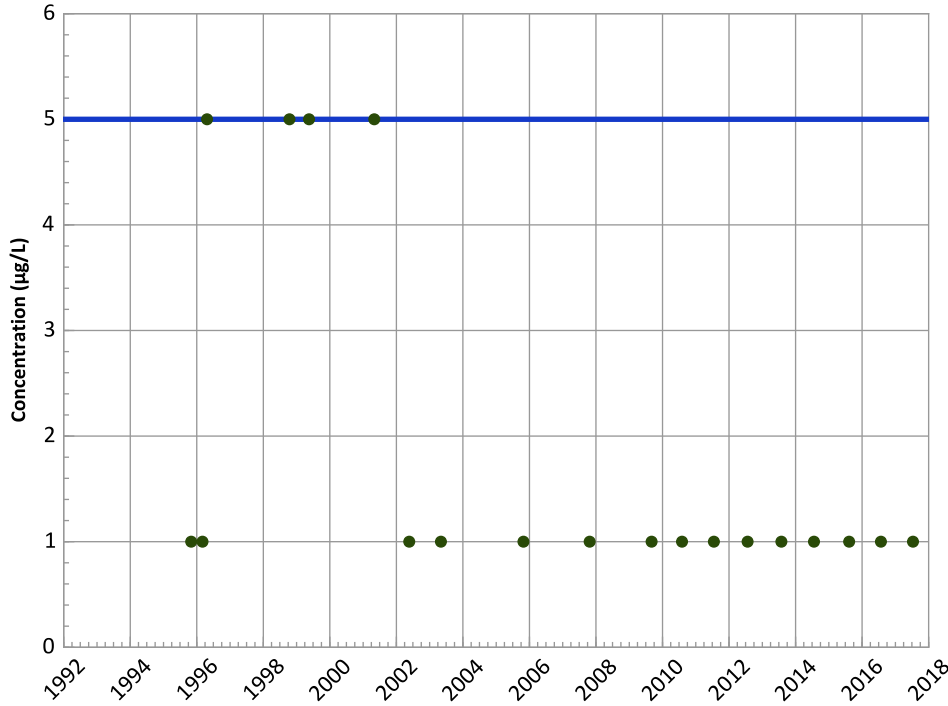
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/01/1995 to 07/13/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX07-1Q02 in Perched Aquifer
USDOE/NNSA Pantex Plant
1,2-Dichloroethane Trend**



Concentration Trend

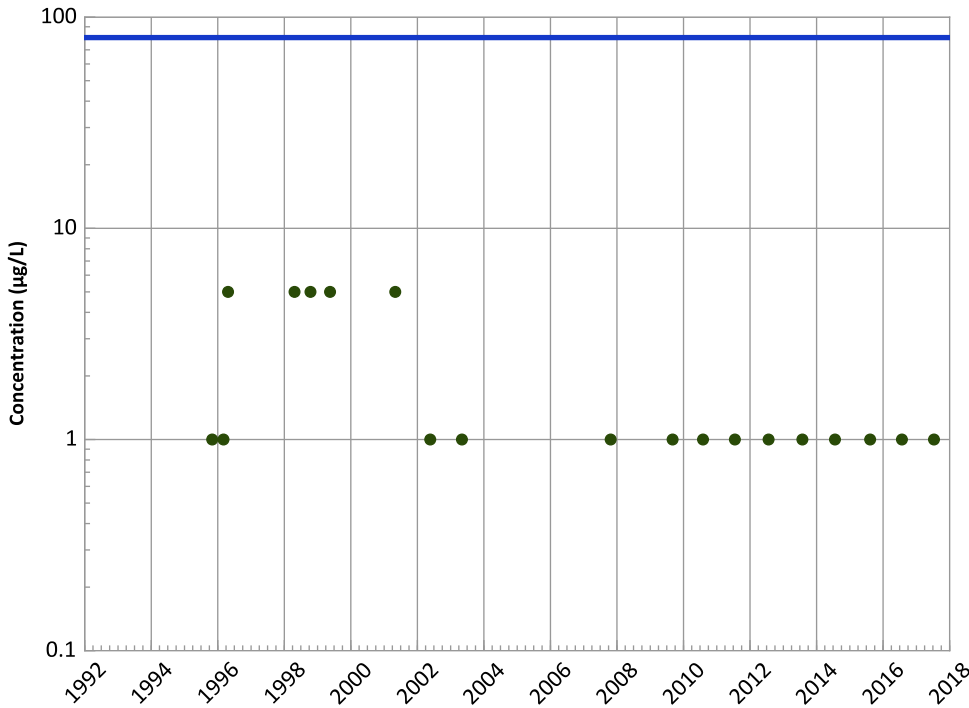
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Chloroform Trend



Concentration Trend

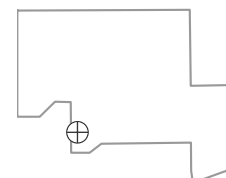
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

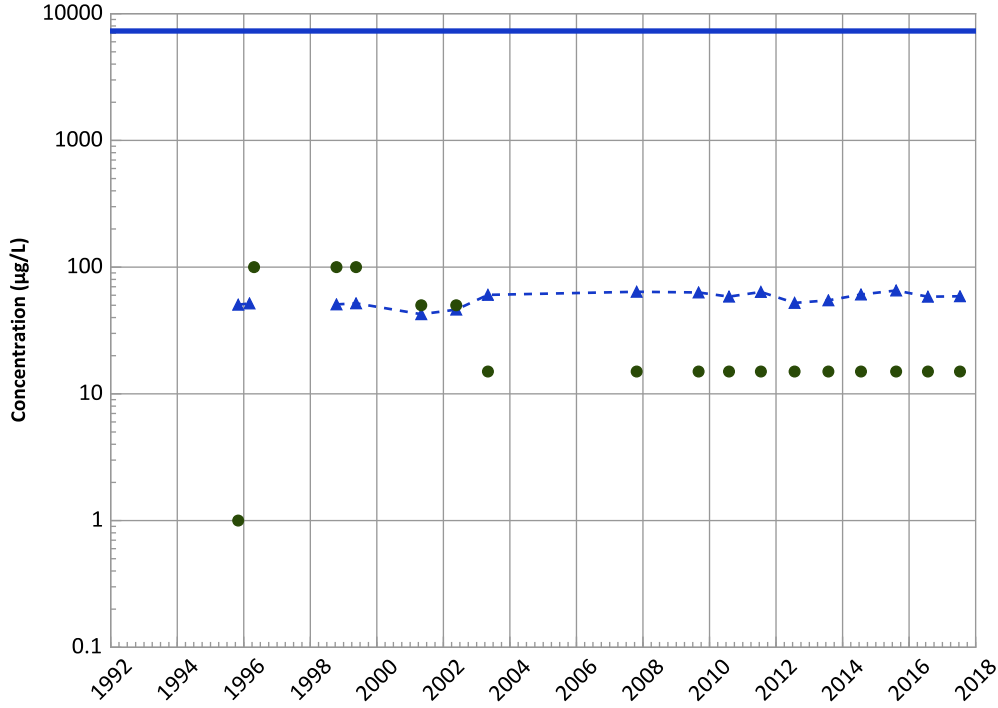


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/01/1995 to 07/13/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX07-1Q02 in Perched Aquifer
USDOE/NNSA Pantex Plant

Boron Trend

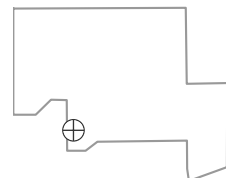


Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 No Trend
 All Data
 Increasing
MAROS Linear Regression Method
 Data ():
 Probably Increasing
 All Data
 Increasing

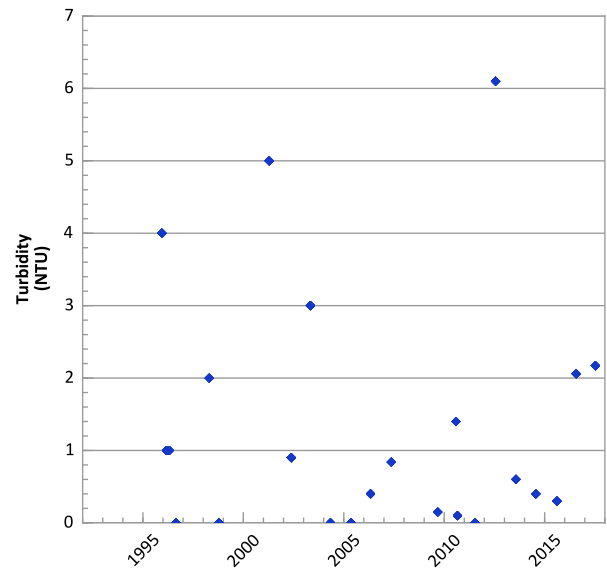
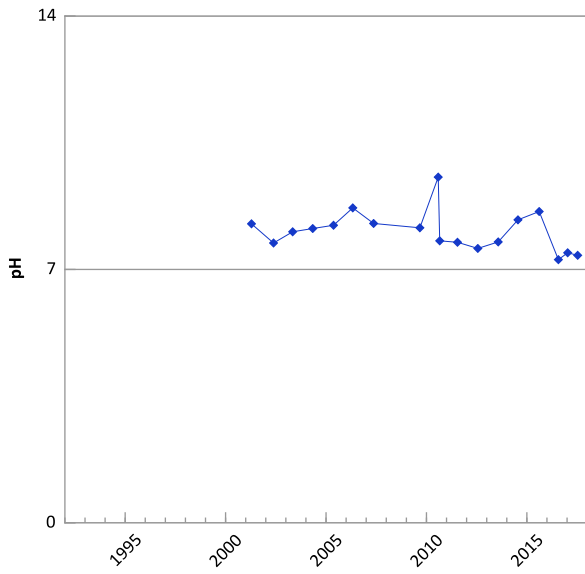
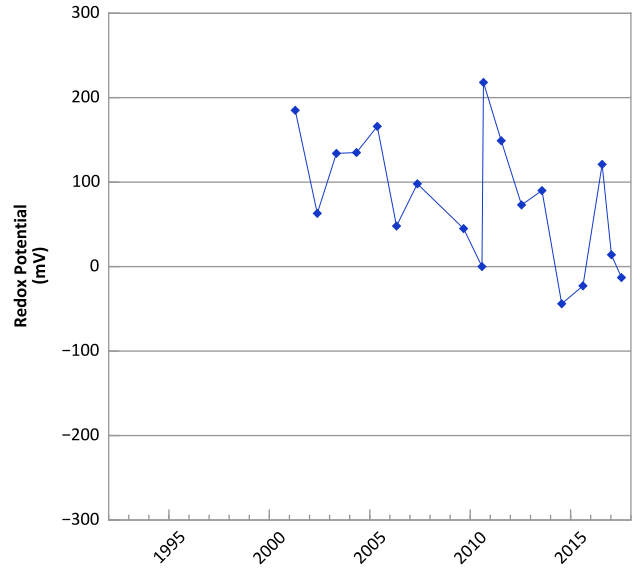
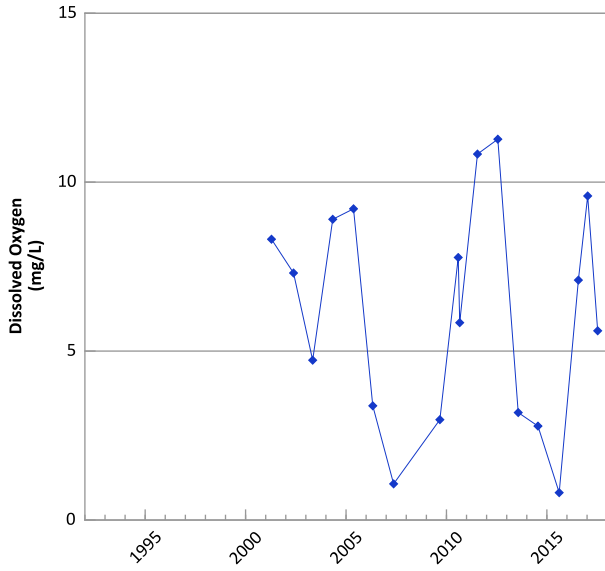
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 11/01/1995 to 07/13/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

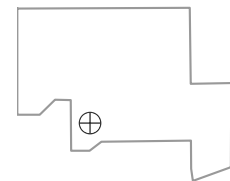


**PTX07-1Q03 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



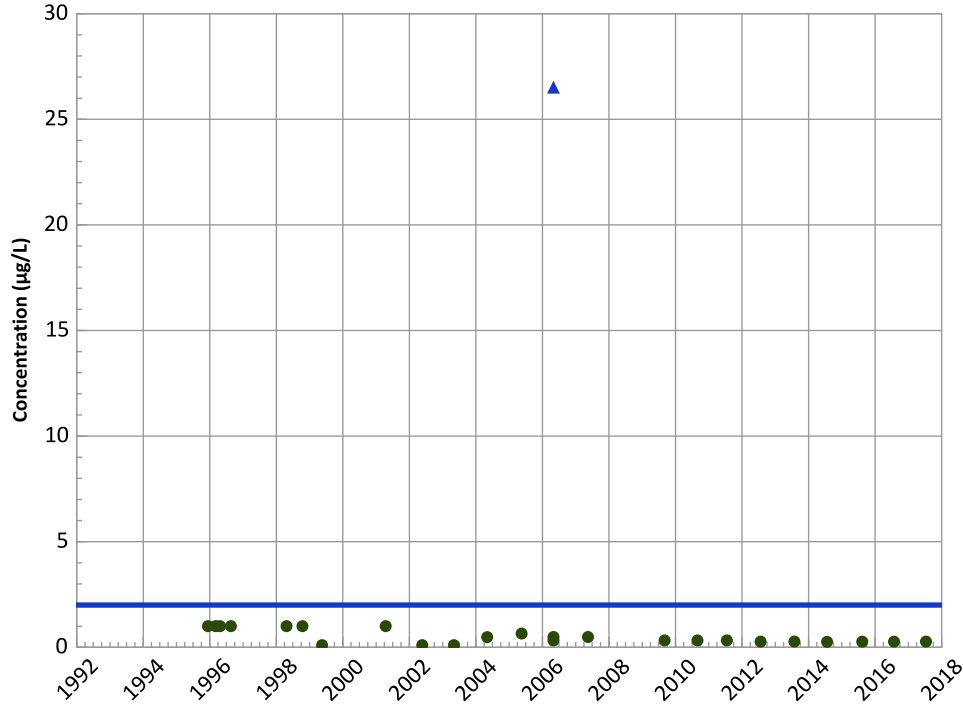
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 12/12/1995 to 07/13/2017
 Analysis Date: 03/21/2018

Well Location



PTX07-1Q03 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

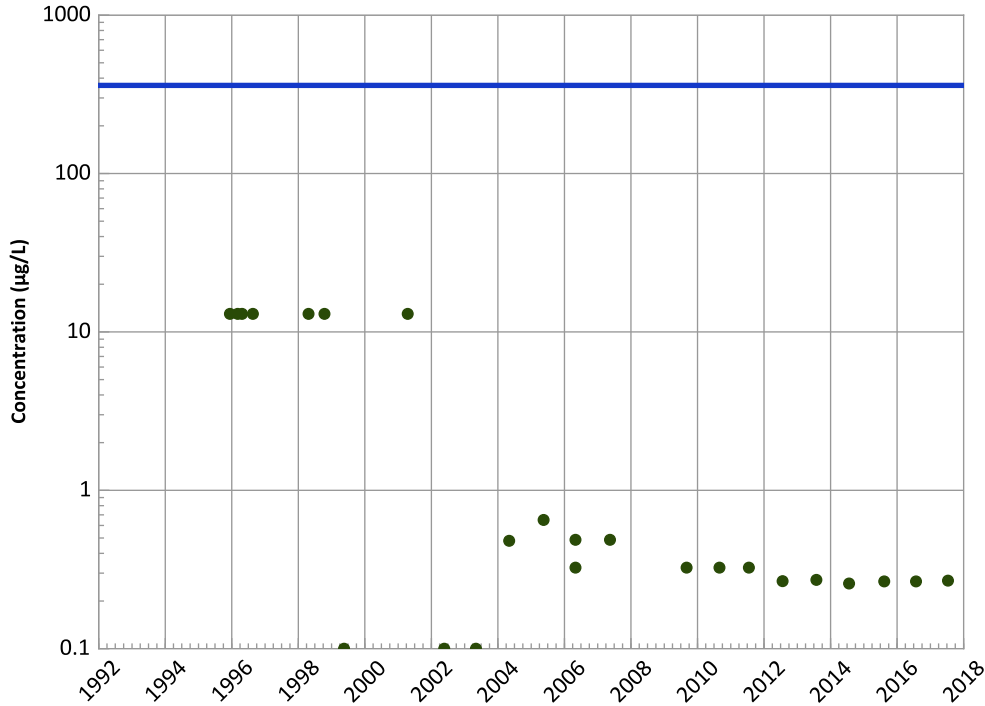
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

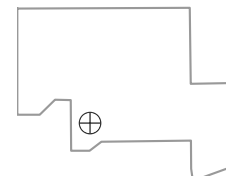
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

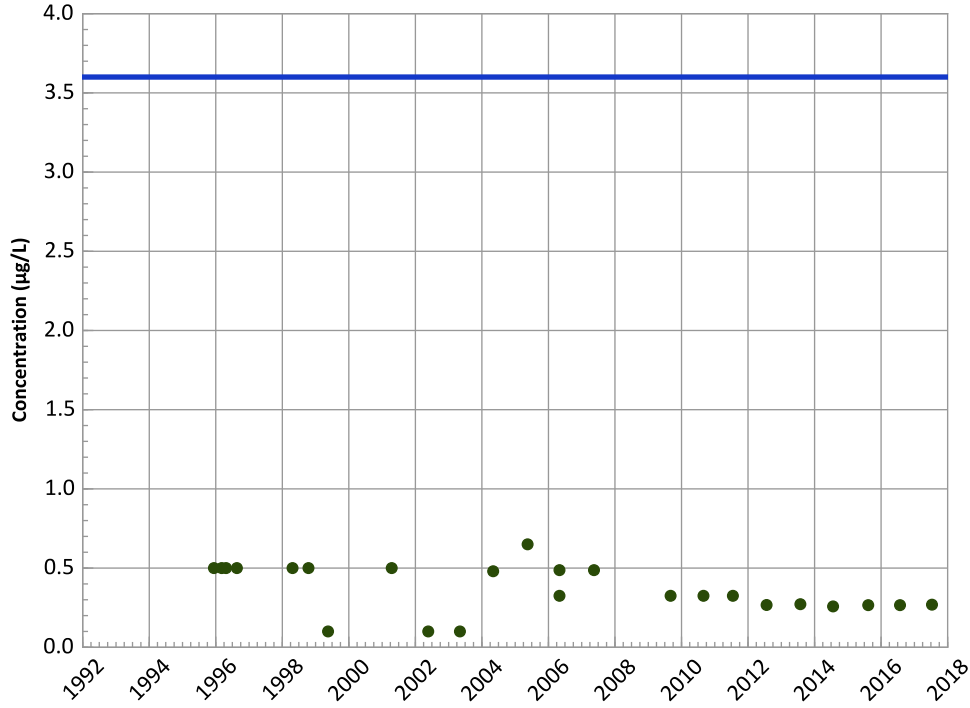


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/12/1995 to 07/13/2017
Analysis Date: 03/21/2018

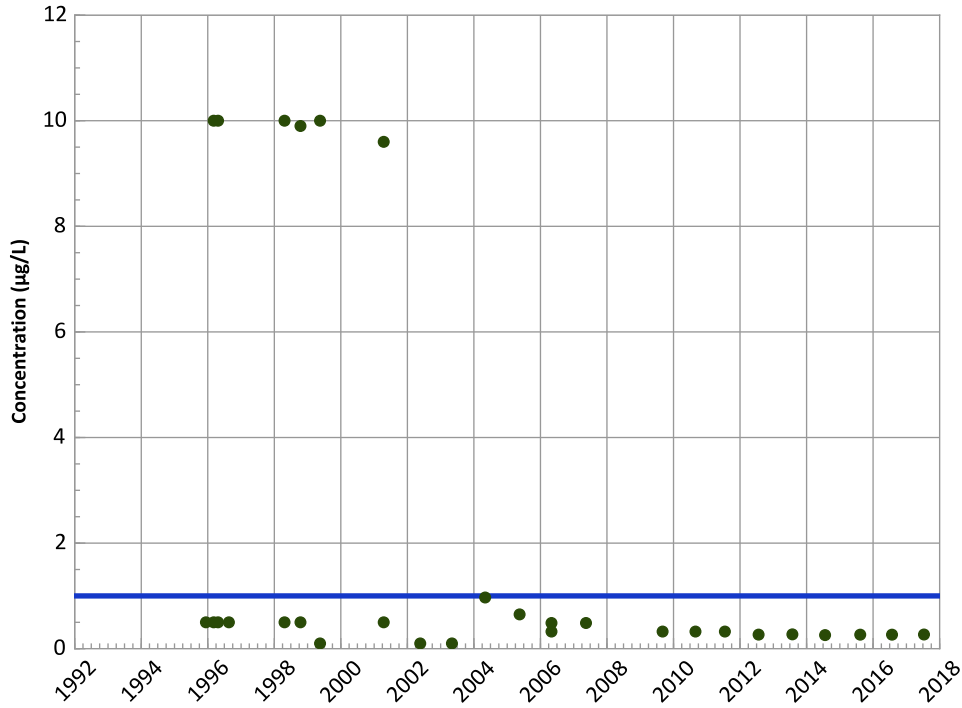
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX07-1Q03 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



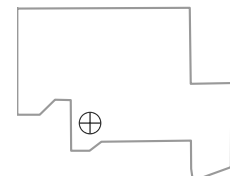
2,4-Dinitrotoluene Trend



Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 12/12/1995 to 07/13/2017
 Analysis Date: 03/21/2018

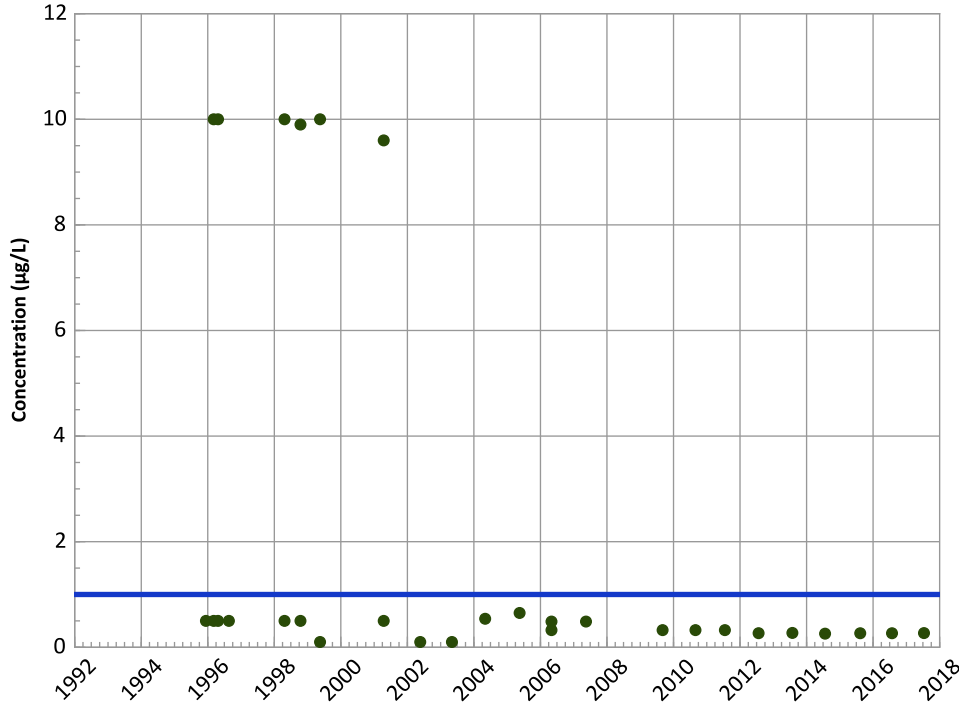
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX07-1Q03 in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

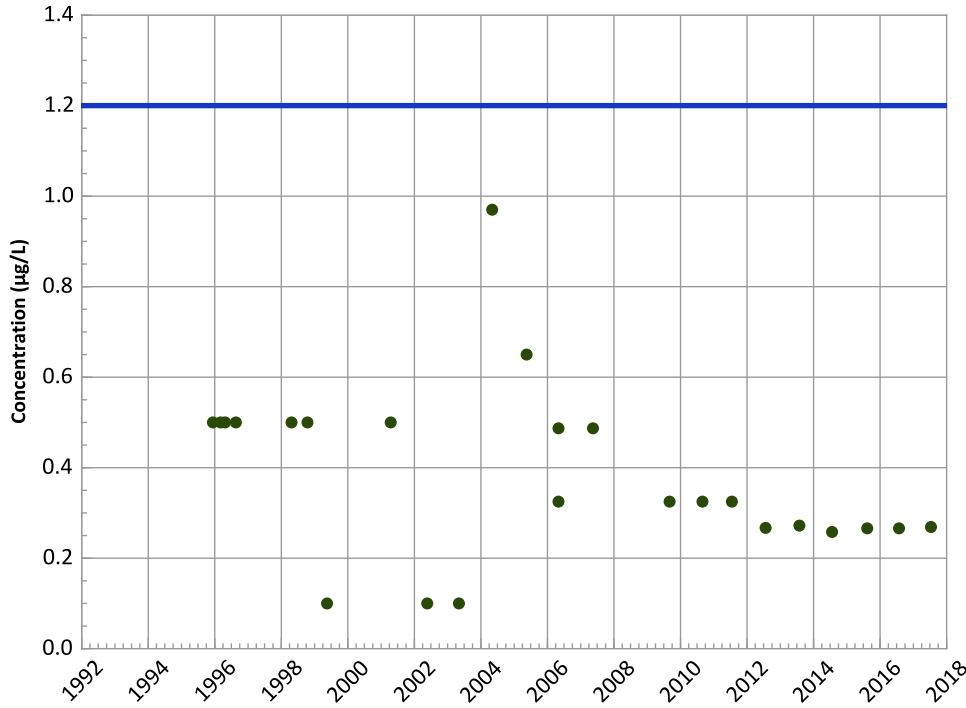
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

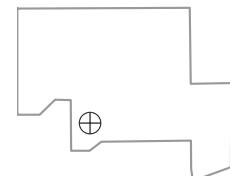
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

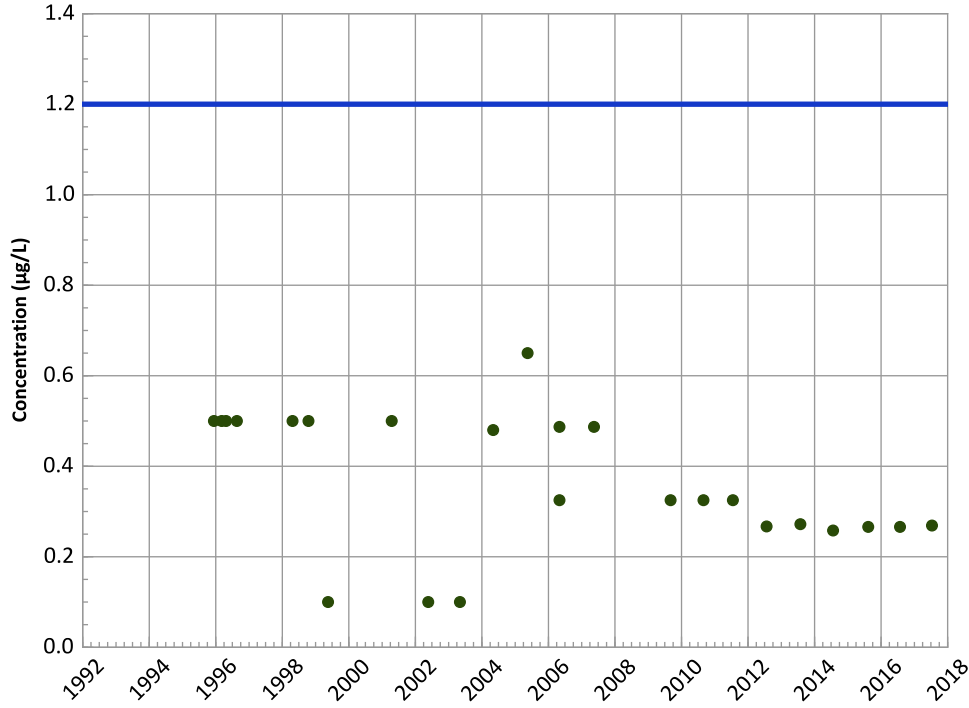


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/12/1995 to 07/13/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX07-1Q03 in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

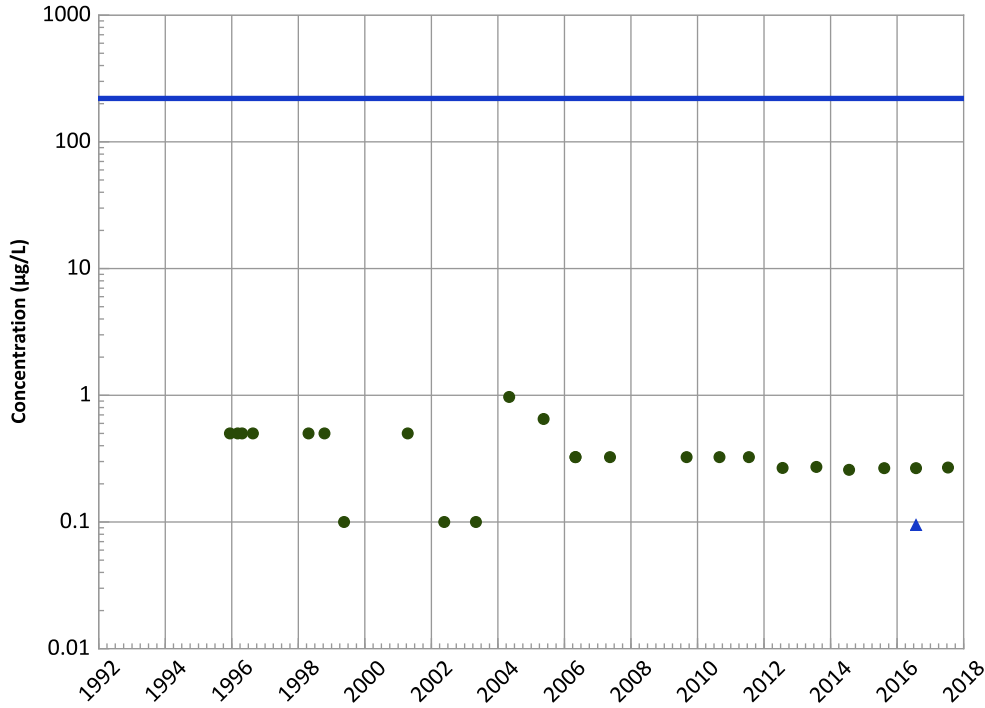
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,3,5-Trinitrobenzene Trend



Concentration Trend

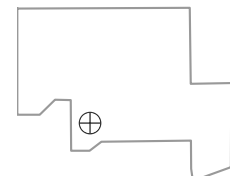
MAROS Mann-Kendall Method

Data ():
N/A (<4 Detections in Dataset)
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
N/A (<4 Detections in Dataset)

Well Location

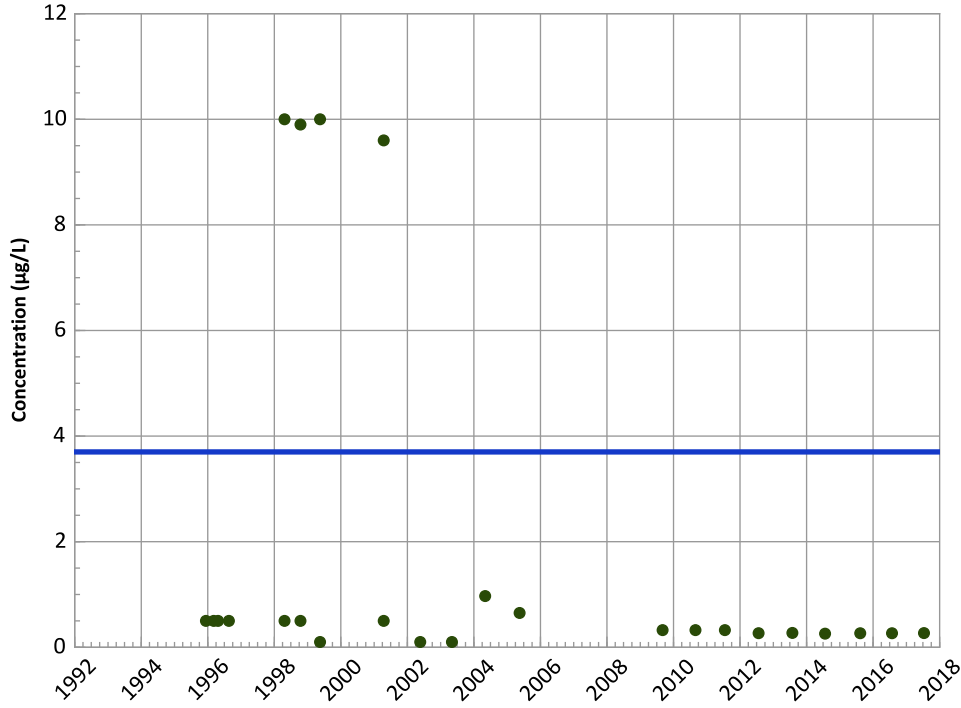


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/12/1995 to 07/13/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX07-1Q03 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

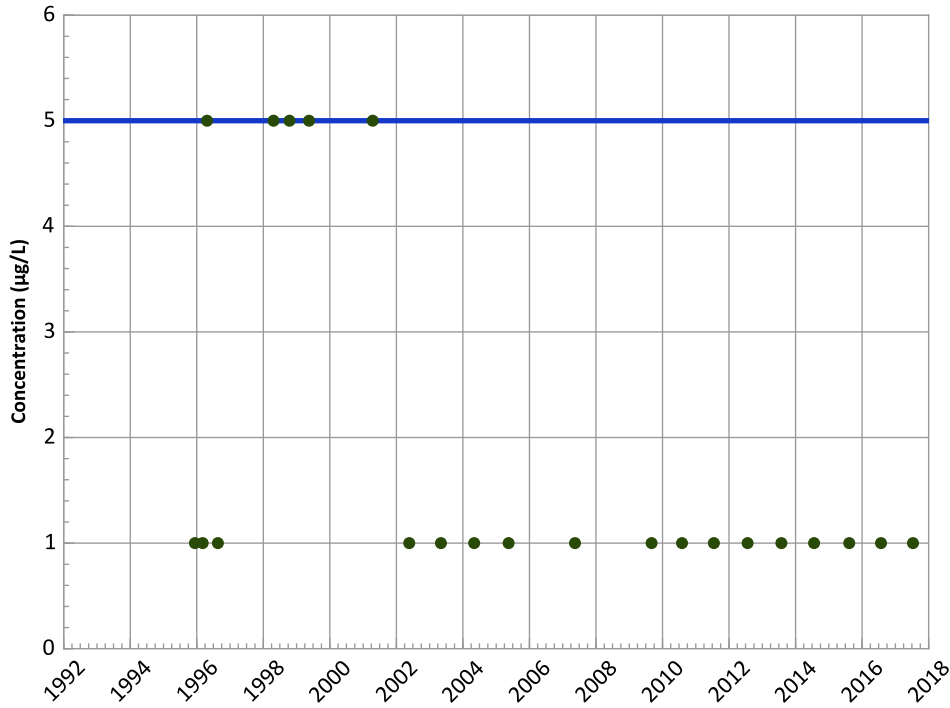
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Tetrachloroethylene (PCE) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

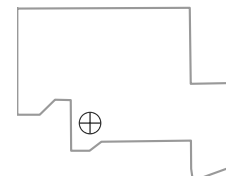
MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/12/1995 to 07/13/2017
Analysis Date: 03/21/2018

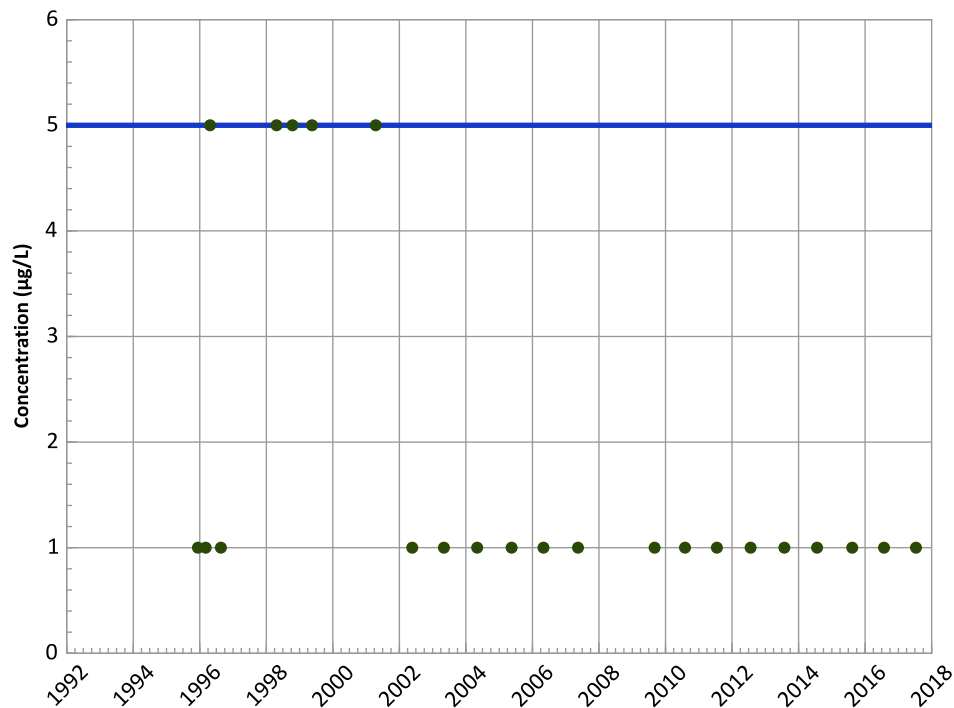
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX07-1Q03 in Perched Aquifer
USDOE/NNSA Pantex Plant

Trichloroethene Trend



Concentration Trend

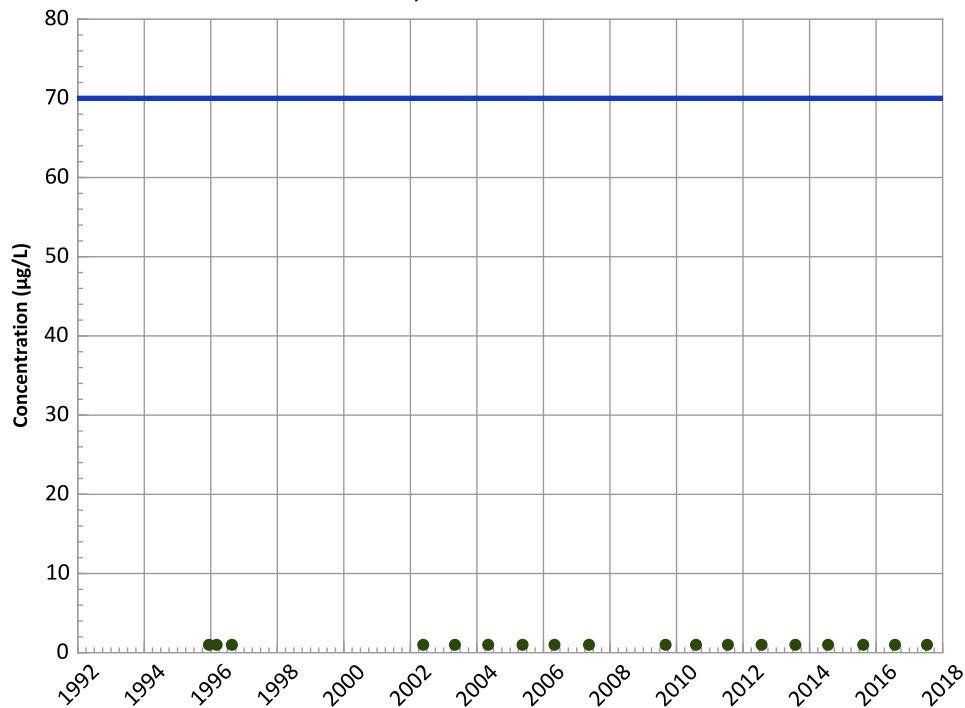
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

cis-1,2-Dichloroethene Trend



Concentration Trend

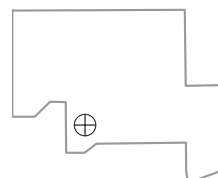
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

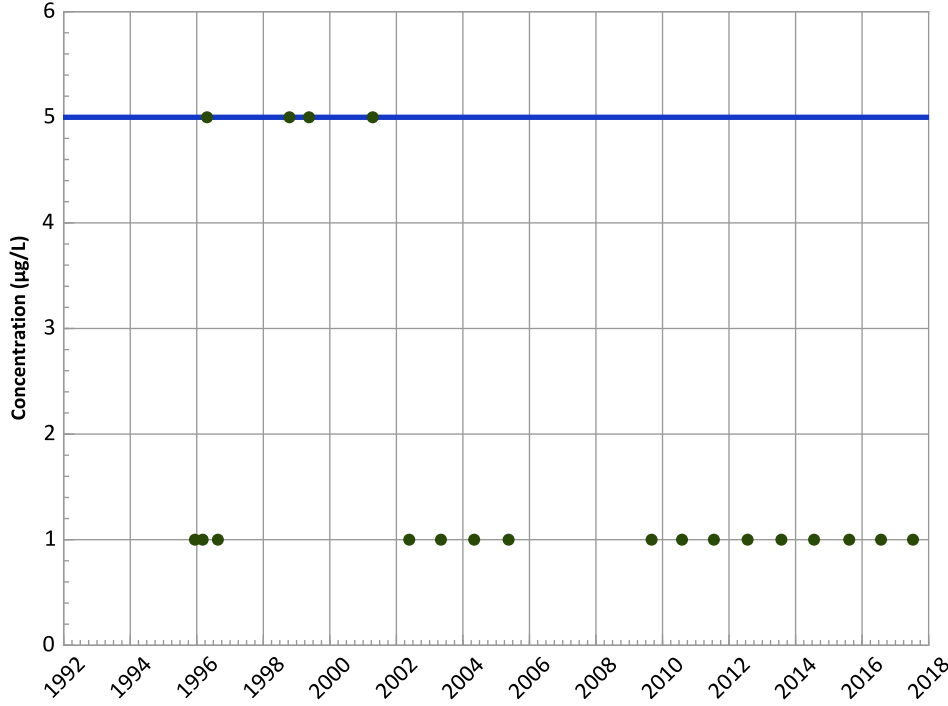


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/12/1995 to 07/13/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX07-1Q03 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,2-Dichloroethane Trend



Concentration Trend

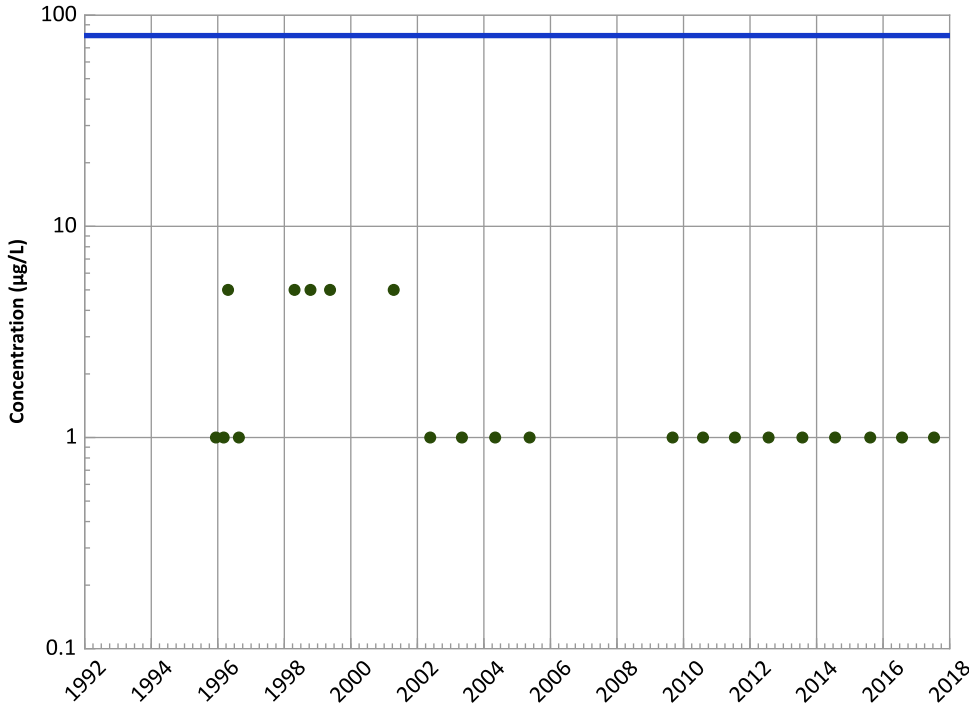
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Chloroform Trend



Concentration Trend

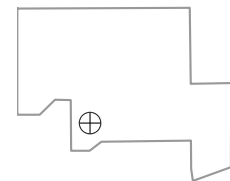
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

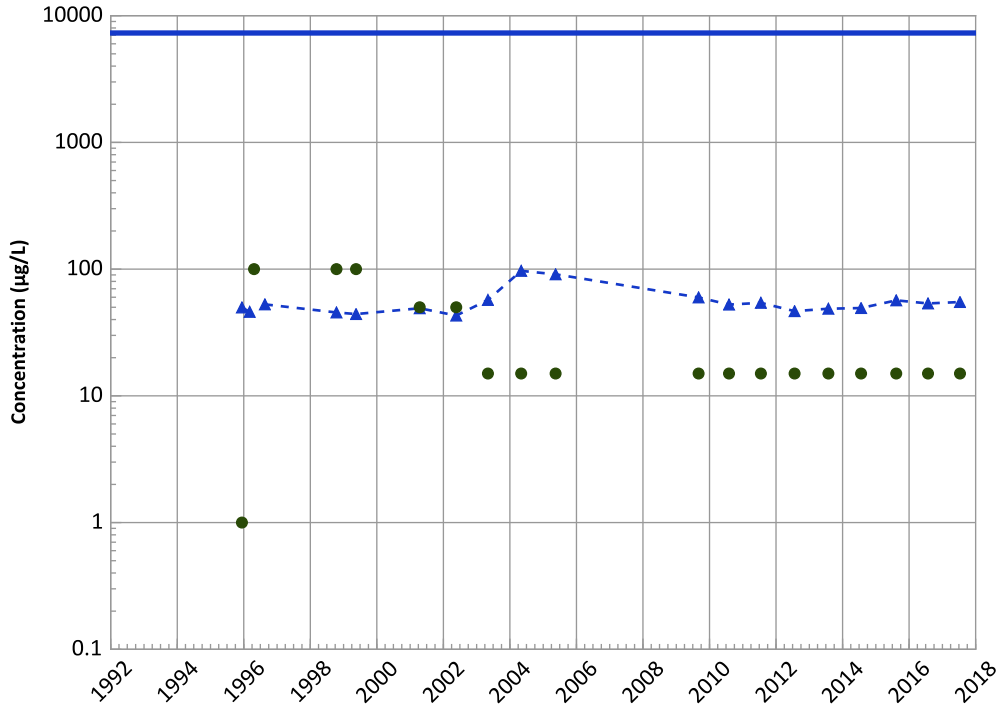


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/12/1995 to 07/13/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX07-1Q03 in Perched Aquifer
USDOE/NNSA Pantex Plant

Boron Trend



Concentration Trend

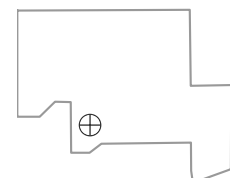
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
No Trend

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

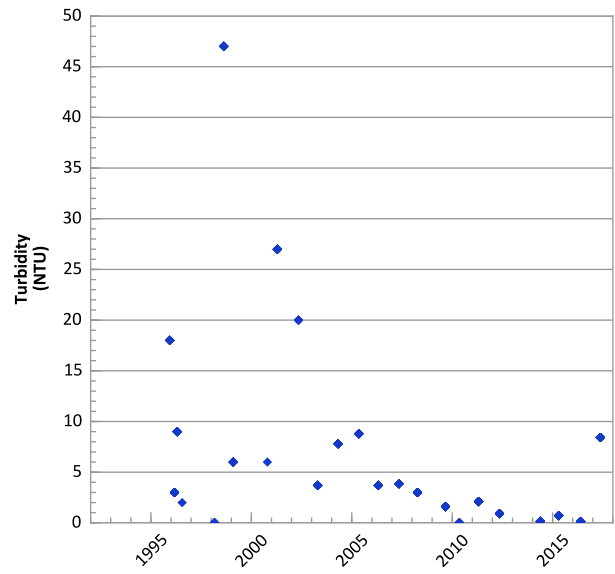
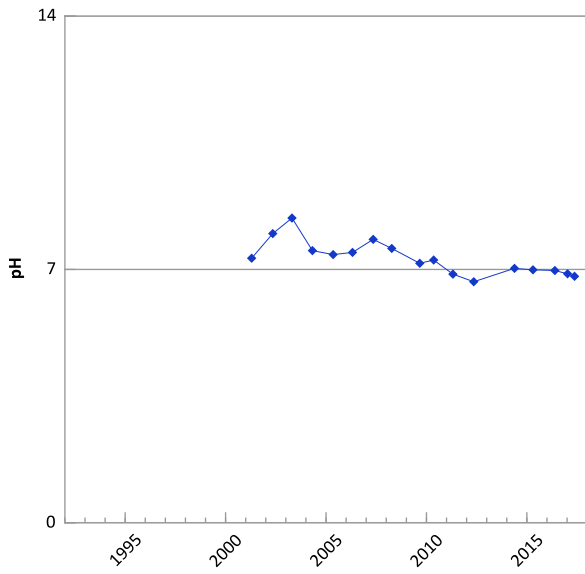
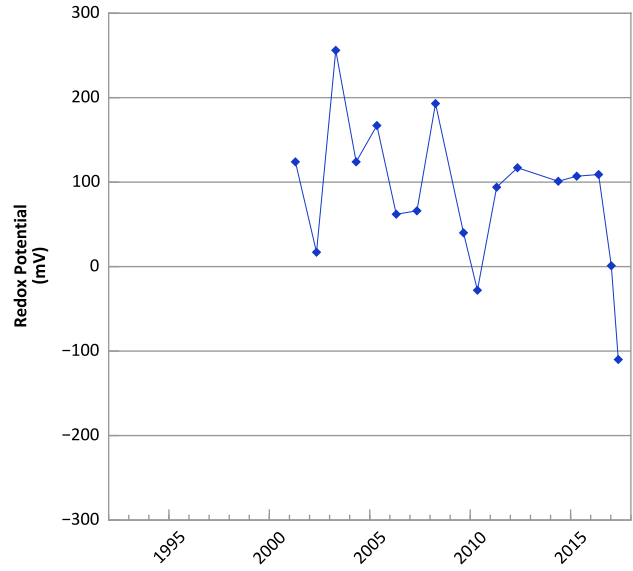
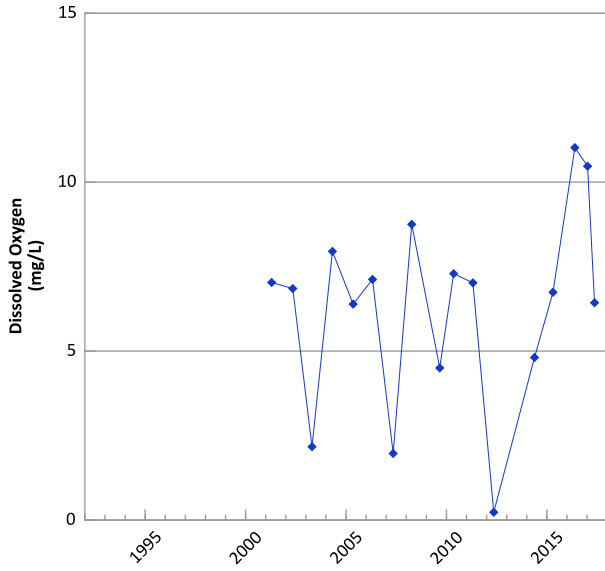
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/12/1995 to 07/13/2017
Analysis Date: 03/21/2018

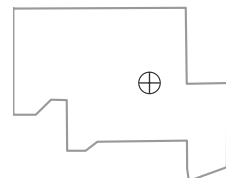
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX08-1001 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



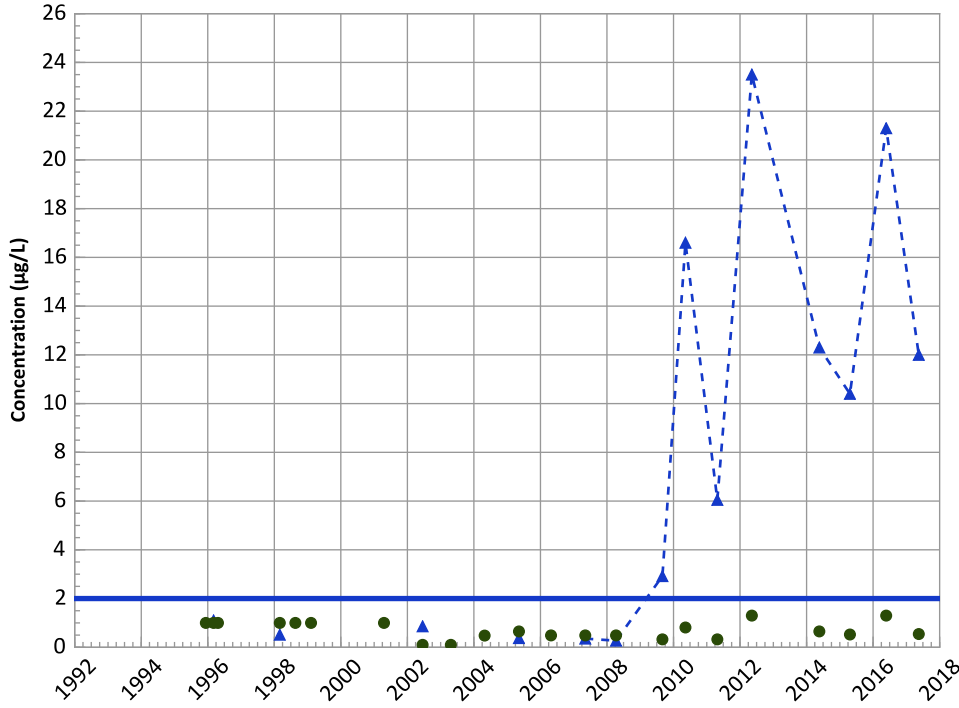
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 12/11/1995 to 05/17/2017
 Analysis Date: 03/21/2018

Well Location



PTX08-1001 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

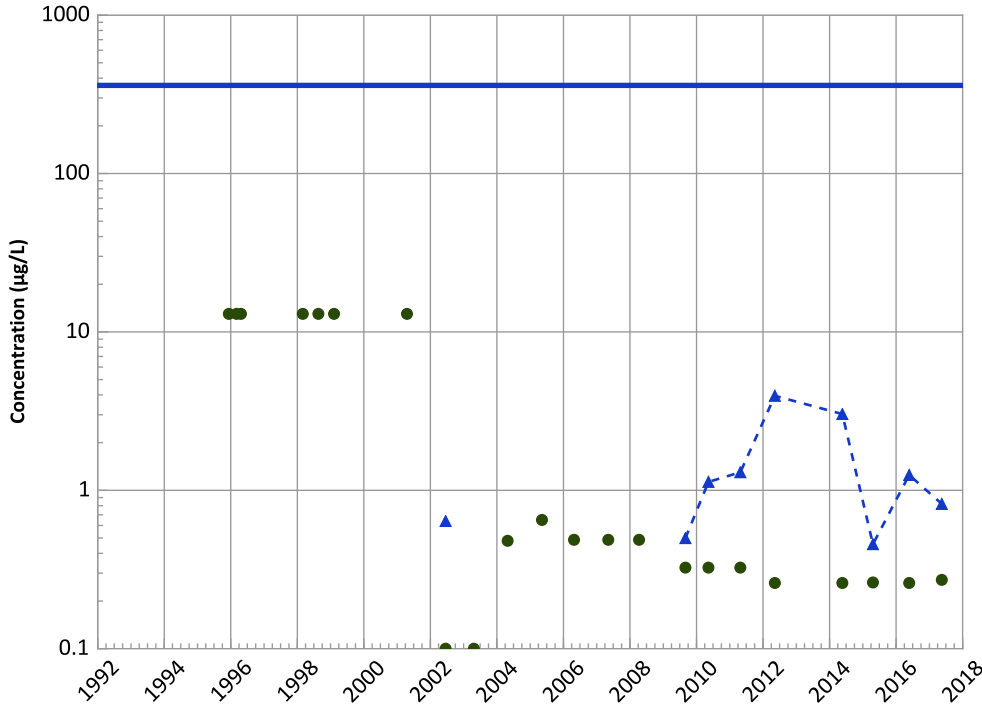
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Stable
All Data
Increasing

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

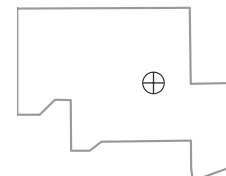
MAROS Linear Regression Method

Data ():
Stable
All Data
No Trend

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/11/1995 to 05/17/2017
Analysis Date: 03/21/2018

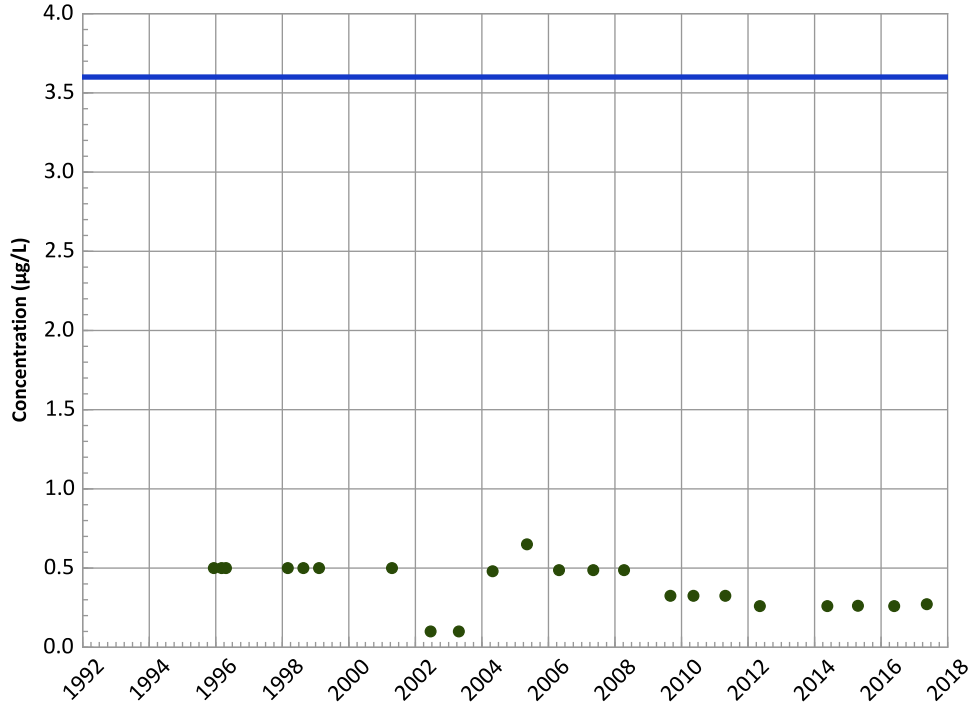
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX08-1001 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

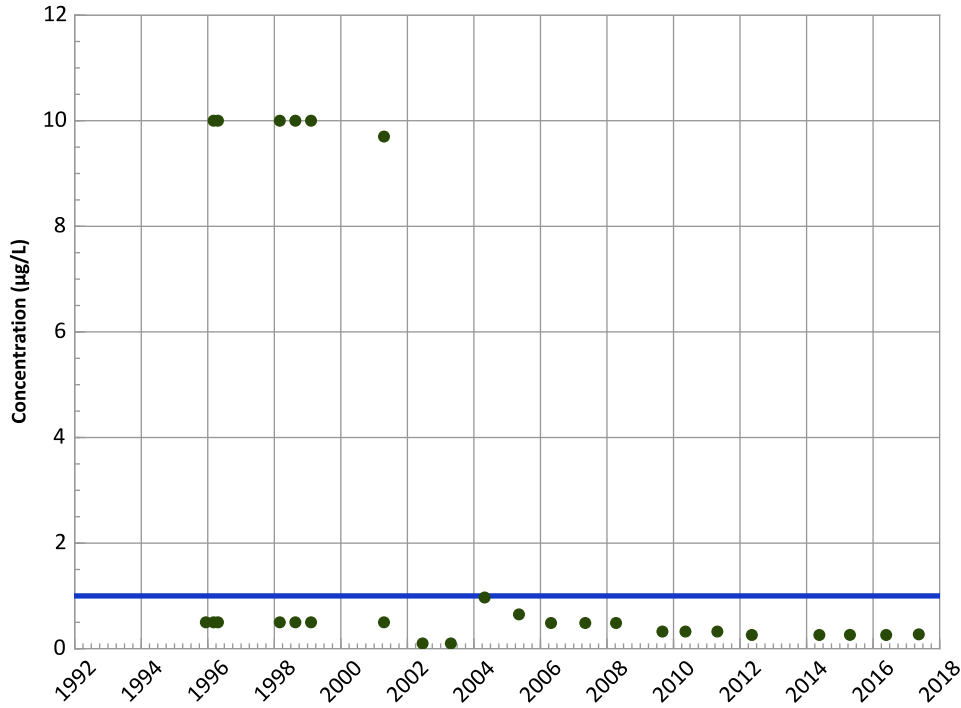
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

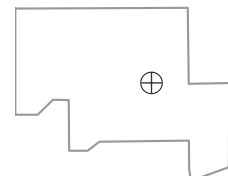
MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/11/1995 to 05/17/2017
Analysis Date: 03/21/2018

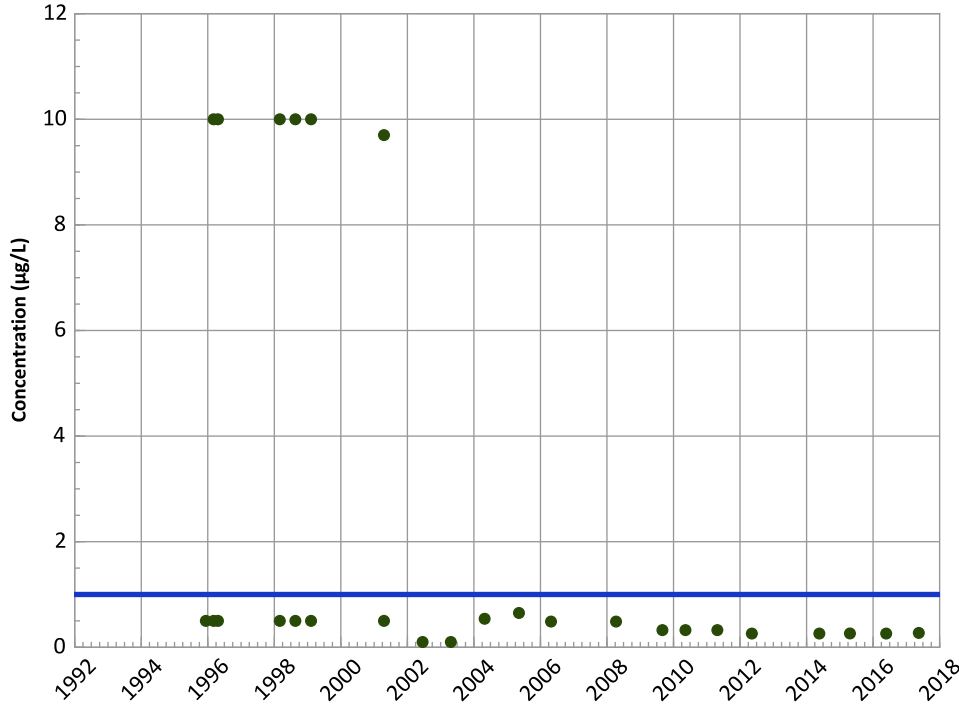
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX08-1001 in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

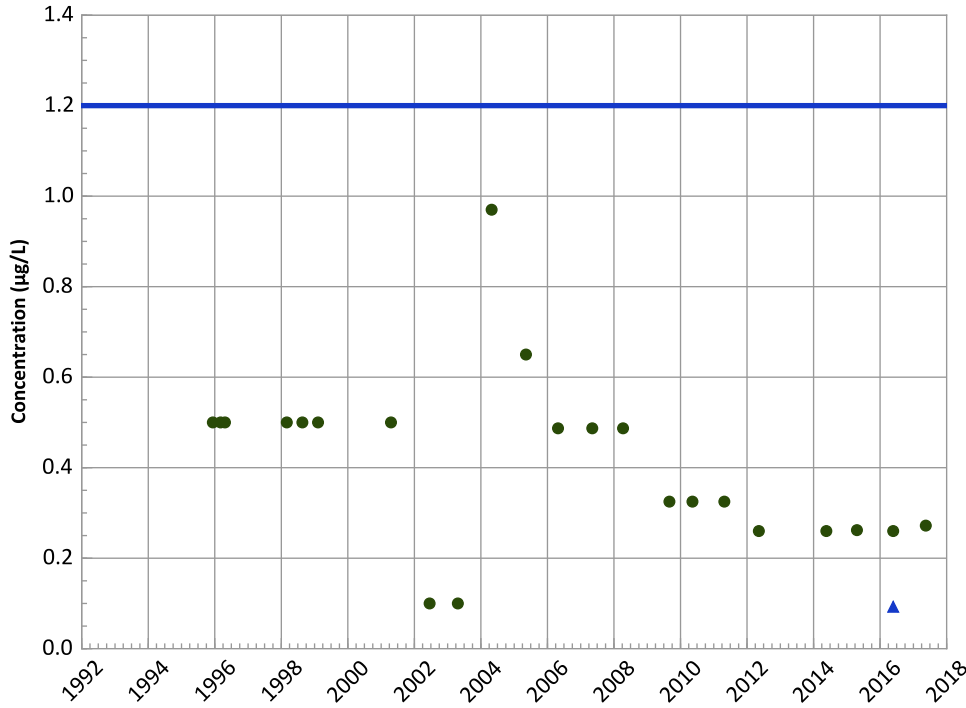
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
N/A (<4 Detections in Dataset)
All Data
N/A (<4 Detections in Dataset)

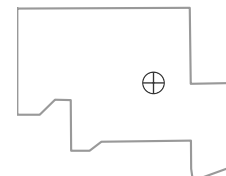
MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
N/A (<4 Detections in Dataset)

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/11/1995 to 05/17/2017
Analysis Date: 03/21/2018

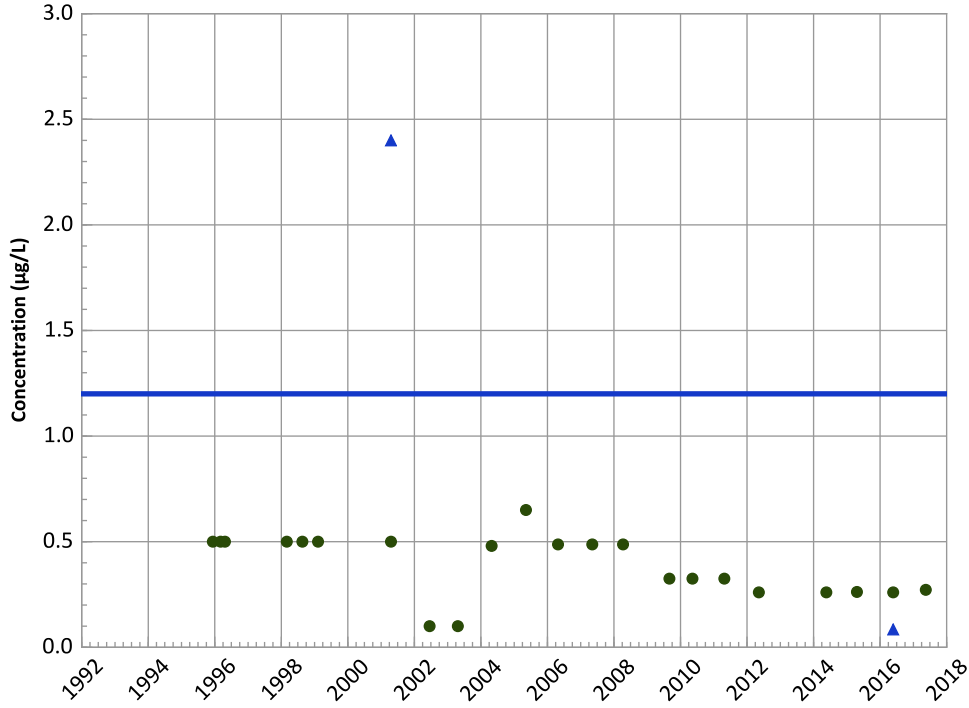
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX08-1001 in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

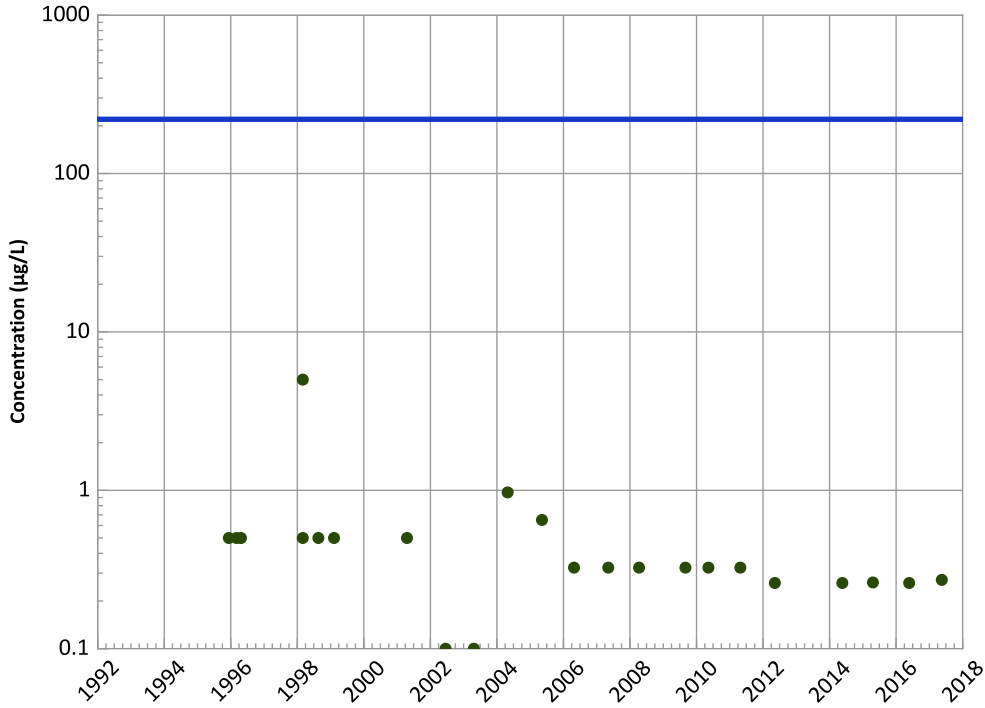
Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

1,3,5-Trinitrobenzene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

All Non-Detect

All Data

All Non-Detect

All Non-Detect

All Non-Detect

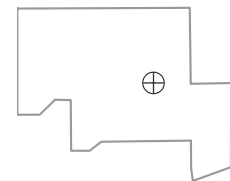
All Non-Detect

All Non-Detect

All Non-Detect

All Non-Detect

Well Location

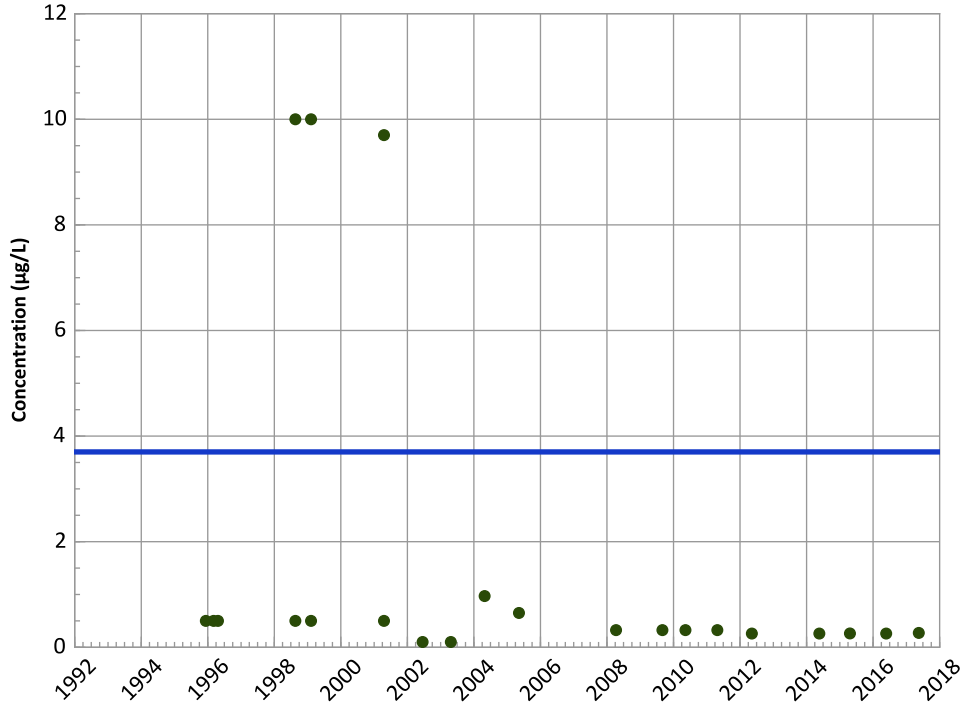


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/11/1995 to 05/17/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX08-1001 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

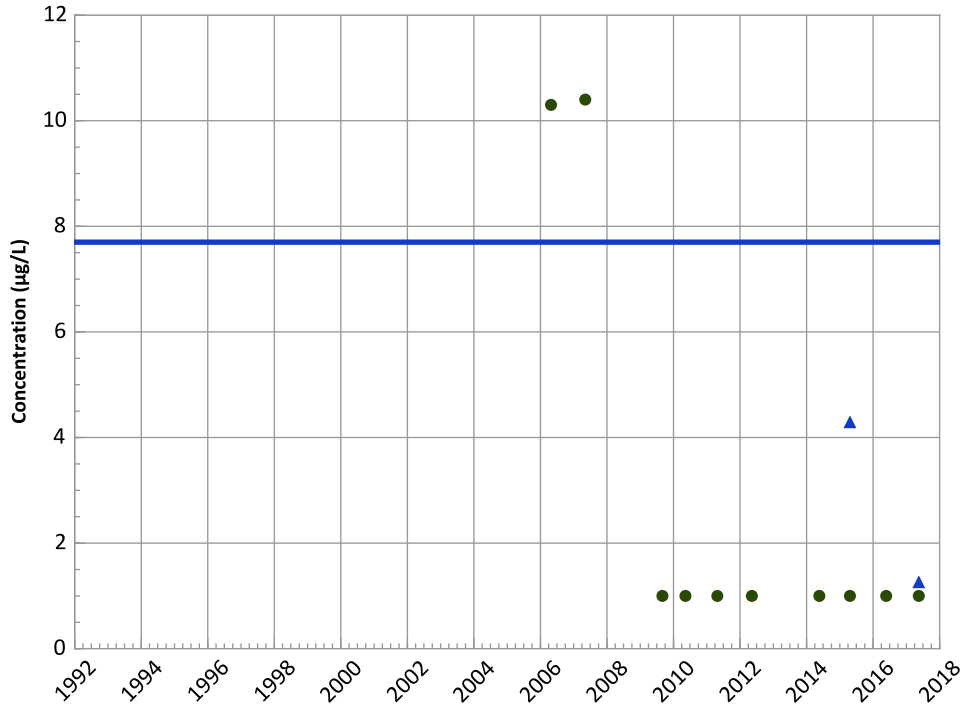
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,4-Dioxane (p-Dioxane) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
N/A (<4 Detections in Dataset)
All Data
N/A (<4 Detections in Dataset)

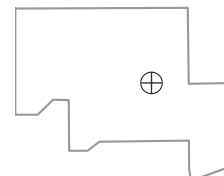
MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
N/A (<4 Detections in Dataset)

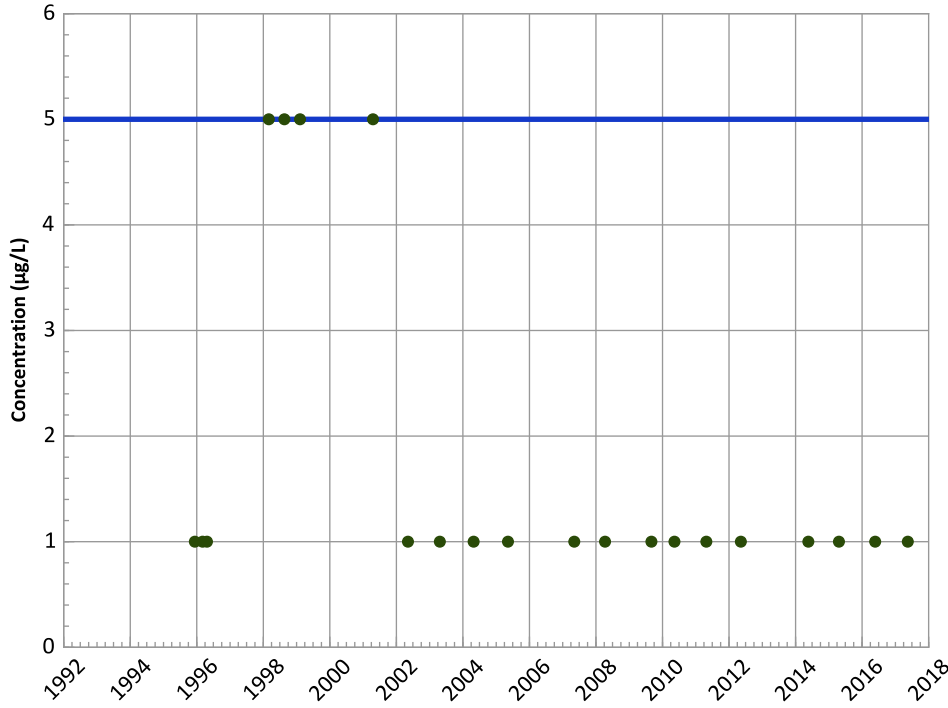
Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/11/1995 to 05/17/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

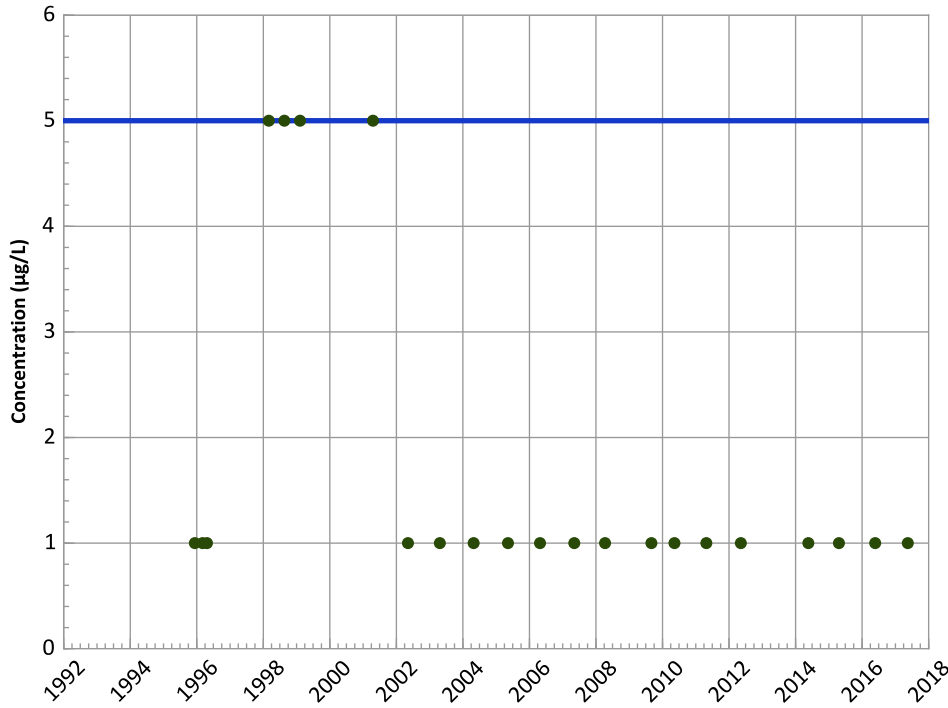


**PTX08-1001 in Perched Aquifer
USDOE/NNSA Pantex Plant
Tetrachloroethylene (PCE) Trend**



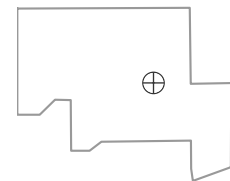
Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect
MAROS Linear Regression Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect

Trichloroethene Trend



Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect
MAROS Linear Regression Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect

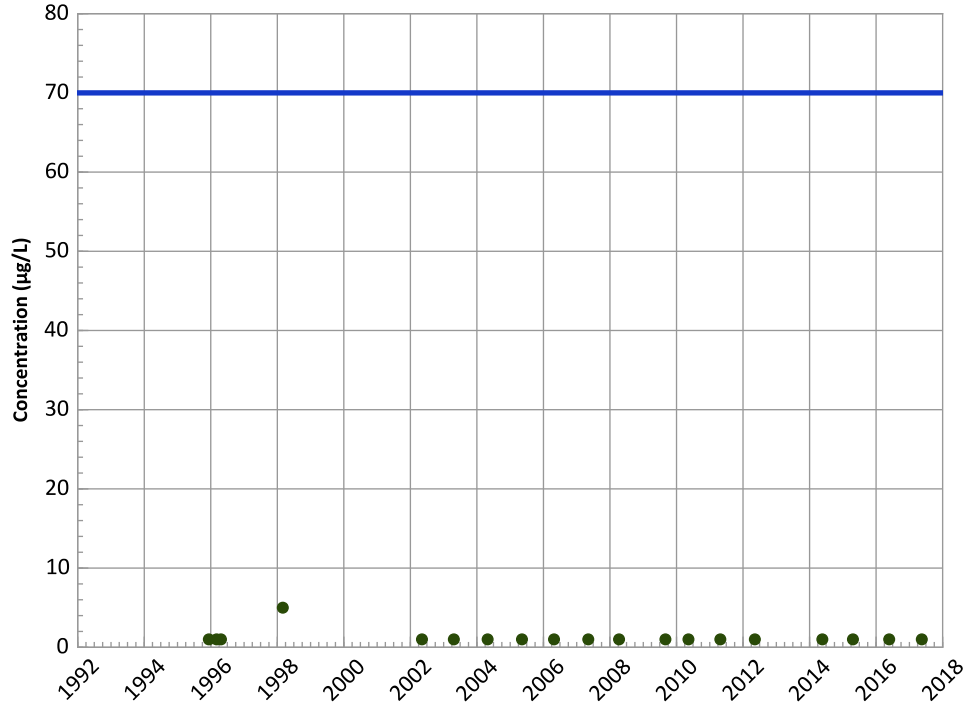
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 12/11/1995 to 05/17/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX08-1001 in Perched Aquifer
USDOE/NNSA Pantex Plant
cis-1,2-Dichloroethene Trend**



Concentration Trend

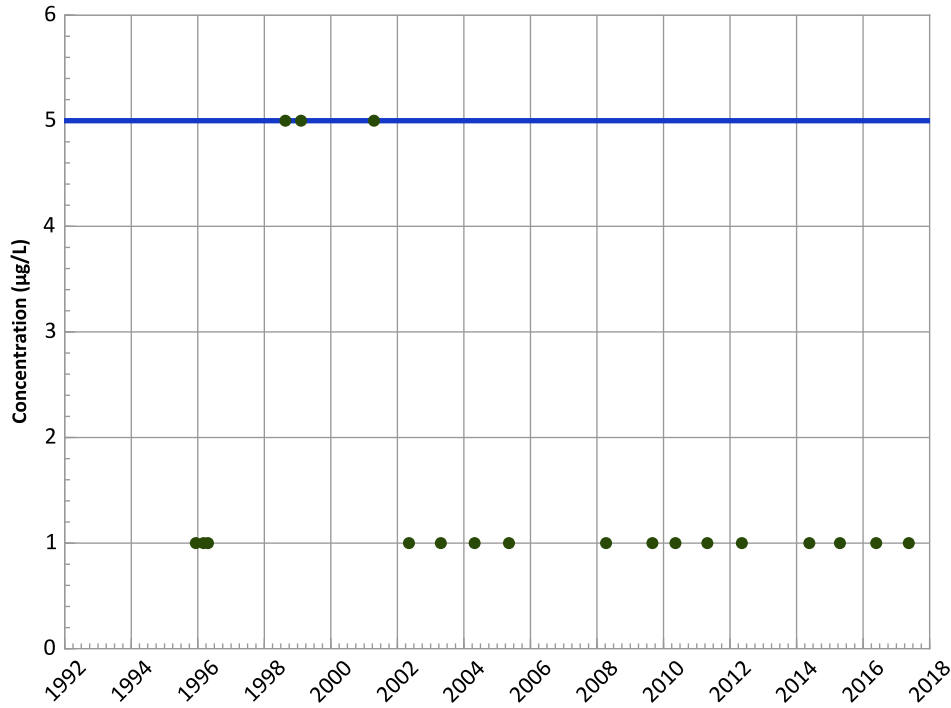
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,2-Dichloroethane Trend



Concentration Trend

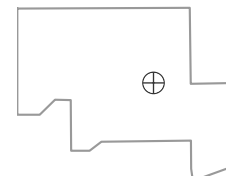
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

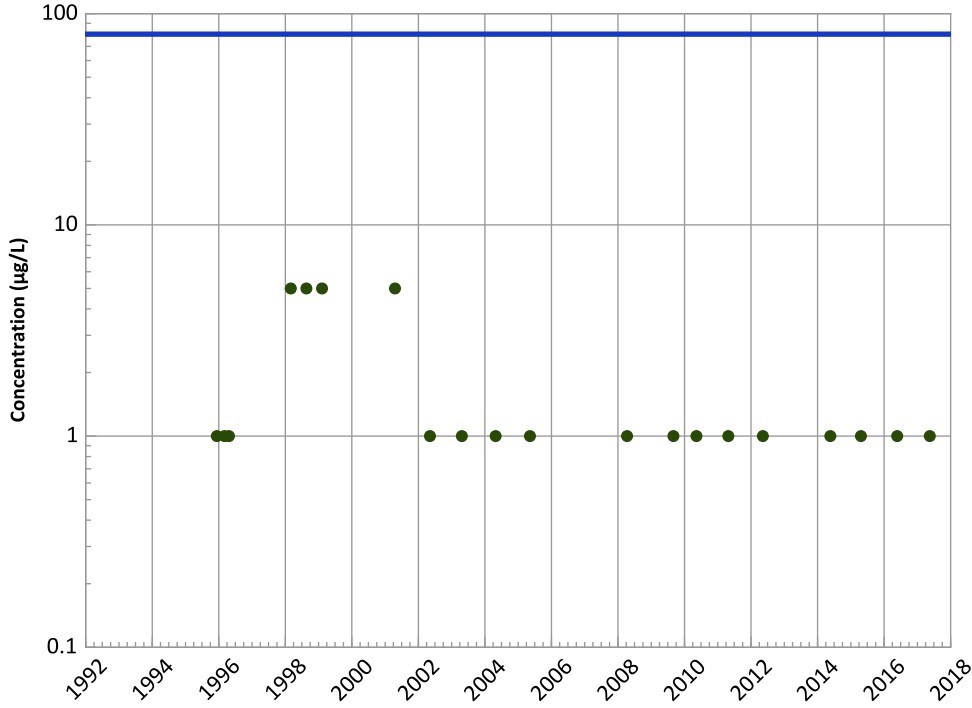


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/11/1995 to 05/17/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX08-1001 in Perched Aquifer
USDOE/NNSA Pantex Plant

Chloroform Trend



Concentration Trend

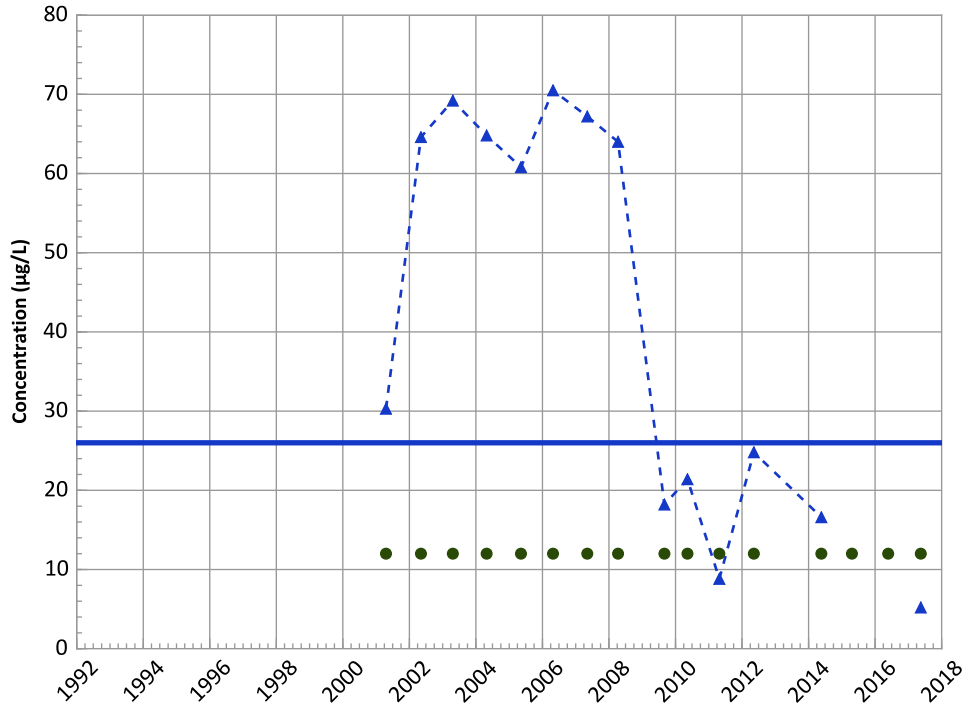
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Perchlorate Trend



Concentration Trend

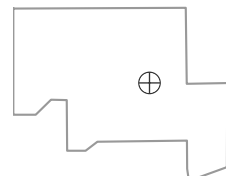
MAROS Mann-Kendall Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

Well Location

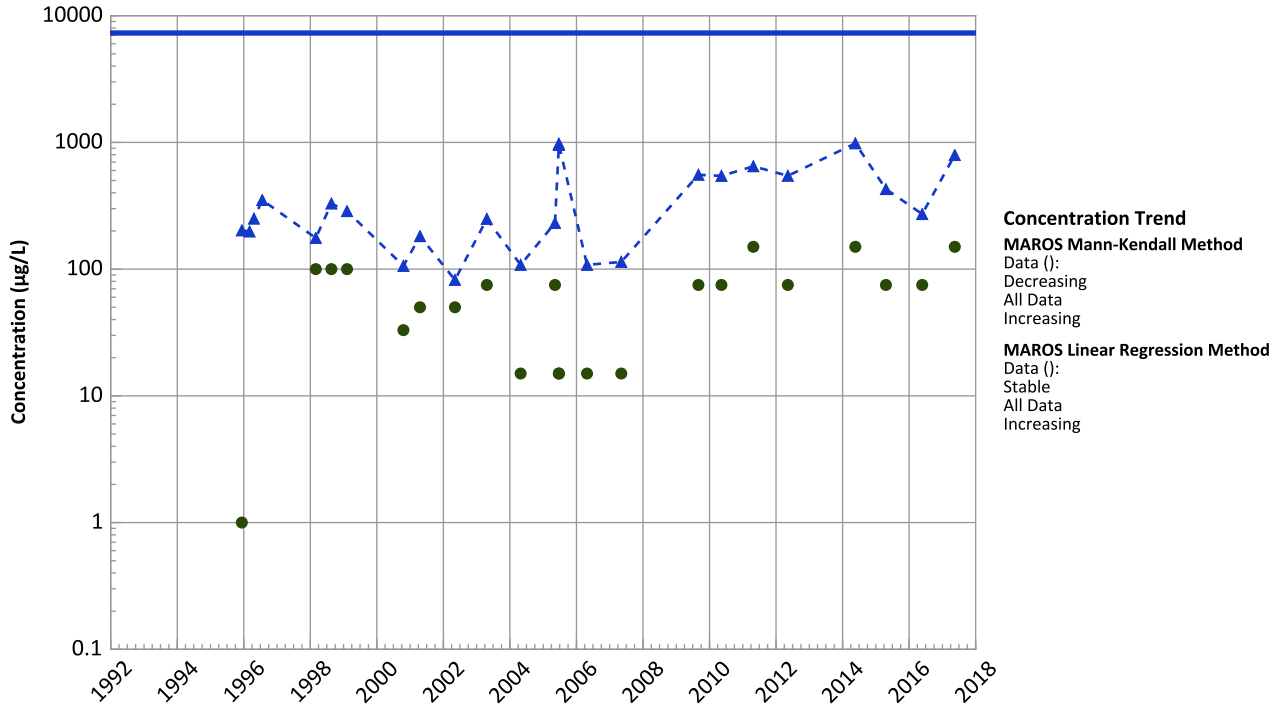


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/11/1995 to 05/17/2017
Analysis Date: 03/21/2018

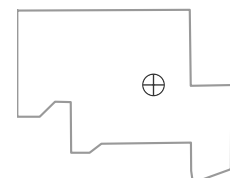
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX08-1001 in Perched Aquifer
USDOE/NNSA Pantex Plant

Boron Trend



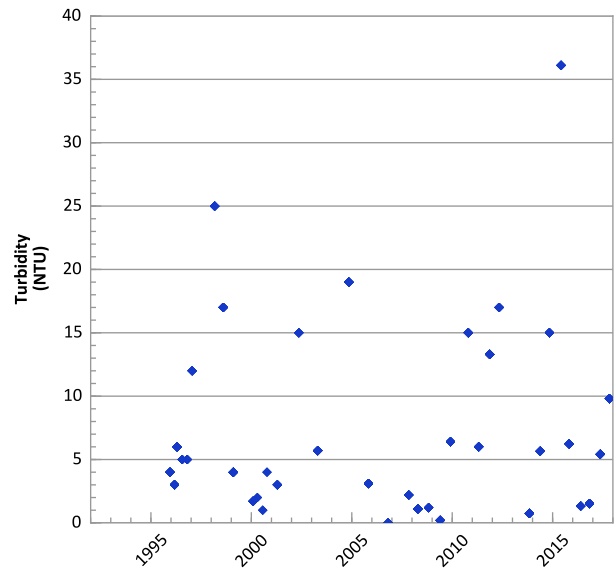
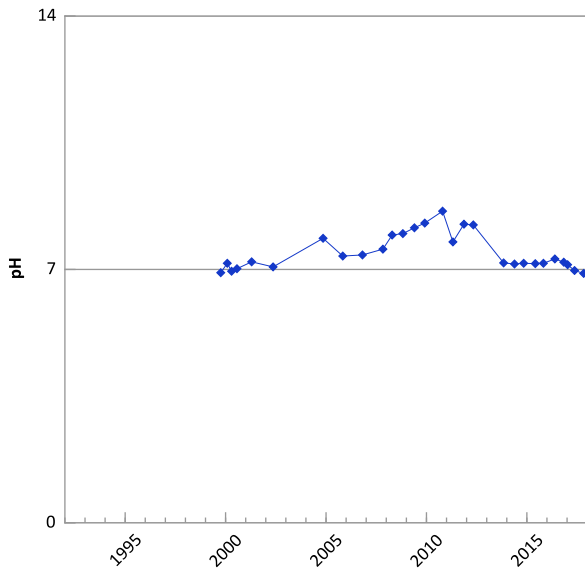
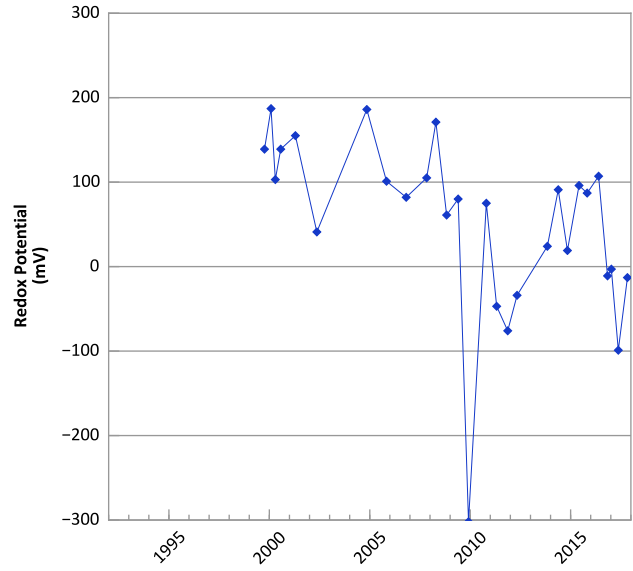
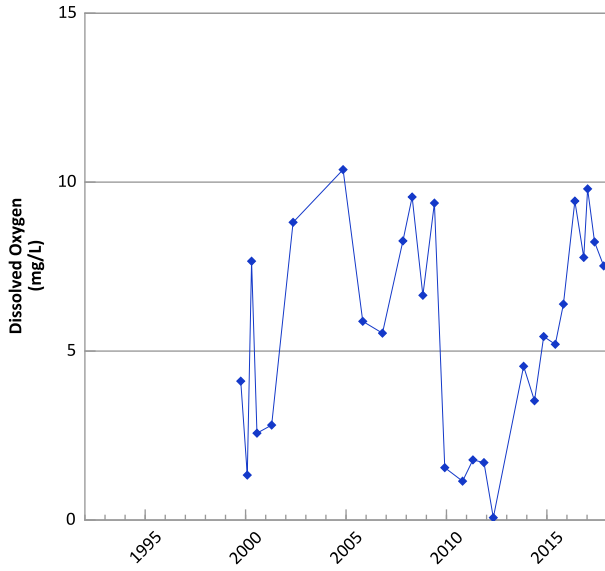
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 12/11/1995 to 05/17/2017
 Analysis Date: 03/21/2018

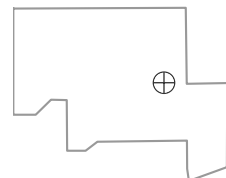
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX08-1002 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



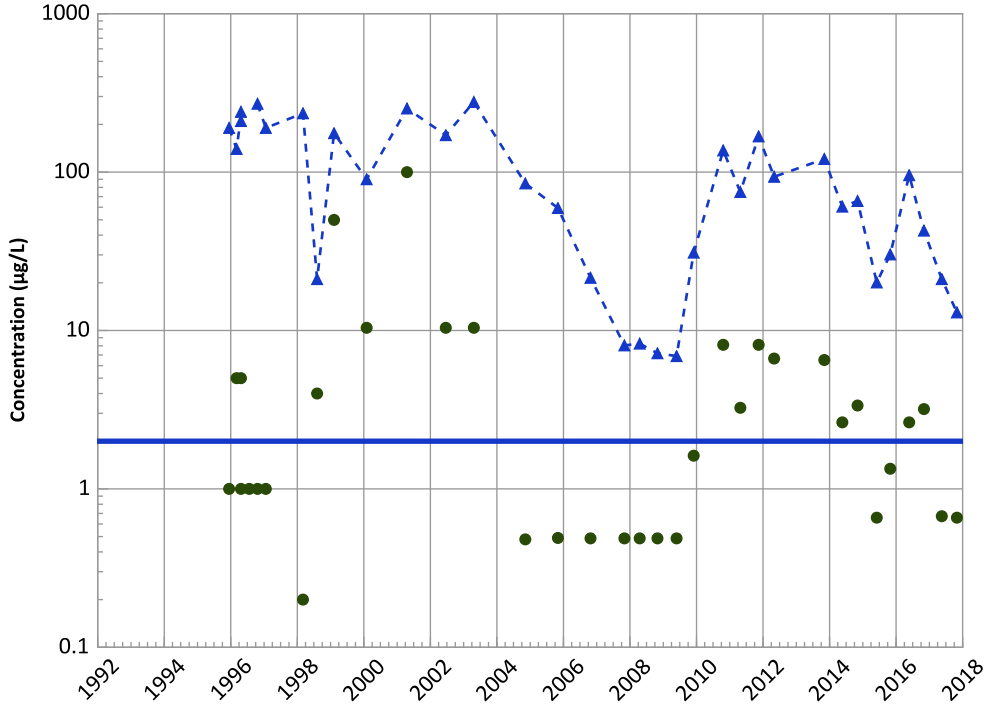
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 12/14/1995 to 10/30/2017
 Analysis Date: 03/21/2018

Well Location



PTX08-1002 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

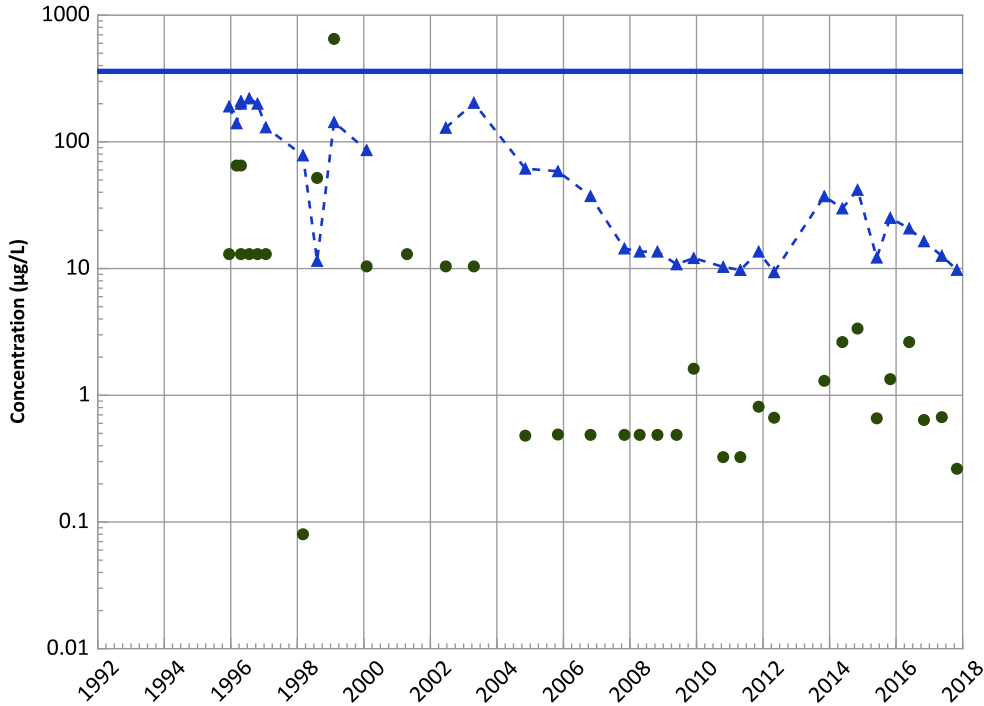
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Stable
All Data
Decreasing

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

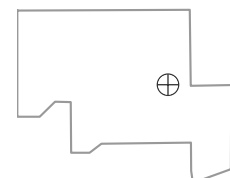
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
Decreasing

Well Location

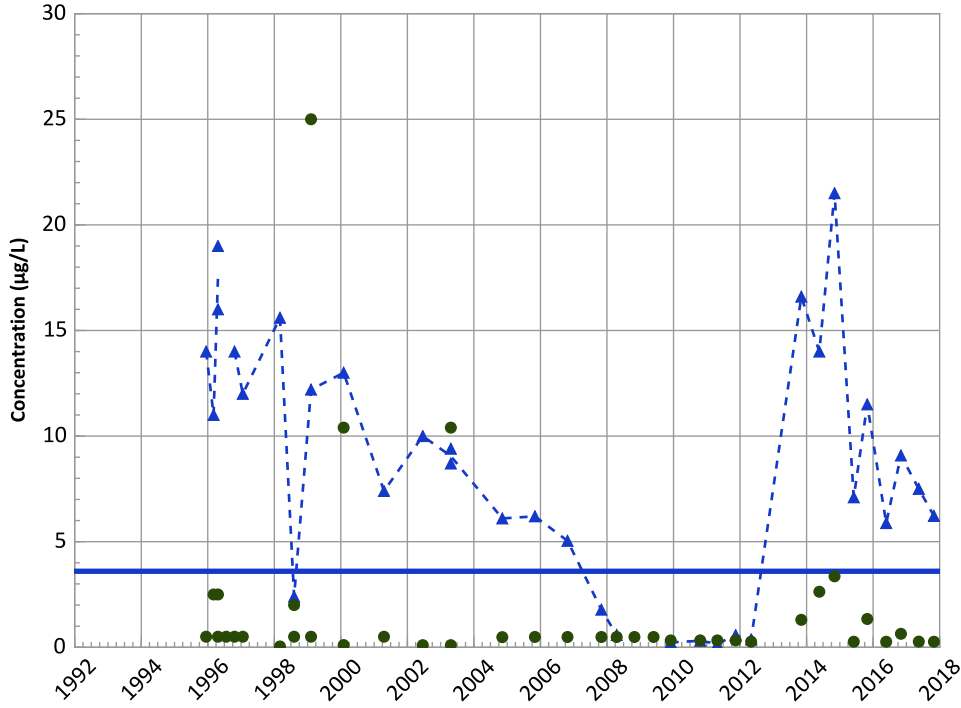


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/14/1995 to 10/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX08-1002 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

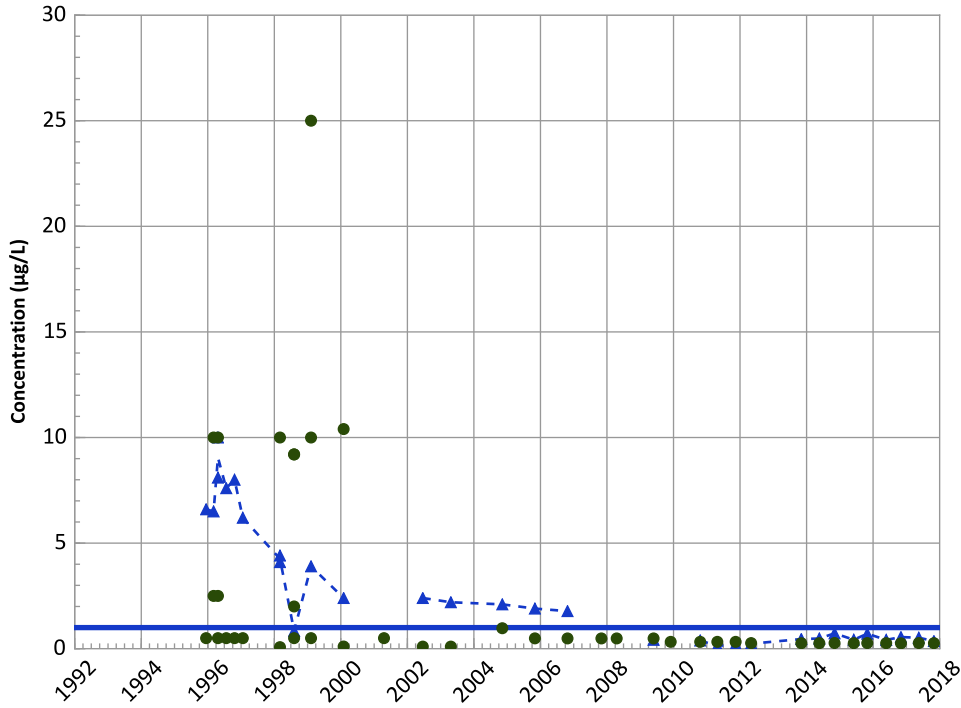
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Probably Increasing
All Data
Probably Decreasing

2,4-Dinitrotoluene Trend



Concentration Trend

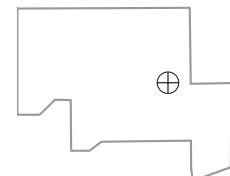
MAROS Mann-Kendall Method

Data ():
No Trend
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Probably Increasing
All Data
Decreasing

Well Location

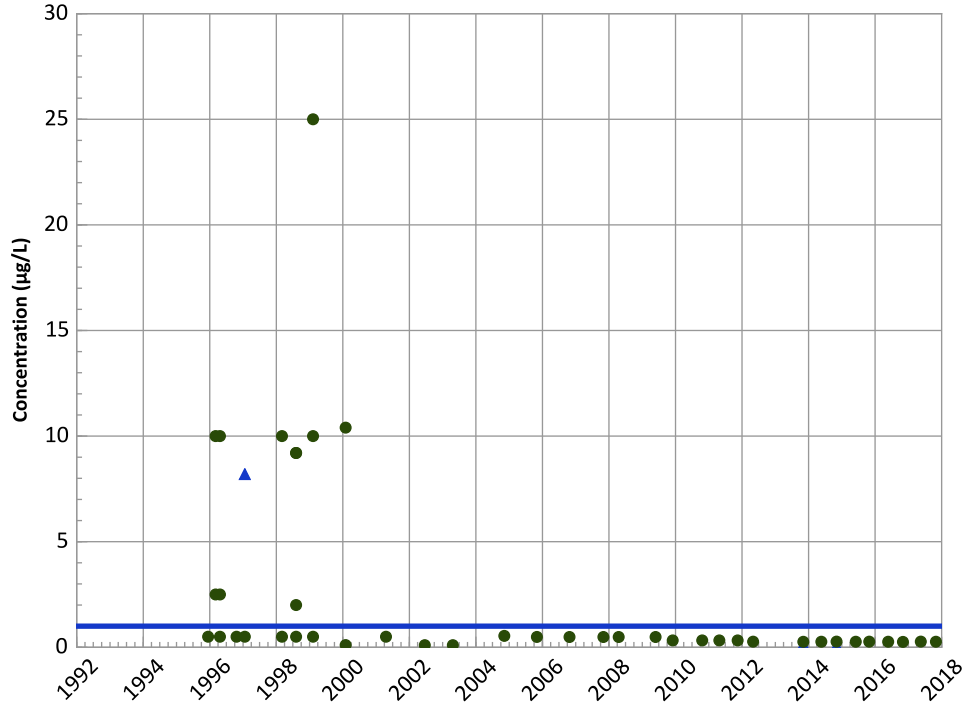


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/14/1995 to 10/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX08-1002 in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

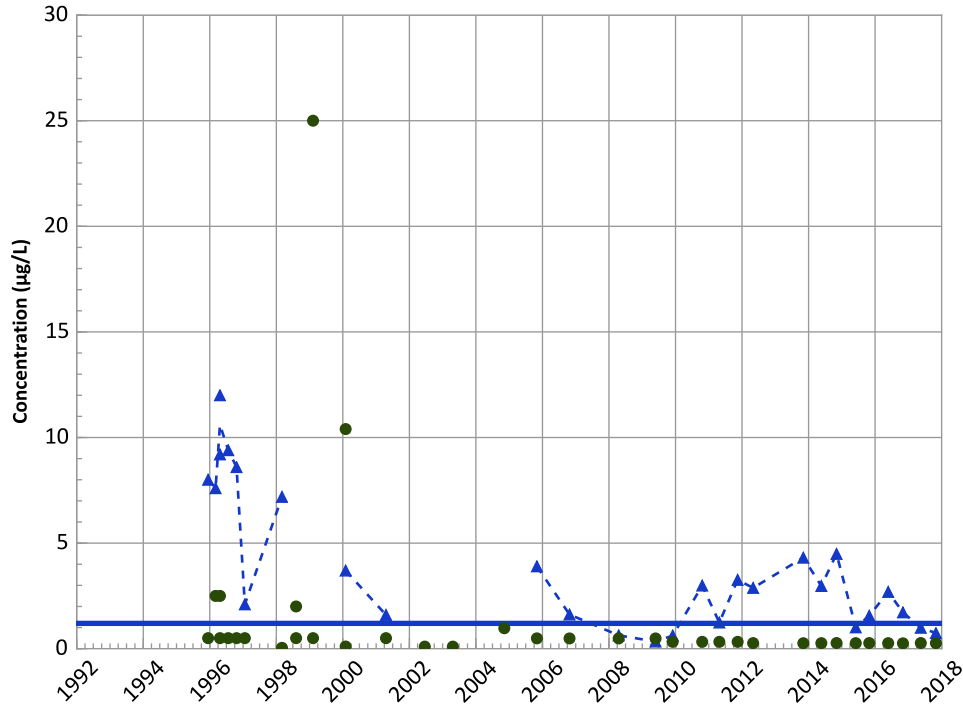
Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

Decreasing

All Data

Decreasing

MAROS Linear Regression Method

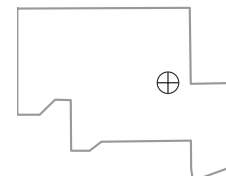
Data ():

Stable

All Data

Decreasing

Well Location

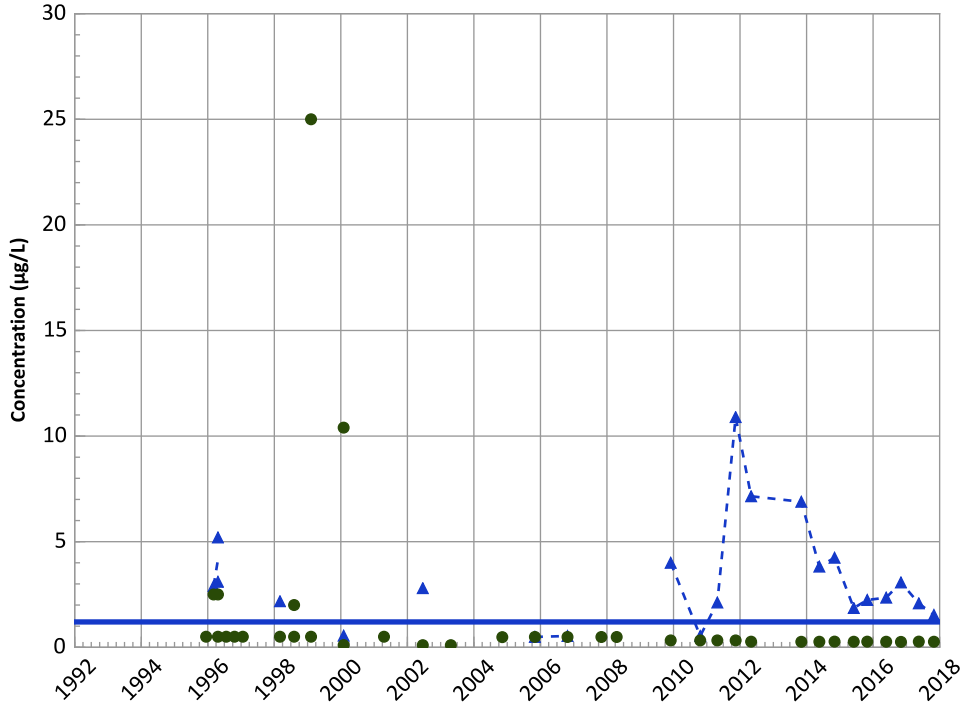


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/14/1995 to 10/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX08-1002 in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

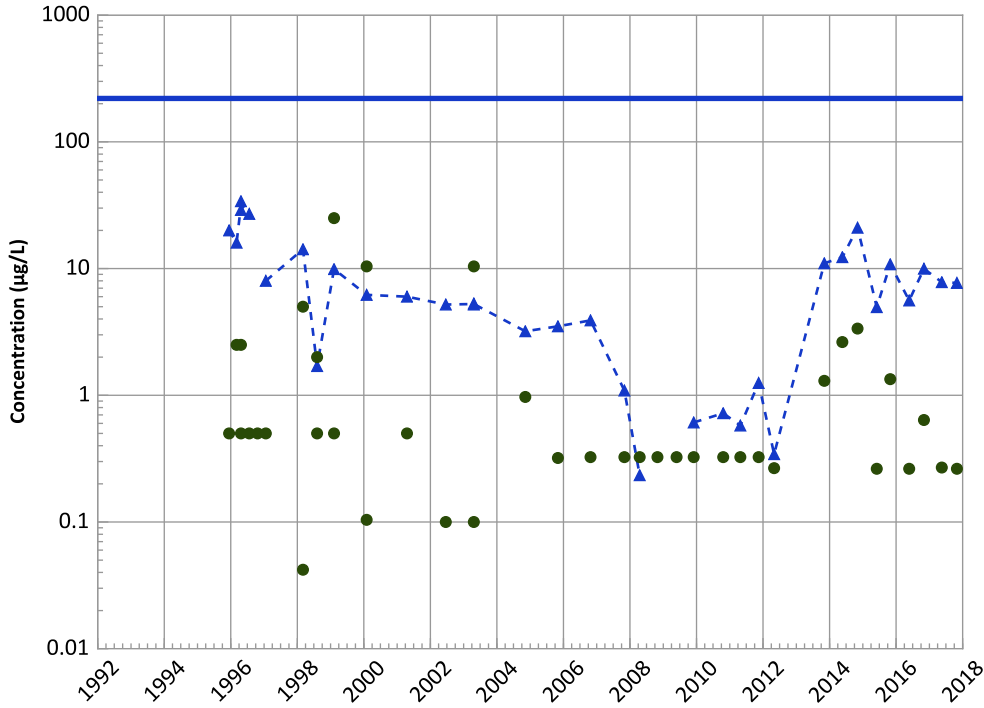
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
No Trend

1,3,5-Trinitrobenzene Trend



Concentration Trend

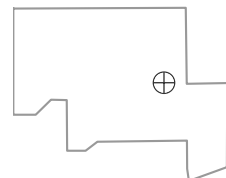
MAROS Mann-Kendall Method

Data ():
Stable
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Probably Increasing
All Data
Probably Decreasing

Well Location

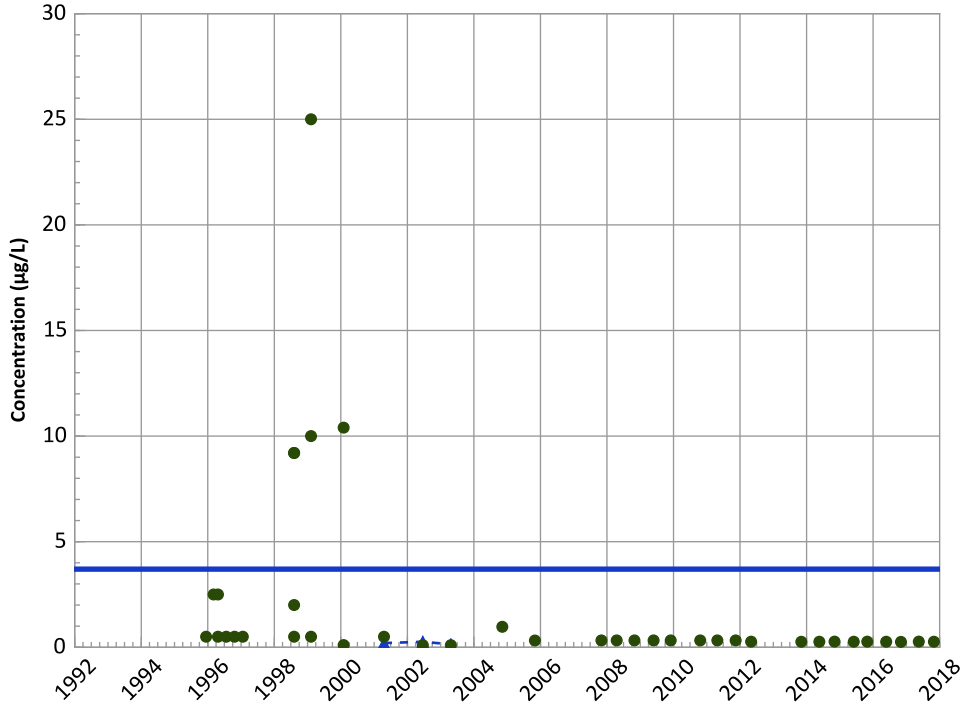


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/14/1995 to 10/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX08-1002 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

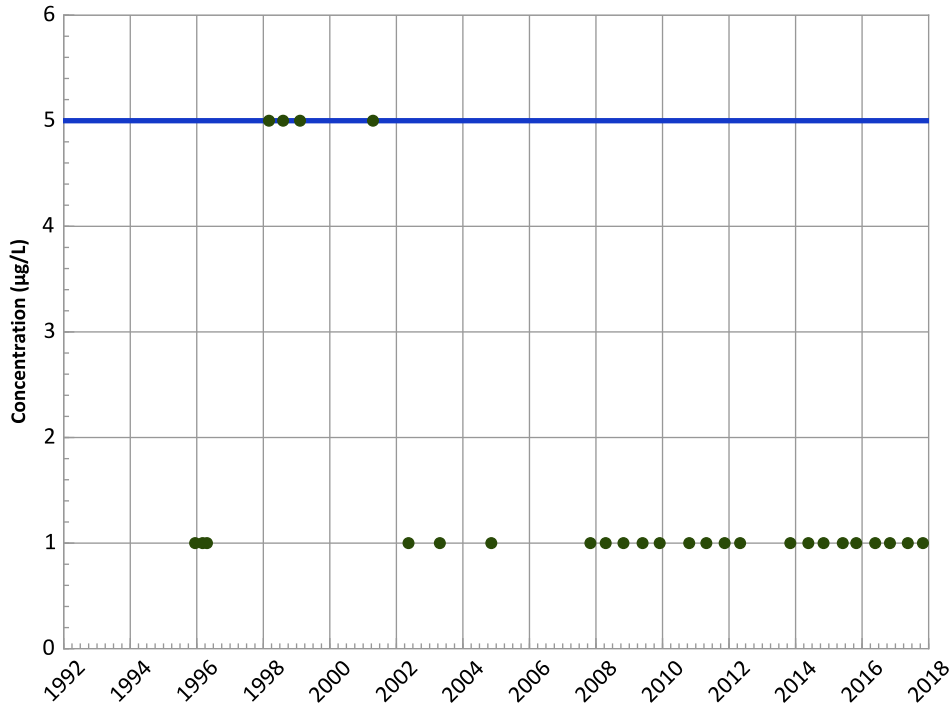
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

Tetrachloroethylene (PCE) Trend



Concentration Trend

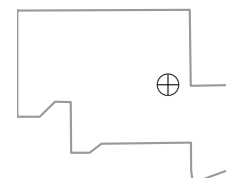
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

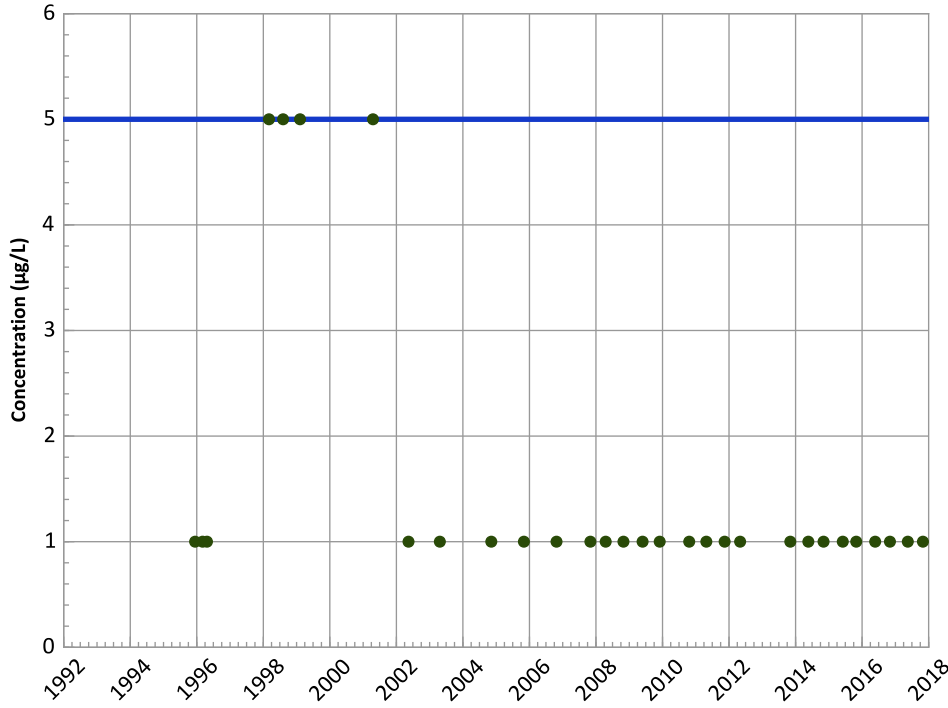


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/14/1995 to 10/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX08-1002 in Perched Aquifer
USDOE/NNSA Pantex Plant

Trichloroethene Trend



Concentration Trend

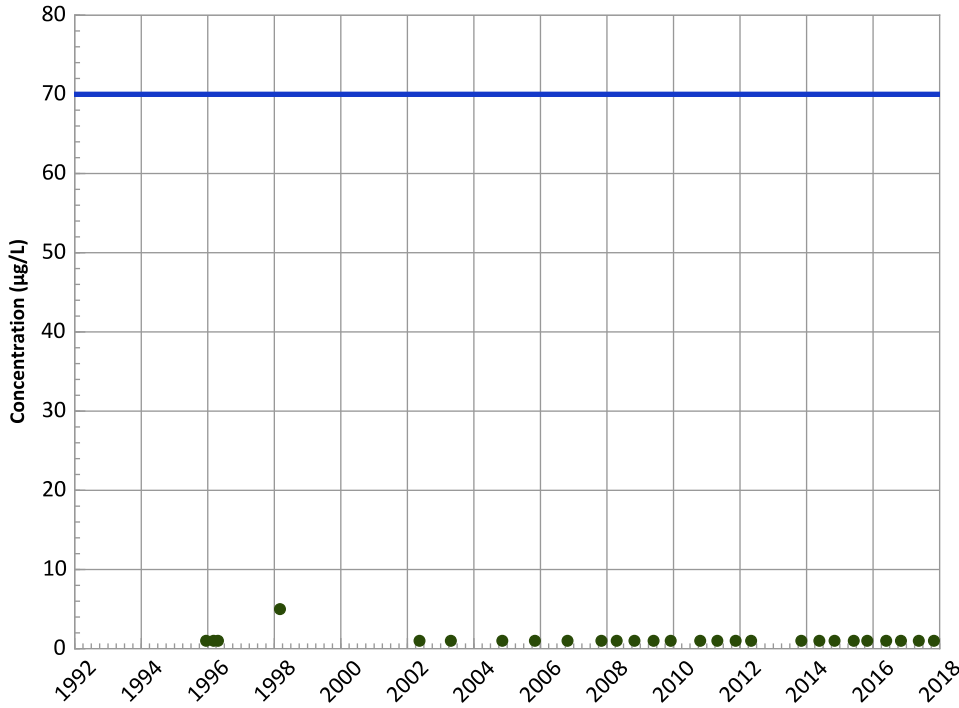
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

cis-1,2-Dichloroethene Trend



Concentration Trend

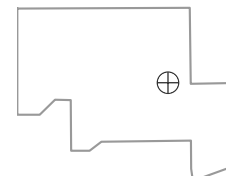
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

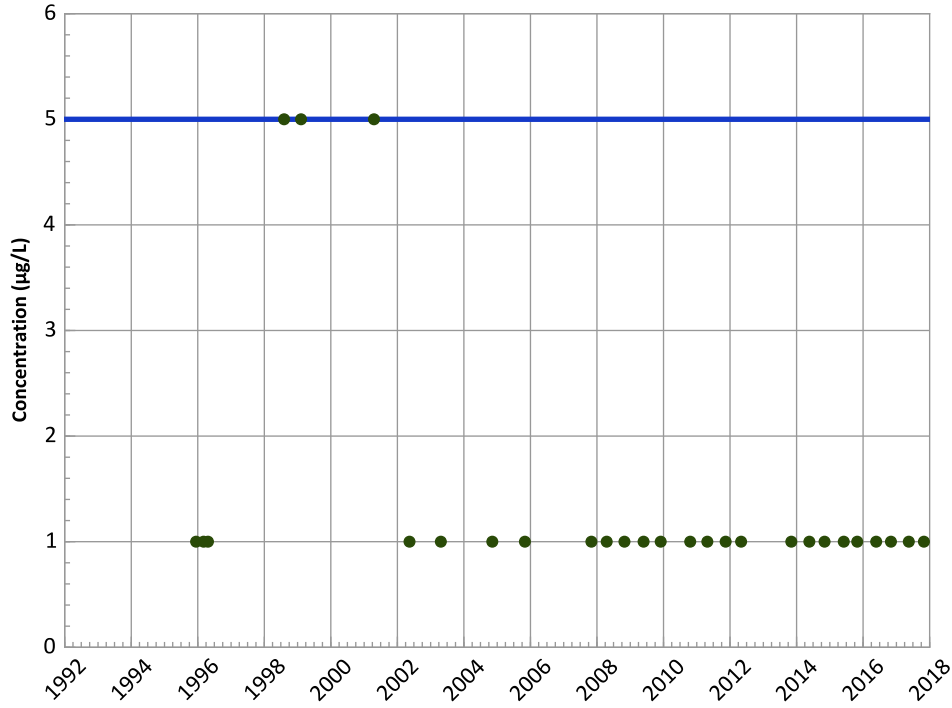


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/14/1995 to 10/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX08-1002 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,2-Dichloroethane Trend



Concentration Trend

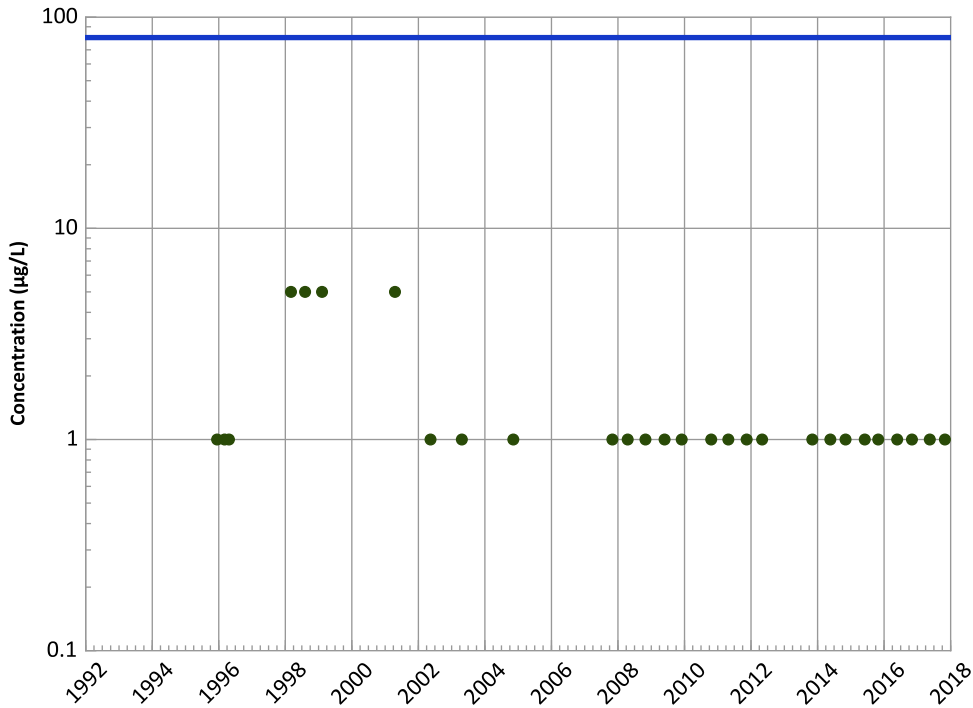
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Chloroform Trend



Concentration Trend

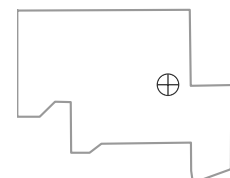
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

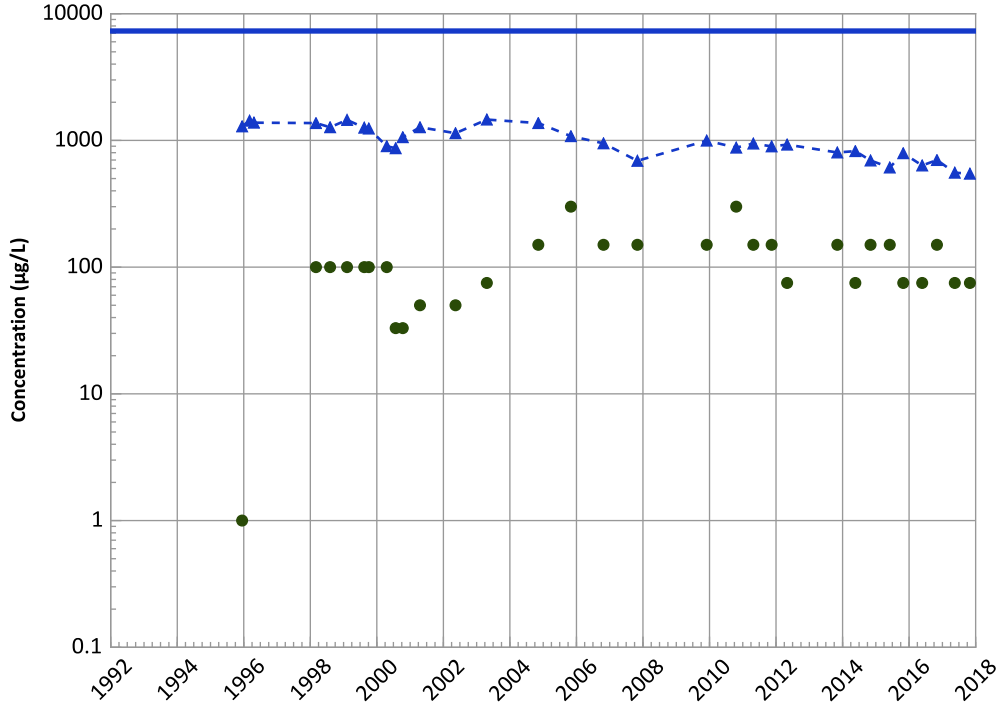


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/14/1995 to 10/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX08-1002 in Perched Aquifer
USDOE/NNSA Pantex Plant

Boron Trend



Concentration Trend

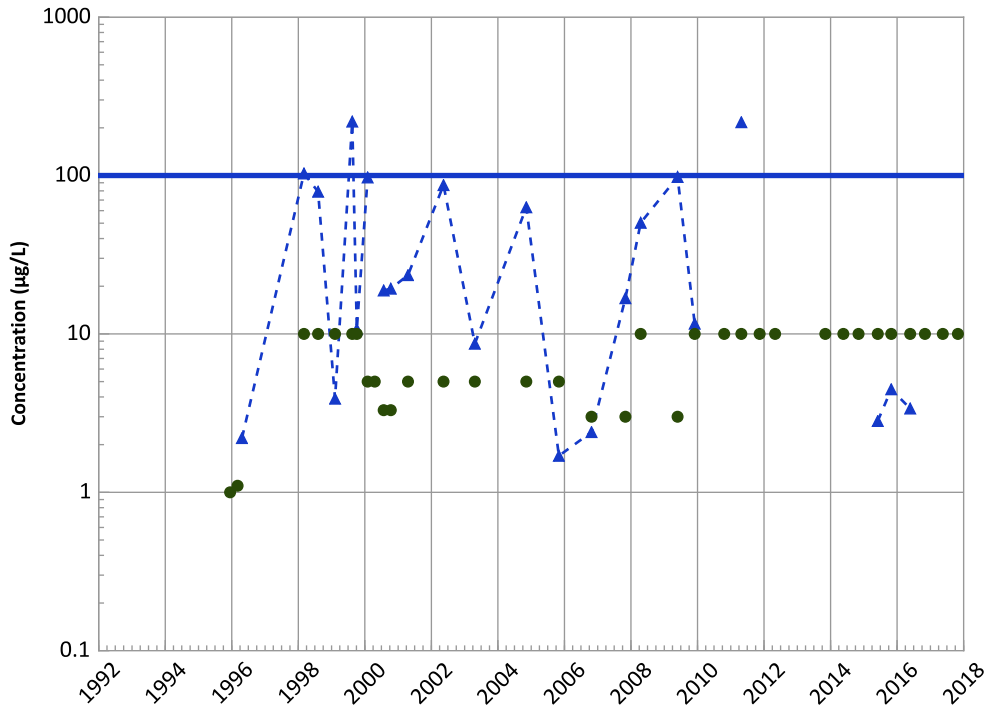
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

Chromium, Total Trend



Concentration Trend

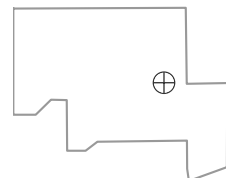
MAROS Mann-Kendall Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
No Trend

Well Location

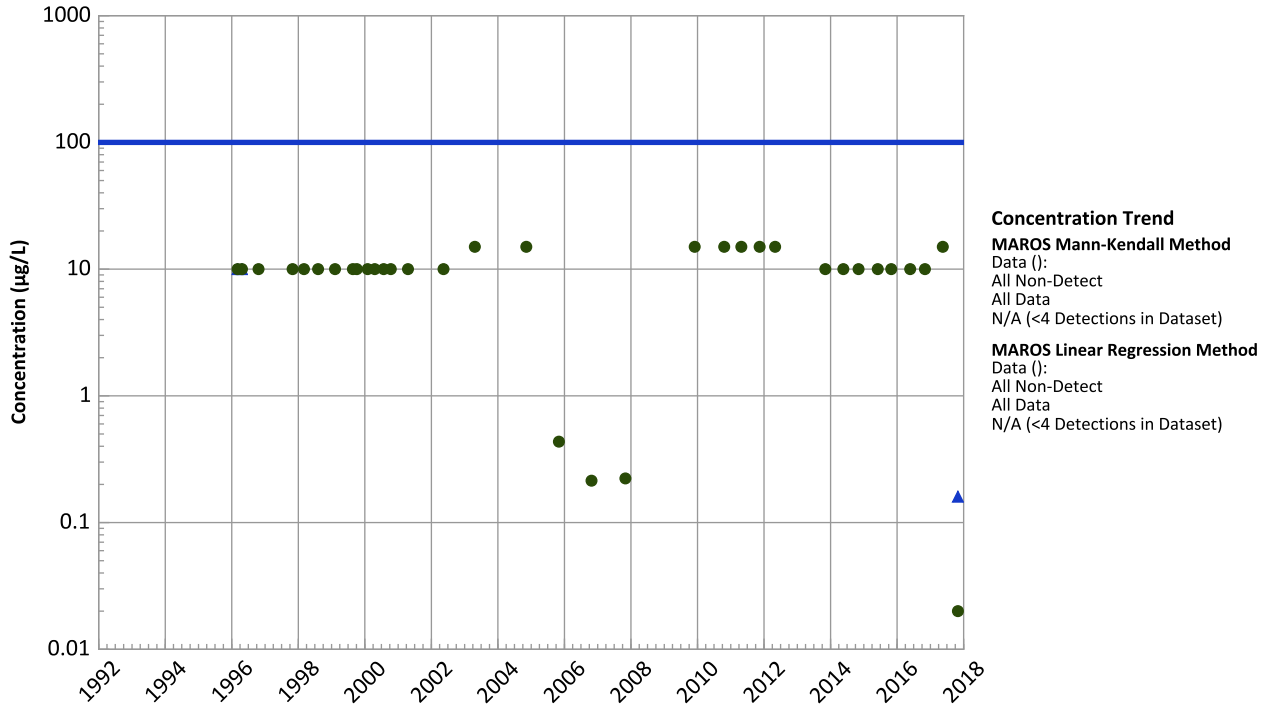


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/14/1995 to 10/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX08-1002 in Perched Aquifer
USDOE/NNSA Pantex Plant

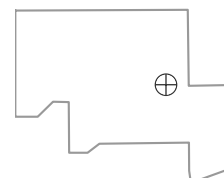
Chromium, Hexavalent Trend



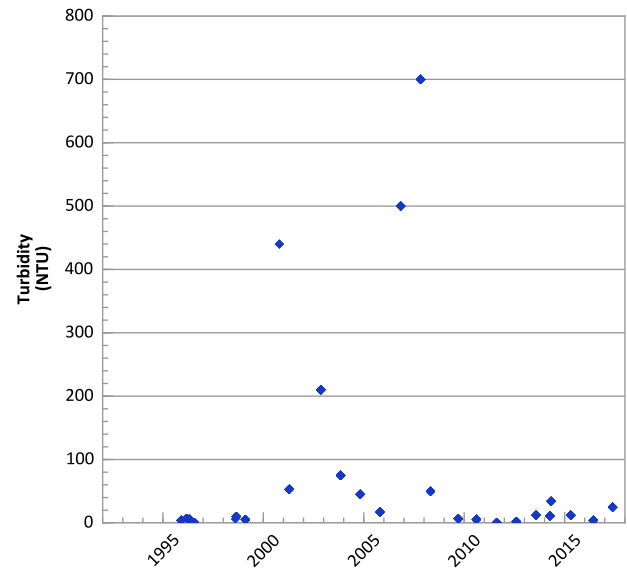
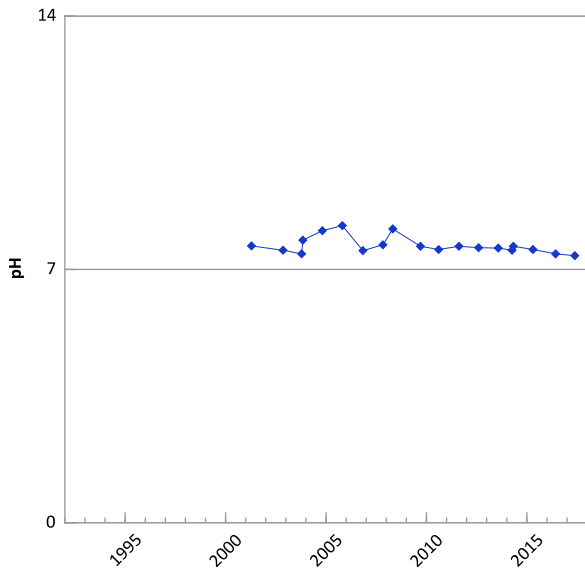
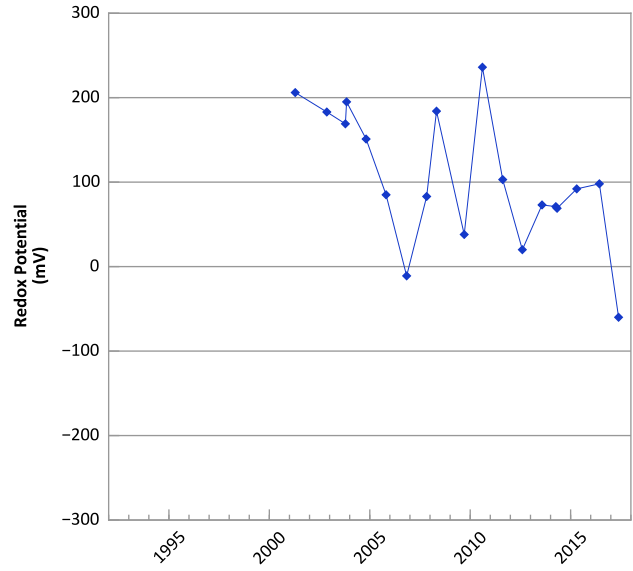
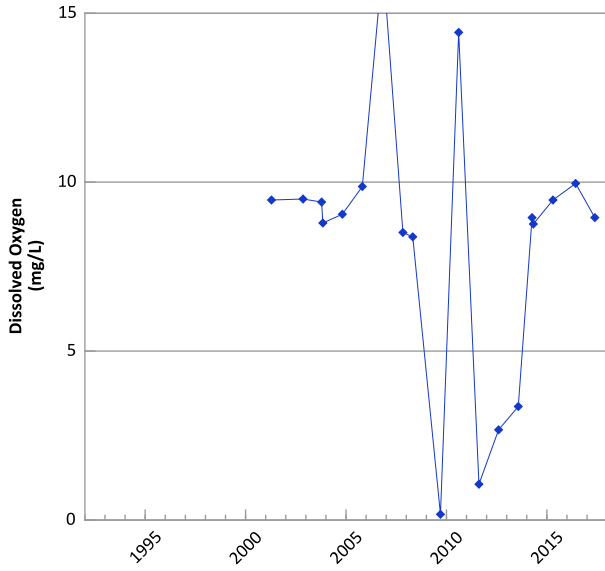
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 12/14/1995 to 10/30/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

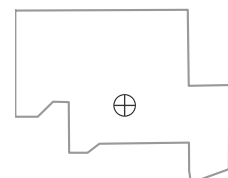


**PTX08-1003 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



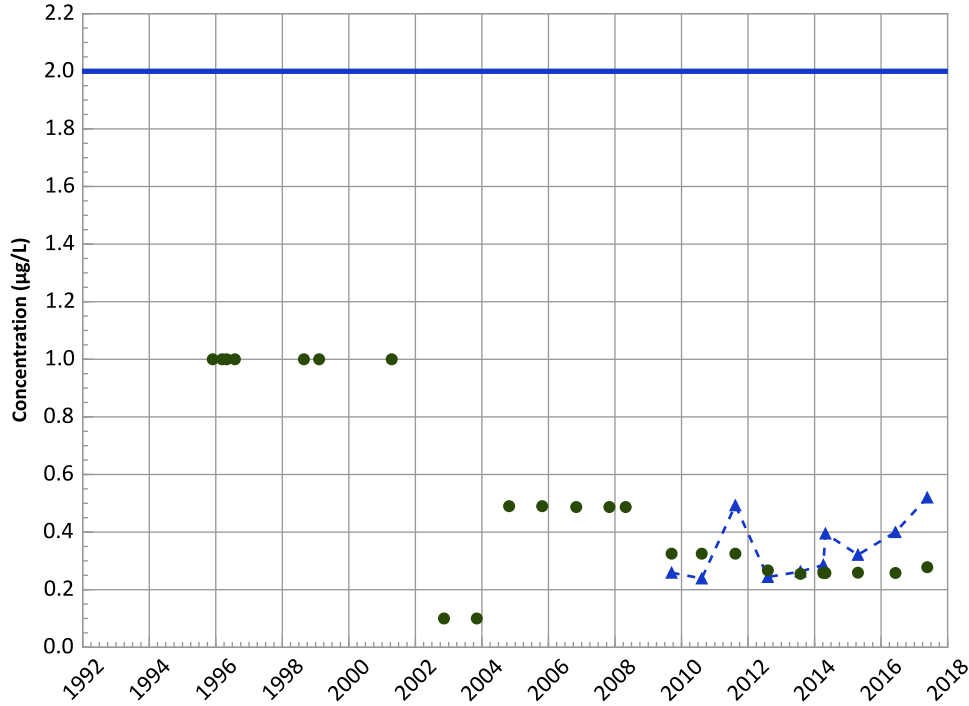
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 11/29/1995 to 05/22/2017
 Analysis Date: 03/21/2018

Well Location



PTX08-1003 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

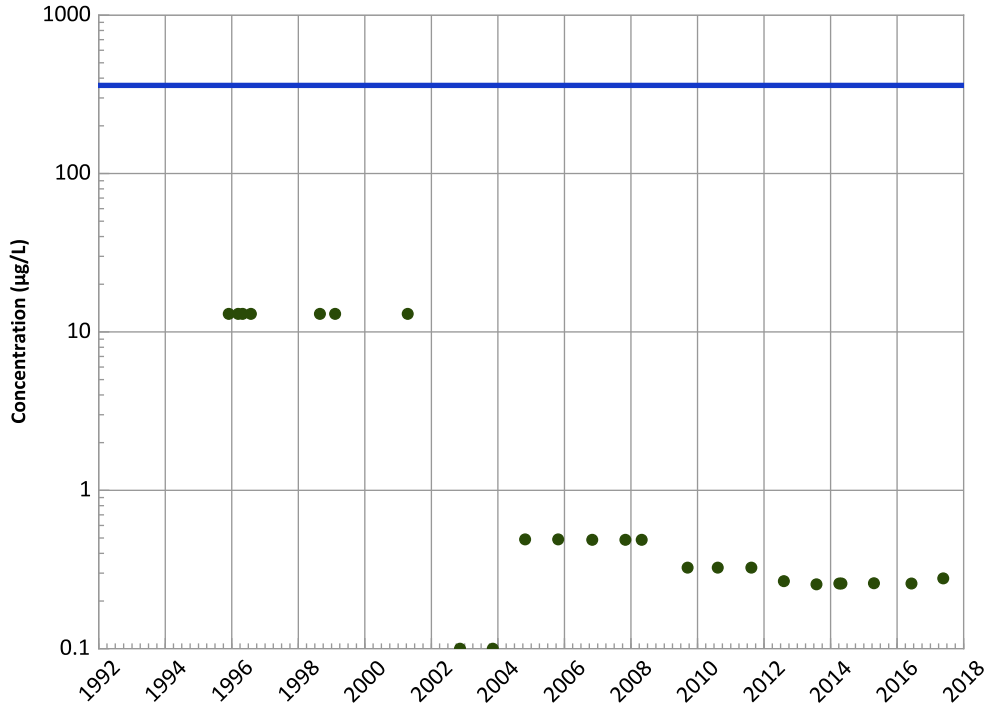
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

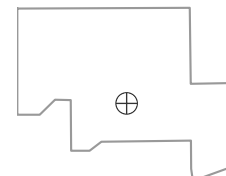
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

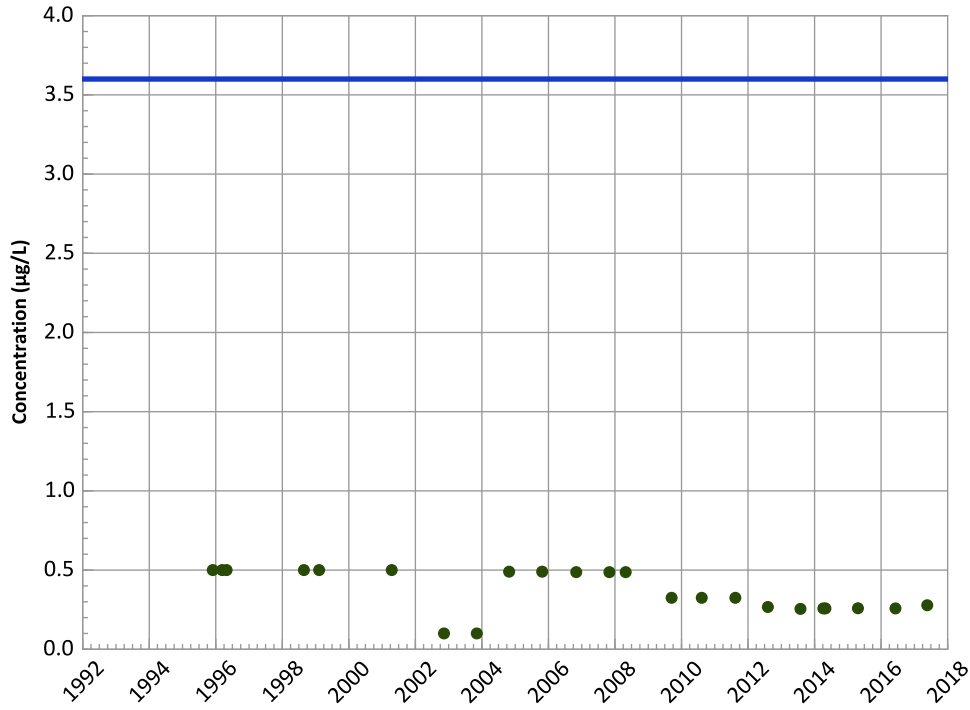


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/29/1995 to 05/22/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX08-1003 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

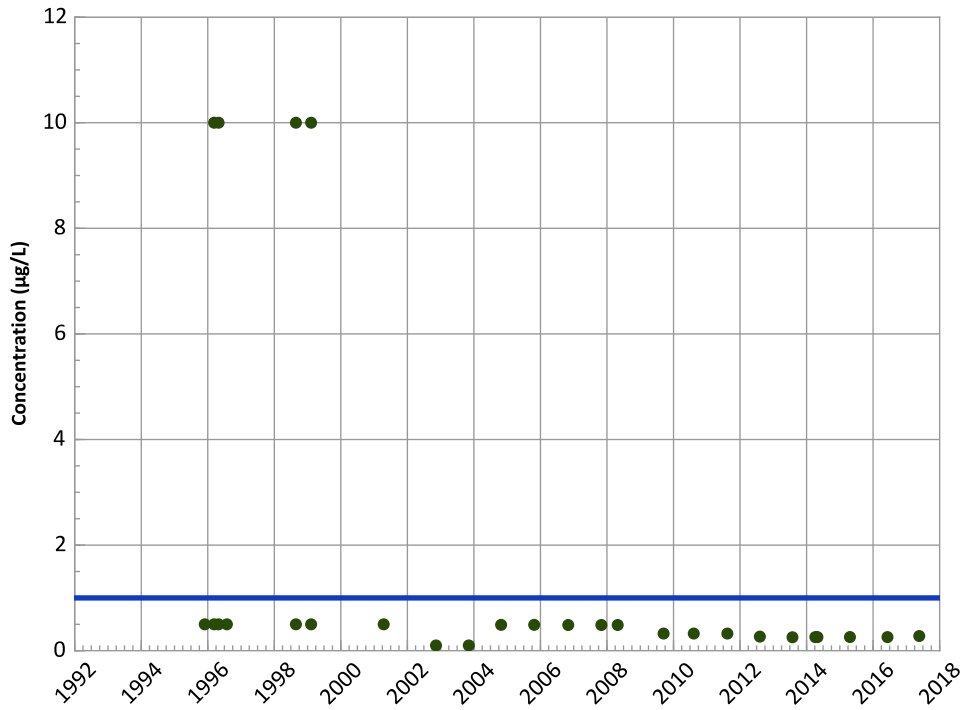
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

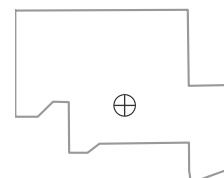
MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/29/1995 to 05/22/2017
Analysis Date: 03/21/2018

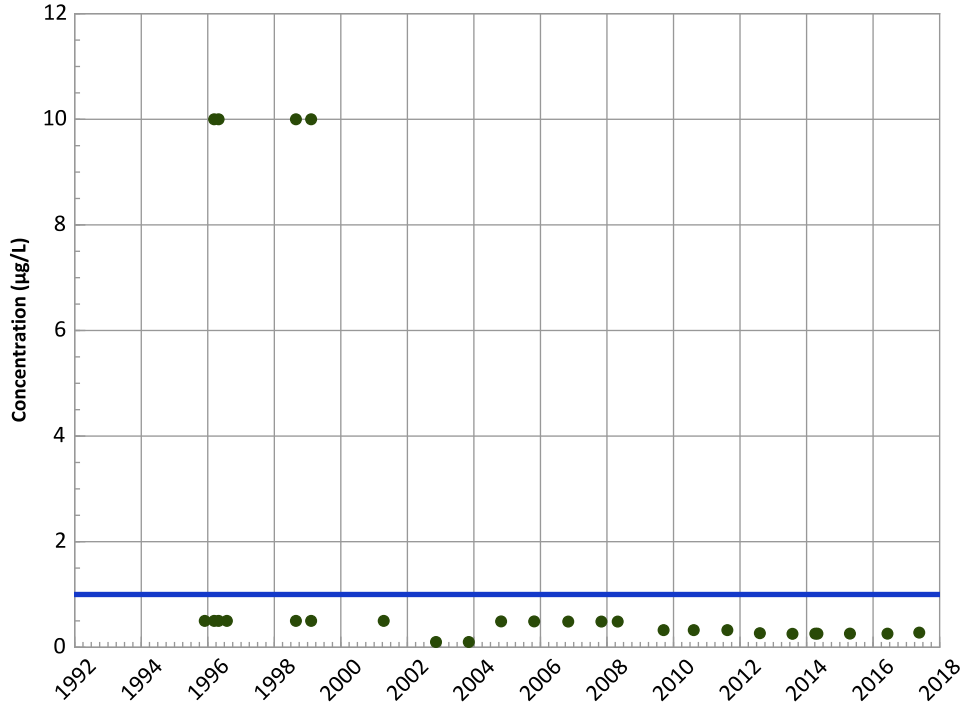
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX08-1003 in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

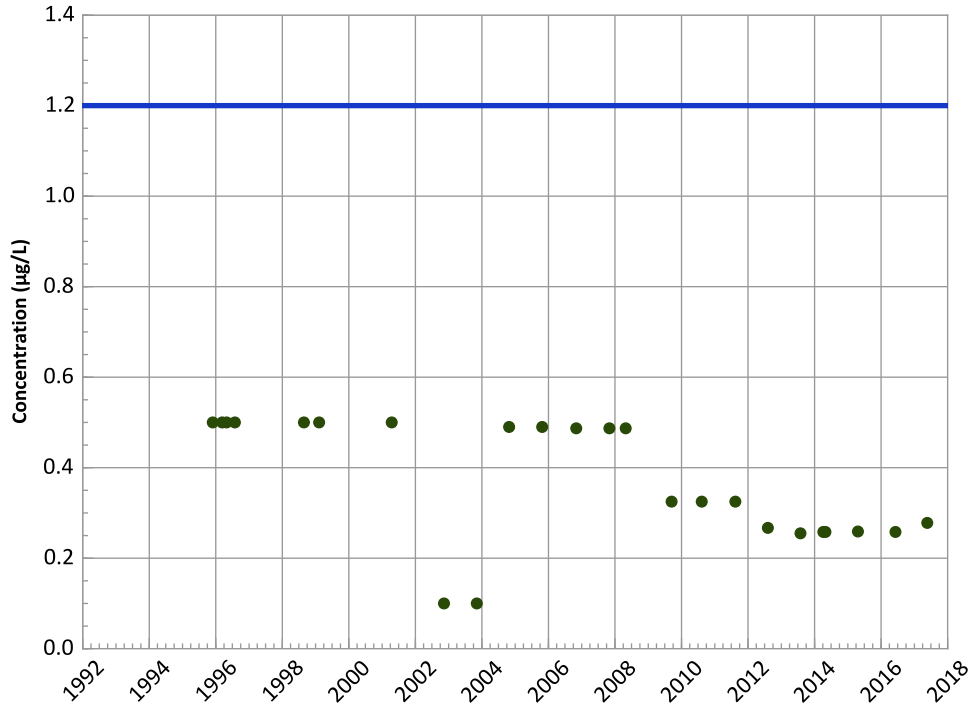
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

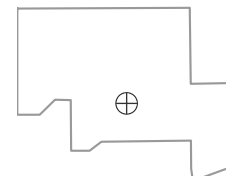
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

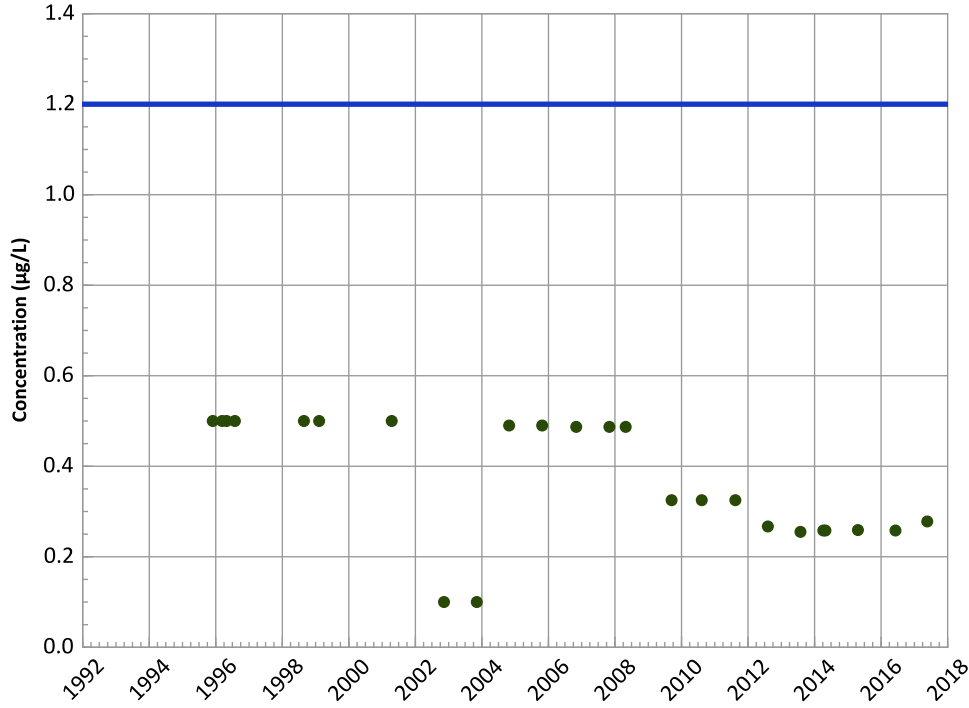


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/29/1995 to 05/22/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX08-1003 in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

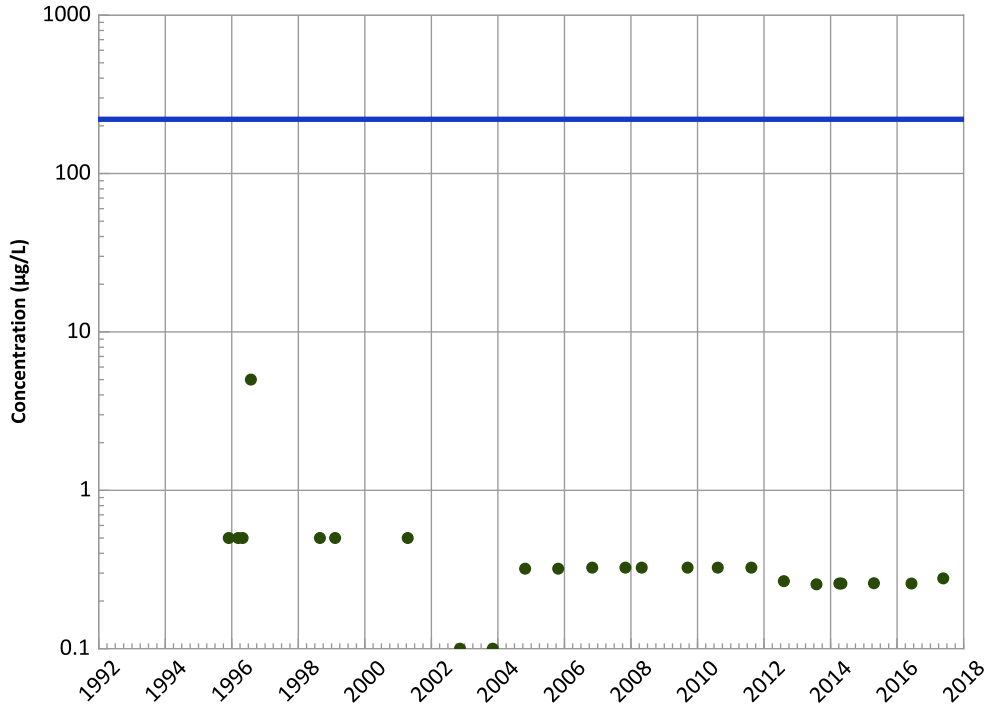
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,3,5-Trinitrobenzene Trend



Concentration Trend

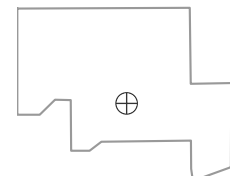
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

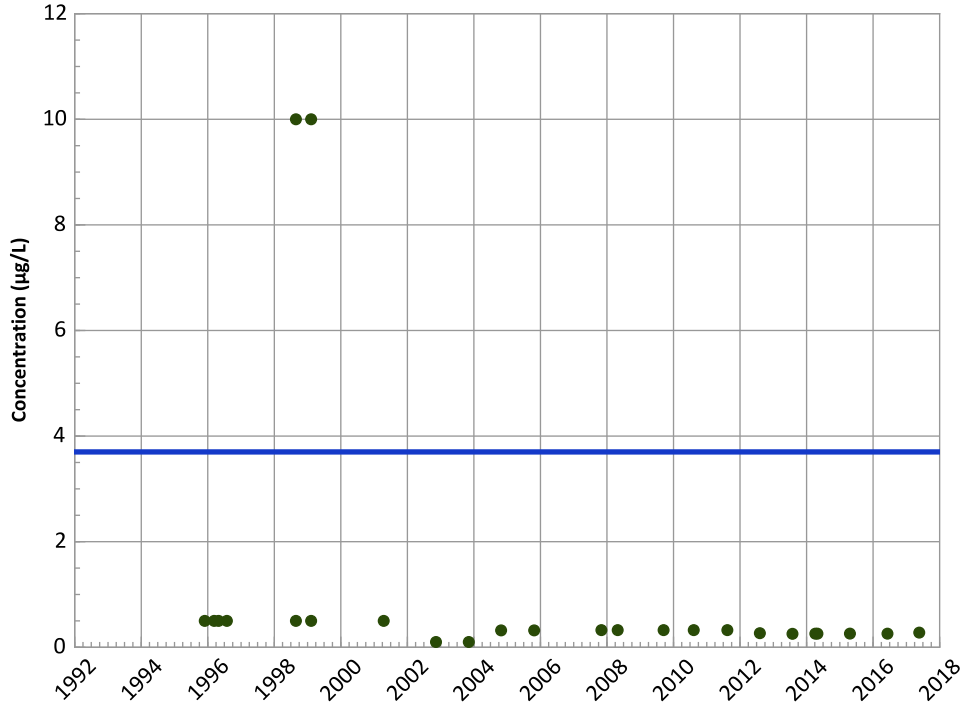


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/29/1995 to 05/22/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX08-1003 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

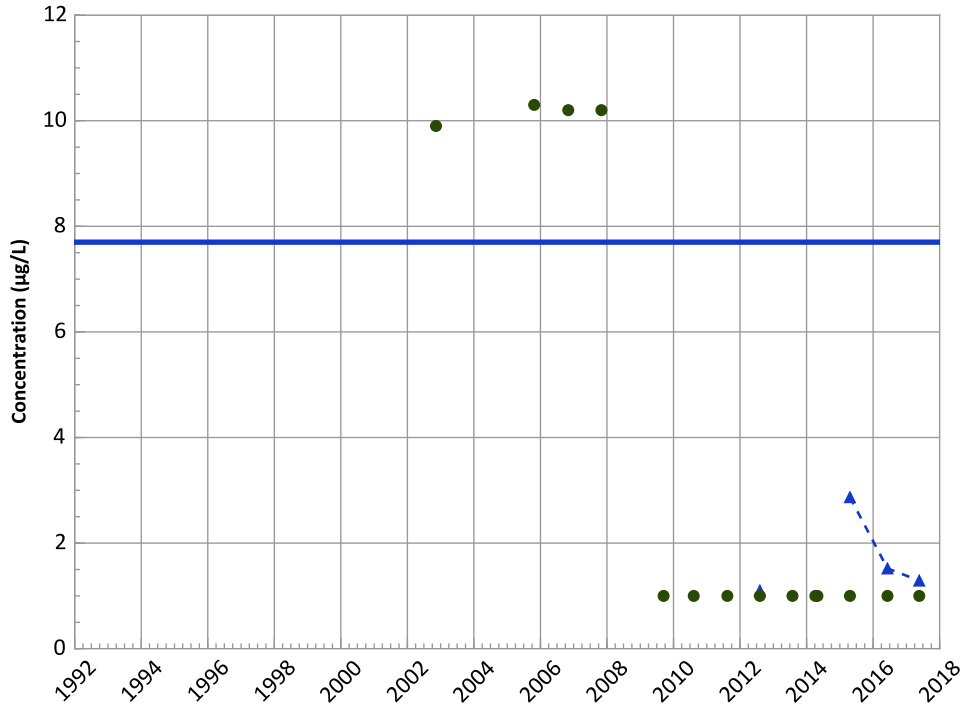
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,4-Dioxane (p-Dioxane) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

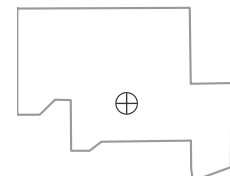
MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
No Trend

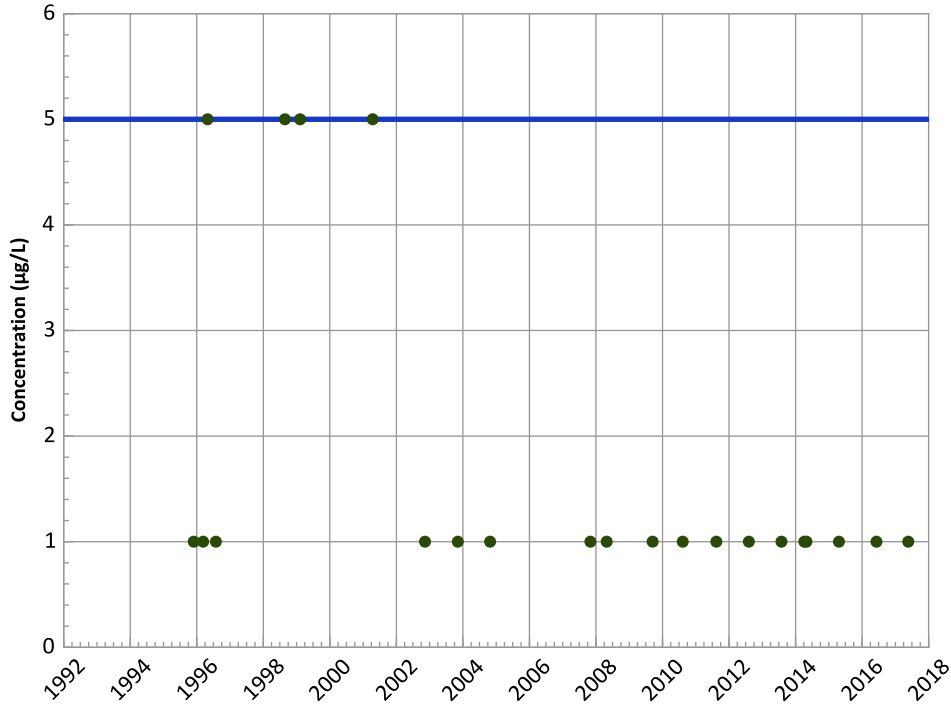
Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/29/1995 to 05/22/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

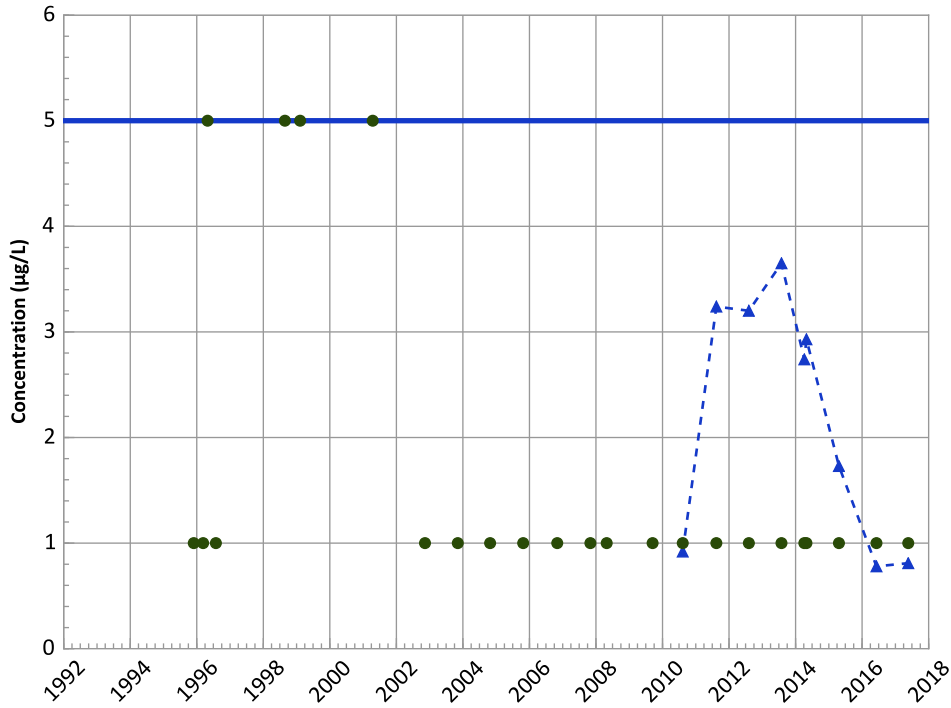


**PTX08-1003 in Perched Aquifer
USDOE/NNSA Pantex Plant
Tetrachloroethylene (PCE) Trend**



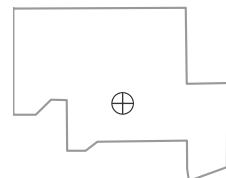
Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect
MAROS Linear Regression Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect

Trichloroethene Trend



Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 Decreasing
 All Data
 Increasing
MAROS Linear Regression Method
 Data ():
 Decreasing
 All Data
 Stable

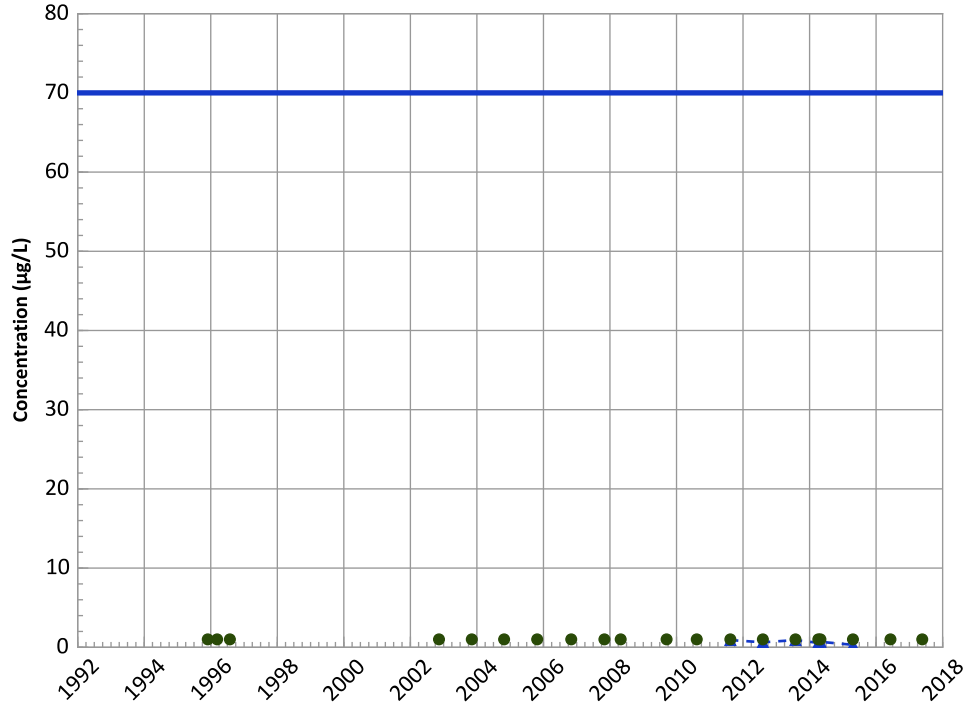
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 11/29/1995 to 05/22/2017
 Analysis Date: 03/21/2018

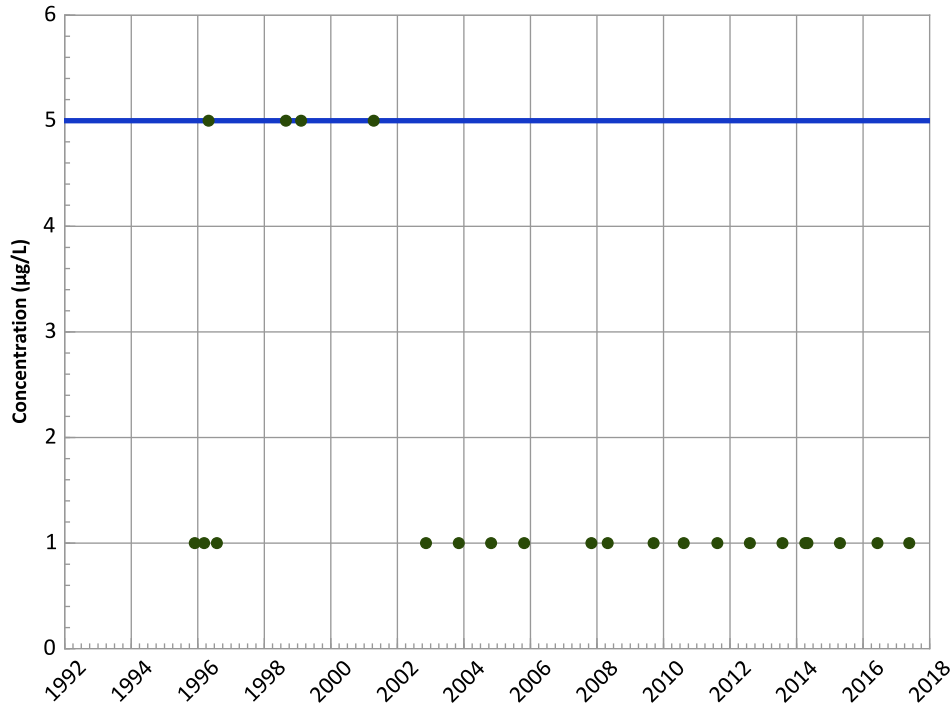
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX08-1003 in Perched Aquifer
USDOE/NNSA Pantex Plant
cis-1,2-Dichloroethene Trend**



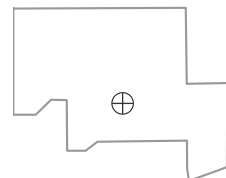
Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 Decreasing
 All Data
 No Trend
MAROS Linear Regression Method
 Data ():
 Stable
 All Data
 Decreasing

1,2-Dichloroethane Trend



Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect
MAROS Linear Regression Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect

Well Location

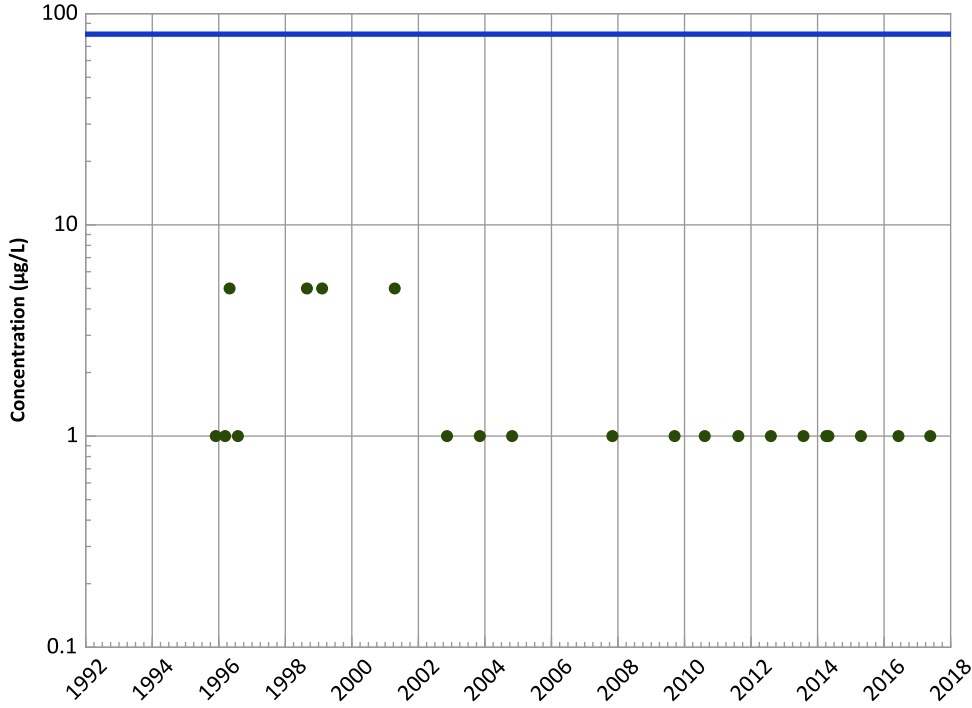


Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 11/29/1995 to 05/22/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX08-1003 in Perched Aquifer
USDOE/NNSA Pantex Plant

Chloroform Trend



Concentration Trend

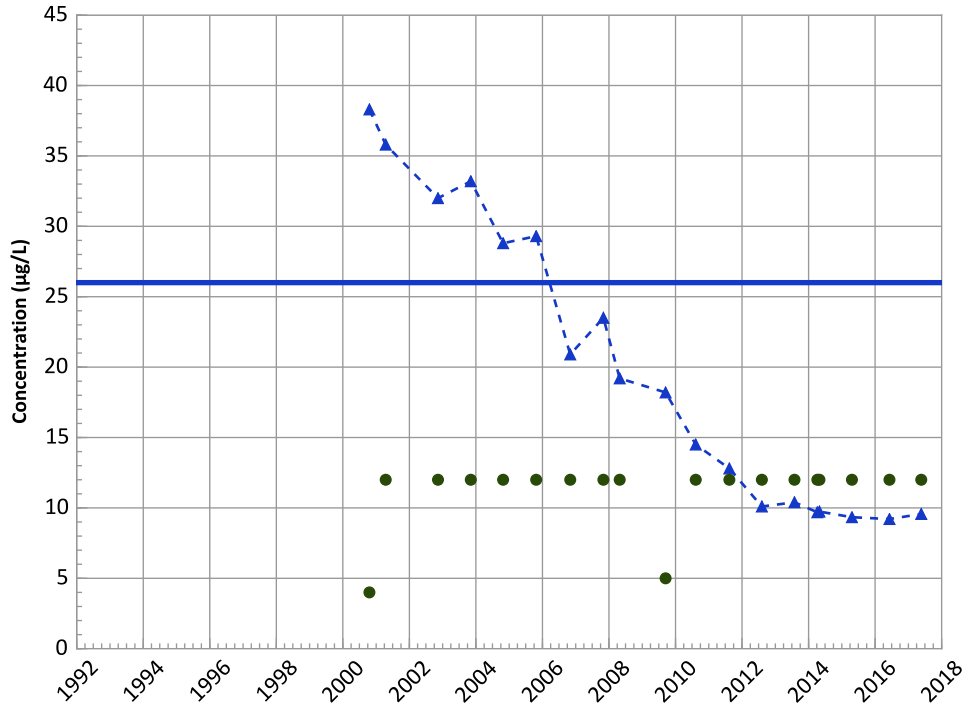
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Perchlorate Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

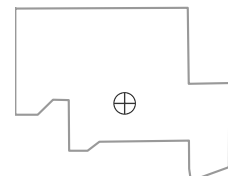
MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

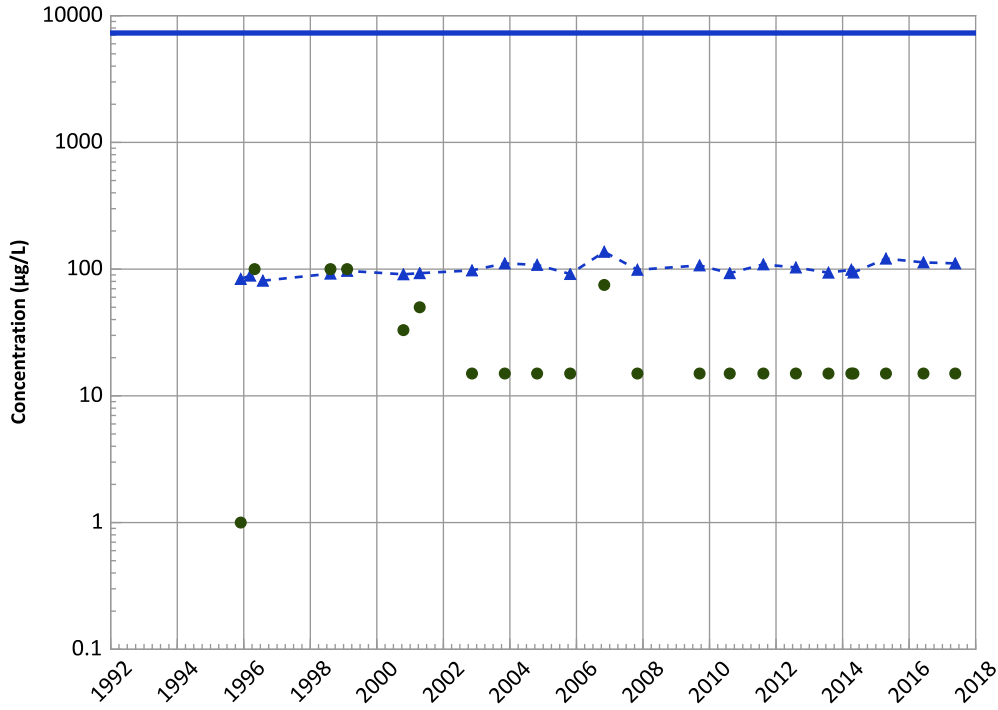
Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/29/1995 to 05/22/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



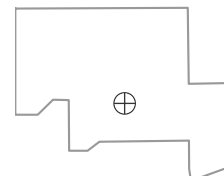
PTX08-1003 in Perched Aquifer
 USDOE/NNSA Pantex Plant
 Boron Trend



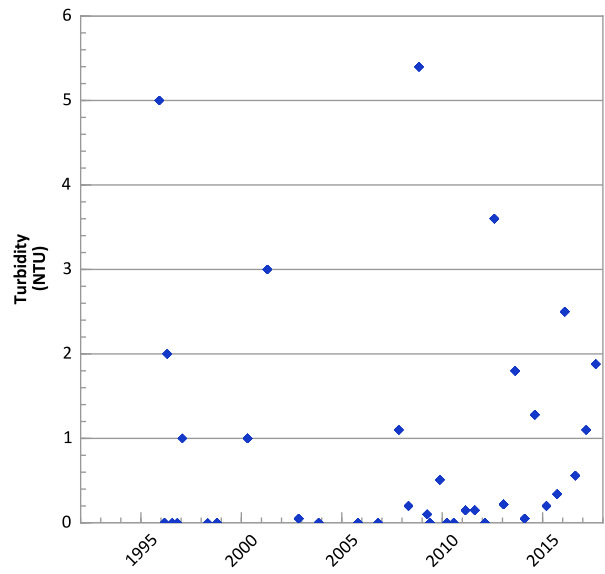
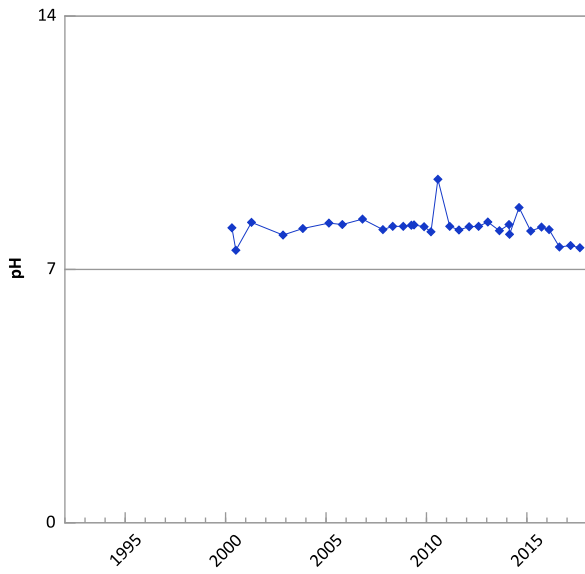
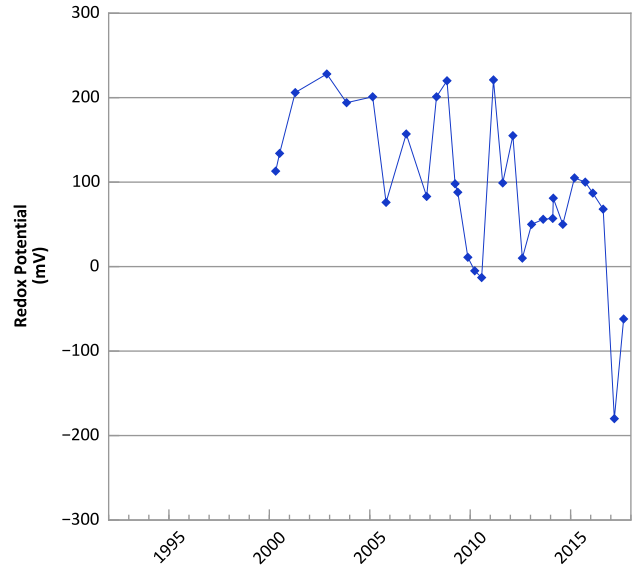
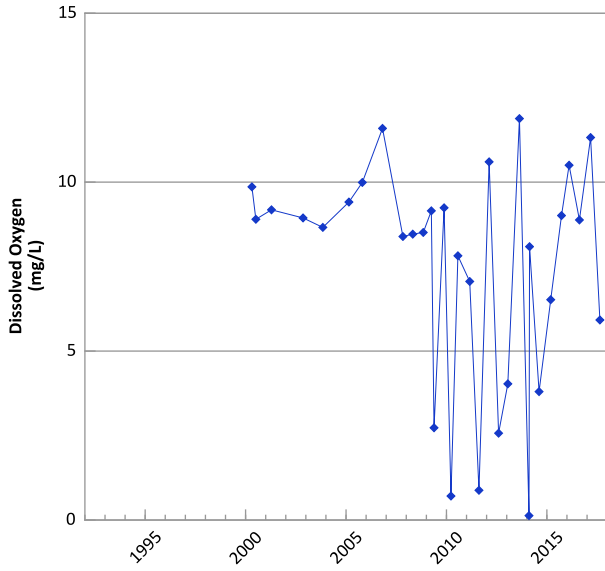
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 11/29/1995 to 05/22/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

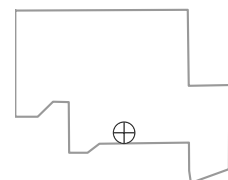


**PTX08-1005 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



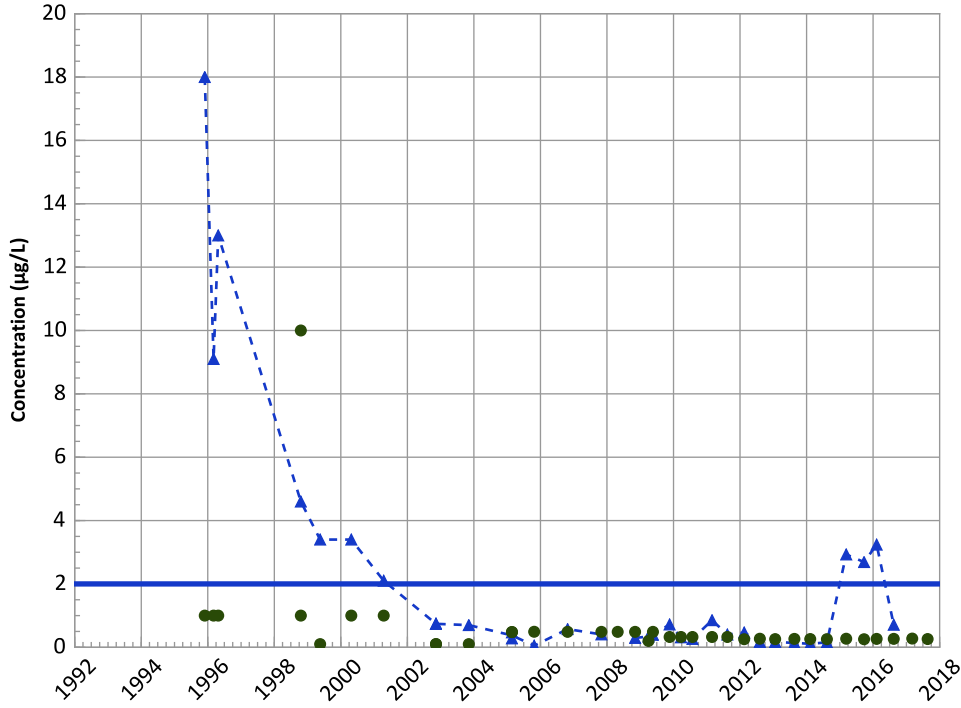
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 11/29/1995 to 08/22/2017
 Analysis Date: 03/21/2018

Well Location



PTX08-1005 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

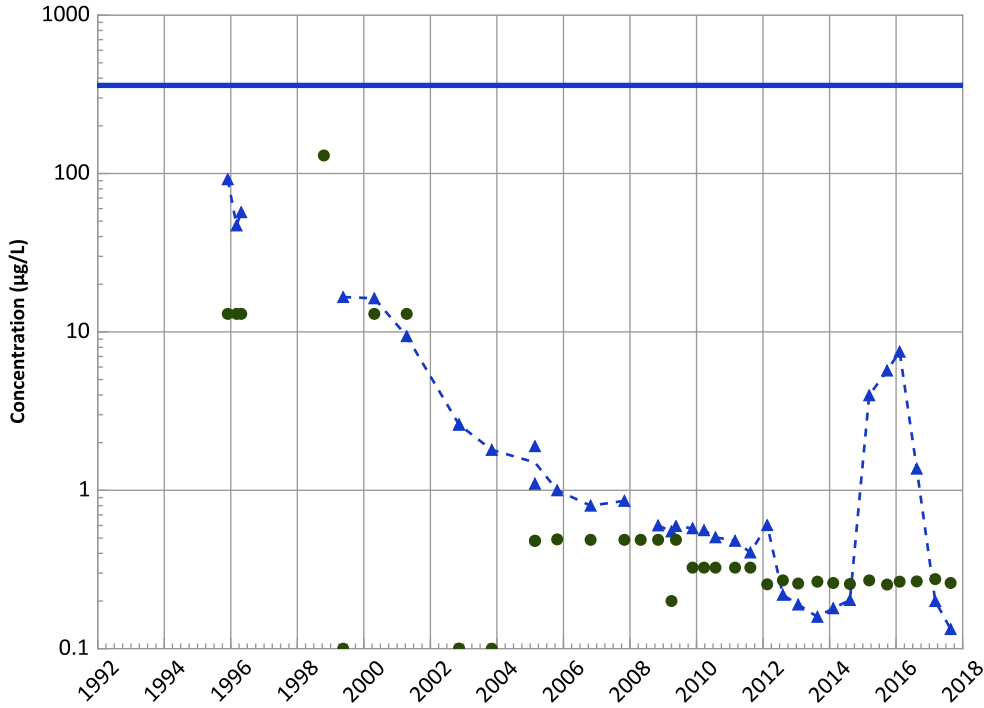
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Decreasing

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
Probably Increasing
All Data
Decreasing

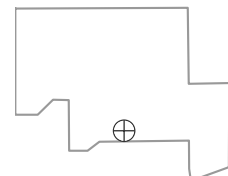
MAROS Linear Regression Method

Data ():
Increasing
All Data
Decreasing

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/29/1995 to 08/22/2017
Analysis Date: 03/21/2018

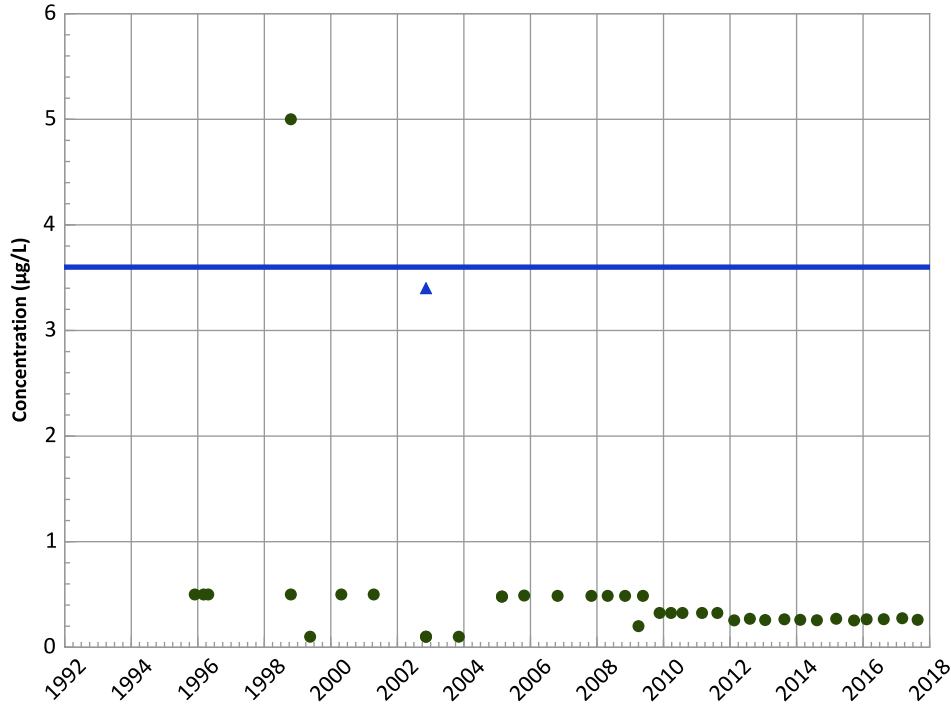
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX08-1005 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

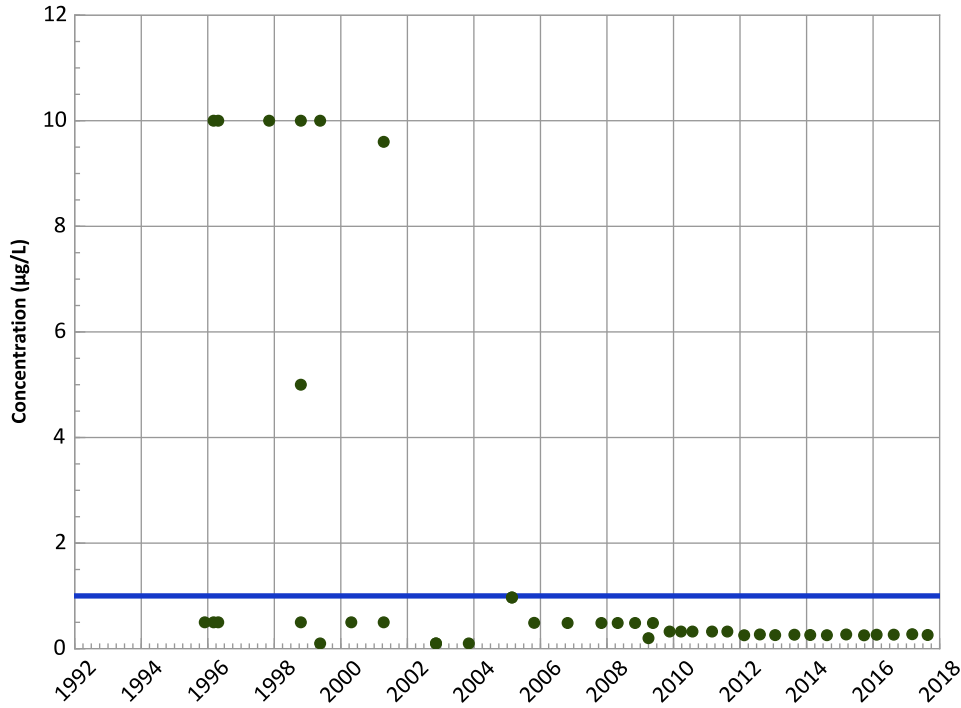
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

2,4-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

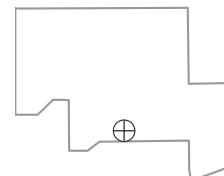
MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/29/1995 to 08/22/2017
Analysis Date: 03/21/2018

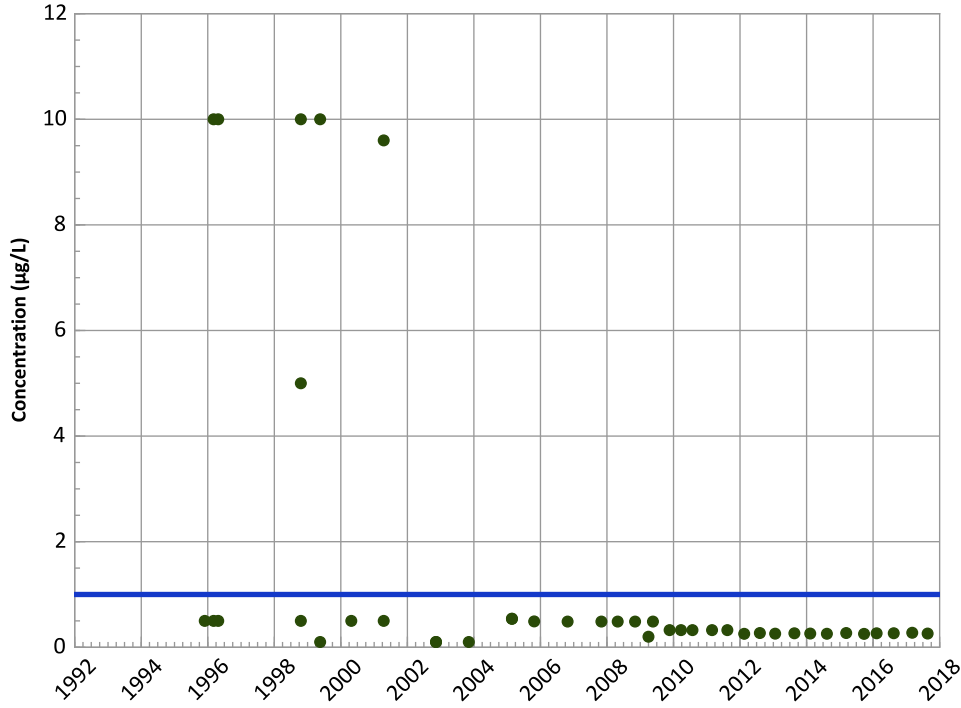
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX08-1005 in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

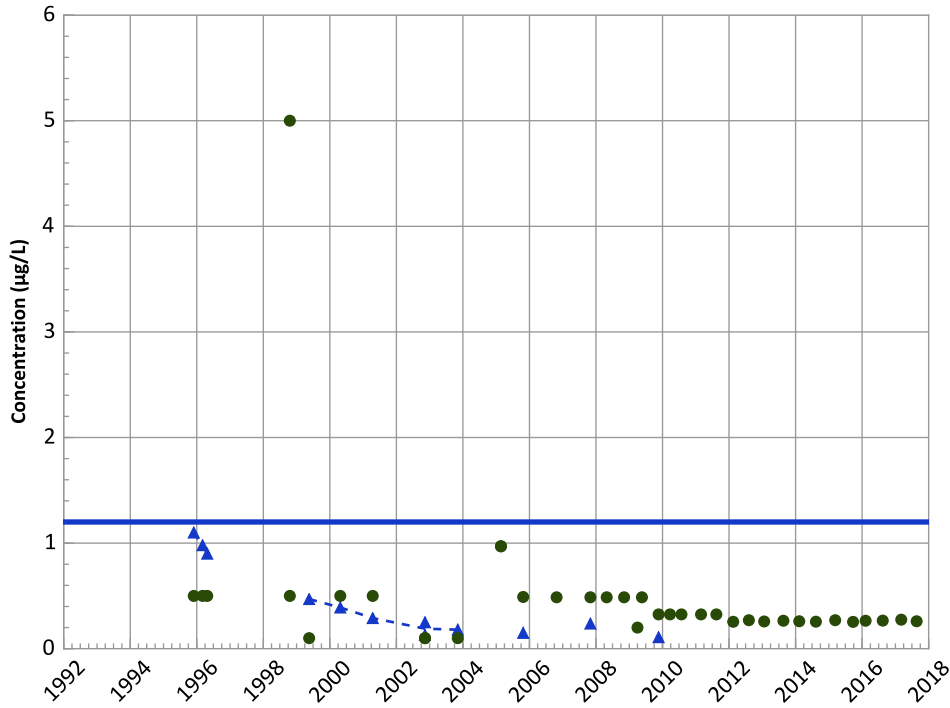
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
Decreasing

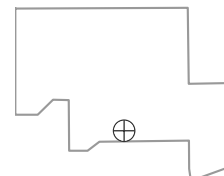
MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
Decreasing

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/29/1995 to 08/22/2017
Analysis Date: 03/21/2018

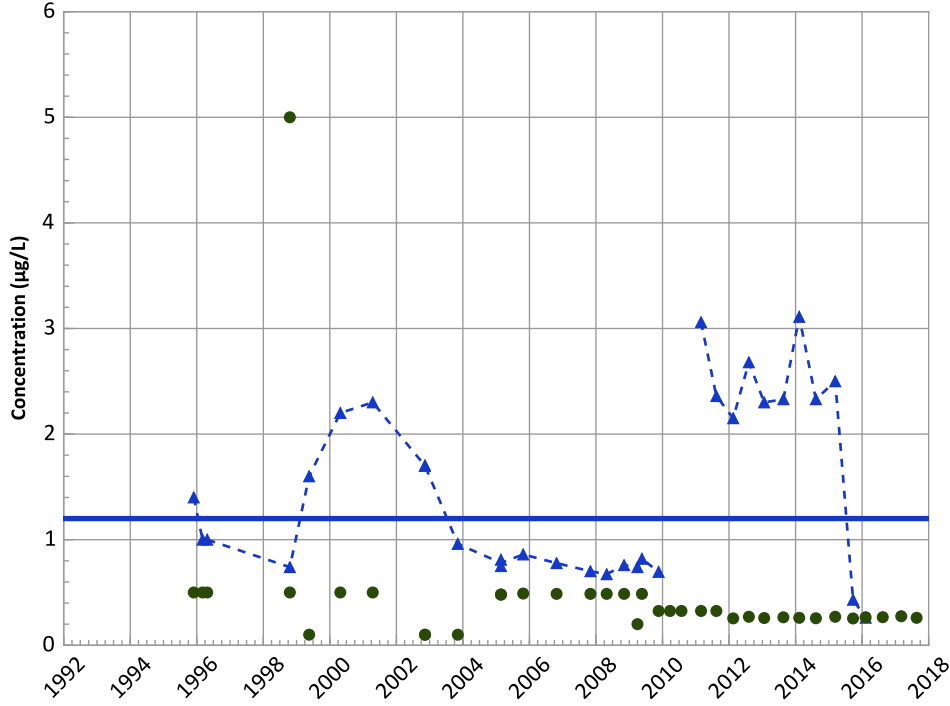
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX08-1005 in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

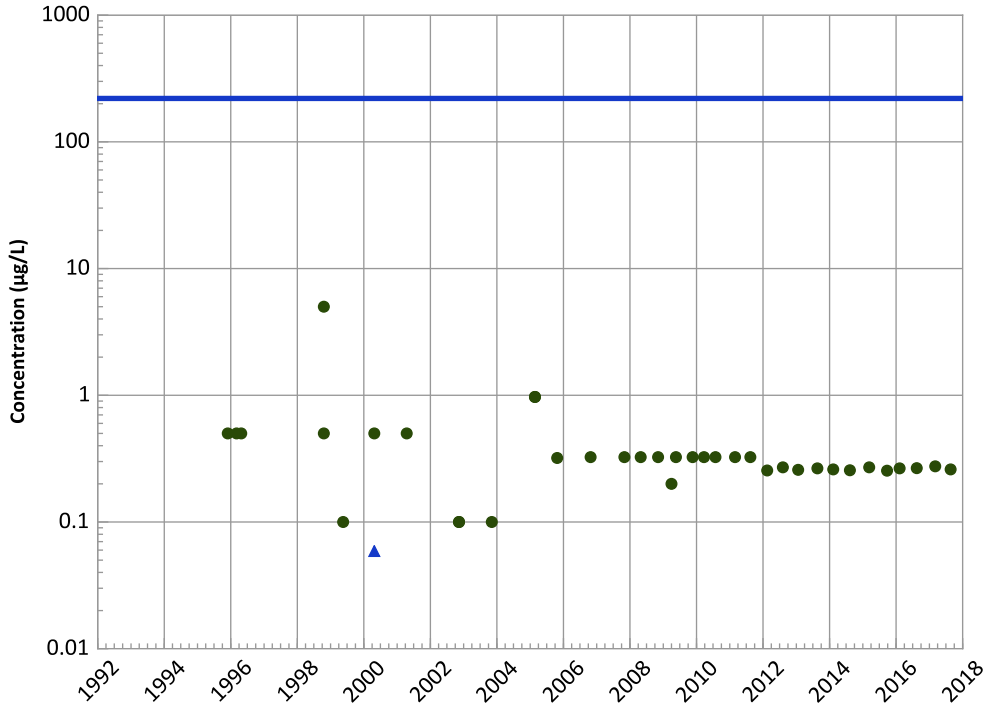
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
No Trend

1,3,5-Trinitrobenzene Trend



Concentration Trend

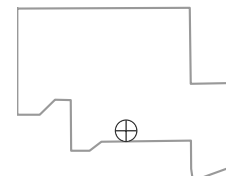
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

Well Location

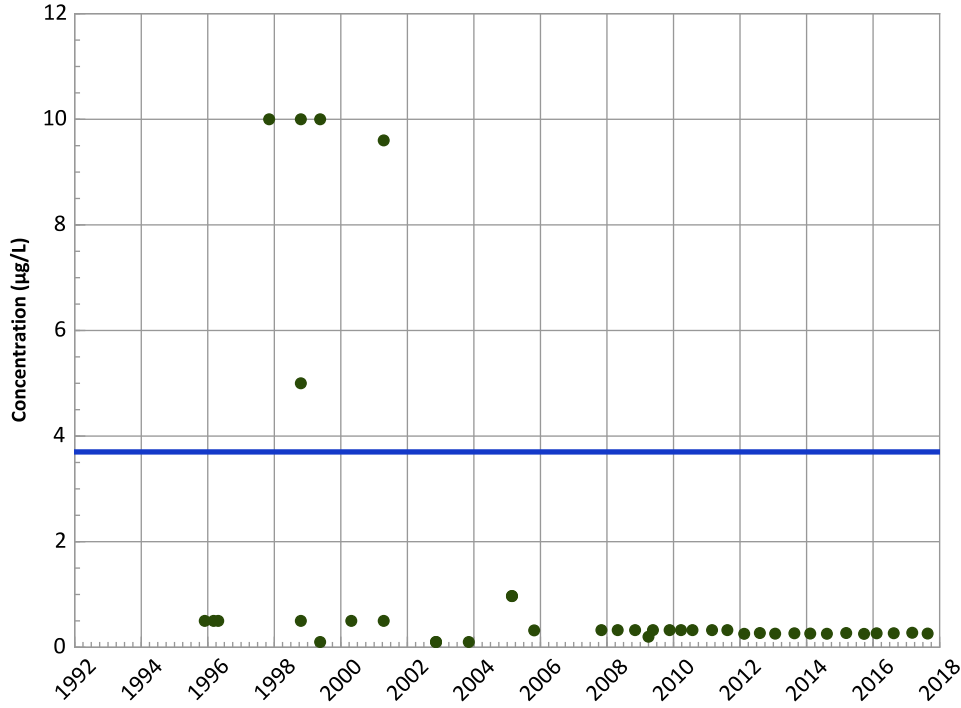


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/29/1995 to 08/22/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX08-1005 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

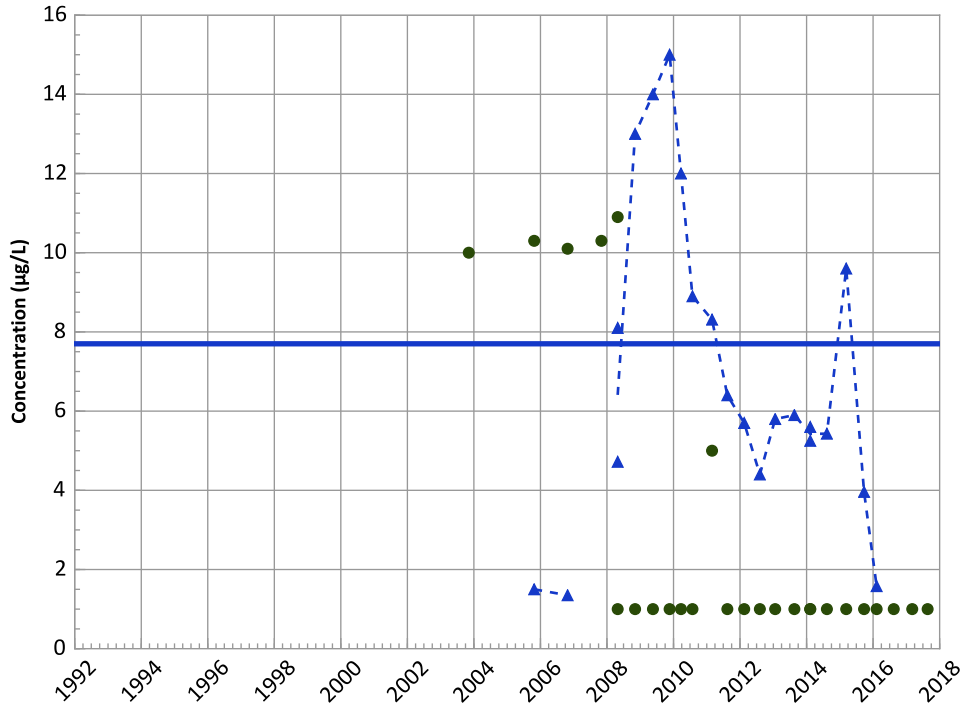
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,4-Dioxane (p-Dioxane) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

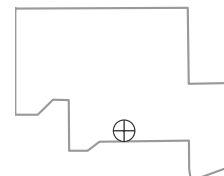
MAROS Linear Regression Method

Data ():
Stable
All Data
No Trend

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/29/1995 to 08/22/2017
Analysis Date: 03/21/2018

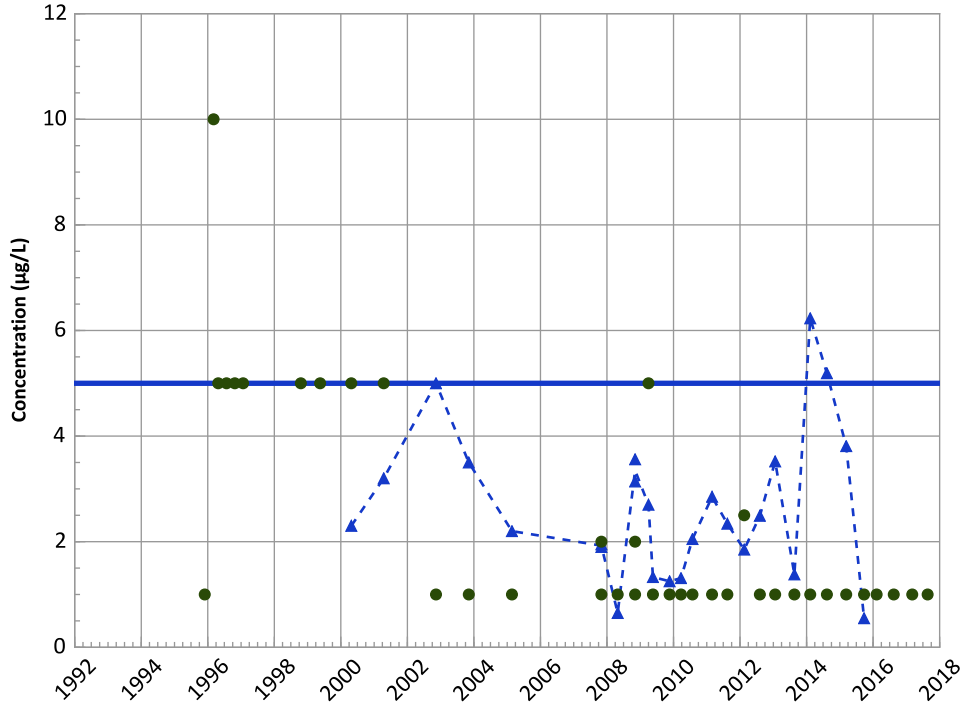
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX08-1005 in Perched Aquifer
USDOE/NNSA Pantex Plant

Tetrachloroethylene (PCE) Trend



Concentration Trend

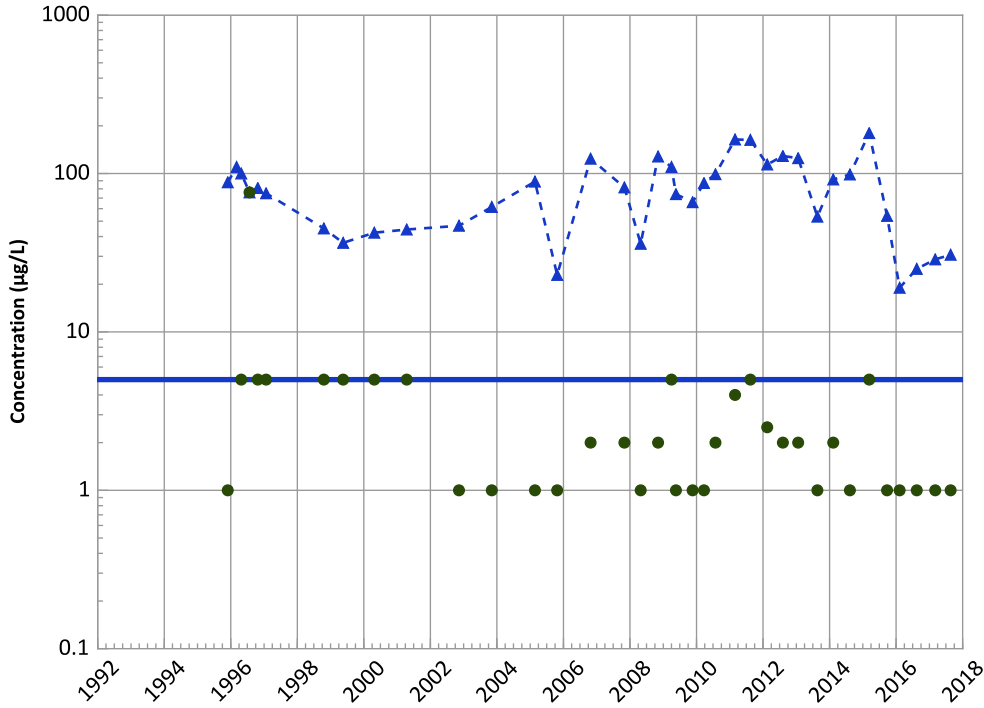
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Stable
All Data
Stable

Trichloroethene Trend



Concentration Trend

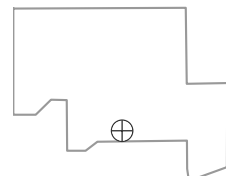
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
No Trend

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Stable

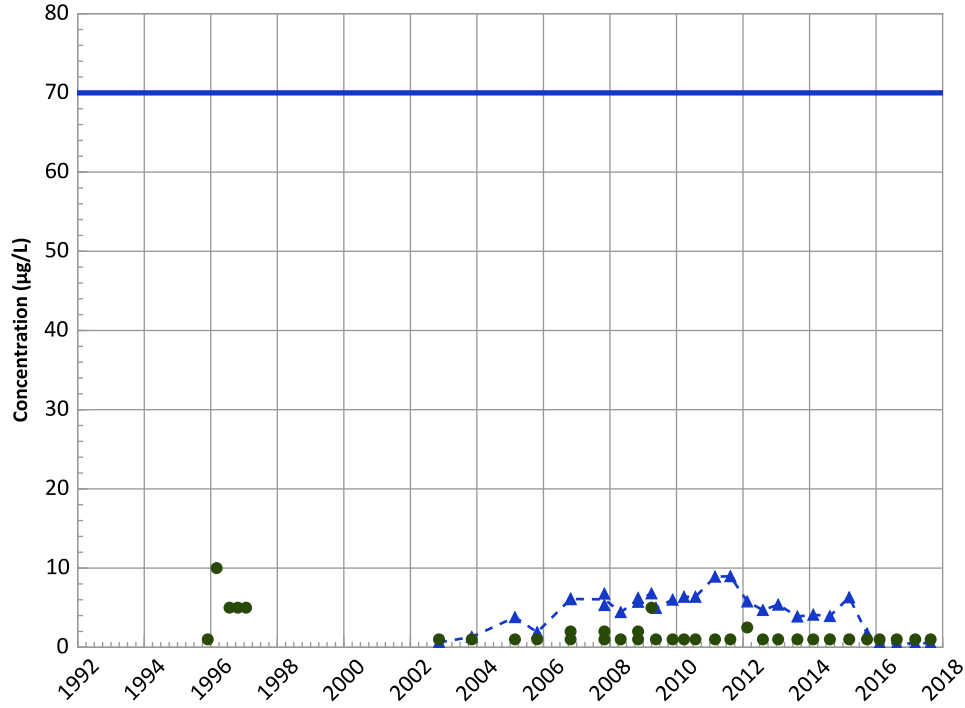
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/29/1995 to 08/22/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX08-1005 in Perched Aquifer
 USDOE/NNSA Pantex Plant
 cis-1,2-Dichloroethene Trend



Concentration Trend

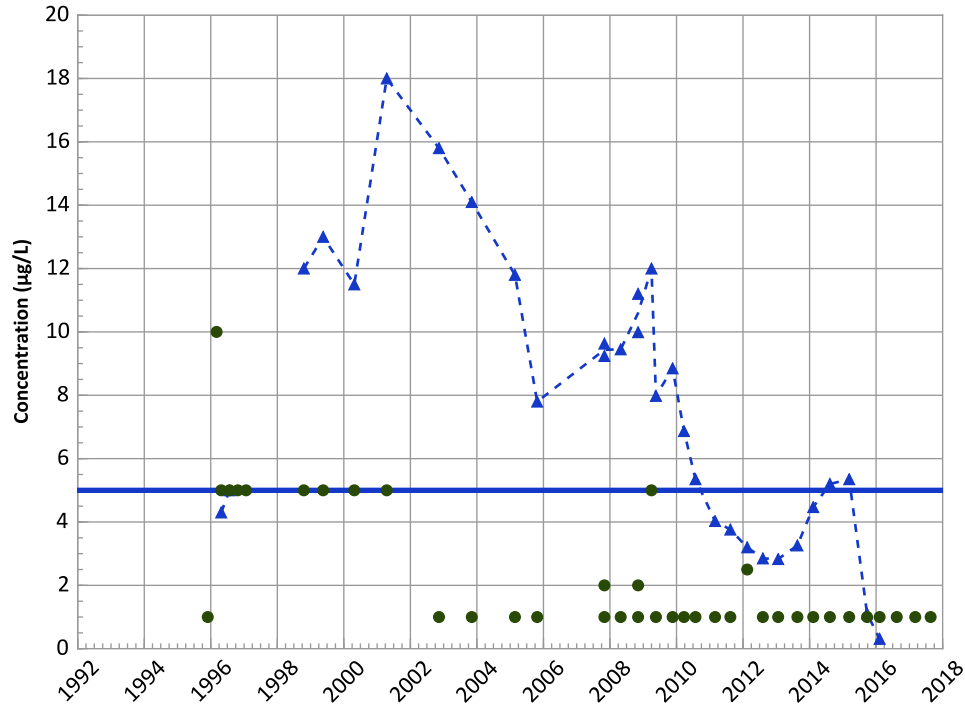
MAROS Mann-Kendall Method

Data ():
 Decreasing
 All Data
 Decreasing

MAROS Linear Regression Method

Data ():
 Decreasing
 All Data
 Probably Decreasing

1,2-Dichloroethane Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
 Decreasing
 All Data
 Decreasing

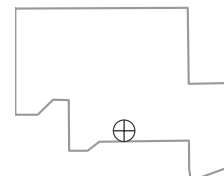
MAROS Linear Regression Method

Data ():
 Probably Decreasing
 All Data
 Decreasing

Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 11/29/1995 to 08/22/2017
 Analysis Date: 03/21/2018

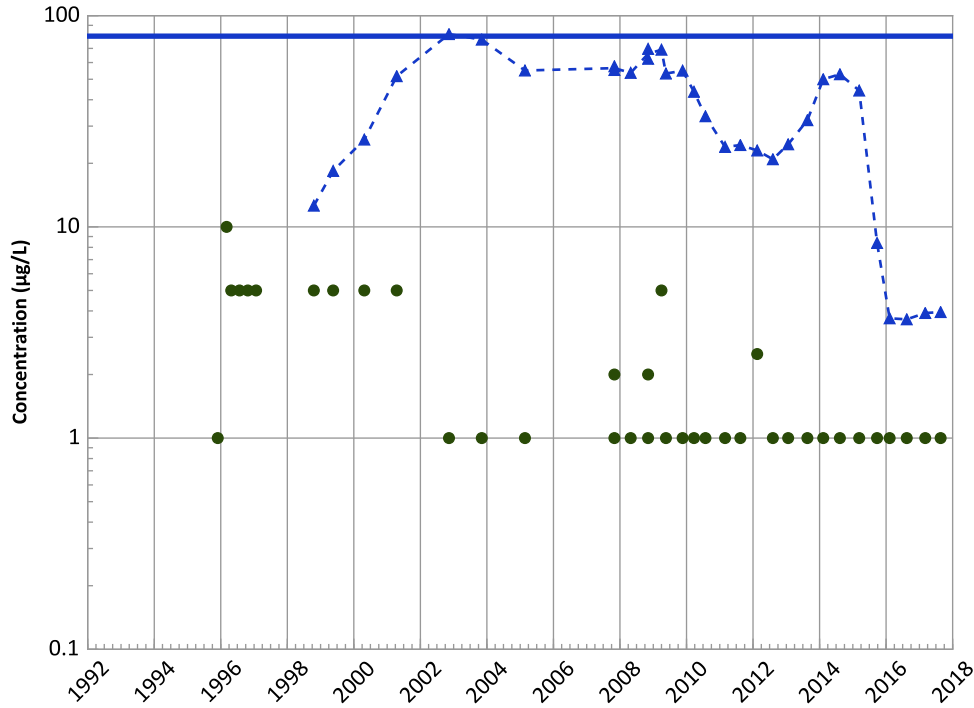
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX08-1005 in Perched Aquifer
USDOE/NNSA Pantex Plant

Chloroform Trend



Concentration Trend

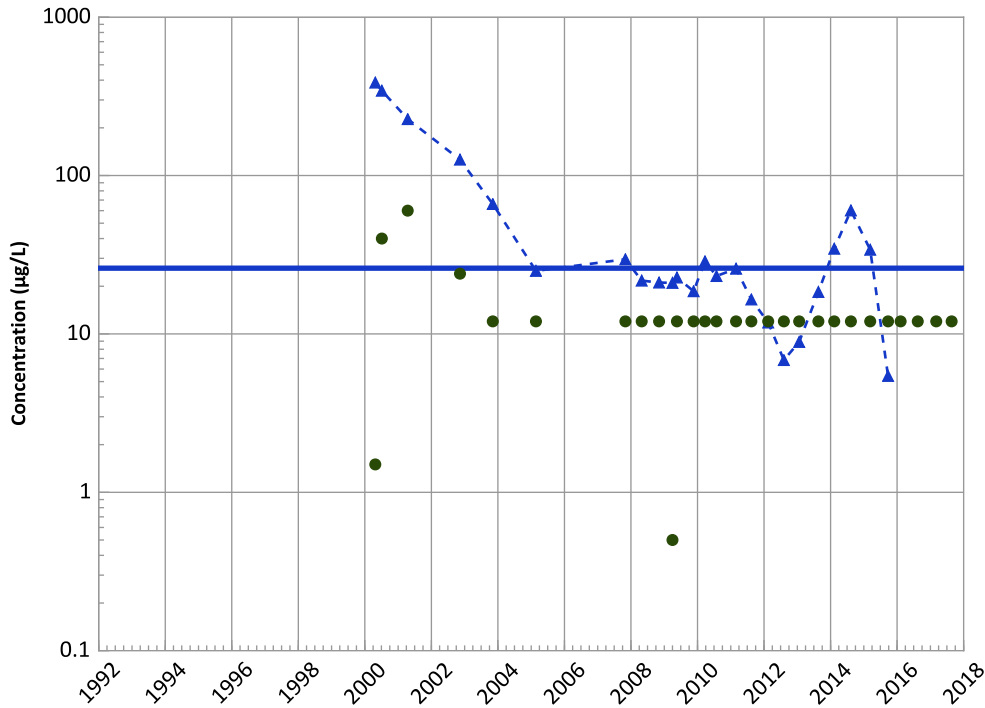
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
No Trend

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

Perchlorate Trend



Concentration Trend

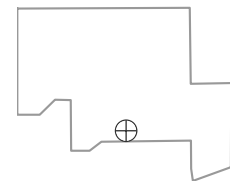
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
Decreasing

Well Location

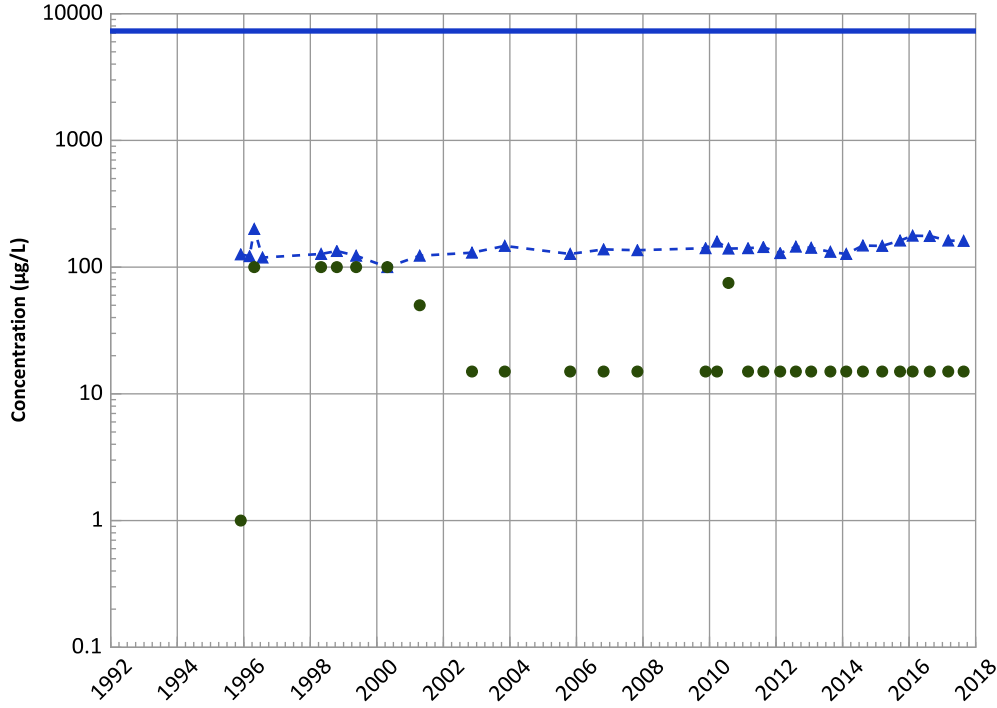


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/29/1995 to 08/22/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX08-1005 in Perched Aquifer
USDOE/NNSA Pantex Plant

Boron Trend



Concentration Trend

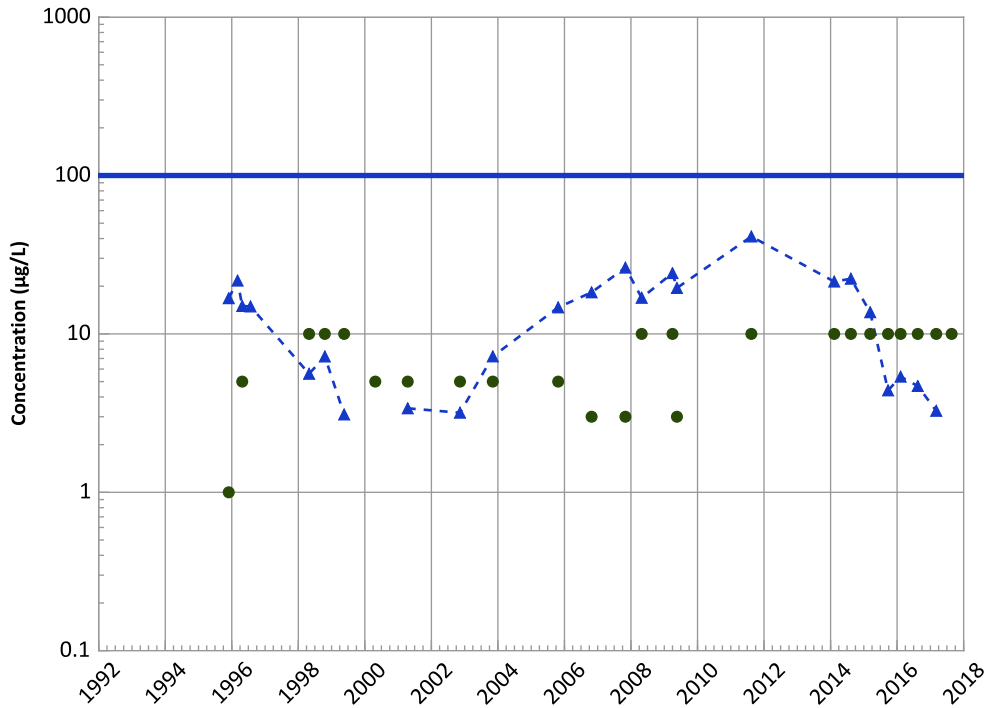
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

Chromium, Total Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

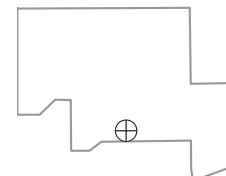
MAROS Linear Regression Method

Data ():
Decreasing
All Data
Increasing

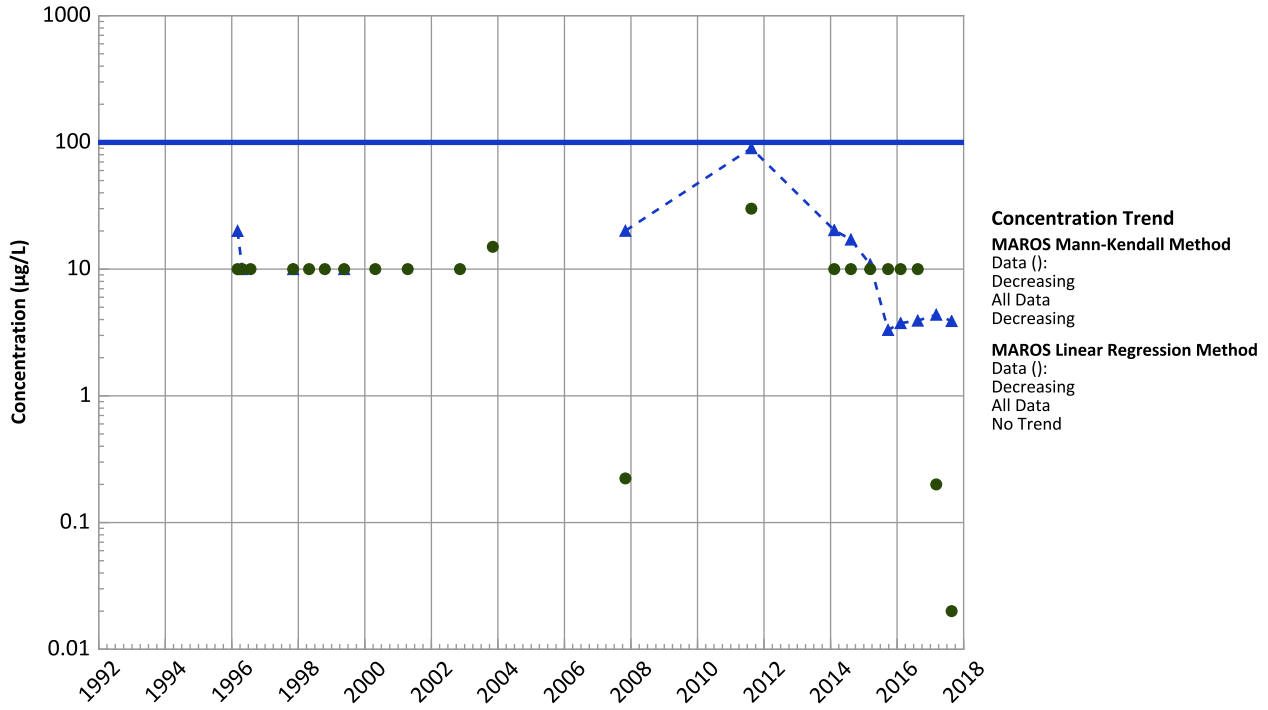
Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/29/1995 to 08/22/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



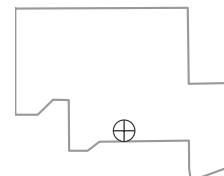
**PTX08-1005 in Perched Aquifer
USDOE/NNSA Pantex Plant
Chromium, Hexavalent Trend**



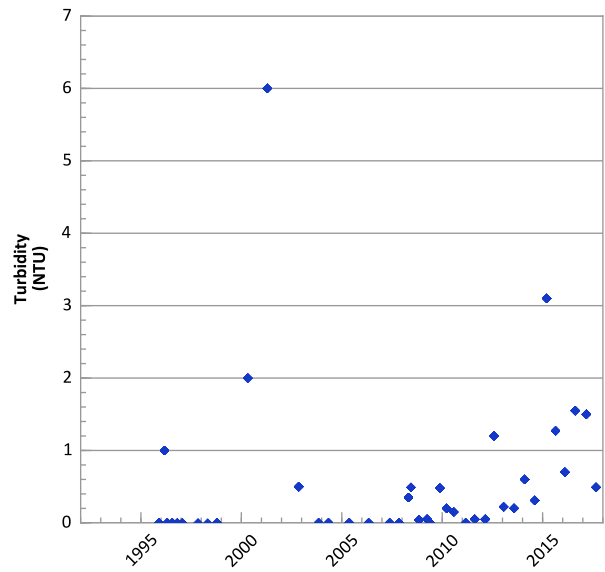
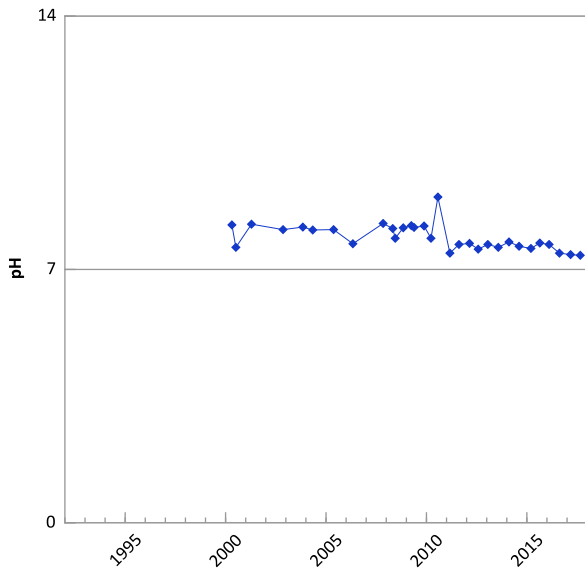
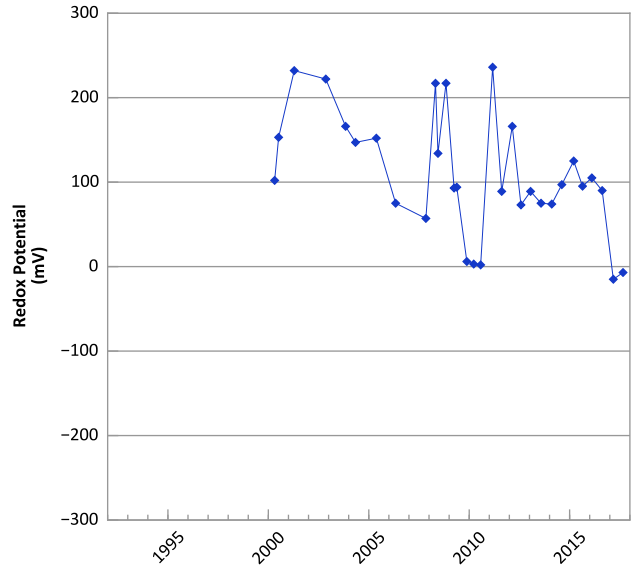
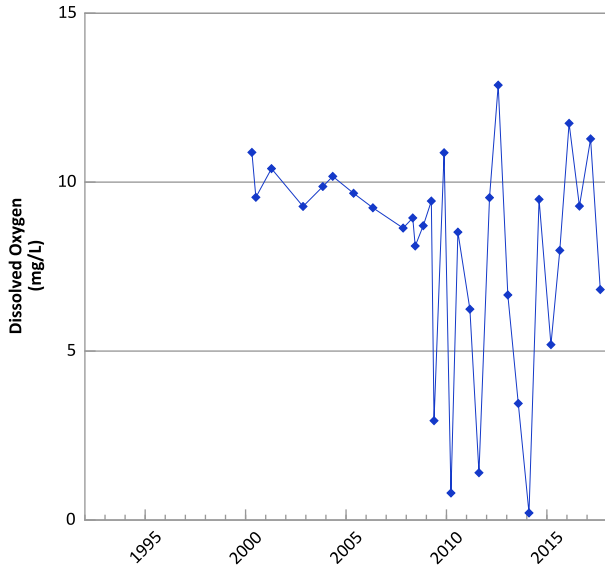
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 11/29/1995 to 08/22/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

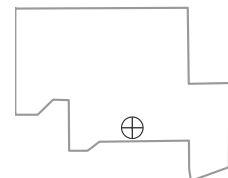


**PTX08-1006 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



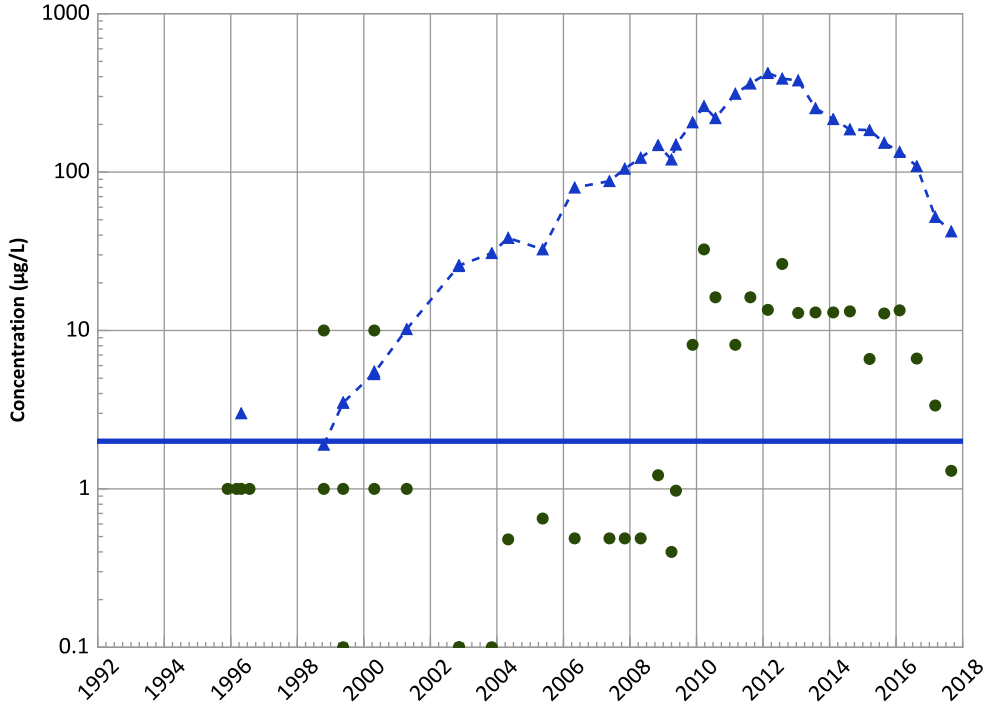
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 11/28/1995 to 08/29/2017
 Analysis Date: 03/21/2018

Well Location



PTX08-1006 in Perched Aquifer
USDOE/NSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

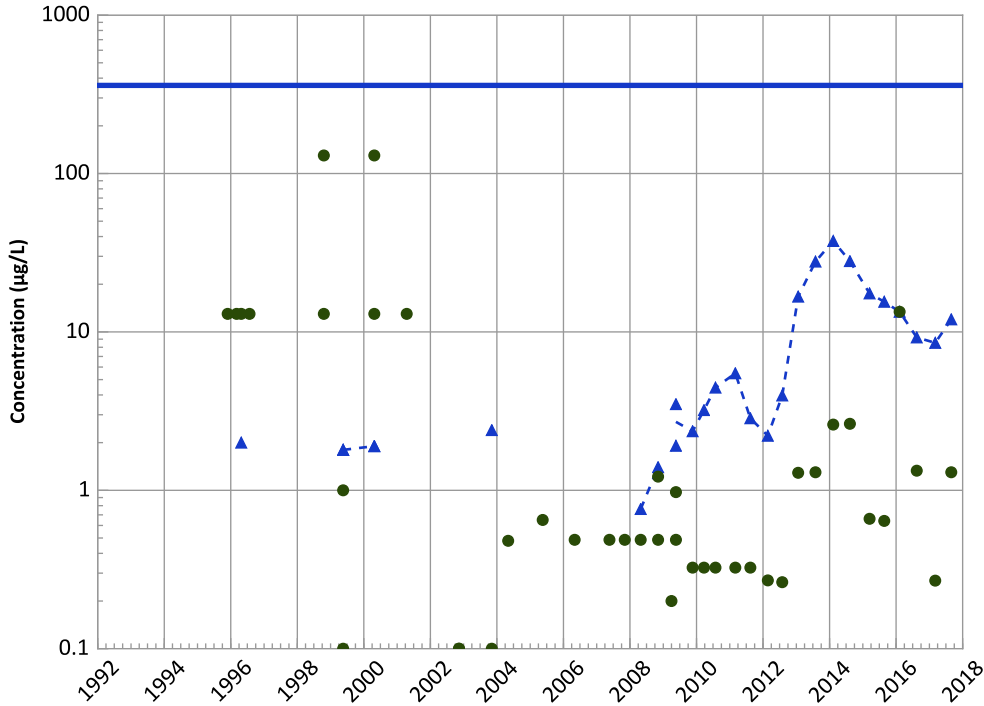
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Increasing

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

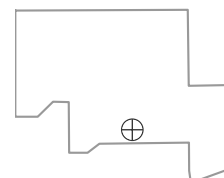
MAROS Linear Regression Method

Data ():
No Trend
All Data
Increasing

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/28/1995 to 08/29/2017
Analysis Date: 03/21/2018

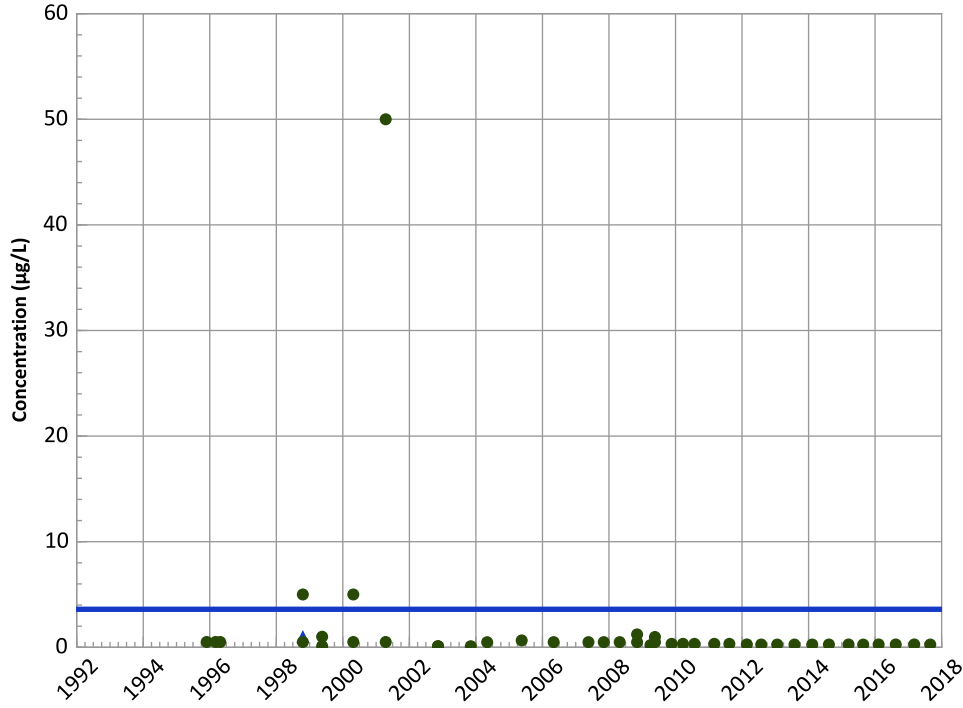
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX08-1006 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

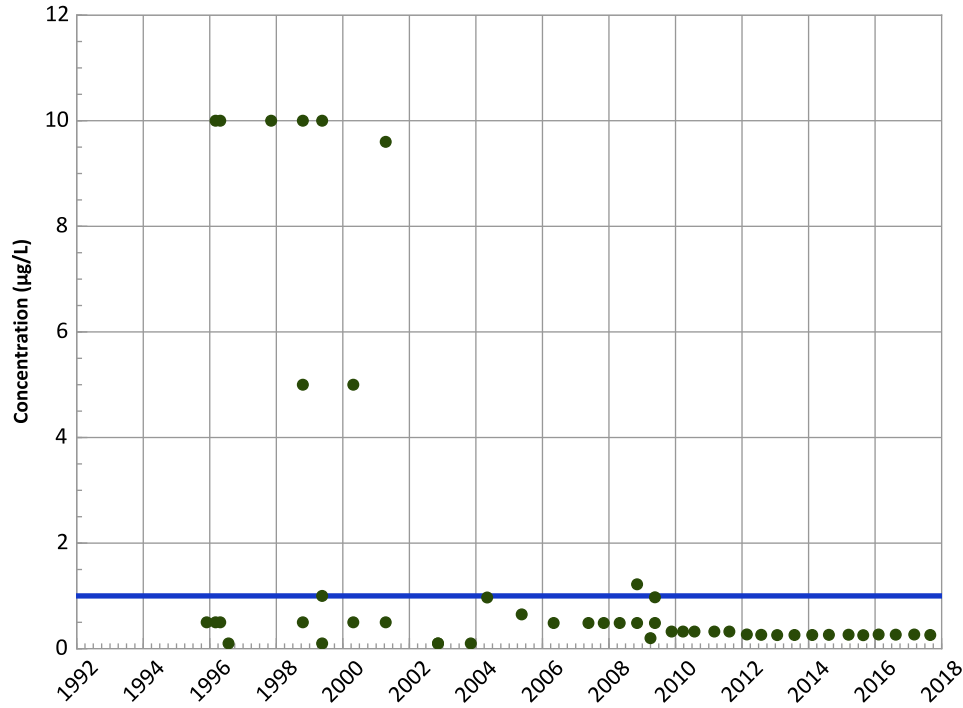
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

2,4-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

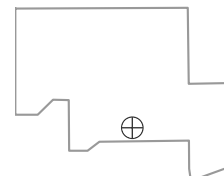
MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/28/1995 to 08/29/2017
Analysis Date: 03/21/2018

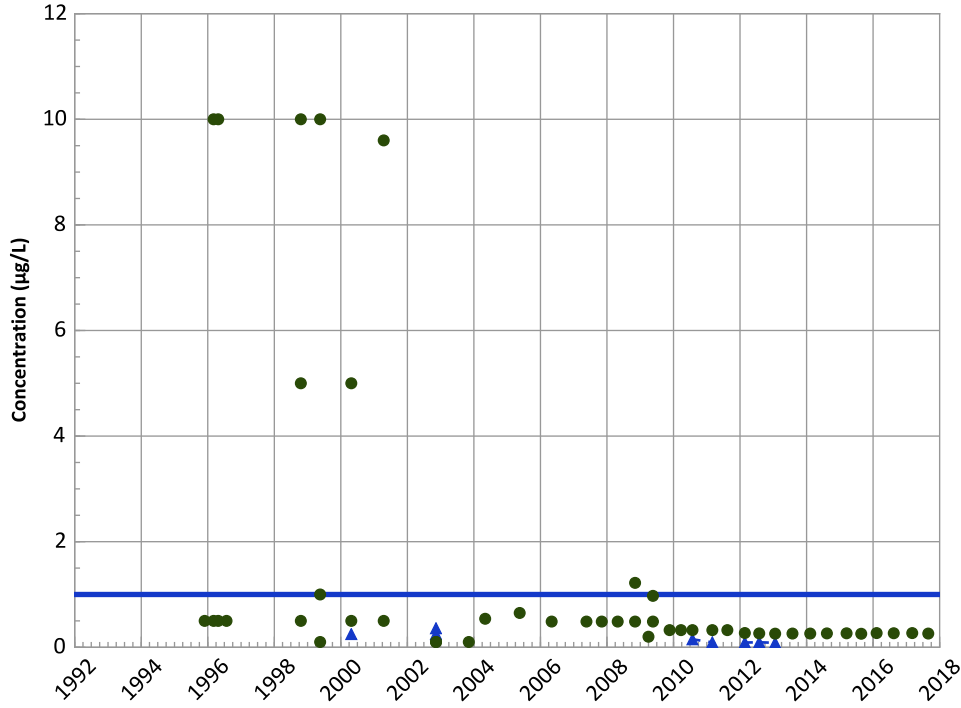
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX08-1006 in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend

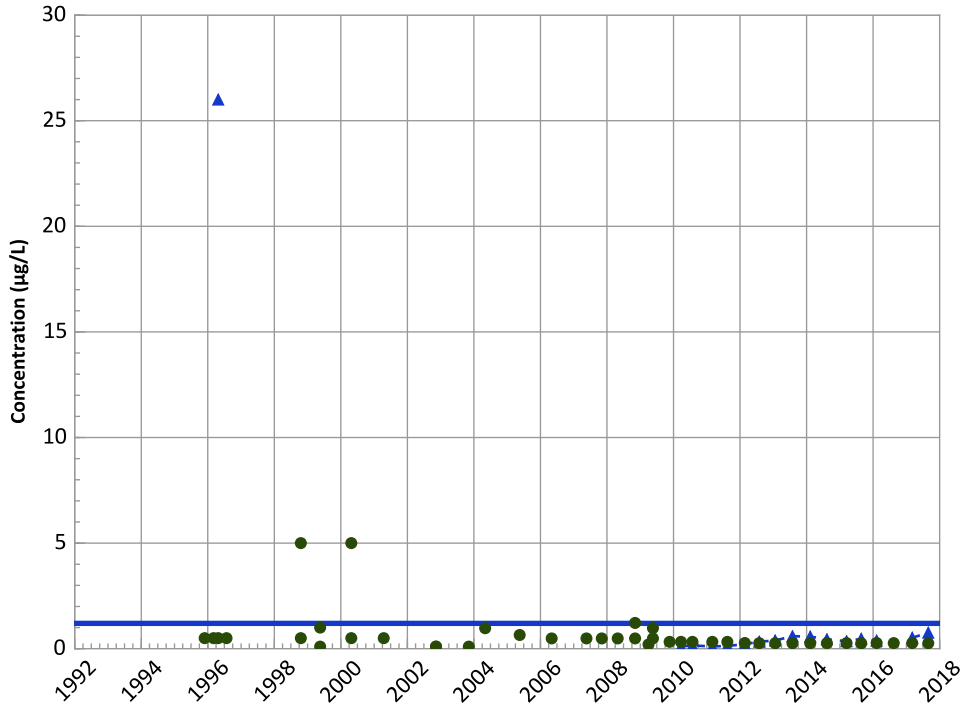


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

MAROS Linear Regression Method
Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

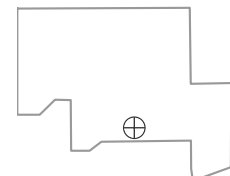
MAROS Mann-Kendall Method
Data ():
Decreasing
All Data
Probably Increasing

MAROS Linear Regression Method
Data ():
No Trend
All Data
Decreasing

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/28/1995 to 08/29/2017
Analysis Date: 03/21/2018

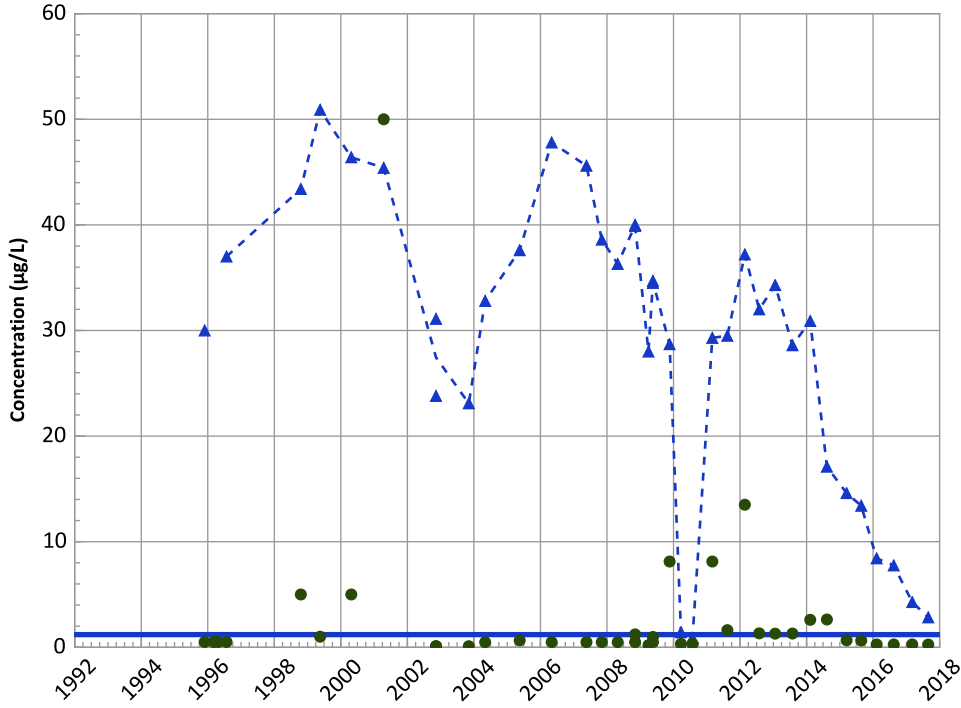
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX08-1006 in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

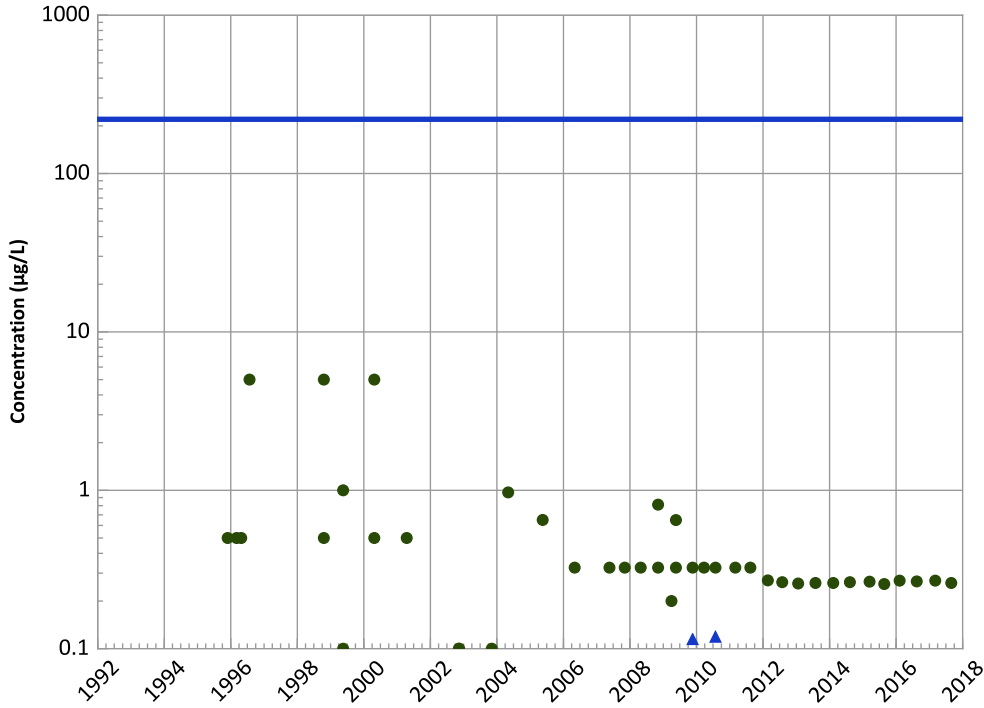
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

1,3,5-Trinitrobenzene Trend



Concentration Trend

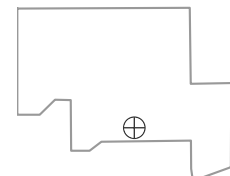
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

Well Location

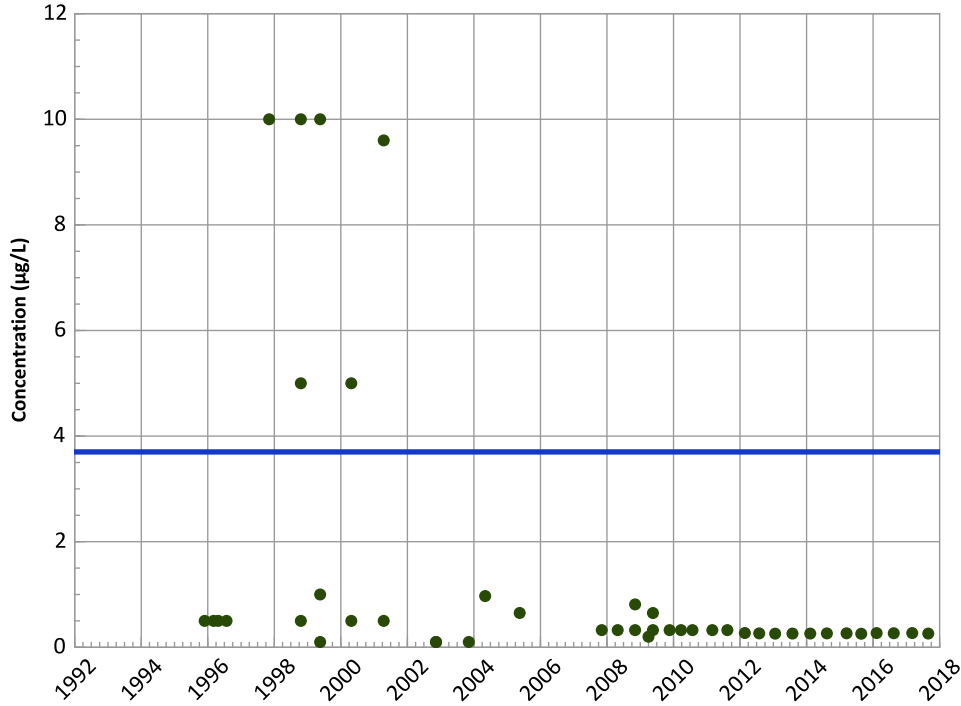


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/28/1995 to 08/29/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX08-1006 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

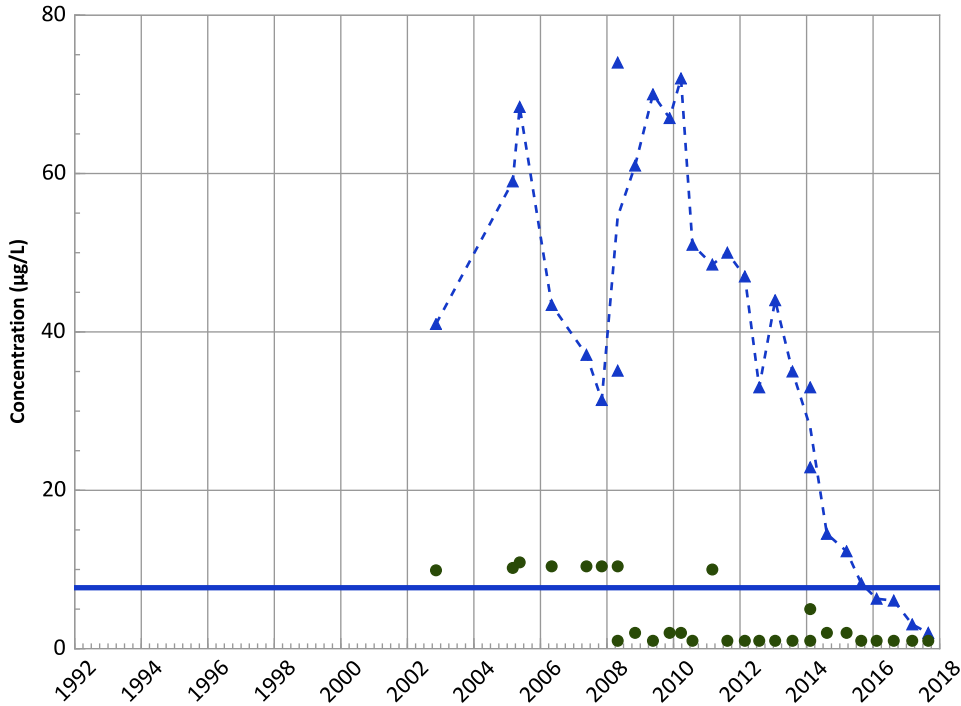
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,4-Dioxane (p-Dioxane) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

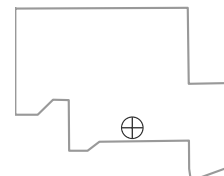
MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

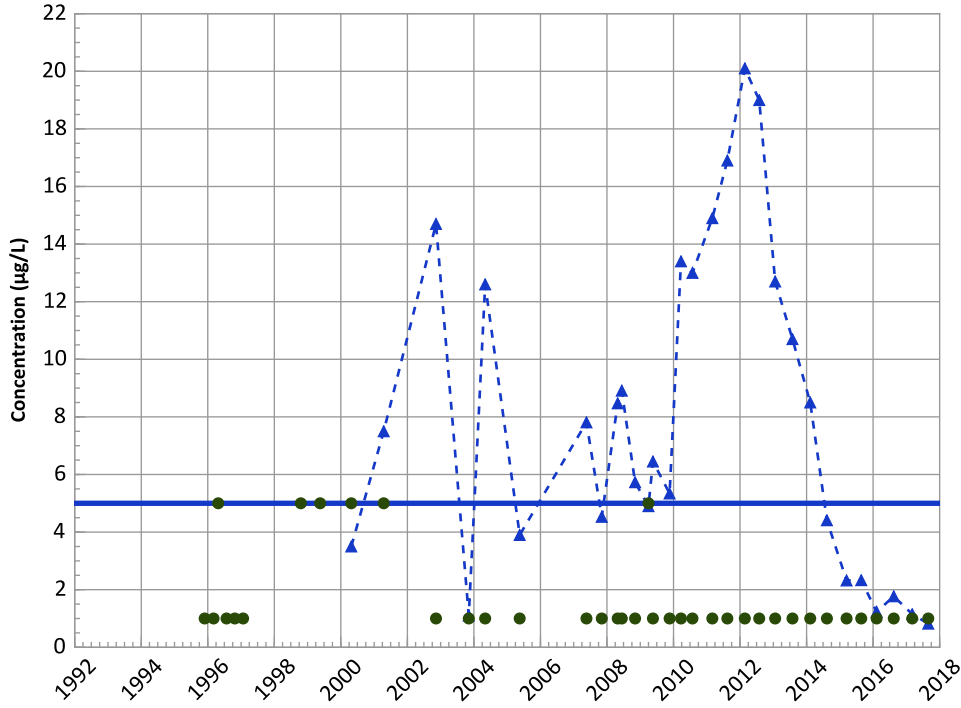
Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/28/1995 to 08/29/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



**PTX08-1006 in Perched Aquifer
USDOE/NNSA Pantex Plant
Tetrachloroethylene (PCE) Trend**



Concentration Trend

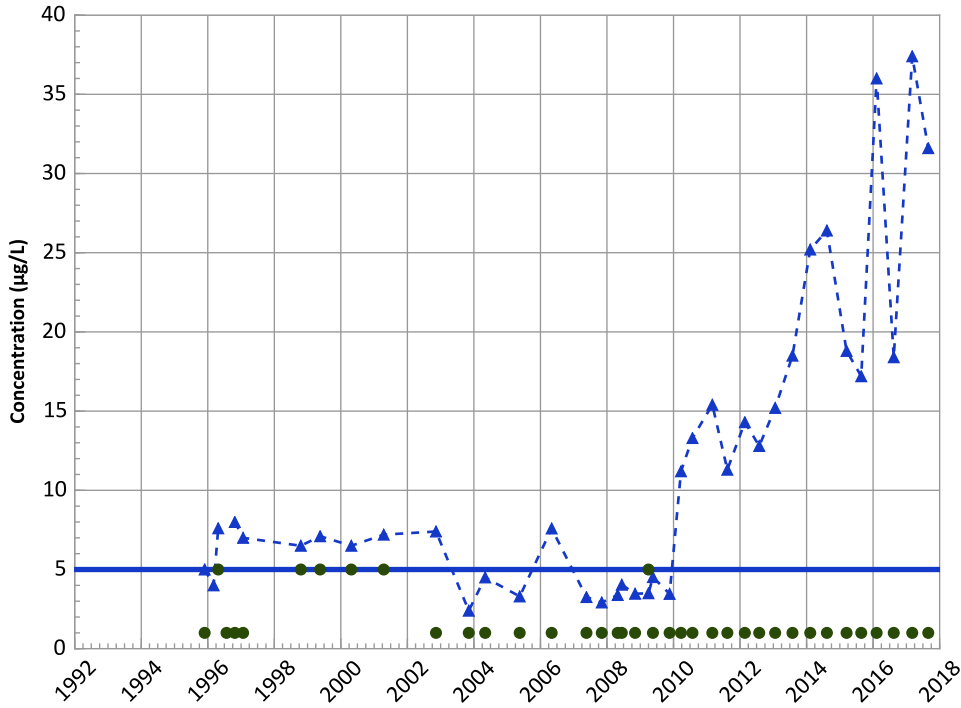
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Probably Decreasing

Trichloroethene Trend



Concentration Trend

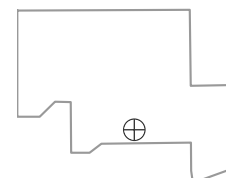
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

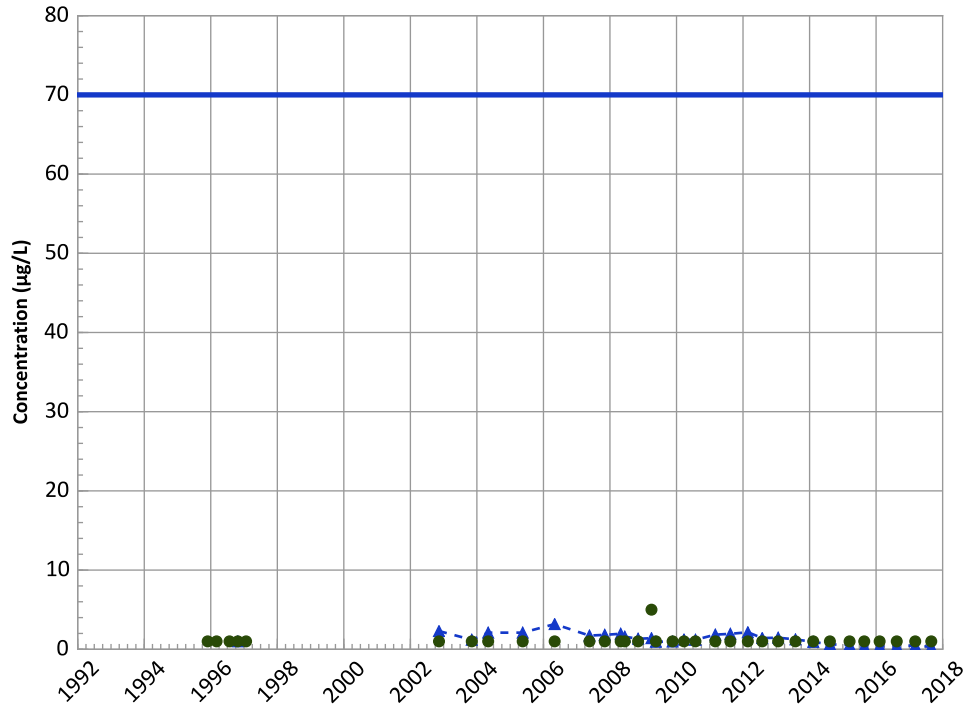
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/28/1995 to 08/29/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX08-1006 in Perched Aquifer
USDOE/NNSA Pantex Plant
cis-1,2-Dichloroethene Trend**



Concentration Trend

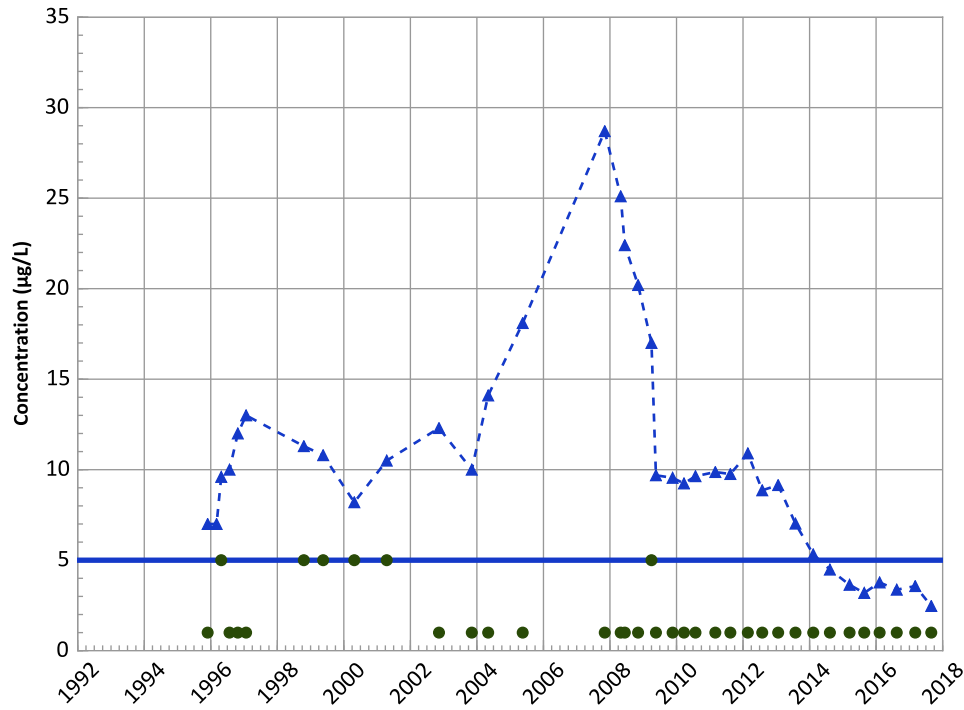
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

1,2-Dichloroethane Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

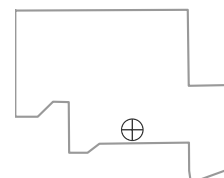
MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

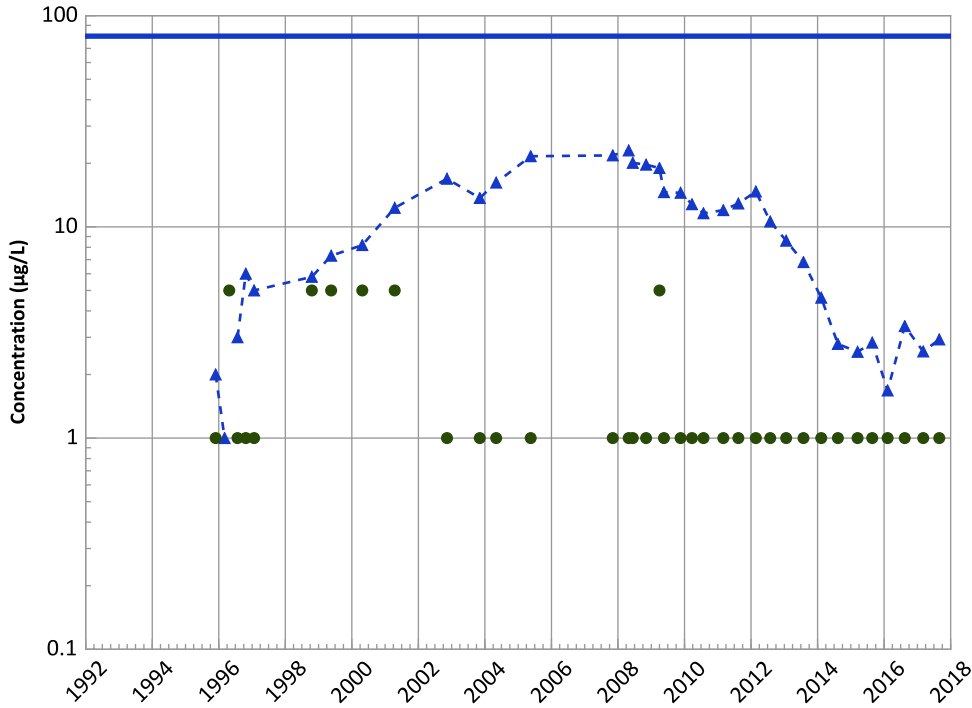
Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/28/1995 to 08/29/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

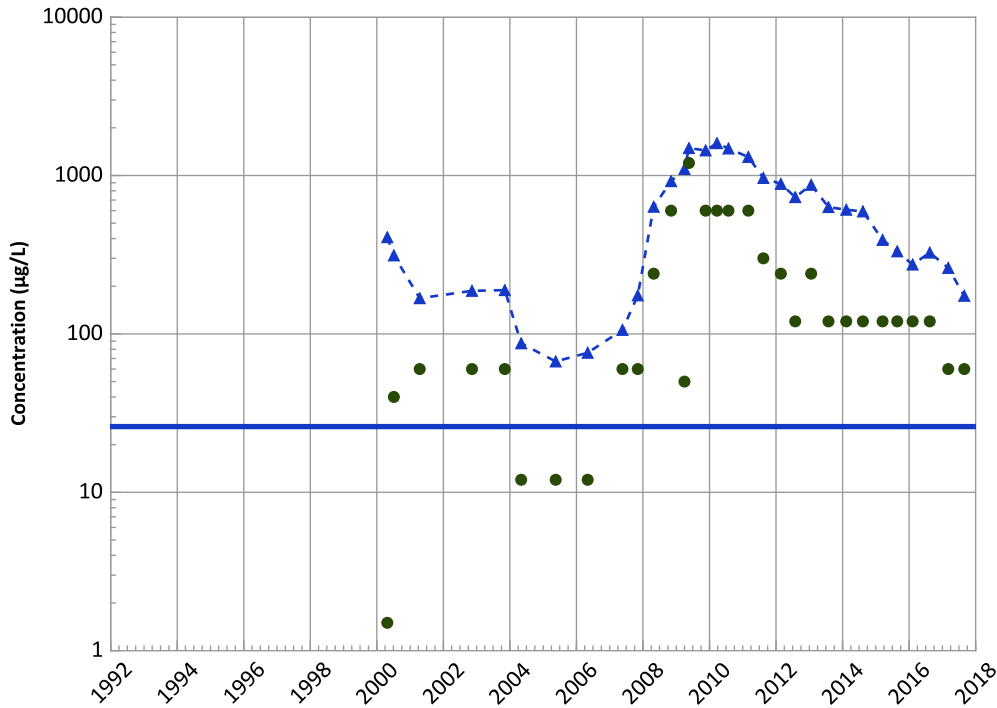


PTX08-1006 in Perched Aquifer
USDOE/NNSA Pantex Plant
Chloroform Trend



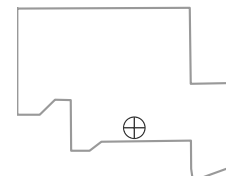
Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 Decreasing
 All Data
 Decreasing
MAROS Linear Regression Method
 Data ():
 Decreasing
 All Data
 Decreasing

Perchlorate Trend



Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 Decreasing
 All Data
 No Trend
MAROS Linear Regression Method
 Data ():
 Decreasing
 All Data
 Increasing

Well Location

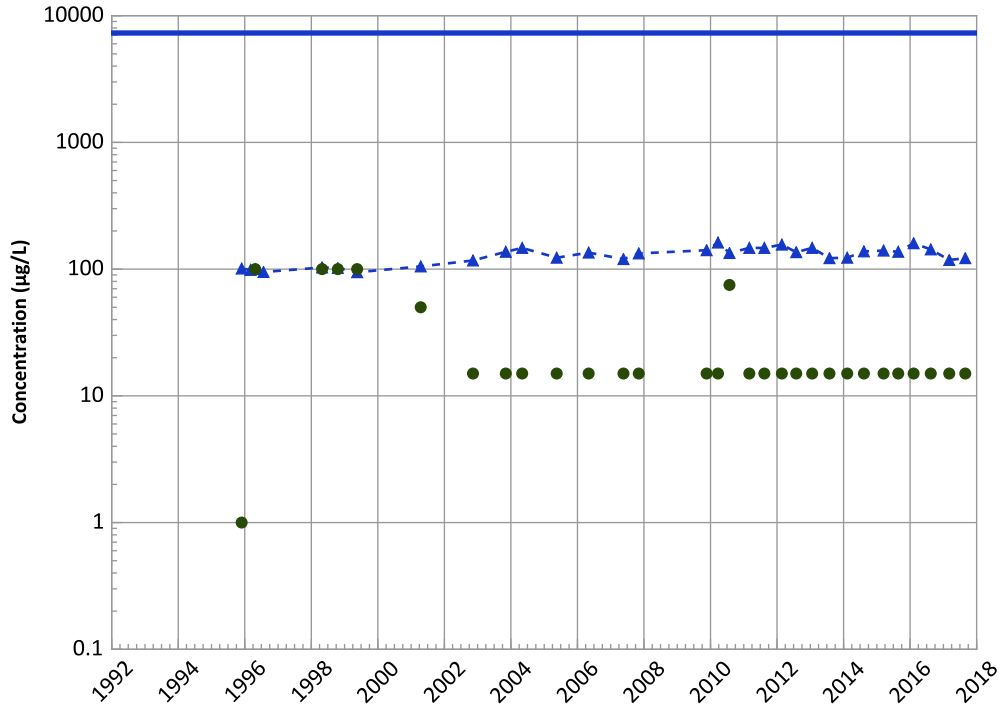


Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 11/28/1995 to 08/29/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX08-1006 in Perched Aquifer
USDOE/NNSA Pantex Plant

Boron Trend



Concentration Trend

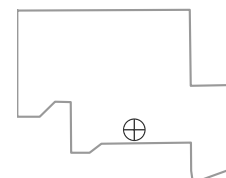
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
Increasing

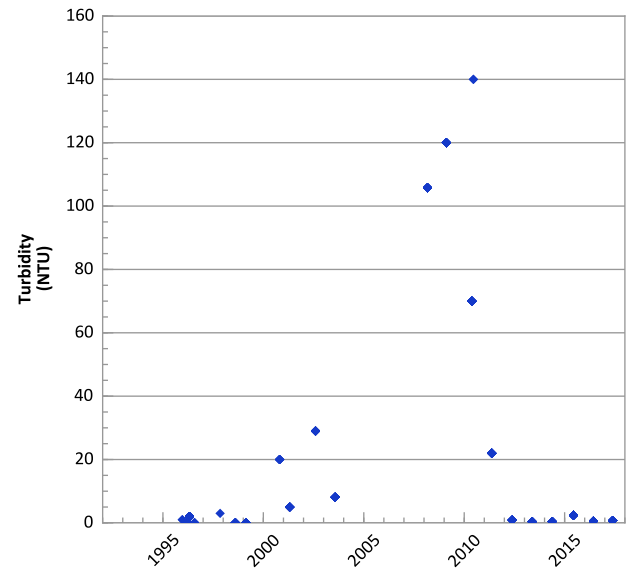
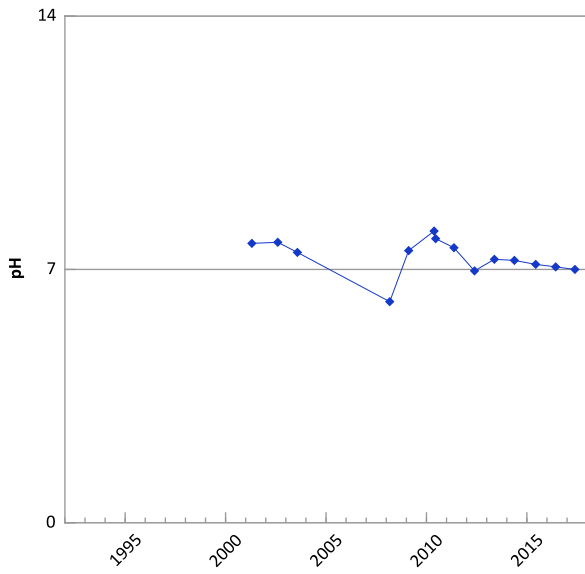
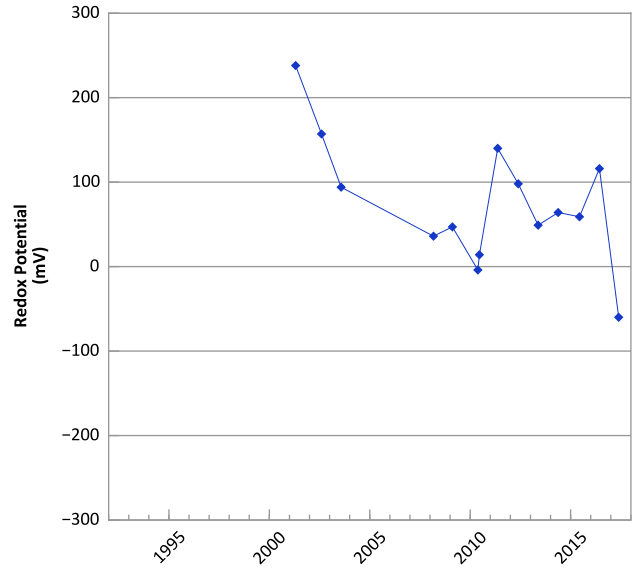
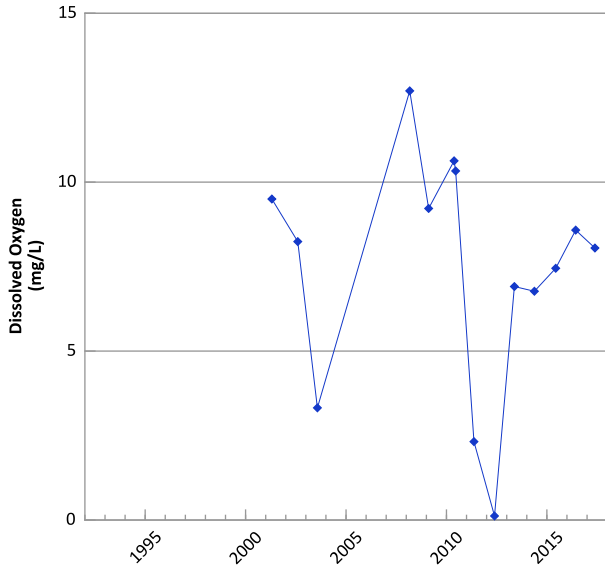
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/28/1995 to 08/29/2017
Analysis Date: 03/21/2018

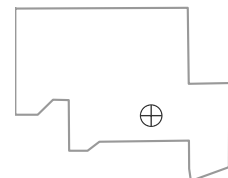
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX08-1007 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



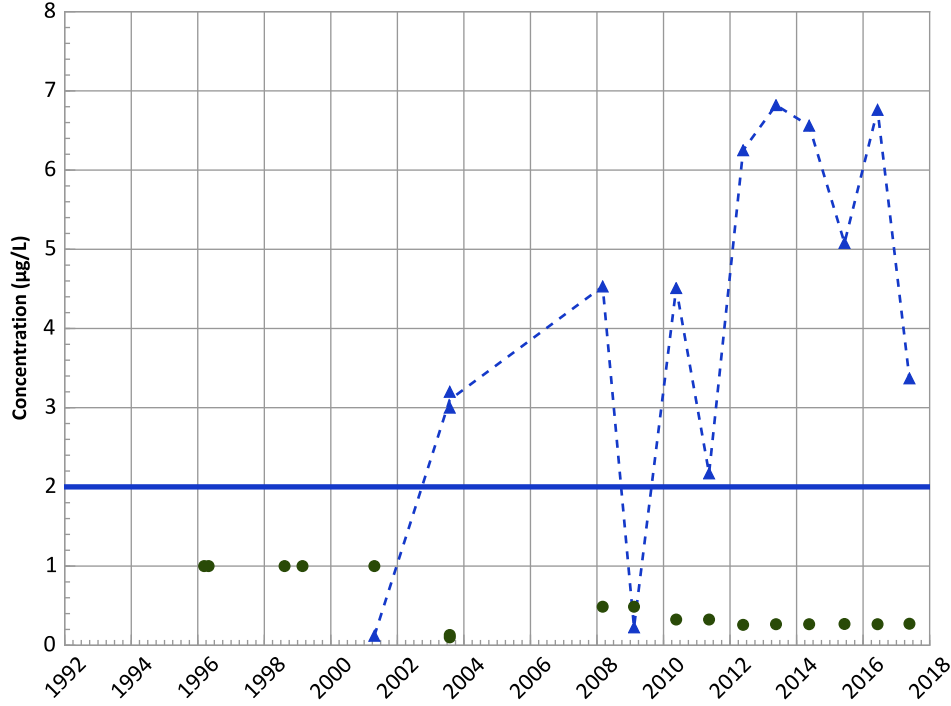
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 12/20/1995 to 05/24/2017
 Analysis Date: 03/21/2018

Well Location



PTX08-1007 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

Stable

All Data

Increasing

MAROS Linear Regression Method

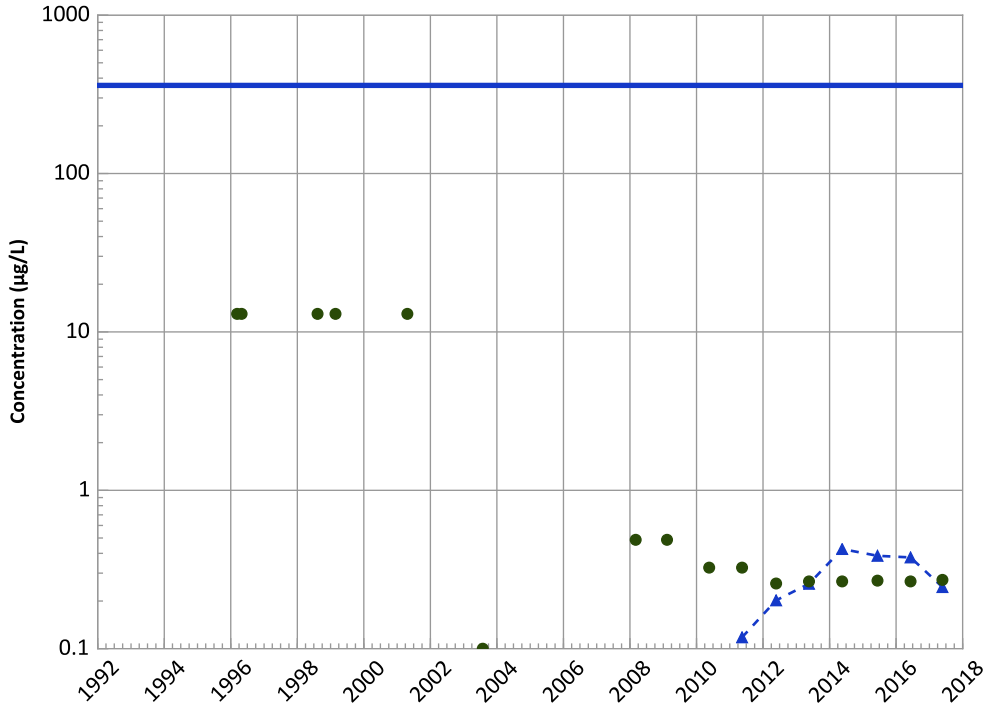
Data ():

Stable

All Data

Increasing

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

No Trend

All Data

Decreasing

MAROS Linear Regression Method

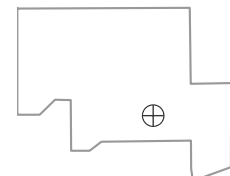
Data ():

Increasing

All Data

Probably Increasing

Well Location

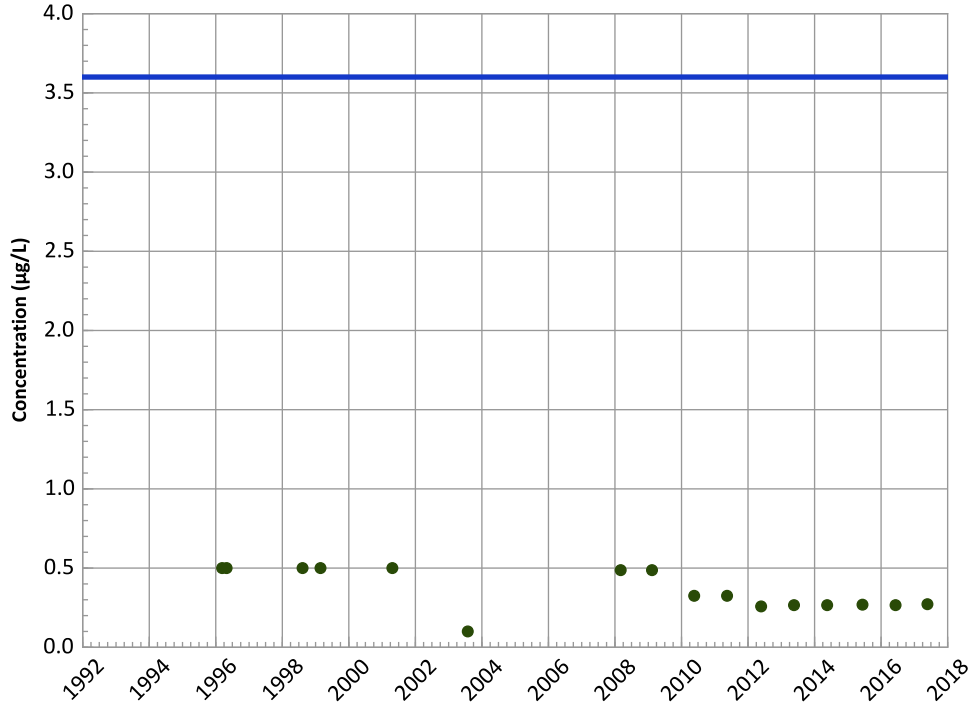


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/20/1995 to 05/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX08-1007 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

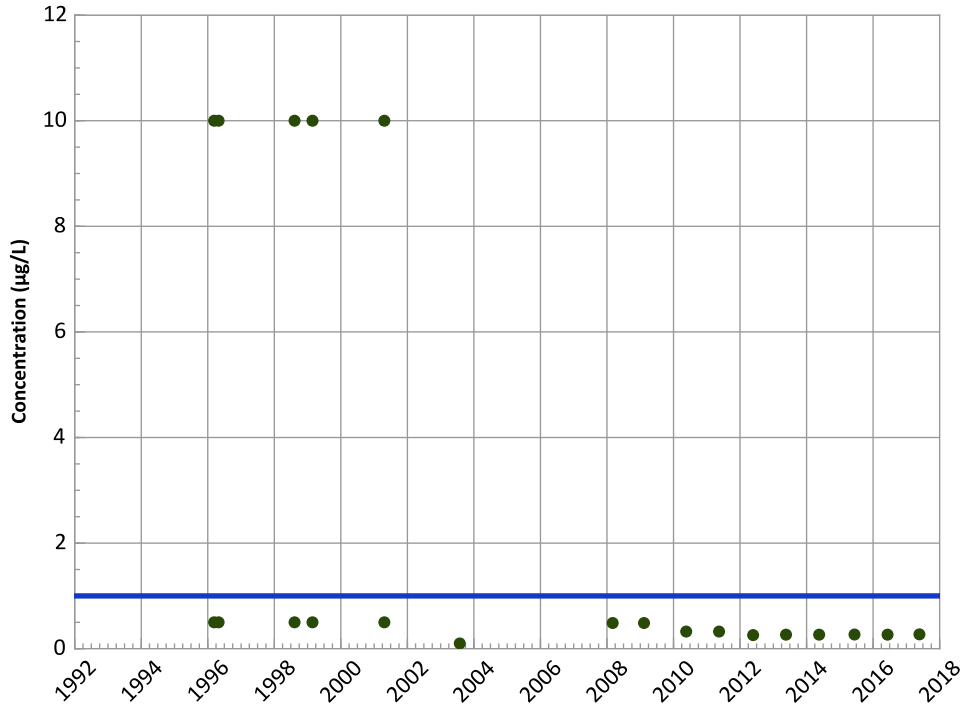
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

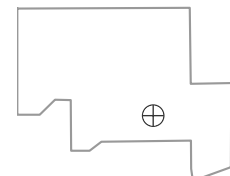
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

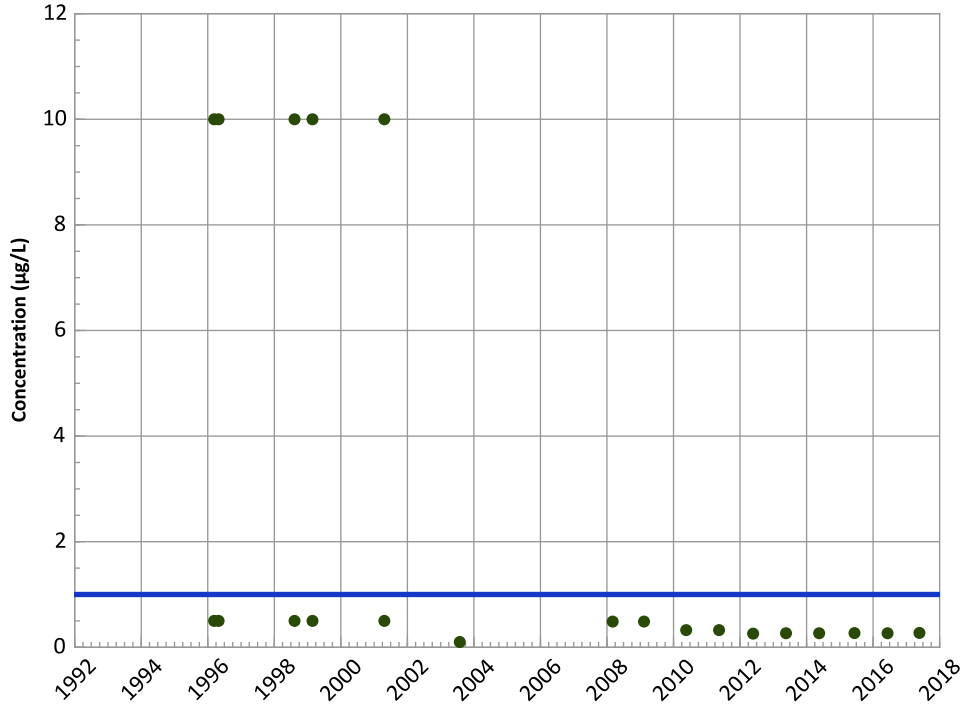


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/20/1995 to 05/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX08-1007 in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

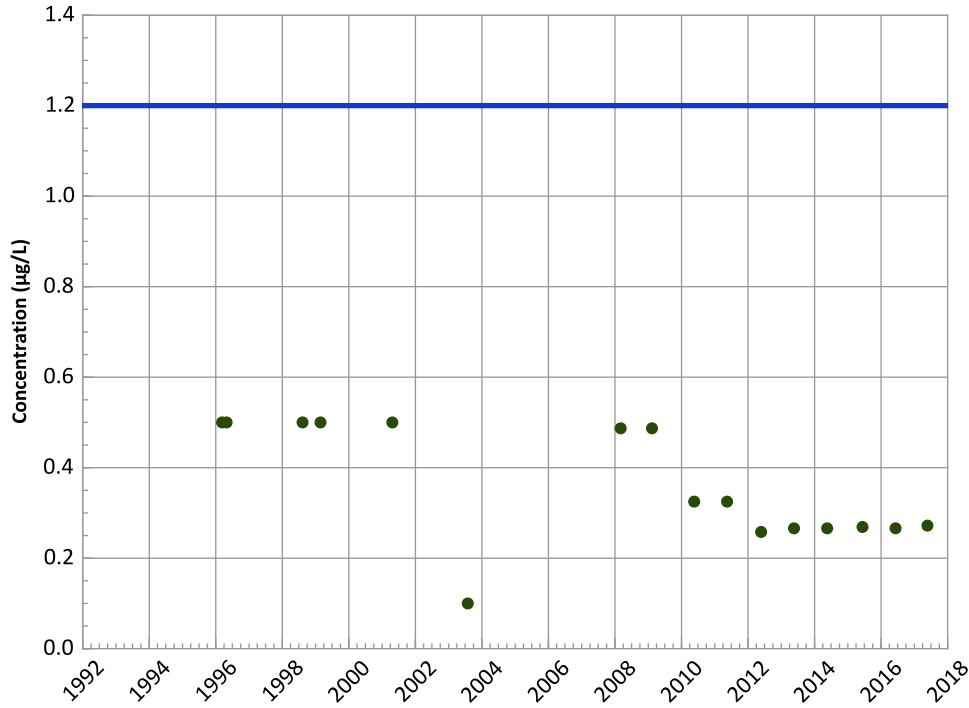
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

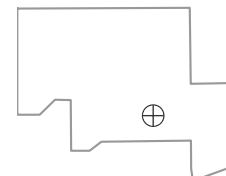
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

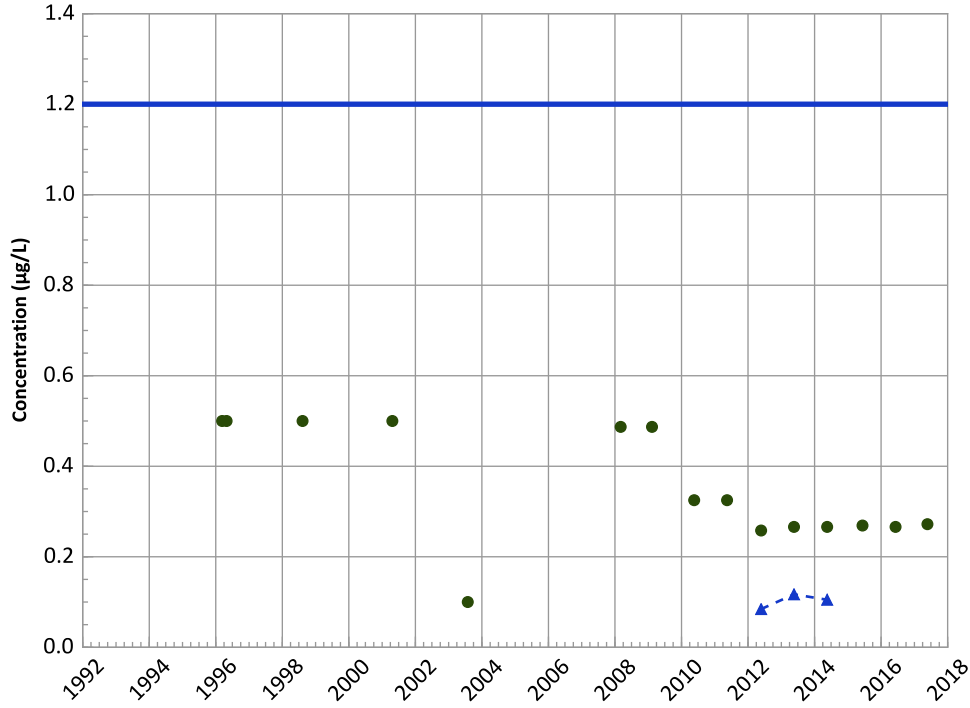


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/20/1995 to 05/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX08-1007 in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

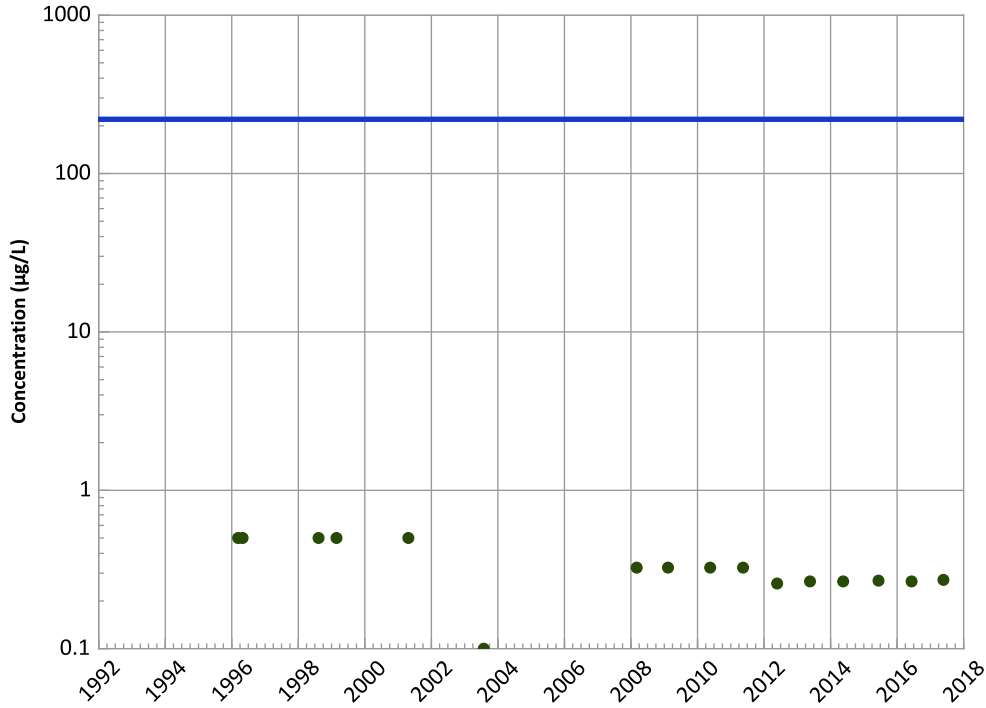
Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

1,3,5-Trinitrobenzene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

All Non-Detect

All Data

All Non-Detect

MAROS Linear Regression Method

Data ():

All Non-Detect

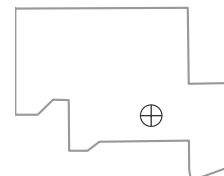
All Data

All Non-Detect

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/20/1995 to 05/24/2017
Analysis Date: 03/21/2018

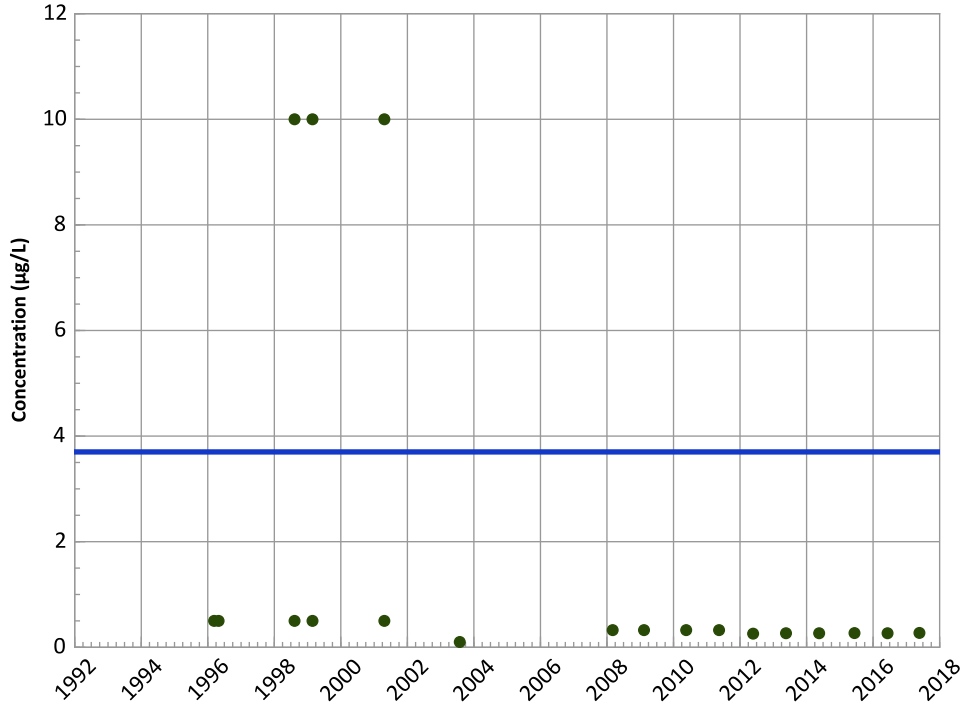
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX08-1007 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

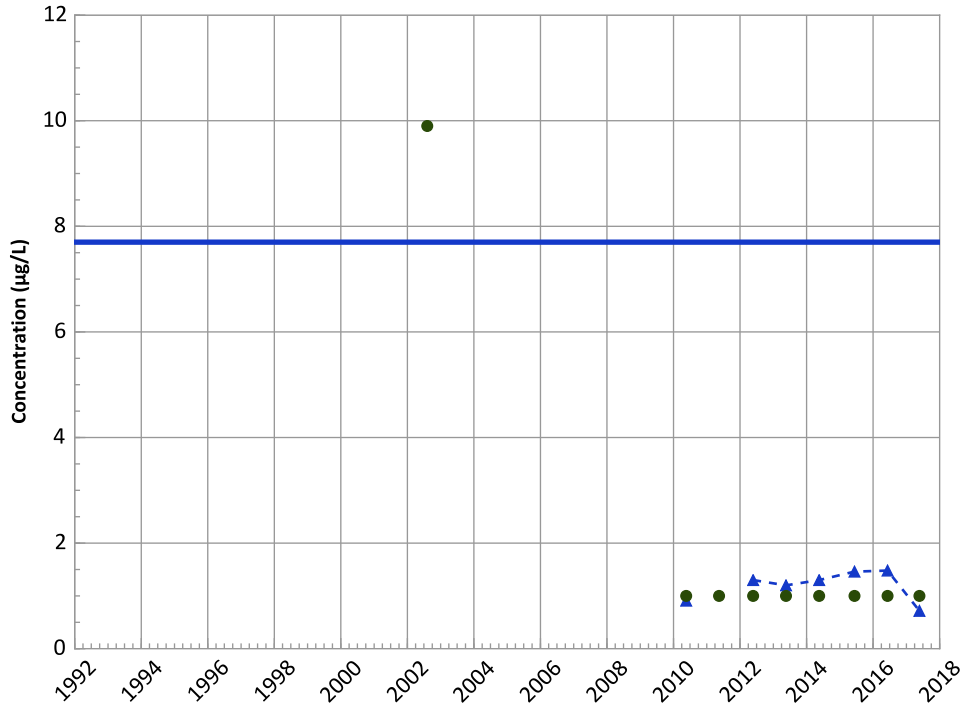
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,4-Dioxane (p-Dioxane) Trend



Concentration Trend

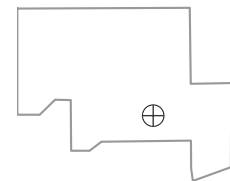
MAROS Mann-Kendall Method

Data ():
Probably Increasing
All Data
No Trend

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

Well Location

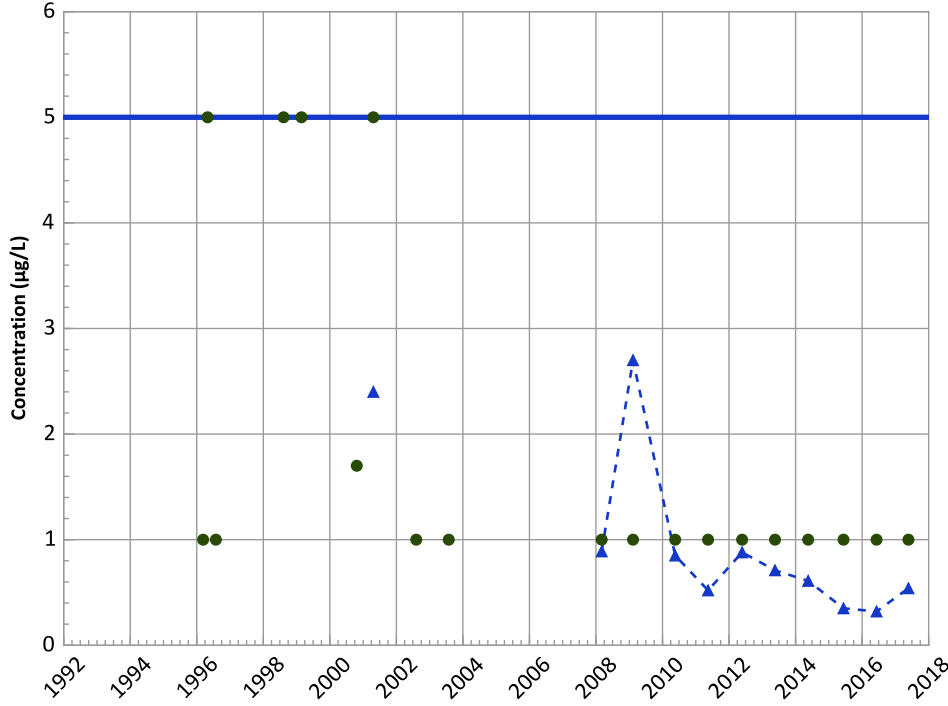


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/20/1995 to 05/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX08-1007 in Perched Aquifer
USDOE/NNSA Pantex Plant

Tetrachloroethylene (PCE) Trend



Concentration Trend

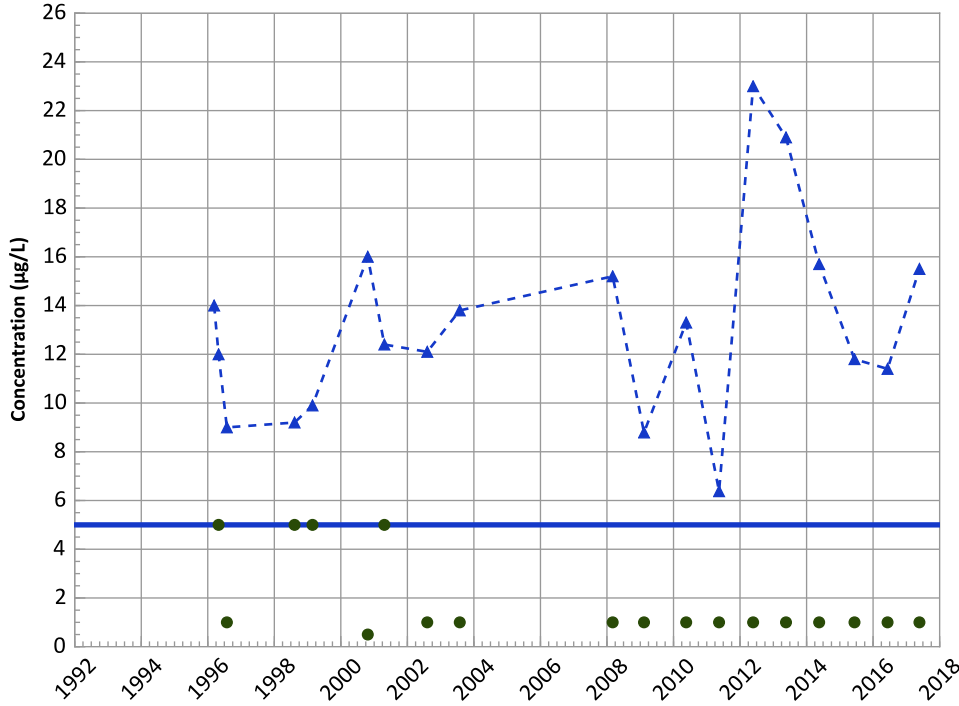
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

Trichloroethene Trend



Concentration Trend

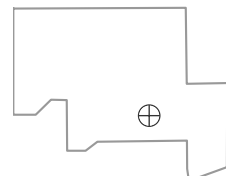
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
No Trend

MAROS Linear Regression Method

Data ():
Decreasing
All Data
No Trend

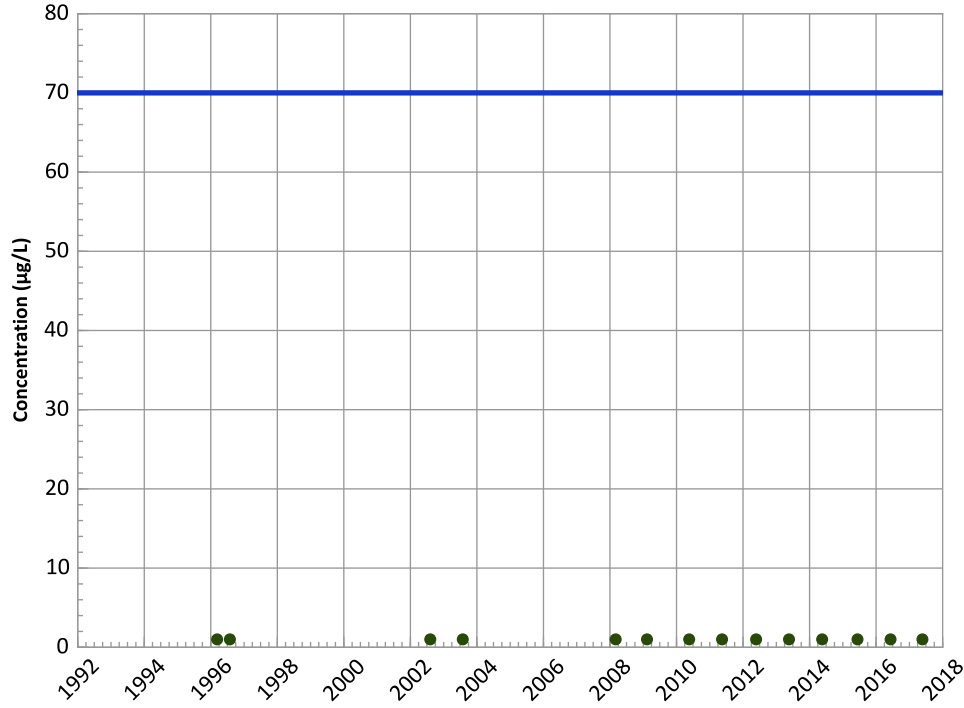
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/20/1995 to 05/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX08-1007 in Perched Aquifer
USDOE/NNSA Pantex Plant
cis-1,2-Dichloroethene Trend**



Concentration Trend

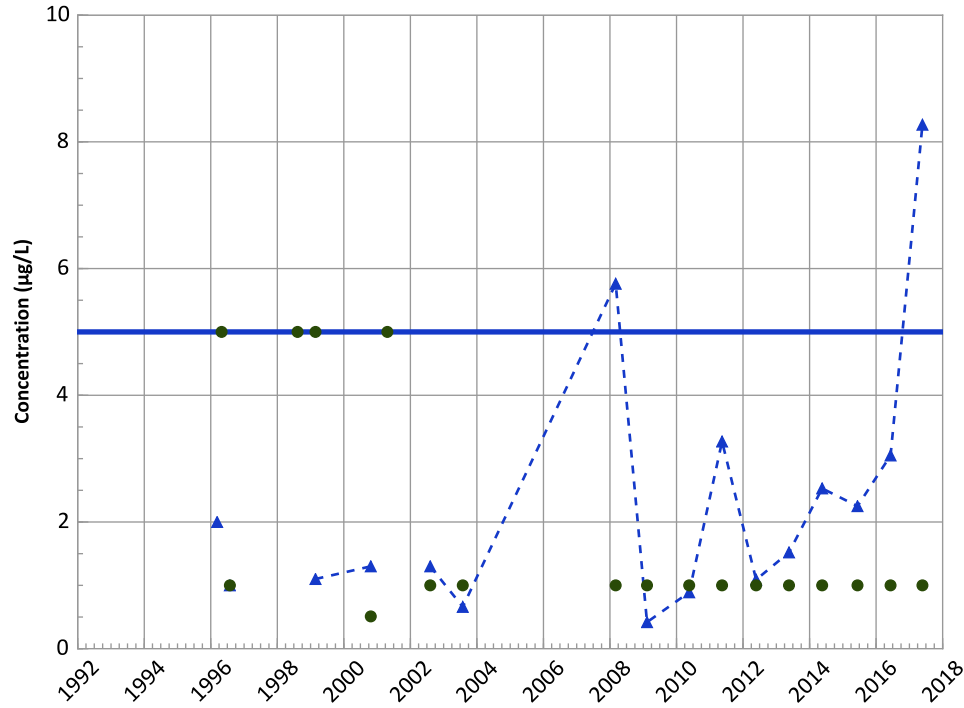
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,2-Dichloroethane Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Probably Increasing

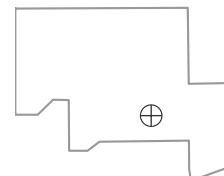
MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

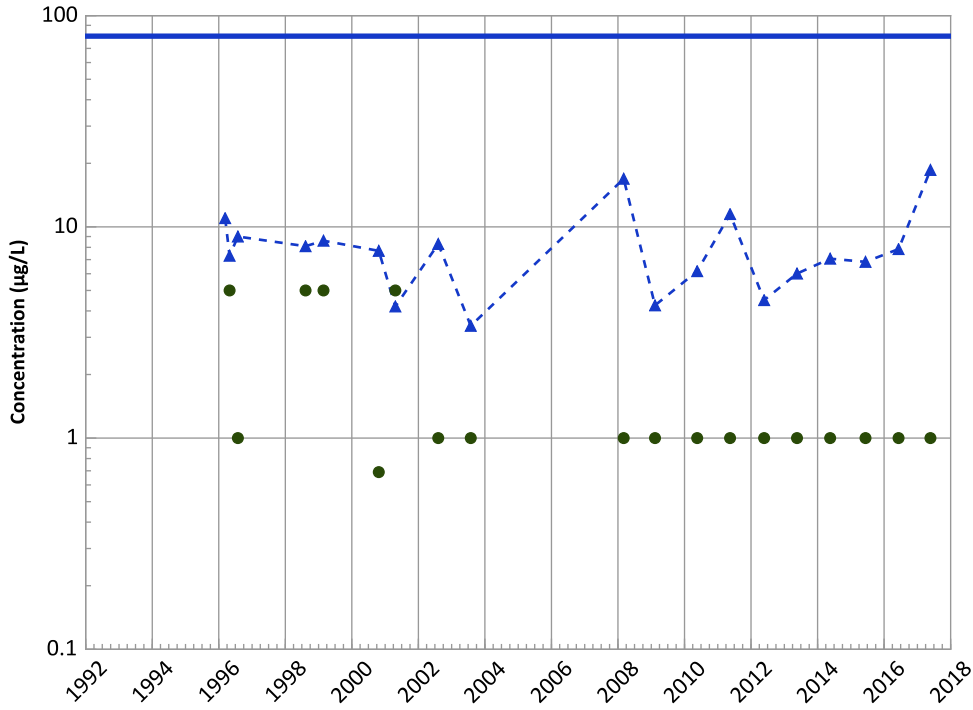
Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/20/1995 to 05/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX08-1007 in Perched Aquifer
 USDOE/NNSA Pantex Plant
 Chloroform Trend



Concentration Trend

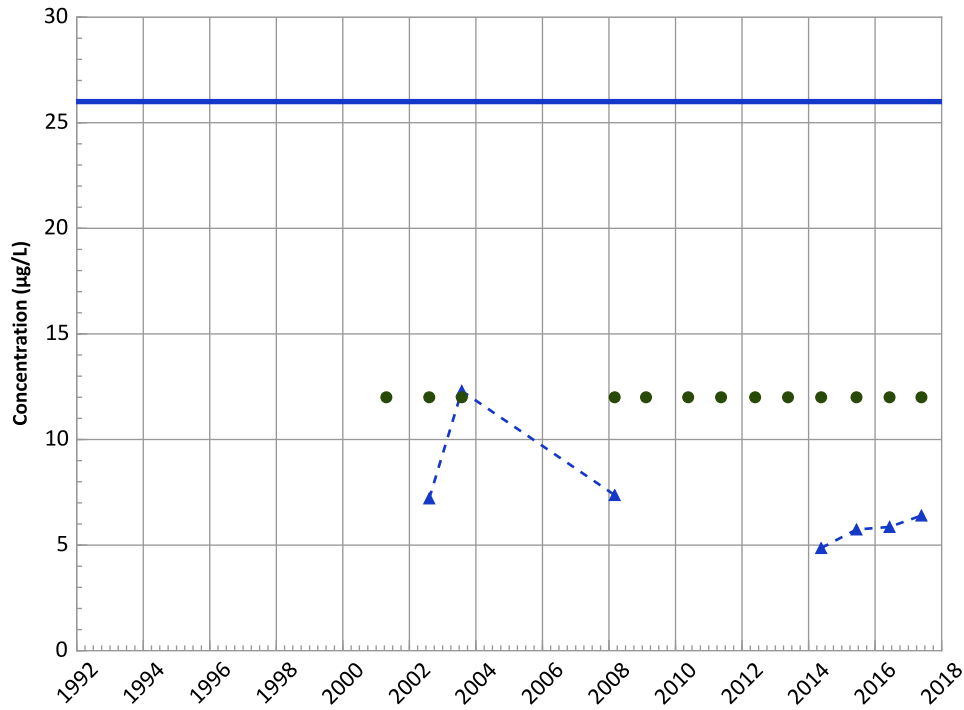
MAROS Mann-Kendall Method

Data ():
 Increasing
 All Data
 Decreasing

MAROS Linear Regression Method

Data ():
 Increasing
 All Data
 Increasing

Perchlorate Trend



Concentration Trend

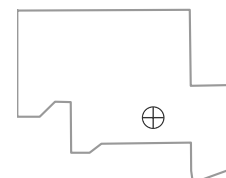
MAROS Mann-Kendall Method

Data ():
 N/A (<4 Detections in Dataset)
 All Data
 Decreasing

MAROS Linear Regression Method

Data ():
 N/A (<4 Detections in Dataset)
 All Data
 Decreasing

Well Location

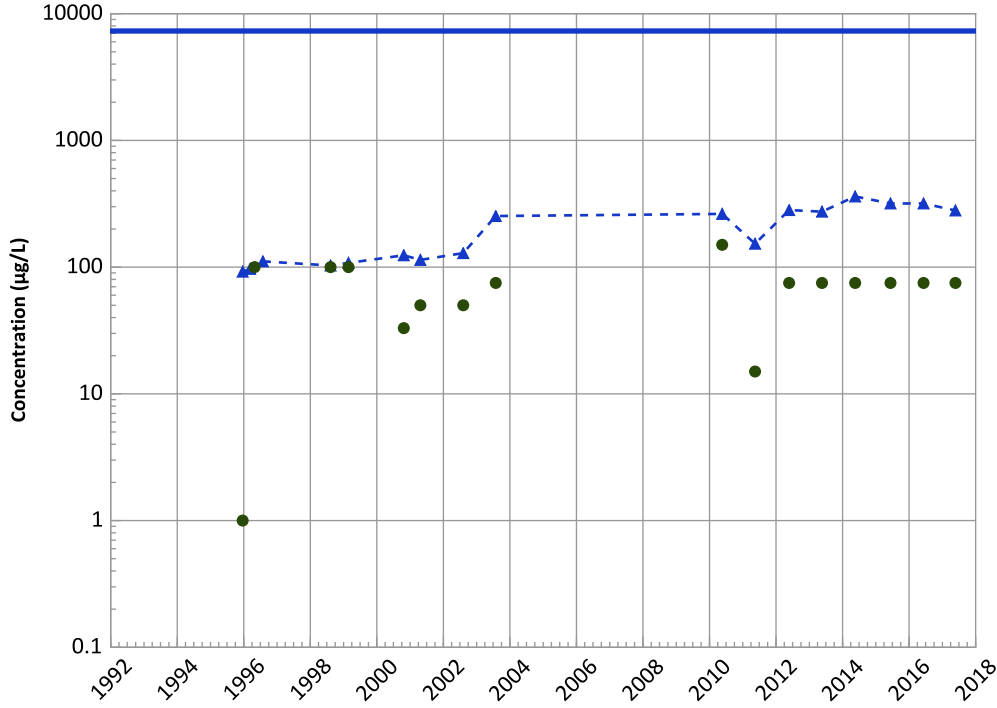


Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 12/20/1995 to 05/24/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX08-1007 in Perched Aquifer
USDOE/NNSA Pantex Plant

Boron Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

No Trend

All Data

Increasing

MAROS Linear Regression Method

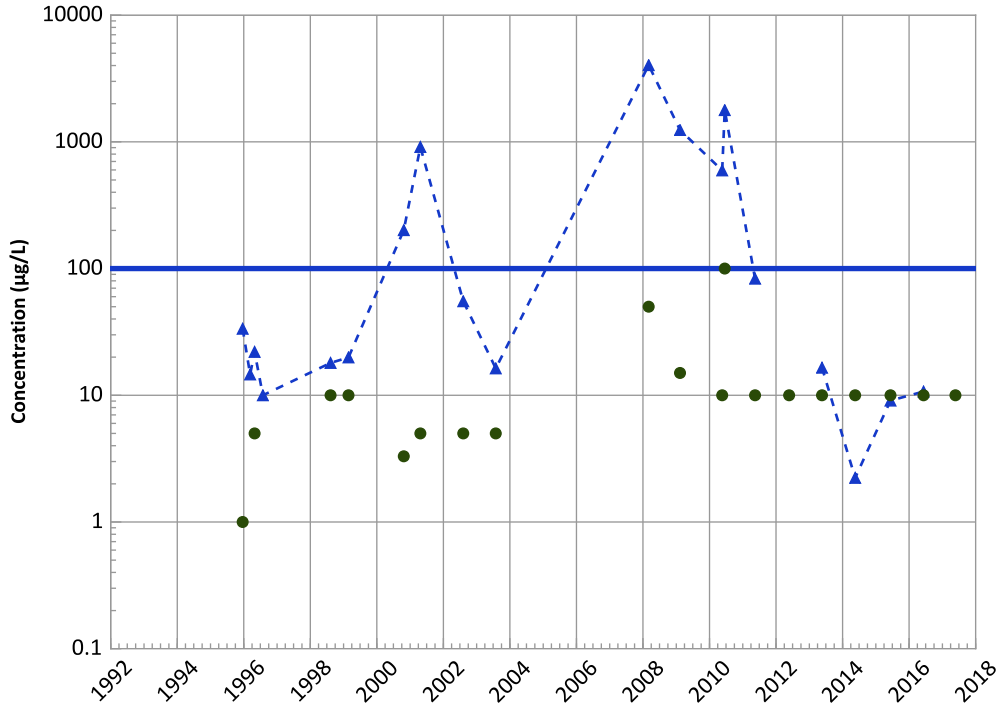
Data ():

No Trend

All Data

Increasing

Chromium, Total Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

No Trend

All Data

Decreasing

MAROS Linear Regression Method

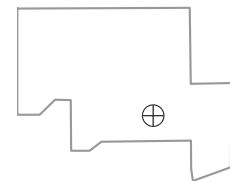
Data ():

No Trend

All Data

No Trend

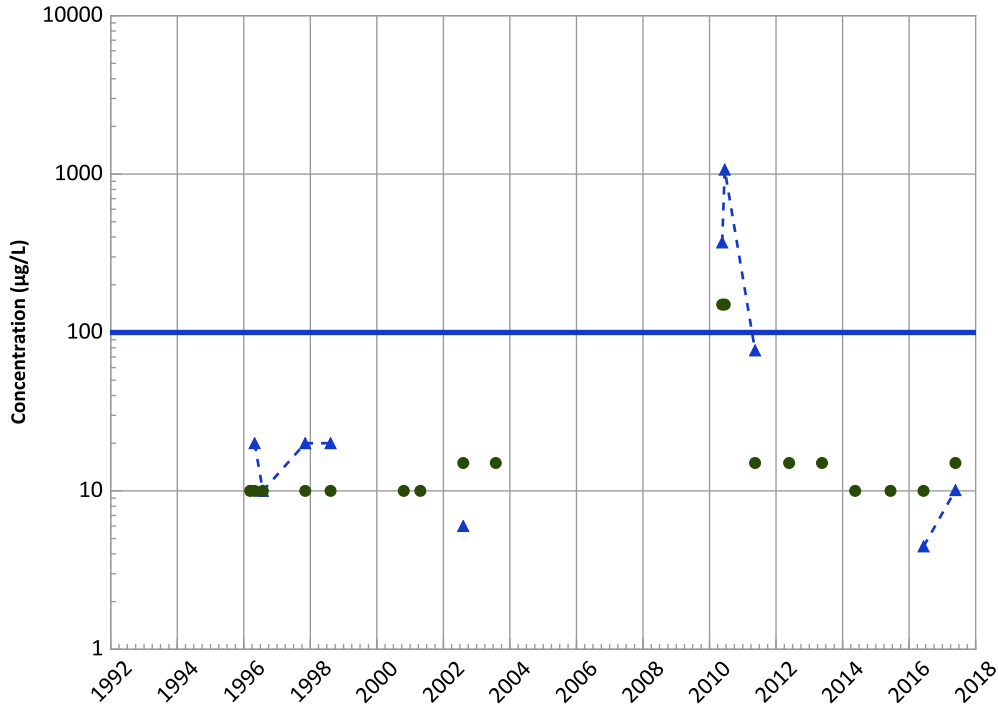
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/20/1995 to 05/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX08-1007 in Perched Aquifer
USDOE/NNSA Pantex Plant
Chromium, Hexavalent Trend**



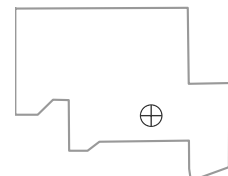
Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 N/A (<4 Detections in Dataset)
 All Data
 Decreasing

MAROS Linear Regression Method
 Data ():
 N/A (<4 Detections in Dataset)
 All Data
 No Trend

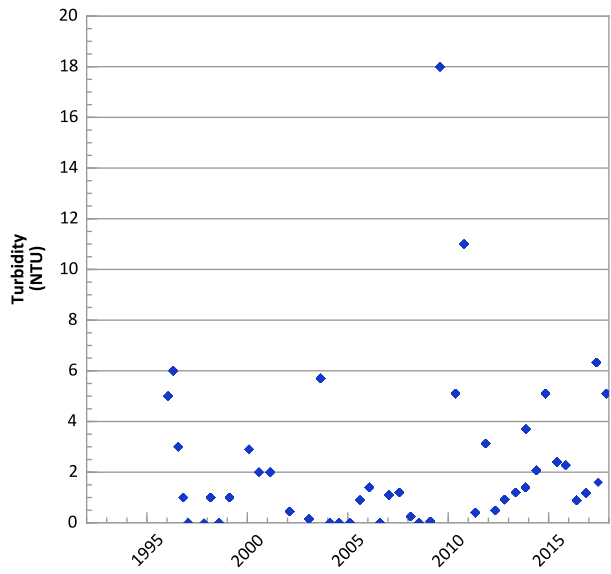
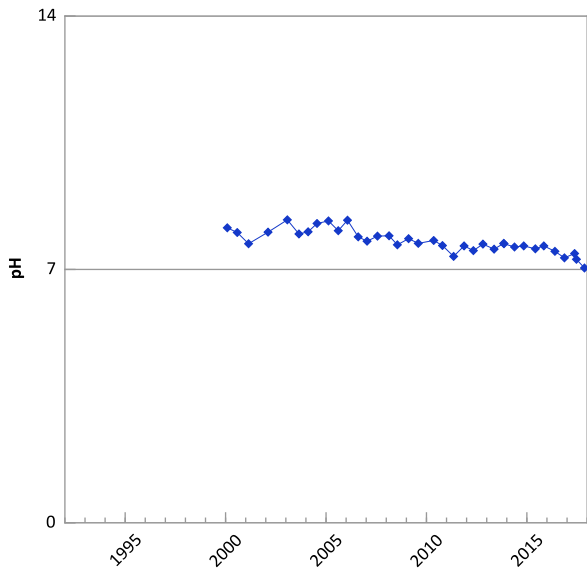
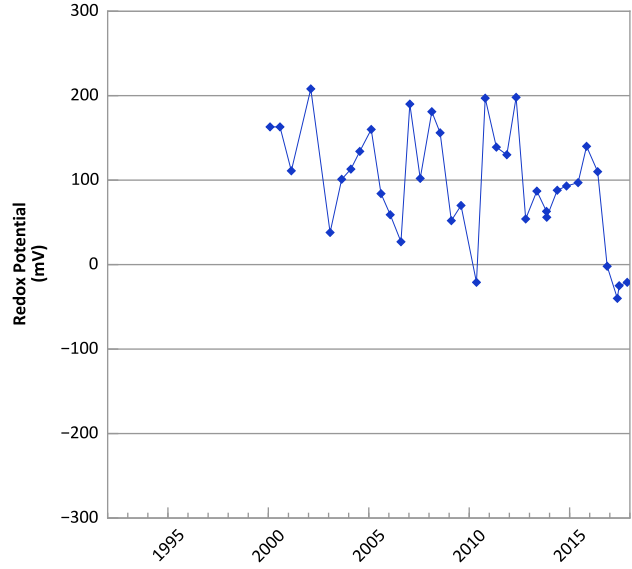
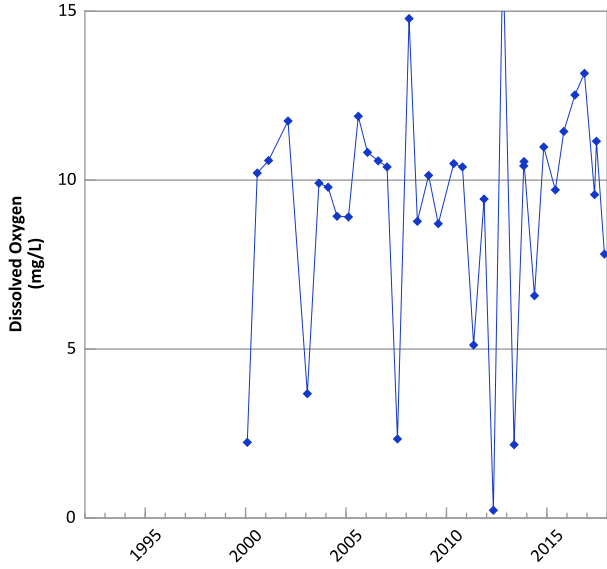
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 12/20/1995 to 05/24/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

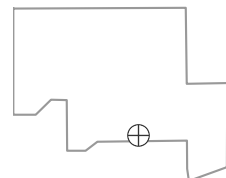


**PTX08-1008 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



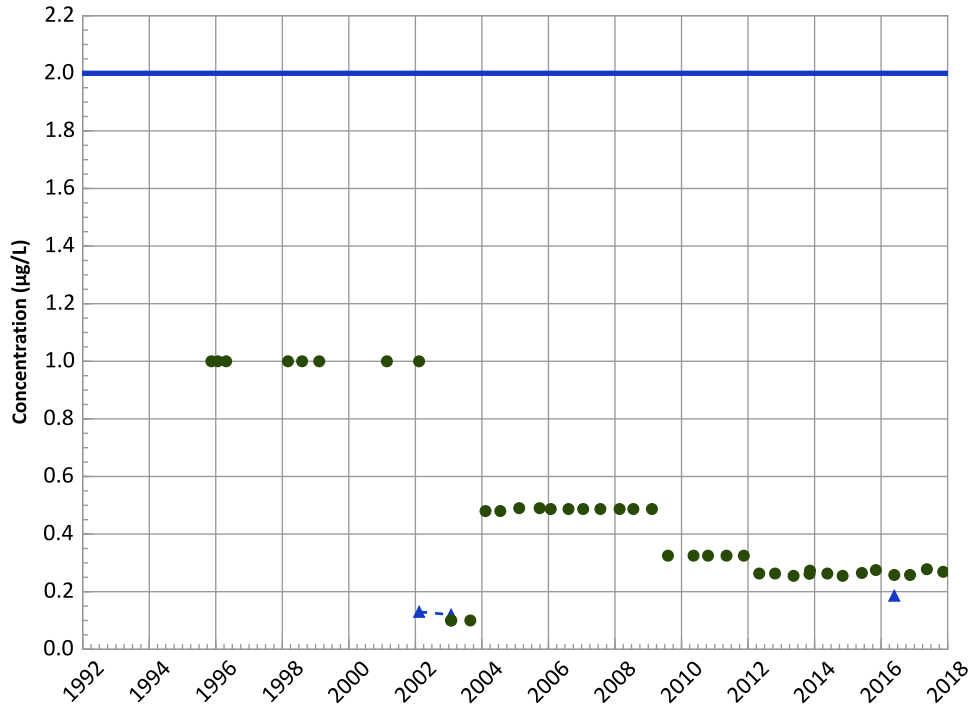
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 11/14/1995 to 11/13/2017
 Analysis Date: 03/21/2018

Well Location



PTX08-1008 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

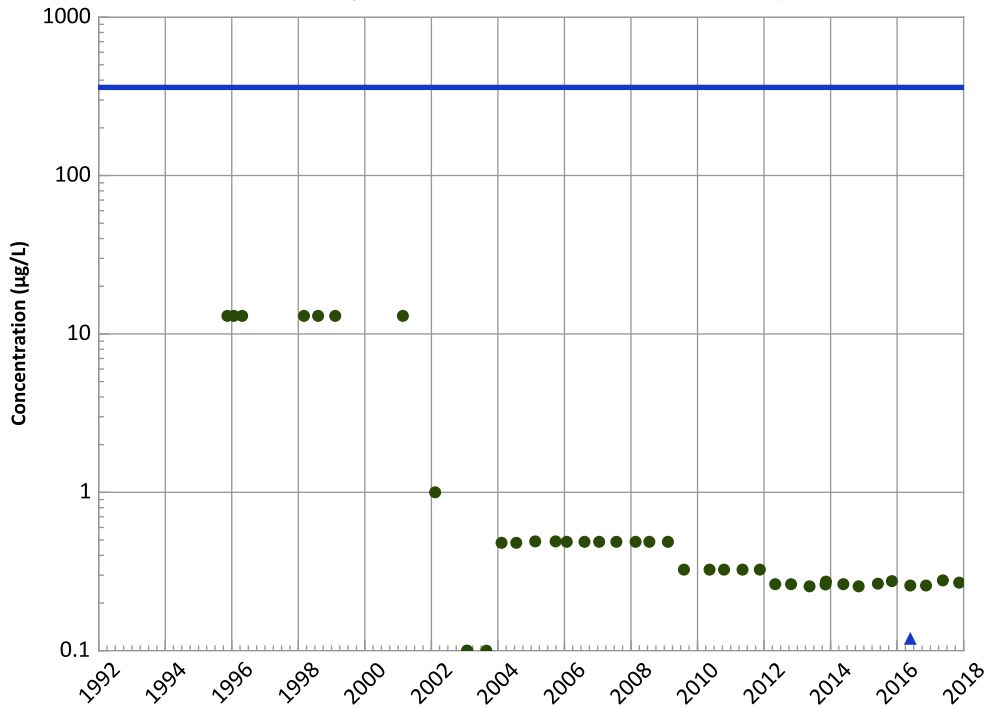
Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

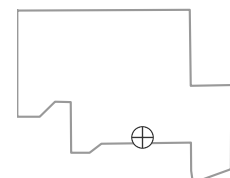
Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

Well Location

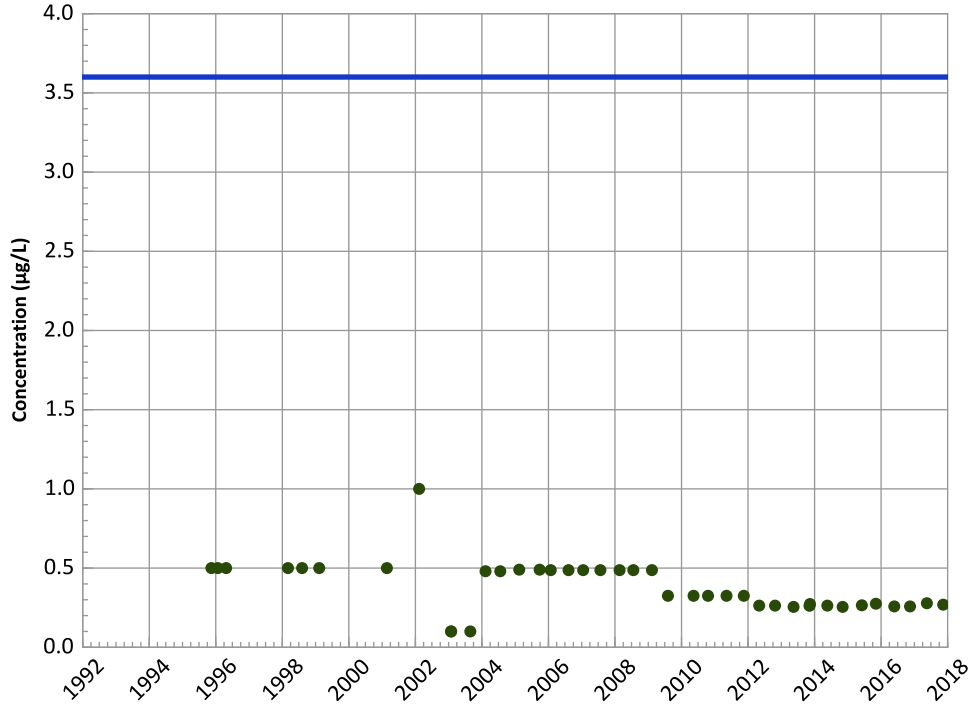


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/14/1995 to 11/13/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX08-1008 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

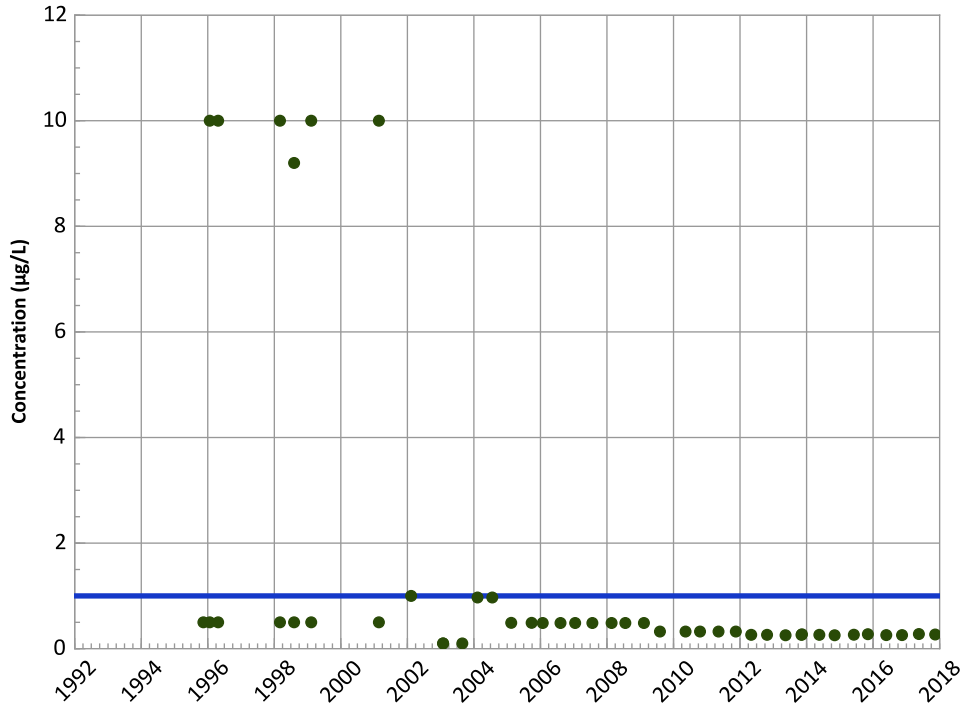
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

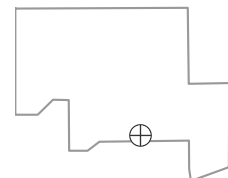
MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/14/1995 to 11/13/2017
Analysis Date: 03/21/2018

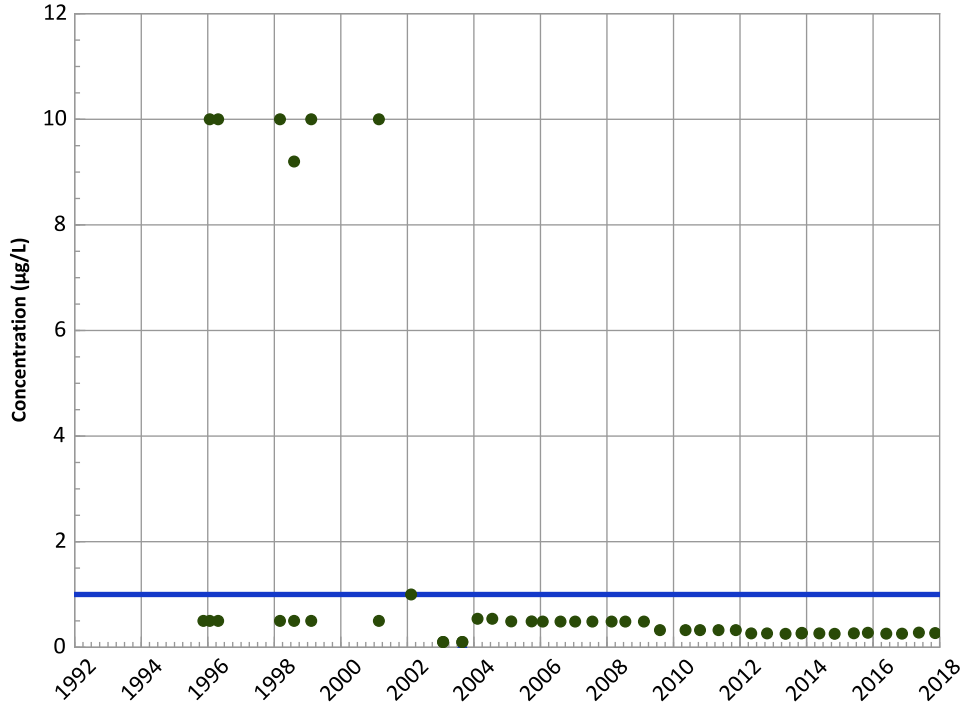
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX08-1008 in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

All Non-Detect

All Data

N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

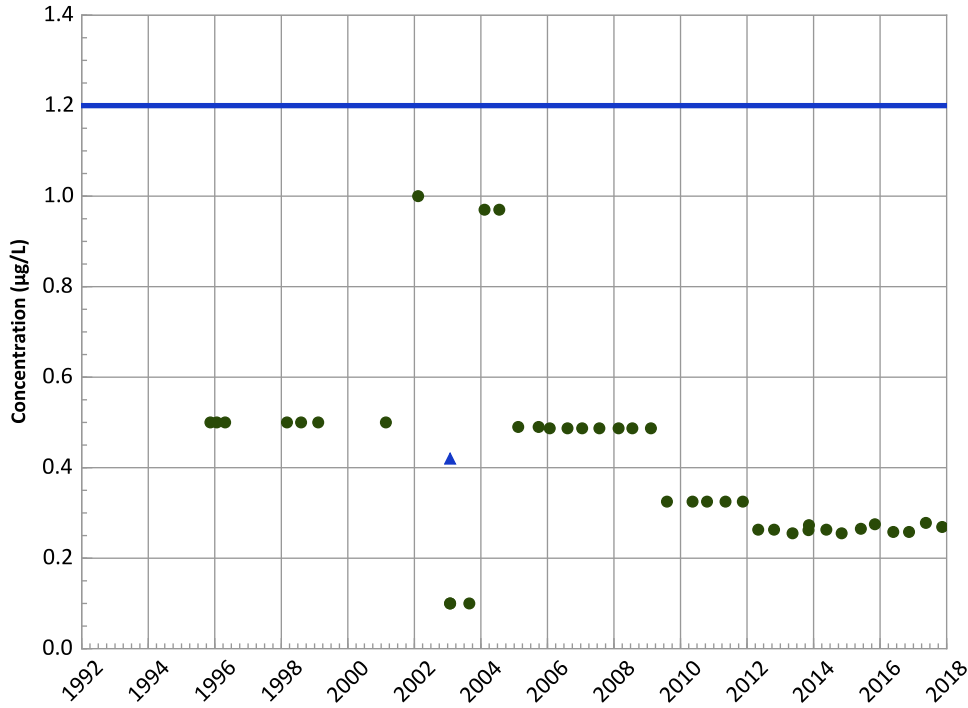
Data ():

All Non-Detect

All Data

N/A (<4 Detections in Dataset)

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

All Non-Detect

All Data

N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

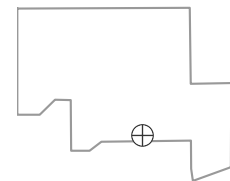
Data ():

All Non-Detect

All Data

N/A (<4 Detections in Dataset)

Well Location

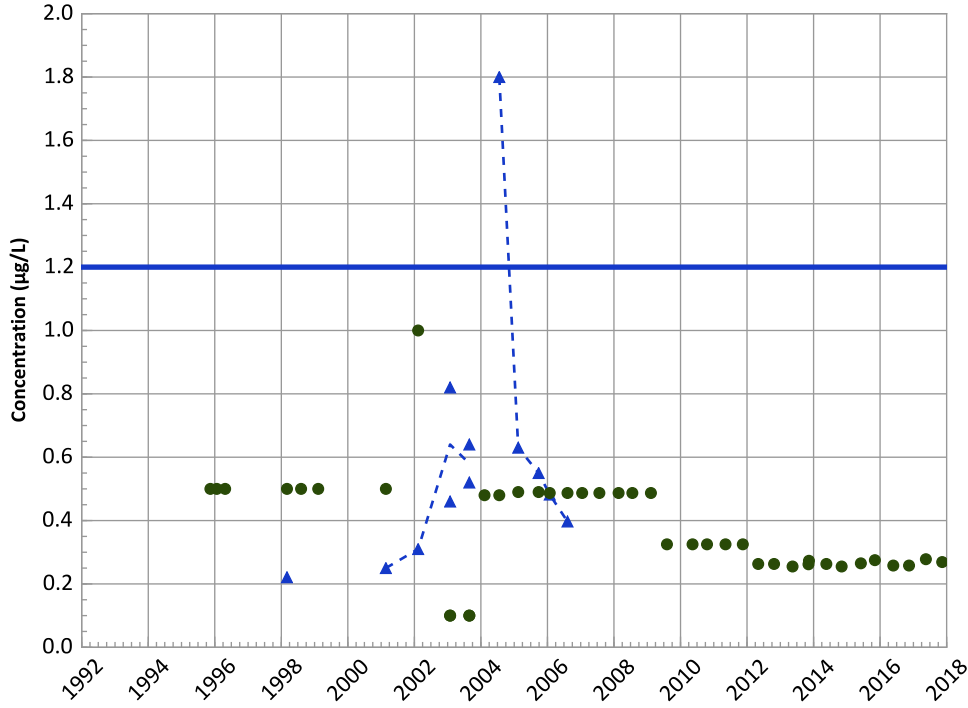


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/14/1995 to 11/13/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX08-1008 in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

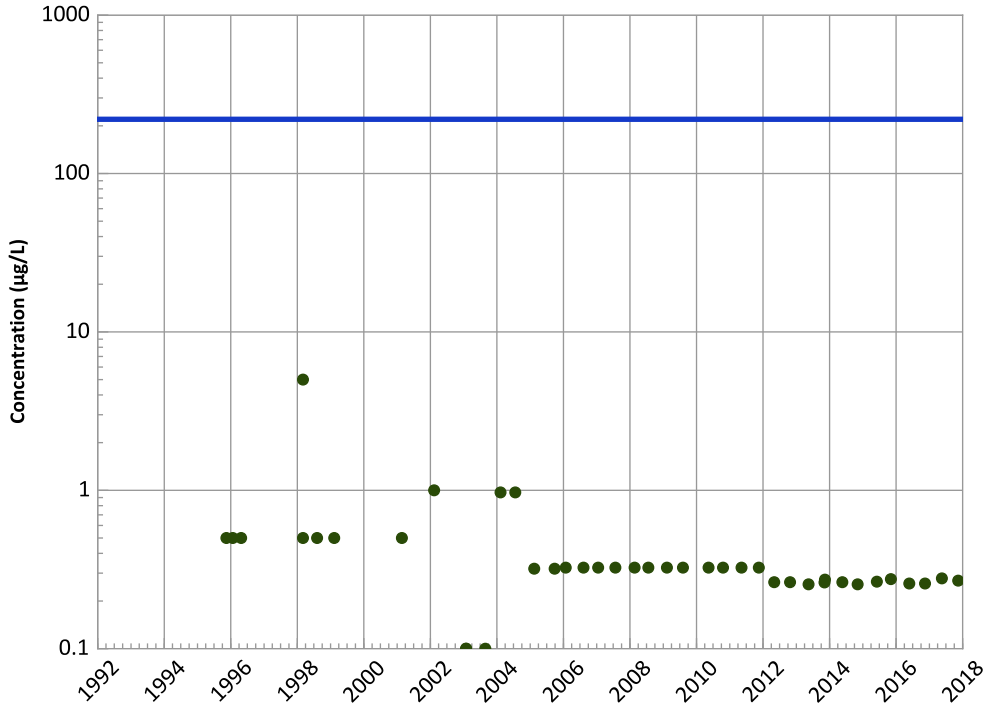
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
Decreasing

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
Increasing

1,3,5-Trinitrobenzene Trend



Concentration Trend

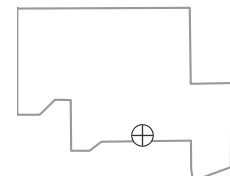
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

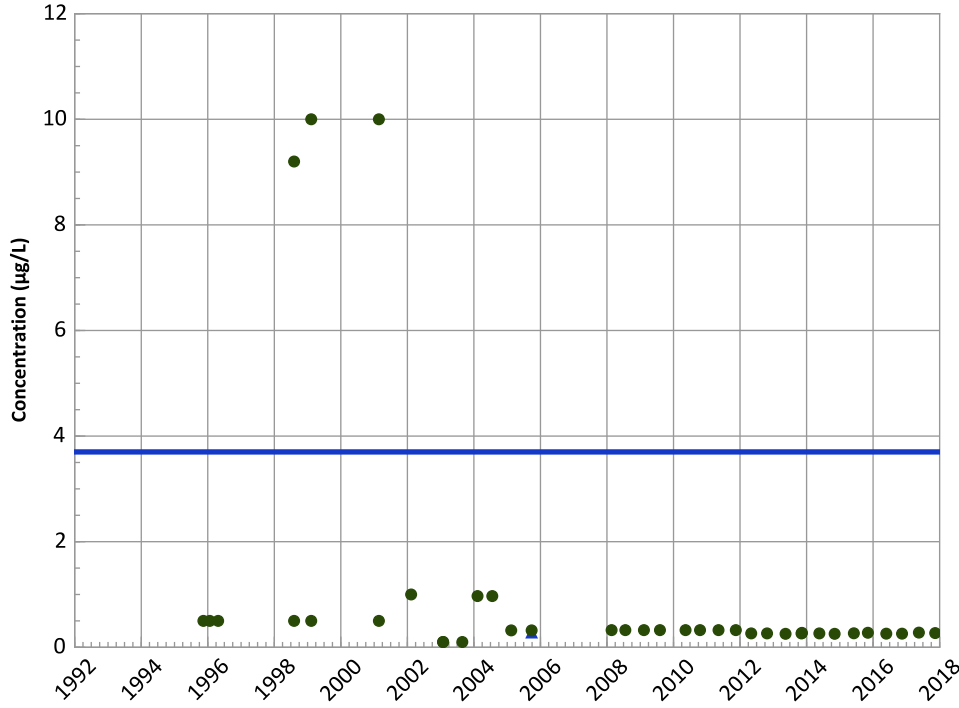


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/14/1995 to 11/13/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX08-1008 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

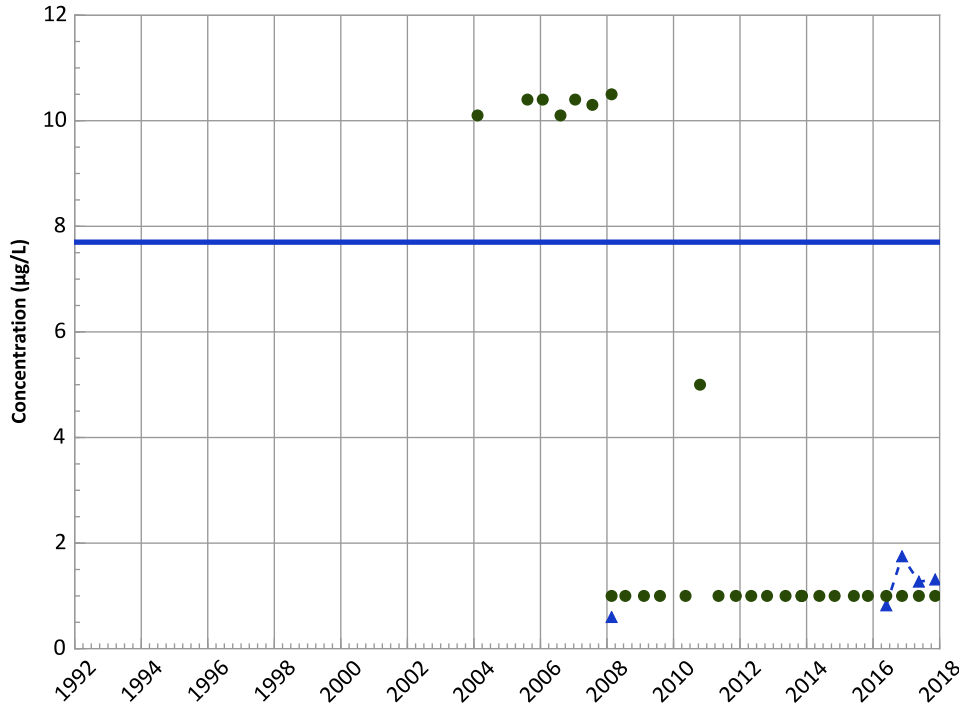
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

1,4-Dioxane (p-Dioxane) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

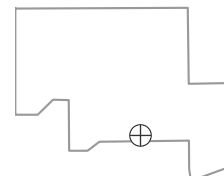
MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Probably Increasing

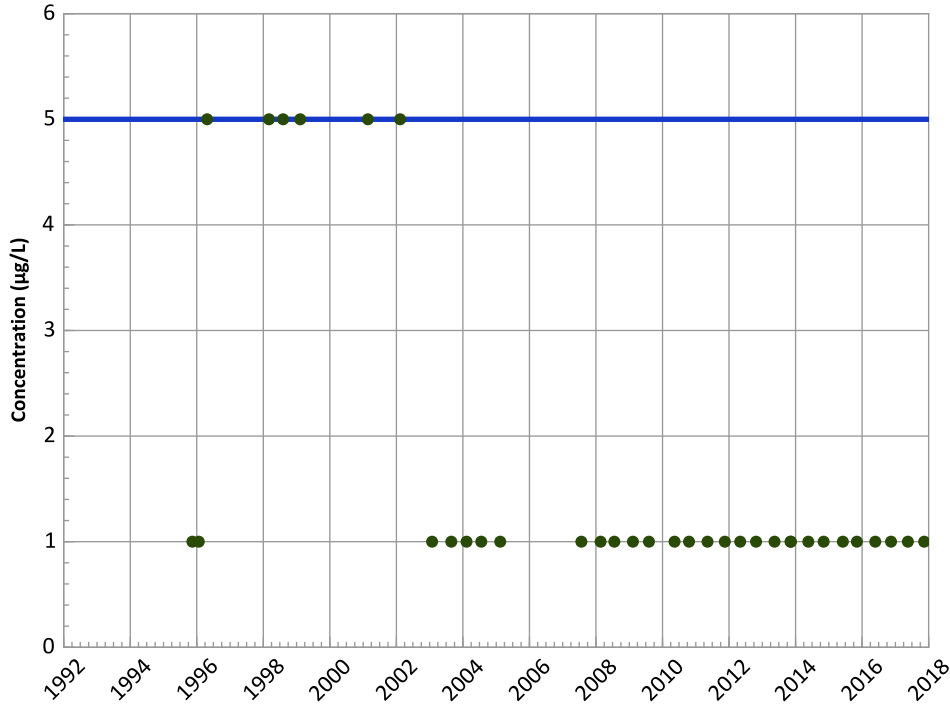
Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/14/1995 to 11/13/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



**PTX08-1008 in Perched Aquifer
USDOE/NNSA Pantex Plant
Tetrachloroethylene (PCE) Trend**



Concentration Trend

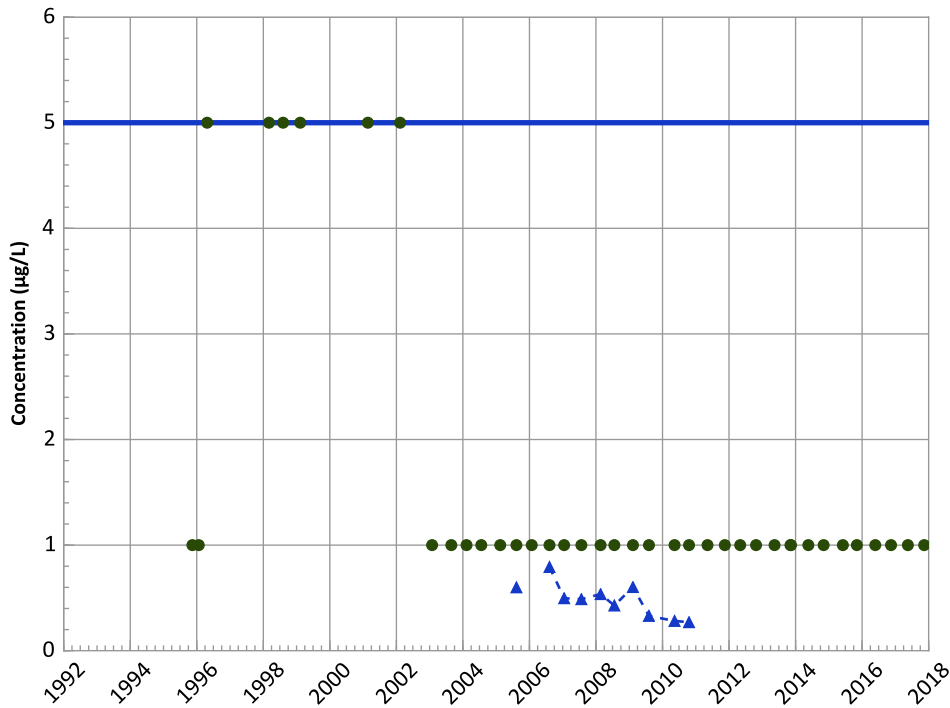
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Trichloroethene Trend



Concentration Trend

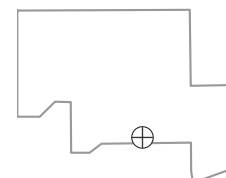
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
Decreasing

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
Decreasing

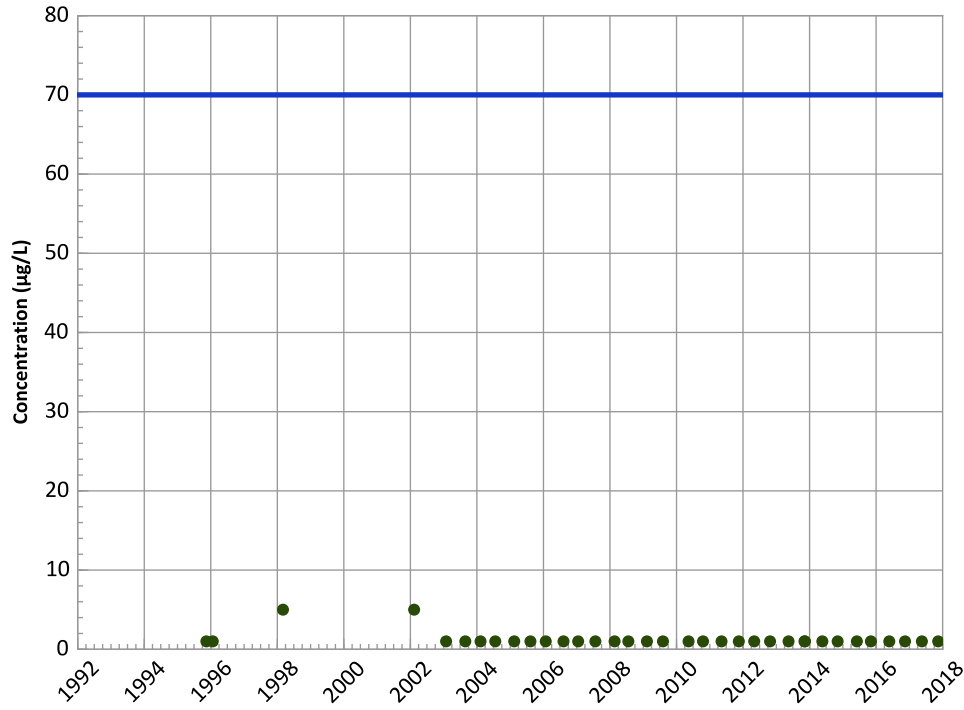
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/14/1995 to 11/13/2017
Analysis Date: 03/21/2018

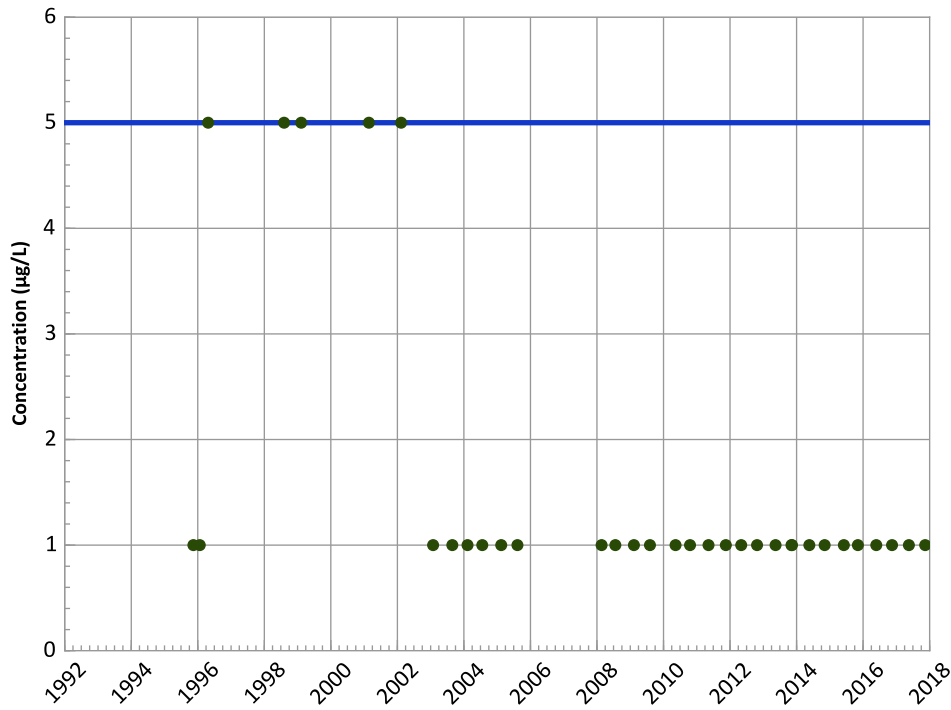
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX08-1008 in Perched Aquifer
USDOE/NNSA Pantex Plant
cis-1,2-Dichloroethene Trend**



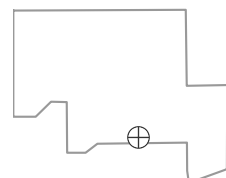
Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect
MAROS Linear Regression Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect

1,2-Dichloroethane Trend



Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect
MAROS Linear Regression Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect

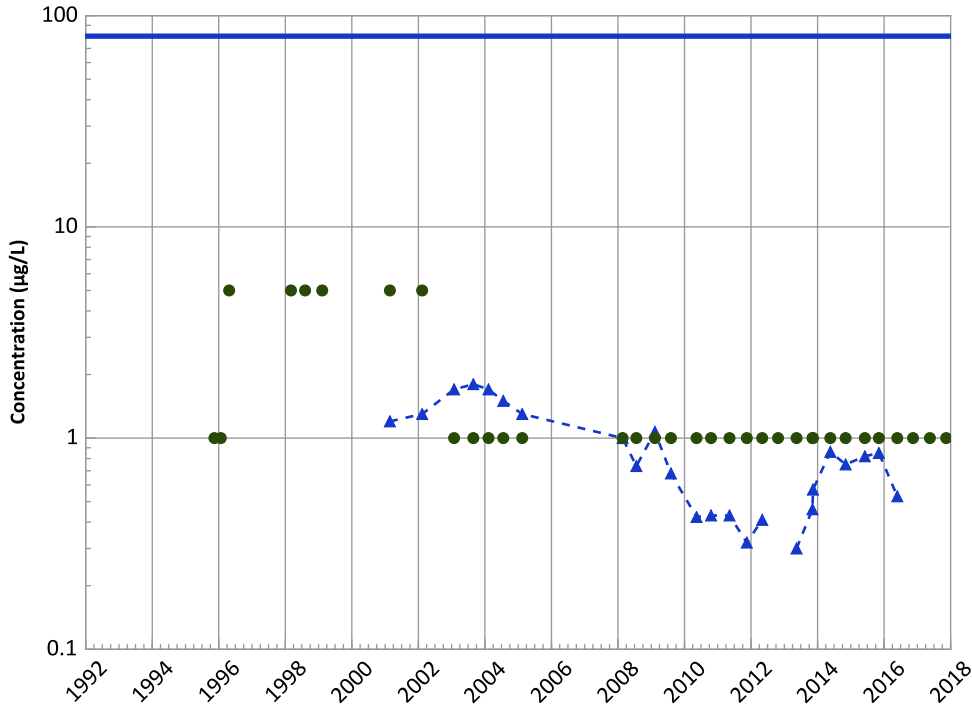
Well Location



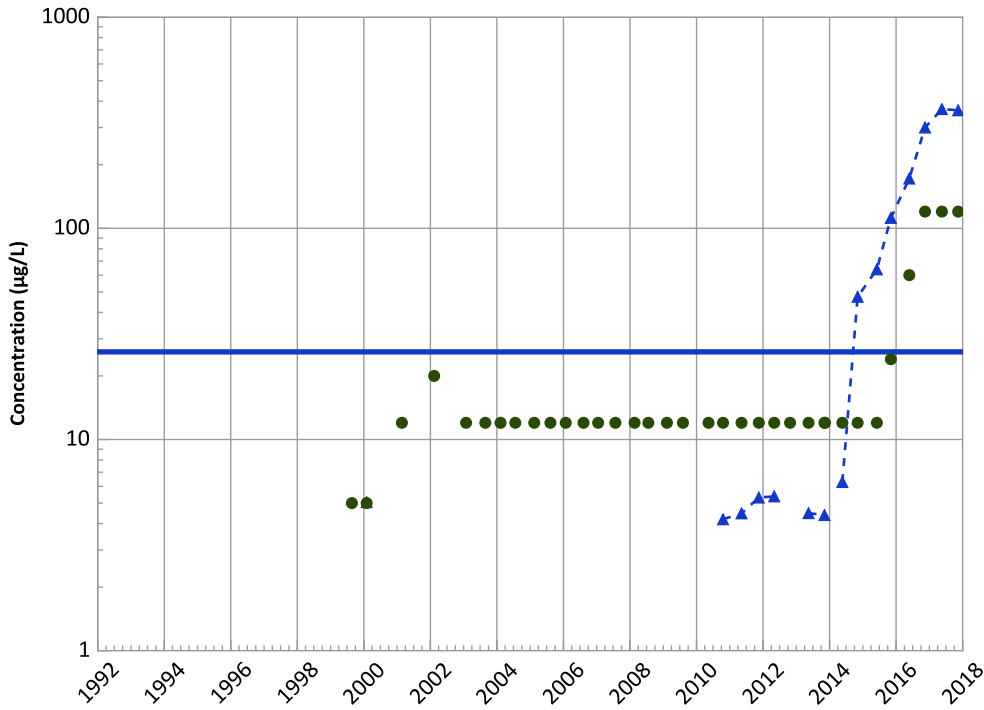
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 11/14/1995 to 11/13/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX08-1008 in Perched Aquifer
 USDOE/NNSA Pantex Plant
 Chloroform Trend



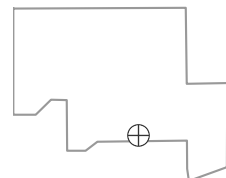
Perchlorate Trend



Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 11/14/1995 to 11/13/2017
 Analysis Date: 03/21/2018

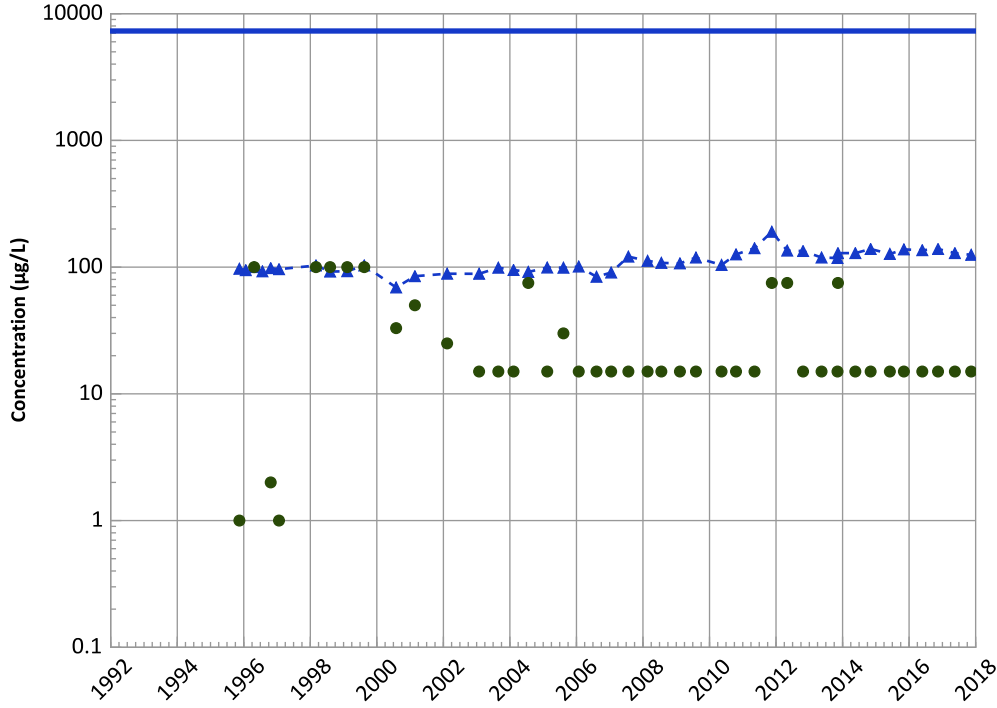
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX08-1008 in Perched Aquifer
USDOE/NNSA Pantex Plant

Boron Trend



Concentration Trend

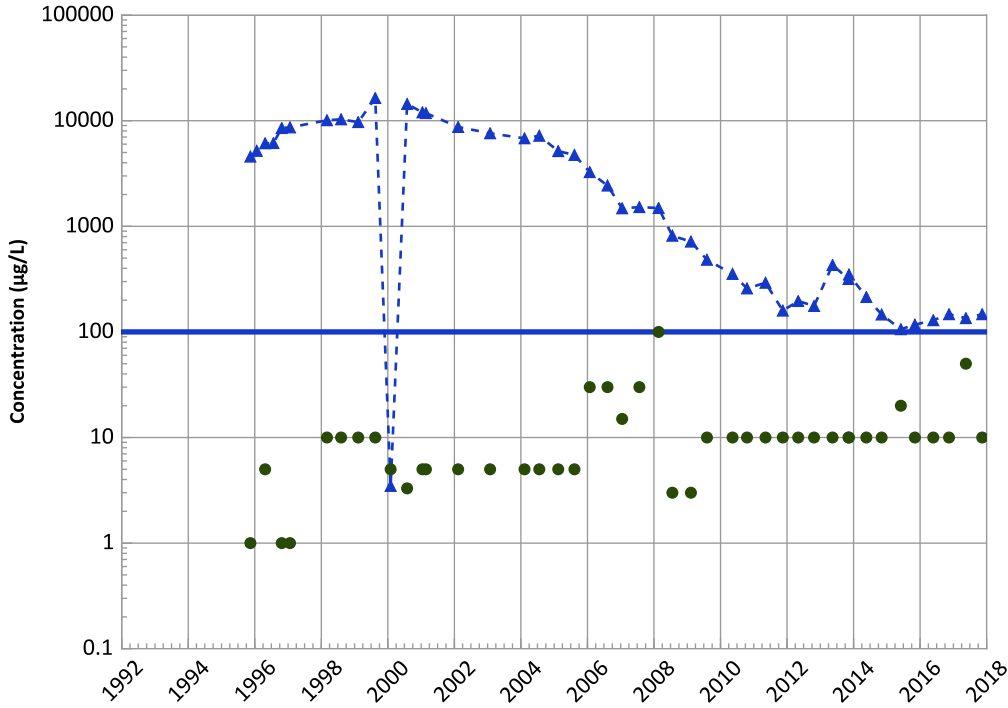
MAROS Mann-Kendall Method

Data ():
No Trend
All Data
Increasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
Increasing

Chromium, Total Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

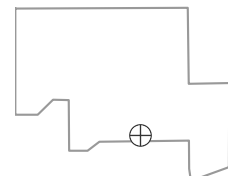
MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/14/1995 to 11/13/2017
Analysis Date: 03/21/2018

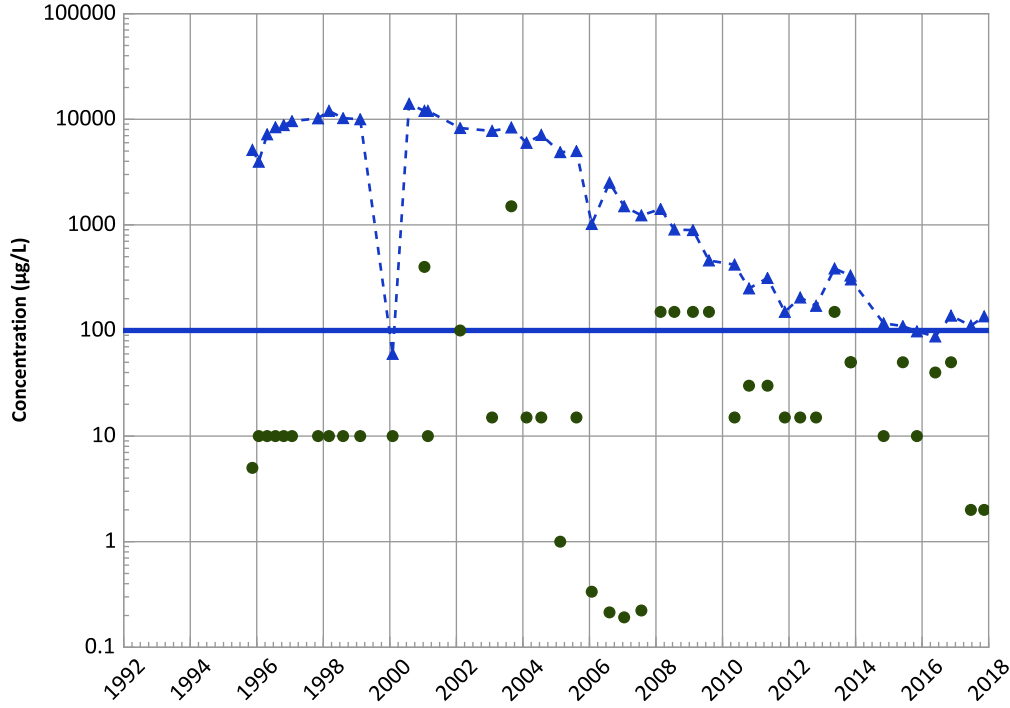
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX08-1008 in Perched Aquifer
USDOE/NNSA Pantex Plant

Chromium, Hexavalent Trend



Concentration Trend

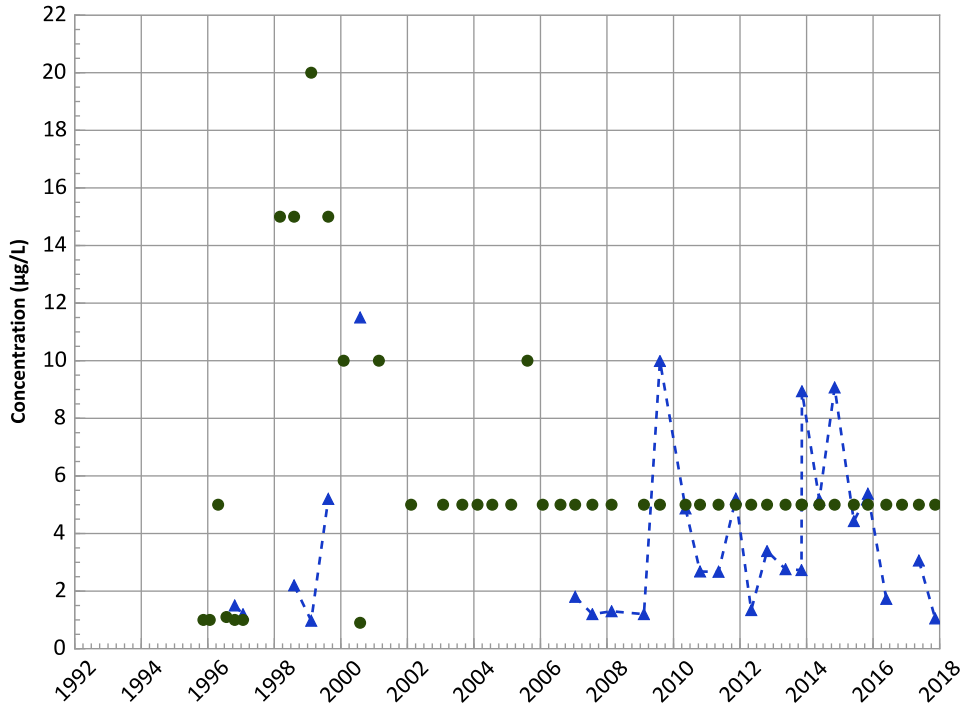
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

Manganese Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
No Trend
All Data
Increasing

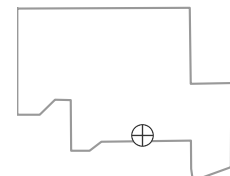
MAROS Linear Regression Method

Data ():
No Trend
All Data
No Trend

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/14/1995 to 11/13/2017
Analysis Date: 03/21/2018

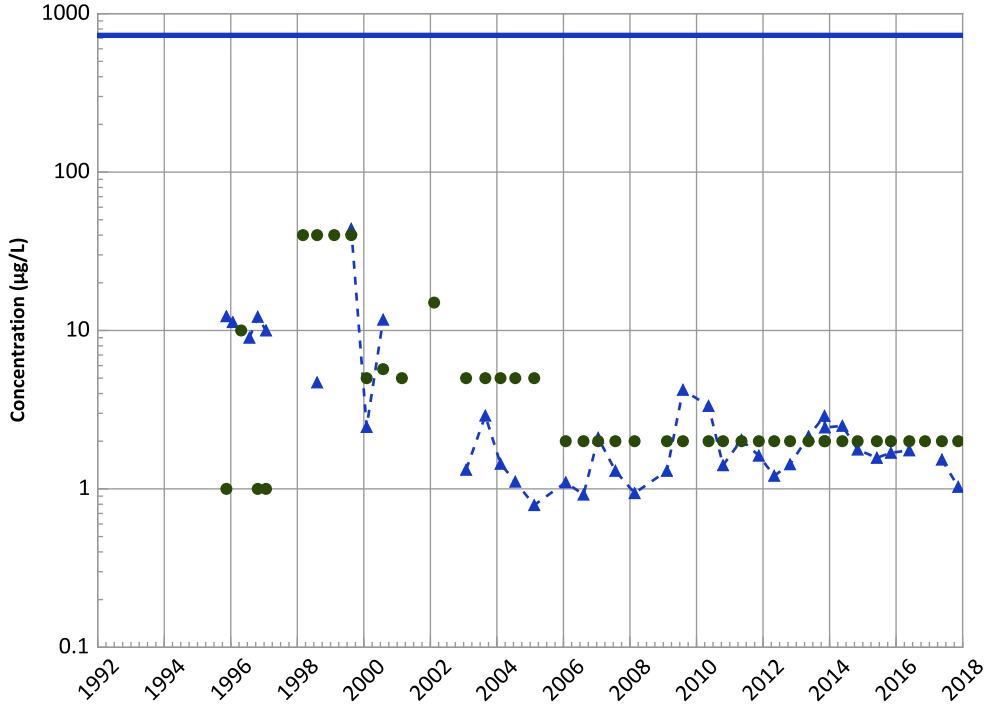
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX08-1008 in Perched Aquifer
USDOE/NNSA Pantex Plant

Nickel Trend



Concentration Trend

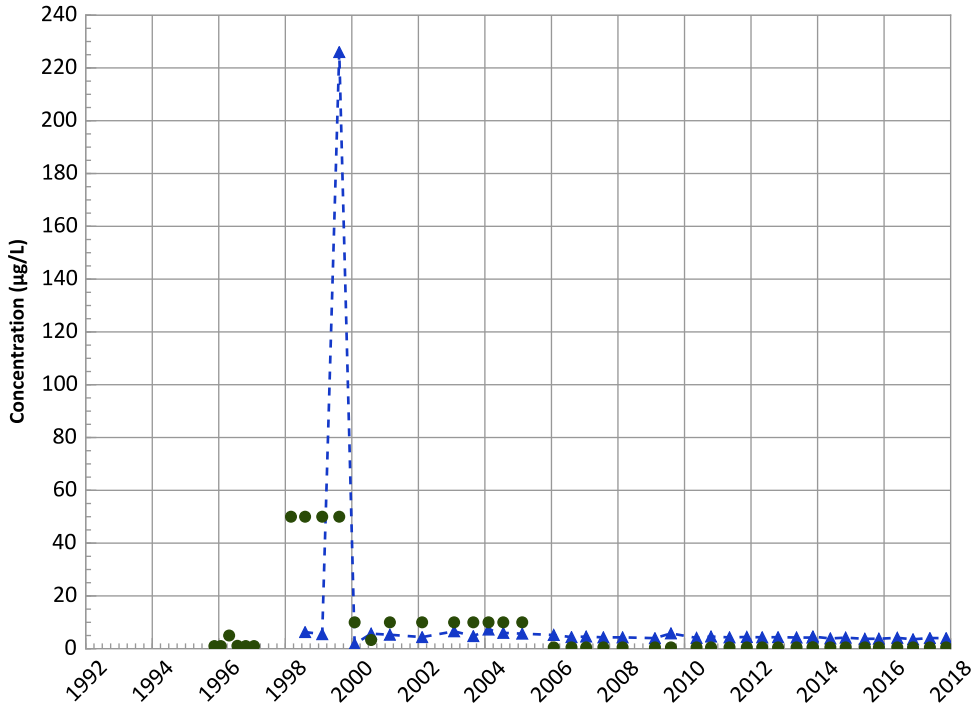
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
Decreasing

Molybdenum Trend



Concentration Trend

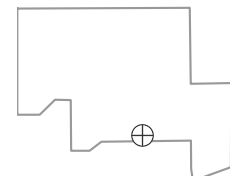
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

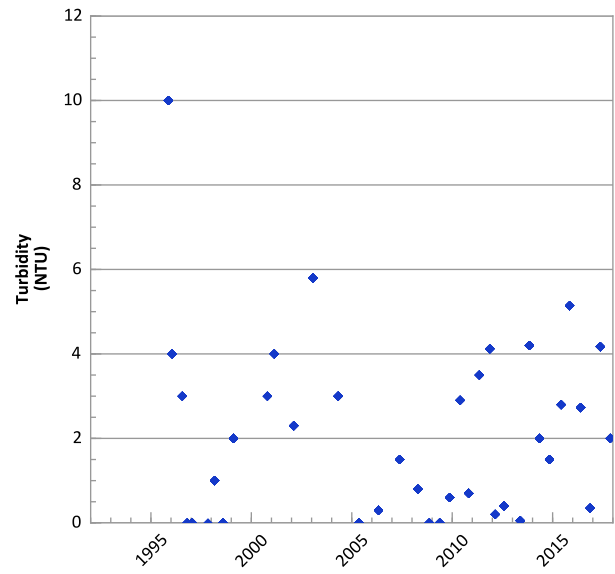
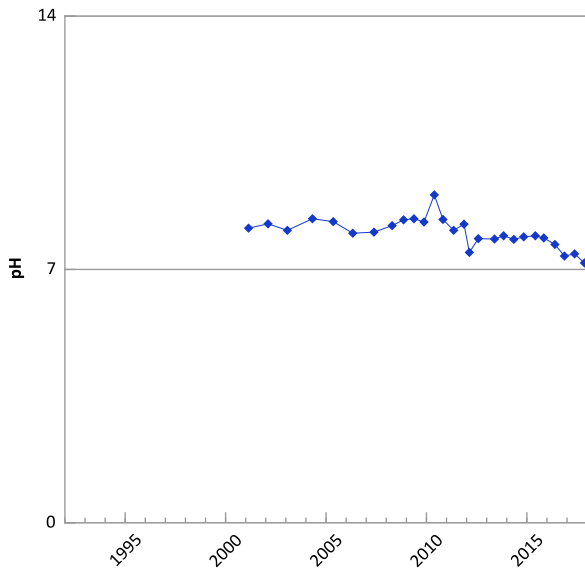
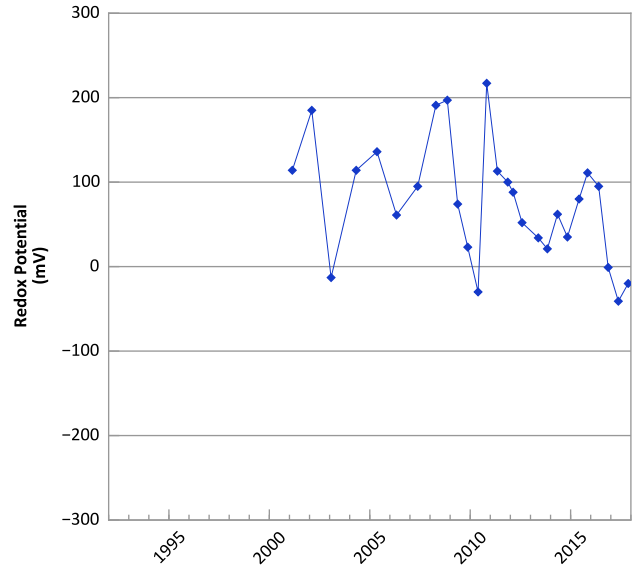
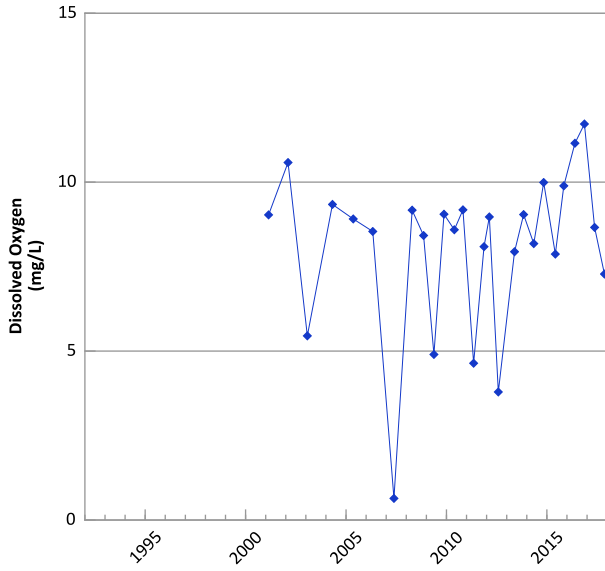
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/14/1995 to 11/13/2017
Analysis Date: 03/21/2018

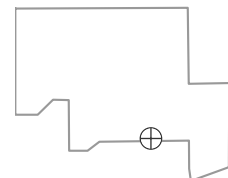
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX08-1009 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



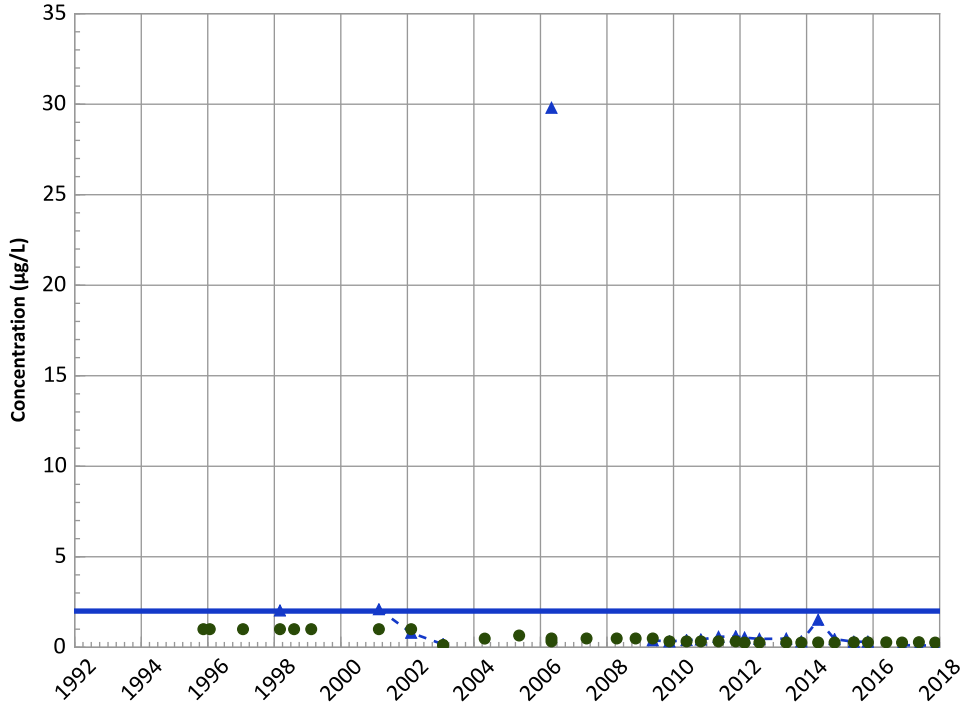
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 11/14/1995 to 11/13/2017
 Analysis Date: 03/21/2018

Well Location



PTX08-1009 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

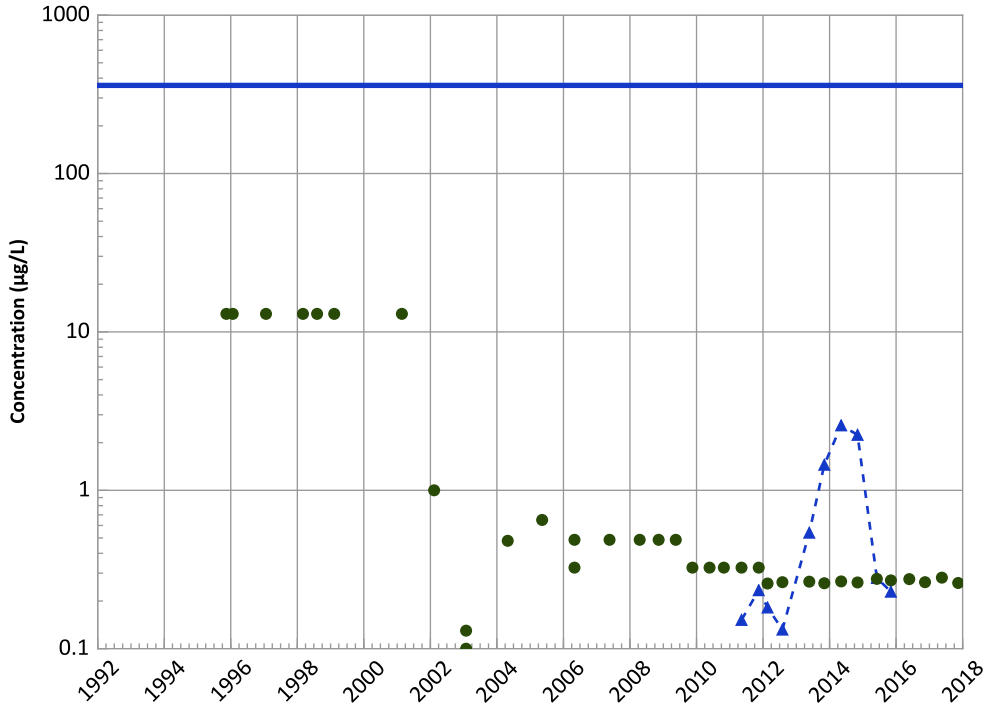
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Probably Decreasing
All Data
Decreasing

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

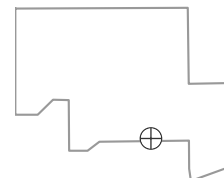
MAROS Linear Regression Method

Data ():
No Trend
All Data
Probably Increasing

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/14/1995 to 11/13/2017
Analysis Date: 03/21/2018

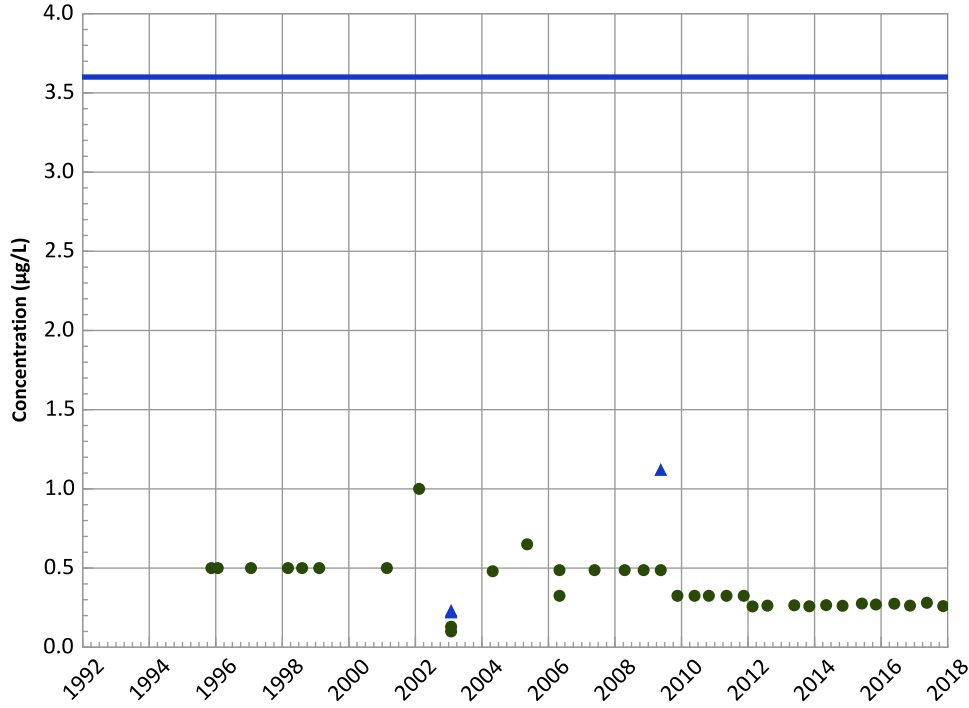
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX08-1009 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

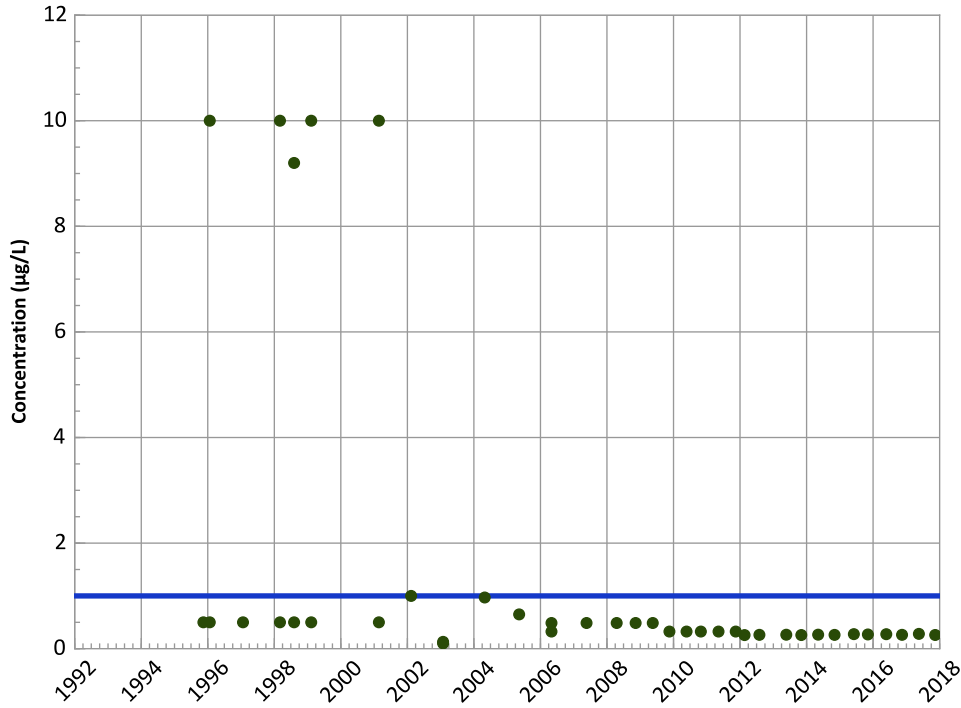
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

2,4-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

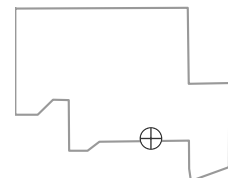
MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/14/1995 to 11/13/2017
Analysis Date: 03/21/2018

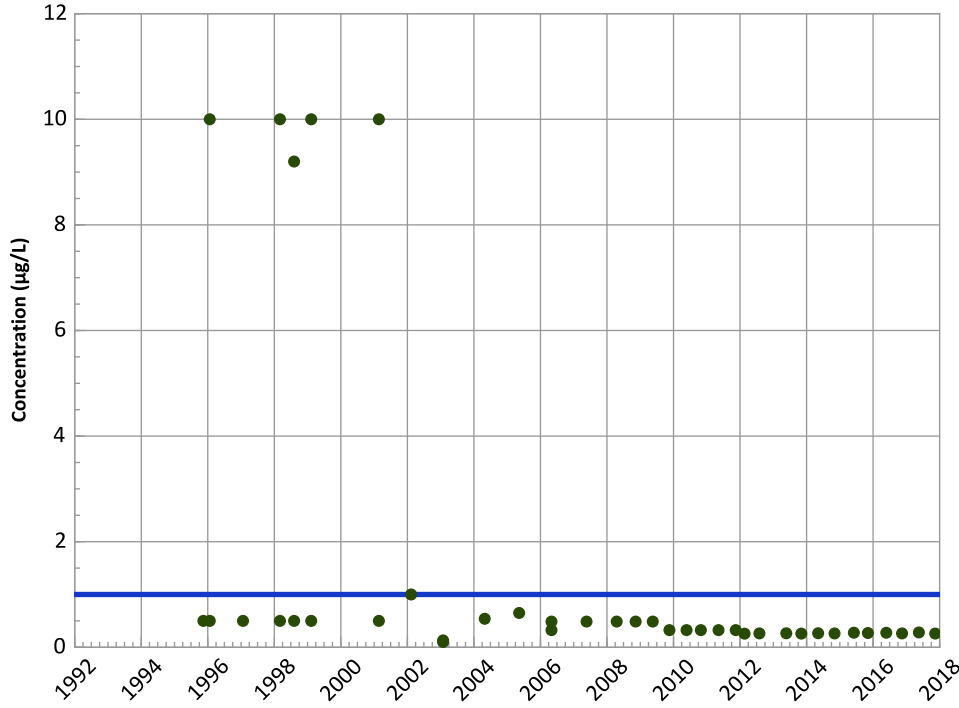
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX08-1009 in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

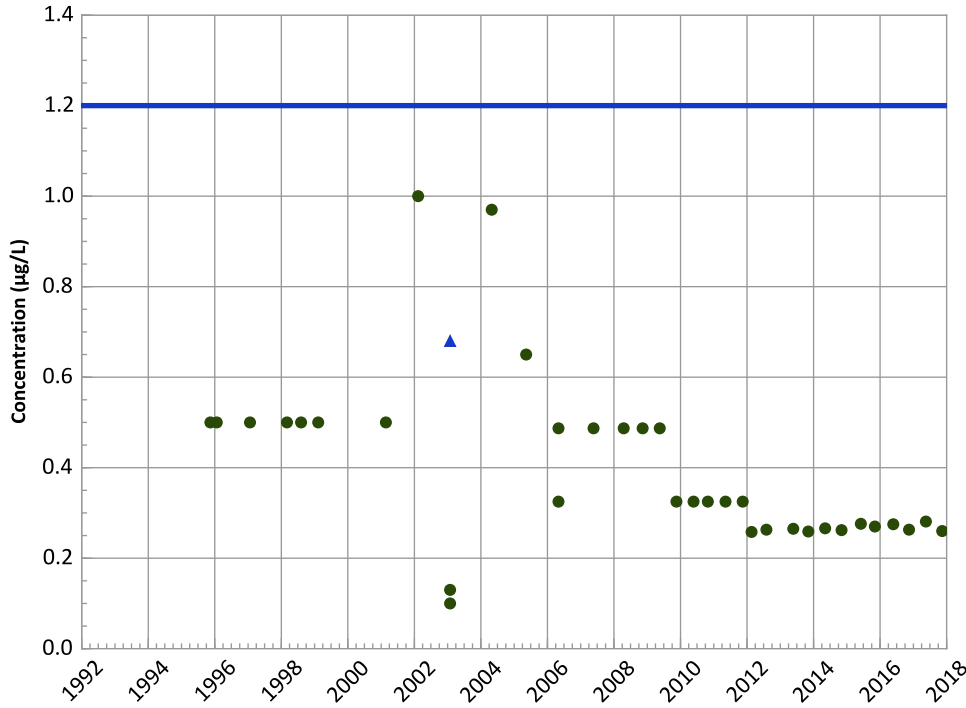
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

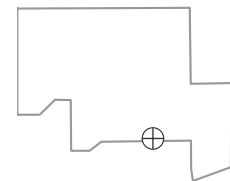
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

Well Location

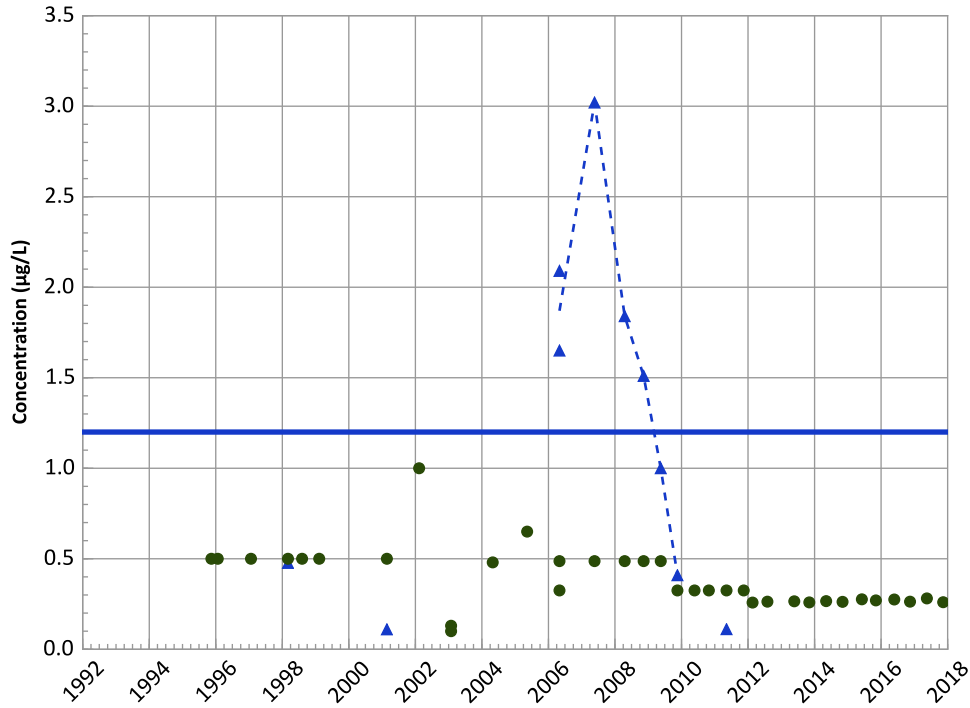


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/14/1995 to 11/13/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX08-1009 in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

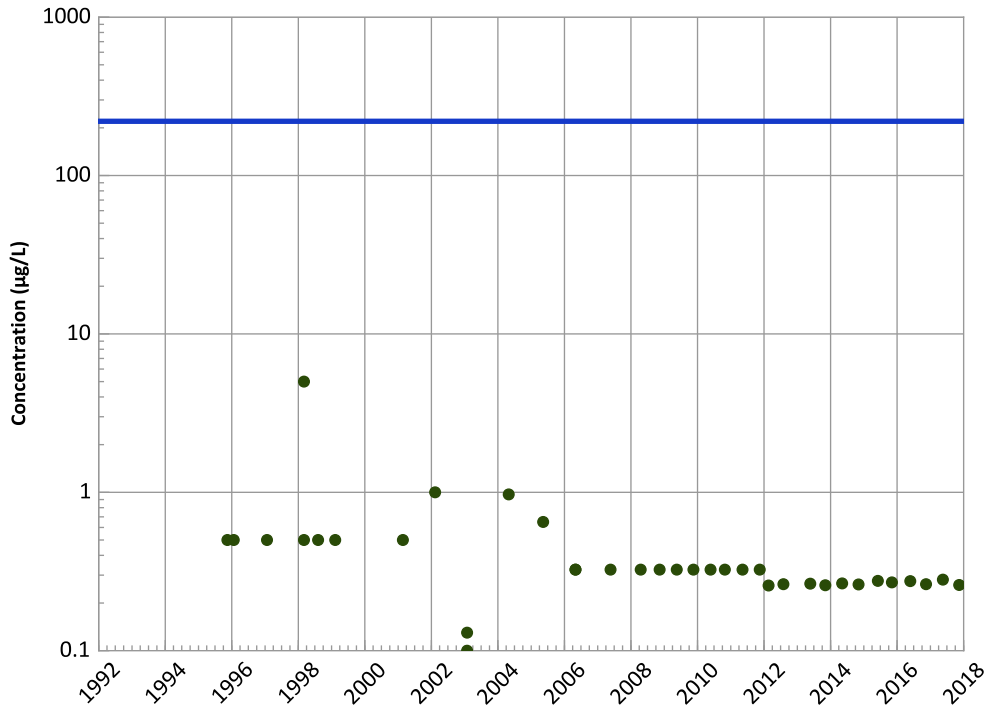
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
Decreasing

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
No Trend

1,3,5-Trinitrobenzene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

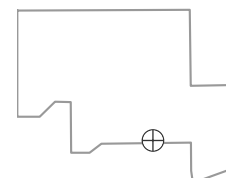
MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/14/1995 to 11/13/2017
Analysis Date: 03/21/2018

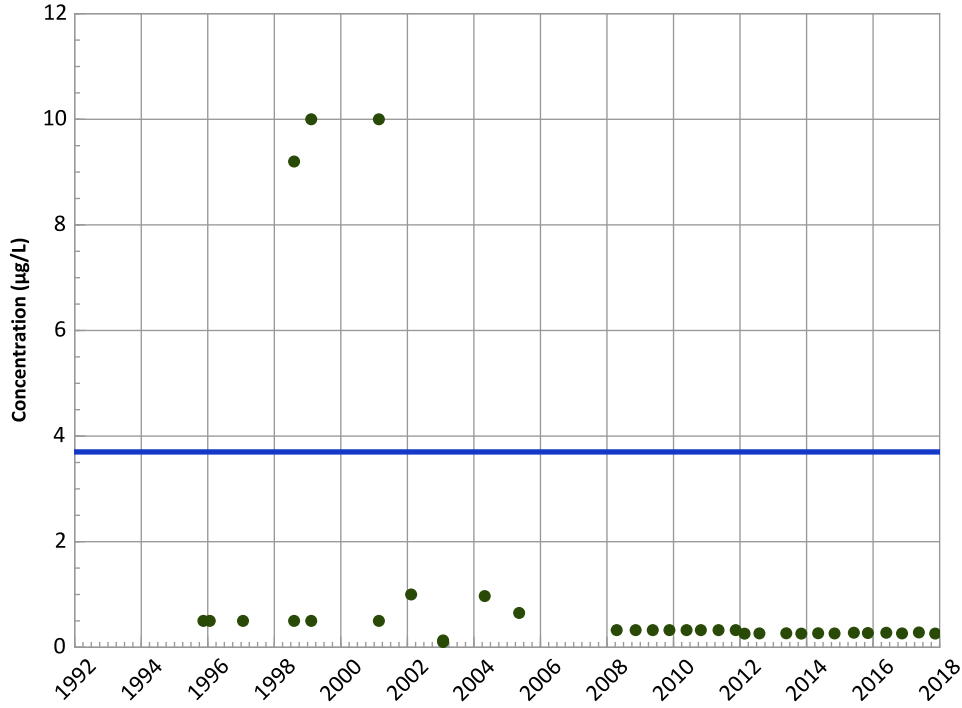
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX08-1009 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

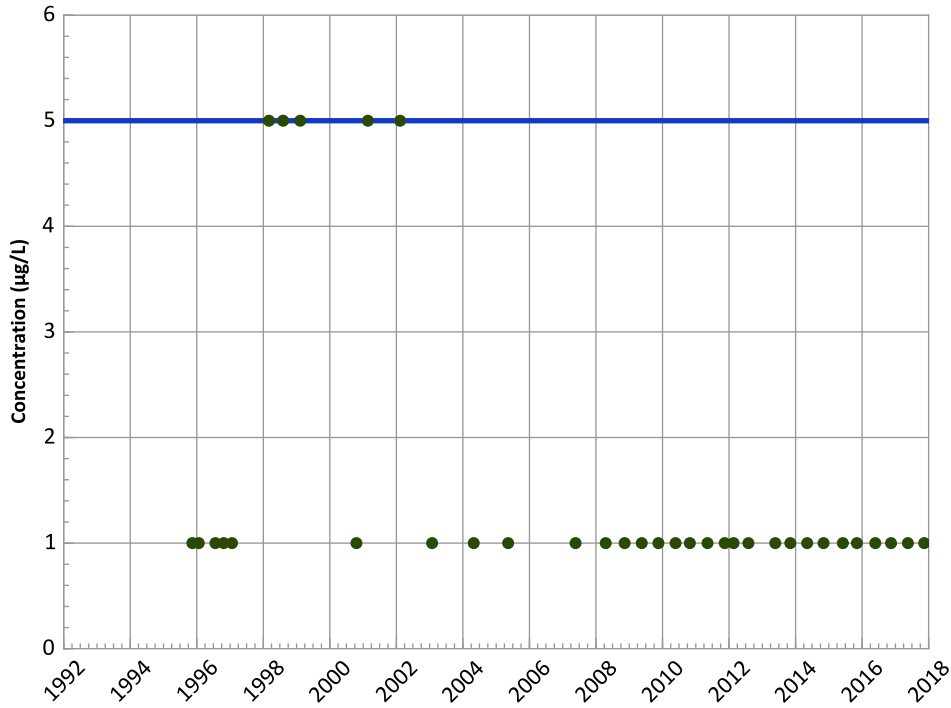
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Tetrachloroethylene (PCE) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

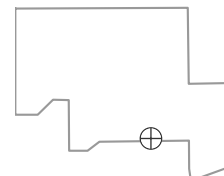
MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/14/1995 to 11/13/2017
Analysis Date: 03/21/2018

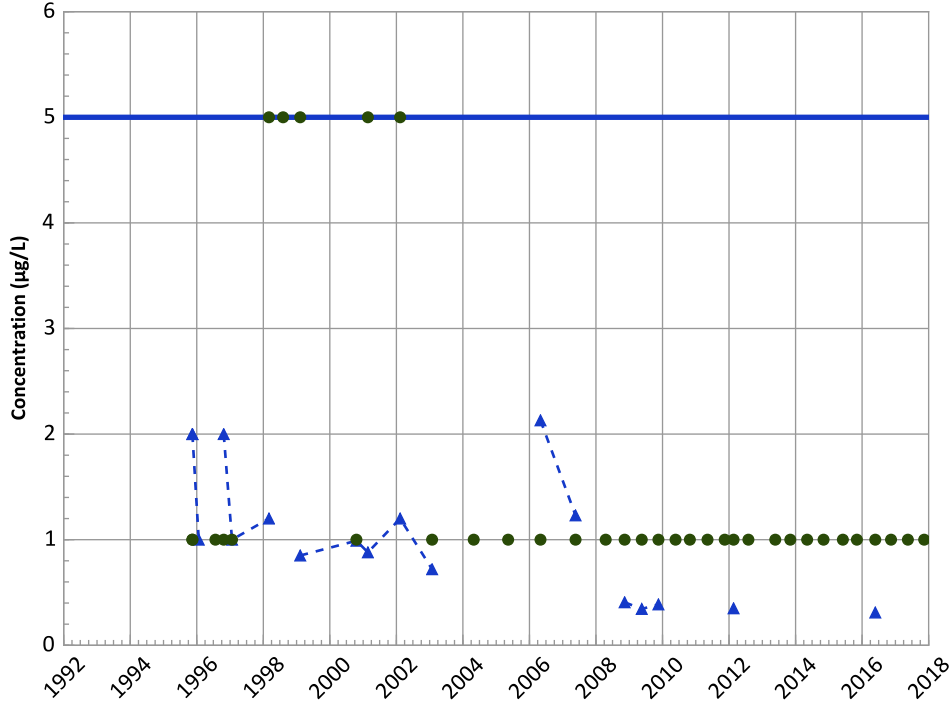
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX08-1009 in Perched Aquifer
USDOE/NNSA Pantex Plant

Trichloroethene Trend

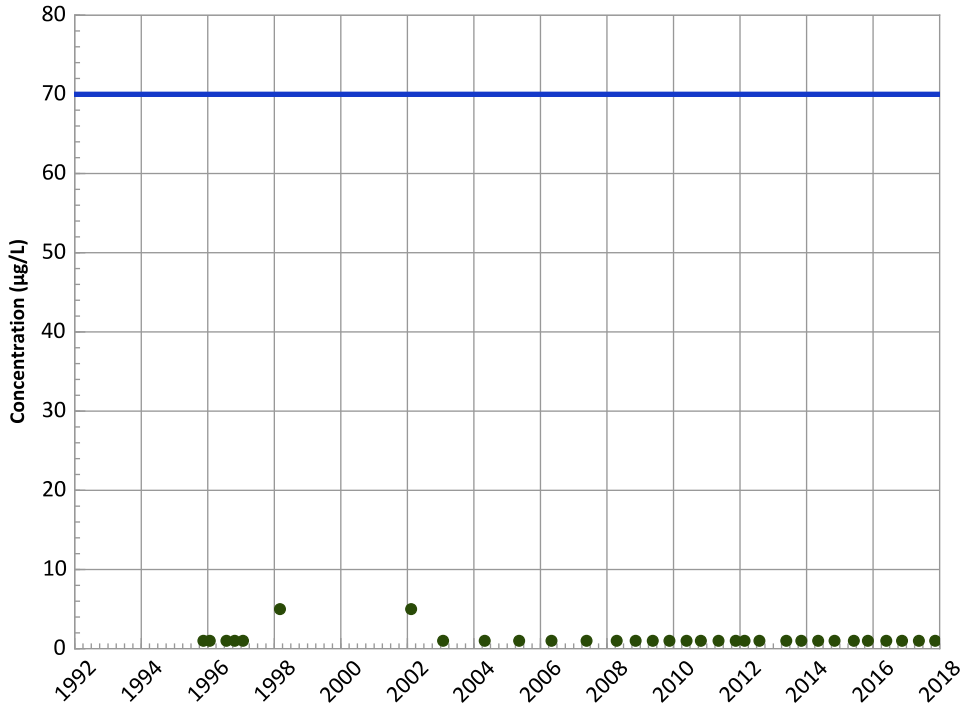


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

MAROS Linear Regression Method
Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

cis-1,2-Dichloroethene Trend

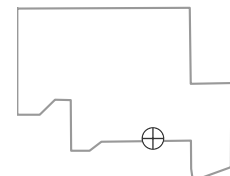


Concentration Trend

MAROS Mann-Kendall Method
Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method
Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

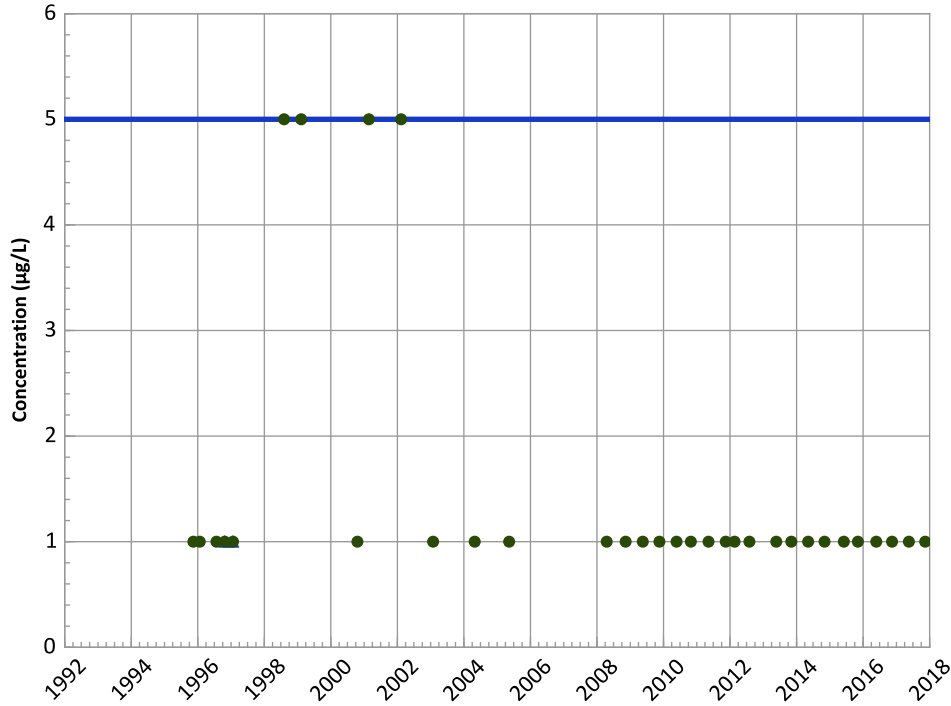


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/14/1995 to 11/13/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX08-1009 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,2-Dichloroethane Trend



Concentration Trend

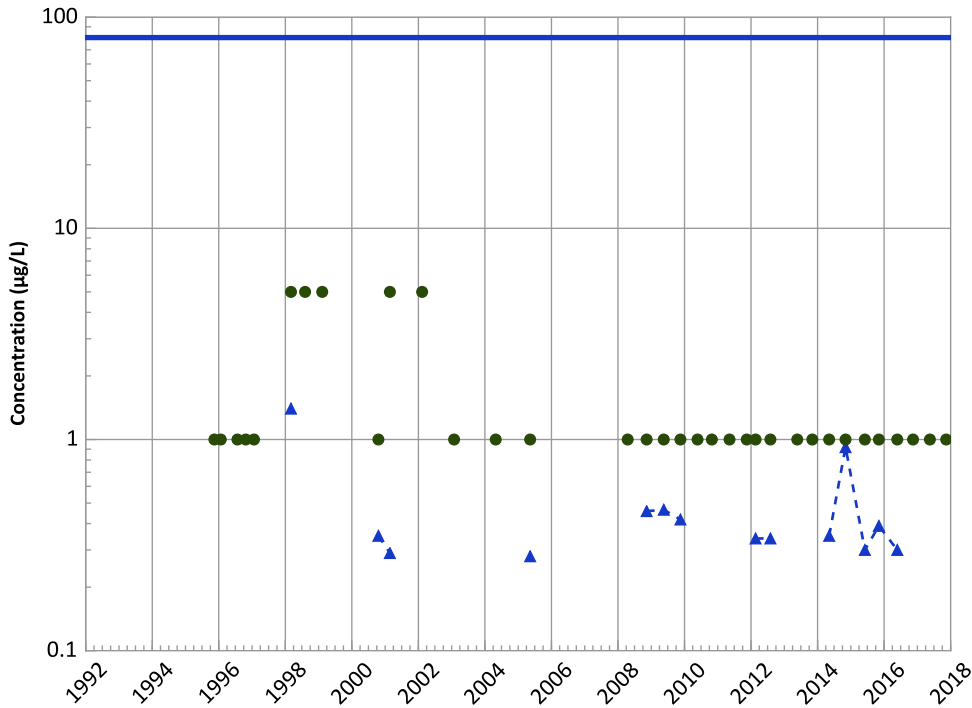
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

Chloroform Trend



Concentration Trend

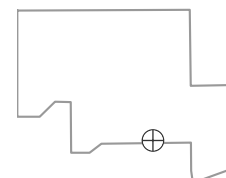
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
Stable

Well Location

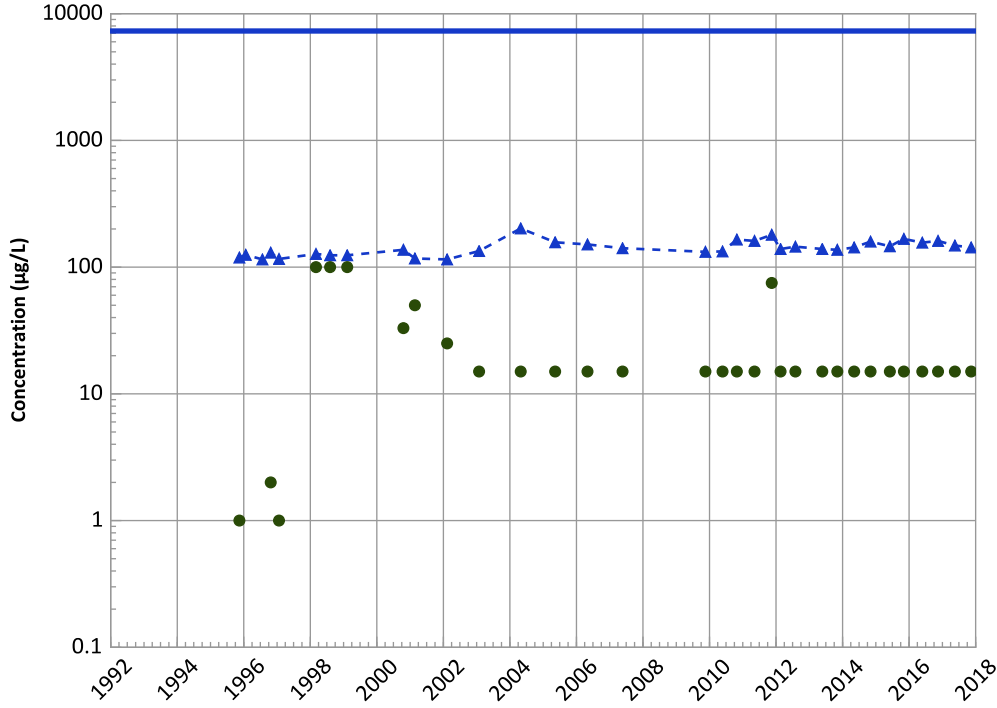


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/14/1995 to 11/13/2017
Analysis Date: 03/21/2018

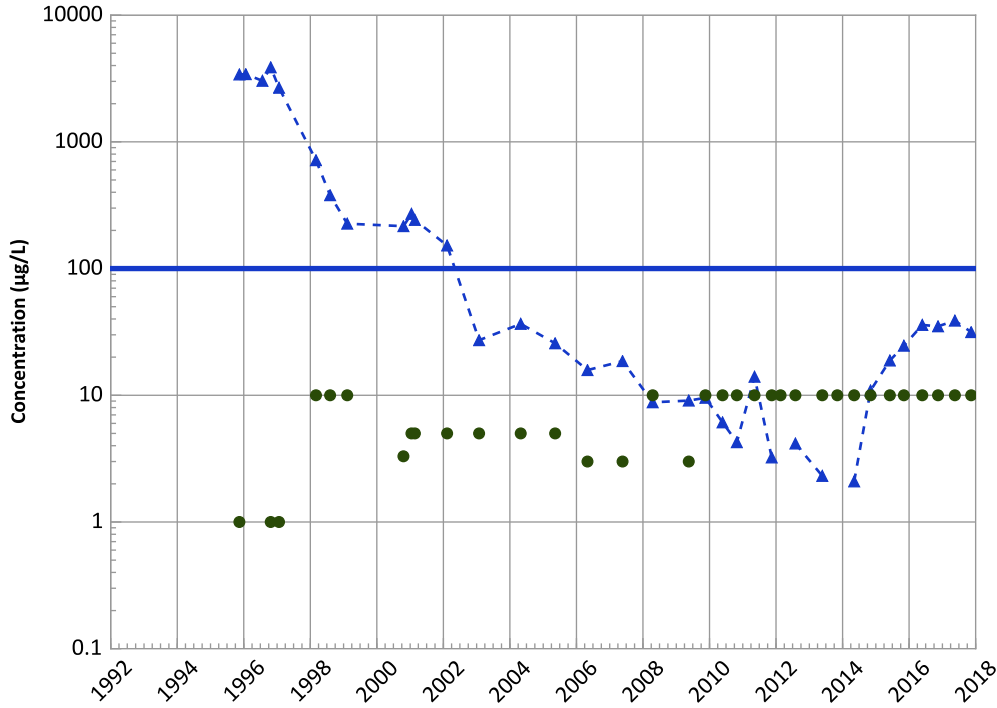
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX08-1009 in Perched Aquifer
USDOE/NNSA Pantex Plant

Boron Trend



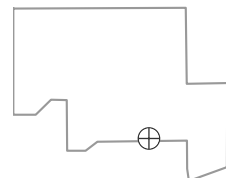
Chromium, Total Trend



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/14/1995 to 11/13/2017
Analysis Date: 03/21/2018

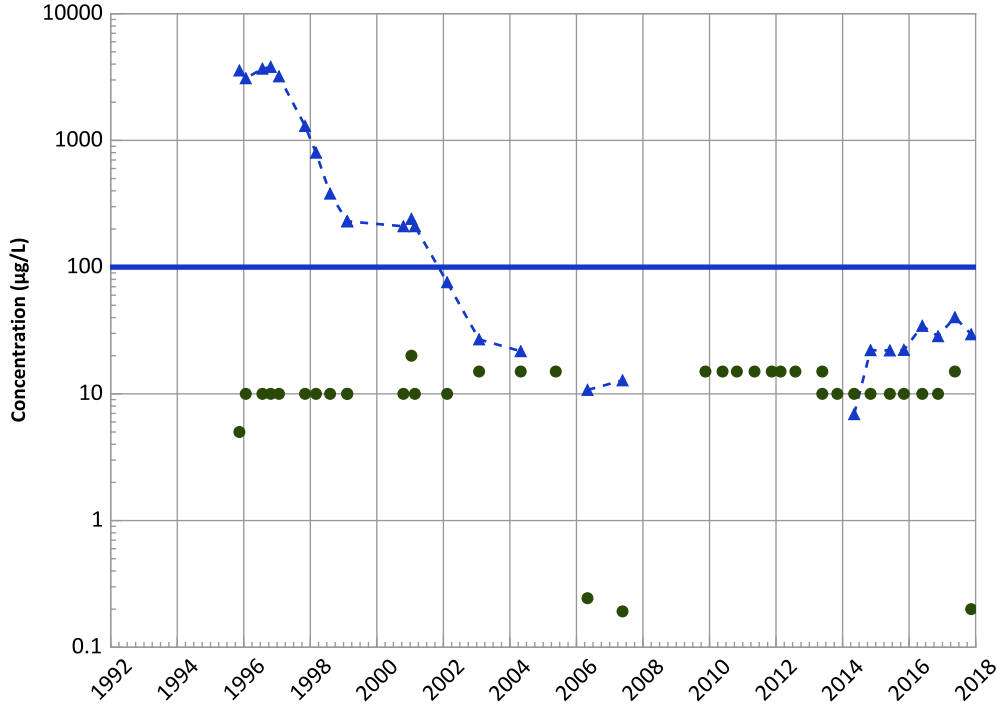
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX08-1009 in Perched Aquifer
USDOE/NNSA Pantex Plant

Chromium, Hexavalent Trend



Concentration Trend

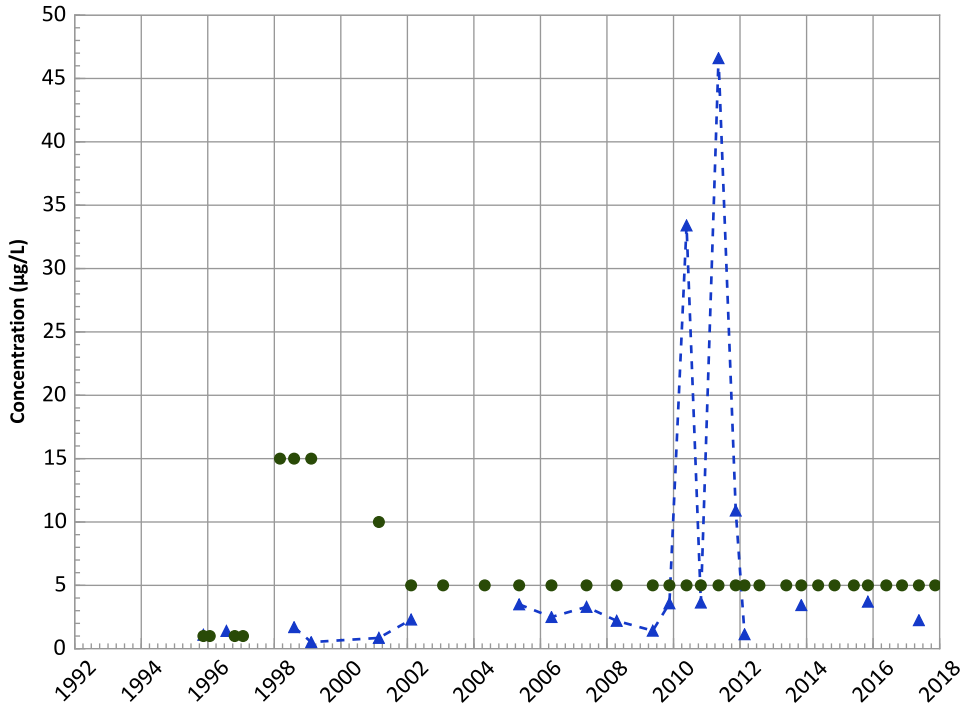
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Decreasing

Manganese Trend



Concentration Trend

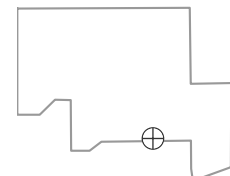
MAROS Mann-Kendall Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Increasing

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Increasing

Well Location

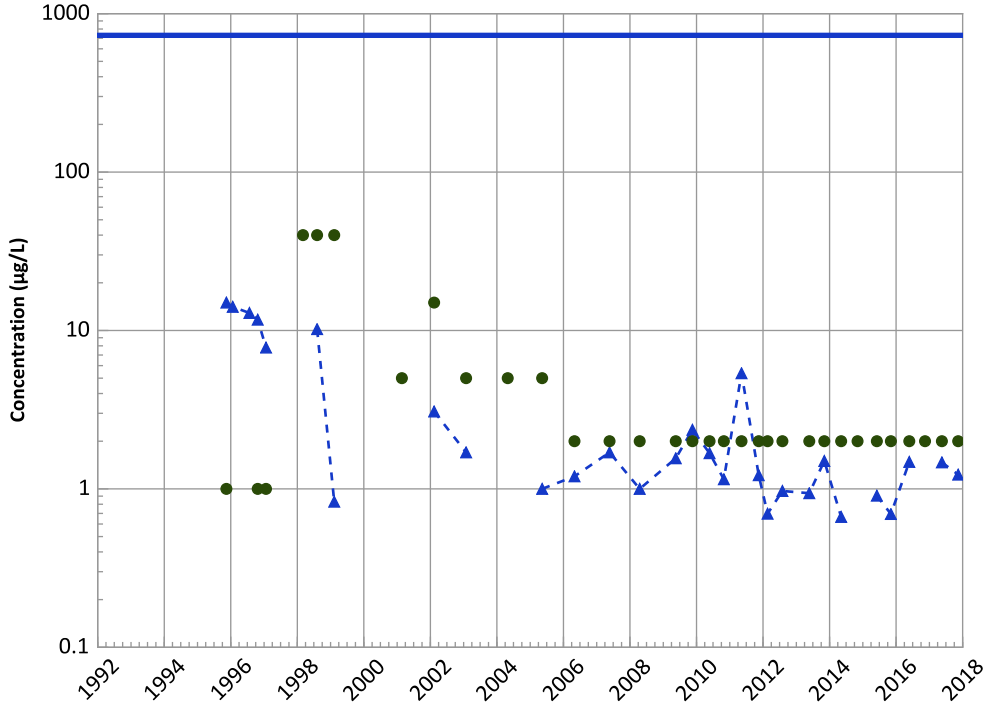


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/14/1995 to 11/13/2017
Analysis Date: 03/21/2018

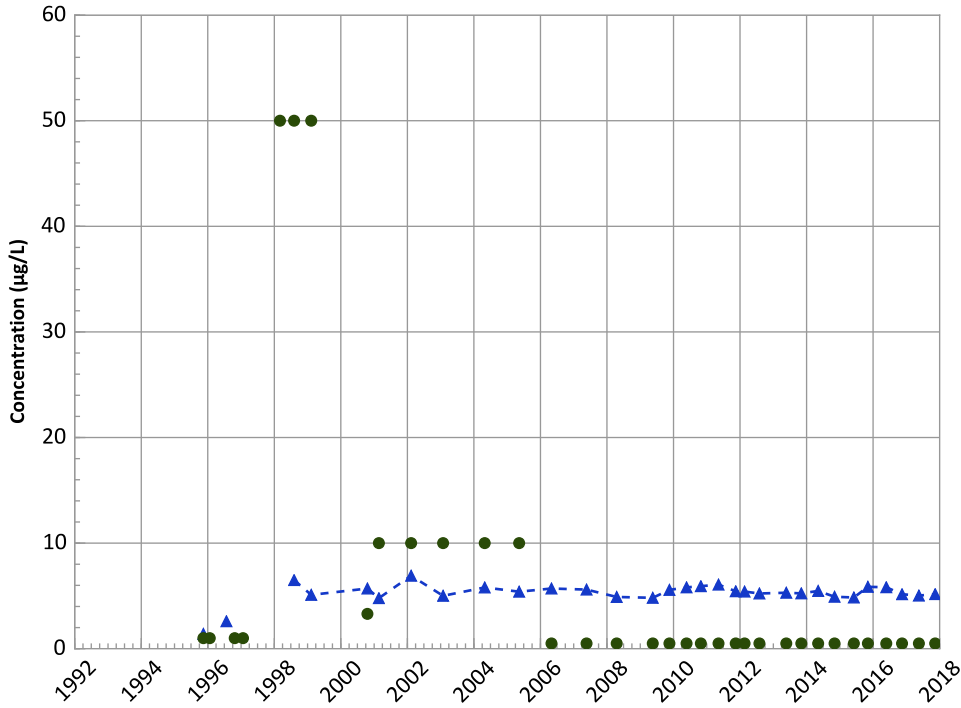
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX08-1009 in Perched Aquifer
USDOE/NNSA Pantex Plant

Nickel Trend



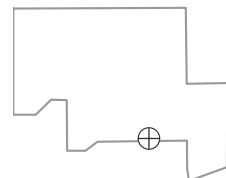
Molybdenum Trend



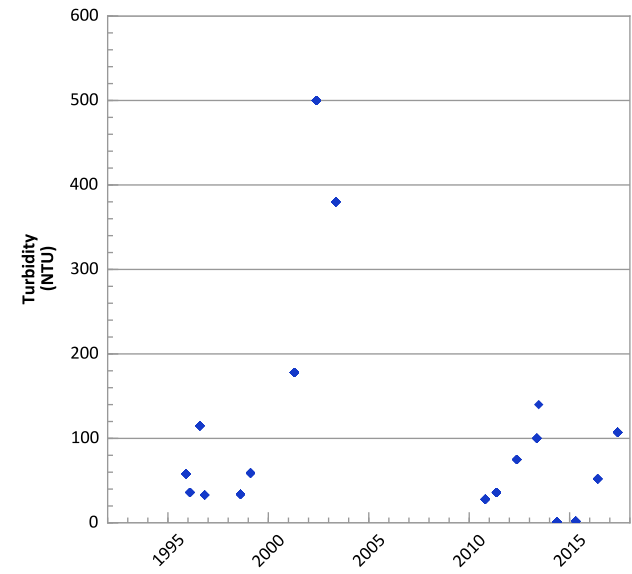
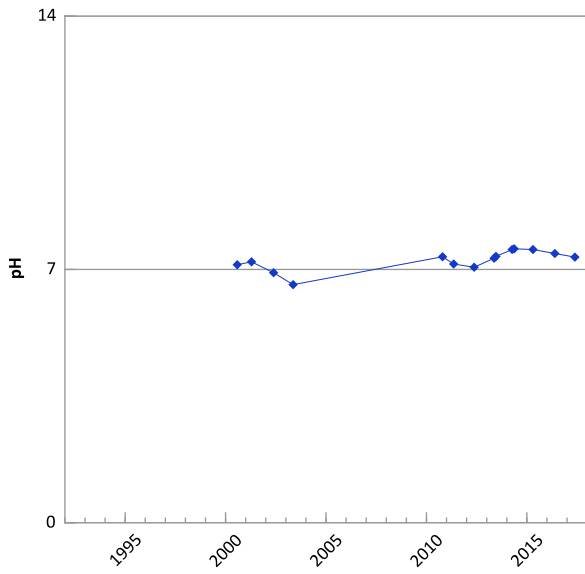
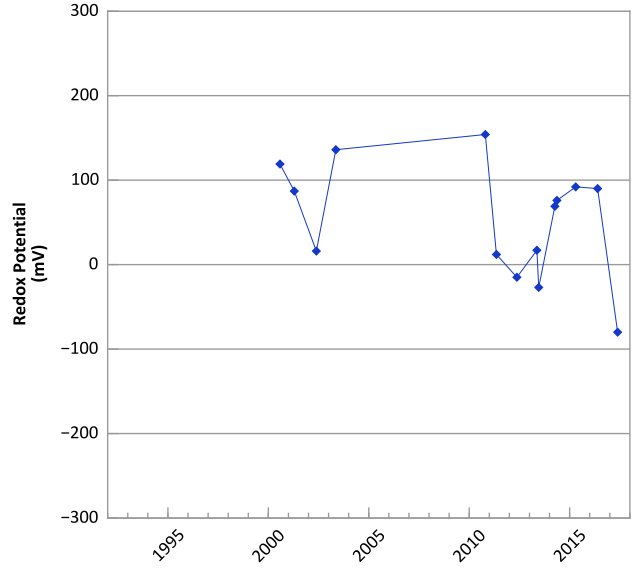
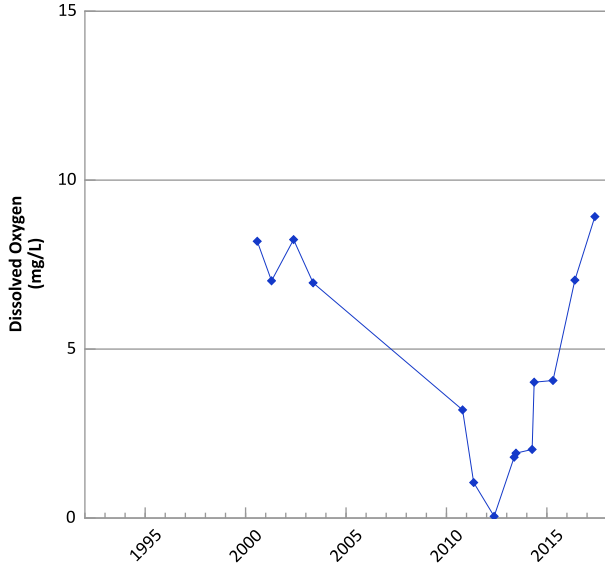
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 11/14/1995 to 11/13/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

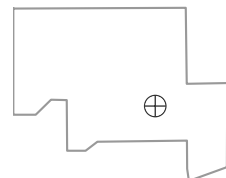


**PTX10-1014 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



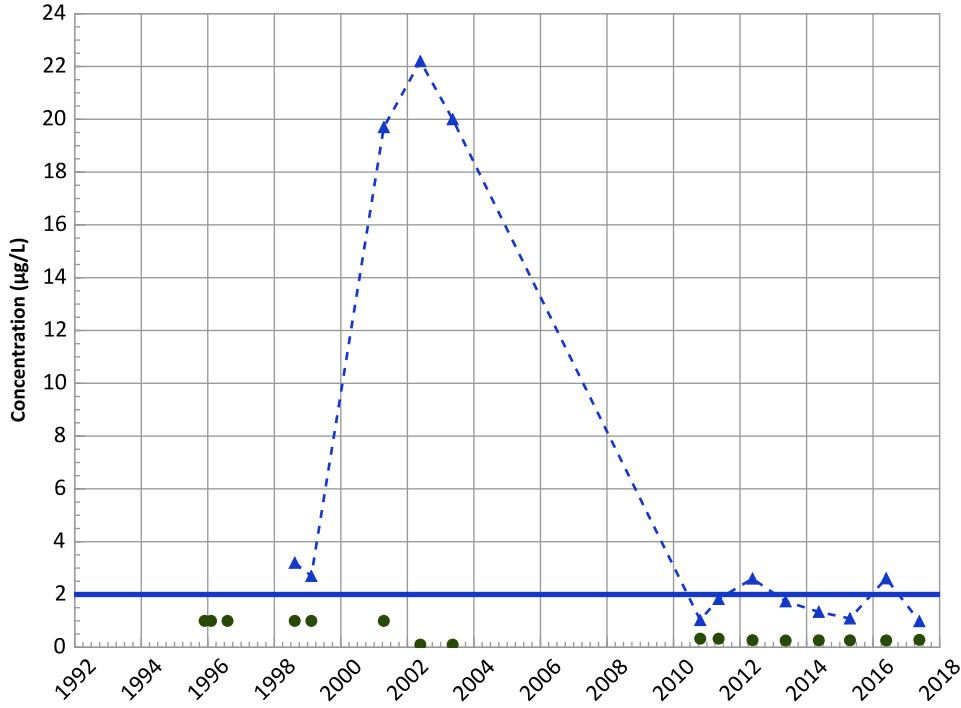
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 07/07/1992 to 05/23/2017
 Analysis Date: 03/21/2018

Well Location



PTX10-1014 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

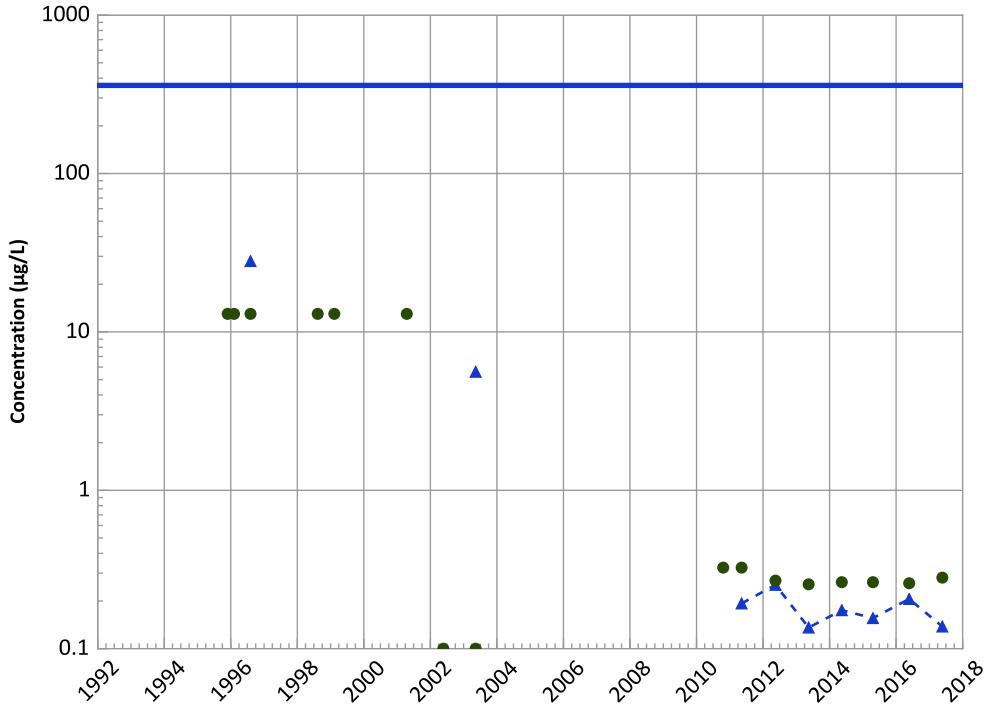
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
No Trend

MAROS Linear Regression Method

Data ():
Stable
All Data
Decreasing

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
Stable
All Data
Decreasing

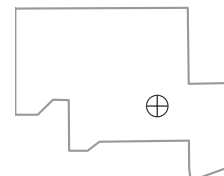
MAROS Linear Regression Method

Data ():
Stable
All Data
Decreasing

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 07/07/1992 to 05/23/2017
Analysis Date: 03/21/2018

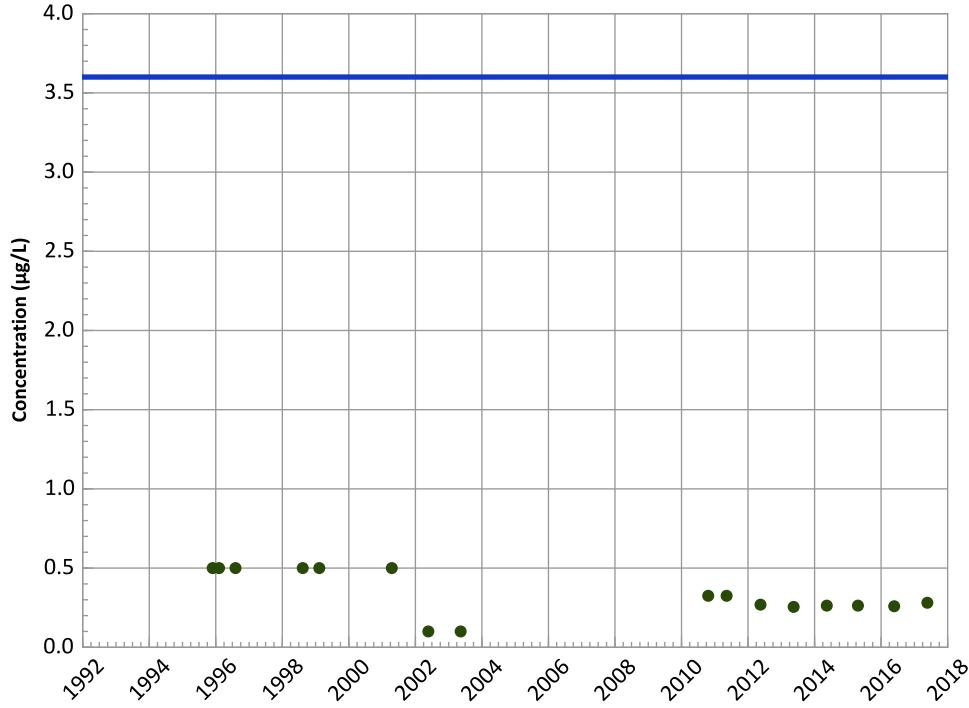
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX10-1014 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

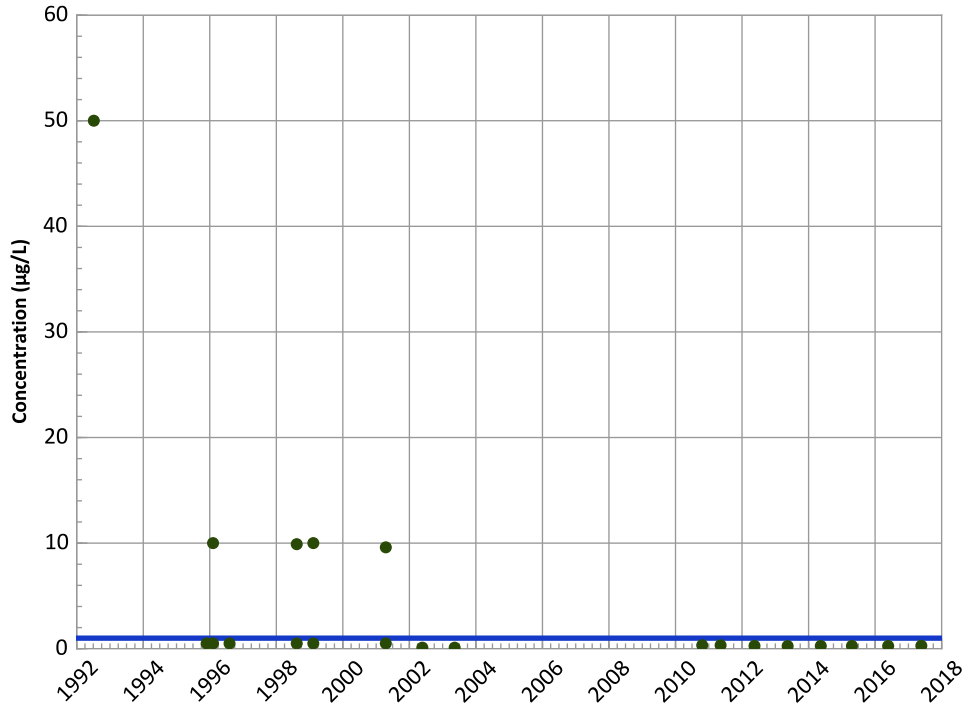
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

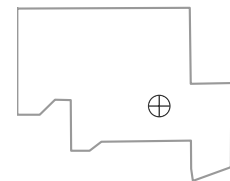
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

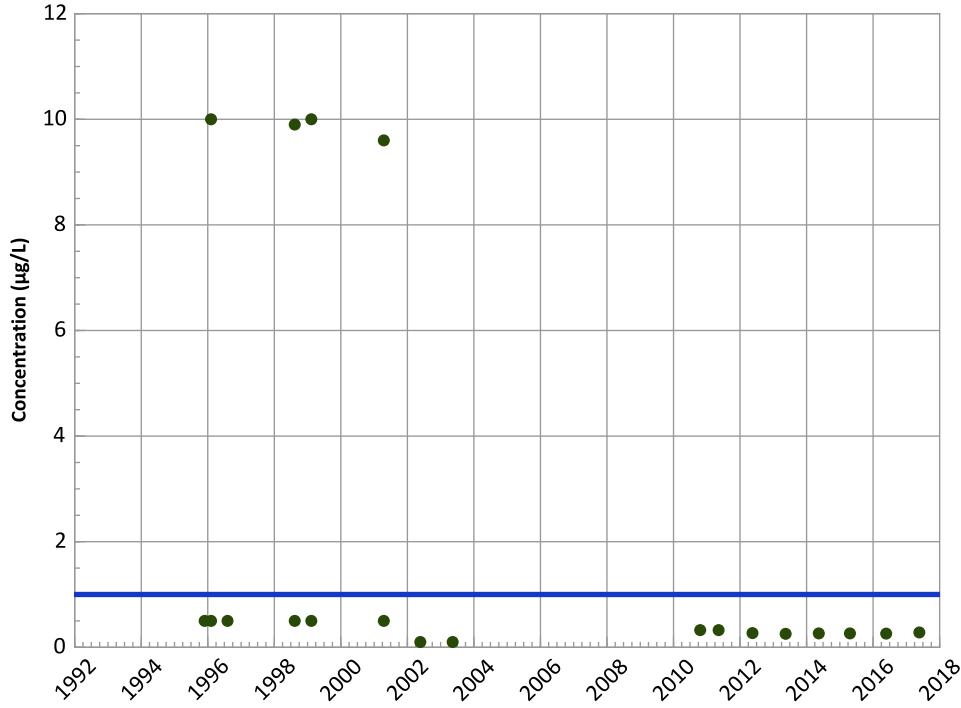


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 07/07/1992 to 05/23/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX10-1014 in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

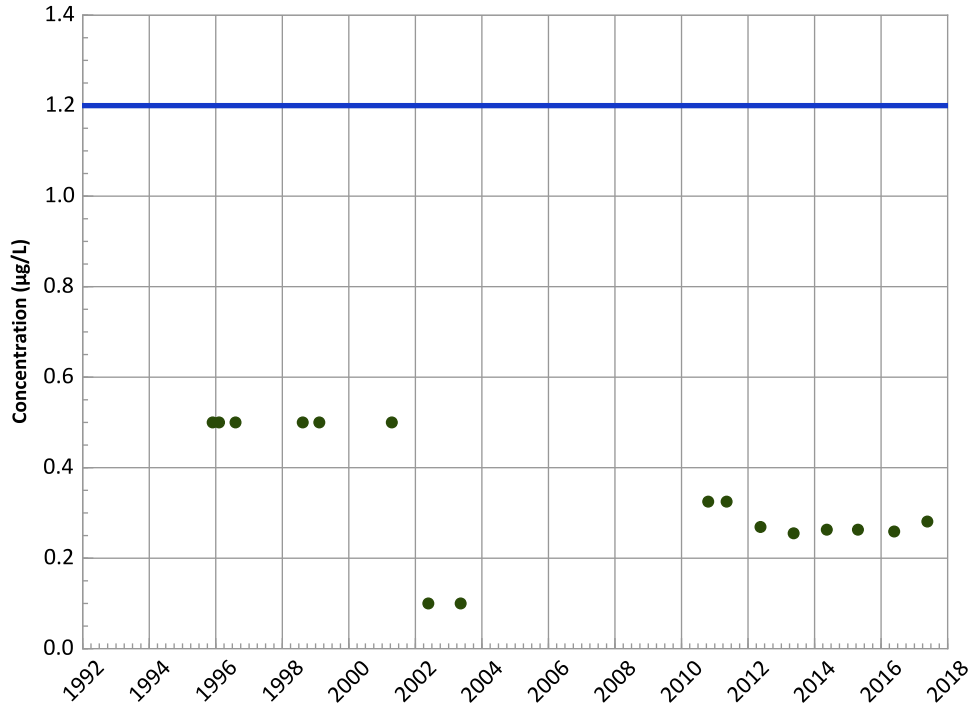
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

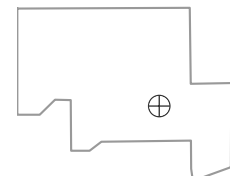
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

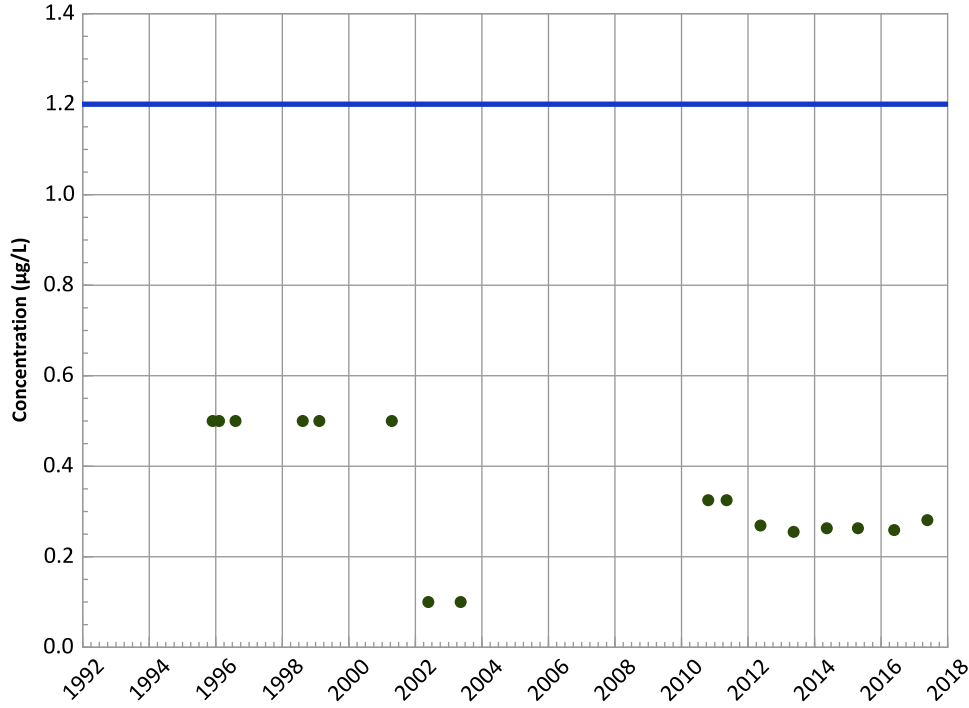


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 07/07/1992 to 05/23/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX10-1014 in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

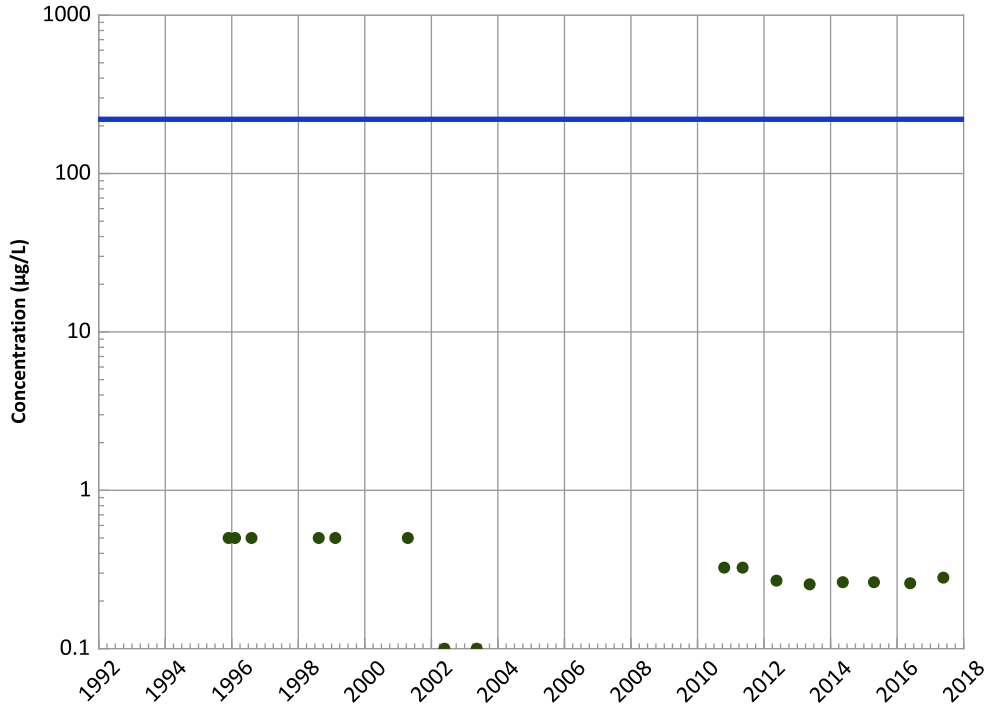
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,3,5-Trinitrobenzene Trend



Concentration Trend

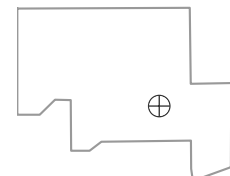
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

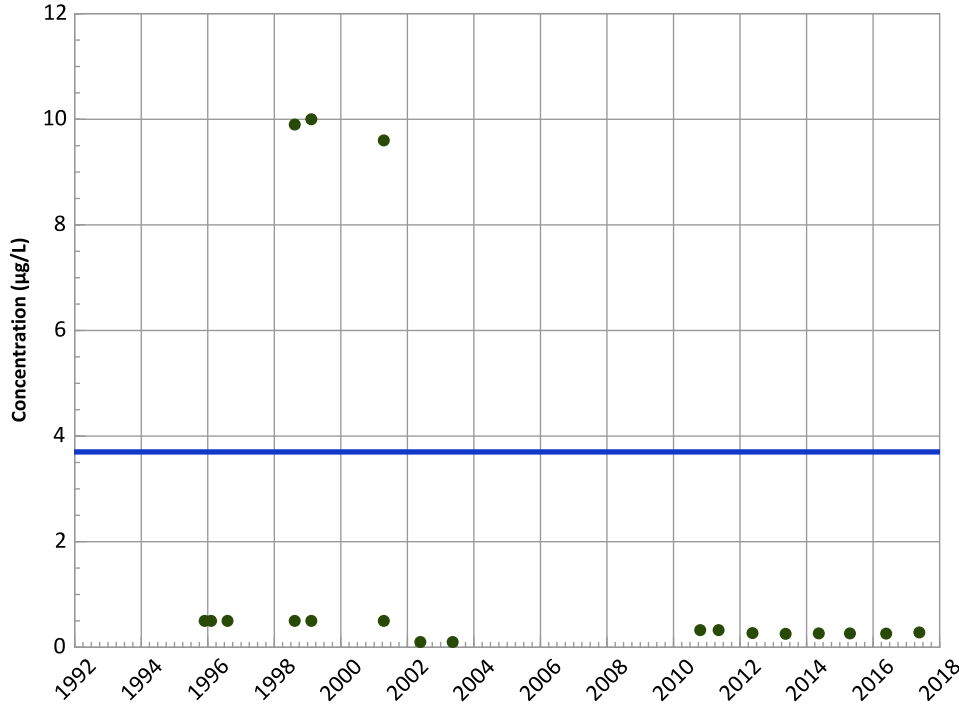


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 07/07/1992 to 05/23/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX10-1014 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

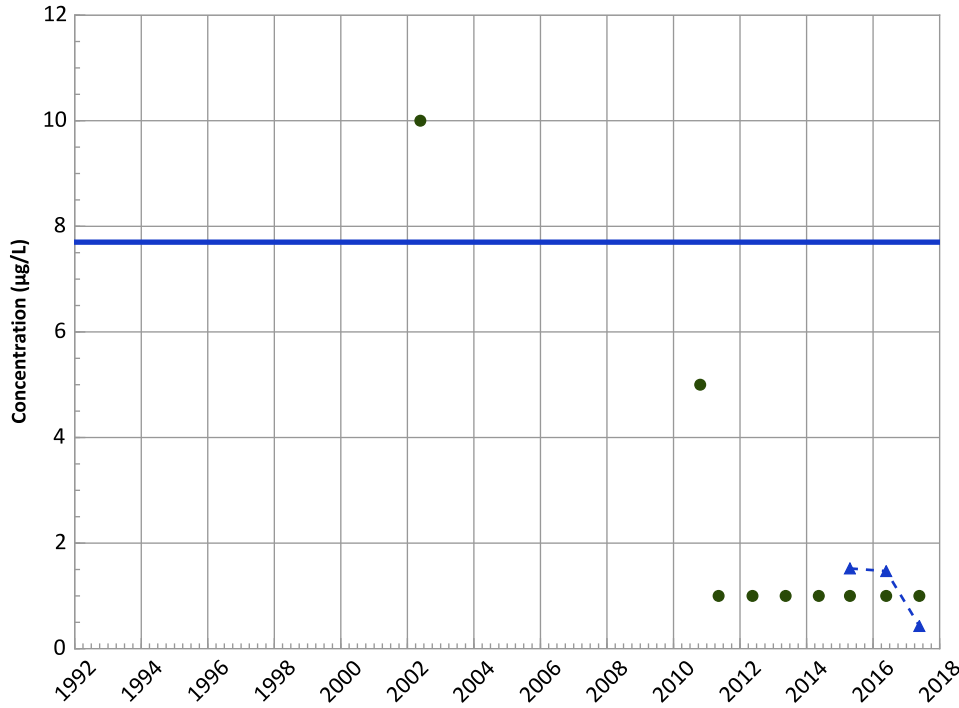
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,4-Dioxane (p-Dioxane) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
N/A (<4 Detections in Dataset)
All Data
N/A (<4 Detections in Dataset)

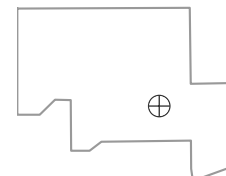
MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
N/A (<4 Detections in Dataset)

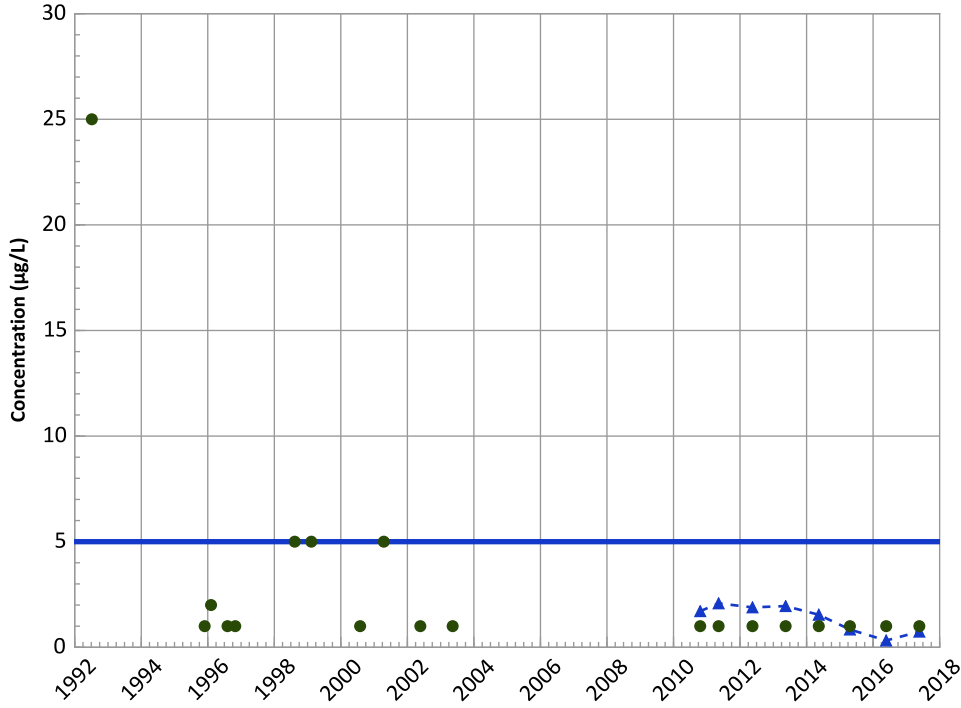
Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 07/07/1992 to 05/23/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



**PTX10-1014 in Perched Aquifer
USDOE/NNSA Pantex Plant
Tetrachloroethylene (PCE) Trend**



Concentration Trend

MAROS Mann-Kendall Method

Data ():

Decreasing

All Data

Decreasing

MAROS Linear Regression Method

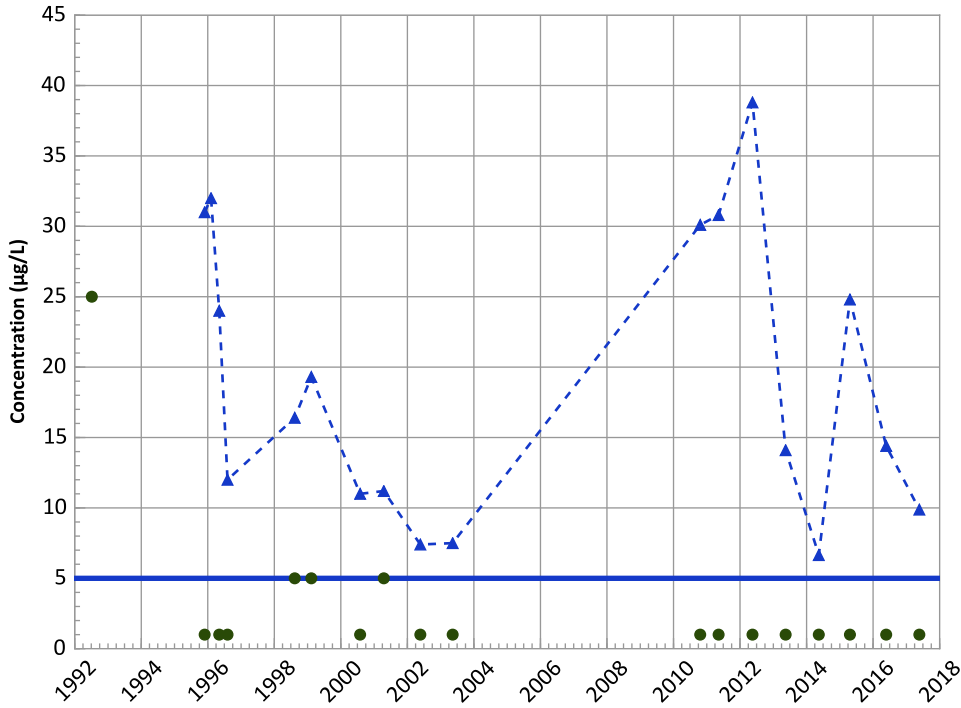
Data ():

Decreasing

All Data

Decreasing

Trichloroethene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

Decreasing

All Data

Decreasing

MAROS Linear Regression Method

Data ():

Stable

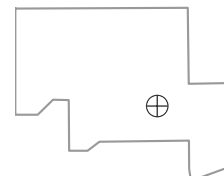
All Data

Stable

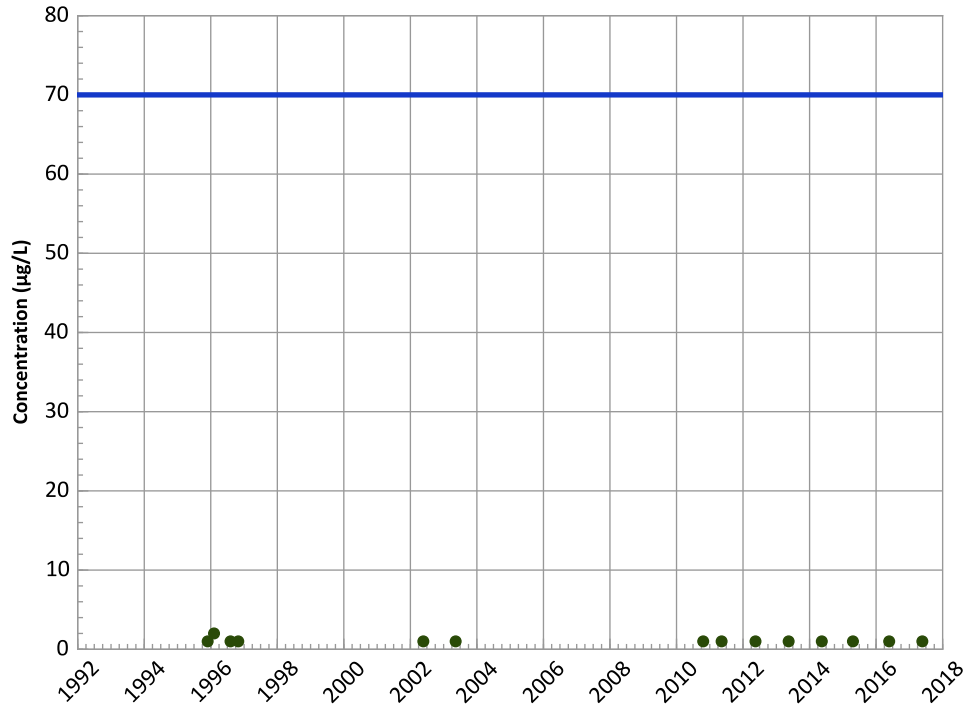
Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 07/07/1992 to 05/23/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



**PTX10-1014 in Perched Aquifer
USDOE/NNSA Pantex Plant
cis-1,2-Dichloroethene Trend**



Concentration Trend

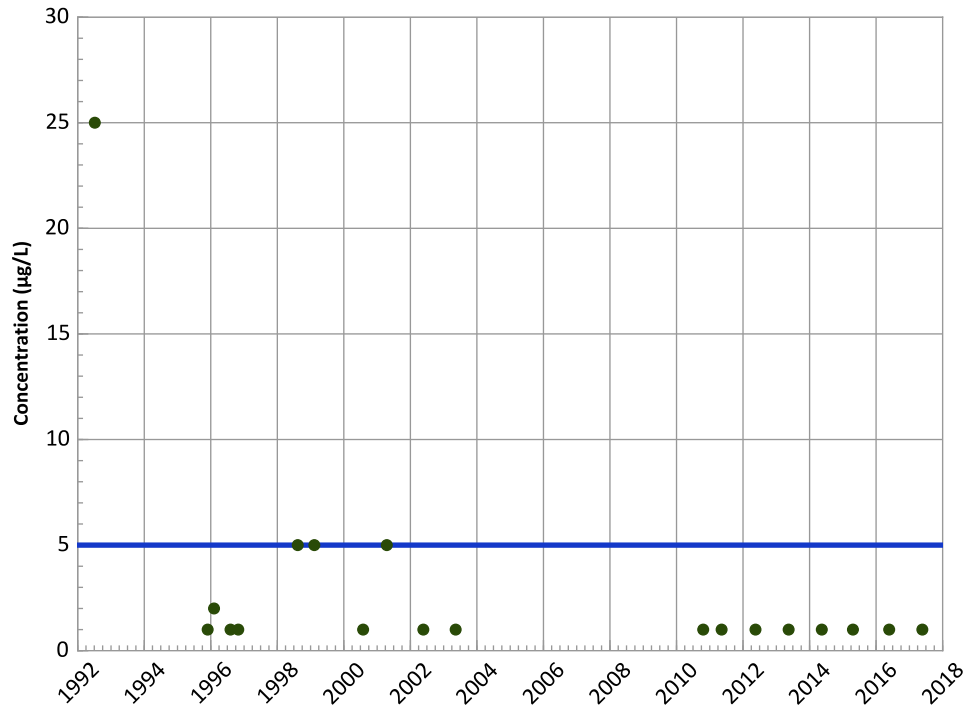
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,2-Dichloroethane Trend



Concentration Trend

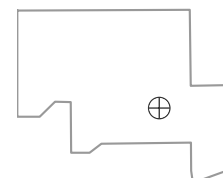
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

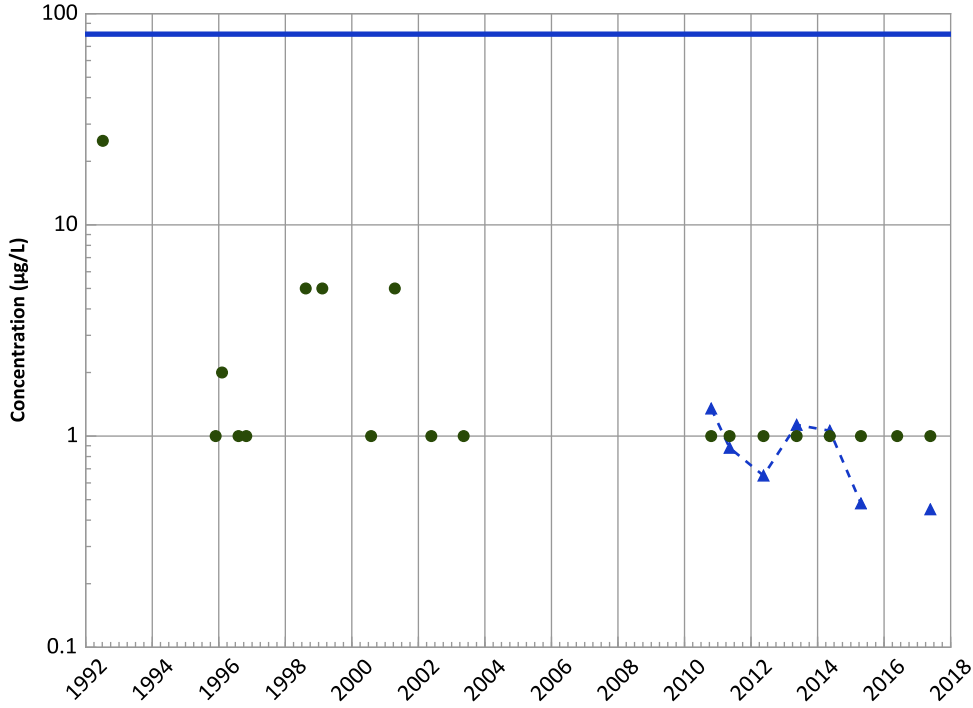


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 07/07/1992 to 05/23/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX10-1014 in Perched Aquifer
USDOE/NNSA Pantex Plant

Chloroform Trend



Concentration Trend

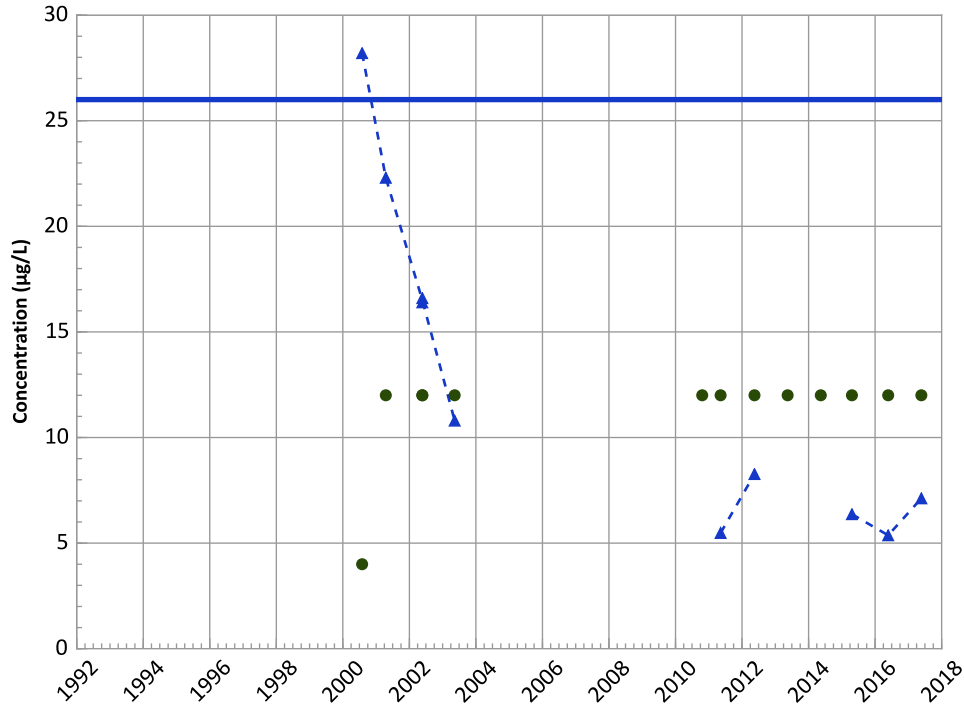
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Stable
All Data
Decreasing

Perchlorate Trend



Concentration Trend

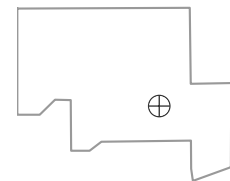
MAROS Mann-Kendall Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

Well Location

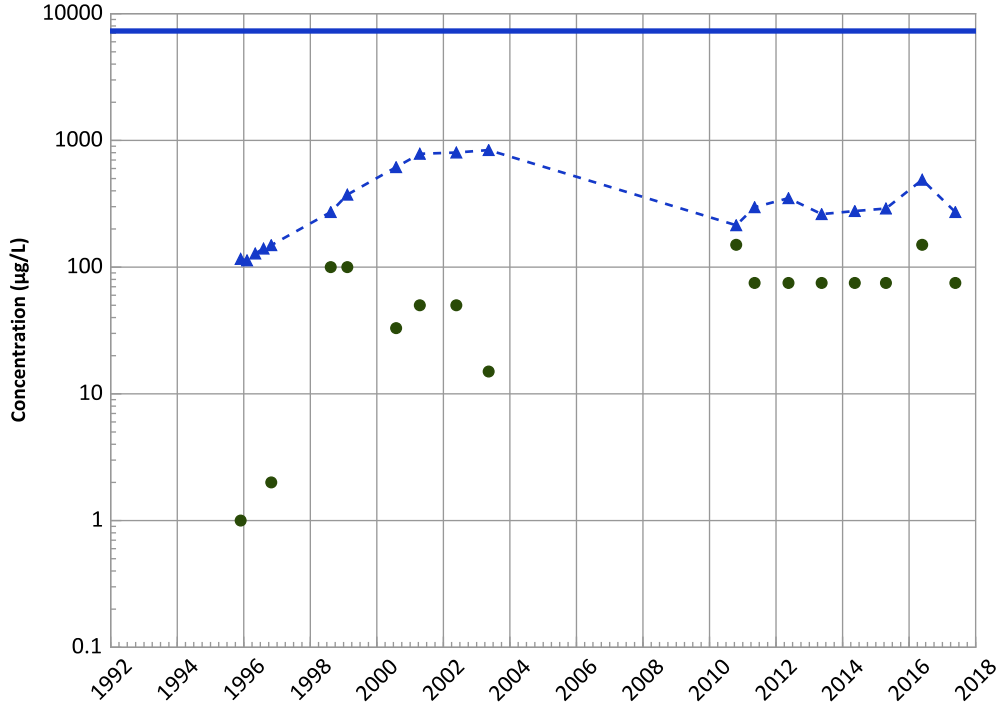


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 07/07/1992 to 05/23/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX10-1014 in Perched Aquifer
USDOE/NNSA Pantex Plant

Boron Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

No Trend

All Data

Increasing

MAROS Linear Regression Method

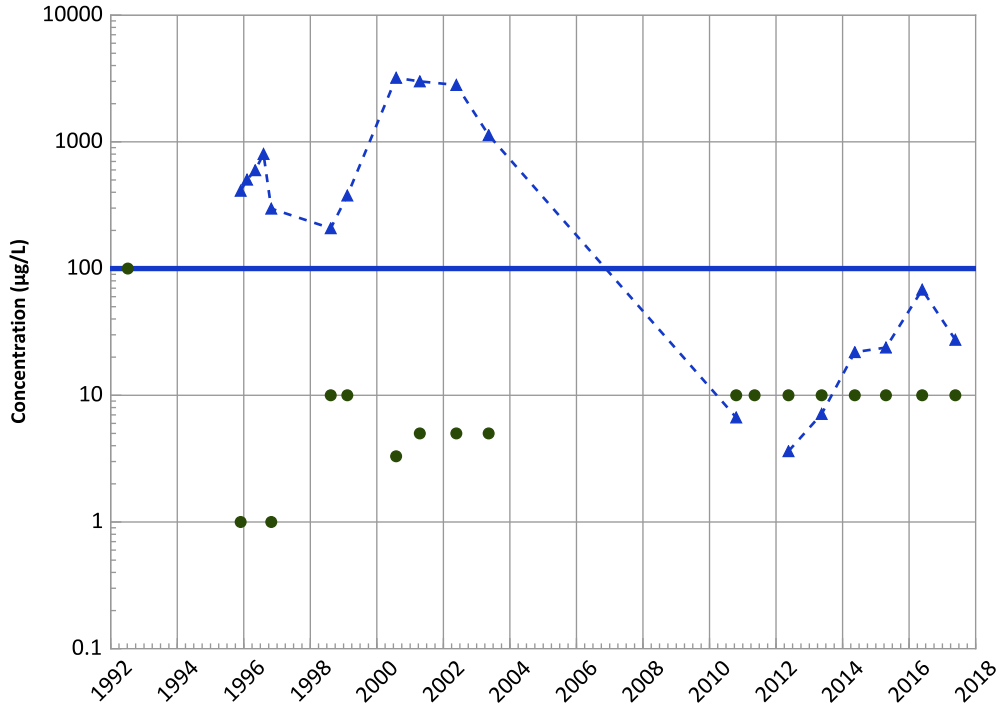
Data ():

No Trend

All Data

No Trend

Chromium, Total Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

Increasing

All Data

Decreasing

MAROS Linear Regression Method

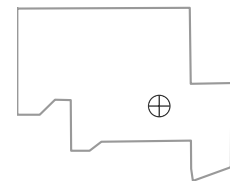
Data ():

Increasing

All Data

Decreasing

Well Location

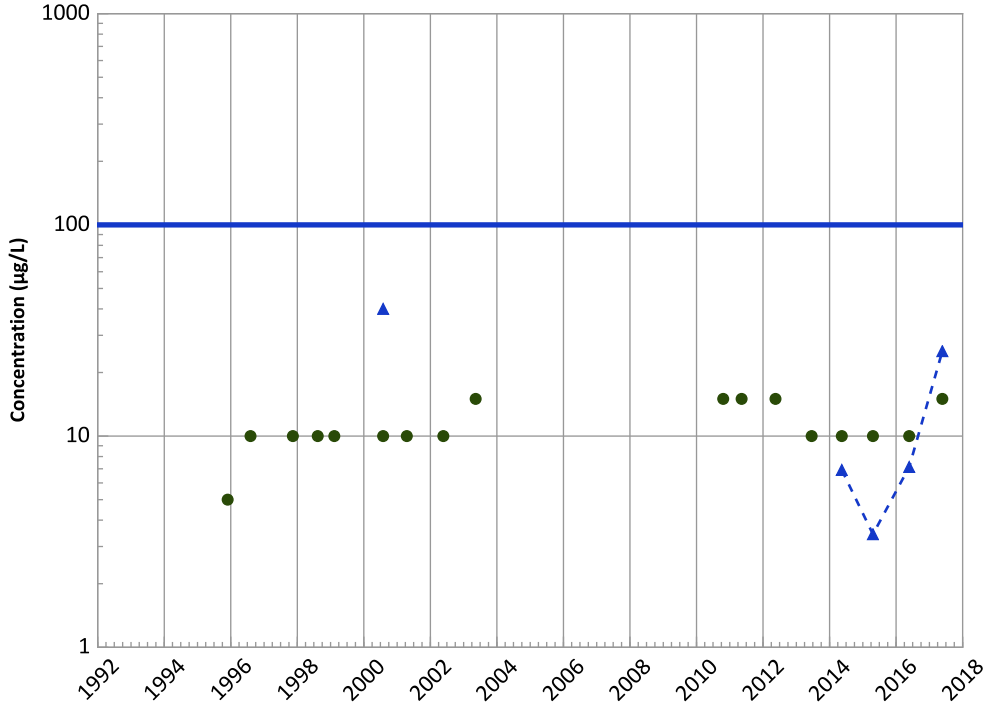


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 07/07/1992 to 05/23/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX10-1014 in Perched Aquifer
USDOE/NNSA Pantex Plant

Chromium, Hexavalent Trend

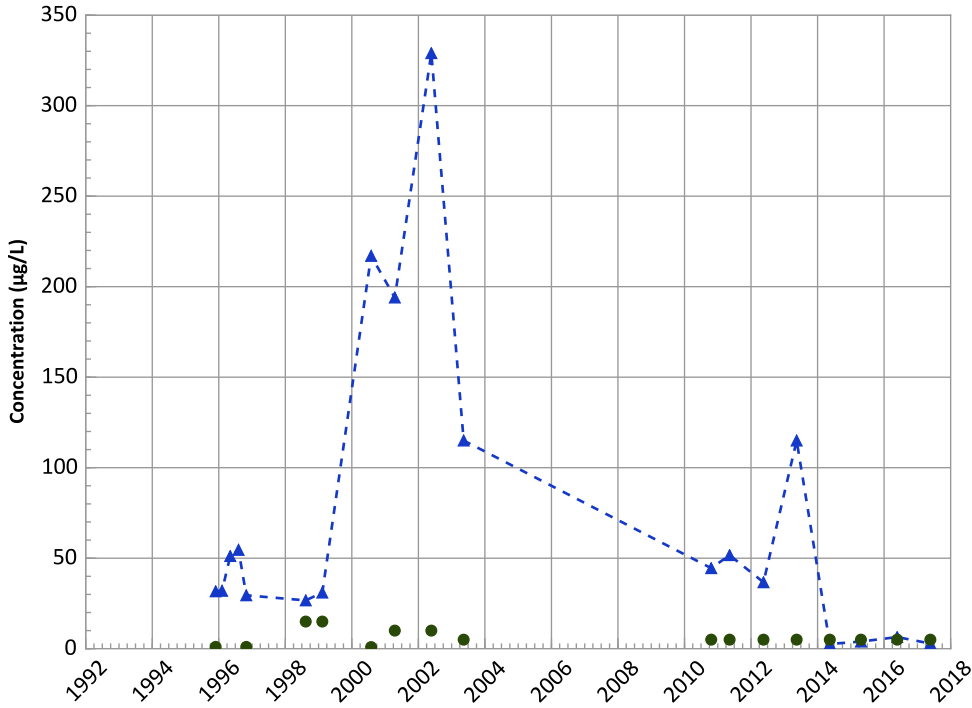


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Detections in Dataset)
All Data
Increasing

MAROS Linear Regression Method
Data ():
N/A (<4 Detections in Dataset)
All Data
Stable

Manganese Trend

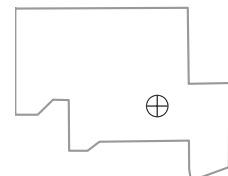


Concentration Trend

MAROS Mann-Kendall Method
Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method
Data ():
No Trend
All Data
Decreasing

Well Location

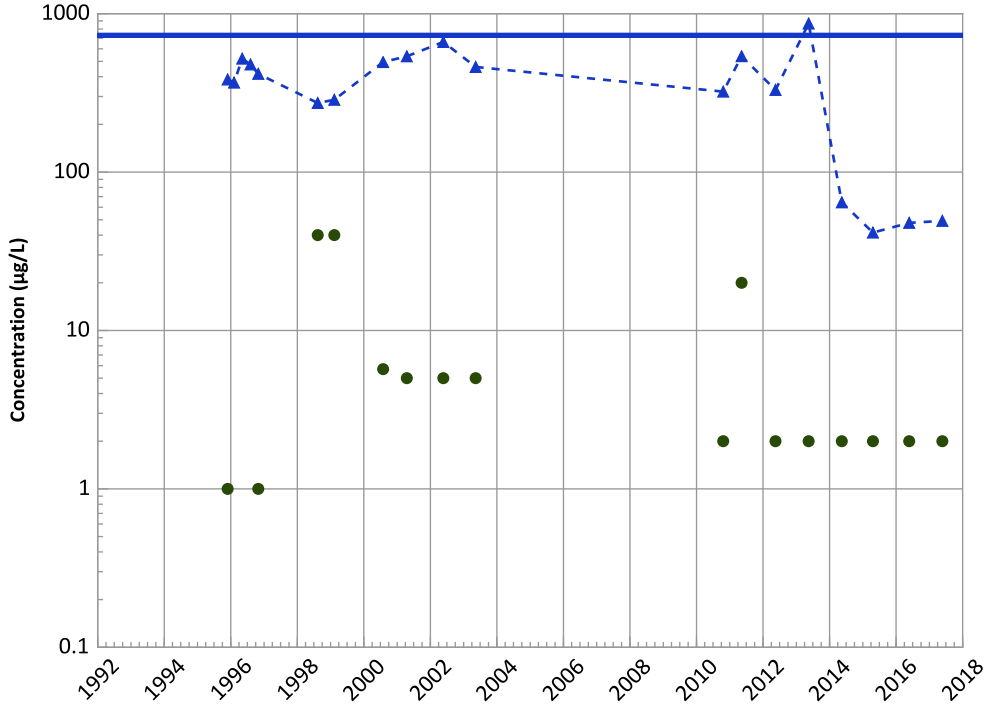


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 07/07/1992 to 05/23/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX10-1014 in Perched Aquifer
USDOE/NNSA Pantex Plant

Nickel Trend



Concentration Trend

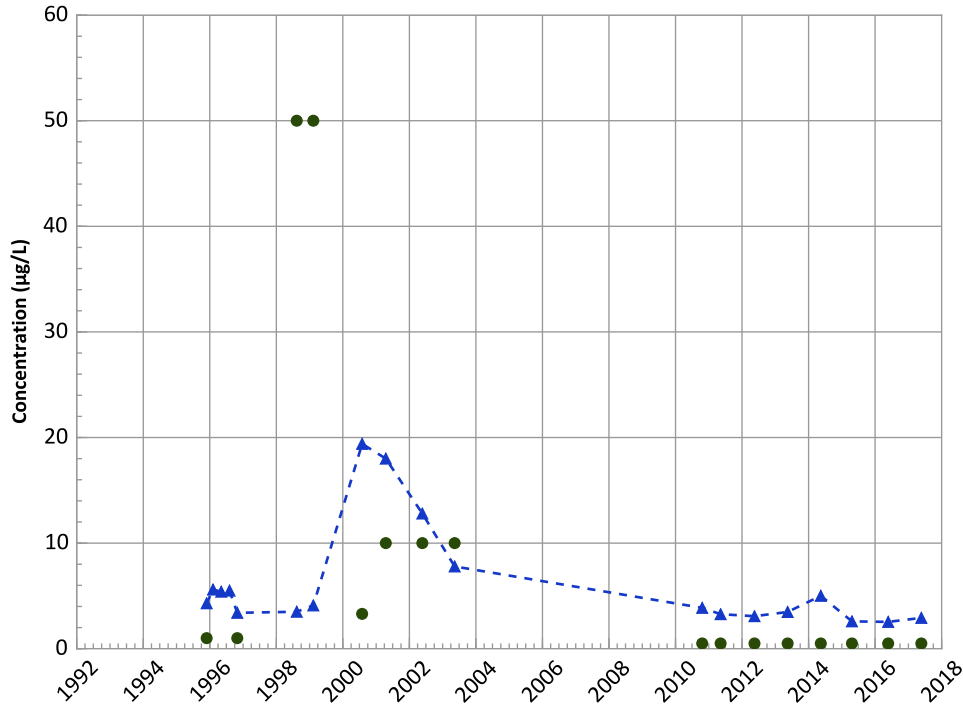
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Probably Decreasing
All Data
Decreasing

Molybdenum Trend



Concentration Trend

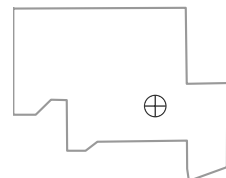
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Stable
All Data
Decreasing

Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 07/07/1992 to 05/23/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

ISB and Performance Monitoring Well Analyte Concentration Trends

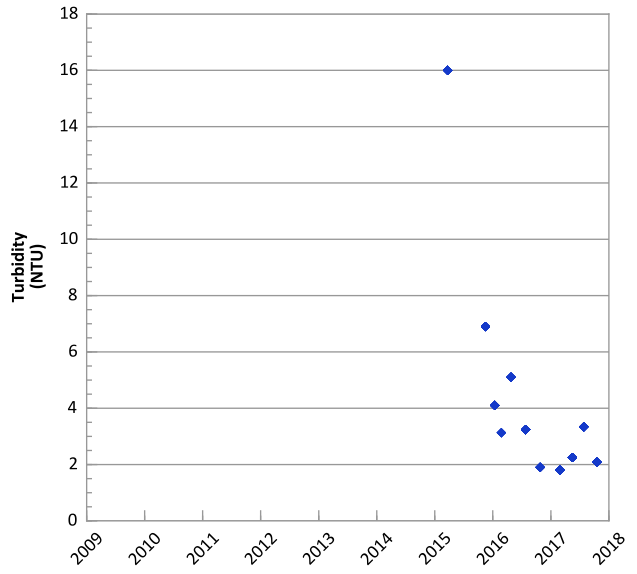
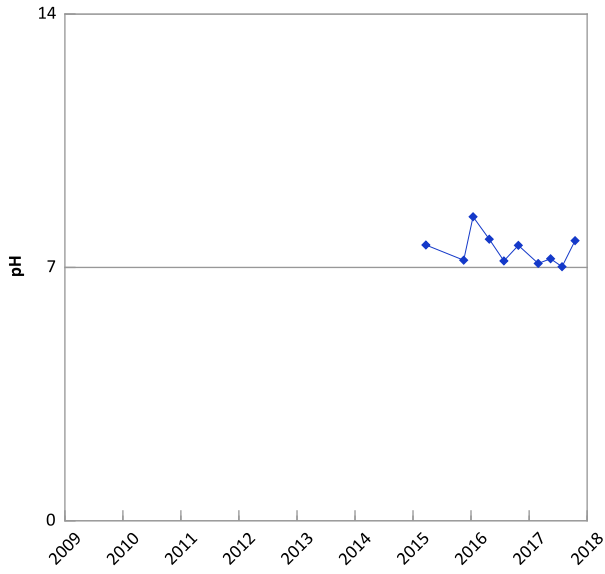
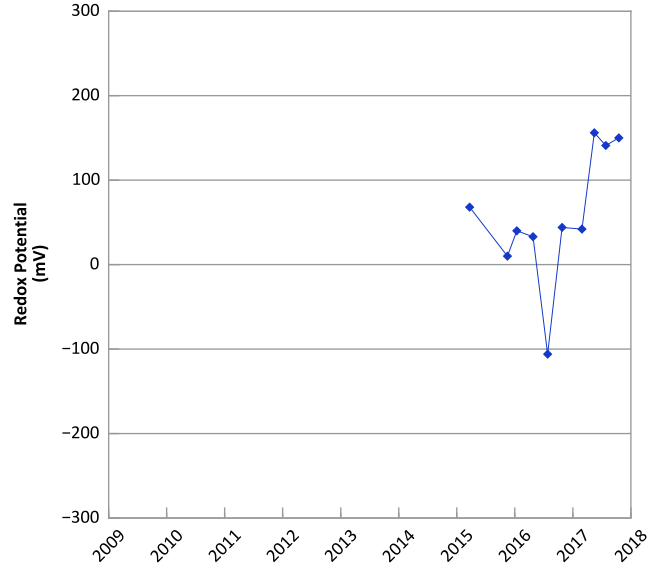
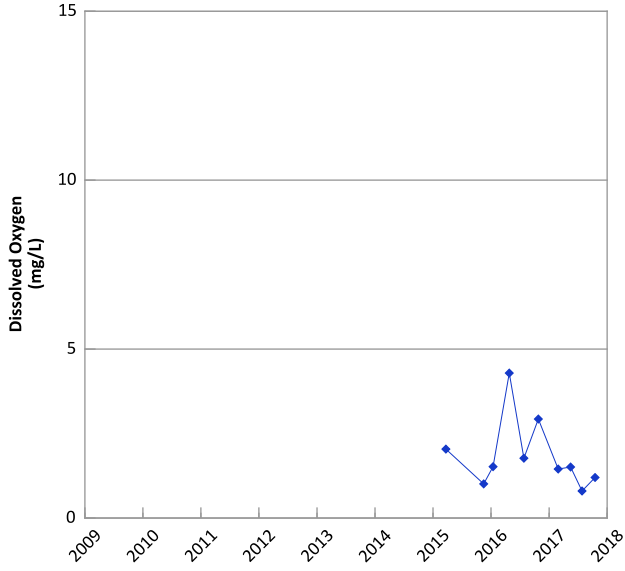
Perched Aquifer ISB Well Analyte Trends

Well	COC	First_Date	Last_Date	NumS_AD	NumD_AD	AIIND_AD	CV_AD	MKS_AD	Conf_AD	Trend_AD	NumS_L4S	NumD_L4S	AIIND_L4S	CV_L4S	MKS_L4S	Conf_L4S	Trend_L4S	NumS_SSRA	NumD_SSRA	AIIND_SSRA	CV_SSRA	MKS_SSRA	Conf_SSRA	Trend_SSRA
PTX06-ISB069	FE	9/14/2009	10/10/2017	29	29	No	0.6619	-78.00	1	Decreasing	4	4	No	1.39856	6.00	0.958	Increasing	29	29	No	0.661864	-78.00	1	Decreasing
PTX06-ISB069	MN	9/14/2009	10/10/2017	29	29	No	1.9954	-218.00	1	Decreasing	4	4	No	1.47359	4.00	0.833	No Trend	29	29	No	1.9954257	-218.00	1	Decreasing
PTX06-ISB069	MN2	5/18/2011	10/10/2017	22	22	No	2.4343	-66.00	1	Decreasing	4	4	No	0.90018	2.00	0.625	No Trend	22	22	No	2.4342767	-66.00	1	Decreasing
PTX06-ISB069	TVFA	9/14/2009	10/10/2017	28	28	No	1.9169	-138.00	1	Decreasing	4	4	No	0.91481	-2.00	1	Decreasing	28	28	No	1.9168859	-138.00	1	Decreasing
PTX06-ISB069	FE(FS)	3/23/2010	10/10/2017	26	24	No	3.0374	-30.00	1	Decreasing	4	4	No	1.24342	6.00	0.958	Increasing	26	24	No	3.0373699	-30.00	1	Decreasing
PTX06-ISB069	FE(FC)	5/18/2011	10/10/2017	22	21	No	1.4527	-42.00	1	Decreasing	4	4	No	0.86252	0.00	0.375	Stable	22	21	No	1.4527133	-42.00	1	Decreasing
PTX06-ISB069	CL	4/1/2009	10/10/2017	30	30	No	0.4533	-44.00	1	Decreasing	4	4	No	0.06505	-2.00	1	Decreasing	29	29	No	0.4294113	-73.00	1	Decreasing
PTX06-ISB069	TOC	4/1/2009	10/10/2017	29	29	No	2.4795	229.00	1	Increasing	4	4	No	1.00398	-6.00	1	Decreasing	28	28	No	2.4306842	201.00	1	Increasing
PTX06-ISB069	DOC	4/1/2009	10/10/2017	29	29	No	2.6901	223.00	1	Increasing	4	4	No	1.01373	-6.00	1	Decreasing	28	28	No	2.6383307	195.00	1	Increasing
PTX06-ISB069	NITRATE	4/1/2009	8/2/2017	28	10	No	1.6979	93.00	0.9655	Increasing	4	1	No	0.00	0.00	0	<4 Detections in Data	27	9	No	1.1059371	120.00	0.994	Increasing
PTX06-ISB069	SO4	4/1/2009	10/10/2017	29	24	No	2.6876	-69.00	1	Decreasing	4	3	No	0.00	0.00	0	<4 Detections in Data	28	23	No	2.5483053	-41.00	1	Decreasing
PTX06-ISB069	C2H4	4/1/2009	10/10/2017	29	0	Yes	0.00	0.00	0	All Non-Detect	4	0	Yes	0.00	0.00	0	All Non-Detect	28	0	Yes	0.00	0.00	0	All Non-Detect
PTX06-ISB069	C2H6	4/1/2009	10/10/2017	29	1	No	0.00	0.00	0	<4 Detections in Data	4	0	Yes	0.00	0.00	0	All Non-Detect	28	1	No	0.00	0.00	0	<4 Detections in Data
PTX06-ISB069	CH4	4/1/2009	10/10/2017	30	30	No	0.4468	-30.00	1	Decreasing	4	4	No	0.25311	-1.00	1	Decreasing	29	29	No	0.3983875	-59.00	1	Decreasing
PTX06-ISB071	PCE	4/1/2009	10/10/2017	16	0	Yes	0.00	0.00	0	All Non-Detect	4	0	Yes	0.00	0.00	0	All Non-Detect	15	0	Yes	0.00	0.00	0	All Non-Detect
PTX06-ISB071	TCE	4/1/2009	10/10/2017	16	2	No	0.00	0.00	0	<4 Detections in Data	4	0	Yes	0.00	0.00	0	All Non-Detect	15	1	No	0.00	0.00	0	<4 Detections in Data
PTX06-ISB071	DCE12C	4/1/2009	10/10/2017	16	12	No	2.4801	-20.00	1	Decreasing	4	3	No	0.00	0.00	0	<4 Detections in Data	15	11	No	1.1022155	-5.00	1	Decreasing
PTX06-ISB071	DCA12	4/1/2009	10/10/2017	16	2	No	0.00	0.00	0	<4 Detections in Data	4	0	Yes	0.00	0.00	0	All Non-Detect	15	1	No	0.00	0.00	0	<4 Detections in Data
PTX06-ISB071	TCLME	4/1/2009	10/10/2017	16	1	No	0.00	0.00	0	<4 Detections in Data	4	0	Yes	0.00	0.00	0	All Non-Detect	15	0	Yes	0.00	0.00	0	All Non-Detect
PTX06-ISB071	VC	4/1/2009	10/10/2017	16	0	Yes	0.00	0.00	0	All Non-Detect	4	0	Yes	0.00	0.00	0	All Non-Detect	15	0	Yes	0.00	0.00	0	All Non-Detect
PTX06-ISB071	PERC	4/1/2009	10/10/2017	16	1	No	0.00	0.00	0	<4 Detections in Data	4	0	Yes	0.00	0.00	0	All Non-Detect	15	0	Yes	0.00	0.00	0	All Non-Detect
PTX06-ISB071	AS	11/1/2012	10/10/2017	15	12	No	0.5828	34.00	1	Increasing	4	3	No	0.00	0.00	0	<4 Detections in Data	15	12	No	0.5827905	34.00	1	Increasing
PTX06-ISB071	FE	11/1/2012	10/10/2017	15	15	No	0.5613	-19.00	1	Decreasing	4	4	No	0.5177	0.00	0.375	Stable	15	15	No	0.5612774	-19.00	1	Decreasing
PTX06-ISB071	MN	11/1/2012	10/10/2017	15	15	No	0.5865	-60.00	1	Decreasing	4	4	No	0.51823	0.00	0.375	Stable	15	15	No	0.5865034	-60.00	1	Decreasing
PTX06-ISB071	MN2	11/1/2012	10/10/2017	15	14	No	0.5828	-46.00	1	Decreasing	4	4	No	0.5154	-4.00	1	Decreasing	15	14	No	0.5827625	-46.00	1	Decreasing
PTX06-ISB071	TVFA	11/1/2012	10/10/2017	15	15	No	2.2013	-41.00	1	Decreasing	4	4	No	0.72569	2.00	0.625	No Trend	15	15	No	2.2013429	-41.00	1	Decreasing
PTX06-ISB071	FE(FS)	11/1/2012	10/10/2017	15	14	No	0.6609	-9.00	1	Decreasing	4	4	No	0.1732	-4.00	1	Decreasing	15	14	No	0.6609311	-9.00	1	Decreasing
PTX06-ISB071	FE(FC)	11/1/2012	10/10/2017	15	12	No	0.7353	-5.00	1	Decreasing	4	4	No	0.46657	0.00	0.375	Stable	15	12	No	0.7352634	-5.00	1	Decreasing
PTX06-ISB071	CL	4/1/2009	10/10/2017	16	16	No	0.2283	-25.00	1	Decreasing	4	4	No	0.00	0.00	0.375	Stable	15	15	No	0.1886733	-40.00	1	Decreasing
PTX06-ISB071	TOC	4/1/2009	10/10/2017	16	16	No	0.7375	-27.00	1	Decreasing	4	4	No	0.24573	6.00	0.958	Increasing	15	15	No	0.667327	-42.00	1	Decreasing
PTX06-ISB071	DOC	4/1/2009	10/10/2017	16	15	No	0.6743	-26.00	1	Decreasing	4	4	No	0.28231	6.00	0.958	Increasing	15	15	No	0.6011571	-41.00	1	Decreasing
PTX06-ISB071	NITRATE	4/1/2009	12/18/2017	14	2	No	0.00	0.00	0	<4 Detections in Data	4	1	No	0.00	0.00	0	<4 Detections in Data	13	1	No	0.00	0.00	0	<4 Detections in Data
PTX06-ISB071	SO4	4/1/2009	10/10/2017	16	15	No	3.1548	-49.00	1	Decreasing	4	4	No	0.53829	-6.00	1	Decreasing	15	14	No	2.0281321	-34.00	1	Decreasing
PTX06-ISB071	C2H4	4/1/2009	10/10/2017	16	0	Yes	0.00	0.00	0	All Non-Detect	4	0	Yes	0.00	0.00	0	All Non-Detect	15	0	Yes	0.00	0.00	0	All Non-Detect
PTX06-ISB071	C2H6	4/1/2009	10/10/2017	16	1	No	0.00	0.00	0	<4 Detections in Data	4	1	No	0.00	0.00	0	<4 Detections in Data	15	1	No	0.00	0.00	0	<4 Detections in Data
PTX06-ISB071	CH4	4/1/2009	10/10/2017	16	15	No	0.594	54.00	0.992	Increasing	4	4	No	0.31746	-2.00	1	Decreasing	15	15	No	0.5151642	39.00	1	Increasing
PTX06-ISB073	PCE	4/6/2009	10/11/2017	25	1	No	0.00	0.00	0	<4 Detections in Data	4	0	Yes	0.00	0.00	0	All Non-Detect	24	0	Yes	0.00	0.00	0	All Non-Detect
PTX06-ISB073	TCE	4/6/2009	10/11/2017	30	8	No	4.7753	81.00	0.923	Probably Increasing	4	2	No	0.00	0.00	0	<4 Detections in Data	29	7	No	1.5513194	110.00	0.98	Increasing
PTX06-ISB073	DCE12C	4/6/2009	10/11/2017	30	20	No	2.747	53.00	0.822	No Trend	4	2	No	0.00	0.00	0	<4 Detections in Data	29	19	No	1.0167243	82.00	0.935	Probably Increasing
PTX06-ISB073	DCA12	4/6/2009	10/11/2017	25	0	Yes	0.00	0.00	0	All Non-Detect	4	0	Yes	0.00	0.00	0	All Non-Detect	24	0	Yes	0.00	0.00	0	All Non-Detect
PTX06-ISB073	TCLME	4/6/2009	10/11/2017	25	1	No	0.00	0.00	0	<4 Detections in Data	4	0	Yes	0.00	0.00	0	All Non-Detect	24	0	Yes	0.00	0.00	0	All Non-Detect
PTX06-ISB073	VC	4/6/2009	10/11/2017	30	1	No	0.00	0.00	0	<4 Detections in Data	4	0	Yes	0.00	0.00	0	All Non-Detect	29	1	No	0.00	0.00	0	<4 Detections in Data
PTX06-ISB073	PERC	4/6/2009	10/11/2017	29	2	No	0.00	0.00	0	<4 Detections in Data	4	0	Yes	0.00	0.00	0	All Non-Detect	28	1	No	0.00	0.00	0	<4 Detections in Data
PTX06-ISB073	AS	9/14/2009	10/11/2017	28	27	No	0.6113	-7.00	1	Decreasing	4	4	No	0.35853	-6.00	1	Decreasing	28	27	No	0.611256	-7.00	1	Decreasing
PTX06-ISB073	FE	9/14/2009	10/11/2017	28	28	No	0.7734	-195.00	1	Decreasing	4	4	No	1.21851	6.00	0.958	Increasing	28	28	No	0.773371	-195.00	1	Decreasing
PTX06-ISB073	MN	4/6/2009	10/11/2017	29	29	No	1.6916	-247.00	1	Decreasing	4	4	No	0.86559	2.00	0.625	No Trend	28	28	No	1.6525625	-275.00	1	Decreasing
PTX06-ISB073	MN2	5/19/2011	10/11/2017	21	21	No	1.1776	-143.00	1	Decreasing	4	4	No	0.32235	1.00	0.5	No Trend	21	21	No	1.1775792	-143.00	1	Decreasing
PTX06-ISB073	TVFA	9/14/2009	10/11/2017	28	28	No	2.5793	-164.00	1	Decreasing	4	4	No	0.54688	-4.00	1	Decreasing	28	28	No	2.5793466	-164.00	1	Decreasing
PTX06-ISB073	FE(FS)	3/23/2010	10/11/2017	26	25	No	3.0049	-138.00	1	Decreasing	4	4	No	1.0634	6.00	0.958	Increasing	26	25	No	3.0048599	-138.00	1	Decreasing
PTX06-ISB073	FE(FC)	5/19/2011	10/11/2017	21	20	No	0.8219	-35.00	1	Decreasing	4	4	No	0.4558	6.00	0.958	Increasing	21	20	No	0.8219346	-35.00		

Perched Aquifer ISB Well Analyte Trends

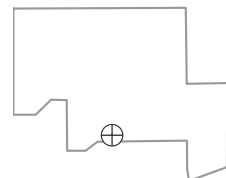
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PTX06-ISB077	PCE	4/6/2009	10/11/2017	26	1	No	0	0.00	0	<4 Detections in Data	4	0	Yes	0	0.00	0	All Non-Detect	25	0	Yes	0	0.00	0	All Non-Detect
PTX06-ISB077	TCE	4/6/2009	10/11/2017	30	11	No	4.4738	-21.00	1	Decreasing	4	0	Yes	0	0.00	0	All Non-Detect	29	10	No	1.26644	8.00	0.552	No Trend
PTX06-ISB077	DCE12C	4/6/2009	10/11/2017	30	19	No	1.2522	10.00	0.563	No Trend	4	3	No	0	0.00	0	<4 Detections in Data	29	18	No	1.0686924	39.00	0.76	No Trend
PTX06-ISB077	DCA12	4/6/2009	10/11/2017	26	2	No	0	0.00	0	<4 Detections in Data	4	0	Yes	0	0.00	0	All Non-Detect	25	1	No	0	0.00	0	<4 Detections in Data
PTX06-ISB077	TCLME	4/6/2009	10/11/2017	26	1	No	0	0.00	0	<4 Detections in Data	4	0	Yes	0	0.00	0	All Non-Detect	25	0	Yes	0	0.00	0	All Non-Detect
PTX06-ISB077	VC	4/6/2009	10/11/2017	30	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	29	0	Yes	0	0.00	0	All Non-Detect
PTX06-ISB077	PERC	4/6/2009	10/11/2017	29	2	No	0	0.00	0	<4 Detections in Data	4	0	Yes	0	0.00	0	All Non-Detect	28	1	No	0	0.00	0	<4 Detections in Data
PTX06-ISB077	AS	9/15/2009	10/11/2017	28	25	No	1.0166	-113.00	1	Decreasing	4	4	No	0.11883	-2.00	1	Decreasing	28	25	No	1.0166125	-113.00	1	Decreasing
PTX06-ISB077	FE	9/15/2009	10/11/2017	28	28	No	1.5022	-16.00	1	Decreasing	4	4	No	0.35858	-6.00	1	Decreasing	28	28	No	1.5021904	-16.00	1	Decreasing
PTX06-ISB077	MN	9/15/2009	10/11/2017	28	28	No	1.484	-208.00	1	Decreasing	4	4	No	0.49882	-6.00	1	Decreasing	28	28	No	1.4839601	-208.00	1	Decreasing
PTX06-ISB077	MN2	5/23/2011	10/11/2017	22	22	No	1.3529	-114.00	1	Decreasing	4	4	No	0.41283	-4.00	1	Decreasing	22	22	No	1.3529494	-114.00	1	Decreasing
PTX06-ISB077	TVFA	9/15/2009	10/11/2017	27	26	No	2.3029	-153.00	1	Decreasing	4	4	No	0.47026	-2.00	1	Decreasing	27	26	No	2.3029217	-153.00	1	Decreasing
PTX06-ISB077	FE(FS)	6/7/2010	10/11/2017	26	25	No	1.6405	-58.00	1	Decreasing	4	4	No	0.39757	-6.00	1	Decreasing	26	25	No	1.6405024	-58.00	1	Decreasing
PTX06-ISB077	FE(FC)	5/23/2011	10/11/2017	22	22	No	1.9731	5.00	0.544	No Trend	4	4	No	0.51524	2.00	0.625	No Trend	22	22	No	1.9731423	5.00	0.544	No Trend
PTX06-ISB077	CL	4/6/2009	10/11/2017	29	29	No	0.8473	-161.00	1	Decreasing	4	4	No	0.086	1.00	0.5	No Trend	28	28	No	0.8279173	-187.00	1	Decreasing
PTX06-ISB077	TOC	4/6/2009	10/11/2017	28	28	No	1.7499	16.00	0.615	No Trend	4	4	No	0.12155	5.00	0.8955	No Trend	27	27	No	1.7087849	-11.00	1	Decreasing
PTX06-ISB077	DOC	4/6/2009	10/11/2017	28	27	No	1.6771	17.00	0.6225	No Trend	4	4	No	0.12376	5.00	0.8955	No Trend	27	27	No	1.6367727	-10.00	1	Decreasing
PTX06-ISB077	NITRATE	9/15/2009	12/18/2017	25	7	No	2.8905	120.00	0.998	Increasing	4	1	No	0	0.00	0	<4 Detections in Data	25	7	No	2.8905077	120.00	0.998	Increasing
PTX06-ISB077	SO4	4/6/2009	10/11/2017	27	26	No	3.5653	-119.00	1	Decreasing	4	4	No	0.20026	1.00	0.5	No Trend	26	25	No	4.0605703	-95.00	1	Decreasing
PTX06-ISB077	C2H4	4/6/2009	10/11/2017	29	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	28	0	Yes	0	0.00	0	All Non-Detect
PTX06-ISB077	C2H6	4/6/2009	10/11/2017	29	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	28	0	Yes	0	0.00	0	All Non-Detect
PTX06-ISB077	CH4	4/6/2009	10/11/2017	29	28	No	0.4555	19.00	0.631	No Trend	4	4	No	0.26559	0.00	0.375	Stable	28	28	No	0.4059604	-9.00	1	Decreasing
PTX06-ISB079	PCE	10/15/2009	10/18/2017	7	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	7	0	Yes	0	0.00	0	All Non-Detect
PTX06-ISB079	TCE	10/15/2009	10/18/2017	7	1	No	0	0.00	0	<4 Detections in Data	4	1	No	0	0.00	0	<4 Detections in Data	7	1	No	0	0.00	0	<4 Detections in Data
PTX06-ISB079	DCE12C	10/15/2009	10/18/2017	7	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	7	0	Yes	0	0.00	0	All Non-Detect
PTX06-ISB079	DCA12	10/15/2009	10/18/2017	7	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	7	0	Yes	0	0.00	0	All Non-Detect
PTX06-ISB079	TCLME	10/15/2009	10/18/2017	7	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	7	0	Yes	0	0.00	0	All Non-Detect
PTX06-ISB079	VC	10/15/2009	10/18/2017	7	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	7	0	Yes	0	0.00	0	All Non-Detect
PTX06-ISB079	PERC	10/15/2009	10/18/2017	7	1	No	0	0.00	0	<4 Detections in Data	4	0	Yes	0	0.00	0	All Non-Detect	7	1	No	0	0.00	0	<4 Detections in Data
PTX06-ISB079	AS	10/15/2009	10/18/2017	7	6	No	0.4626	12.00	0.9485	Probably Increasing	4	4	No	0.14993	-1.00	1	Decreasing	7	6	No	0.4625618	12.00	0.9485	Probably Increasing
PTX06-ISB079	FE	10/15/2009	10/18/2017	7	7	No	0.5505	3.00	0.614	No Trend	4	4	No	0.38711	-4.00	1	Decreasing	7	7	No	0.5504799	3.00	0.614	No Trend
PTX06-ISB079	MN	10/15/2009	10/18/2017	7	7	No	0.33	0.00	0.43733	Stable	4	4	No	0.07071	3.00	0.729	No Trend	7	7	No	0.3300197	0.00	0.43733333	Stable
PTX06-ISB079	MN2	4/26/2016	10/18/2017	6	6	No	0.388	-11.00	1	Decreasing	4	4	No	0.07788	-2.00	1	Decreasing	6	6	No	0.3880484	-11.00	1	Decreasing
PTX06-ISB079	TVFA	4/26/2016	10/18/2017	6	6	No	0.5619	9.00	0.932	Probably Increasing	4	4	No	0.55521	6.00	0.958	Increasing	6	6	No	0.5618764	9.00	0.932	Probably Increasing
PTX06-ISB079	FE(FS)	4/26/2016	10/18/2017	6	6	No	0.7288	-4.00	1	Decreasing	4	4	No	0.72803	-4.00	1	Decreasing	6	6	No	0.7287919	-4.00	1	Decreasing
PTX06-ISB079	FE(FC)	4/26/2016	10/18/2017	6	6	No	0.7631	-3.00	1	Decreasing	4	4	No	0.99764	0.00	0.375	Stable	6	6	No	0.7630873	-3.00	1	Decreasing
PTX06-ISB079	CL	10/15/2009	10/18/2017	7	7	No	0.6316	1.00	0.5	No Trend	4	4	No	0.30045	-6.00	1	Decreasing	7	7	No	0.6316486	1.00	0.5	No Trend
PTX06-ISB079	TOC	10/15/2009	10/18/2017	7	7	No	0.4475	7.00	0.809	No Trend	4	4	No	0.05136	4.00	0.833	No Trend	7	7	No	0.4475478	7.00	0.809	No Trend
PTX06-ISB079	DOC	4/26/2016	10/18/2017	6	6	No	0.0749	0.00	0.42267	Stable	4	4	No	0.06178	4.00	0.833	No Trend	6	6	No	0.0748727	0.00	0.42266667	Stable
PTX06-ISB079	NITRATE	10/15/2009	10/18/2017	7	2	No	0	0.00	0	<4 Detections in Data	4	1	No	0	0.00	0	<4 Detections in Data	7	2	No	0	0.00	0	<4 Detections in Data
PTX06-ISB079	SO4	10/15/2009	10/18/2017	7	7	No	1.9739	-7.00	1	Decreasing	4	4	No	0.14397	-6.00	1	Decreasing	7	7	No	1.9739405	-7.00	1	Decreasing
PTX06-ISB079	C2H4	4/26/2016	10/18/2017	6	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	6	0	Yes	0	0.00	0	All Non-Detect
PTX06-ISB079	C2H6	4/26/2016	10/18/2017	6	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	6	0	Yes	0	0.00	0	All Non-Detect
PTX06-ISB079	CH4	4/26/2016	10/18/2017	6	6	No	0.3593	4.00	0.7025	No Trend	4	4	No	0.27702	-3.00	1	Decreasing	6	6	No	0.359259	4.00	0.7025	No Trend
PTX06-ISB082	PCE	10/19/2009	10/18/2017	20	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	20	0	Yes	0	0.00	0	All Non-Detect
PTX06-ISB082	TCE	10/19/2009	10/18/2017	20	3	No	0	0.00	0	<4 Detections in Data	4	1	No	0	0.00	0	<4 Detections in Data	20	3	No	0	0.00	0	<4 Detections in Data
PTX06-ISB082	DCE12C	10/19/2009	10/18/2017	20	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	20	0	Yes	0	0.00	0	All Non-Detect
PTX06-ISB082	DCA12	10/19/2009	10/18/2017	20	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	20	0	Yes	0	0.00	0	All Non-Detect
PTX06-ISB082	TCLME	10/19/2009	10/18/2017	20	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	20	0	Yes	0	0.00	0	All Non-Detect
PTX06-ISB082	VC	10/19/2009	10/18/2017	20	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	20	0	Yes	0	0.00	0	All Non-Detect
PTX06-ISB082	PERC	10/19/2009	10/18/2017	20	1	No	0	0.00	0	<4 Detections in Data	4	0	Yes	0	0.00	0	All Non-Detect	20	1	No	0	0.00		

**PTX06-1164 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**

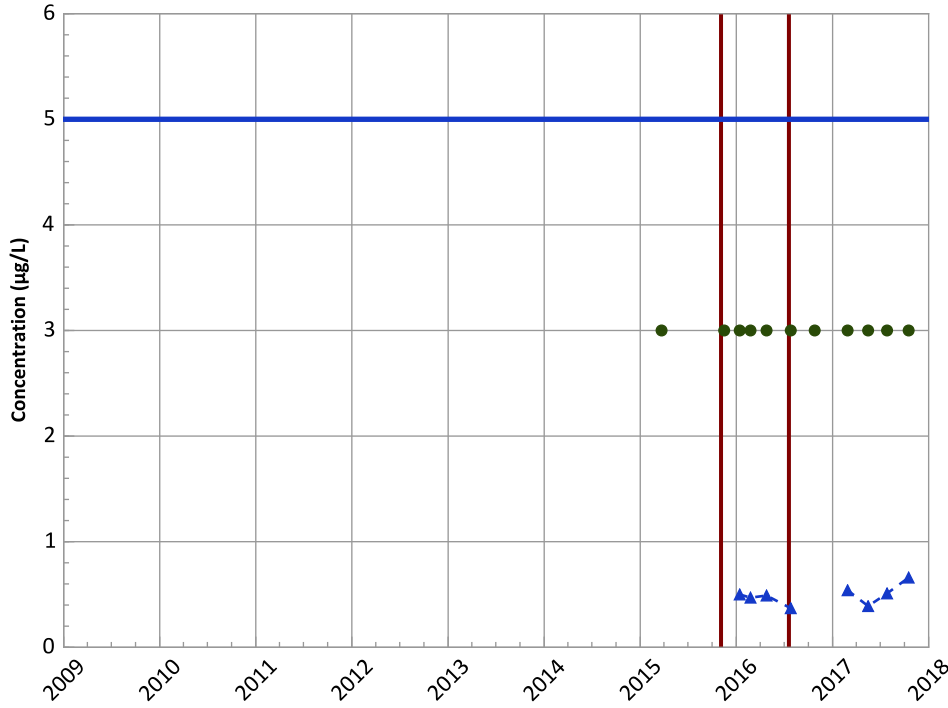


Query Date Range: 01/01/2009 to 12/31/2017
 Data Date Range: 03/23/2015 to 10/17/2017
 Analysis Date: 03/29/2018

Well Location



**PTX06-1164 in Perched Aquifer
USDOE/NNSA Pantex Plant
Tetrachloroethylene (PCE) Trend**



Concentration Trend

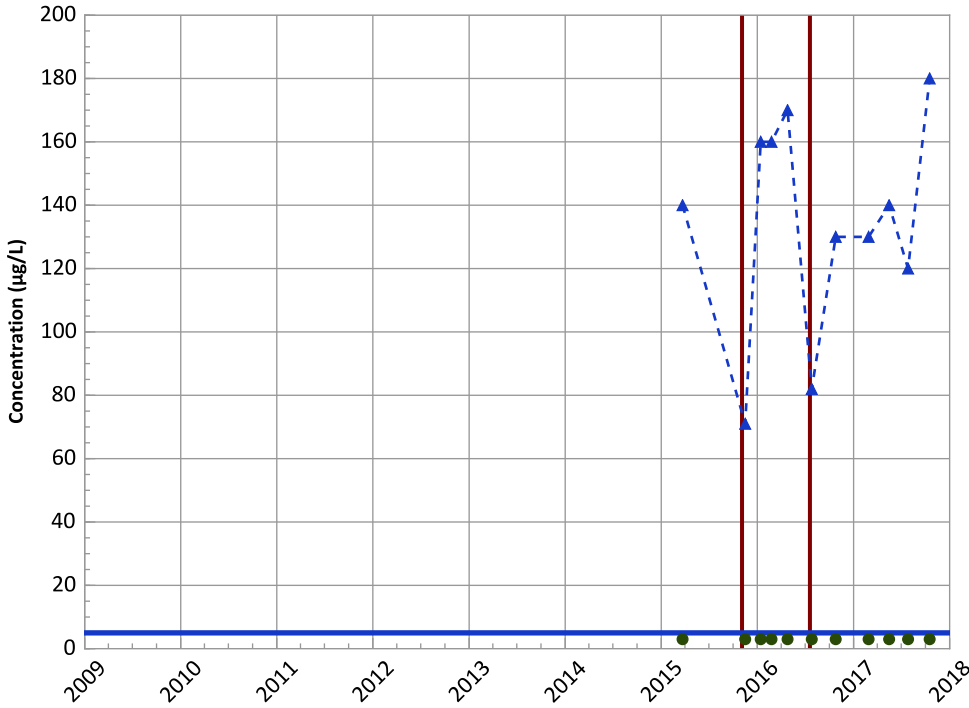
MAROS Mann-Kendall Method

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Decreasing
2015 - 2017 Data:
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MAROS Linear Regression Method

All Data
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2015 - 2017 Data:
No Trend

Trichloroethene Trend



Concentration Trend

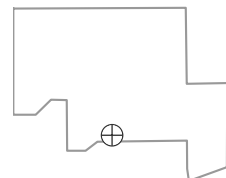
MAROS Mann-Kendall Method

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MAROS Linear Regression Method

All Data
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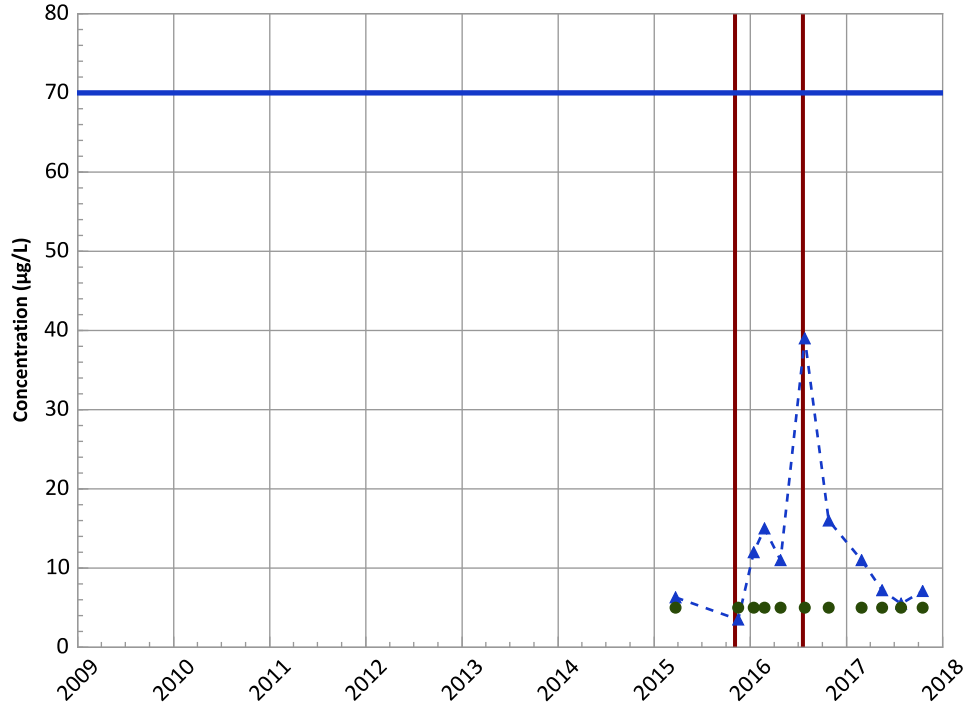
Well Location



Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 03/23/2015 to 10/17/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

**PTX06-1164 in Perched Aquifer
USDOE/NNSA Pantex Plant**
cis-1,2-Dichloroethene Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data
Decreasing

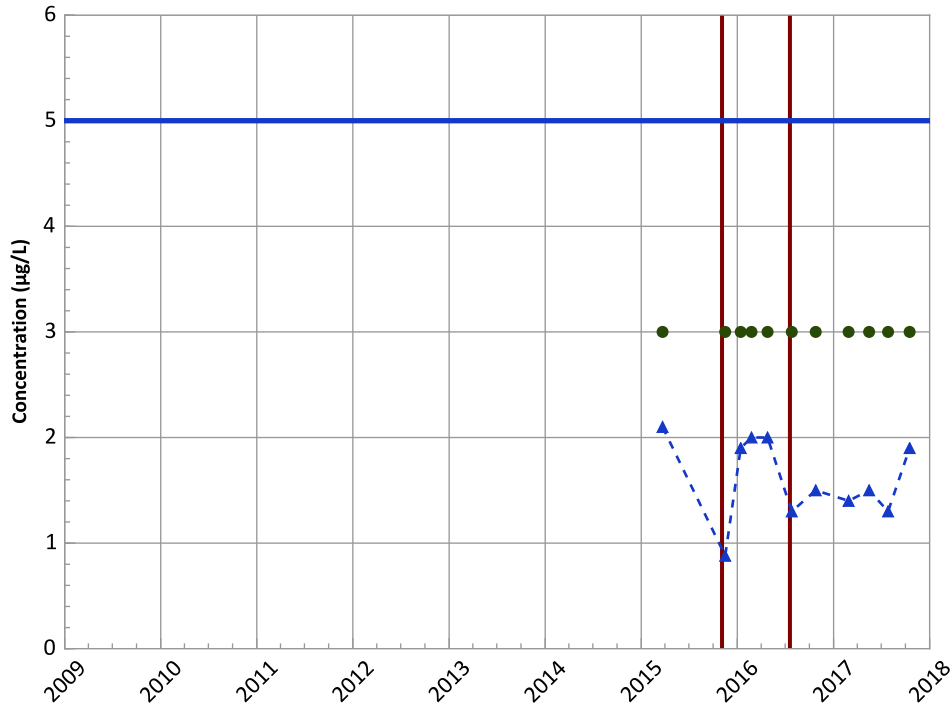
2015 - 2017 Data:
Decreasing

MAROS Linear Regression Method

All Data
Stable

2015 - 2017 Data:
Probably Decreasing

1,2-Dichloroethane Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data
Decreasing

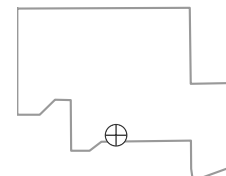
2015 - 2017 Data:
No Trend

MAROS Linear Regression Method

All Data
Stable

2015 - 2017 Data:
No Trend

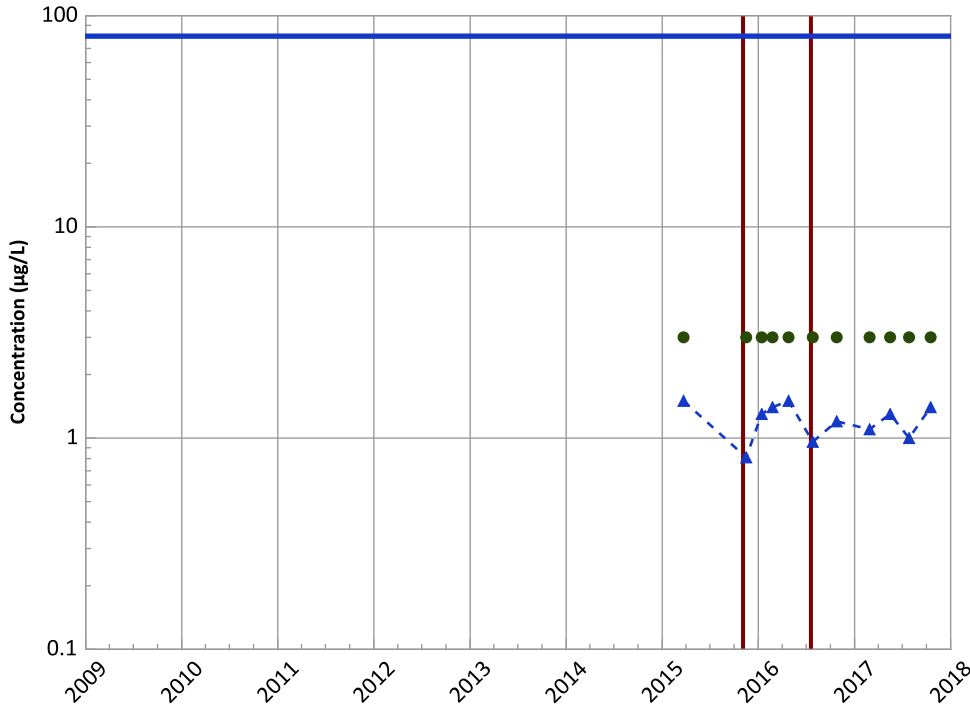
Well Location



Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 03/23/2015 to 10/17/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-1164 in Perched Aquifer
 USDOE/NNSA Pantex Plant
 Chloroform Trend



Concentration Trend

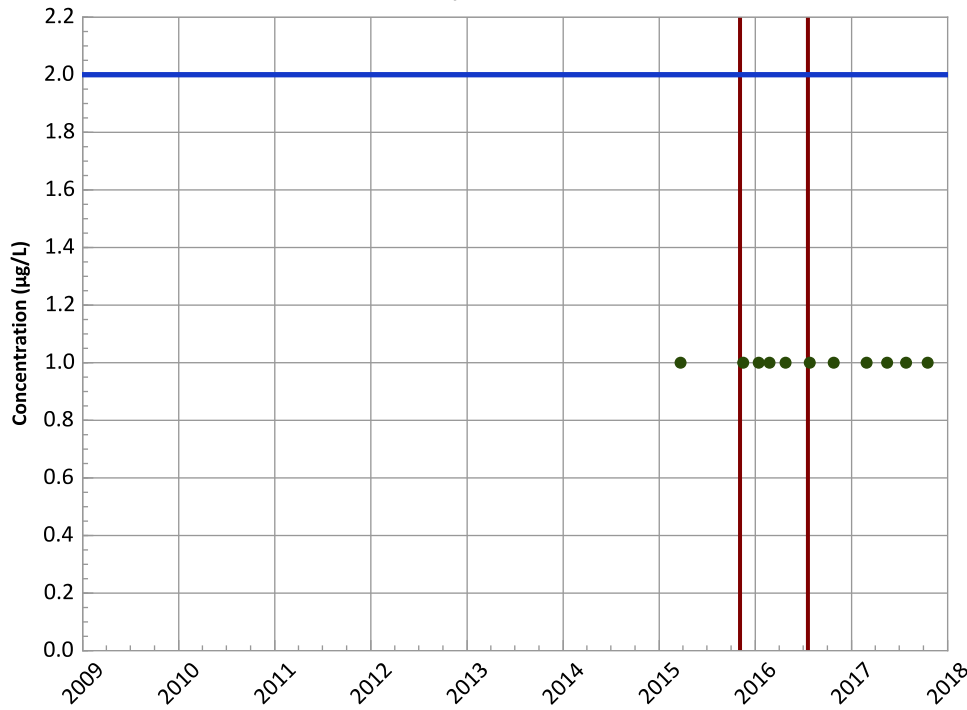
MAROS Mann-Kendall Method

All Data
 Decreasing
 2015 - 2017 Data:
 No Trend

MAROS Linear Regression Method

All Data
 Stable
 2015 - 2017 Data:
 No Trend

Vinyl Chloride Trend



Concentration Trend

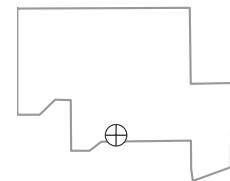
MAROS Mann-Kendall Method

All Data
 All Non-Detect
 2015 - 2017 Data:
 All Non-Detect

MAROS Linear Regression Method

All Data
 All Non-Detect
 2015 - 2017 Data:
 All Non-Detect

Well Location

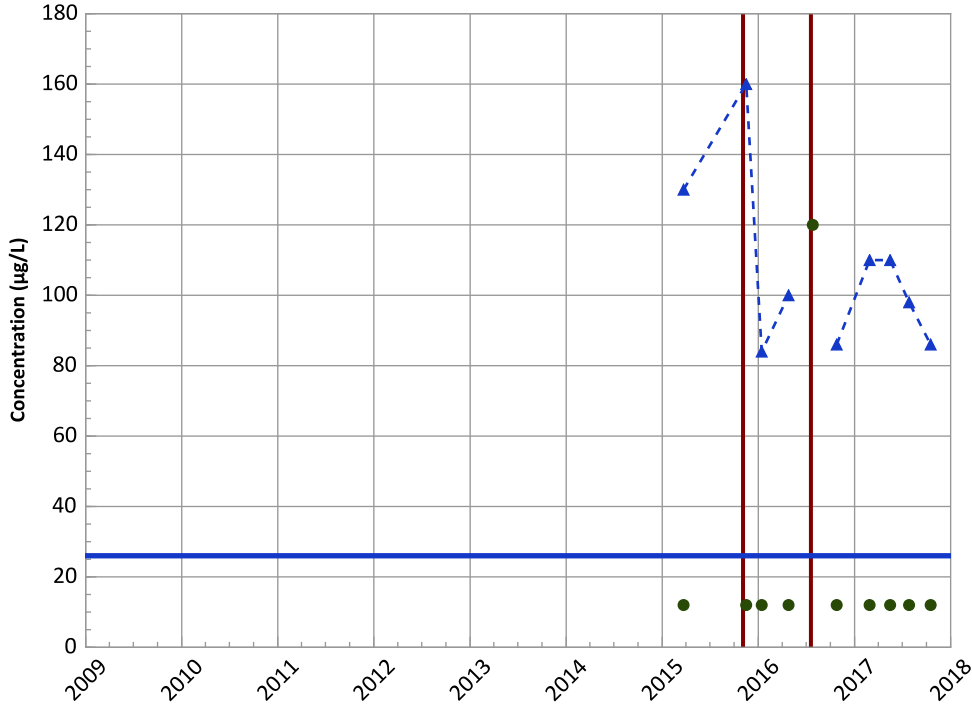


Query Date Range: 01/01/2009 to 12/31/2017
 Data Date Range: 03/23/2015 to 10/17/2017
 Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-1164 in Perched Aquifer
USDOE/NNSA Pantex Plant

Perchlorate Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Decreasing

MAROS Linear Regression Method

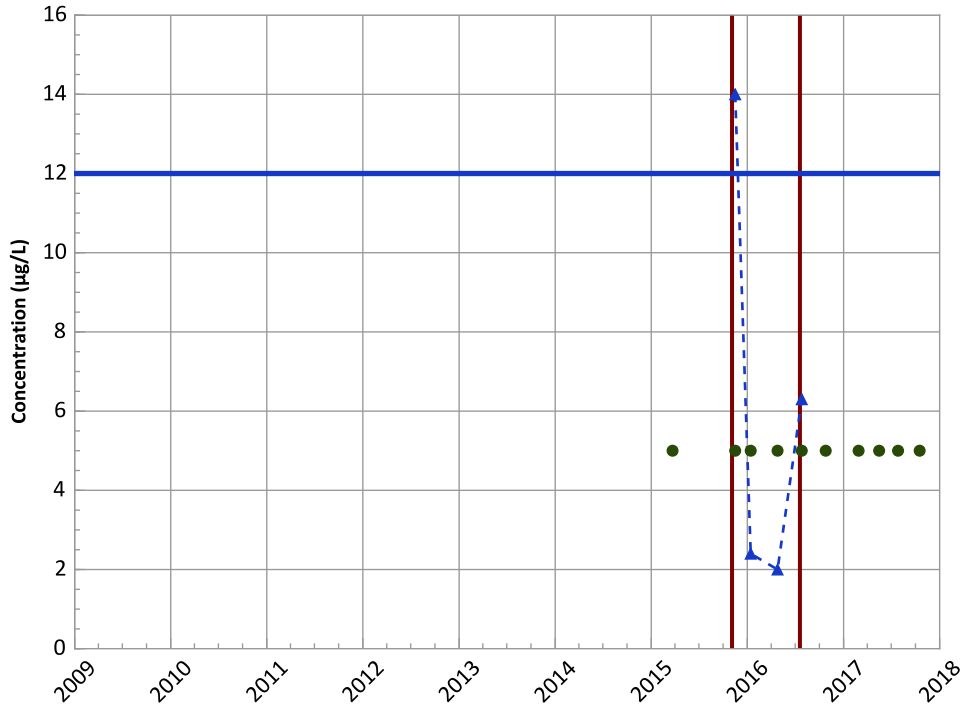
All Data

Probably Decreasing

2015 - 2017 Data:

Probably Decreasing

Arsenic Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

All Non-Detect

MAROS Linear Regression Method

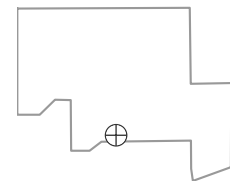
All Data

Stable

2015 - 2017 Data:

Stable

Well Location

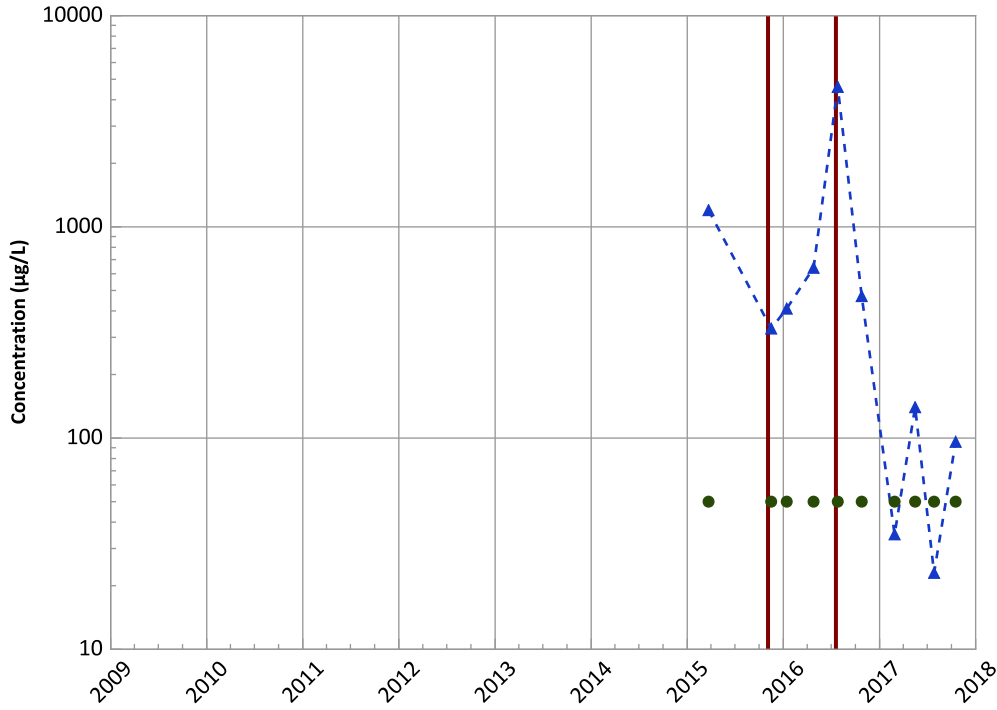


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 03/23/2015 to 10/17/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-1164 in Perched Aquifer
USDOE/NNSA Pantex Plant

Iron Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Stable

MAROS Linear Regression Method

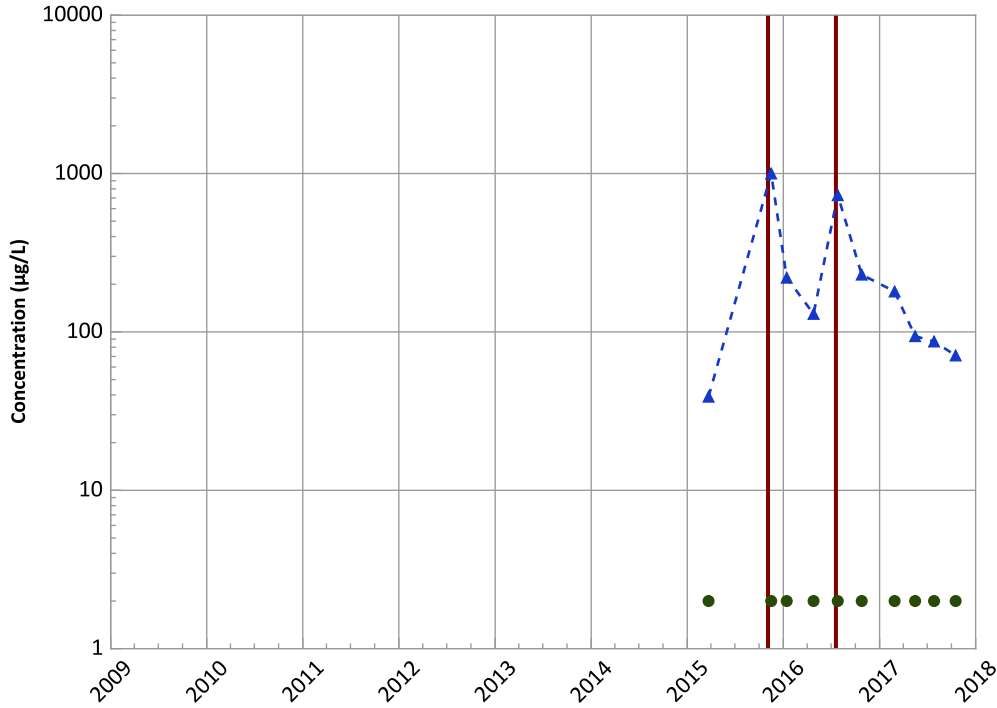
All Data

Decreasing

2015 - 2017 Data:

No Trend

Manganese Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Decreasing

MAROS Linear Regression Method

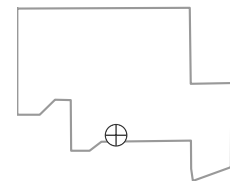
All Data

No Trend

2015 - 2017 Data:

Decreasing

Well Location

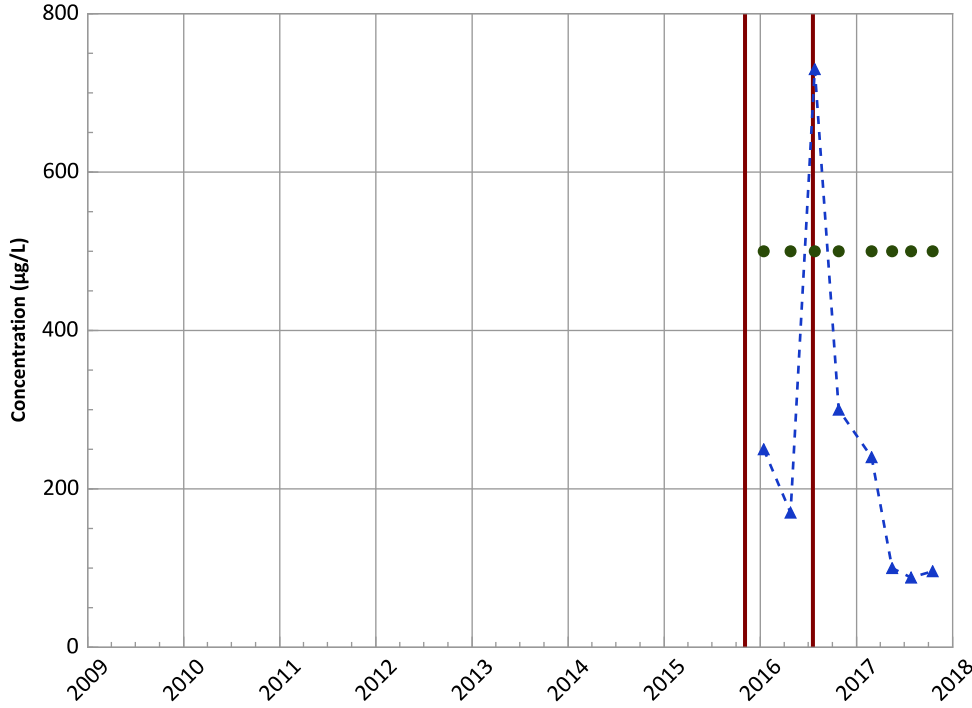


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 03/23/2015 to 10/17/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-1164 in Perched Aquifer
USDOE/NNSA Pantex Plant

Divalent Manganese Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data
Decreasing

2015 - 2017 Data:
Decreasing

Decreasing

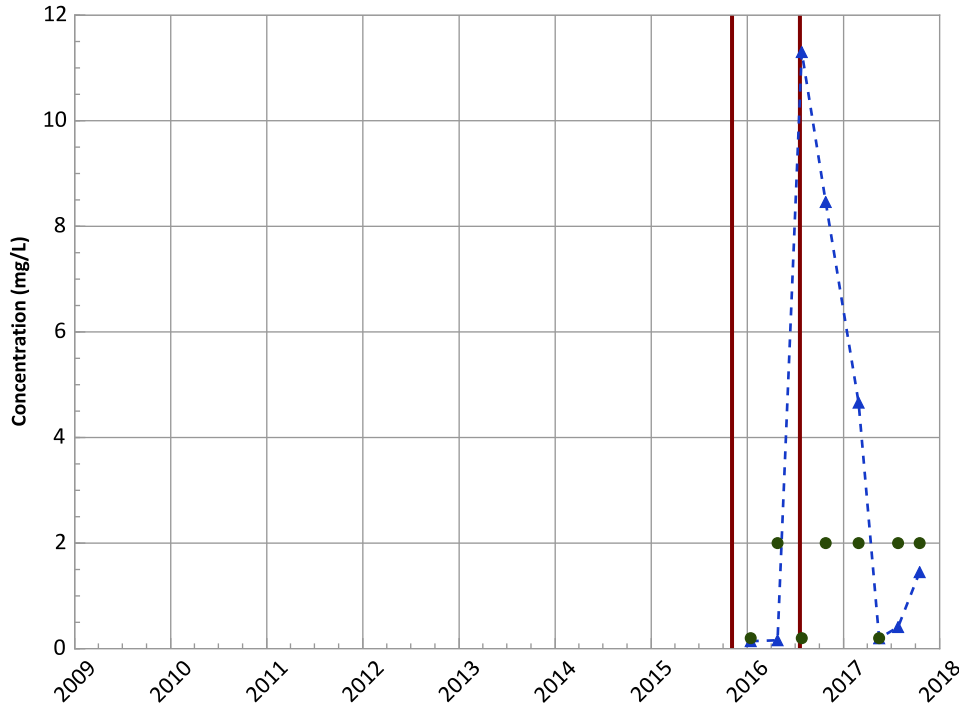
MAROS Linear Regression Method

All Data
Decreasing

2015 - 2017 Data:
Probably Decreasing

Probably Decreasing

Total Volatile Fatty Acids Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data
No Trend

2015 - 2017 Data:
No Trend

No Trend

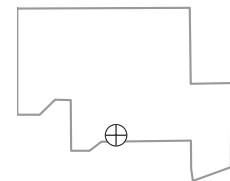
MAROS Linear Regression Method

All Data
No Trend

2015 - 2017 Data:
No Trend

No Trend

Well Location

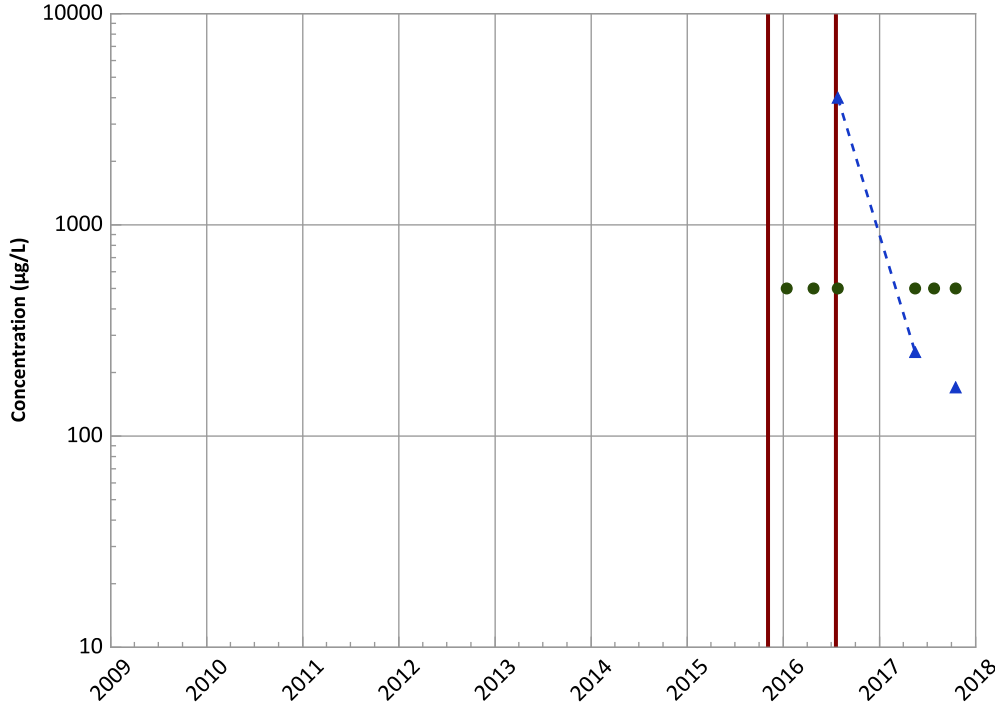


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 03/23/2015 to 10/17/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-1164 in Perched Aquifer
USDOE/NNSA Pantex Plant

Ferrous Iron Trend



Concentration Trend

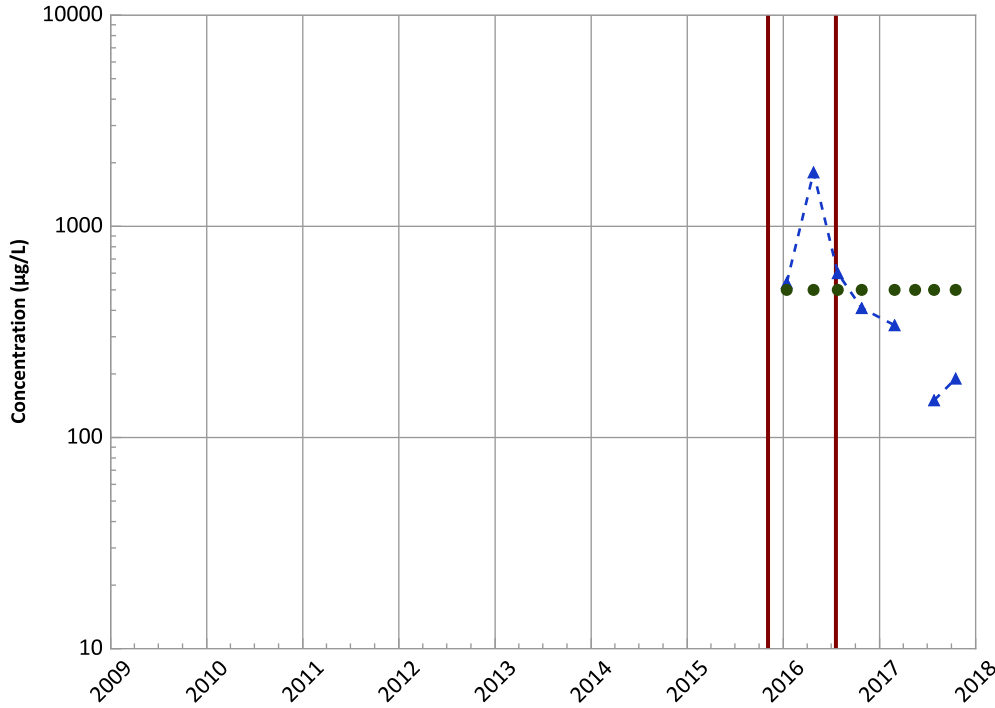
MAROS Mann-Kendall Method

All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
N/A (<4 Detections in Dataset)

Ferric Iron Trend



Concentration Trend

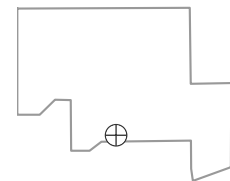
MAROS Mann-Kendall Method

All Data
Decreasing
2015 - 2017 Data:
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

All Data
Decreasing
2015 - 2017 Data:
Probably Decreasing

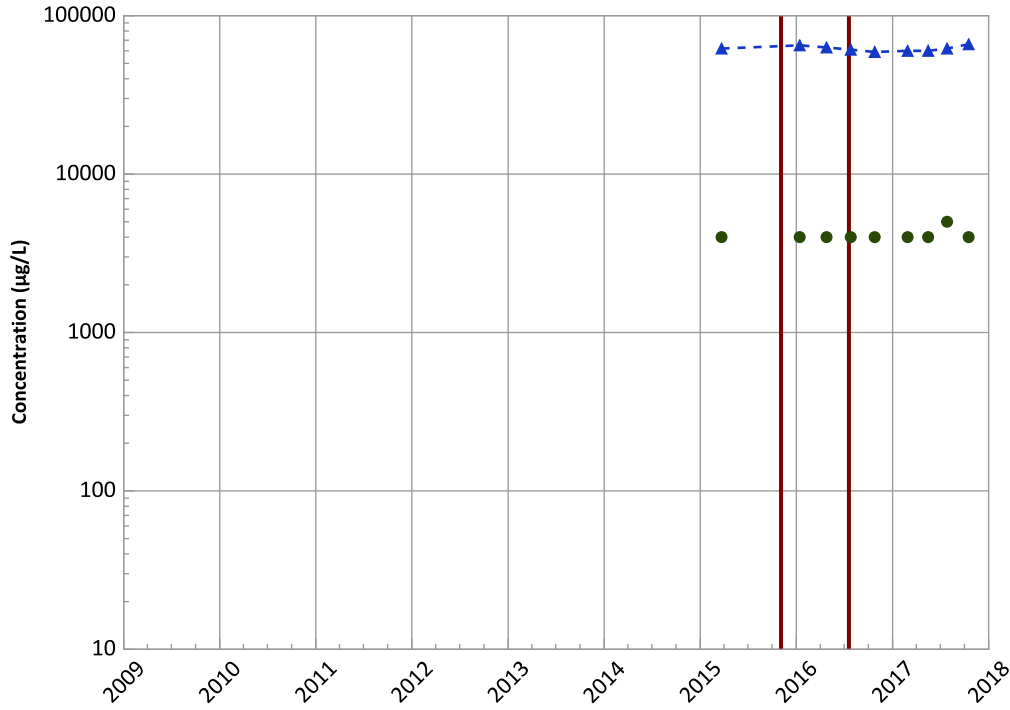
Well Location



Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 03/23/2015 to 10/17/2017
Analysis Date: 03/29/2018

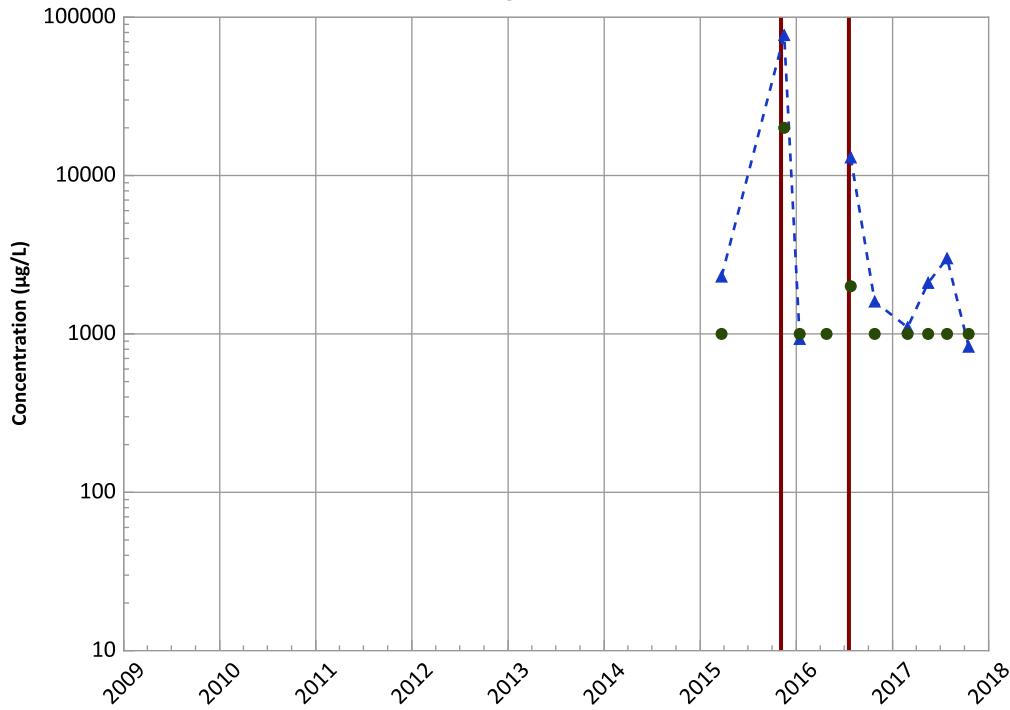
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

**PTX06-1164 in Perched Aquifer
USDOE/NNSA Pantex Plant
Chloride (as Cl) Trend**



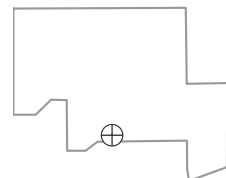
Concentration Trend
MAROS Mann-Kendall Method
 All Data: Decreasing
 2015 - 2017 Data: No Trend
MAROS Linear Regression Method
 All Data: Decreasing
 2015 - 2017 Data: No Trend

Total Organic Carbon Trend



Concentration Trend
MAROS Mann-Kendall Method
 All Data: Decreasing
 2015 - 2017 Data: Stable
MAROS Linear Regression Method
 All Data: No Trend
 2015 - 2017 Data: Stable

Well Location

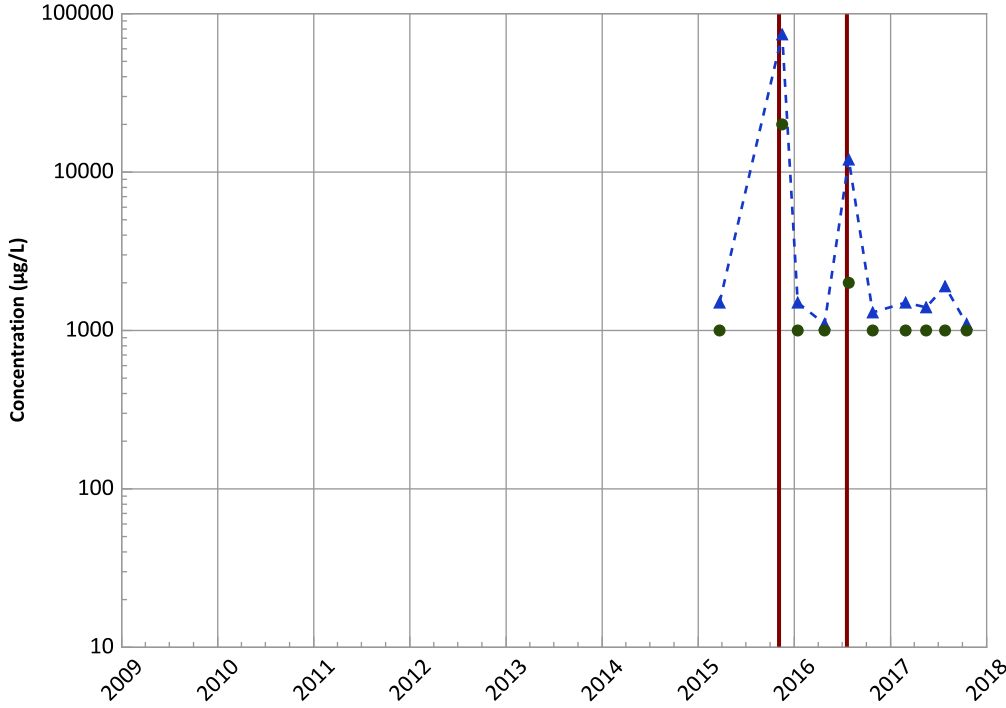


Query Date Range: 01/01/2009 to 12/31/2017
 Data Date Range: 03/23/2015 to 10/17/2017
 Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-1164 in Perched Aquifer
USDOE/NNSA Pantex Plant

Dissolved Organic Carbon (DOC) Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Decreasing

MAROS Linear Regression Method

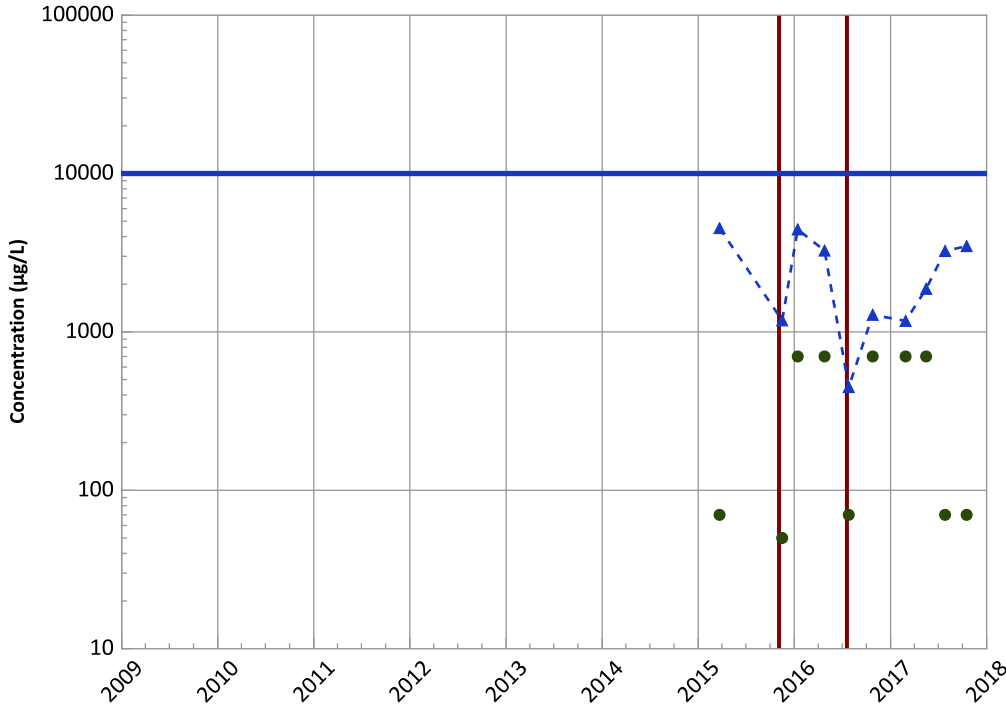
All Data

No Trend

2015 - 2017 Data:

Stable

Nitrate as N Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Increasing

MAROS Linear Regression Method

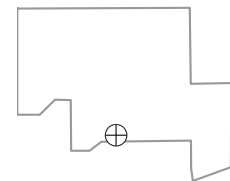
All Data

Stable

2015 - 2017 Data:

Increasing

Well Location

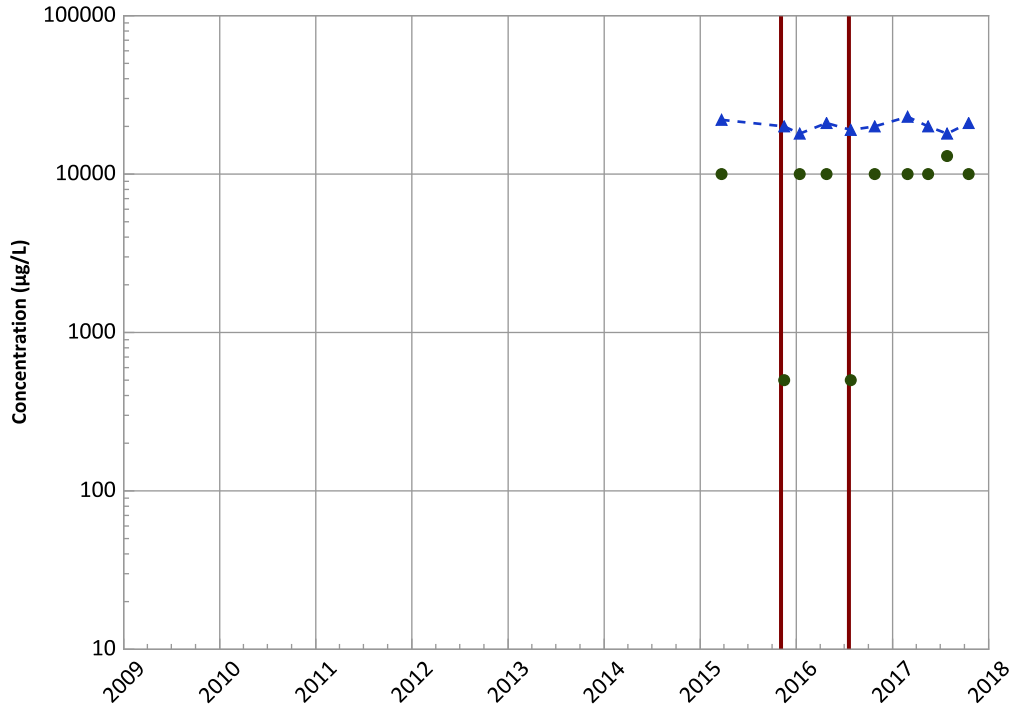


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 03/23/2015 to 10/17/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-1164 in Perched Aquifer
USDOE/NNSA Pantex Plant

Sulfate (as SO4) Trend



Concentration Trend

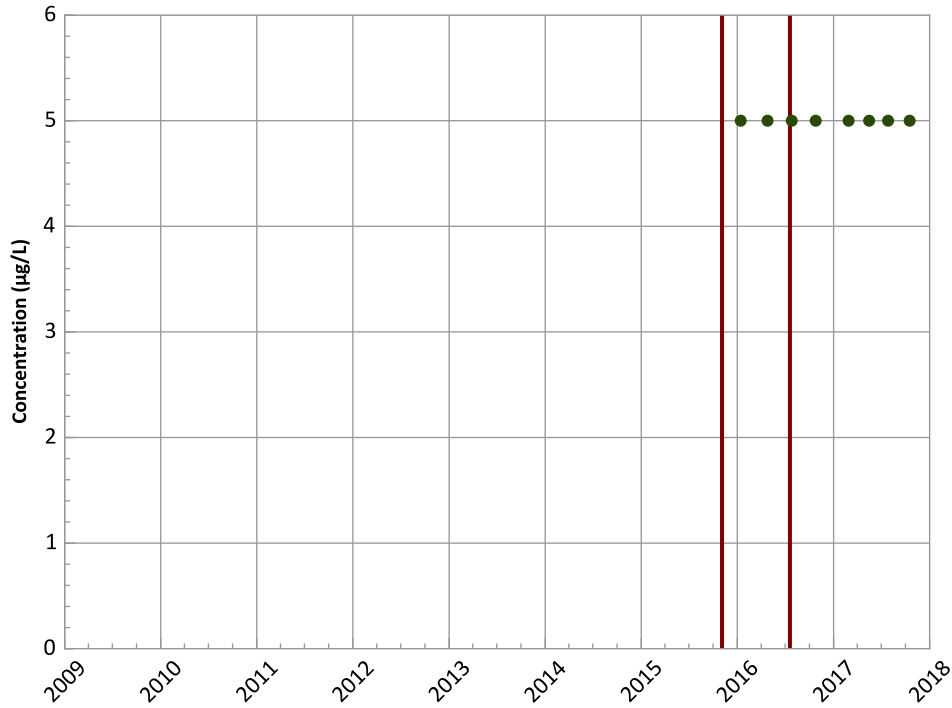
MAROS Mann-Kendall Method

All Data
Decreasing
2015 - 2017 Data:
Decreasing

MAROS Linear Regression Method

All Data
Stable
2015 - 2017 Data:
Stable

Ethene (Ethylene) Trend



Concentration Trend

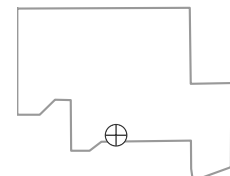
MAROS Mann-Kendall Method

All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method

All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

Well Location

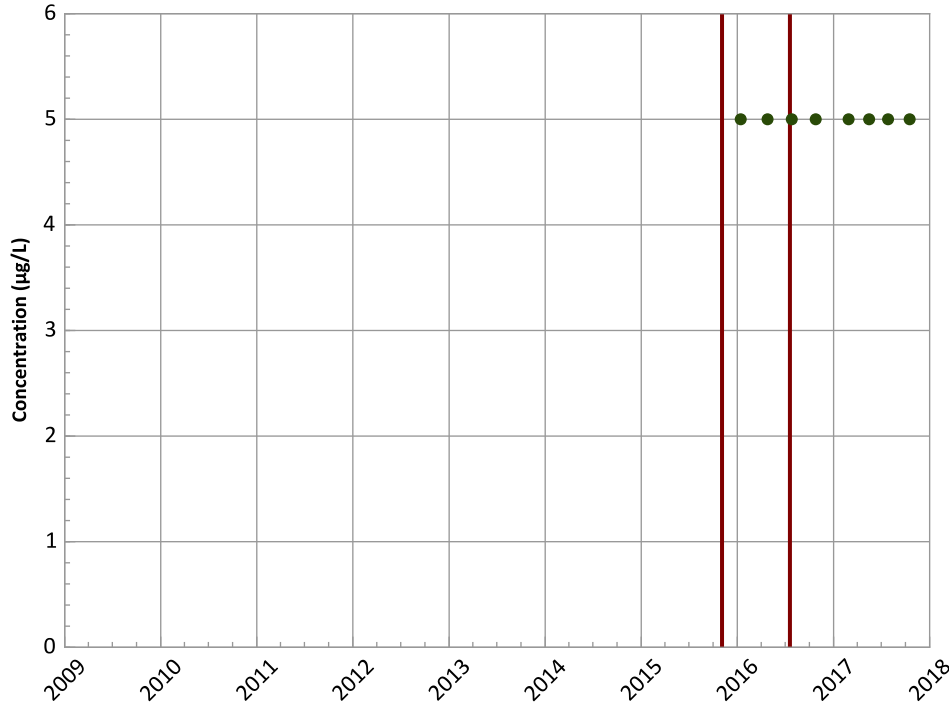


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 03/23/2015 to 10/17/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

**PTX06-1164 in Perched Aquifer
USDOE/NNSA Pantex Plant**

Ethane Trend



Concentration Trend

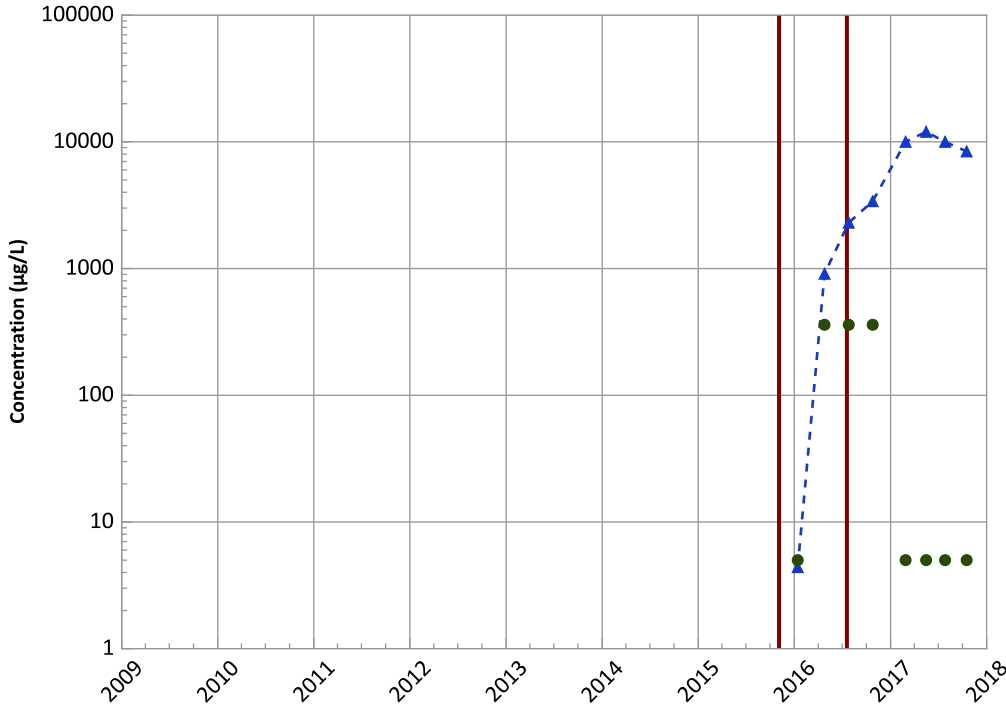
MAROS Mann-Kendall Method

All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method

All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

Methane Trend



Concentration Trend

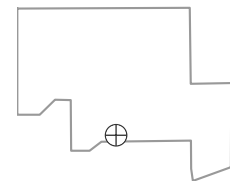
MAROS Mann-Kendall Method

All Data
Increasing
2015 - 2017 Data:
Decreasing

MAROS Linear Regression Method

All Data
Increasing
2015 - 2017 Data:
Stable

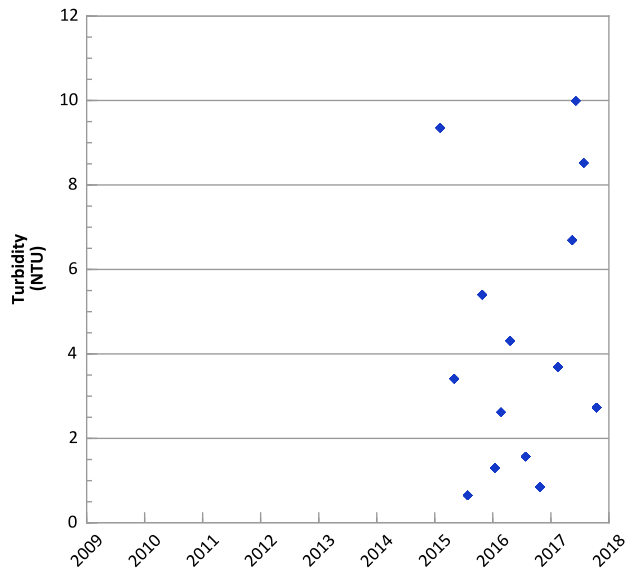
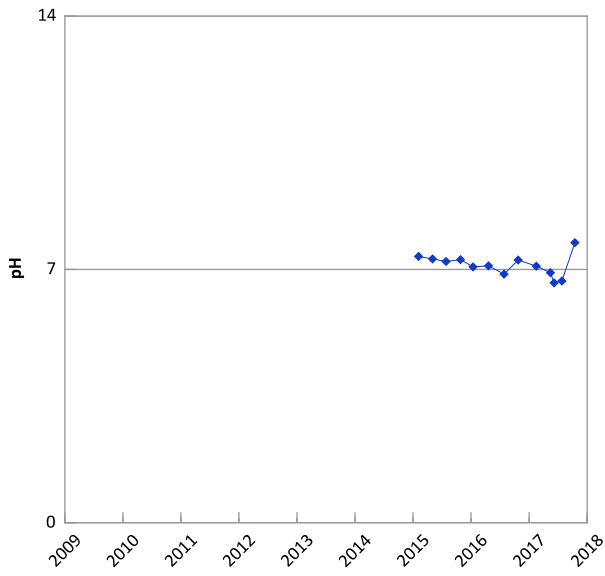
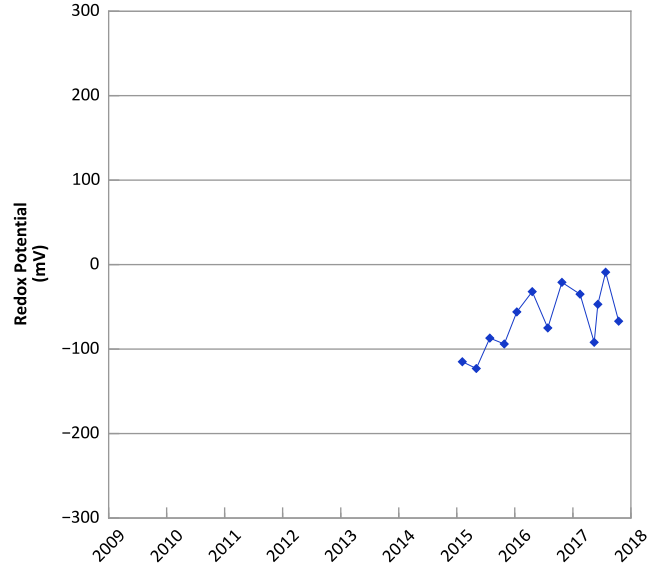
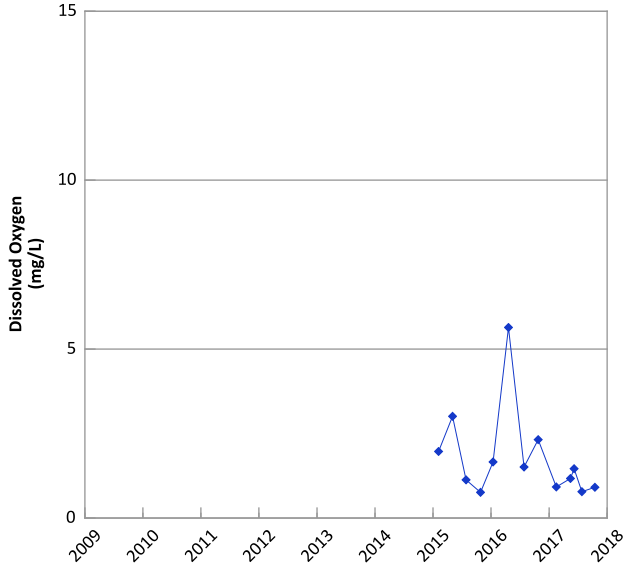
Well Location



Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 03/23/2015 to 10/17/2017
Analysis Date: 03/29/2018

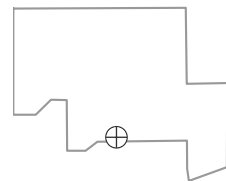
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-1170 in Perched Aquifer USDOE/NNSA Pantex Plant Field Parameters



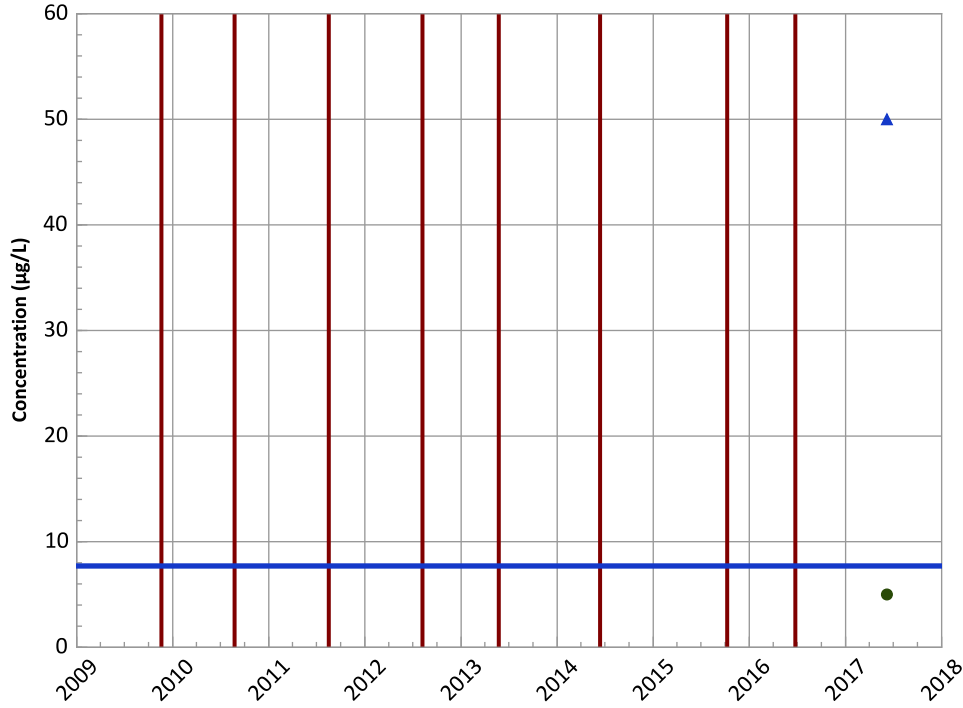
Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 02/05/2015 to 10/16/2017
Analysis Date: 03/29/2018

Well Location



PTX06-1170 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,4-Dioxane (p-Dioxane) Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

N/A (<4 Samples in Dataset)

2015 - 2017 Data:

N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

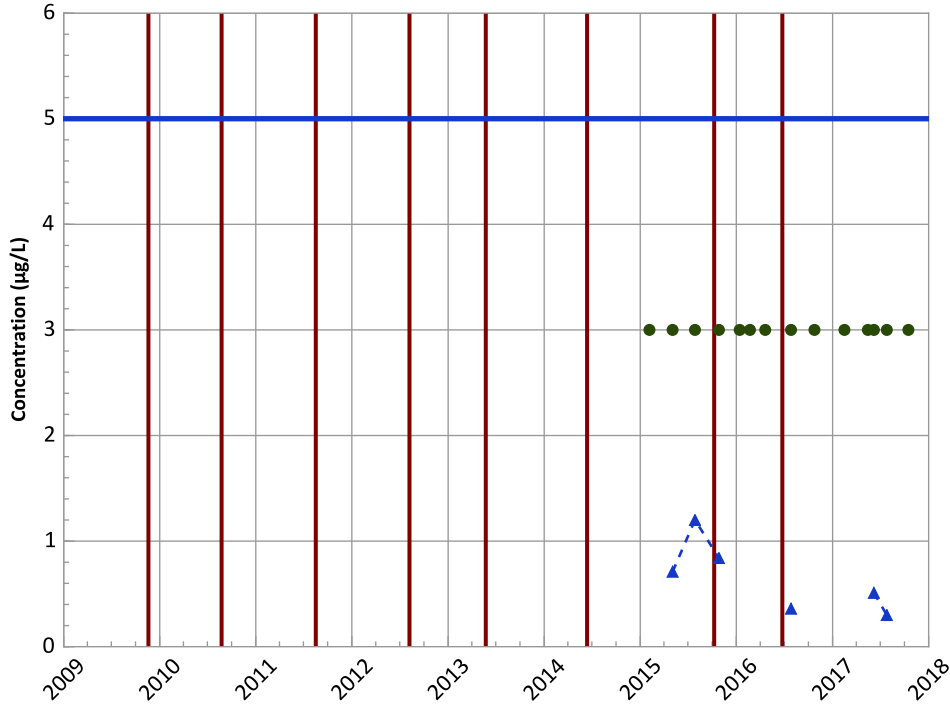
All Data

N/A (<4 Detections in Dataset)

2015 - 2017 Data:

N/A (<4 Detections in Dataset)

Tetrachloroethylene (PCE) Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

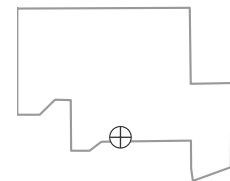
All Data

Decreasing

2015 - 2017 Data:

Stable

Well Location

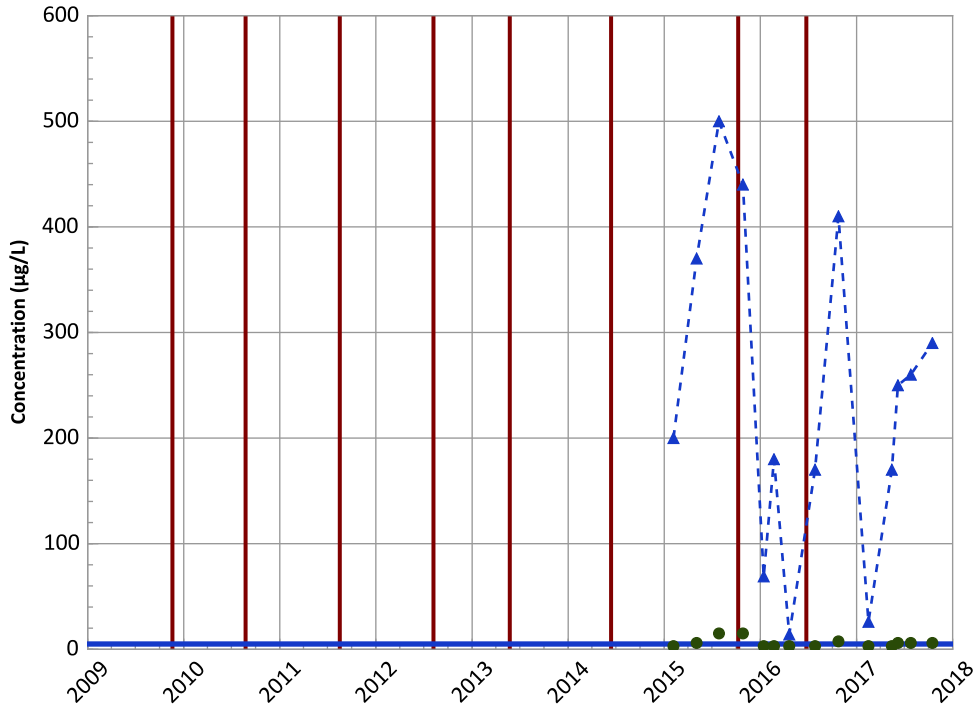


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 02/05/2015 to 10/16/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-1170 in Perched Aquifer
USDOE/NNSA Pantex Plant

Trichloroethene Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Increasing

MAROS Linear Regression Method

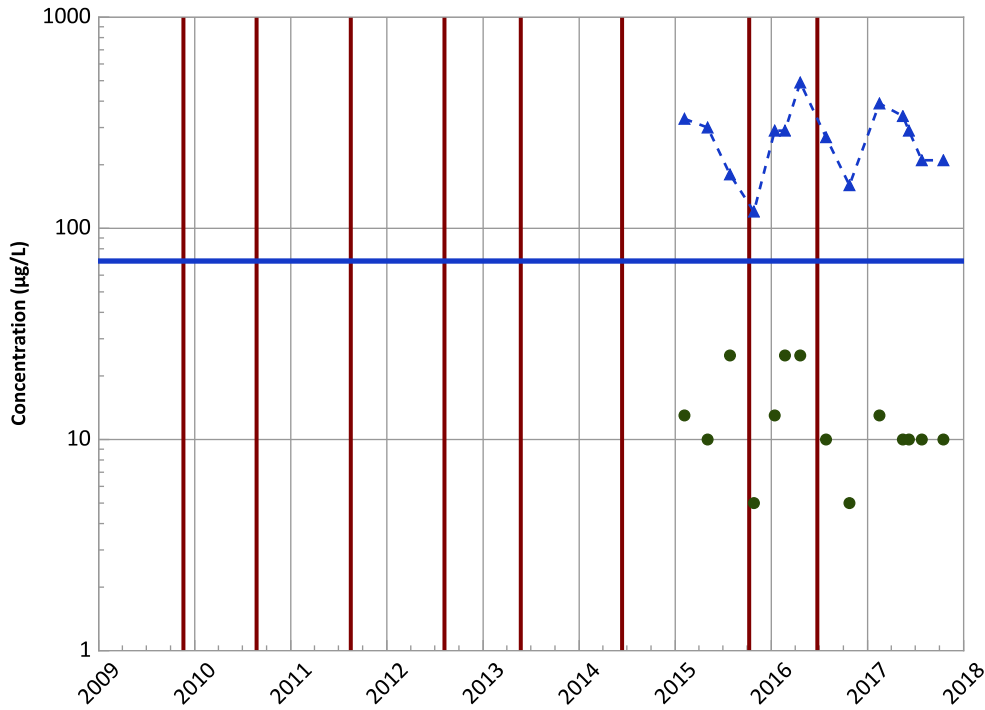
All Data

Stable

2015 - 2017 Data:

Increasing

cis-1,2-Dichloroethene Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Decreasing

MAROS Linear Regression Method

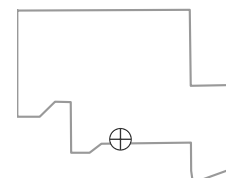
All Data

No Trend

2015 - 2017 Data:

Decreasing

Well Location

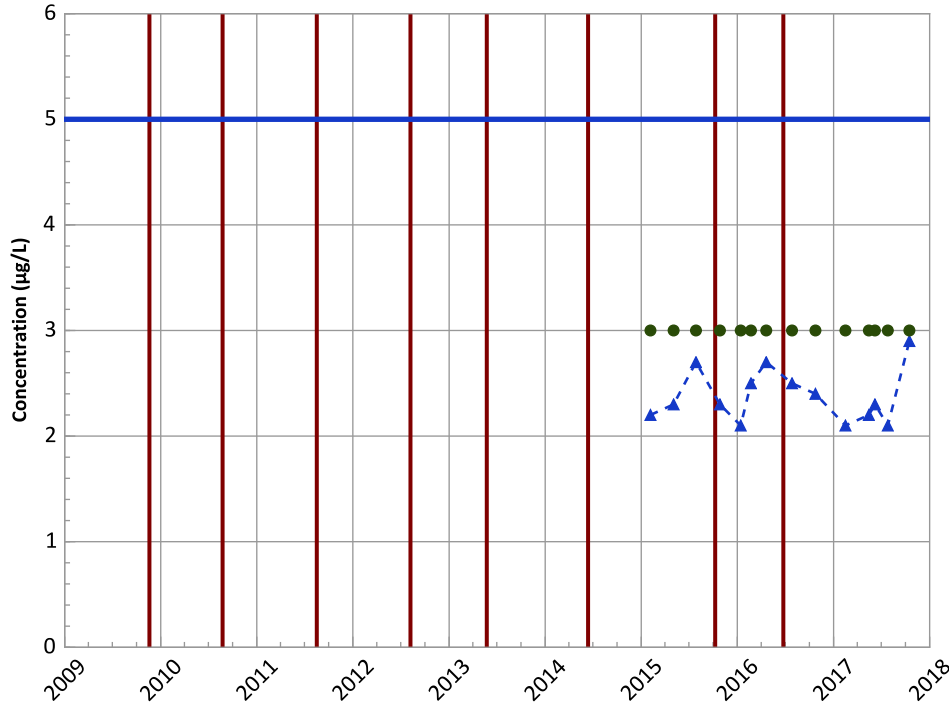


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 02/05/2015 to 10/16/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-1170 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,2-Dichloroethane Trend



Concentration Trend

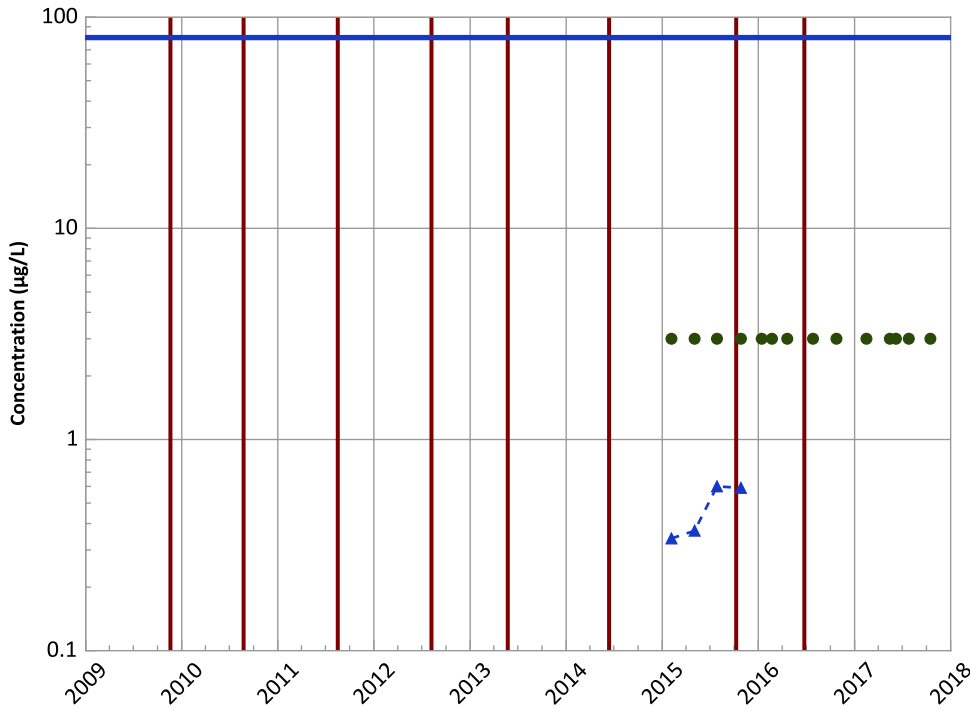
MAROS Mann-Kendall Method

All Data
Decreasing
2015 - 2017 Data:
No Trend

MAROS Linear Regression Method

All Data
Increasing
2015 - 2017 Data:
No Trend

Chloroform Trend



Concentration Trend

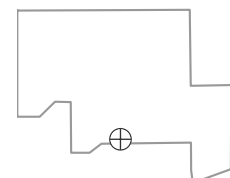
MAROS Mann-Kendall Method

All Data
Increasing
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method

All Data
Increasing
2015 - 2017 Data:
Increasing

Well Location

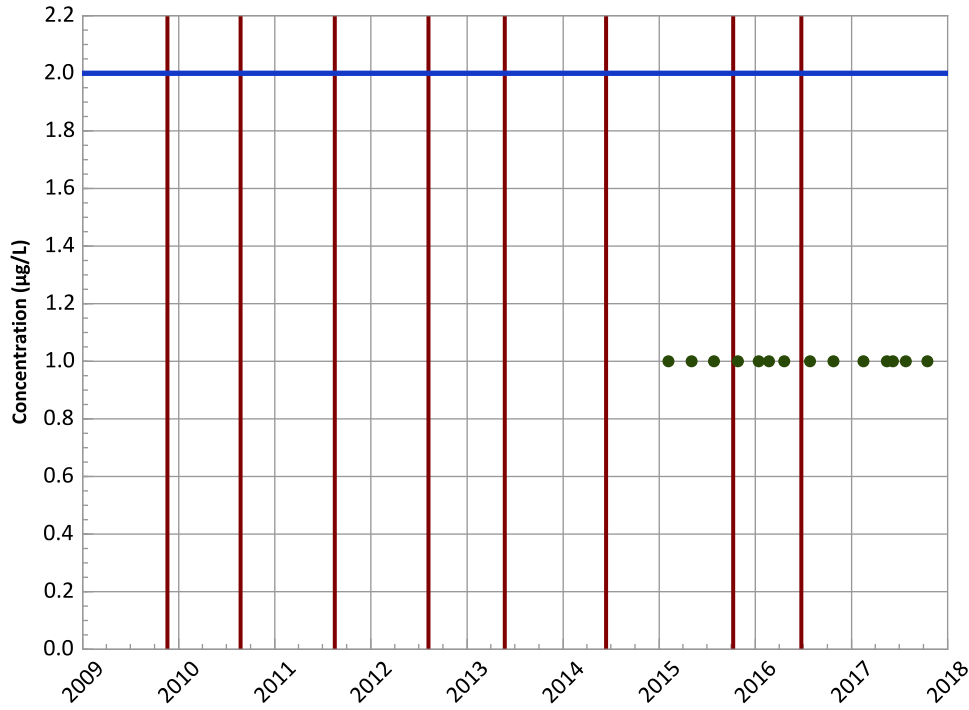


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 02/05/2015 to 10/16/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

**PTX06-1170 in Perched Aquifer
USDOE/NNSA Pantex Plant**

Vinyl Chloride Trend



Concentration Trend

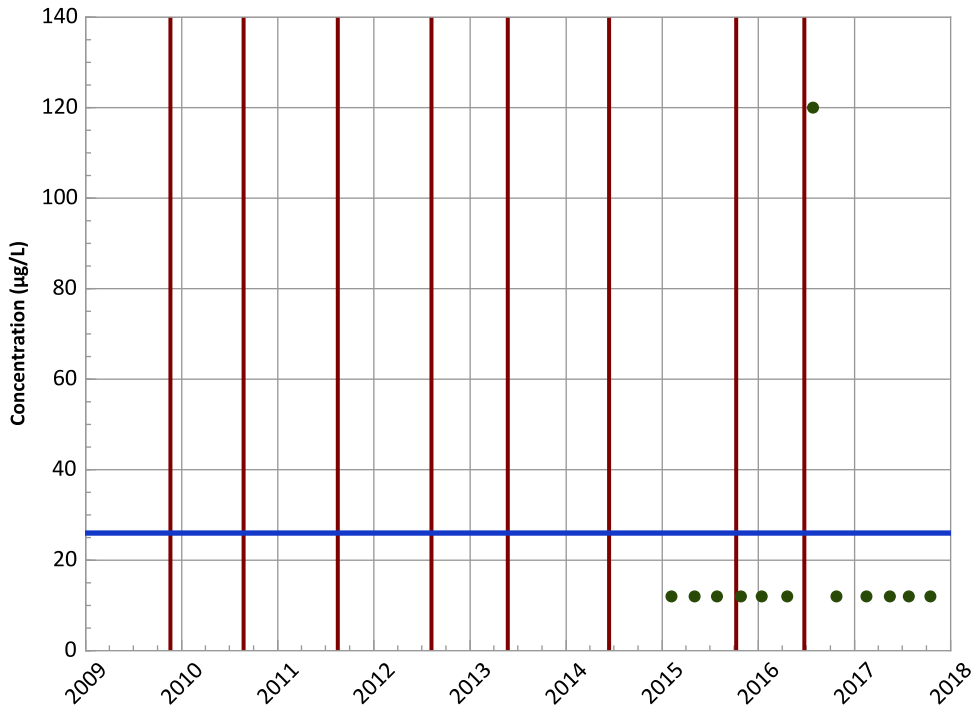
MAROS Mann-Kendall Method

All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method

All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

Perchlorate Trend



Concentration Trend

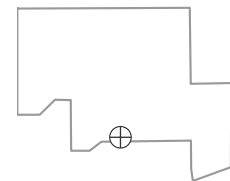
MAROS Mann-Kendall Method

All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method

All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

Well Location

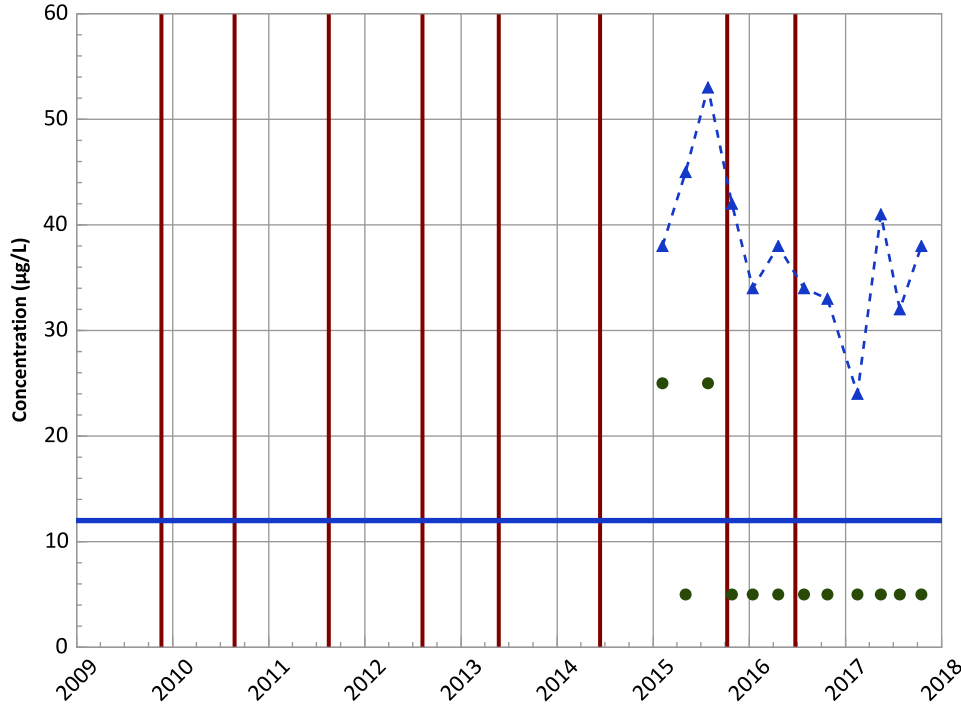


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 02/05/2015 to 10/16/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-1170 in Perched Aquifer
USDOE/NNSA Pantex Plant

Arsenic Trend



Concentration Trend

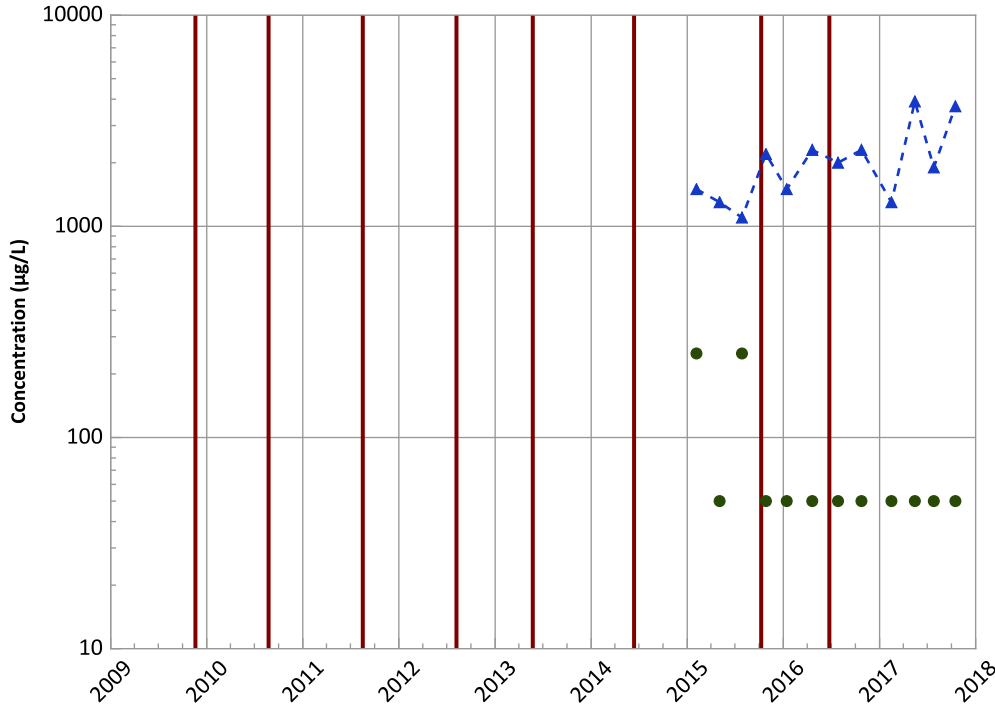
MAROS Mann-Kendall Method

All Data
Decreasing
2015 - 2017 Data:
No Trend

MAROS Linear Regression Method

All Data
Decreasing
2015 - 2017 Data:
No Trend

Iron Trend



Concentration Trend

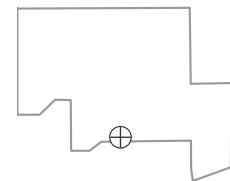
MAROS Mann-Kendall Method

All Data
Increasing
2015 - 2017 Data:
No Trend

MAROS Linear Regression Method

All Data
Increasing
2015 - 2017 Data:
No Trend

Well Location

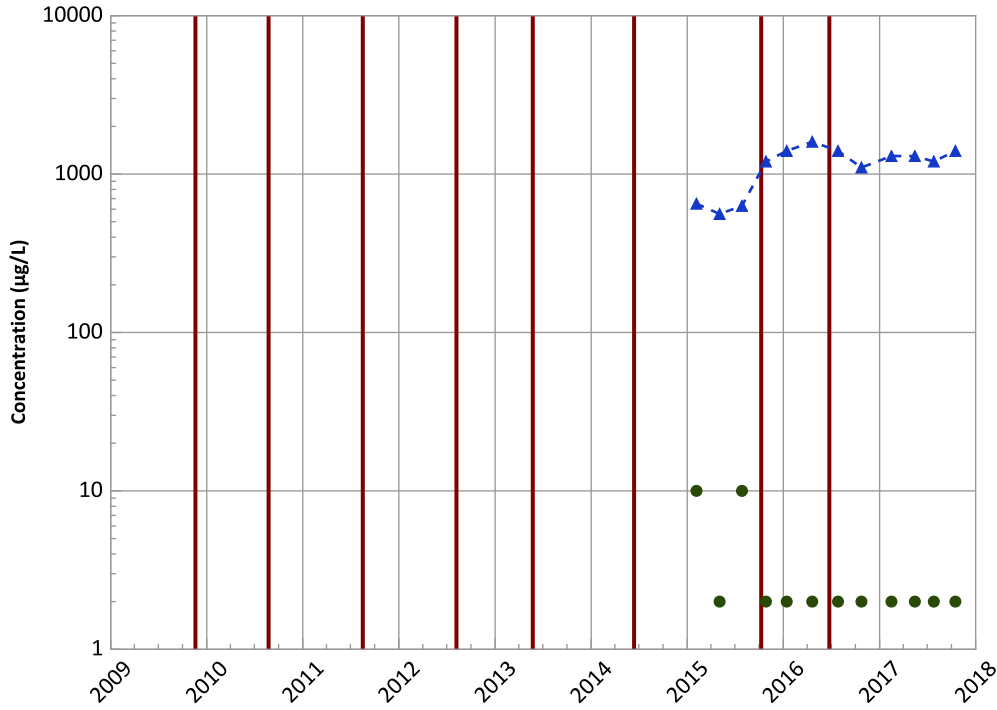


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 02/05/2015 to 10/16/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-1170 in Perched Aquifer
USDOE/NNSA Pantex Plant

Manganese Trend



Concentration Trend

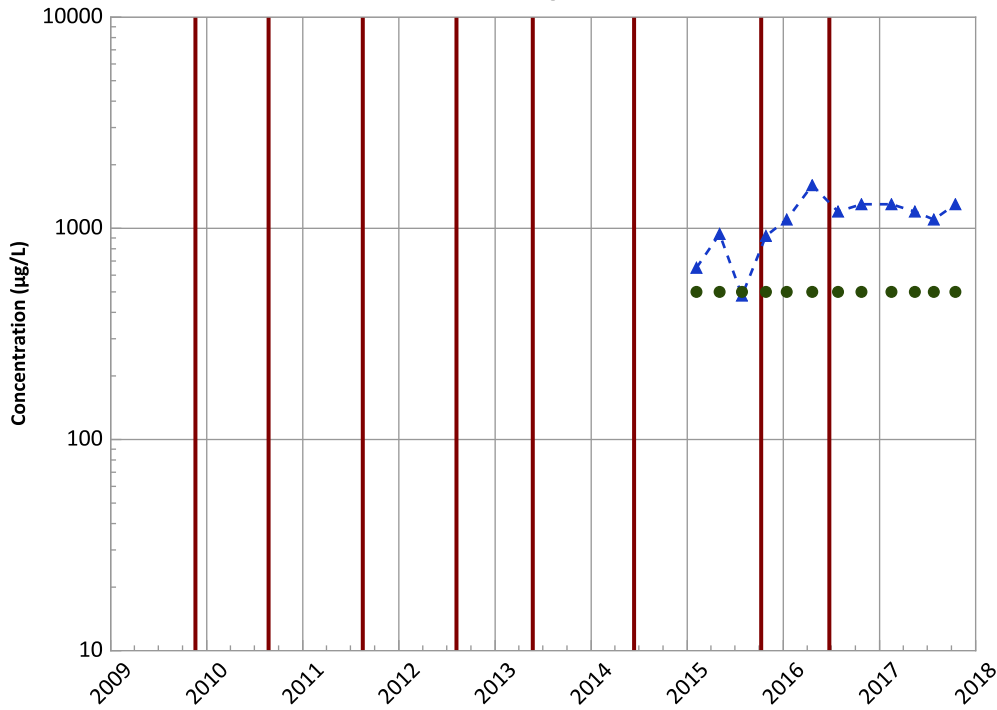
MAROS Mann-Kendall Method

All Data
Probably Increasing
2015 - 2017 Data:
No Trend

MAROS Linear Regression Method

All Data
Increasing
2015 - 2017 Data:
No Trend

Divalent Manganese Trend



Concentration Trend

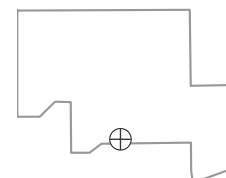
MAROS Mann-Kendall Method

All Data
Increasing
2015 - 2017 Data:
Decreasing

MAROS Linear Regression Method

All Data
Increasing
2015 - 2017 Data:
Stable

Well Location

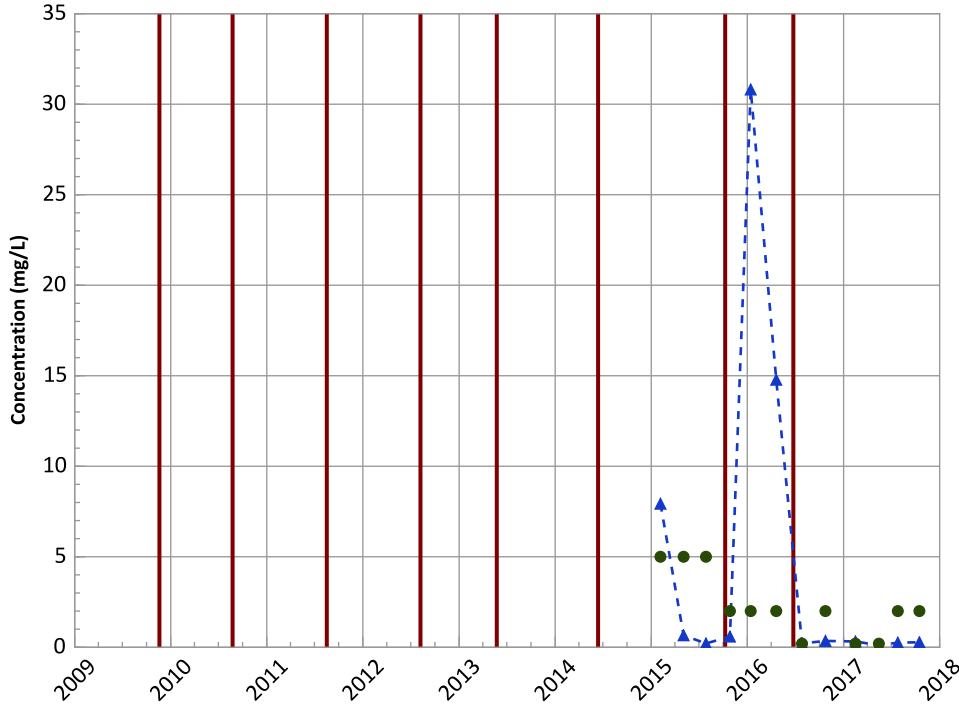


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 02/05/2015 to 10/16/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-1170 in Perched Aquifer
USDOE/NNSA Pantex Plant

Total Volatile Fatty Acids Trend



Concentration Trend

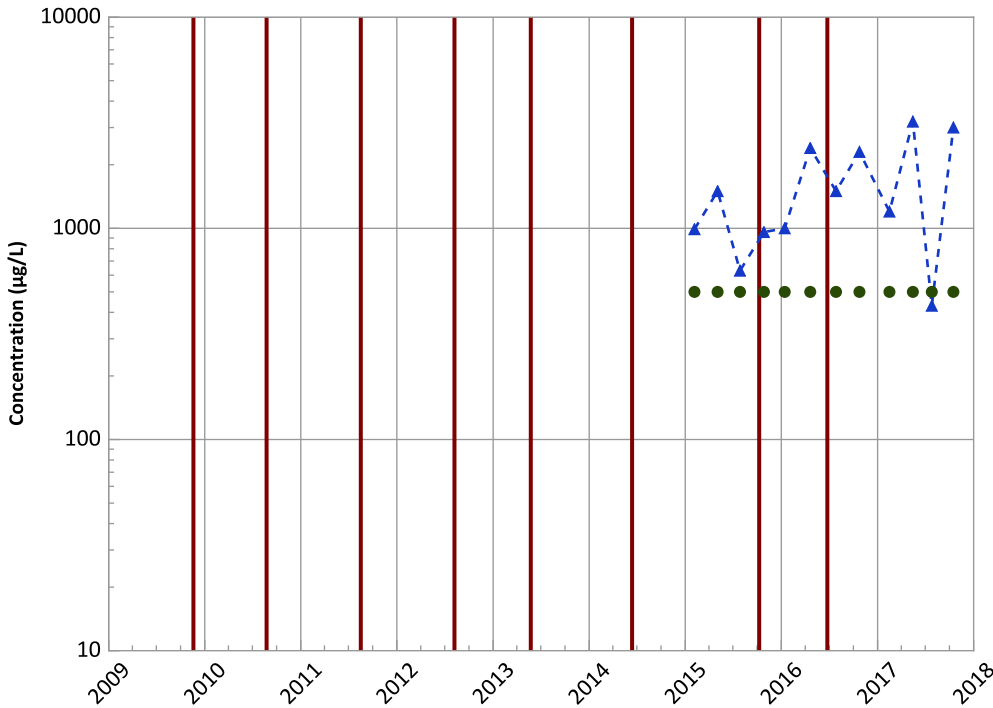
MAROS Mann-Kendall Method

All Data
Decreasing
2015 - 2017 Data:
Stable

MAROS Linear Regression Method

All Data
Probably Decreasing
2015 - 2017 Data:
No Trend

Ferrous Iron Trend



Concentration Trend

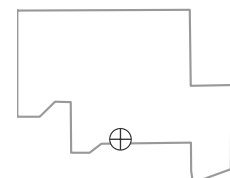
MAROS Mann-Kendall Method

All Data
Probably Increasing
2015 - 2017 Data:
Stable

MAROS Linear Regression Method

All Data
No Trend
2015 - 2017 Data:
No Trend

Well Location

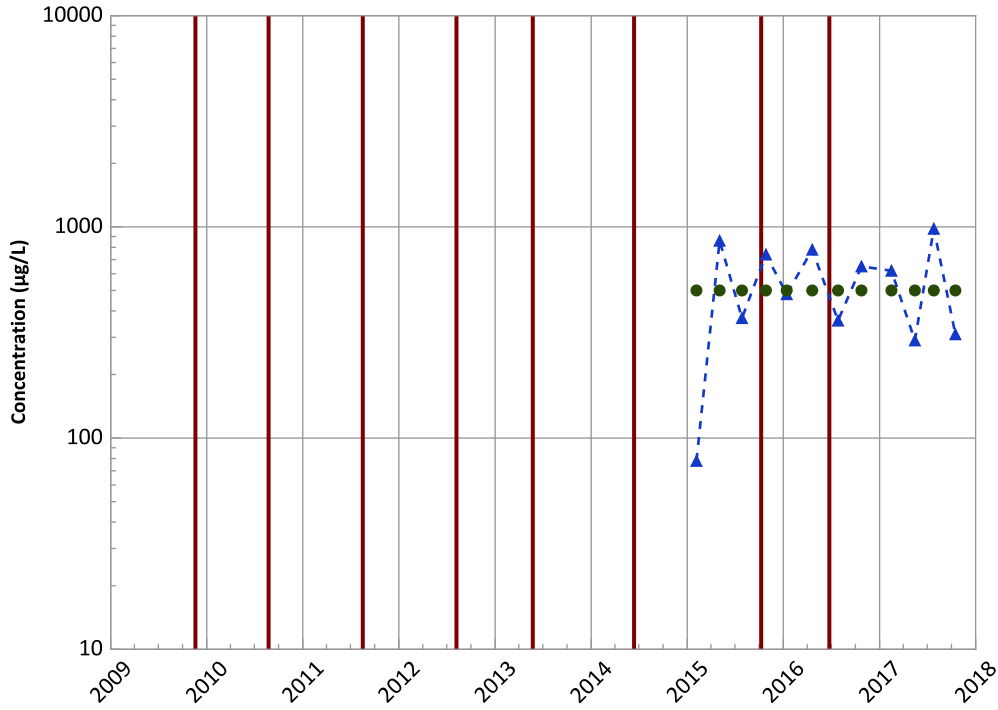


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 02/05/2015 to 10/16/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-1170 in Perched Aquifer
USDOE/NNSA Pantex Plant

Ferric Iron Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data
Decreasing

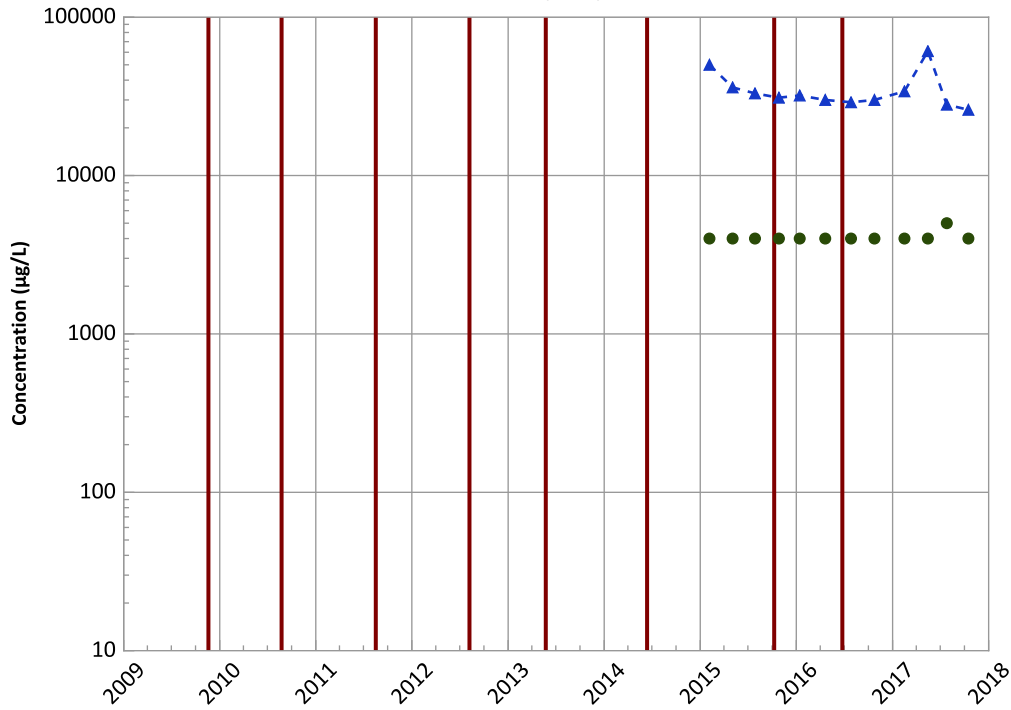
2015 - 2017 Data:
Stable

MAROS Linear Regression Method

All Data
No Trend

2015 - 2017 Data:
Stable

Chloride (as Cl) Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data
Decreasing

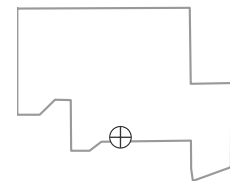
2015 - 2017 Data:
Decreasing

MAROS Linear Regression Method

All Data
Stable

2015 - 2017 Data:
Stable

Well Location

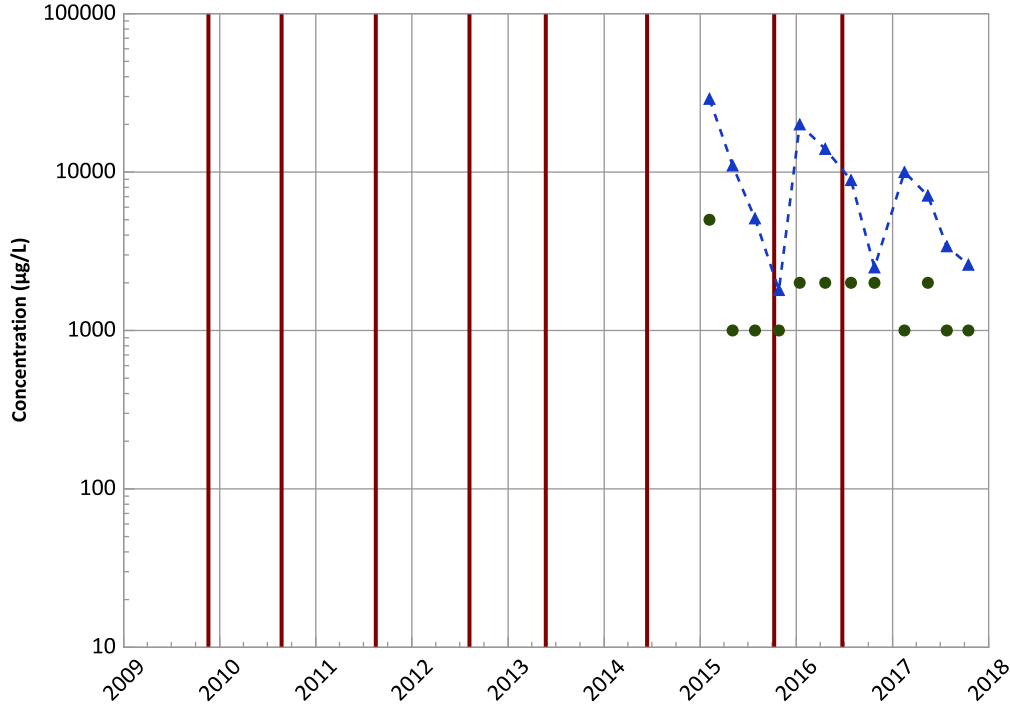


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 02/05/2015 to 10/16/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-1170 in Perched Aquifer
USDOE/NNSA Pantex Plant

Total Organic Carbon Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Decreasing

MAROS Linear Regression Method

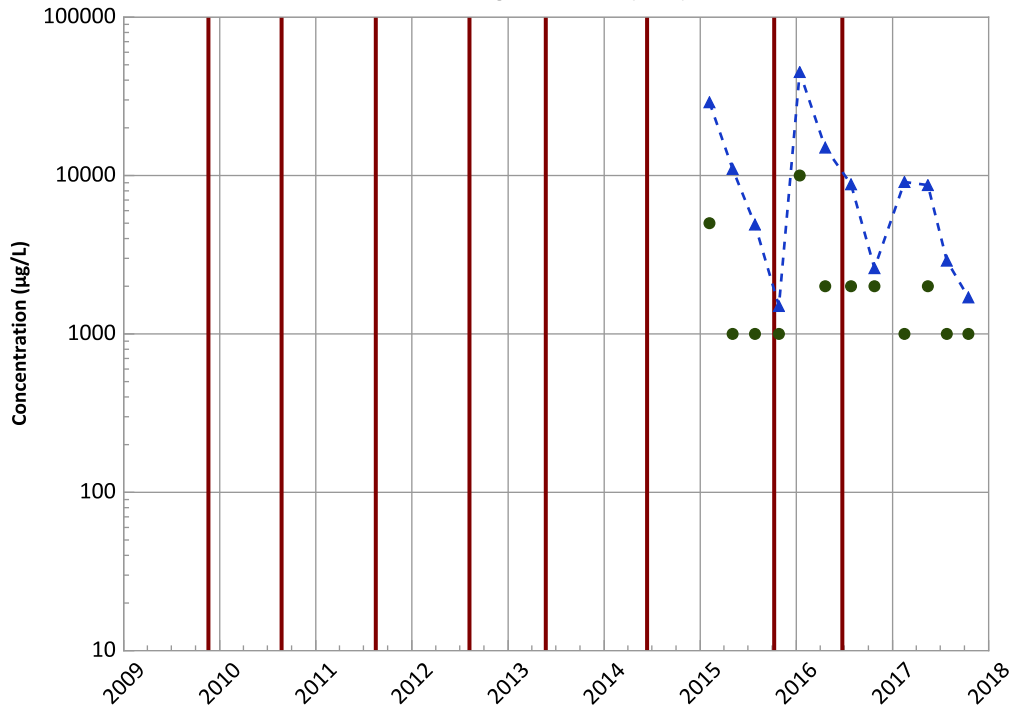
All Data

Probably Decreasing

2015 - 2017 Data:

Decreasing

Dissolved Organic Carbon (DOC) Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Decreasing

MAROS Linear Regression Method

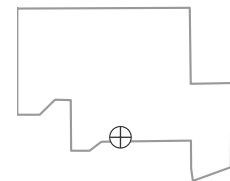
All Data

Probably Decreasing

2015 - 2017 Data:

Decreasing

Well Location

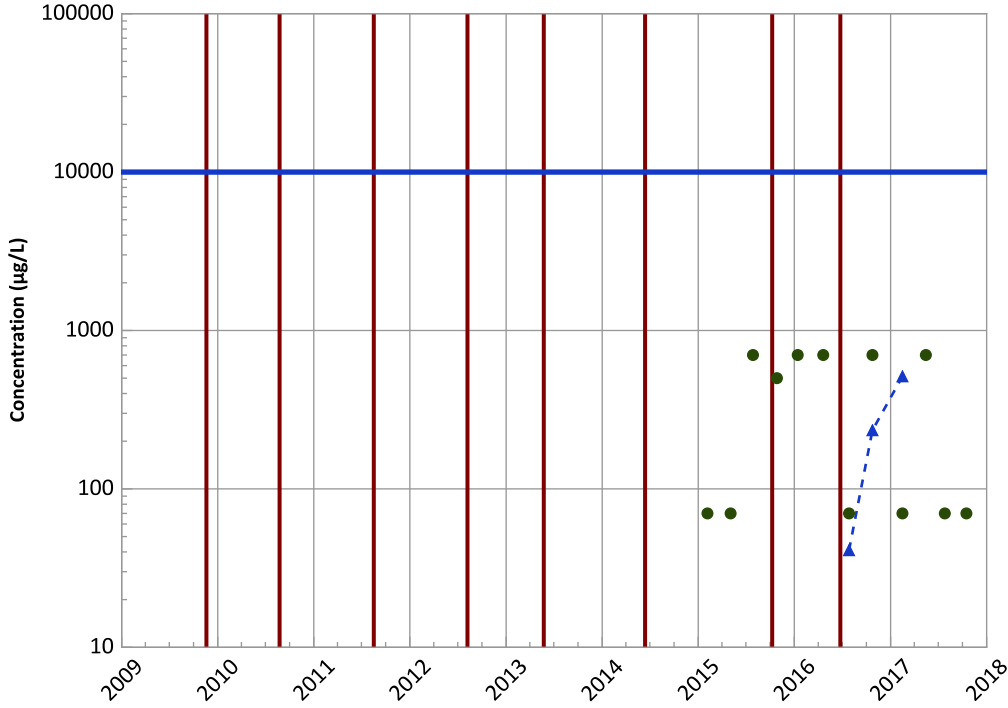


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 02/05/2015 to 10/16/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-1170 in Perched Aquifer
USDOE/NNSA Pantex Plant

Nitrate as N Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

N/A (<4 Detections in Dataset)

2015 - 2017 Data:

N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

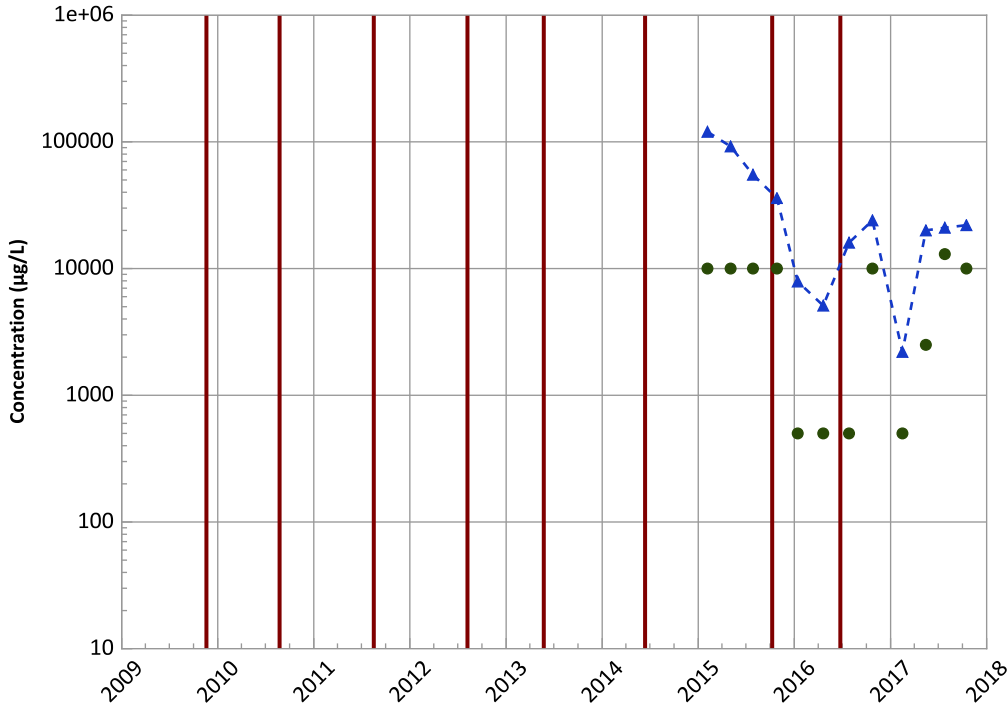
All Data

N/A (<4 Detections in Dataset)

2015 - 2017 Data:

N/A (<4 Detections in Dataset)

Sulfate (as SO4) Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Increasing

MAROS Linear Regression Method

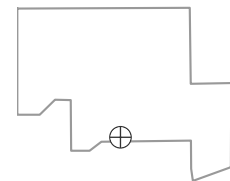
All Data

Decreasing

2015 - 2017 Data:

No Trend

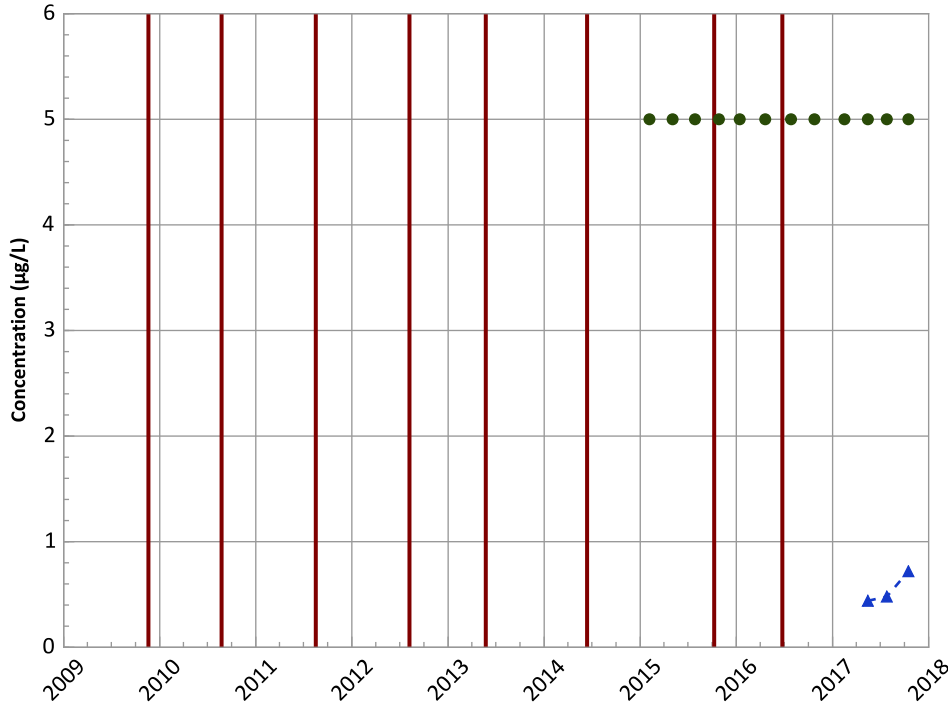
Well Location



Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 02/05/2015 to 10/16/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

**PTX06-1170 in Perched Aquifer
USDOE/NNSA Pantex Plant
Ethene (Ethylene) Trend**



Concentration Trend

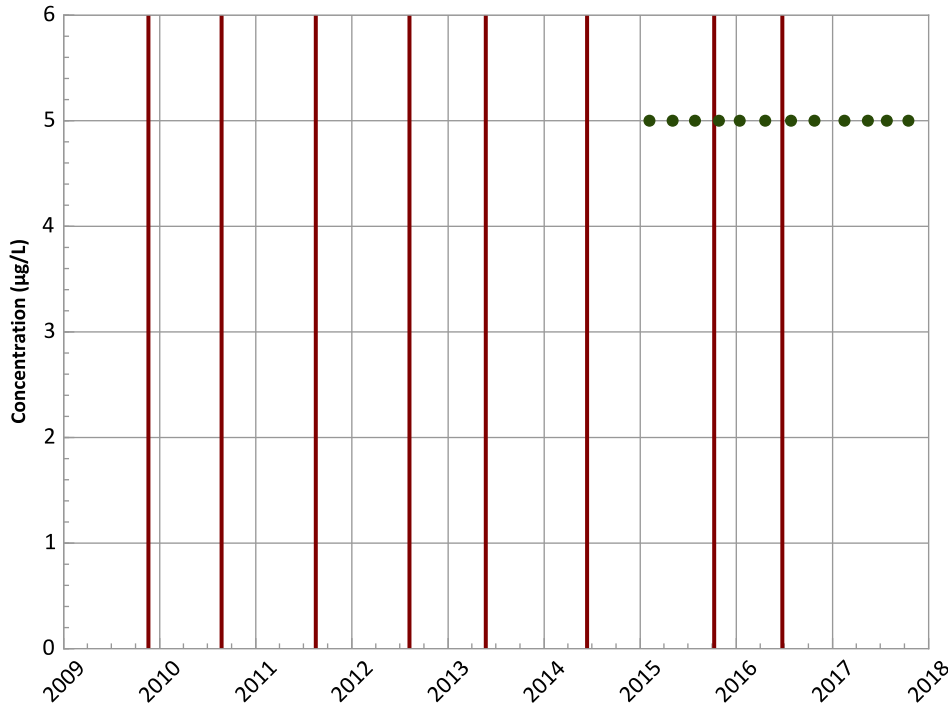
MAROS Mann-Kendall Method

All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
N/A (<4 Detections in Dataset)

Ethane Trend



Concentration Trend

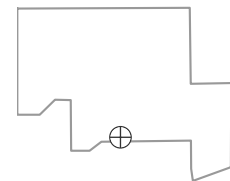
MAROS Mann-Kendall Method

All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method

All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

Well Location

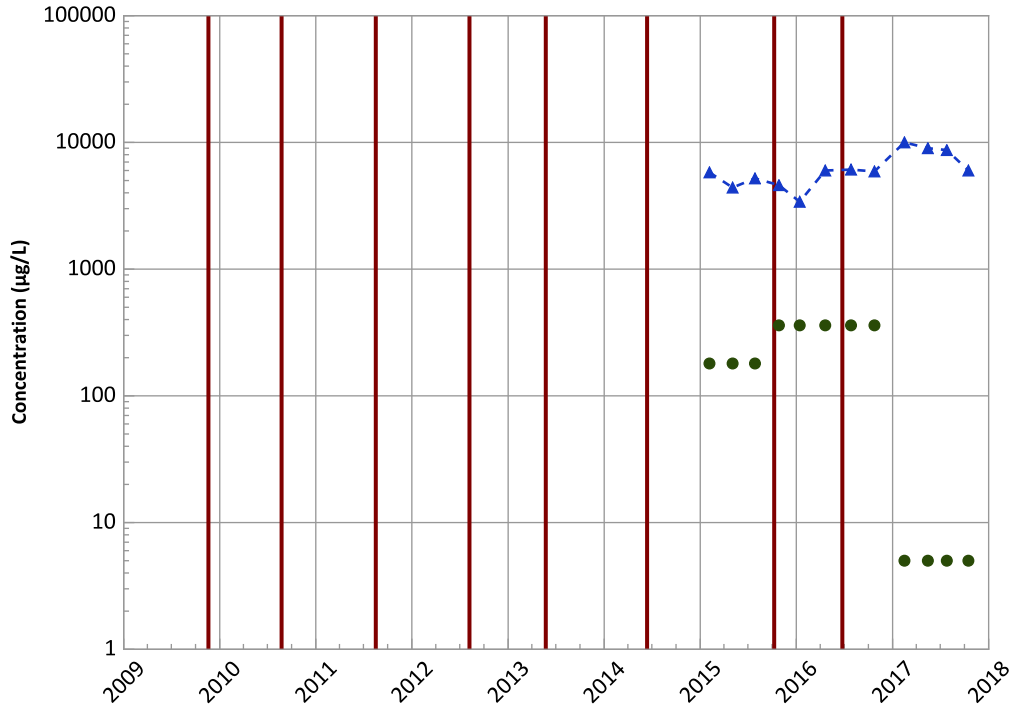


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 02/05/2015 to 10/16/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-1170 in Perched Aquifer
USDOE/NNSA Pantex Plant

Methane Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Increasing

2015 - 2017 Data:

Decreasing

MAROS Linear Regression Method

All Data

Increasing

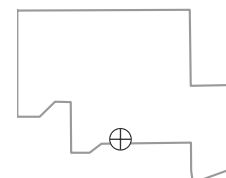
2015 - 2017 Data:

Decreasing

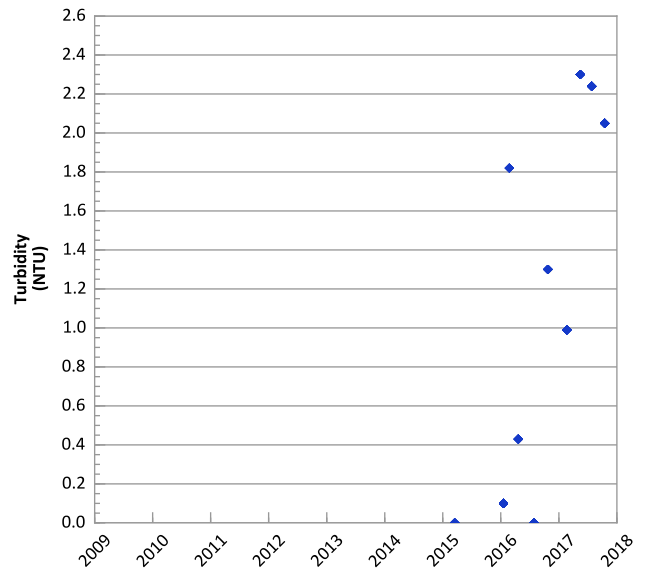
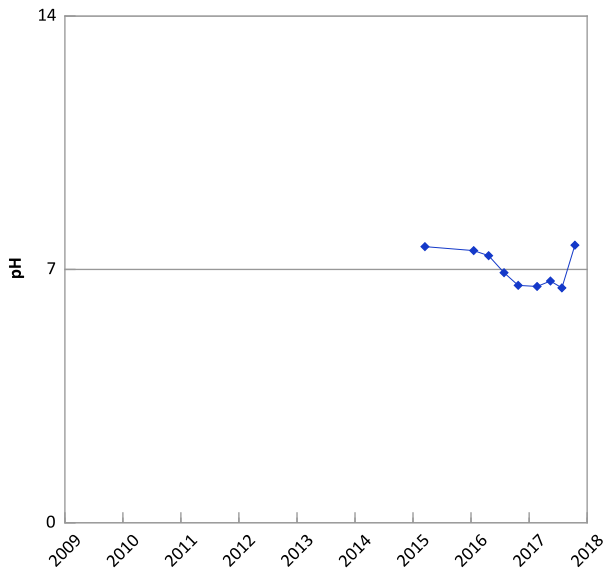
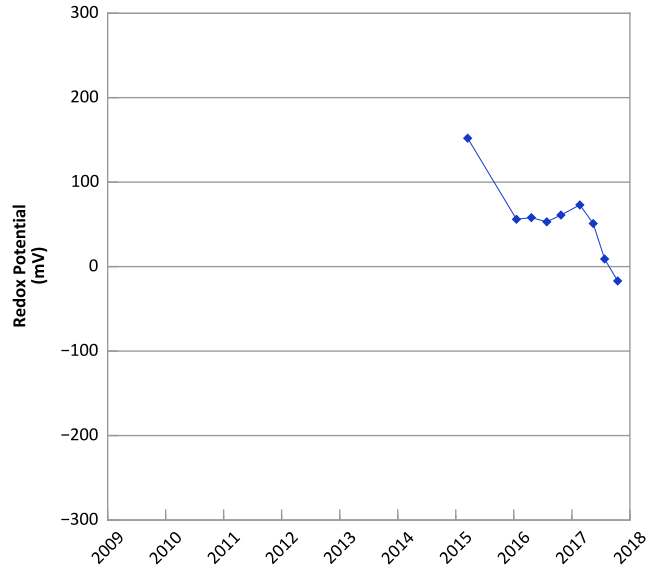
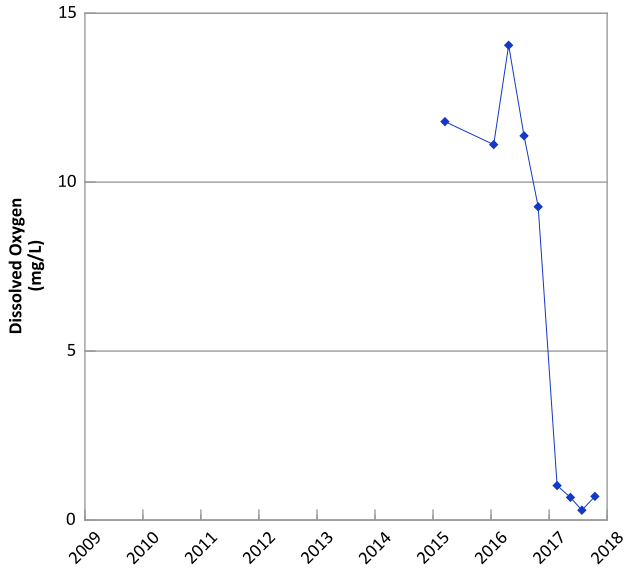
Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 02/05/2015 to 10/16/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

Well Location

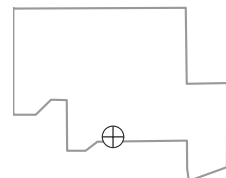


**PTX06-1176 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**

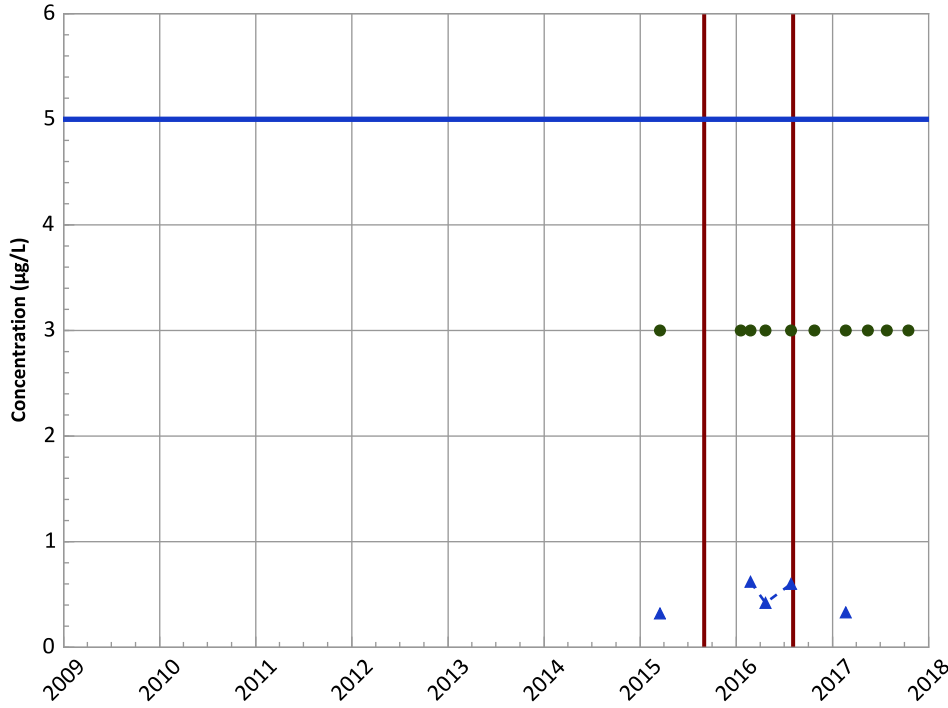


Query Date Range: 01/01/2009 to 12/31/2017
 Data Date Range: 03/17/2015 to 10/16/2017
 Analysis Date: 03/29/2018

Well Location



**PTX06-1176 in Perched Aquifer
USDOE/NNSA Pantex Plant
Tetrachloroethylene (PCE) Trend**



Concentration Trend

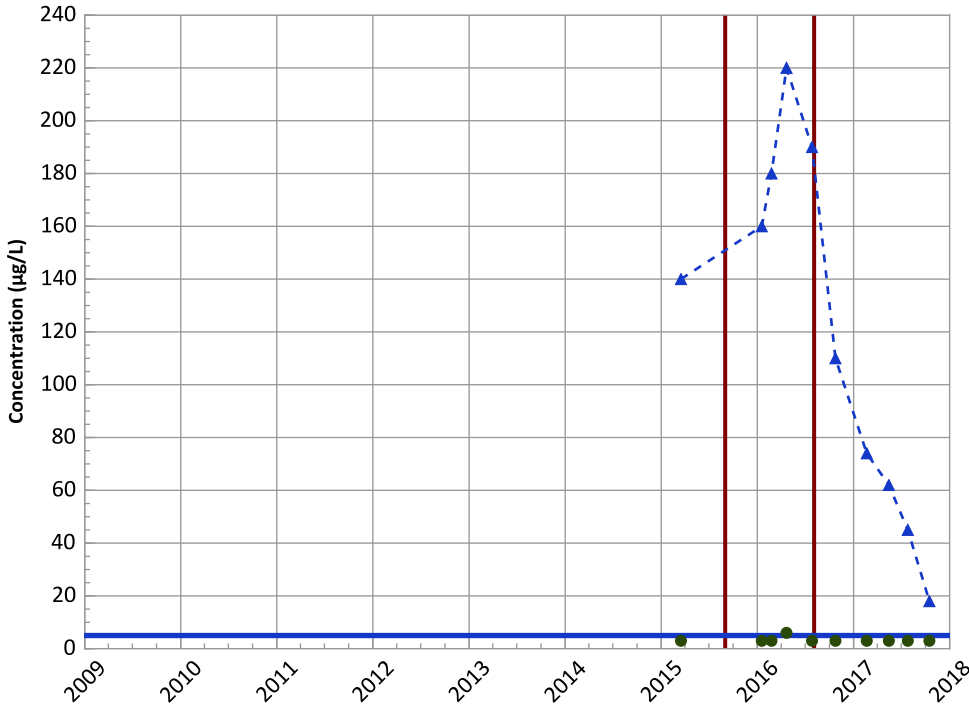
MAROS Mann-Kendall Method

All Data
No Trend
2015 - 2017 Data:
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

All Data
No Trend
2015 - 2017 Data:
Stable

Trichloroethene Trend



Concentration Trend

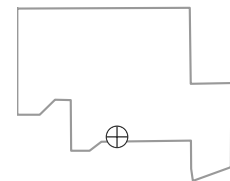
MAROS Mann-Kendall Method

All Data
Decreasing
2015 - 2017 Data:
Decreasing

MAROS Linear Regression Method

All Data
Decreasing
2015 - 2017 Data:
Stable

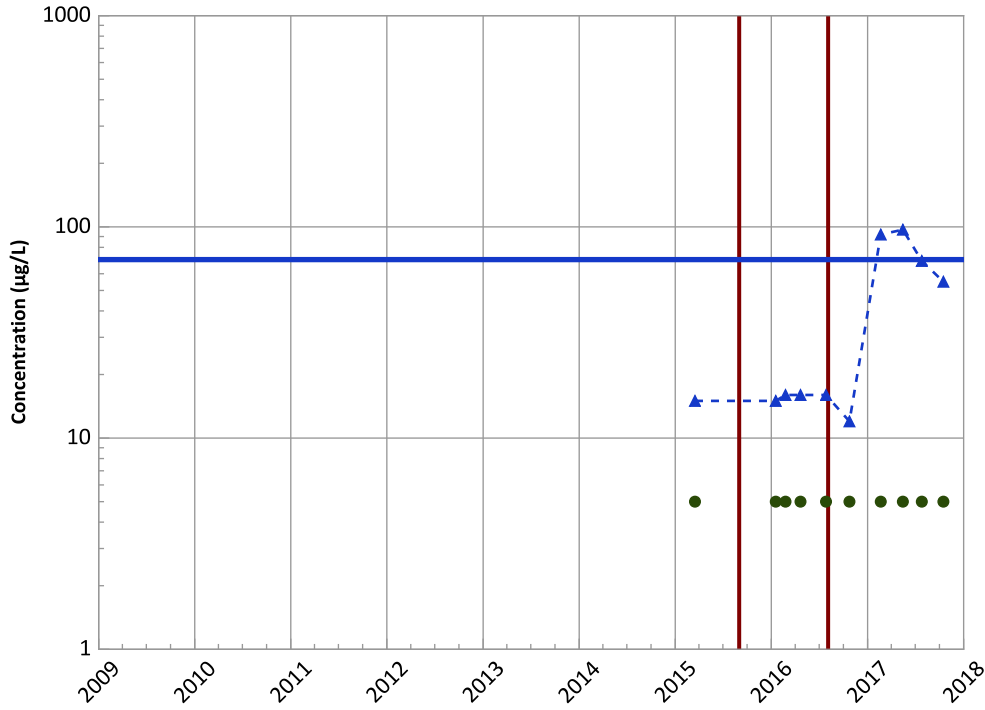
Well Location



Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 03/17/2015 to 10/16/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

**PTX06-1176 in Perched Aquifer
USDOE/NNSA Pantex Plant**
cis-1,2-Dichloroethene Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Increasing

2015 - 2017 Data:

Decreasing

MAROS Linear Regression Method

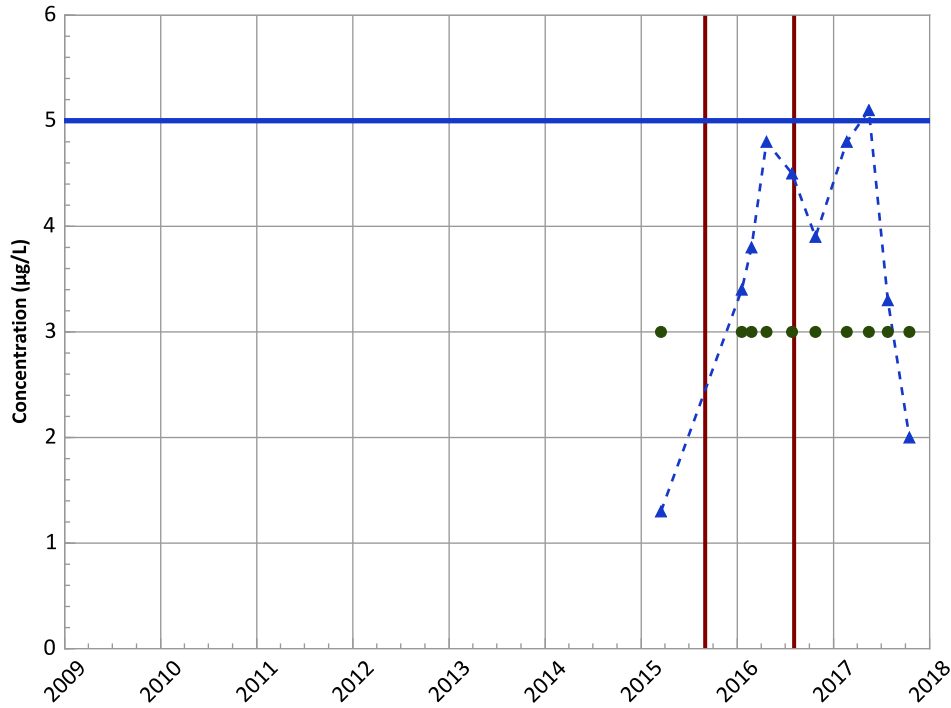
All Data

Increasing

2015 - 2017 Data:

Stable

1,2-Dichloroethane Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Increasing

2015 - 2017 Data:

Decreasing

MAROS Linear Regression Method

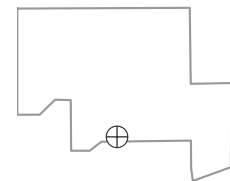
All Data

No Trend

2015 - 2017 Data:

Stable

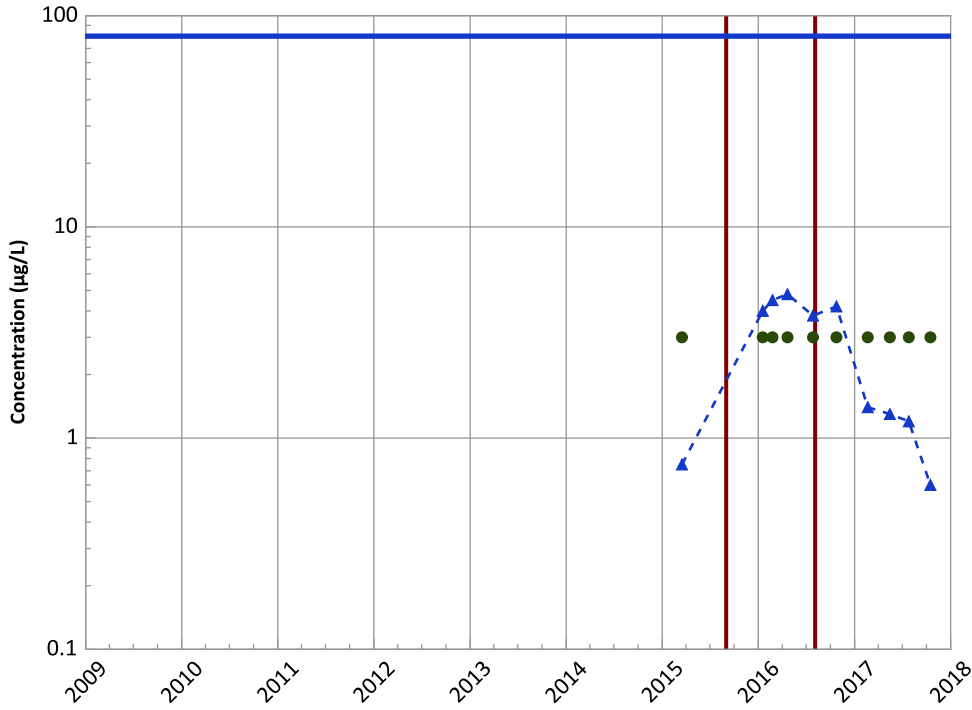
Well Location



Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 03/17/2015 to 10/16/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-1176 in Perched Aquifer
 USDOE/NNSA Pantex Plant
 Chloroform Trend



Concentration Trend

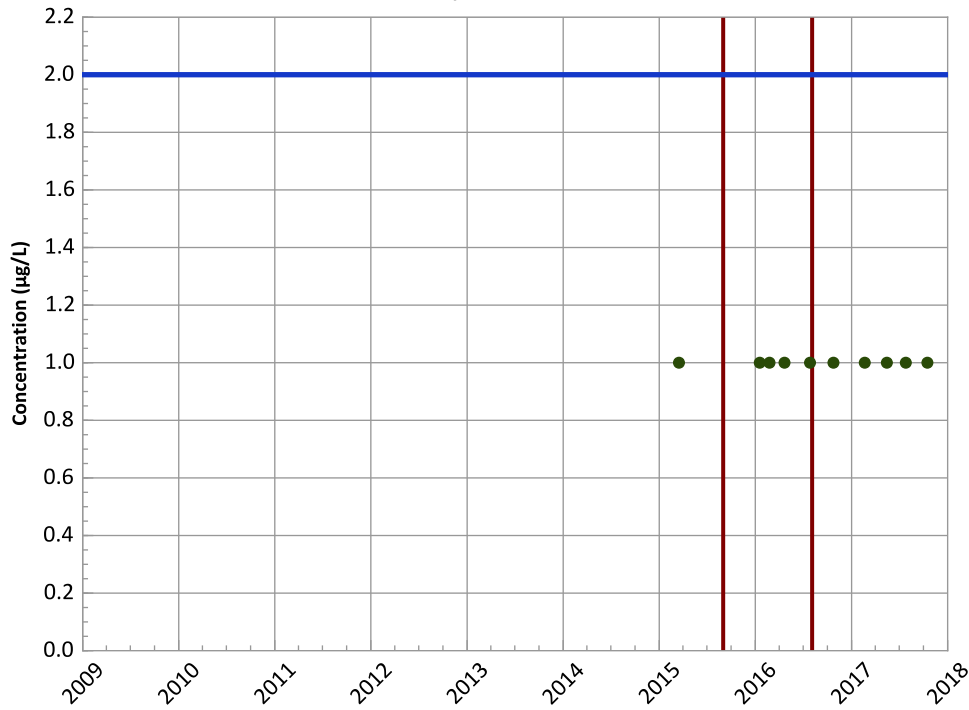
MAROS Mann-Kendall Method

All Data
 Decreasing
 2015 - 2017 Data:
 Decreasing

MAROS Linear Regression Method

All Data
 Stable
 2015 - 2017 Data:
 Stable

Vinyl Chloride Trend



Concentration Trend

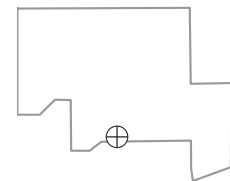
MAROS Mann-Kendall Method

All Data
 All Non-Detect
 2015 - 2017 Data:
 All Non-Detect

MAROS Linear Regression Method

All Data
 All Non-Detect
 2015 - 2017 Data:
 All Non-Detect

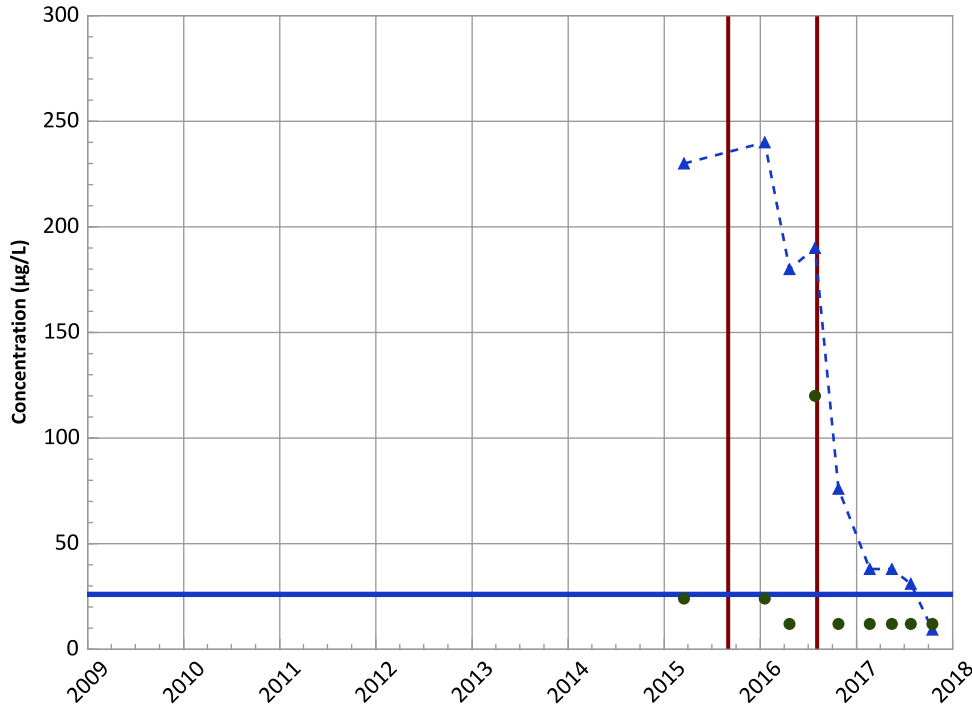
Well Location



Query Date Range: 01/01/2009 to 12/31/2017
 Data Date Range: 03/17/2015 to 10/16/2017
 Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

**PTX06-1176 in Perched Aquifer
USDOE/NNSA Pantex Plant
Perchlorate Trend**



Concentration Trend

MAROS Mann-Kendall Method

All Data
Decreasing

2015 - 2017 Data:
Decreasing

Decreasing

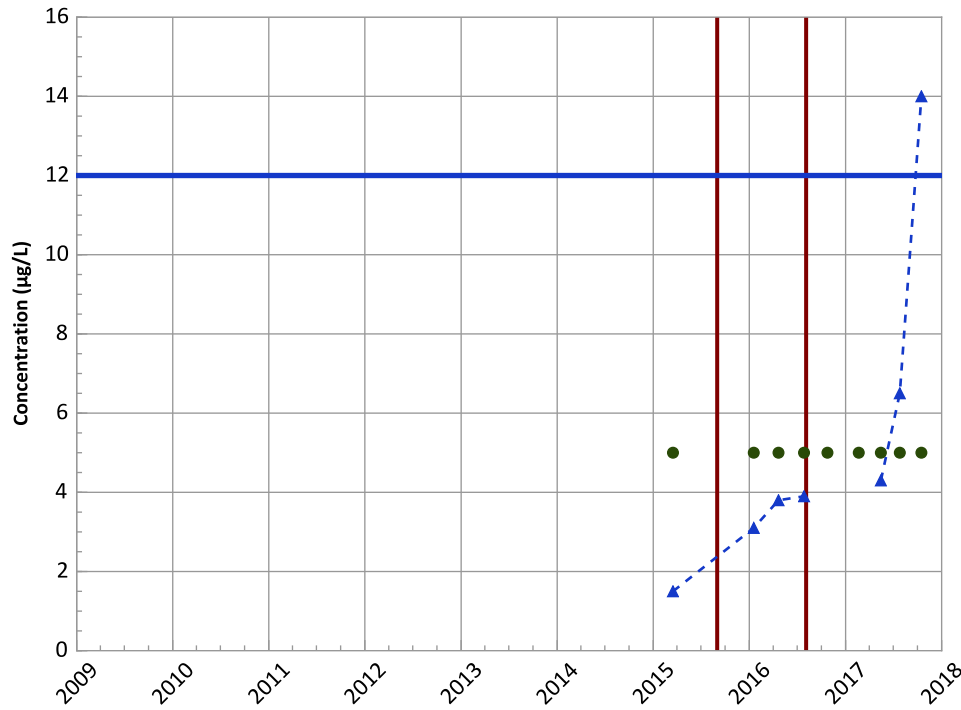
MAROS Linear Regression Method

All Data
Decreasing

2015 - 2017 Data:
Stable

Stable

Arsenic Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data
Increasing

2015 - 2017 Data:
N/A (<4 Detections in Dataset)

N/A (<4 Detections in Dataset)

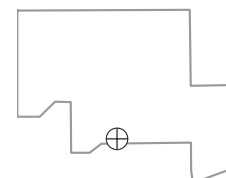
MAROS Linear Regression Method

All Data
Increasing

2015 - 2017 Data:
Probably Increasing

Probably Increasing

Well Location

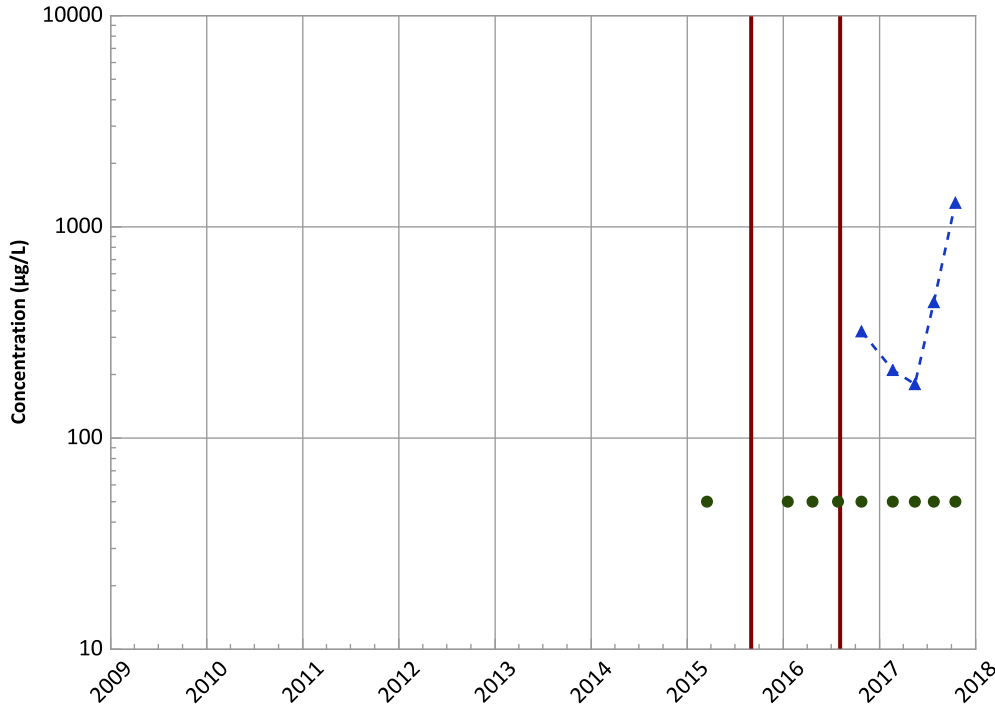


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 03/17/2015 to 10/16/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

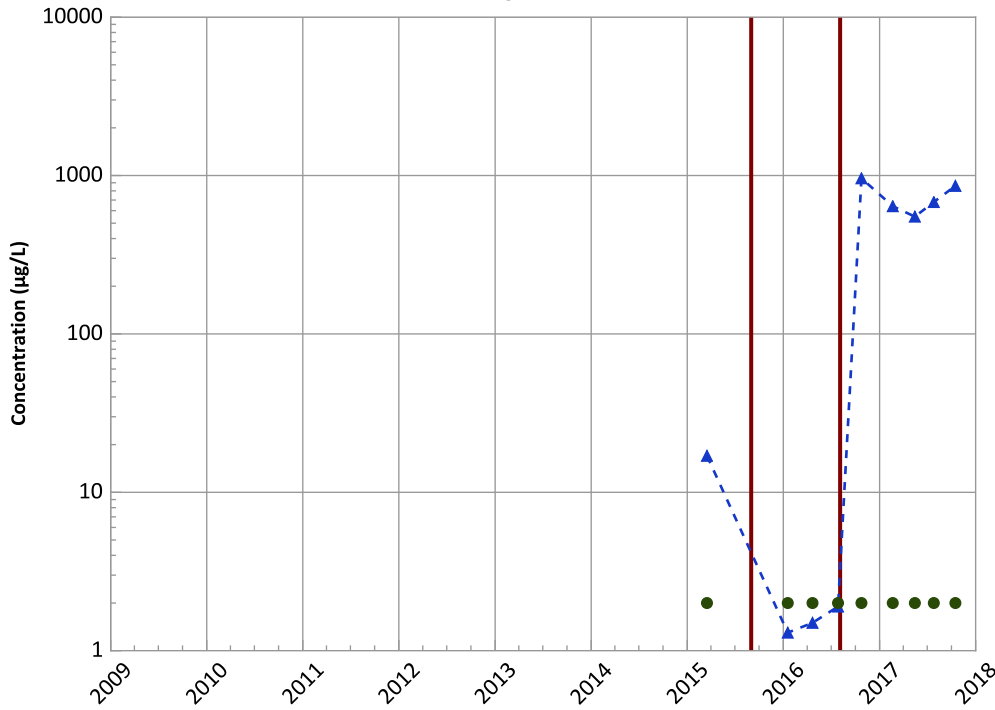
PTX06-1176 in Perched Aquifer
USDOE/NNSA Pantex Plant

Iron Trend



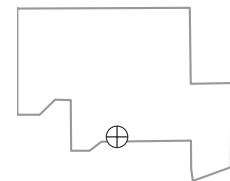
Concentration Trend
MAROS Mann-Kendall Method
 All Data
 Increasing
 2015 - 2017 Data:
 No Trend
MAROS Linear Regression Method
 All Data
 No Trend
 2015 - 2017 Data:
 Probably Increasing

Manganese Trend



Concentration Trend
MAROS Mann-Kendall Method
 All Data
 Increasing
 2015 - 2017 Data:
 No Trend
MAROS Linear Regression Method
 All Data
 Increasing
 2015 - 2017 Data:
 No Trend

Well Location

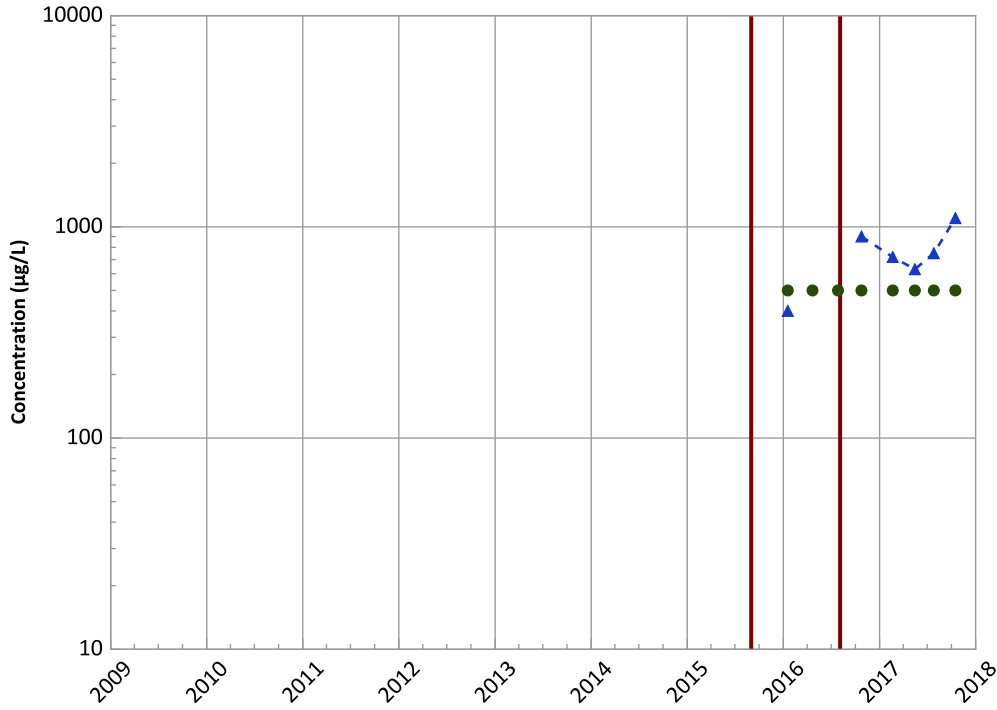


Query Date Range: 01/01/2009 to 12/31/2017
 Data Date Range: 03/17/2015 to 10/16/2017
 Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-1176 in Perched Aquifer
USDOE/NNSA Pantex Plant

Divalent Manganese Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Increasing

2015 - 2017 Data:

No Trend

MAROS Linear Regression Method

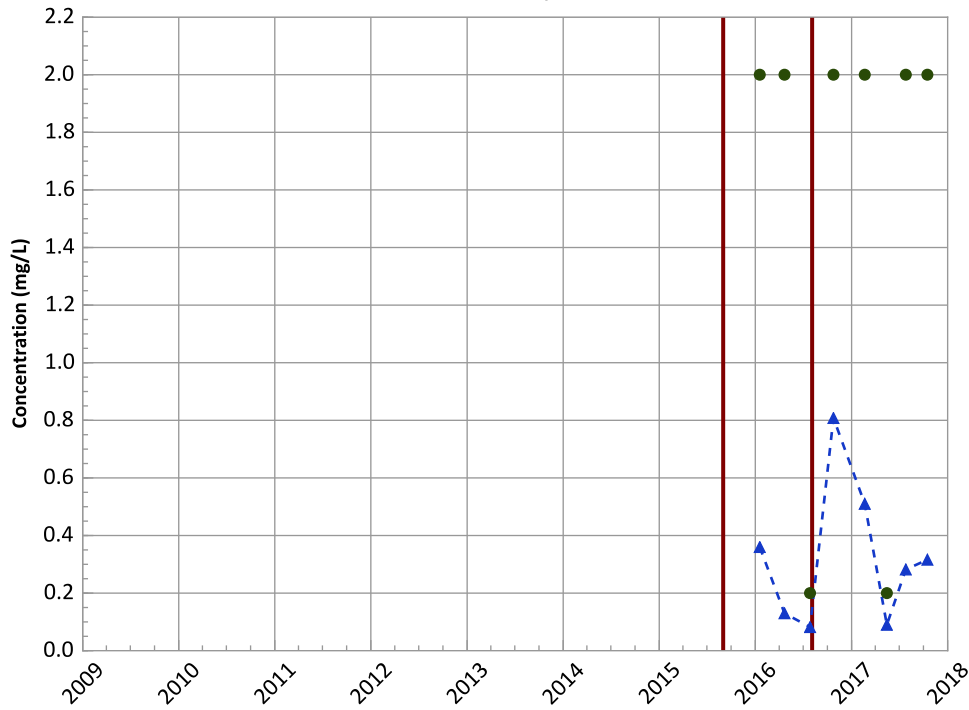
All Data

Increasing

2015 - 2017 Data:

No Trend

Total Volatile Fatty Acids Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Stable

2015 - 2017 Data:

Stable

MAROS Linear Regression Method

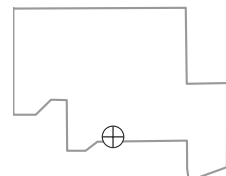
All Data

No Trend

2015 - 2017 Data:

Stable

Well Location

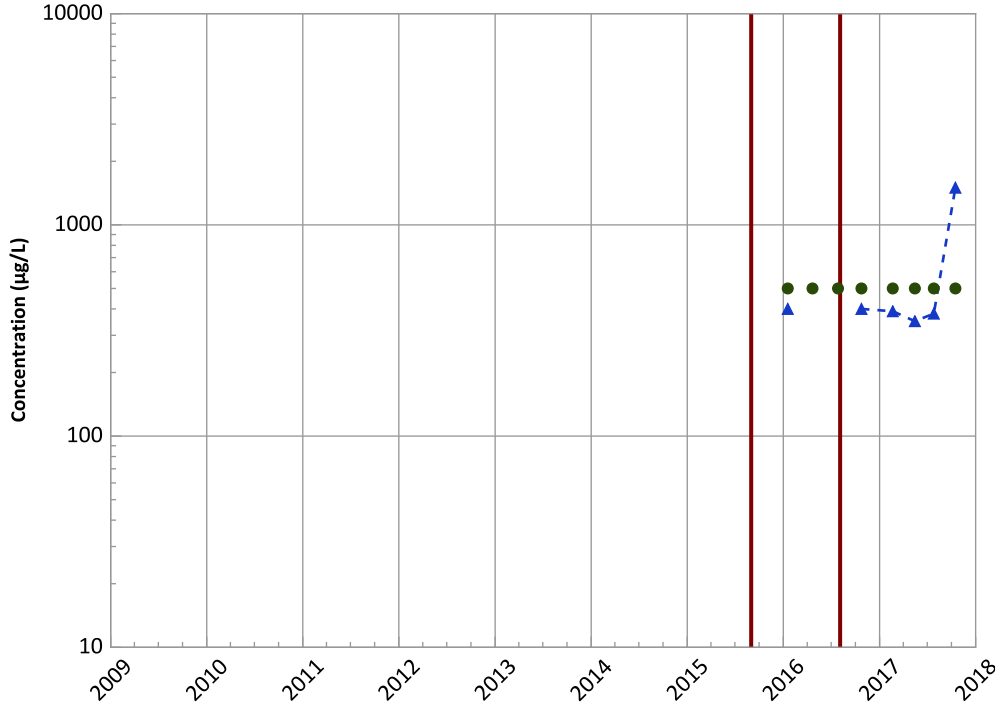


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 03/17/2015 to 10/16/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-1176 in Perched Aquifer
USDOE/NNSA Pantex Plant

Ferrous Iron Trend



Concentration Trend

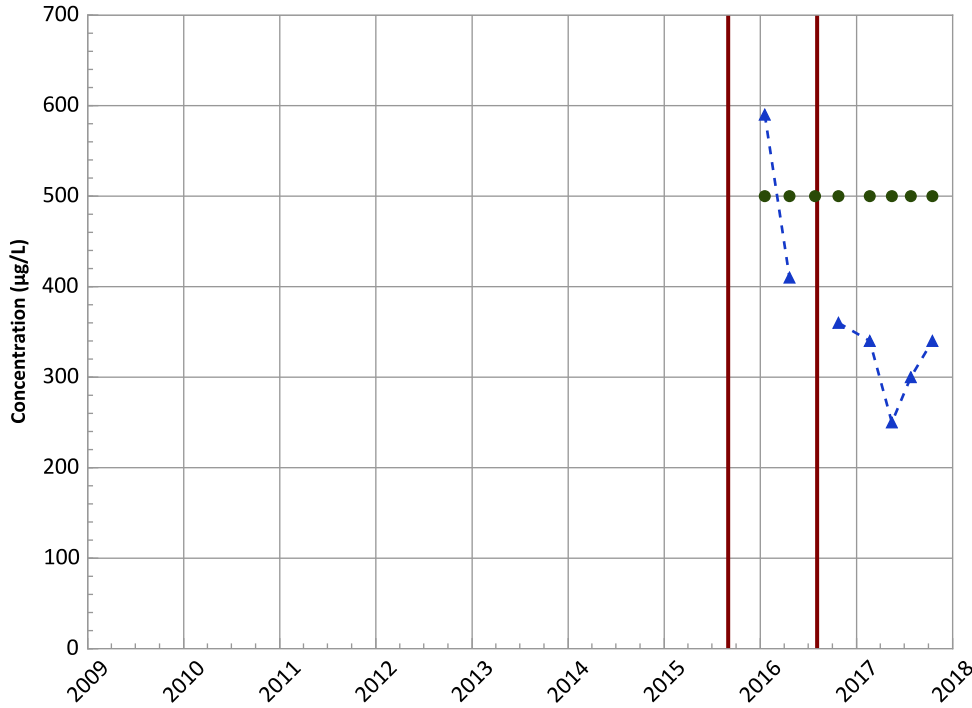
MAROS Mann-Kendall Method

All Data
No Trend
2015 - 2017 Data:
No Trend

MAROS Linear Regression Method

All Data
No Trend
2015 - 2017 Data:
No Trend

Ferric Iron Trend



Concentration Trend

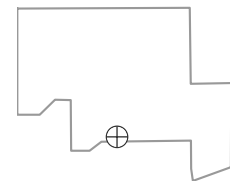
MAROS Mann-Kendall Method

All Data
Decreasing
2015 - 2017 Data:
No Trend

MAROS Linear Regression Method

All Data
Decreasing
2015 - 2017 Data:
No Trend

Well Location

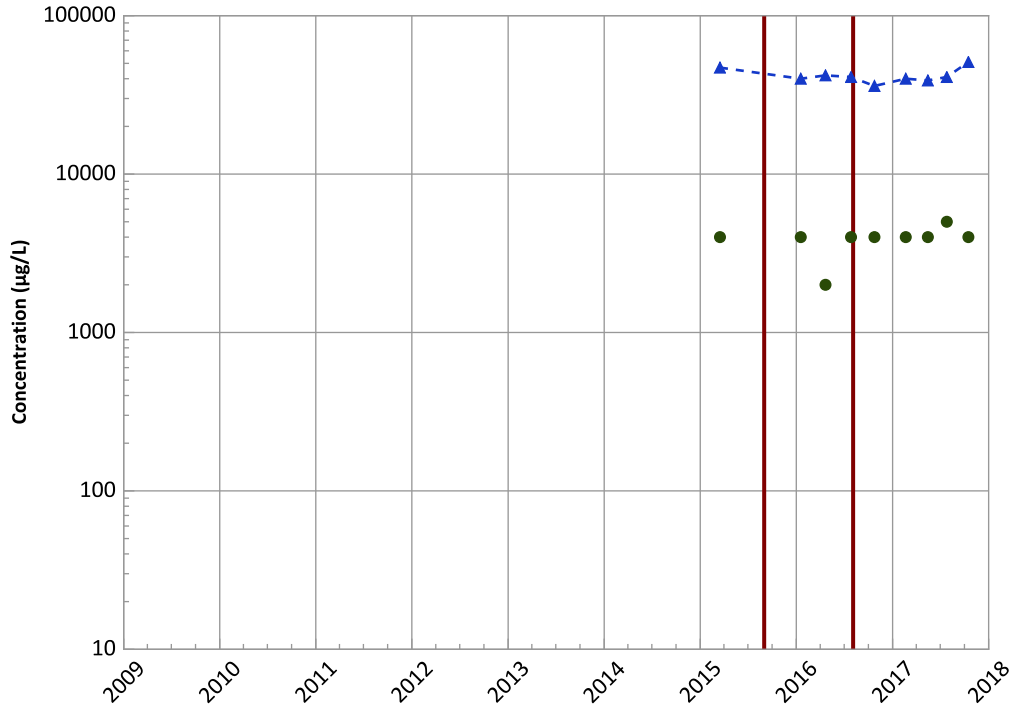


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 03/17/2015 to 10/16/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-1176 in Perched Aquifer
USDOE/NNSA Pantex Plant

Chloride (as Cl) Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

No Trend

MAROS Linear Regression Method

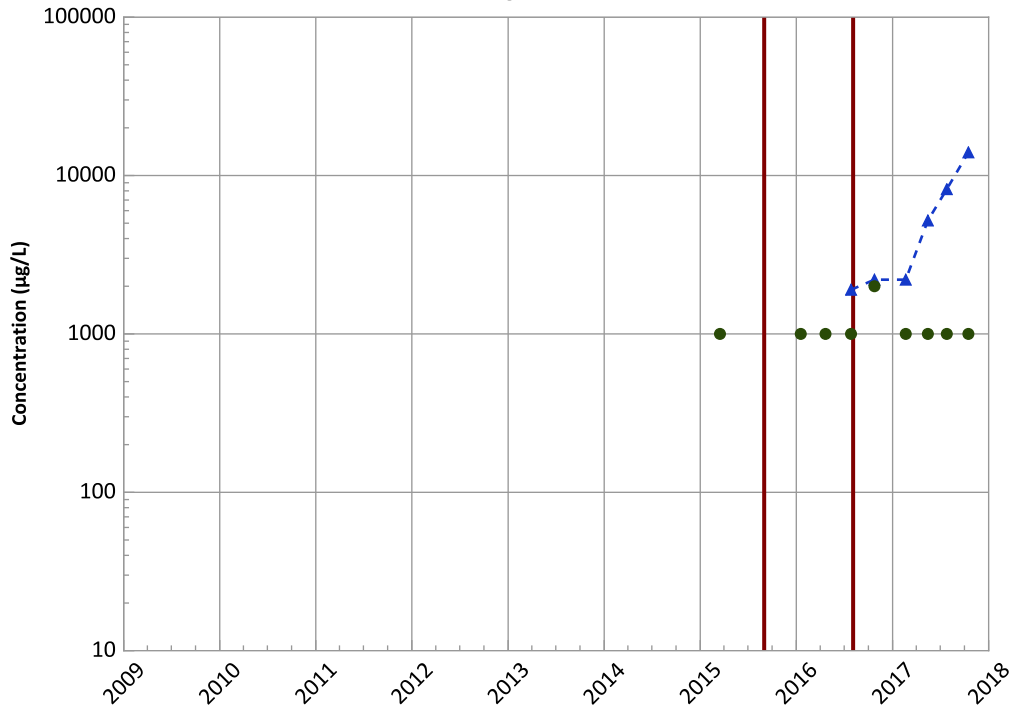
All Data

Stable

2015 - 2017 Data:

No Trend

Total Organic Carbon Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Increasing

2015 - 2017 Data:

Increasing

MAROS Linear Regression Method

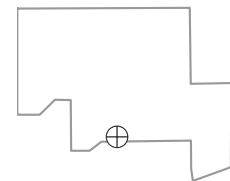
All Data

Increasing

2015 - 2017 Data:

Increasing

Well Location

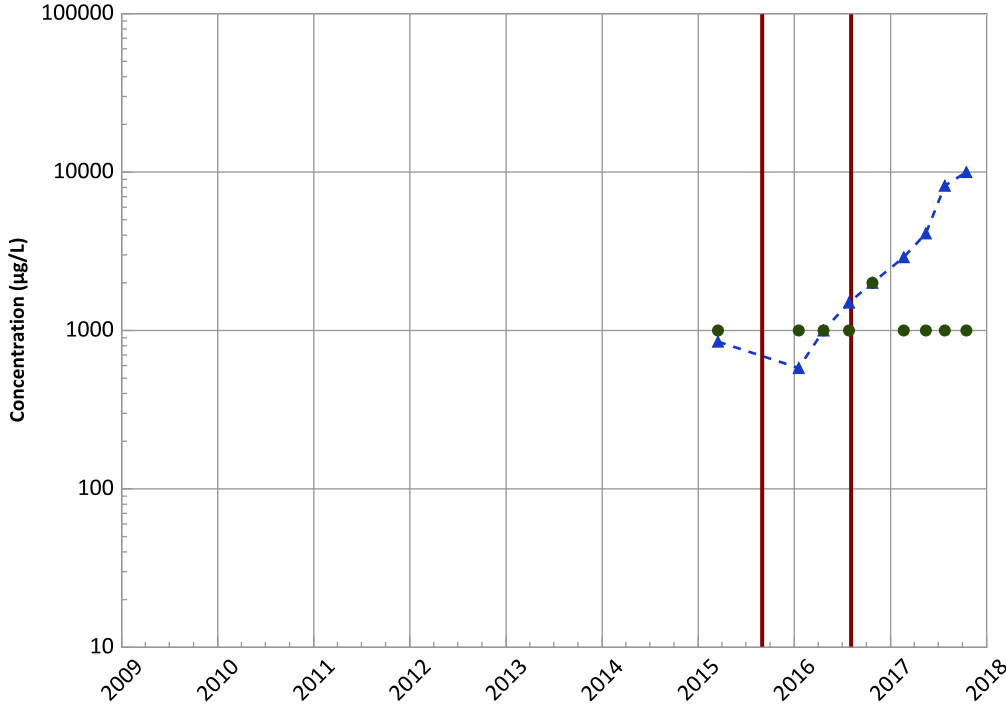


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 03/17/2015 to 10/16/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-1176 in Perched Aquifer
USDOE/NNSA Pantex Plant

Dissolved Organic Carbon (DOC) Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Increasing

2015 - 2017 Data:

Increasing

MAROS Linear Regression Method

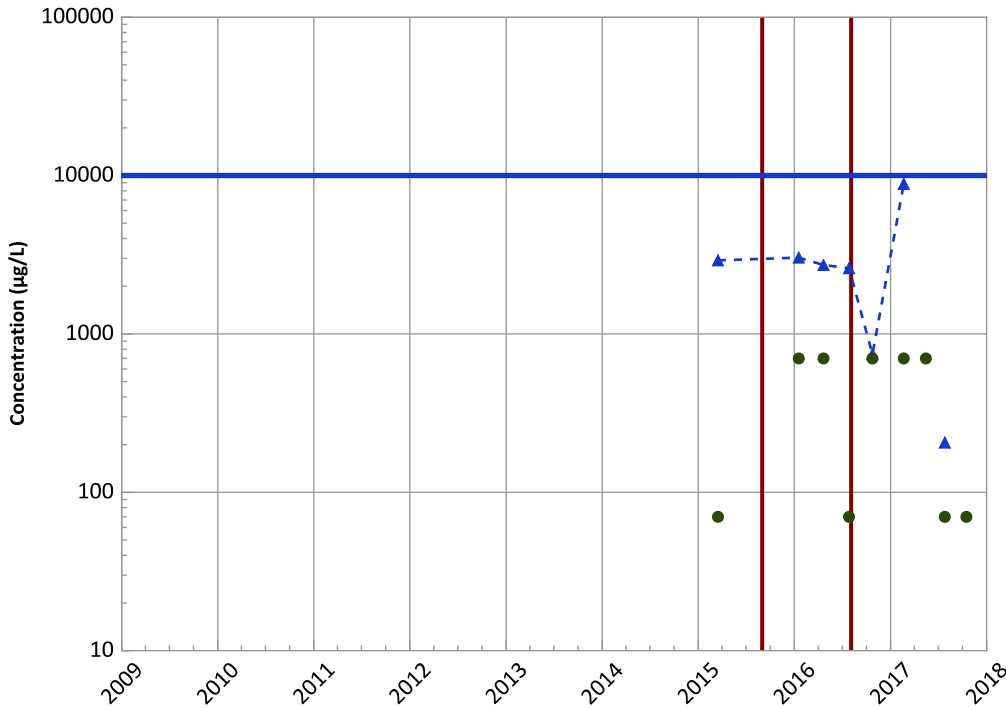
All Data

Increasing

2015 - 2017 Data:

Increasing

Nitrate as N Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

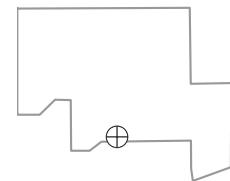
All Data

Stable

2015 - 2017 Data:

No Trend

Well Location

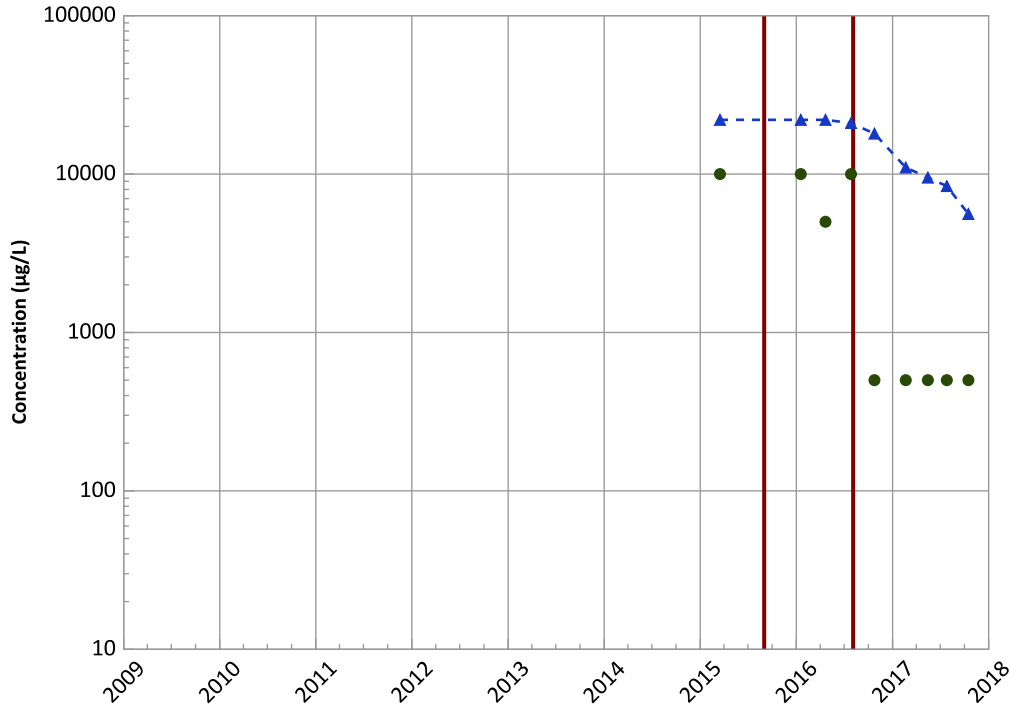


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 03/17/2015 to 10/16/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-1176 in Perched Aquifer
USDOE/NNSA Pantex Plant

Sulfate (as SO₄) Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Decreasing

MAROS Linear Regression Method

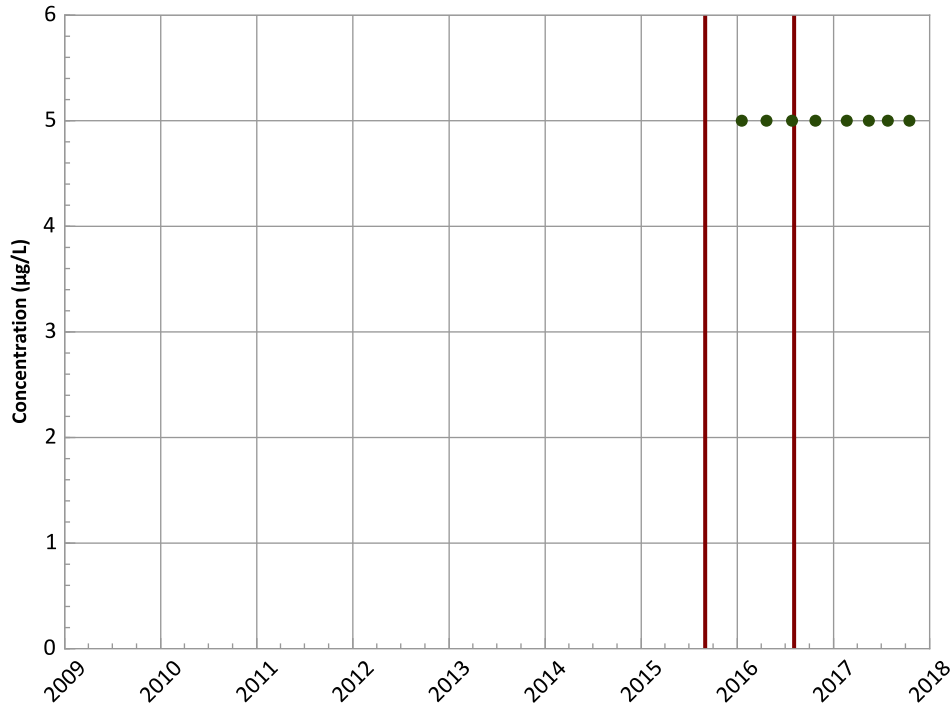
All Data

Decreasing

2015 - 2017 Data:

Probably Decreasing

Ethene (Ethylene) Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

All Non-Detect

2015 - 2017 Data:

All Non-Detect

MAROS Linear Regression Method

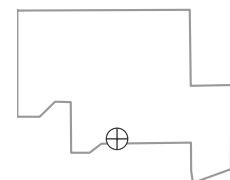
All Data

All Non-Detect

2015 - 2017 Data:

All Non-Detect

Well Location

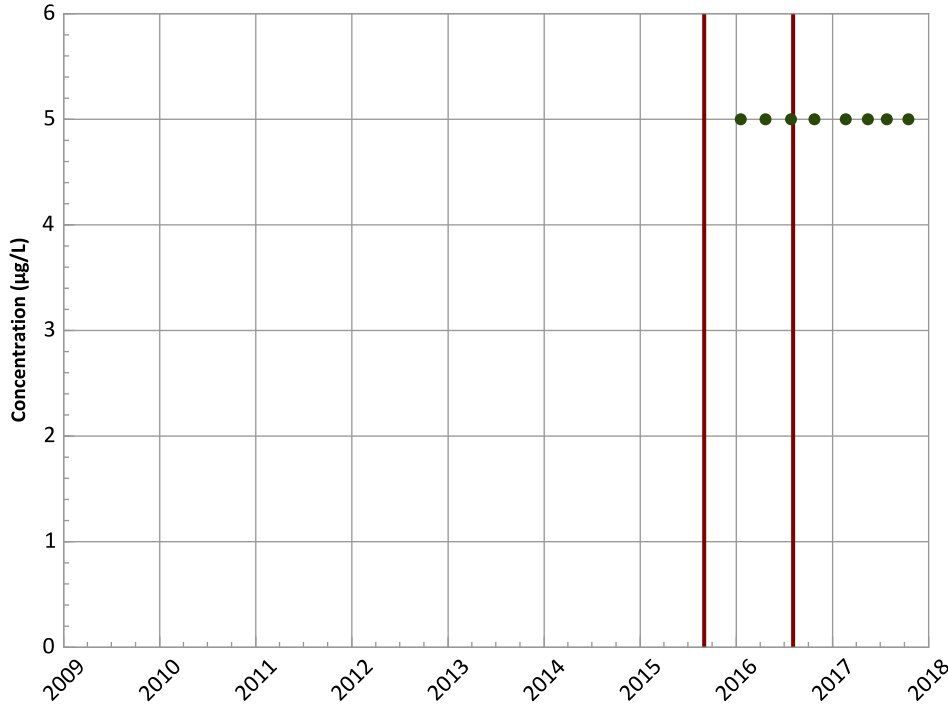


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 03/17/2015 to 10/16/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-1176 in Perched Aquifer
USDOE/NNSA Pantex Plant

Ethane Trend



Concentration Trend

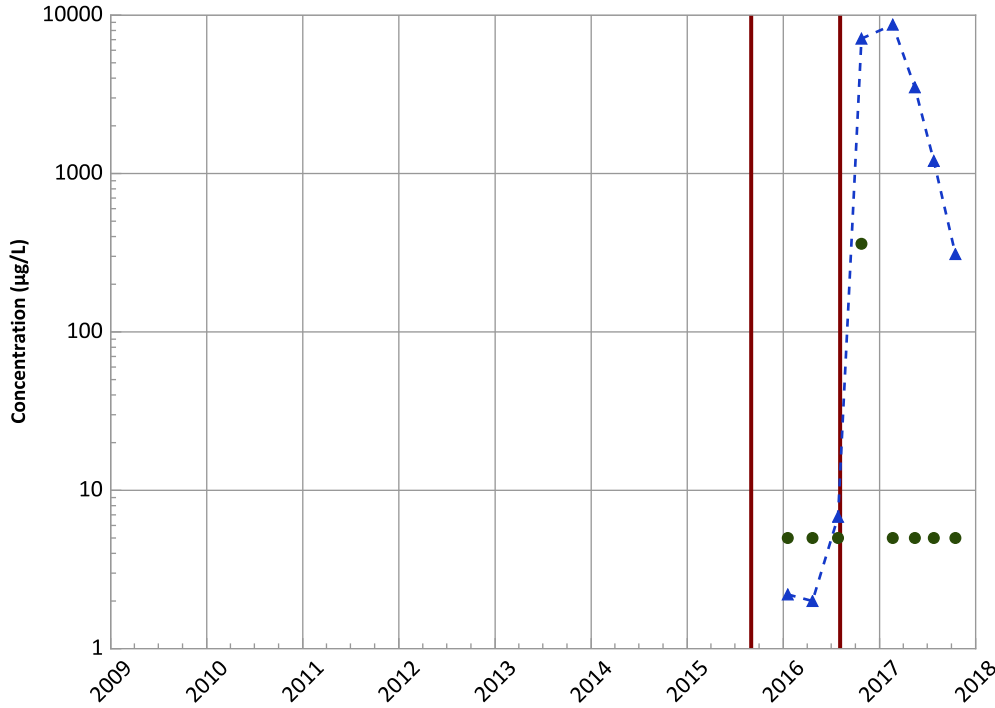
MAROS Mann-Kendall Method

All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method

All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

Methane Trend



Concentration Trend

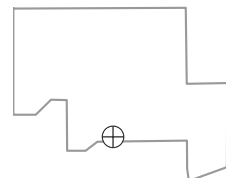
MAROS Mann-Kendall Method

All Data
No Trend
2015 - 2017 Data:
Decreasing

MAROS Linear Regression Method

All Data
Increasing
2015 - 2017 Data:
Decreasing

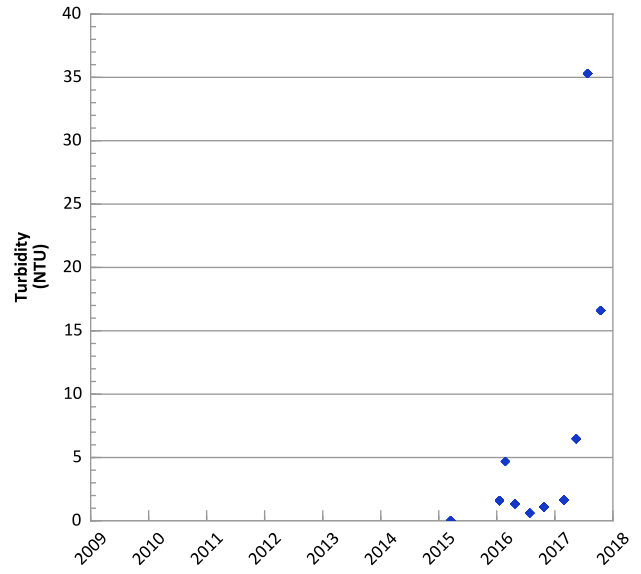
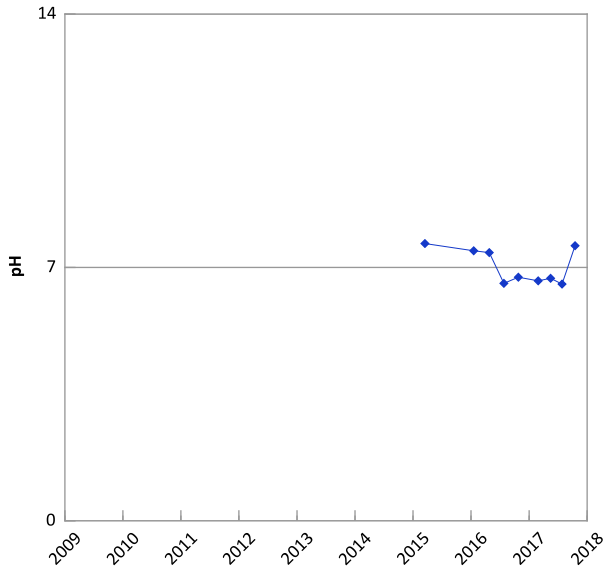
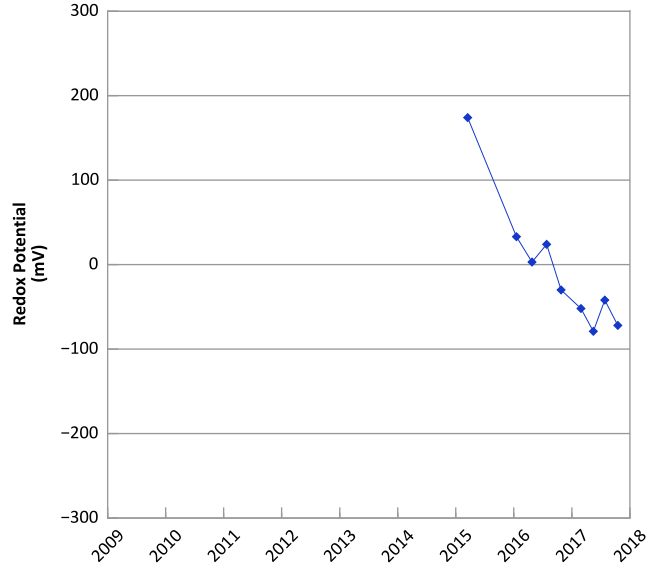
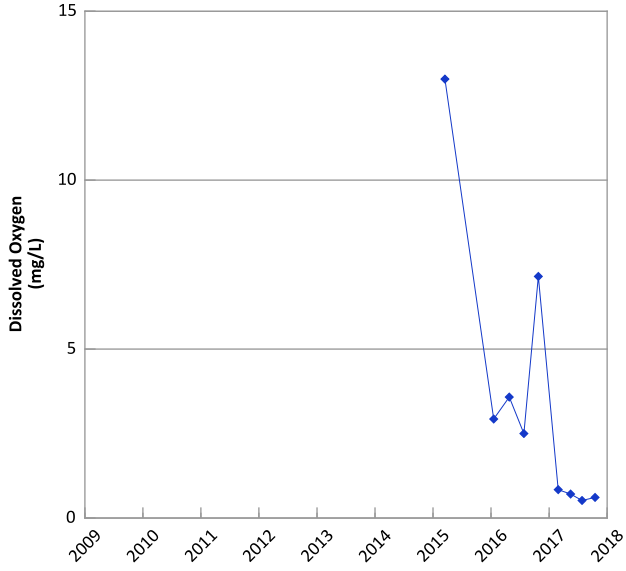
Well Location



Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 03/17/2015 to 10/16/2017
Analysis Date: 03/29/2018

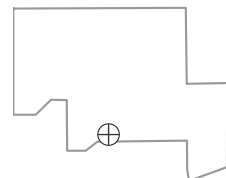
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

**PTX06-1177 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**

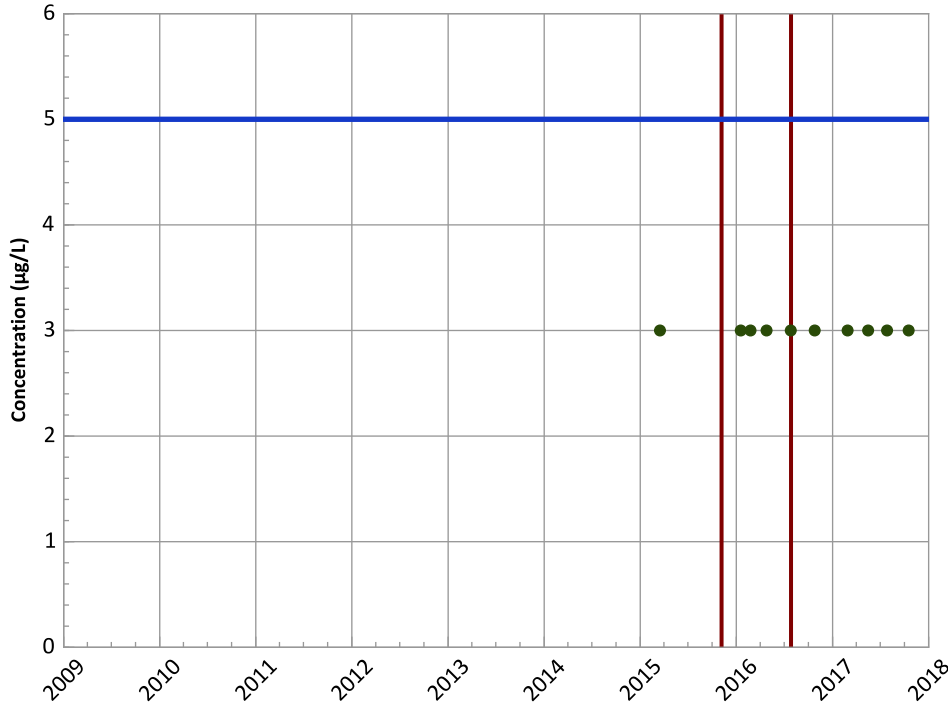


Query Date Range: 01/01/2009 to 12/31/2017
 Data Date Range: 03/17/2015 to 10/17/2017
 Analysis Date: 03/29/2018

Well Location



**PTX06-1177 in Perched Aquifer
USDOE/NNSA Pantex Plant
Tetrachloroethylene (PCE) Trend**



Concentration Trend

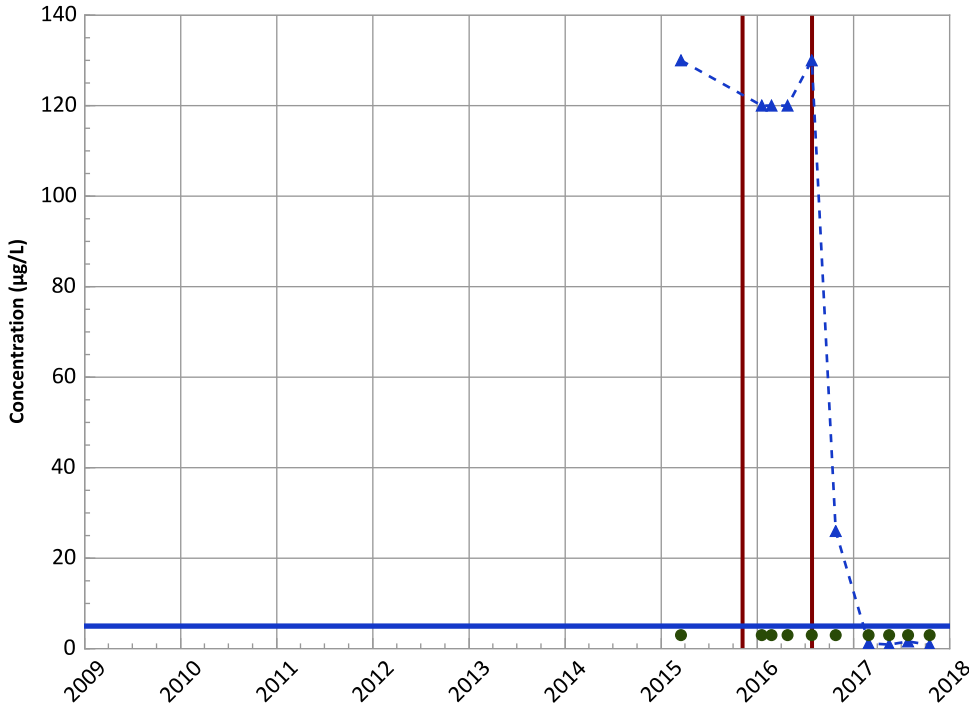
MAROS Mann-Kendall Method

All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method

All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

Trichloroethene Trend



Concentration Trend

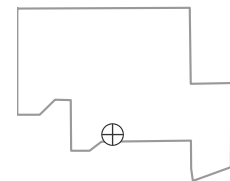
MAROS Mann-Kendall Method

All Data
Decreasing
2015 - 2017 Data:
Decreasing

MAROS Linear Regression Method

All Data
Decreasing
2015 - 2017 Data:
Stable

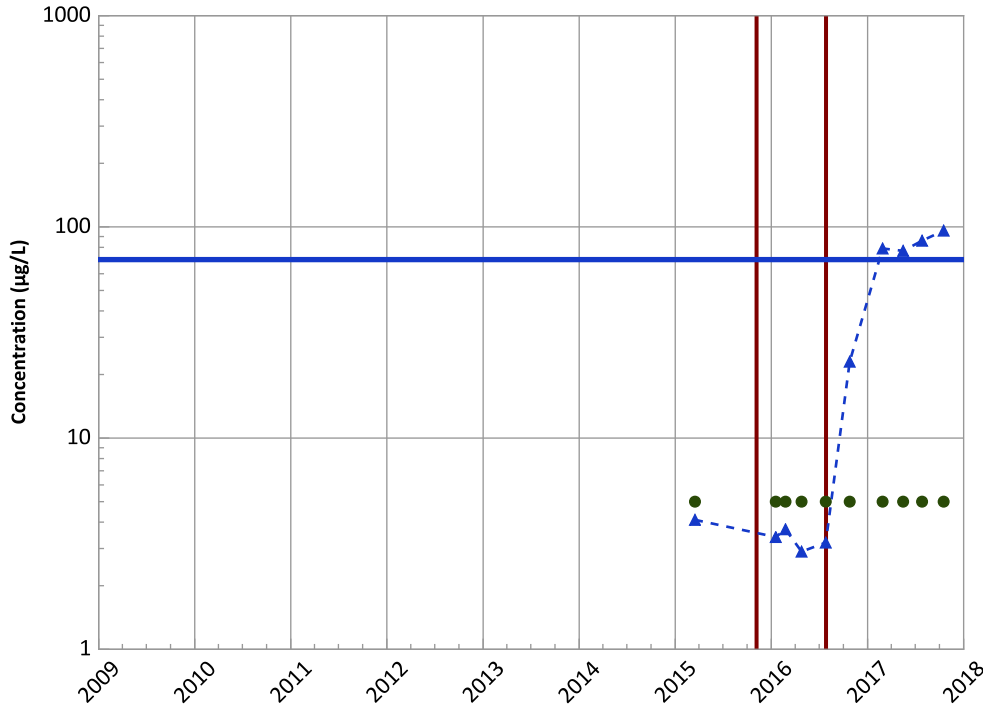
Well Location



Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 03/17/2015 to 10/17/2017
Analysis Date: 03/29/2018

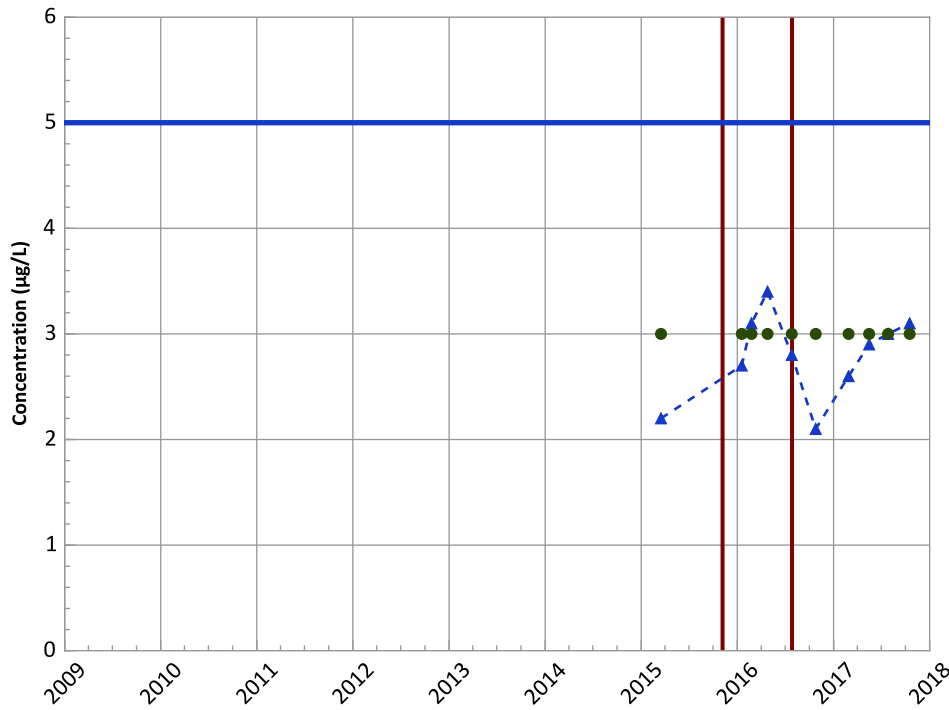
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

**PTX06-1177 in Perched Aquifer
USDOE/NNSA Pantex Plant**
cis-1,2-Dichloroethene Trend



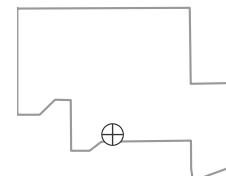
Concentration Trend
MAROS Mann-Kendall Method
 All Data
 Increasing
 2015 - 2017 Data:
 No Trend
MAROS Linear Regression Method
 All Data
 Increasing
 2015 - 2017 Data:
 No Trend

1,2-Dichloroethane Trend



Concentration Trend
MAROS Mann-Kendall Method
 All Data
 Increasing
 2015 - 2017 Data:
 Increasing
MAROS Linear Regression Method
 All Data
 No Trend
 2015 - 2017 Data:
 Increasing

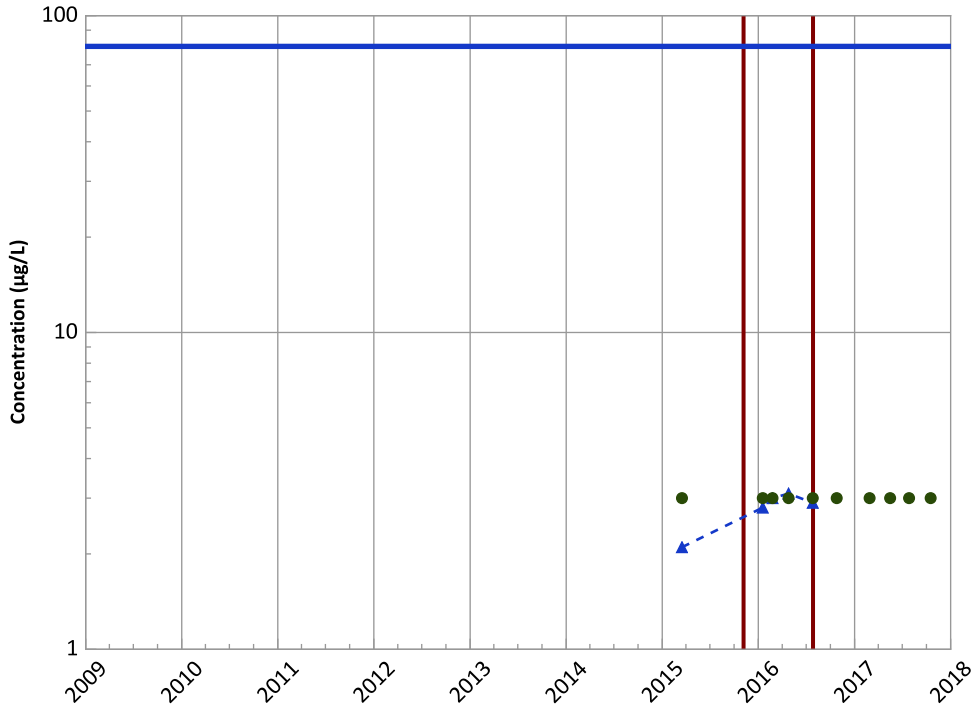
Well Location



Query Date Range: 01/01/2009 to 12/31/2017
 Data Date Range: 03/17/2015 to 10/17/2017
 Analysis Date: 03/29/2018

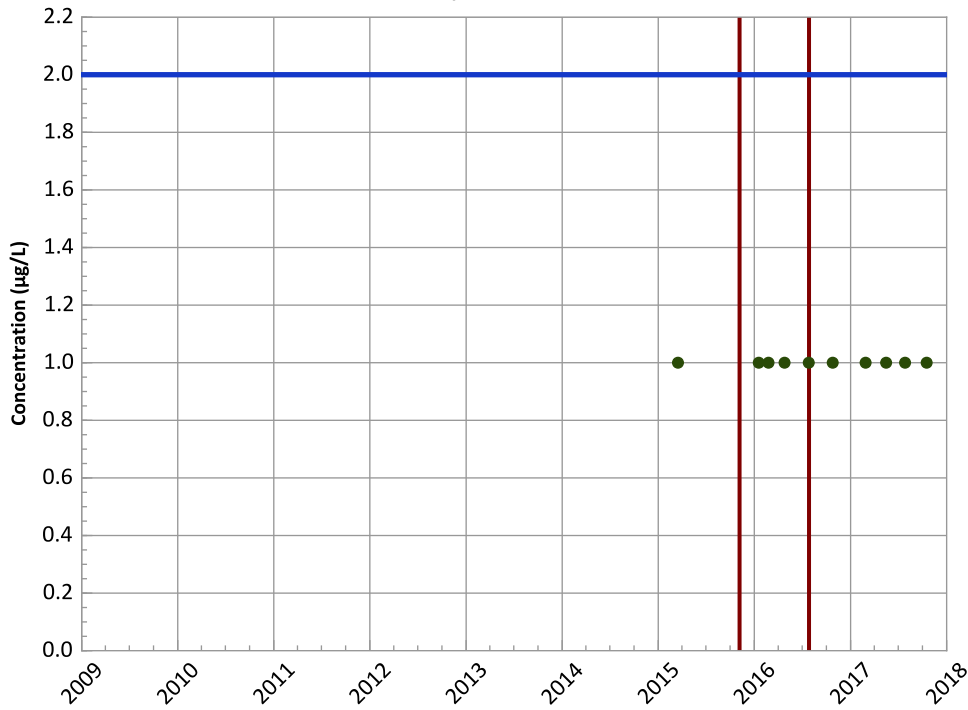
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

**PTX06-1177 in Perched Aquifer
USDOE/NNSA Pantex Plant
Chloroform Trend**



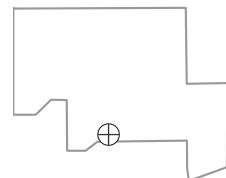
Concentration Trend
MAROS Mann-Kendall Method
 All Data: Decreasing
 2015 - 2017 Data: All Non-Detect
MAROS Linear Regression Method
 All Data: Increasing
 2015 - 2017 Data: No Trend

Vinyl Chloride Trend



Concentration Trend
MAROS Mann-Kendall Method
 All Data: All Non-Detect
 2015 - 2017 Data: All Non-Detect
MAROS Linear Regression Method
 All Data: All Non-Detect
 2015 - 2017 Data: All Non-Detect

Well Location

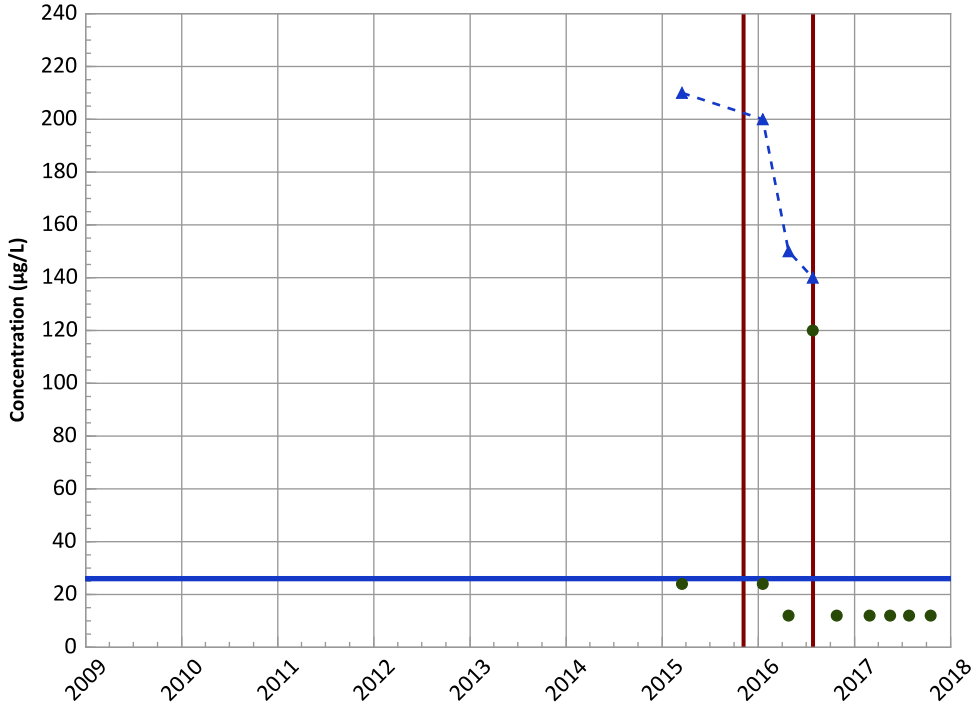


Query Date Range: 01/01/2009 to 12/31/2017
 Data Date Range: 03/17/2015 to 10/17/2017
 Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-1177 in Perched Aquifer
USDOE/NNSA Pantex Plant

Perchlorate Trend



Concentration Trend

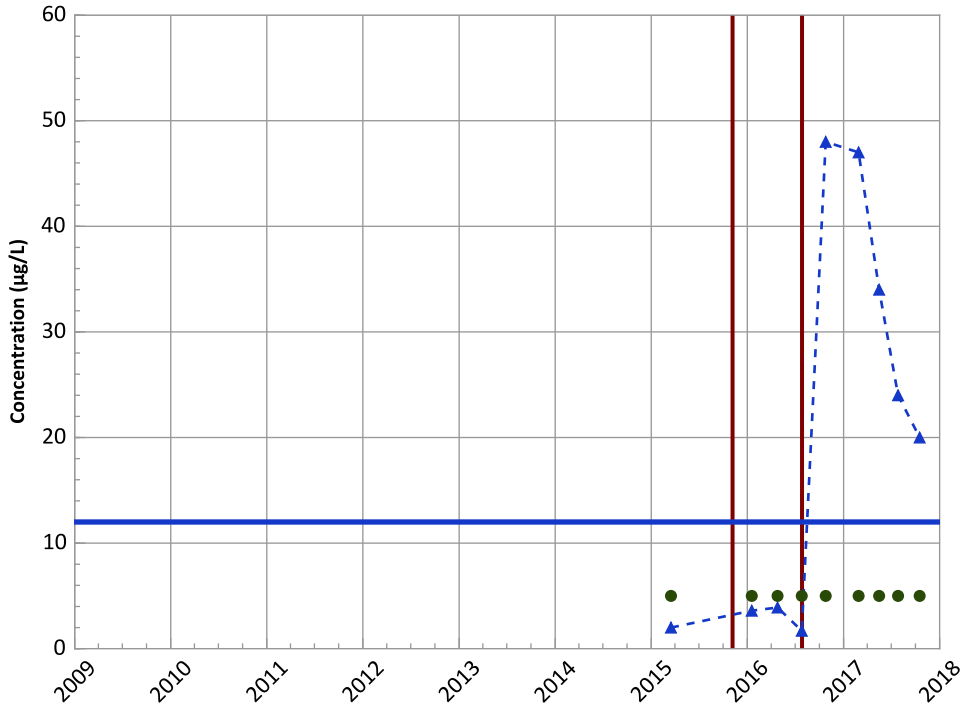
MAROS Mann-Kendall Method

All Data
Decreasing
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method

All Data
Probably Decreasing
2015 - 2017 Data:
Probably Decreasing

Arsenic Trend



Concentration Trend

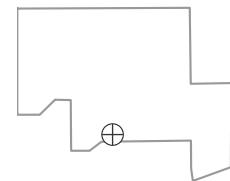
MAROS Mann-Kendall Method

All Data
No Trend
2015 - 2017 Data:
Decreasing

MAROS Linear Regression Method

All Data
Increasing
2015 - 2017 Data:
Decreasing

Well Location

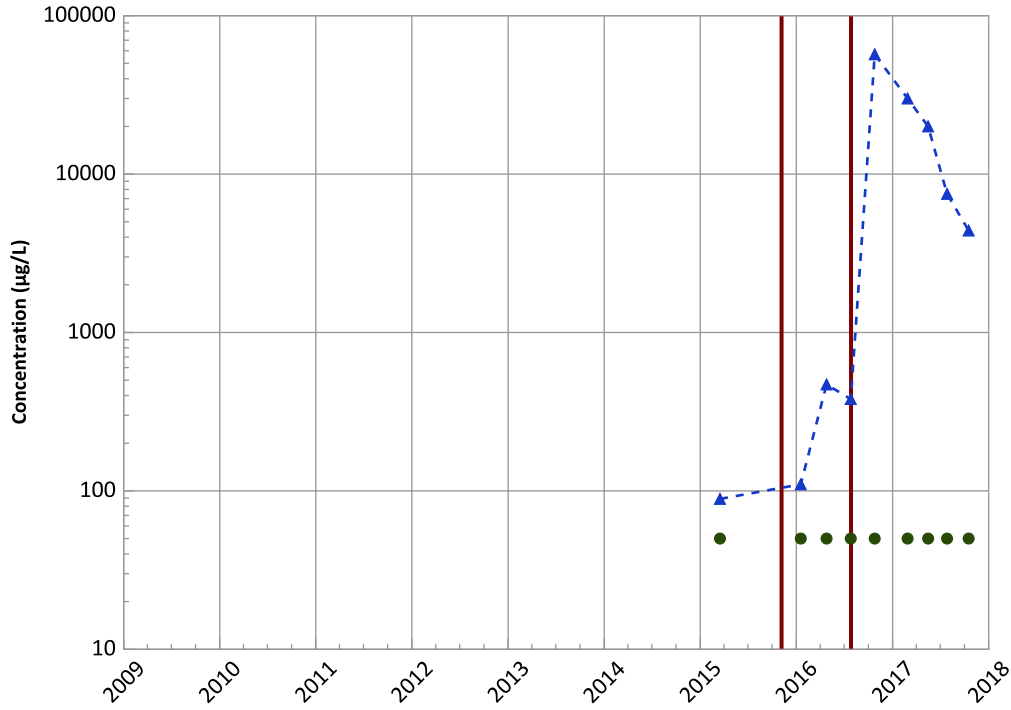


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 03/17/2015 to 10/17/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-1177 in Perched Aquifer
USDOE/NNSA Pantex Plant

Iron Trend



Concentration Trend

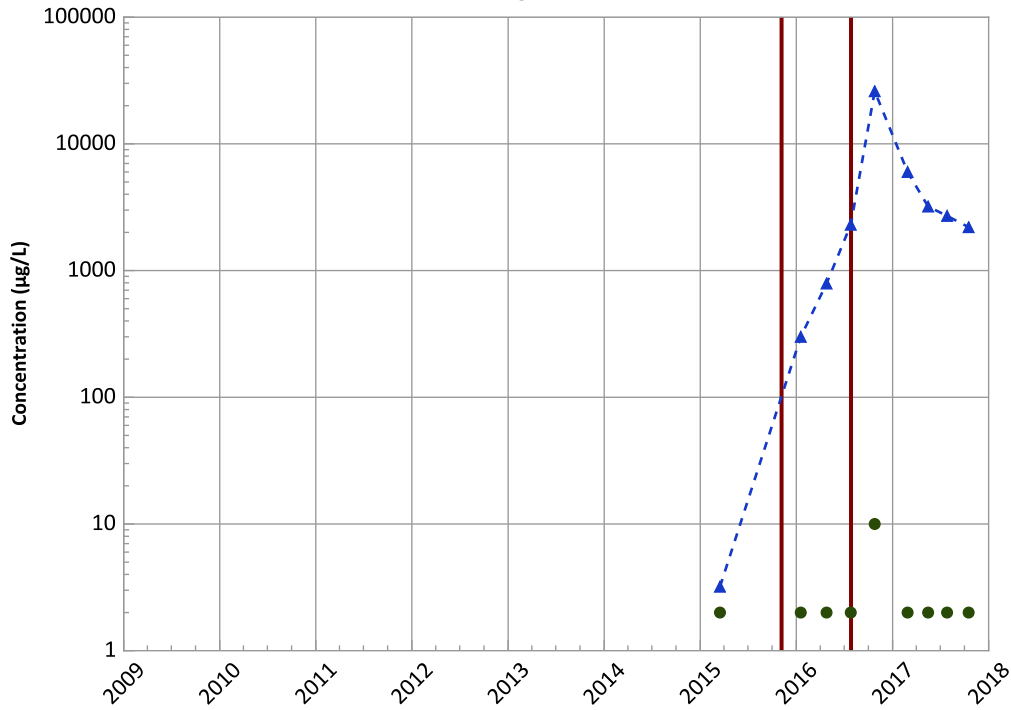
MAROS Mann-Kendall Method

All Data
Probably Increasing
2015 - 2017 Data:
Decreasing

MAROS Linear Regression Method

All Data
Increasing
2015 - 2017 Data:
Decreasing

Manganese Trend



Concentration Trend

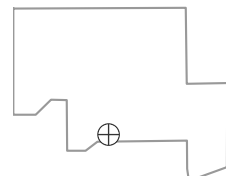
MAROS Mann-Kendall Method

All Data
Probably Increasing
2015 - 2017 Data:
Decreasing

MAROS Linear Regression Method

All Data
Increasing
2015 - 2017 Data:
Decreasing

Well Location

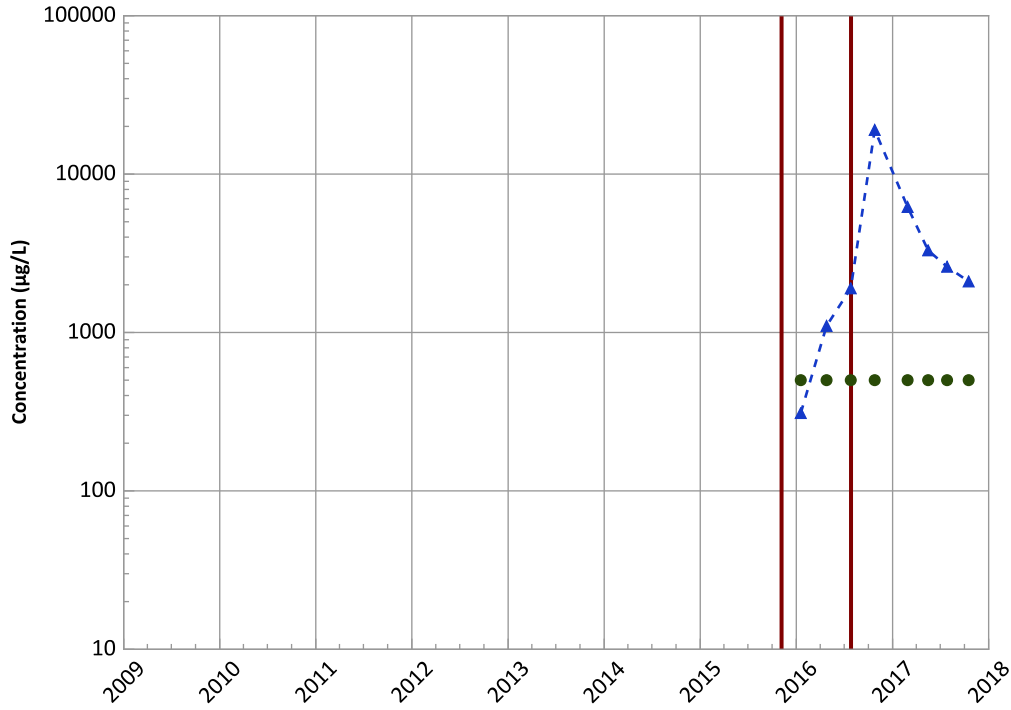


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 03/17/2015 to 10/17/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-1177 in Perched Aquifer
USDOE/NNSA Pantex Plant

Divalent Manganese Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

No Trend

2015 - 2017 Data:

Decreasing

MAROS Linear Regression Method

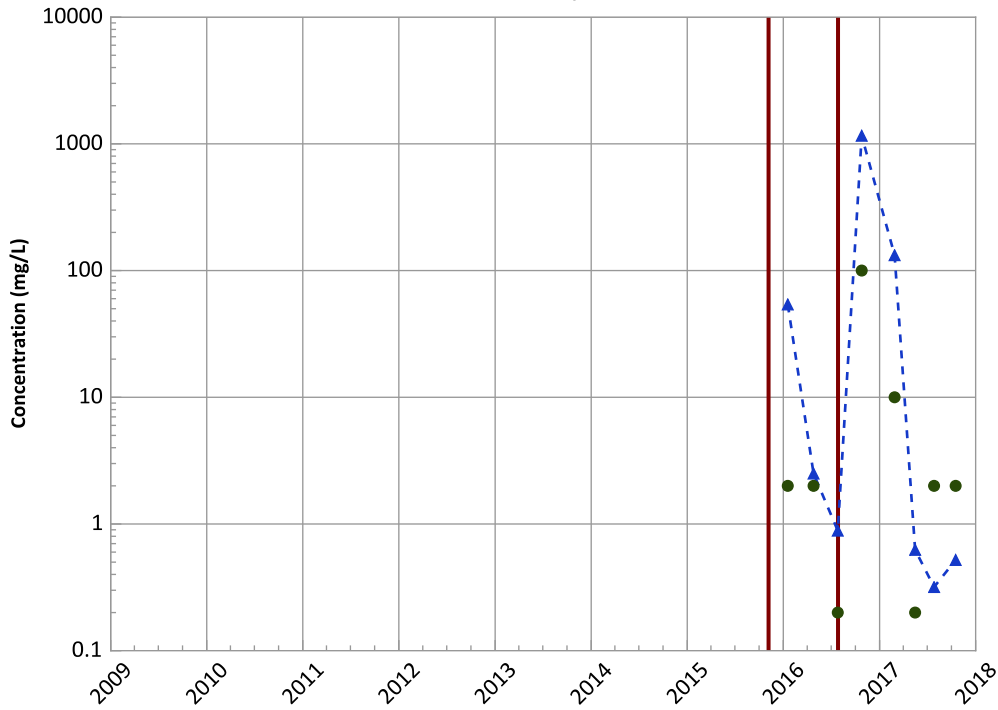
All Data

No Trend

2015 - 2017 Data:

Decreasing

Total Volatile Fatty Acids Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Decreasing

MAROS Linear Regression Method

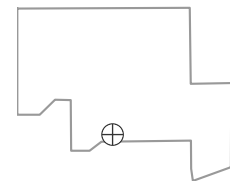
All Data

No Trend

2015 - 2017 Data:

No Trend

Well Location

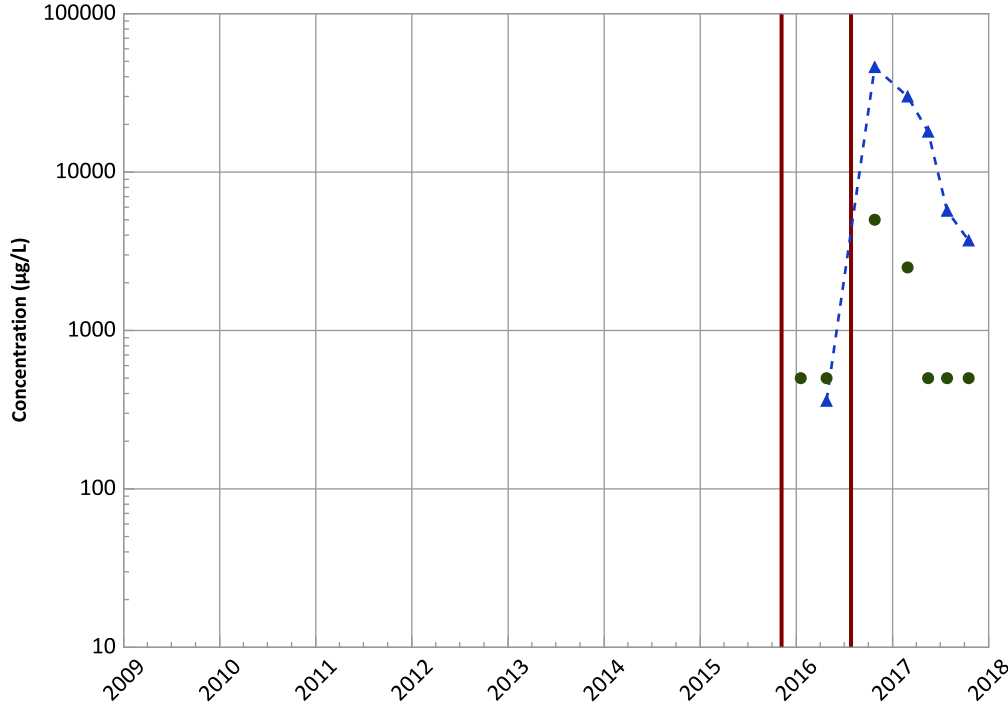


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 03/17/2015 to 10/17/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-1177 in Perched Aquifer
USDOE/NNSA Pantex Plant

Ferrous Iron Trend



Concentration Trend

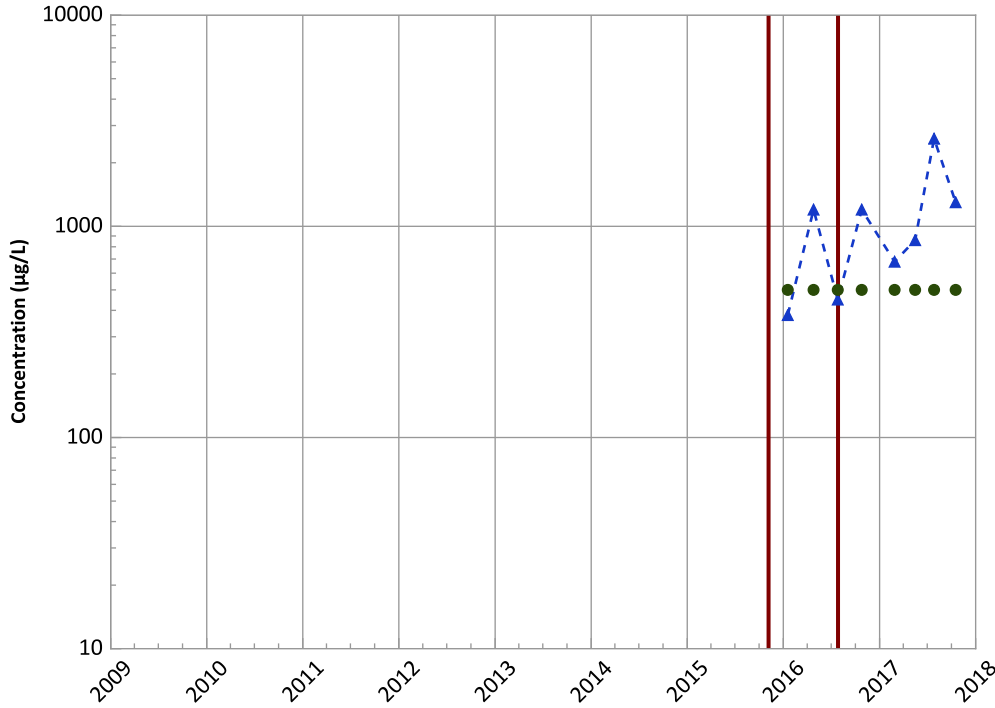
MAROS Mann-Kendall Method

All Data
No Trend
2015 - 2017 Data:
Decreasing

MAROS Linear Regression Method

All Data
No Trend
2015 - 2017 Data:
Decreasing

Ferric Iron Trend



Concentration Trend

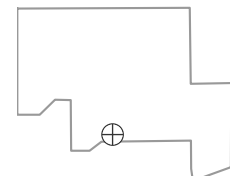
MAROS Mann-Kendall Method

All Data
Increasing
2015 - 2017 Data:
No Trend

MAROS Linear Regression Method

All Data
Increasing
2015 - 2017 Data:
No Trend

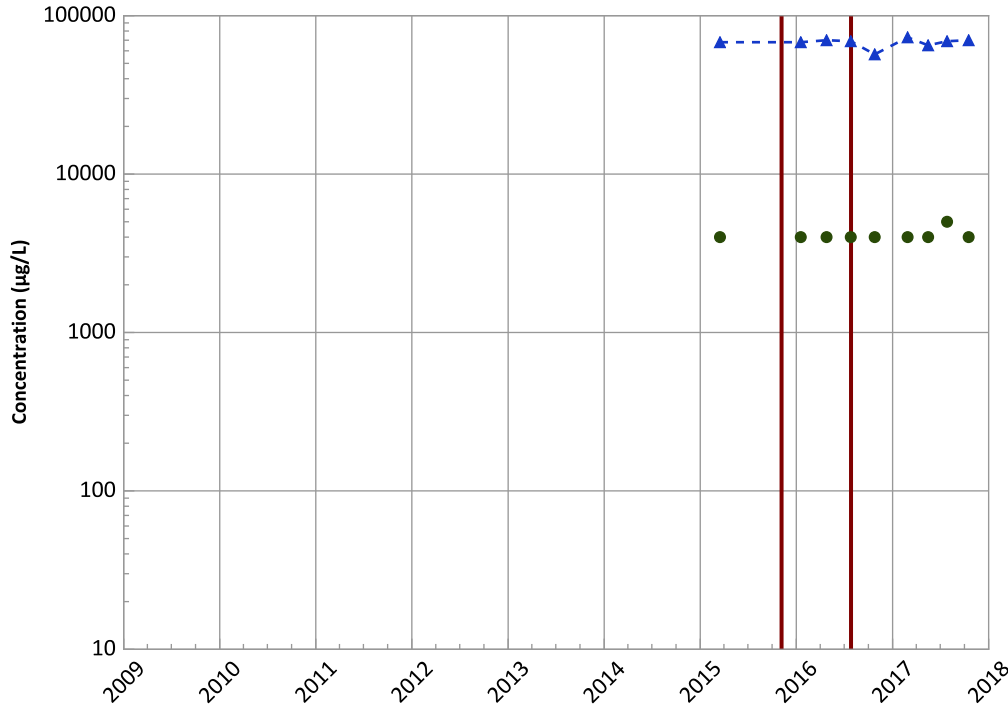
Well Location



Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 03/17/2015 to 10/17/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-1177 in Perched Aquifer
 USDOE/NNSA Pantex Plant
 Chloride (as Cl) Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

No Trend

2015 - 2017 Data:

Stable

MAROS Linear Regression Method

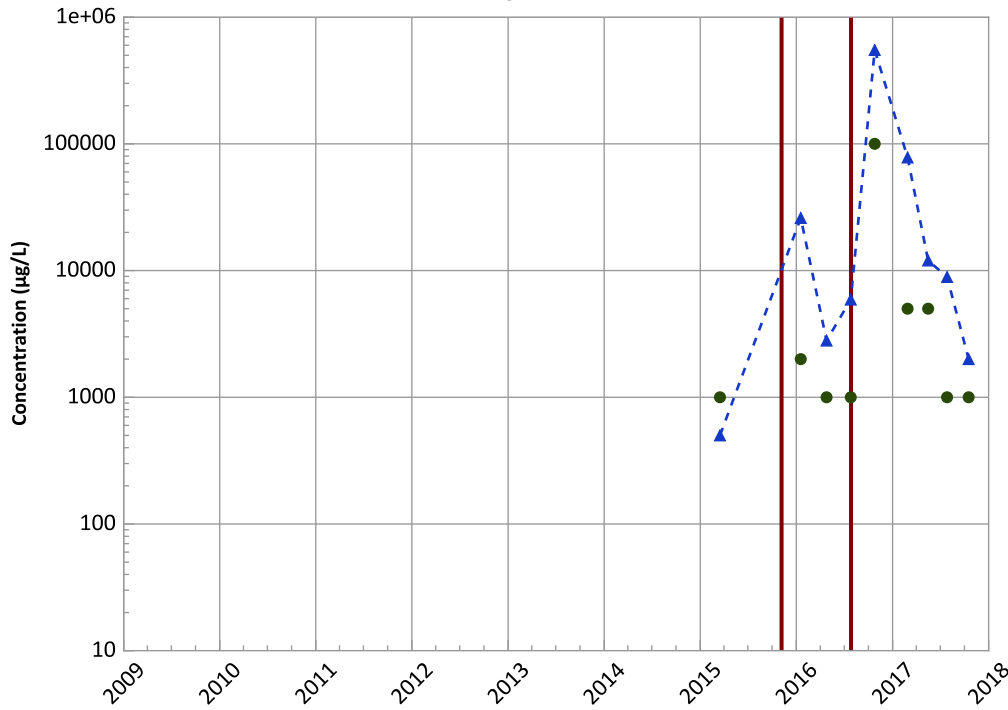
All Data

Increasing

2015 - 2017 Data:

Stable

Total Organic Carbon Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

No Trend

2015 - 2017 Data:

Decreasing

MAROS Linear Regression Method

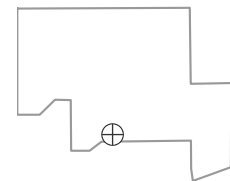
All Data

No Trend

2015 - 2017 Data:

Decreasing

Well Location

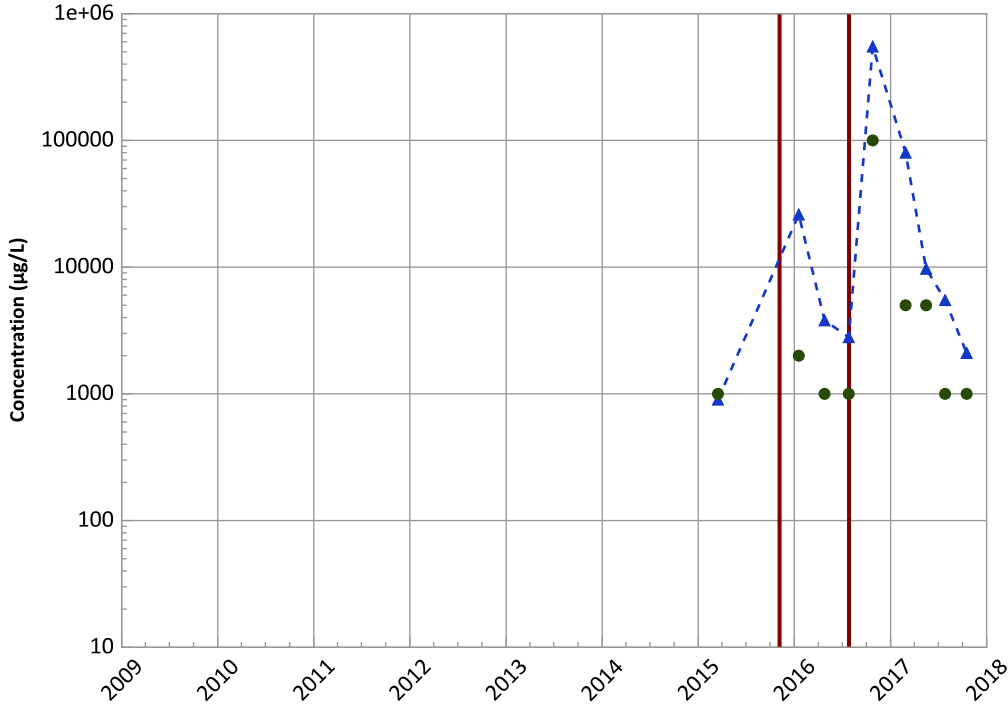


Query Date Range: 01/01/2009 to 12/31/2017
 Data Date Range: 03/17/2015 to 10/17/2017
 Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-1177 in Perched Aquifer
USDOE/NNSA Pantex Plant

Dissolved Organic Carbon (DOC) Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data
No Trend

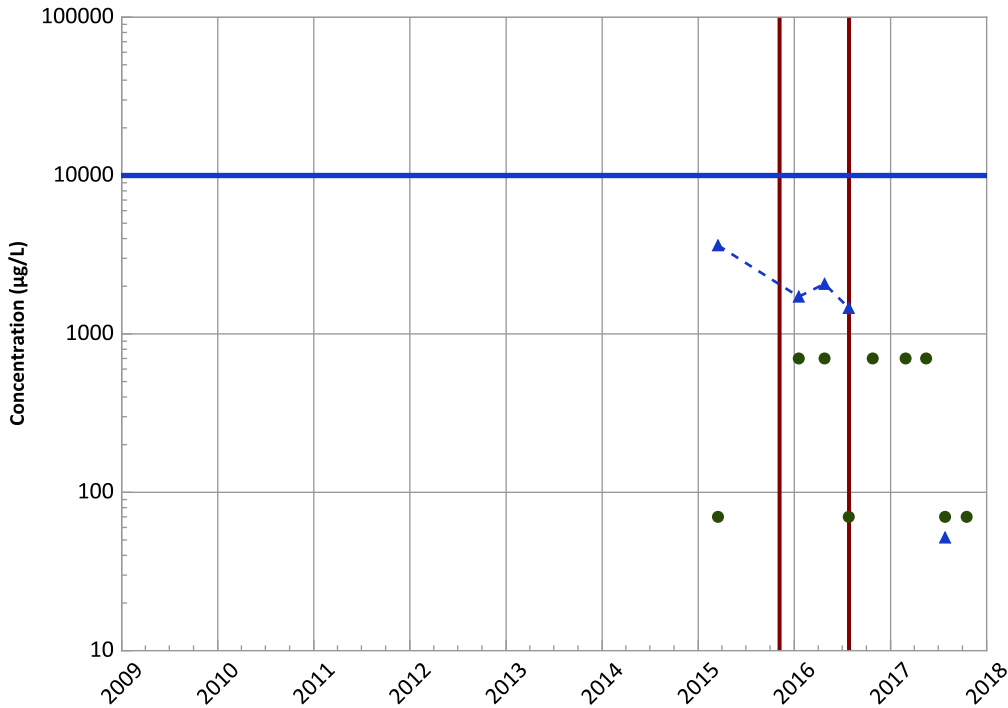
2015 - 2017 Data:
Decreasing

MAROS Linear Regression Method

All Data
No Trend

2015 - 2017 Data:
Decreasing

Nitrate as N Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data
Decreasing

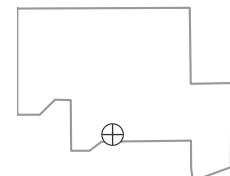
2015 - 2017 Data:
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

All Data
Decreasing

2015 - 2017 Data:
Stable

Well Location

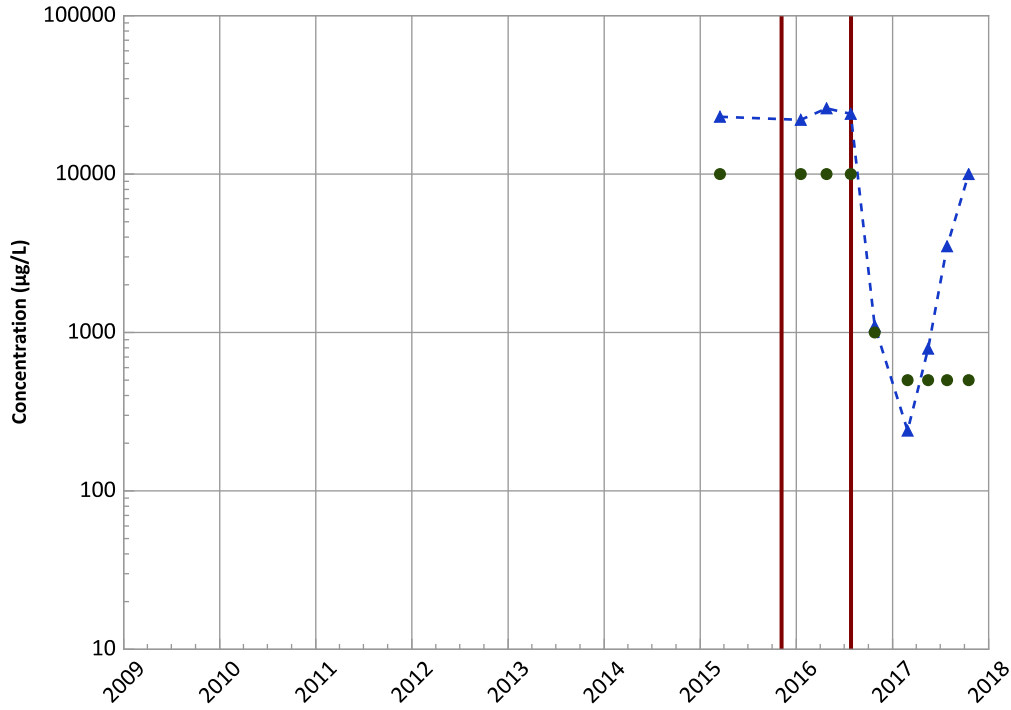


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 03/17/2015 to 10/17/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-1177 in Perched Aquifer
USDOE/NNSA Pantex Plant

Sulfate (as SO4) Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Increasing

MAROS Linear Regression Method

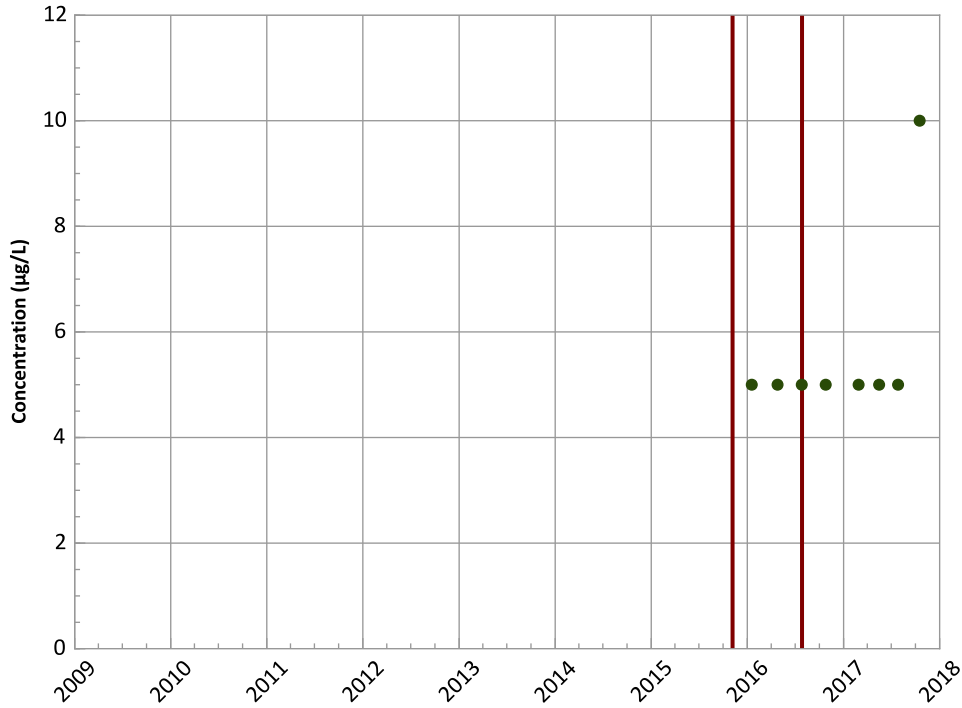
All Data

Probably Decreasing

2015 - 2017 Data:

Increasing

Ethene (Ethylene) Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

All Non-Detect

2015 - 2017 Data:

All Non-Detect

MAROS Linear Regression Method

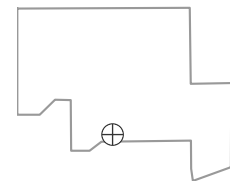
All Data

All Non-Detect

2015 - 2017 Data:

All Non-Detect

Well Location

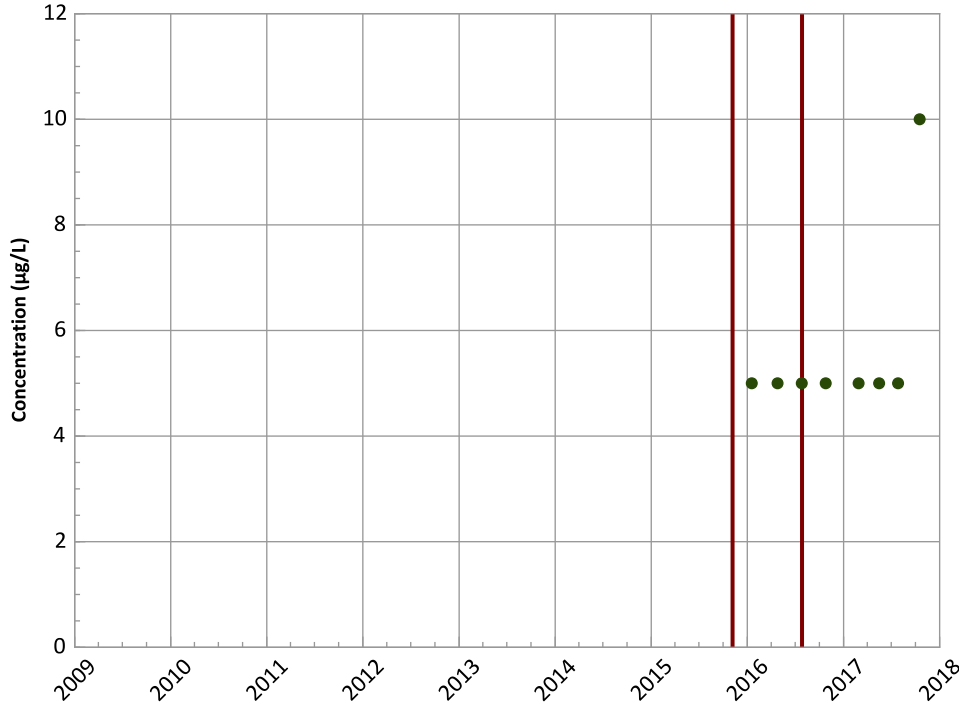


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 03/17/2015 to 10/17/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-1177 in Perched Aquifer
USDOE/NNSA Pantex Plant

Ethane Trend



Concentration Trend

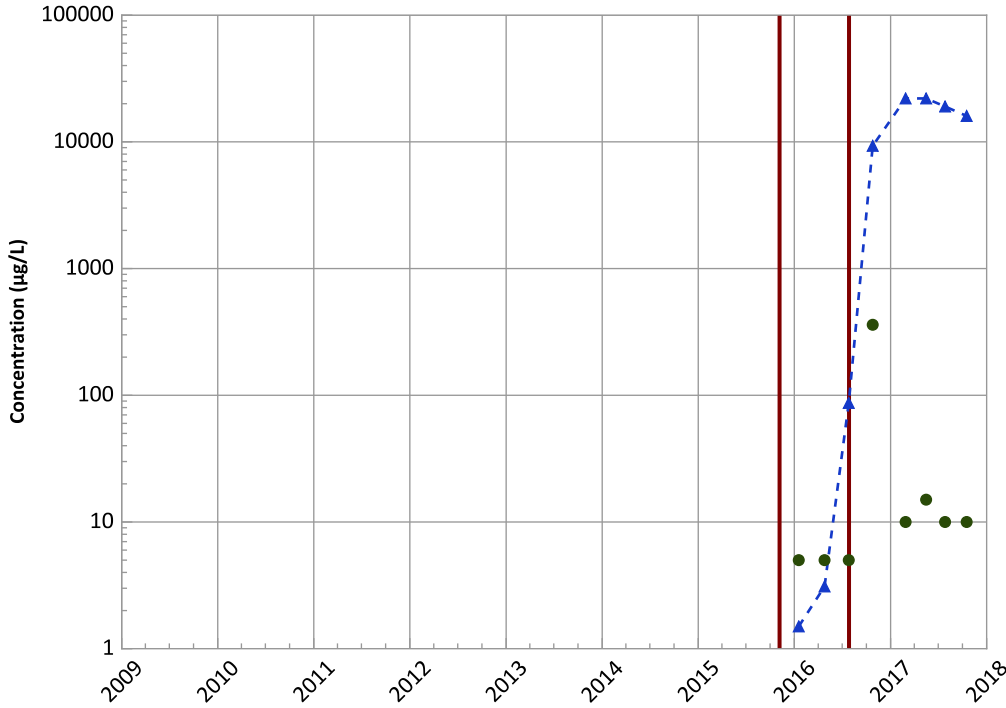
MAROS Mann-Kendall Method

All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method

All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

Methane Trend



Concentration Trend

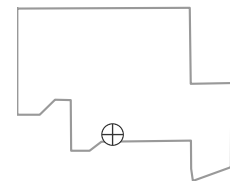
MAROS Mann-Kendall Method

All Data
Increasing
2015 - 2017 Data:
Decreasing

MAROS Linear Regression Method

All Data
Increasing
2015 - 2017 Data:
Decreasing

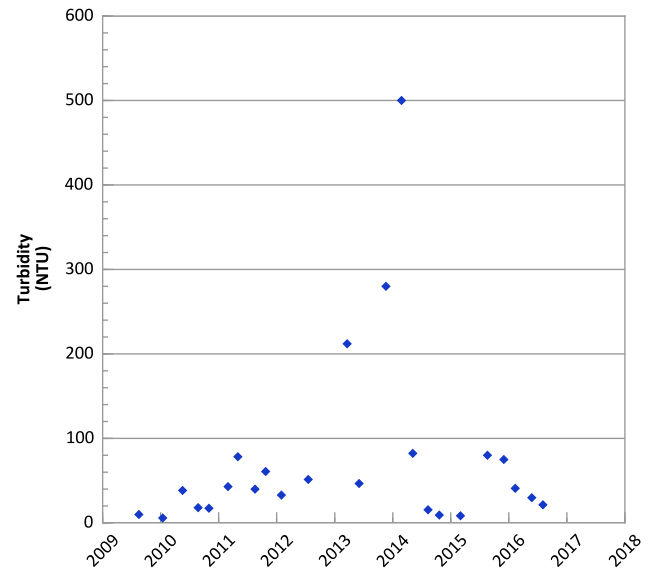
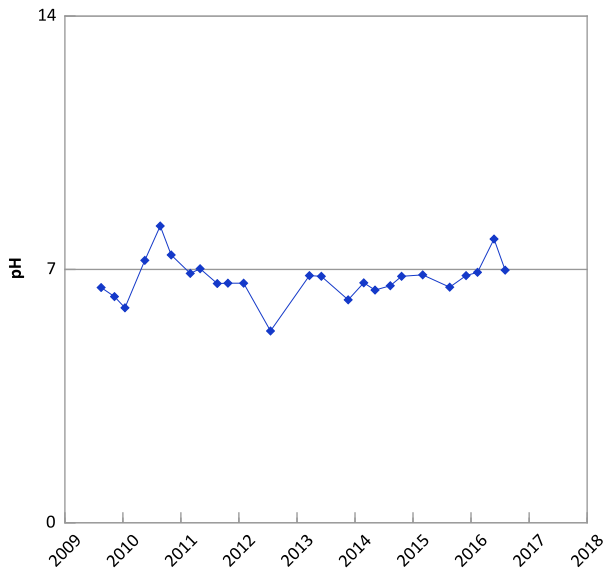
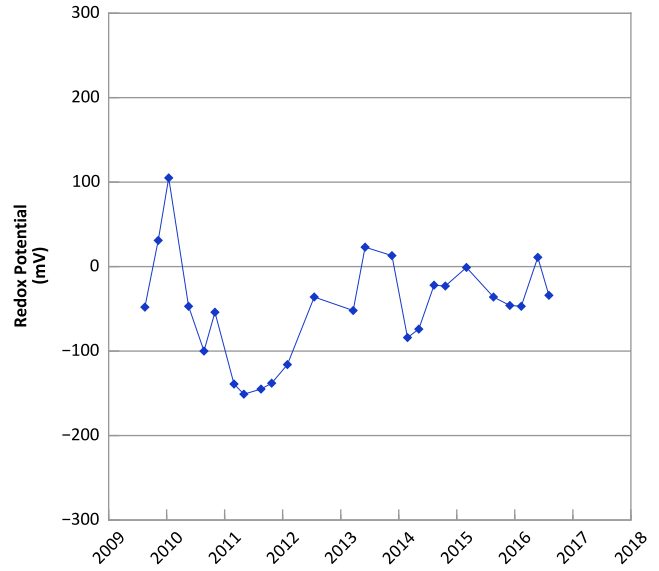
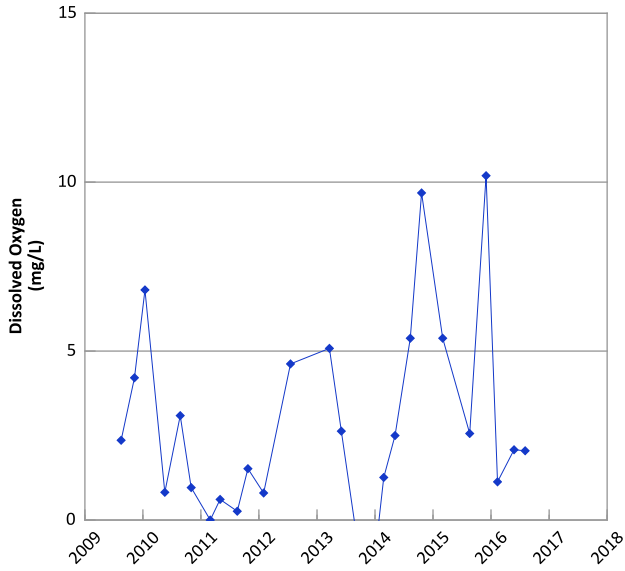
Well Location



Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 03/17/2015 to 10/17/2017
Analysis Date: 03/29/2018

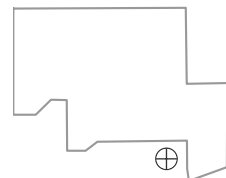
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

**PTX06-ISB014 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



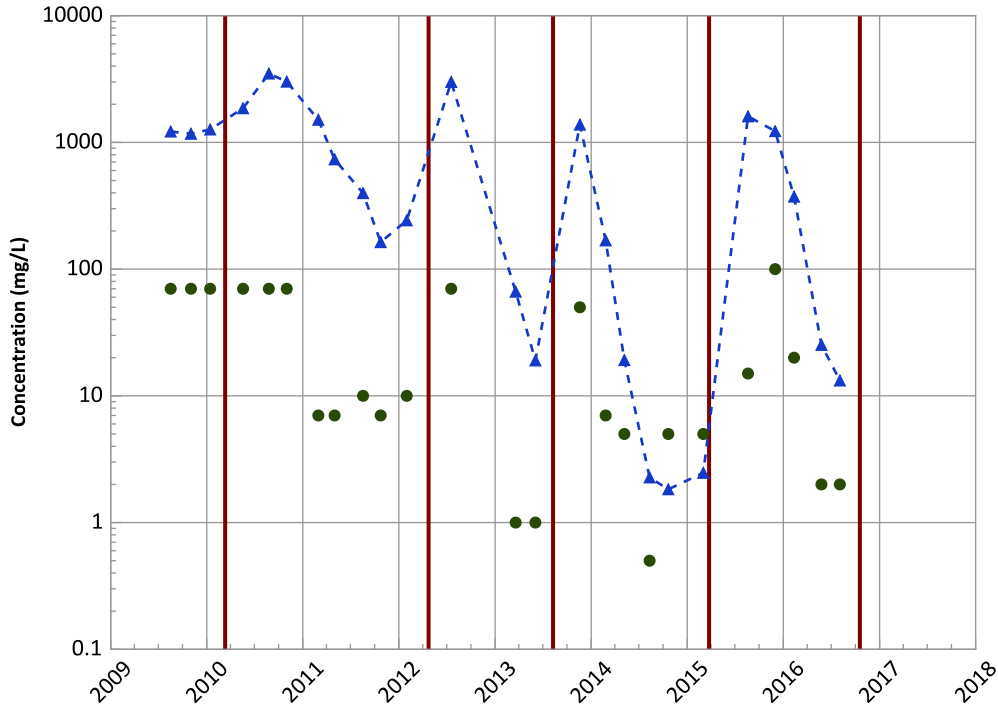
Query Date Range: 01/01/2009 to 12/31/2017
 Data Date Range: 08/17/2009 to 08/03/2016
 Analysis Date: 03/29/2018

Well Location



PTX06-ISB014 in Perched Aquifer
USDOE/NNSA Pantex Plant

Total Volatile Fatty Acids Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Decreasing

MAROS Linear Regression Method

All Data

Decreasing

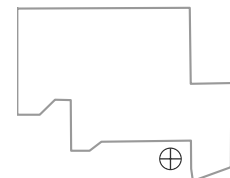
2015 - 2017 Data:

Decreasing

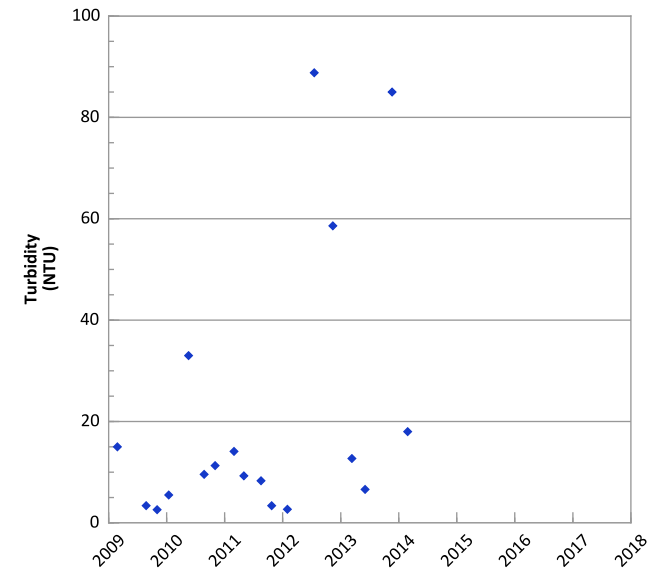
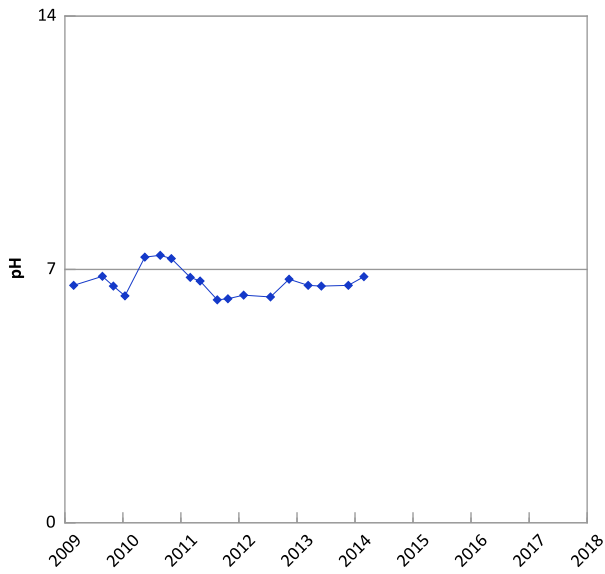
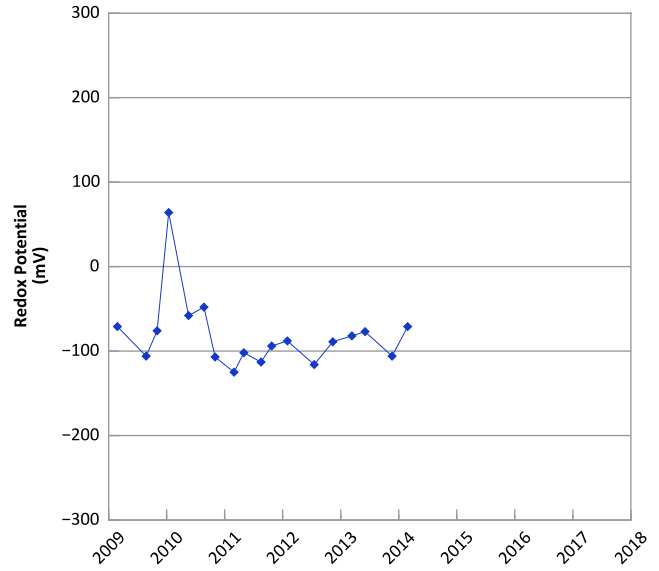
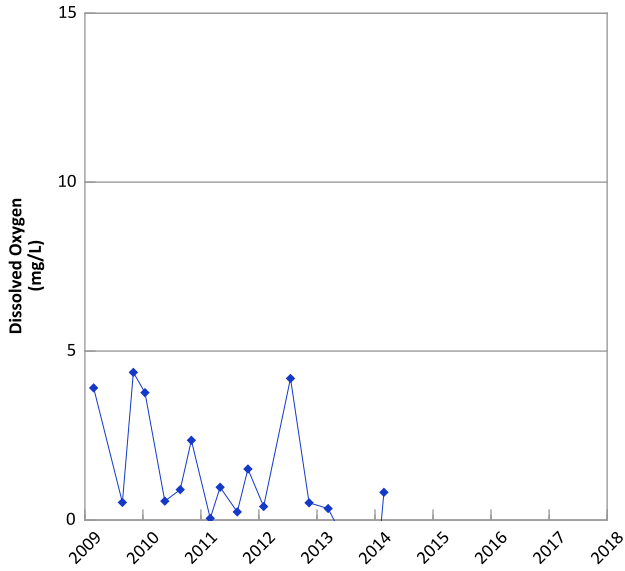
Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 08/17/2009 to 08/03/2016
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

Well Location

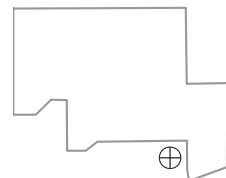


**PTX06-ISB019 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



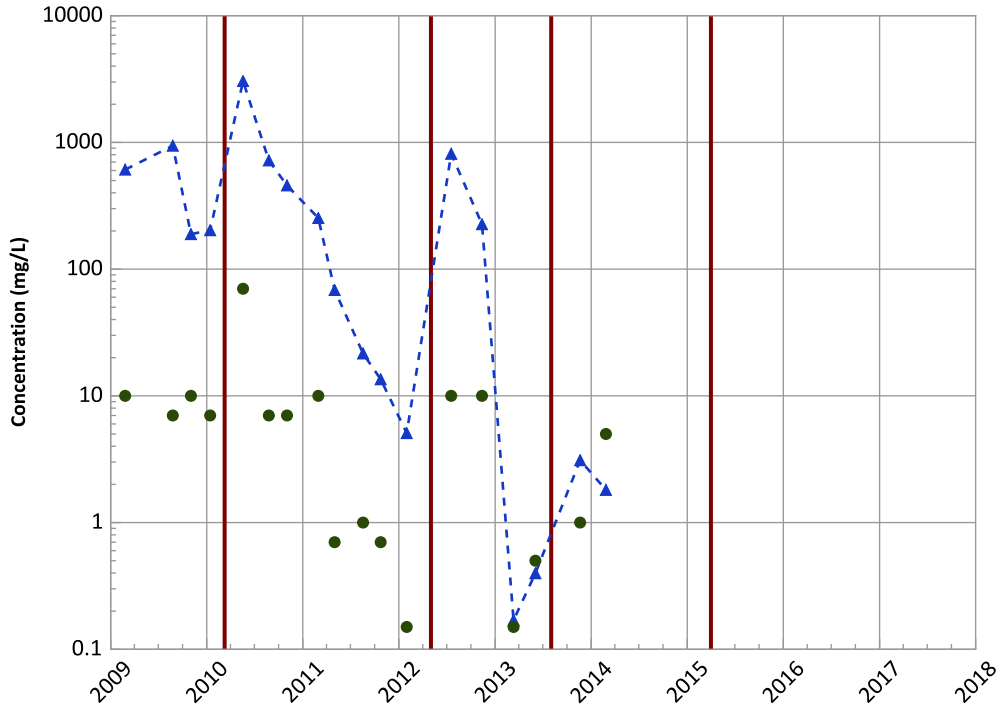
Query Date Range: 01/01/2009 to 12/31/2017
 Data Date Range: 02/25/2009 to 02/26/2014
 Analysis Date: 03/29/2018

Well Location



PTX06-ISB019 in Perched Aquifer
USDOE/NNSA Pantex Plant

Total Volatile Fatty Acids Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

No Trend

MAROS Linear Regression Method

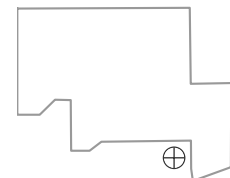
All Data

Decreasing

2015 - 2017 Data:

Probably Increasing

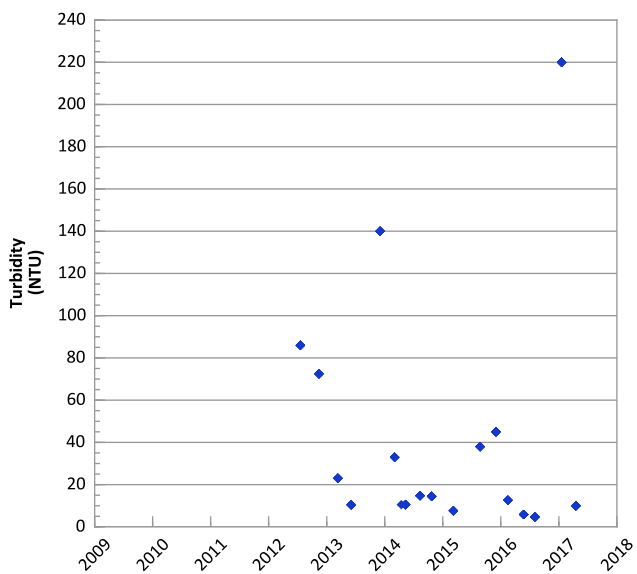
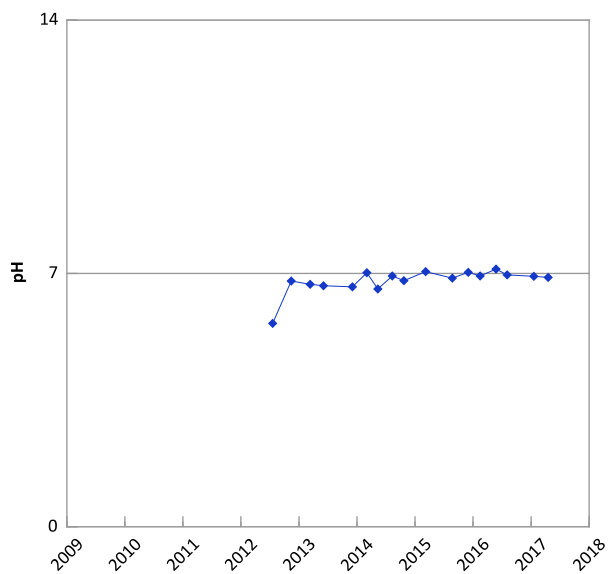
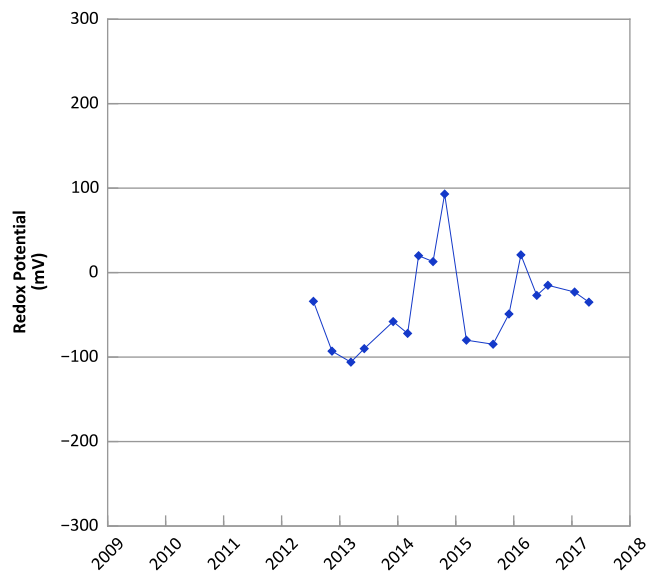
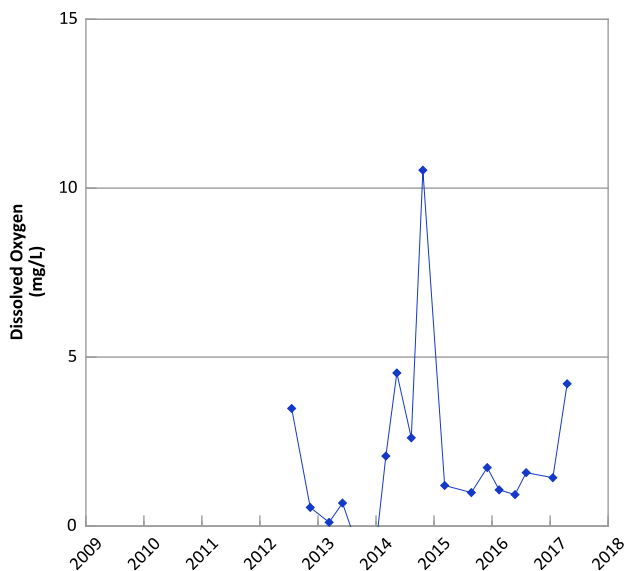
Well Location



Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 02/25/2009 to 02/26/2014
Analysis Date: 03/29/2018

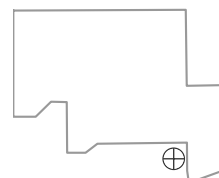
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

**PTX06-ISB024 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



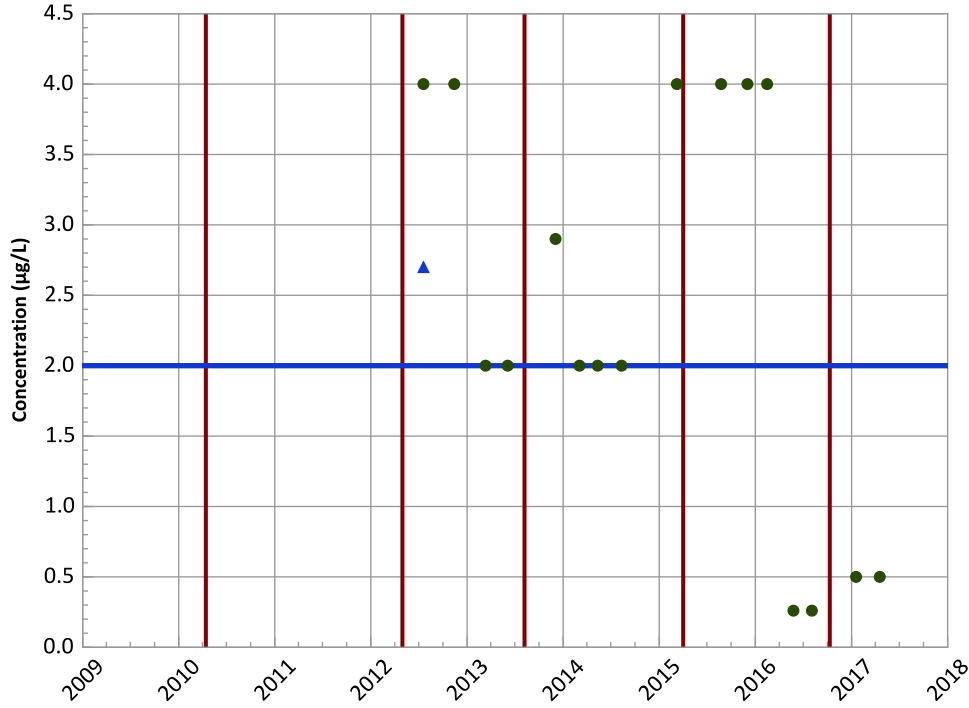
Query Date Range: 01/01/2009 to 12/31/2017
 Data Date Range: 07/19/2012 to 04/18/2017
 Analysis Date: 03/29/2018

Well Location



PTX06-ISB024 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend

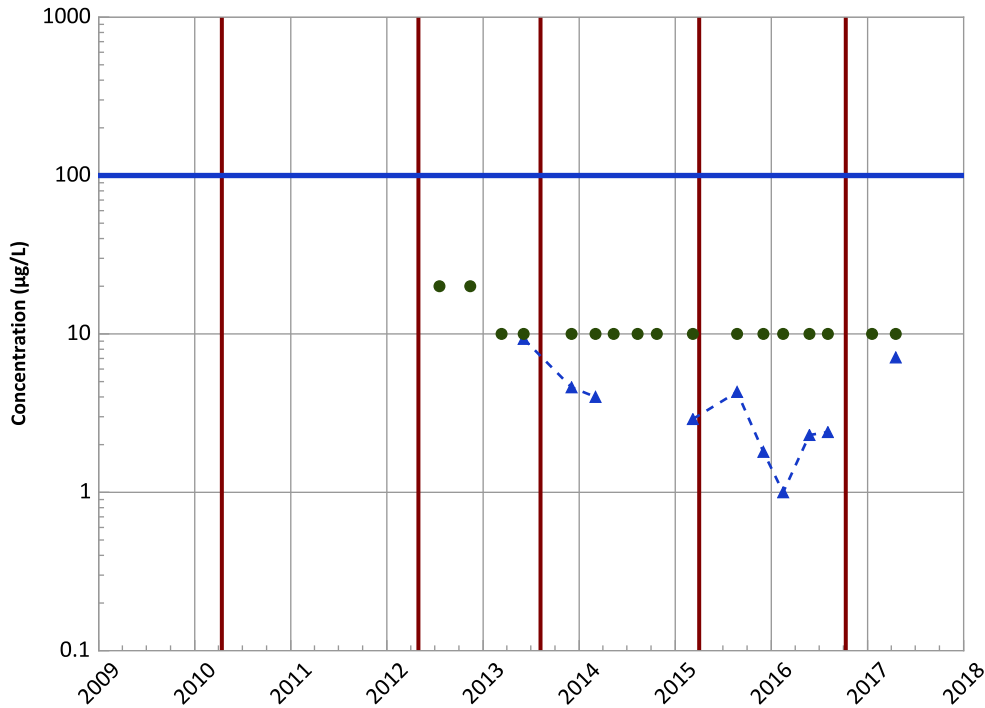


Concentration Trend

MAROS Mann-Kendall Method
All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method
All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
N/A (<4 Detections in Dataset)

Chromium, Total Trend

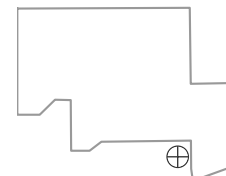


Concentration Trend

MAROS Mann-Kendall Method
All Data
Decreasing
2015 - 2017 Data:
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method
All Data
Stable
2015 - 2017 Data:
Increasing

Well Location

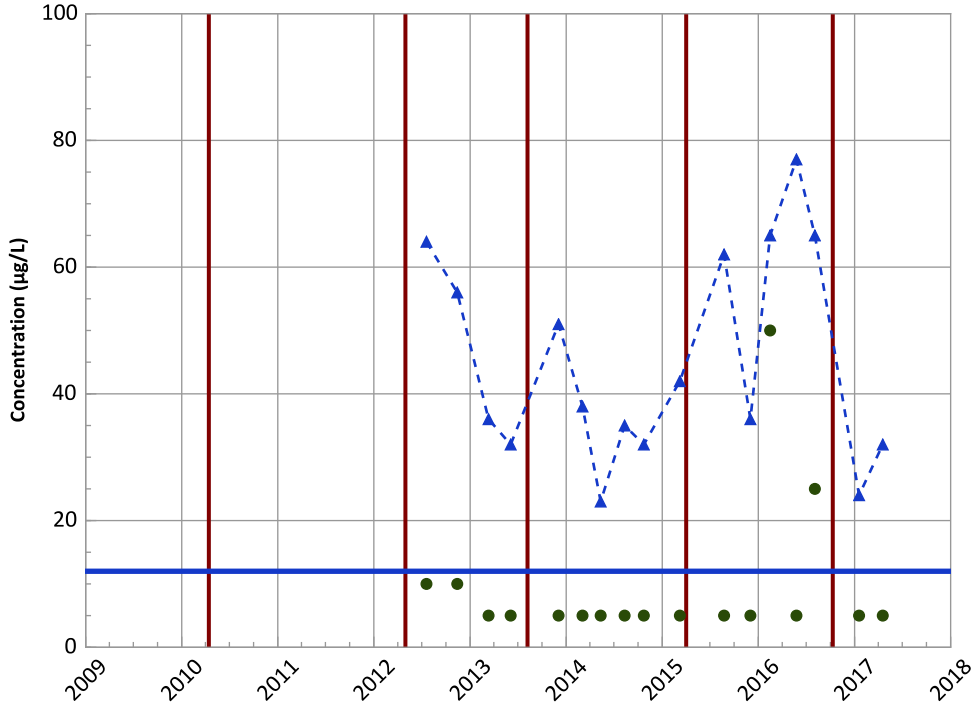


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 07/19/2012 to 04/18/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB024 in Perched Aquifer
USDOE/NNSA Pantex Plant

Arsenic Trend



Concentration Trend

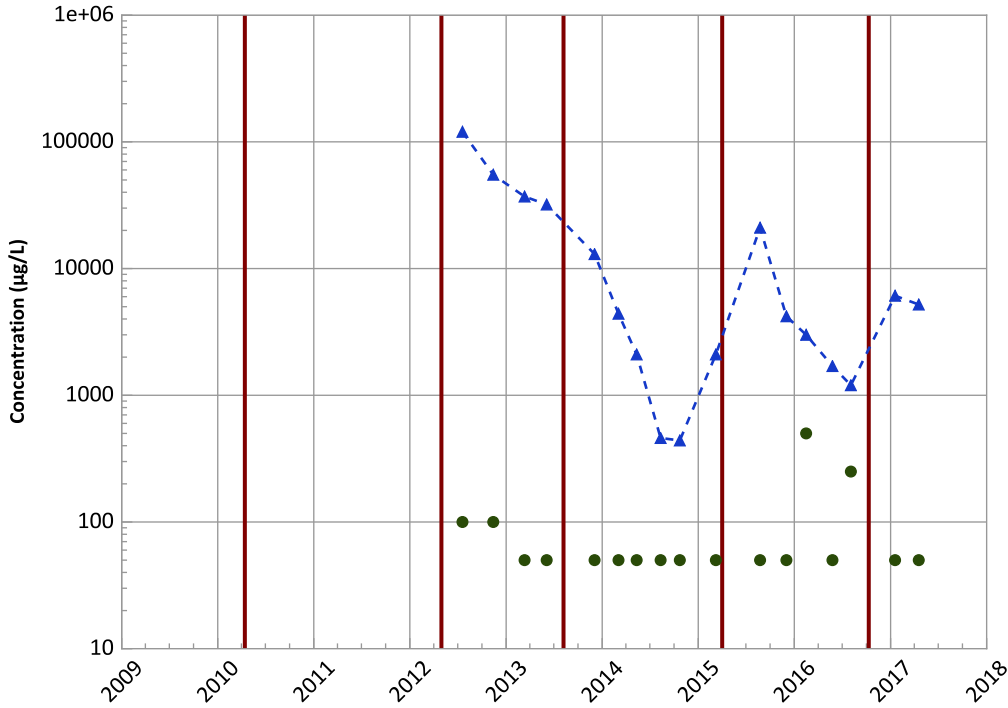
MAROS Mann-Kendall Method

All Data
No Trend
2015 - 2017 Data:
Decreasing

MAROS Linear Regression Method

All Data
Stable
2015 - 2017 Data:
Probably Decreasing

Iron Trend



Concentration Trend

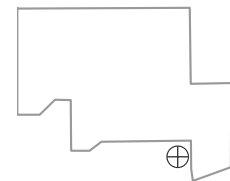
MAROS Mann-Kendall Method

All Data
Decreasing
2015 - 2017 Data:
No Trend

MAROS Linear Regression Method

All Data
Decreasing
2015 - 2017 Data:
Probably Increasing

Well Location

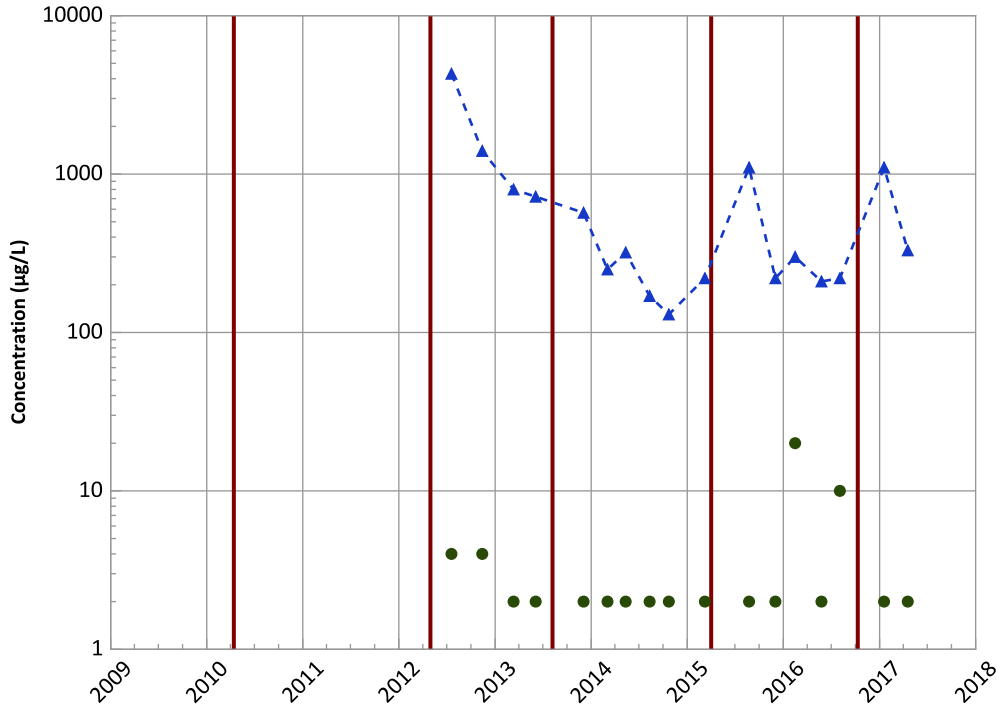


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 07/19/2012 to 04/18/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB024 in Perched Aquifer
USDOE/NNSA Pantex Plant

Manganese Trend



Concentration Trend

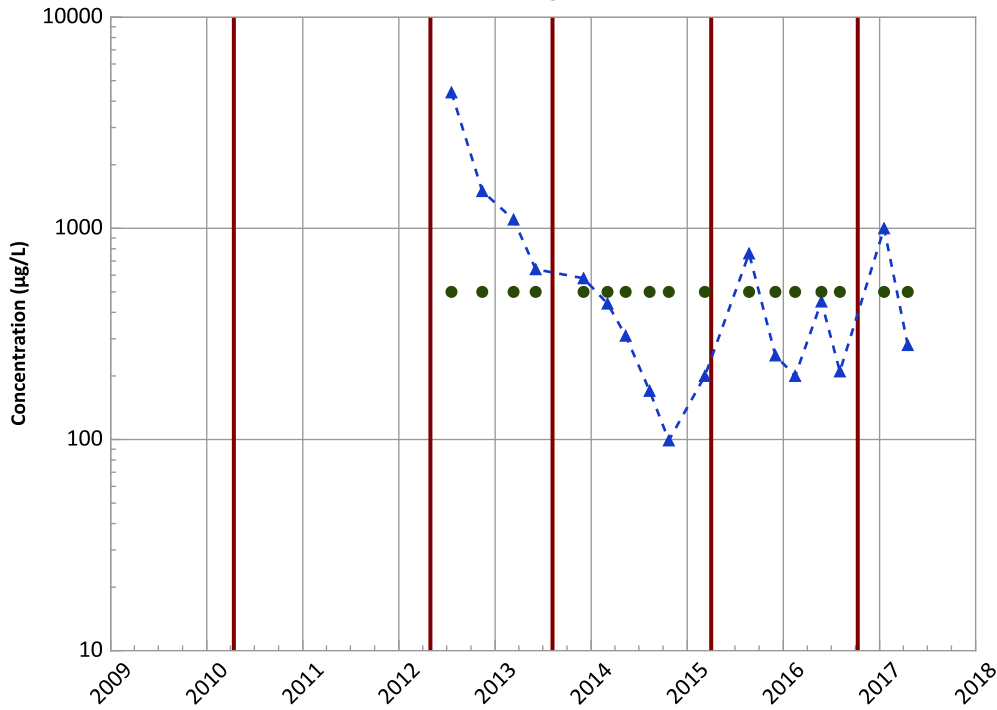
MAROS Mann-Kendall Method

All Data
Decreasing
2015 - 2017 Data:
No Trend

MAROS Linear Regression Method

All Data
Decreasing
2015 - 2017 Data:
No Trend

Divalent Manganese Trend



Concentration Trend

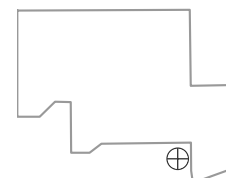
MAROS Mann-Kendall Method

All Data
Decreasing
2015 - 2017 Data:
Stable

MAROS Linear Regression Method

All Data
Decreasing
2015 - 2017 Data:
No Trend

Well Location

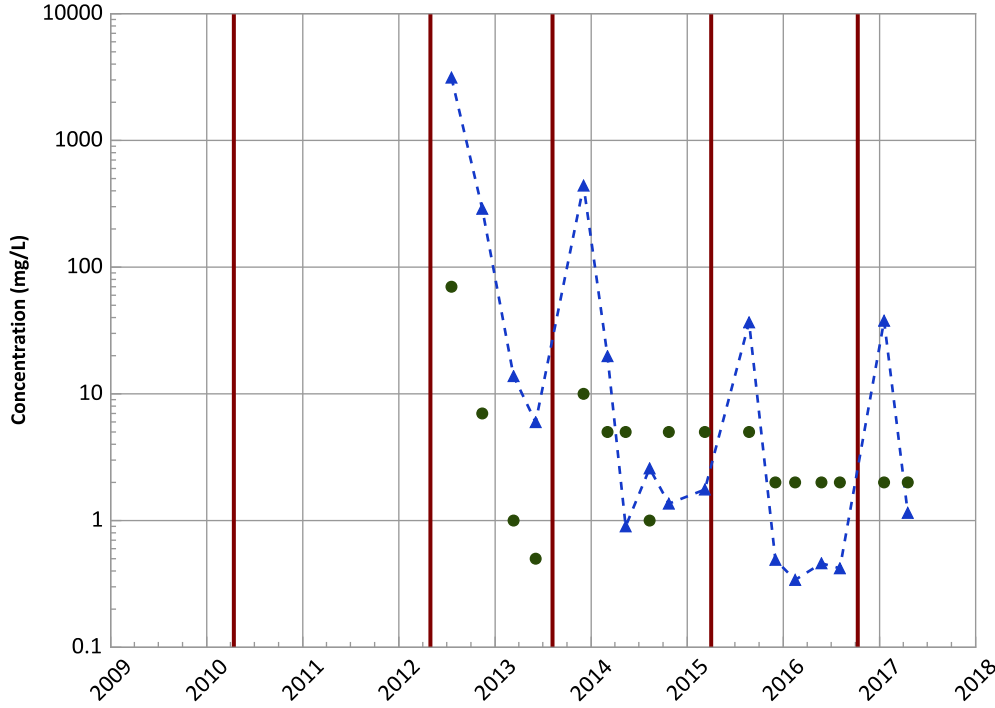


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 07/19/2012 to 04/18/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB024 in Perched Aquifer
USDOE/NNSA Pantex Plant

Total Volatile Fatty Acids Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

No Trend

MAROS Linear Regression Method

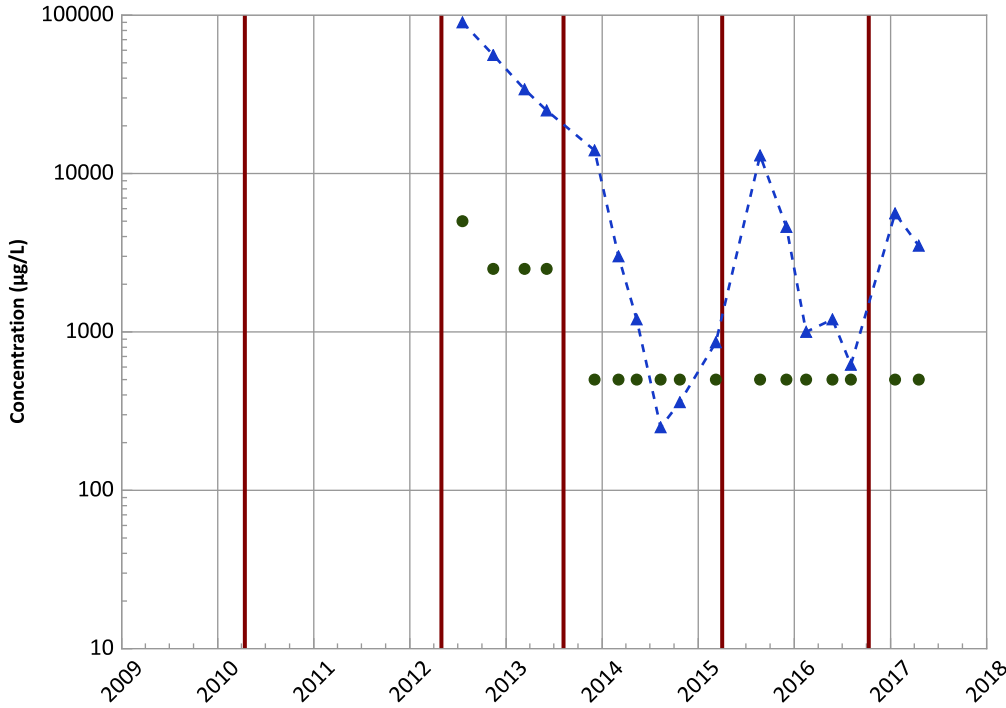
All Data

Decreasing

2015 - 2017 Data:

No Trend

Ferrous Iron Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

No Trend

MAROS Linear Regression Method

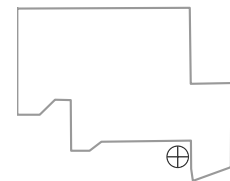
All Data

Decreasing

2015 - 2017 Data:

No Trend

Well Location

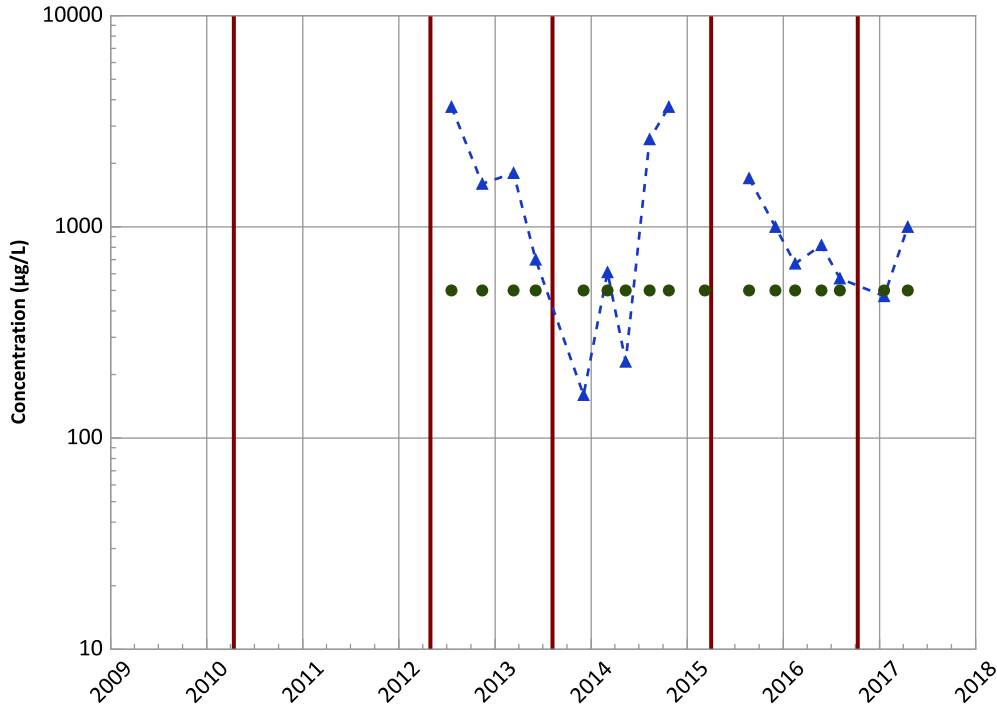


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 07/19/2012 to 04/18/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB024 in Perched Aquifer
USDOE/NNSA Pantex Plant

Ferric Iron Trend



Concentration Trend

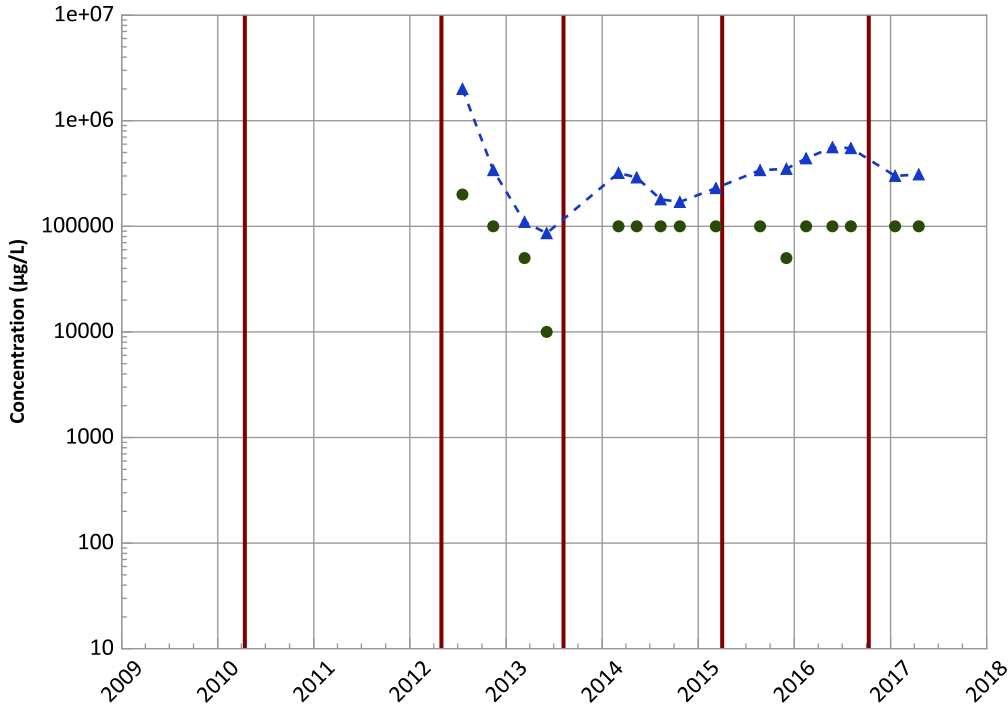
MAROS Mann-Kendall Method

All Data
Decreasing
2015 - 2017 Data:
Stable

MAROS Linear Regression Method

All Data
Stable
2015 - 2017 Data:
No Trend

Total Organic Carbon Trend



Concentration Trend

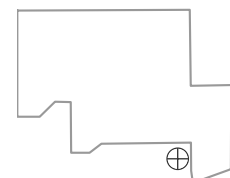
MAROS Mann-Kendall Method

All Data
No Trend
2015 - 2017 Data:
Decreasing

MAROS Linear Regression Method

All Data
No Trend
2015 - 2017 Data:
Decreasing

Well Location

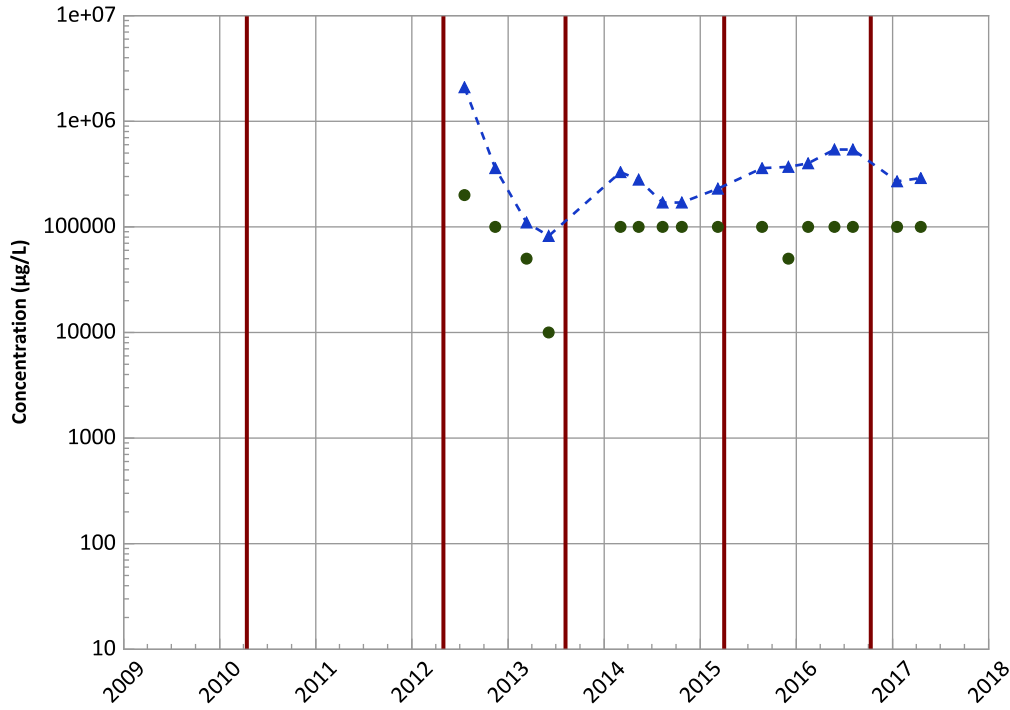


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 07/19/2012 to 04/18/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB024 in Perched Aquifer
USDOE/NNSA Pantex Plant

Dissolved Organic Carbon (DOC) Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

No Trend

2015 - 2017 Data:

Decreasing

MAROS Linear Regression Method

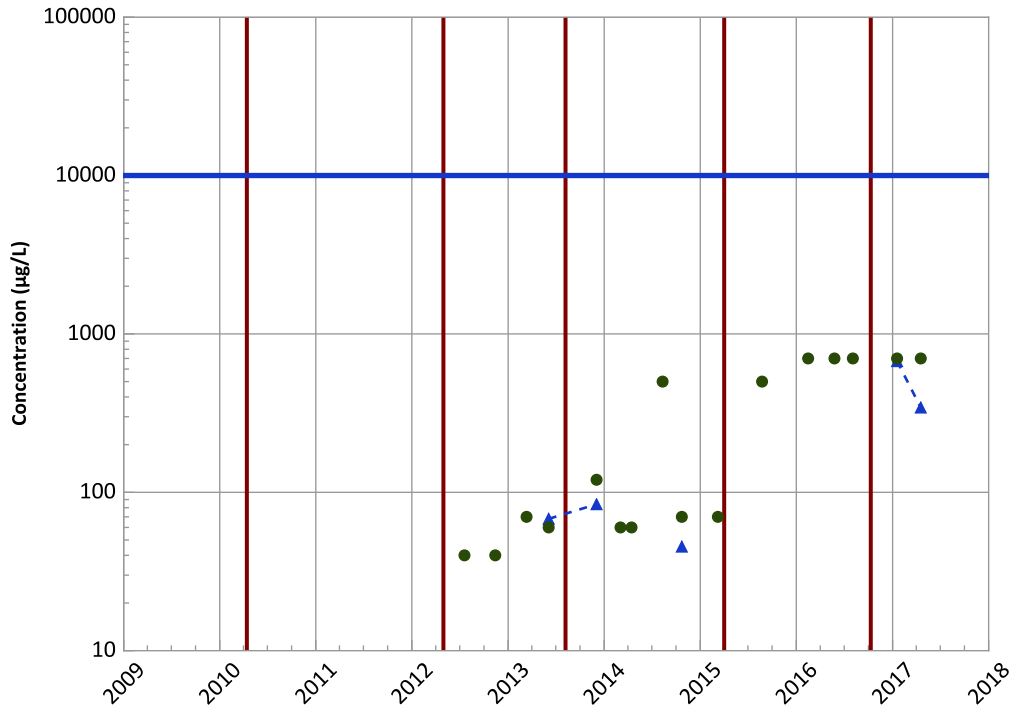
All Data

No Trend

2015 - 2017 Data:

Probably Decreasing

Nitrate as N Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Increasing

2015 - 2017 Data:

N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

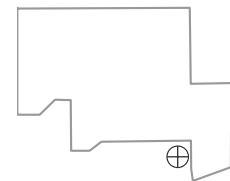
All Data

Increasing

2015 - 2017 Data:

No Trend

Well Location

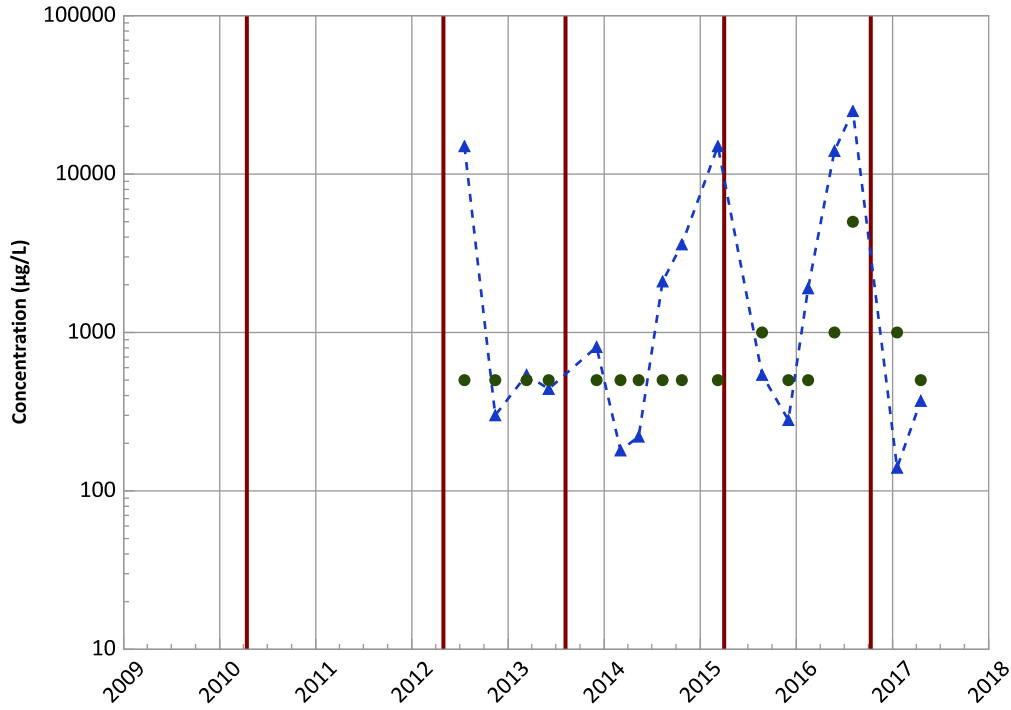


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 07/19/2012 to 04/18/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB024 in Perched Aquifer
USDOE/NNSA Pantex Plant

Sulfate (as SO4) Trend

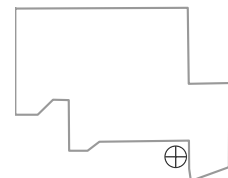


Concentration Trend
MAROS Mann-Kendall Method
 All Data
 No Trend
 2015 - 2017 Data:
 Decreasing
MAROS Linear Regression Method
 All Data
 No Trend
 2015 - 2017 Data:
 Probably Decreasing

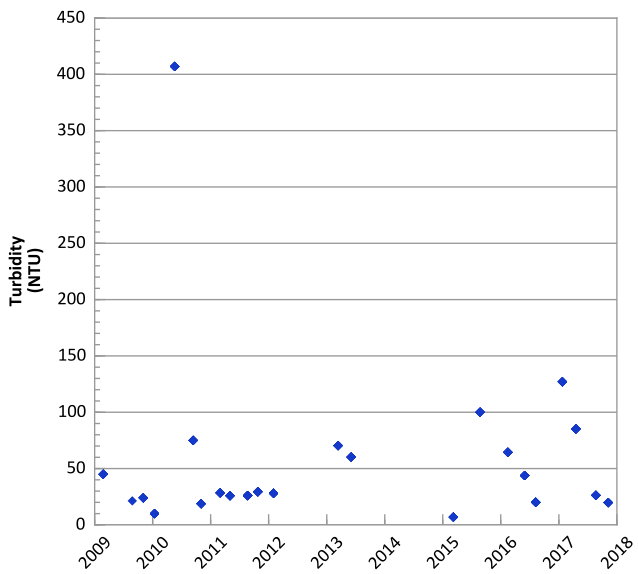
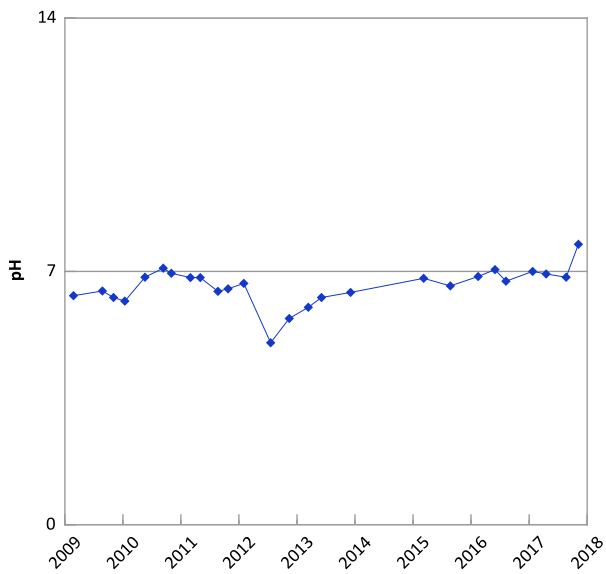
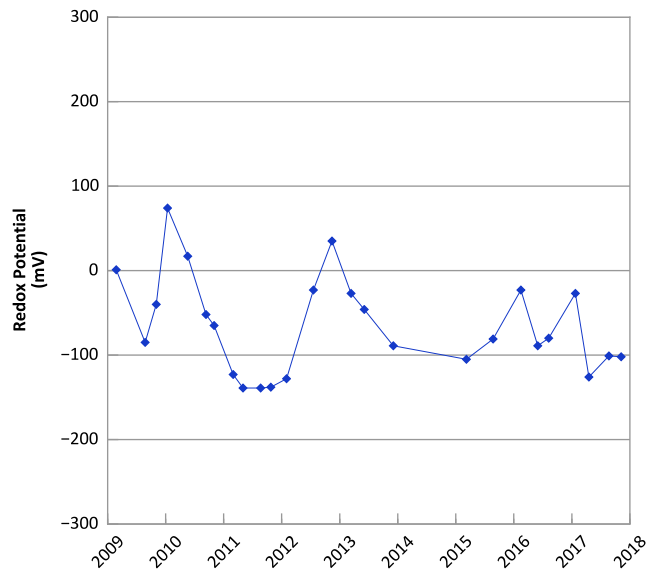
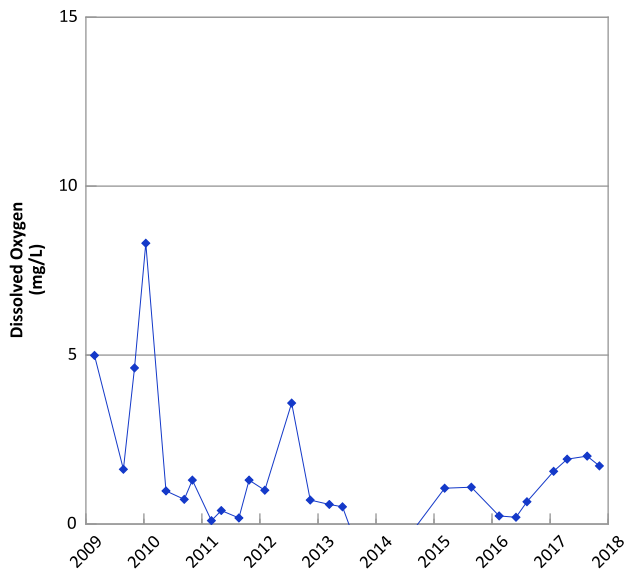
Query Date Range: 01/01/2009 to 12/31/2017
 Data Date Range: 07/19/2012 to 04/18/2017
 Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

Well Location

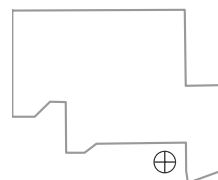


**PTX06-ISB030B in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



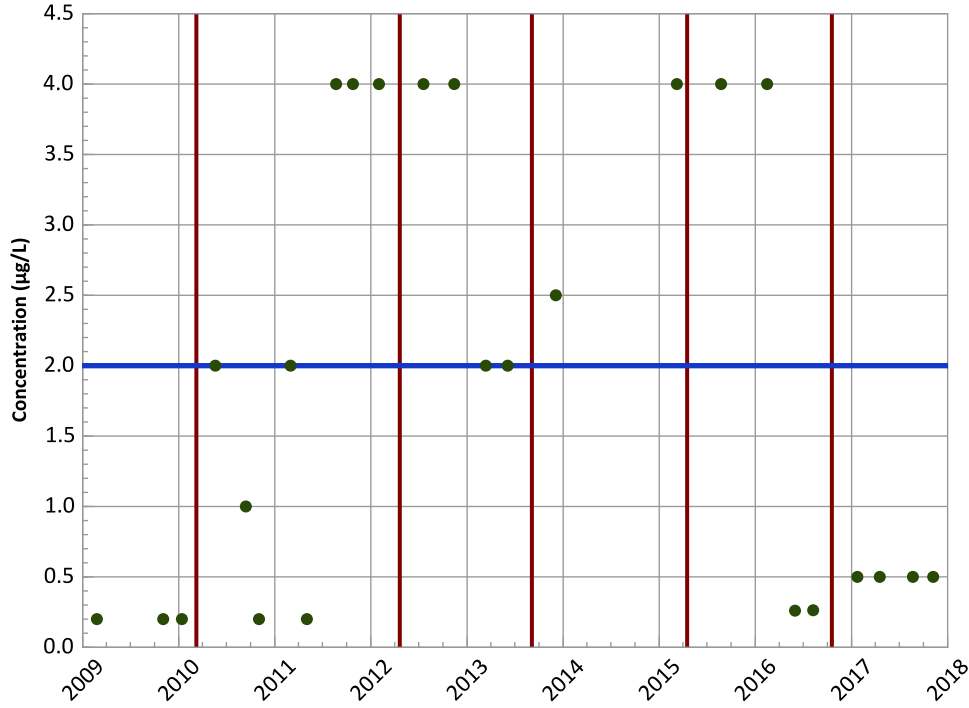
Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 02/24/2009 to 11/07/2017
Analysis Date: 03/29/2018

Well Location



PTX06-ISB030B in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

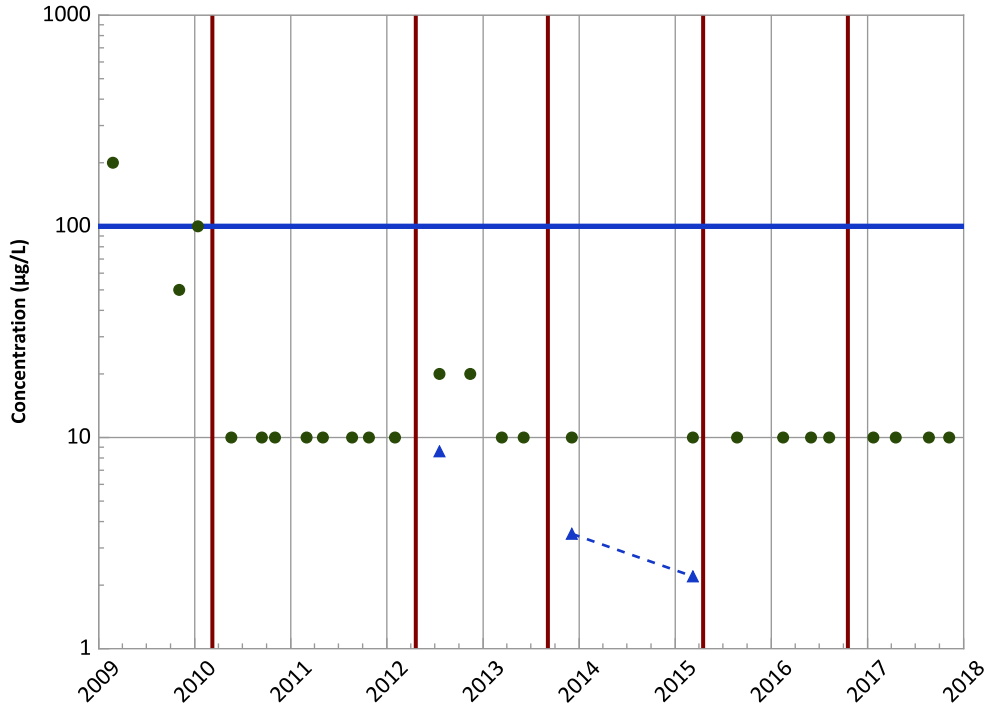
MAROS Mann-Kendall Method

All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method

All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

Chromium, Total Trend



Concentration Trend

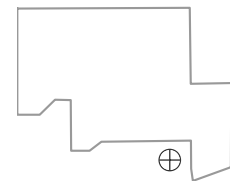
MAROS Mann-Kendall Method

All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method

All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
N/A (<4 Detections in Dataset)

Well Location

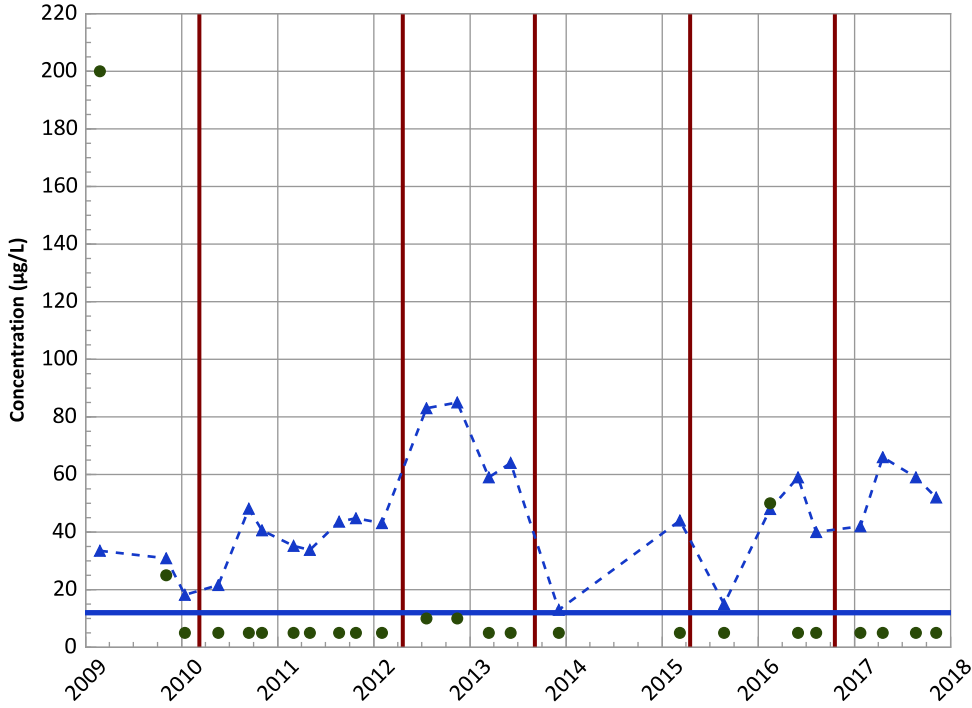


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 02/24/2009 to 11/07/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB030B in Perched Aquifer
USDOE/NNSA Pantex Plant

Arsenic Trend



Concentration Trend

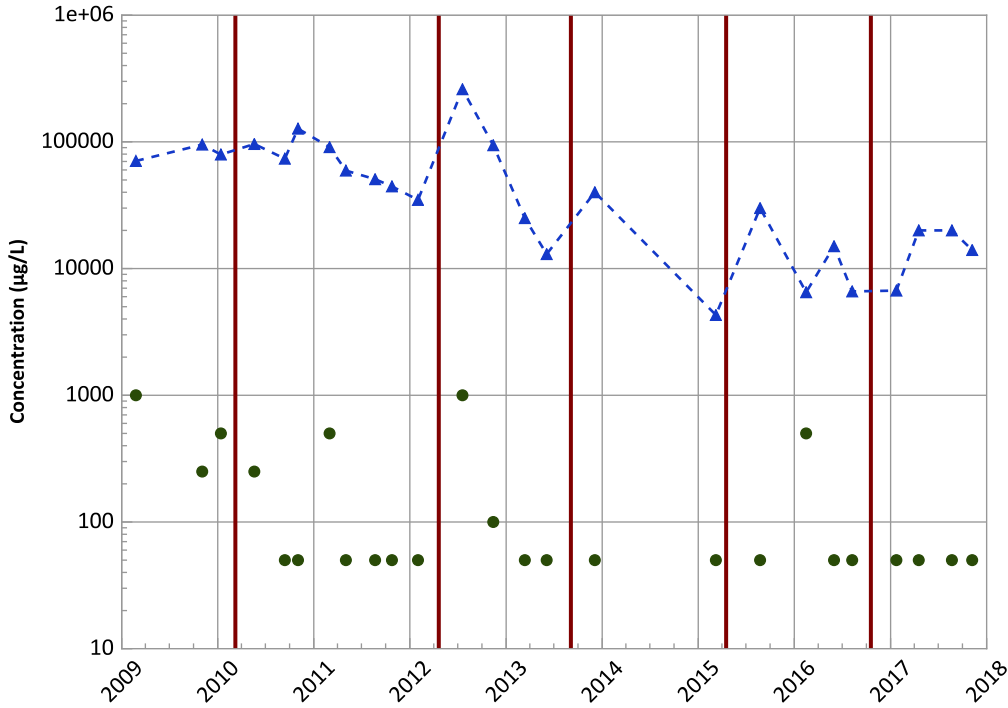
MAROS Mann-Kendall Method

All Data
Increasing
2015 - 2017 Data:
Stable

MAROS Linear Regression Method

All Data
Probably Increasing
2015 - 2017 Data:
No Trend

Iron Trend



Concentration Trend

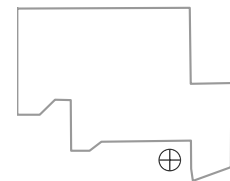
MAROS Mann-Kendall Method

All Data
Decreasing
2015 - 2017 Data:
No Trend

MAROS Linear Regression Method

All Data
Decreasing
2015 - 2017 Data:
No Trend

Well Location

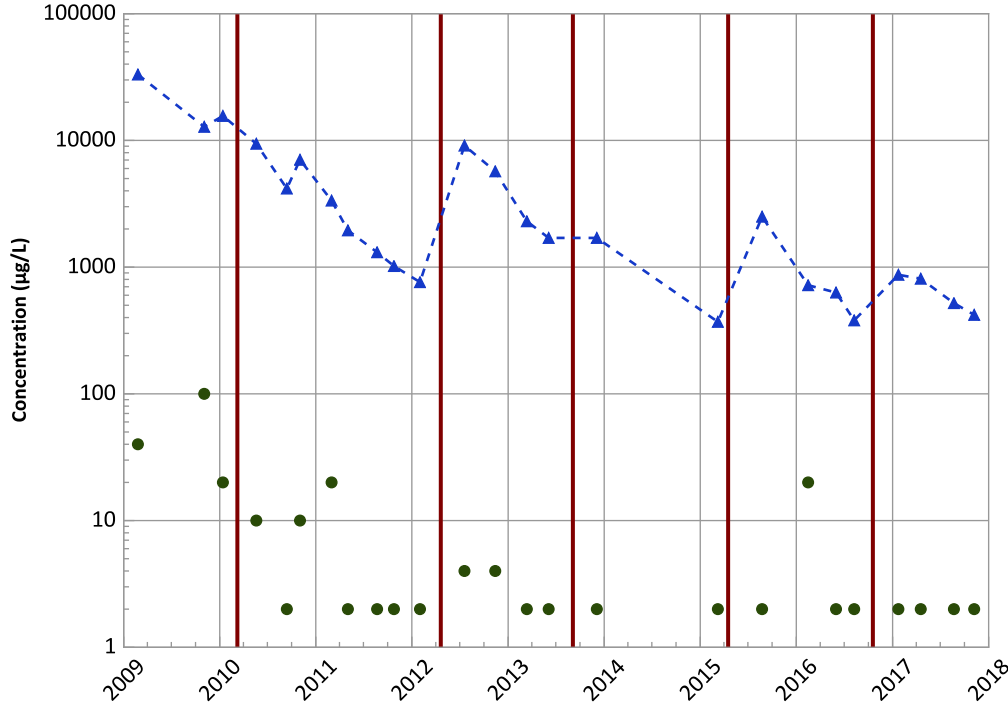


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 02/24/2009 to 11/07/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB030B in Perched Aquifer
USDOE/NNSA Pantex Plant

Manganese Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Decreasing

MAROS Linear Regression Method

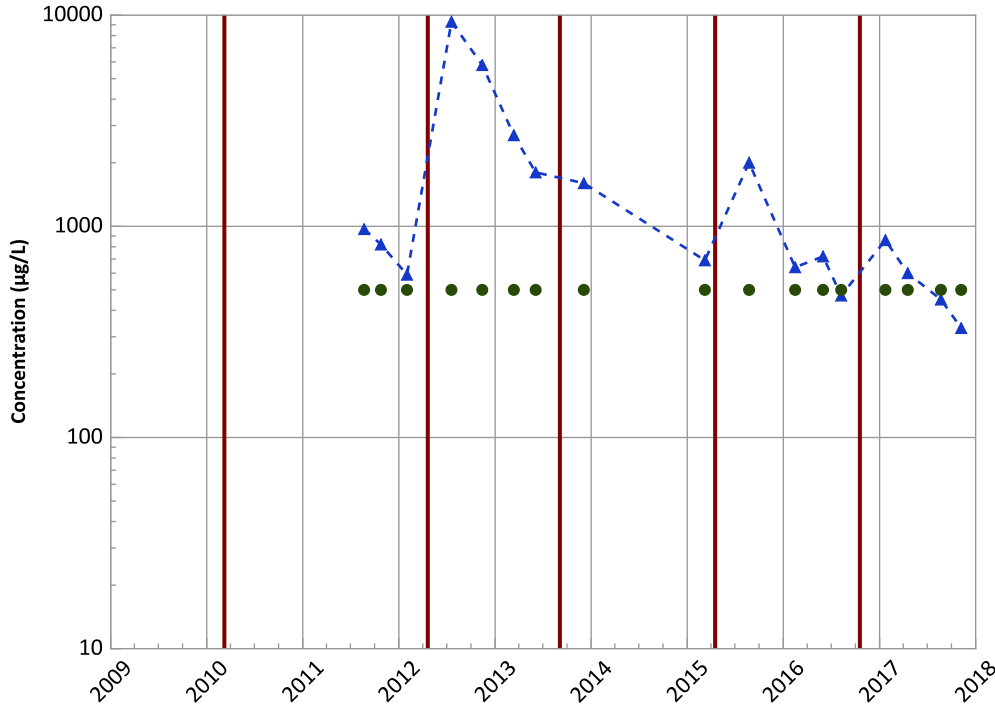
All Data

Decreasing

2015 - 2017 Data:

Probably Decreasing

Divalent Manganese Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Decreasing

MAROS Linear Regression Method

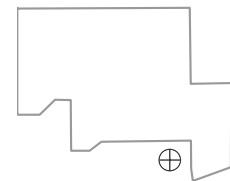
All Data

Decreasing

2015 - 2017 Data:

Decreasing

Well Location

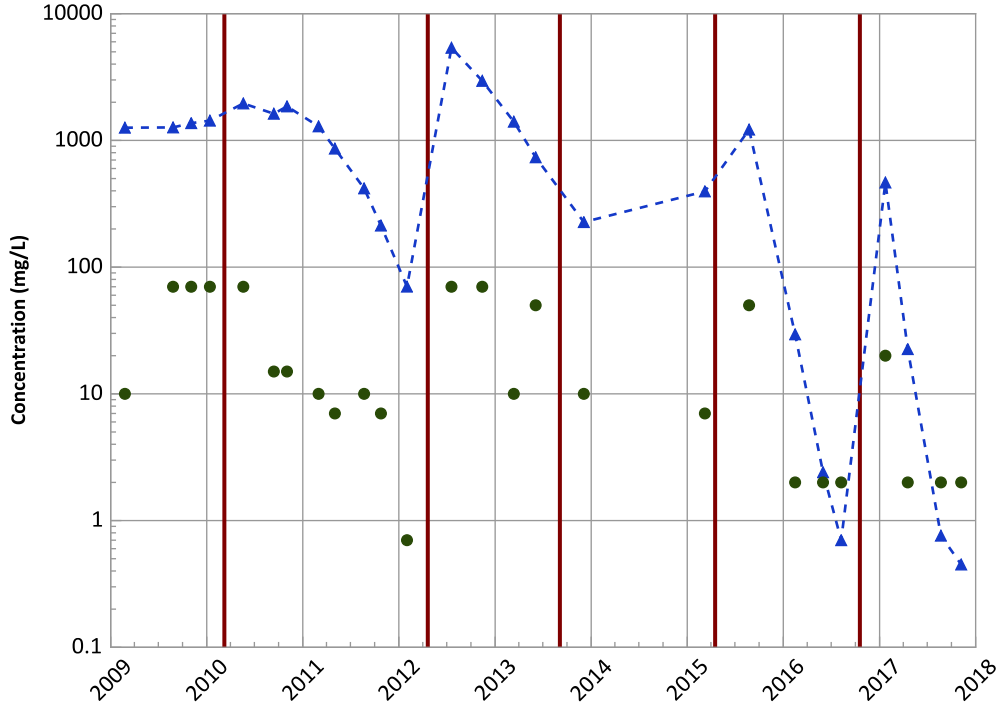


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 02/24/2009 to 11/07/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB030B in Perched Aquifer
USDOE/NNSA Pantex Plant

Total Volatile Fatty Acids Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Decreasing

MAROS Linear Regression Method

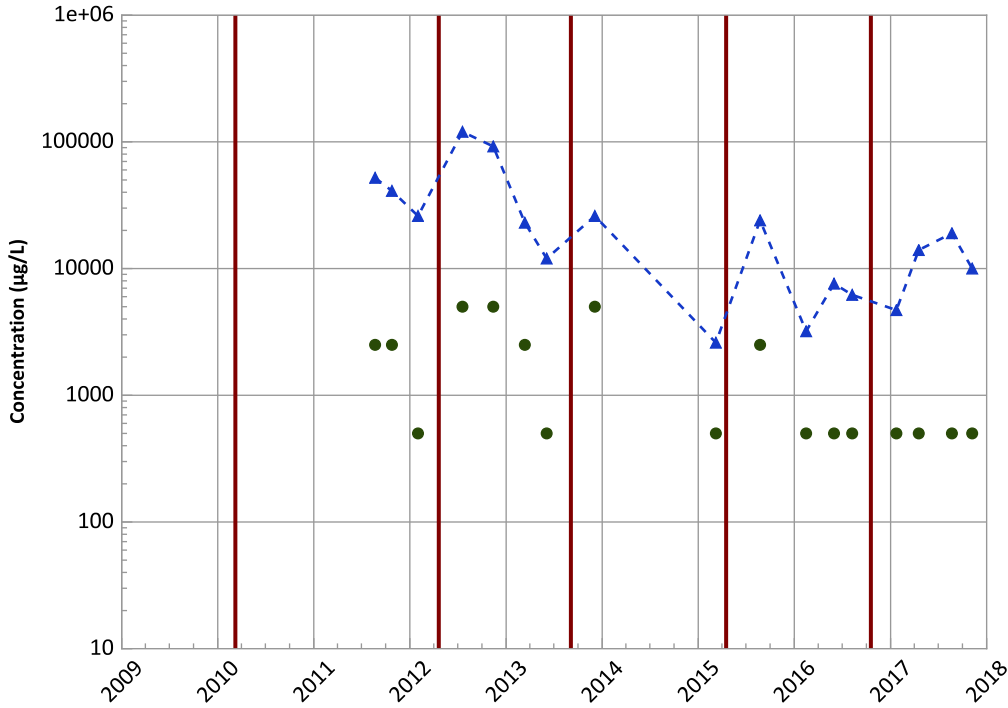
All Data

Decreasing

2015 - 2017 Data:

Decreasing

Ferrous Iron Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

No Trend

MAROS Linear Regression Method

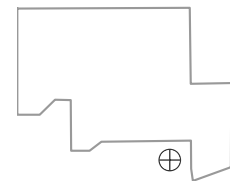
All Data

Decreasing

2015 - 2017 Data:

No Trend

Well Location

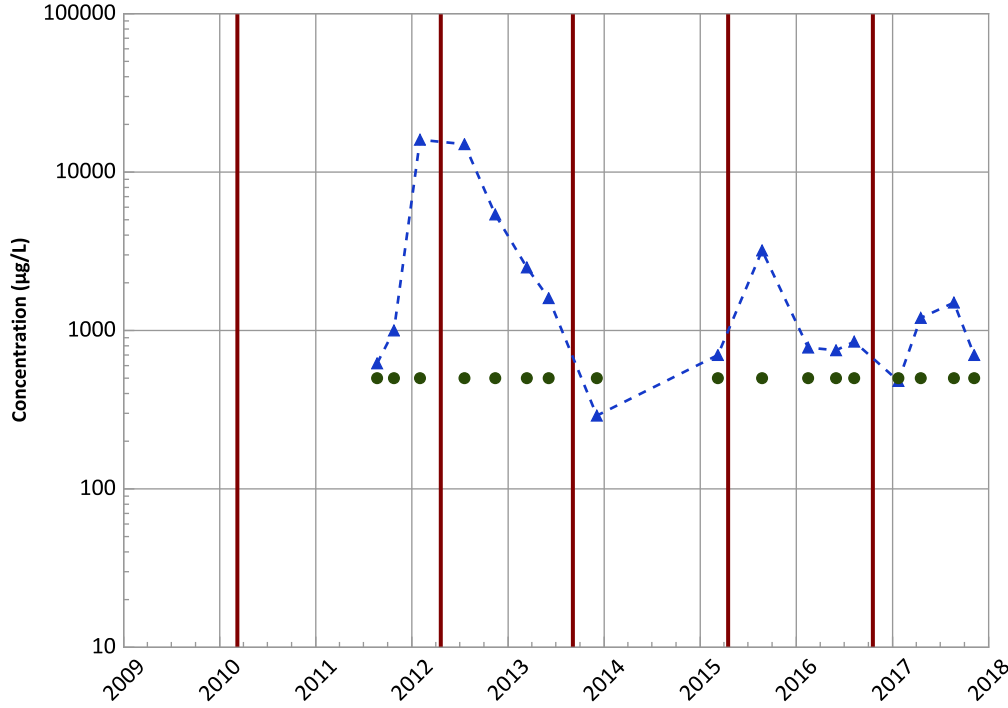


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 02/24/2009 to 11/07/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB030B in Perched Aquifer
USDOE/NNSA Pantex Plant

Ferric Iron Trend



Concentration Trend

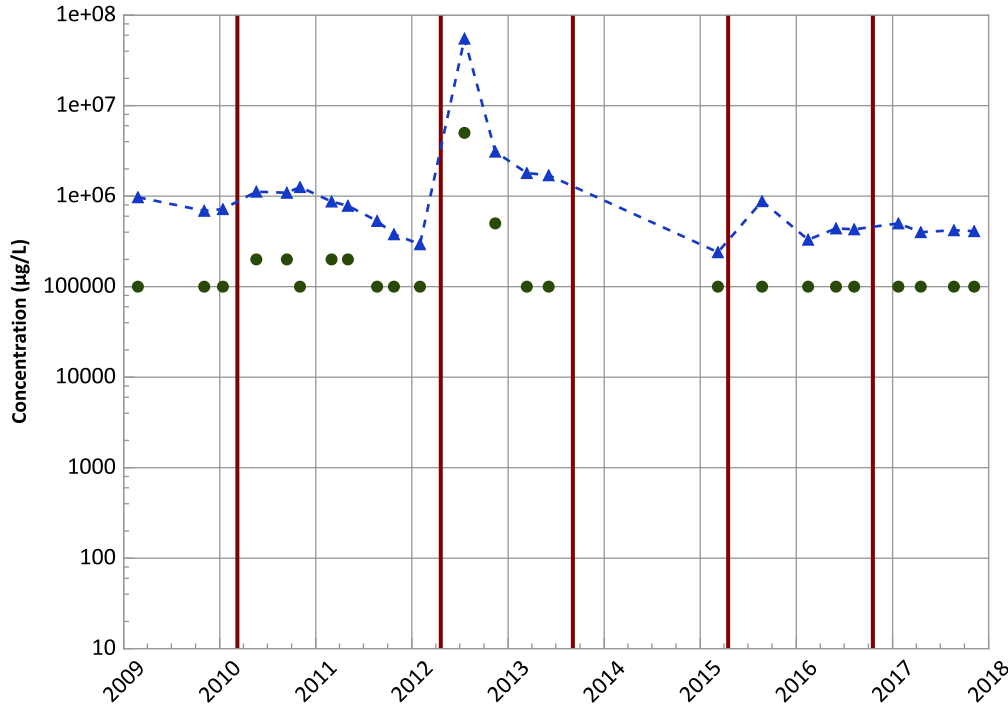
MAROS Mann-Kendall Method

All Data
Decreasing
2015 - 2017 Data:
No Trend

MAROS Linear Regression Method

All Data
Decreasing
2015 - 2017 Data:
No Trend

Total Organic Carbon Trend



Concentration Trend

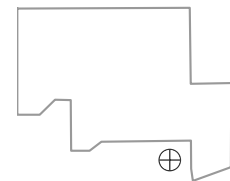
MAROS Mann-Kendall Method

All Data
Decreasing
2015 - 2017 Data:
Decreasing

MAROS Linear Regression Method

All Data
Probably Decreasing
2015 - 2017 Data:
Probably Decreasing

Well Location

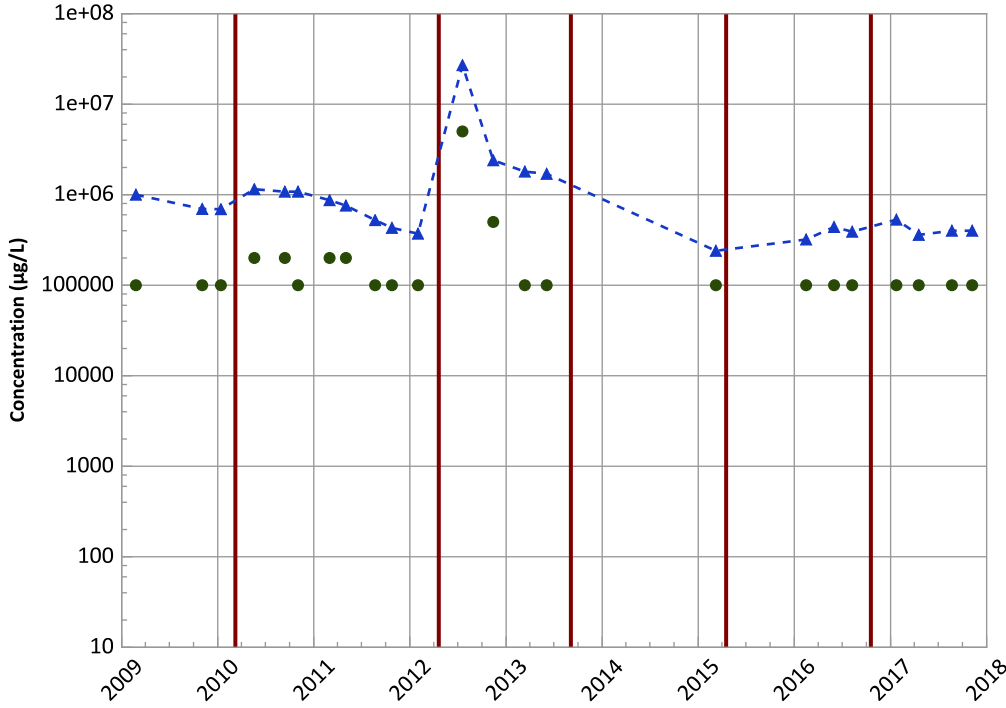


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 02/24/2009 to 11/07/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB030B in Perched Aquifer
USDOE/NNSA Pantex Plant

Dissolved Organic Carbon (DOC) Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Decreasing

MAROS Linear Regression Method

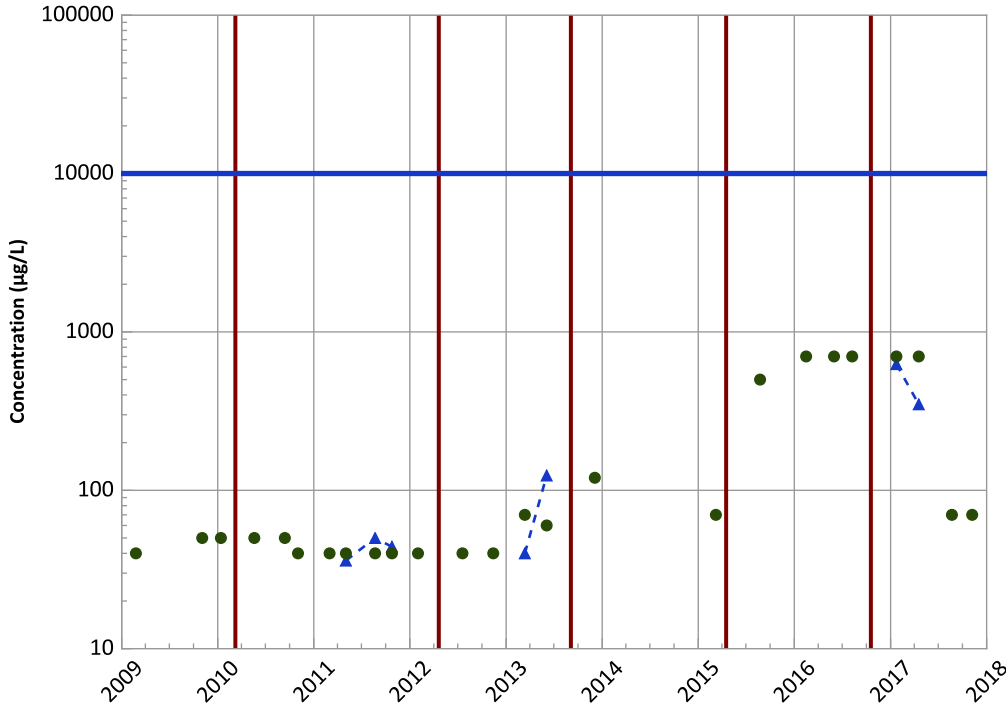
All Data

Decreasing

2015 - 2017 Data:

Stable

Nitrate as N Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Increasing

2015 - 2017 Data:

N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

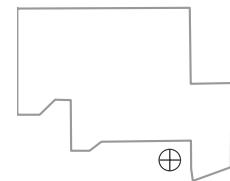
All Data

Increasing

2015 - 2017 Data:

No Trend

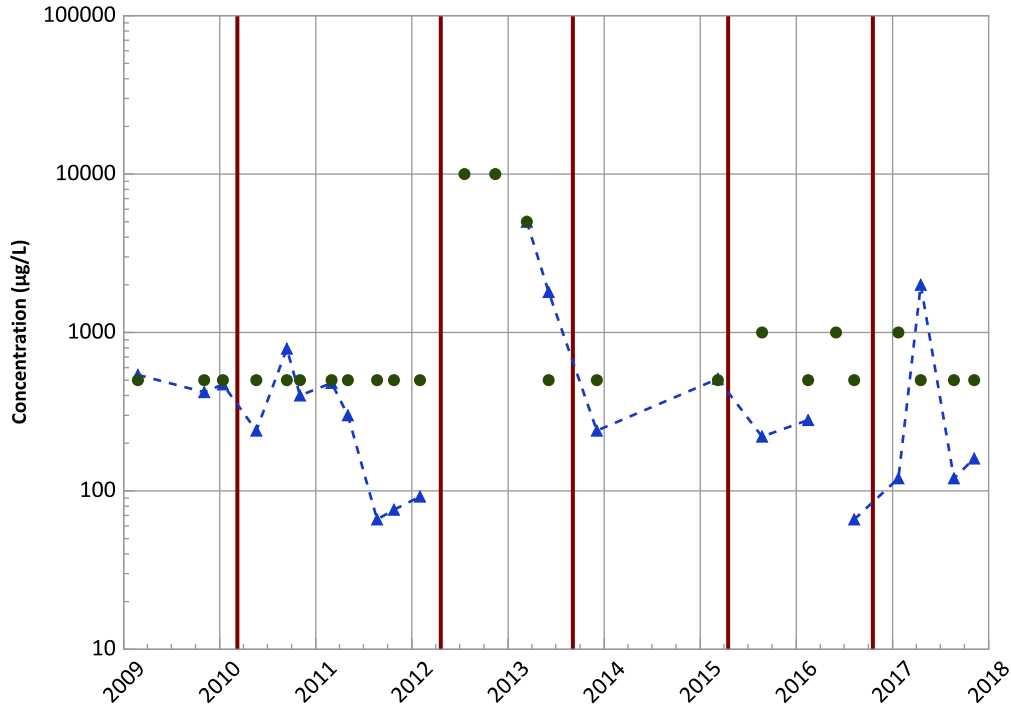
Well Location



Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 02/24/2009 to 11/07/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

**PTX06-ISB030B in Perched Aquifer
USDOE/NNSA Pantex Plant
Sulfate (as SO₄) Trend**

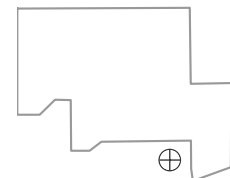


Concentration Trend
MAROS Mann-Kendall Method
 All Data: Decreasing
 2015 - 2017 Data: No Trend
MAROS Linear Regression Method
 All Data: No Trend
 2015 - 2017 Data: No Trend

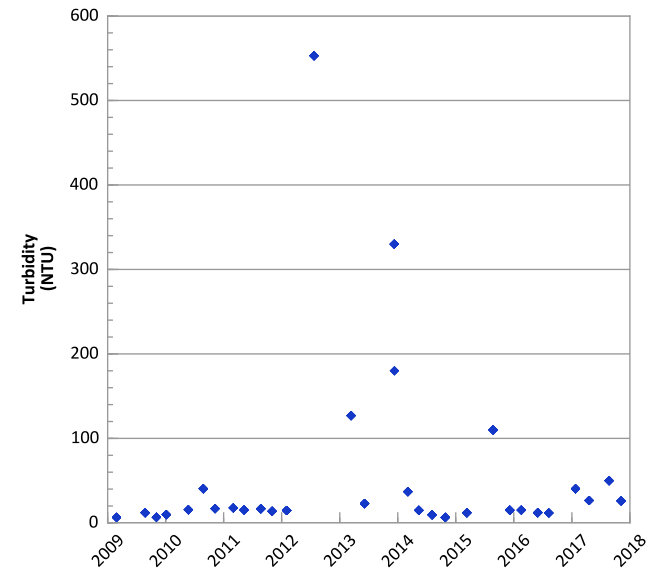
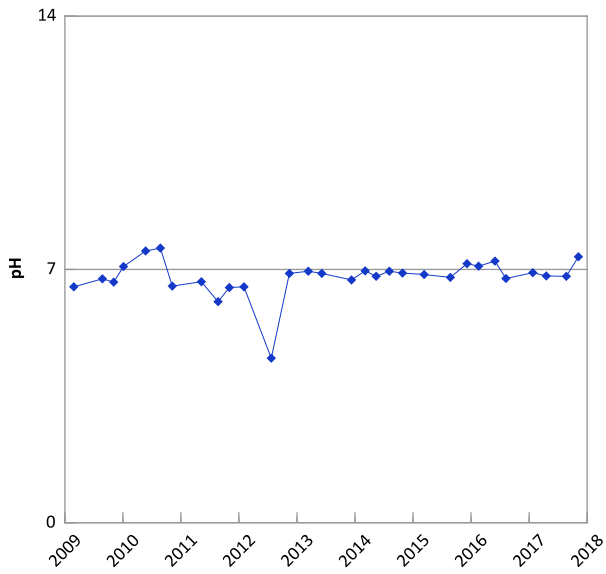
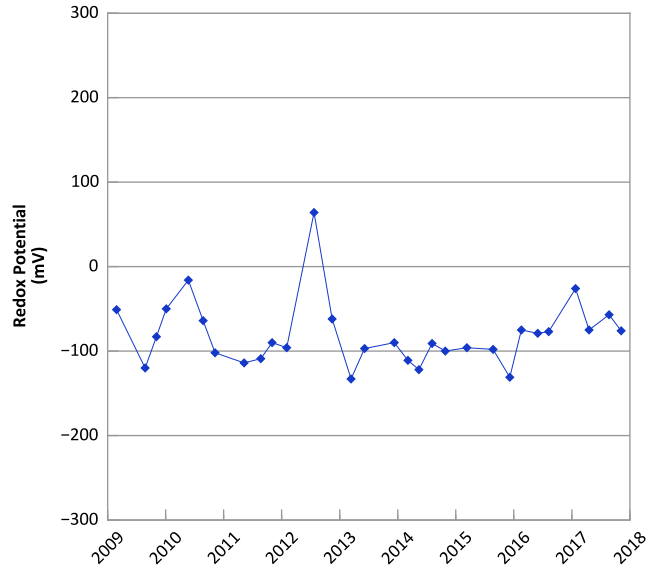
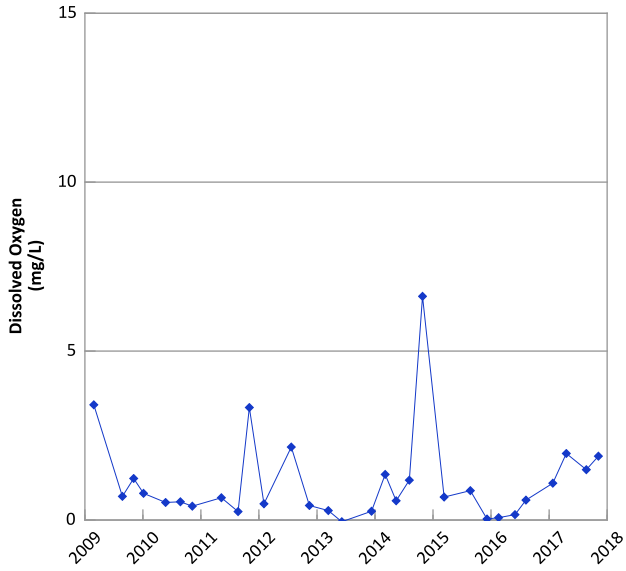
Query Date Range: 01/01/2009 to 12/31/2017
 Data Date Range: 02/24/2009 to 11/07/2017
 Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

Well Location

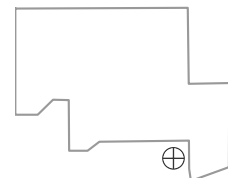


**PTX06-ISB038 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



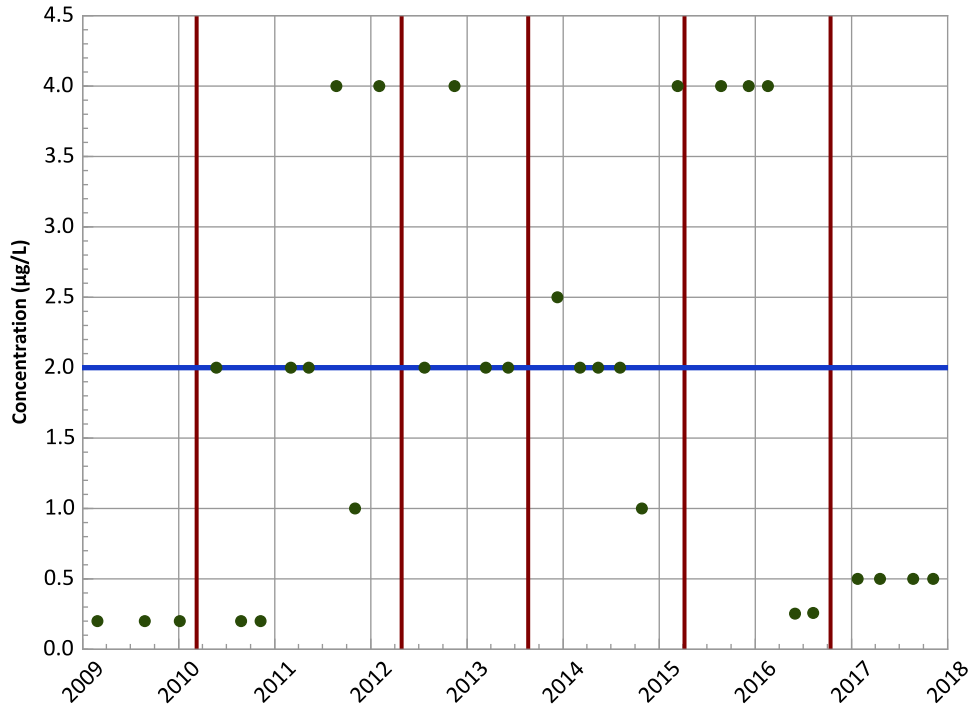
Query Date Range: 01/01/2009 to 12/31/2017
 Data Date Range: 02/26/2009 to 11/07/2017
 Analysis Date: 03/29/2018

Well Location



PTX06-ISB038 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

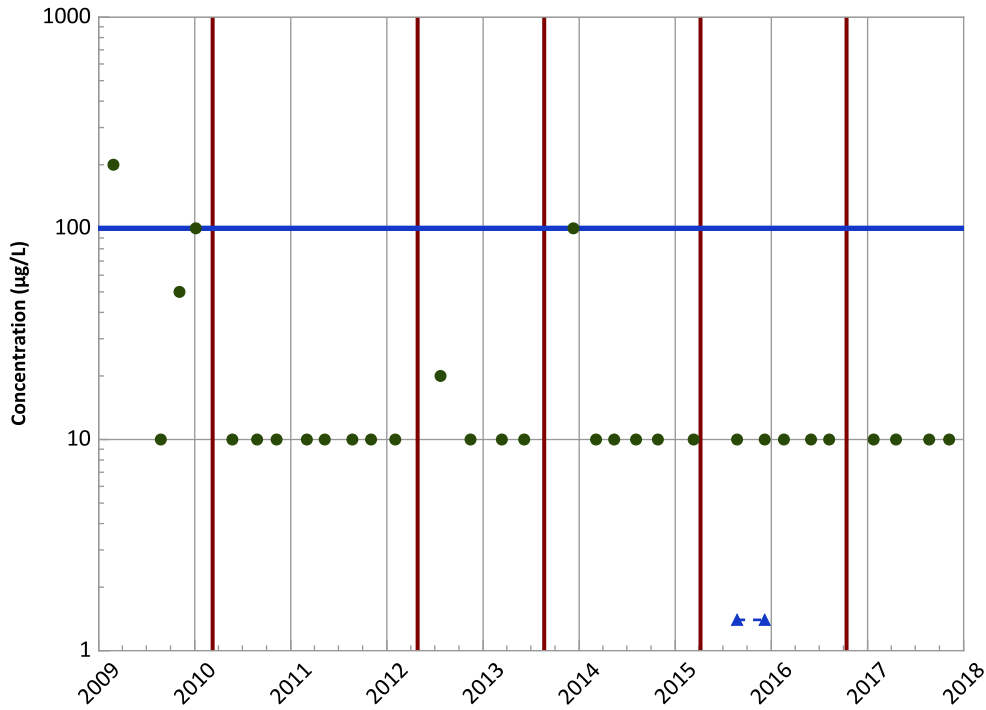
MAROS Mann-Kendall Method

All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method

All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

Chromium, Total Trend



Concentration Trend

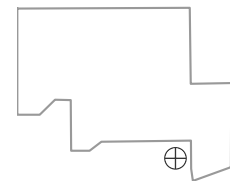
MAROS Mann-Kendall Method

All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method

All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
N/A (<4 Detections in Dataset)

Well Location

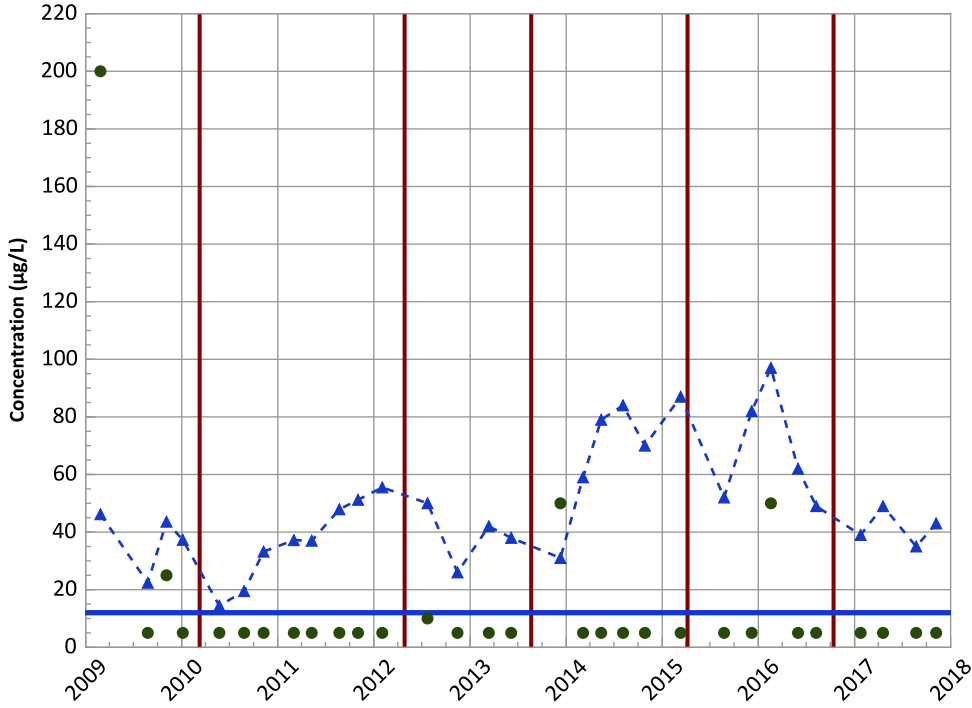


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 02/26/2009 to 11/07/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB038 in Perched Aquifer
USDOE/NNSA Pantex Plant

Arsenic Trend



Concentration Trend

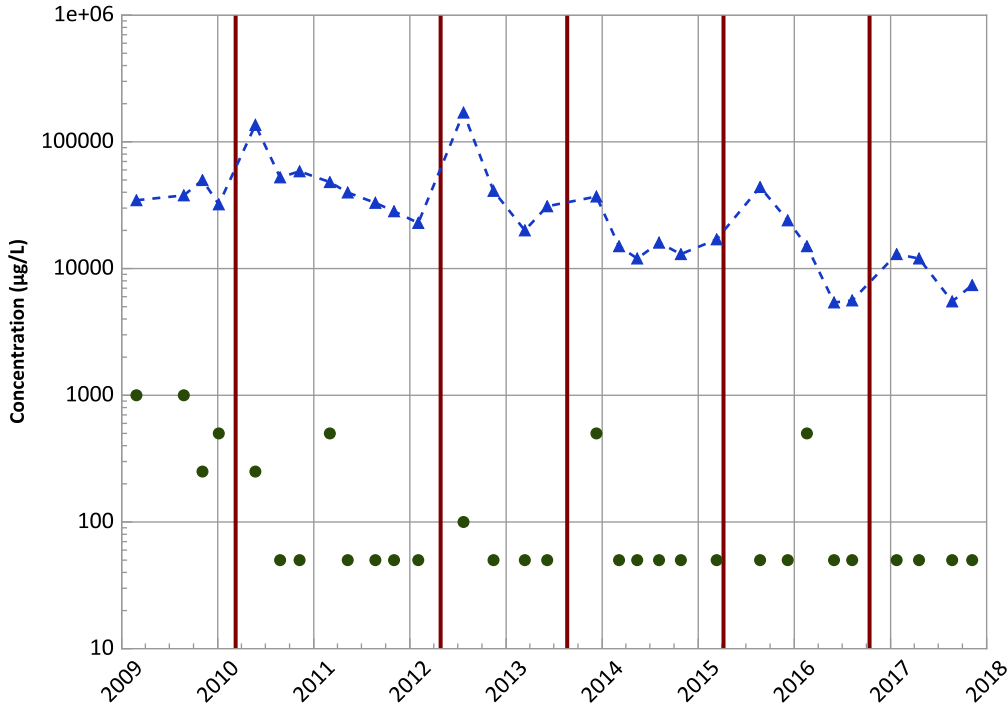
MAROS Mann-Kendall Method

All Data: Increasing
2015 - 2017 Data: Stable

MAROS Linear Regression Method

All Data: Increasing
2015 - 2017 Data: No Trend

Iron Trend



Concentration Trend

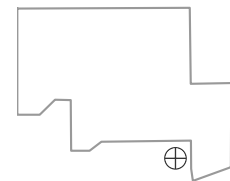
MAROS Mann-Kendall Method

All Data: Decreasing
2015 - 2017 Data: Decreasing

MAROS Linear Regression Method

All Data: Decreasing
2015 - 2017 Data: Stable

Well Location

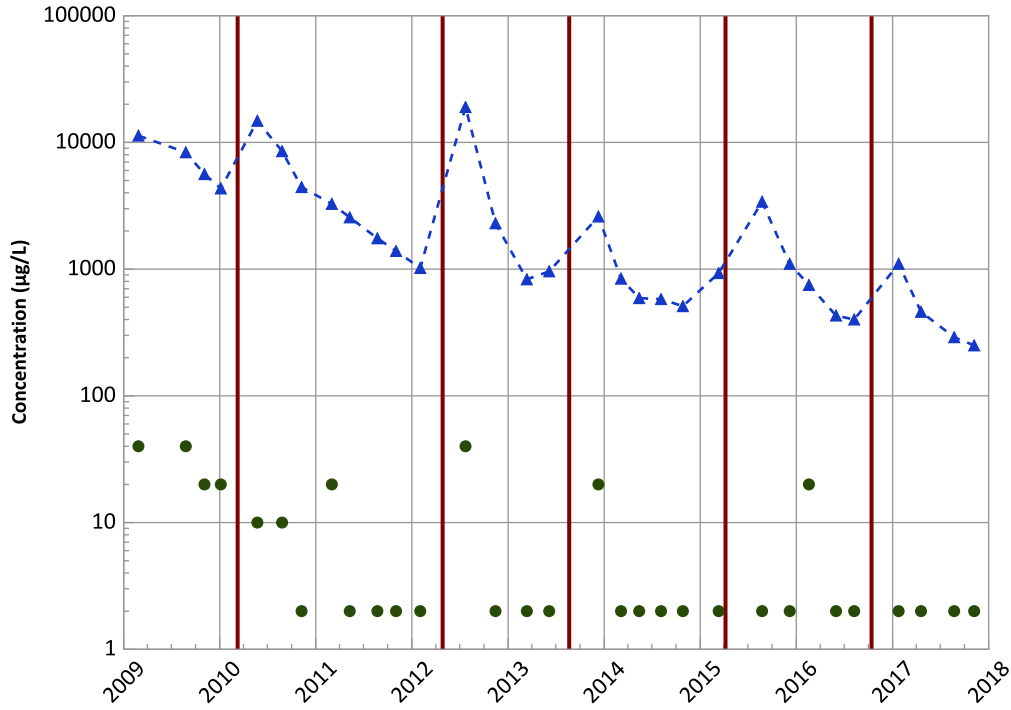


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 02/26/2009 to 11/07/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB038 in Perched Aquifer
USDOE/NNSA Pantex Plant

Manganese Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Decreasing

MAROS Linear Regression Method

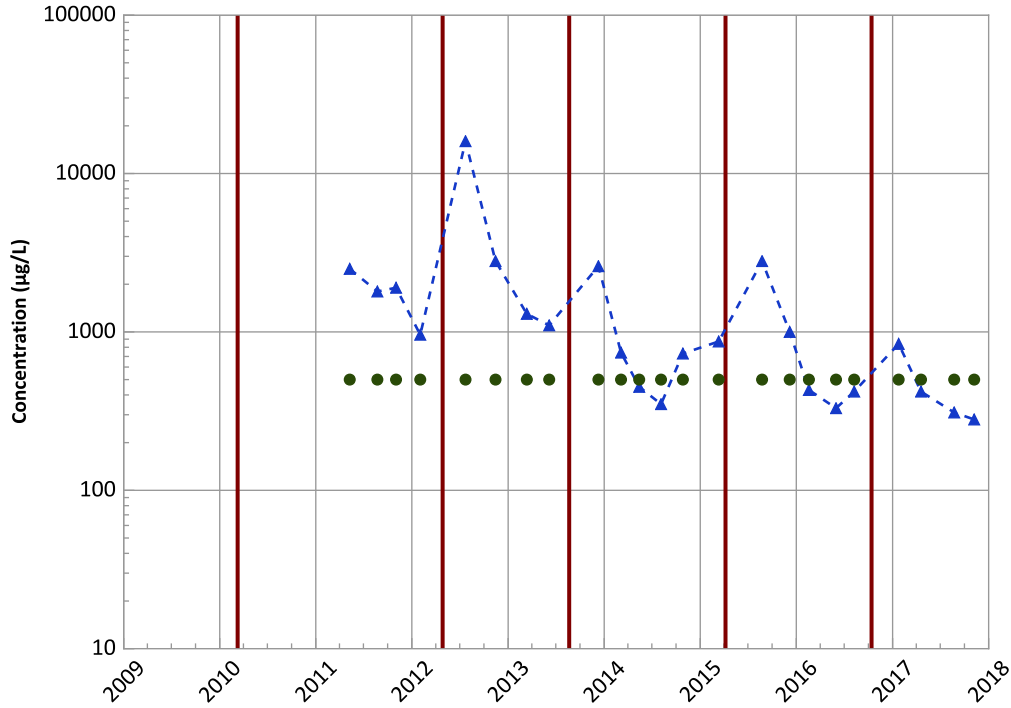
All Data

Decreasing

2015 - 2017 Data:

Decreasing

Divalent Manganese Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Decreasing

MAROS Linear Regression Method

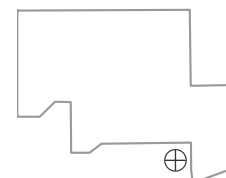
All Data

Decreasing

2015 - 2017 Data:

Decreasing

Well Location

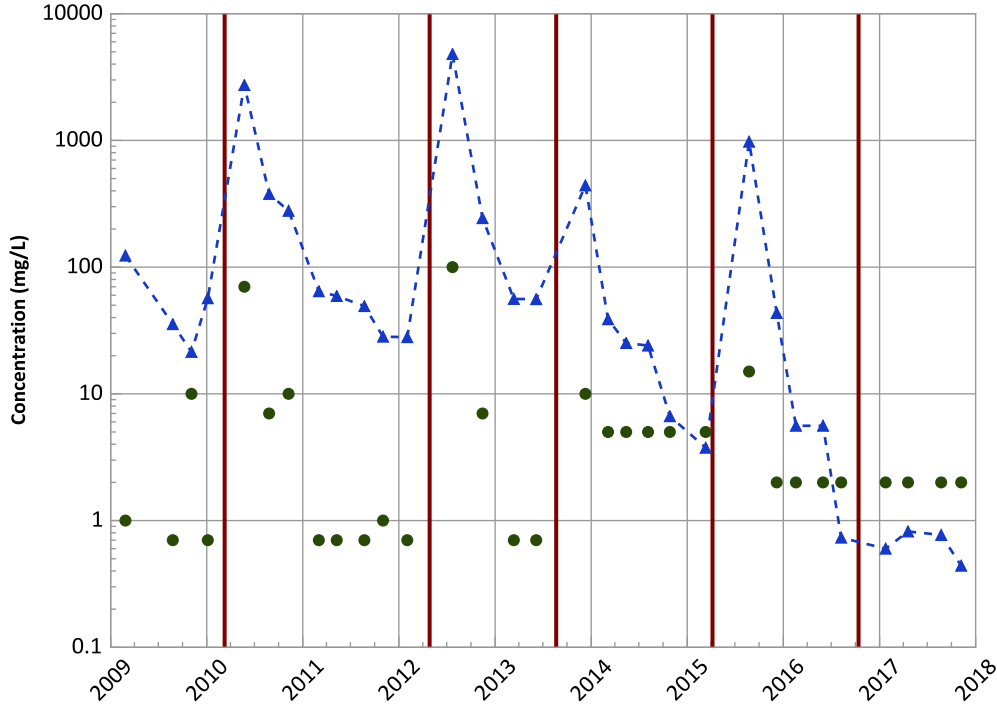


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 02/26/2009 to 11/07/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB038 in Perched Aquifer
USDOE/NNSA Pantex Plant

Total Volatile Fatty Acids Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Decreasing

MAROS Linear Regression Method

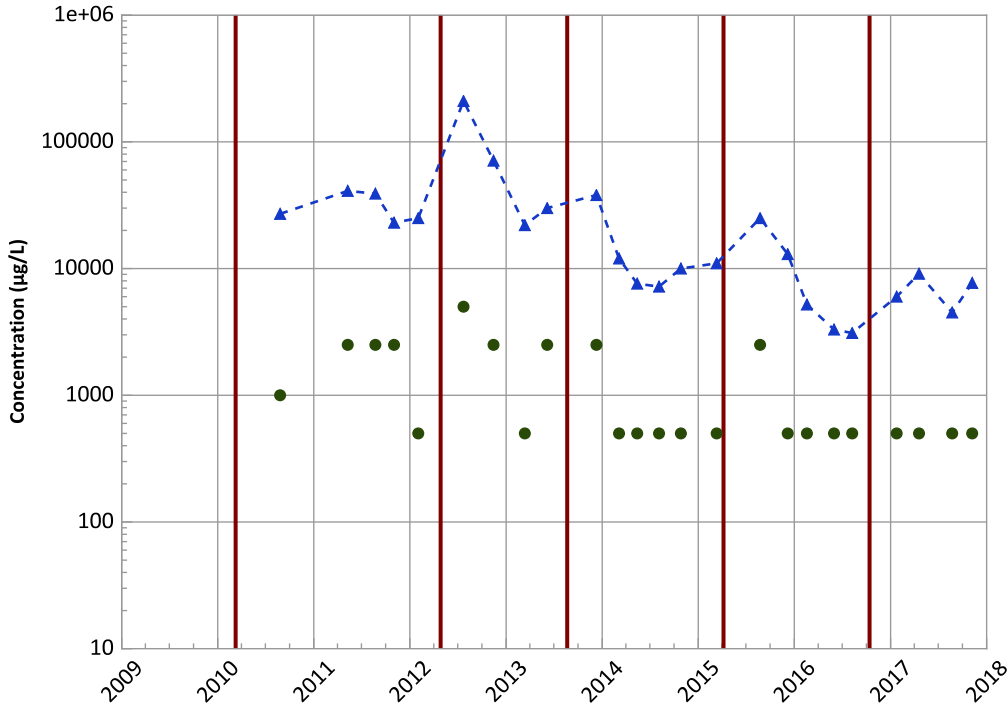
All Data

Decreasing

2015 - 2017 Data:

Stable

Ferrous Iron Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Stable

MAROS Linear Regression Method

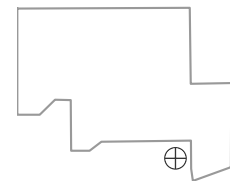
All Data

Decreasing

2015 - 2017 Data:

No Trend

Well Location

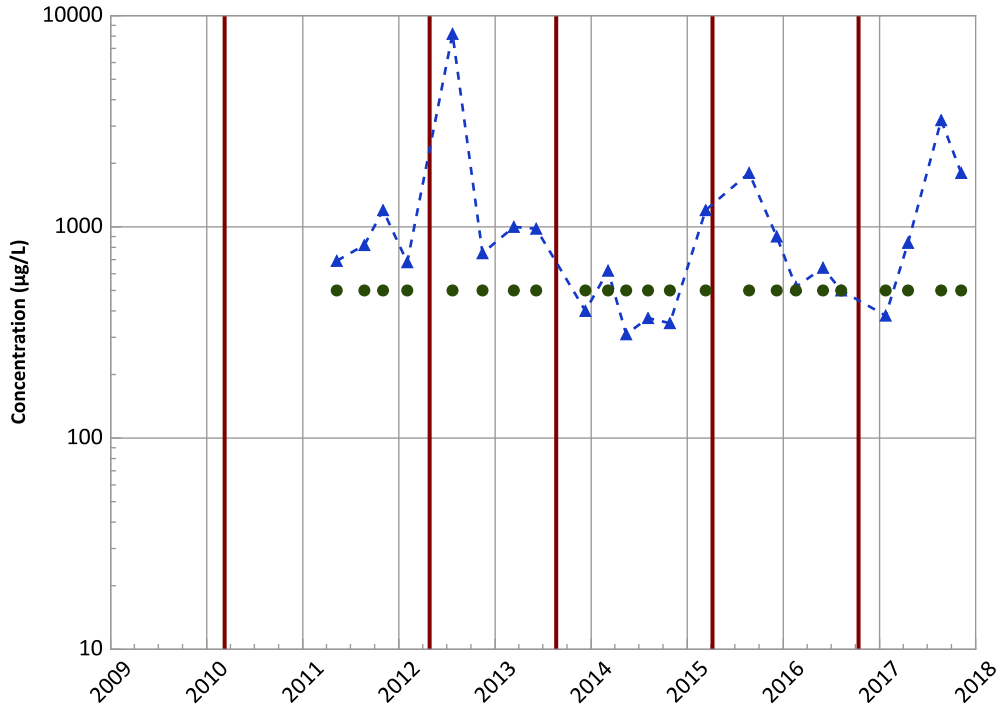


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 02/26/2009 to 11/07/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB038 in Perched Aquifer
USDOE/NNSA Pantex Plant

Ferric Iron Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

No Trend

MAROS Linear Regression Method

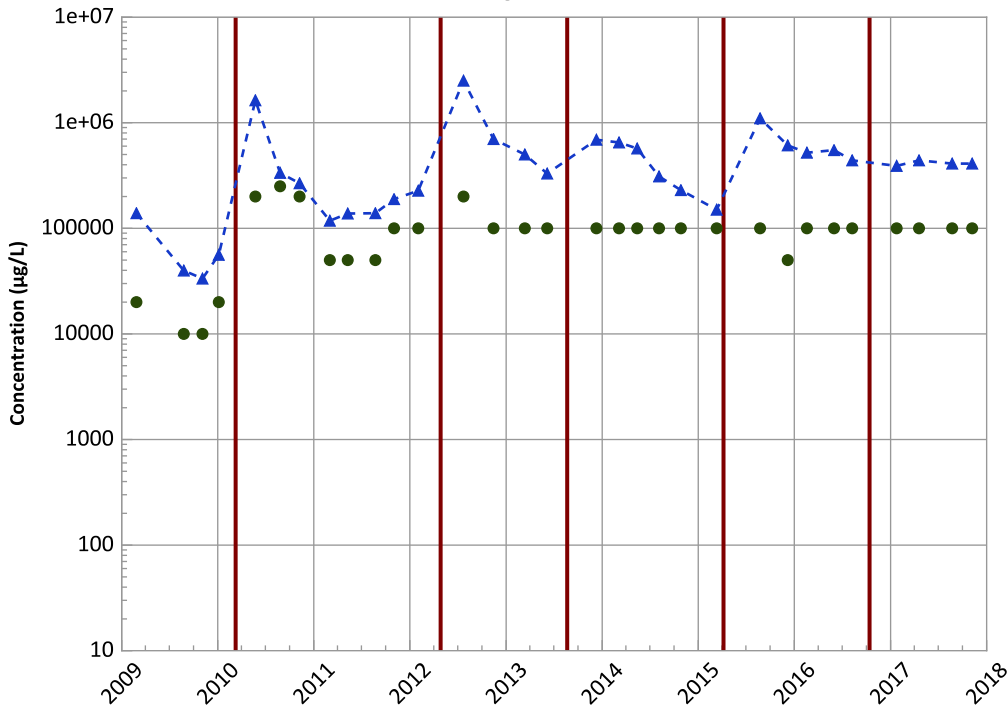
All Data

No Trend

2015 - 2017 Data:

Probably Increasing

Total Organic Carbon Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Increasing

2015 - 2017 Data:

No Trend

MAROS Linear Regression Method

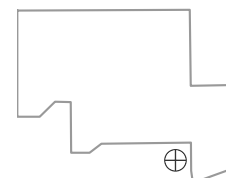
All Data

Increasing

2015 - 2017 Data:

No Trend

Well Location

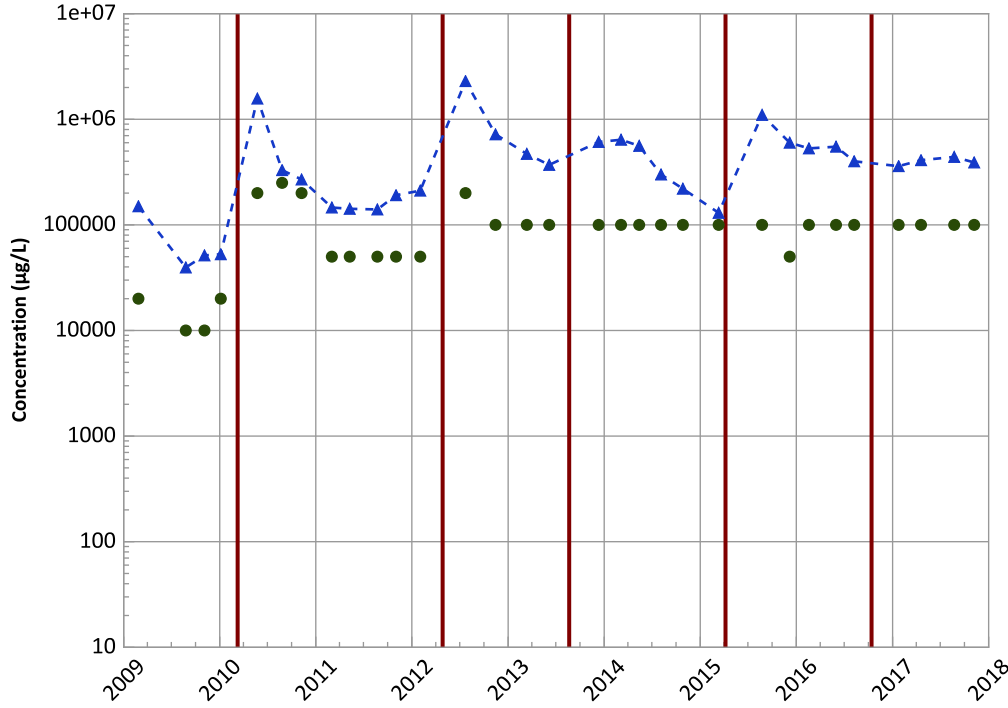


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 02/26/2009 to 11/07/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB038 in Perched Aquifer
USDOE/NNSA Pantex Plant

Dissolved Organic Carbon (DOC) Trend



Concentration Trend

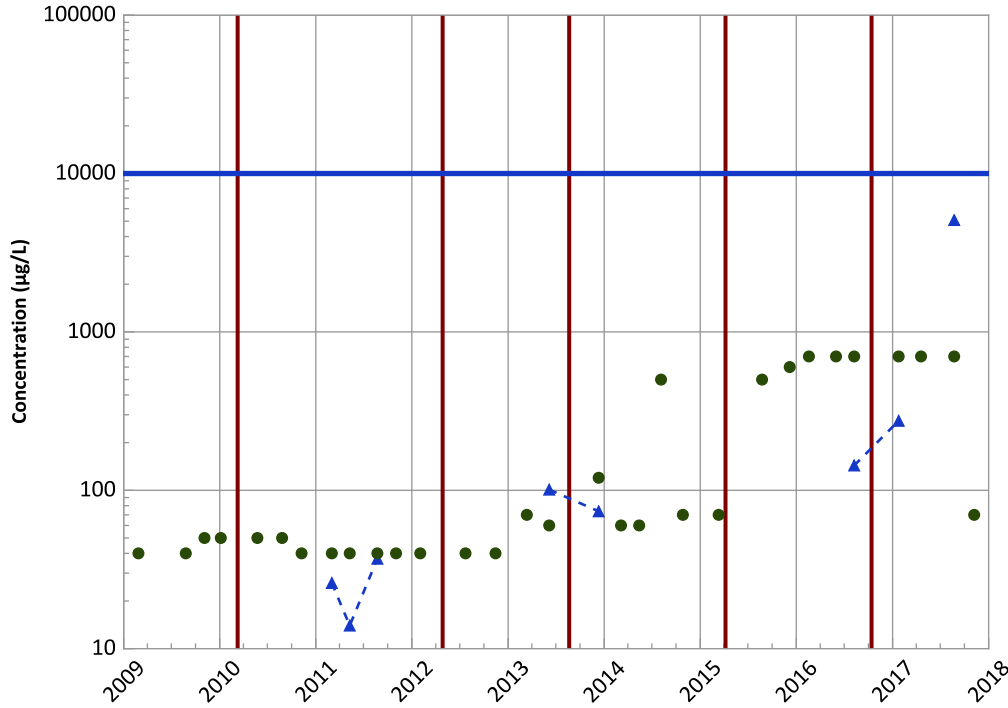
MAROS Mann-Kendall Method

All Data
Increasing
2015 - 2017 Data:
No Trend

MAROS Linear Regression Method

All Data
Increasing
2015 - 2017 Data:
No Trend

Nitrate as N Trend



Concentration Trend

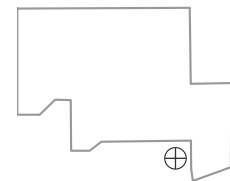
MAROS Mann-Kendall Method

All Data
Increasing
2015 - 2017 Data:
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

All Data
Increasing
2015 - 2017 Data:
Increasing

Well Location

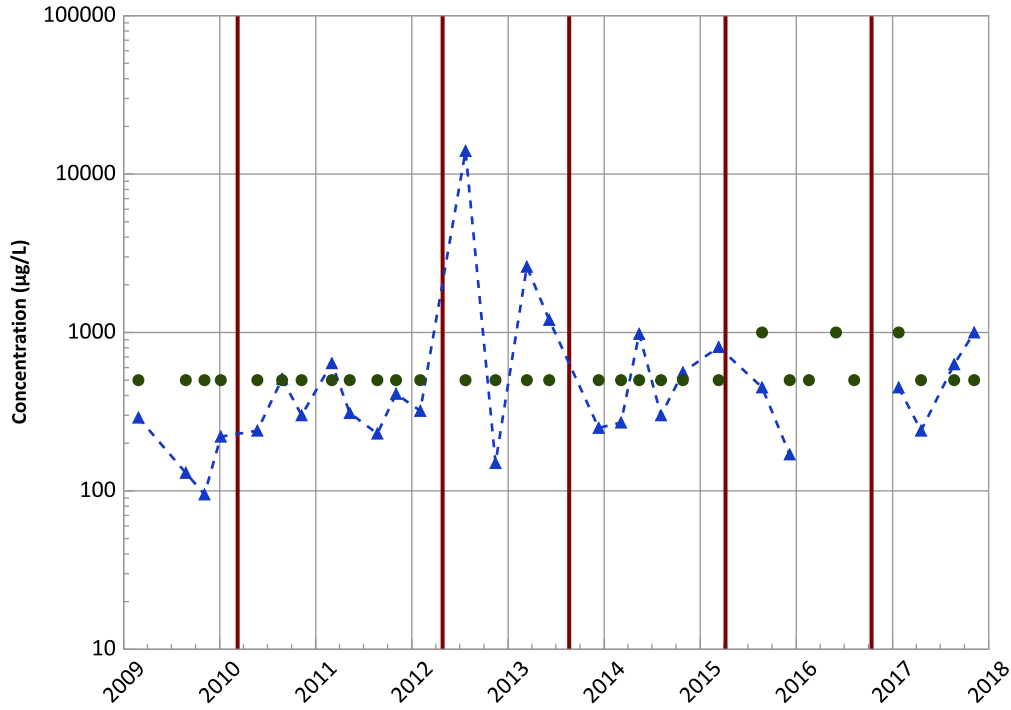


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 02/26/2009 to 11/07/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB038 in Perched Aquifer
USDOE/NNSA Pantex Plant

Sulfate (as SO4) Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Probably Increasing

2015 - 2017 Data:

No Trend

MAROS Linear Regression Method

All Data

No Trend

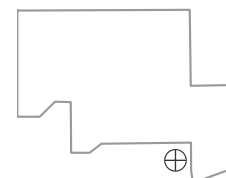
2015 - 2017 Data:

No Trend

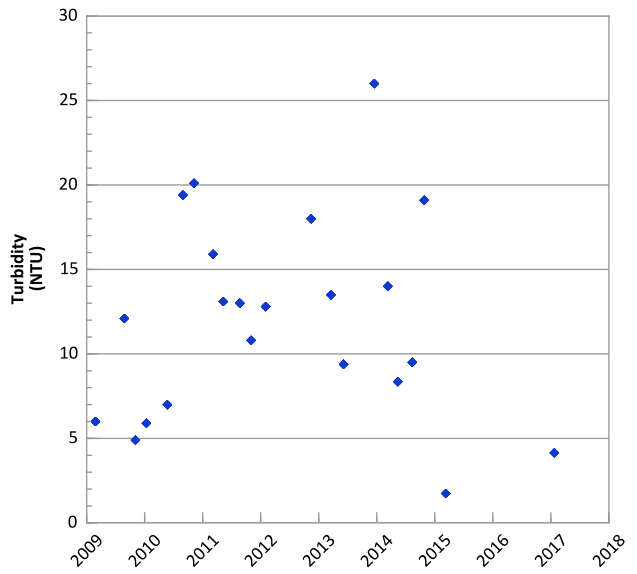
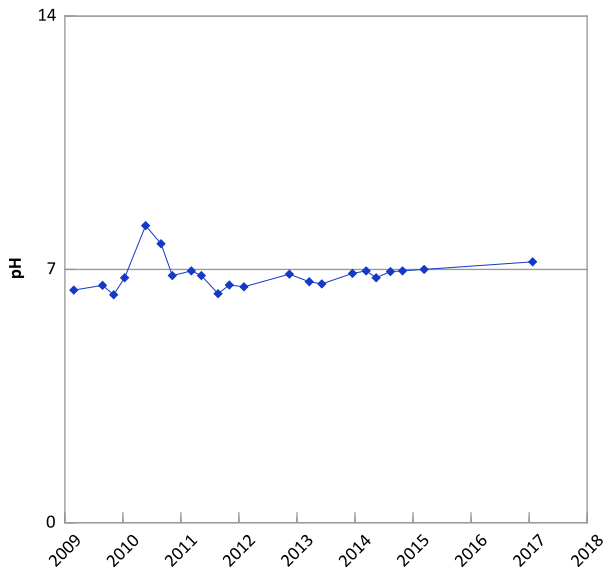
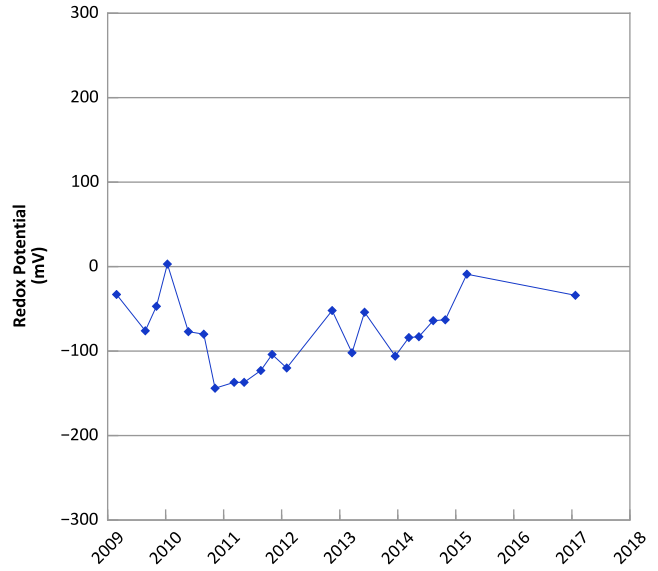
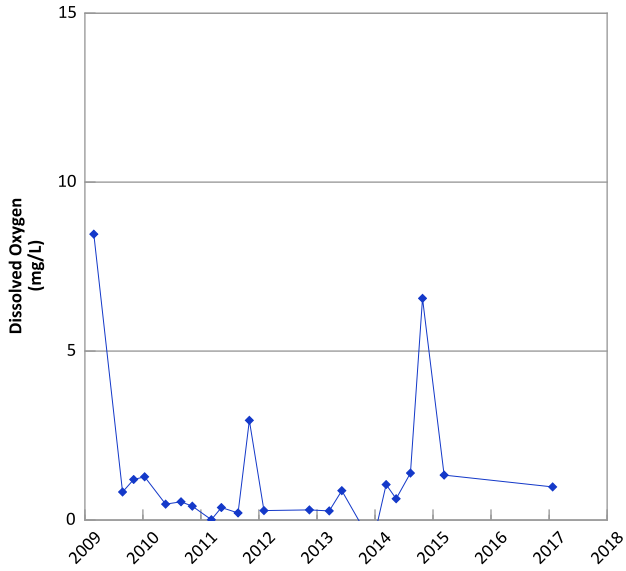
Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 02/26/2009 to 11/07/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

Well Location

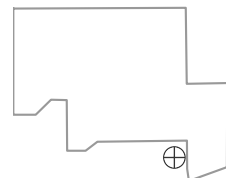


**PTX06-ISB042 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



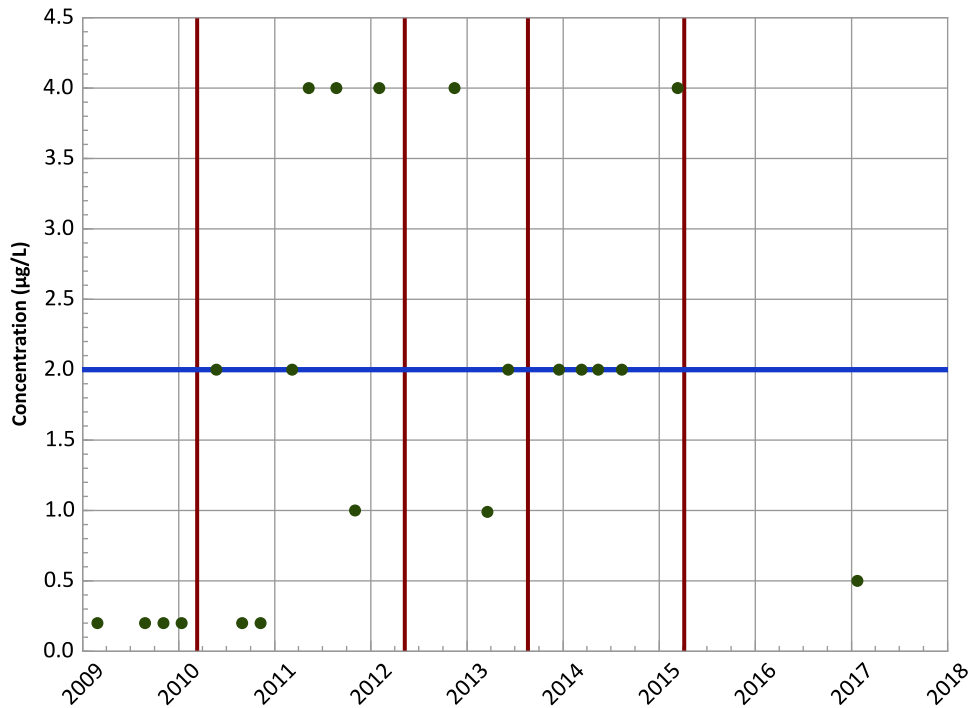
Query Date Range: 01/01/2009 to 12/31/2017
 Data Date Range: 02/26/2009 to 01/23/2017
 Analysis Date: 03/29/2018

Well Location



PTX06-ISB042 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

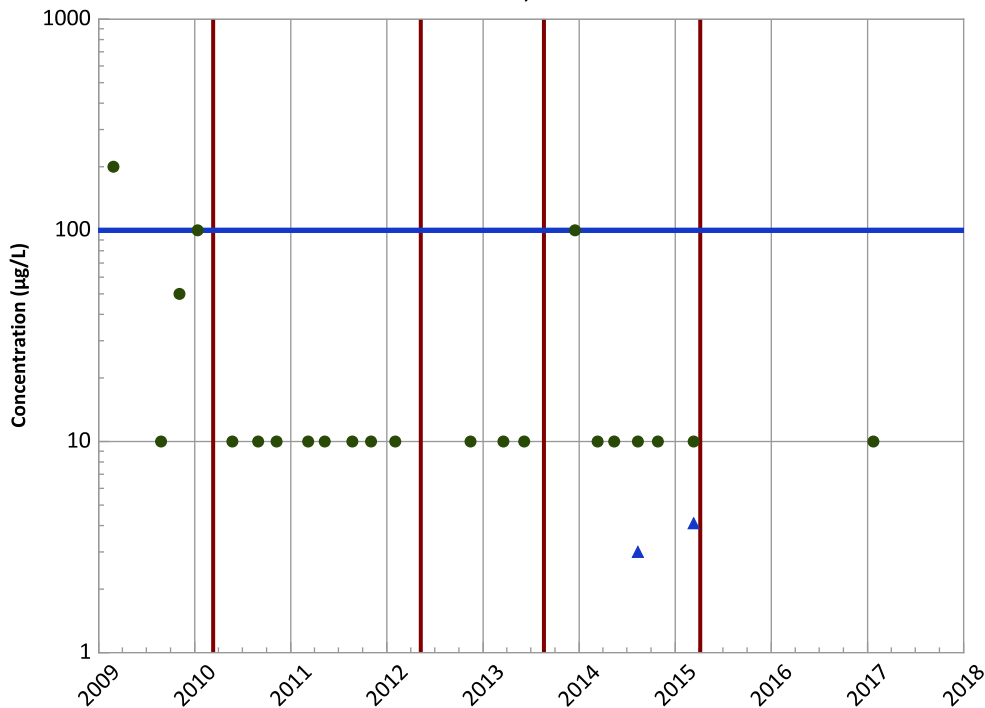
MAROS Mann-Kendall Method

All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method

All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

Chromium, Total Trend



Concentration Trend

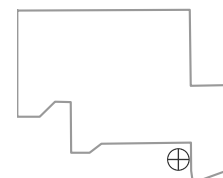
MAROS Mann-Kendall Method

All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
N/A (<4 Detections in Dataset)

Well Location

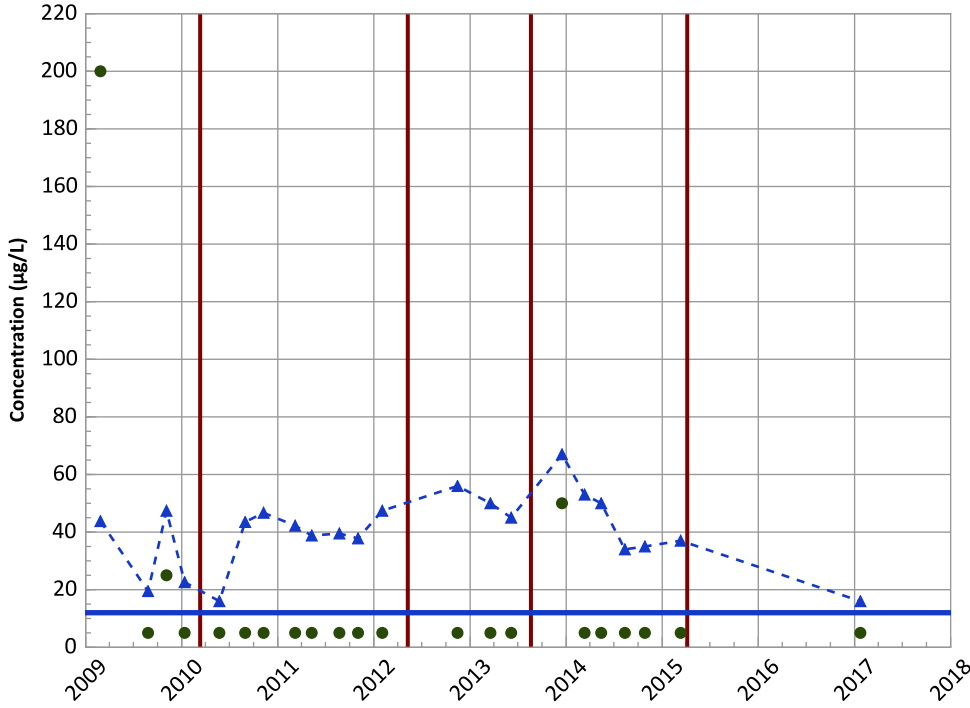


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 02/26/2009 to 01/23/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB042 in Perched Aquifer
USDOE/NNSA Pantex Plant

Arsenic Trend



Concentration Trend

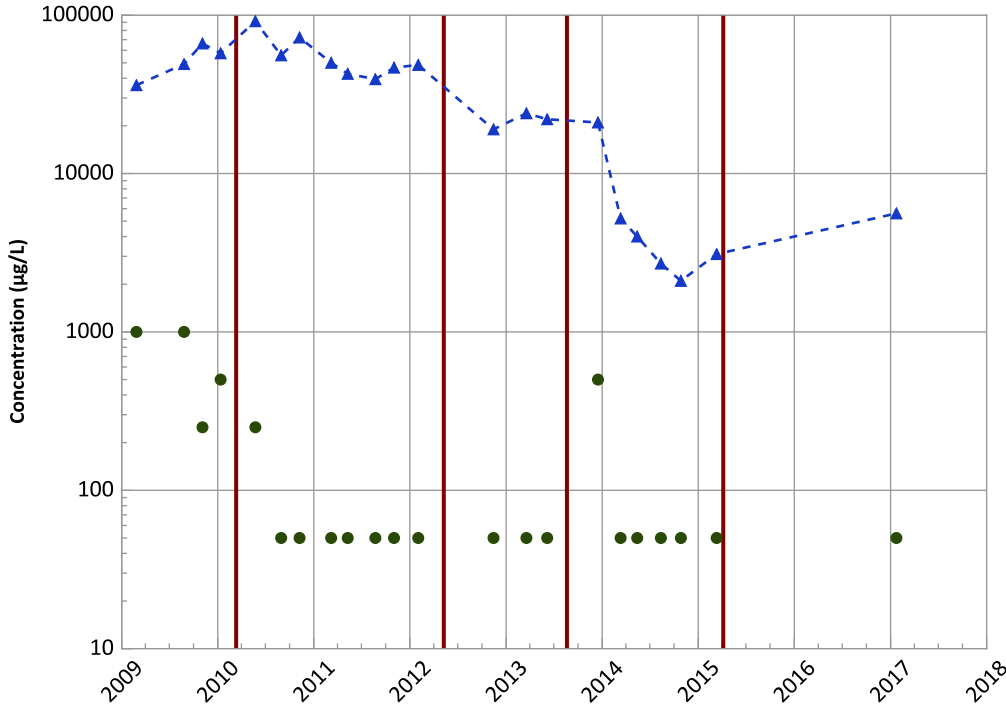
MAROS Mann-Kendall Method

All Data
No Trend
2015 - 2017 Data:
Stable

MAROS Linear Regression Method

All Data
No Trend
2015 - 2017 Data:
Stable

Iron Trend



Concentration Trend

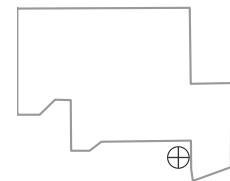
MAROS Mann-Kendall Method

All Data
Decreasing
2015 - 2017 Data:
No Trend

MAROS Linear Regression Method

All Data
Decreasing
2015 - 2017 Data:
No Trend

Well Location

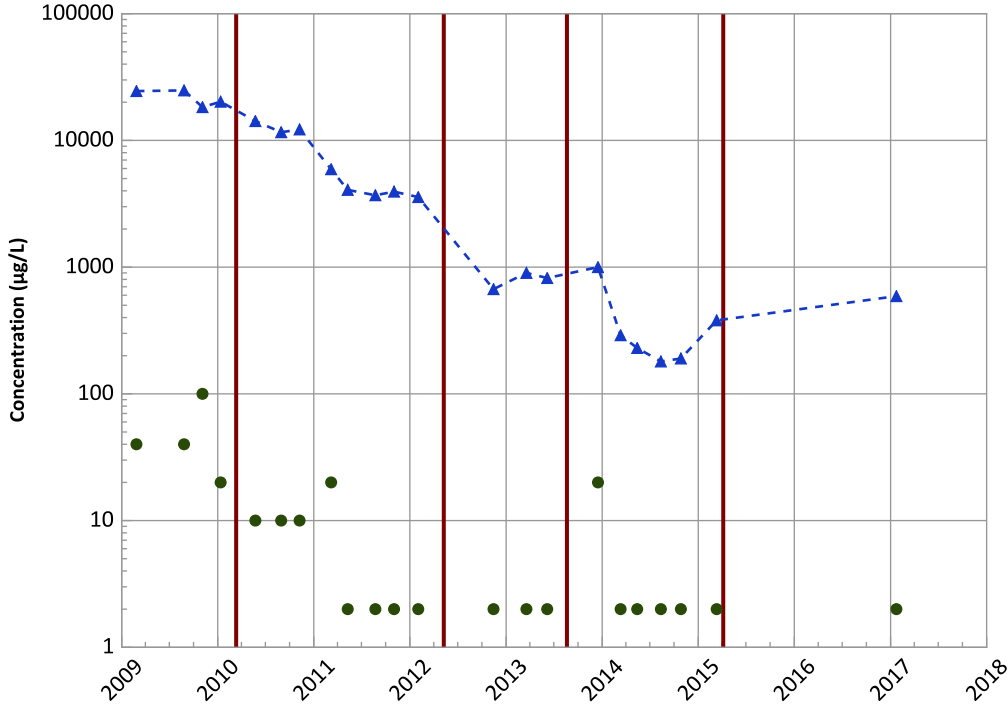


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 02/26/2009 to 01/23/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB042 in Perched Aquifer
USDOE/NNSA Pantex Plant

Manganese Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Increasing

MAROS Linear Regression Method

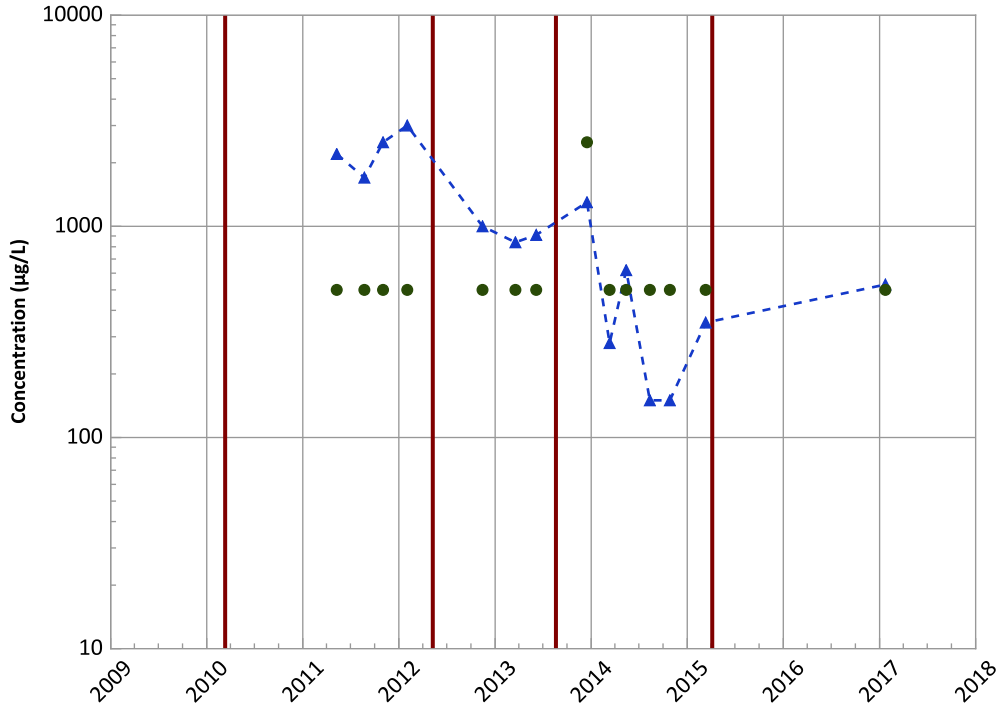
All Data

Decreasing

2015 - 2017 Data:

Probably Increasing

Divalent Manganese Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

No Trend

MAROS Linear Regression Method

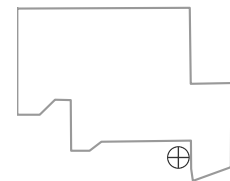
All Data

Decreasing

2015 - 2017 Data:

Increasing

Well Location

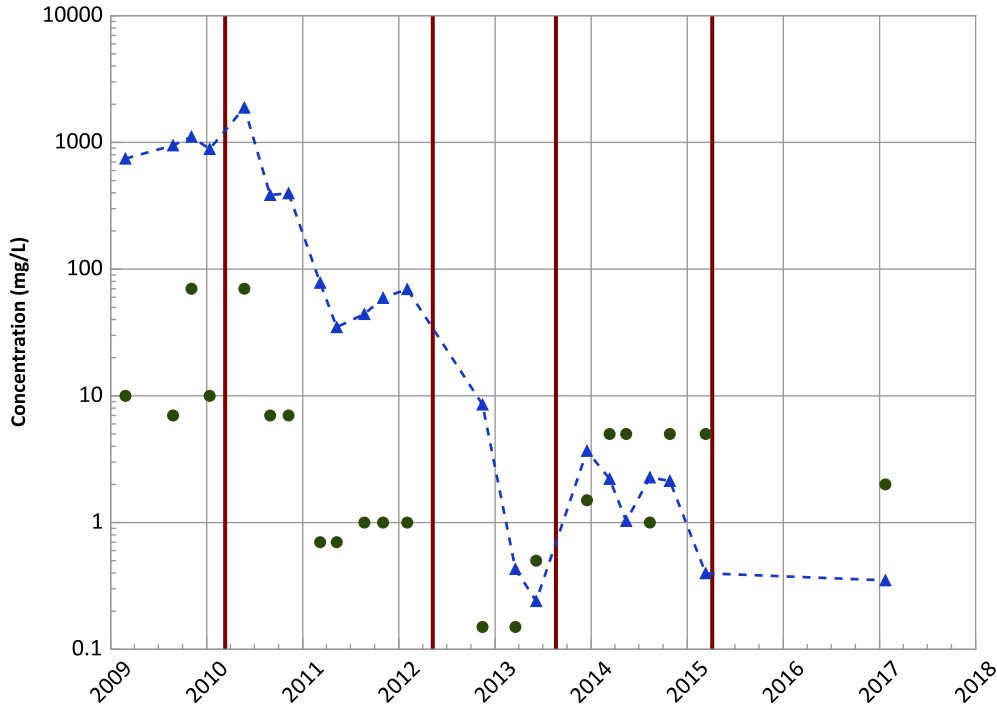


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 02/26/2009 to 01/23/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB042 in Perched Aquifer
USDOE/NNSA Pantex Plant

Total Volatile Fatty Acids Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Decreasing

MAROS Linear Regression Method

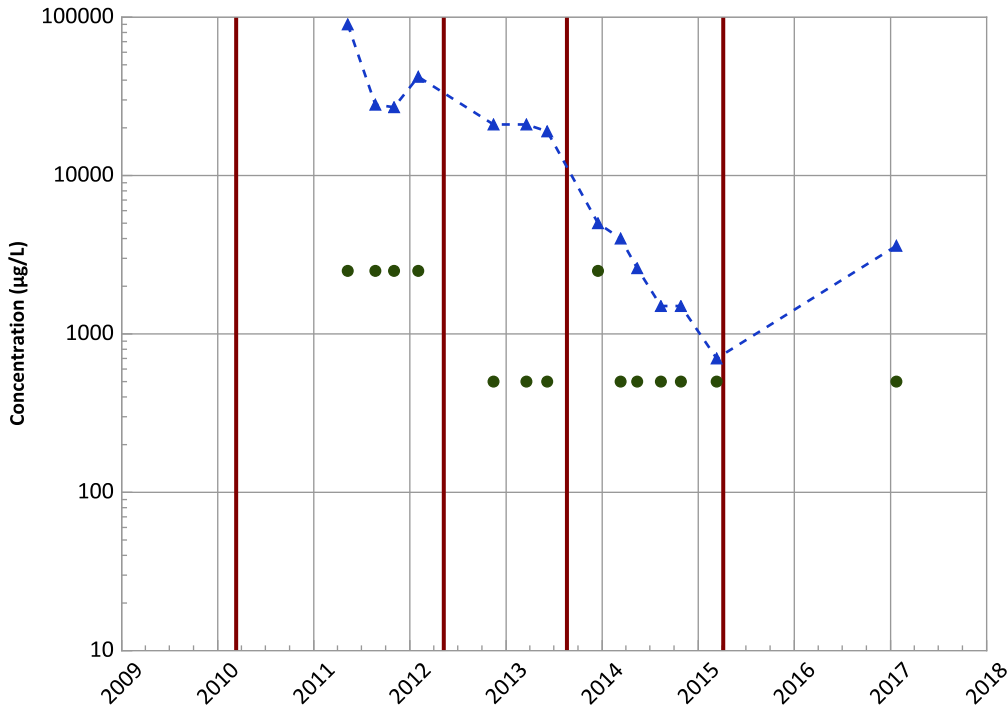
All Data

Decreasing

2015 - 2017 Data:

Probably Decreasing

Ferrous Iron Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

No Trend

MAROS Linear Regression Method

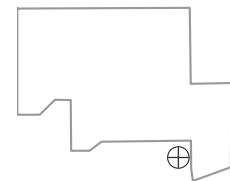
All Data

Decreasing

2015 - 2017 Data:

No Trend

Well Location

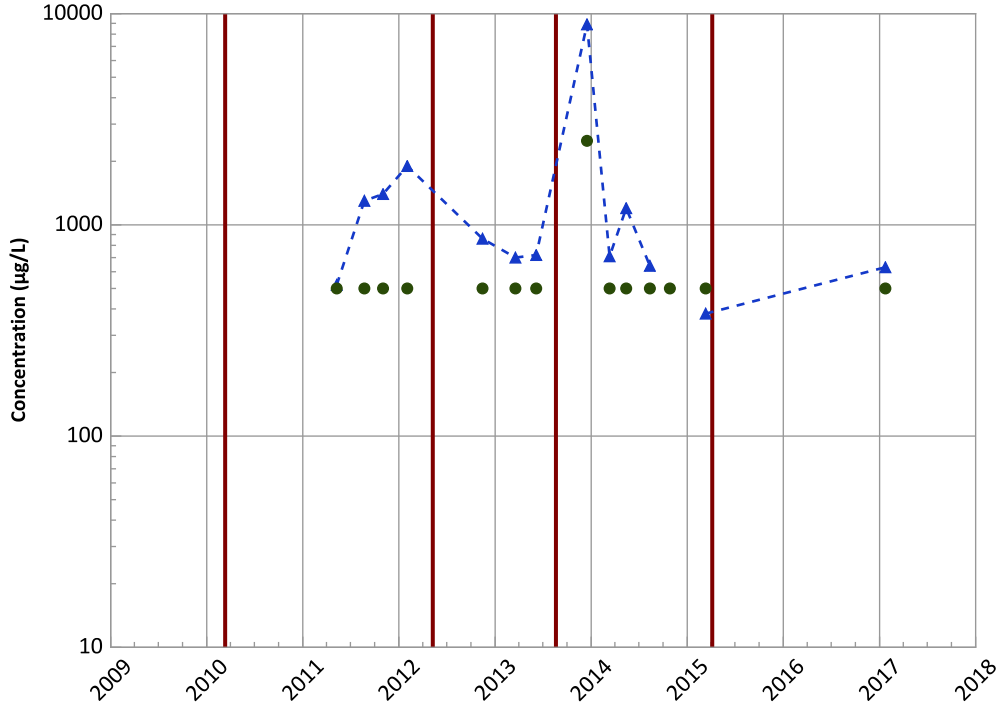


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 02/26/2009 to 01/23/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB042 in Perched Aquifer
USDOE/NNSA Pantex Plant

Ferric Iron Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

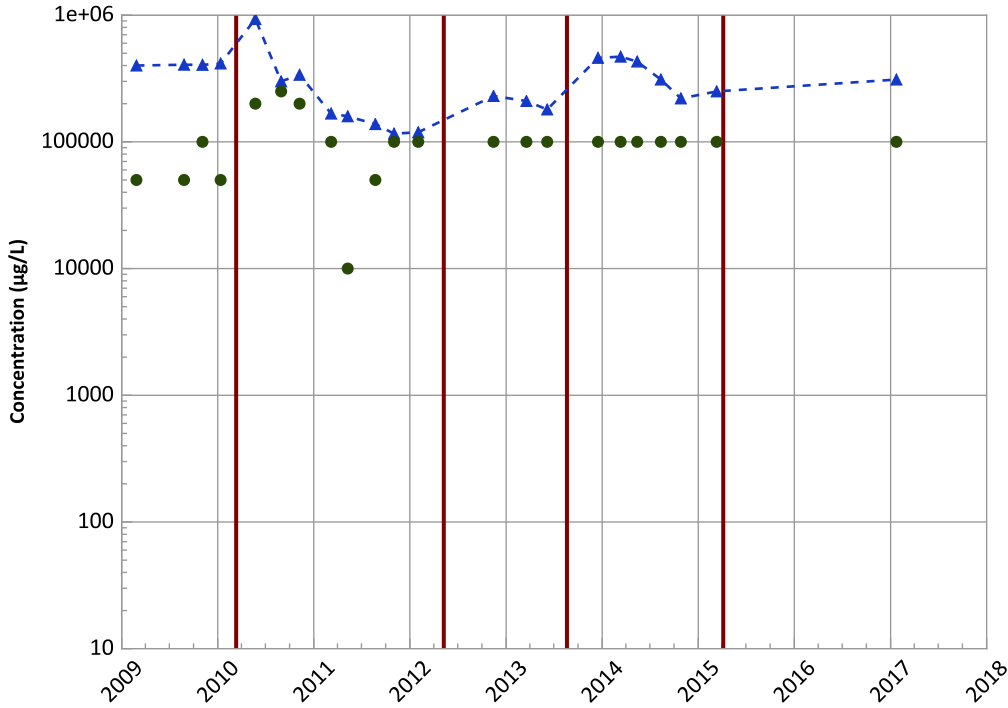
All Data

No Trend

2015 - 2017 Data:

Stable

Total Organic Carbon Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

No Trend

MAROS Linear Regression Method

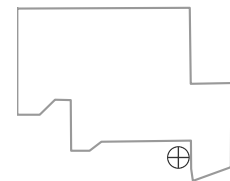
All Data

Stable

2015 - 2017 Data:

Stable

Well Location

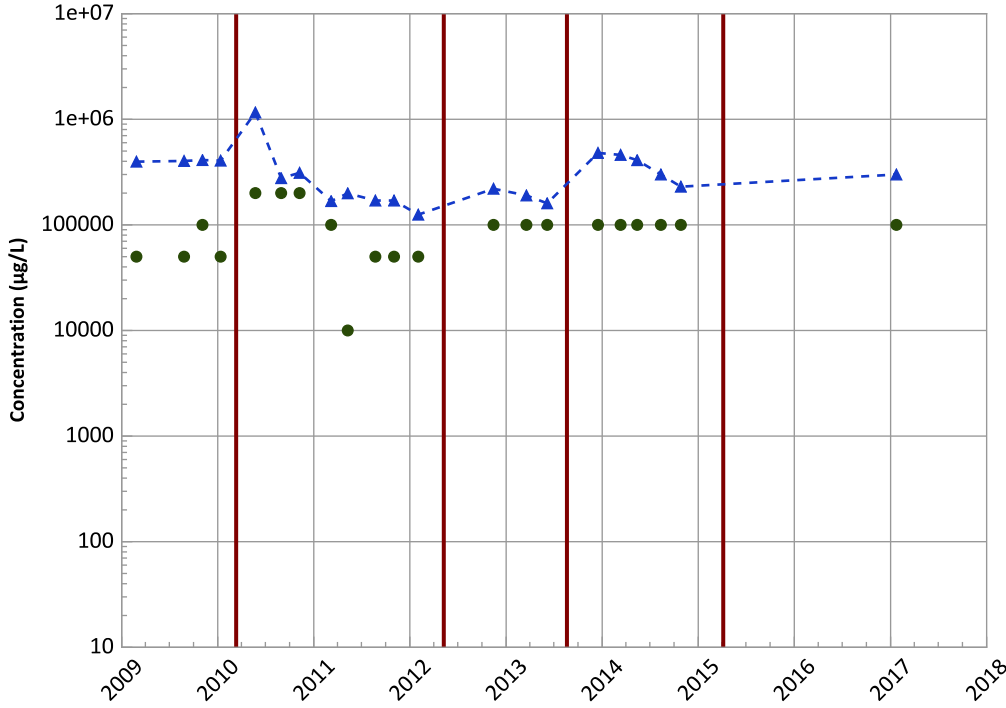


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 02/26/2009 to 01/23/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB042 in Perched Aquifer
USDOE/NNSA Pantex Plant

Dissolved Organic Carbon (DOC) Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Decreasing

MAROS Linear Regression Method

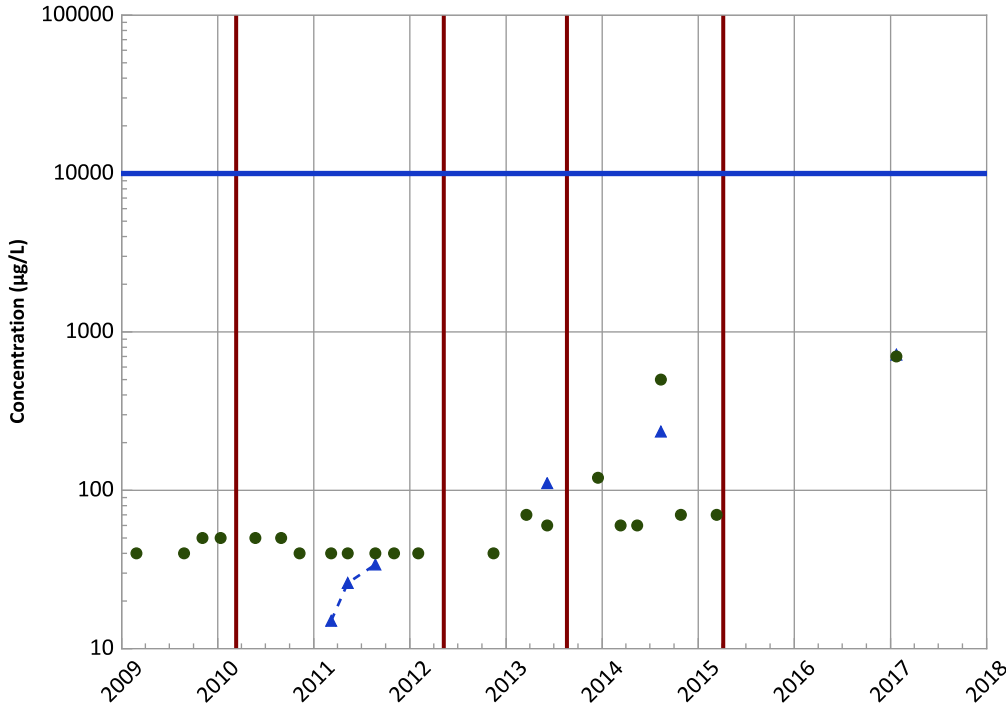
All Data

Stable

2015 - 2017 Data:

Stable

Nitrate as N Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Increasing

2015 - 2017 Data:

N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

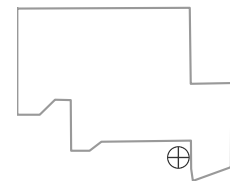
All Data

Increasing

2015 - 2017 Data:

Probably Increasing

Well Location

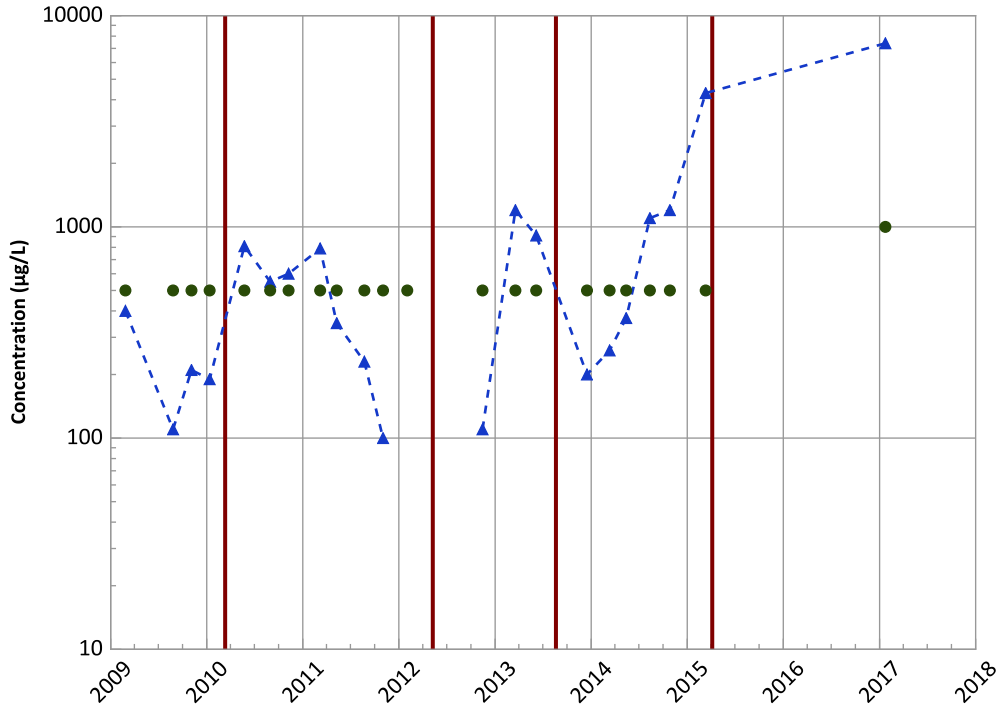


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 02/26/2009 to 01/23/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB042 in Perched Aquifer
USDOE/NNSA Pantex Plant

Sulfate (as SO4) Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Increasing

2015 - 2017 Data:

Increasing

MAROS Linear Regression Method

All Data

Increasing

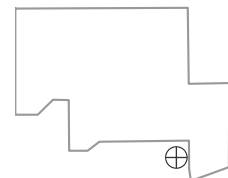
2015 - 2017 Data:

Probably Increasing

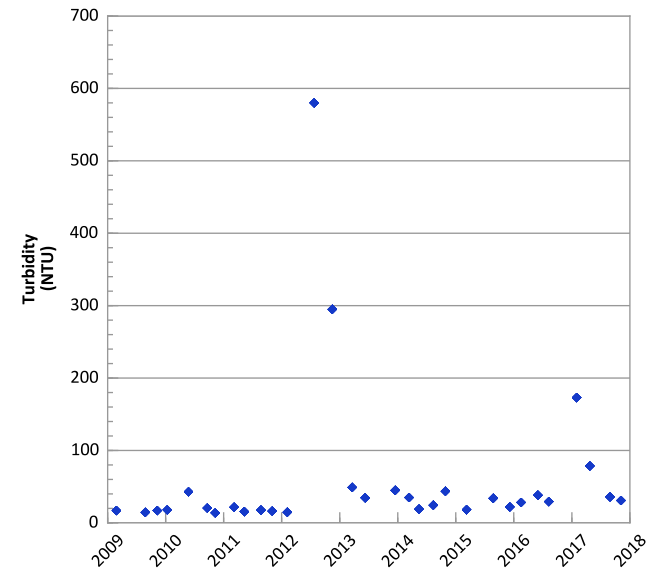
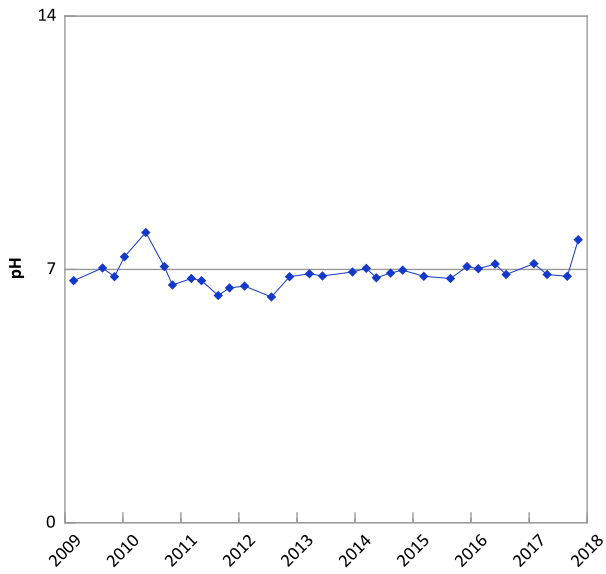
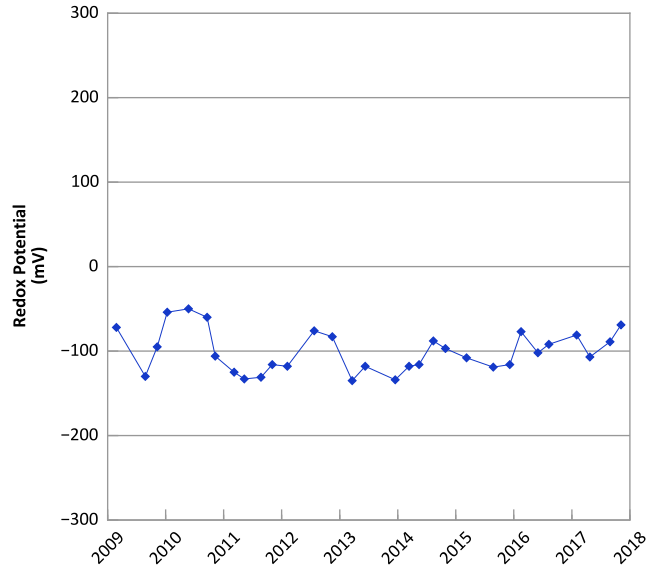
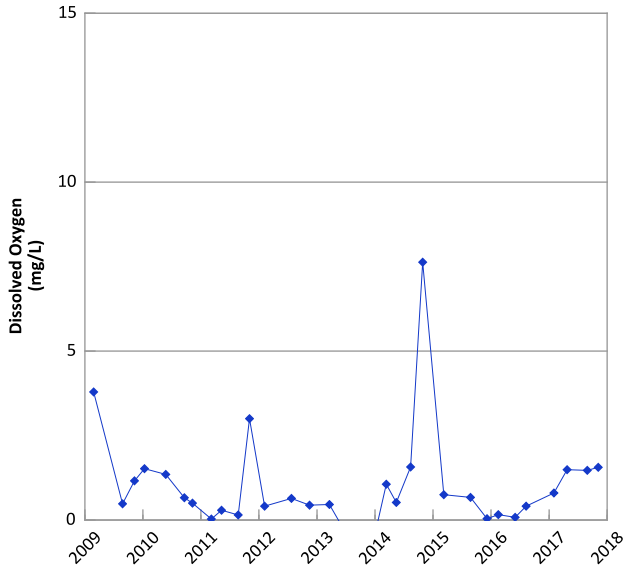
Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 02/26/2009 to 01/23/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

Well Location

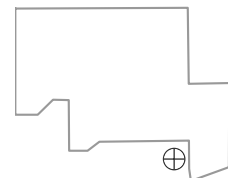


**PTX06-ISB046 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



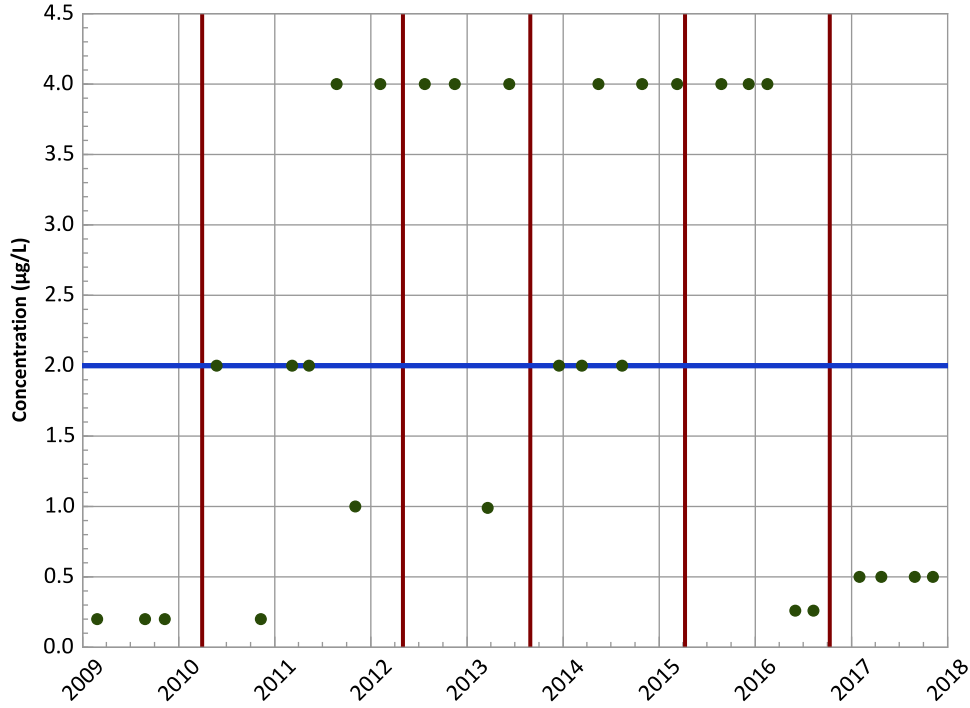
Query Date Range: 01/01/2009 to 12/31/2017
 Data Date Range: 02/25/2009 to 11/06/2017
 Analysis Date: 03/29/2018

Well Location



PTX06-ISB046 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

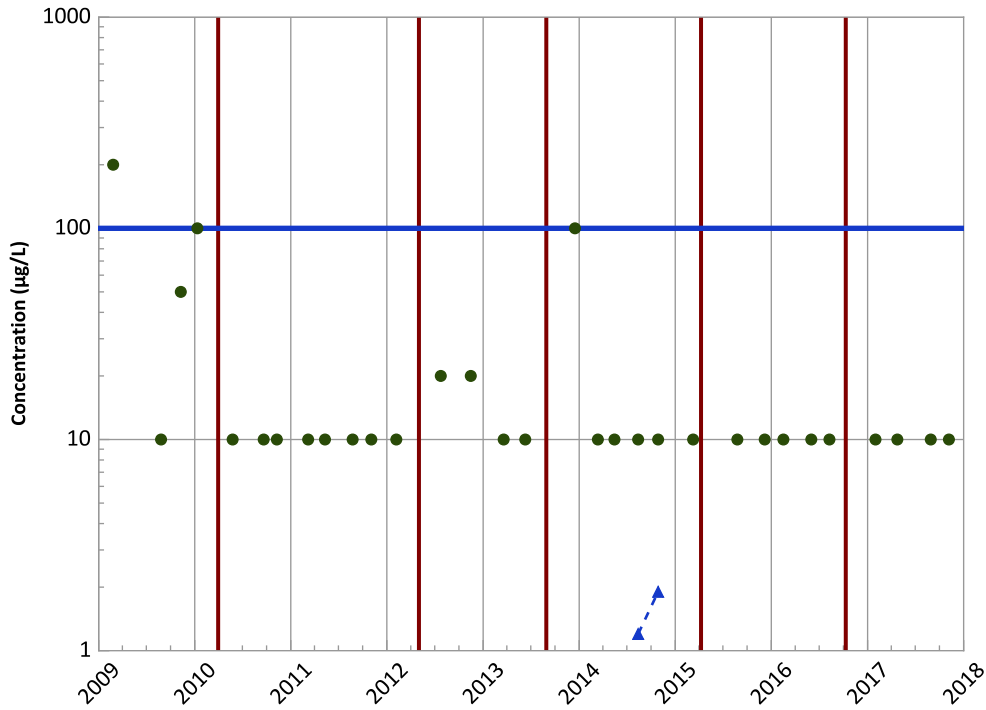
MAROS Mann-Kendall Method

All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method

All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

Chromium, Total Trend



Concentration Trend

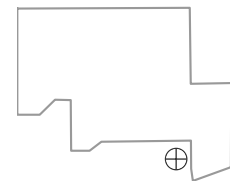
MAROS Mann-Kendall Method

All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method

All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
N/A (<4 Detections in Dataset)

Well Location

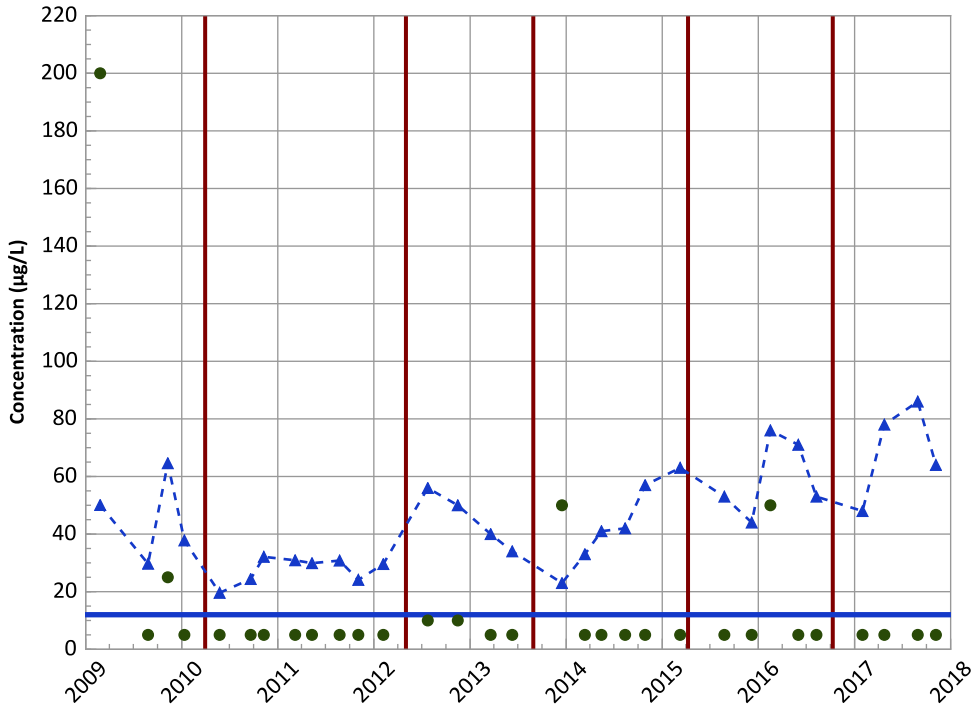


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 02/25/2009 to 11/06/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB046 in Perched Aquifer
USDOE/NNSA Pantex Plant

Arsenic Trend



Concentration Trend

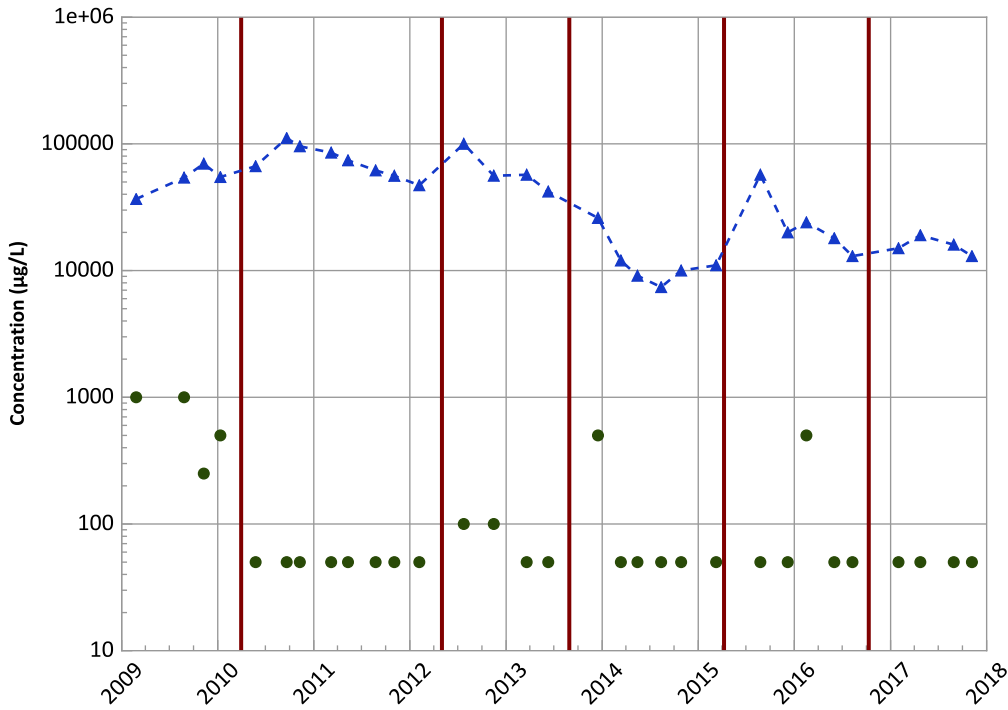
MAROS Mann-Kendall Method

All Data
Increasing
2015 - 2017 Data:
No Trend

MAROS Linear Regression Method

All Data
Increasing
2015 - 2017 Data:
No Trend

Iron Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data
Decreasing
2015 - 2017 Data:
Decreasing

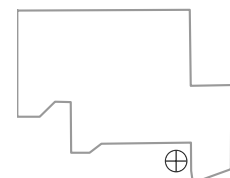
MAROS Linear Regression Method

All Data
Decreasing
2015 - 2017 Data:
Stable

Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 02/25/2009 to 11/06/2017
Analysis Date: 03/29/2018

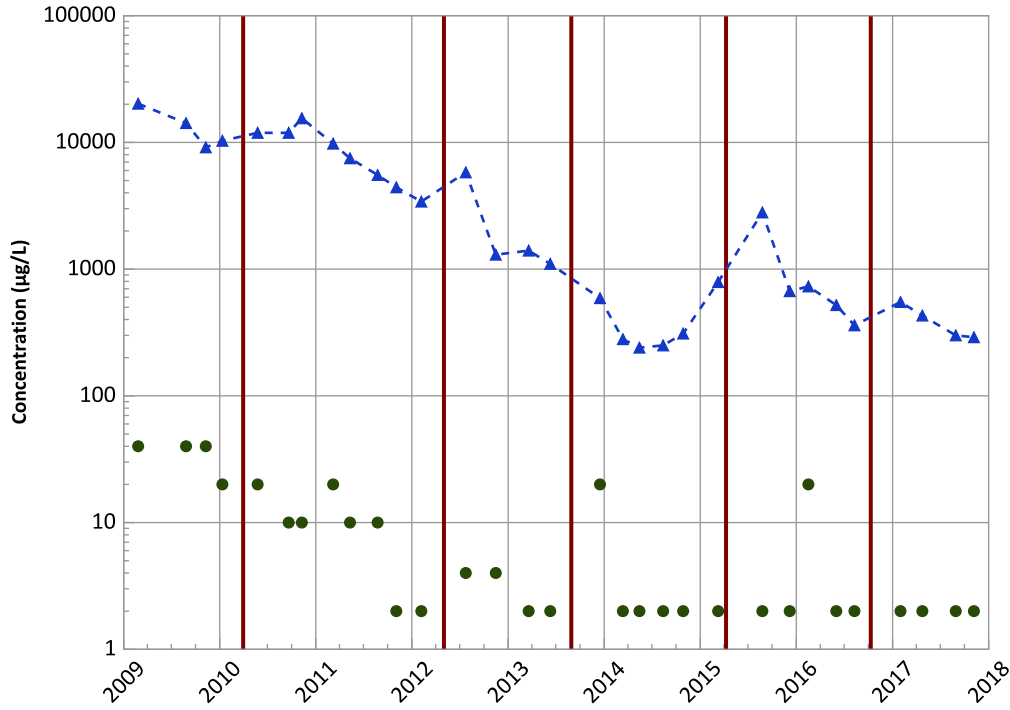
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

Well Location



PTX06-ISB046 in Perched Aquifer
USDOE/NNSA Pantex Plant

Manganese Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Decreasing

MAROS Linear Regression Method

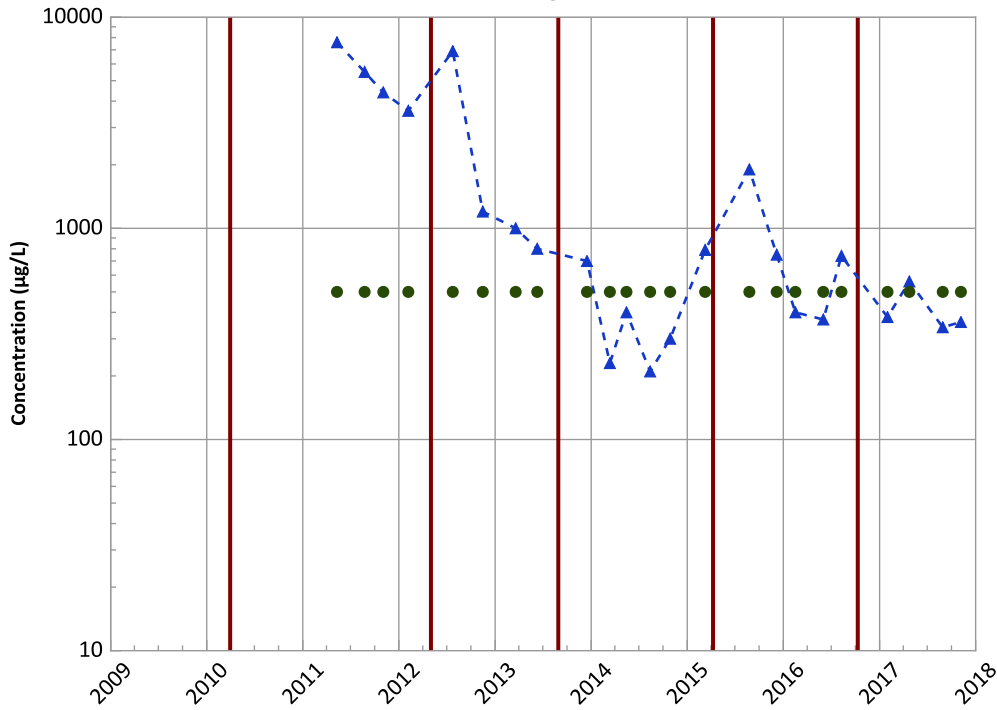
All Data

Decreasing

2015 - 2017 Data:

Decreasing

Divalent Manganese Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Decreasing

MAROS Linear Regression Method

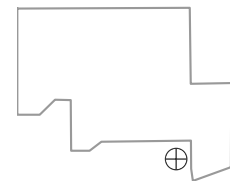
All Data

Decreasing

2015 - 2017 Data:

Stable

Well Location

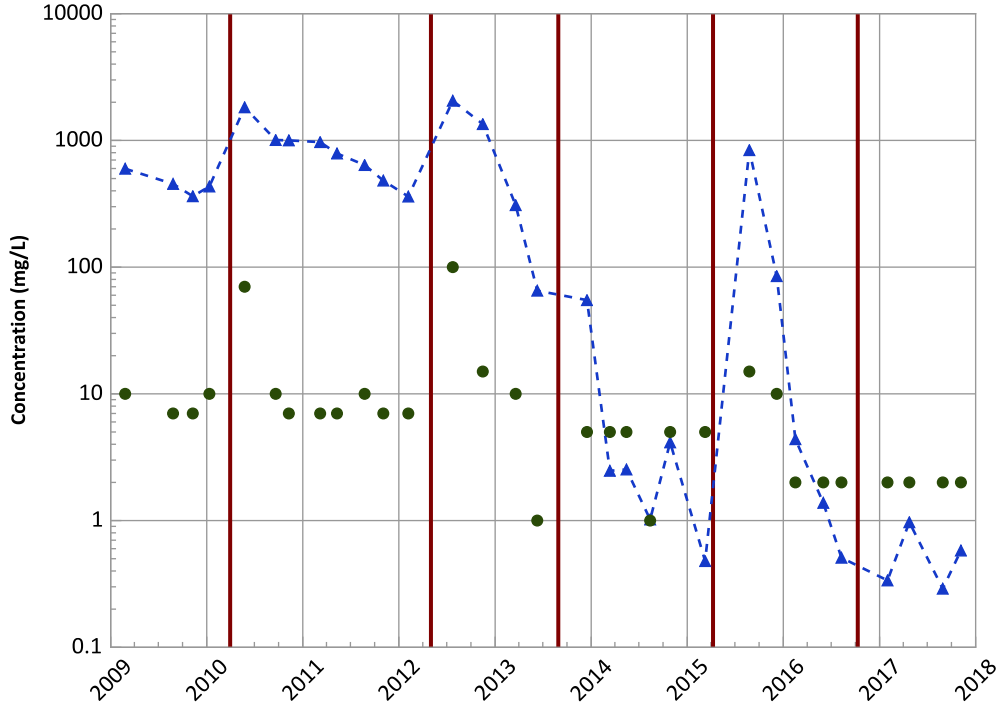


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 02/25/2009 to 11/06/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB046 in Perched Aquifer
USDOE/NNSA Pantex Plant

Total Volatile Fatty Acids Trend



Concentration Trend

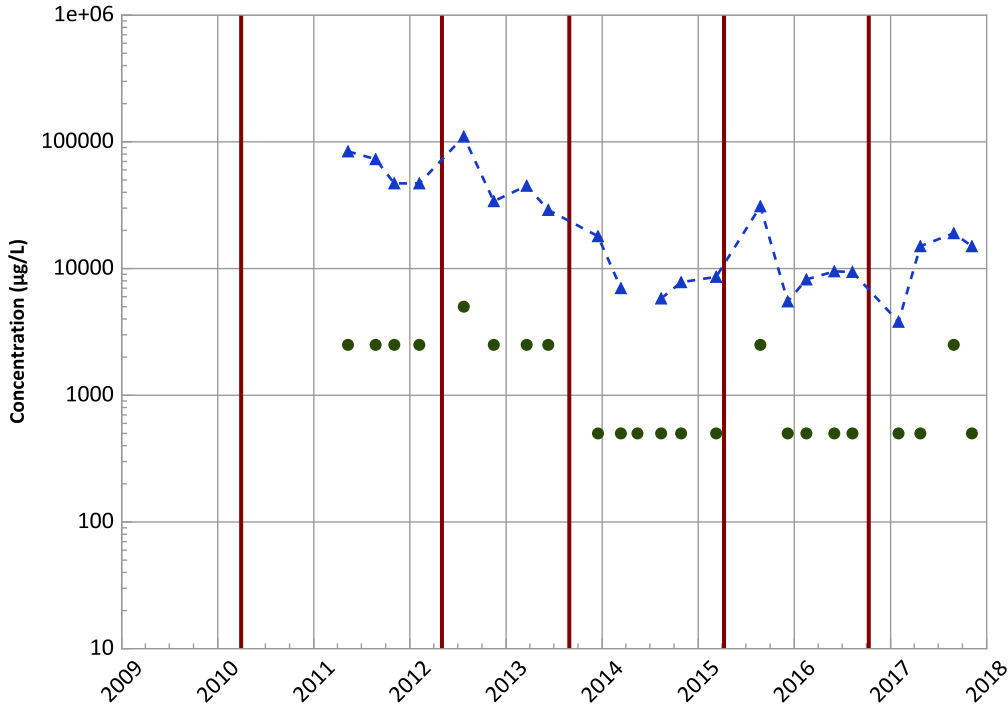
MAROS Mann-Kendall Method

All Data
Decreasing
2015 - 2017 Data:
Stable

MAROS Linear Regression Method

All Data
Decreasing
2015 - 2017 Data:
No Trend

Ferrous Iron Trend



Concentration Trend

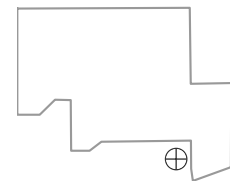
MAROS Mann-Kendall Method

All Data
Decreasing
2015 - 2017 Data:
No Trend

MAROS Linear Regression Method

All Data
Decreasing
2015 - 2017 Data:
No Trend

Well Location

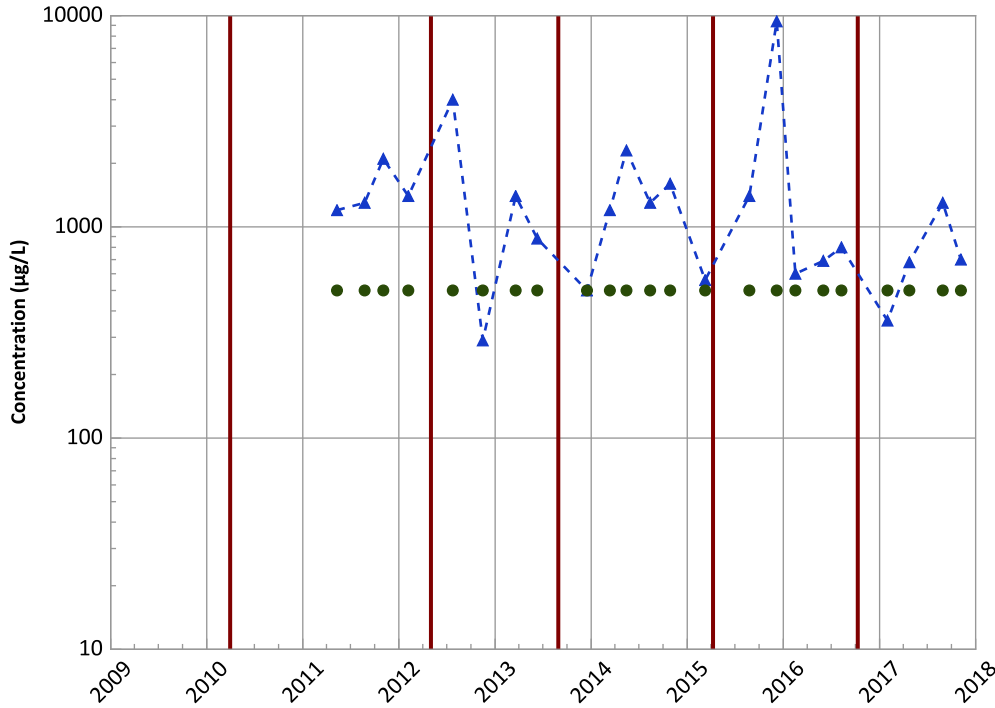


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 02/25/2009 to 11/06/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB046 in Perched Aquifer
USDOE/NNSA Pantex Plant

Ferric Iron Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

No Trend

MAROS Linear Regression Method

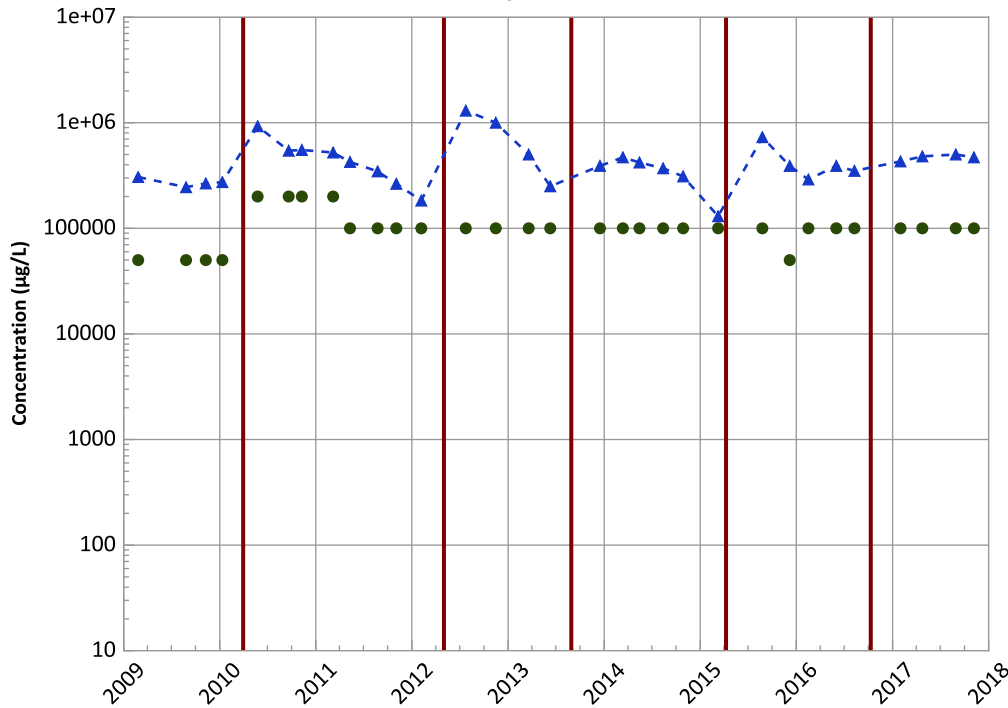
All Data

No Trend

2015 - 2017 Data:

No Trend

Total Organic Carbon Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

No Trend

2015 - 2017 Data:

No Trend

MAROS Linear Regression Method

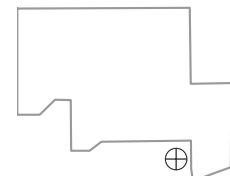
All Data

No Trend

2015 - 2017 Data:

No Trend

Well Location

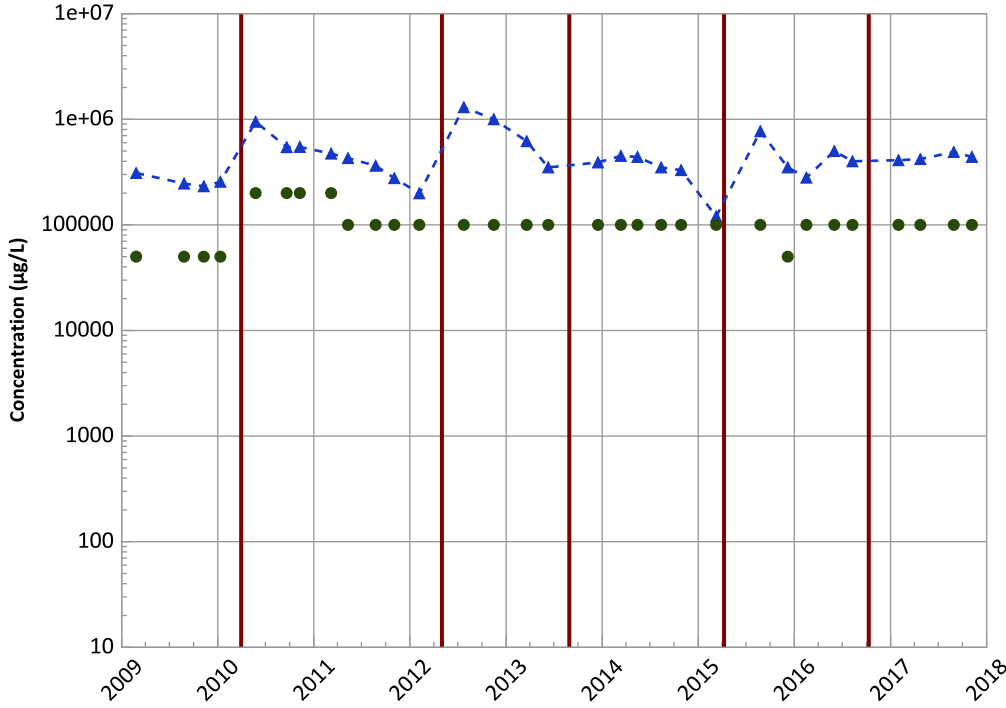


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 02/25/2009 to 11/06/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB046 in Perched Aquifer
USDOE/NNSA Pantex Plant

Dissolved Organic Carbon (DOC) Trend



Concentration Trend

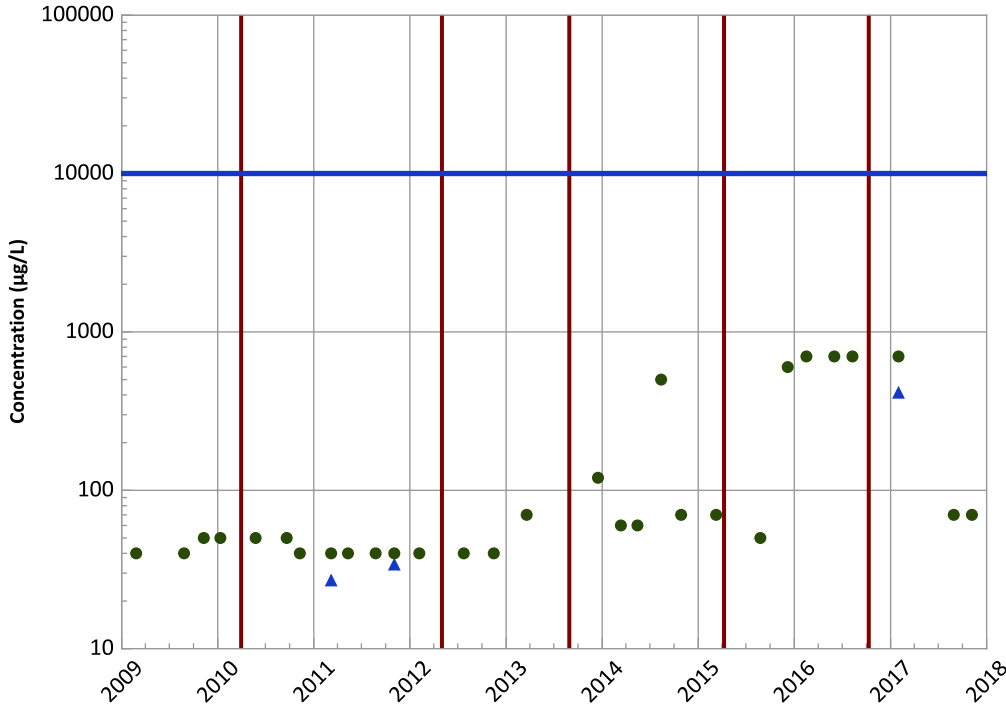
MAROS Mann-Kendall Method

All Data
No Trend
2015 - 2017 Data:
No Trend

MAROS Linear Regression Method

All Data
No Trend
2015 - 2017 Data:
No Trend

Nitrate as N Trend



Concentration Trend

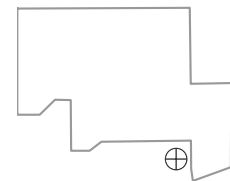
MAROS Mann-Kendall Method

All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
N/A (<4 Detections in Dataset)

Well Location

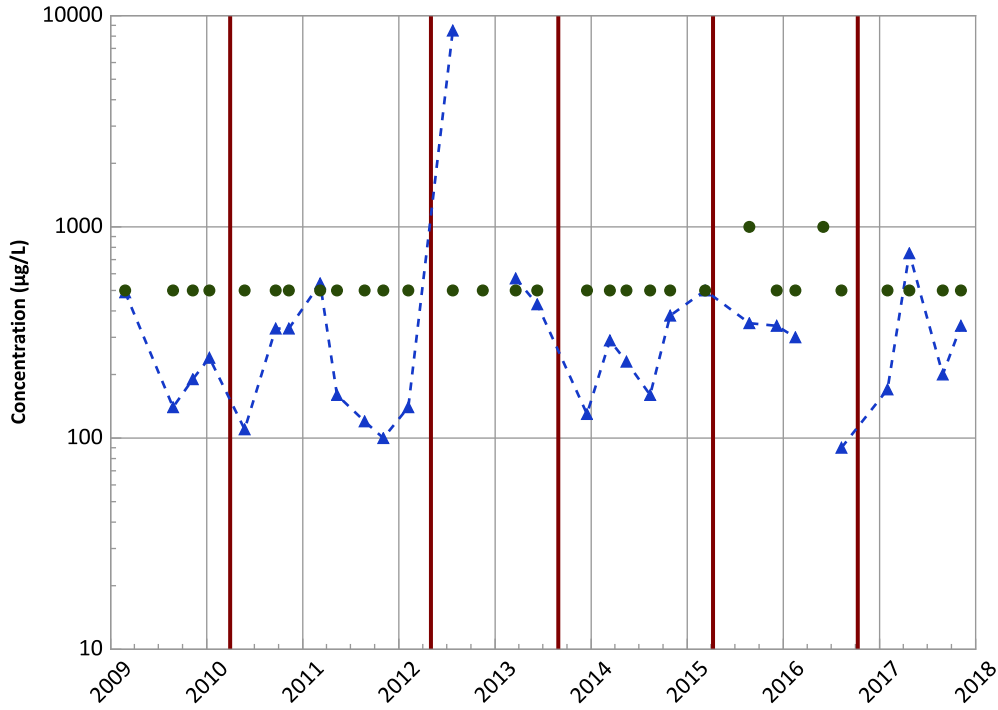


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 02/25/2009 to 11/06/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB046 in Perched Aquifer
USDOE/NNSA Pantex Plant

Sulfate (as SO4) Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

No Trend

2015 - 2017 Data:

No Trend

MAROS Linear Regression Method

All Data

No Trend

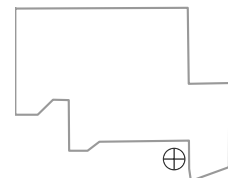
2015 - 2017 Data:

No Trend

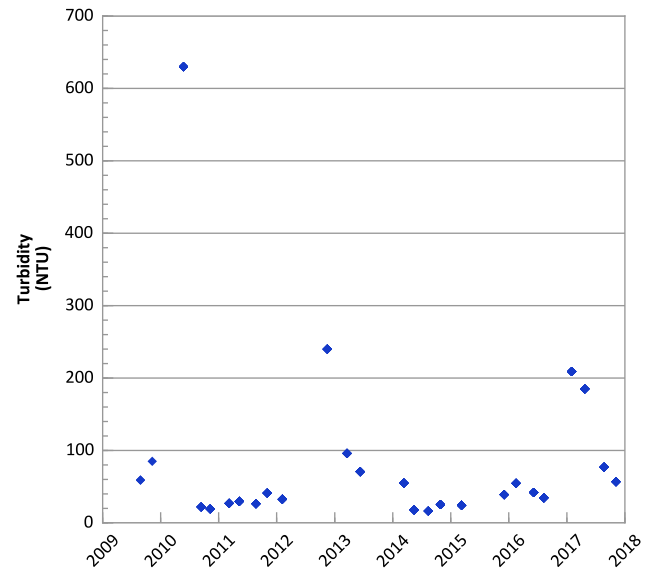
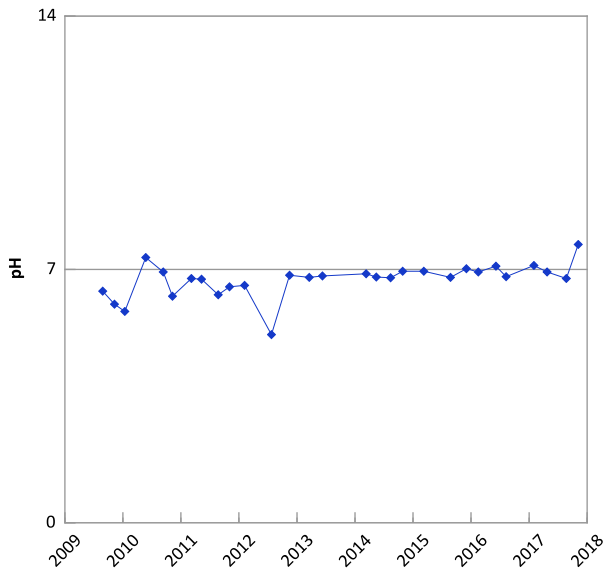
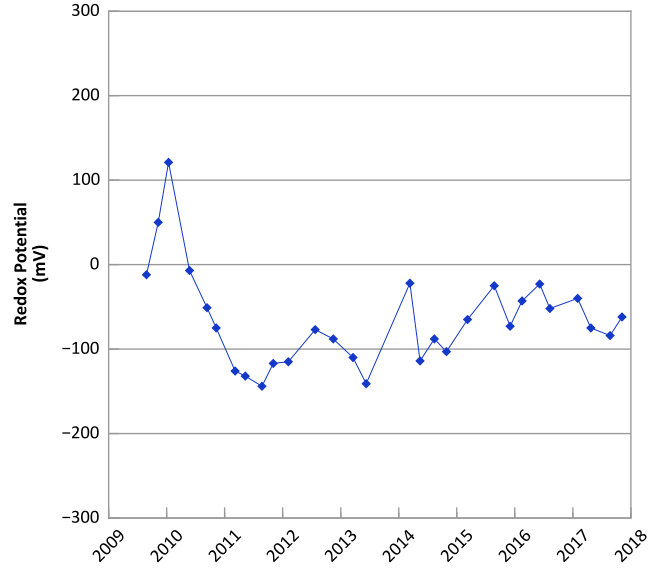
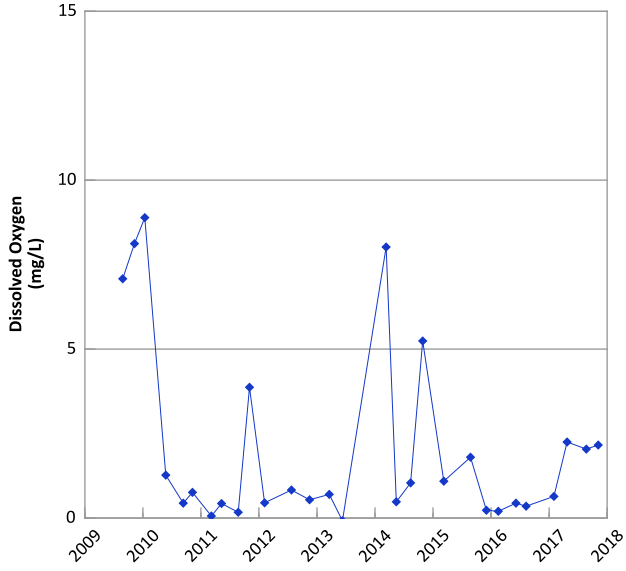
Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 02/25/2009 to 11/06/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

Well Location

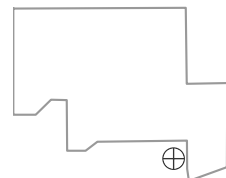


**PTX06-ISB048 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



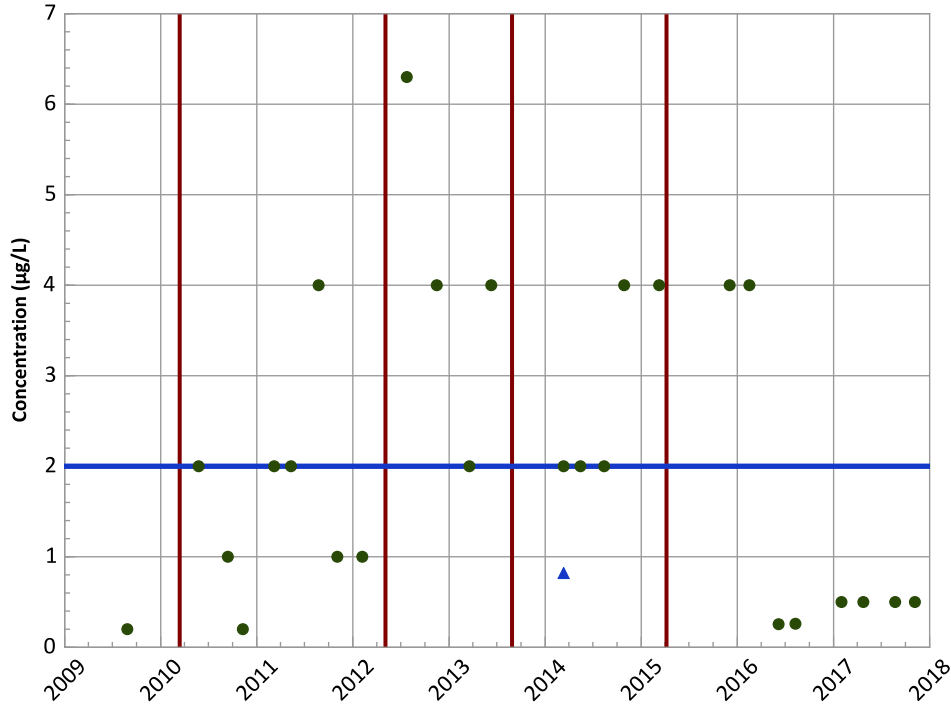
Query Date Range: 01/01/2009 to 12/31/2017
 Data Date Range: 08/27/2009 to 11/06/2017
 Analysis Date: 03/29/2018

Well Location



PTX06-ISB048 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

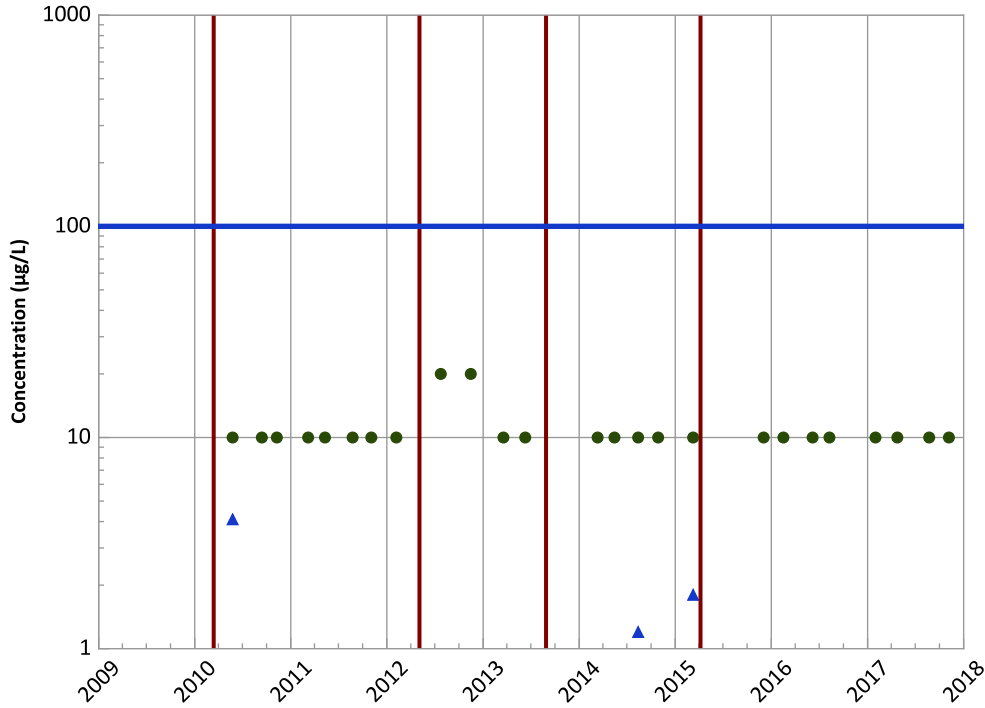
MAROS Mann-Kendall Method

All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method

All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
N/A (<4 Detections in Dataset)

Chromium, Total Trend



Concentration Trend

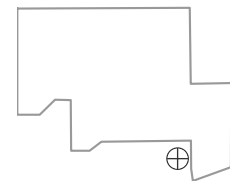
MAROS Mann-Kendall Method

All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method

All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
N/A (<4 Detections in Dataset)

Well Location

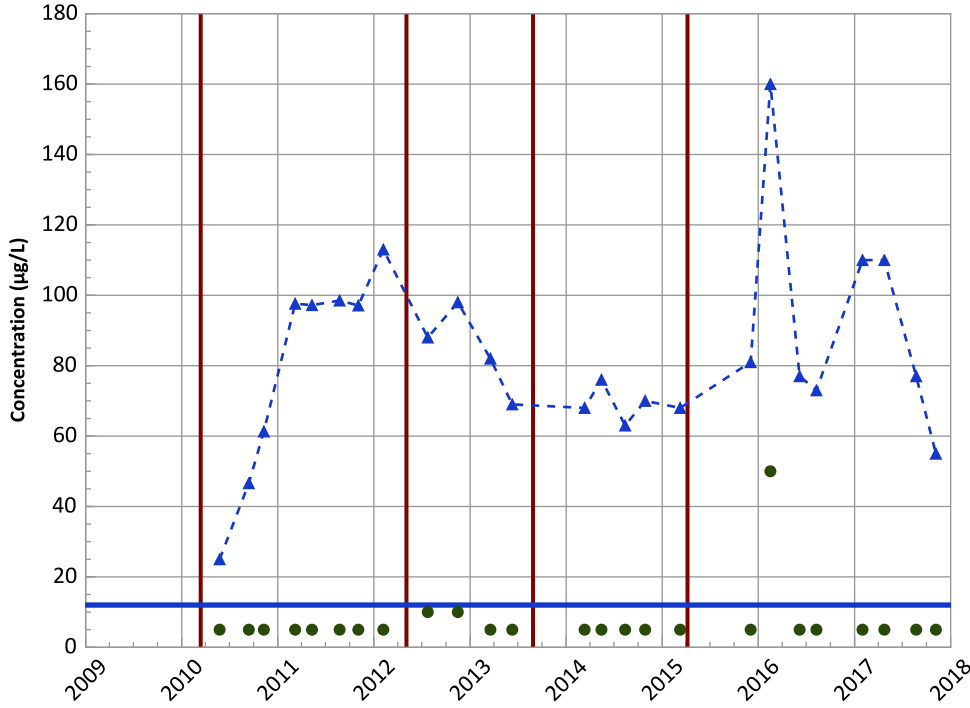


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 08/27/2009 to 11/06/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB048 in Perched Aquifer
USDOE/NNSA Pantex Plant

Arsenic Trend



Concentration Trend

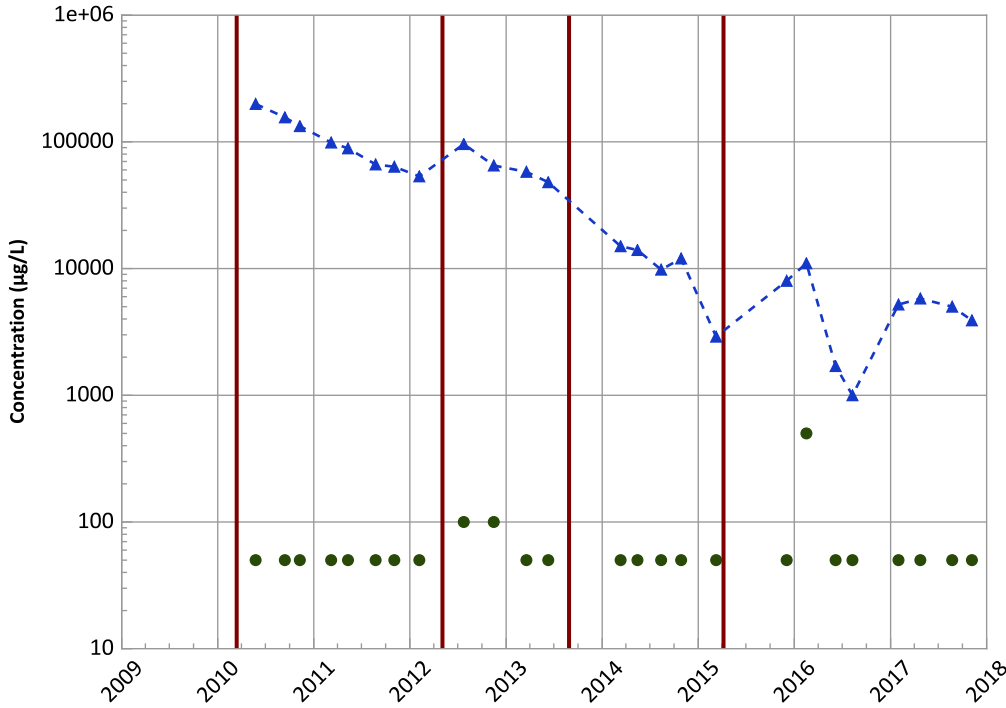
MAROS Mann-Kendall Method

All Data
No Trend
2015 - 2017 Data:
Decreasing

MAROS Linear Regression Method

All Data
No Trend
2015 - 2017 Data:
Decreasing

Iron Trend



Concentration Trend

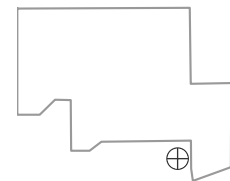
MAROS Mann-Kendall Method

All Data
Decreasing
2015 - 2017 Data:
Decreasing

MAROS Linear Regression Method

All Data
Decreasing
2015 - 2017 Data:
Stable

Well Location

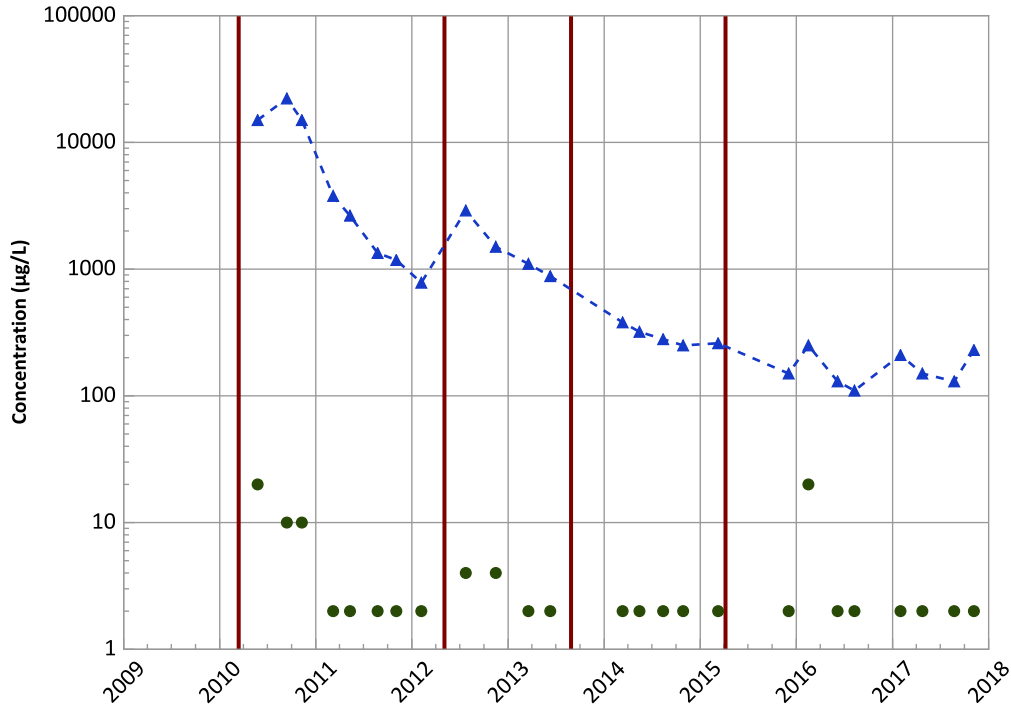


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 08/27/2009 to 11/06/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB048 in Perched Aquifer
USDOE/NNSA Pantex Plant

Manganese Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Stable

MAROS Linear Regression Method

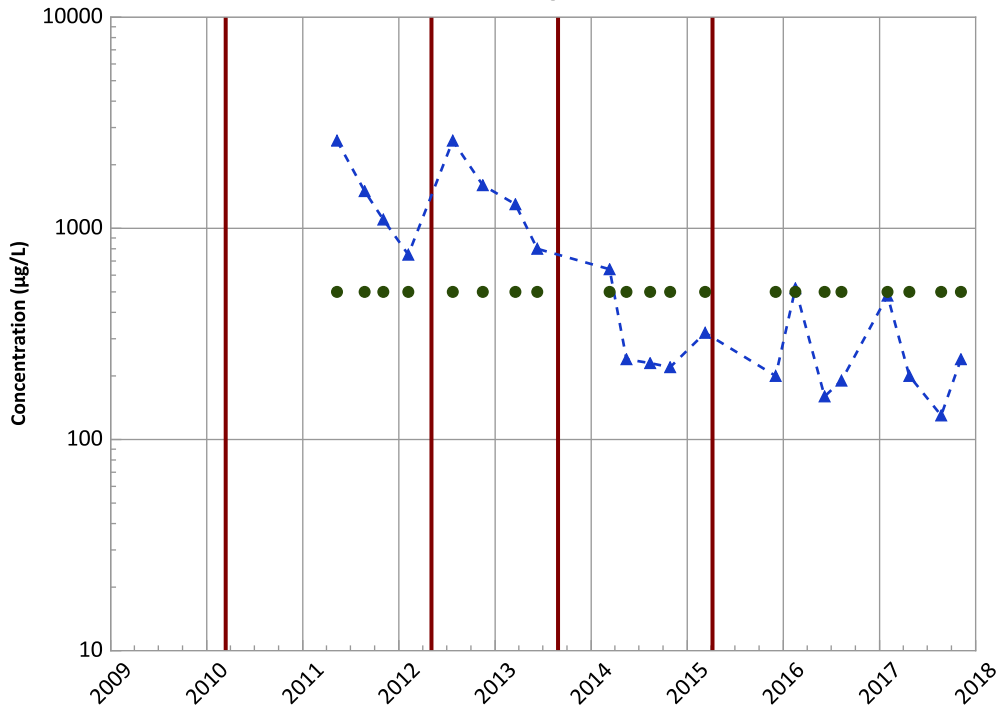
All Data

Decreasing

2015 - 2017 Data:

No Trend

Divalent Manganese Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Decreasing

MAROS Linear Regression Method

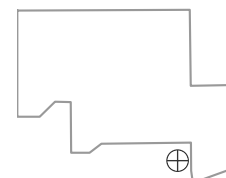
All Data

Decreasing

2015 - 2017 Data:

Stable

Well Location

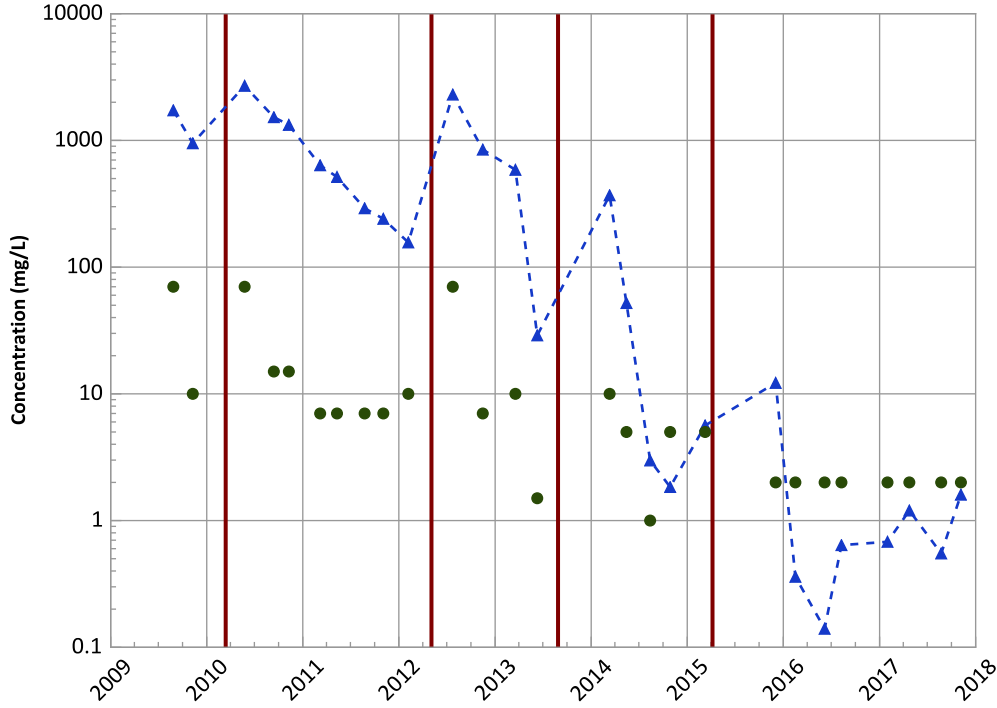


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 08/27/2009 to 11/06/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB048 in Perched Aquifer
USDOE/NNSA Pantex Plant

Total Volatile Fatty Acids Trend



Concentration Trend

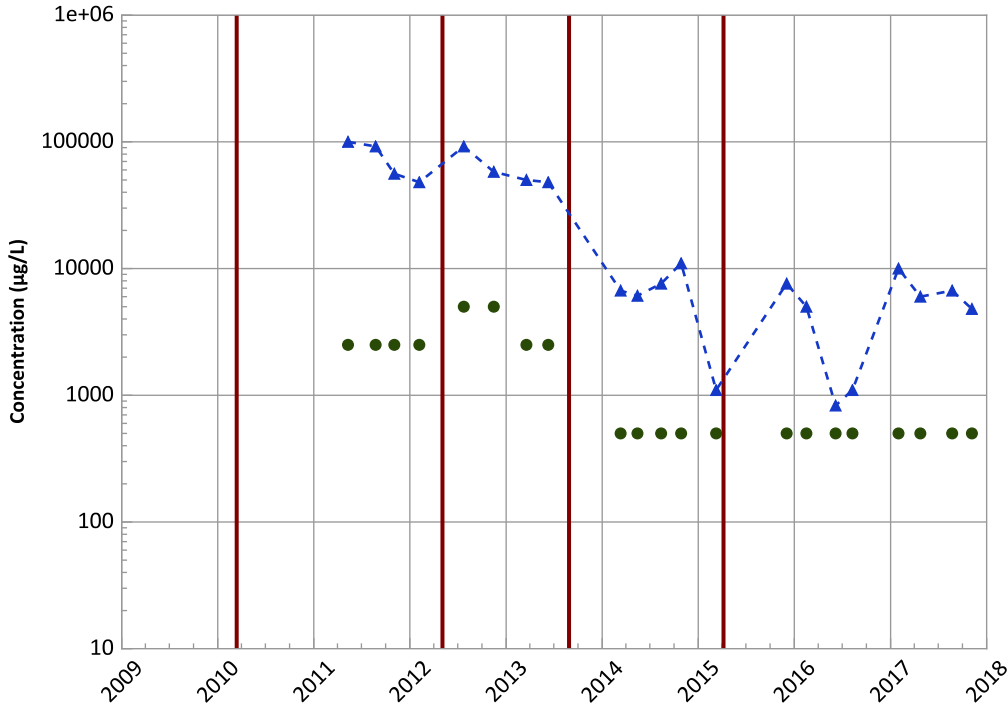
MAROS Mann-Kendall Method

All Data
Decreasing
2015 - 2017 Data:
No Trend

MAROS Linear Regression Method

All Data
Decreasing
2015 - 2017 Data:
No Trend

Ferrous Iron Trend



Concentration Trend

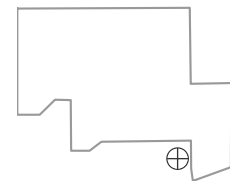
MAROS Mann-Kendall Method

All Data
Decreasing
2015 - 2017 Data:
Decreasing

MAROS Linear Regression Method

All Data
Decreasing
2015 - 2017 Data:
Decreasing

Well Location

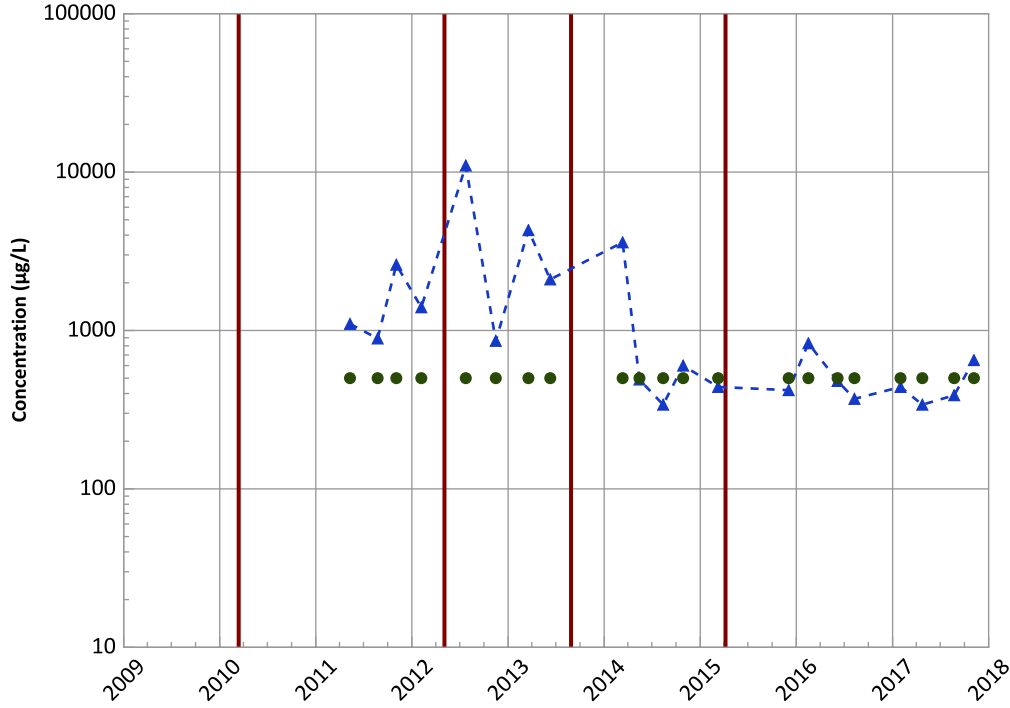


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 08/27/2009 to 11/06/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB048 in Perched Aquifer
USDOE/NNSA Pantex Plant

Ferric Iron Trend



Concentration Trend

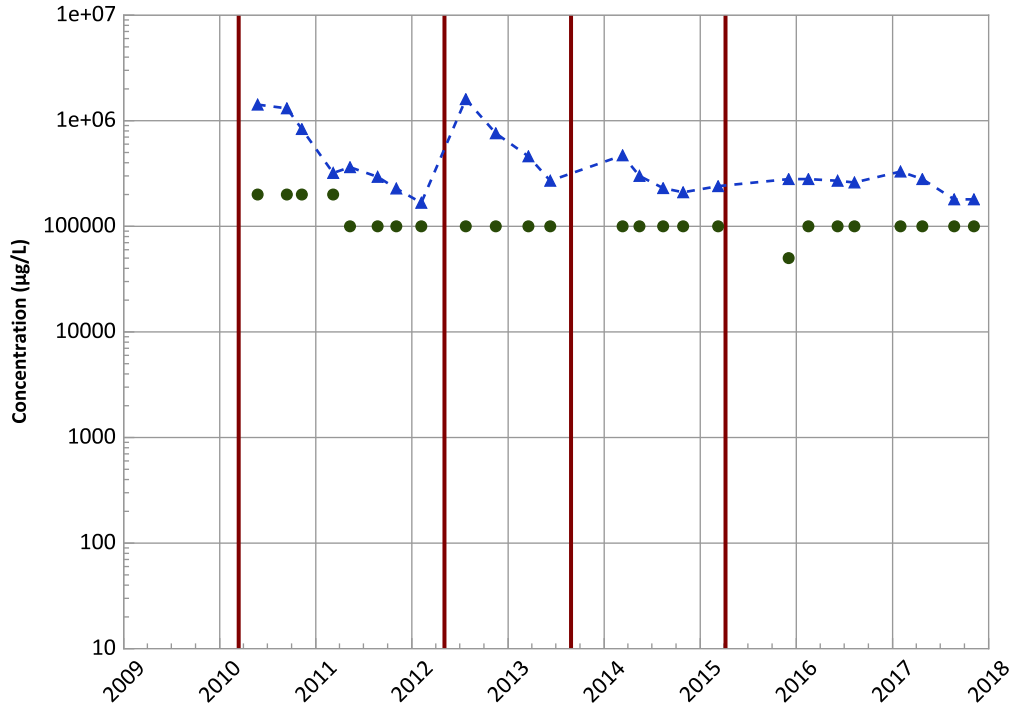
MAROS Mann-Kendall Method

All Data
Decreasing
2015 - 2017 Data:
No Trend

MAROS Linear Regression Method

All Data
Decreasing
2015 - 2017 Data:
No Trend

Total Organic Carbon Trend



Concentration Trend

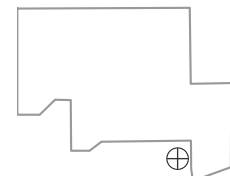
MAROS Mann-Kendall Method

All Data
Decreasing
2015 - 2017 Data:
Decreasing

MAROS Linear Regression Method

All Data
Decreasing
2015 - 2017 Data:
Probably Decreasing

Well Location

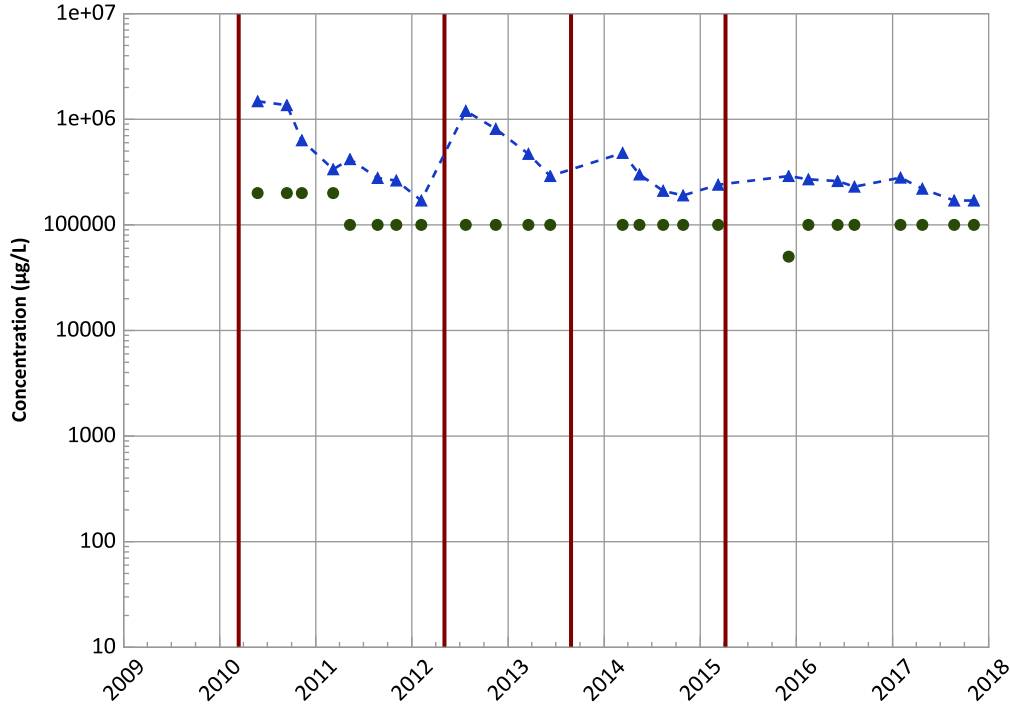


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 08/27/2009 to 11/06/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB048 in Perched Aquifer
USDOE/NNSA Pantex Plant

Dissolved Organic Carbon (DOC) Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Decreasing

MAROS Linear Regression Method

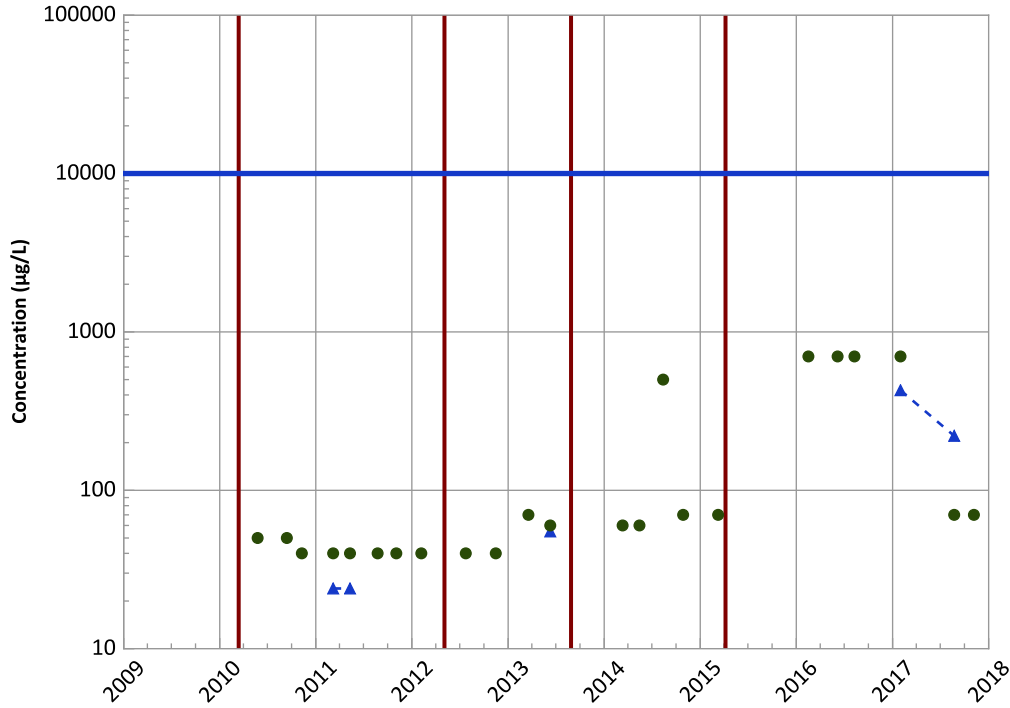
All Data

Decreasing

2015 - 2017 Data:

Decreasing

Nitrate as N Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Increasing

2015 - 2017 Data:

N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

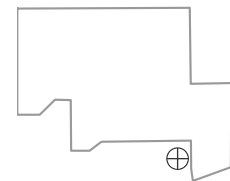
All Data

Increasing

2015 - 2017 Data:

No Trend

Well Location

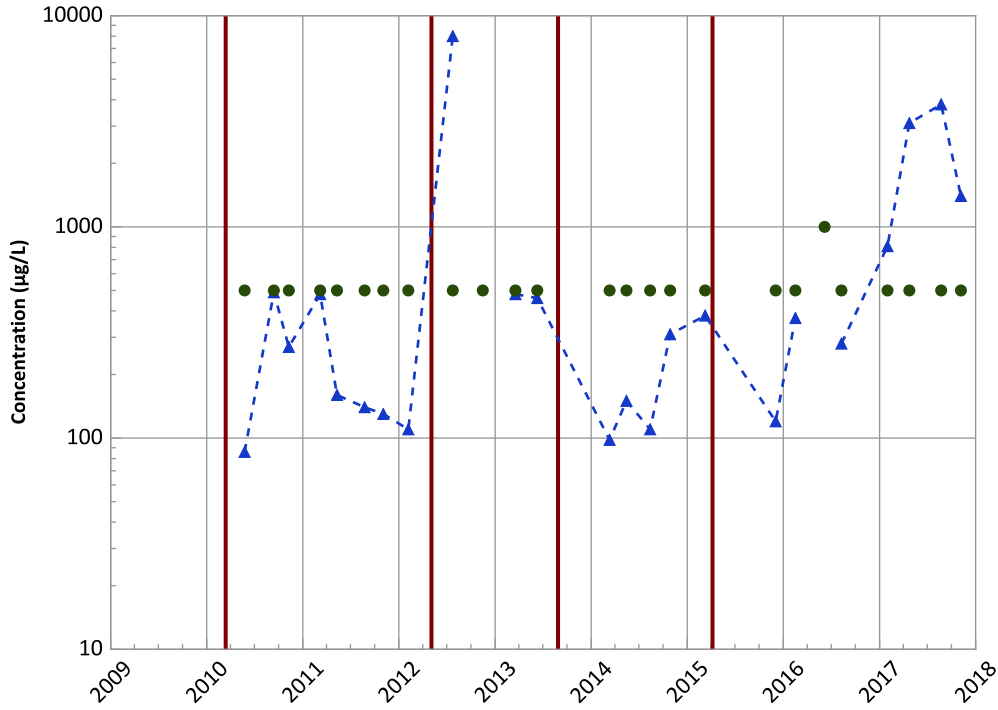


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 08/27/2009 to 11/06/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB048 in Perched Aquifer
USDOE/NNSA Pantex Plant

Sulfate (as SO4) Trend

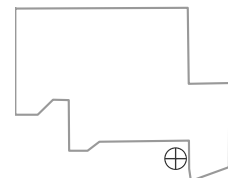


Concentration Trend
MAROS Mann-Kendall Method
 All Data
 Increasing
 2015 - 2017 Data:
 No Trend
MAROS Linear Regression Method
 All Data
 Increasing
 2015 - 2017 Data:
 No Trend

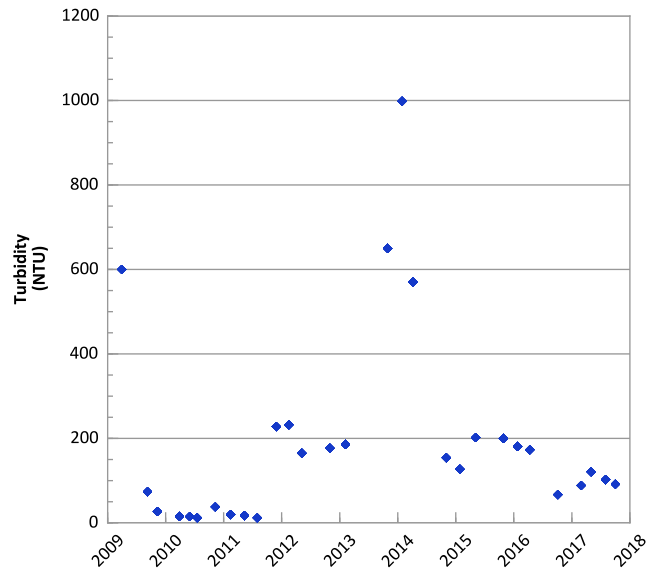
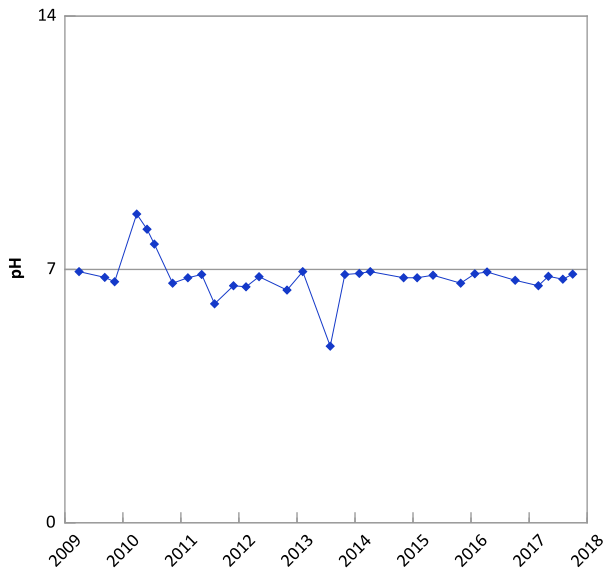
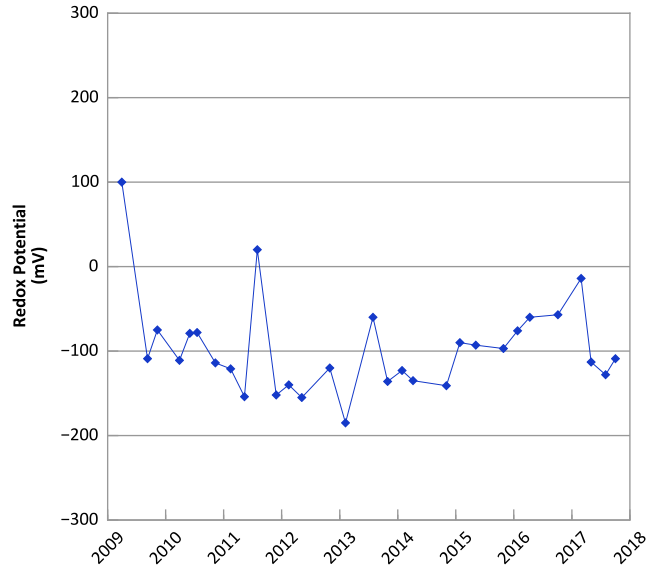
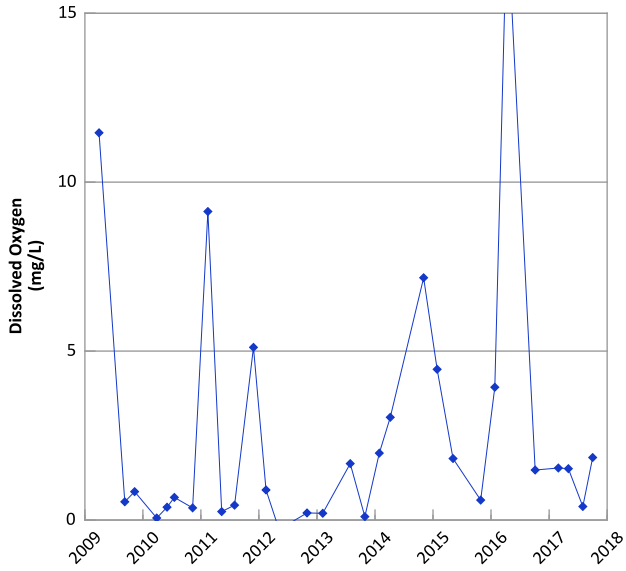
Query Date Range: 01/01/2009 to 12/31/2017
 Data Date Range: 08/27/2009 to 11/06/2017
 Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

Well Location

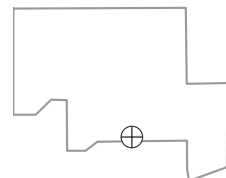


**PTX06-ISB055 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



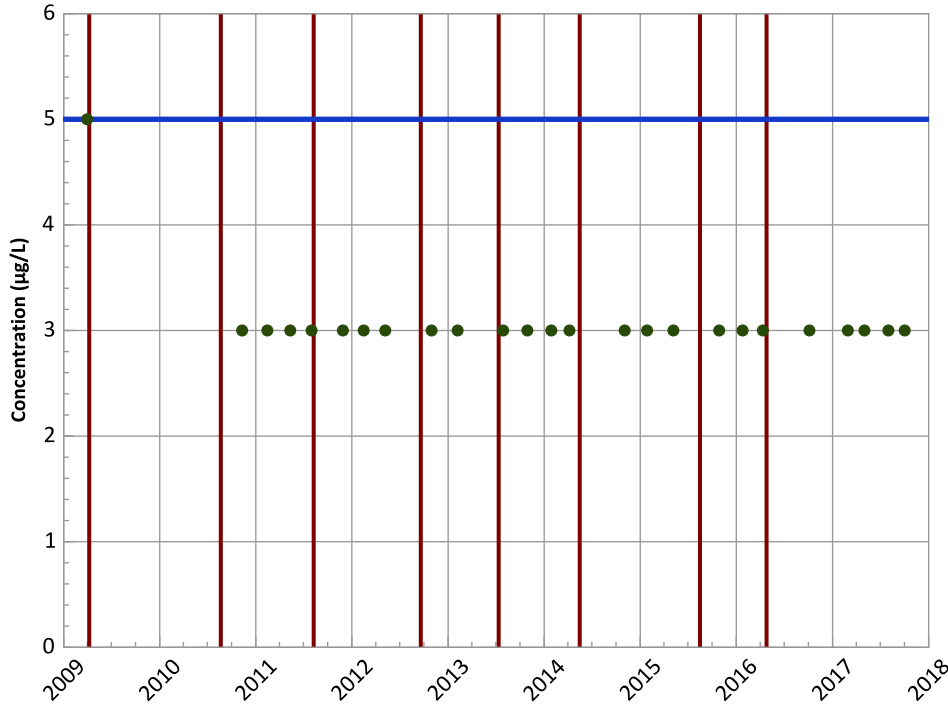
Query Date Range: 01/01/2009 to 12/31/2017
 Data Date Range: 03/31/2009 to 10/02/2017
 Analysis Date: 03/29/2018

Well Location



PTX06-ISB055 in Perched Aquifer
USDOE/NNSA Pantex Plant

Tetrachloroethylene (PCE) Trend



Concentration Trend

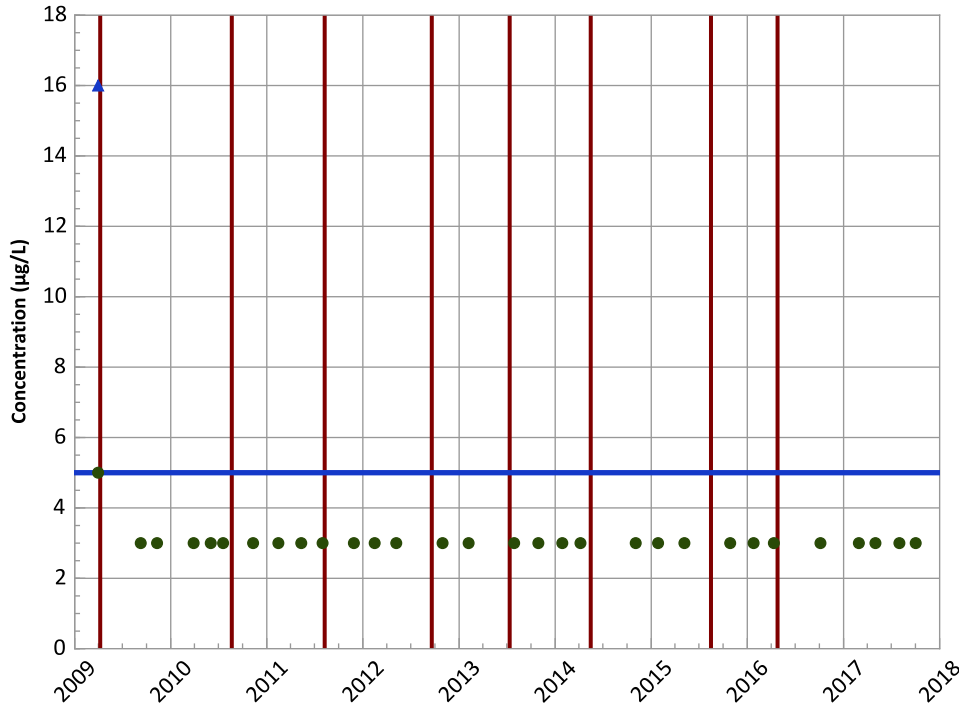
MAROS Mann-Kendall Method

All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method

All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

Trichloroethene Trend



Concentration Trend

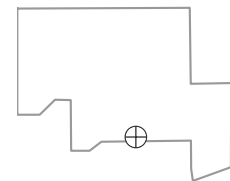
MAROS Mann-Kendall Method

All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method

All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
N/A (<4 Detections in Dataset)

Well Location

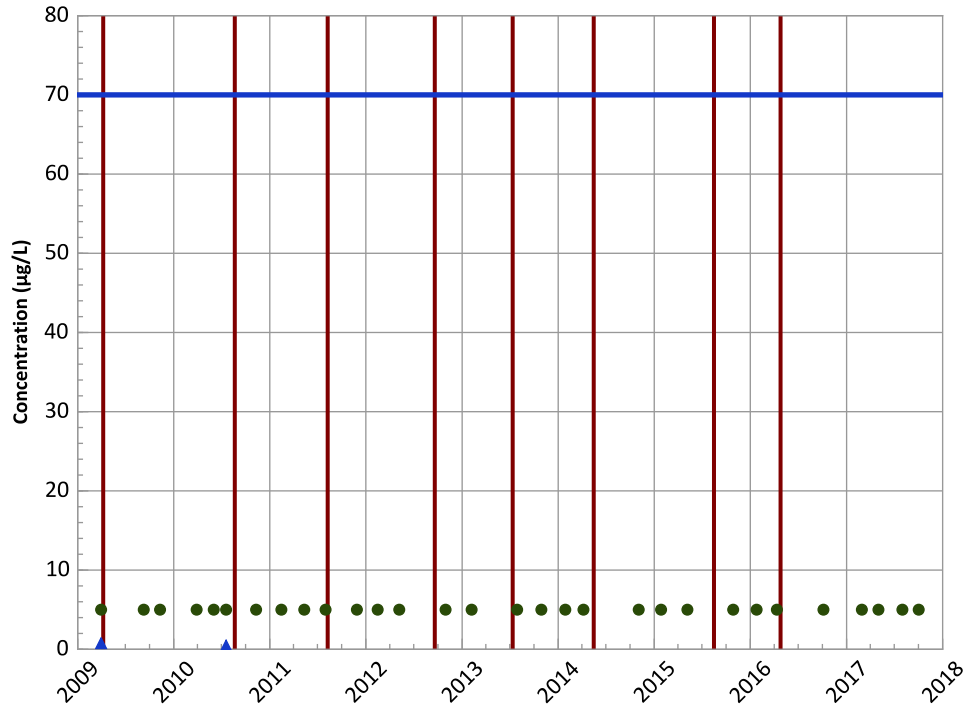


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 03/31/2009 to 10/02/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB055 in Perched Aquifer
USDOE/NNSA Pantex Plant

cis-1,2-Dichloroethene Trend

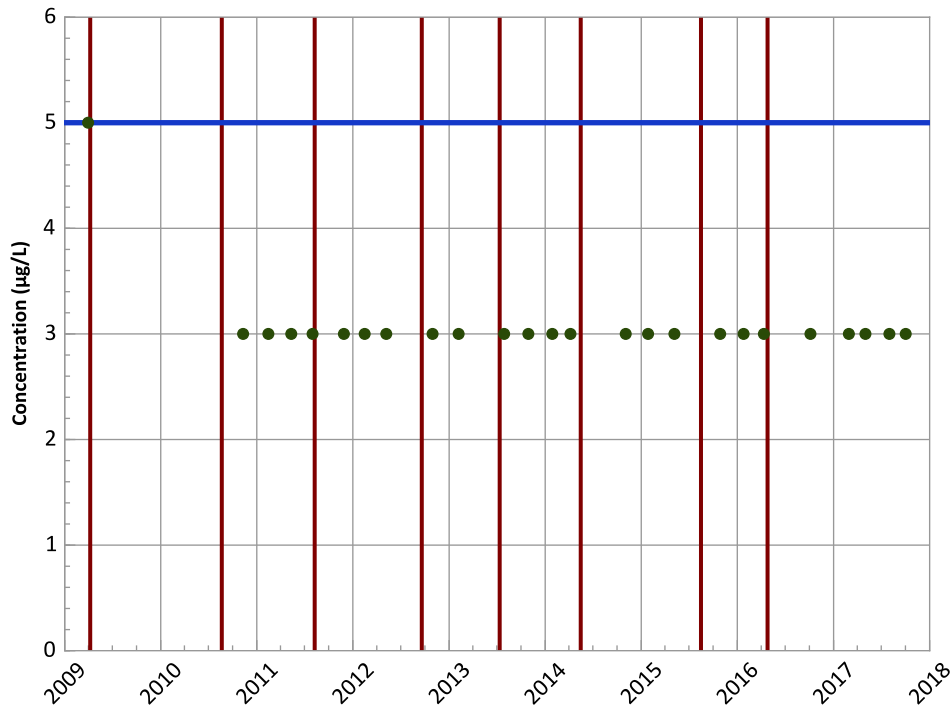


Concentration Trend

MAROS Mann-Kendall Method
All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method
All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
N/A (<4 Detections in Dataset)

1,2-Dichloroethane Trend

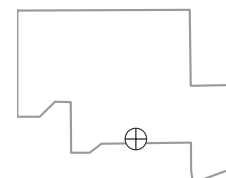


Concentration Trend

MAROS Mann-Kendall Method
All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method
All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

Well Location

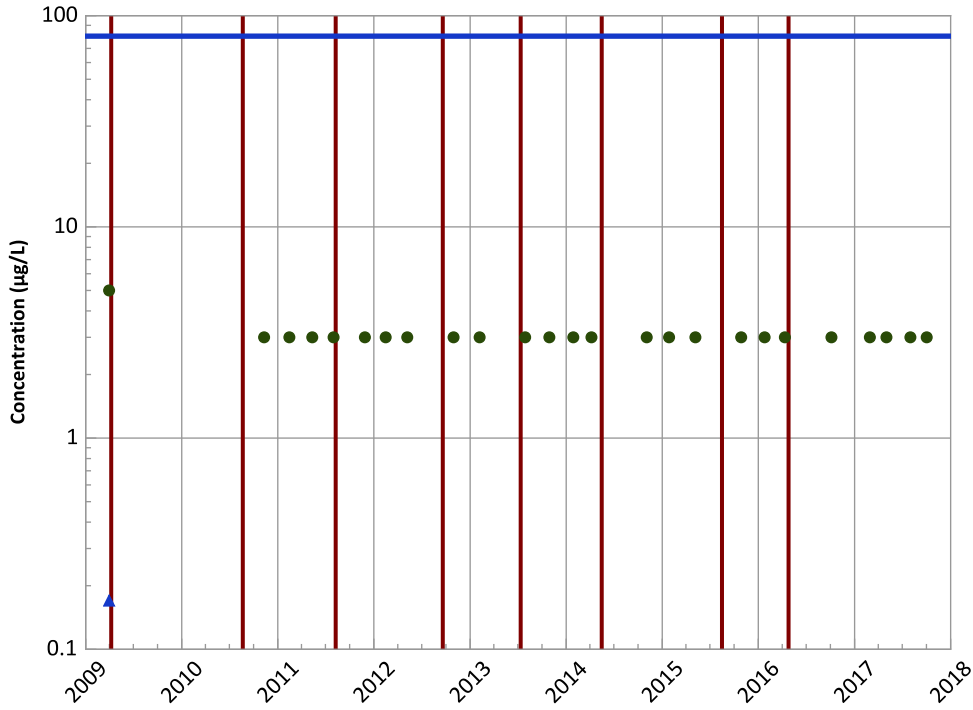


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 03/31/2009 to 10/02/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB055 in Perched Aquifer
USDOE/NNSA Pantex Plant

Chloroform Trend

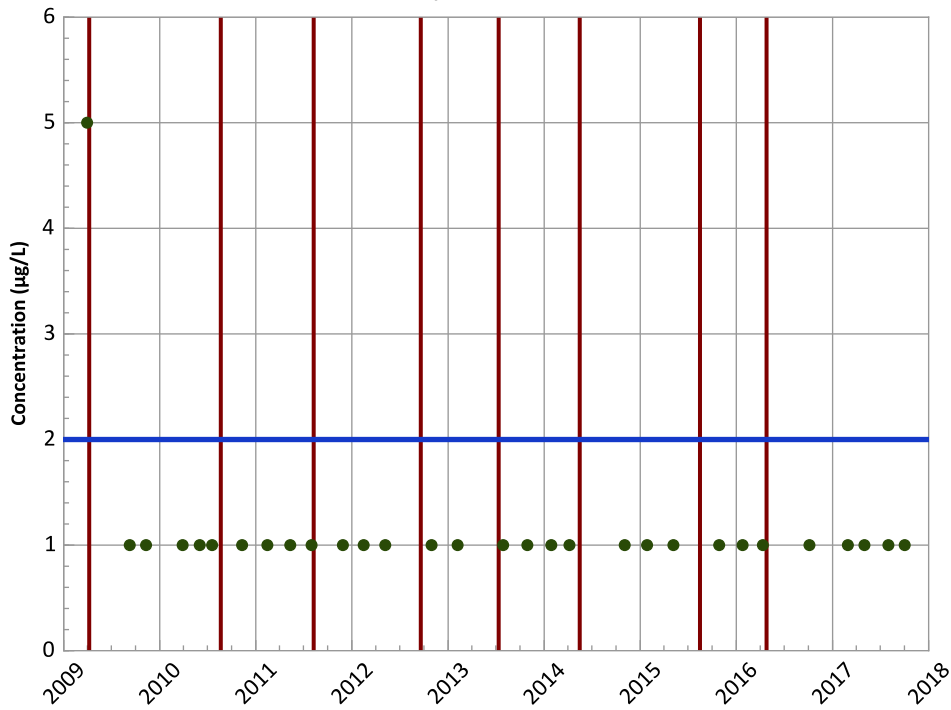


Concentration Trend

MAROS Mann-Kendall Method
All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method
All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
N/A (<4 Detections in Dataset)

Vinyl Chloride Trend

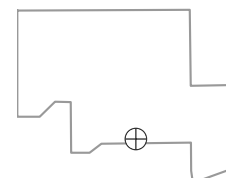


Concentration Trend

MAROS Mann-Kendall Method
All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method
All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

Well Location



Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 03/31/2009 to 10/02/2017
Analysis Date: 03/29/2018

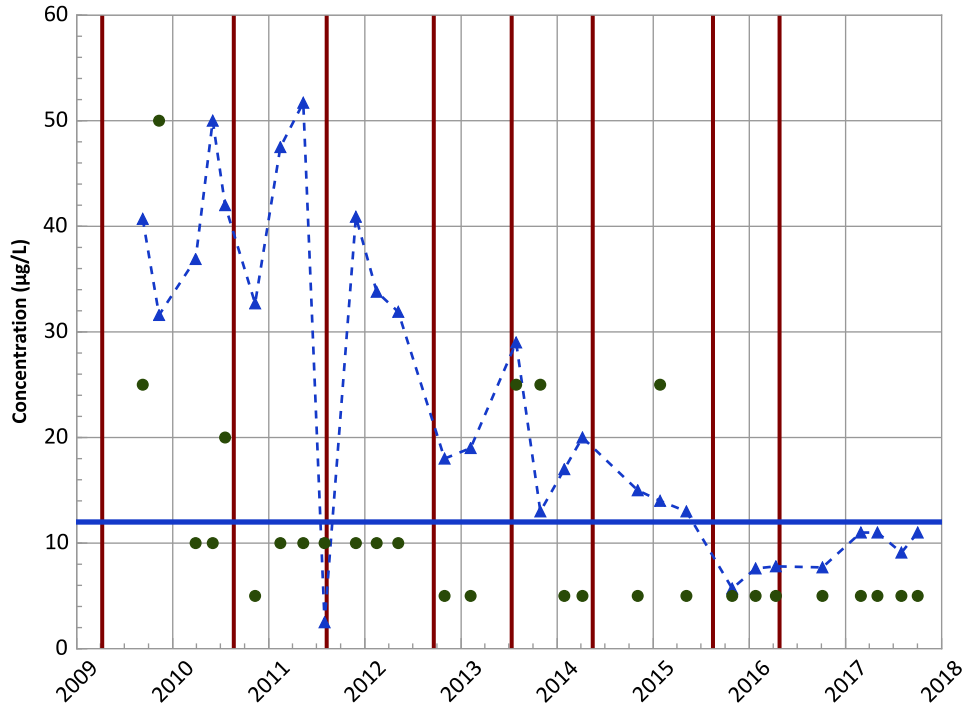
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB055 in Perched Aquifer
USDOE/NNSA Pantex Plant

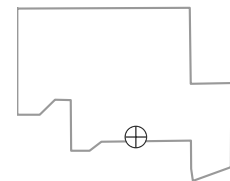
Perchlorate Trend



Arsenic Trend



Well Location

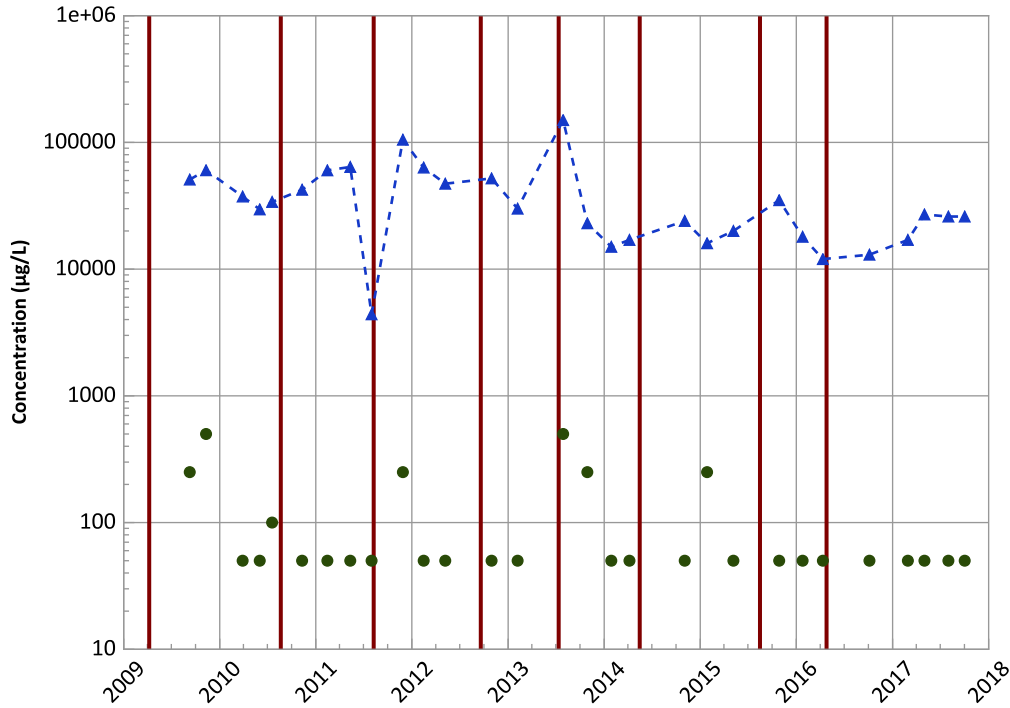


Query Date Range: 01/01/2009 to 12/31/2017
 Data Date Range: 03/31/2009 to 10/02/2017
 Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB055 in Perched Aquifer
USDOE/NNSA Pantex Plant

Iron Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

No Trend

MAROS Linear Regression Method

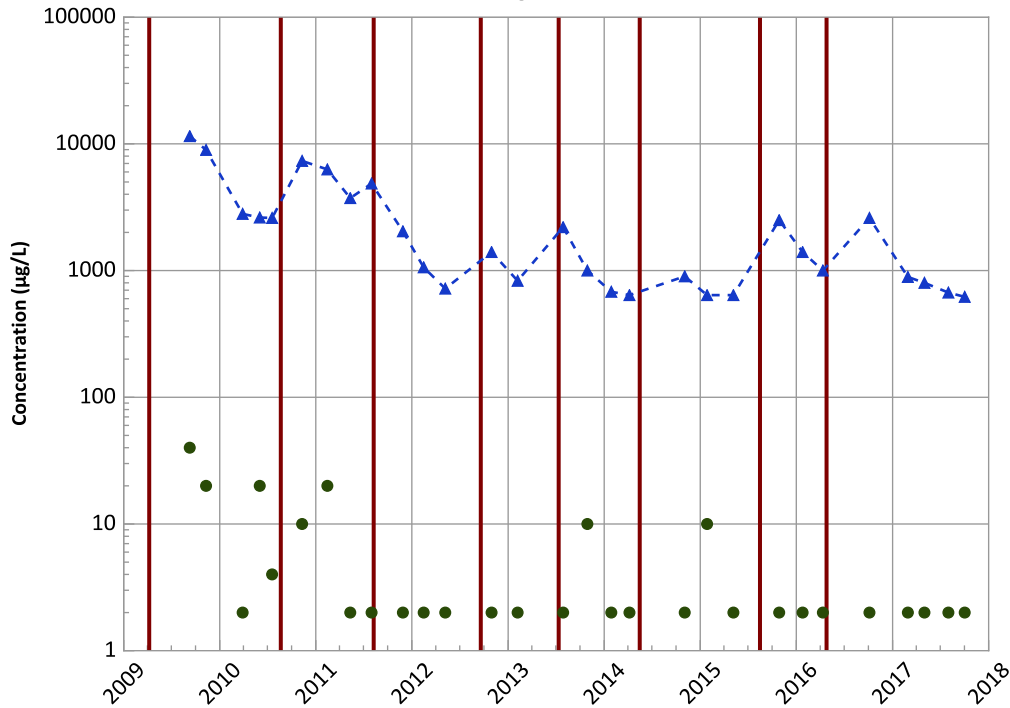
All Data

Decreasing

2015 - 2017 Data:

No Trend

Manganese Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Decreasing

MAROS Linear Regression Method

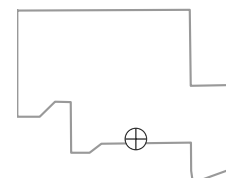
All Data

Decreasing

2015 - 2017 Data:

Decreasing

Well Location

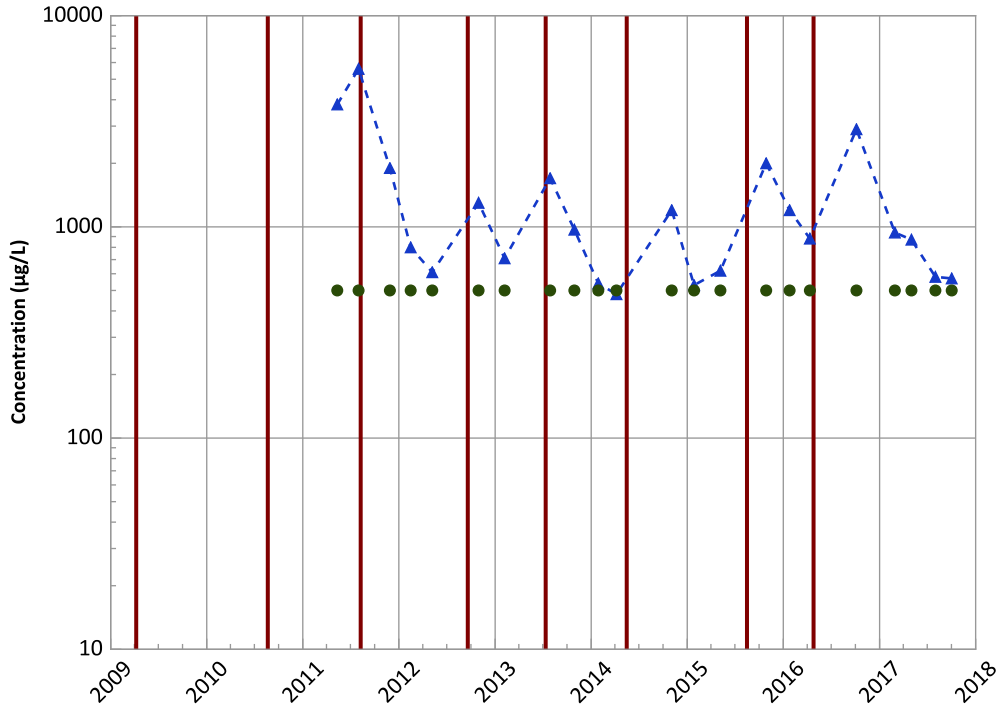


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 03/31/2009 to 10/02/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB055 in Perched Aquifer
USDOE/NNSA Pantex Plant

Divalent Manganese Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Decreasing

MAROS Linear Regression Method

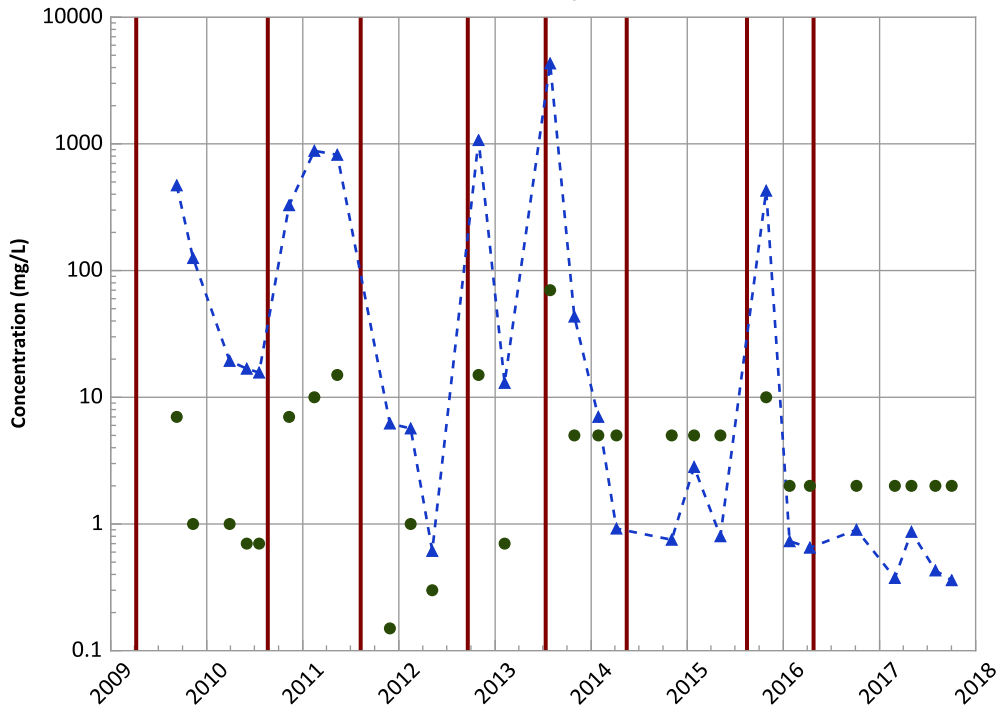
All Data

Decreasing

2015 - 2017 Data:

Decreasing

Total Volatile Fatty Acids Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Decreasing

MAROS Linear Regression Method

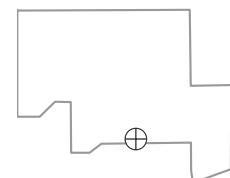
All Data

Decreasing

2015 - 2017 Data:

Stable

Well Location

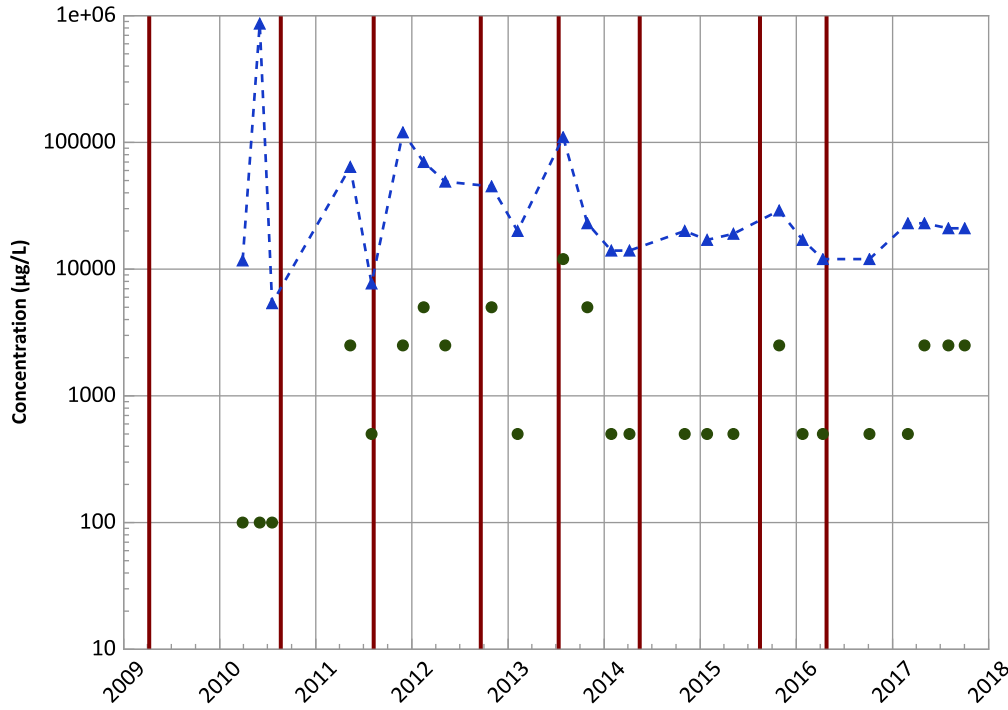


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 03/31/2009 to 10/02/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB055 in Perched Aquifer
USDOE/NNSA Pantex Plant

Ferrous Iron Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Decreasing

MAROS Linear Regression Method

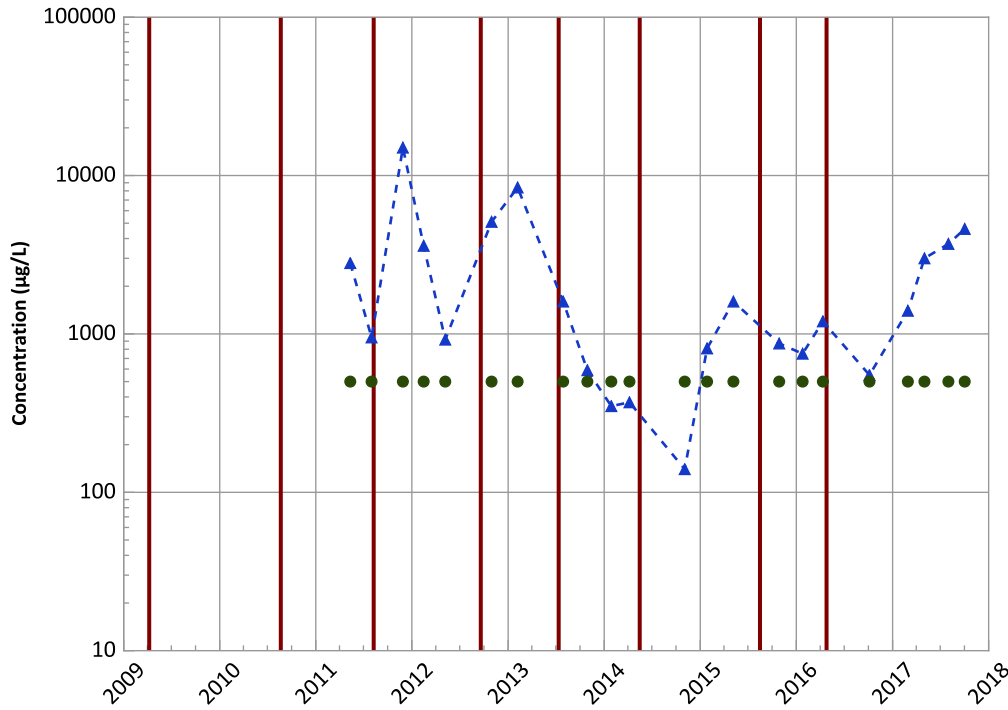
All Data

Probably Decreasing

2015 - 2017 Data:

Stable

Ferric Iron Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Increasing

MAROS Linear Regression Method

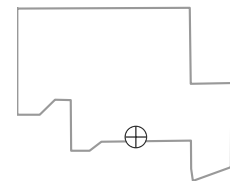
All Data

No Trend

2015 - 2017 Data:

Increasing

Well Location

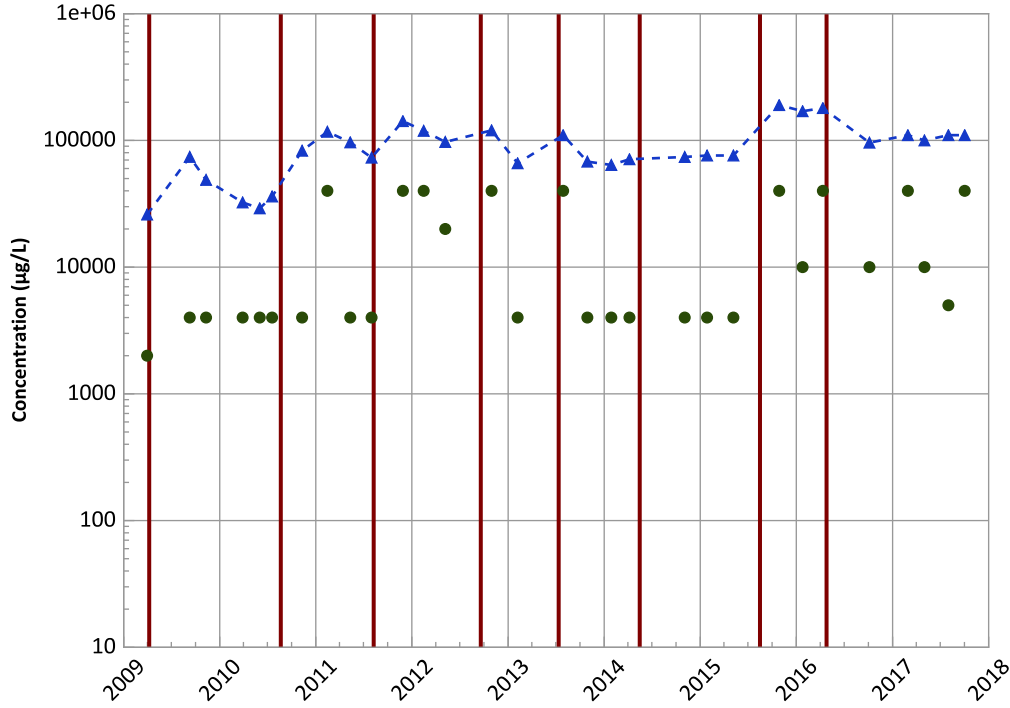


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 03/31/2009 to 10/02/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB055 in Perched Aquifer
USDOE/NNSA Pantex Plant

Chloride (as Cl) Trend



Concentration Trend

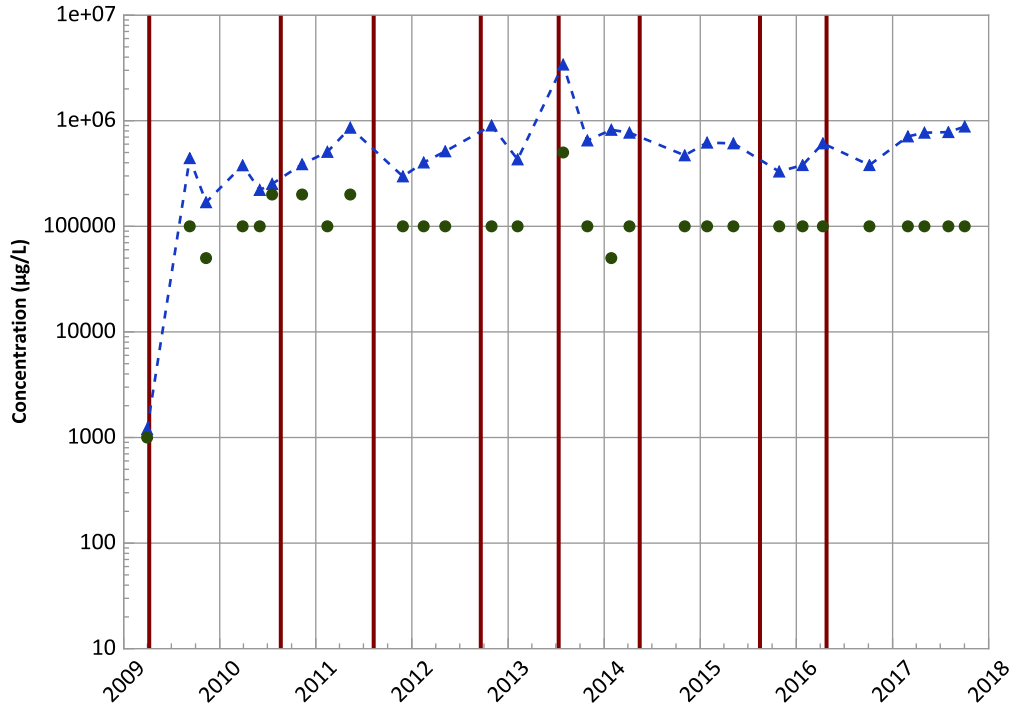
MAROS Mann-Kendall Method

All Data
Increasing
2015 - 2017 Data:
No Trend

MAROS Linear Regression Method

All Data
Increasing
2015 - 2017 Data:
No Trend

Total Organic Carbon Trend



Concentration Trend

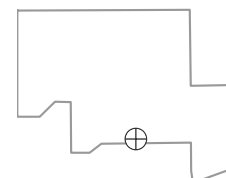
MAROS Mann-Kendall Method

All Data
Increasing
2015 - 2017 Data:
Increasing

MAROS Linear Regression Method

All Data
Increasing
2015 - 2017 Data:
Increasing

Well Location

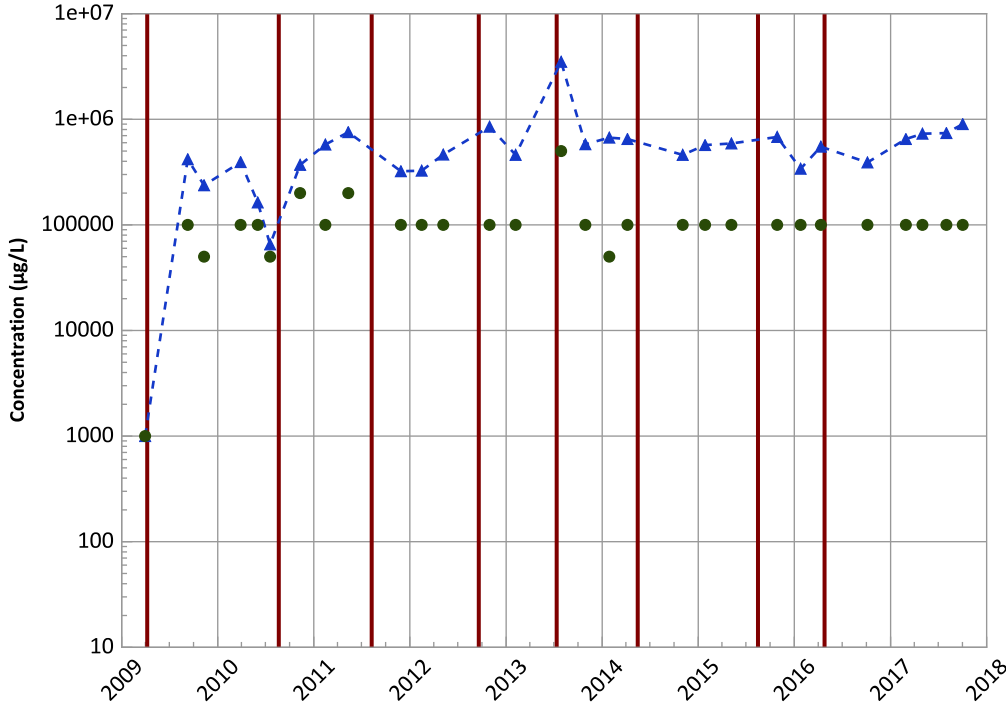


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 03/31/2009 to 10/02/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB055 in Perched Aquifer
USDOE/NNSA Pantex Plant

Dissolved Organic Carbon (DOC) Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Increasing

2015 - 2017 Data:

Increasing

MAROS Linear Regression Method

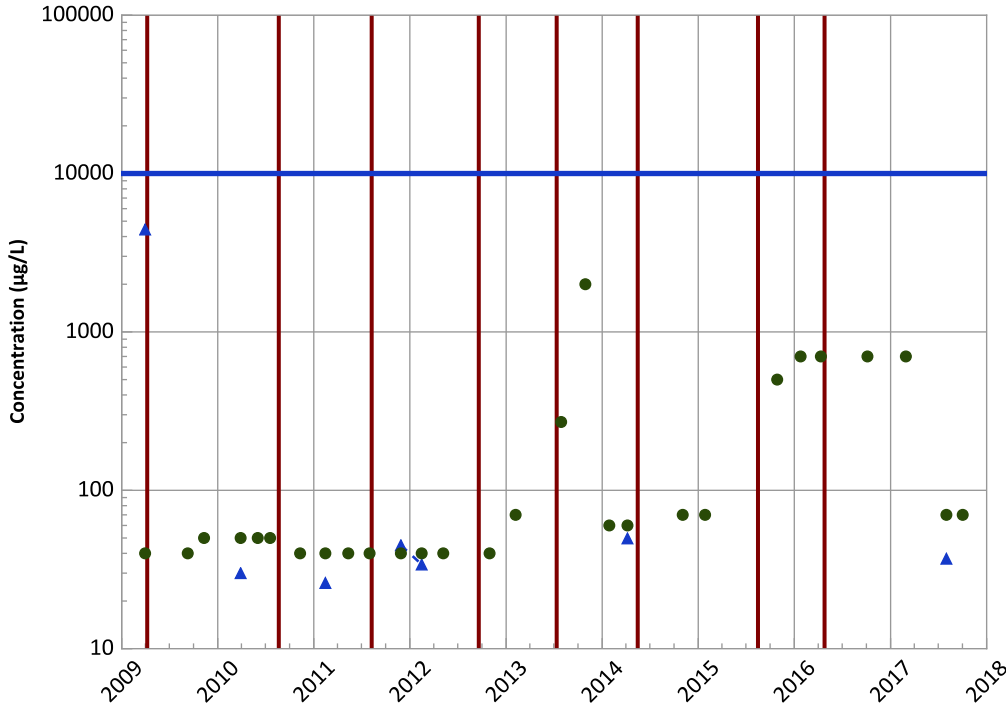
All Data

Increasing

2015 - 2017 Data:

Increasing

Nitrate as N Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Increasing

2015 - 2017 Data:

N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

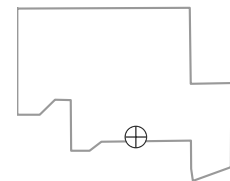
All Data

No Trend

2015 - 2017 Data:

Stable

Well Location

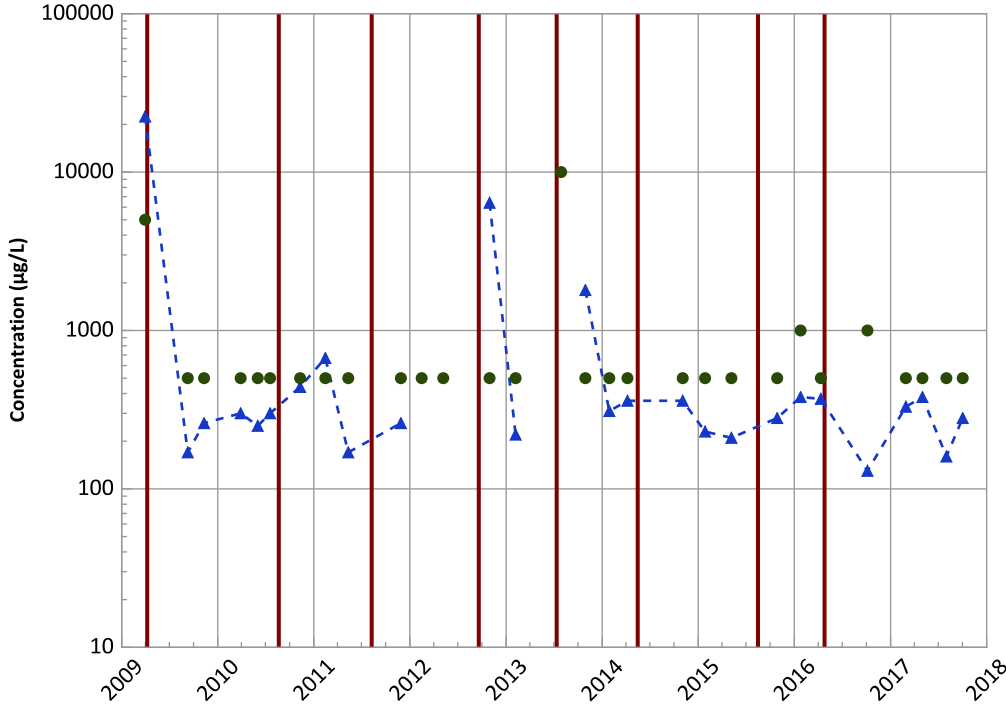


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 03/31/2009 to 10/02/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB055 in Perched Aquifer
USDOE/NNSA Pantex Plant

Sulfate (as SO4) Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Decreasing

MAROS Linear Regression Method

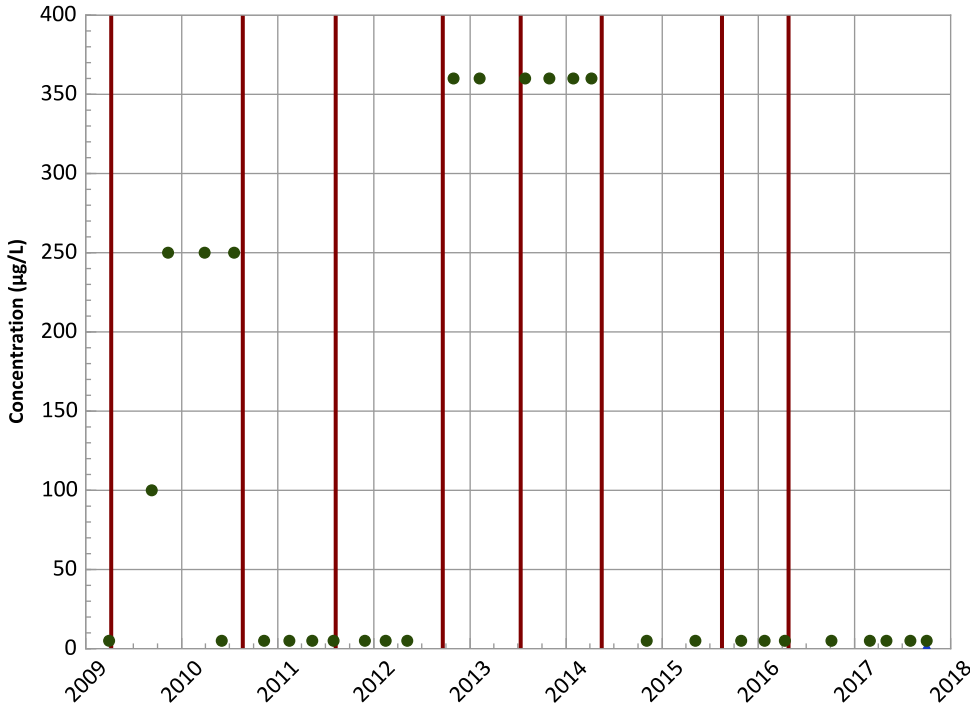
All Data

Probably Decreasing

2015 - 2017 Data:

Stable

Ethene (Ethylene) Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

N/A (<4 Detections in Dataset)

2015 - 2017 Data:

N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

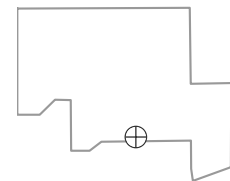
All Data

N/A (<4 Detections in Dataset)

2015 - 2017 Data:

N/A (<4 Detections in Dataset)

Well Location

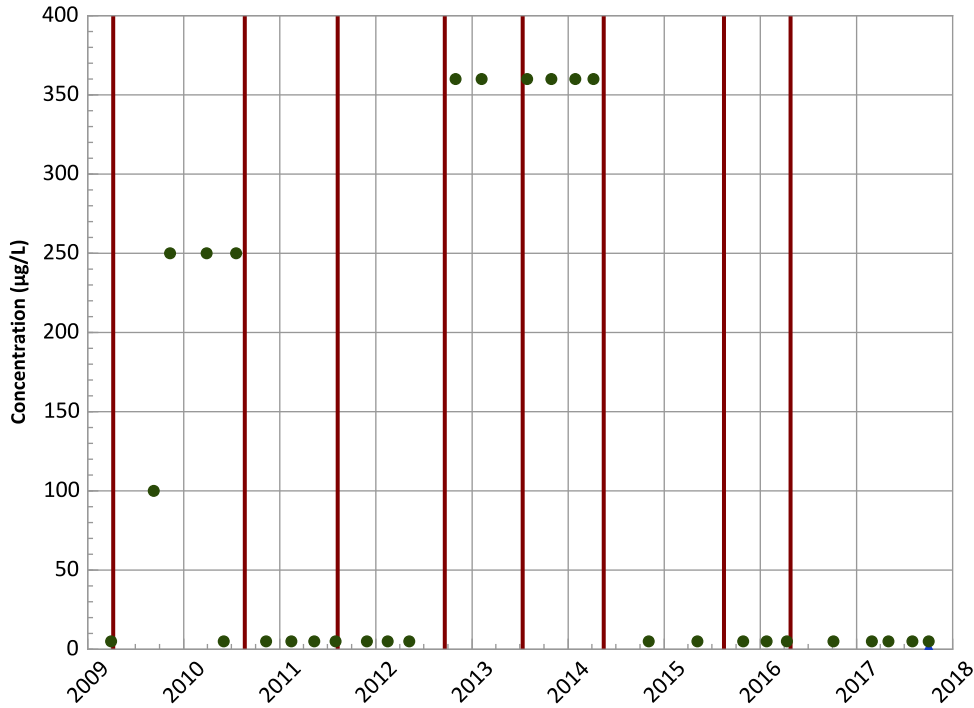


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 03/31/2009 to 10/02/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB055 in Perched Aquifer
USDOE/NNSA Pantex Plant

Ethane Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

N/A (<4 Detections in Dataset)

2015 - 2017 Data:

N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

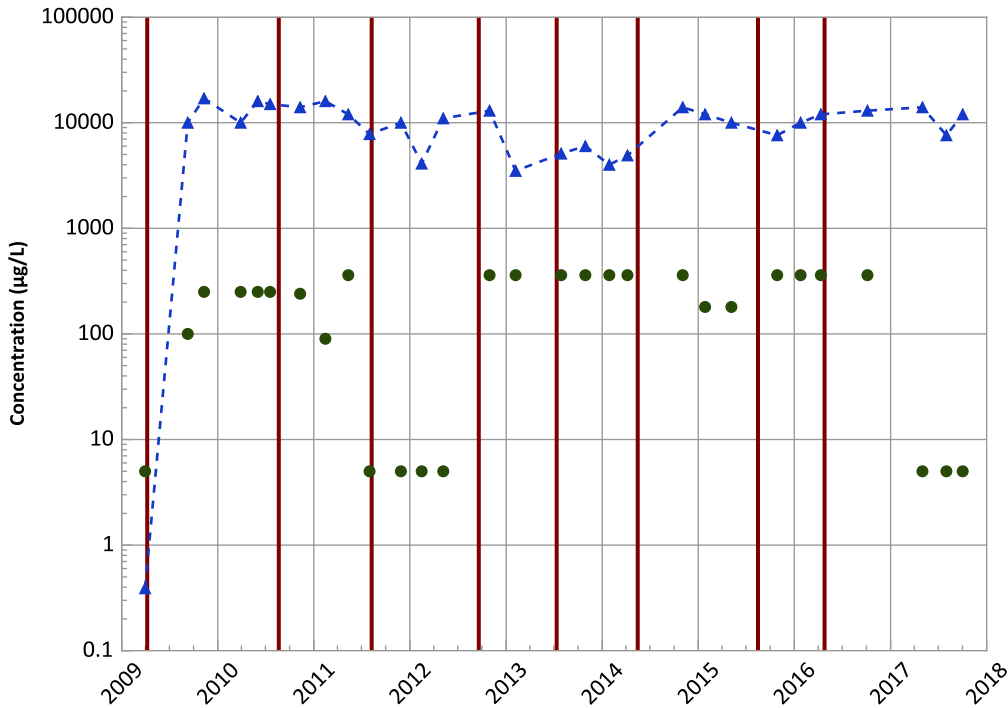
All Data

N/A (<4 Detections in Dataset)

2015 - 2017 Data:

N/A (<4 Detections in Dataset)

Methane Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Decreasing

MAROS Linear Regression Method

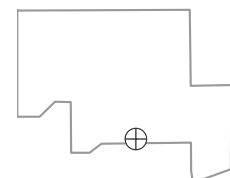
All Data

Probably Increasing

2015 - 2017 Data:

Stable

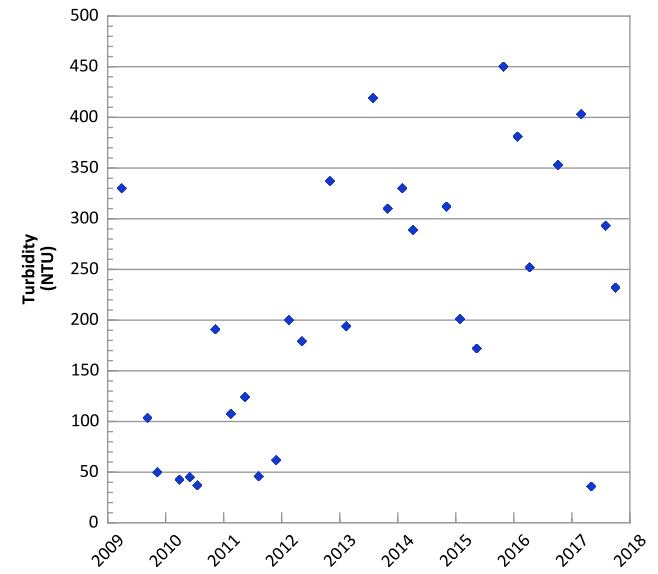
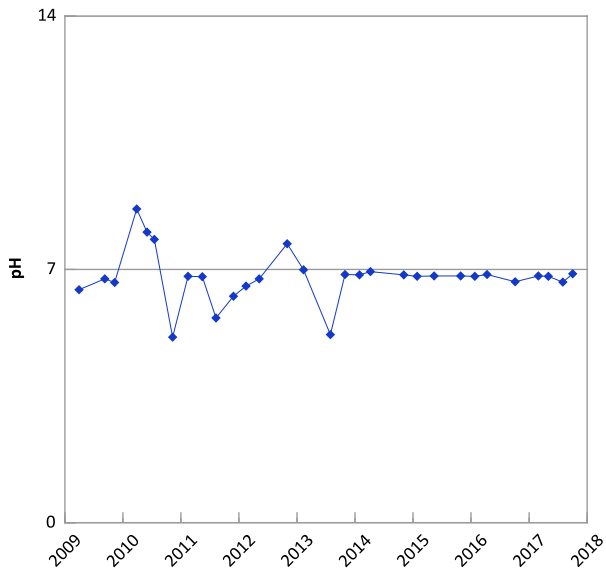
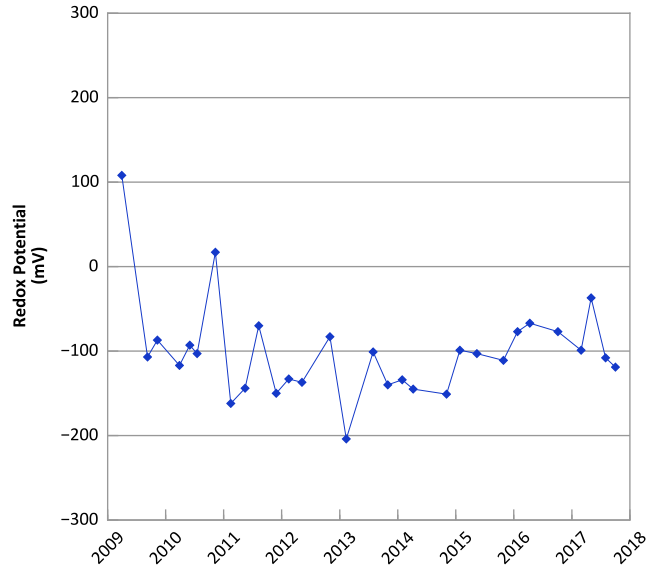
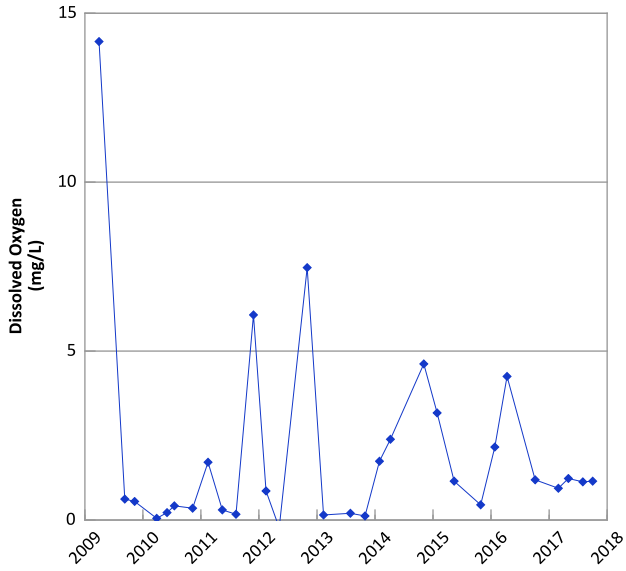
Well Location



Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 03/31/2009 to 10/02/2017
Analysis Date: 03/29/2018

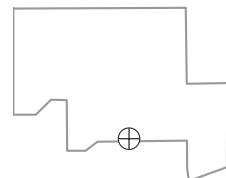
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

**PTX06-ISB059 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



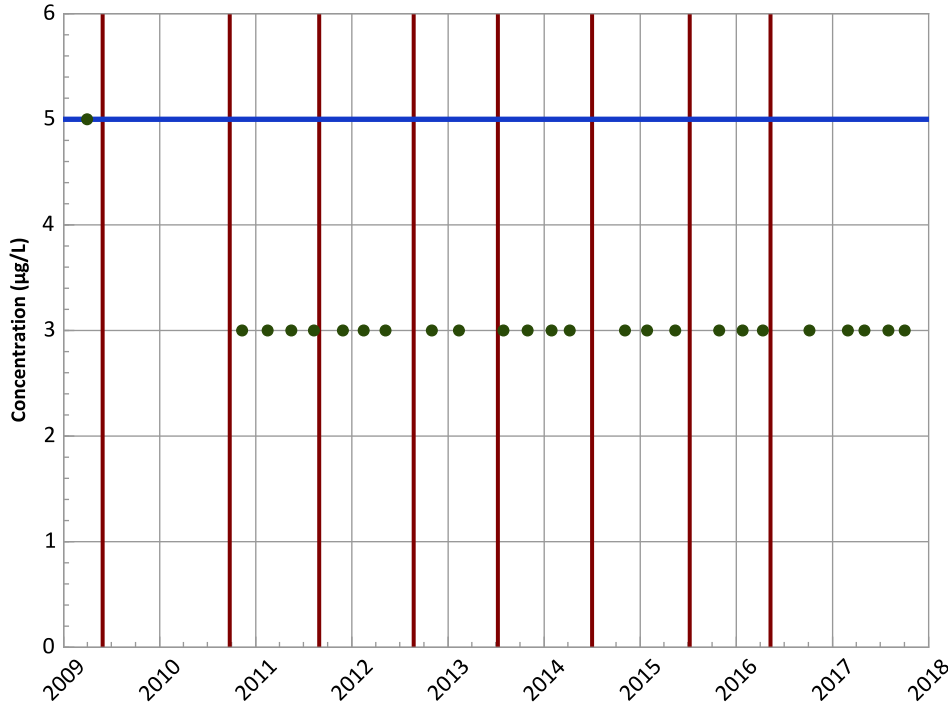
Query Date Range: 01/01/2009 to 12/31/2017
 Data Date Range: 03/31/2009 to 10/02/2017
 Analysis Date: 03/29/2018

Well Location



PTX06-ISB059 in Perched Aquifer
USDOE/NNSA Pantex Plant

Tetrachloroethylene (PCE) Trend



Concentration Trend

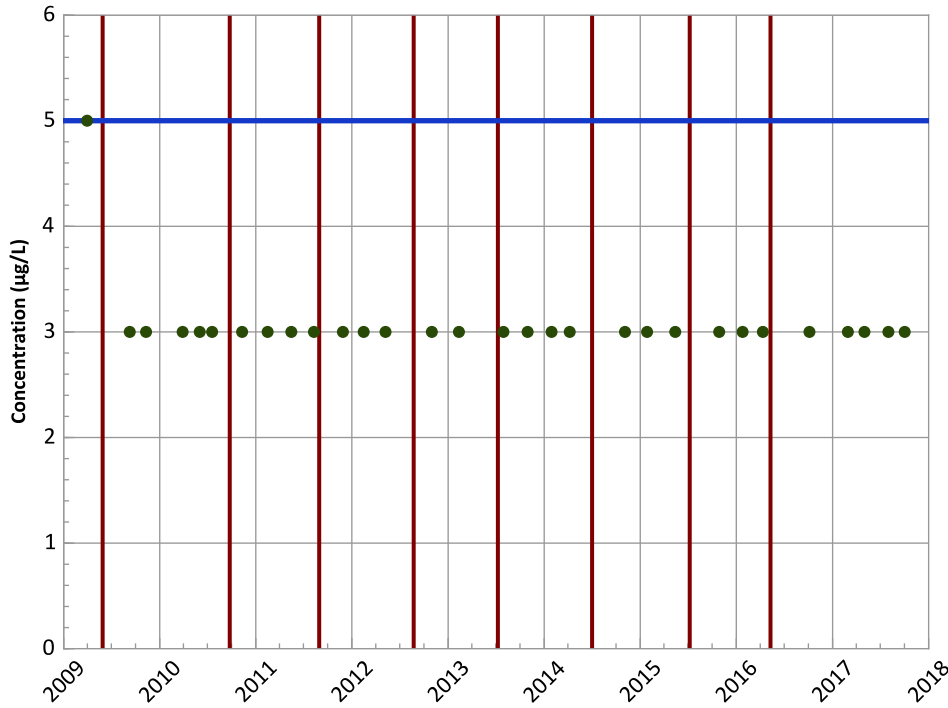
MAROS Mann-Kendall Method

All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method

All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

Trichloroethene Trend



Concentration Trend

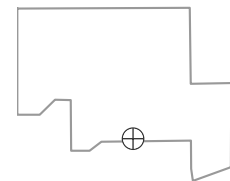
MAROS Mann-Kendall Method

All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method

All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

Well Location



Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 03/31/2009 to 10/02/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB059 in Perched Aquifer
USDOE/NNSA Pantex Plant

cis-1,2-Dichloroethene Trend



Concentration Trend

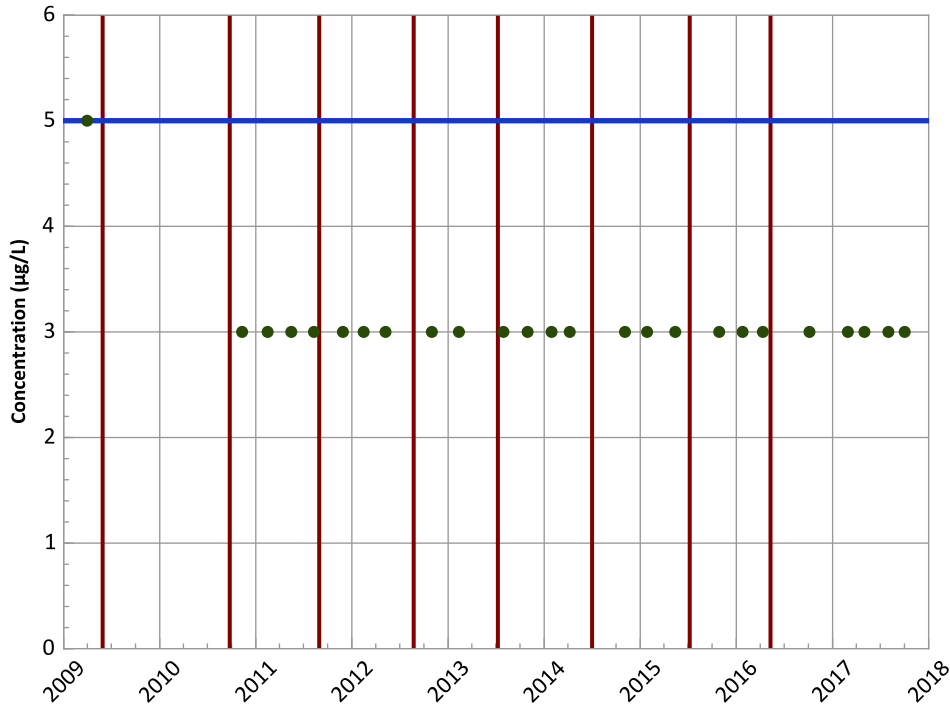
MAROS Mann-Kendall Method

All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method

All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

1,2-Dichloroethane Trend



Concentration Trend

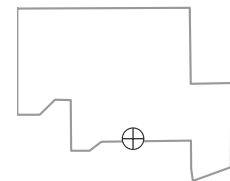
MAROS Mann-Kendall Method

All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method

All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

Well Location

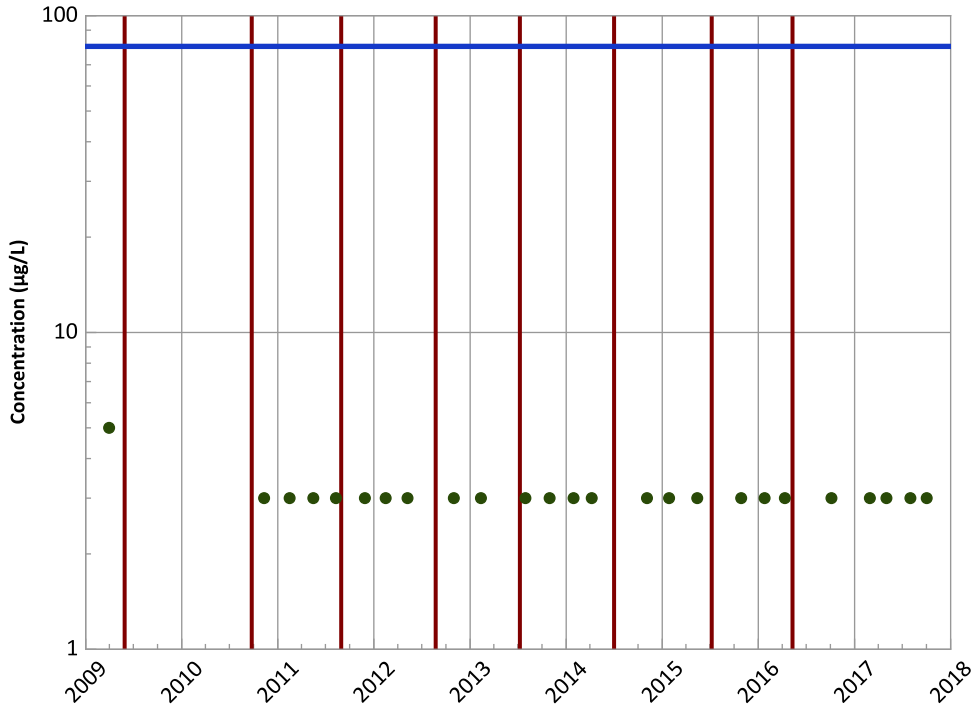


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 03/31/2009 to 10/02/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB059 in Perched Aquifer
USDOE/NNSA Pantex Plant

Chloroform Trend



Concentration Trend

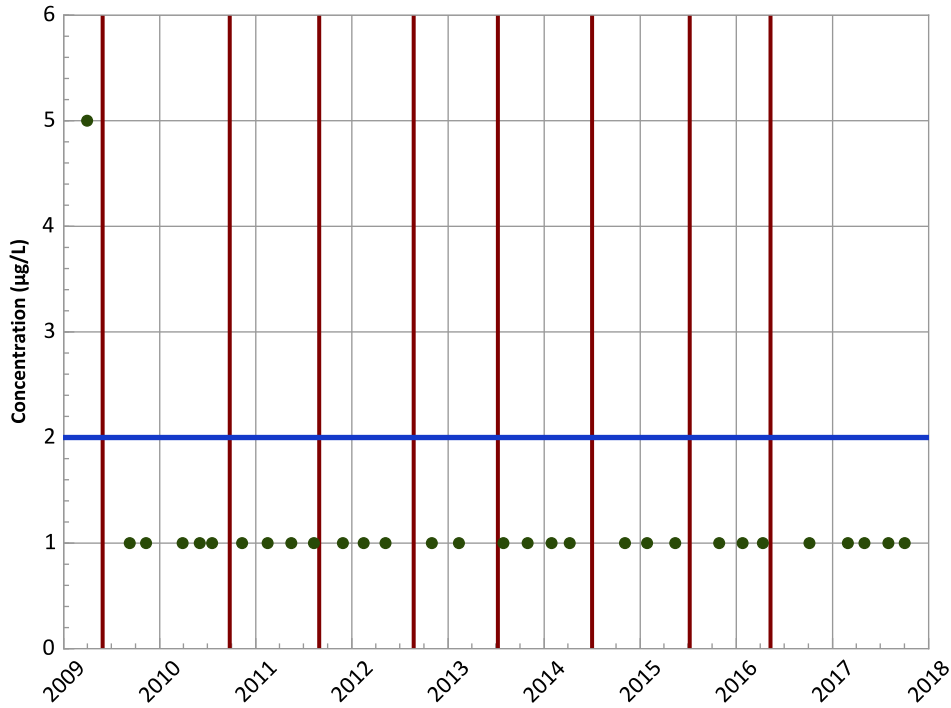
MAROS Mann-Kendall Method

All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method

All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

Vinyl Chloride Trend



Concentration Trend

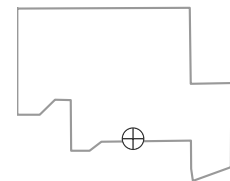
MAROS Mann-Kendall Method

All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method

All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

Well Location



Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 03/31/2009 to 10/02/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB059 in Perched Aquifer
USDOE/NNSA Pantex Plant

Perchlorate Trend

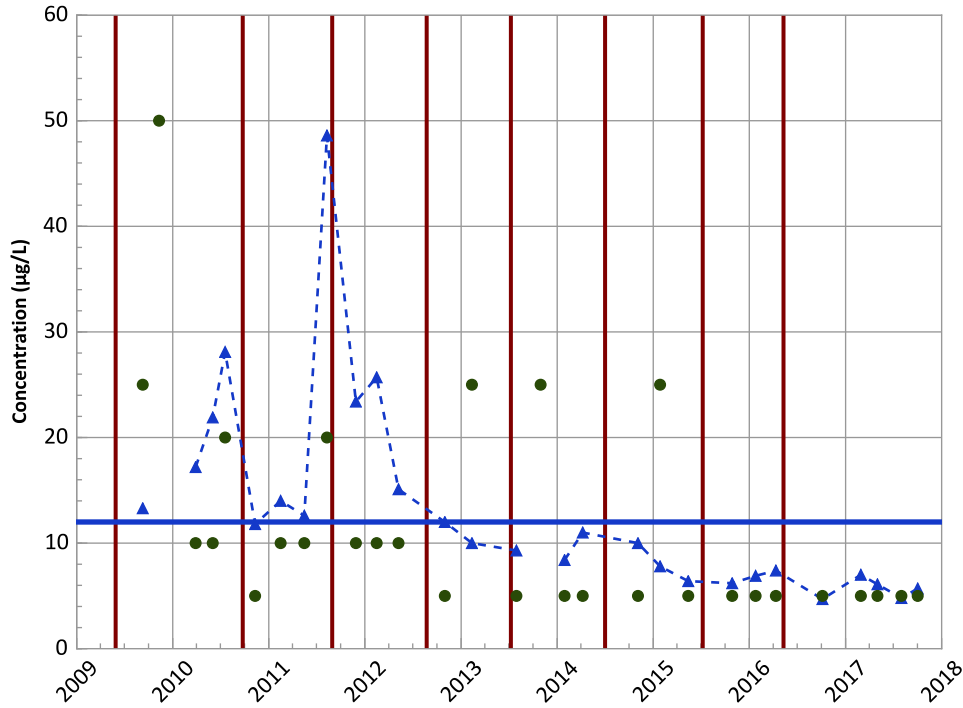


Concentration Trend

MAROS Mann-Kendall Method
All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method
All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
N/A (<4 Detections in Dataset)

Arsenic Trend



Concentration Trend

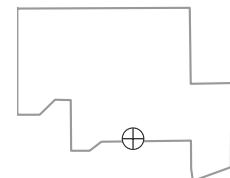
MAROS Mann-Kendall Method
All Data
Decreasing
2015 - 2017 Data:
Decreasing

MAROS Linear Regression Method
All Data
Decreasing
2015 - 2017 Data:
Stable

Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 03/31/2009 to 10/02/2017
Analysis Date: 03/29/2018

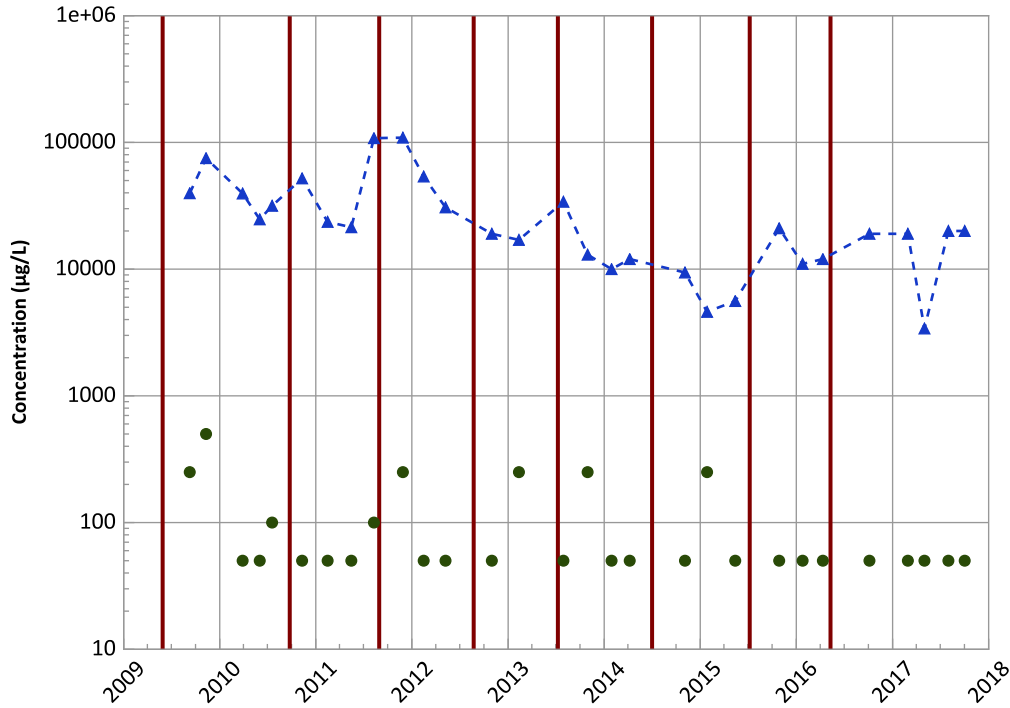
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

Well Location



PTX06-ISB059 in Perched Aquifer
USDOE/NNSA Pantex Plant

Iron Trend



Concentration Trend

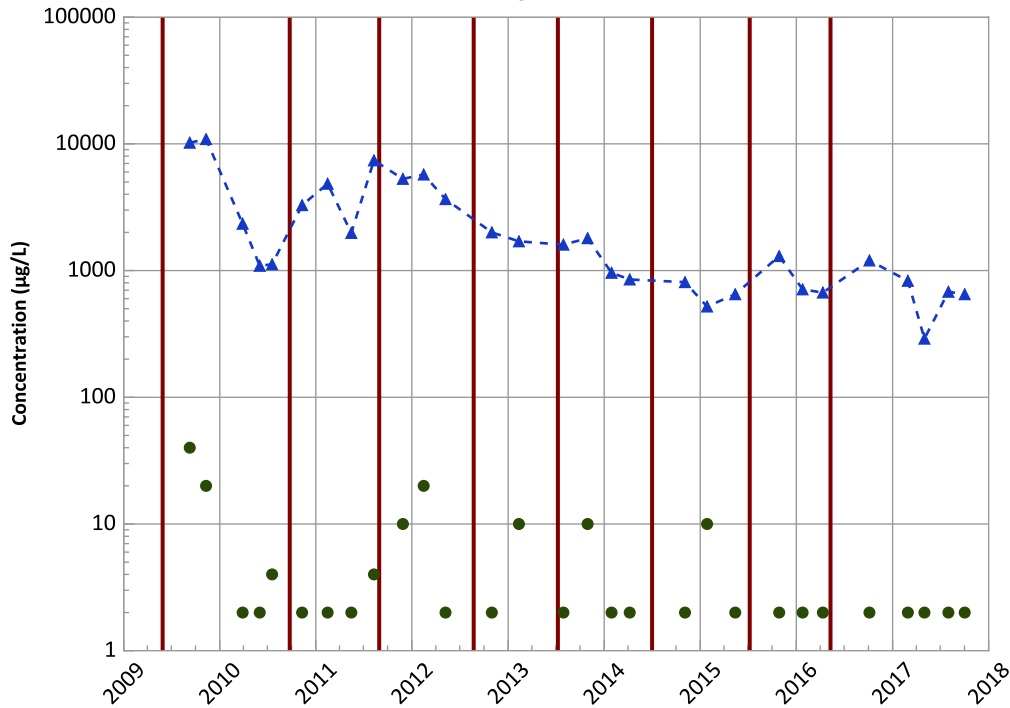
MAROS Mann-Kendall Method

All Data
Decreasing
2015 - 2017 Data:
No Trend

MAROS Linear Regression Method

All Data
Decreasing
2015 - 2017 Data:
No Trend

Manganese Trend



Concentration Trend

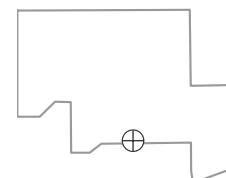
MAROS Mann-Kendall Method

All Data
Decreasing
2015 - 2017 Data:
Decreasing

MAROS Linear Regression Method

All Data
Decreasing
2015 - 2017 Data:
No Trend

Well Location

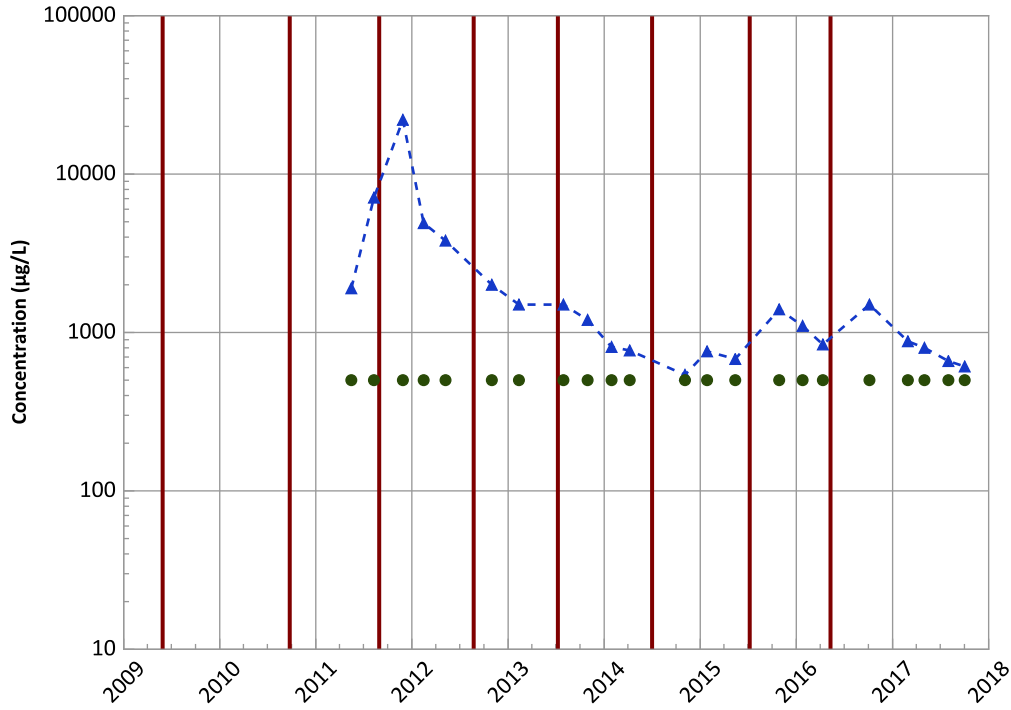


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 03/31/2009 to 10/02/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB059 in Perched Aquifer
USDOE/NNSA Pantex Plant

Divalent Manganese Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Decreasing

MAROS Linear Regression Method

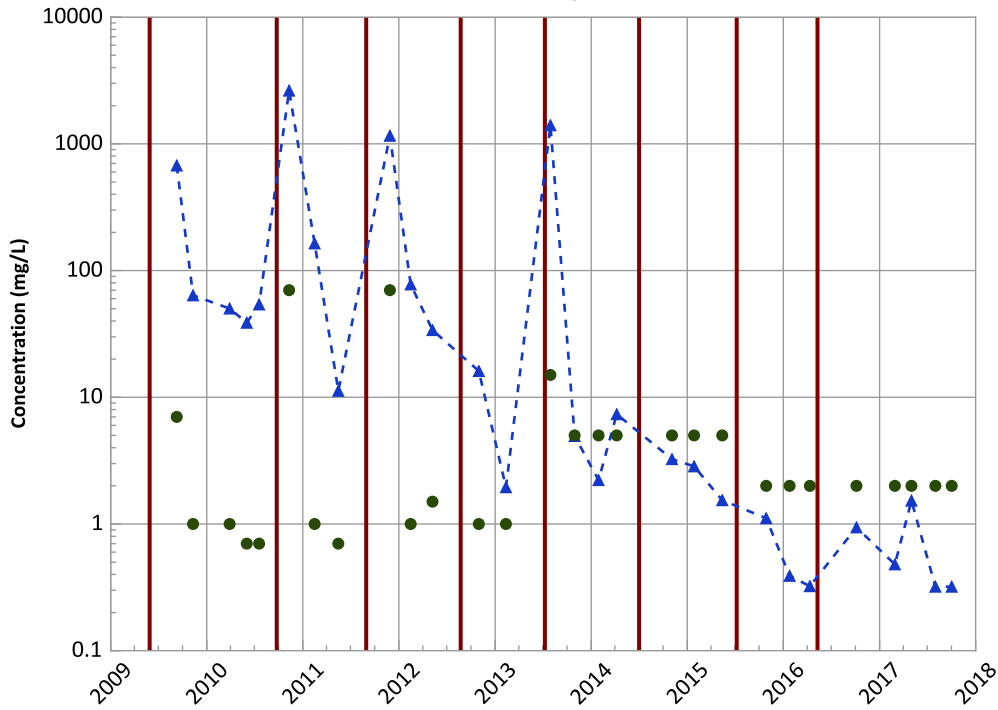
All Data

Decreasing

2015 - 2017 Data:

Decreasing

Total Volatile Fatty Acids Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Decreasing

MAROS Linear Regression Method

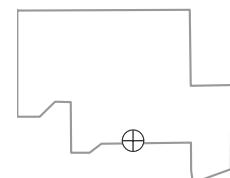
All Data

Decreasing

2015 - 2017 Data:

Stable

Well Location

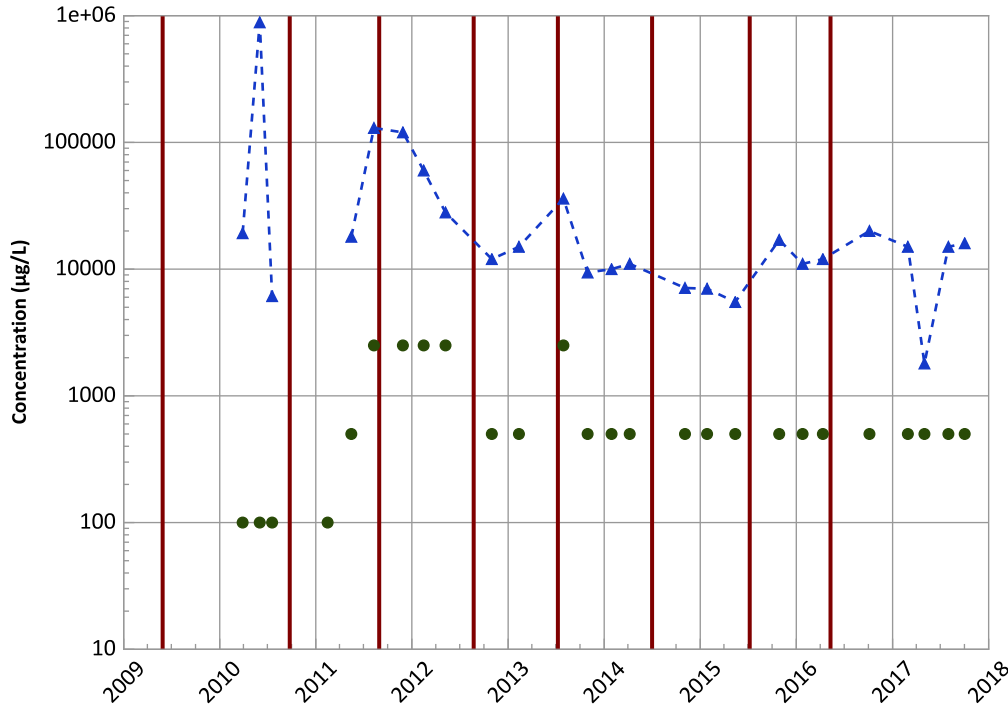


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 03/31/2009 to 10/02/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB059 in Perched Aquifer
USDOE/NNSA Pantex Plant

Ferrous Iron Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

No Trend

MAROS Linear Regression Method

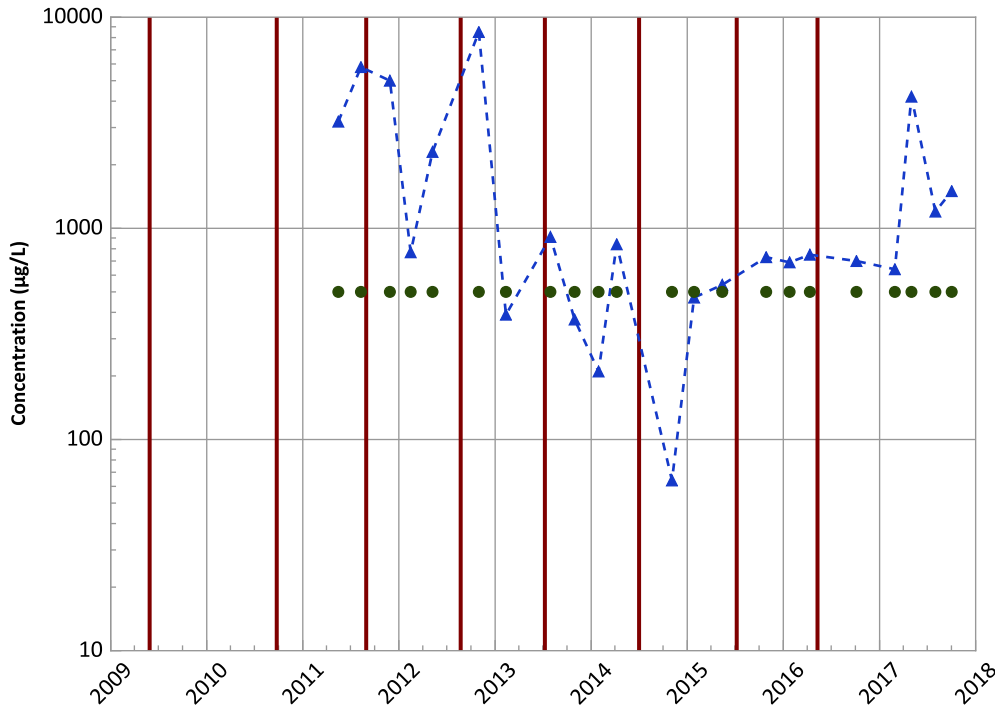
All Data

Decreasing

2015 - 2017 Data:

No Trend

Ferric Iron Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

No Trend

MAROS Linear Regression Method

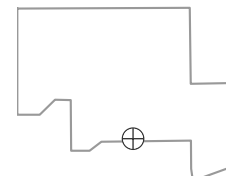
All Data

Probably Decreasing

2015 - 2017 Data:

No Trend

Well Location

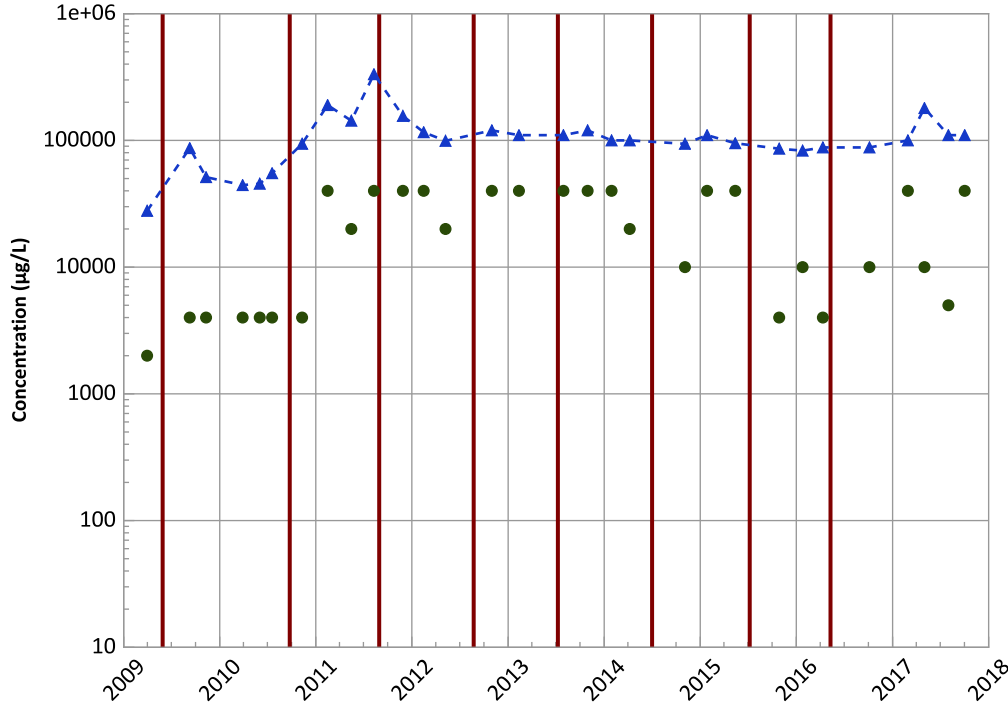


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 03/31/2009 to 10/02/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB059 in Perched Aquifer
USDOE/NNSA Pantex Plant

Chloride (as Cl) Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

No Trend

2015 - 2017 Data:

No Trend

MAROS Linear Regression Method

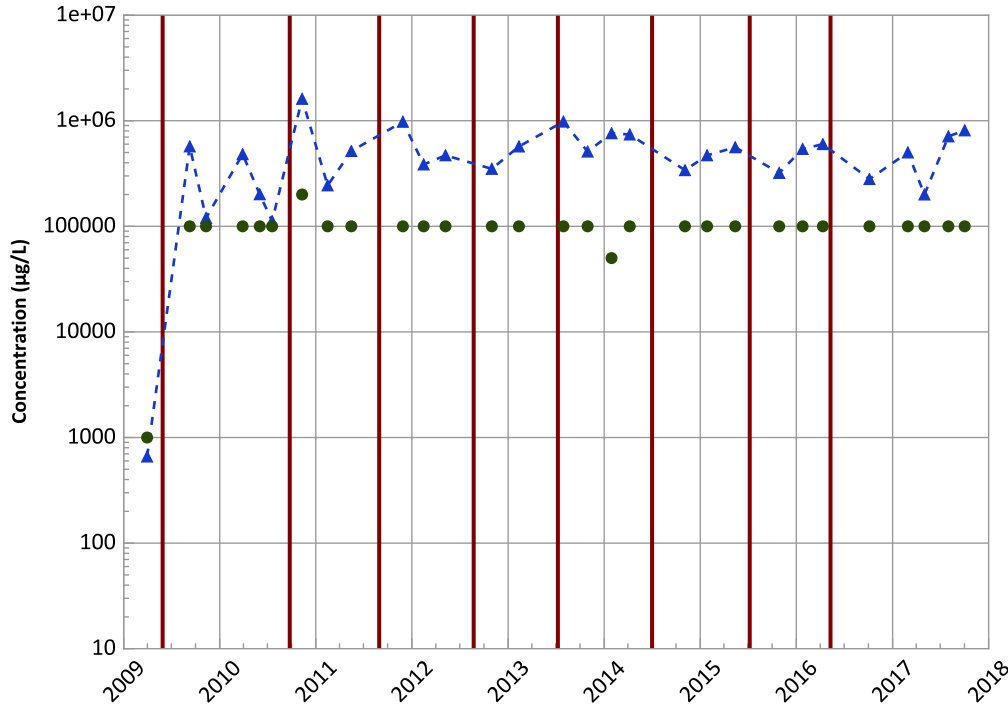
All Data

Increasing

2015 - 2017 Data:

No Trend

Total Organic Carbon Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

No Trend

2015 - 2017 Data:

No Trend

MAROS Linear Regression Method

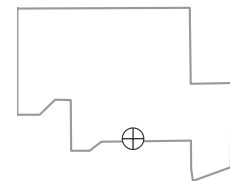
All Data

Increasing

2015 - 2017 Data:

No Trend

Well Location

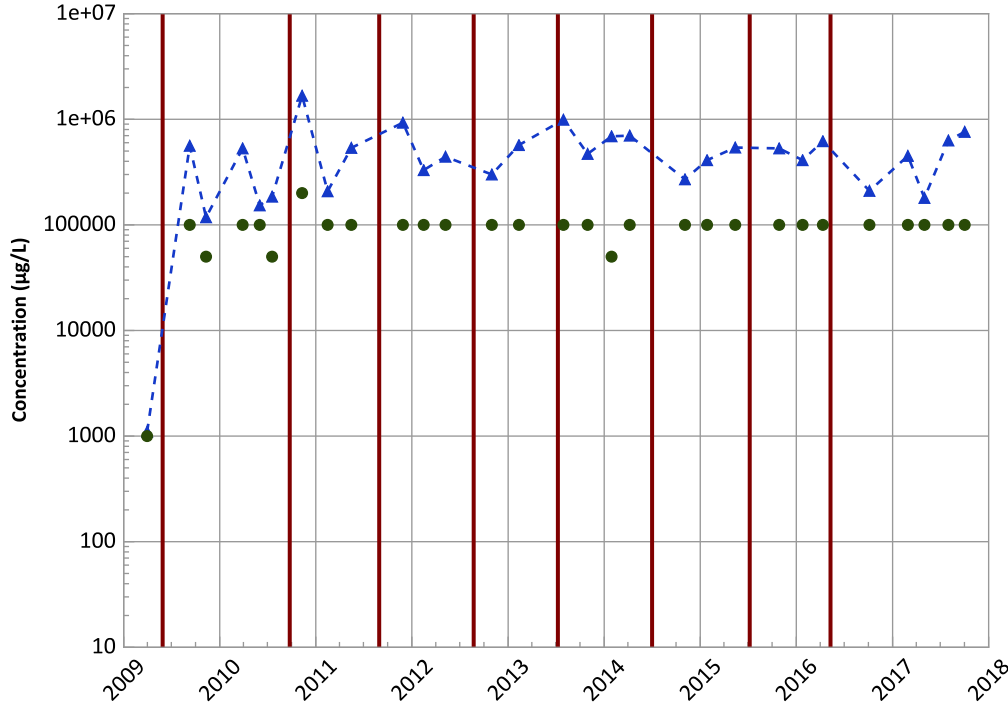


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 03/31/2009 to 10/02/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB059 in Perched Aquifer
USDOE/NNSA Pantex Plant

Dissolved Organic Carbon (DOC) Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Probably Increasing

2015 - 2017 Data:

No Trend

MAROS Linear Regression Method

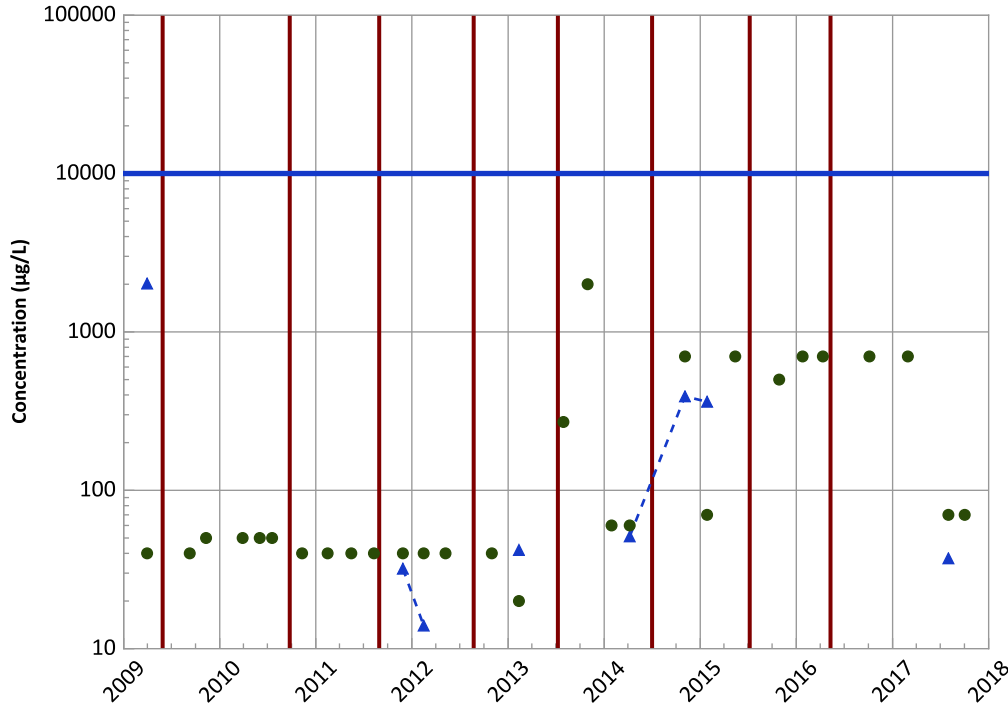
All Data

Increasing

2015 - 2017 Data:

No Trend

Nitrate as N Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Increasing

2015 - 2017 Data:

N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

All Data

No Trend

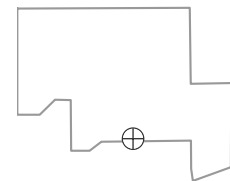
2015 - 2017 Data:

No Trend

Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 03/31/2009 to 10/02/2017
Analysis Date: 03/29/2018

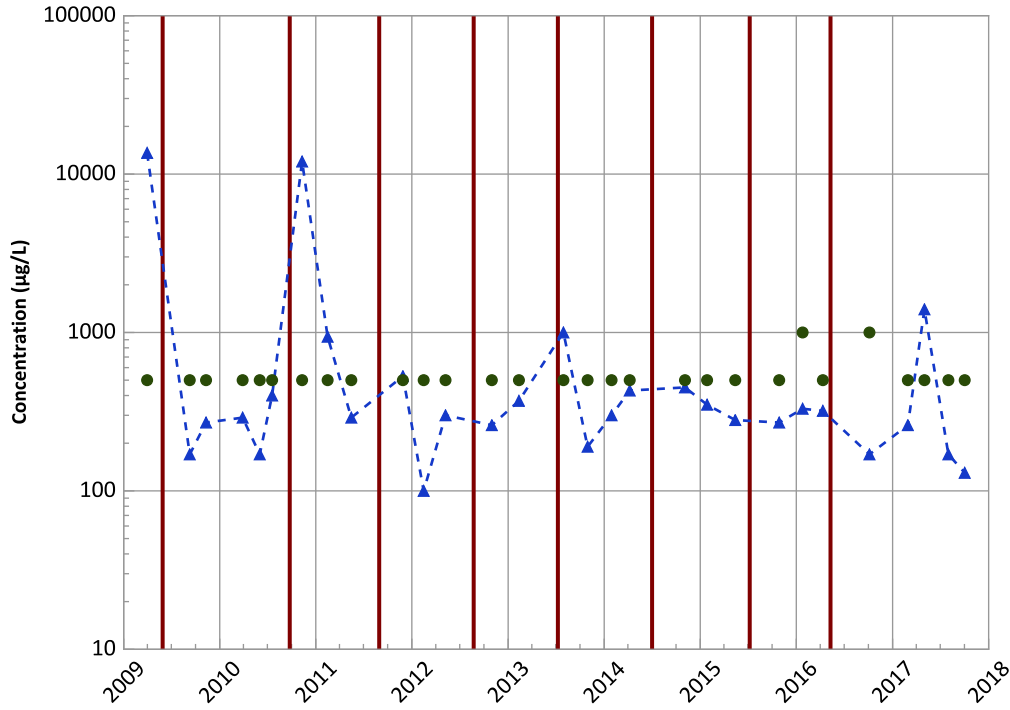
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

Well Location



PTX06-ISB059 in Perched Aquifer
USDOE/NNSA Pantex Plant

Sulfate (as SO4) Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Decreasing

MAROS Linear Regression Method

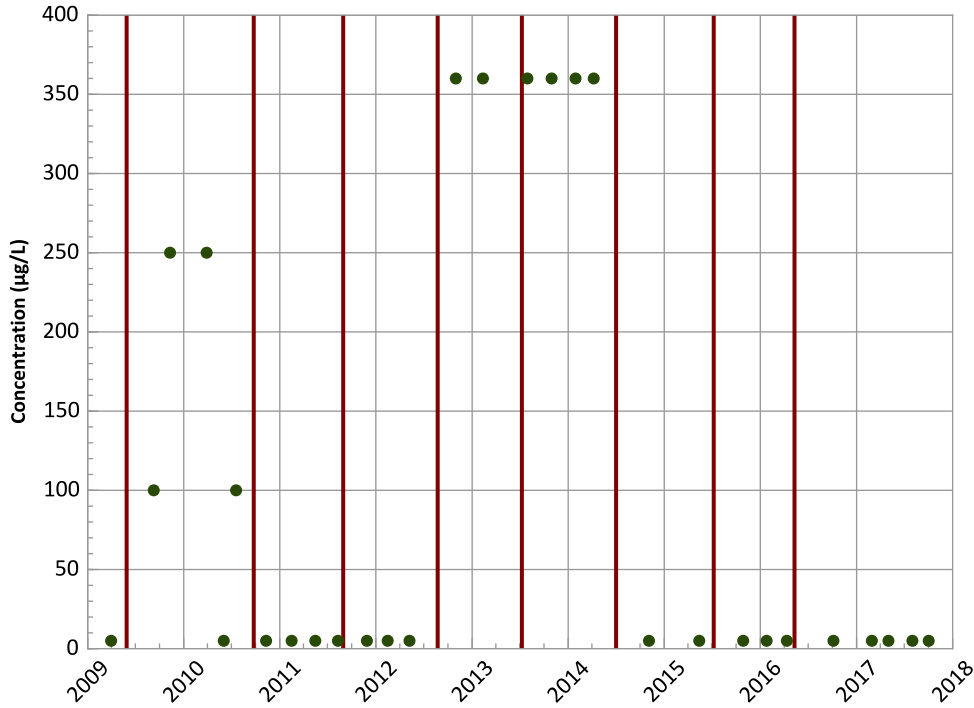
All Data

Probably Decreasing

2015 - 2017 Data:

No Trend

Ethene (Ethylene) Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

All Non-Detect

2015 - 2017 Data:

All Non-Detect

MAROS Linear Regression Method

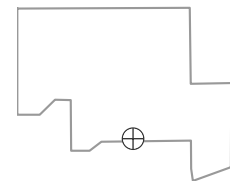
All Data

All Non-Detect

2015 - 2017 Data:

All Non-Detect

Well Location

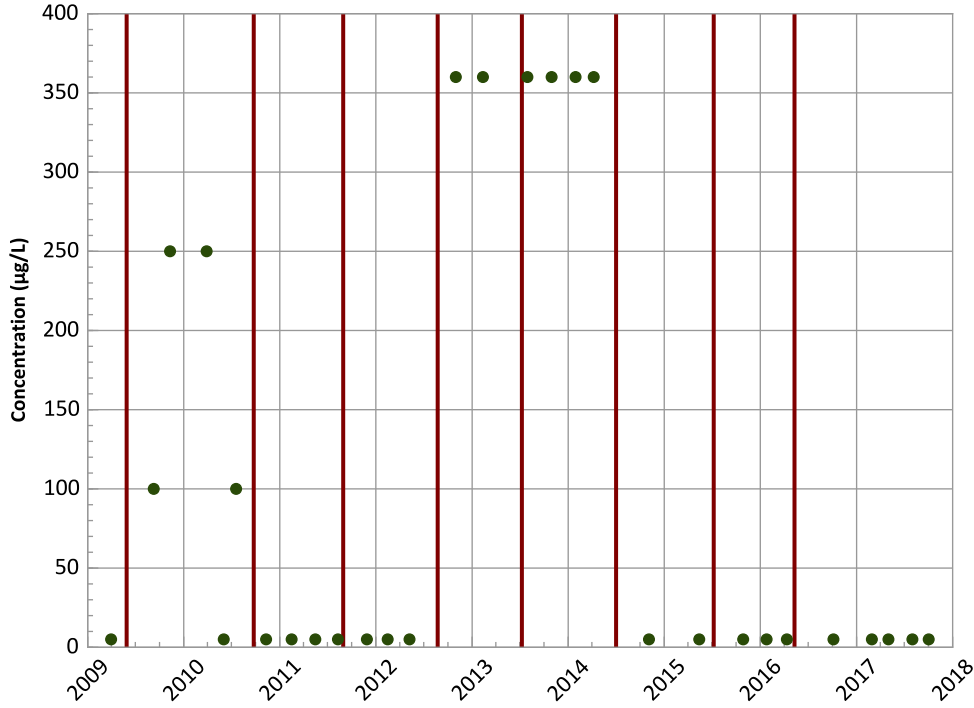


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 03/31/2009 to 10/02/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB059 in Perched Aquifer
USDOE/NNSA Pantex Plant

Ethane Trend



Concentration Trend

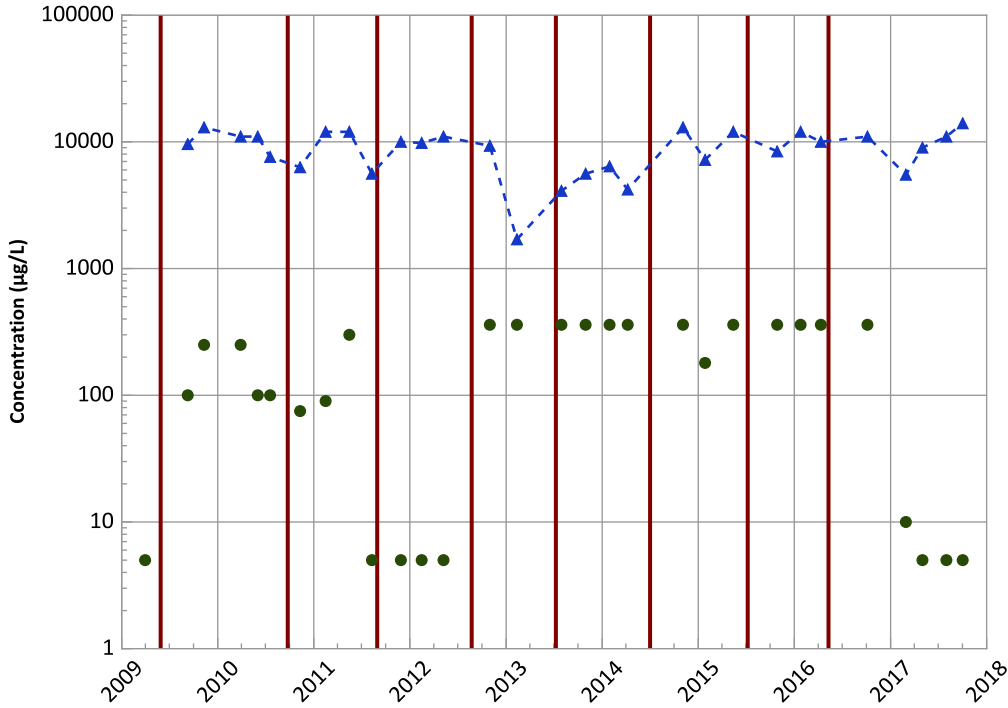
MAROS Mann-Kendall Method

All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method

All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

Methane Trend



Concentration Trend

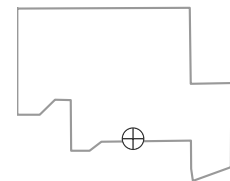
MAROS Mann-Kendall Method

All Data
No Trend
2015 - 2017 Data:
Increasing

MAROS Linear Regression Method

All Data
Increasing
2015 - 2017 Data:
Increasing

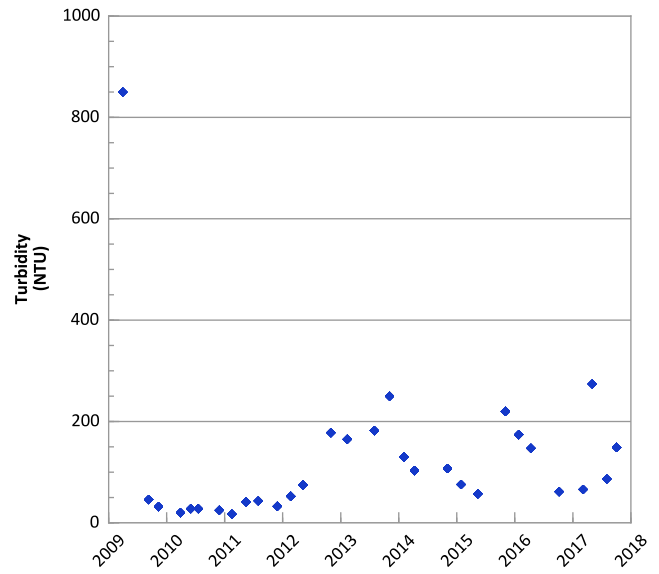
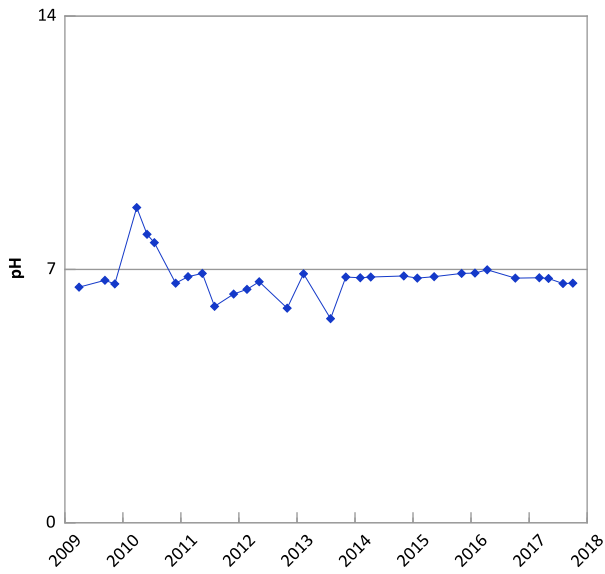
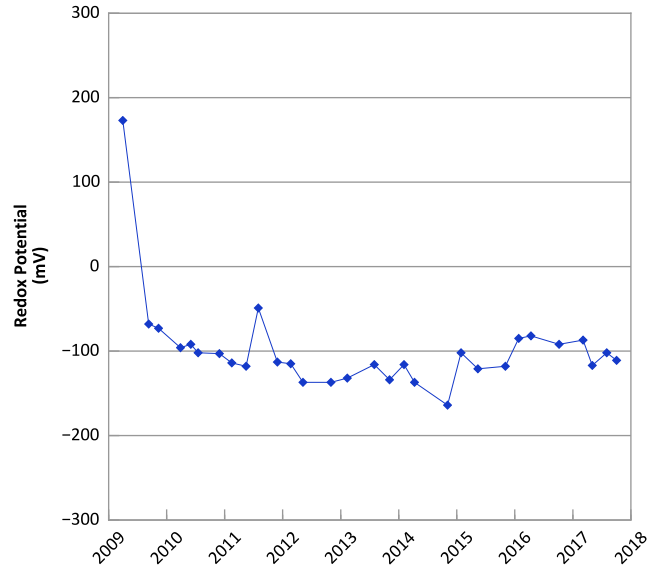
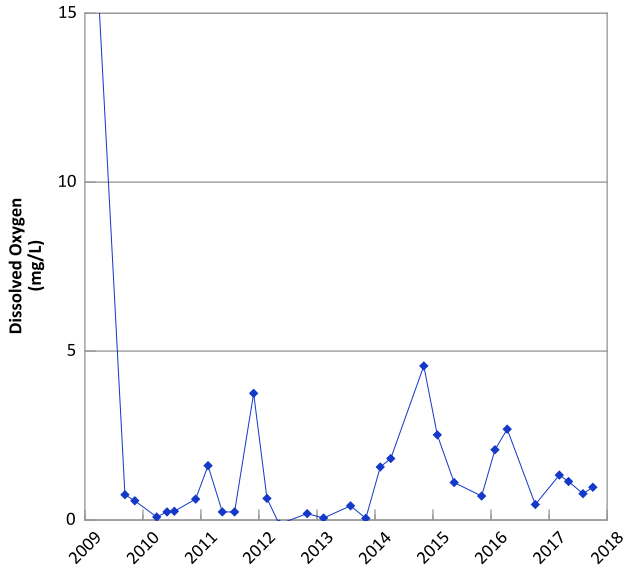
Well Location



Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 03/31/2009 to 10/02/2017
Analysis Date: 03/29/2018

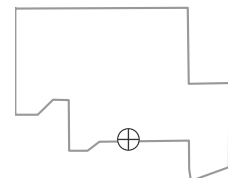
- ▲ Measured Value
- Sample Detection Limit
- Concentration Trend
- Groundwater Protection Standard
- Injection Dates

**PTX06-ISB063 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**

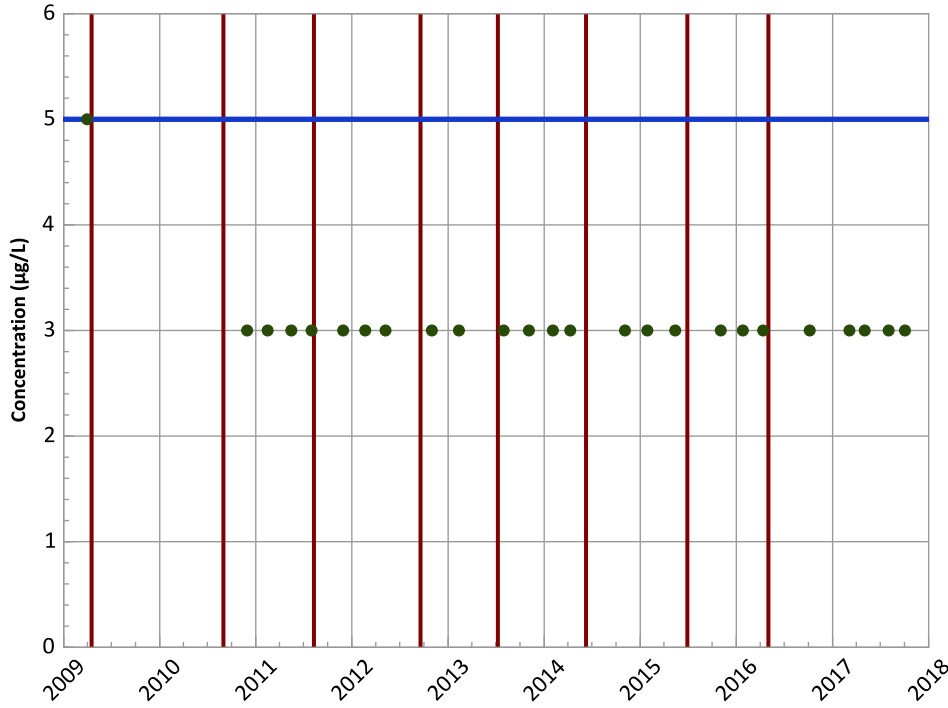


Query Date Range: 01/01/2009 to 12/31/2017
 Data Date Range: 03/31/2009 to 10/03/2017
 Analysis Date: 03/29/2018

Well Location



**PTX06-ISB063 in Perched Aquifer
USDOE/NNSA Pantex Plant
Tetrachloroethylene (PCE) Trend**



Concentration Trend

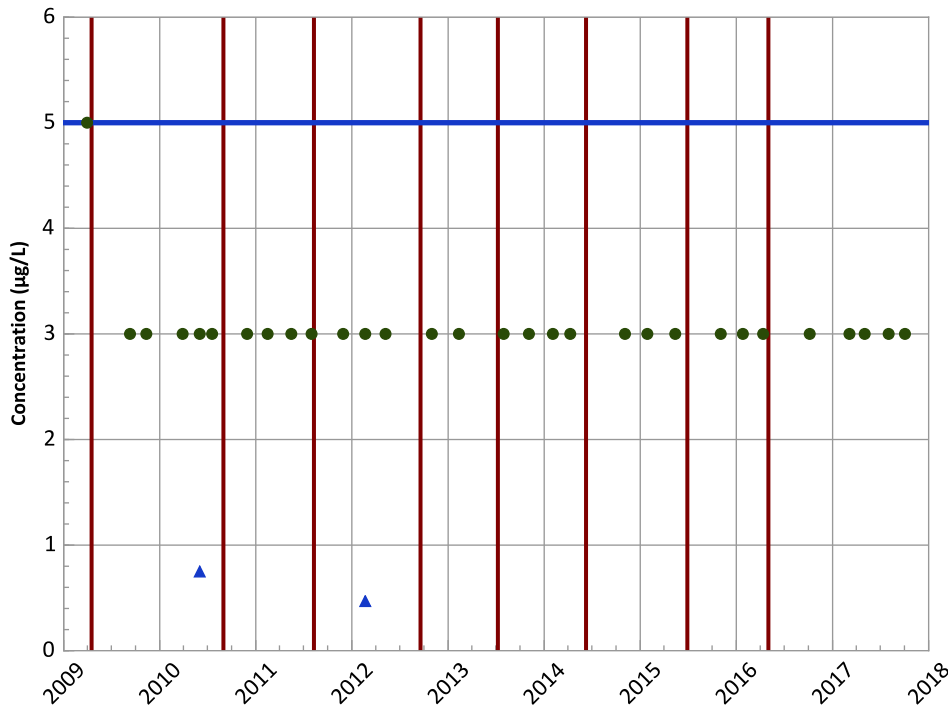
MAROS Mann-Kendall Method

All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method

All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

Trichloroethene Trend



Concentration Trend

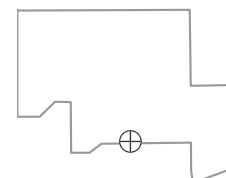
MAROS Mann-Kendall Method

All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method

All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
N/A (<4 Detections in Dataset)

Well Location

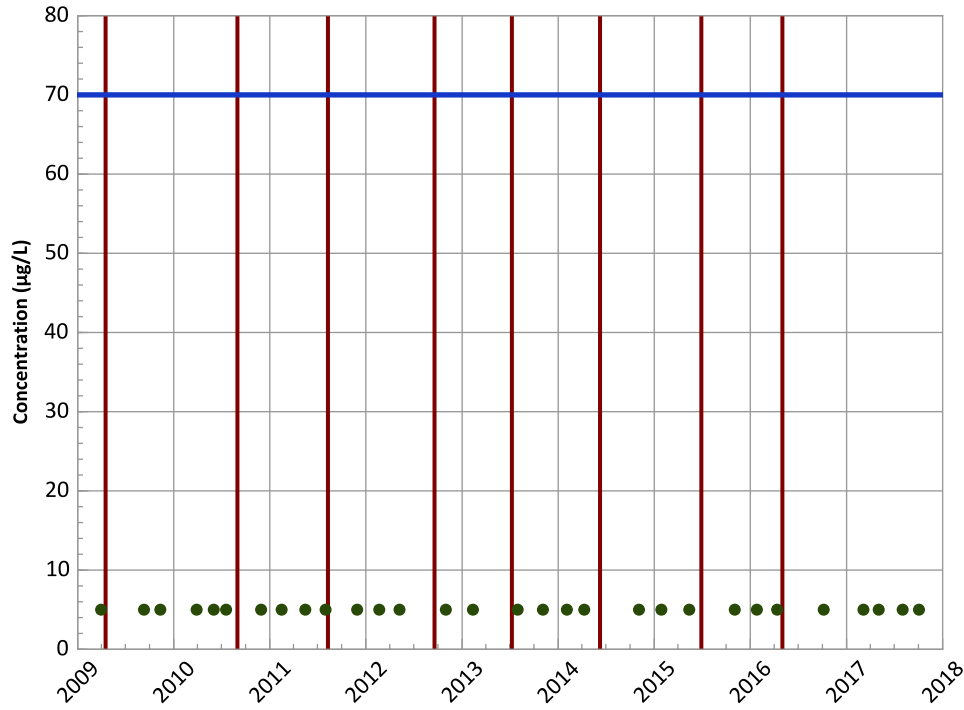


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 03/31/2009 to 10/03/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB063 in Perched Aquifer
USDOE/NNSA Pantex Plant

cis-1,2-Dichloroethene Trend



Concentration Trend

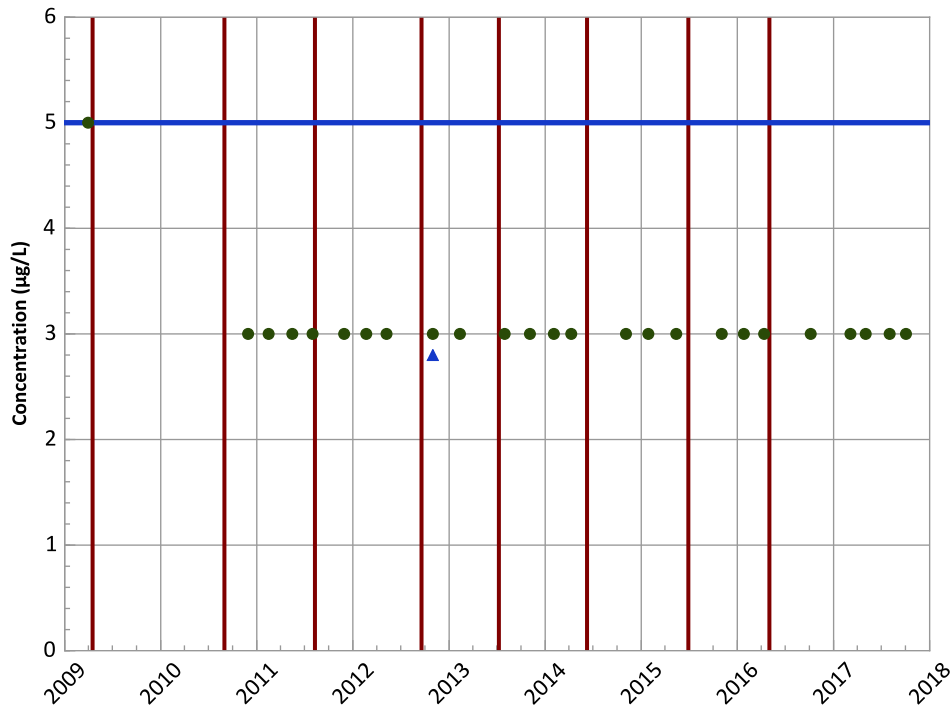
MAROS Mann-Kendall Method

All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method

All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

1,2-Dichloroethane Trend



Concentration Trend

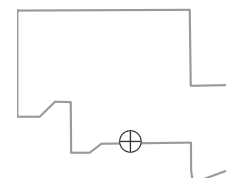
MAROS Mann-Kendall Method

All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method

All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
N/A (<4 Detections in Dataset)

Well Location

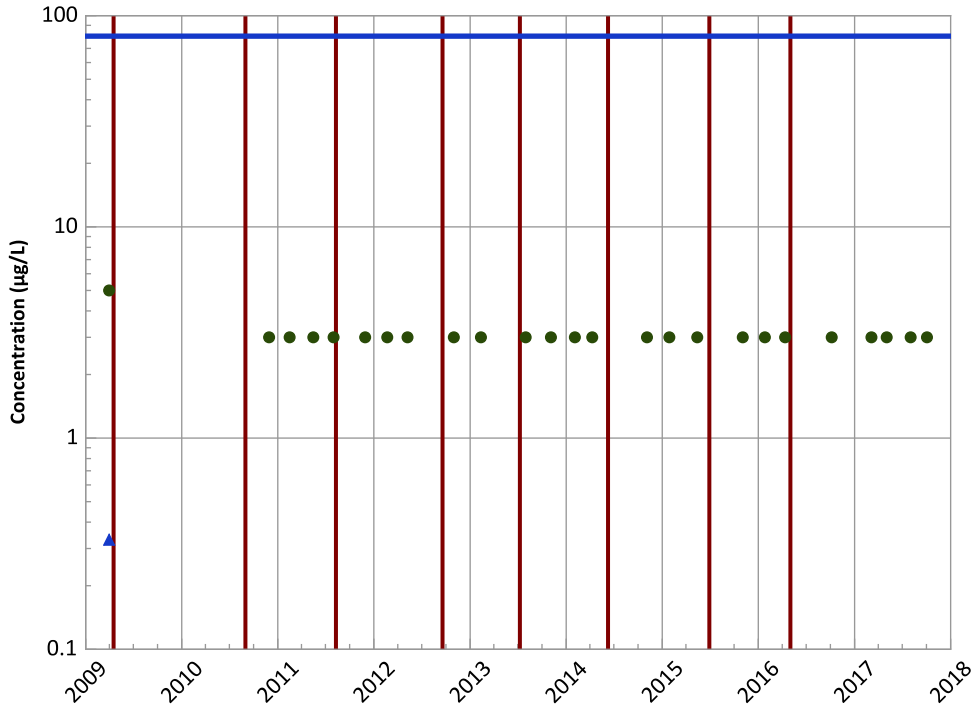


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 03/31/2009 to 10/03/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB063 in Perched Aquifer
USDOE/NNSA Pantex Plant

Chloroform Trend

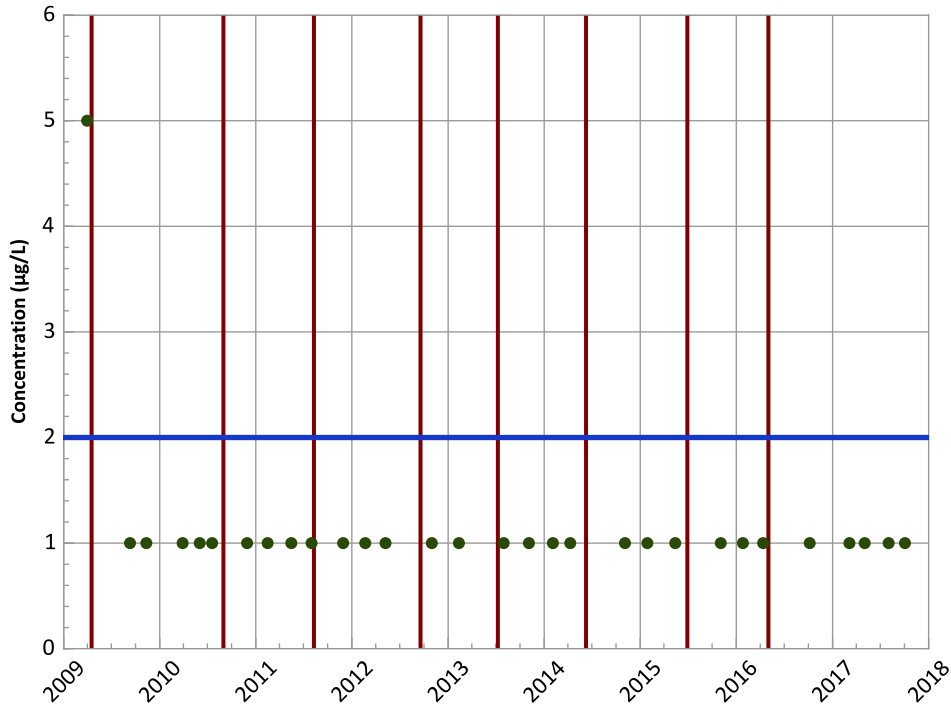


Concentration Trend

MAROS Mann-Kendall Method
All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method
All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
N/A (<4 Detections in Dataset)

Vinyl Chloride Trend

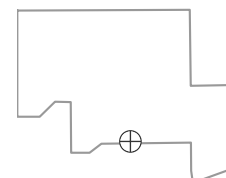


Concentration Trend

MAROS Mann-Kendall Method
All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method
All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

Well Location

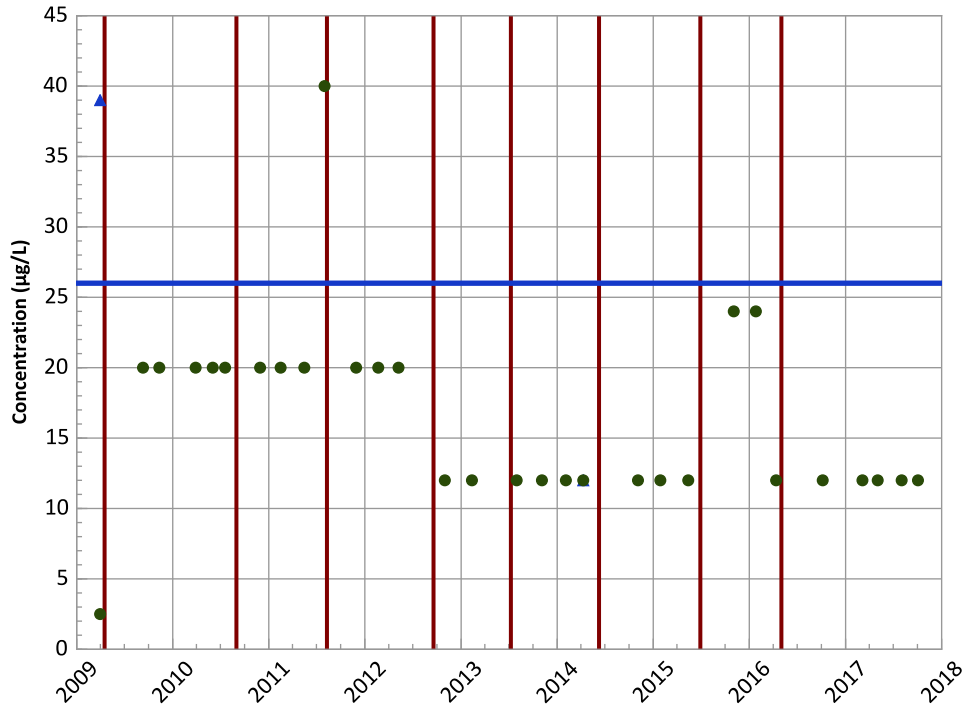


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 03/31/2009 to 10/03/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB063 in Perched Aquifer
USDOE/NNSA Pantex Plant

Perchlorate Trend

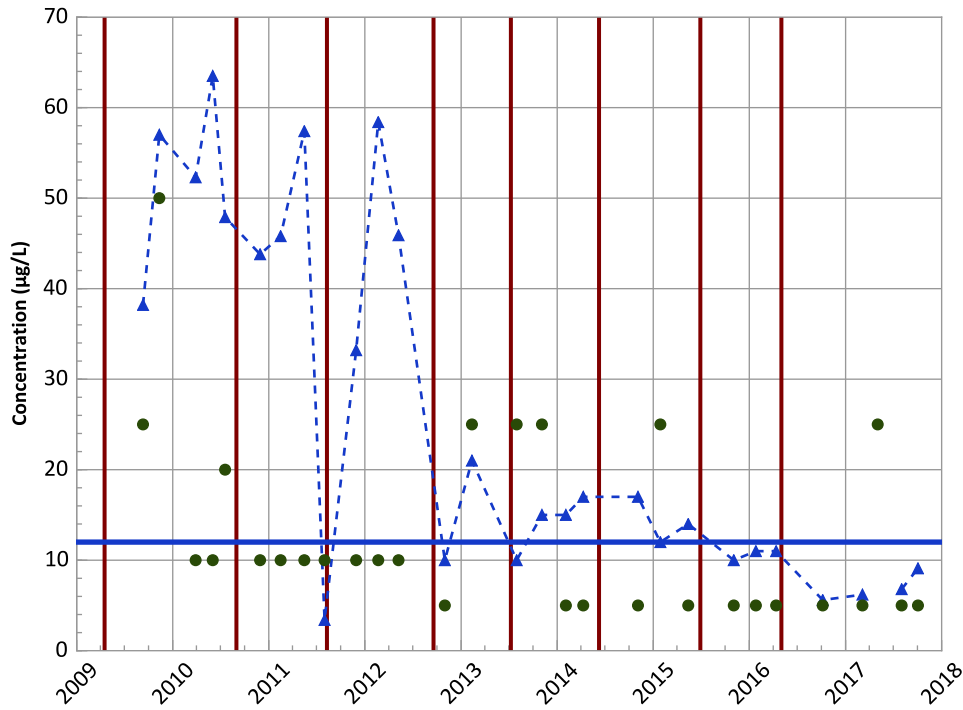


Concentration Trend

MAROS Mann-Kendall Method
All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method
All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
N/A (<4 Detections in Dataset)

Arsenic Trend

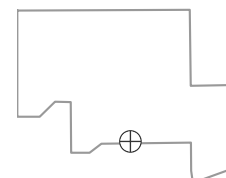


Concentration Trend

MAROS Mann-Kendall Method
All Data
Decreasing
2015 - 2017 Data:
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method
All Data
Decreasing
2015 - 2017 Data:
Increasing

Well Location

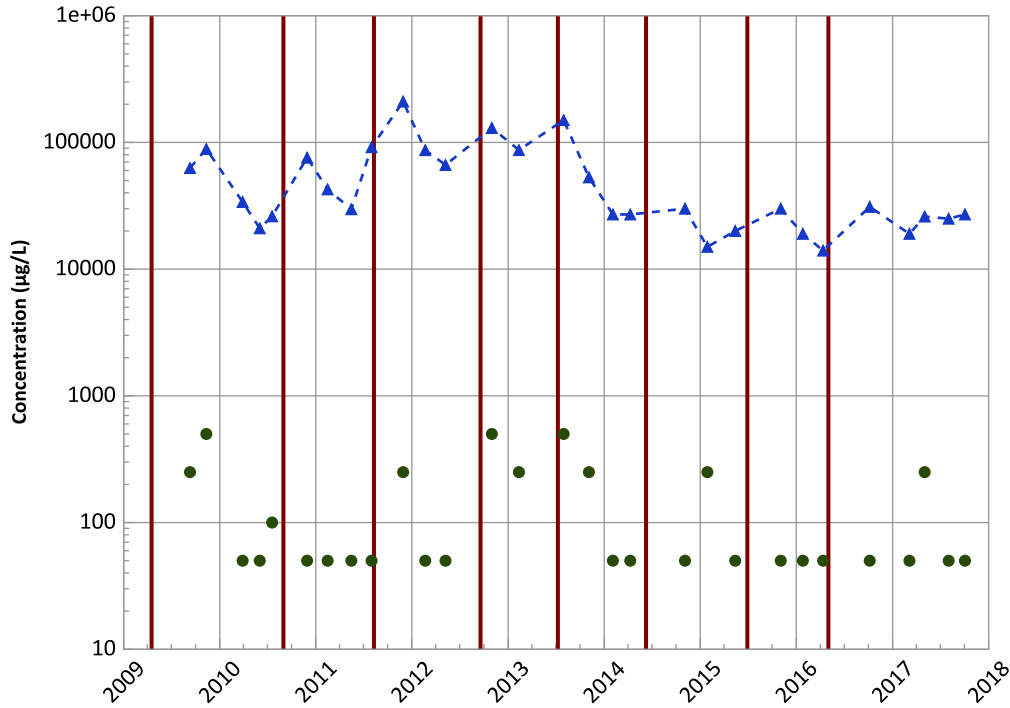


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 03/31/2009 to 10/03/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB063 in Perched Aquifer
USDOE/NNSA Pantex Plant

Iron Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

No Trend

MAROS Linear Regression Method

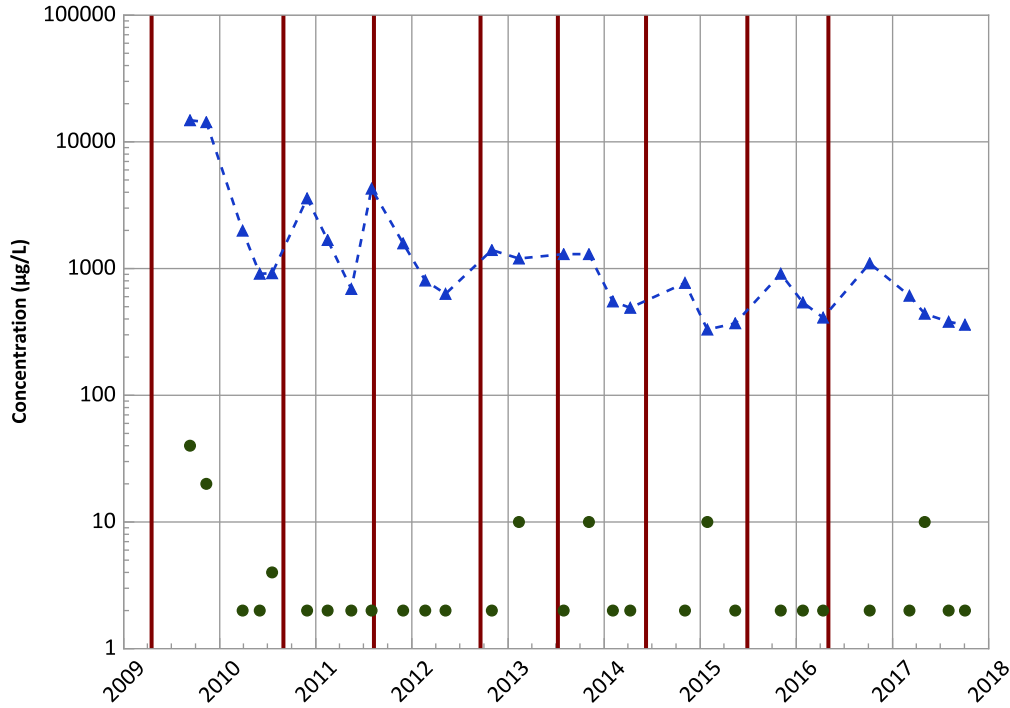
All Data

Decreasing

2015 - 2017 Data:

No Trend

Manganese Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Decreasing

MAROS Linear Regression Method

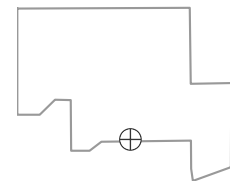
All Data

Decreasing

2015 - 2017 Data:

Decreasing

Well Location

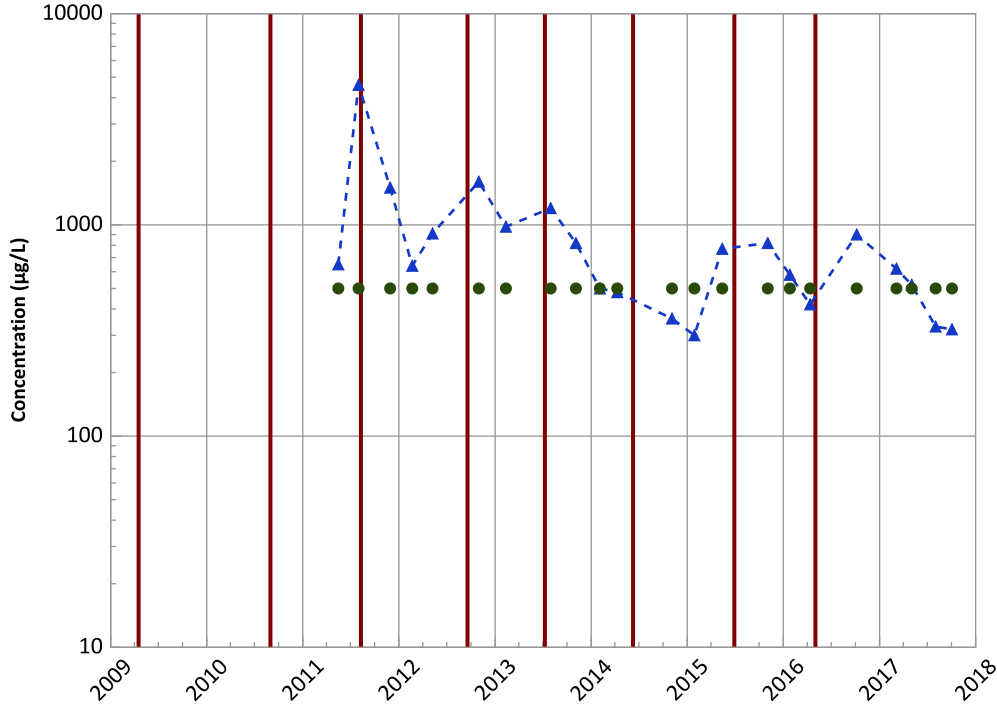


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 03/31/2009 to 10/03/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB063 in Perched Aquifer
USDOE/NNSA Pantex Plant

Divalent Manganese Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Decreasing

MAROS Linear Regression Method

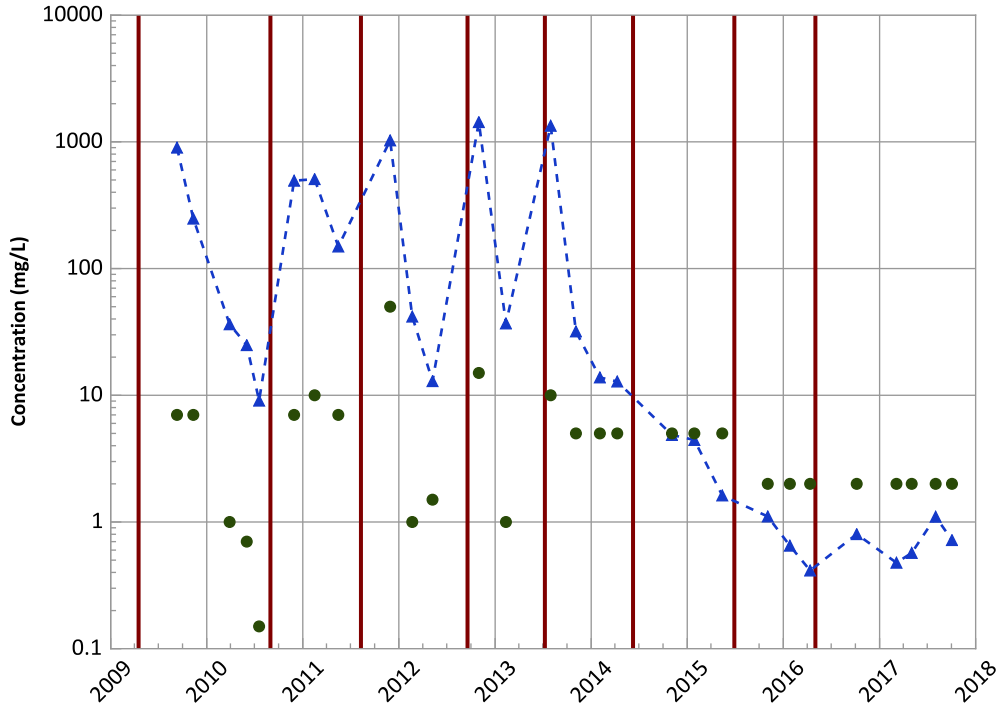
All Data

Decreasing

2015 - 2017 Data:

Decreasing

Total Volatile Fatty Acids Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

No Trend

MAROS Linear Regression Method

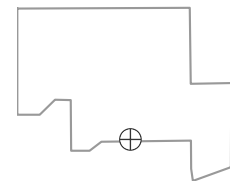
All Data

Decreasing

2015 - 2017 Data:

No Trend

Well Location

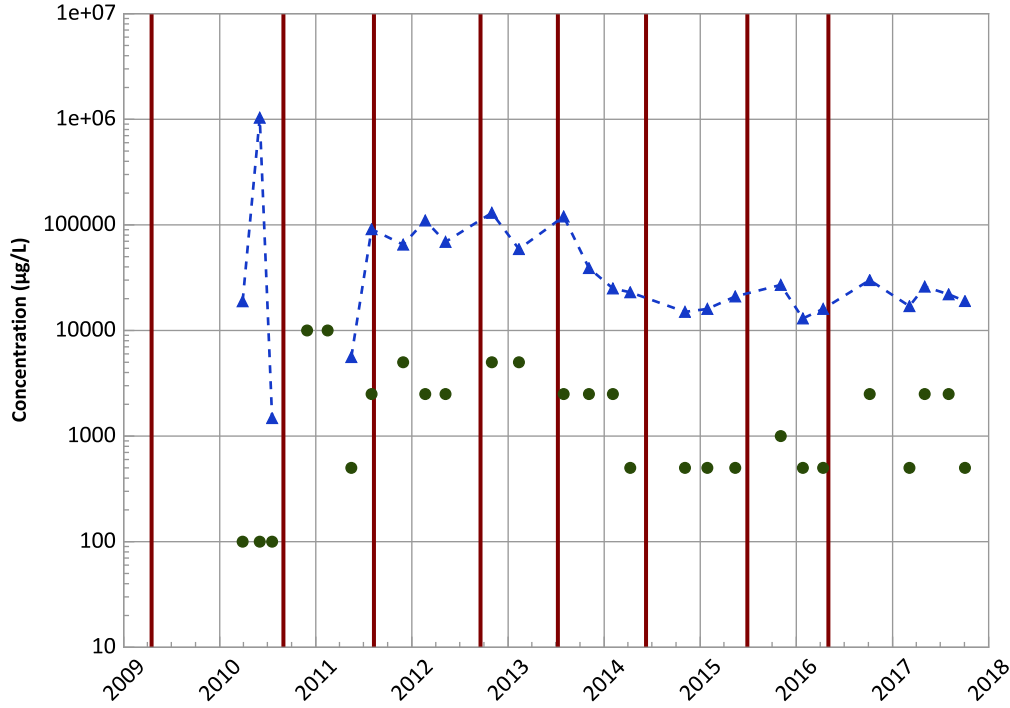


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 03/31/2009 to 10/03/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB063 in Perched Aquifer
USDOE/NNSA Pantex Plant

Ferrous Iron Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Stable

MAROS Linear Regression Method

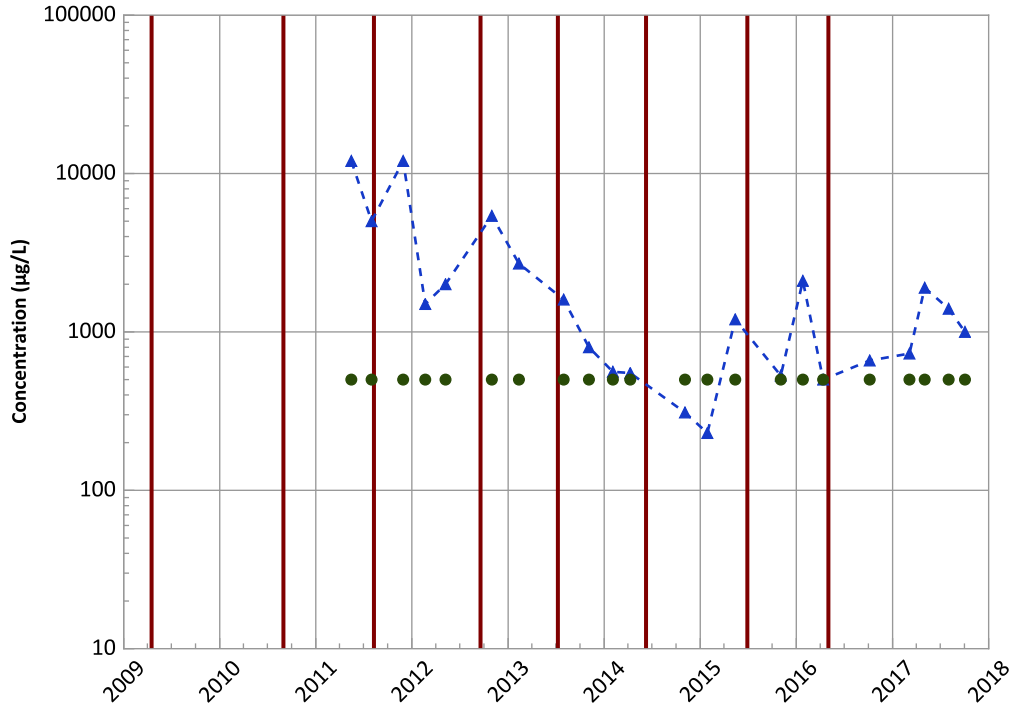
All Data

No Trend

2015 - 2017 Data:

Stable

Ferric Iron Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Stable

MAROS Linear Regression Method

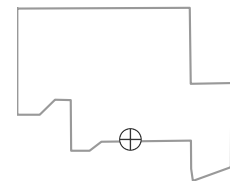
All Data

Decreasing

2015 - 2017 Data:

No Trend

Well Location

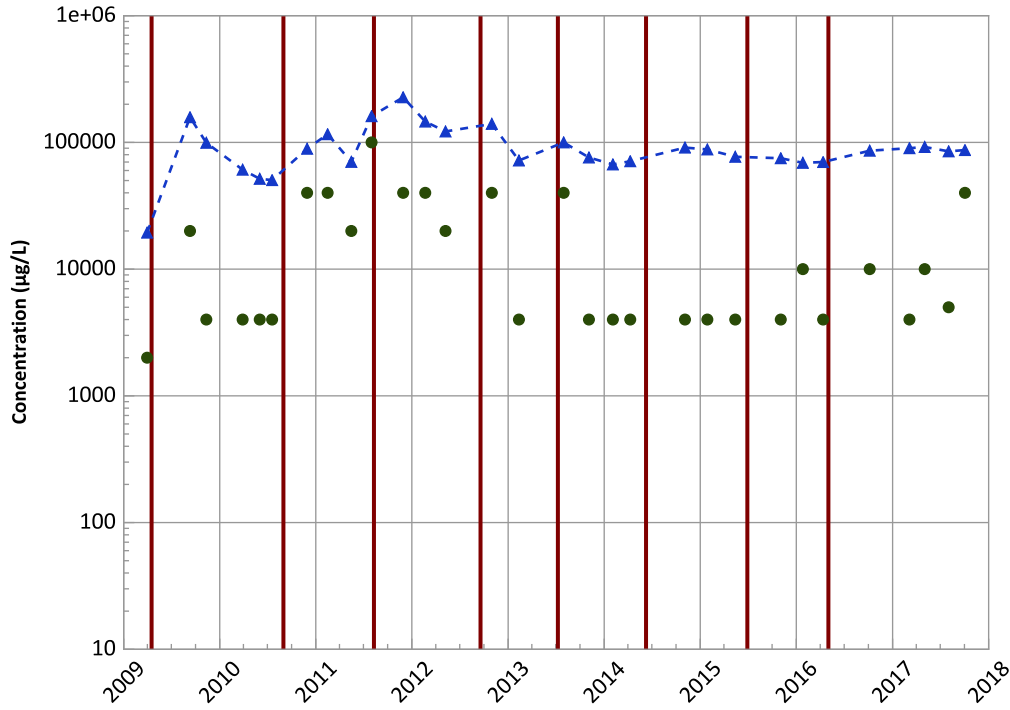


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 03/31/2009 to 10/03/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB063 in Perched Aquifer
USDOE/NNSA Pantex Plant

Chloride (as Cl) Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Decreasing

MAROS Linear Regression Method

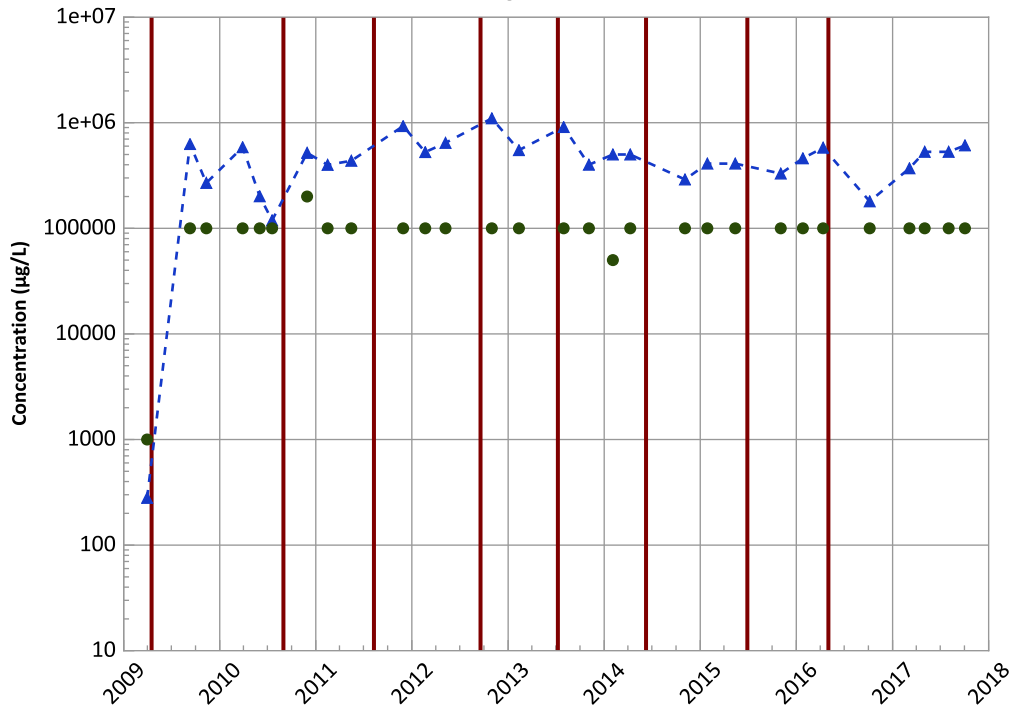
All Data

No Trend

2015 - 2017 Data:

Stable

Total Organic Carbon Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

No Trend

2015 - 2017 Data:

No Trend

MAROS Linear Regression Method

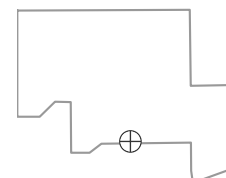
All Data

Probably Increasing

2015 - 2017 Data:

Increasing

Well Location

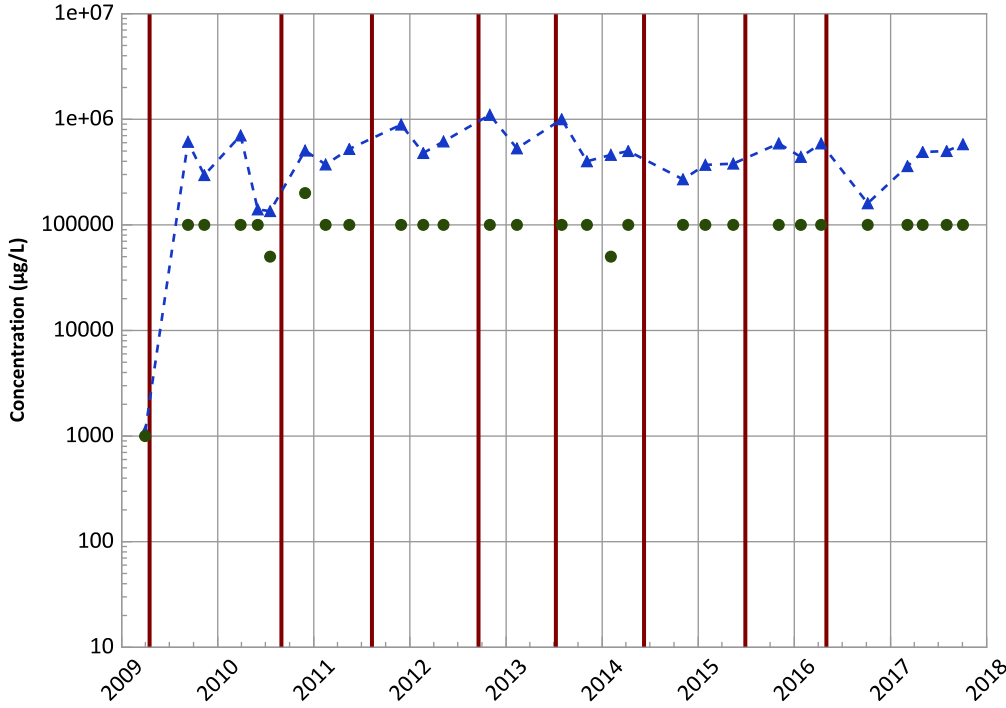


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 03/31/2009 to 10/03/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB063 in Perched Aquifer
USDOE/NNSA Pantex Plant

Dissolved Organic Carbon (DOC) Trend



Concentration Trend

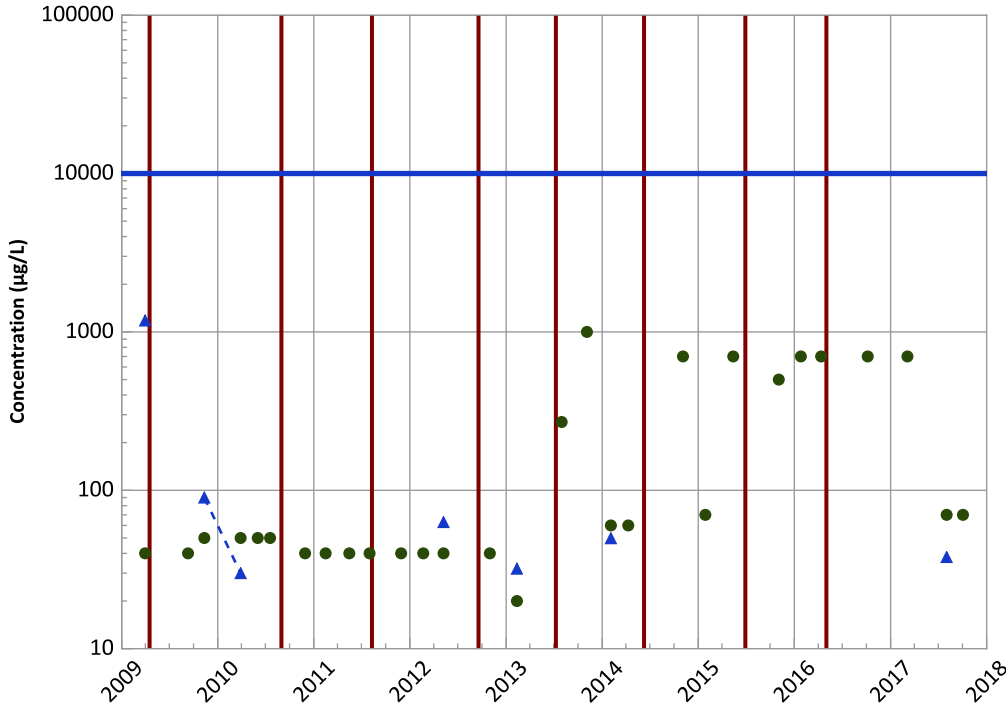
MAROS Mann-Kendall Method

All Data
No Trend
2015 - 2017 Data:
Increasing

MAROS Linear Regression Method

All Data
Probably Increasing
2015 - 2017 Data:
Increasing

Nitrate as N Trend



Concentration Trend

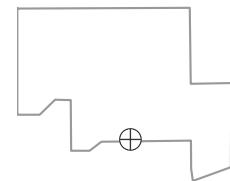
MAROS Mann-Kendall Method

All Data
Increasing
2015 - 2017 Data:
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

All Data
No Trend
2015 - 2017 Data:
Stable

Well Location

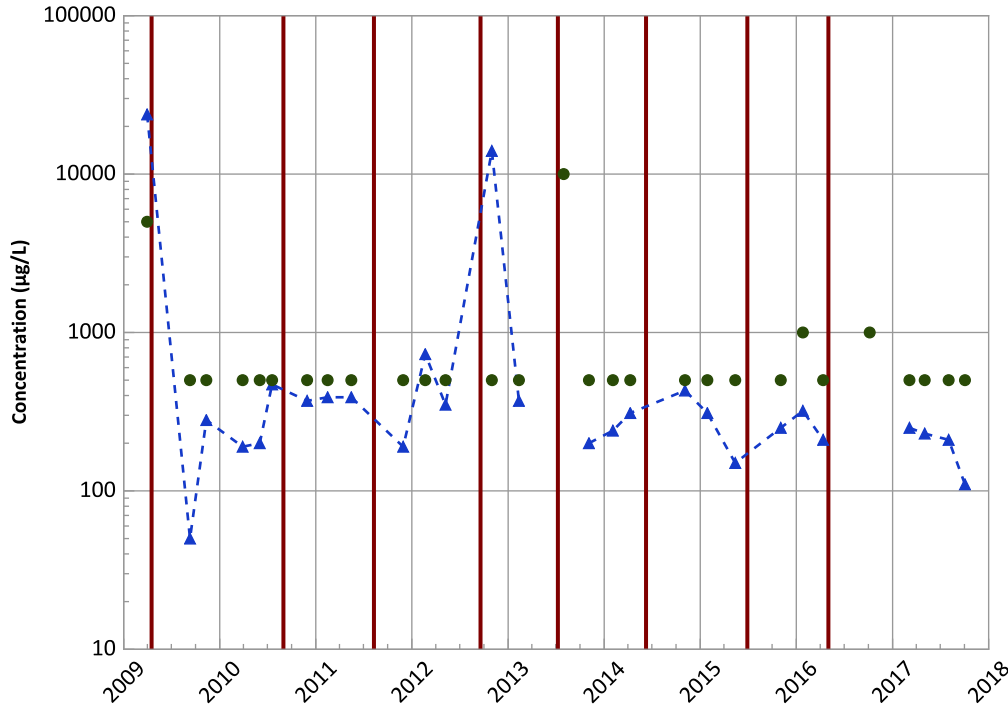


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 03/31/2009 to 10/03/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB063 in Perched Aquifer
USDOE/NNSA Pantex Plant

Sulfate (as SO4) Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Decreasing

MAROS Linear Regression Method

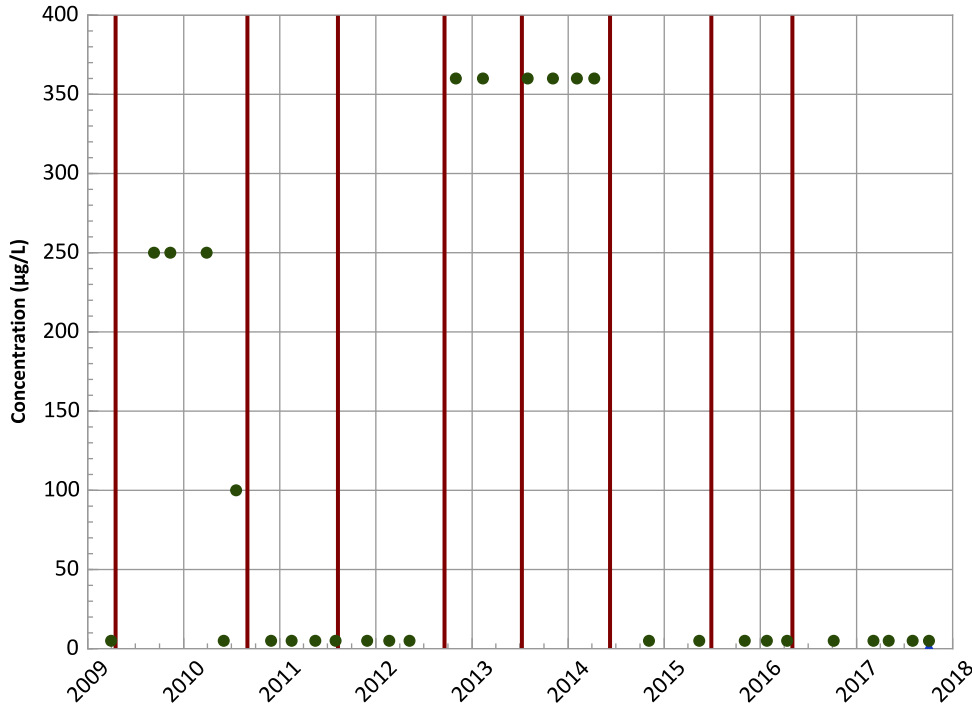
All Data

Probably Decreasing

2015 - 2017 Data:

Probably Decreasing

Ethene (Ethylene) Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

N/A (<4 Detections in Dataset)

2015 - 2017 Data:

N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

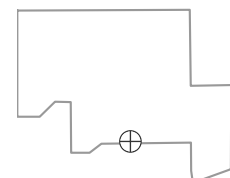
All Data

N/A (<4 Detections in Dataset)

2015 - 2017 Data:

N/A (<4 Detections in Dataset)

Well Location

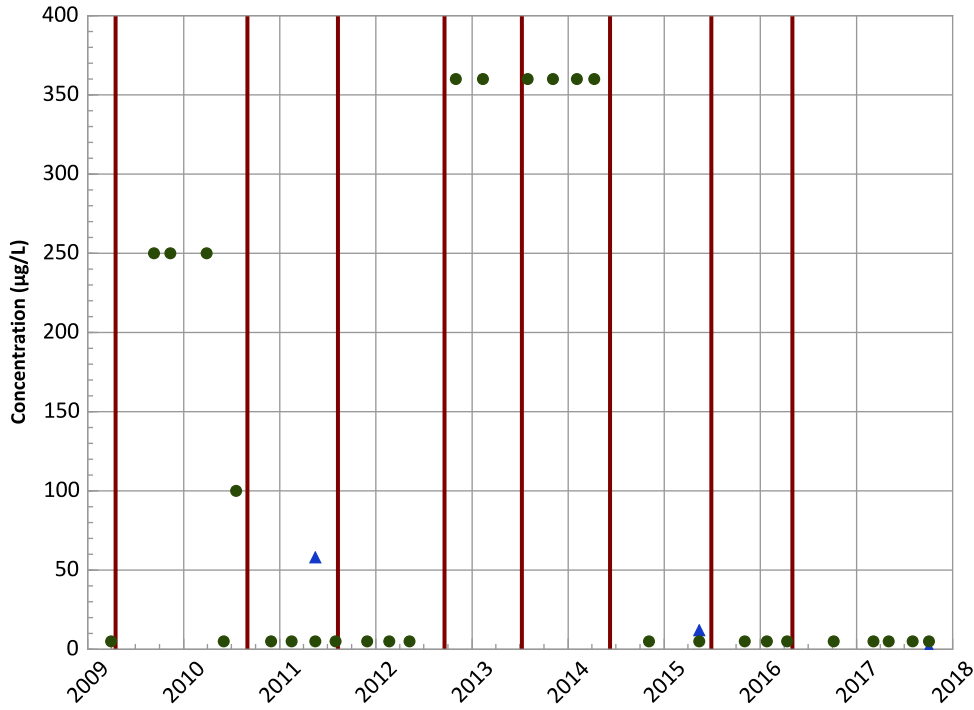


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 03/31/2009 to 10/03/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB063 in Perched Aquifer
USDOE/NNSA Pantex Plant

Ethane Trend

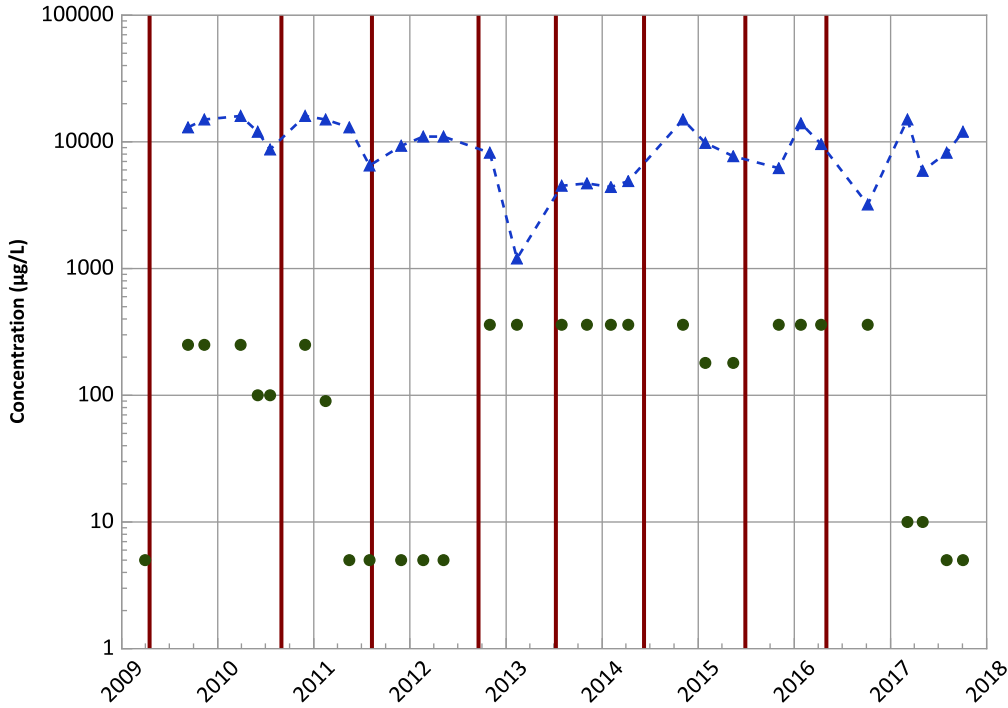


Concentration Trend

MAROS Mann-Kendall Method
All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method
All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
N/A (<4 Detections in Dataset)

Methane Trend

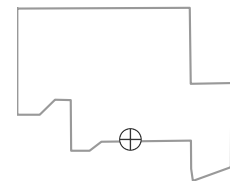


Concentration Trend

MAROS Mann-Kendall Method
All Data
Decreasing
2015 - 2017 Data:
Stable

MAROS Linear Regression Method
All Data
Probably Decreasing
2015 - 2017 Data:
Stable

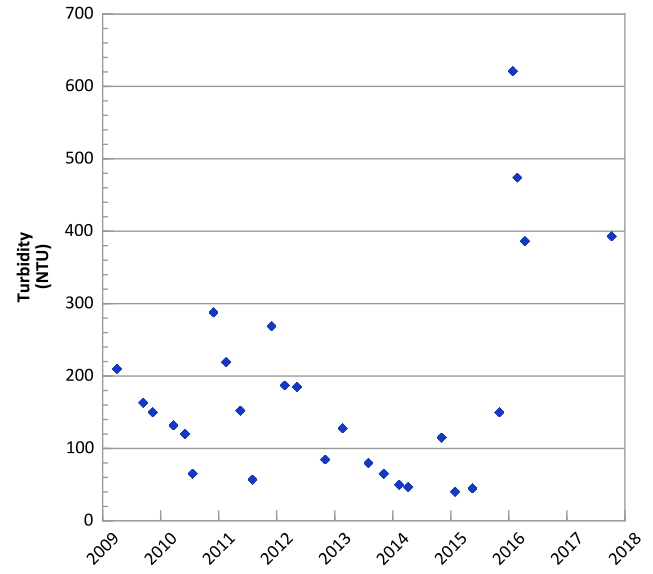
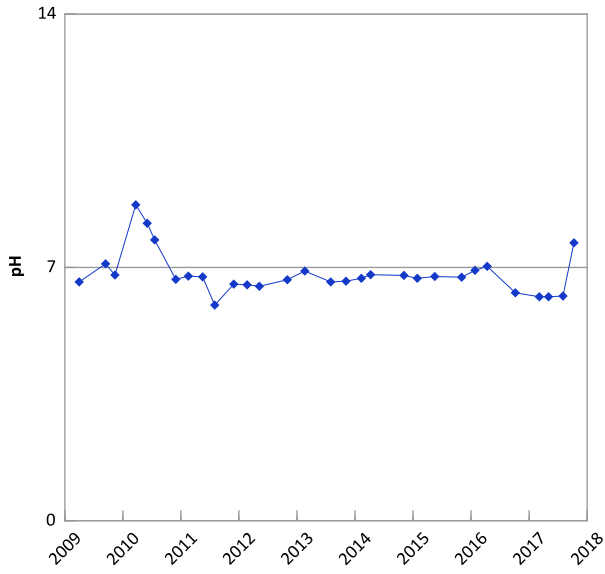
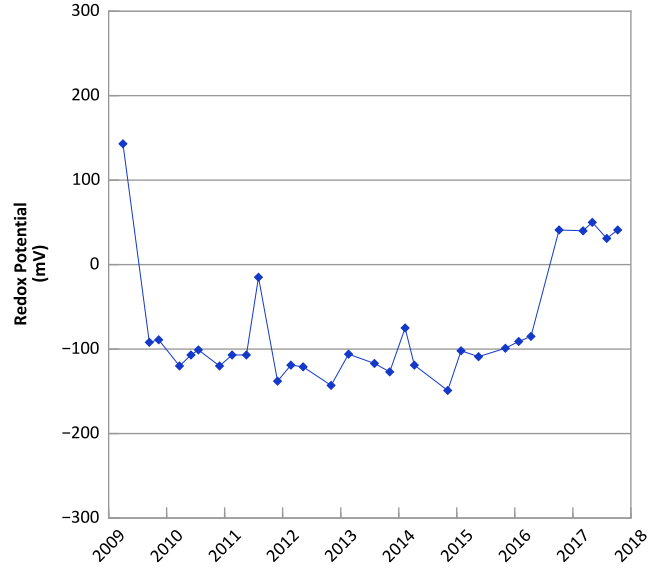
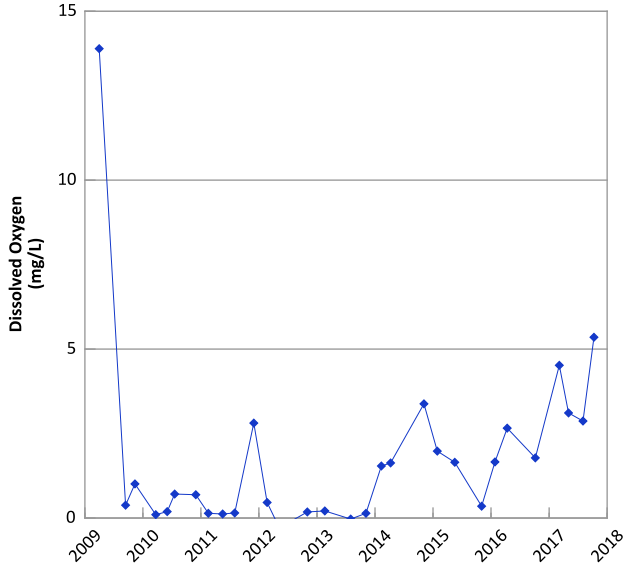
Well Location



Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 03/31/2009 to 10/03/2017
Analysis Date: 03/29/2018

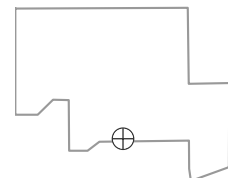
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

**PTX06-ISB069A in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



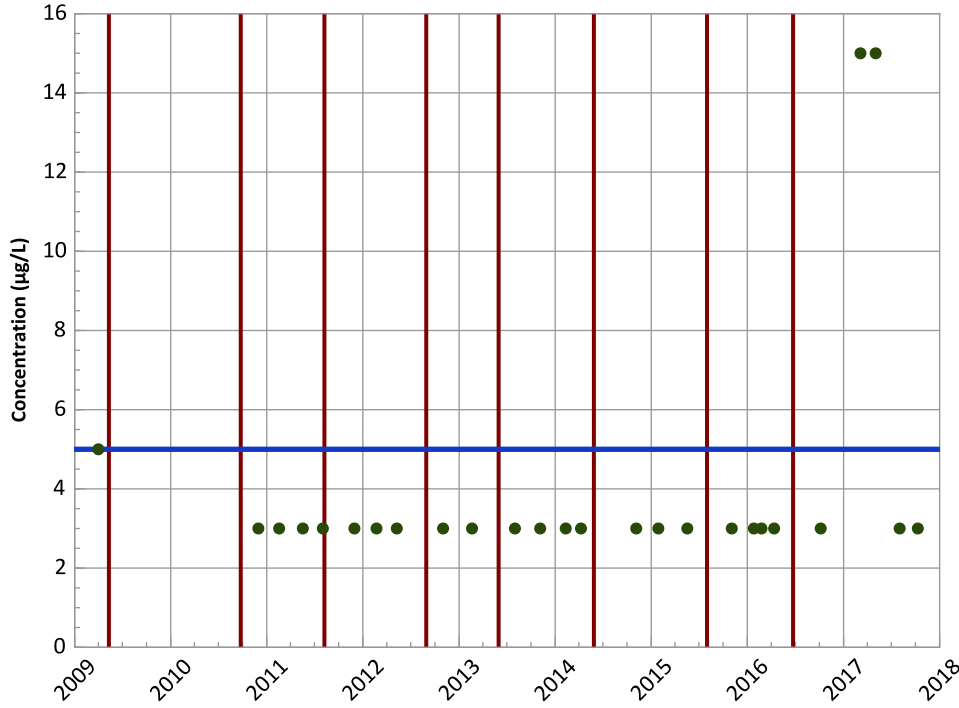
Query Date Range: 01/01/2009 to 12/31/2017
 Data Date Range: 04/01/2009 to 10/10/2017
 Analysis Date: 03/29/2018

Well Location



PTX06-ISB069A in Perched Aquifer
USDOE/NNSA Pantex Plant

Tetrachloroethylene (PCE) Trend



Concentration Trend

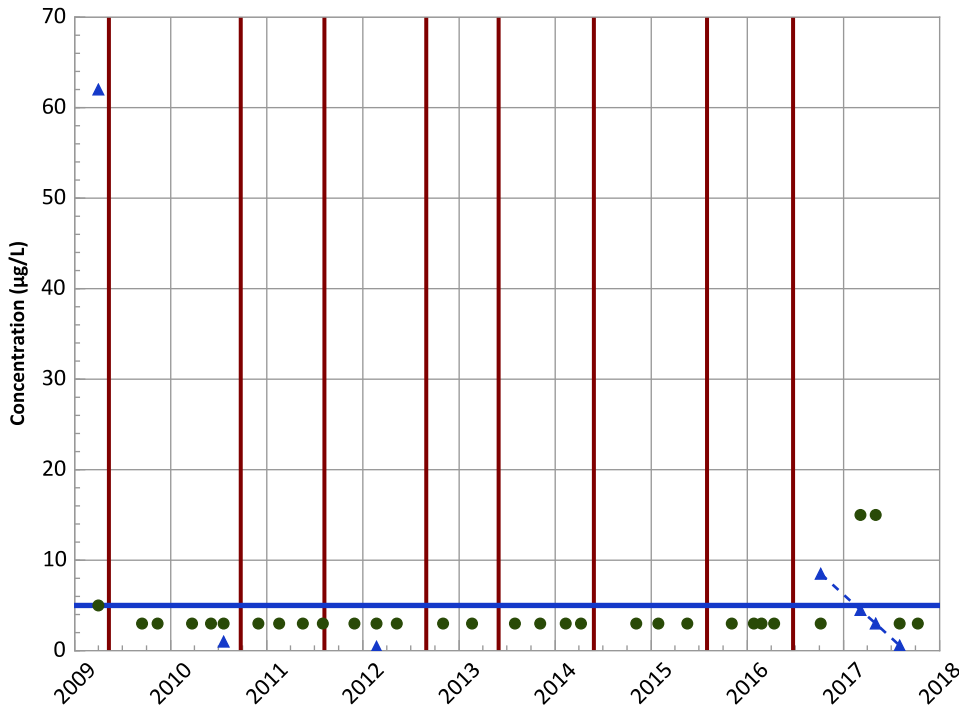
MAROS Mann-Kendall Method

All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method

All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

Trichloroethene Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data
No Trend
2015 - 2017 Data:
N/A (<4 Detections in Dataset)

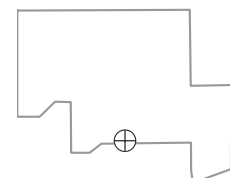
MAROS Linear Regression Method

All Data
No Trend
2015 - 2017 Data:
Decreasing

Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 04/01/2009 to 10/10/2017
Analysis Date: 03/29/2018

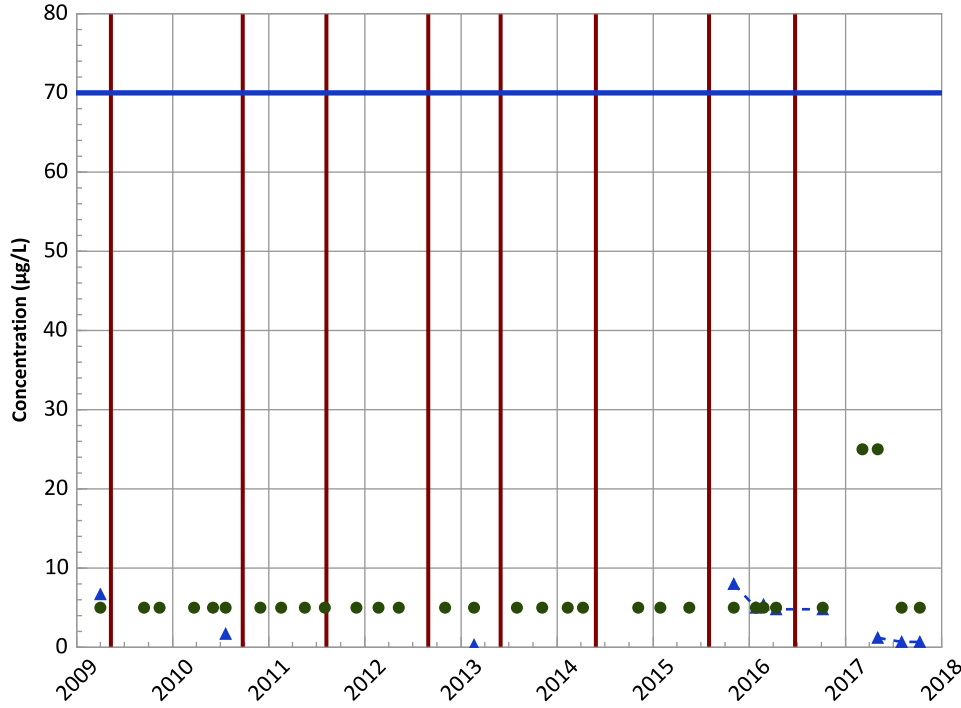
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

Well Location



PTX06-ISB069A in Perched Aquifer
USDOE/NNSA Pantex Plant

cis-1,2-Dichloroethene Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data
No Trend

2015 - 2017 Data:
N/A (<4 Detections in Dataset)

2015 - 2017 Data:
N/A (<4 Detections in Dataset)

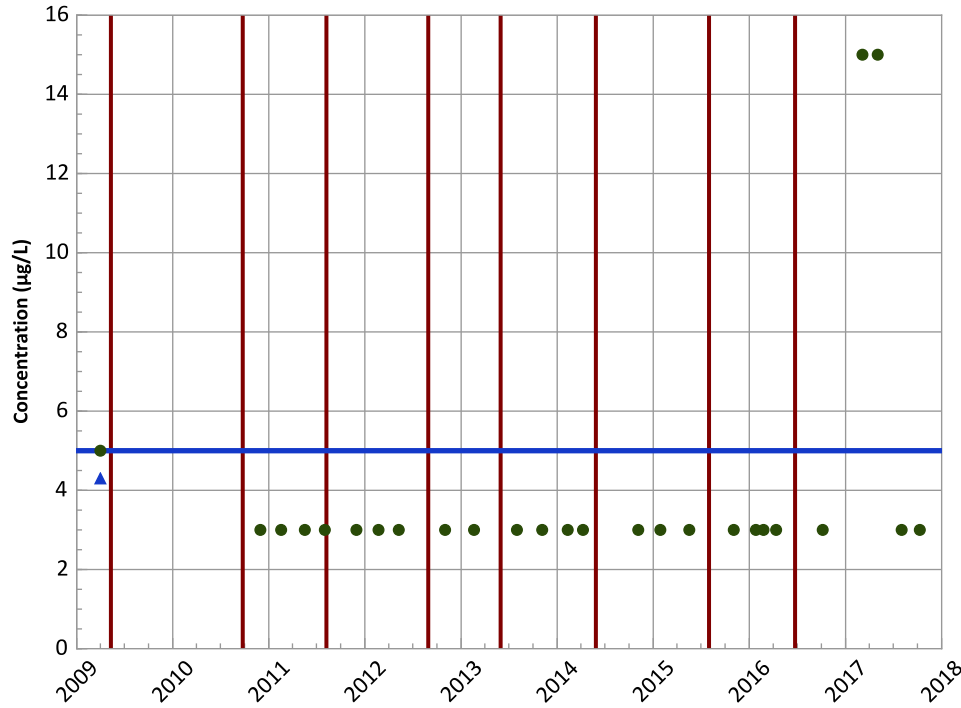
MAROS Linear Regression Method

All Data

Stable

2015 - 2017 Data:
Probably Decreasing

1,2-Dichloroethane Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

N/A (<4 Detections in Dataset)

2015 - 2017 Data:
All Non-Detect

2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method

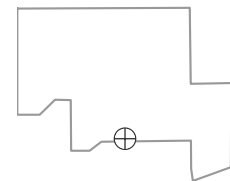
All Data

N/A (<4 Detections in Dataset)

2015 - 2017 Data:
N/A (<4 Detections in Dataset)

2015 - 2017 Data:
N/A (<4 Detections in Dataset)

Well Location

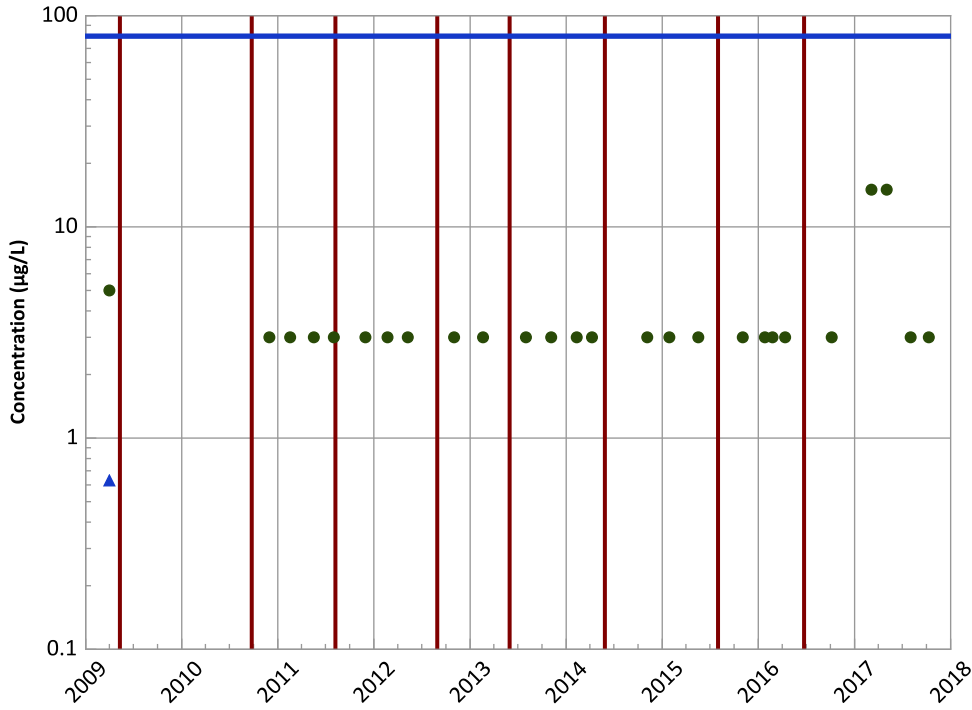


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 04/01/2009 to 10/10/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB069A in Perched Aquifer
USDOE/NNSA Pantex Plant

Chloroform Trend

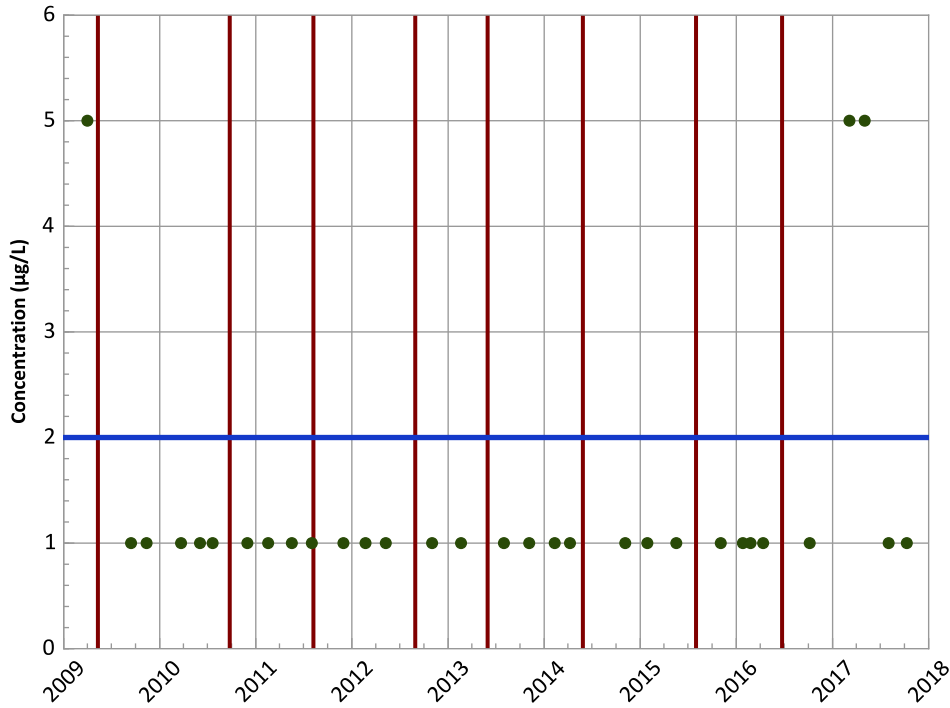


Concentration Trend

MAROS Mann-Kendall Method
All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method
All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
N/A (<4 Detections in Dataset)

Vinyl Chloride Trend

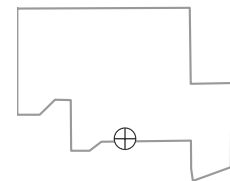


Concentration Trend

MAROS Mann-Kendall Method
All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method
All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

Well Location

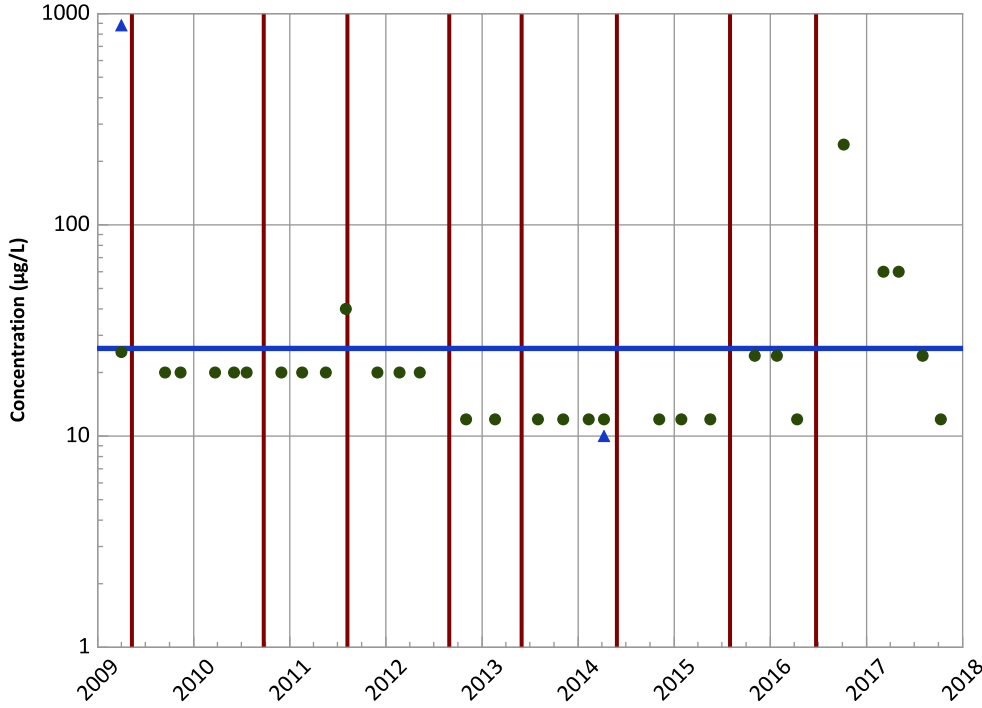


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 04/01/2009 to 10/10/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB069A in Perched Aquifer
USDOE/NNSA Pantex Plant

Perchlorate Trend

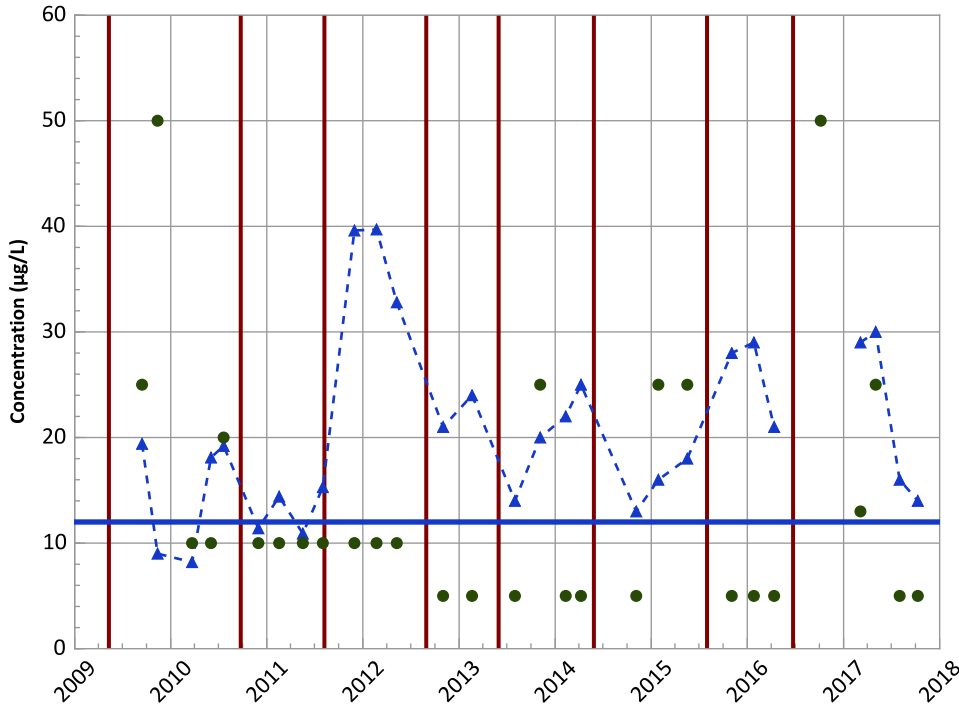


Concentration Trend

MAROS Mann-Kendall Method
All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method
All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
N/A (<4 Detections in Dataset)

Arsenic Trend

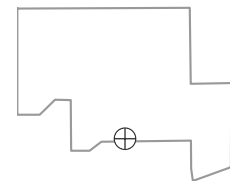


Concentration Trend

MAROS Mann-Kendall Method
All Data
Increasing
2015 - 2017 Data:
Decreasing

MAROS Linear Regression Method
All Data
Increasing
2015 - 2017 Data:
Decreasing

Well Location

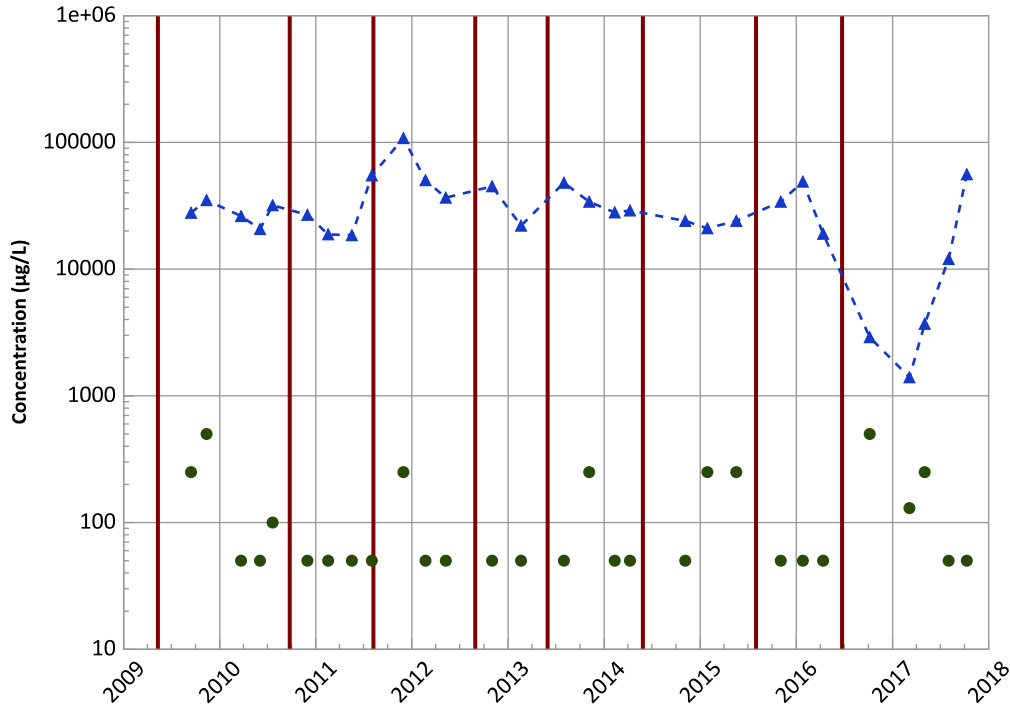


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 04/01/2009 to 10/10/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB069A in Perched Aquifer
USDOE/NNSA Pantex Plant

Iron Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Increasing

MAROS Linear Regression Method

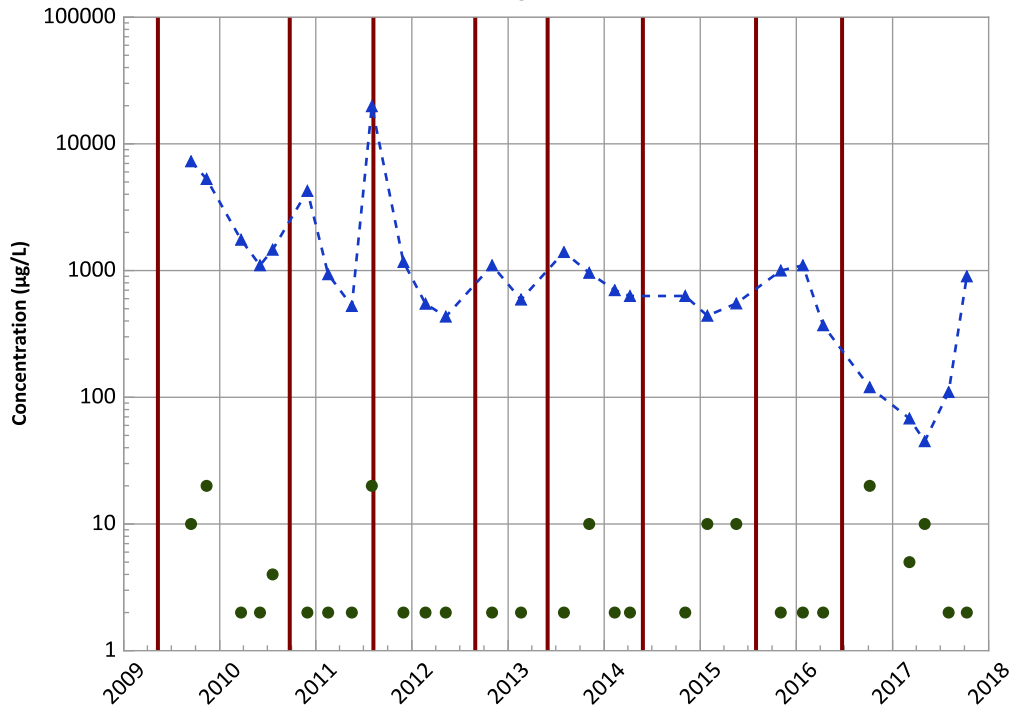
All Data

Decreasing

2015 - 2017 Data:

Increasing

Manganese Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

No Trend

MAROS Linear Regression Method

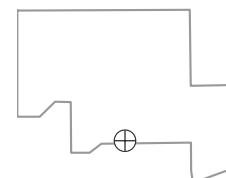
All Data

Decreasing

2015 - 2017 Data:

Probably Increasing

Well Location

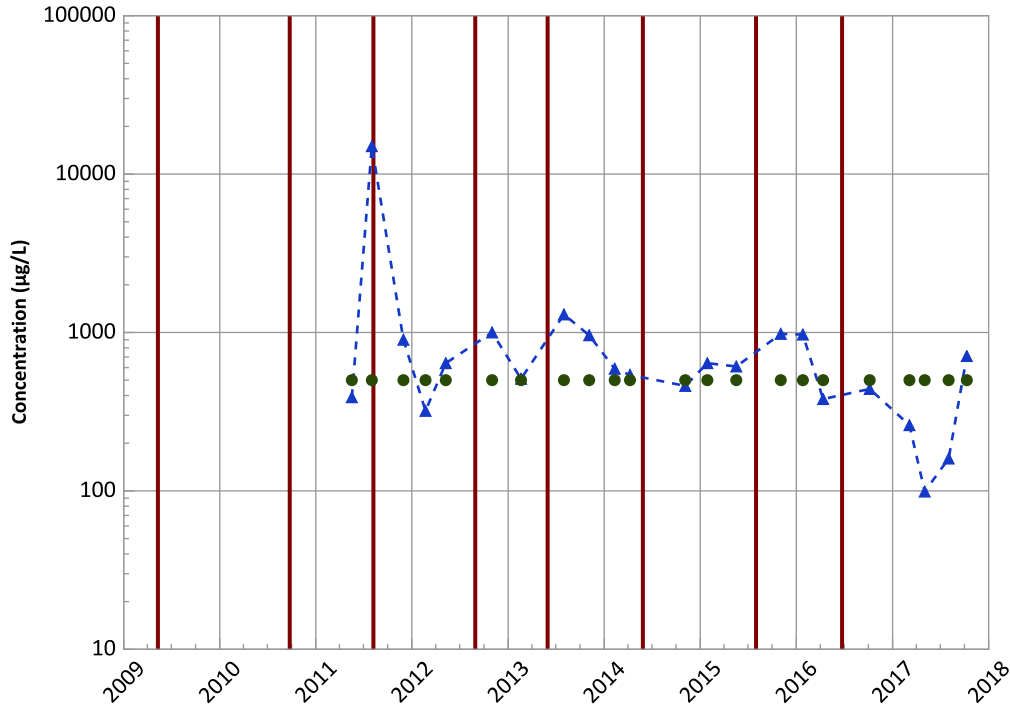


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 04/01/2009 to 10/10/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB069A in Perched Aquifer
USDOE/NNSA Pantex Plant

Divalent Manganese Trend



Concentration Trend

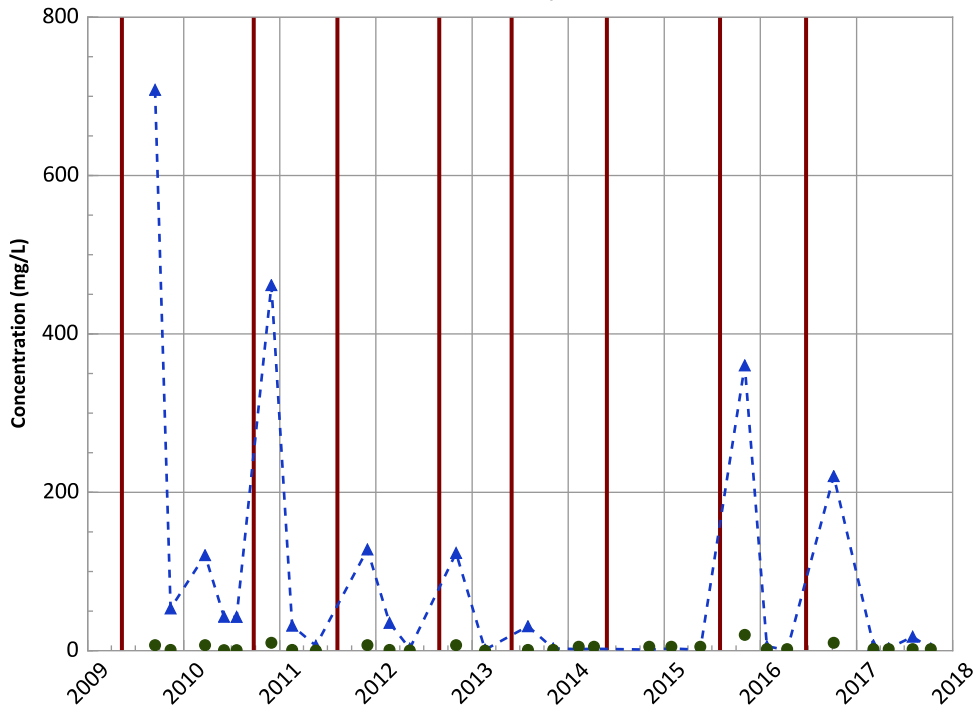
MAROS Mann-Kendall Method

All Data
Decreasing
2015 - 2017 Data:
No Trend

MAROS Linear Regression Method

All Data
Decreasing
2015 - 2017 Data:
No Trend

Total Volatile Fatty Acids Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data
Decreasing
2015 - 2017 Data:
Decreasing

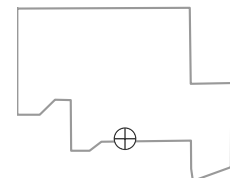
MAROS Linear Regression Method

All Data
Decreasing
2015 - 2017 Data:
Stable

Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 04/01/2009 to 10/10/2017
Analysis Date: 03/29/2018

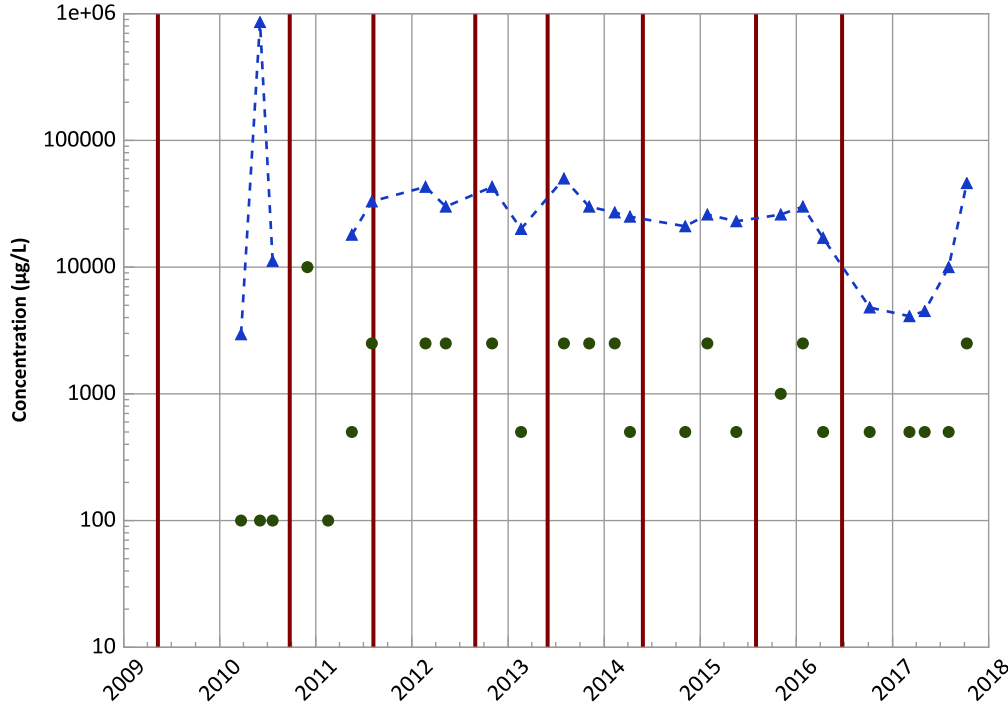
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

Well Location



PTX06-ISB069A in Perched Aquifer
USDOE/NNSA Pantex Plant

Ferrous Iron Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data
Decreasing

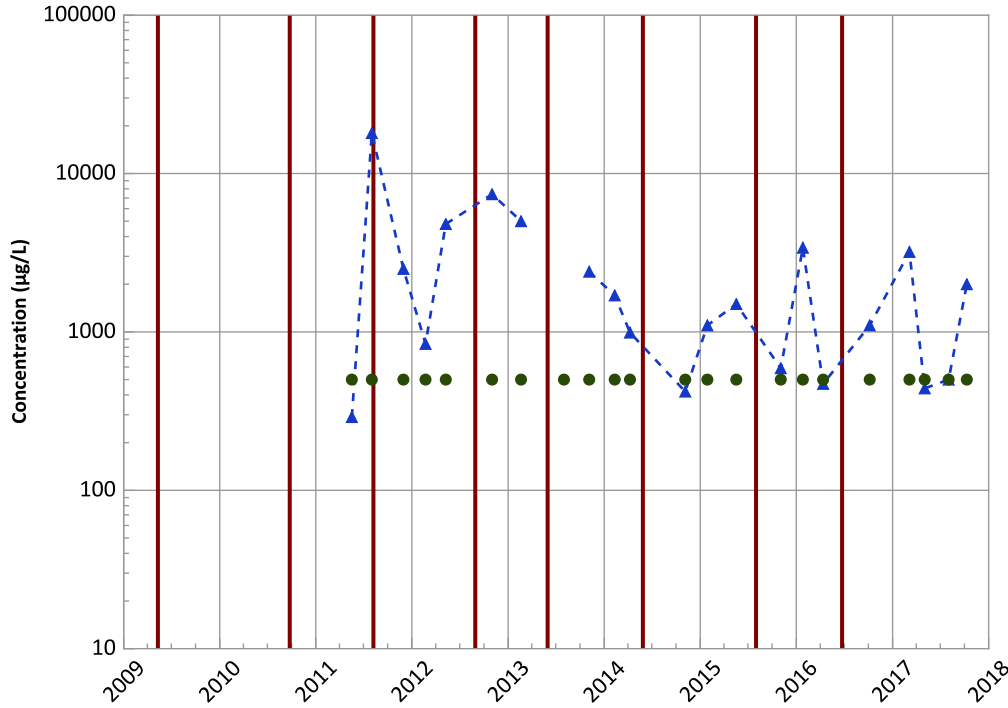
2015 - 2017 Data:
Increasing

MAROS Linear Regression Method

All Data
Probably Decreasing

2015 - 2017 Data:
Increasing

Ferric Iron Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data
Decreasing

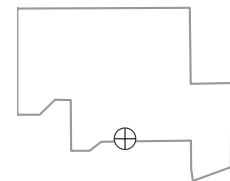
2015 - 2017 Data:
Stable

MAROS Linear Regression Method

All Data
Probably Decreasing

2015 - 2017 Data:
Stable

Well Location

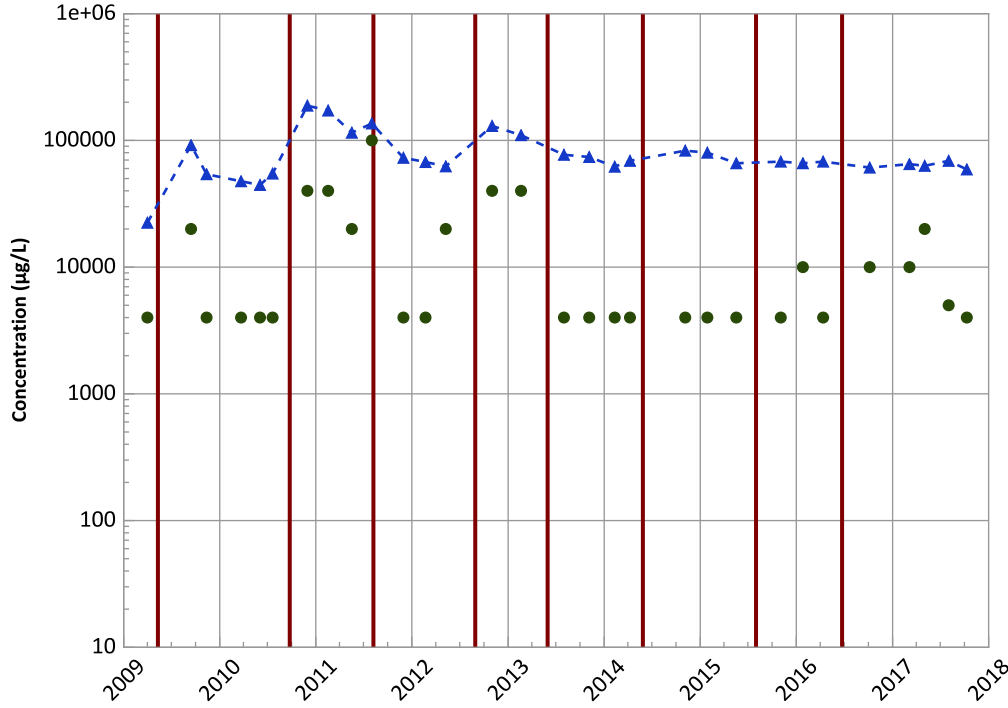


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 04/01/2009 to 10/10/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB069A in Perched Aquifer
USDOE/NNSA Pantex Plant

Chloride (as Cl) Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Decreasing

MAROS Linear Regression Method

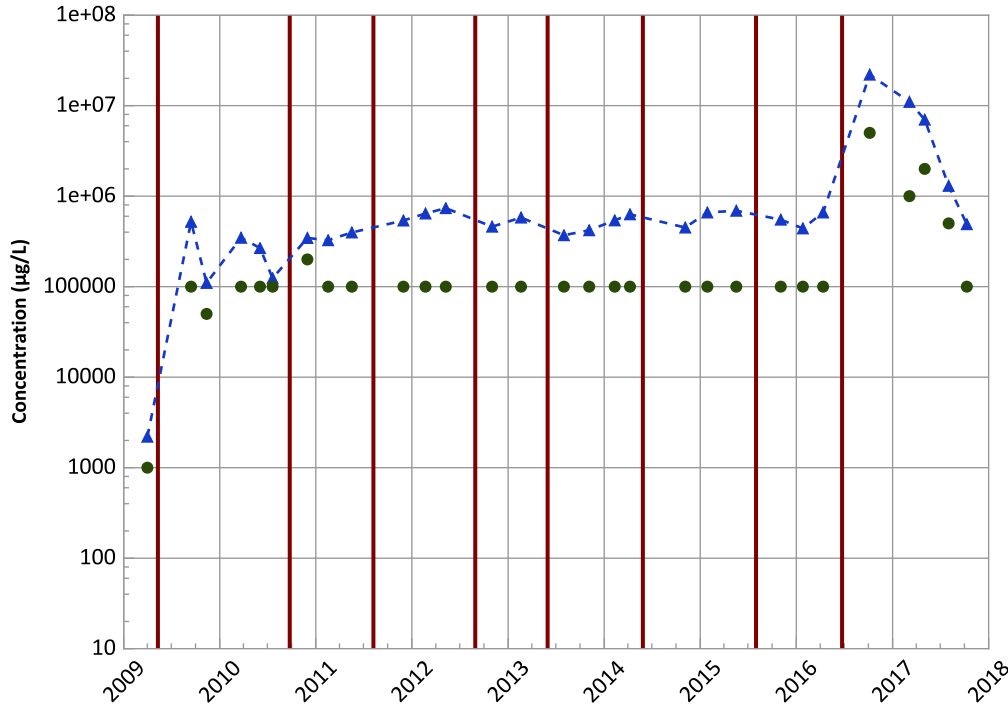
All Data

Stable

2015 - 2017 Data:

Stable

Total Organic Carbon Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Increasing

2015 - 2017 Data:

Decreasing

MAROS Linear Regression Method

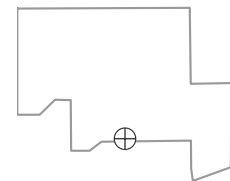
All Data

Increasing

2015 - 2017 Data:

Decreasing

Well Location

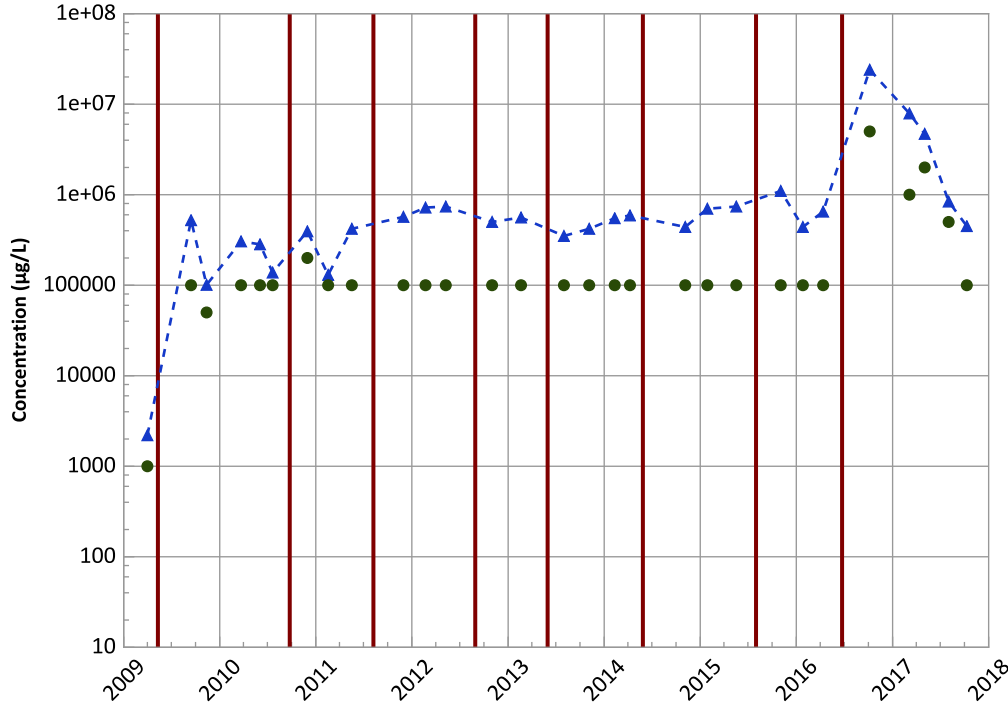


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 04/01/2009 to 10/10/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB069A in Perched Aquifer
USDOE/NNSA Pantex Plant

Dissolved Organic Carbon (DOC) Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Increasing

2015 - 2017 Data:

Decreasing

MAROS Linear Regression Method

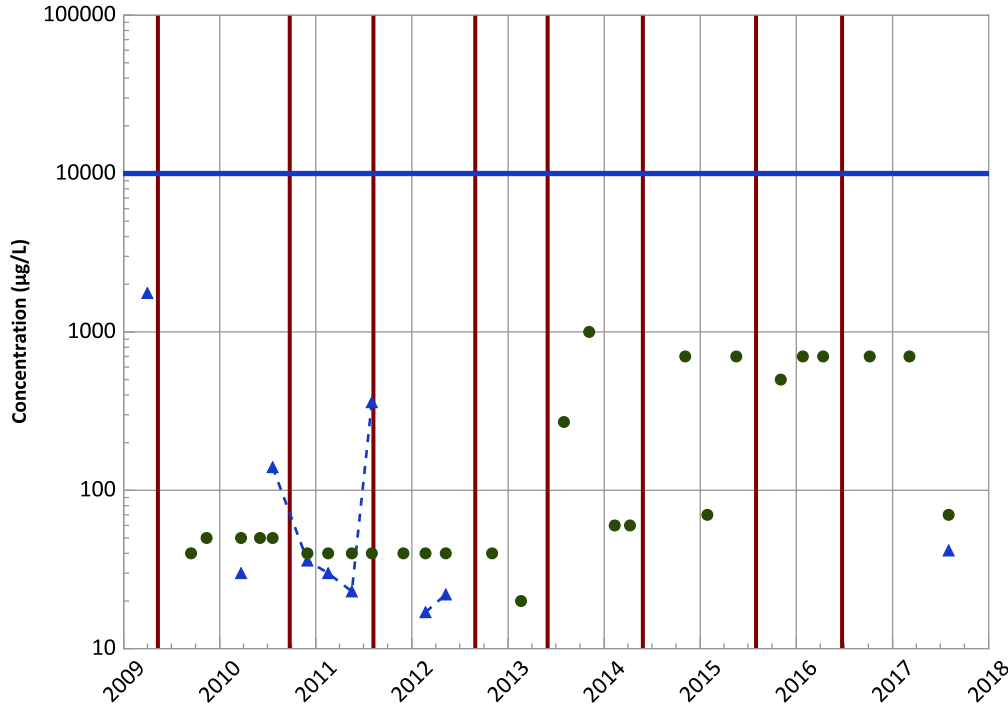
All Data

Increasing

2015 - 2017 Data:

Decreasing

Nitrate as N Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Increasing

2015 - 2017 Data:

N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

All Data

No Trend

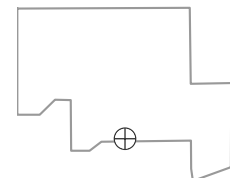
2015 - 2017 Data:

No Trend

Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 04/01/2009 to 10/10/2017
Analysis Date: 03/29/2018

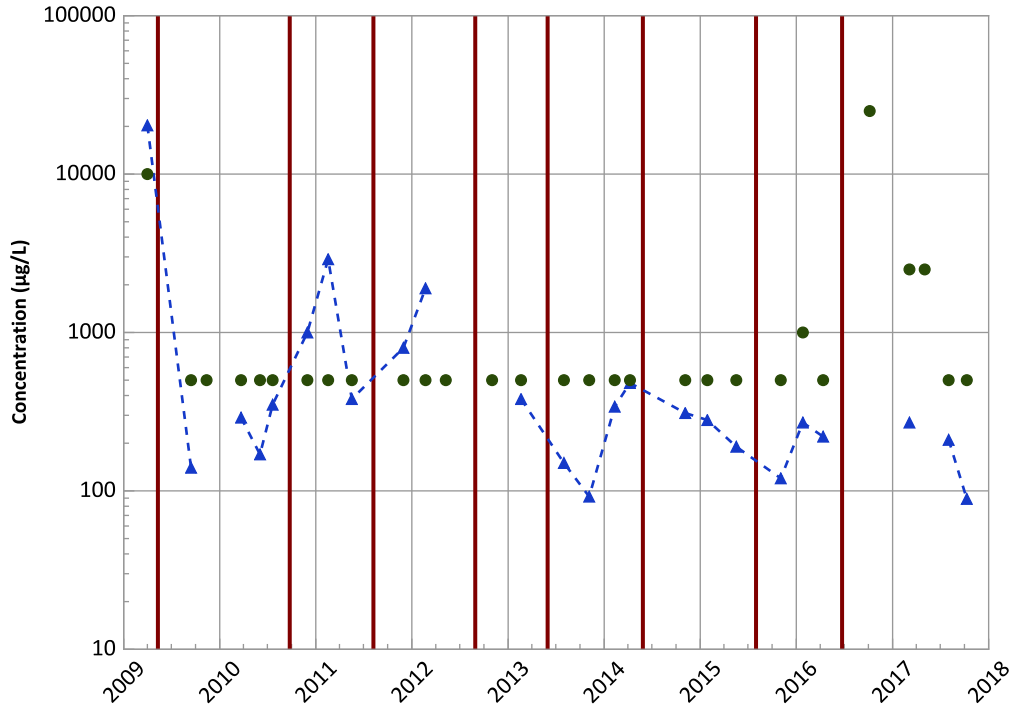
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

Well Location



PTX06-ISB069A in Perched Aquifer
USDOE/NNSA Pantex Plant

Sulfate (as SO4) Trend



Concentration Trend

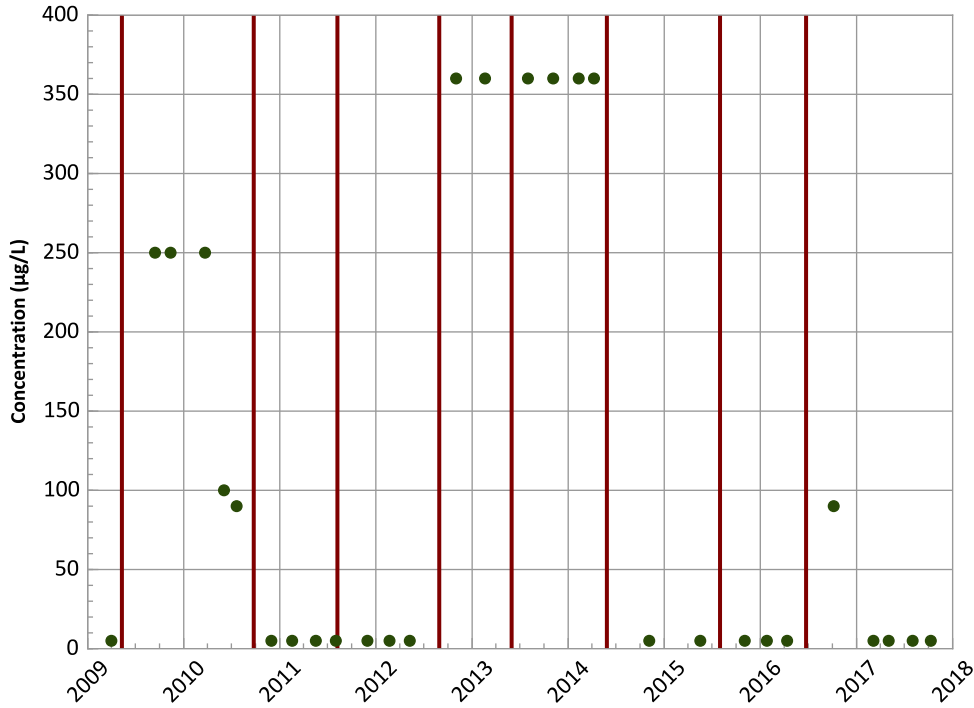
MAROS Mann-Kendall Method

All Data
Decreasing
2015 - 2017 Data:
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

All Data
Decreasing
2015 - 2017 Data:
Stable

Ethene (Ethylene) Trend



Concentration Trend

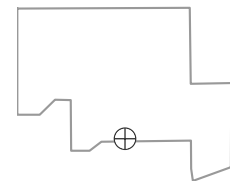
MAROS Mann-Kendall Method

All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method

All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

Well Location

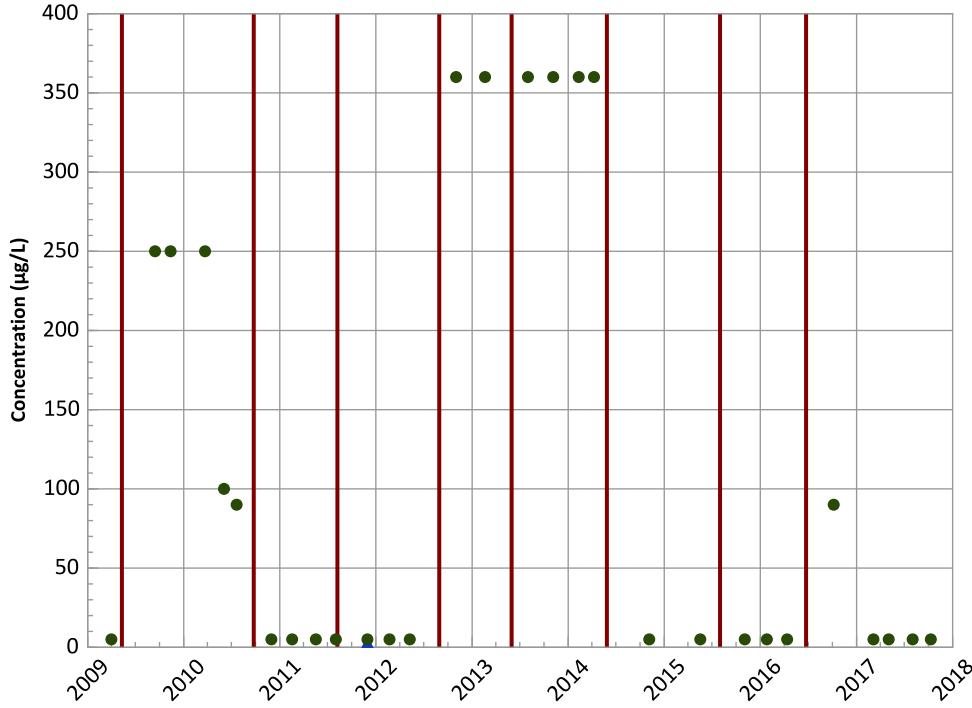


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 04/01/2009 to 10/10/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB069A in Perched Aquifer
USDOE/NNSA Pantex Plant

Ethane Trend



Concentration Trend

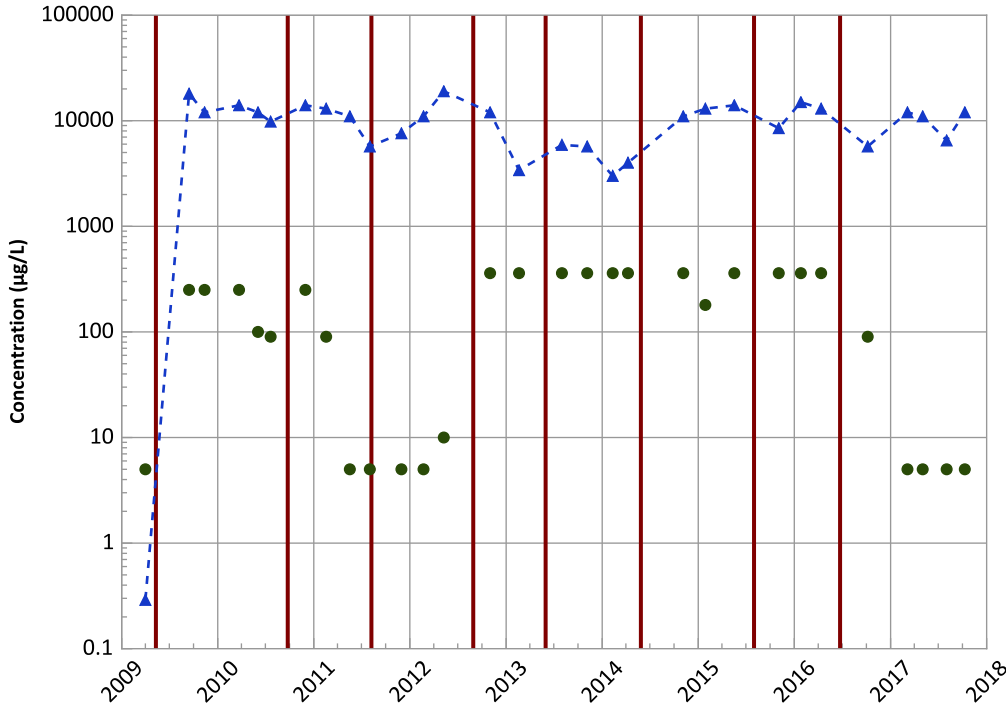
MAROS Mann-Kendall Method

All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method

All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
N/A (<4 Detections in Dataset)

Methane Trend



Concentration Trend

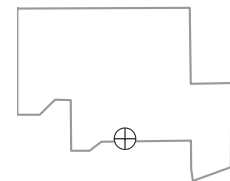
MAROS Mann-Kendall Method

All Data
Decreasing
2015 - 2017 Data:
Decreasing

MAROS Linear Regression Method

All Data
Probably Increasing
2015 - 2017 Data:
Stable

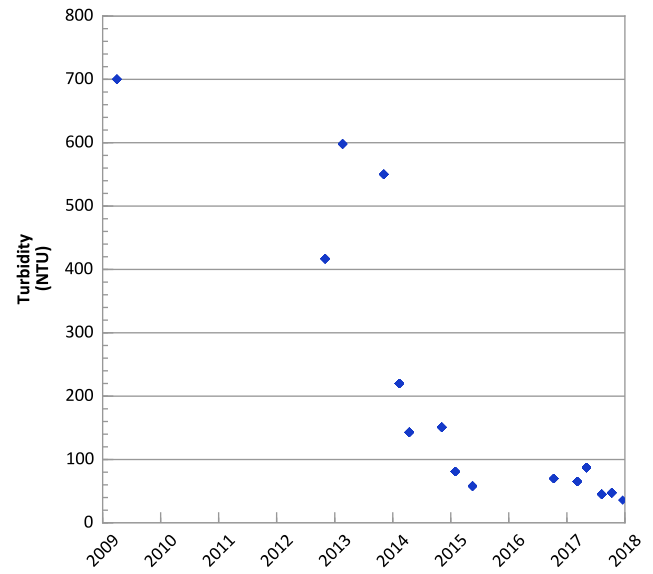
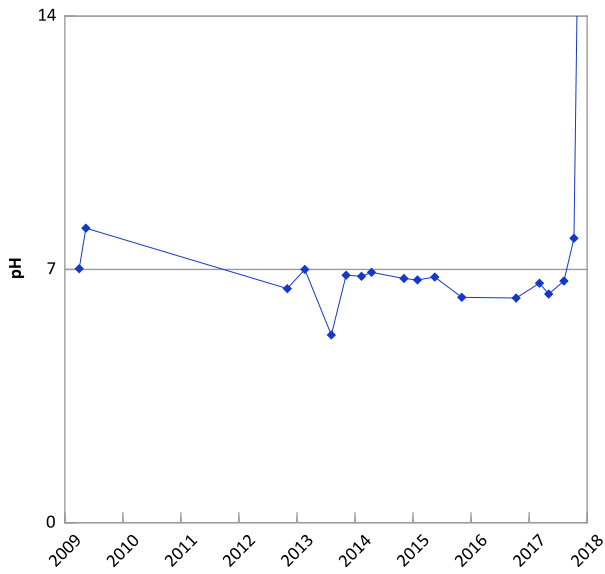
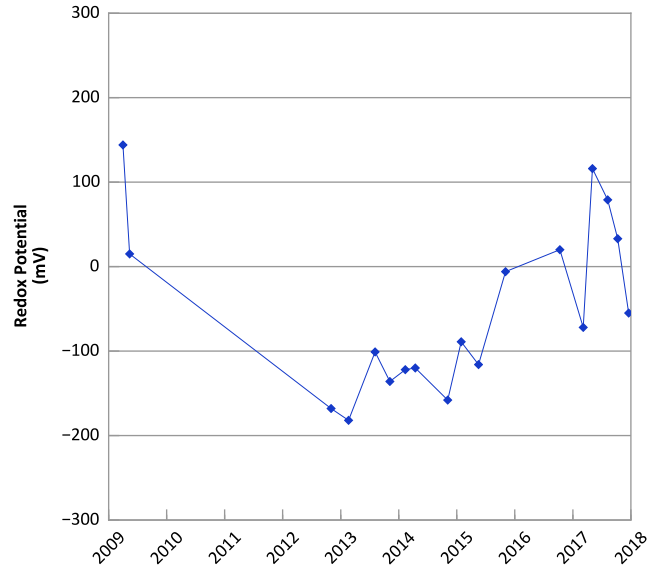
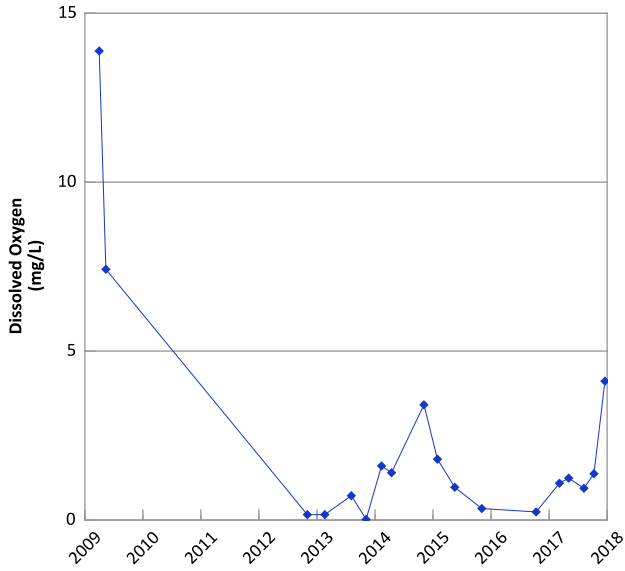
Well Location



Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 04/01/2009 to 10/10/2017
Analysis Date: 03/29/2018

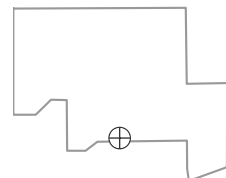
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

**PTX06-ISB071 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**

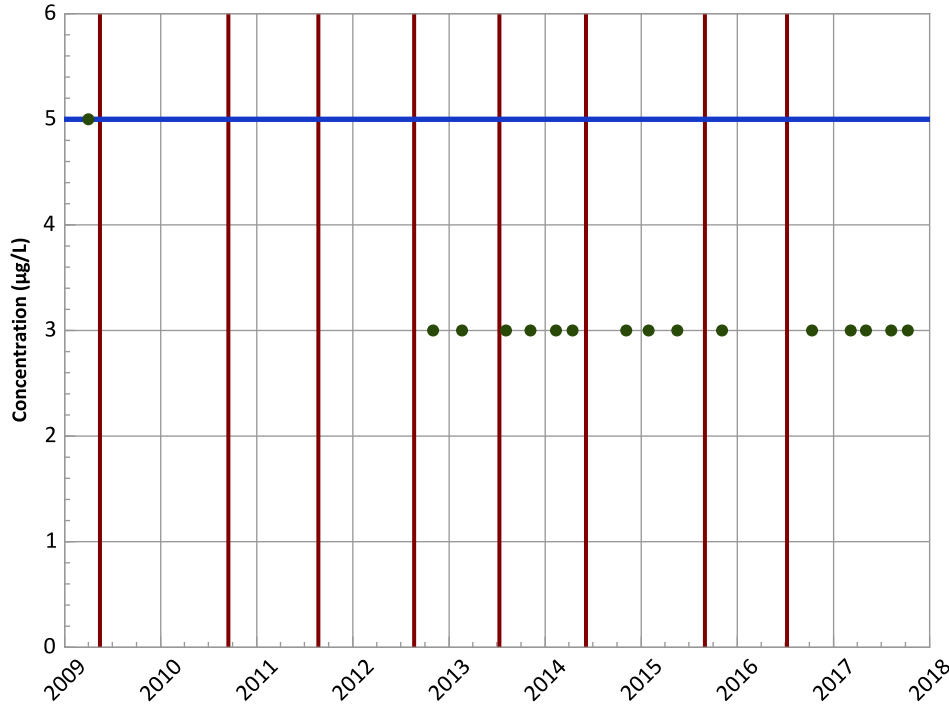


Query Date Range: 01/01/2009 to 12/31/2017
 Data Date Range: 04/01/2009 to 12/18/2017
 Analysis Date: 03/29/2018

Well Location



**PTX06-ISB071 in Perched Aquifer
USDOE/NNSA Pantex Plant
Tetrachloroethylene (PCE) Trend**



Concentration Trend

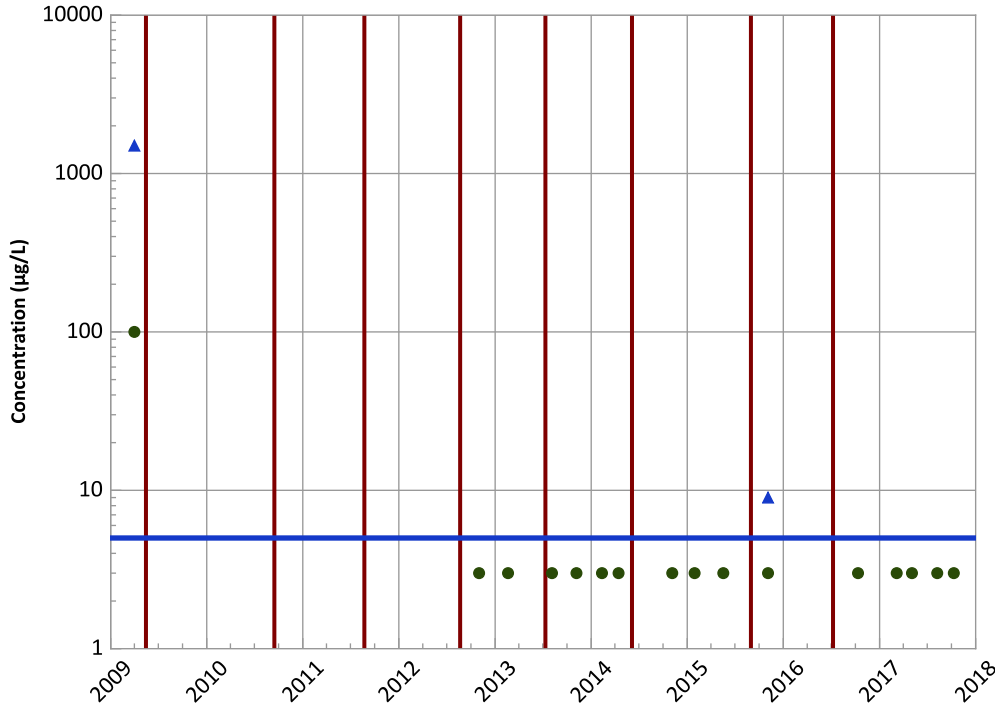
MAROS Mann-Kendall Method

All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method

All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

Trichloroethene Trend



Concentration Trend

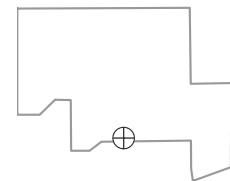
MAROS Mann-Kendall Method

All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method

All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
N/A (<4 Detections in Dataset)

Well Location

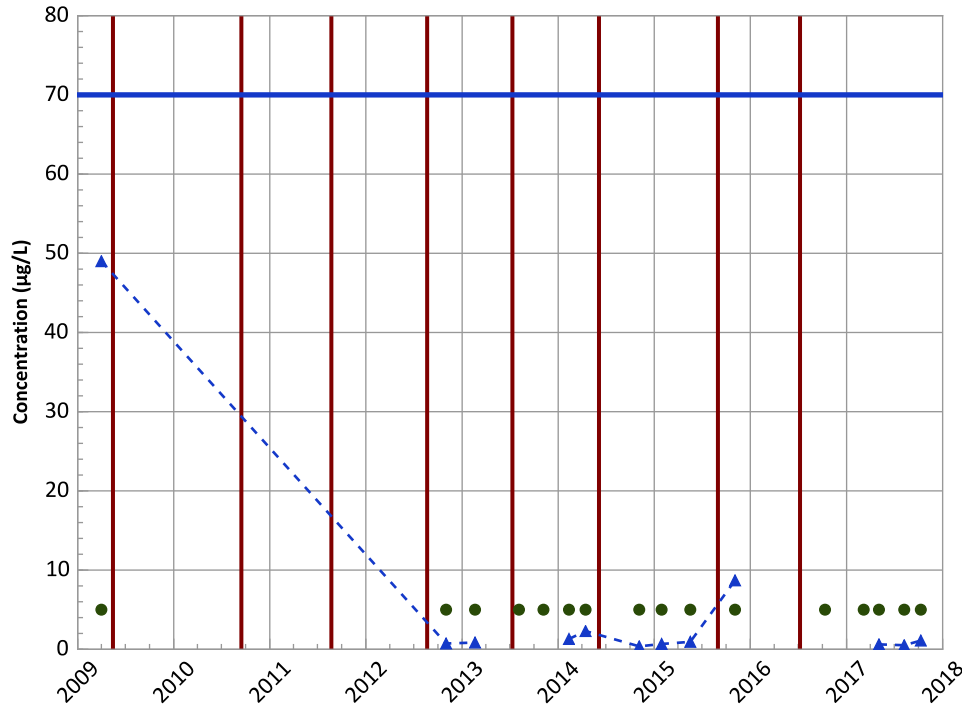


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 04/01/2009 to 12/18/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB071 in Perched Aquifer
USDOE/NNSA Pantex Plant

cis-1,2-Dichloroethene Trend



Concentration Trend

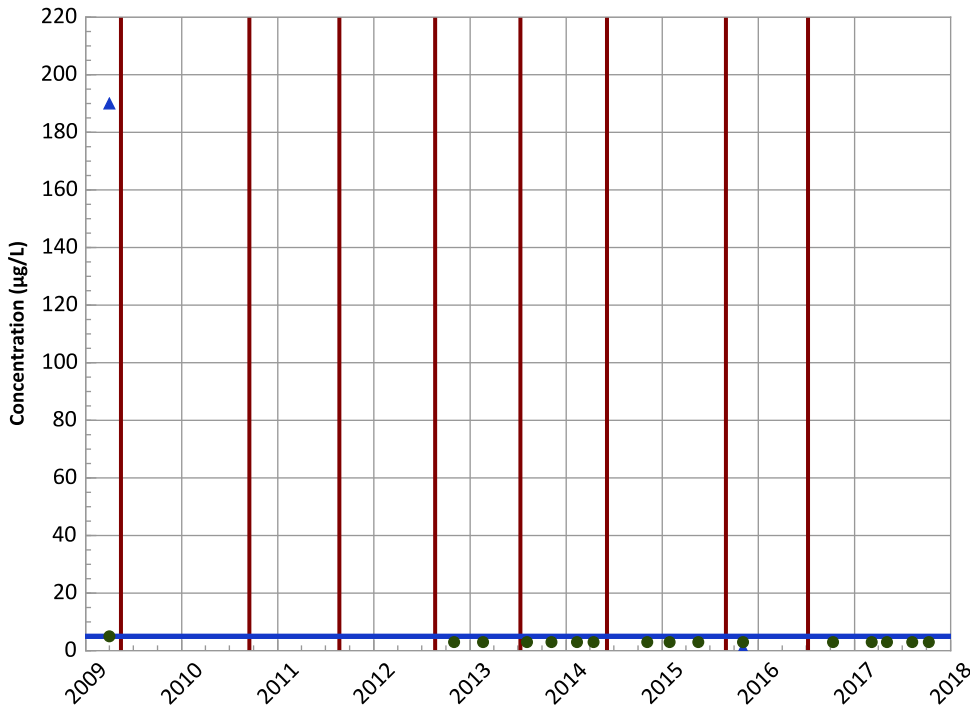
MAROS Mann-Kendall Method

All Data
Decreasing
2015 - 2017 Data:
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

All Data
Decreasing
2015 - 2017 Data:
Probably Decreasing

1,2-Dichloroethane Trend



Concentration Trend

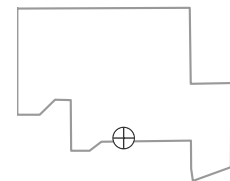
MAROS Mann-Kendall Method

All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method

All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
N/A (<4 Detections in Dataset)

Well Location

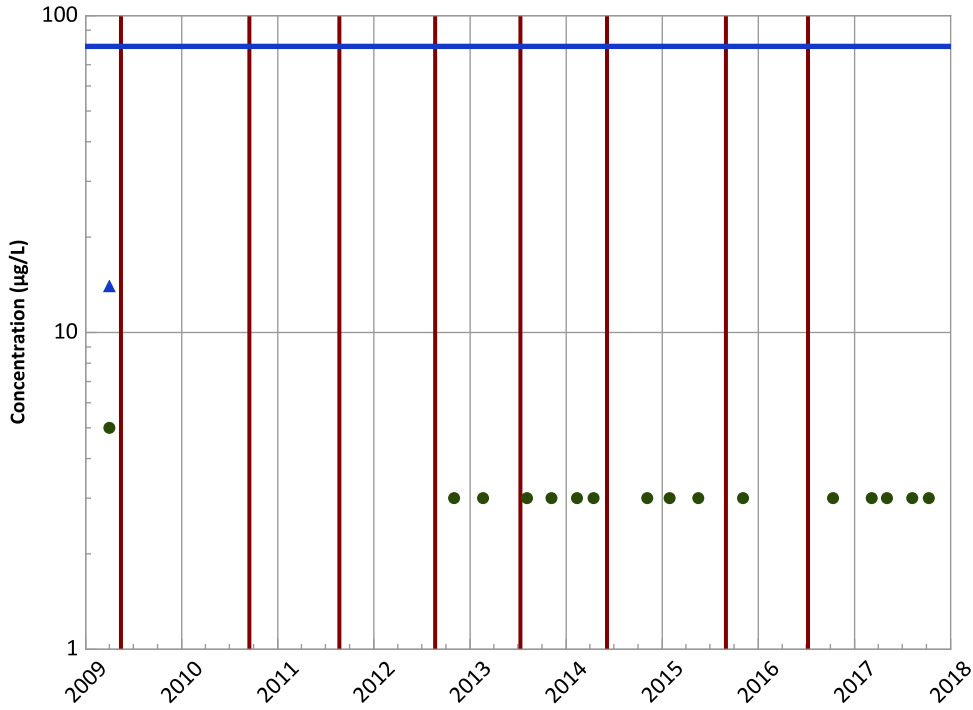


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 04/01/2009 to 12/18/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB071 in Perched Aquifer
USDOE/NNSA Pantex Plant

Chloroform Trend

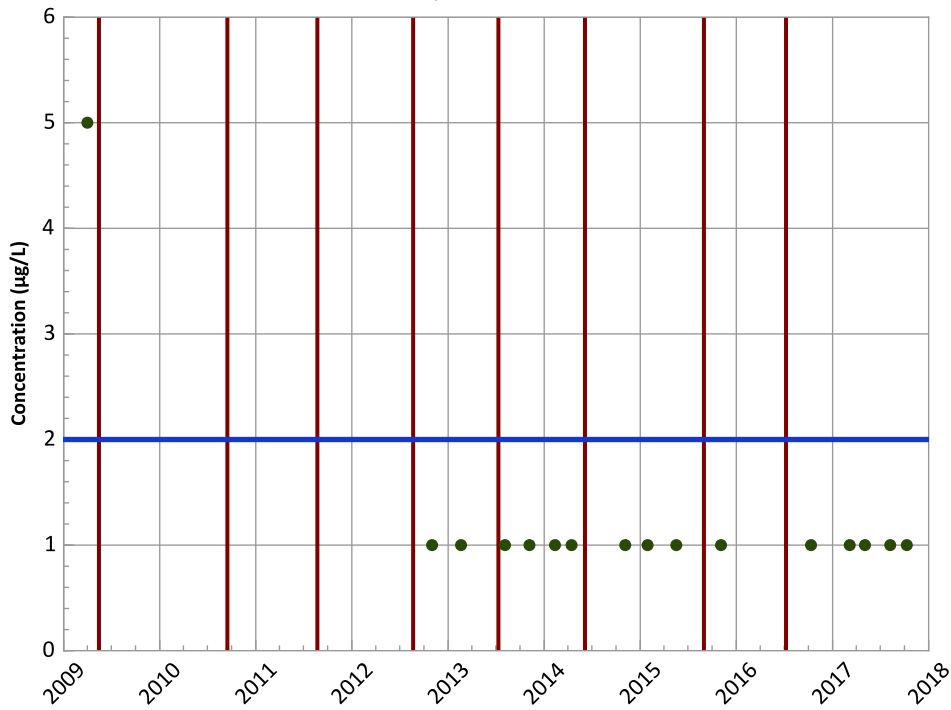


Concentration Trend

MAROS Mann-Kendall Method
All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method
All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
N/A (<4 Detections in Dataset)

Vinyl Chloride Trend

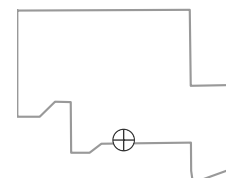


Concentration Trend

MAROS Mann-Kendall Method
All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method
All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

Well Location

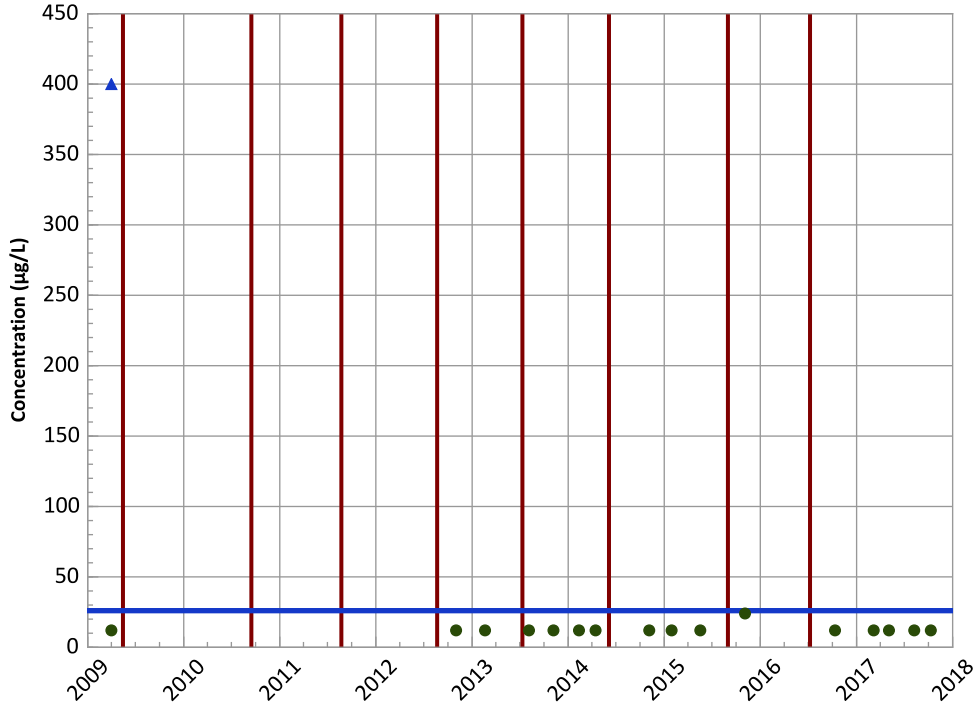


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 04/01/2009 to 12/18/2017
Analysis Date: 03/29/2018

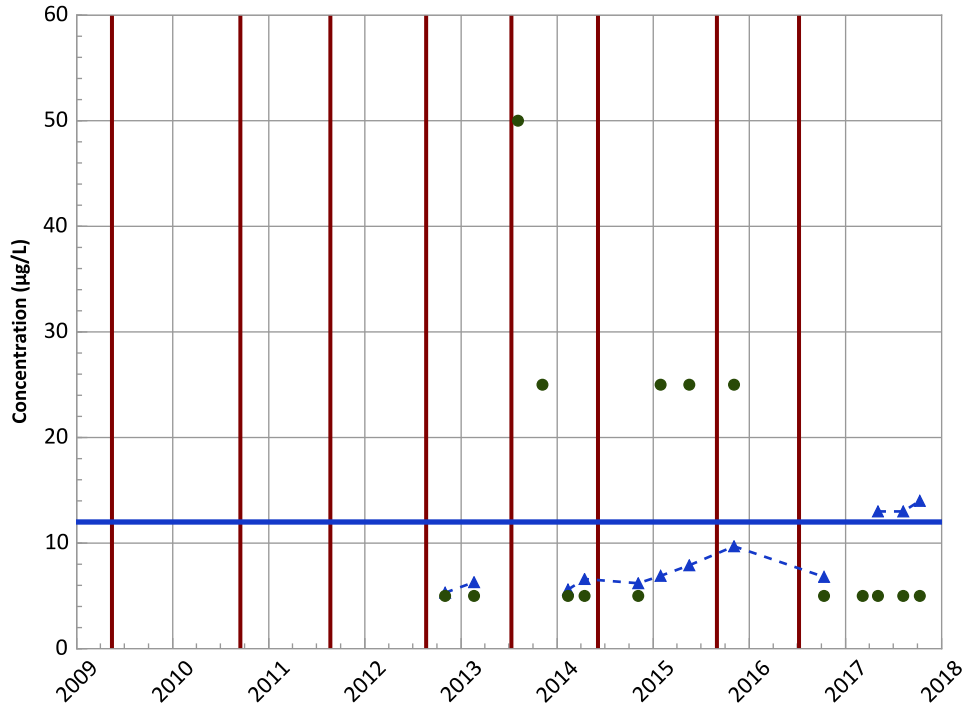
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB071 in Perched Aquifer
USDOE/NNSA Pantex Plant

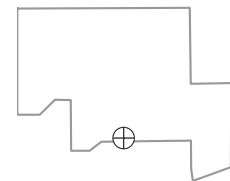
Perchlorate Trend



Arsenic Trend



Well Location

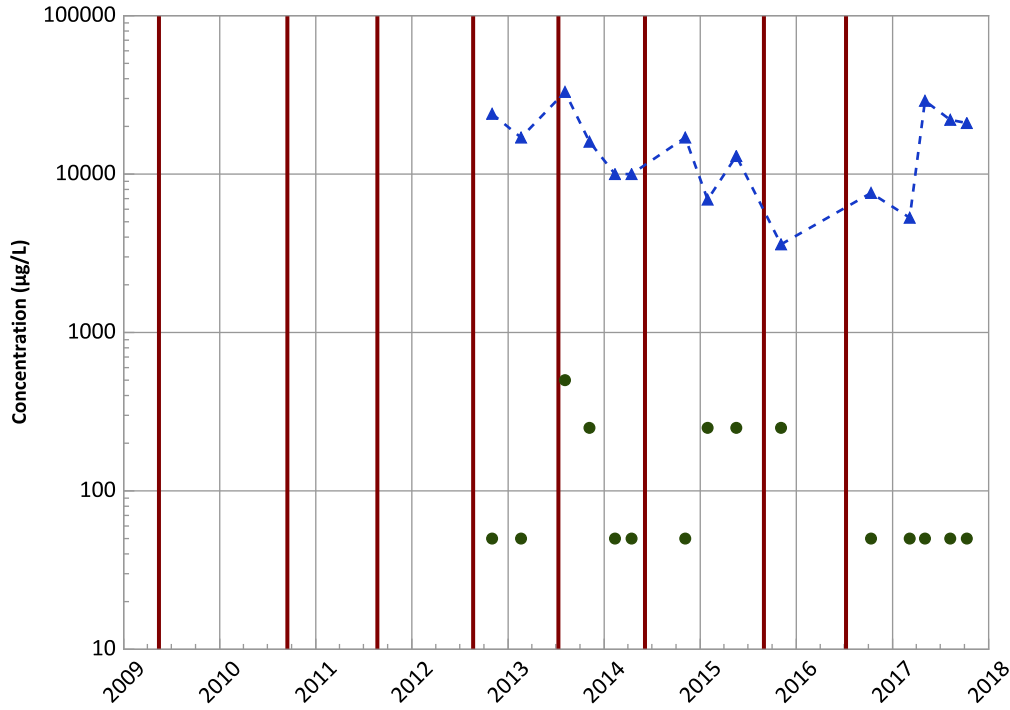


Query Date Range: 01/01/2009 to 12/31/2017
 Data Date Range: 04/01/2009 to 12/18/2017
 Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB071 in Perched Aquifer
USDOE/NNSA Pantex Plant

Iron Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Stable

MAROS Linear Regression Method

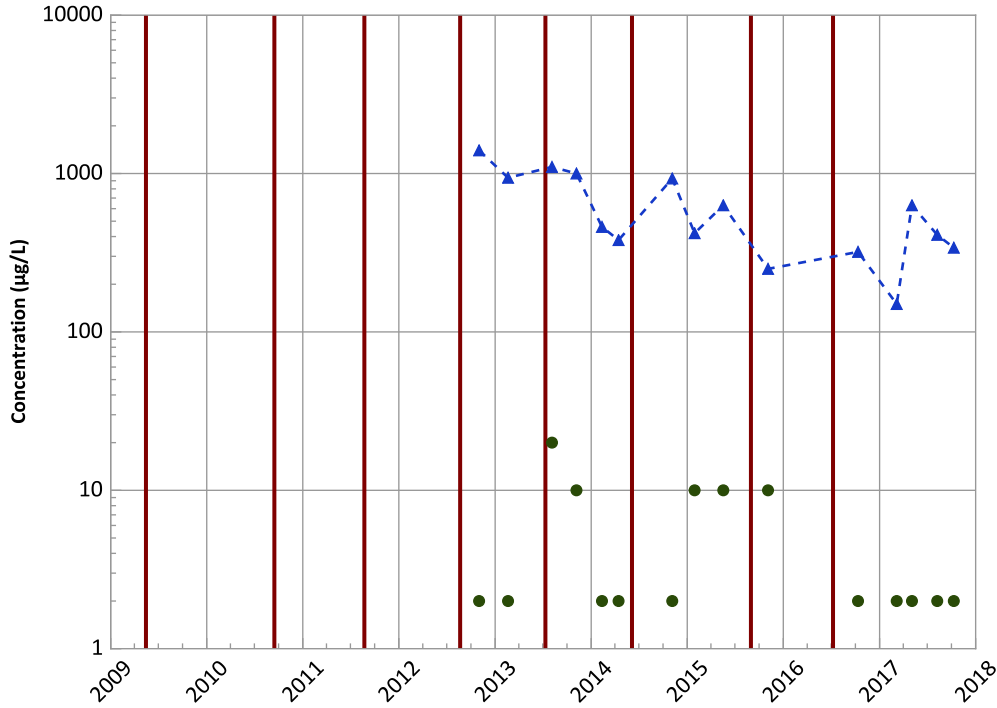
All Data

Stable

2015 - 2017 Data:

No Trend

Manganese Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Stable

MAROS Linear Regression Method

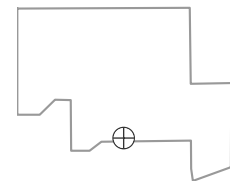
All Data

Decreasing

2015 - 2017 Data:

No Trend

Well Location

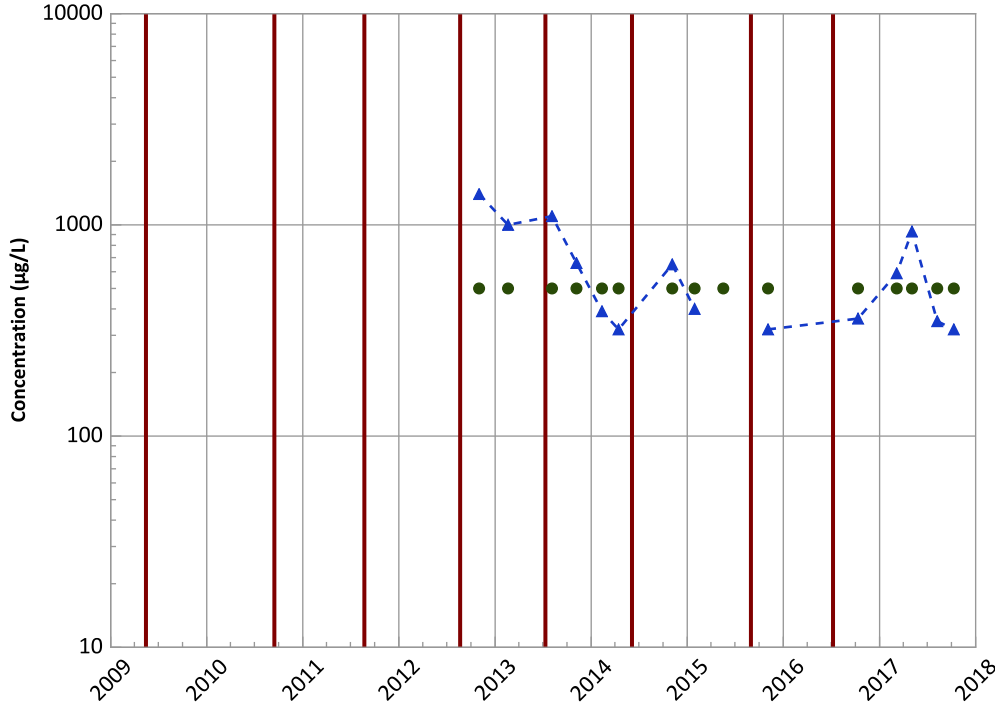


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 04/01/2009 to 12/18/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB071 in Perched Aquifer
USDOE/NNSA Pantex Plant

Divalent Manganese Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Decreasing

MAROS Linear Regression Method

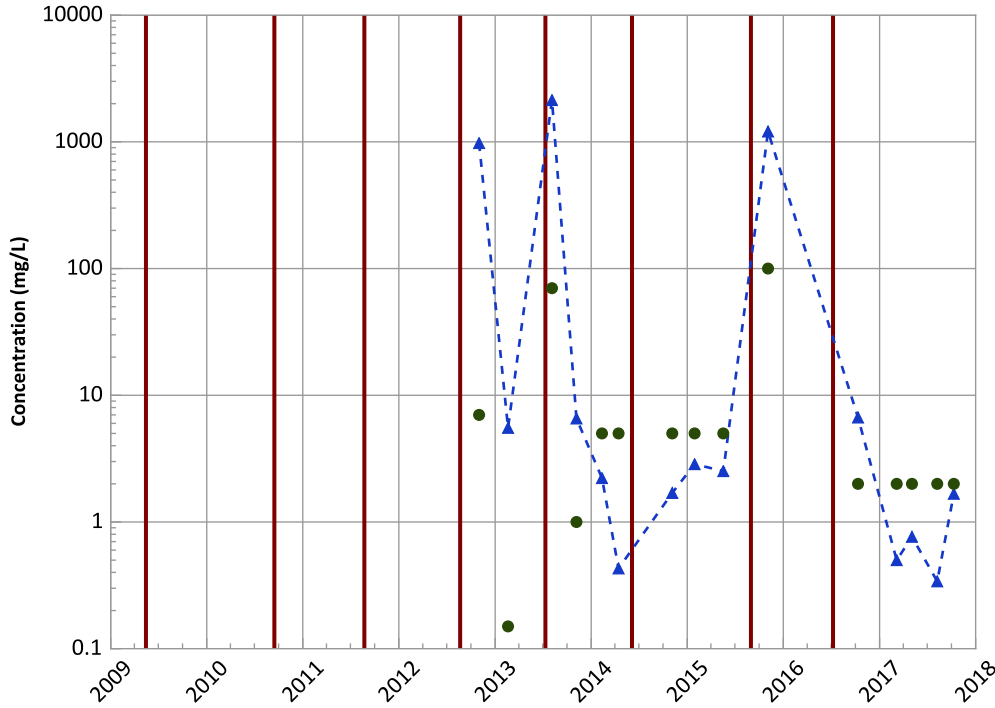
All Data

Decreasing

2015 - 2017 Data:

Stable

Total Volatile Fatty Acids Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

No Trend

MAROS Linear Regression Method

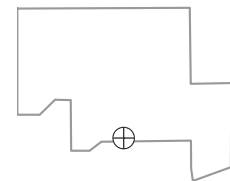
All Data

Decreasing

2015 - 2017 Data:

No Trend

Well Location

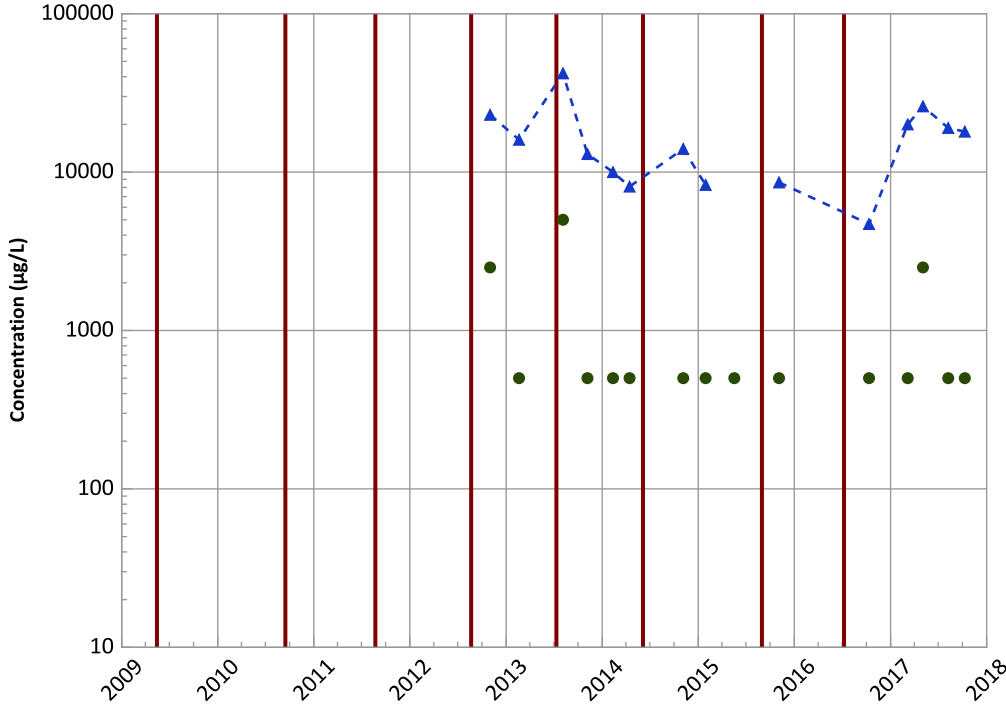


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 04/01/2009 to 12/18/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB071 in Perched Aquifer
USDOE/NNSA Pantex Plant

Ferrous Iron Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Decreasing

MAROS Linear Regression Method

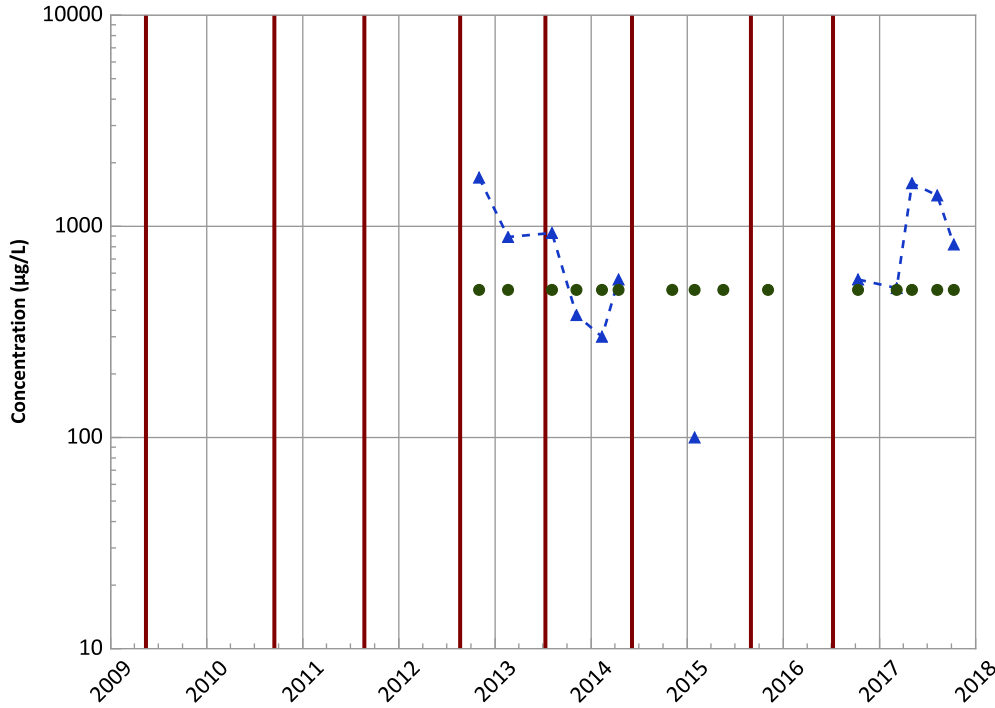
All Data

Stable

2015 - 2017 Data:

Stable

Ferric Iron Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Stable

MAROS Linear Regression Method

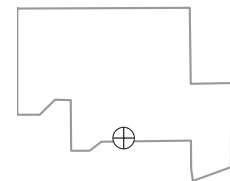
All Data

No Trend

2015 - 2017 Data:

No Trend

Well Location

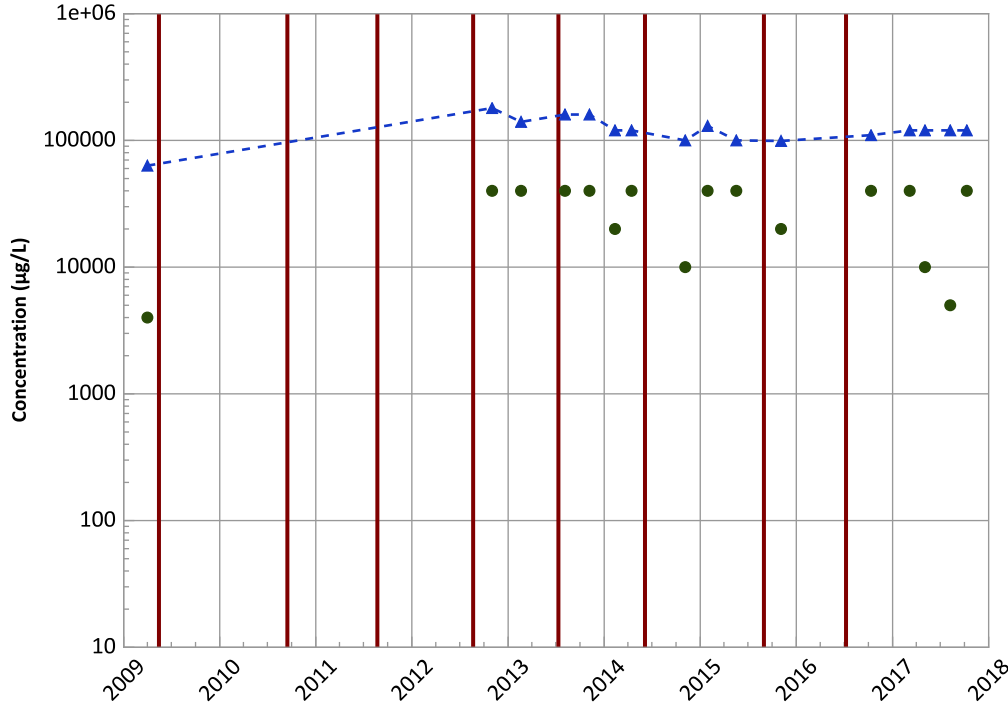


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 04/01/2009 to 12/18/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB071 in Perched Aquifer
USDOE/NNSA Pantex Plant

Chloride (as Cl) Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Stable

MAROS Linear Regression Method

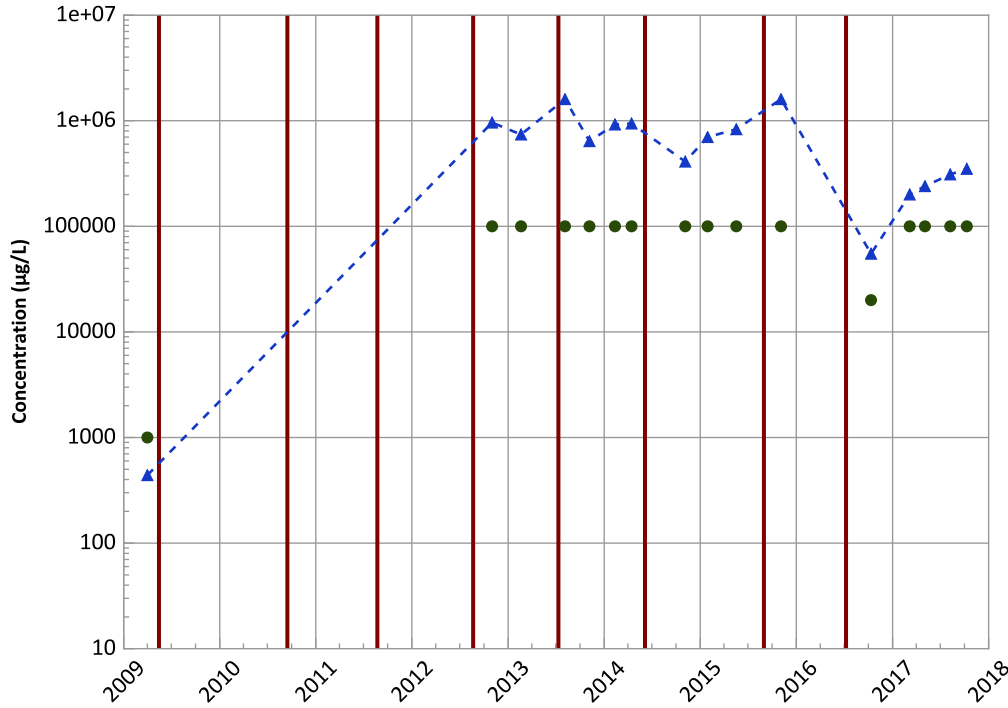
All Data

No Trend

2015 - 2017 Data:

Stable

Total Organic Carbon Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Increasing

MAROS Linear Regression Method

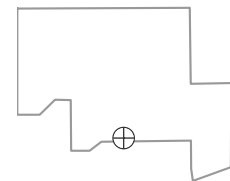
All Data

Probably Increasing

2015 - 2017 Data:

Probably Increasing

Well Location

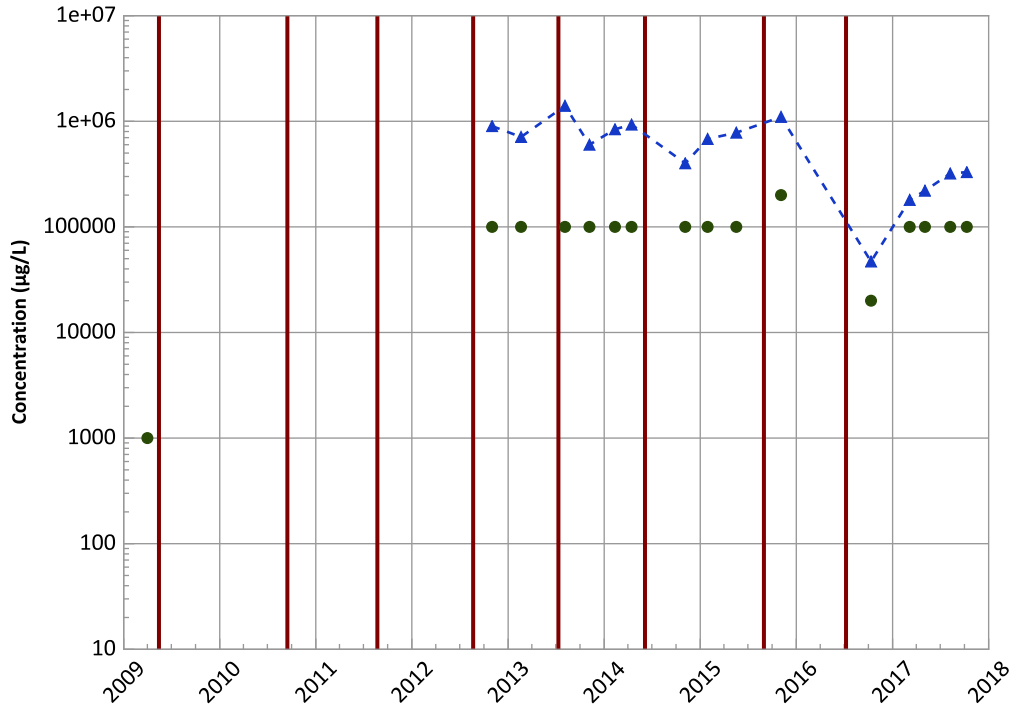


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 04/01/2009 to 12/18/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB071 in Perched Aquifer
USDOE/NNSA Pantex Plant

Dissolved Organic Carbon (DOC) Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Increasing

MAROS Linear Regression Method

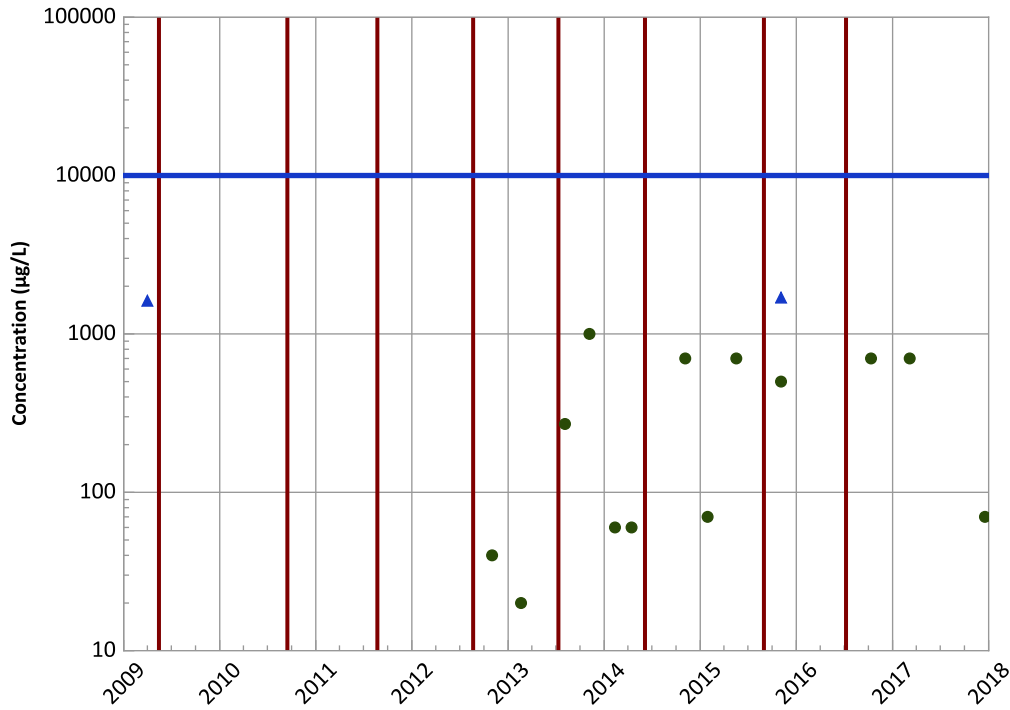
All Data

Decreasing

2015 - 2017 Data:

Increasing

Nitrate as N Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

N/A (<4 Detections in Dataset)

2015 - 2017 Data:

N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

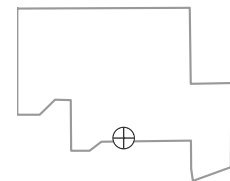
All Data

N/A (<4 Detections in Dataset)

2015 - 2017 Data:

N/A (<4 Detections in Dataset)

Well Location

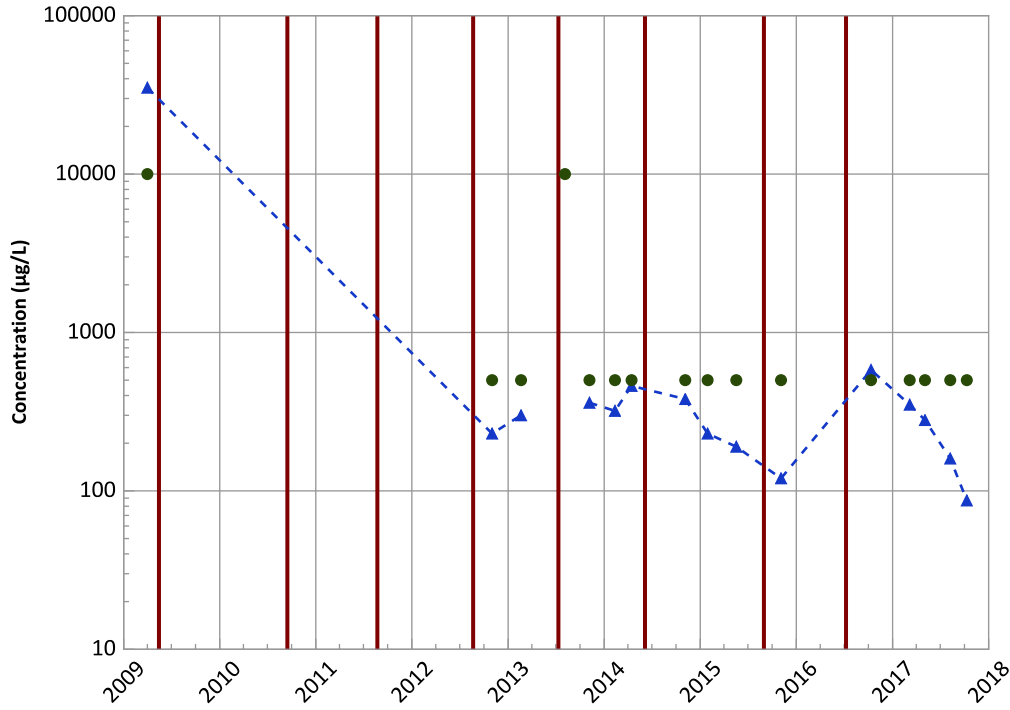


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 04/01/2009 to 12/18/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB071 in Perched Aquifer
USDOE/NNSA Pantex Plant

Sulfate (as SO4) Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Decreasing

MAROS Linear Regression Method

All Data

Decreasing

2015 - 2017 Data:

Stable

Ethene (Ethylene) Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

All Non-Detect

2015 - 2017 Data:

All Non-Detect

MAROS Linear Regression Method

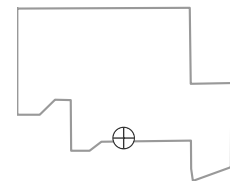
All Data

All Non-Detect

2015 - 2017 Data:

All Non-Detect

Well Location



Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 04/01/2009 to 12/18/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB071 in Perched Aquifer
USDOE/NNSA Pantex Plant

Ethane Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

N/A (<4 Detections in Dataset)

2015 - 2017 Data:

N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

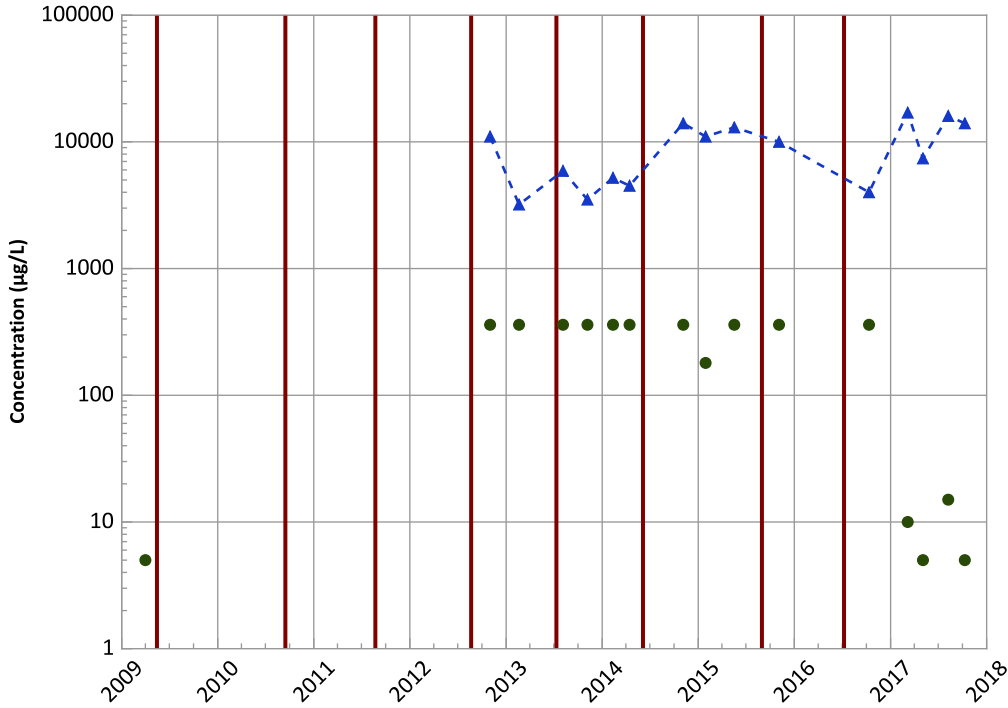
All Data

N/A (<4 Detections in Dataset)

2015 - 2017 Data:

N/A (<4 Detections in Dataset)

Methane Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Increasing

2015 - 2017 Data:

Decreasing

MAROS Linear Regression Method

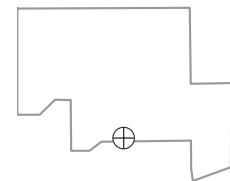
All Data

Increasing

2015 - 2017 Data:

No Trend

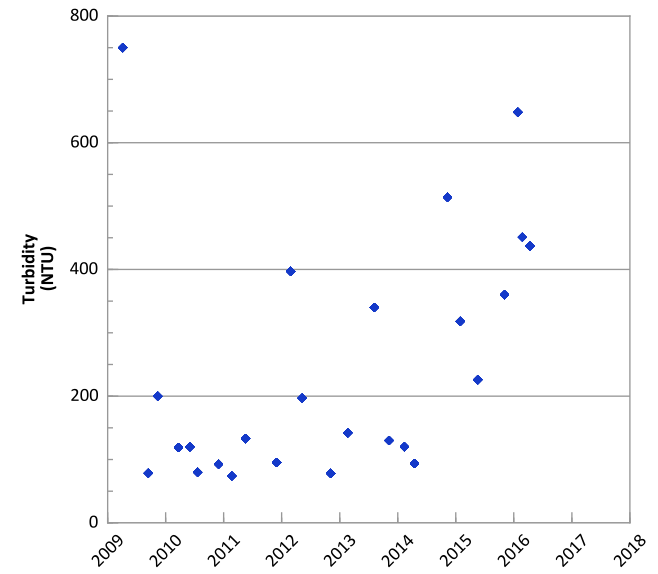
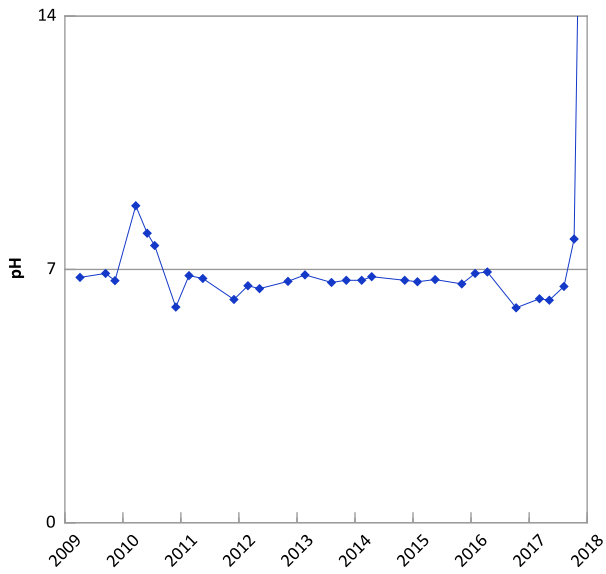
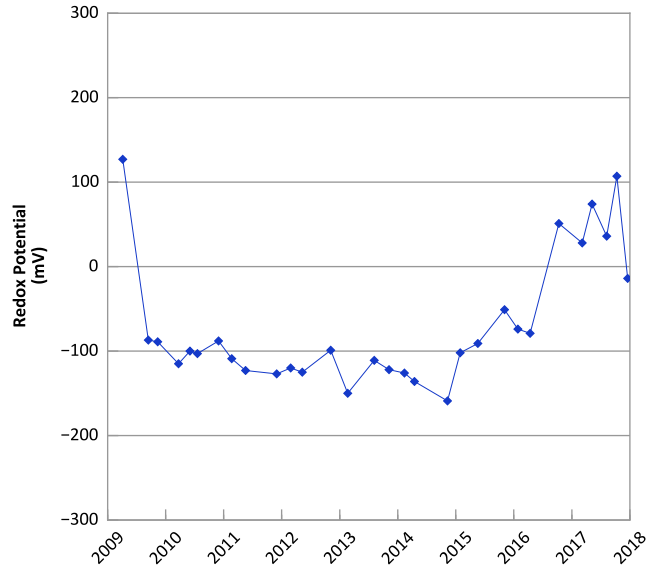
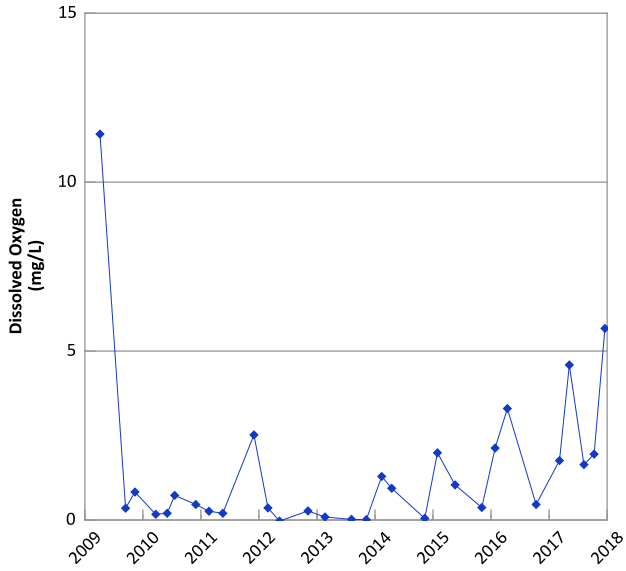
Well Location



Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 04/01/2009 to 12/18/2017
Analysis Date: 03/29/2018

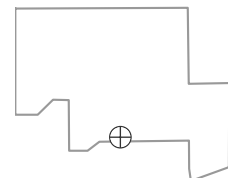
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

**PTX06-ISB073 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



Query Date Range: 01/01/2009 to 12/31/2017
 Data Date Range: 04/06/2009 to 12/18/2017
 Analysis Date: 03/29/2018

Well Location



PTX06-ISB073 in Perched Aquifer
USDOE/NNSA Pantex Plant

Tetrachloroethylene (PCE) Trend



Concentration Trend

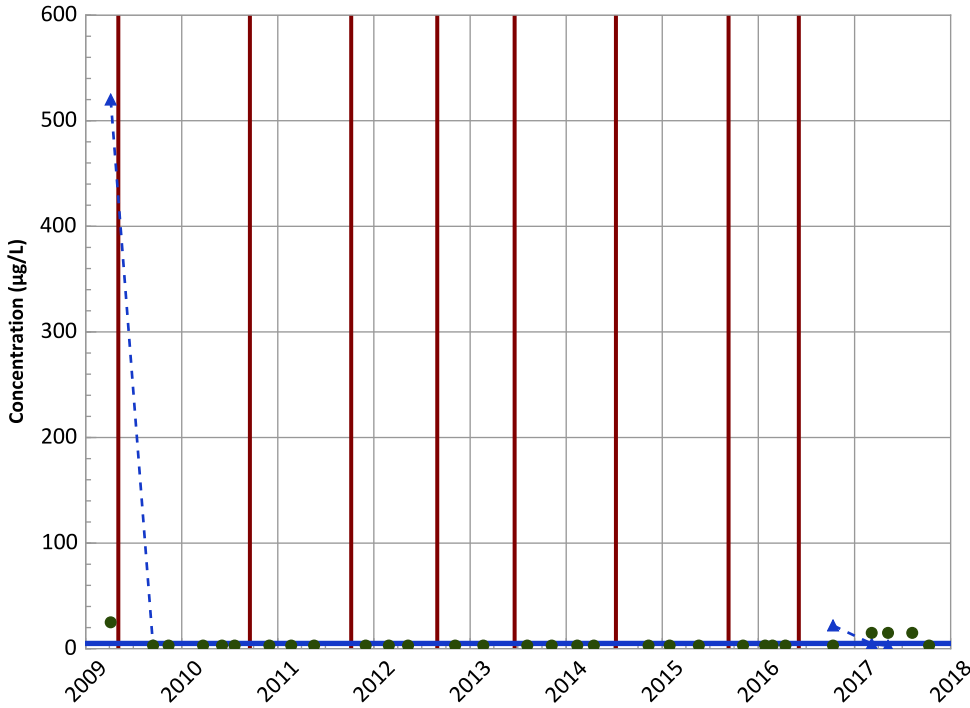
MAROS Mann-Kendall Method

All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method

All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
N/A (<4 Detections in Dataset)

Trichloroethene Trend



Concentration Trend

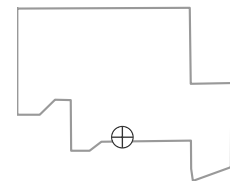
MAROS Mann-Kendall Method

All Data
Probably Increasing
2015 - 2017 Data:
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

All Data
No Trend
2015 - 2017 Data:
No Trend

Well Location

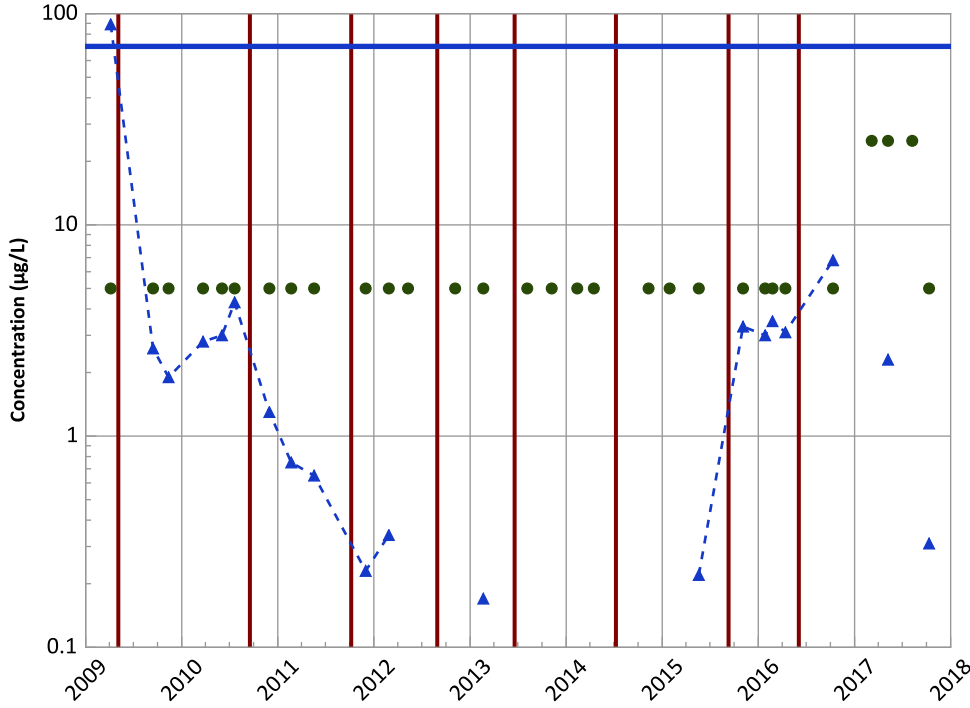


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 04/06/2009 to 12/18/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB073 in Perched Aquifer
USDOE/NNSA Pantex Plant

cis-1,2-Dichloroethene Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data
No Trend

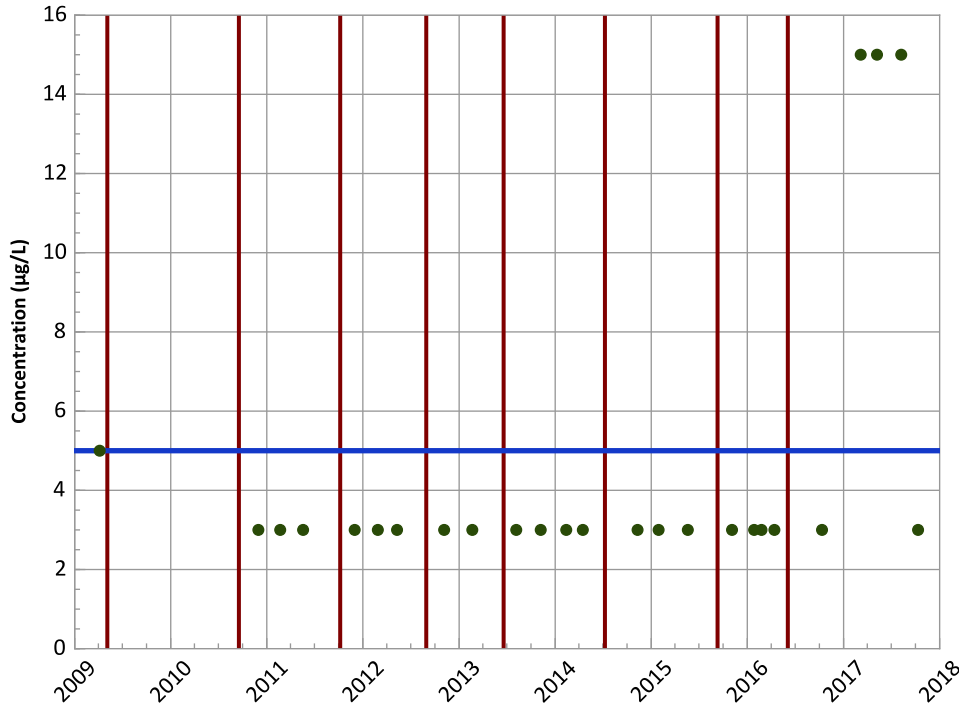
2015 - 2017 Data:
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

All Data
No Trend

2015 - 2017 Data:
Stable

1,2-Dichloroethane Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data
All Non-Detect

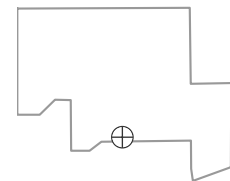
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method

All Data
All Non-Detect

2015 - 2017 Data:
All Non-Detect

Well Location

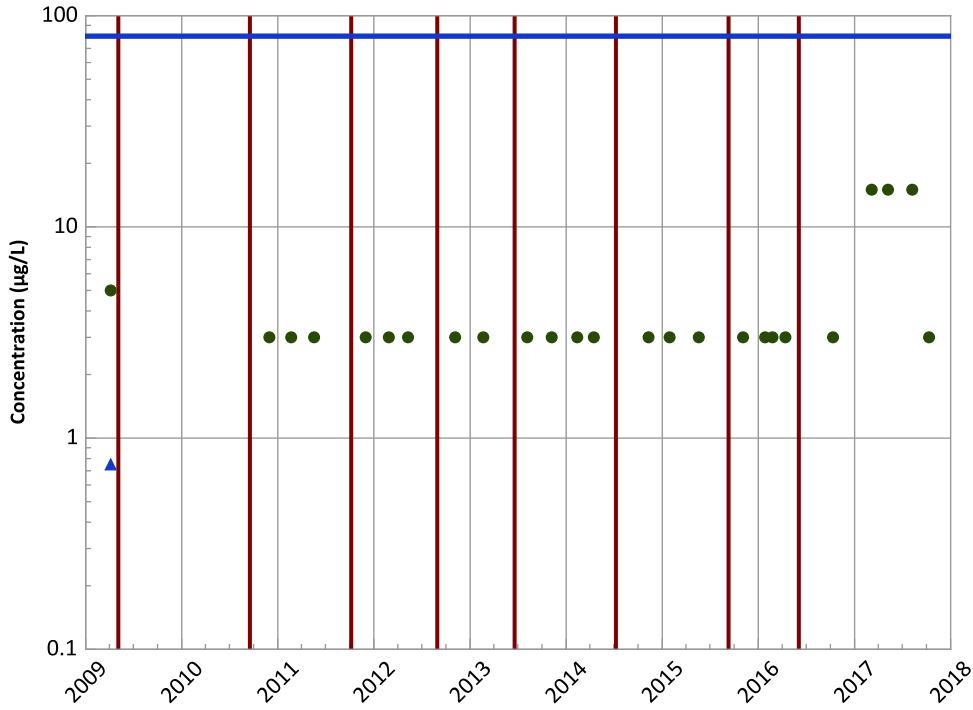


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 04/06/2009 to 12/18/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB073 in Perched Aquifer
USDOE/NNSA Pantex Plant

Chloroform Trend

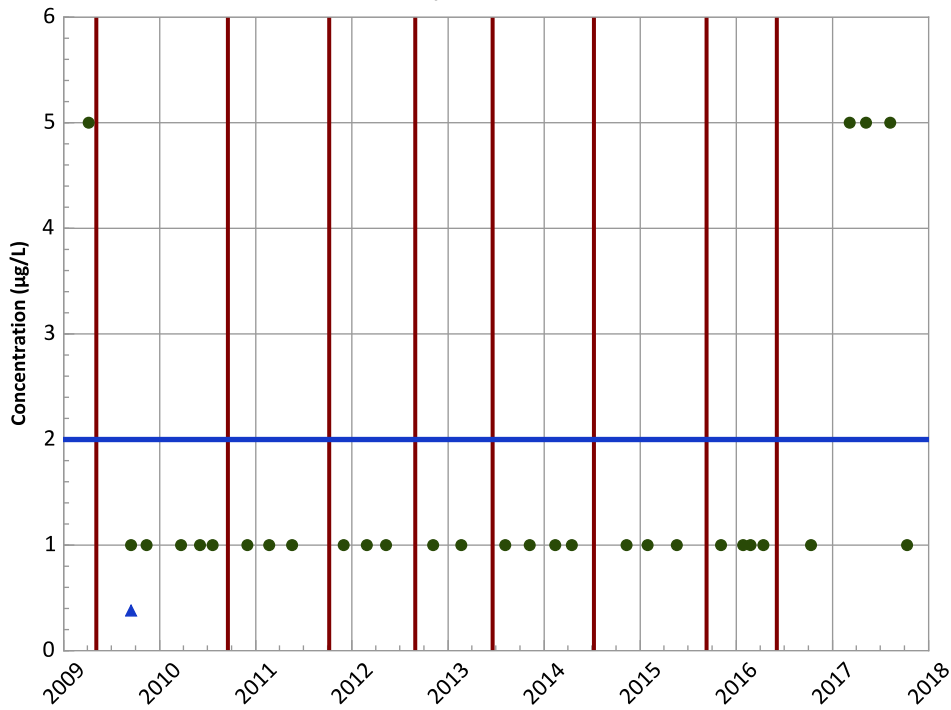


Concentration Trend

MAROS Mann-Kendall Method
All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method
All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
N/A (<4 Detections in Dataset)

Vinyl Chloride Trend

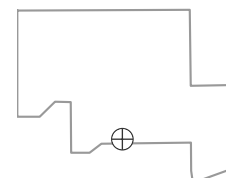


Concentration Trend

MAROS Mann-Kendall Method
All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method
All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
N/A (<4 Detections in Dataset)

Well Location

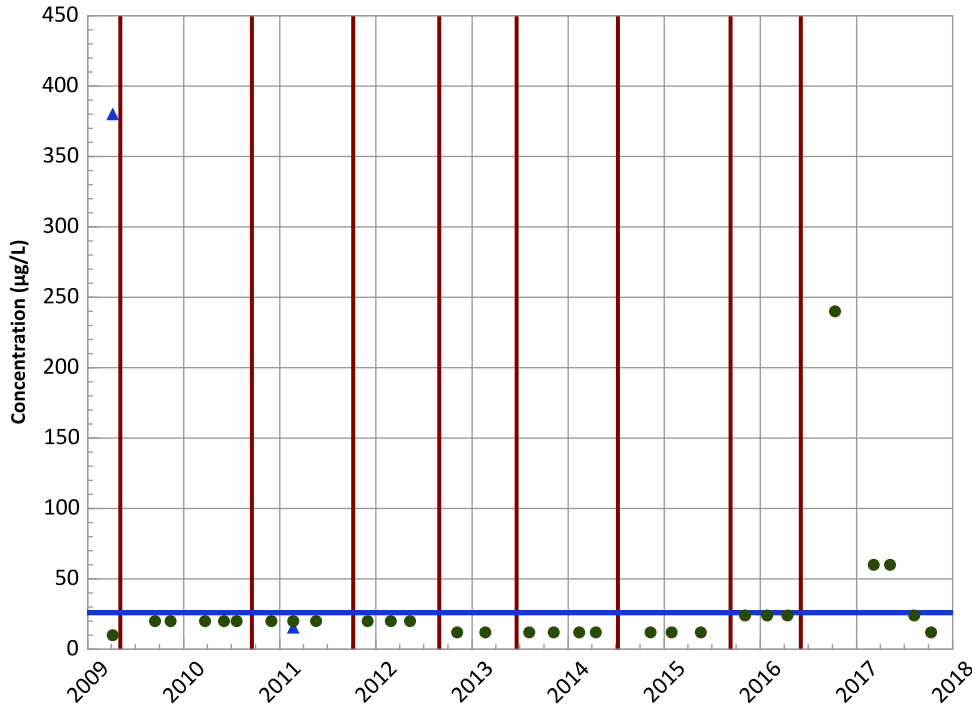


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 04/06/2009 to 12/18/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB073 in Perched Aquifer
USDOE/NNSA Pantex Plant

Perchlorate Trend

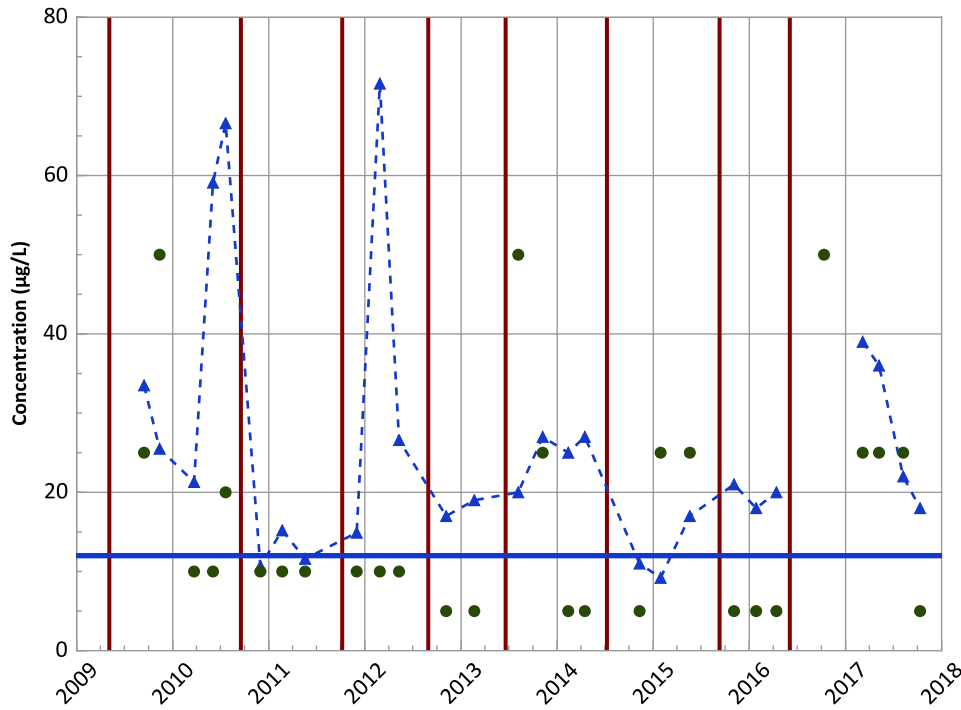


Concentration Trend

MAROS Mann-Kendall Method
All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method
All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
N/A (<4 Detections in Dataset)

Arsenic Trend

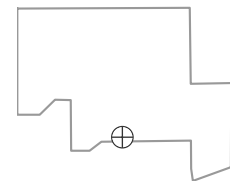


Concentration Trend

MAROS Mann-Kendall Method
All Data
Decreasing
2015 - 2017 Data:
Decreasing

MAROS Linear Regression Method
All Data
Stable
2015 - 2017 Data:
Decreasing

Well Location

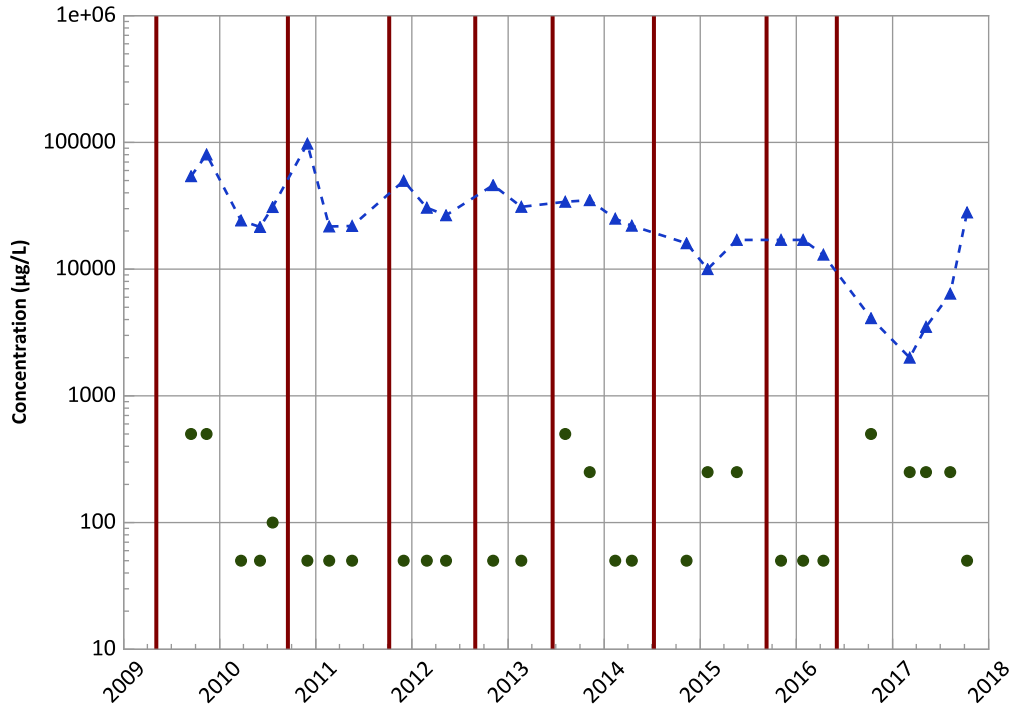


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 04/06/2009 to 12/18/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB073 in Perched Aquifer
USDOE/NNSA Pantex Plant

Iron Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Increasing

MAROS Linear Regression Method

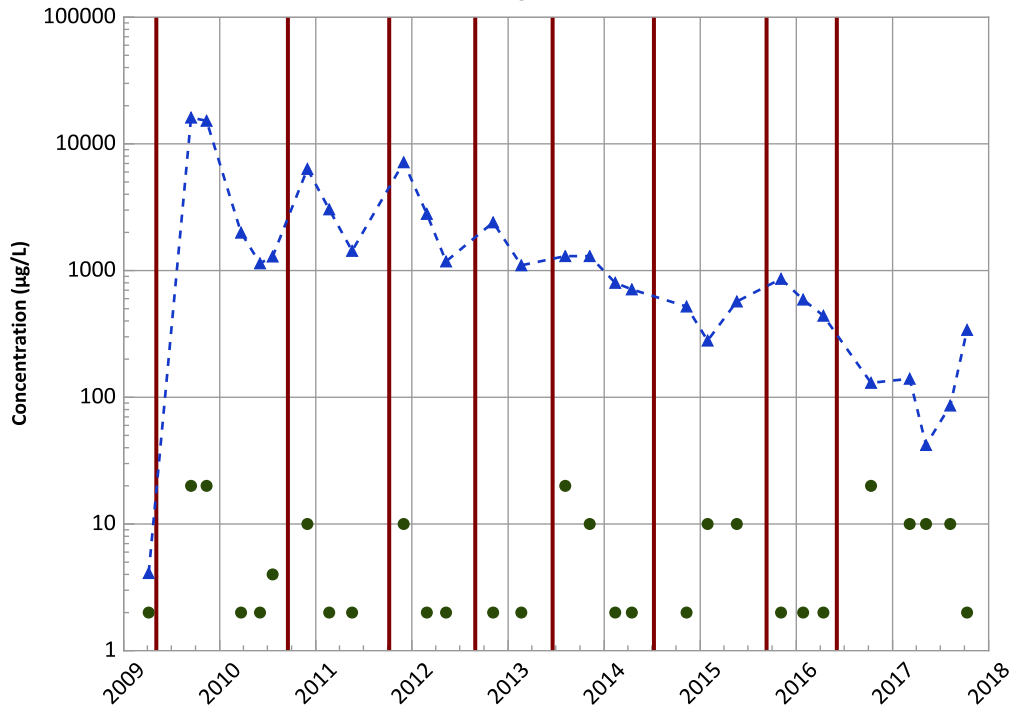
All Data

Decreasing

2015 - 2017 Data:

Increasing

Manganese Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

No Trend

MAROS Linear Regression Method

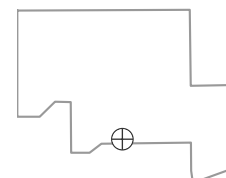
All Data

Decreasing

2015 - 2017 Data:

No Trend

Well Location

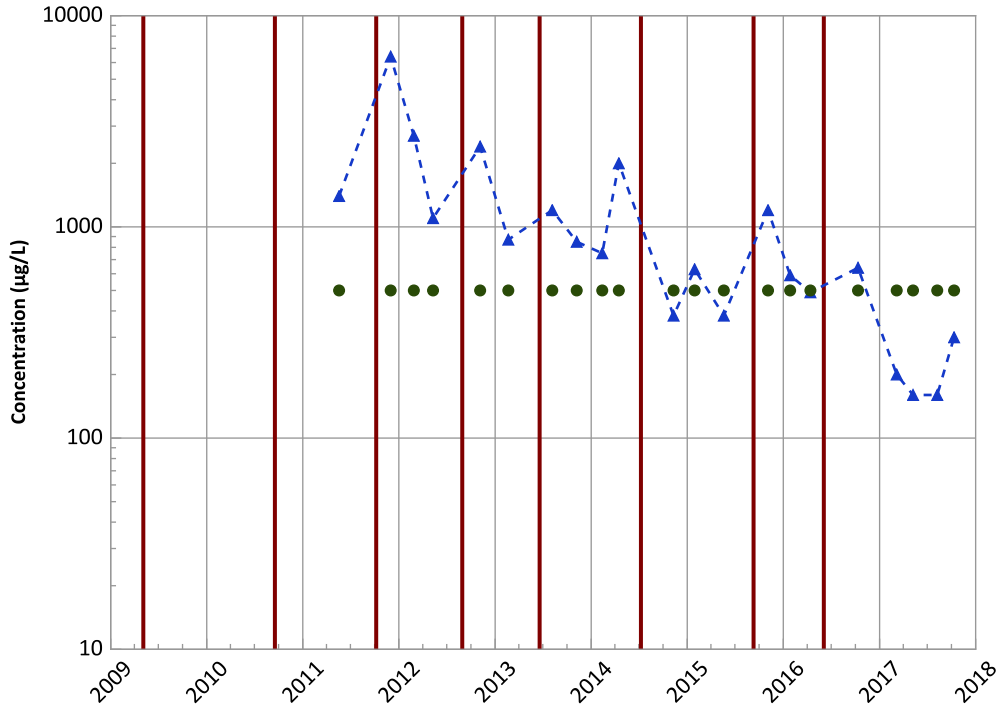


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 04/06/2009 to 12/18/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB073 in Perched Aquifer
USDOE/NNSA Pantex Plant

Divalent Manganese Trend



Concentration Trend

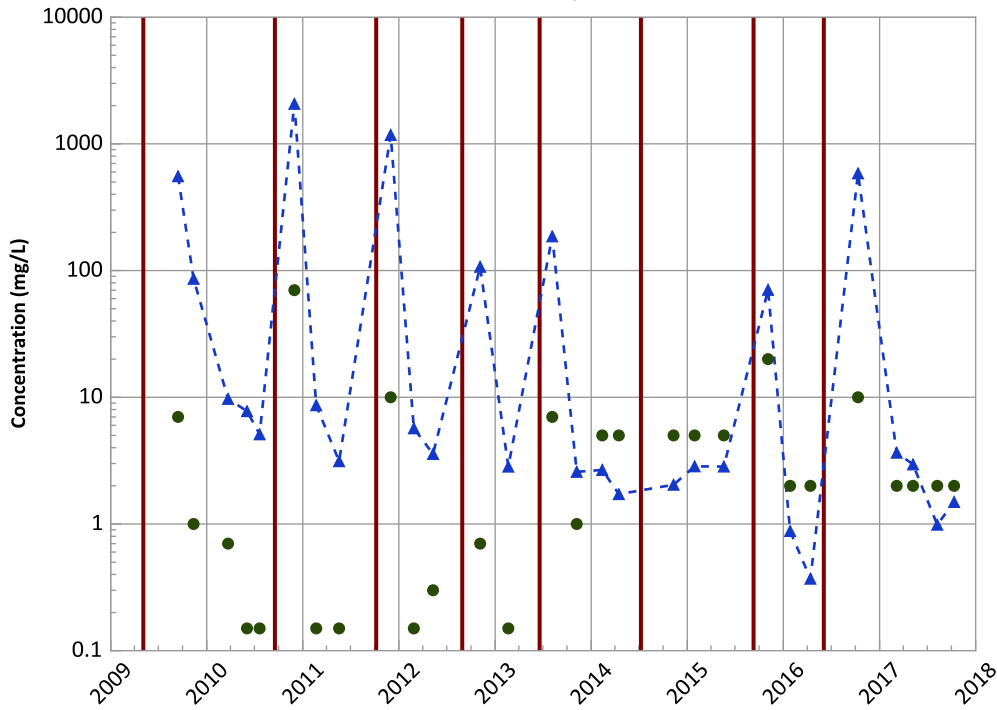
MAROS Mann-Kendall Method

All Data
Decreasing
2015 - 2017 Data:
No Trend

MAROS Linear Regression Method

All Data
Decreasing
2015 - 2017 Data:
No Trend

Total Volatile Fatty Acids Trend



Concentration Trend

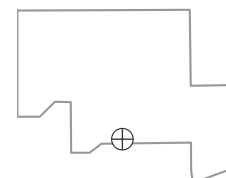
MAROS Mann-Kendall Method

All Data
Decreasing
2015 - 2017 Data:
Decreasing

MAROS Linear Regression Method

All Data
Decreasing
2015 - 2017 Data:
Probably Decreasing

Well Location

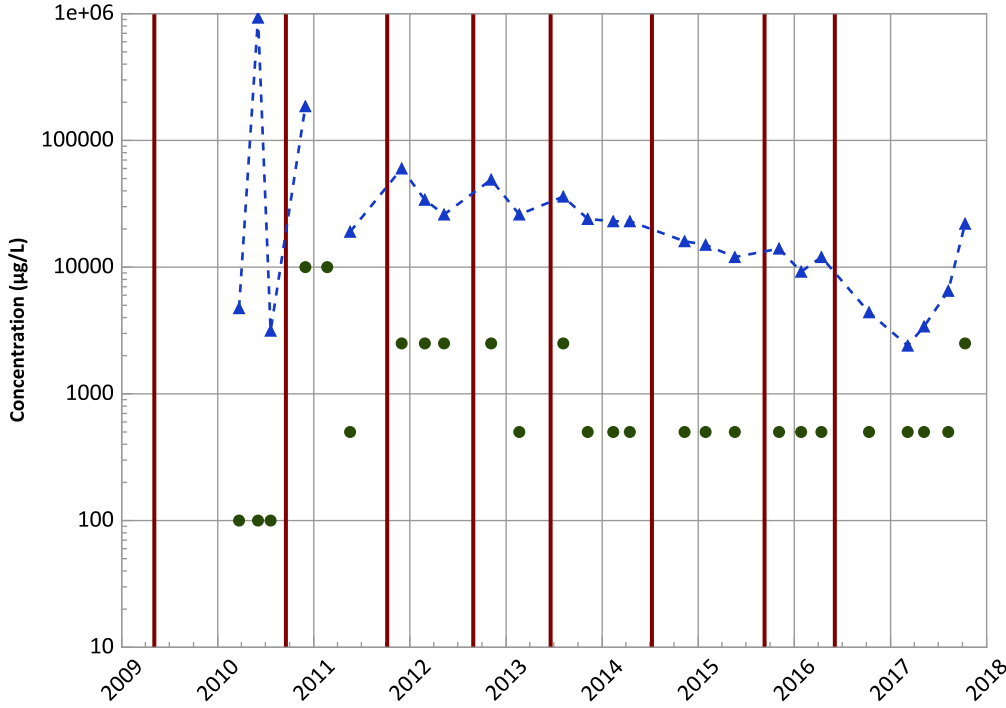


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 04/06/2009 to 12/18/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB073 in Perched Aquifer
USDOE/NNSA Pantex Plant

Ferrous Iron Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Increasing

MAROS Linear Regression Method

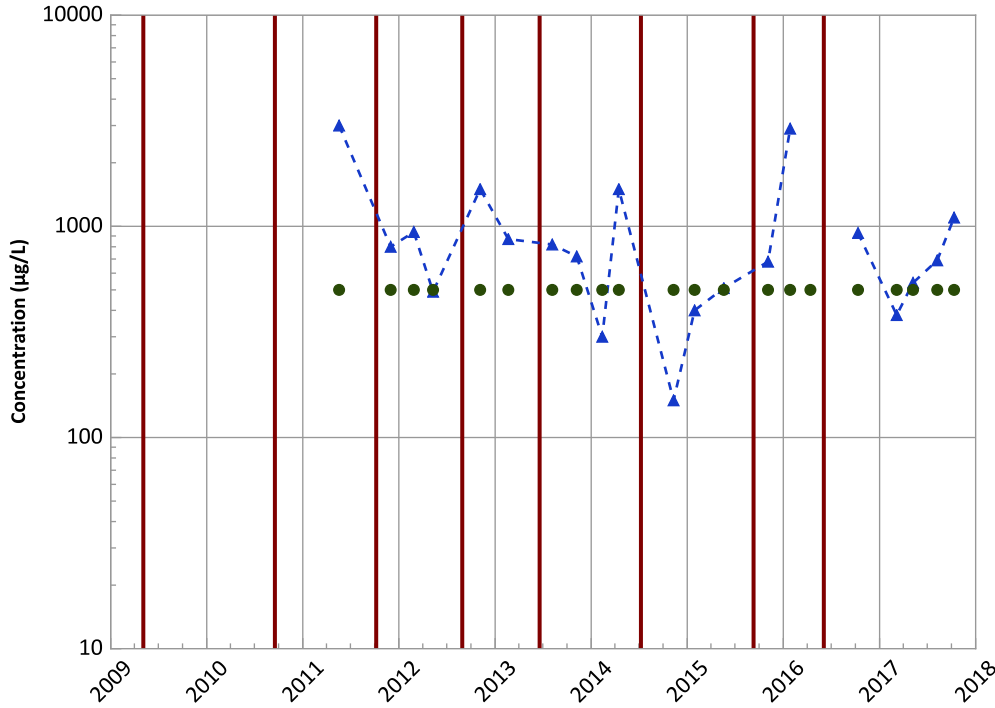
All Data

Decreasing

2015 - 2017 Data:

Increasing

Ferric Iron Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Increasing

MAROS Linear Regression Method

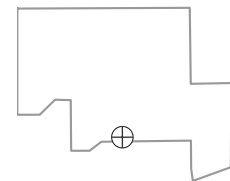
All Data

Stable

2015 - 2017 Data:

Increasing

Well Location

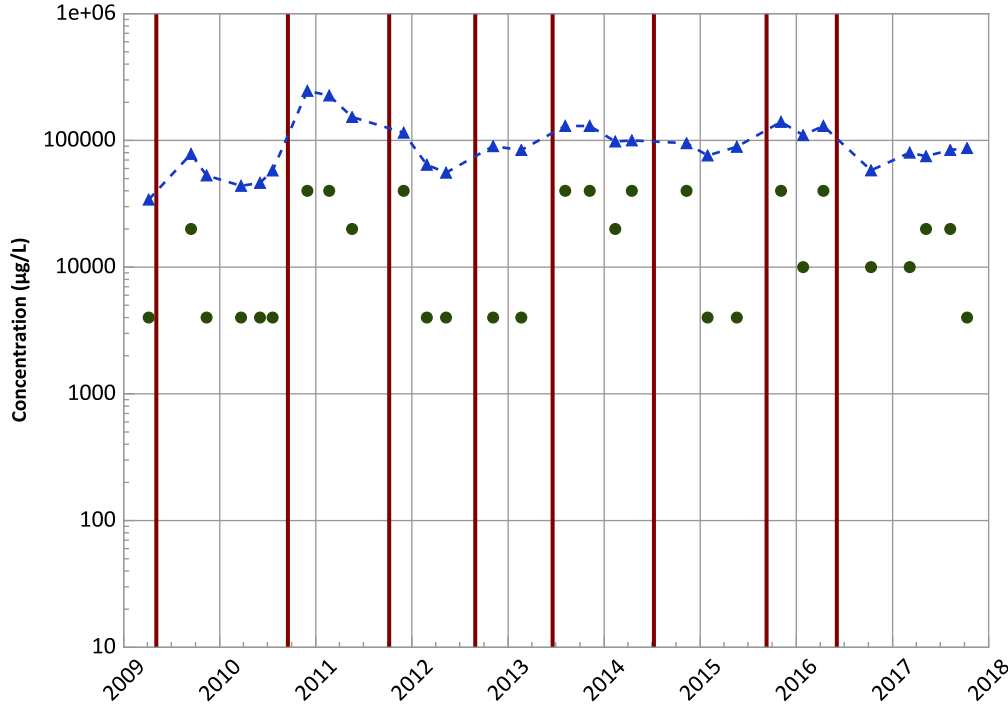


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 04/06/2009 to 12/18/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB073 in Perched Aquifer
USDOE/NNSA Pantex Plant

Chloride (as Cl) Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

No Trend

2015 - 2017 Data:

No Trend

MAROS Linear Regression Method

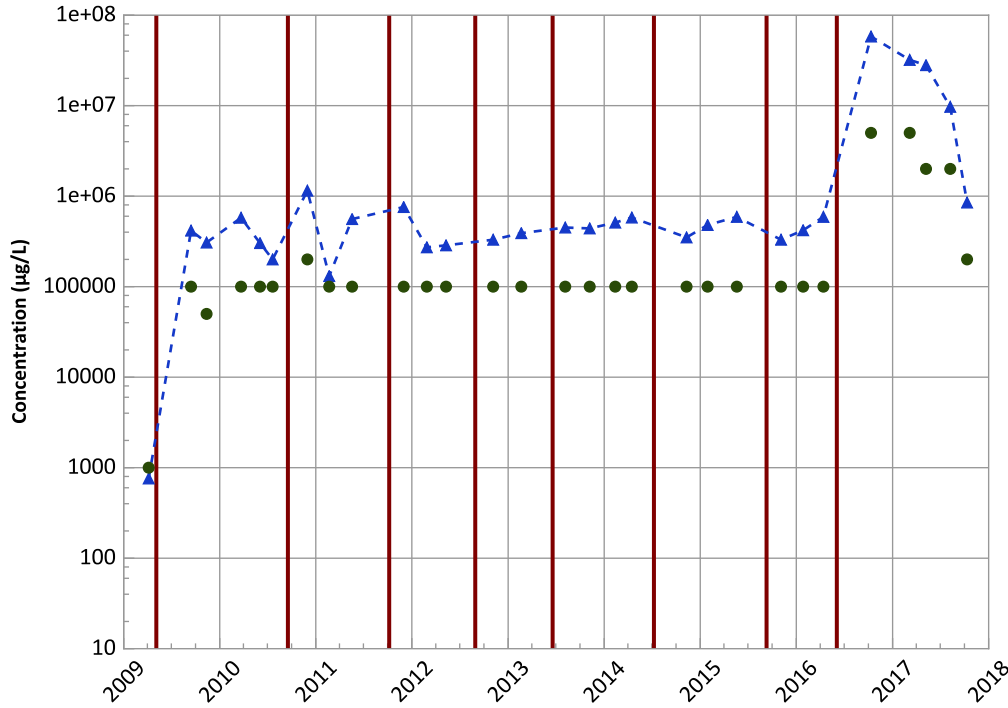
All Data

No Trend

2015 - 2017 Data:

No Trend

Total Organic Carbon Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Increasing

2015 - 2017 Data:

Decreasing

MAROS Linear Regression Method

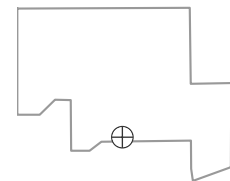
All Data

Increasing

2015 - 2017 Data:

Probably Decreasing

Well Location

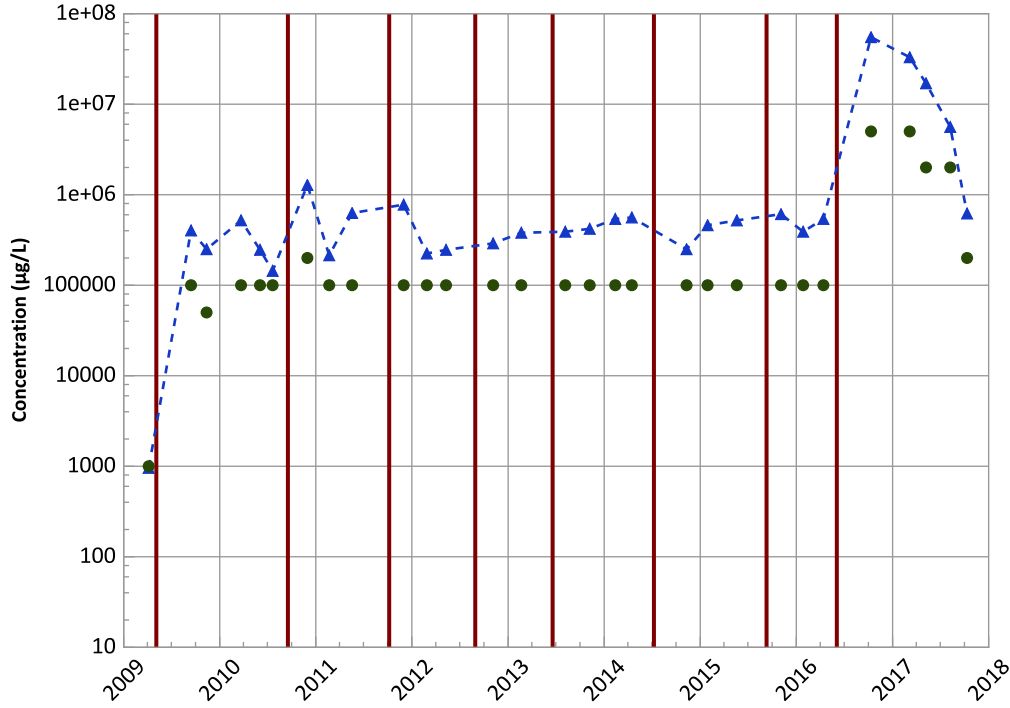


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 04/06/2009 to 12/18/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB073 in Perched Aquifer
USDOE/NNSA Pantex Plant

Dissolved Organic Carbon (DOC) Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Increasing

2015 - 2017 Data:

Decreasing

MAROS Linear Regression Method

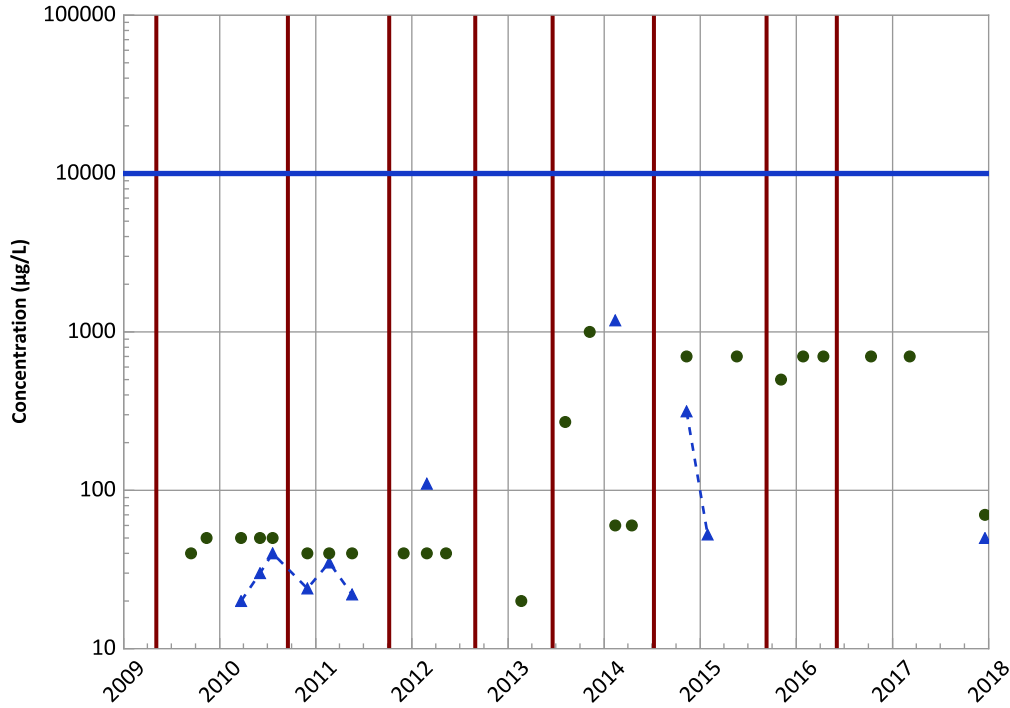
All Data

Increasing

2015 - 2017 Data:

Decreasing

Nitrate as N Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Increasing

2015 - 2017 Data:

N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

All Data

Probably Increasing

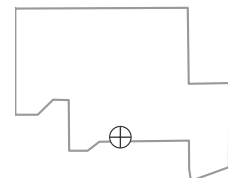
2015 - 2017 Data:

Probably Decreasing

Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 04/06/2009 to 12/18/2017
Analysis Date: 03/29/2018

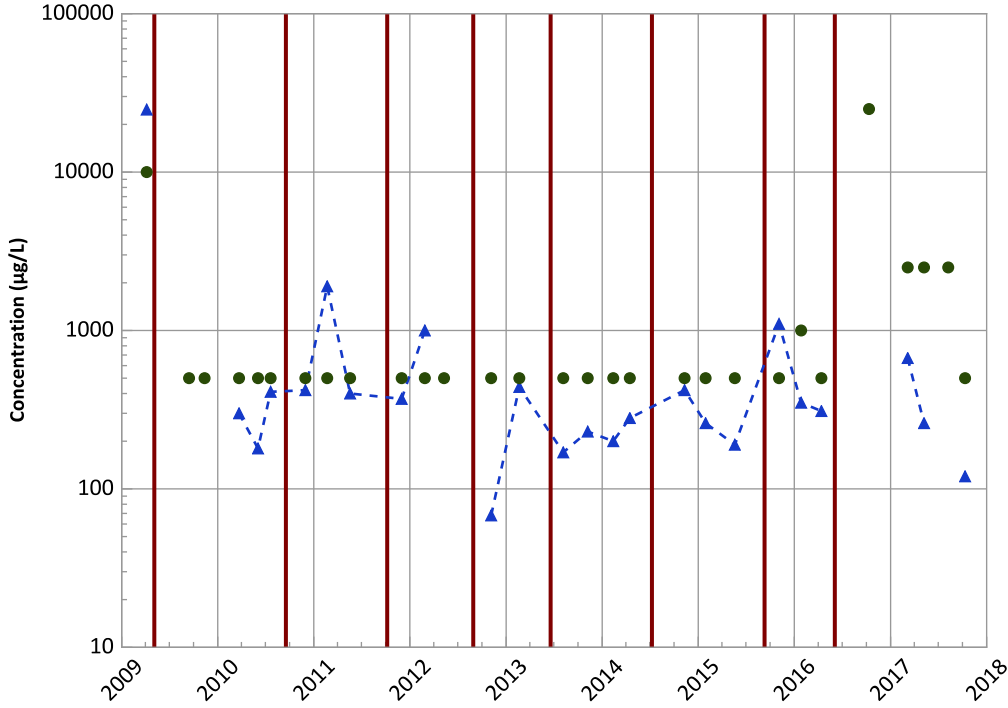
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

Well Location



PTX06-ISB073 in Perched Aquifer
USDOE/NNSA Pantex Plant

Sulfate (as SO4) Trend



Concentration Trend

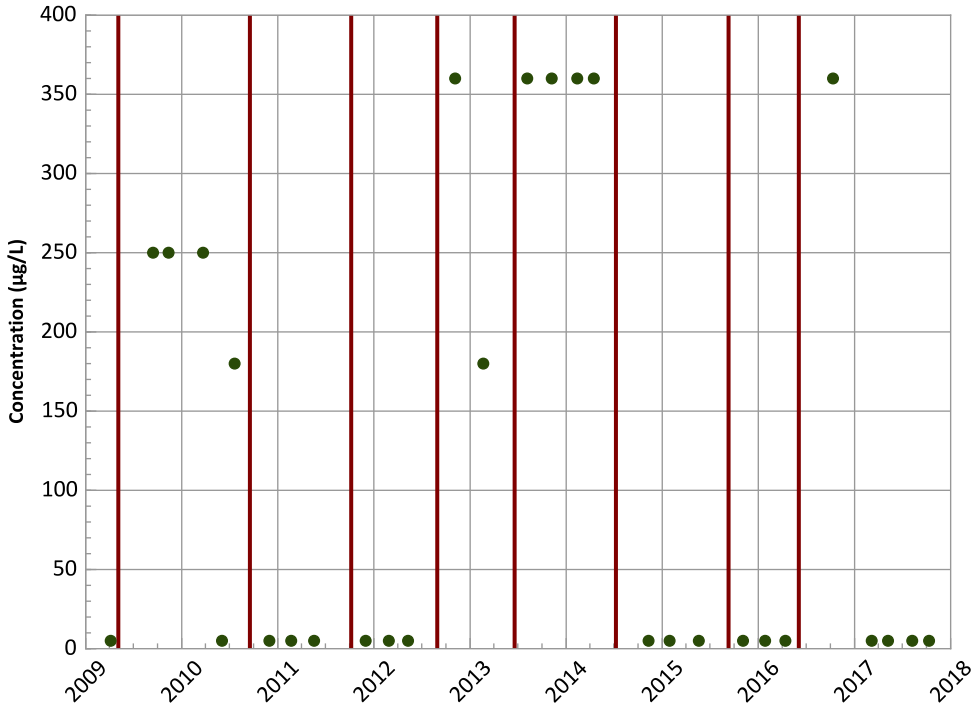
MAROS Mann-Kendall Method

All Data
No Trend
2015 - 2017 Data:
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

All Data
Decreasing
2015 - 2017 Data:
Stable

Ethene (Ethylene) Trend



Concentration Trend

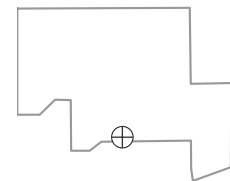
MAROS Mann-Kendall Method

All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method

All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

Well Location

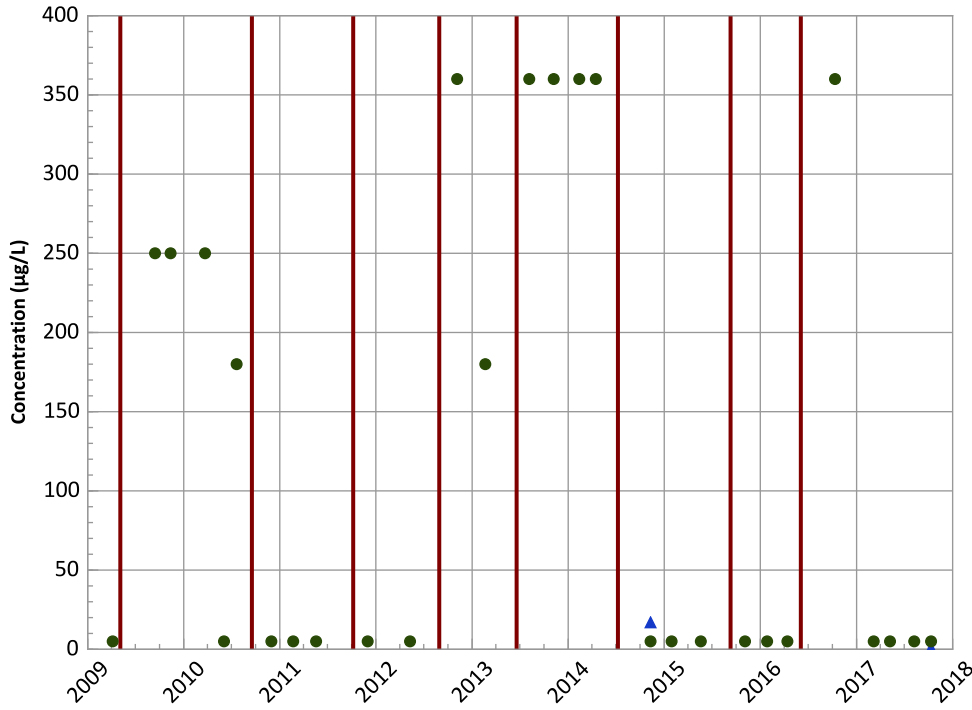


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 04/06/2009 to 12/18/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB073 in Perched Aquifer
USDOE/NNSA Pantex Plant

Ethane Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

N/A (<4 Detections in Dataset)

2015 - 2017 Data:

N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

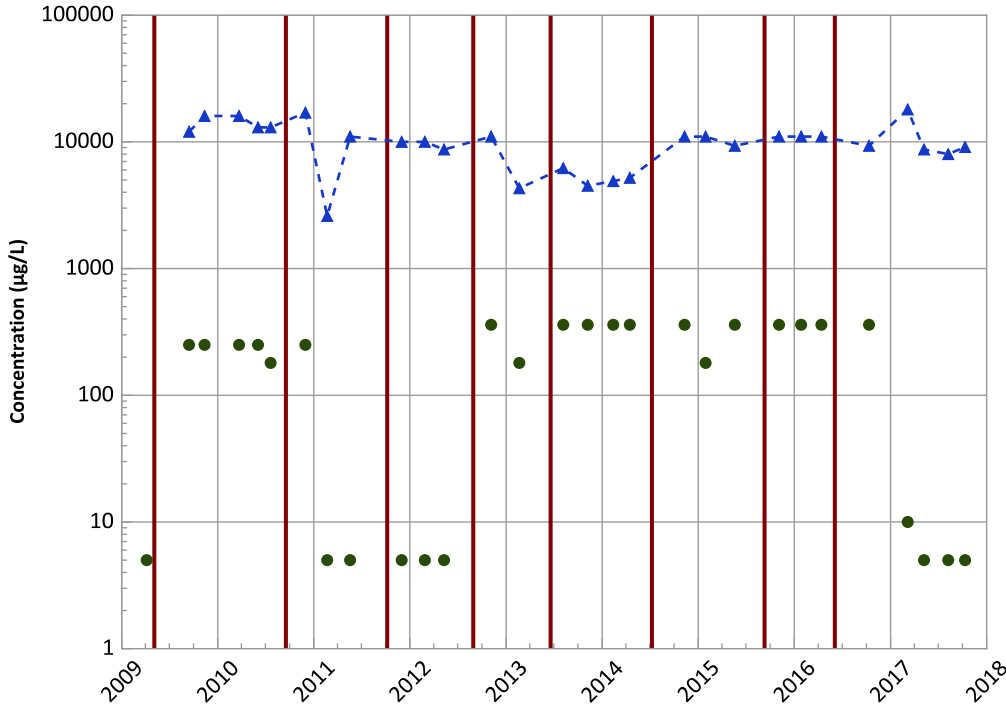
All Data

N/A (<4 Detections in Dataset)

2015 - 2017 Data:

N/A (<4 Detections in Dataset)

Methane Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Decreasing

MAROS Linear Regression Method

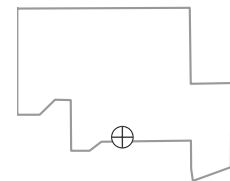
All Data

Stable

2015 - 2017 Data:

Stable

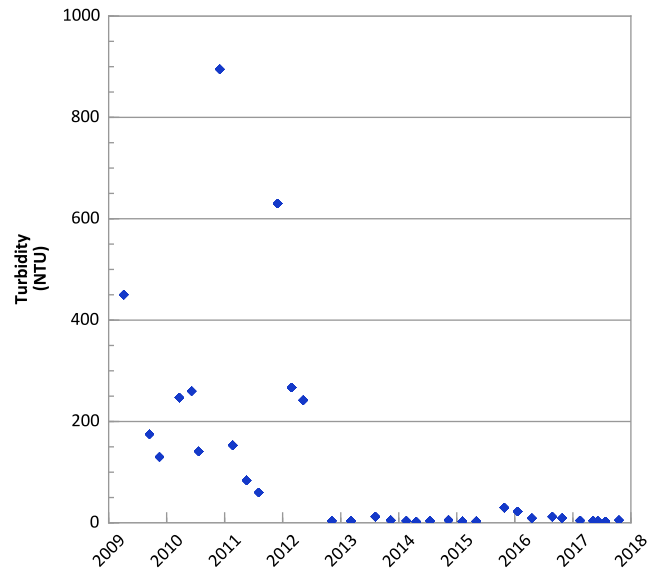
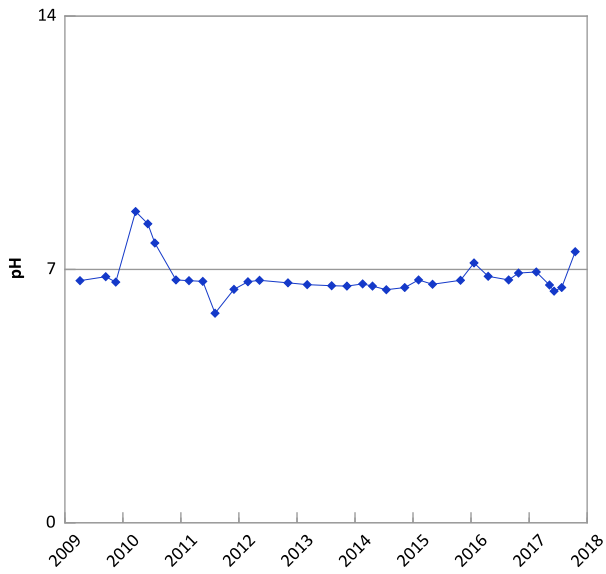
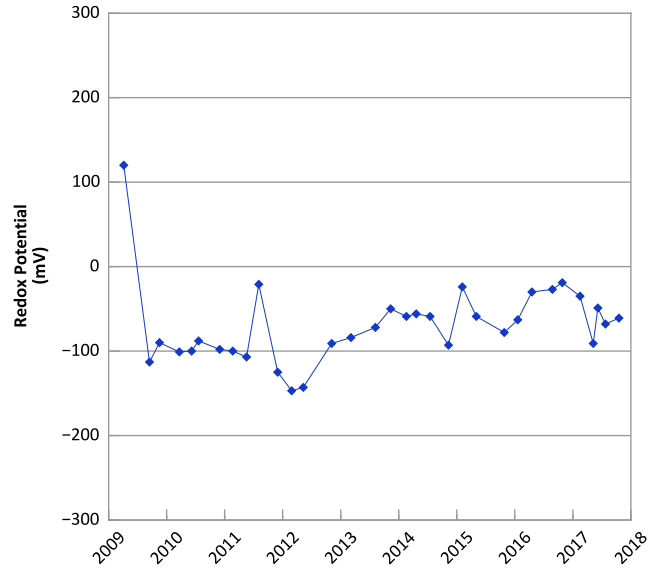
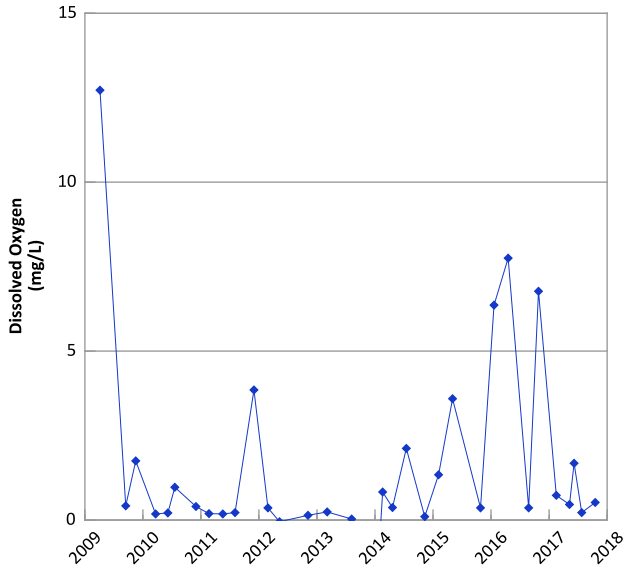
Well Location



Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 04/06/2009 to 12/18/2017
Analysis Date: 03/29/2018

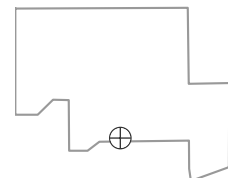
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

**PTX06-ISB075 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



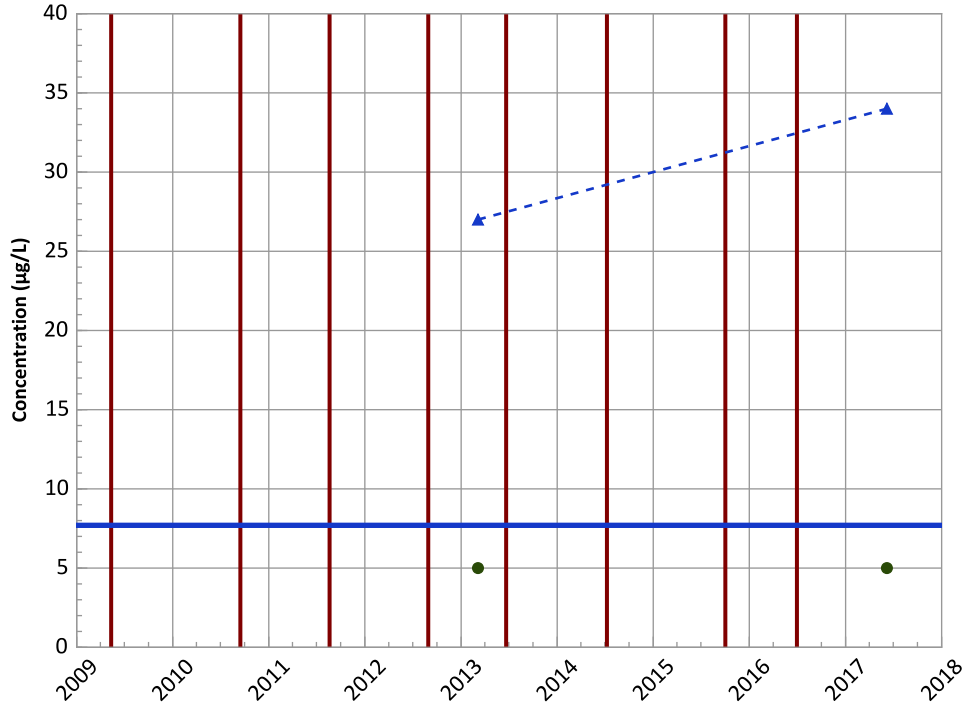
Query Date Range: 01/01/2009 to 12/31/2017
 Data Date Range: 04/06/2009 to 10/18/2017
 Analysis Date: 03/29/2018

Well Location



PTX06-ISB075 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,4-Dioxane (p-Dioxane) Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

N/A (<4 Samples in Dataset)

2015 - 2017 Data:

N/A (<4 Samples in Dataset)

MAROS Linear Regression Method

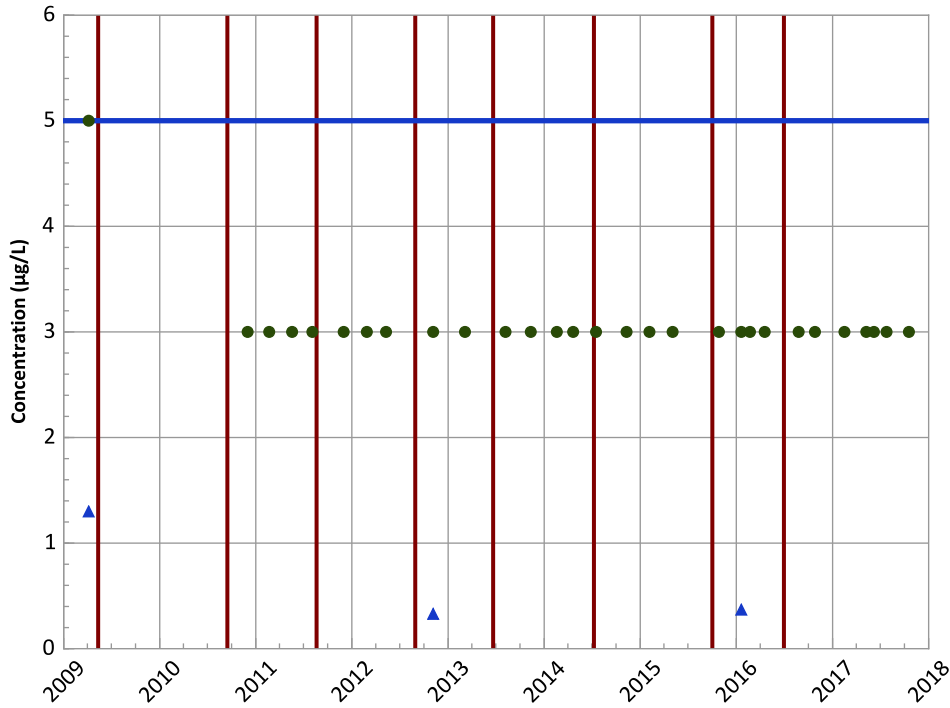
All Data

N/A (<4 Detections in Dataset)

2015 - 2017 Data:

N/A (<4 Detections in Dataset)

Tetrachloroethylene (PCE) Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

N/A (<4 Detections in Dataset)

2015 - 2017 Data:

All Non-Detect

MAROS Linear Regression Method

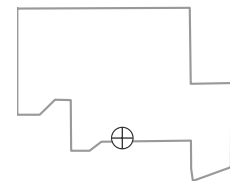
All Data

N/A (<4 Detections in Dataset)

2015 - 2017 Data:

N/A (<4 Detections in Dataset)

Well Location

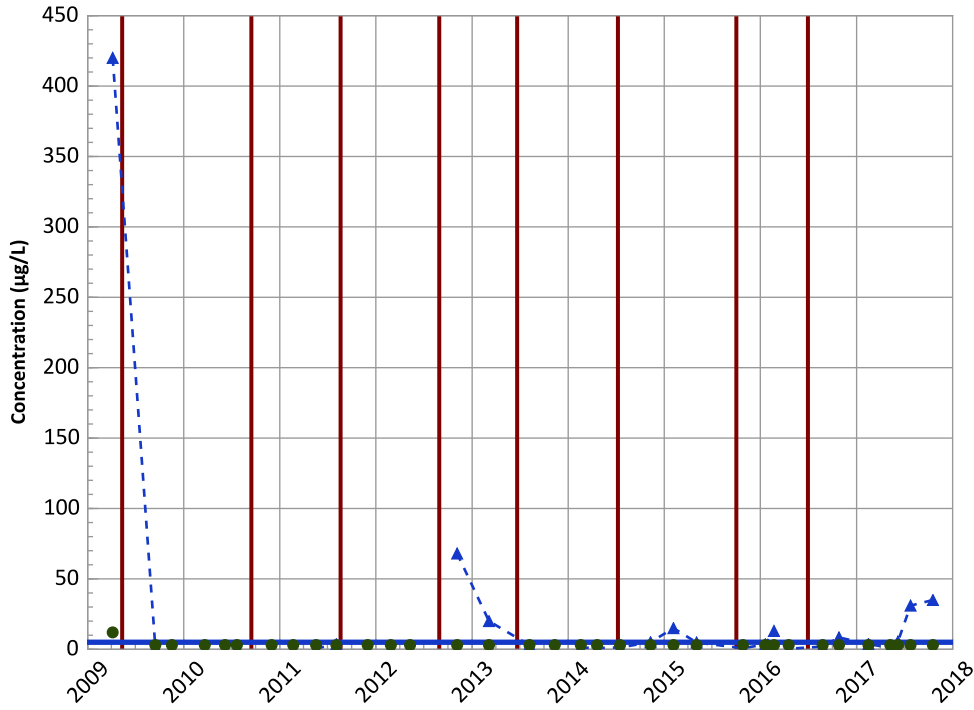


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 04/06/2009 to 10/18/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB075 in Perched Aquifer
USDOE/NNSA Pantex Plant

Trichloroethene Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

No Trend

2015 - 2017 Data:

Increasing

MAROS Linear Regression Method

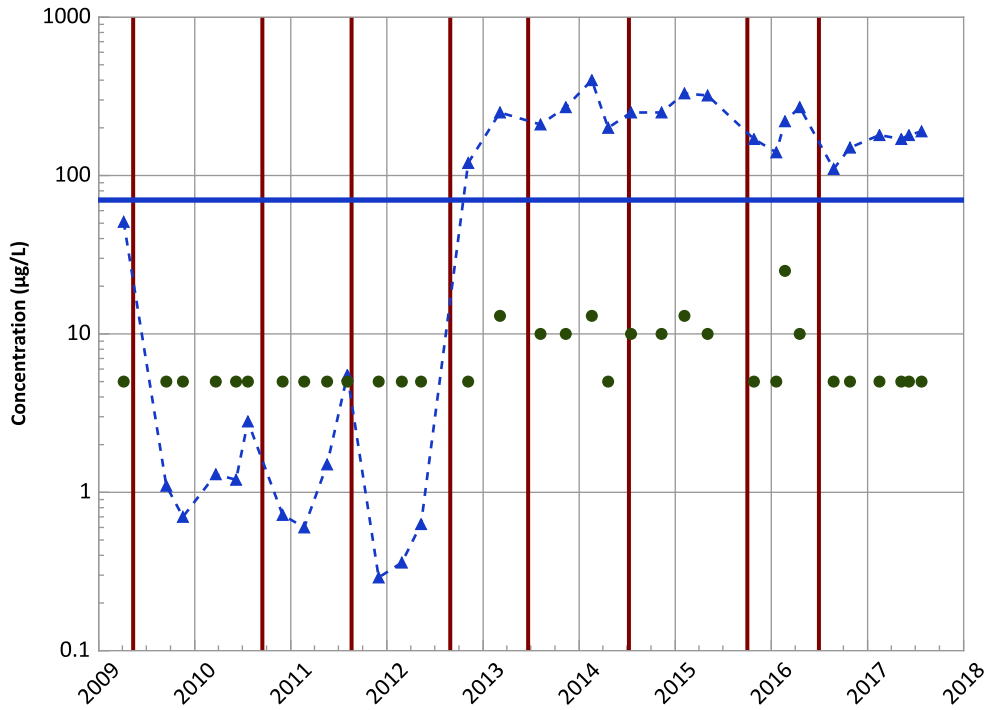
All Data

No Trend

2015 - 2017 Data:

Increasing

cis-1,2-Dichloroethene Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Increasing

2015 - 2017 Data:

No Trend

MAROS Linear Regression Method

All Data

Increasing

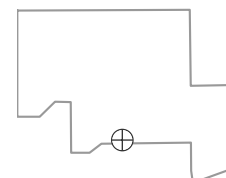
2015 - 2017 Data:

No Trend

Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 04/06/2009 to 10/18/2017
Analysis Date: 03/29/2018

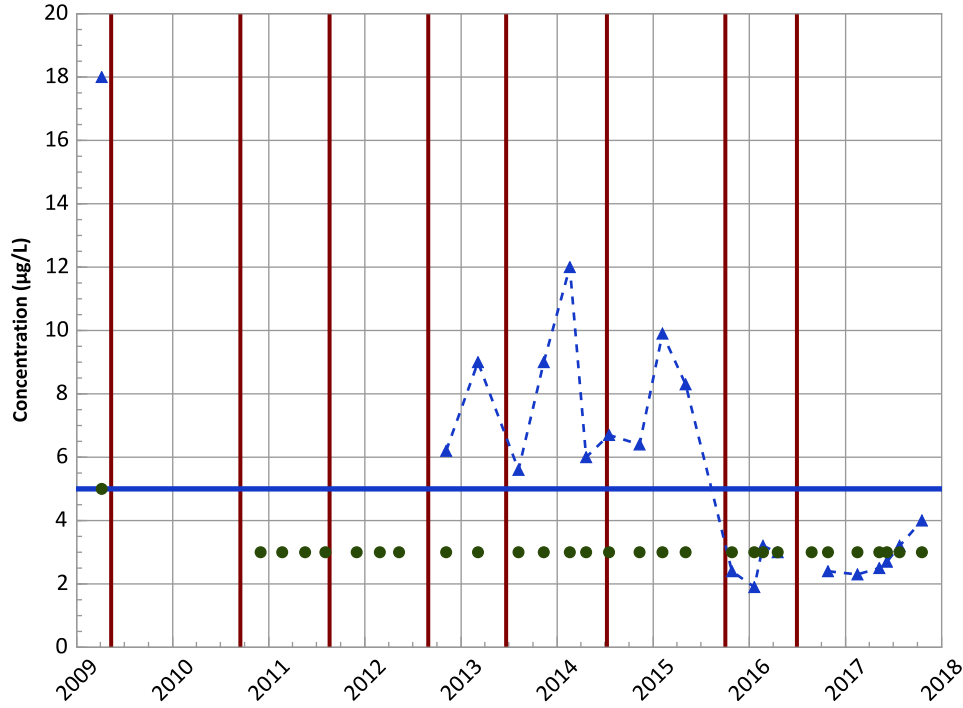
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

Well Location



PTX06-ISB075 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,2-Dichloroethane Trend



Concentration Trend

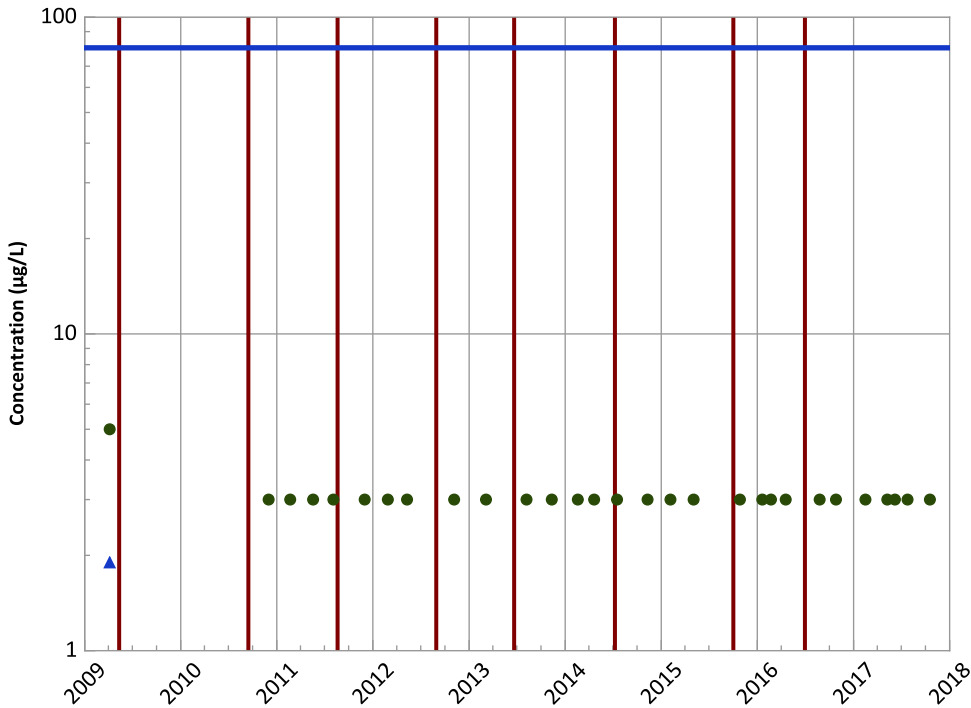
MAROS Mann-Kendall Method

All Data
No Trend
2015 - 2017 Data:
Increasing

MAROS Linear Regression Method

All Data
Decreasing
2015 - 2017 Data:
No Trend

Chloroform Trend



Concentration Trend

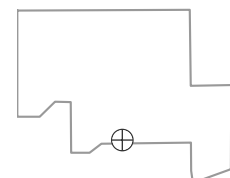
MAROS Mann-Kendall Method

All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method

All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
N/A (<4 Detections in Dataset)

Well Location

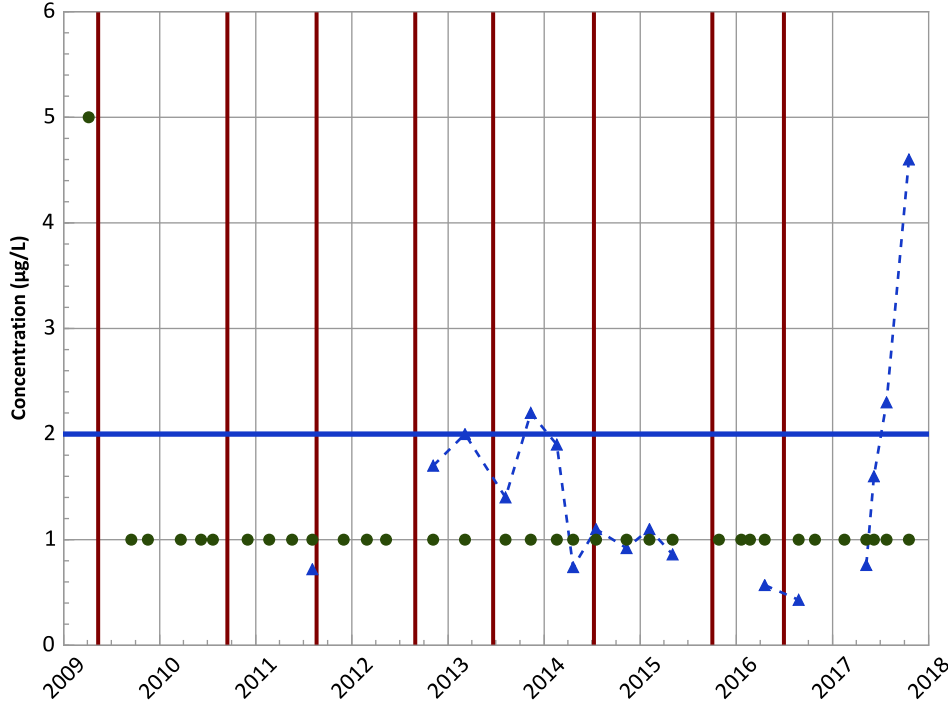


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 04/06/2009 to 10/18/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB075 in Perched Aquifer
USDOE/NNSA Pantex Plant

Vinyl Chloride Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Probably Increasing

2015 - 2017 Data:

Increasing

MAROS Linear Regression Method

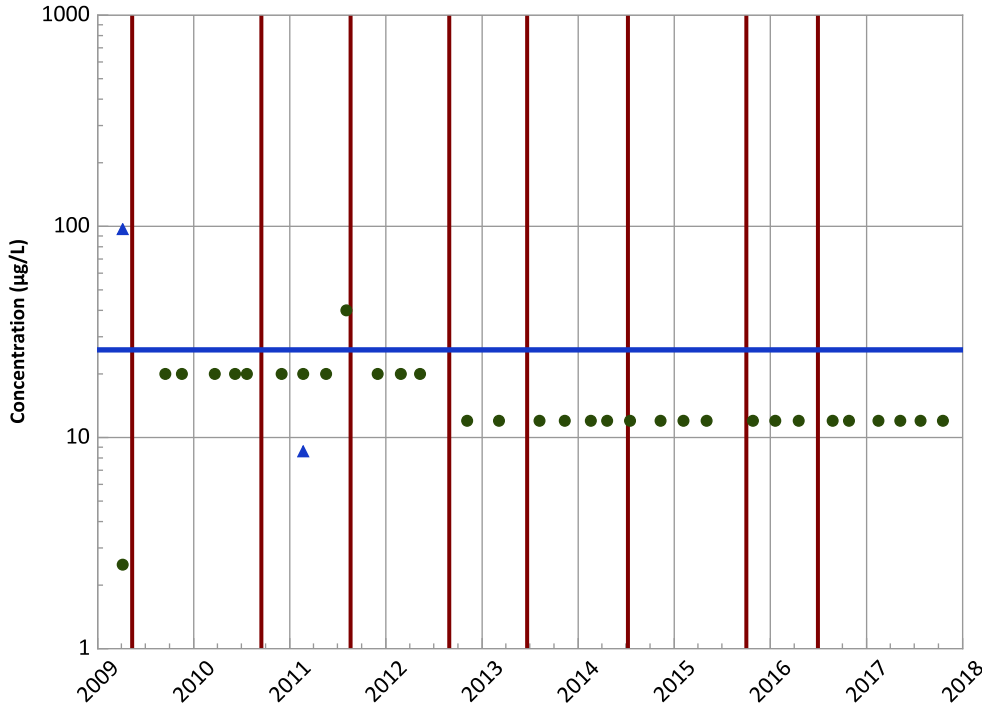
All Data

No Trend

2015 - 2017 Data:

Increasing

Perchlorate Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

N/A (<4 Detections in Dataset)

2015 - 2017 Data:

All Non-Detect

MAROS Linear Regression Method

All Data

N/A (<4 Detections in Dataset)

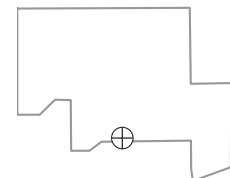
2015 - 2017 Data:

N/A (<4 Detections in Dataset)

Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 04/06/2009 to 10/18/2017
Analysis Date: 03/29/2018

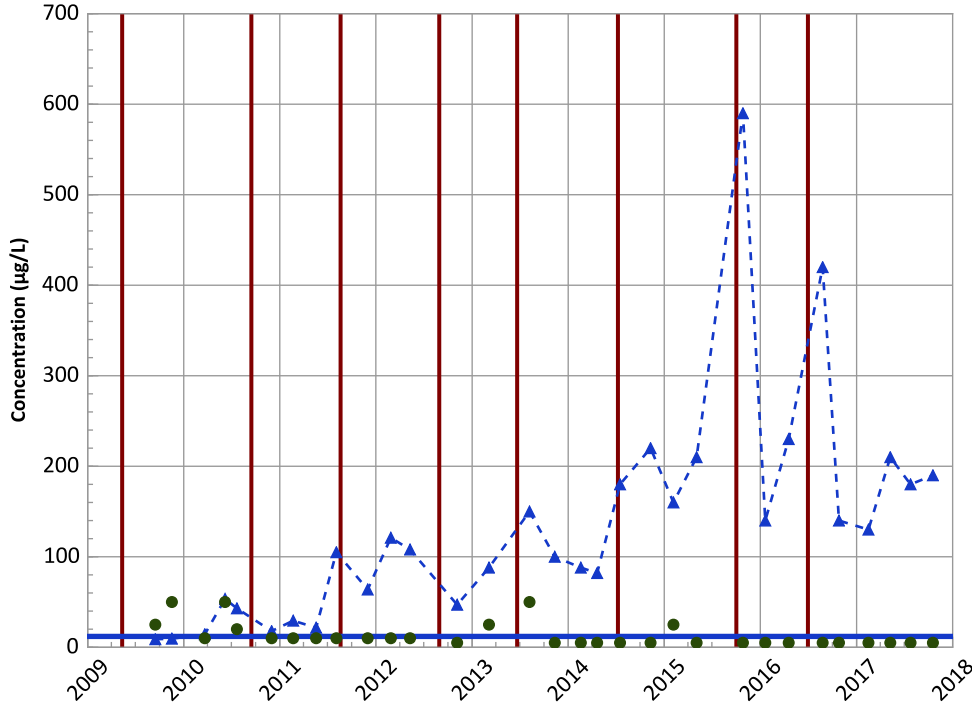
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

Well Location



PTX06-ISB075 in Perched Aquifer
USDOE/NNSA Pantex Plant

Arsenic Trend



Concentration Trend

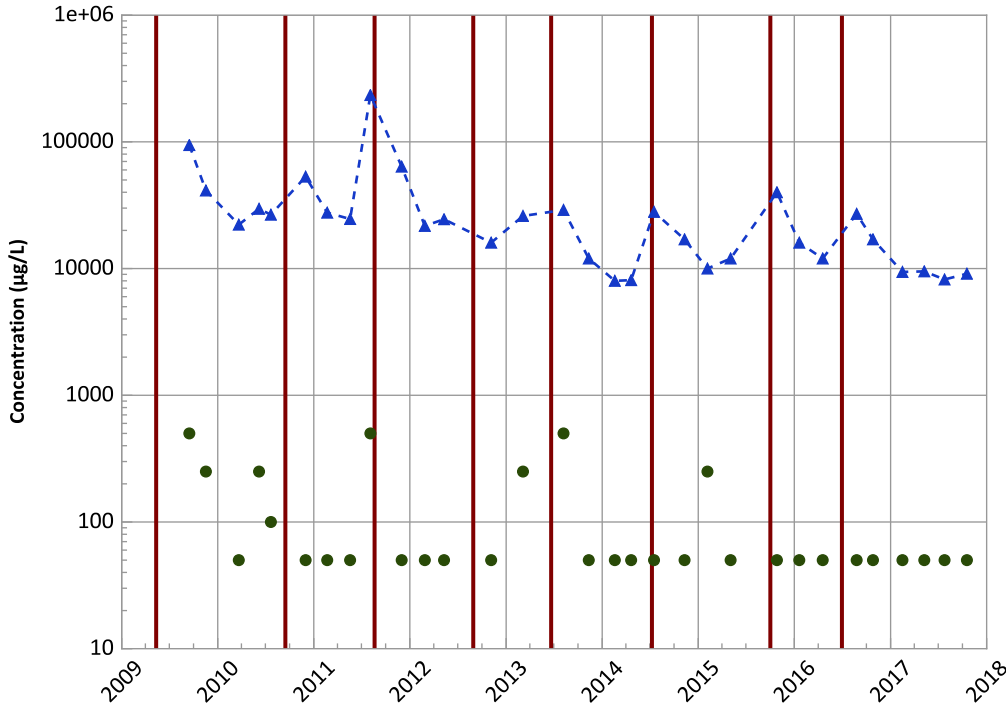
MAROS Mann-Kendall Method

All Data
Increasing
2015 - 2017 Data:
No Trend

MAROS Linear Regression Method

All Data
Increasing
2015 - 2017 Data:
No Trend

Iron Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data
Decreasing
2015 - 2017 Data:
Decreasing

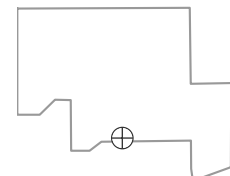
MAROS Linear Regression Method

All Data
Decreasing
2015 - 2017 Data:
Stable

Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 04/06/2009 to 10/18/2017
Analysis Date: 03/29/2018

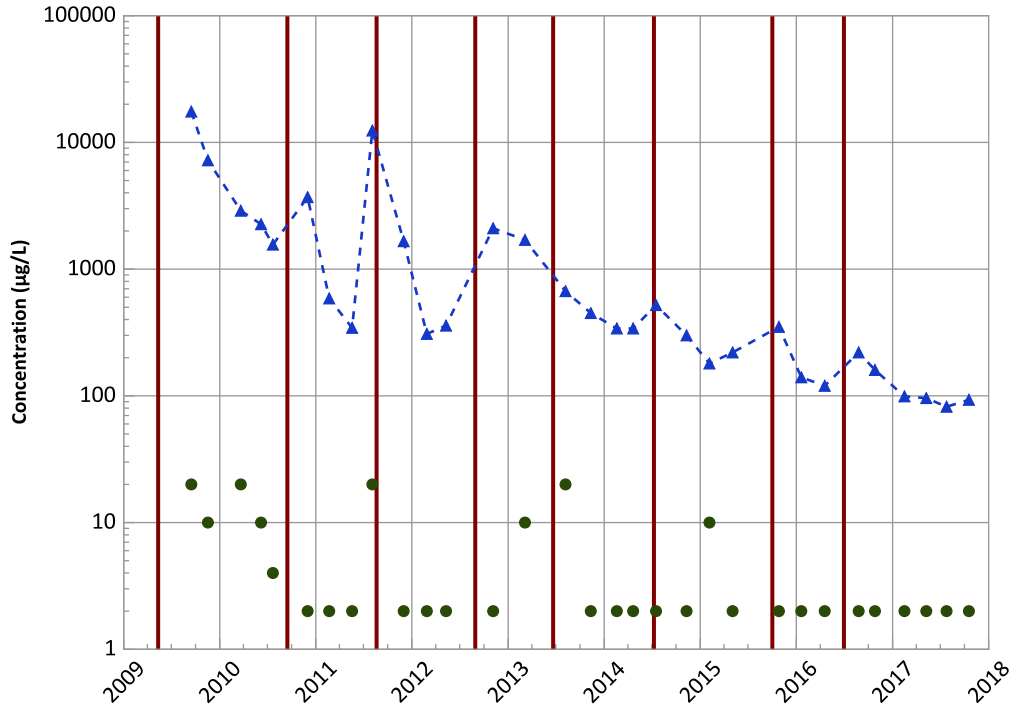
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

Well Location



PTX06-ISB075 in Perched Aquifer
USDOE/NNSA Pantex Plant

Manganese Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Decreasing

MAROS Linear Regression Method

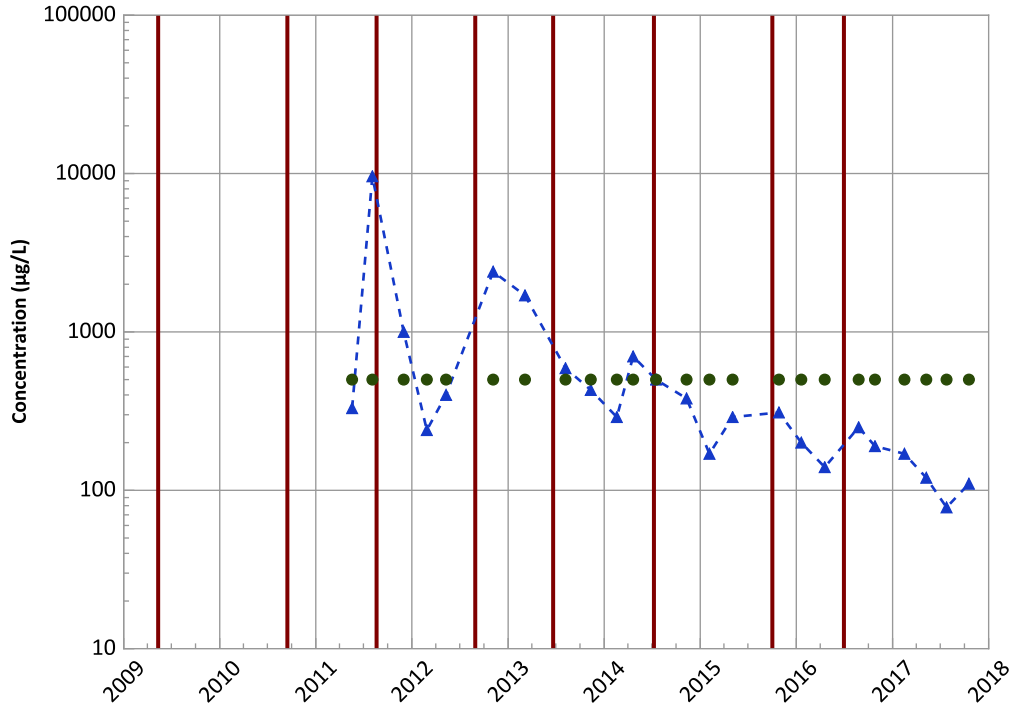
All Data

Decreasing

2015 - 2017 Data:

Stable

Divalent Manganese Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Decreasing

MAROS Linear Regression Method

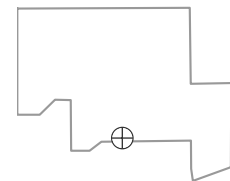
All Data

Decreasing

2015 - 2017 Data:

Stable

Well Location

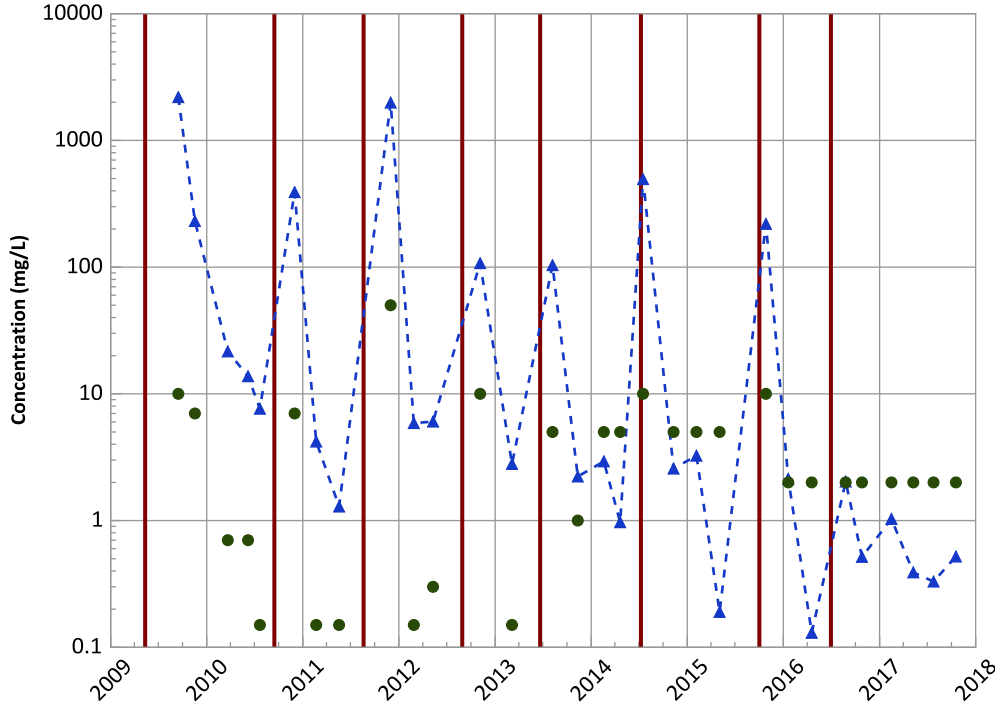


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 04/06/2009 to 10/18/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB075 in Perched Aquifer
USDOE/NNSA Pantex Plant

Total Volatile Fatty Acids Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Decreasing

MAROS Linear Regression Method

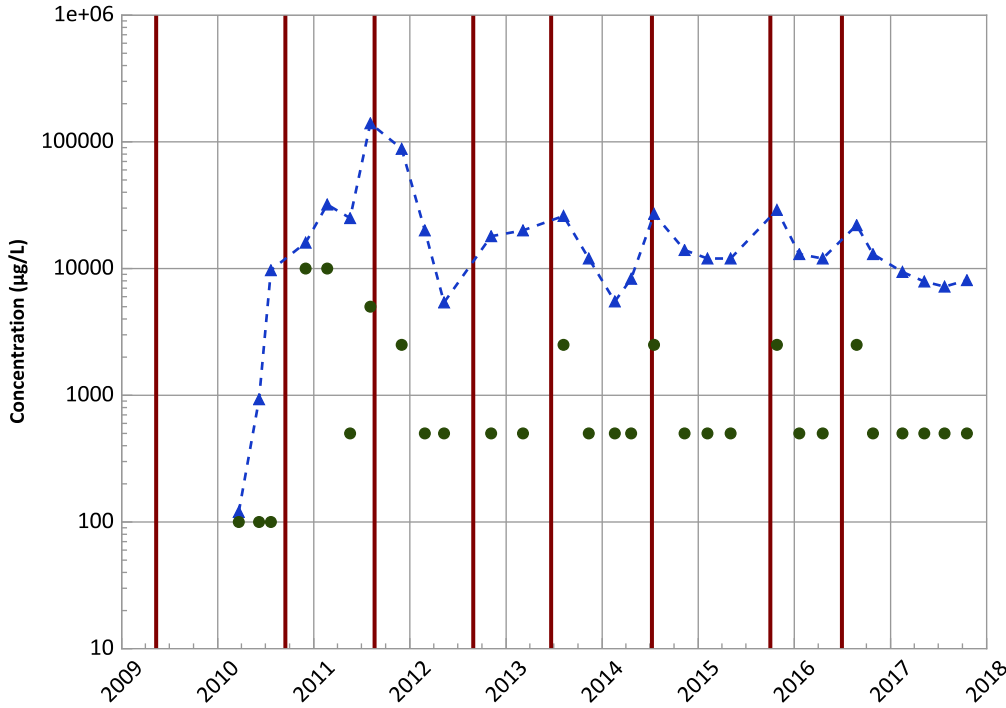
All Data

Decreasing

2015 - 2017 Data:

Stable

Ferrous Iron Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Decreasing

MAROS Linear Regression Method

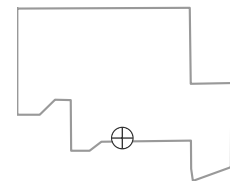
All Data

No Trend

2015 - 2017 Data:

Stable

Well Location

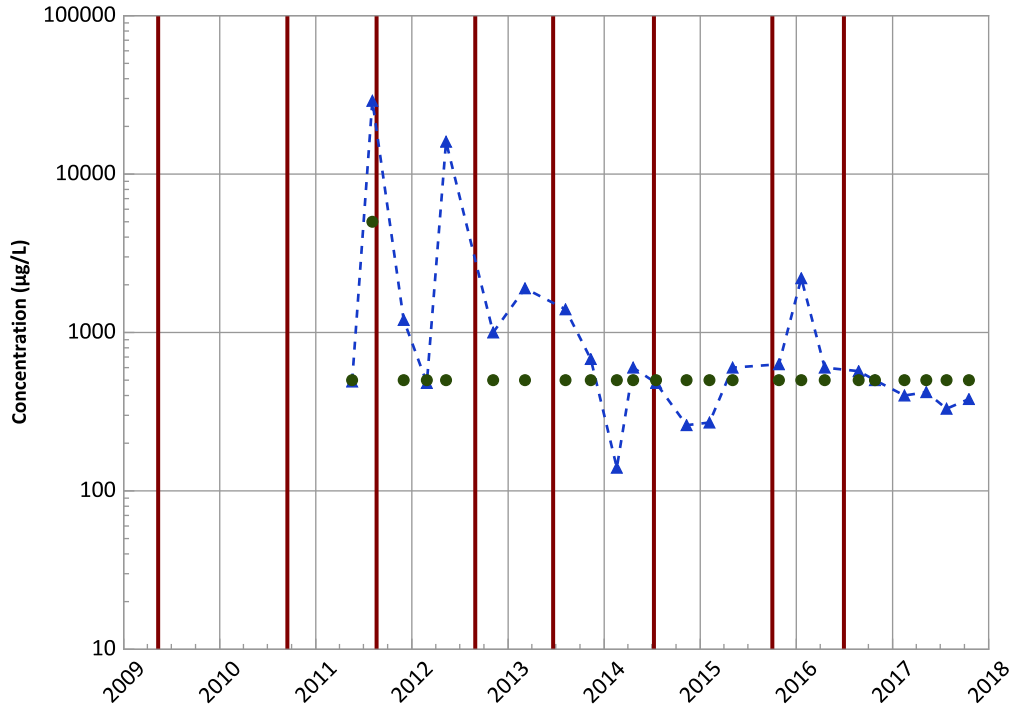


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 04/06/2009 to 10/18/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB075 in Perched Aquifer
USDOE/NNSA Pantex Plant

Ferric Iron Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Decreasing

MAROS Linear Regression Method

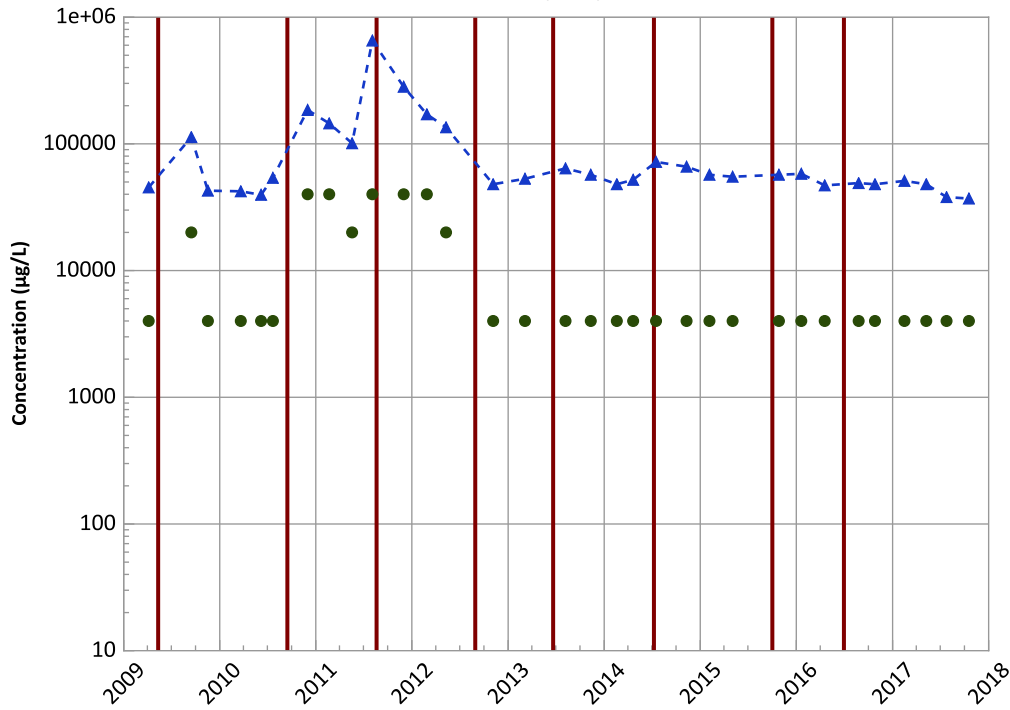
All Data

Decreasing

2015 - 2017 Data:

Stable

Chloride (as Cl) Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Decreasing

MAROS Linear Regression Method

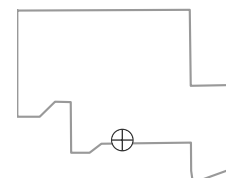
All Data

Decreasing

2015 - 2017 Data:

Decreasing

Well Location

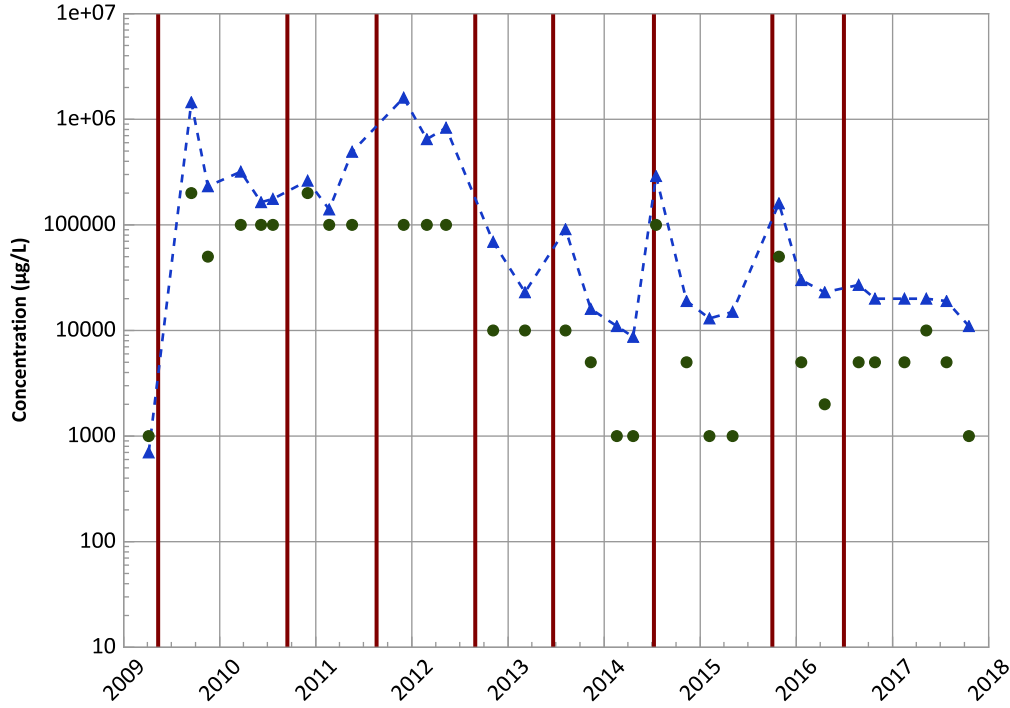


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 04/06/2009 to 10/18/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB075 in Perched Aquifer
USDOE/NNSA Pantex Plant

Total Organic Carbon Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Decreasing

MAROS Linear Regression Method

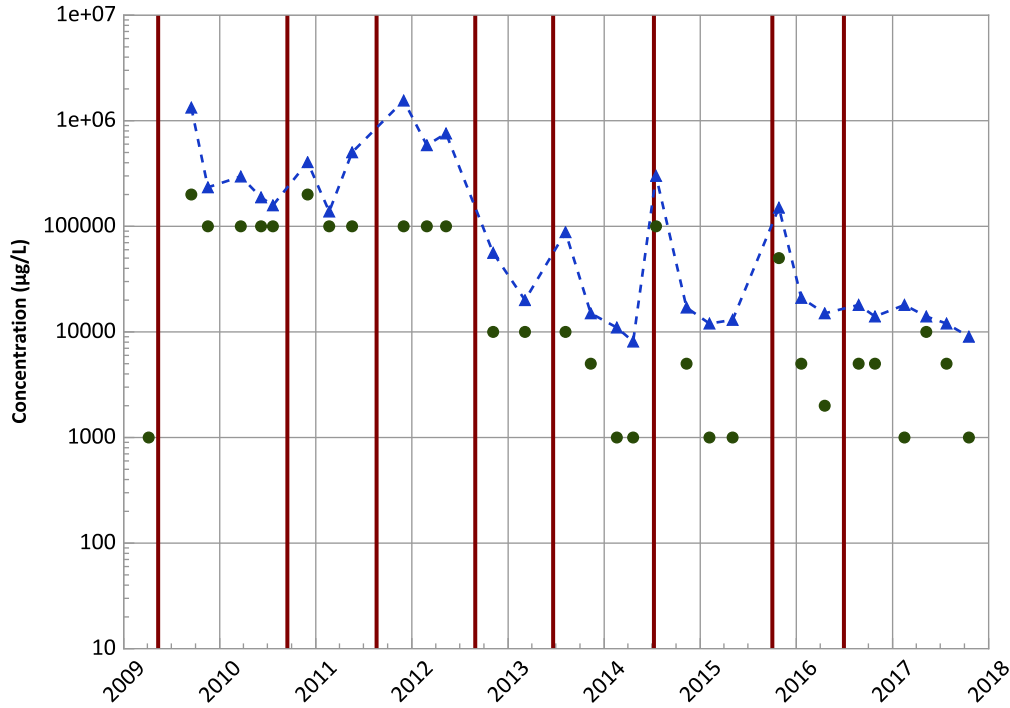
All Data

Decreasing

2015 - 2017 Data:

Stable

Dissolved Organic Carbon (DOC) Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Decreasing

MAROS Linear Regression Method

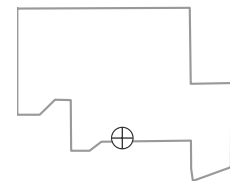
All Data

Decreasing

2015 - 2017 Data:

Decreasing

Well Location

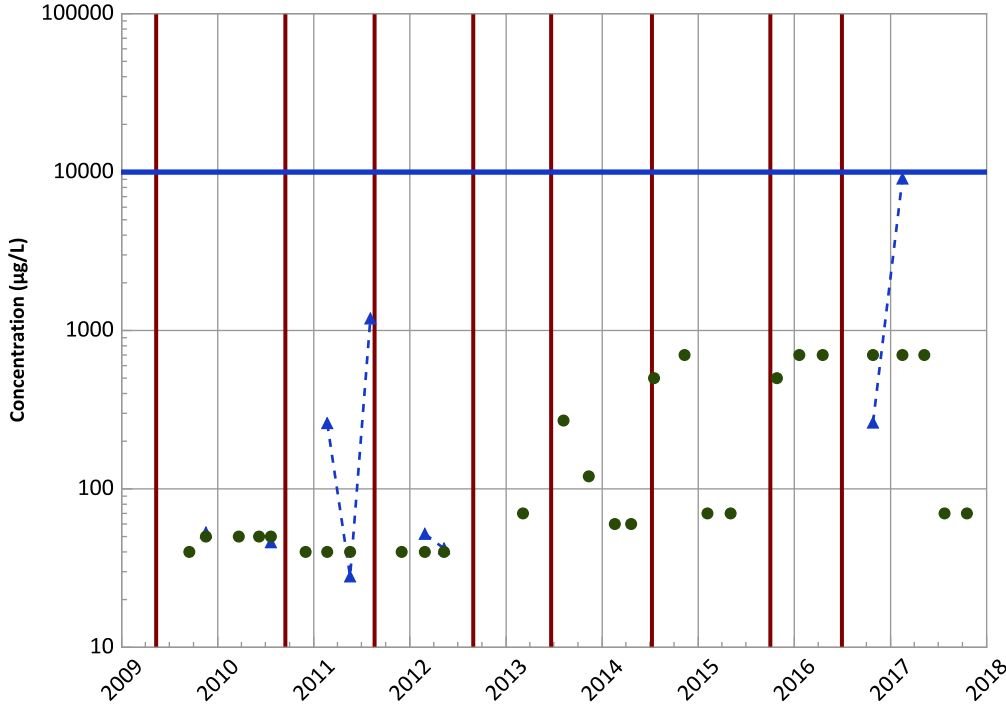


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 04/06/2009 to 10/18/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB075 in Perched Aquifer
USDOE/NNSA Pantex Plant

Nitrate as N Trend



Concentration Trend

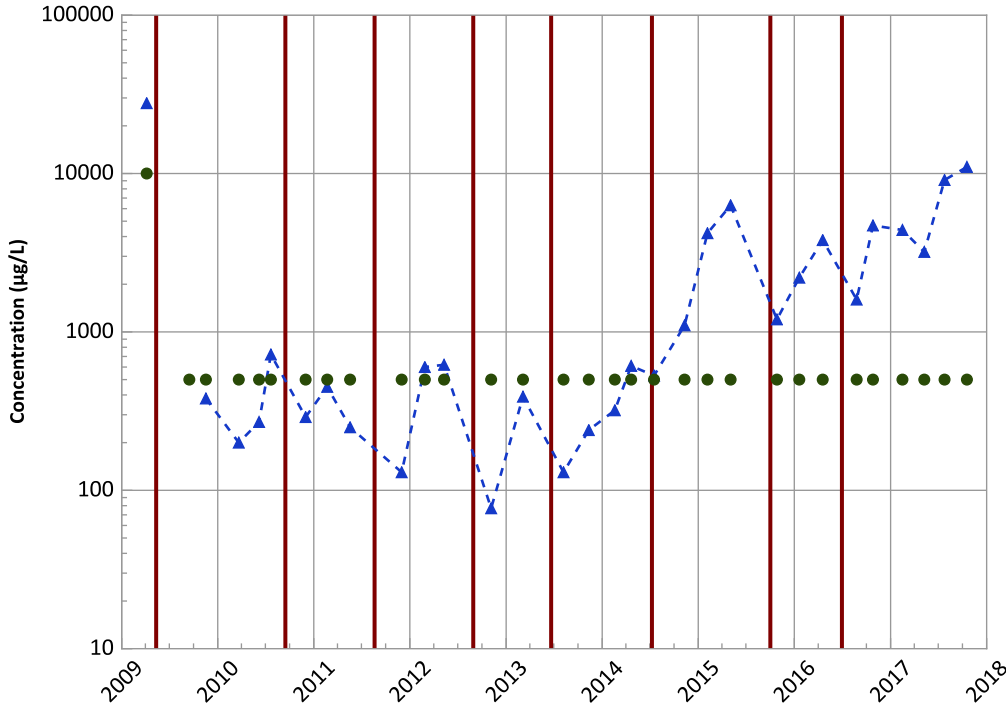
MAROS Mann-Kendall Method

All Data
Increasing
2015 - 2017 Data:
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

All Data
Increasing
2015 - 2017 Data:
Probably Increasing

Sulfate (as SO4) Trend



Concentration Trend

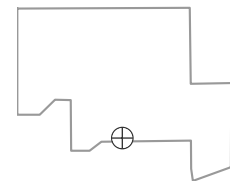
MAROS Mann-Kendall Method

All Data
Increasing
2015 - 2017 Data:
No Trend

MAROS Linear Regression Method

All Data
Increasing
2015 - 2017 Data:
No Trend

Well Location

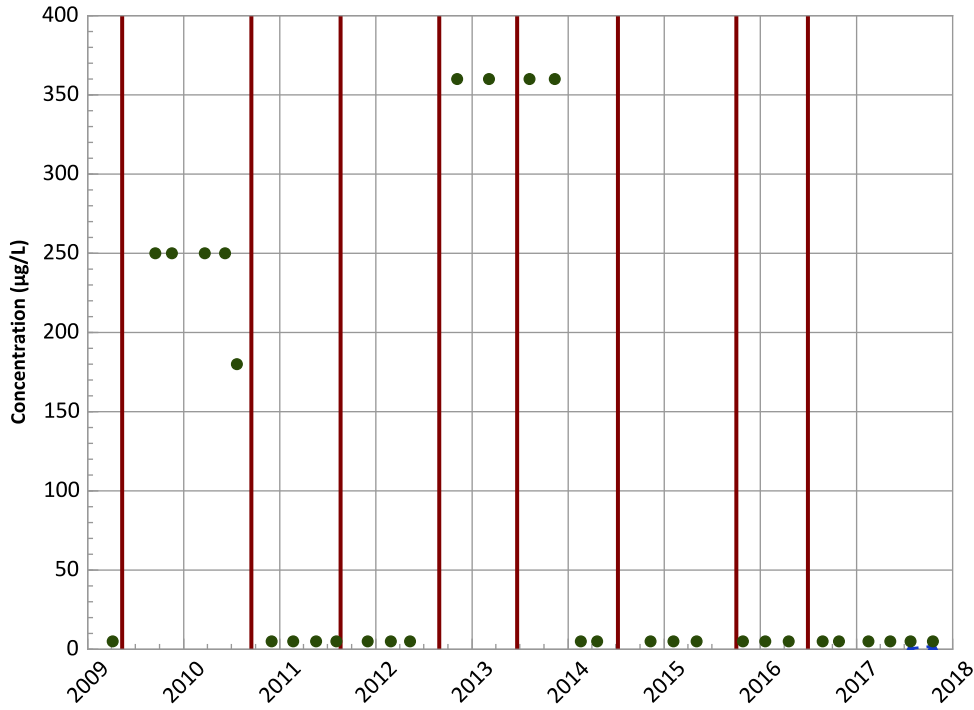


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 04/06/2009 to 10/18/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB075 in Perched Aquifer
USDOE/NNSA Pantex Plant

Ethene (Ethylene) Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

N/A (<4 Detections in Dataset)

2015 - 2017 Data:

N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

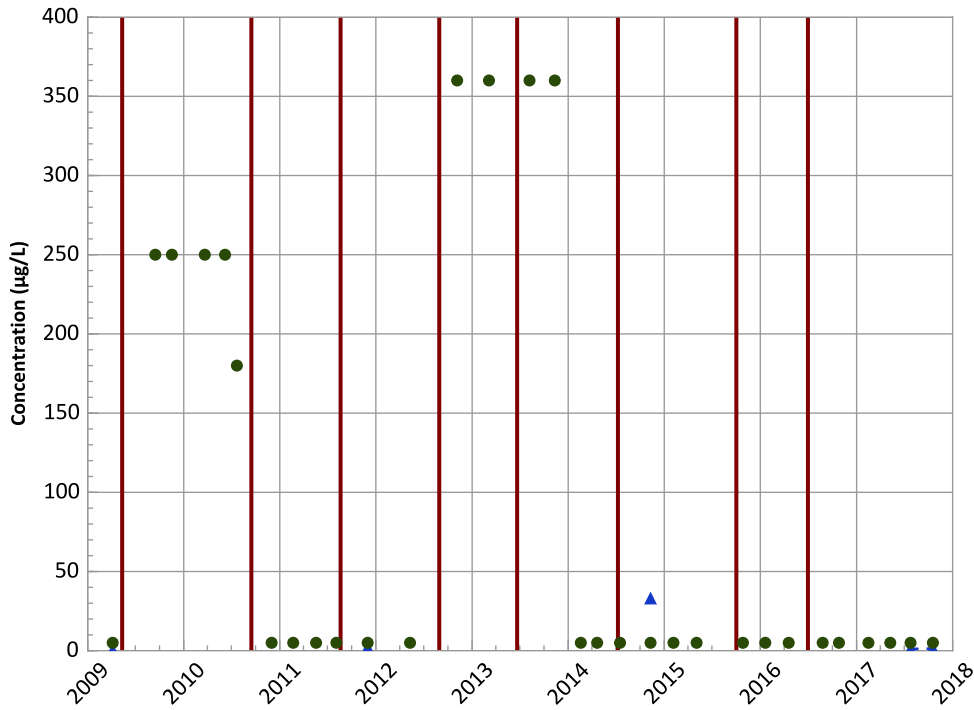
All Data

N/A (<4 Detections in Dataset)

2015 - 2017 Data:

N/A (<4 Detections in Dataset)

Ethane Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

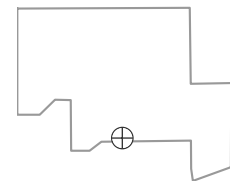
All Data

No Trend

2015 - 2017 Data:

No Trend

Well Location

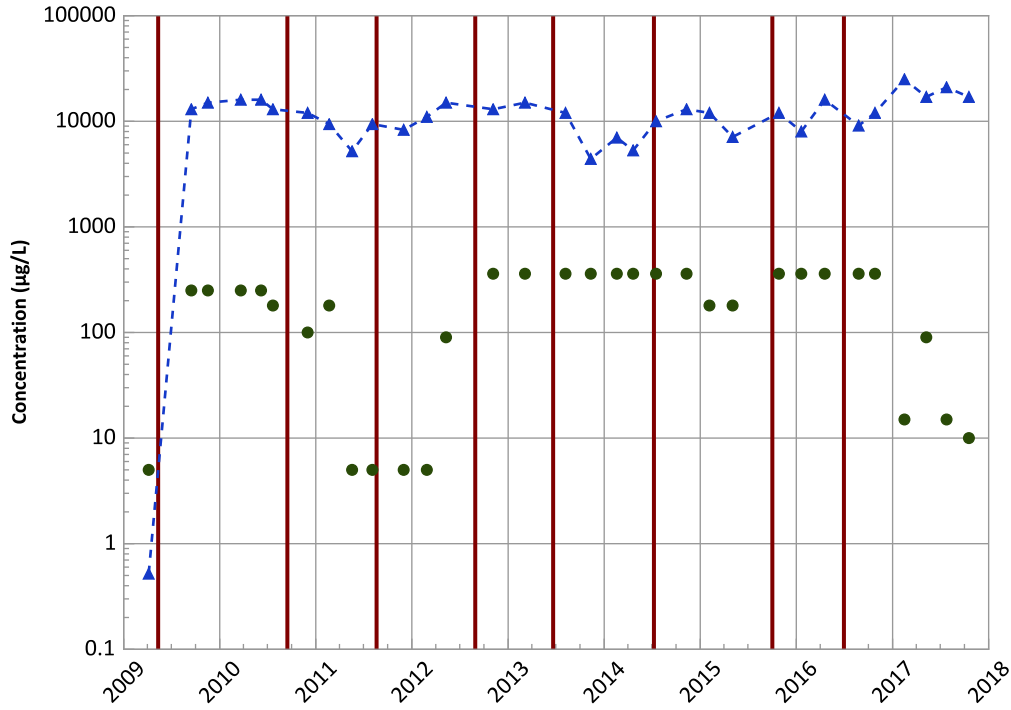


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 04/06/2009 to 10/18/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB075 in Perched Aquifer
USDOE/NNSA Pantex Plant

Methane Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

No Trend

2015 - 2017 Data:

Decreasing

MAROS Linear Regression Method

All Data

Increasing

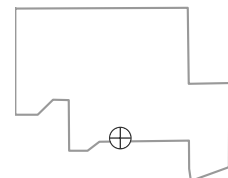
2015 - 2017 Data:

Stable

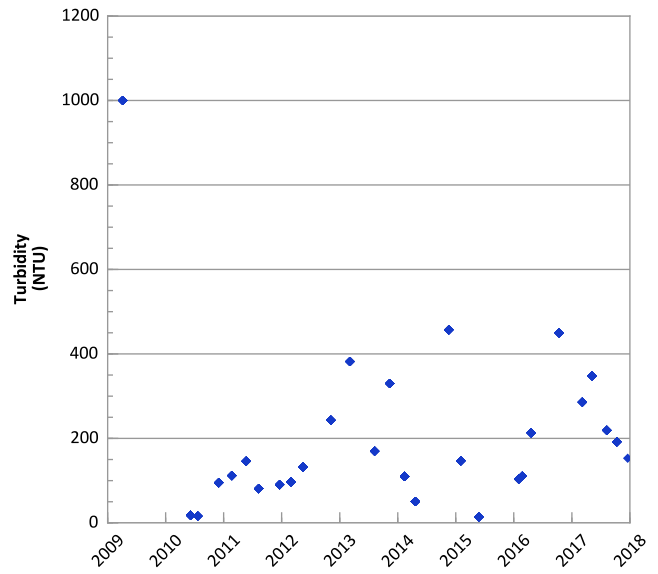
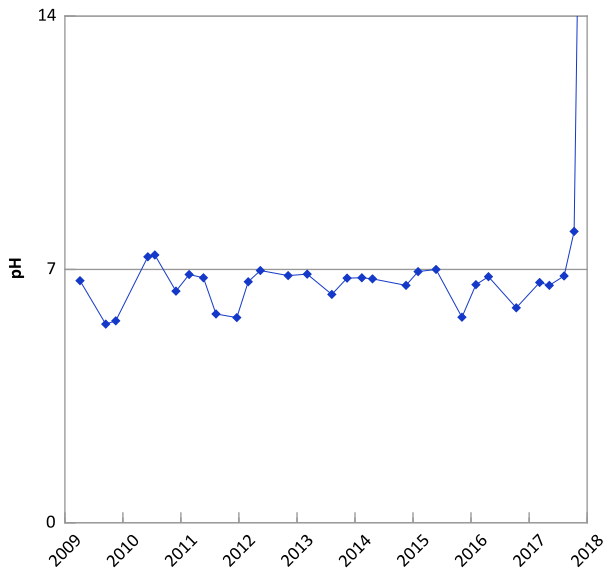
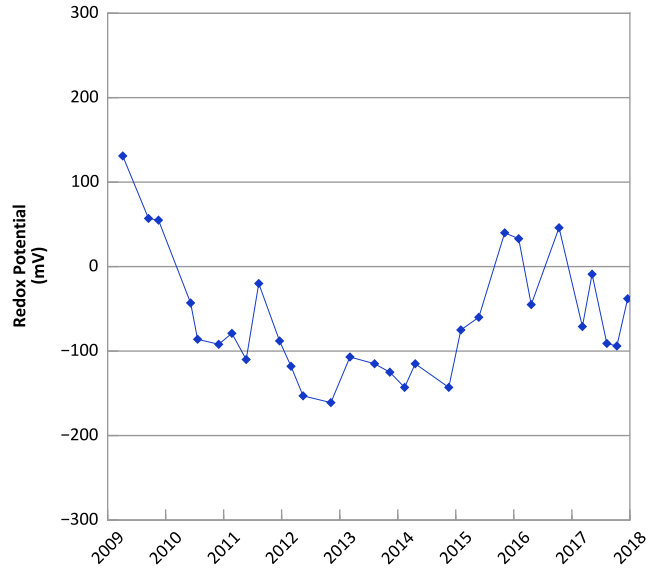
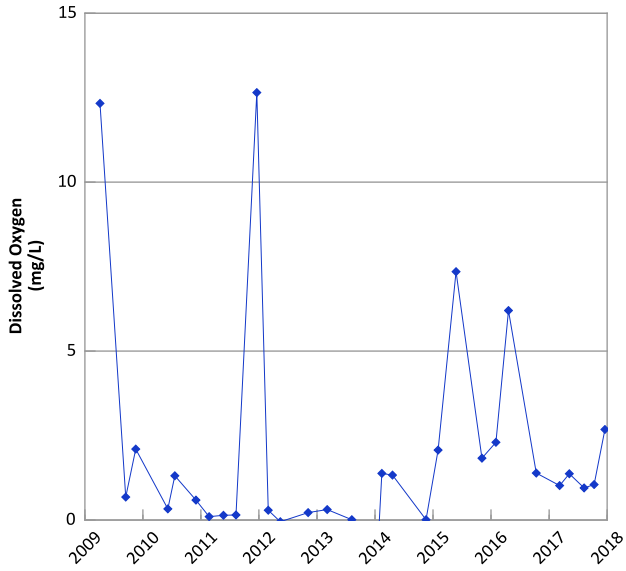
Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 04/06/2009 to 10/18/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

Well Location

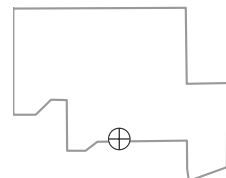


**PTX06-ISB077 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**

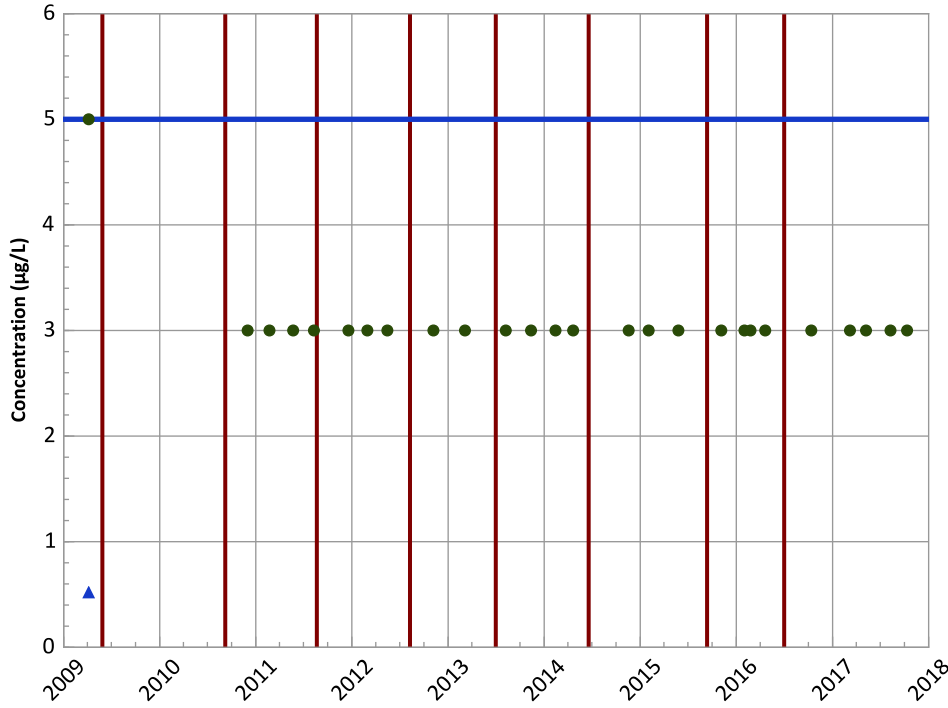


Query Date Range: 01/01/2009 to 12/31/2017
 Data Date Range: 04/06/2009 to 12/18/2017
 Analysis Date: 03/29/2018

Well Location



PTX06-ISB077 in Perched Aquifer
 USDOE/NNSA Pantex Plant
 Tetrachloroethylene (PCE) Trend

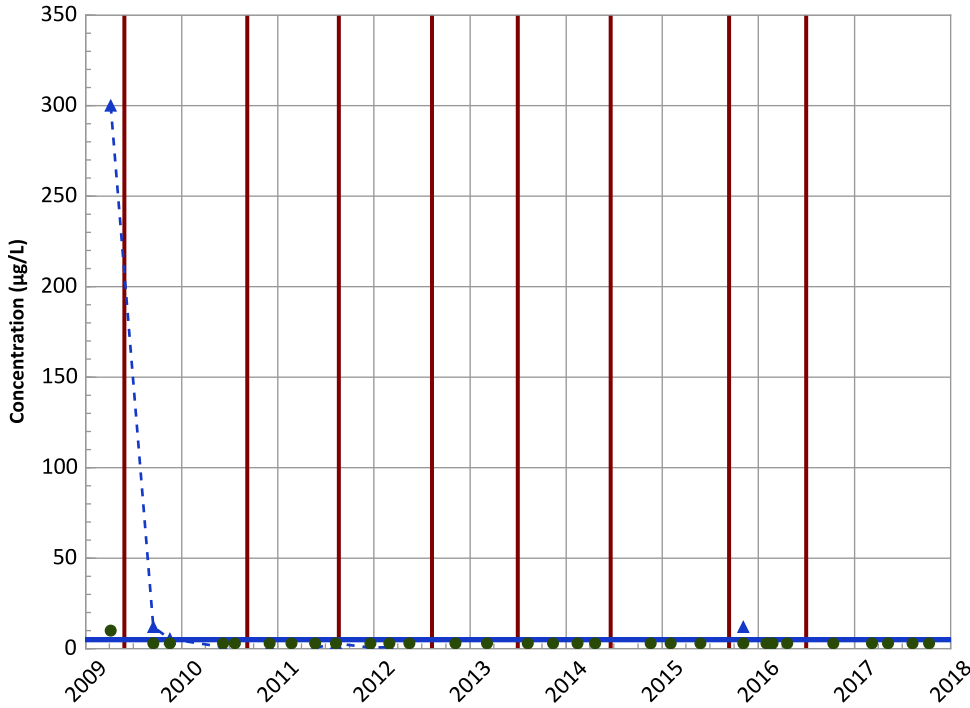


Concentration Trend

MAROS Mann-Kendall Method
 All Data
 N/A (<4 Detections in Dataset)
 2015 - 2017 Data:
 All Non-Detect

MAROS Linear Regression Method
 All Data
 N/A (<4 Detections in Dataset)
 2015 - 2017 Data:
 N/A (<4 Detections in Dataset)

Trichloroethene Trend

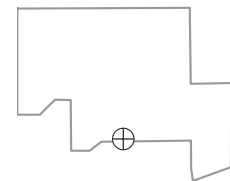


Concentration Trend

MAROS Mann-Kendall Method
 All Data
 Decreasing
 2015 - 2017 Data:
 All Non-Detect

MAROS Linear Regression Method
 All Data
 No Trend
 2015 - 2017 Data:
 No Trend

Well Location

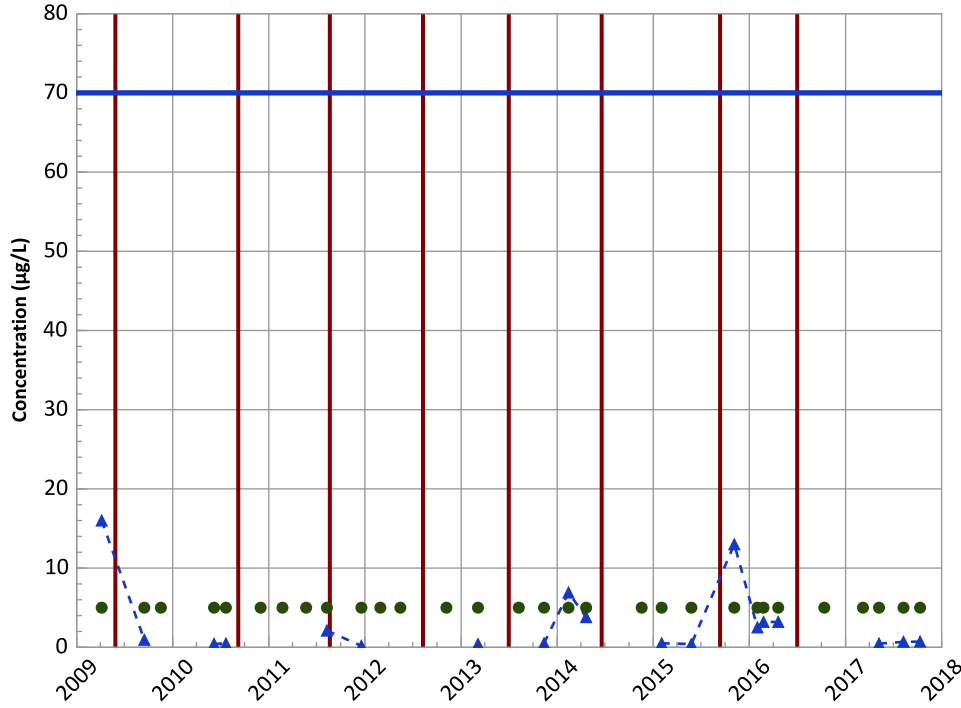


Query Date Range: 01/01/2009 to 12/31/2017
 Data Date Range: 04/06/2009 to 12/18/2017
 Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB077 in Perched Aquifer
USDOE/NNSA Pantex Plant

cis-1,2-Dichloroethene Trend



Concentration Trend

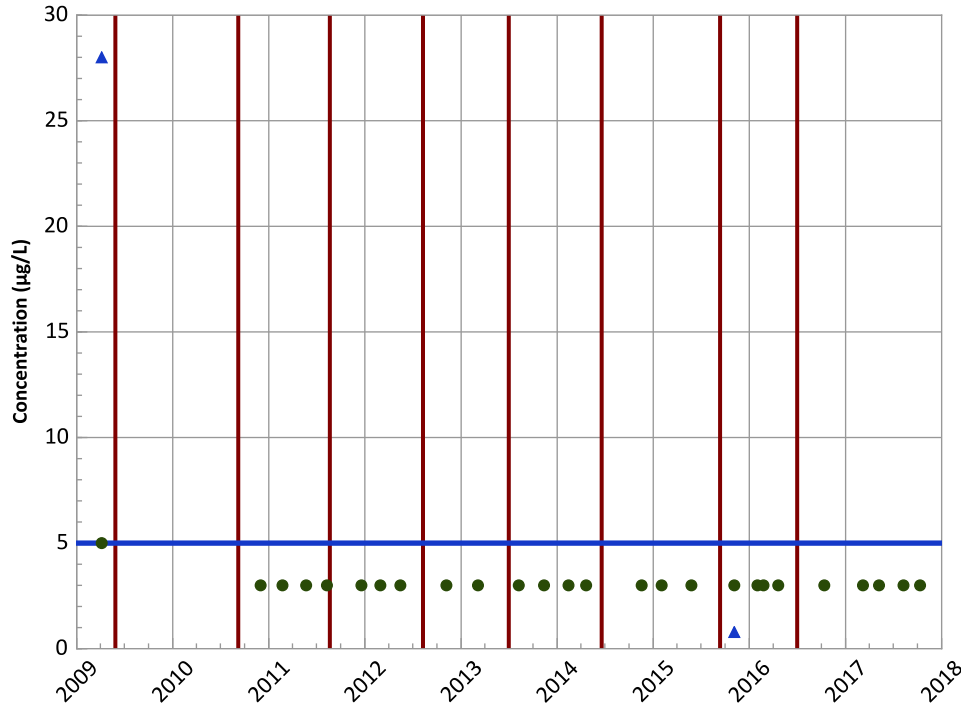
MAROS Mann-Kendall Method

All Data
No Trend
2015 - 2017 Data:
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

All Data
Increasing
2015 - 2017 Data:
No Trend

1,2-Dichloroethane Trend



Concentration Trend

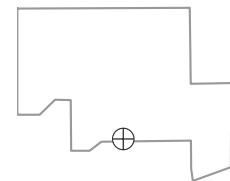
MAROS Mann-Kendall Method

All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method

All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
N/A (<4 Detections in Dataset)

Well Location

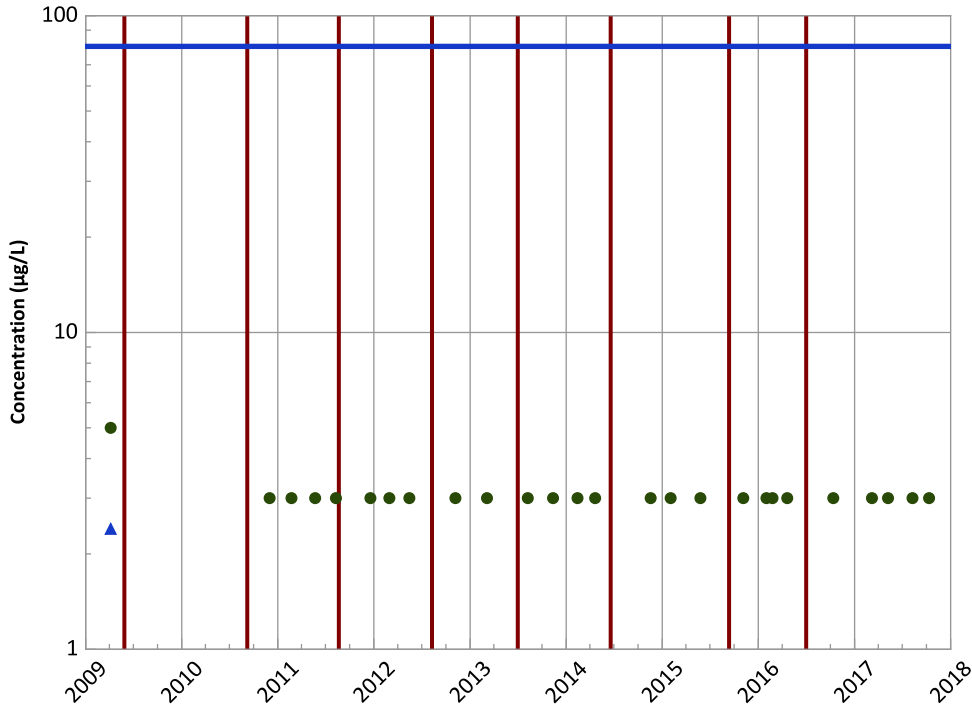


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 04/06/2009 to 12/18/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB077 in Perched Aquifer
USDOE/NNSA Pantex Plant

Chloroform Trend

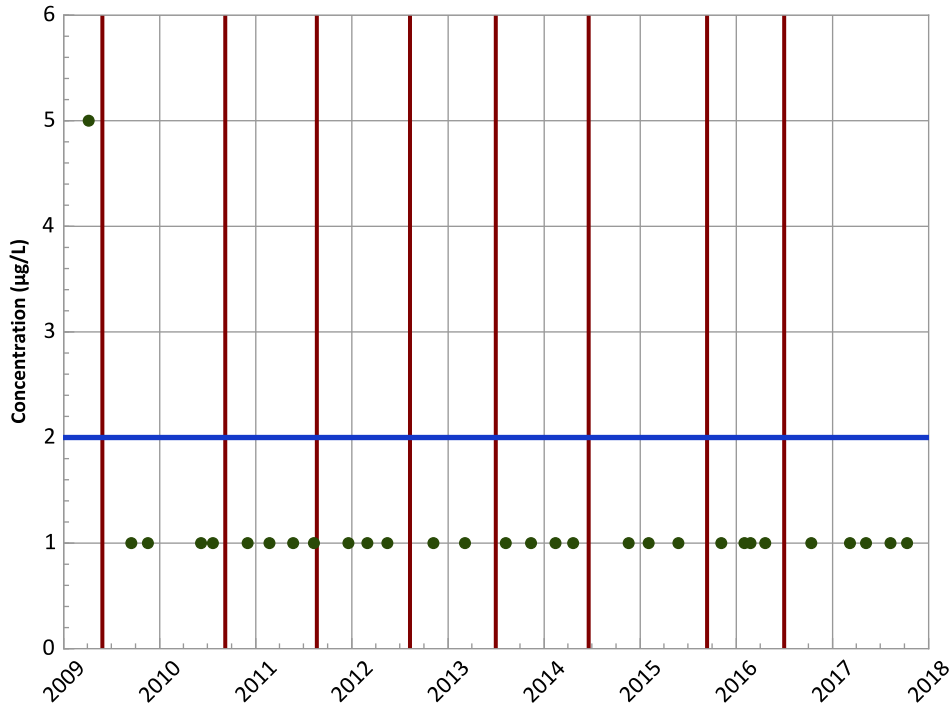


Concentration Trend

MAROS Mann-Kendall Method
All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method
All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
N/A (<4 Detections in Dataset)

Vinyl Chloride Trend

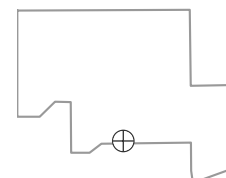


Concentration Trend

MAROS Mann-Kendall Method
All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method
All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

Well Location

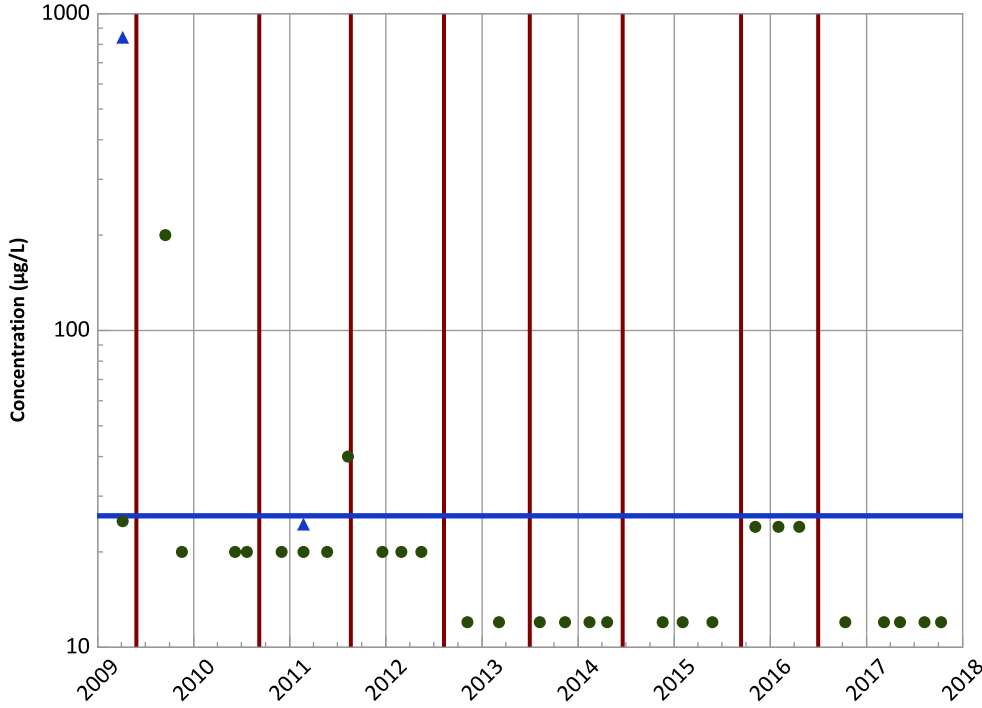


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 04/06/2009 to 12/18/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB077 in Perched Aquifer
USDOE/NNSA Pantex Plant

Perchlorate Trend

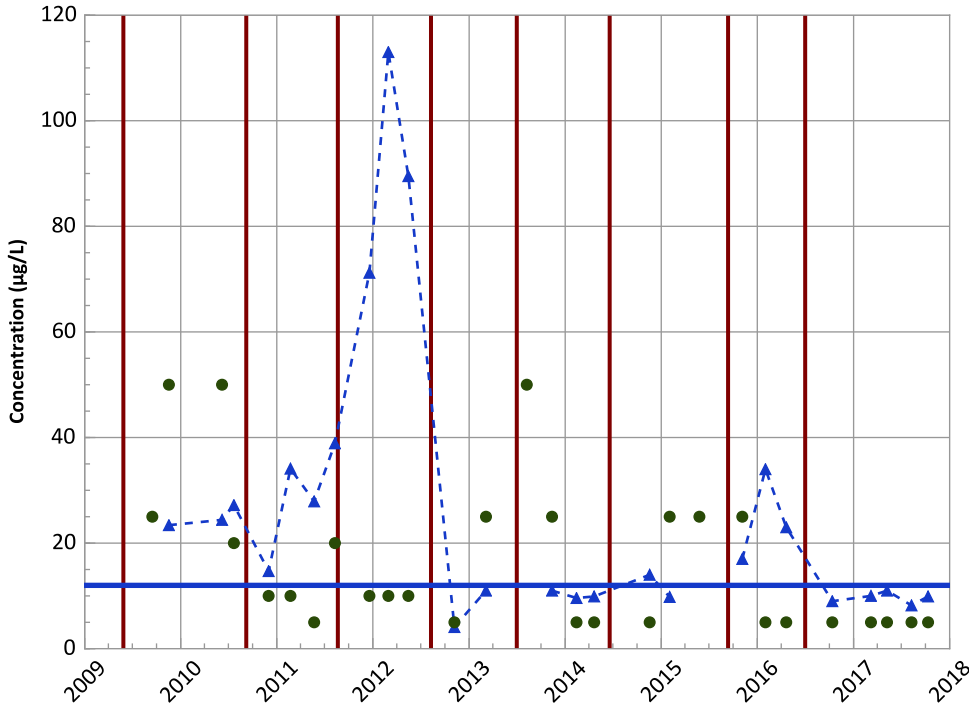


Concentration Trend

MAROS Mann-Kendall Method
All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method
All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
N/A (<4 Detections in Dataset)

Arsenic Trend

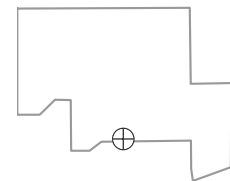


Concentration Trend

MAROS Mann-Kendall Method
All Data
Decreasing
2015 - 2017 Data:
Decreasing

MAROS Linear Regression Method
All Data
Decreasing
2015 - 2017 Data:
Stable

Well Location

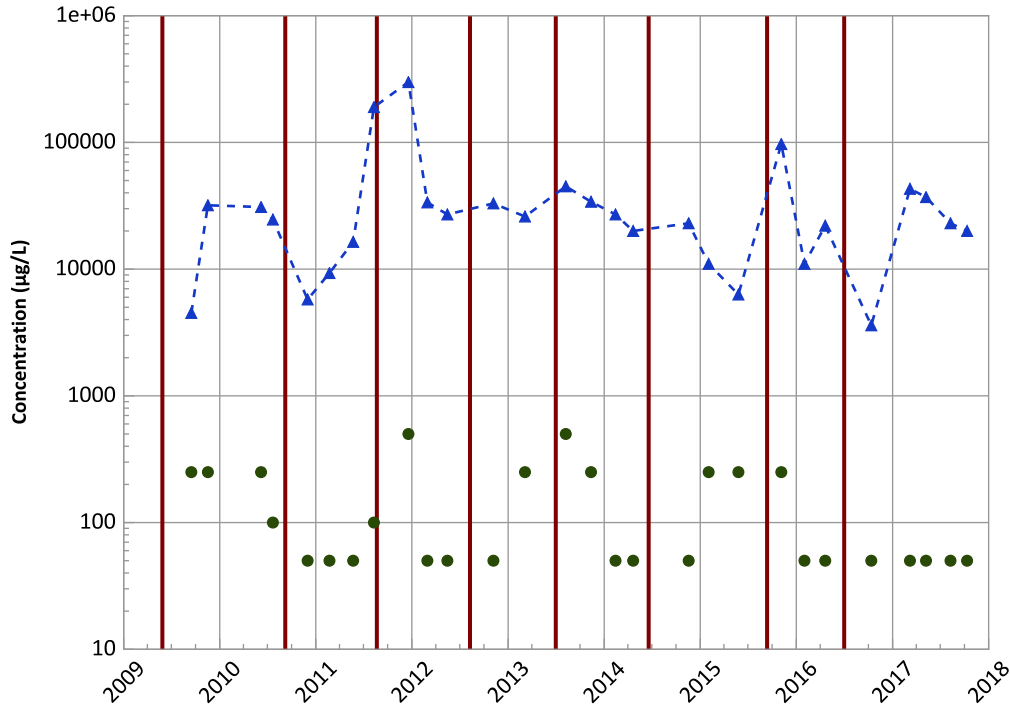


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 04/06/2009 to 12/18/2017
Analysis Date: 03/29/2018

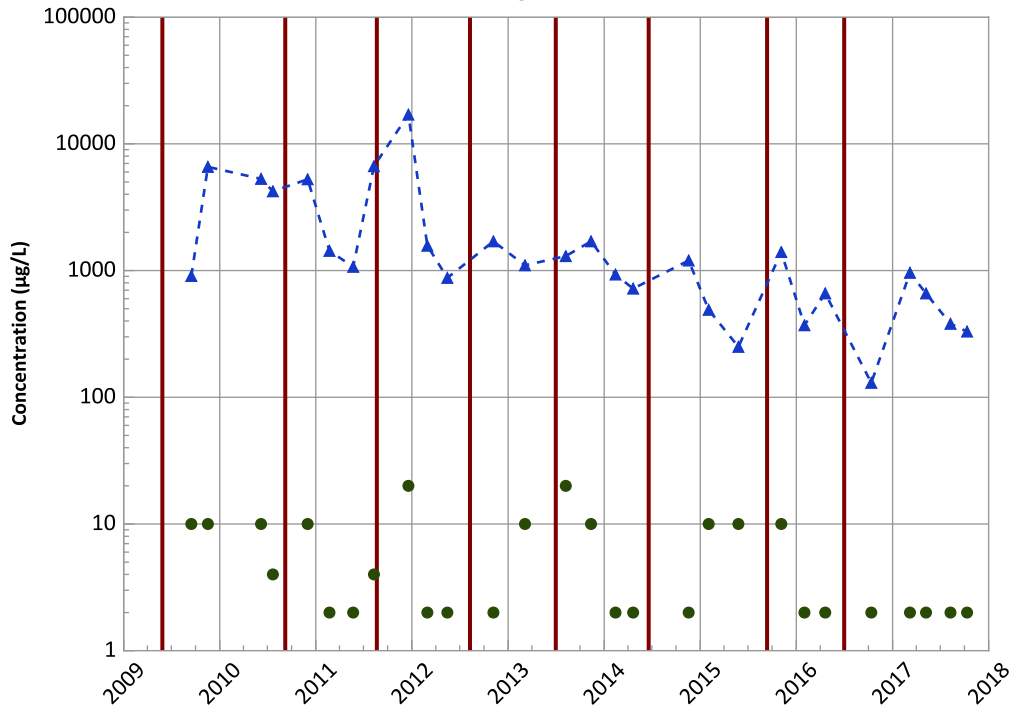
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB077 in Perched Aquifer
USDOE/NNSA Pantex Plant

Iron Trend



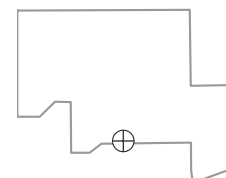
Manganese Trend



Query Date Range: 01/01/2009 to 12/31/2017
 Data Date Range: 04/06/2009 to 12/18/2017
 Analysis Date: 03/29/2018

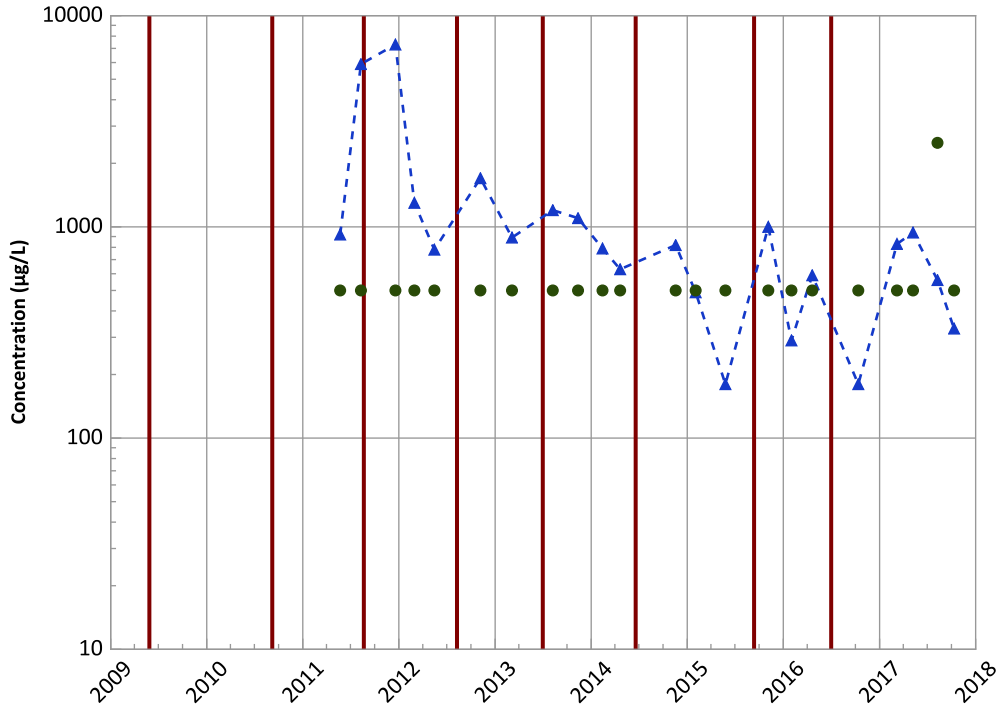
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

Well Location



PTX06-ISB077 in Perched Aquifer
USDOE/NNSA Pantex Plant

Divalent Manganese Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Decreasing

MAROS Linear Regression Method

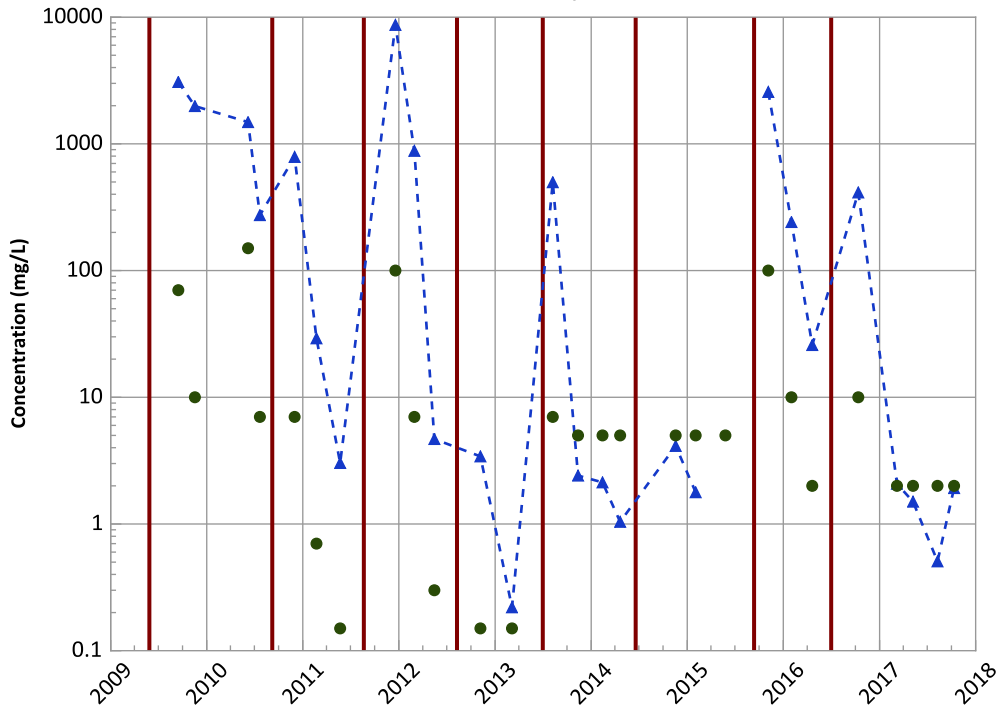
All Data

Decreasing

2015 - 2017 Data:

Decreasing

Total Volatile Fatty Acids Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Decreasing

MAROS Linear Regression Method

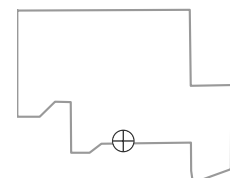
All Data

Decreasing

2015 - 2017 Data:

Stable

Well Location

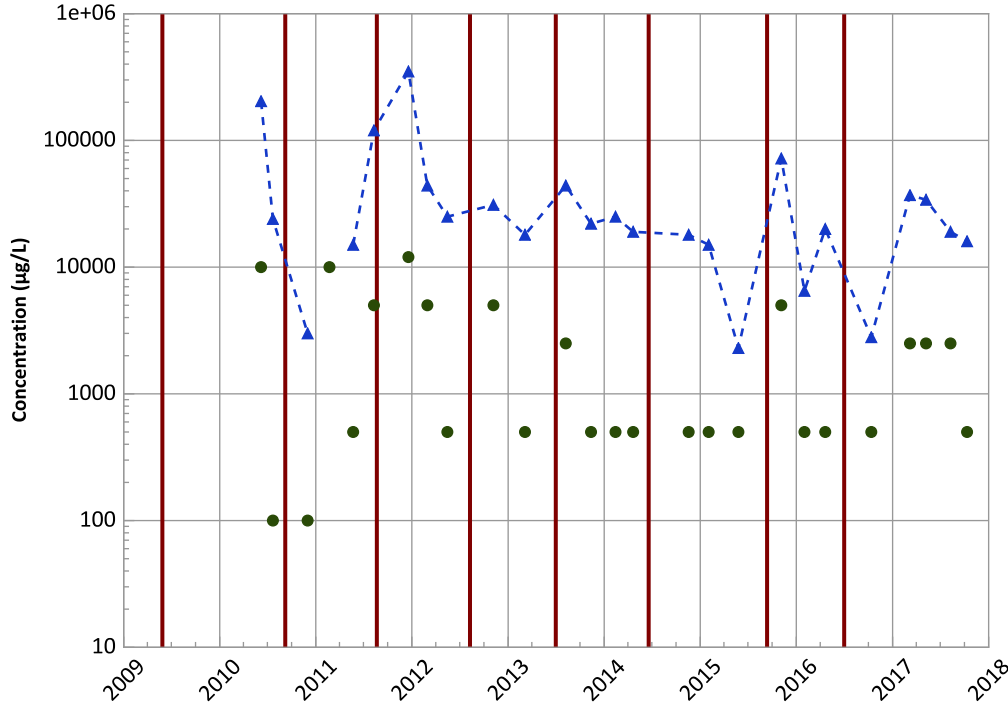


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 04/06/2009 to 12/18/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB077 in Perched Aquifer
USDOE/NNSA Pantex Plant

Ferrous Iron Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Decreasing

MAROS Linear Regression Method

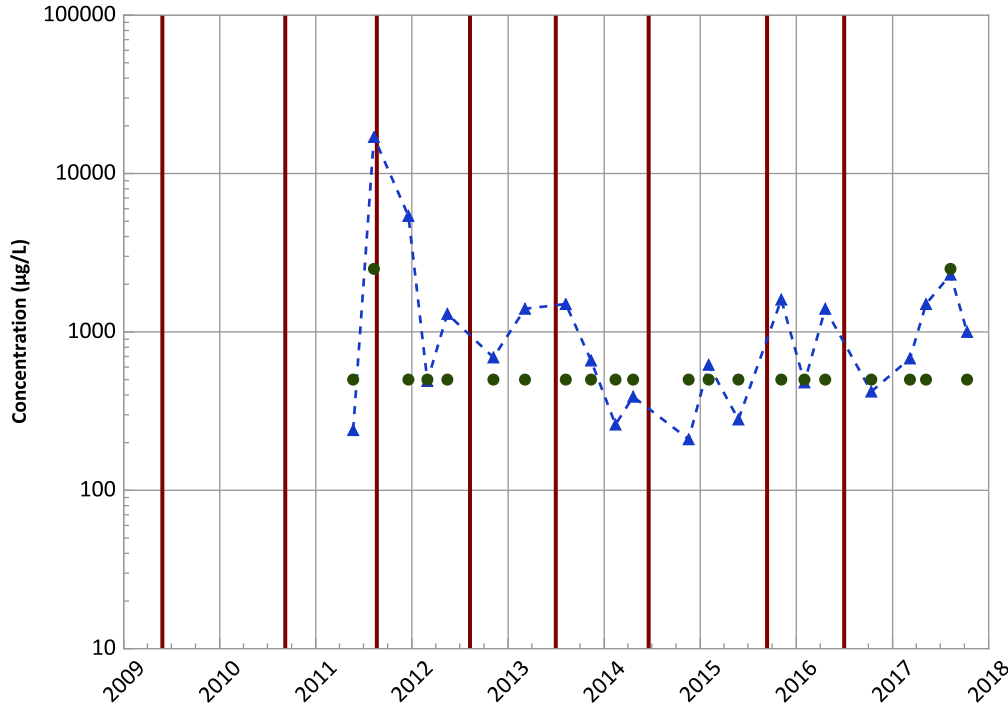
All Data

Probably Decreasing

2015 - 2017 Data:

Decreasing

Ferric Iron Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

No Trend

2015 - 2017 Data:

No Trend

MAROS Linear Regression Method

All Data

No Trend

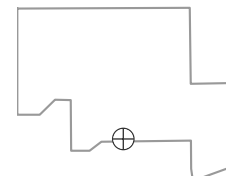
2015 - 2017 Data:

No Trend

Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 04/06/2009 to 12/18/2017
Analysis Date: 03/29/2018

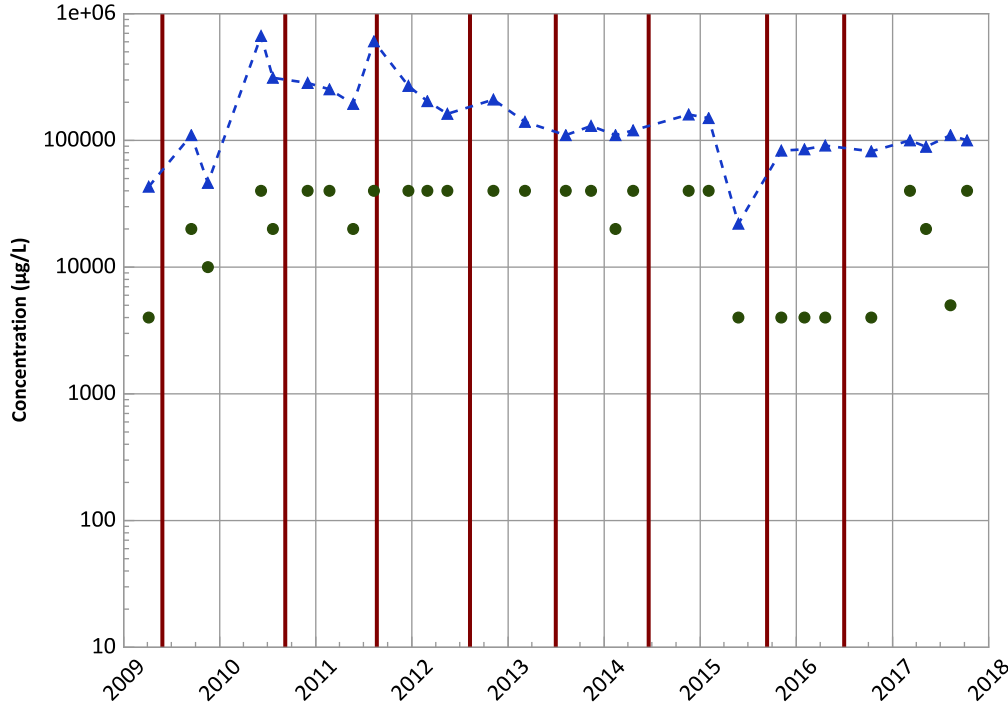
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

Well Location



PTX06-ISB077 in Perched Aquifer
USDOE/NNSA Pantex Plant

Chloride (as Cl) Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

No Trend

MAROS Linear Regression Method

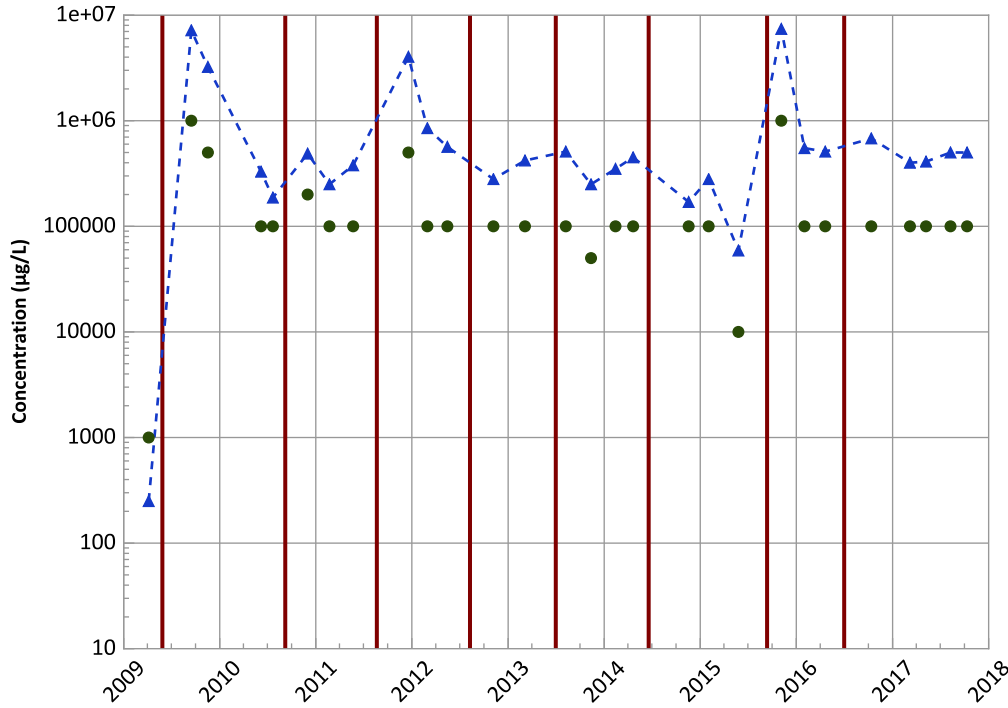
All Data

Decreasing

2015 - 2017 Data:

No Trend

Total Organic Carbon Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

No Trend

2015 - 2017 Data:

No Trend

MAROS Linear Regression Method

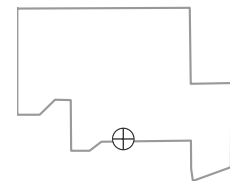
All Data

No Trend

2015 - 2017 Data:

Probably Increasing

Well Location

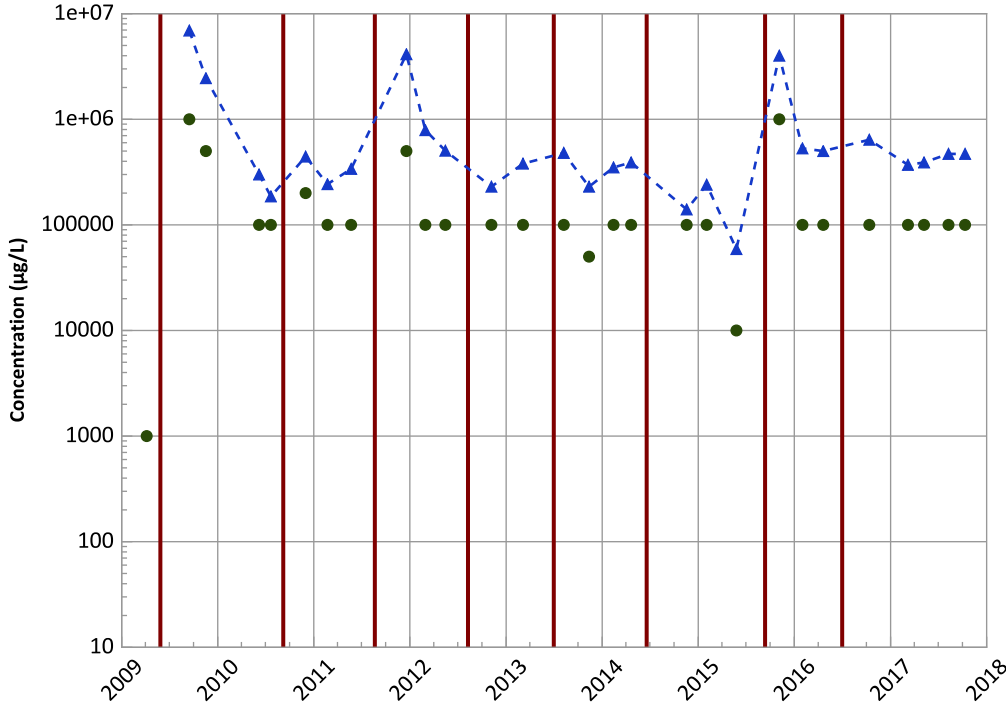


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 04/06/2009 to 12/18/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB077 in Perched Aquifer
USDOE/NNSA Pantex Plant

Dissolved Organic Carbon (DOC) Trend



Concentration Trend

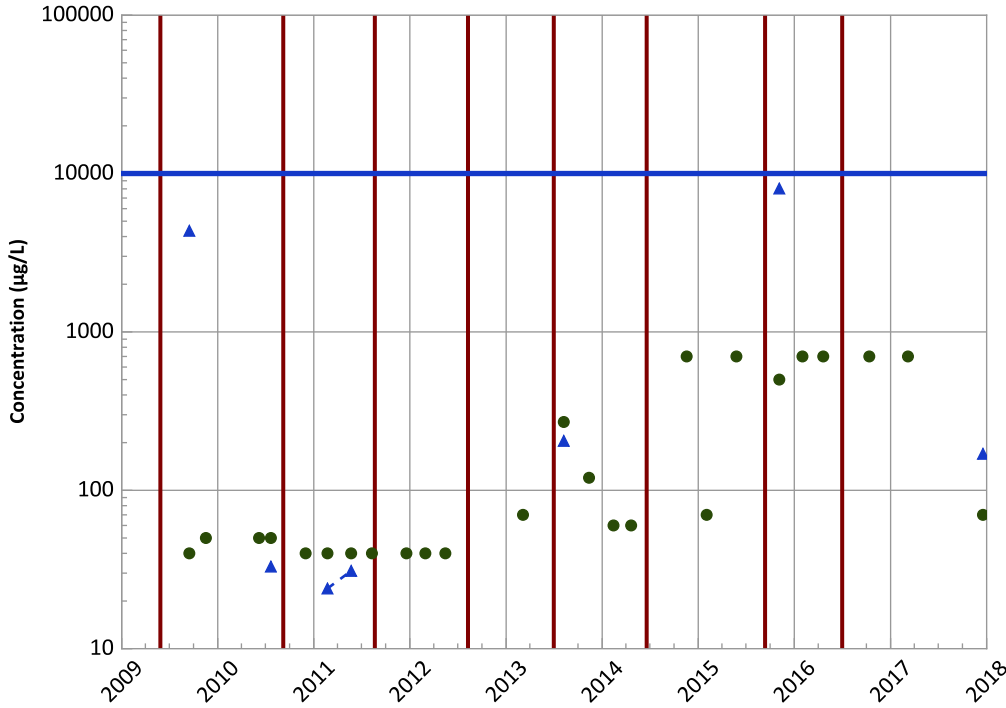
MAROS Mann-Kendall Method

All Data
No Trend
2015 - 2017 Data:
No Trend

MAROS Linear Regression Method

All Data
No Trend
2015 - 2017 Data:
Increasing

Nitrate as N Trend



Concentration Trend

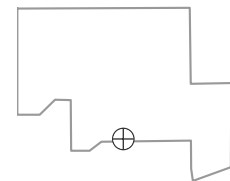
MAROS Mann-Kendall Method

All Data
Increasing
2015 - 2017 Data:
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

All Data
No Trend
2015 - 2017 Data:
No Trend

Well Location

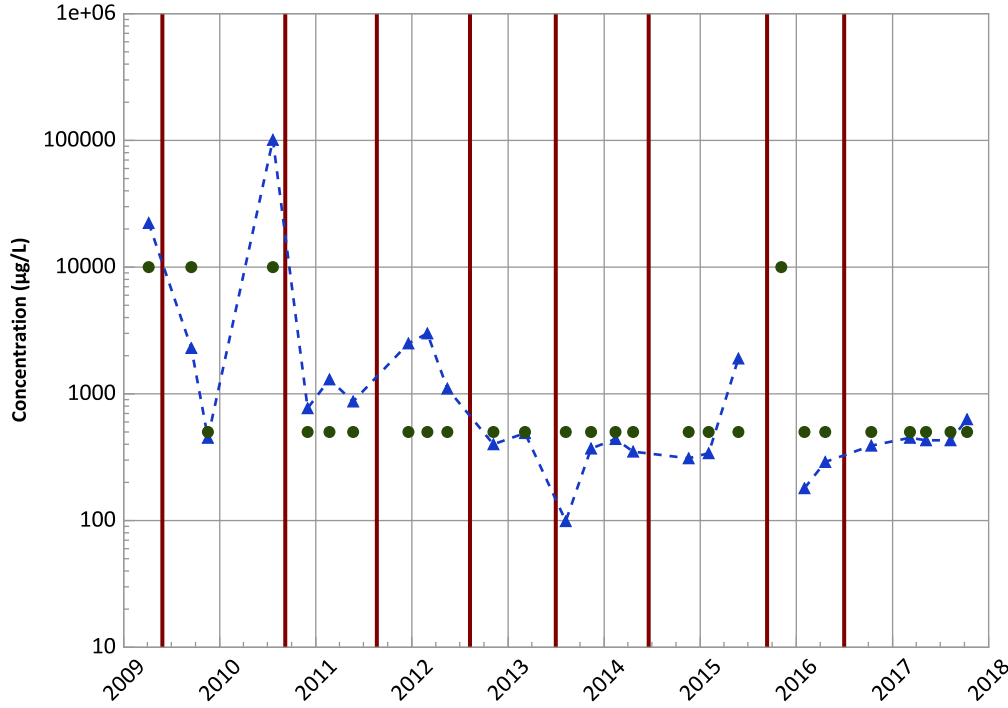


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 04/06/2009 to 12/18/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB077 in Perched Aquifer
USDOE/NNSA Pantex Plant

Sulfate (as SO₄) Trend



Concentration Trend

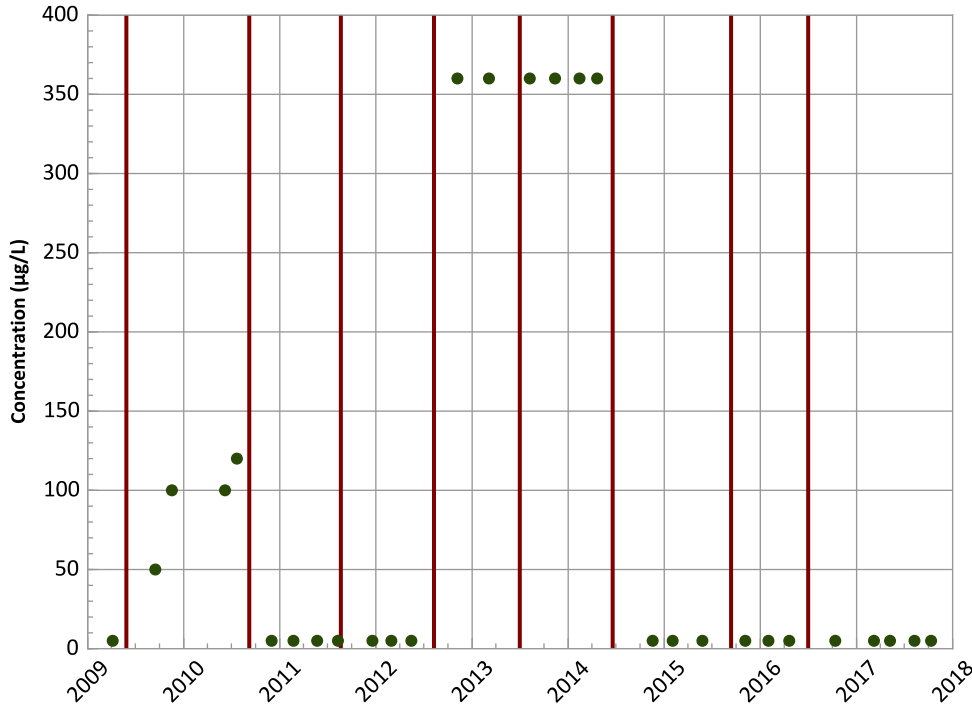
MAROS Mann-Kendall Method

All Data
Decreasing
2015 - 2017 Data:
No Trend

MAROS Linear Regression Method

All Data
Decreasing
2015 - 2017 Data:
Probably Increasing

Ethene (Ethylene) Trend



Concentration Trend

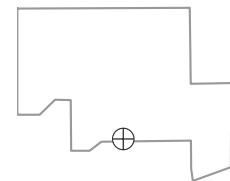
MAROS Mann-Kendall Method

All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method

All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

Well Location

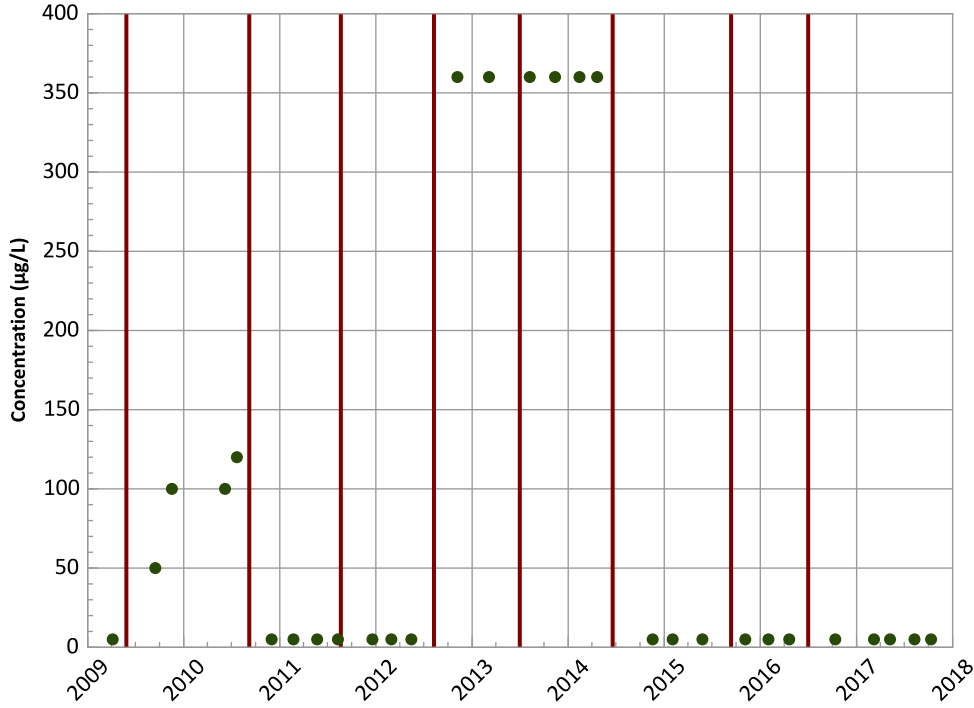


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 04/06/2009 to 12/18/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB077 in Perched Aquifer
USDOE/NNSA Pantex Plant

Ethane Trend



Concentration Trend

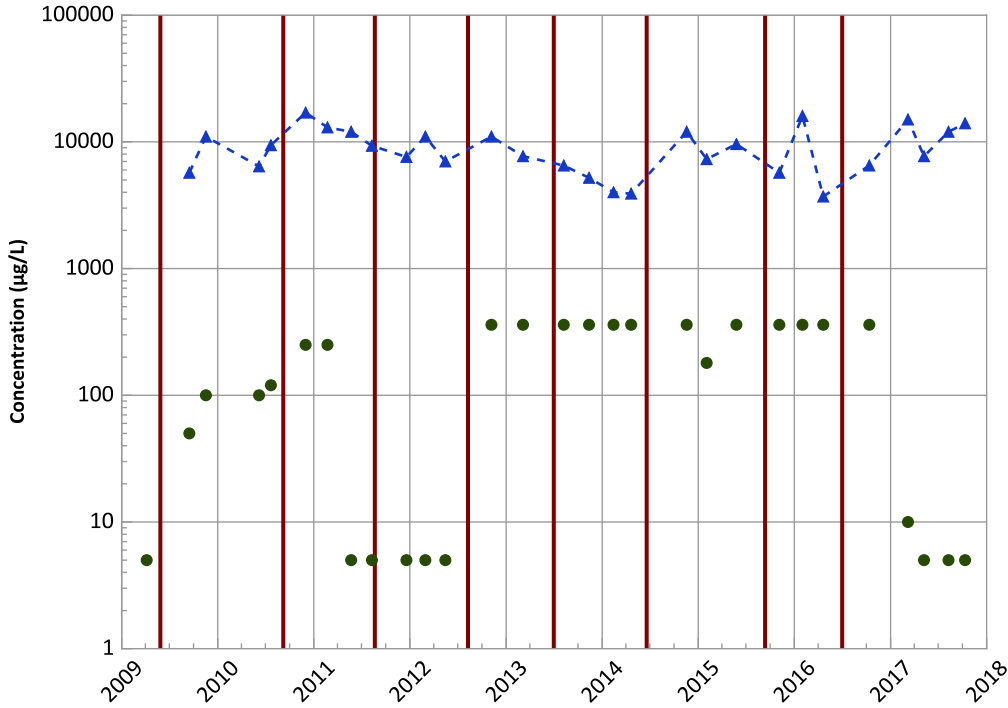
MAROS Mann-Kendall Method

All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method

All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

Methane Trend



Concentration Trend

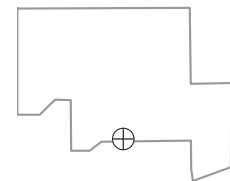
MAROS Mann-Kendall Method

All Data
No Trend
2015 - 2017 Data:
Stable

MAROS Linear Regression Method

All Data
Stable
2015 - 2017 Data:
No Trend

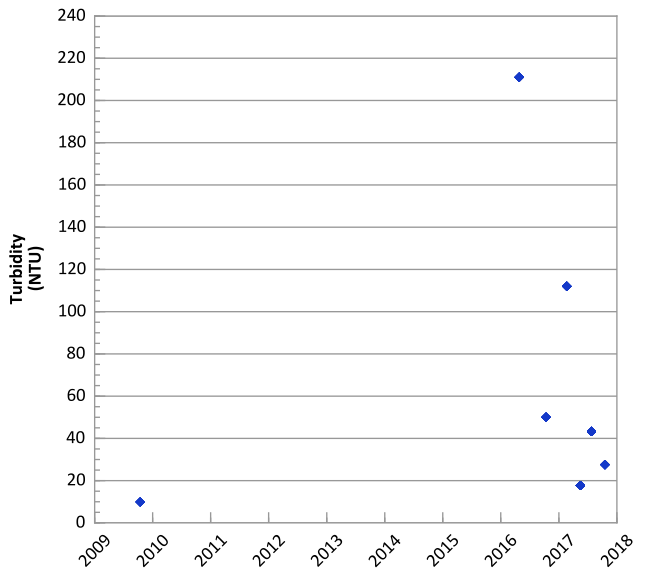
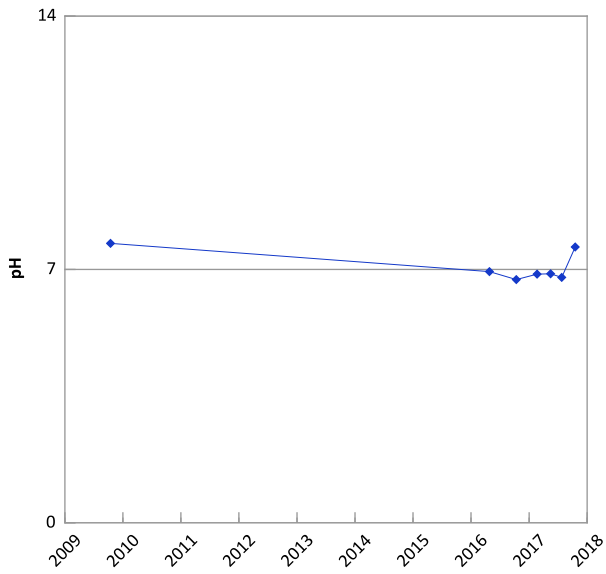
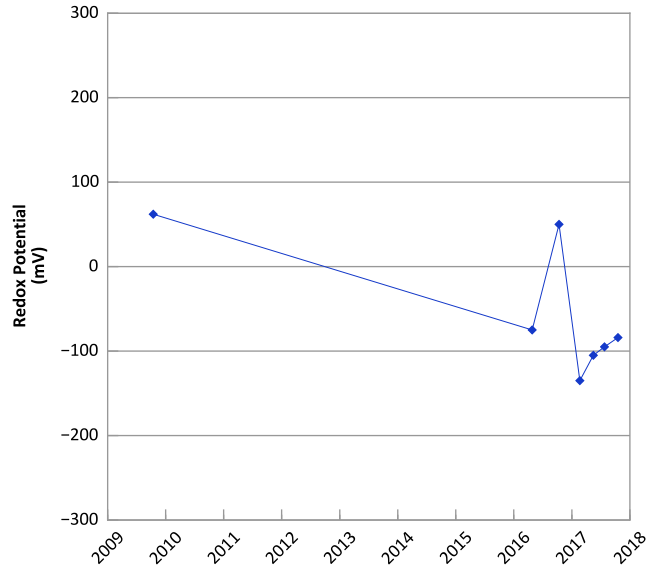
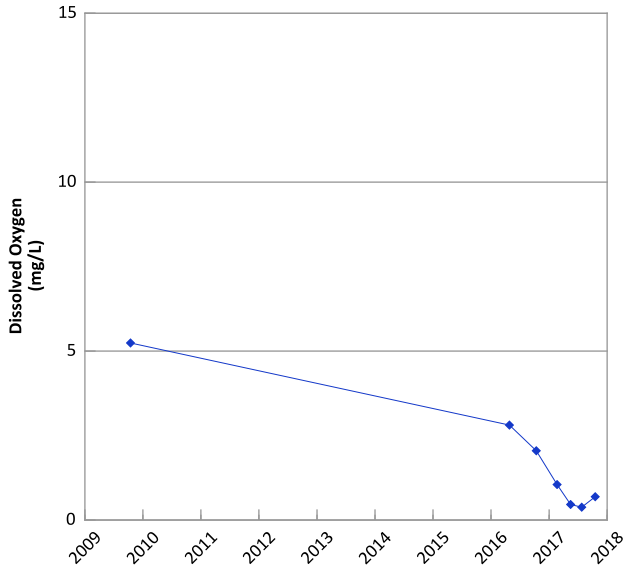
Well Location



Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 04/06/2009 to 12/18/2017
Analysis Date: 03/29/2018

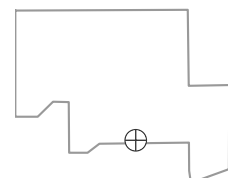
- ▲ Measured Value
- Sample Detection Limit
- Concentration Trend
- Groundwater Protection Standard
- Injection Dates

**PTX06-ISB079 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**

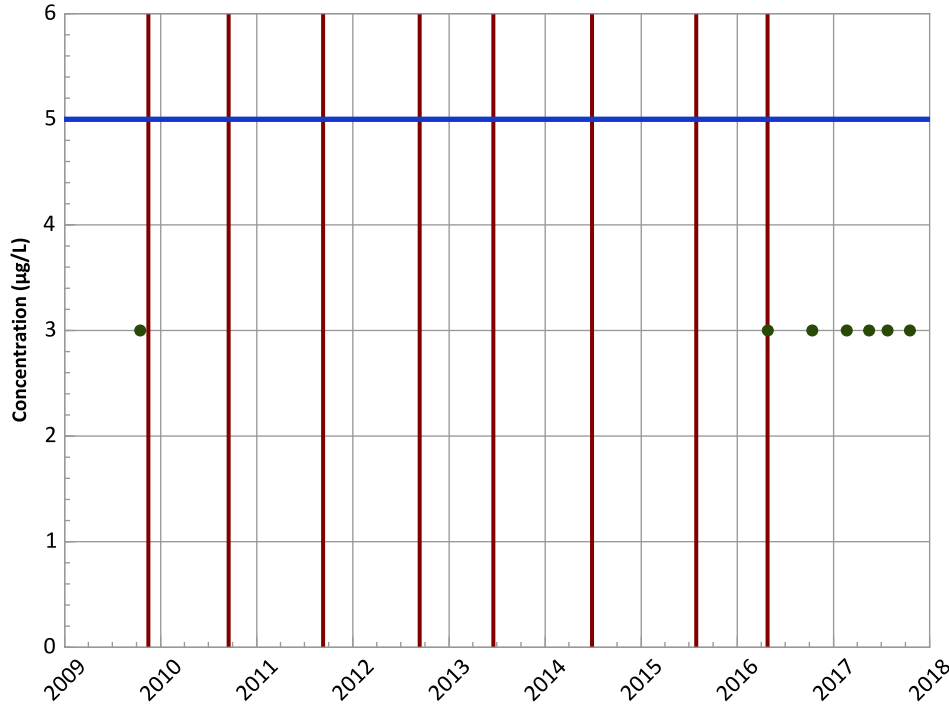


Query Date Range: 01/01/2009 to 12/31/2017
 Data Date Range: 10/15/2009 to 10/18/2017
 Analysis Date: 03/29/2018

Well Location



**PTX06-ISB079 in Perched Aquifer
USDOE/NNSA Pantex Plant
Tetrachloroethylene (PCE) Trend**



Concentration Trend

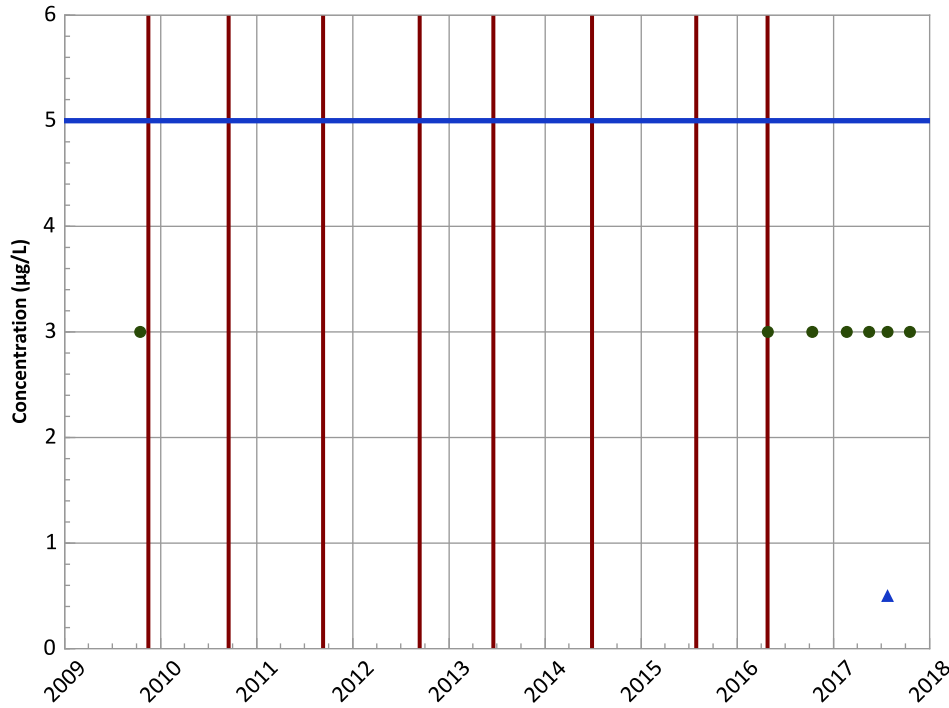
MAROS Mann-Kendall Method

All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method

All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

Trichloroethene Trend



Concentration Trend

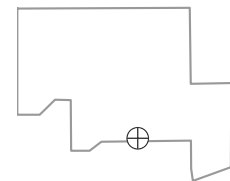
MAROS Mann-Kendall Method

All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
N/A (<4 Detections in Dataset)

Well Location

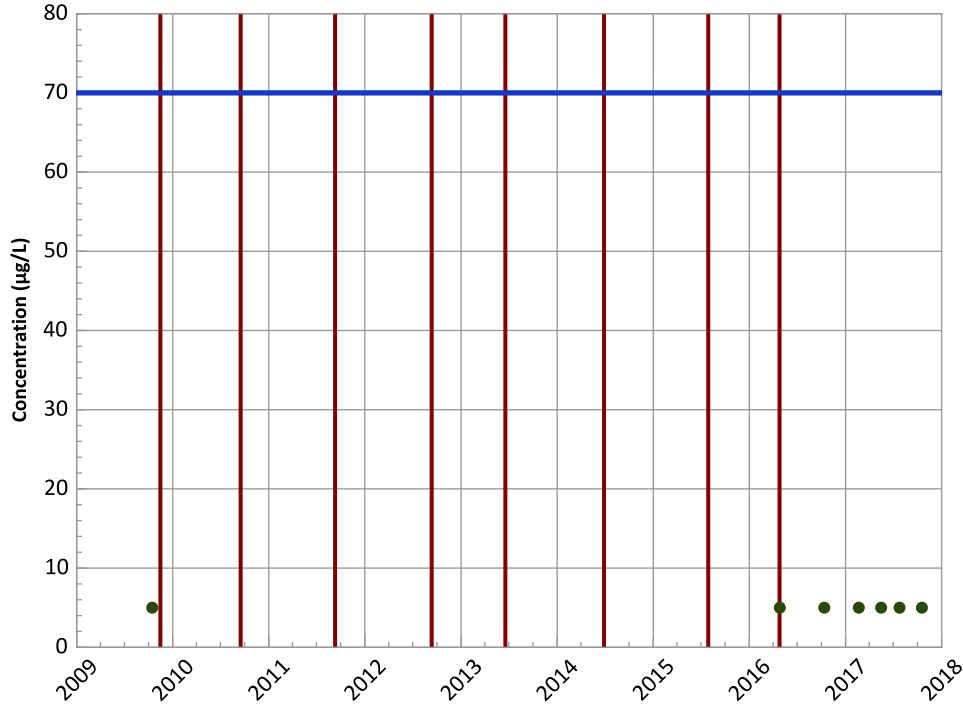


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 10/15/2009 to 10/18/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB079 in Perched Aquifer
USDOE/NNSA Pantex Plant

cis-1,2-Dichloroethene Trend



Concentration Trend

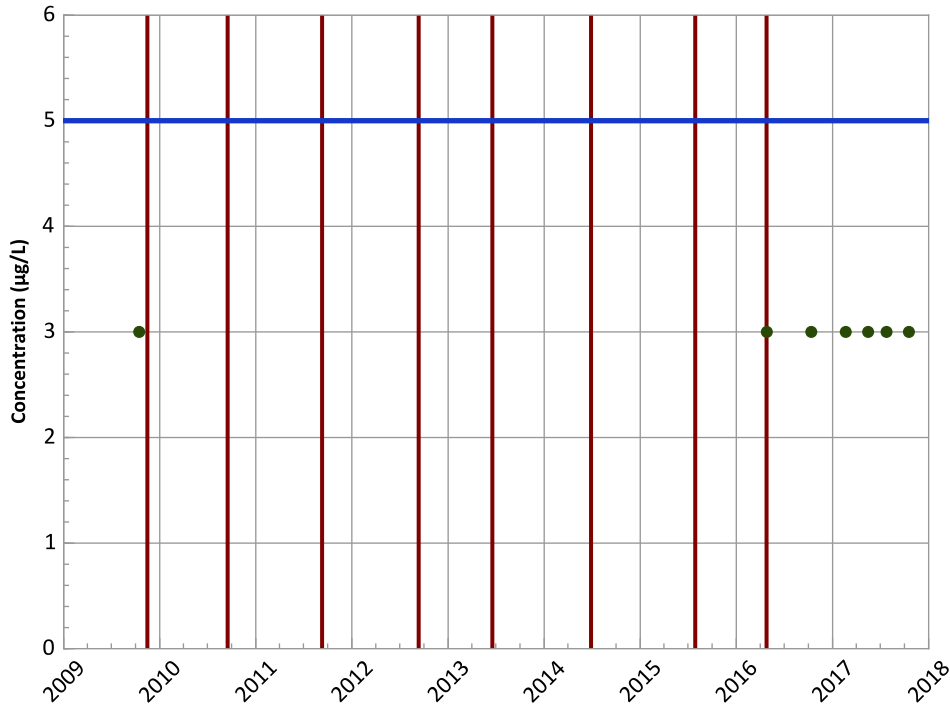
MAROS Mann-Kendall Method

All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method

All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

1,2-Dichloroethane Trend



Concentration Trend

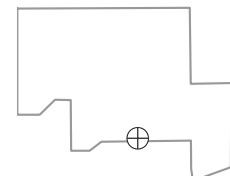
MAROS Mann-Kendall Method

All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method

All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

Well Location

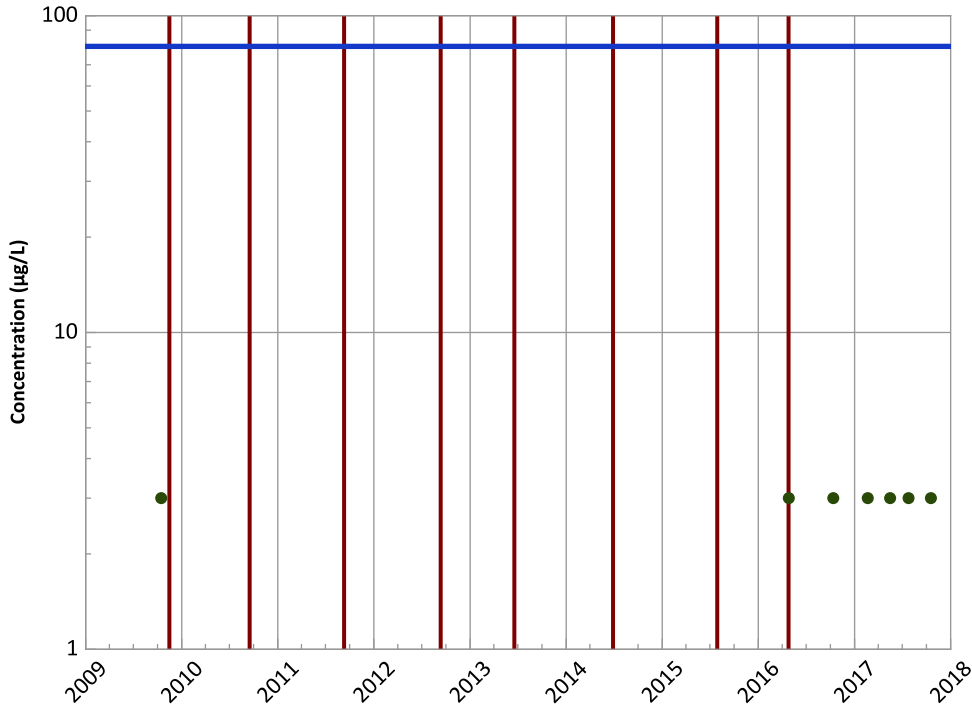


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 10/15/2009 to 10/18/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB079 in Perched Aquifer
USDOE/NNSA Pantex Plant

Chloroform Trend



Concentration Trend

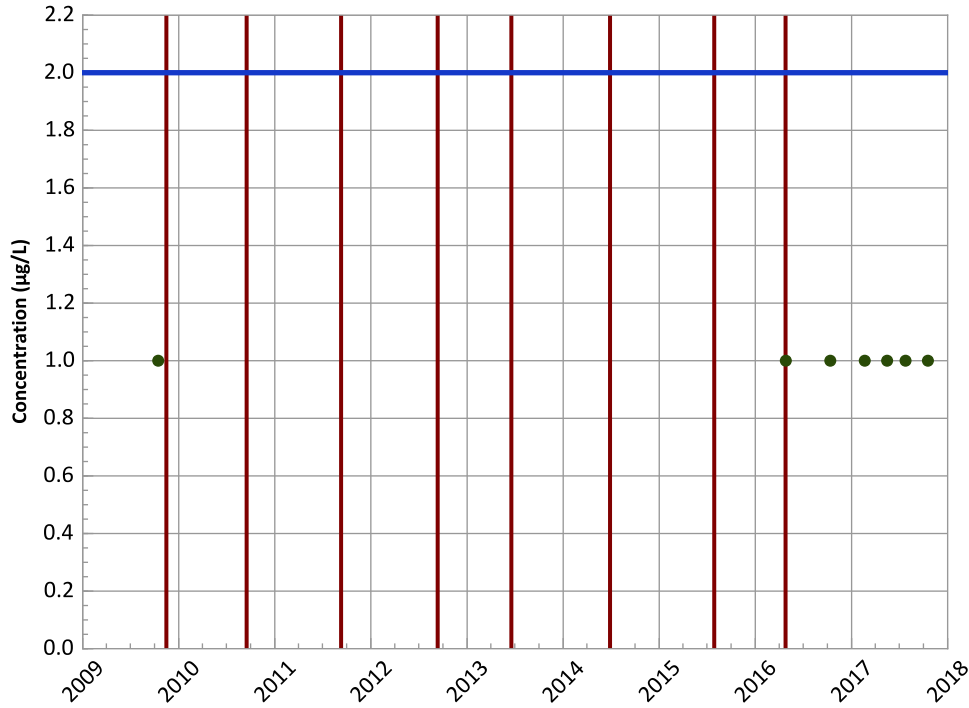
MAROS Mann-Kendall Method

All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method

All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

Vinyl Chloride Trend



Concentration Trend

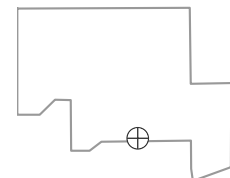
MAROS Mann-Kendall Method

All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method

All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

Well Location

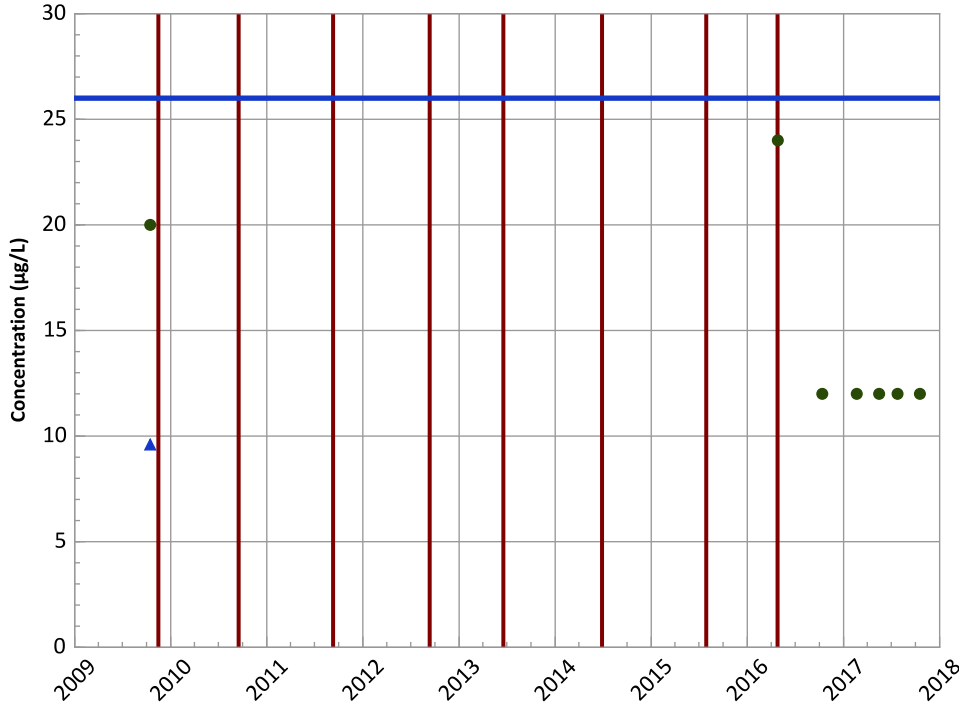


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 10/15/2009 to 10/18/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB079 in Perched Aquifer
USDOE/NNSA Pantex Plant

Perchlorate Trend

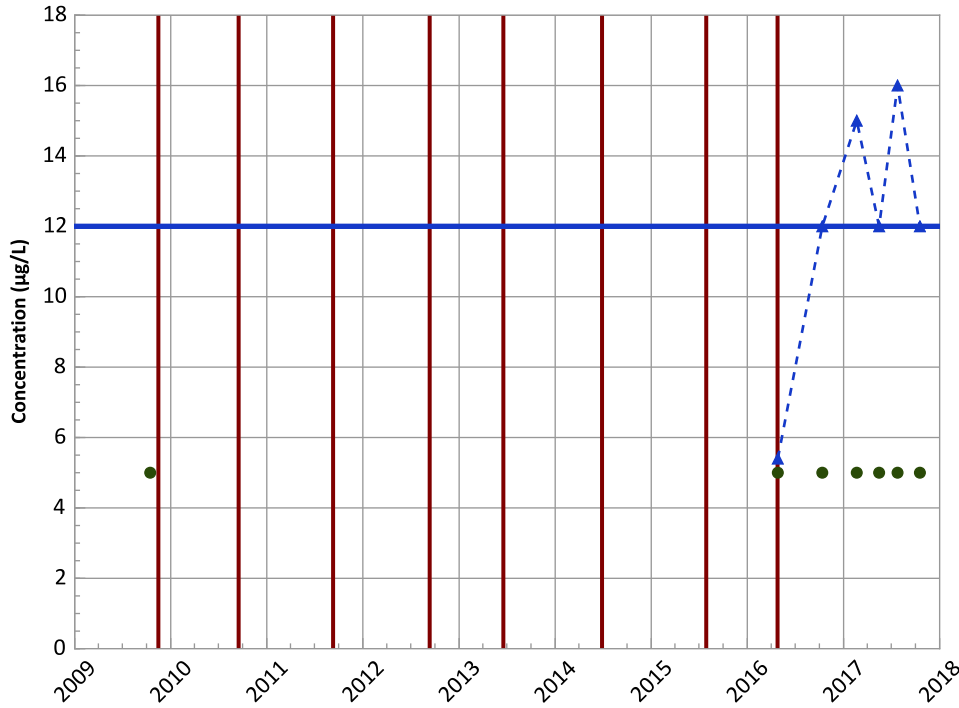


Concentration Trend

MAROS Mann-Kendall Method
All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method
All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
N/A (<4 Detections in Dataset)

Arsenic Trend

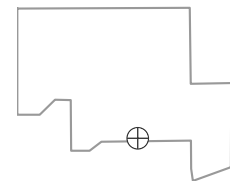


Concentration Trend

MAROS Mann-Kendall Method
All Data
Probably Increasing
2015 - 2017 Data:
Decreasing

MAROS Linear Regression Method
All Data
Increasing
2015 - 2017 Data:
Stable

Well Location

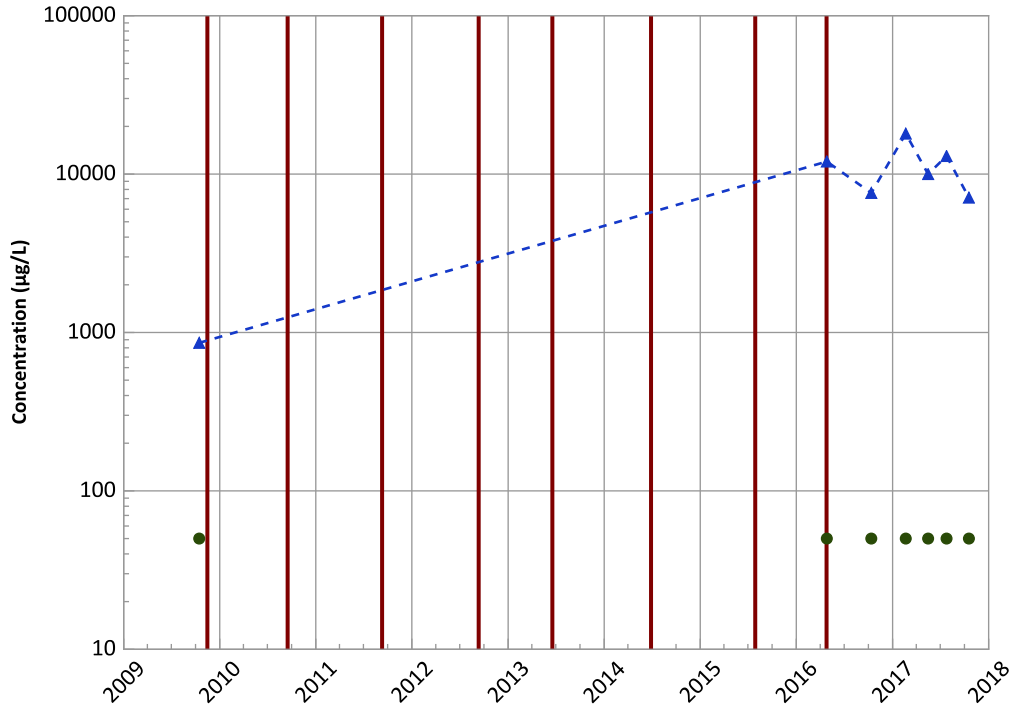


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 10/15/2009 to 10/18/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB079 in Perched Aquifer
USDOE/NNSA Pantex Plant

Iron Trend



Concentration Trend

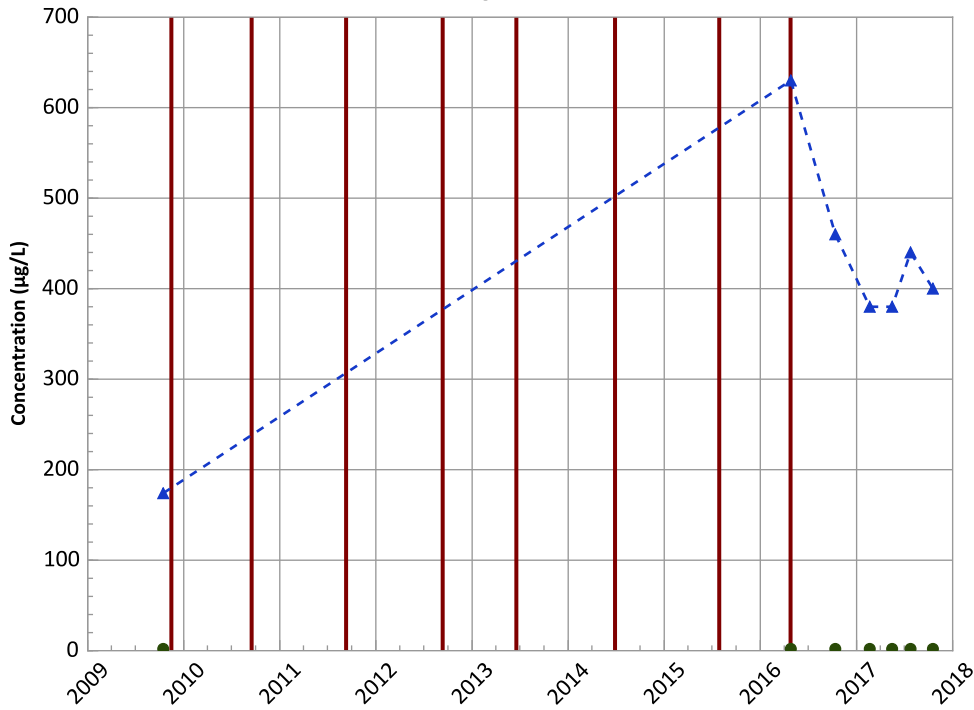
MAROS Mann-Kendall Method

All Data
No Trend
2015 - 2017 Data:
Decreasing

MAROS Linear Regression Method

All Data
Increasing
2015 - 2017 Data:
Probably Decreasing

Manganese Trend



Concentration Trend

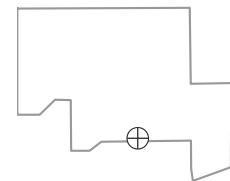
MAROS Mann-Kendall Method

All Data
Stable
2015 - 2017 Data:
No Trend

MAROS Linear Regression Method

All Data
Increasing
2015 - 2017 Data:
No Trend

Well Location

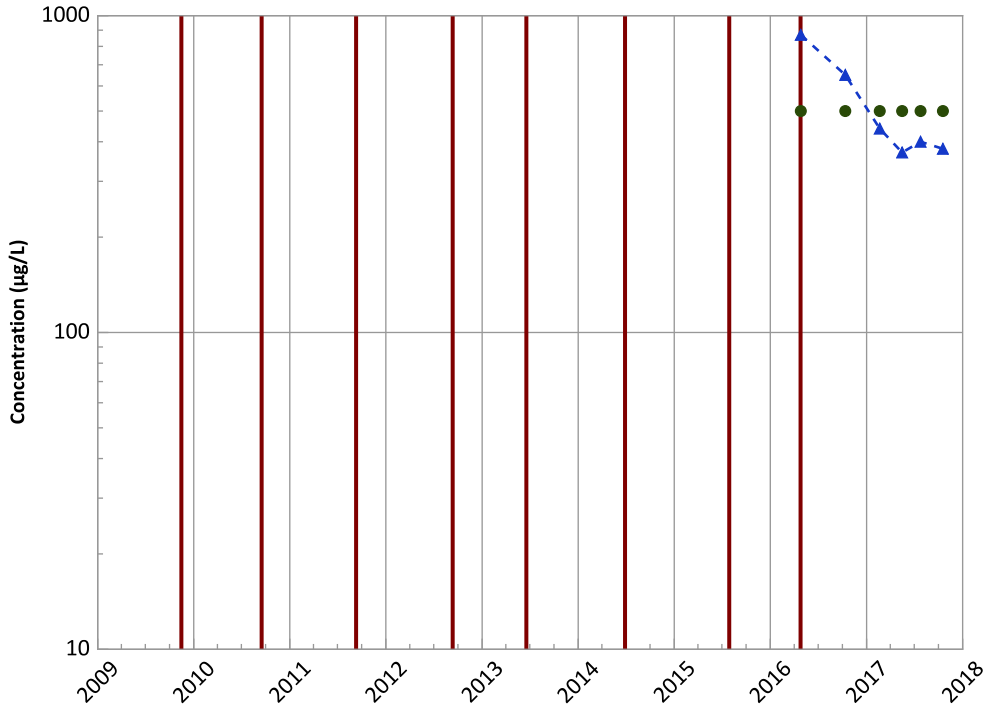


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 10/15/2009 to 10/18/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB079 in Perched Aquifer
USDOE/NNSA Pantex Plant

Divalent Manganese Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Decreasing

MAROS Linear Regression Method

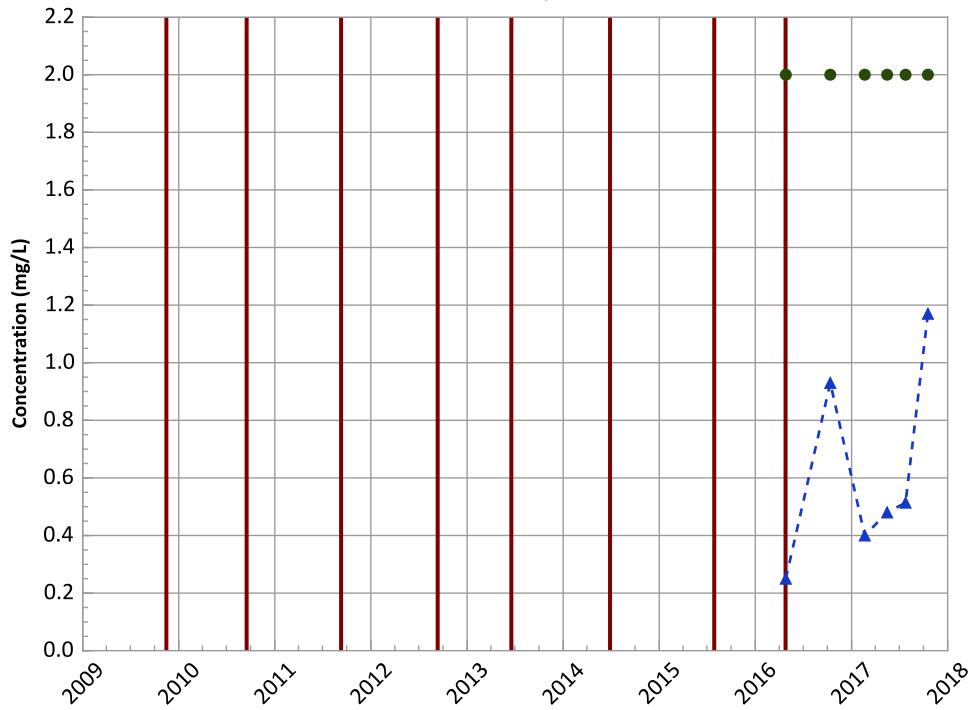
All Data

Decreasing

2015 - 2017 Data:

Stable

Total Volatile Fatty Acids Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Probably Increasing

2015 - 2017 Data:

Increasing

MAROS Linear Regression Method

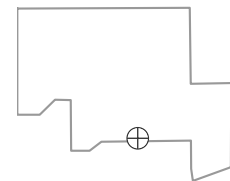
All Data

No Trend

2015 - 2017 Data:

Probably Increasing

Well Location

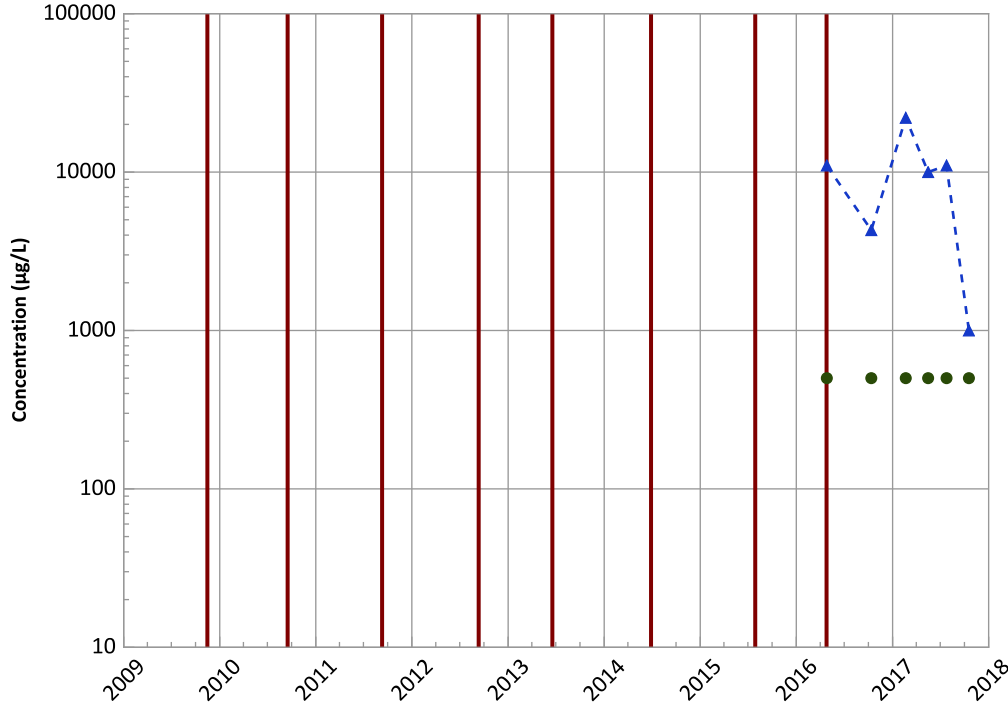


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 10/15/2009 to 10/18/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB079 in Perched Aquifer
USDOE/NNSA Pantex Plant

Ferrous Iron Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data
Decreasing

2015 - 2017 Data:
Decreasing

Decreasing

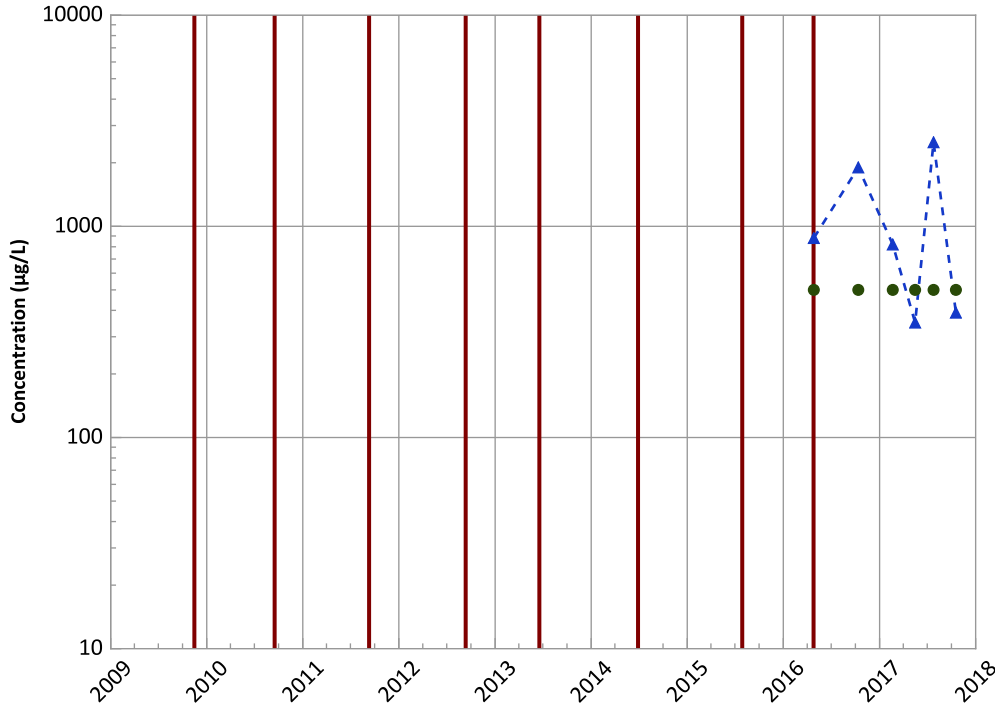
MAROS Linear Regression Method

All Data
Stable

2015 - 2017 Data:
Probably Decreasing

Probably Decreasing

Ferric Iron Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data
Decreasing

2015 - 2017 Data:
Stable

Stable

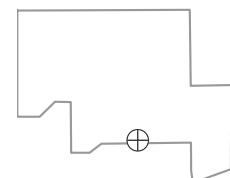
MAROS Linear Regression Method

All Data
Stable

2015 - 2017 Data:
No Trend

No Trend

Well Location

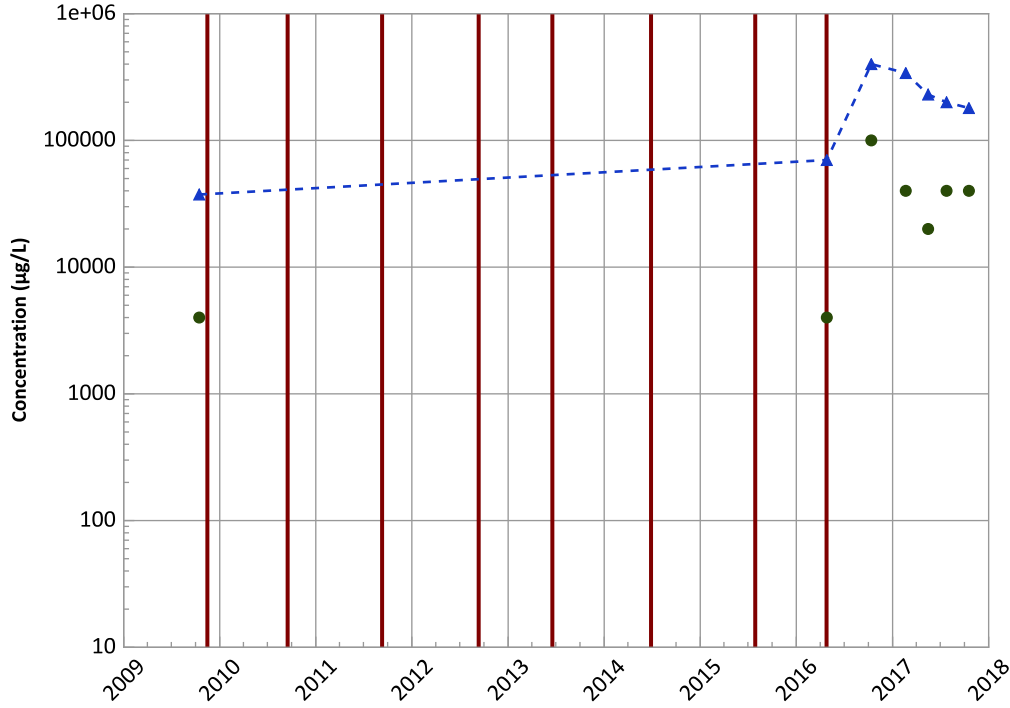


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 10/15/2009 to 10/18/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB079 in Perched Aquifer
USDOE/NNSA Pantex Plant

Chloride (as Cl) Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

No Trend

2015 - 2017 Data:

Decreasing

MAROS Linear Regression Method

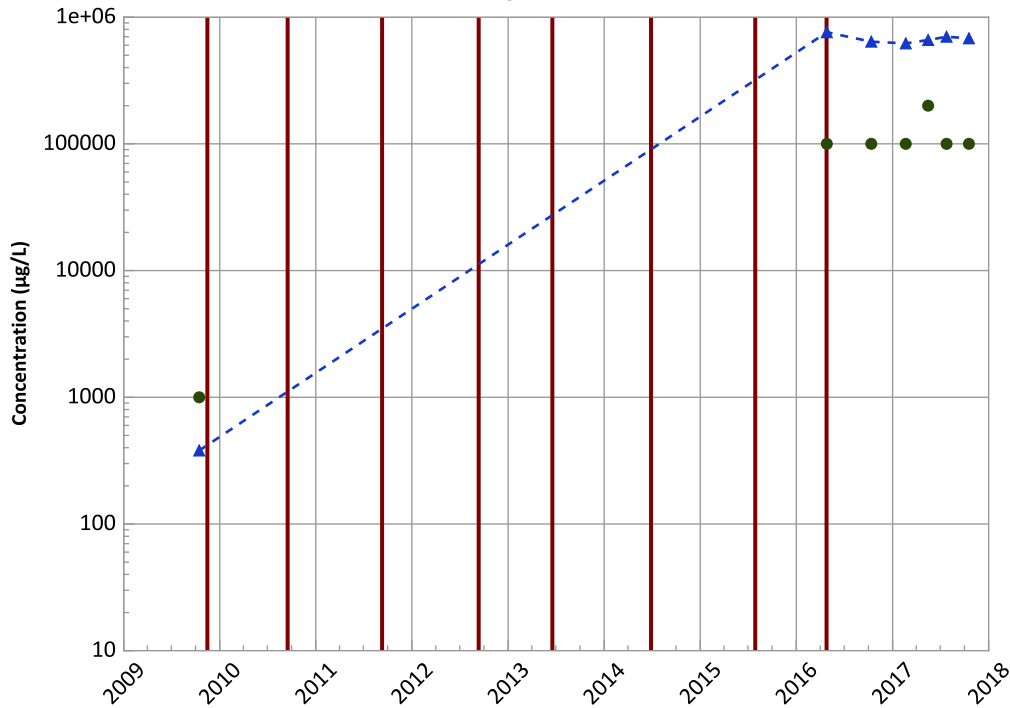
All Data

Increasing

2015 - 2017 Data:

Decreasing

Total Organic Carbon Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

No Trend

2015 - 2017 Data:

No Trend

MAROS Linear Regression Method

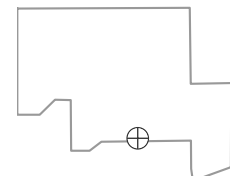
All Data

Increasing

2015 - 2017 Data:

Increasing

Well Location

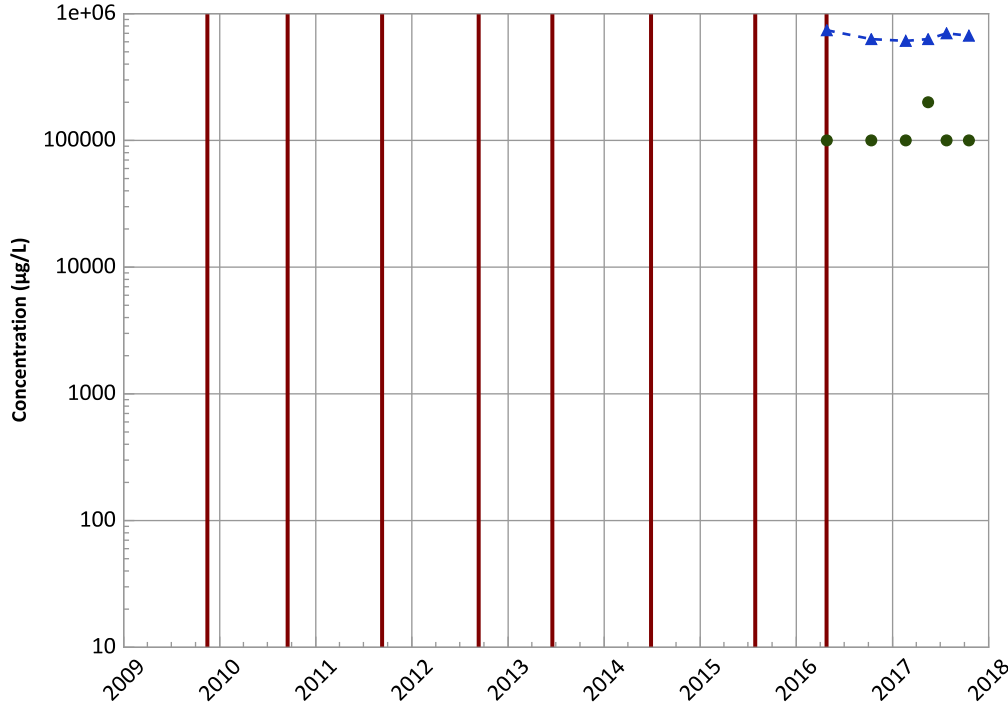


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 10/15/2009 to 10/18/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB079 in Perched Aquifer
USDOE/NNSA Pantex Plant

Dissolved Organic Carbon (DOC) Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Stable

2015 - 2017 Data:

No Trend

MAROS Linear Regression Method

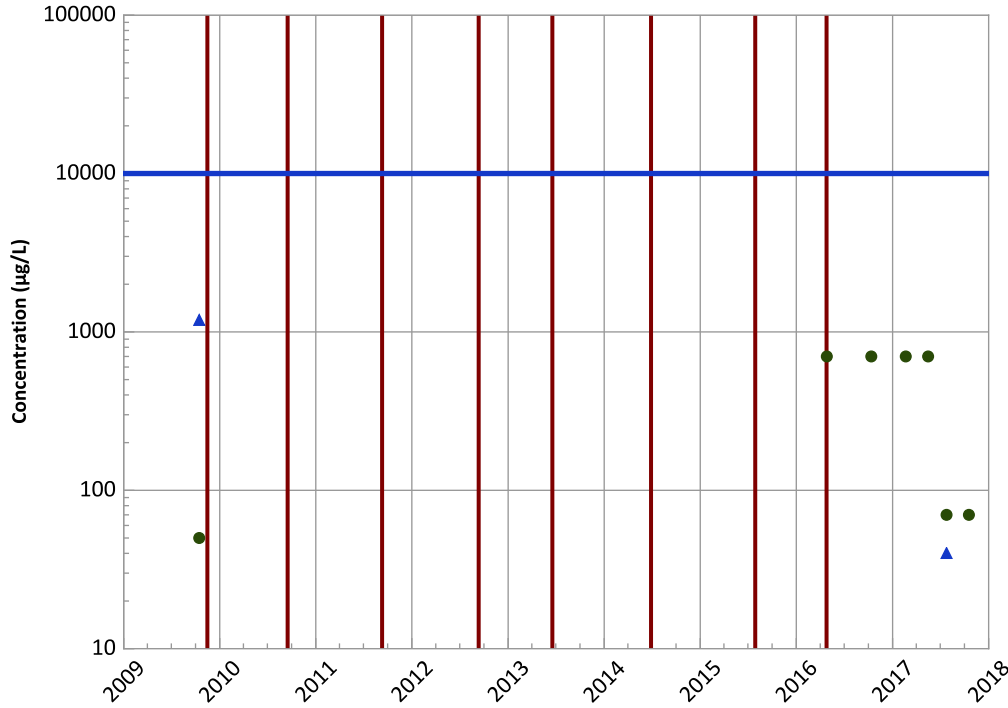
All Data

Stable

2015 - 2017 Data:

Probably Increasing

Nitrate as N Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

N/A (<4 Detections in Dataset)

2015 - 2017 Data:

N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

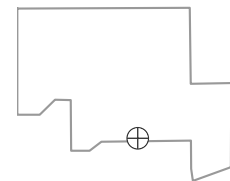
All Data

N/A (<4 Detections in Dataset)

2015 - 2017 Data:

N/A (<4 Detections in Dataset)

Well Location

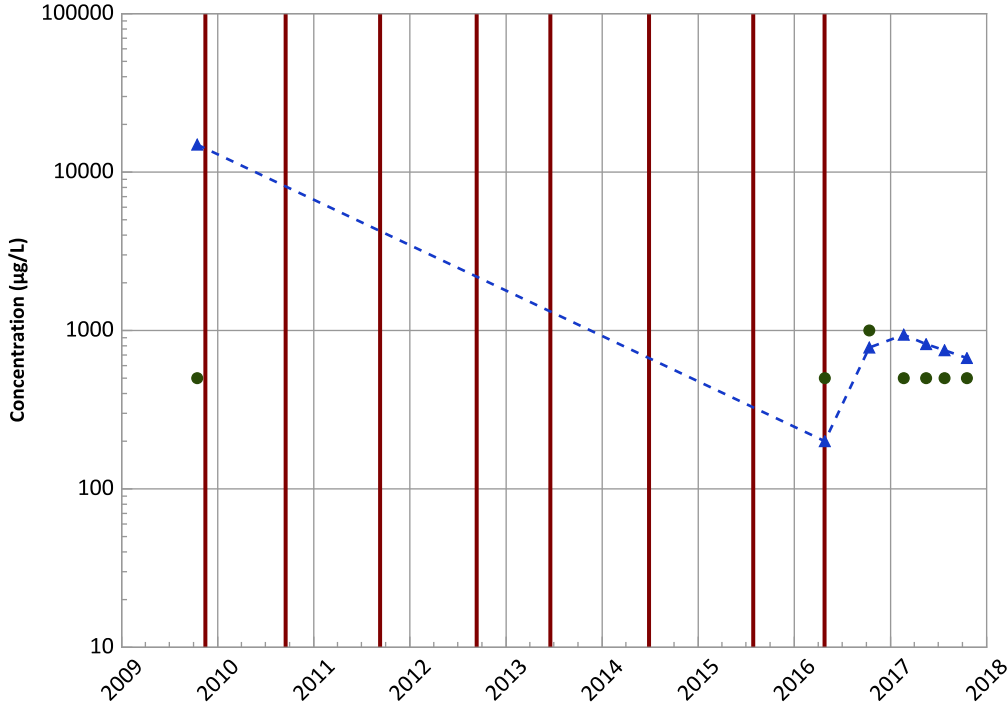


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 10/15/2009 to 10/18/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB079 in Perched Aquifer
USDOE/NNSA Pantex Plant

Sulfate (as SO4) Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Decreasing

MAROS Linear Regression Method

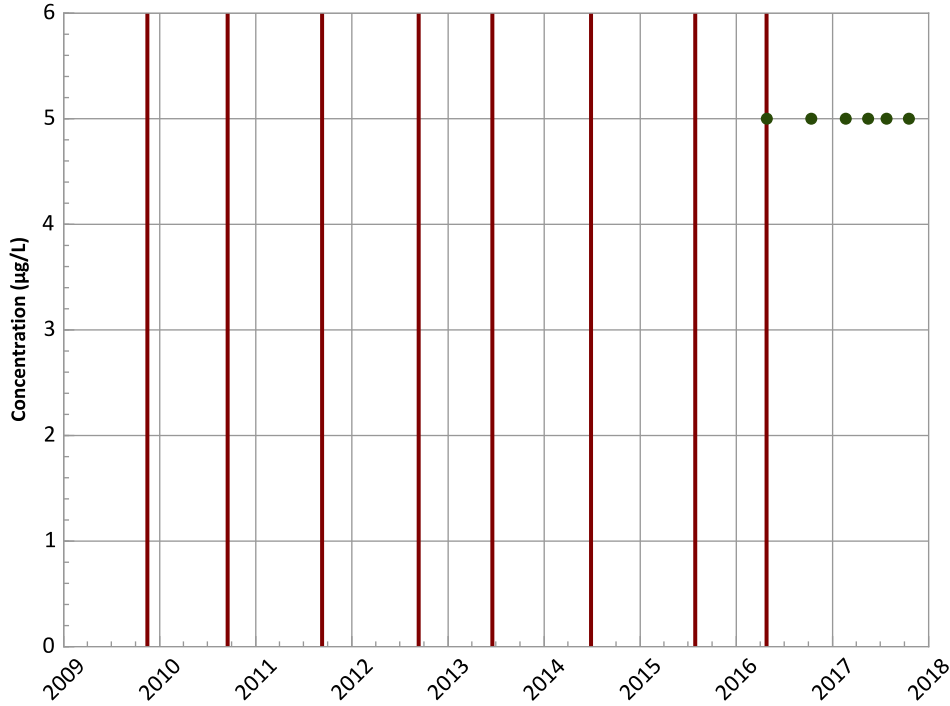
All Data

Decreasing

2015 - 2017 Data:

Probably Decreasing

Ethene (Ethylene) Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

All Non-Detect

2015 - 2017 Data:

All Non-Detect

MAROS Linear Regression Method

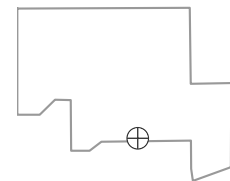
All Data

All Non-Detect

2015 - 2017 Data:

All Non-Detect

Well Location

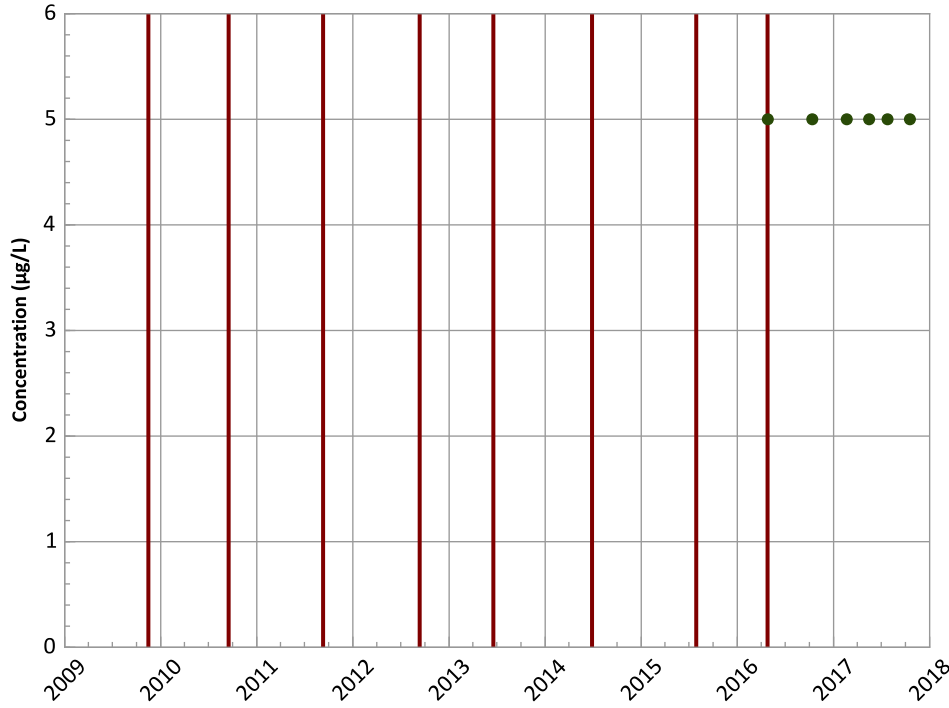


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 10/15/2009 to 10/18/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB079 in Perched Aquifer
USDOE/NNSA Pantex Plant

Ethane Trend



Concentration Trend

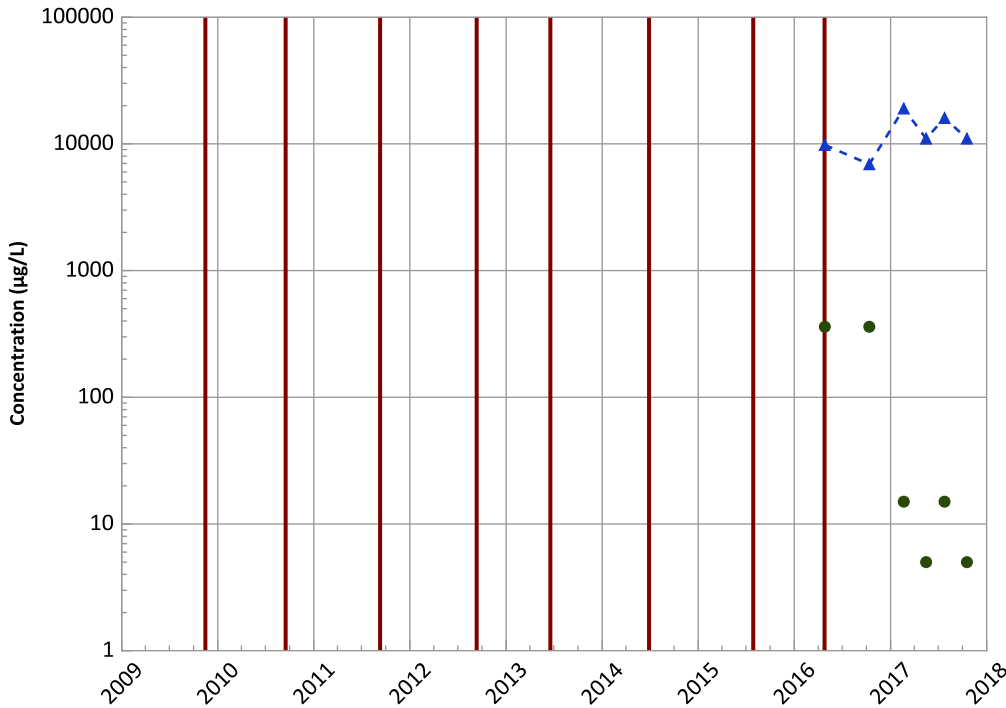
MAROS Mann-Kendall Method

All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method

All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

Methane Trend



Concentration Trend

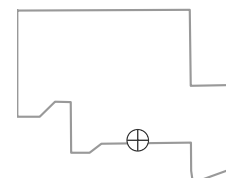
MAROS Mann-Kendall Method

All Data
No Trend
2015 - 2017 Data:
Decreasing

MAROS Linear Regression Method

All Data
No Trend
2015 - 2017 Data:
Stable

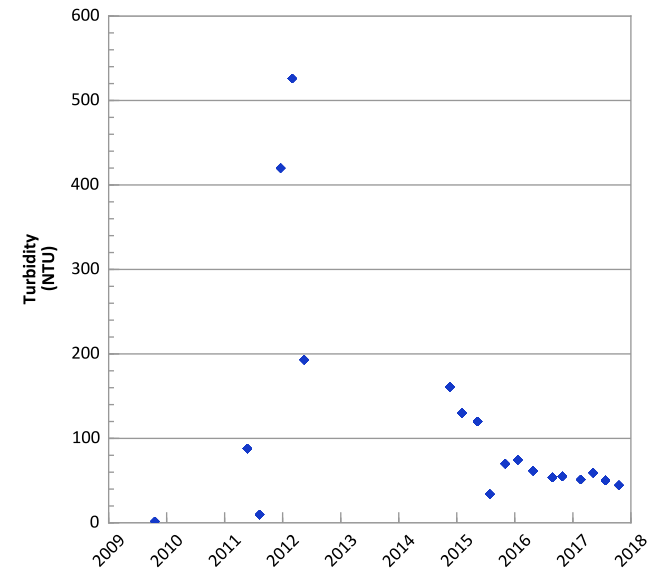
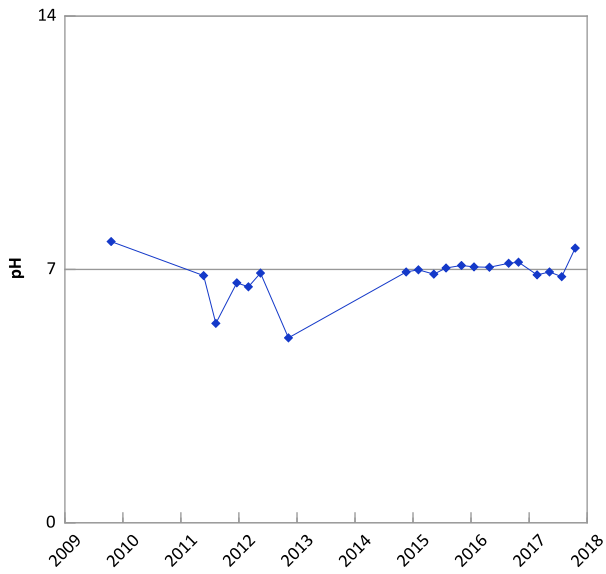
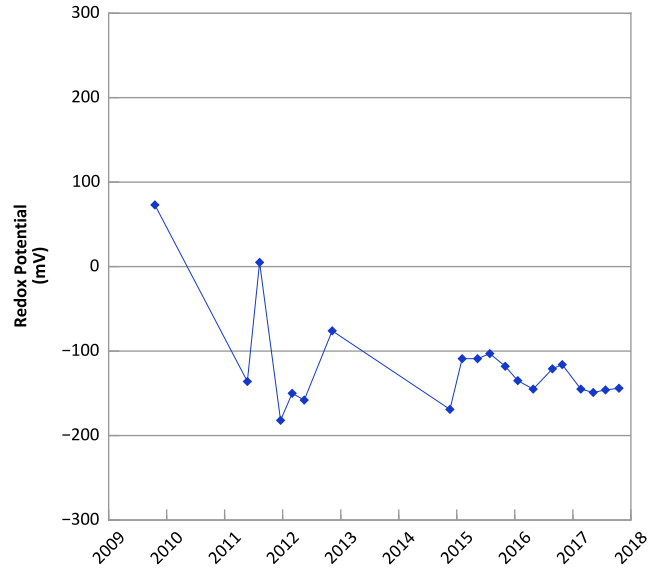
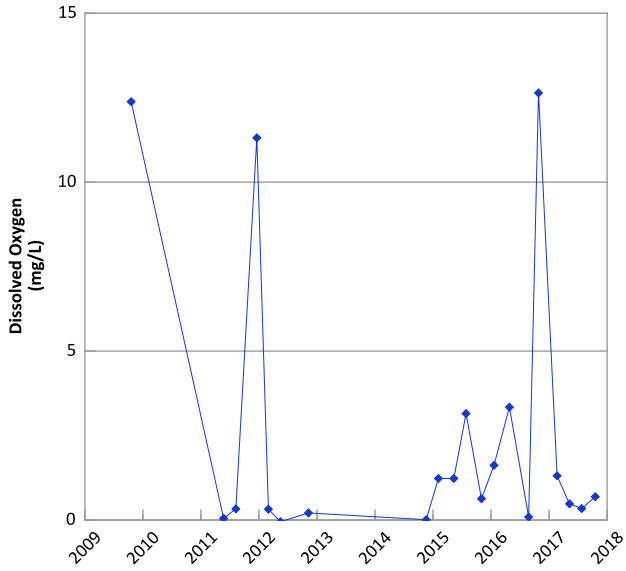
Well Location



Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 10/15/2009 to 10/18/2017
Analysis Date: 03/29/2018

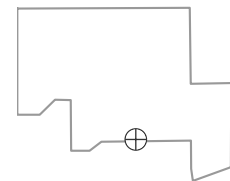
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

**PTX06-ISB082 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



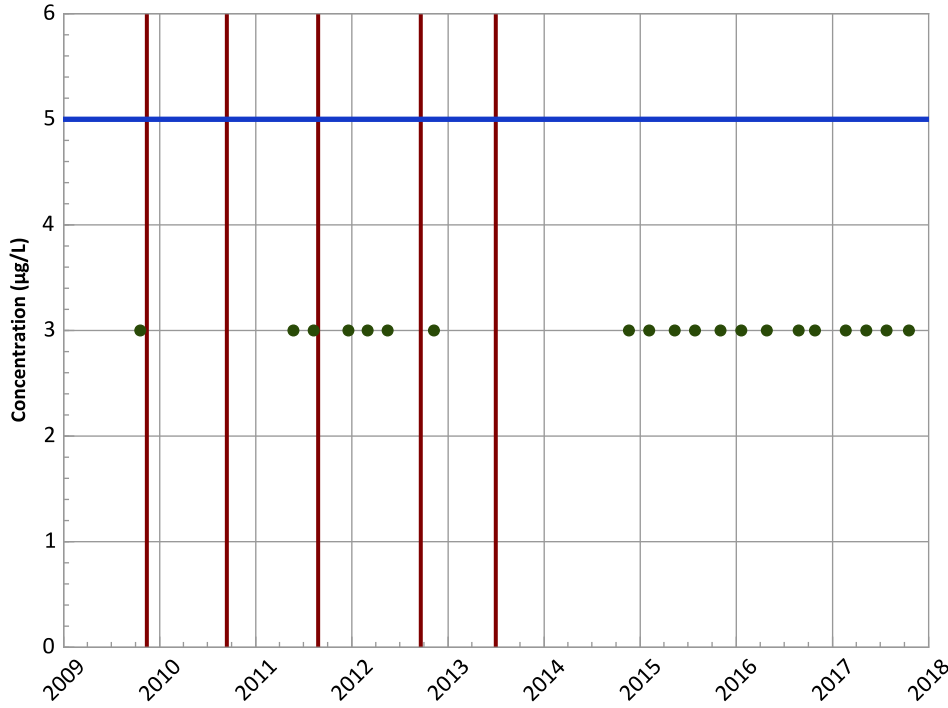
Query Date Range: 01/01/2009 to 12/31/2017
 Data Date Range: 10/19/2009 to 10/18/2017
 Analysis Date: 03/29/2018

Well Location



PTX06-ISB082 in Perched Aquifer
USDOE/NNSA Pantex Plant

Tetrachloroethylene (PCE) Trend



Concentration Trend

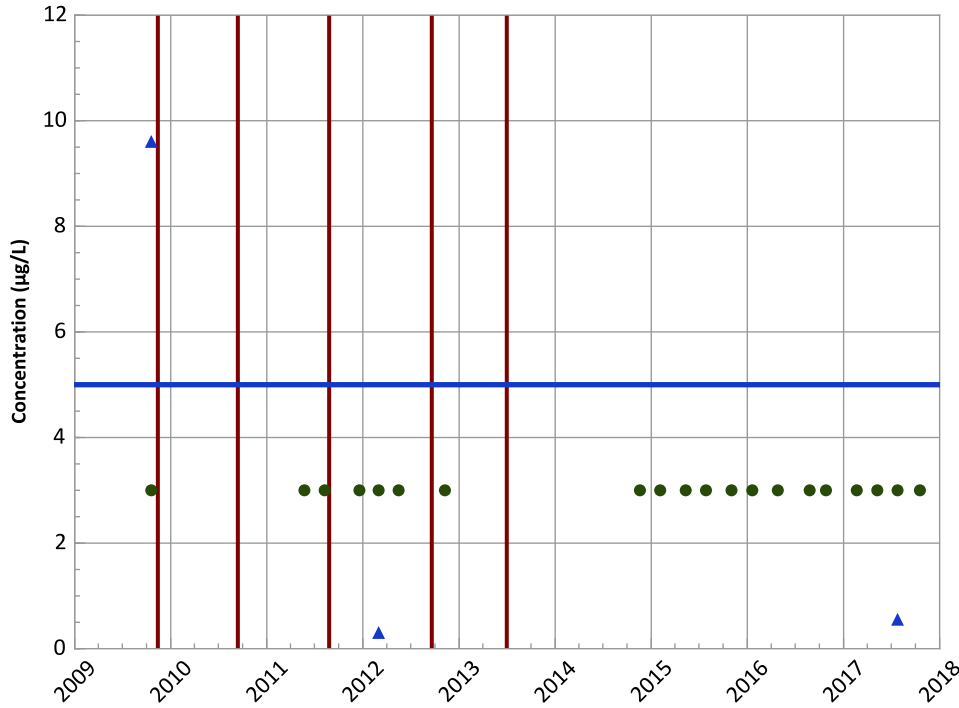
MAROS Mann-Kendall Method

All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method

All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

Trichloroethene Trend



Concentration Trend

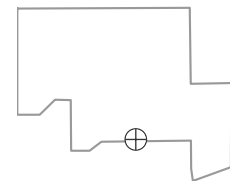
MAROS Mann-Kendall Method

All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
N/A (<4 Detections in Dataset)

Well Location

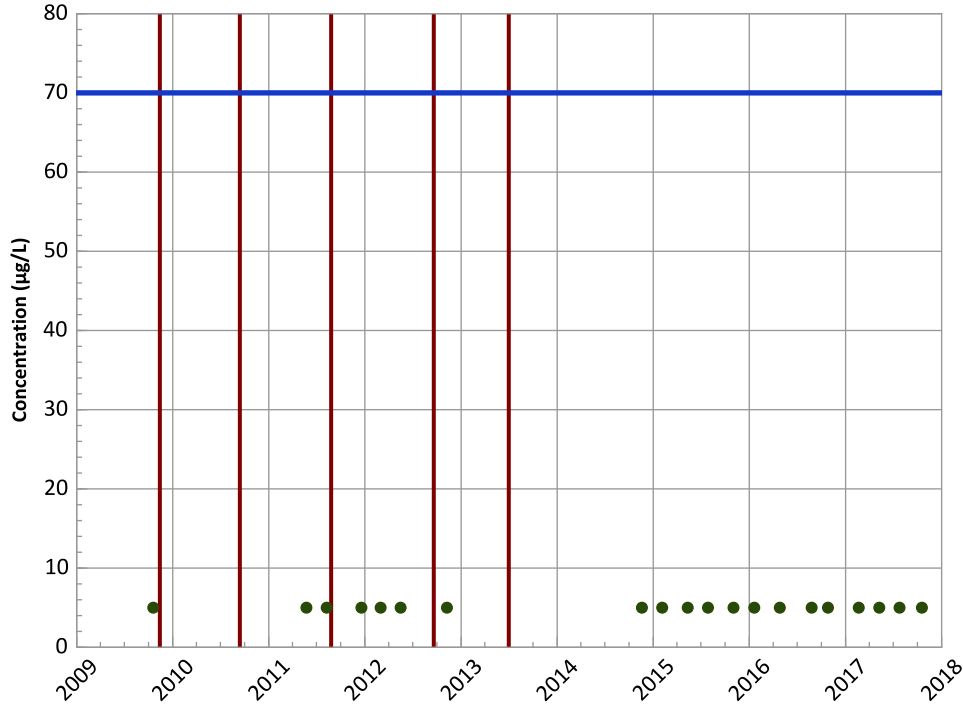


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 10/19/2009 to 10/18/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB082 in Perched Aquifer
USDOE/NNSA Pantex Plant

cis-1,2-Dichloroethene Trend



Concentration Trend

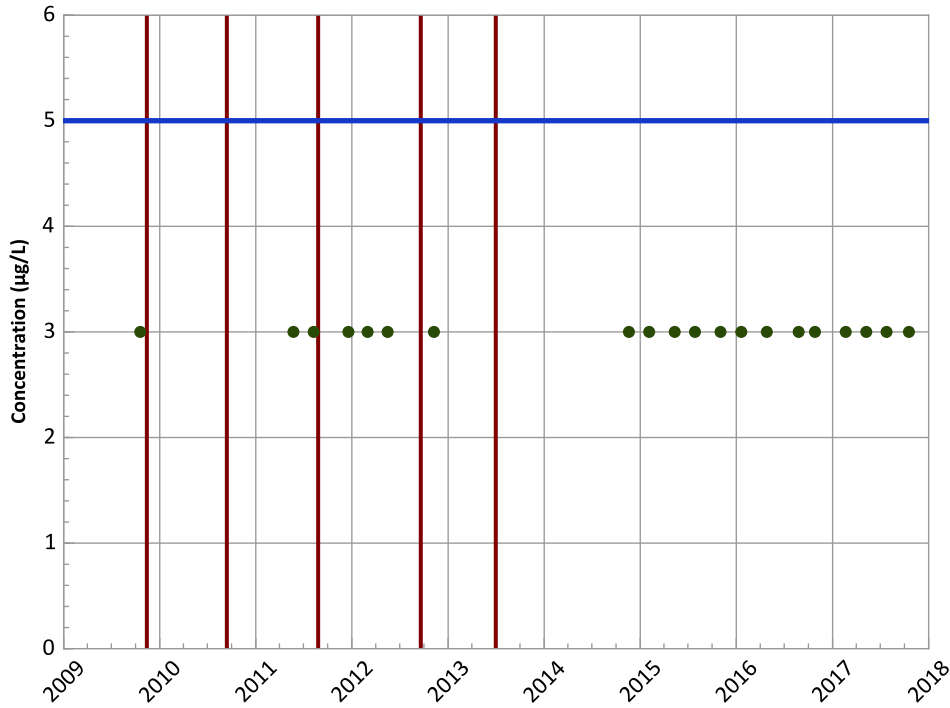
MAROS Mann-Kendall Method

All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method

All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

1,2-Dichloroethane Trend



Concentration Trend

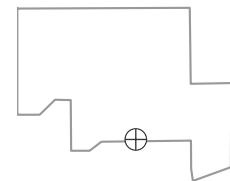
MAROS Mann-Kendall Method

All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method

All Data
All Non-Detect
2015 - 2017 Data:
All Non-Detect

Well Location

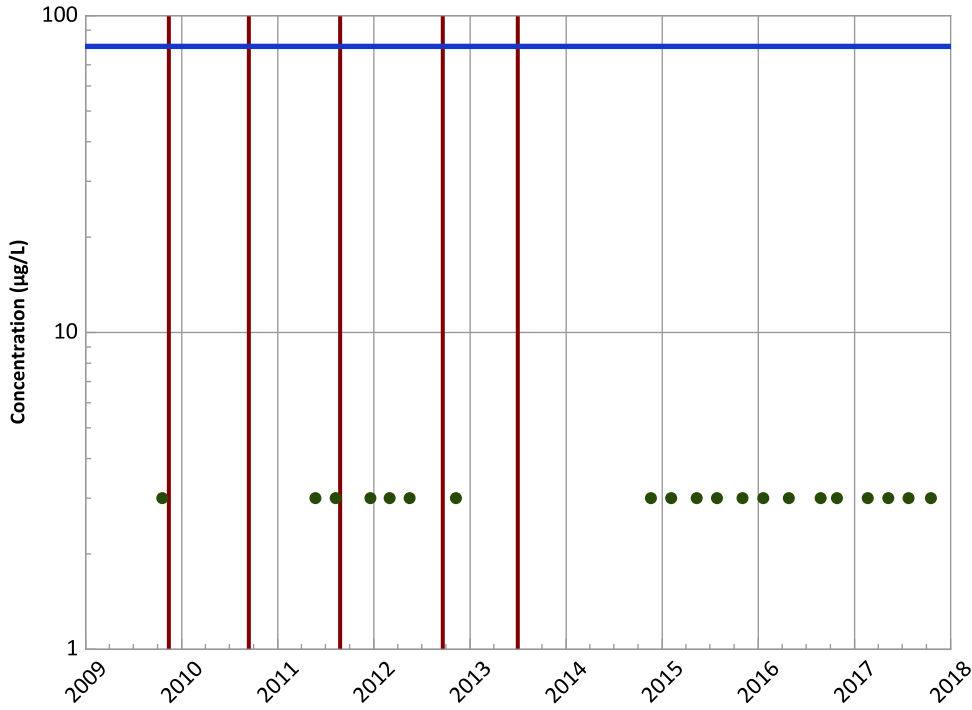


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 10/19/2009 to 10/18/2017
Analysis Date: 03/29/2018

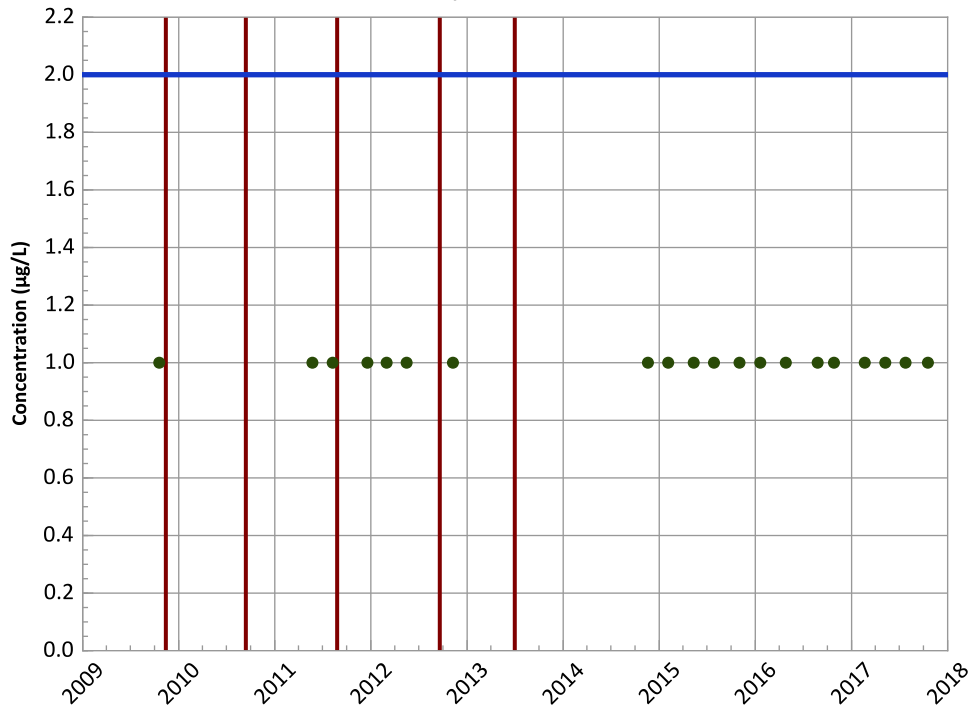
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB082 in Perched Aquifer
USDOE/NNSA Pantex Plant

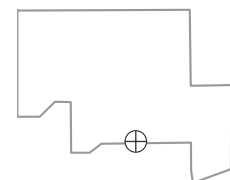
Chloroform Trend



Vinyl Chloride Trend



Well Location

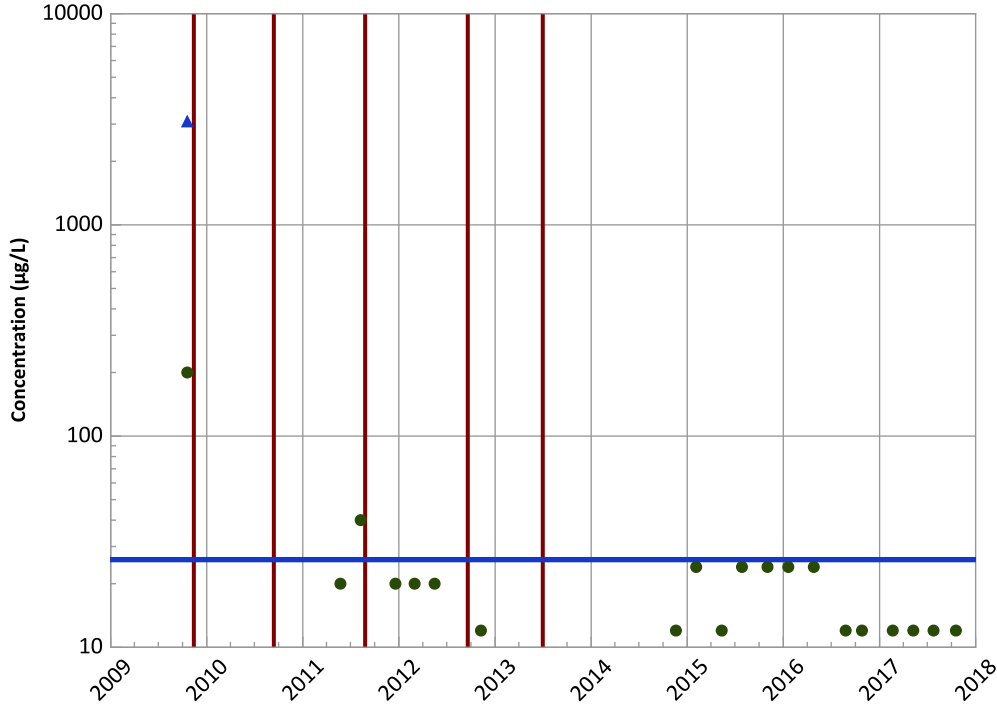


Query Date Range: 01/01/2009 to 12/31/2017
 Data Date Range: 10/19/2009 to 10/18/2017
 Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB082 in Perched Aquifer
USDOE/NNSA Pantex Plant

Perchlorate Trend

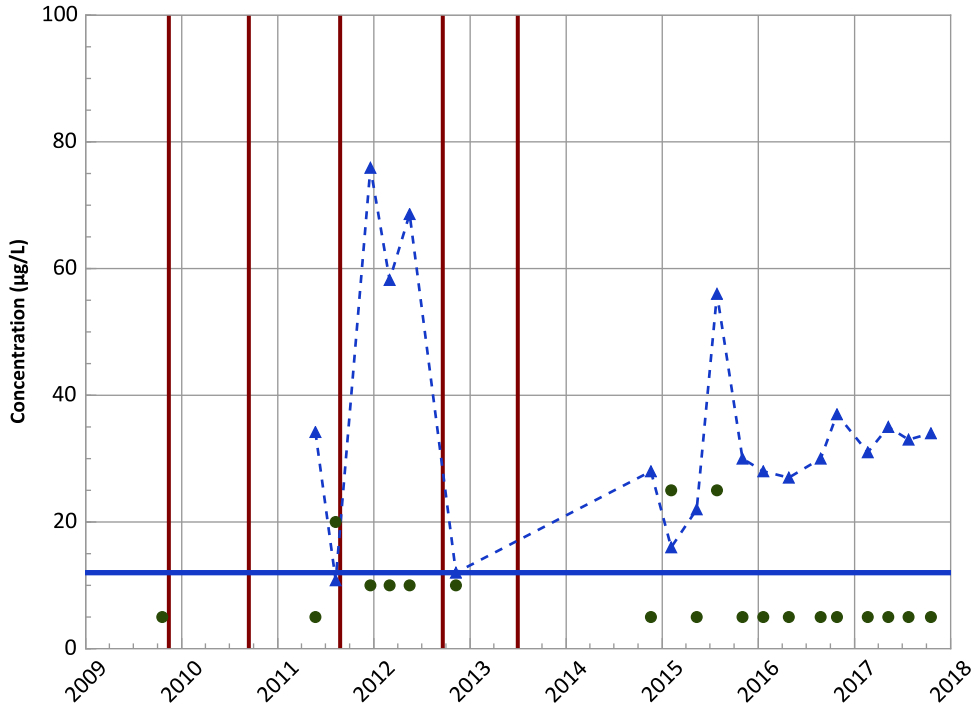


Concentration Trend

MAROS Mann-Kendall Method
All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method
All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
N/A (<4 Detections in Dataset)

Arsenic Trend



Concentration Trend

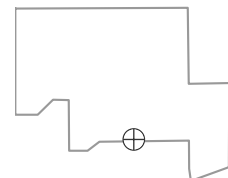
MAROS Mann-Kendall Method
All Data
No Trend
2015 - 2017 Data:
No Trend

MAROS Linear Regression Method
All Data
Stable
2015 - 2017 Data:
No Trend

Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 10/19/2009 to 10/18/2017
Analysis Date: 03/29/2018

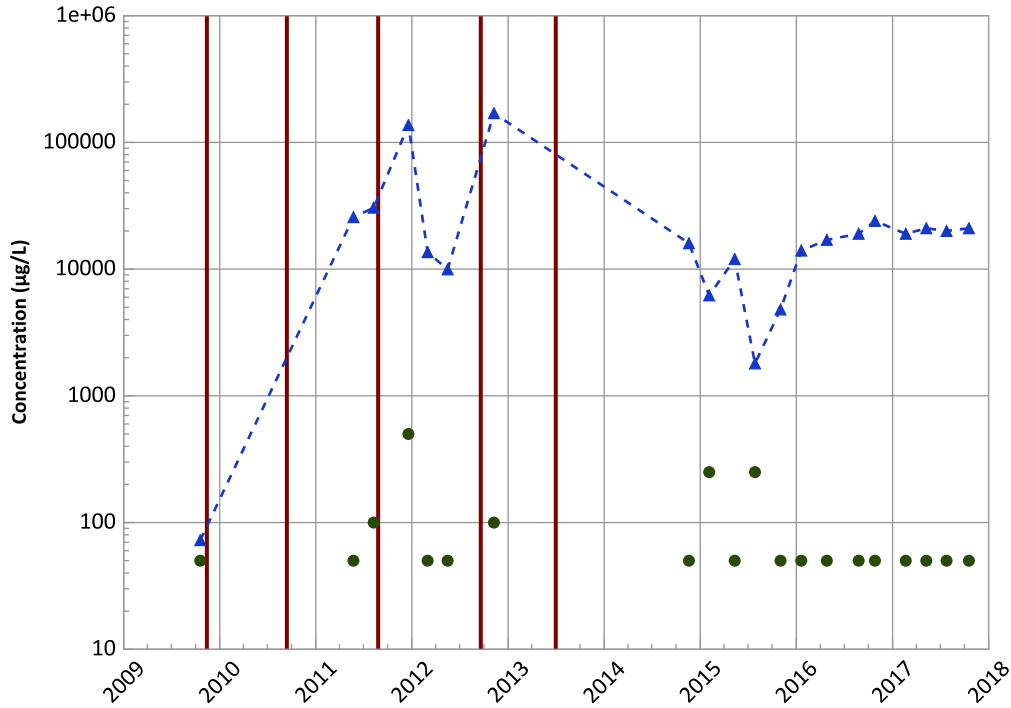
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

Well Location



PTX06-ISB082 in Perched Aquifer
USDOE/NNSA Pantex Plant

Iron Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

No Trend

2015 - 2017 Data:

No Trend

MAROS Linear Regression Method

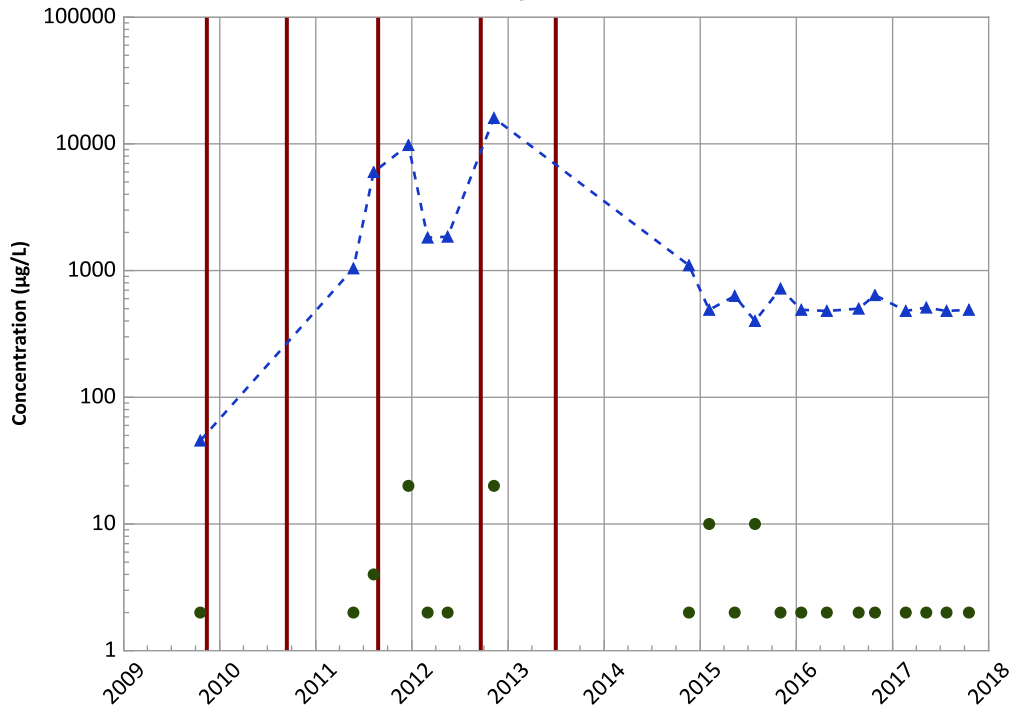
All Data

No Trend

2015 - 2017 Data:

Probably Increasing

Manganese Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

No Trend

MAROS Linear Regression Method

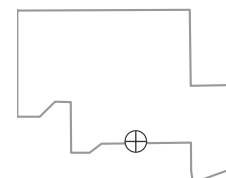
All Data

Probably Decreasing

2015 - 2017 Data:

No Trend

Well Location

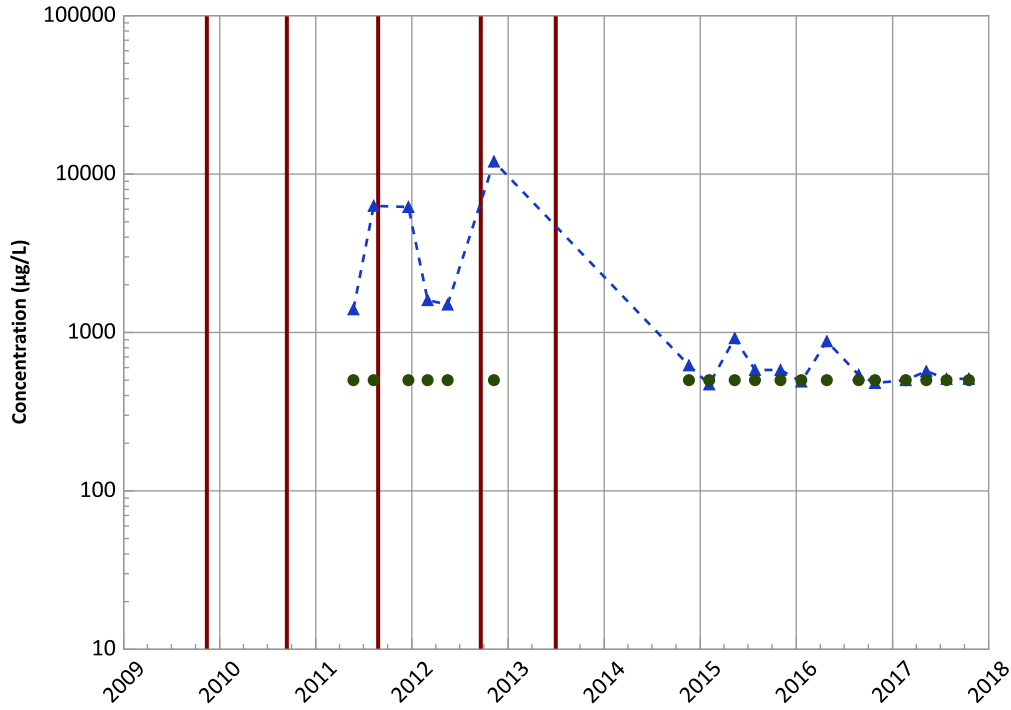


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 10/19/2009 to 10/18/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB082 in Perched Aquifer
USDOE/NNSA Pantex Plant

Divalent Manganese Trend



Concentration Trend

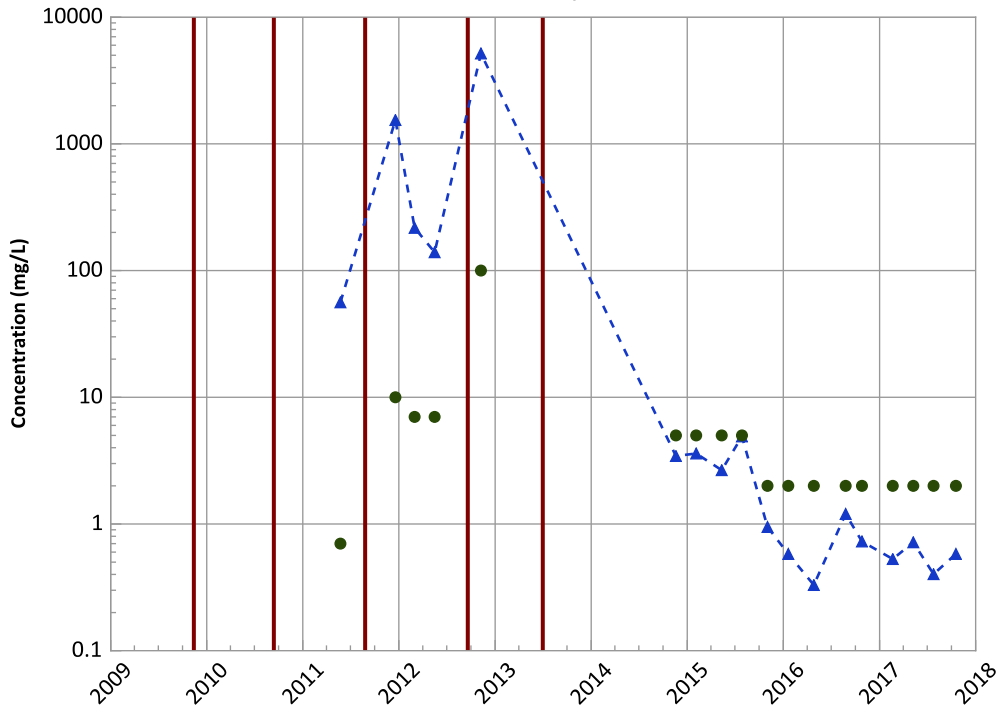
MAROS Mann-Kendall Method

All Data
Decreasing
2015 - 2017 Data:
No Trend

MAROS Linear Regression Method

All Data
Decreasing
2015 - 2017 Data:
Stable

Total Volatile Fatty Acids Trend



Concentration Trend

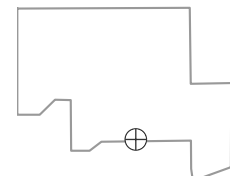
MAROS Mann-Kendall Method

All Data
Decreasing
2015 - 2017 Data:
Stable

MAROS Linear Regression Method

All Data
Decreasing
2015 - 2017 Data:
Stable

Well Location

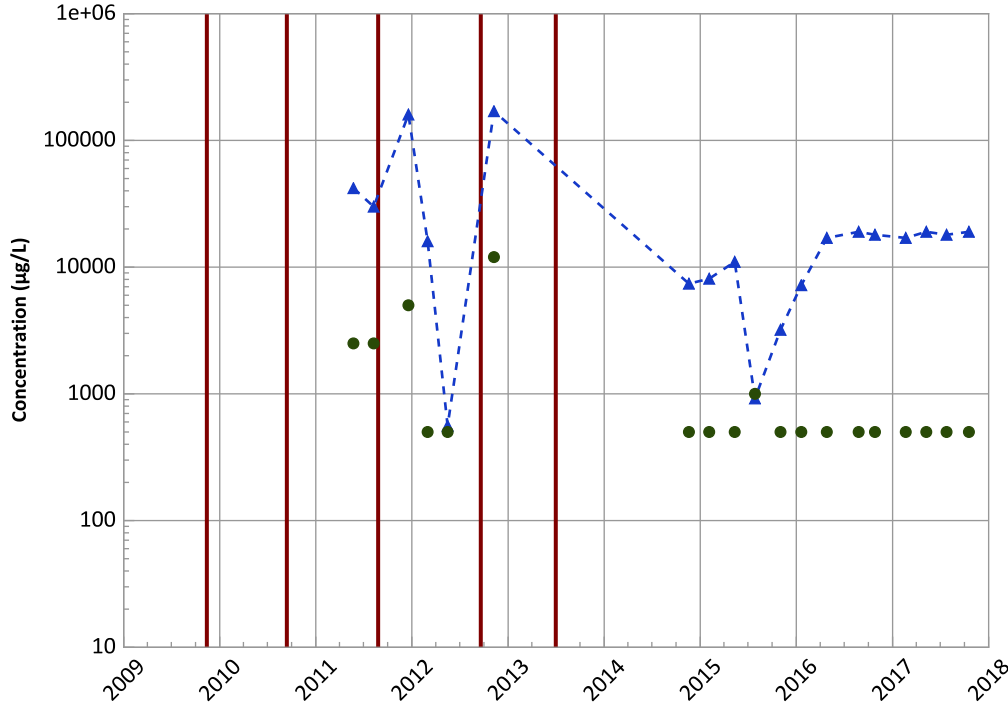


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 10/19/2009 to 10/18/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB082 in Perched Aquifer
USDOE/NNSA Pantex Plant

Ferrous Iron Trend



Concentration Trend

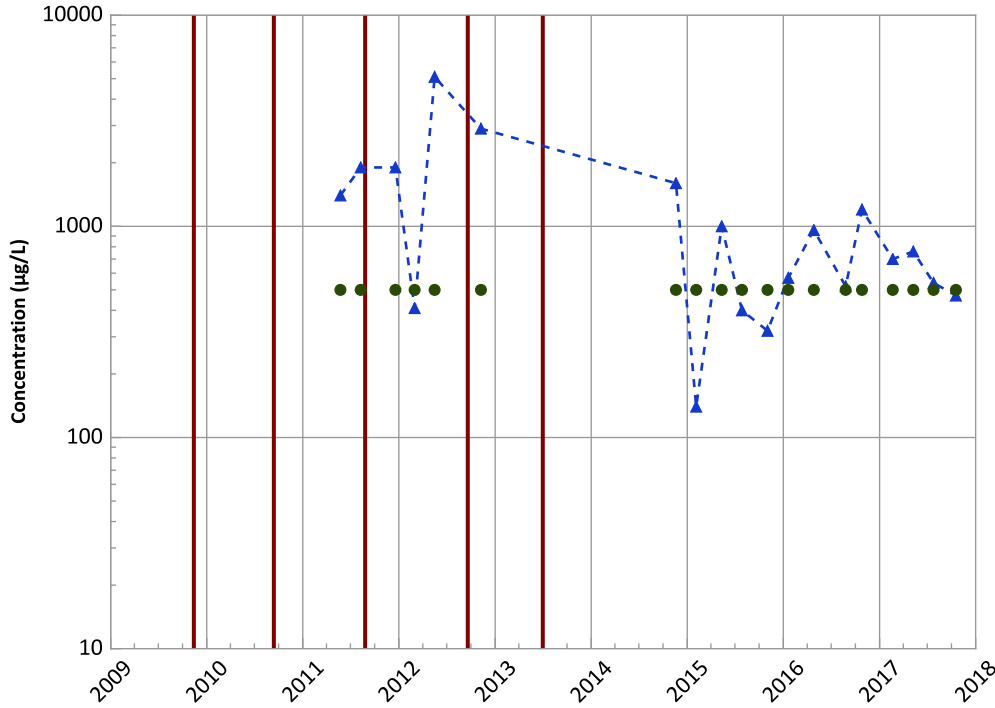
MAROS Mann-Kendall Method

All Data
No Trend
2015 - 2017 Data:
No Trend

MAROS Linear Regression Method

All Data
No Trend
2015 - 2017 Data:
No Trend

Ferric Iron Trend



Concentration Trend

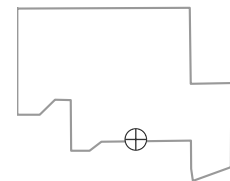
MAROS Mann-Kendall Method

All Data
Decreasing
2015 - 2017 Data:
Decreasing

MAROS Linear Regression Method

All Data
Decreasing
2015 - 2017 Data:
Decreasing

Well Location

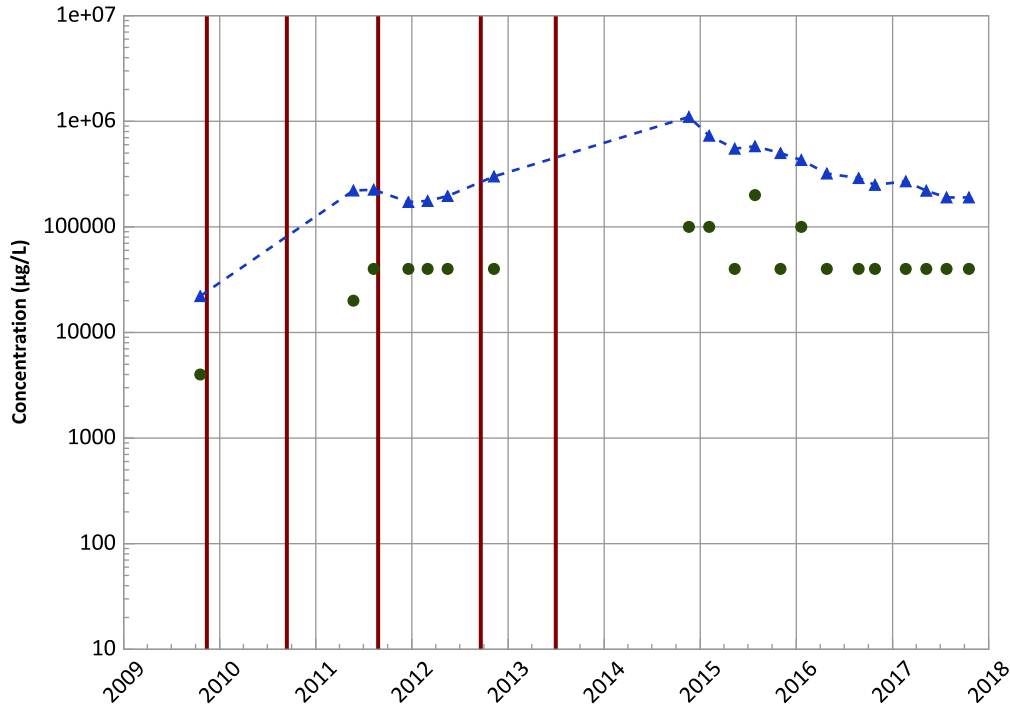


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 10/19/2009 to 10/18/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB082 in Perched Aquifer
USDOE/NNSA Pantex Plant

Chloride (as Cl) Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Decreasing

MAROS Linear Regression Method

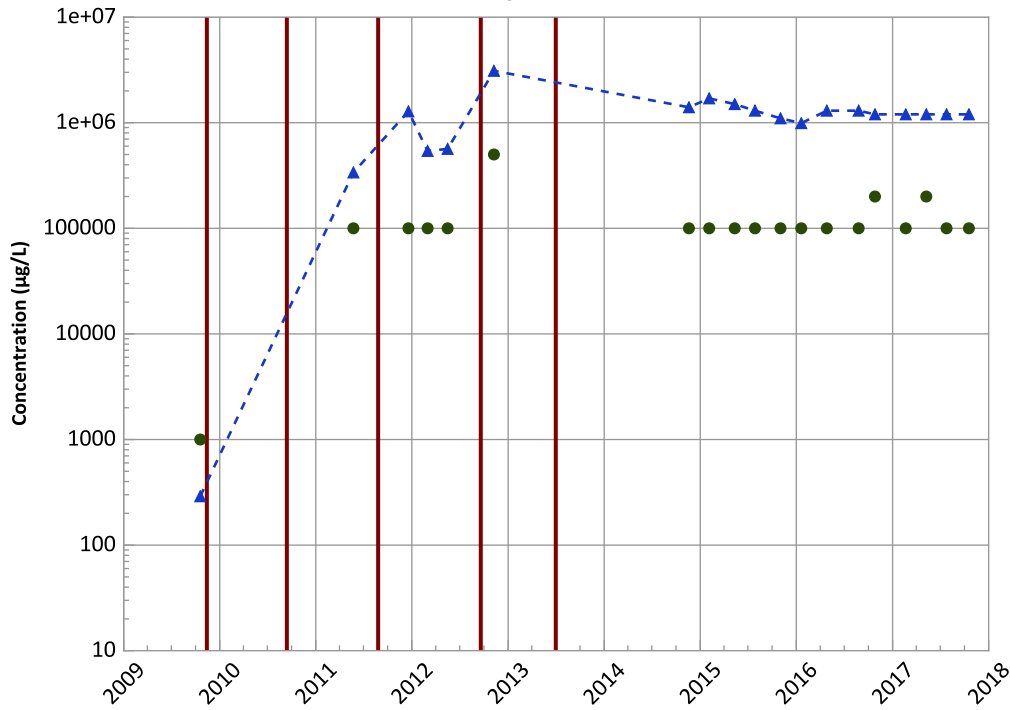
All Data

Increasing

2015 - 2017 Data:

Decreasing

Total Organic Carbon Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

No Trend

2015 - 2017 Data:

Stable

MAROS Linear Regression Method

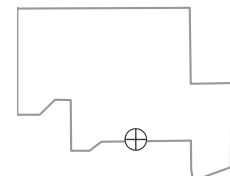
All Data

Increasing

2015 - 2017 Data:

Stable

Well Location

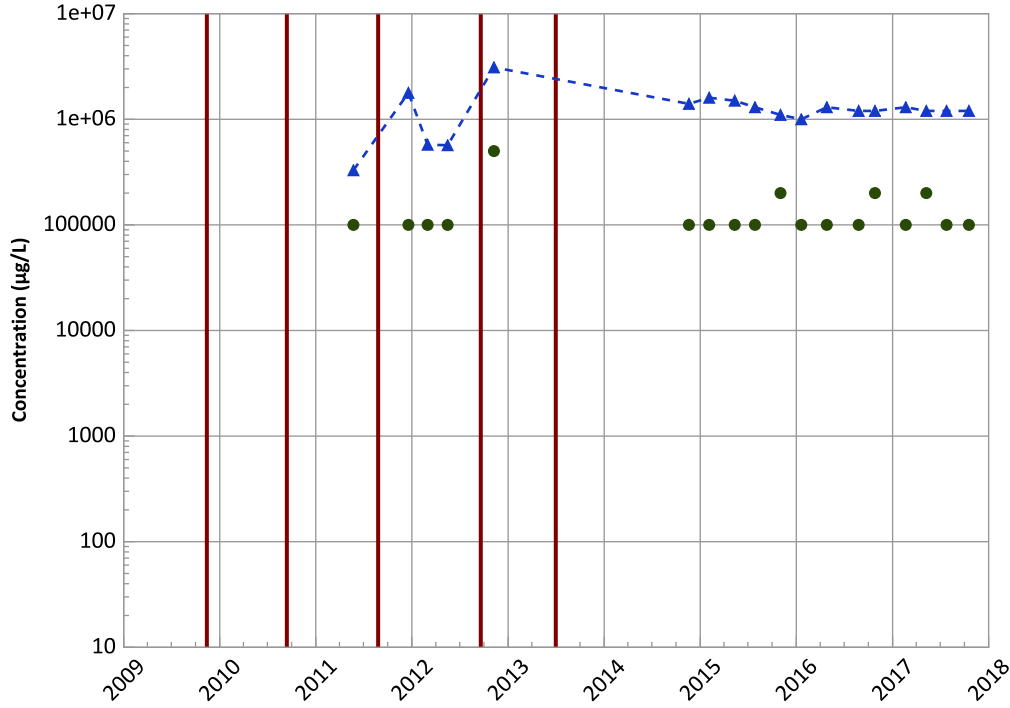


Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 10/19/2009 to 10/18/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB082 in Perched Aquifer
USDOE/NNSA Pantex Plant

Dissolved Organic Carbon (DOC) Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Decreasing

MAROS Linear Regression Method

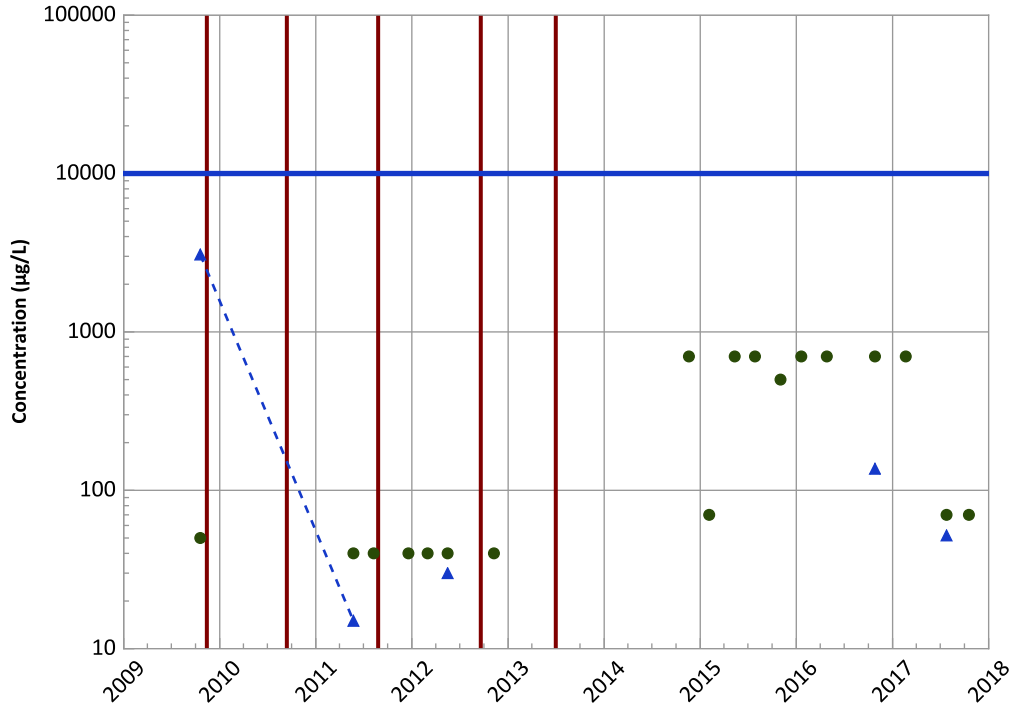
All Data

Probably Increasing

2015 - 2017 Data:

Decreasing

Nitrate as N Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Probably Increasing

2015 - 2017 Data:

N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

All Data

No Trend

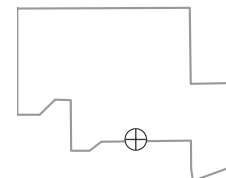
2015 - 2017 Data:

No Trend

Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 10/19/2009 to 10/18/2017
Analysis Date: 03/29/2018

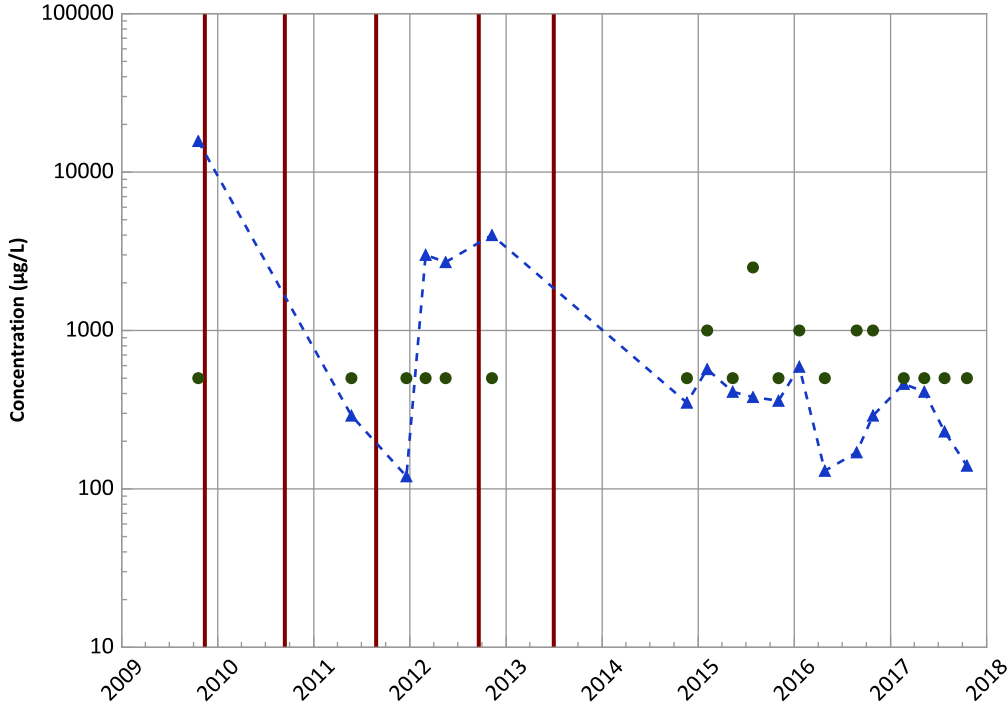
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

Well Location



PTX06-ISB082 in Perched Aquifer
USDOE/NNSA Pantex Plant

Sulfate (as SO4) Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

Decreasing

2015 - 2017 Data:

Decreasing

MAROS Linear Regression Method

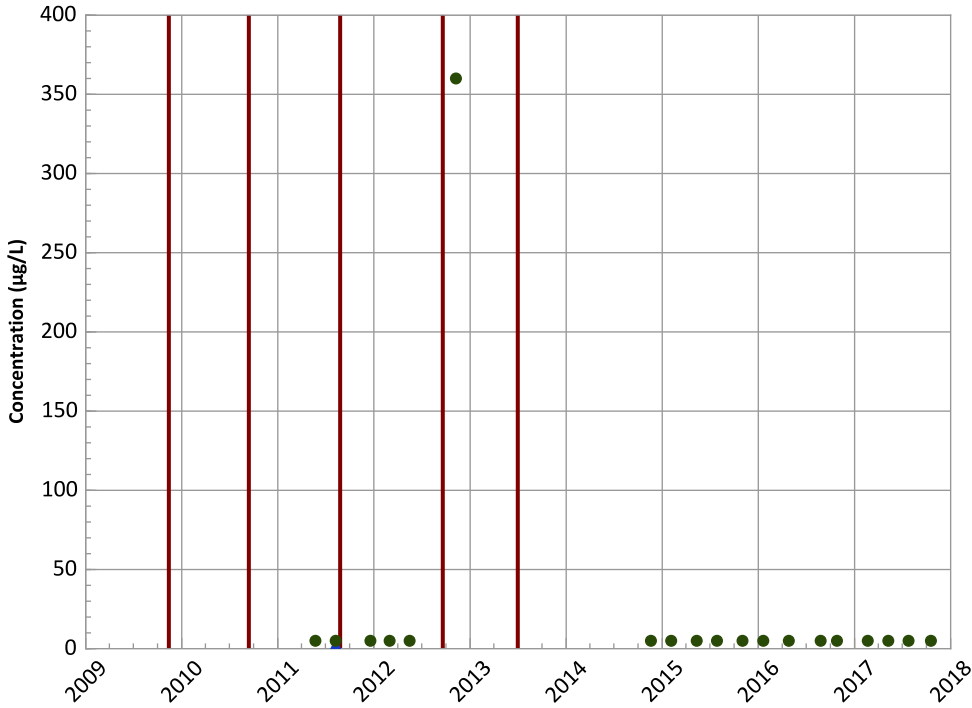
All Data

Decreasing

2015 - 2017 Data:

Probably Decreasing

Ethene (Ethylene) Trend



Concentration Trend

MAROS Mann-Kendall Method

All Data

N/A (<4 Detections in Dataset)

2015 - 2017 Data:

All Non-Detect

MAROS Linear Regression Method

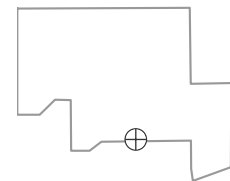
All Data

N/A (<4 Detections in Dataset)

2015 - 2017 Data:

N/A (<4 Detections in Dataset)

Well Location



Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 10/19/2009 to 10/18/2017
Analysis Date: 03/29/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

PTX06-ISB082 in Perched Aquifer
USDOE/NNSA Pantex Plant

Ethane Trend

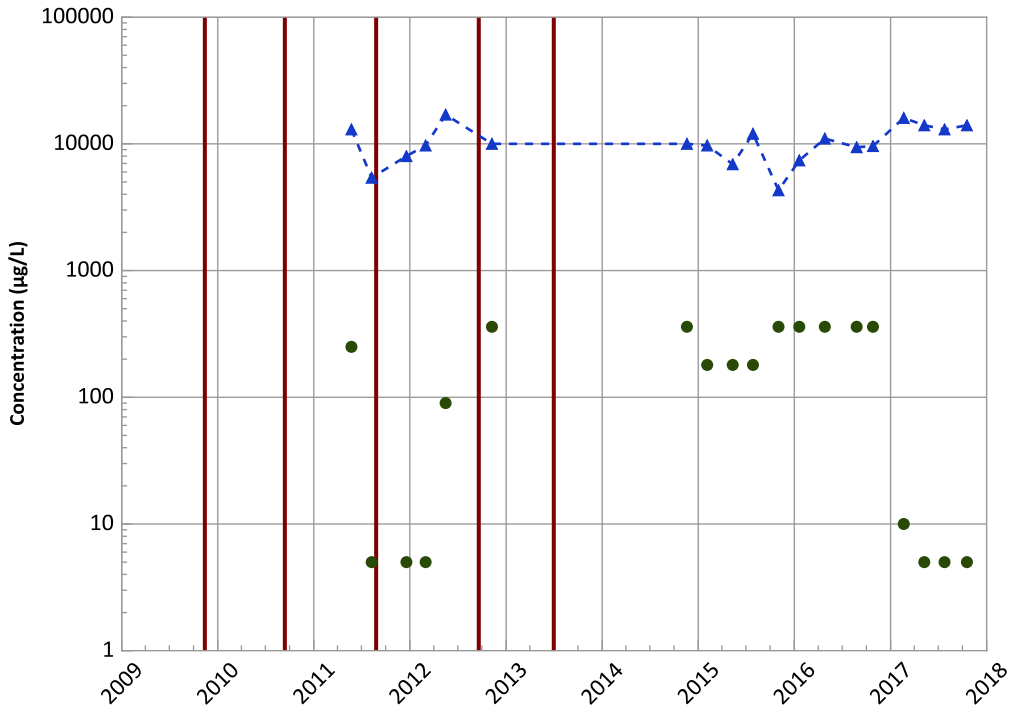


Concentration Trend

MAROS Mann-Kendall Method
All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
All Non-Detect

MAROS Linear Regression Method
All Data
N/A (<4 Detections in Dataset)
2015 - 2017 Data:
N/A (<4 Detections in Dataset)

Methane Trend

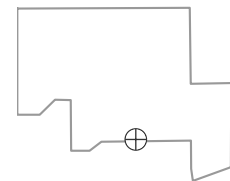


Concentration Trend

MAROS Mann-Kendall Method
All Data
No Trend
2015 - 2017 Data:
Decreasing

MAROS Linear Regression Method
All Data
No Trend
2015 - 2017 Data:
Stable

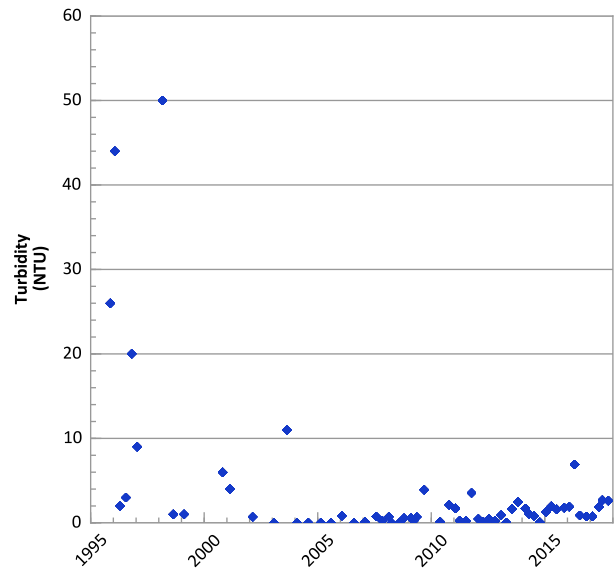
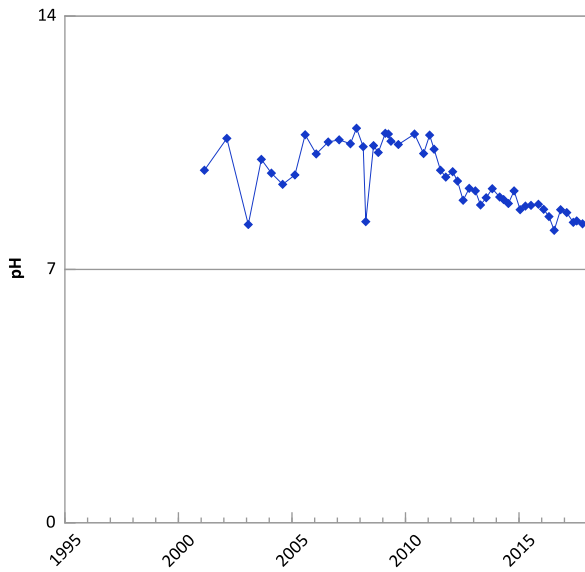
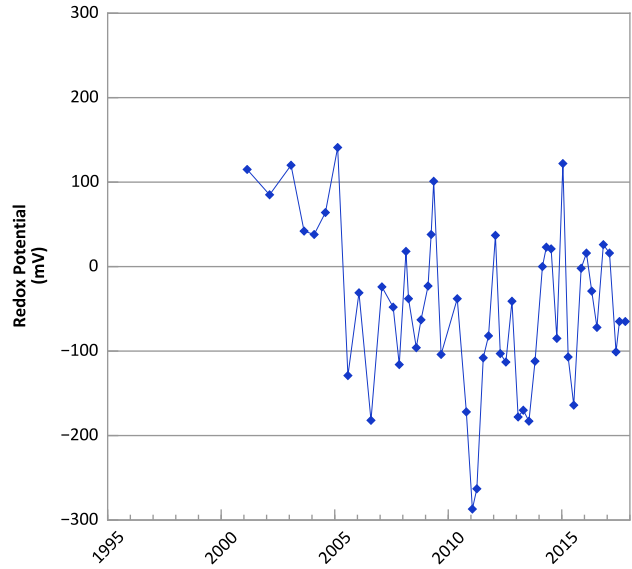
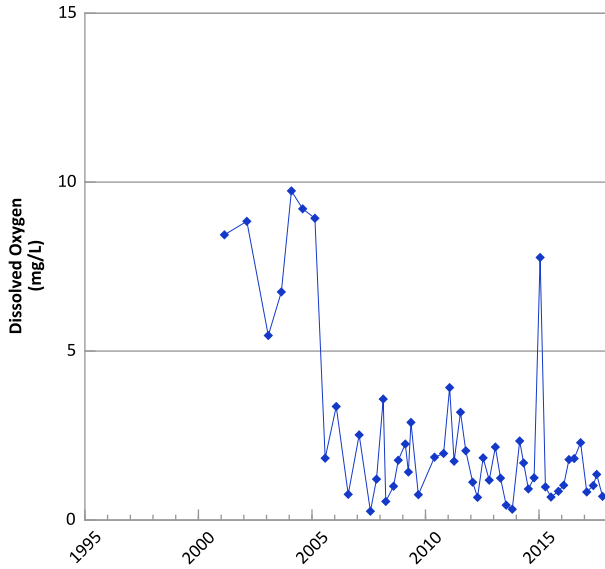
Well Location



Query Date Range: 01/01/2009 to 12/31/2017
Data Date Range: 10/19/2009 to 10/18/2017
Analysis Date: 03/29/2018

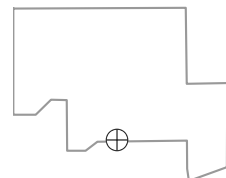
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard
- Injection Dates

**PTX06-1012 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



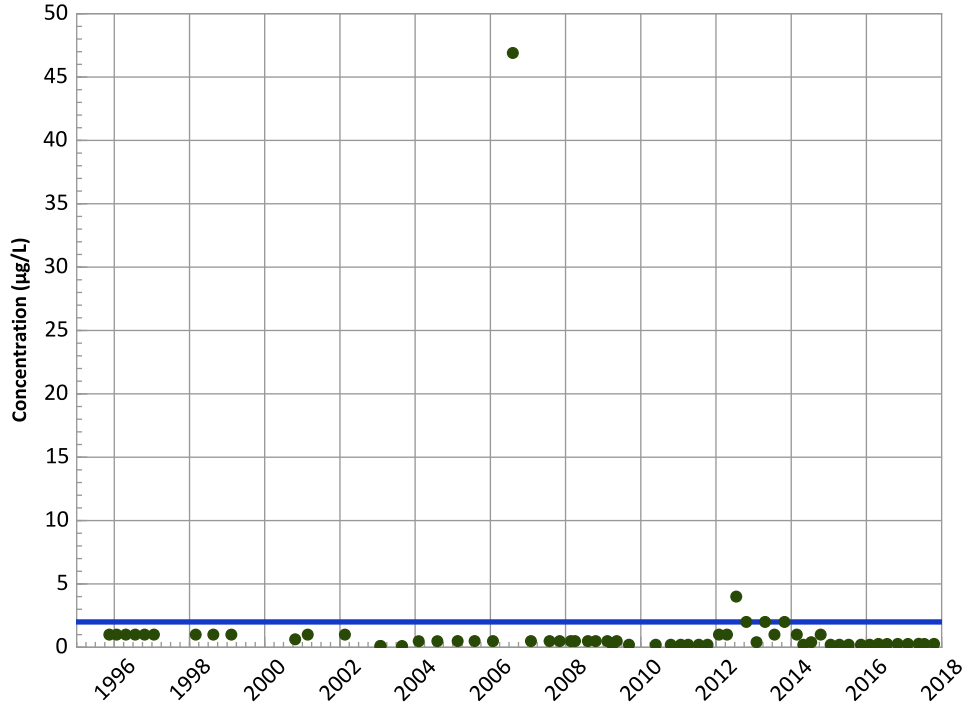
Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/14/1995 to 10/19/2017
Analysis Date: 03/21/2018

Well Location



PTX06-1012 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

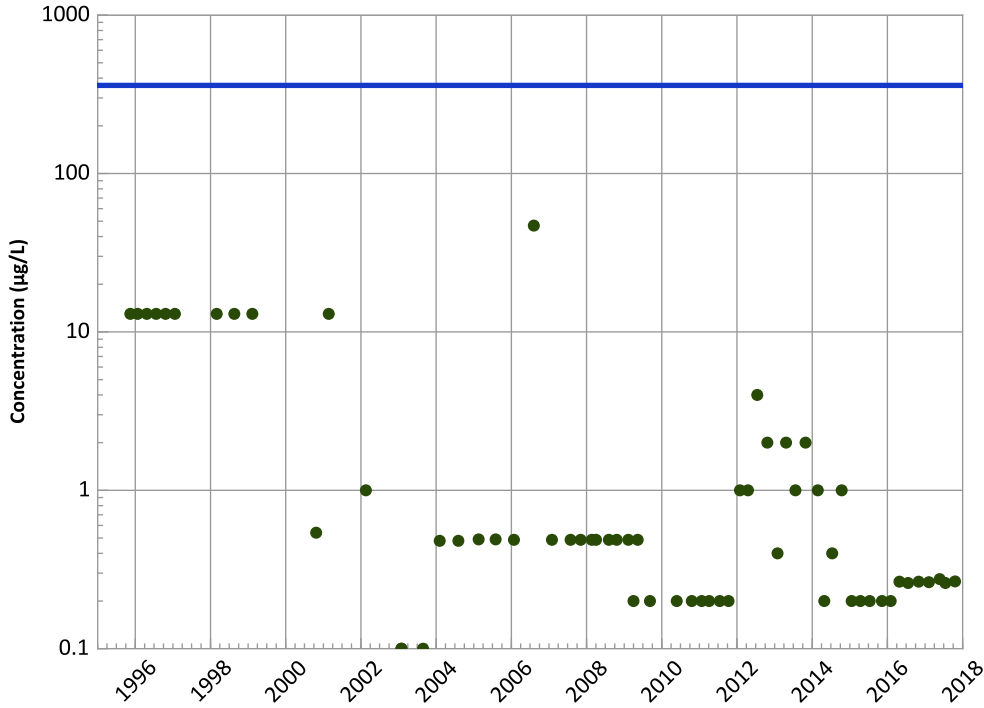
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

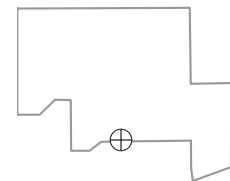
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

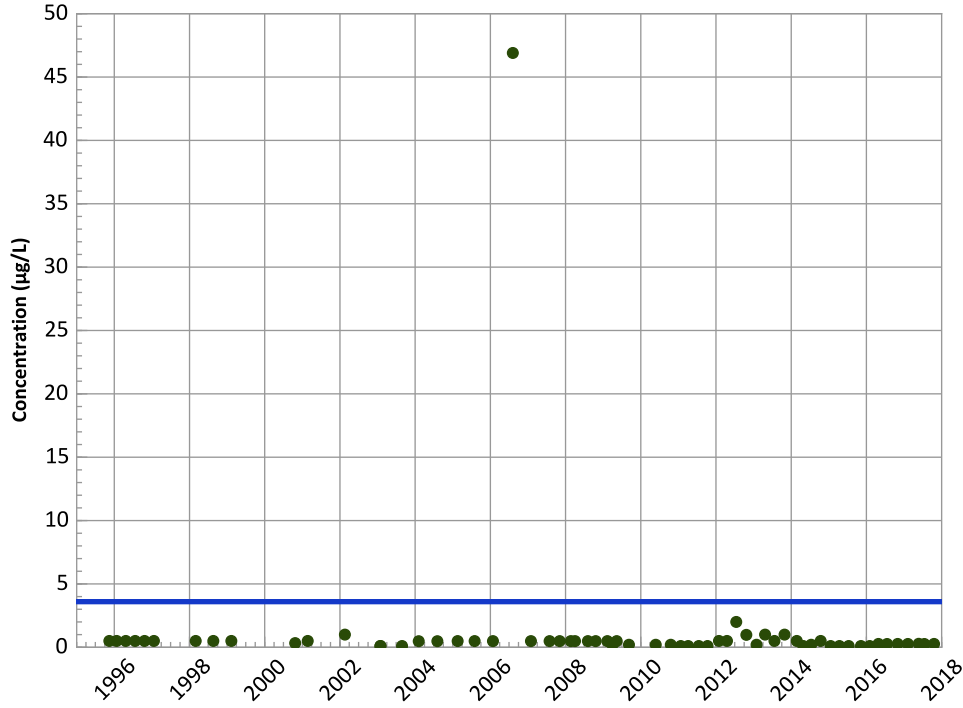


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/14/1995 to 10/19/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1012 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

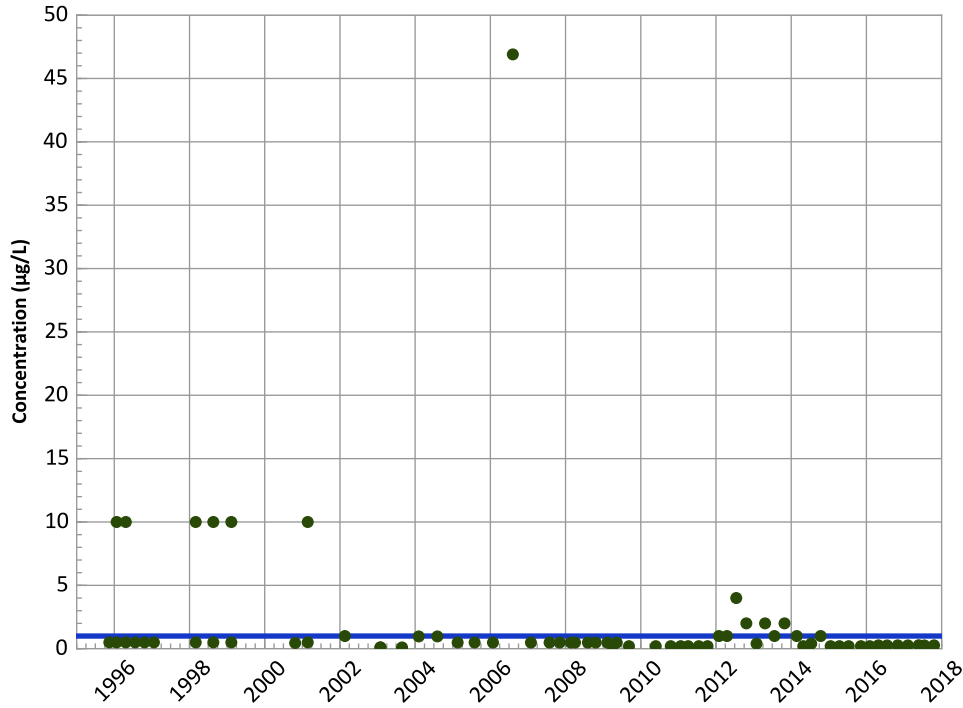
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

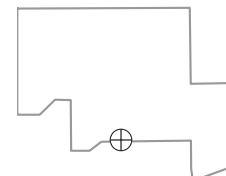
MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/14/1995 to 10/19/2017
Analysis Date: 03/21/2018

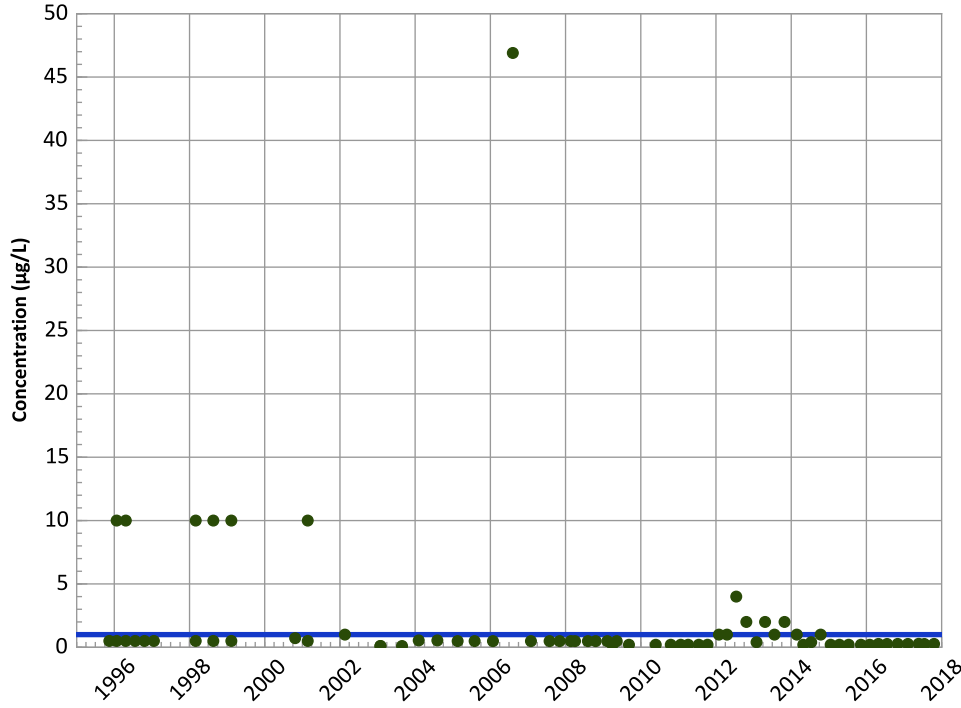
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1012 in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

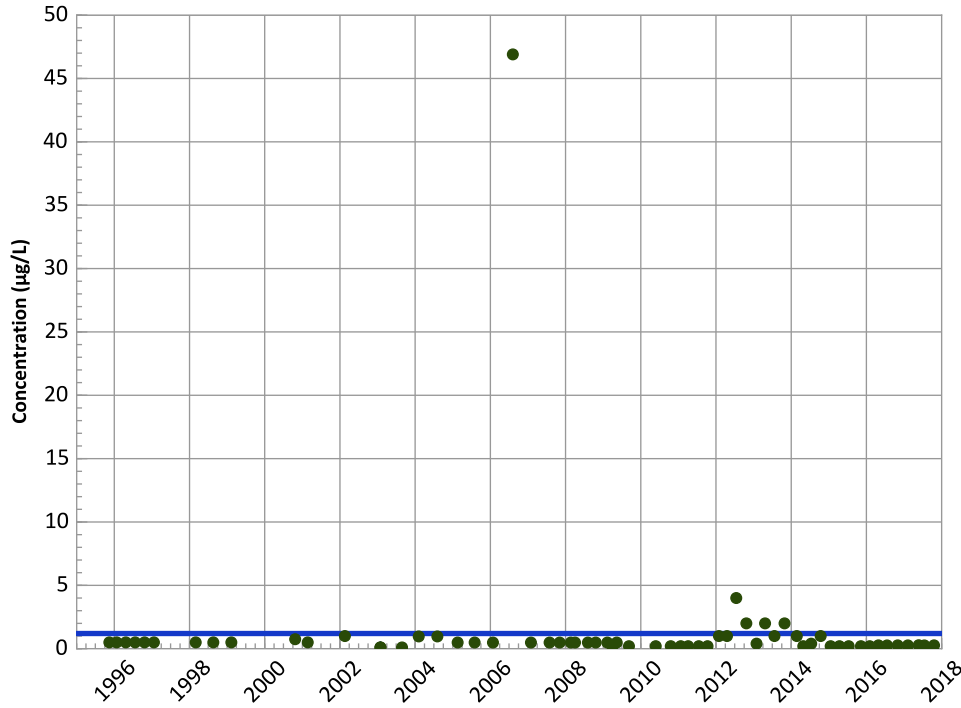
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

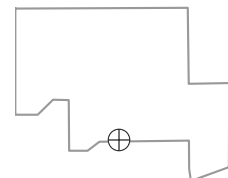
MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/14/1995 to 10/19/2017
Analysis Date: 03/21/2018

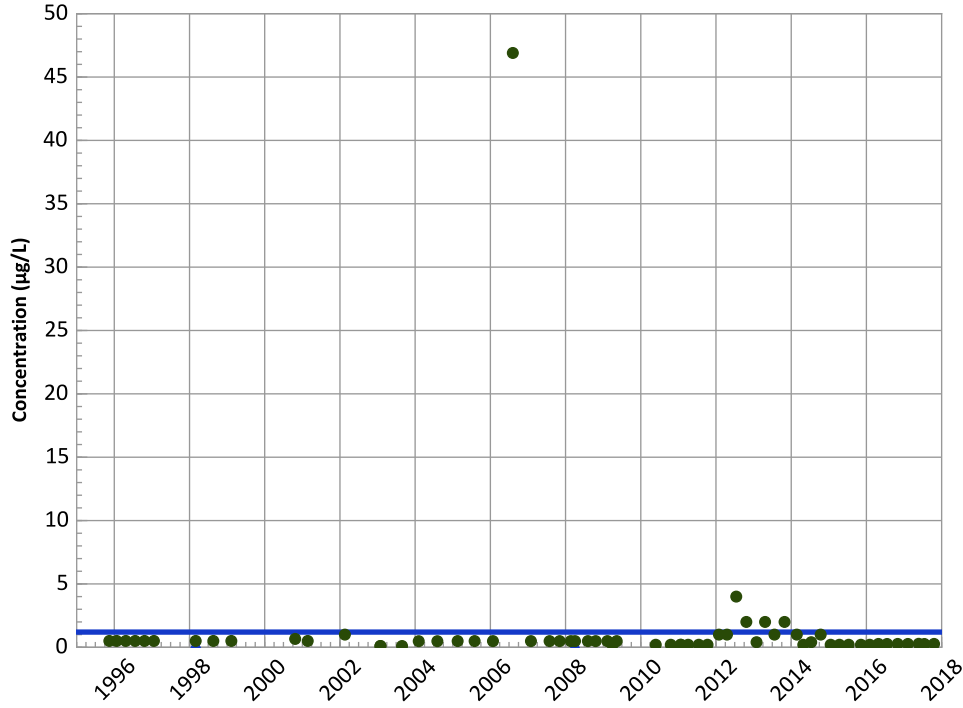
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1012 in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

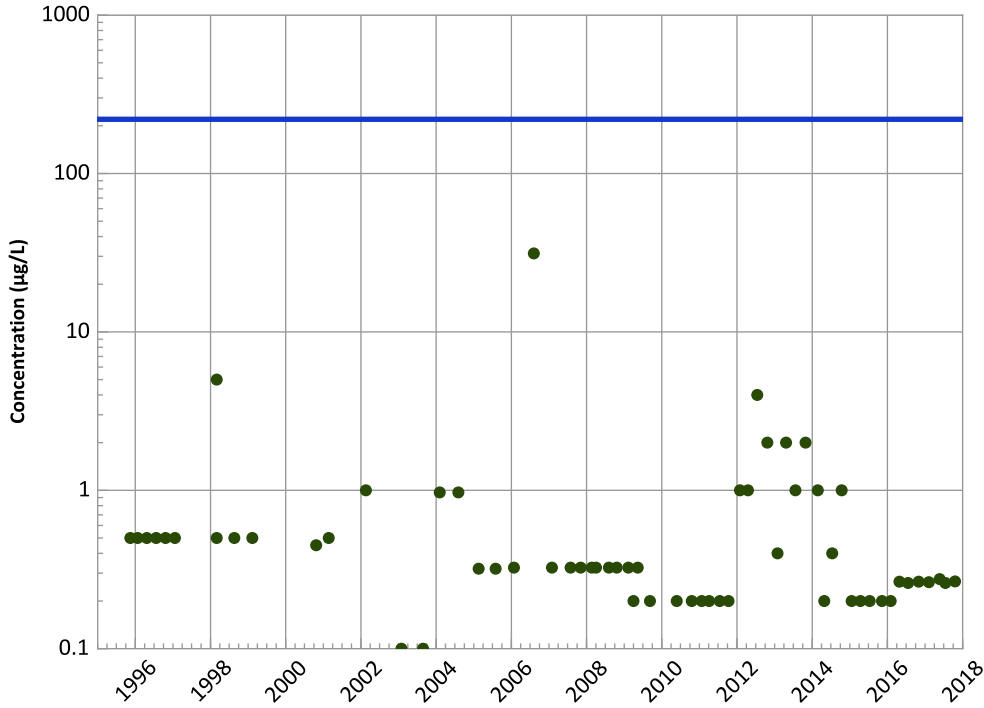
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
Decreasing

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
Stable

1,3,5-Trinitrobenzene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

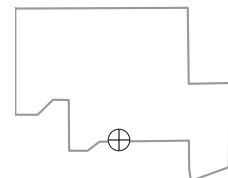
MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/14/1995 to 10/19/2017
Analysis Date: 03/21/2018

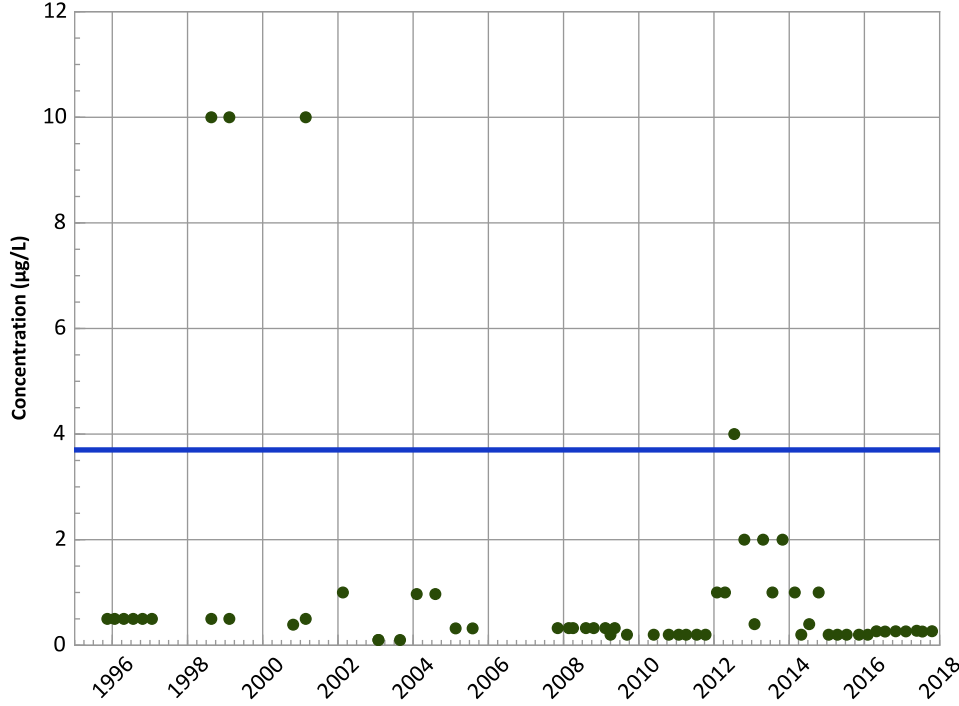
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1012 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

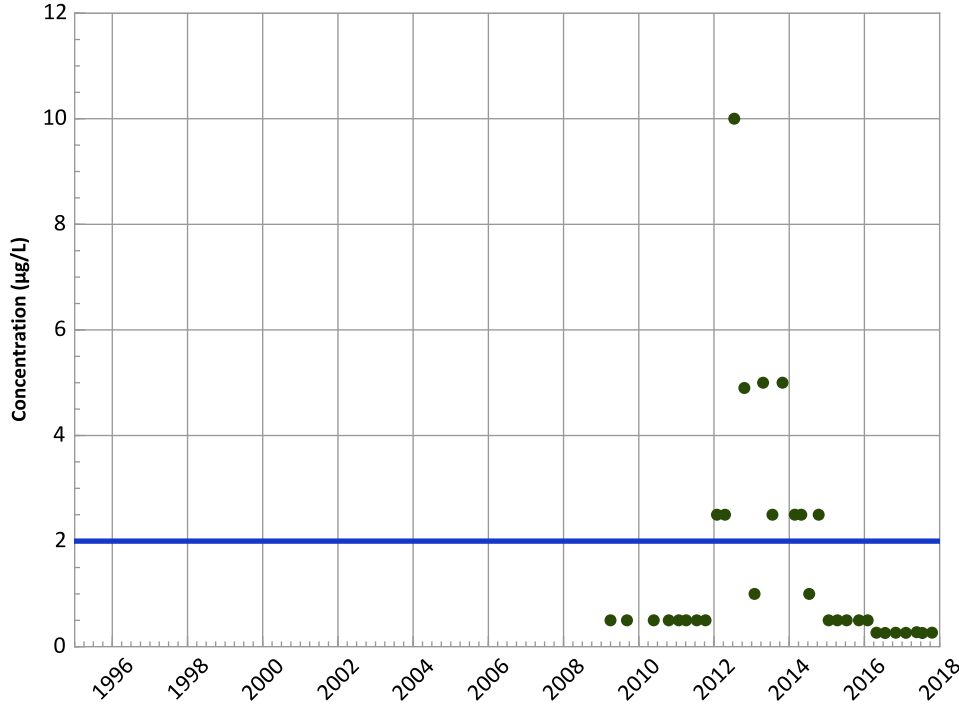
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Hexahydro-1-Nitroso-3,5-Dinitro-1,3,5-Triazine (MNX) Trend



Concentration Trend

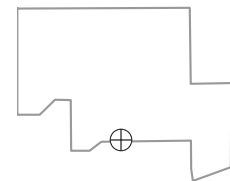
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

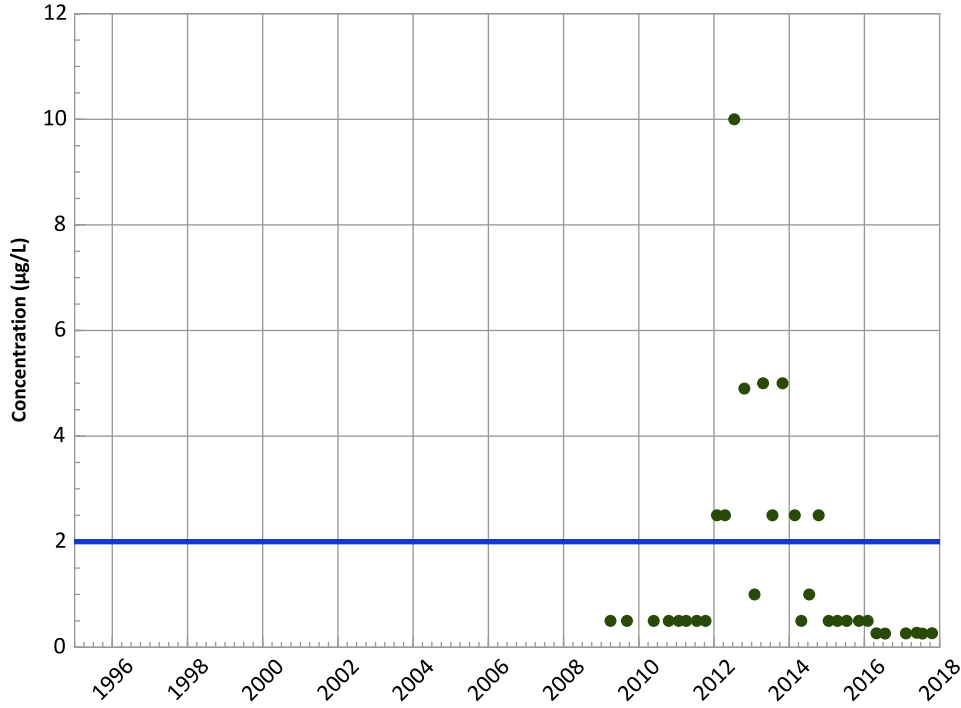


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/14/1995 to 10/19/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1012 in Perched Aquifer
USDOE/NNSA Pantex Plant

Hexahydro-1,3-Dinitroso-5-Nitro-1,3,5-Triazine (DNX) Trend



Concentration Trend

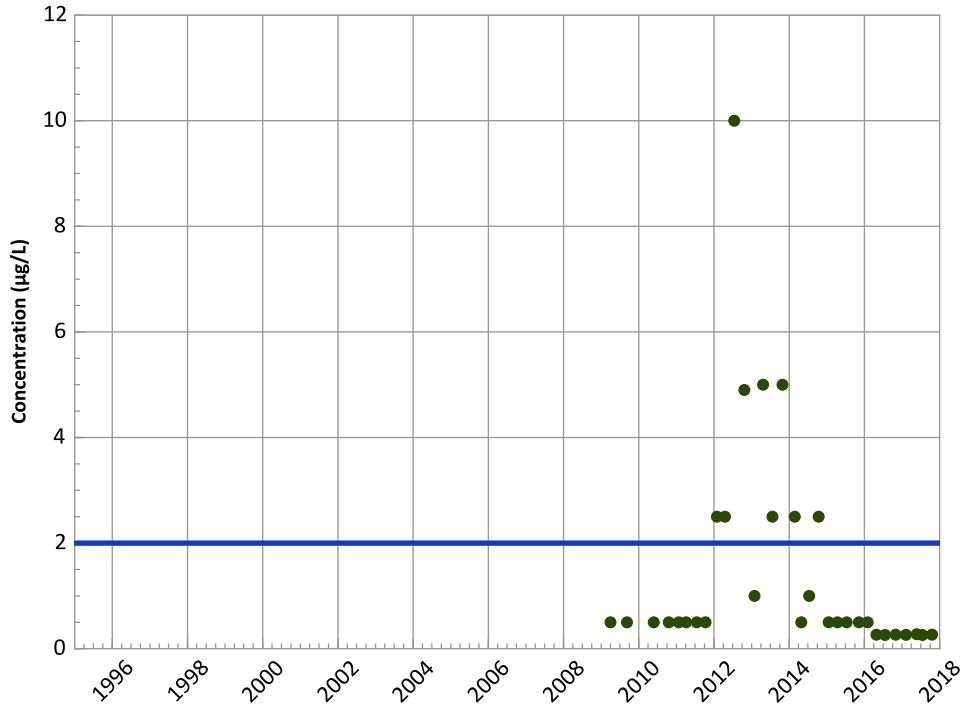
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Hexahydro-1,3,5-Trinitroso-1,3,5-Triazine (TNX) Trend



Concentration Trend

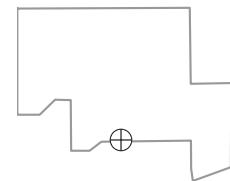
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

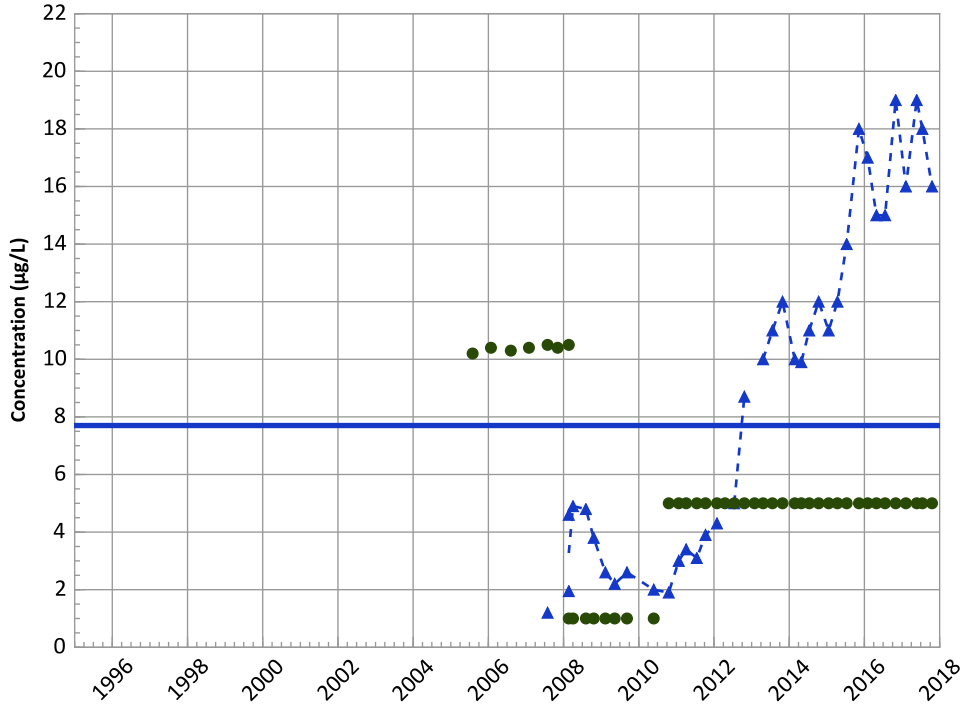


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/14/1995 to 10/19/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1012 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,4-Dioxane (p-Dioxane) Trend



Concentration Trend

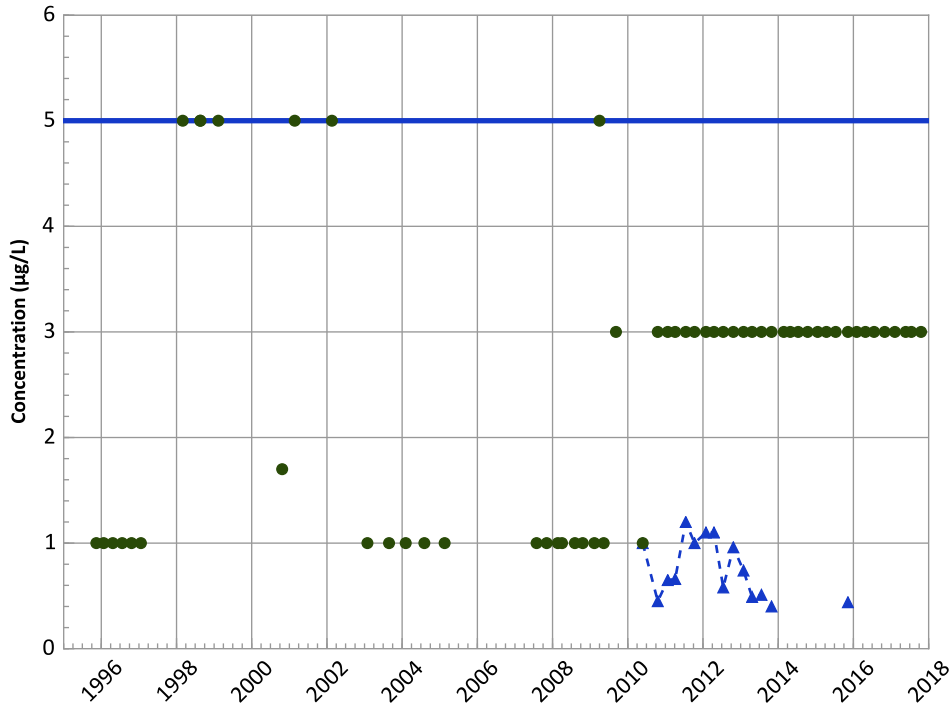
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

Tetrachloroethylene (PCE) Trend



Concentration Trend

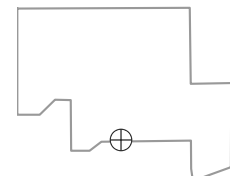
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

Well Location

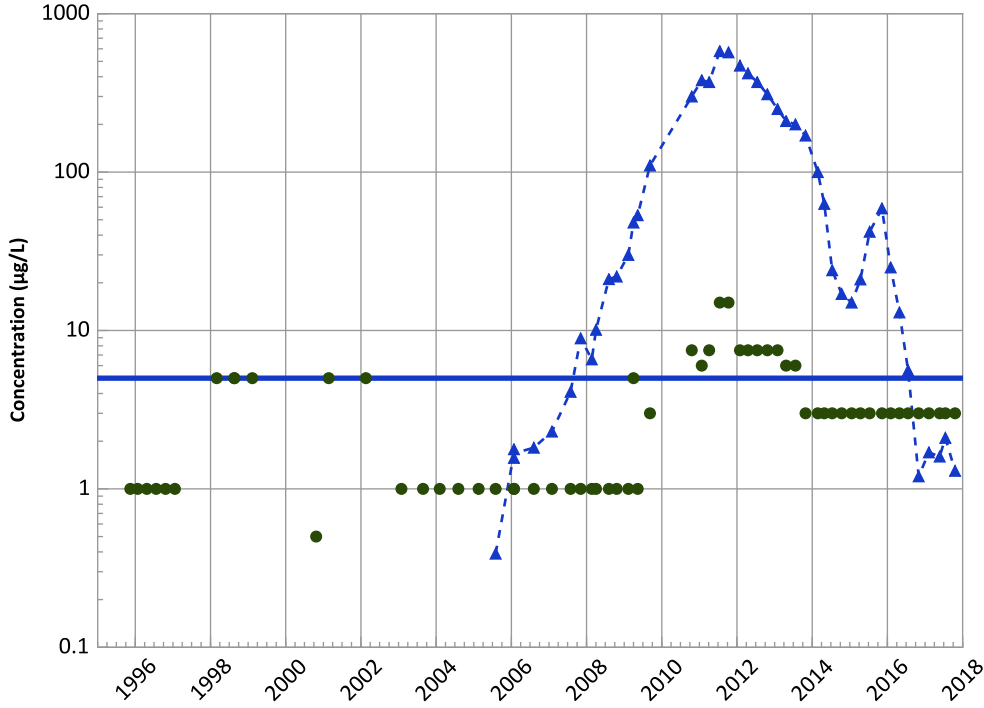


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/14/1995 to 10/19/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1012 in Perched Aquifer
USDOE/NNSA Pantex Plant

Trichloroethene Trend



Concentration Trend

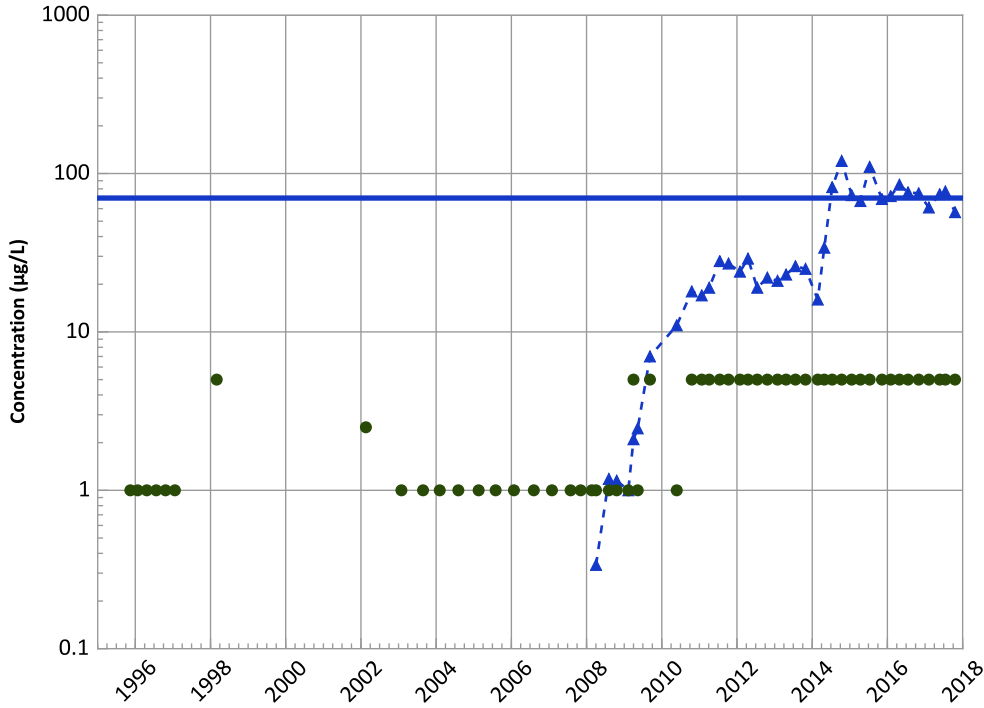
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
No Trend

cis-1,2-Dichloroethene Trend



Concentration Trend

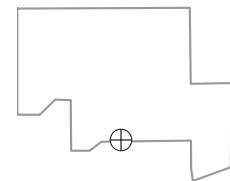
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

Well Location

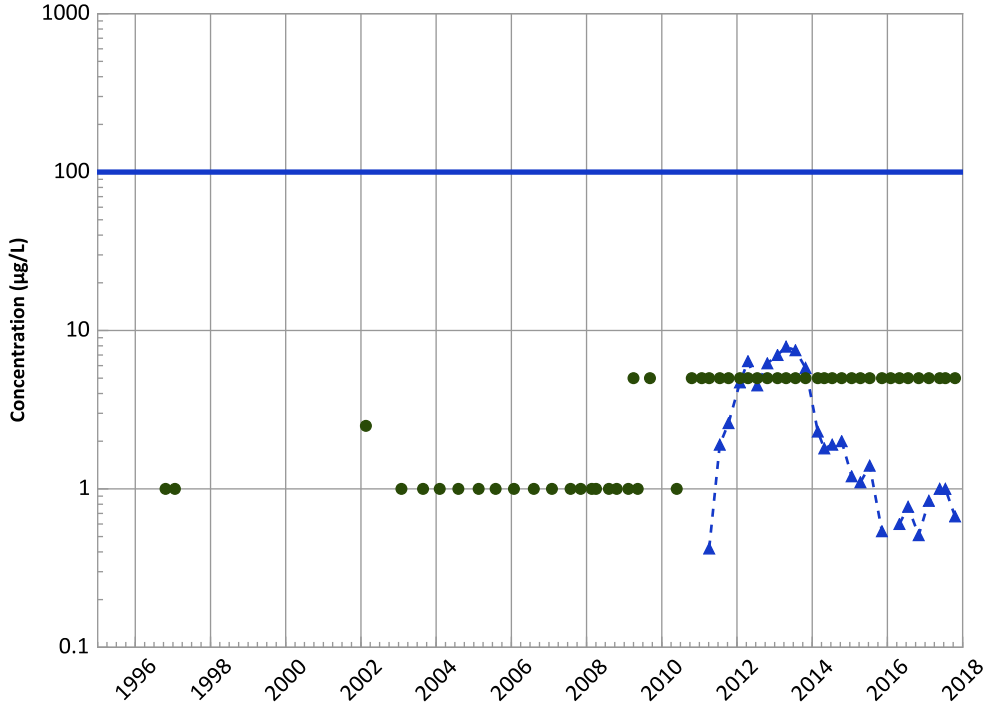


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/14/1995 to 10/19/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1012 in Perched Aquifer
USDOE/NNSA Pantex Plant

trans-1,2-Dichloroethene Trend



Concentration Trend

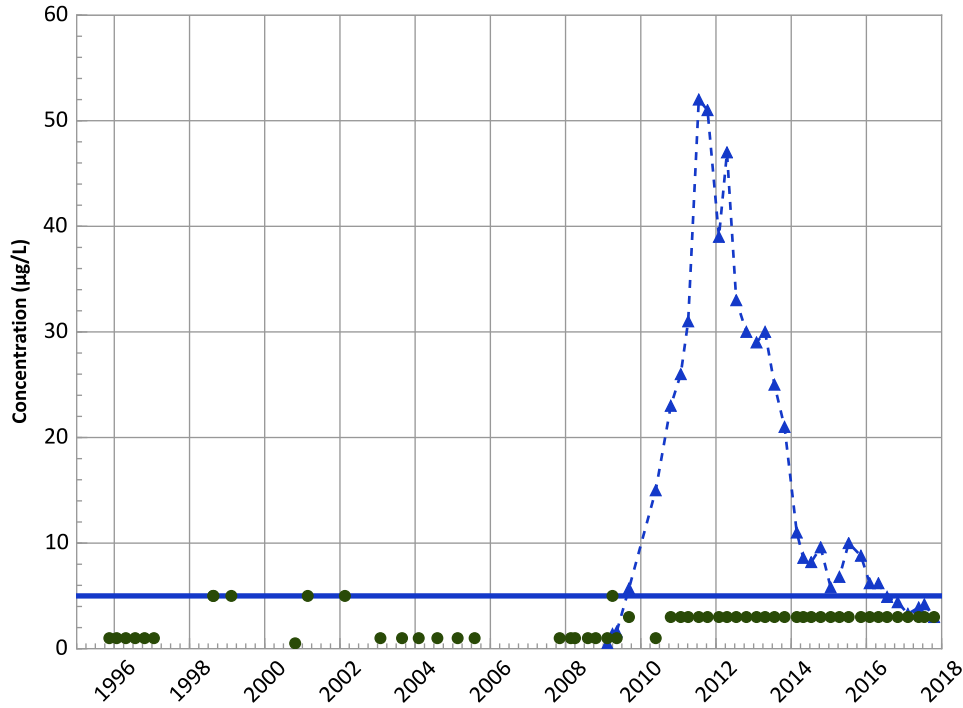
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

1,2-Dichloroethane Trend



Concentration Trend

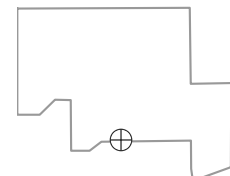
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Stable

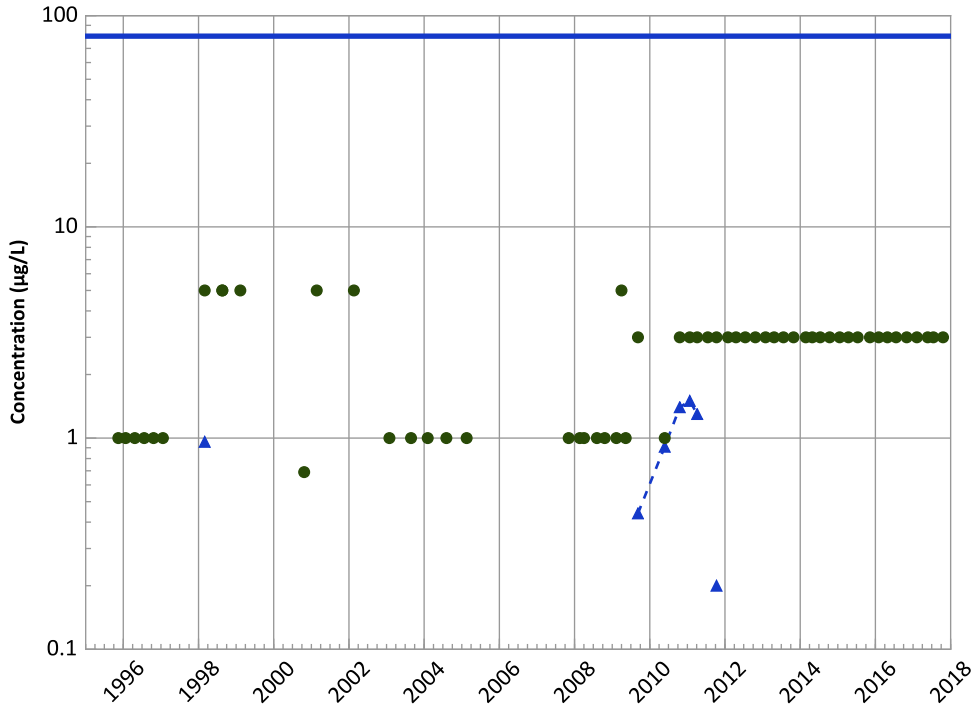
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/14/1995 to 10/19/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

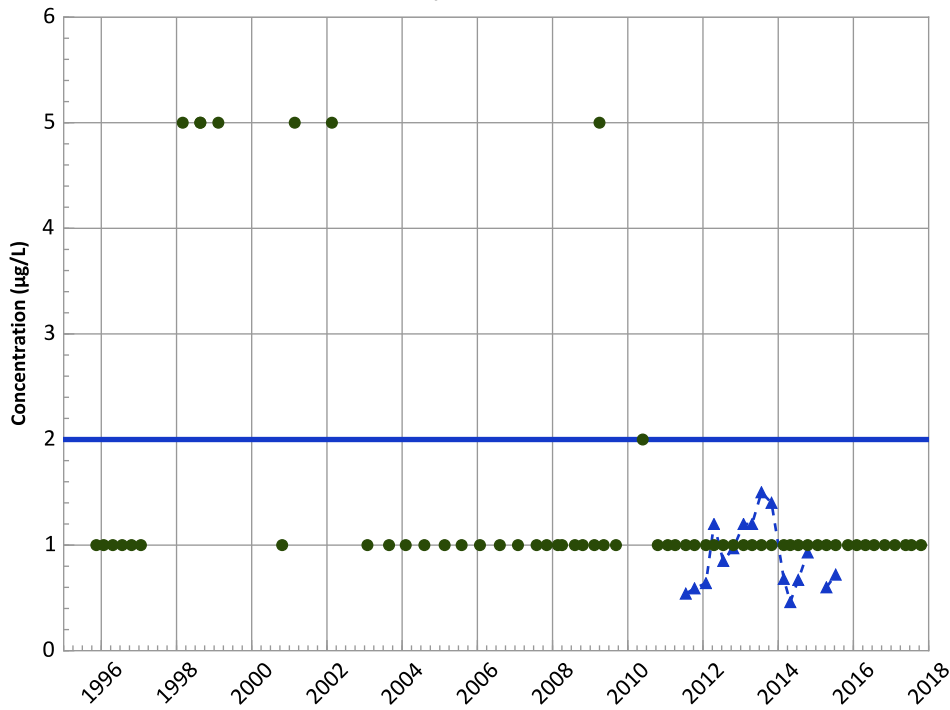
**PTX06-1012 in Perched Aquifer
USDOE/NNSA Pantex Plant
Chloroform Trend**



Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 All Non-Detect
 All Data
 Increasing

MAROS Linear Regression Method
 Data ():
 All Non-Detect
 All Data
 Stable

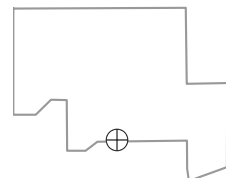
Vinyl Chloride Trend



Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 Decreasing
 All Data
 Increasing

MAROS Linear Regression Method
 Data ():
 Probably Decreasing
 All Data
 Stable

Well Location

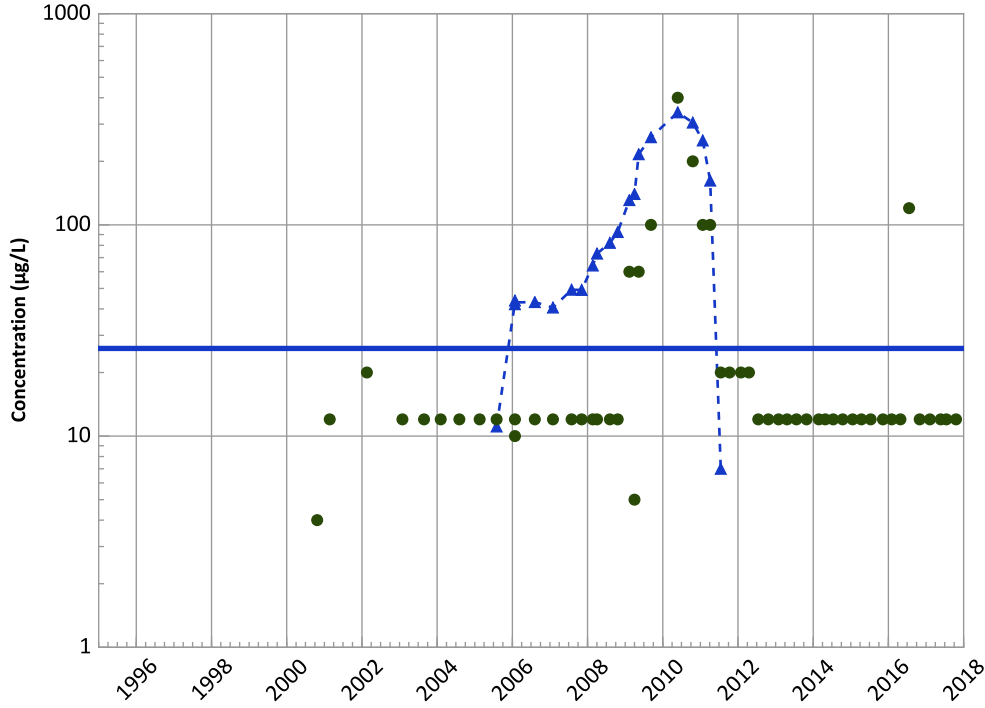


Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 11/14/1995 to 10/19/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1012 in Perched Aquifer
USDOE/NNSA Pantex Plant

Perchlorate Trend



Concentration Trend

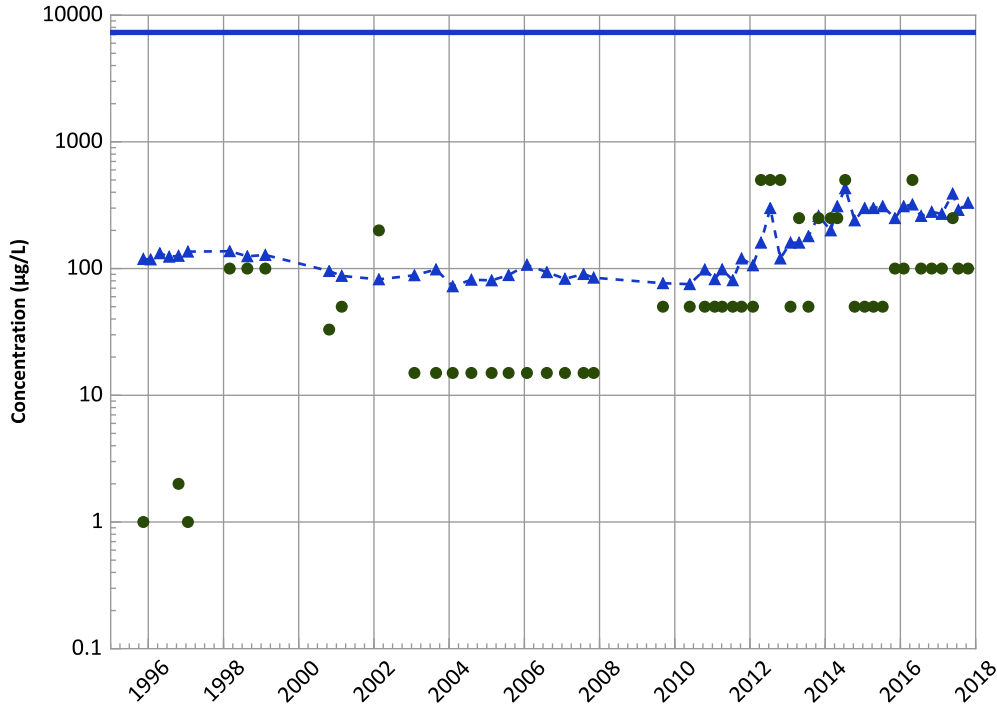
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
Decreasing

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
Increasing

Boron Trend



Concentration Trend

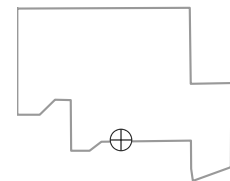
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

Well Location

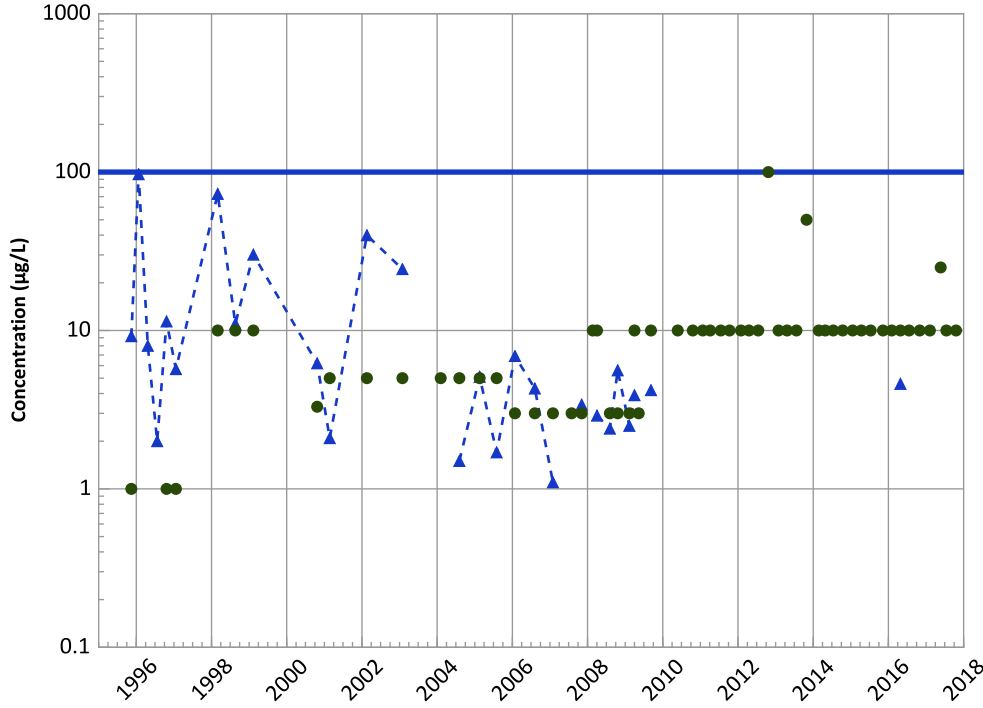


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/14/1995 to 10/19/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1012 in Perched Aquifer
USDOE/NNSA Pantex Plant

Chromium, Total Trend

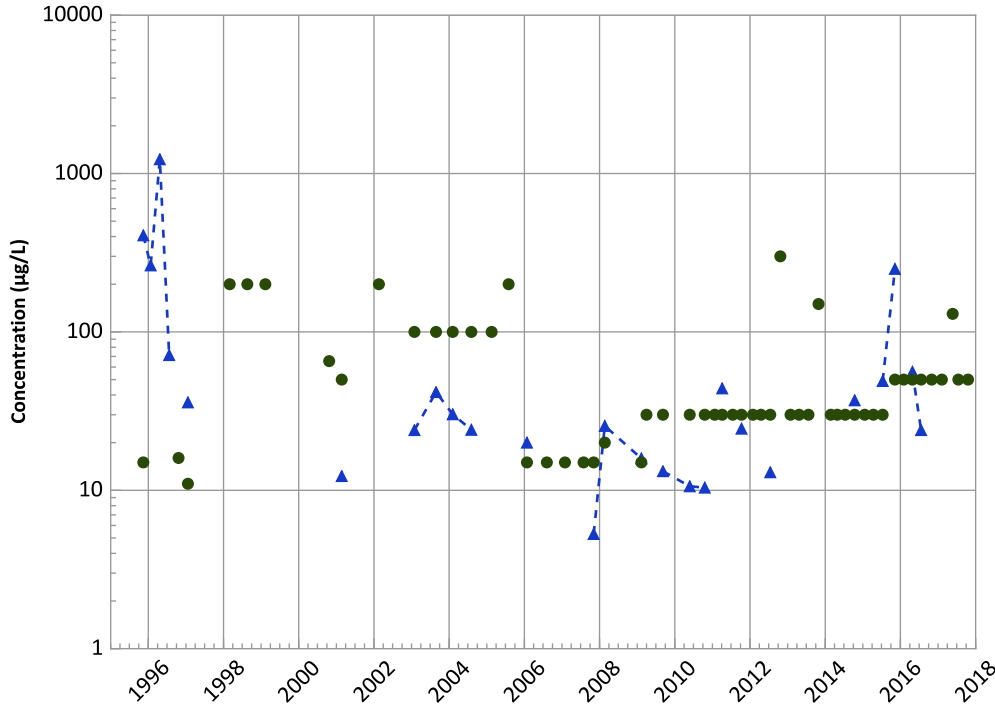


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

MAROS Linear Regression Method
Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

Aluminum Trend

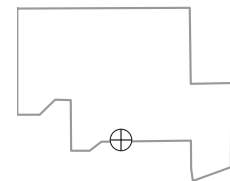


Concentration Trend

MAROS Mann-Kendall Method
Data ():
Increasing
All Data
Decreasing

MAROS Linear Regression Method
Data ():
No Trend
All Data
Decreasing

Well Location

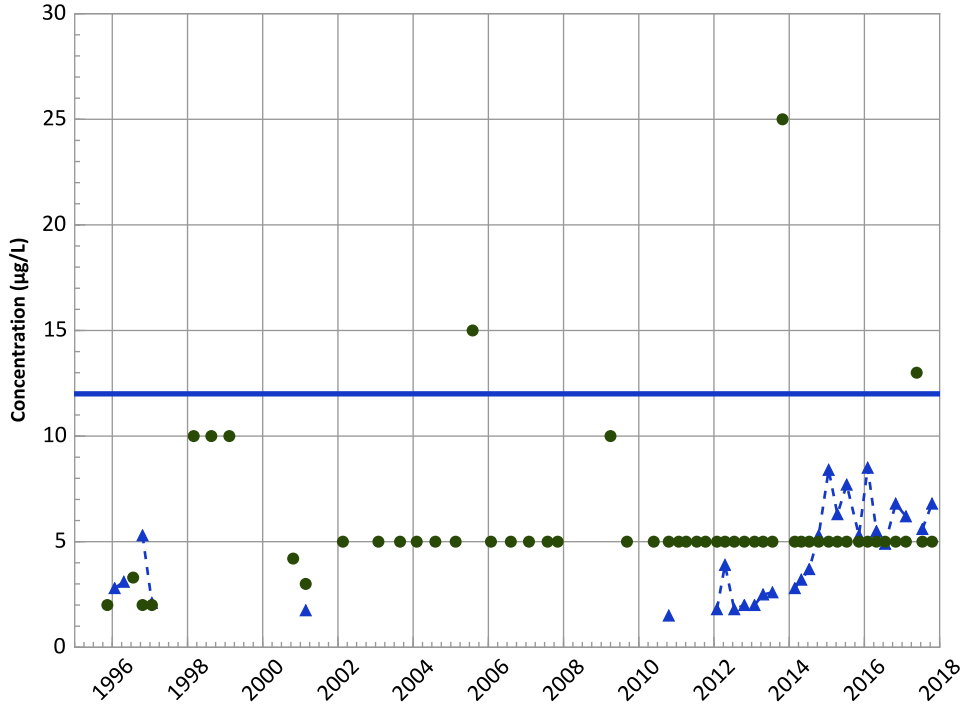


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/14/1995 to 10/19/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1012 in Perched Aquifer
USDOE/NNSA Pantex Plant

Arsenic Trend



Concentration Trend

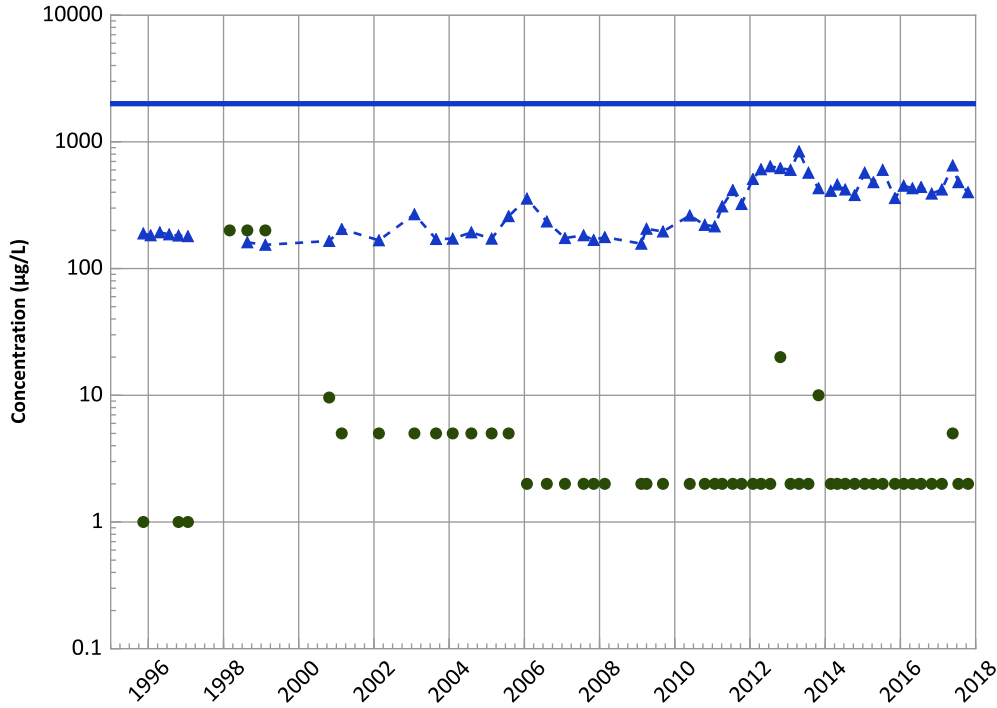
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

Barium Trend



Concentration Trend

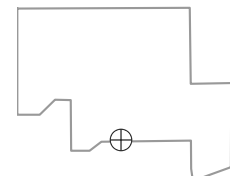
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Increasing

Well Location

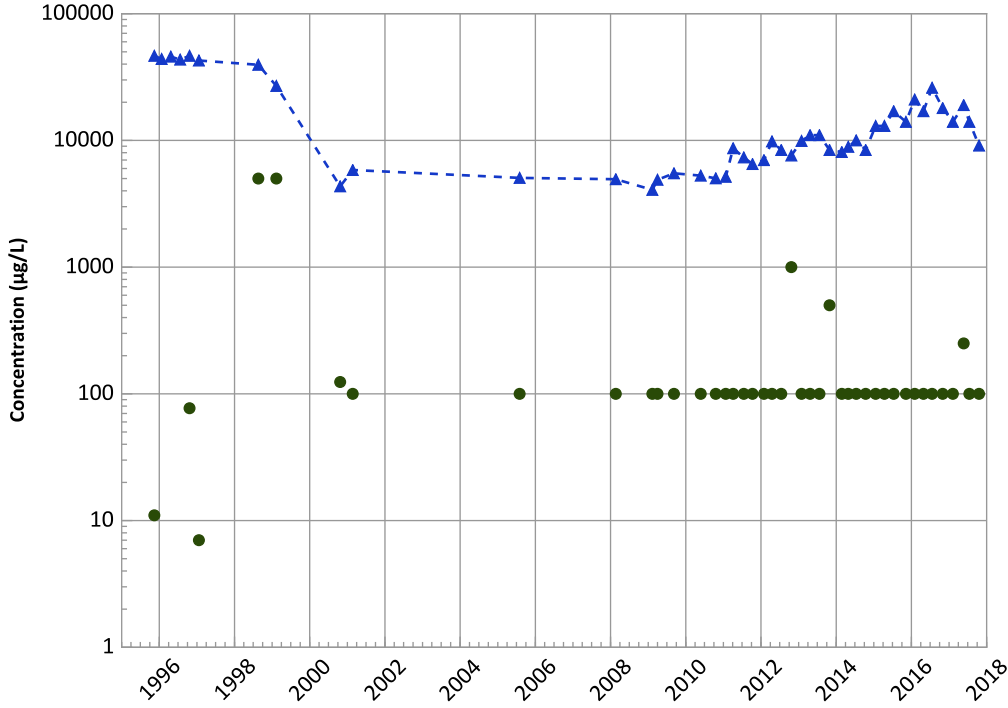


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/14/1995 to 10/19/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1012 in Perched Aquifer
USDOE/NNSA Pantex Plant

Calcium Trend



Concentration Trend

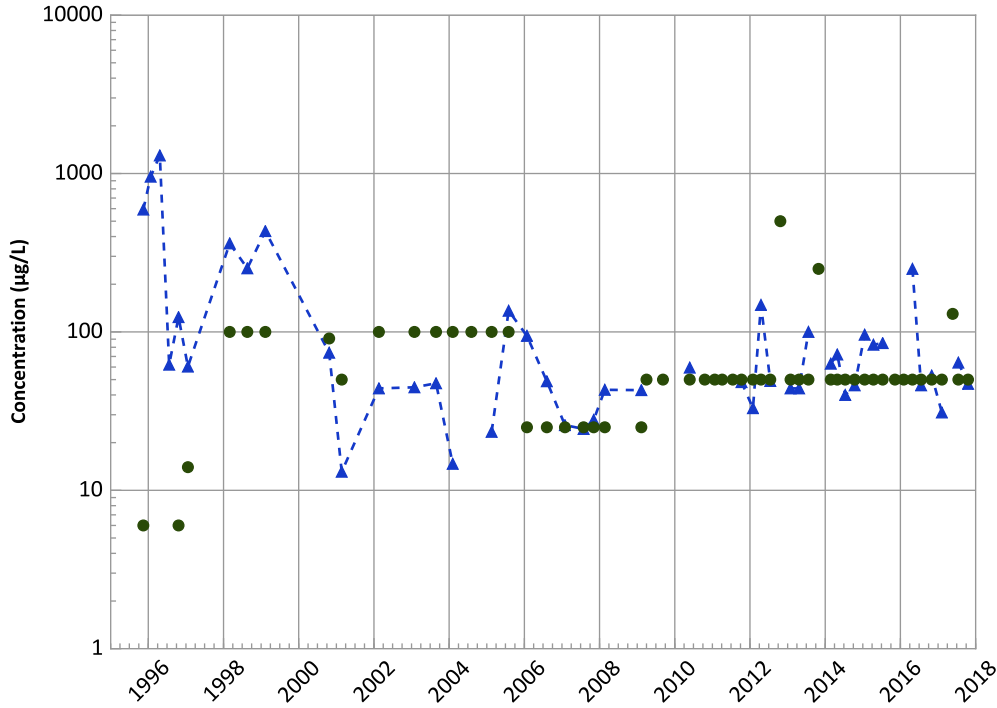
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Decreasing

Iron Trend



Concentration Trend

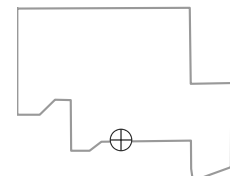
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
Decreasing

Well Location

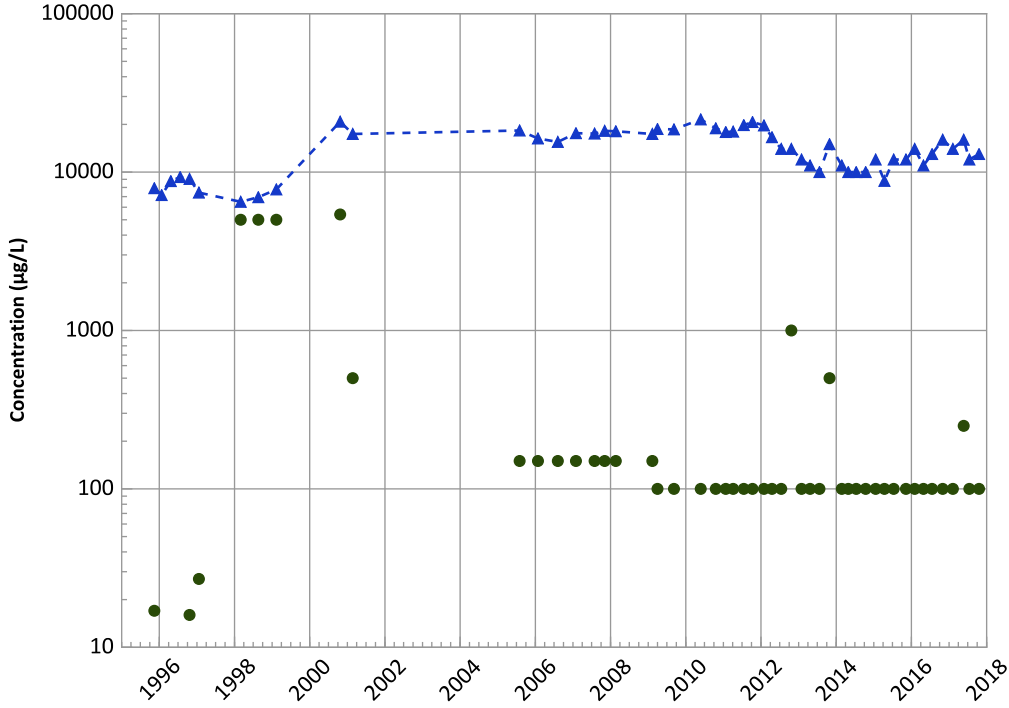


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/14/1995 to 10/19/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1012 in Perched Aquifer
USDOE/NNSA Pantex Plant

Potassium Trend



Concentration Trend

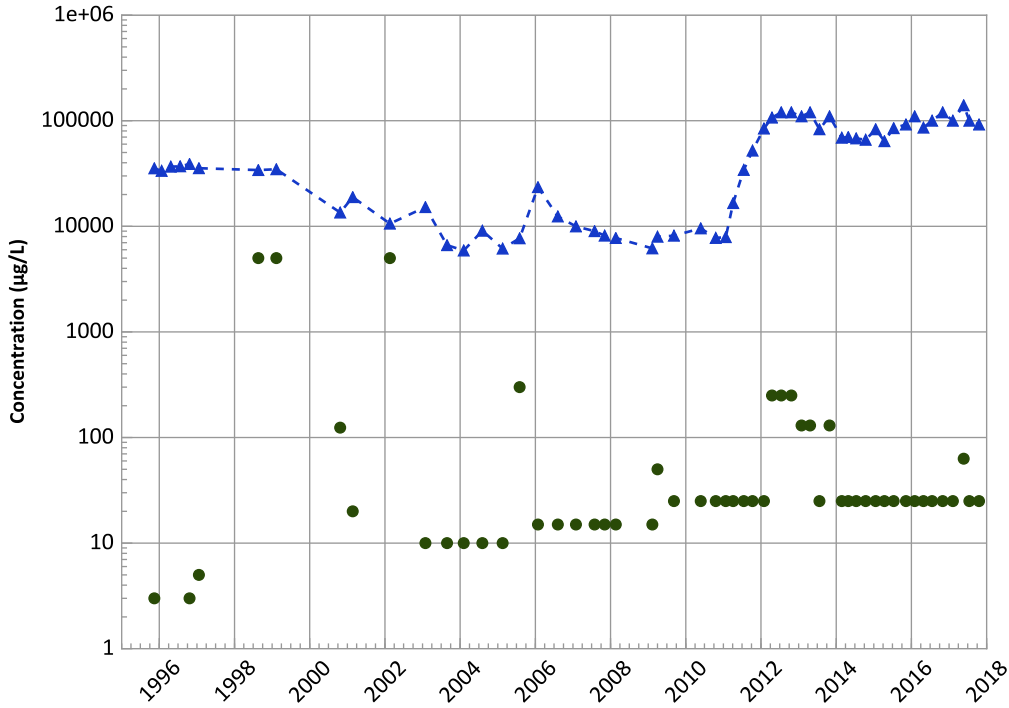
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Stable
All Data
Increasing

Magnesium Trend



Concentration Trend

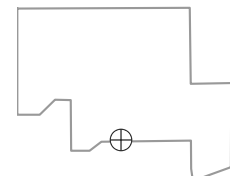
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Stable
All Data
Increasing

Well Location

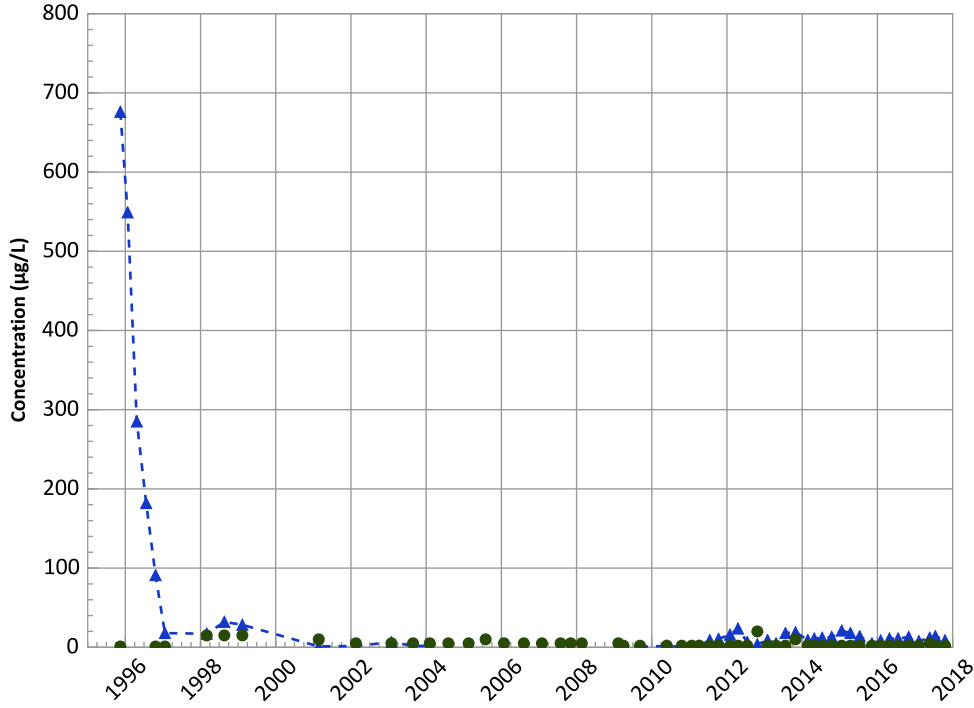


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/14/1995 to 10/19/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1012 in Perched Aquifer
USDOE/NNSA Pantex Plant

Manganese Trend



Concentration Trend

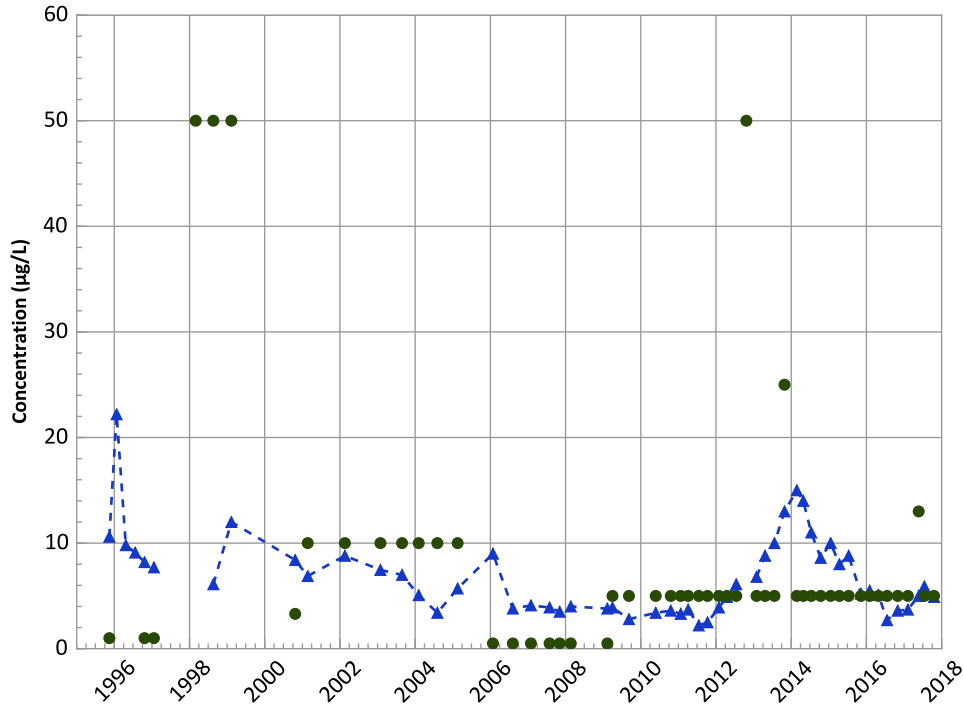
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
Decreasing

Molybdenum Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

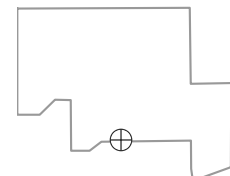
MAROS Linear Regression Method

Data ():
Stable
All Data
Decreasing

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/14/1995 to 10/19/2017
Analysis Date: 03/21/2018

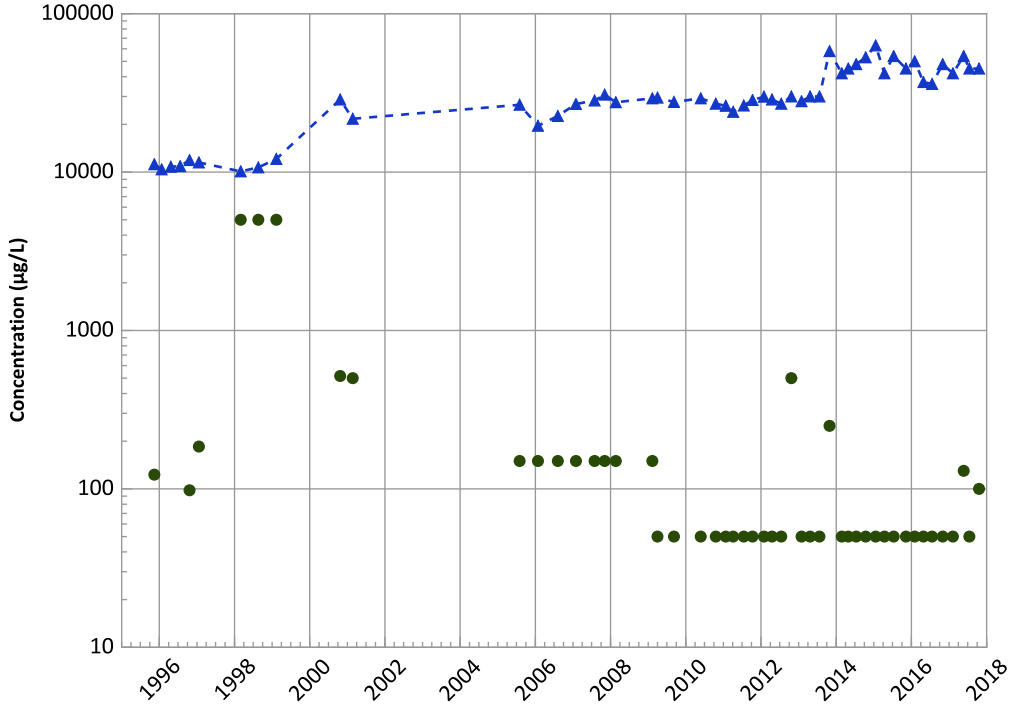
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1012 in Perched Aquifer
USDOE/NNSA Pantex Plant

Sodium Trend



Concentration Trend

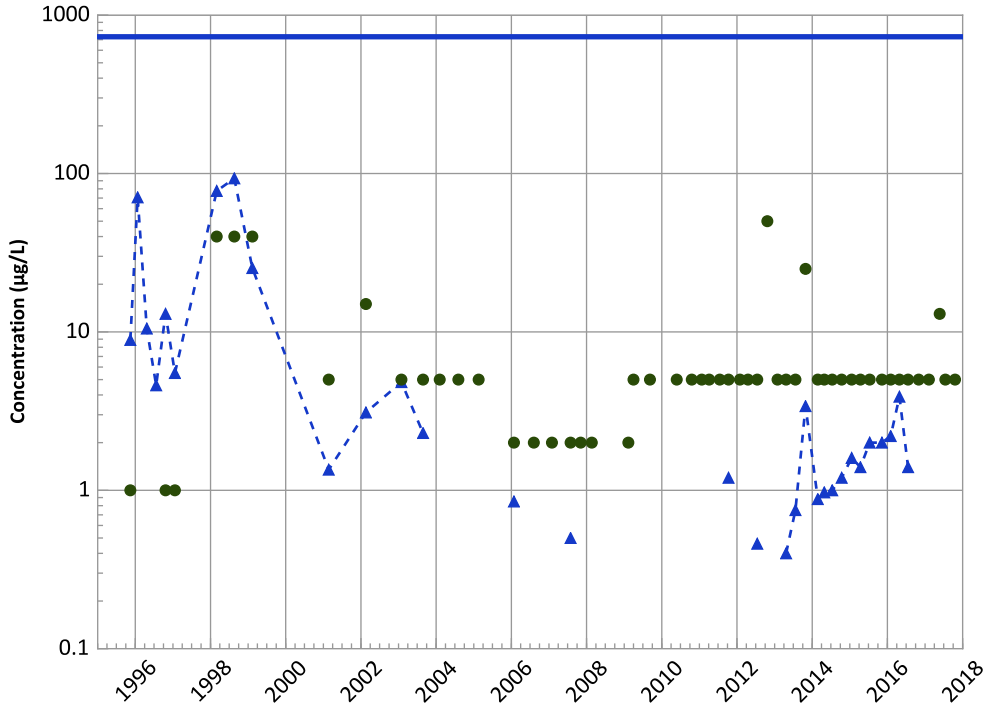
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

Nickel Trend



Concentration Trend

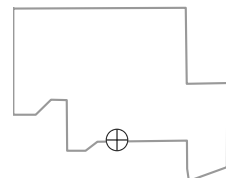
MAROS Mann-Kendall Method

Data ():
No Trend
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Decreasing

Well Location

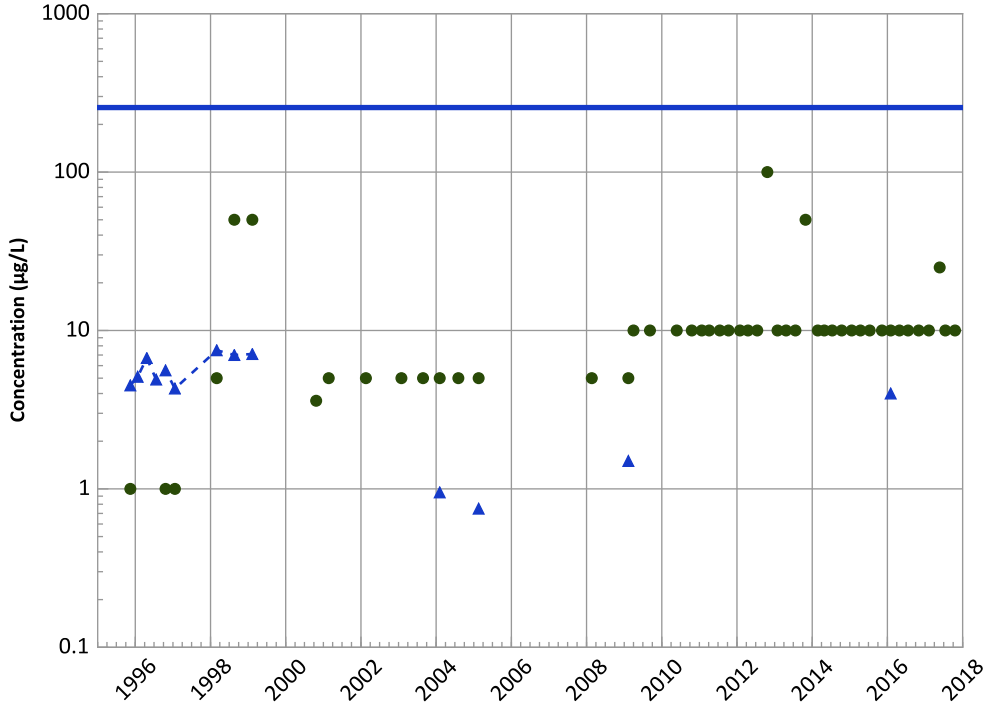


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/14/1995 to 10/19/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1012 in Perched Aquifer
USDOE/NNSA Pantex Plant

Vanadium Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Detections in Dataset)

All Data

Increasing

MAROS Linear Regression Method

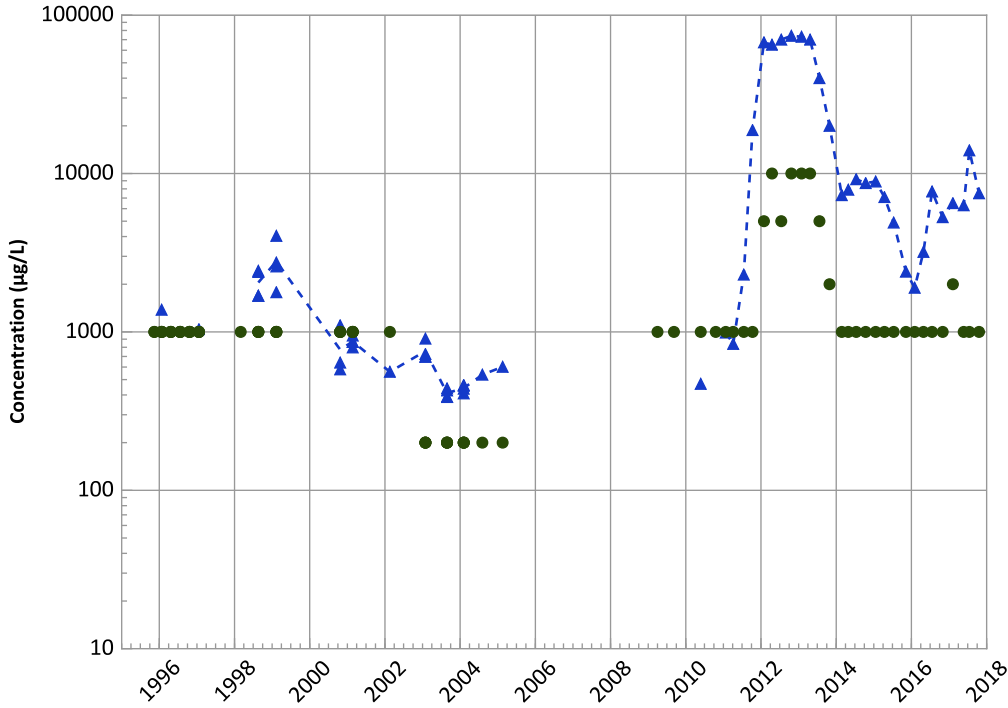
Data ():

N/A (<4 Detections in Dataset)

All Data

Decreasing

Total Organic Carbon Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

Decreasing

All Data

Increasing

MAROS Linear Regression Method

Data ():

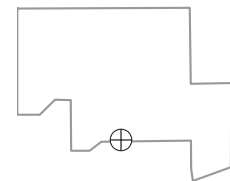
Decreasing

All Data

Increasing

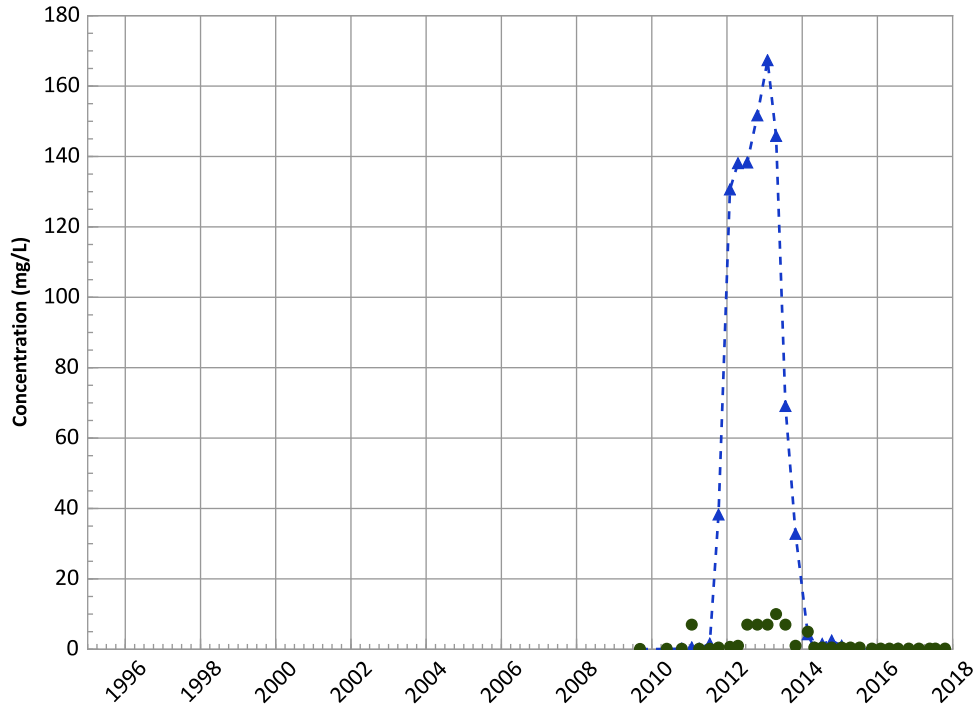
Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/14/1995 to 10/19/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard



PTX06-1012 in Perched Aquifer
USDOE/NNSA Pantex Plant

Total Volatile Fatty Acids Trend

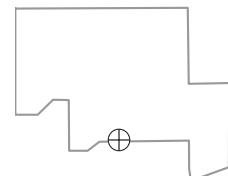


Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 Decreasing
 All Data
 Decreasing
MAROS Linear Regression Method
 Data ():
 Decreasing
 All Data
 Decreasing

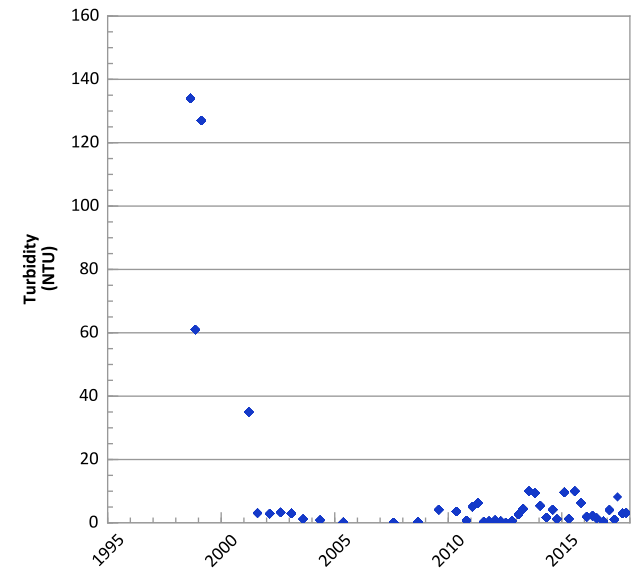
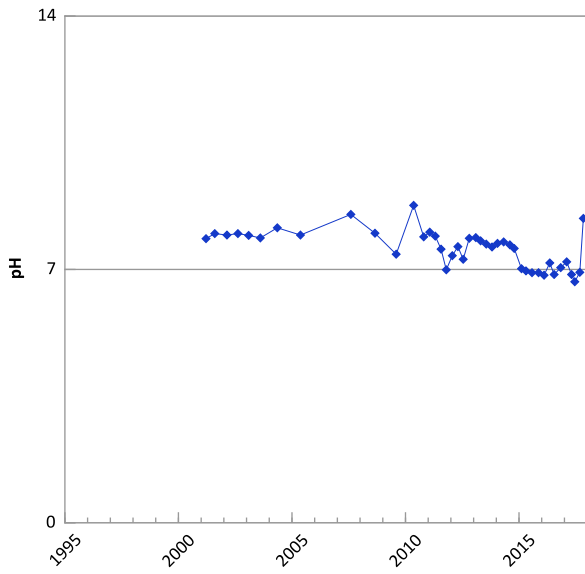
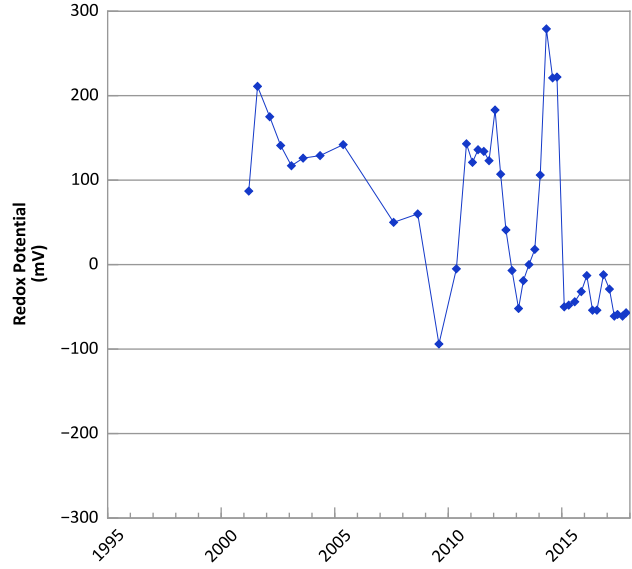
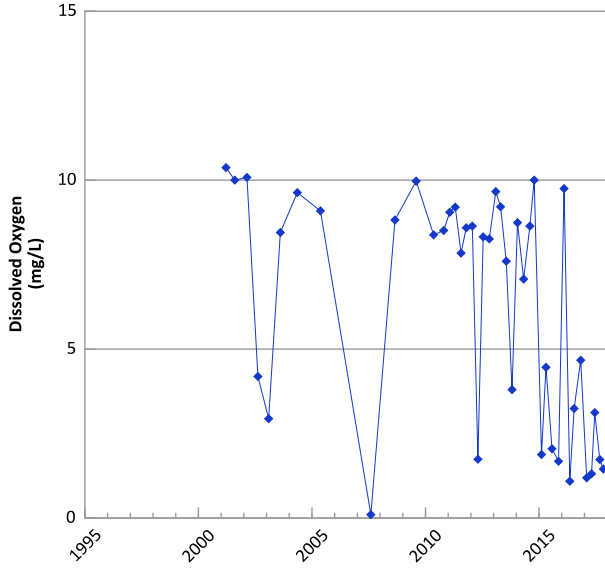
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 11/14/1995 to 10/19/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

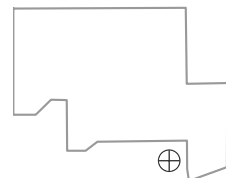


**PTX06-1037 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



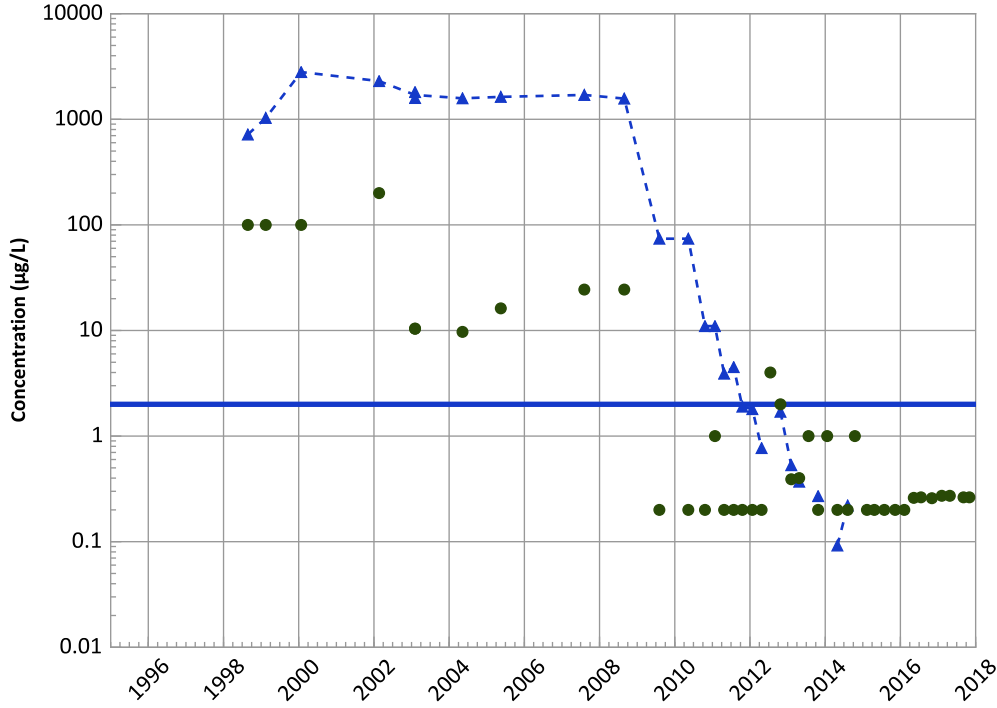
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 08/25/1998 to 11/01/2017
 Analysis Date: 03/21/2018

Well Location



PTX06-1037 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

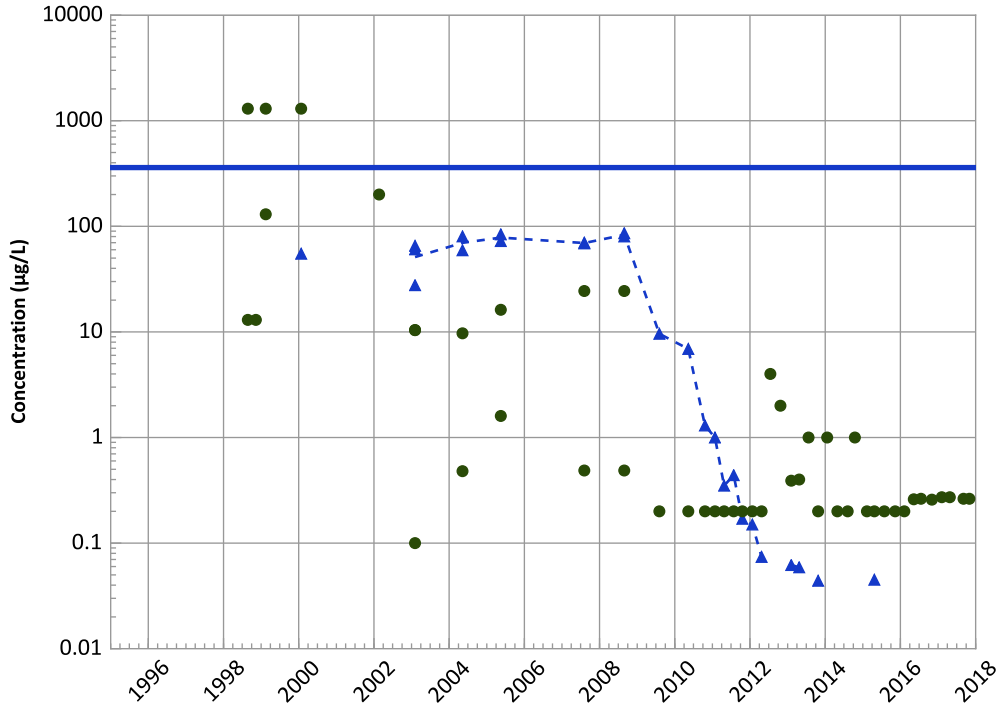
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

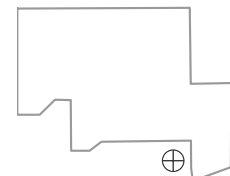
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

Well Location

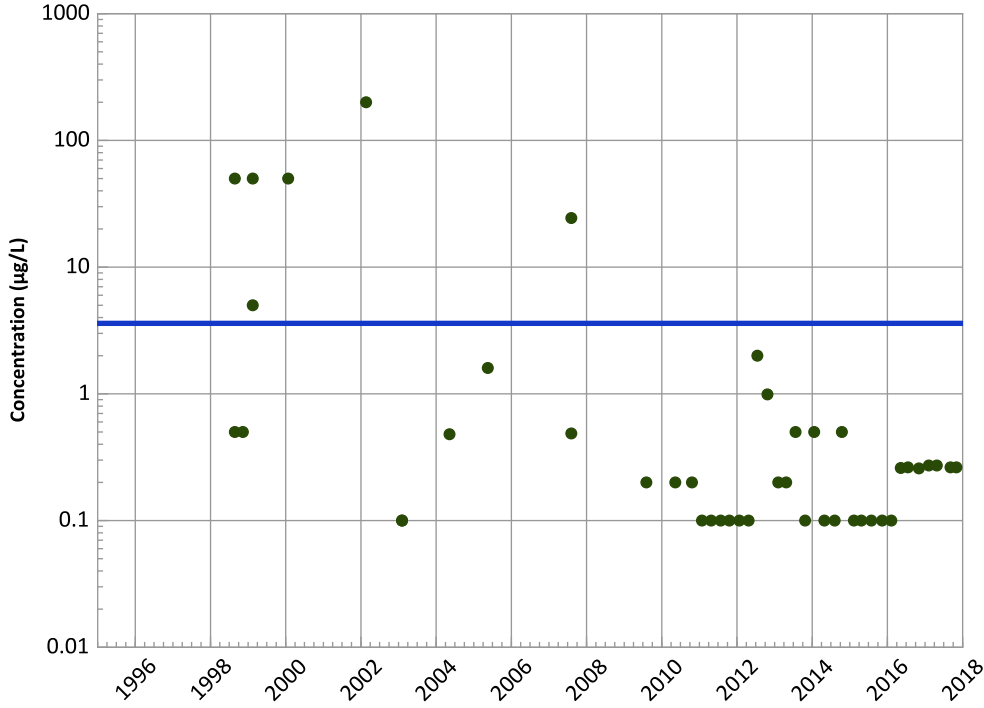


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/25/1998 to 11/01/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1037 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

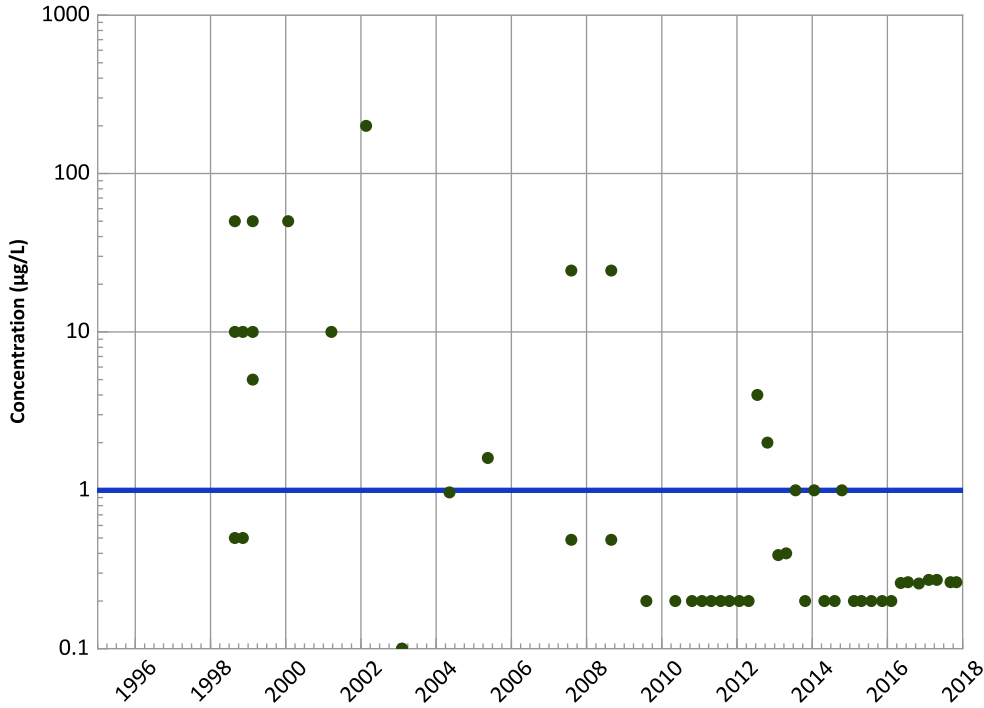
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

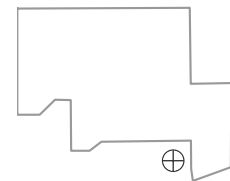
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

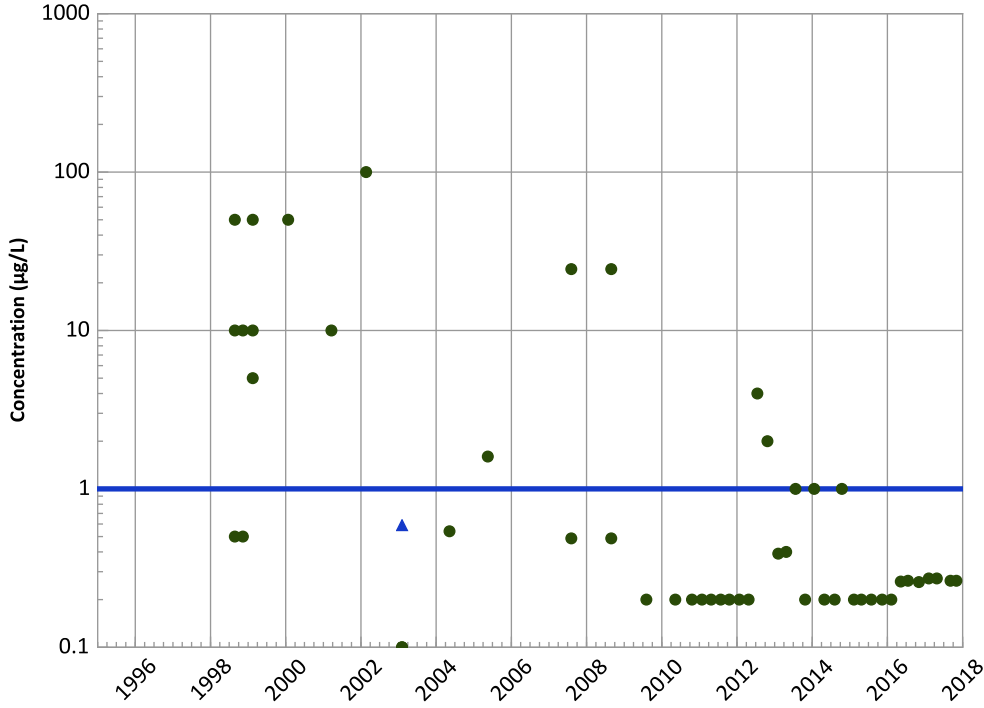


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/25/1998 to 11/01/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1037 in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

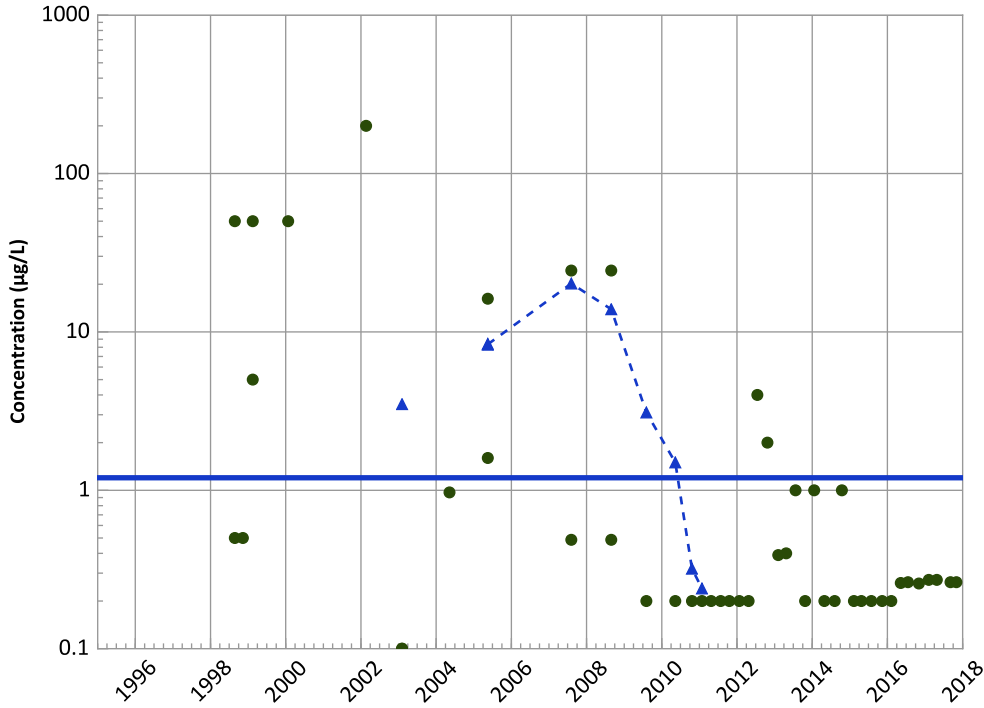
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
Decreasing

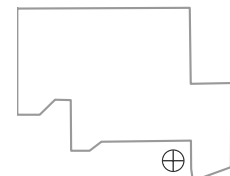
MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
Probably Decreasing

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/25/1998 to 11/01/2017
Analysis Date: 03/21/2018

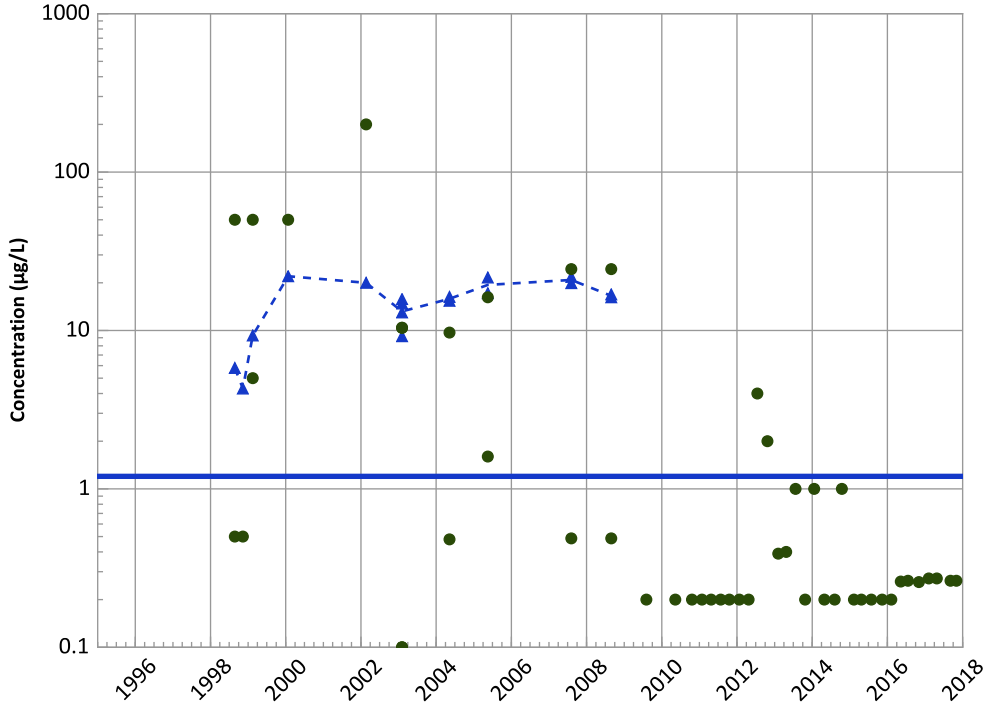
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1037 in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

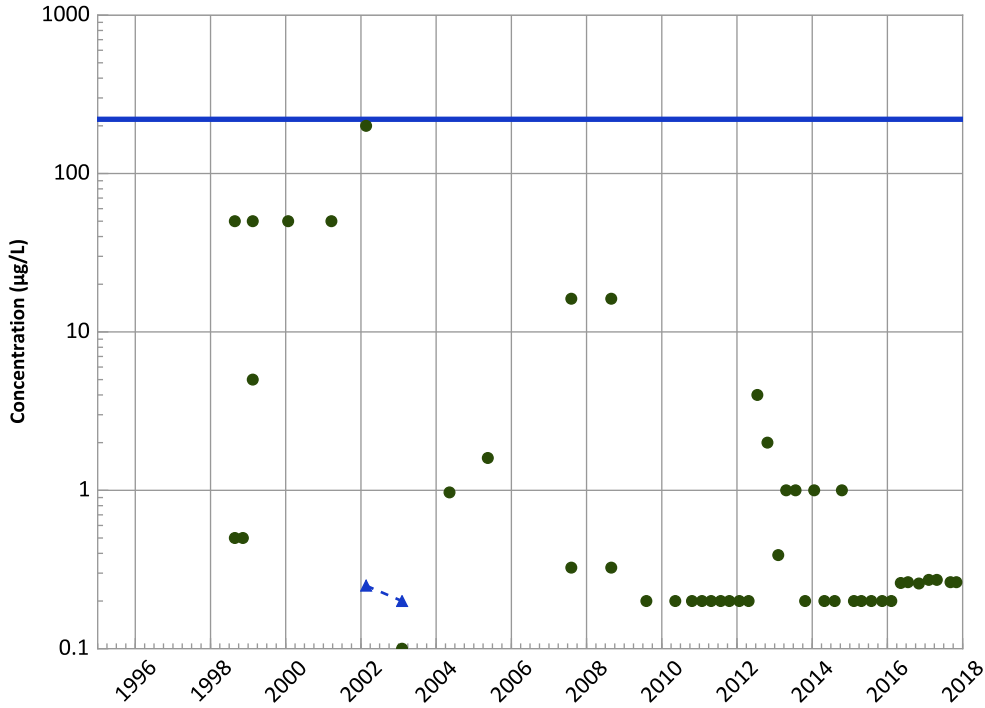
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
Decreasing

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
Increasing

1,3,5-Trinitrobenzene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

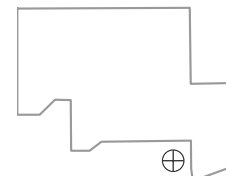
MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/25/1998 to 11/01/2017
Analysis Date: 03/21/2018

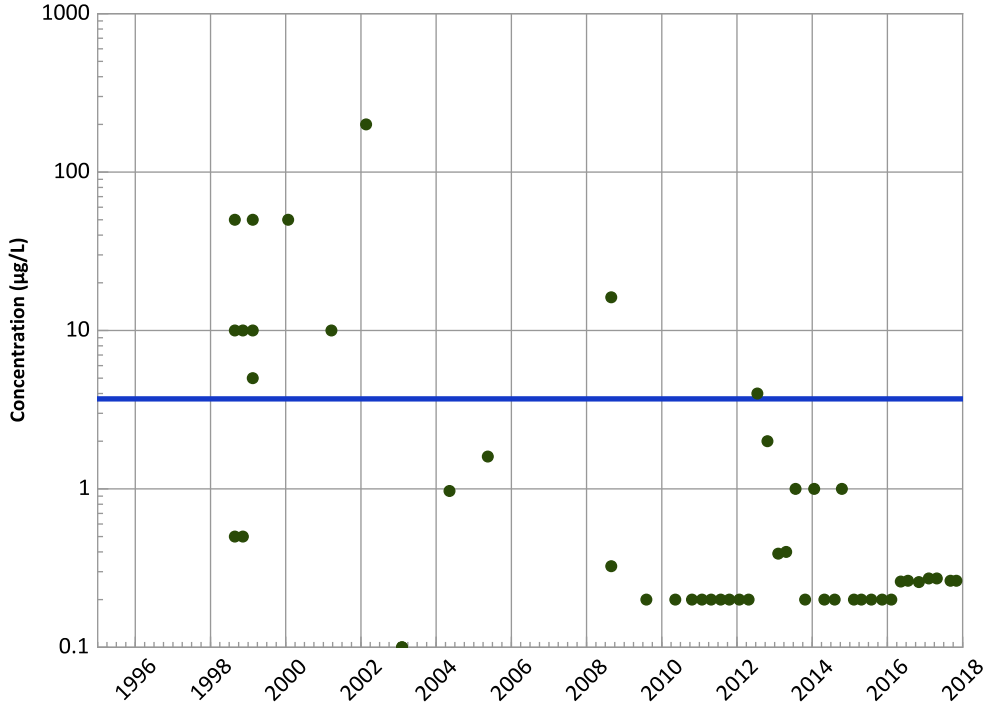
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1037 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

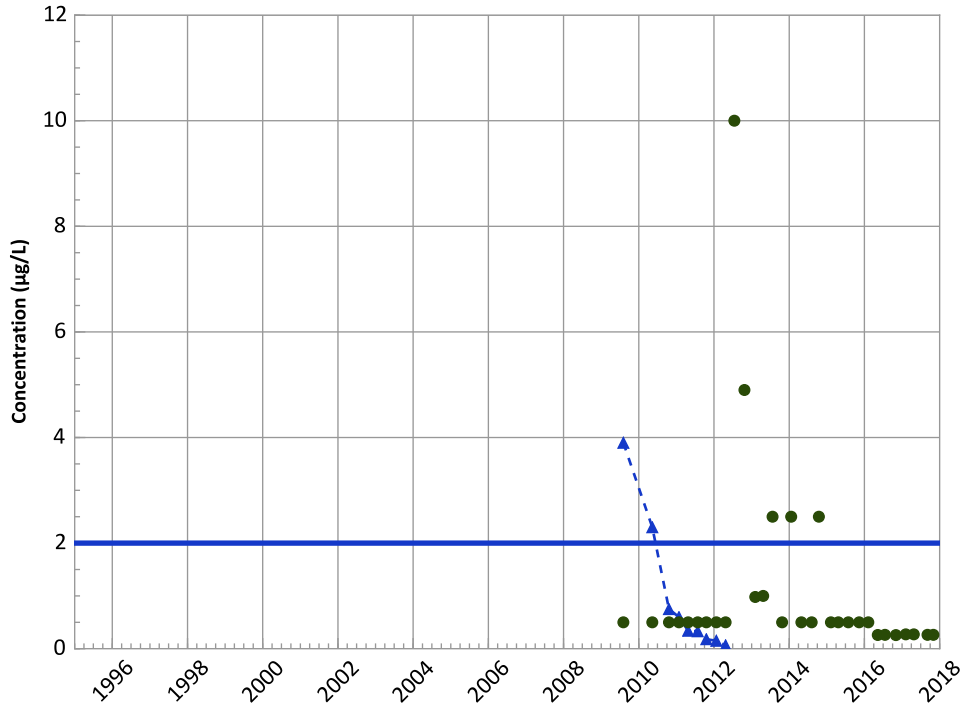
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Hexahydro-1-Nitroso-3,5-Dinitro-1,3,5-Triazine (MNX) Trend



Concentration Trend

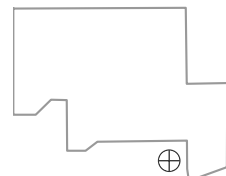
MAROS Mann-Kendall Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

Well Location

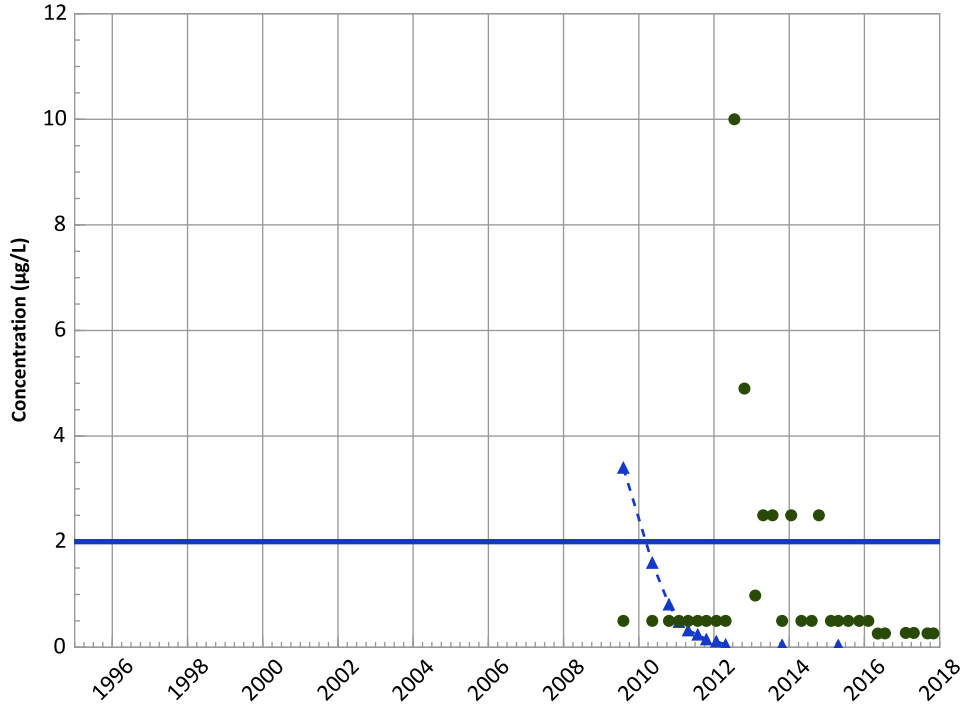


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/25/1998 to 11/01/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1037 in Perched Aquifer
USDOE/NNSA Pantex Plant

Hexahydro-1,3-Dinitroso-5-Nitro-1,3,5-Triazine (DNX) Trend



Concentration Trend

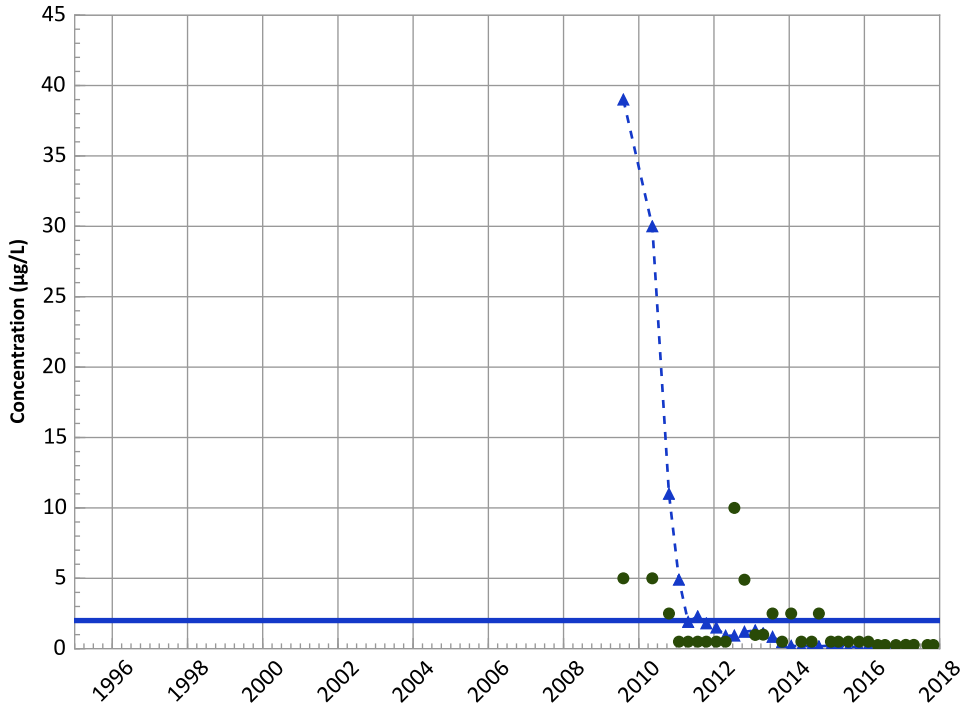
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Stable
All Data
Decreasing

Hexahydro-1,3,5-Trinitroso-1,3,5-Triazine (TNX) Trend



Concentration Trend

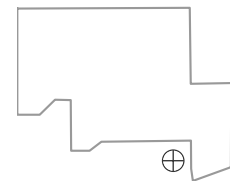
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

Well Location

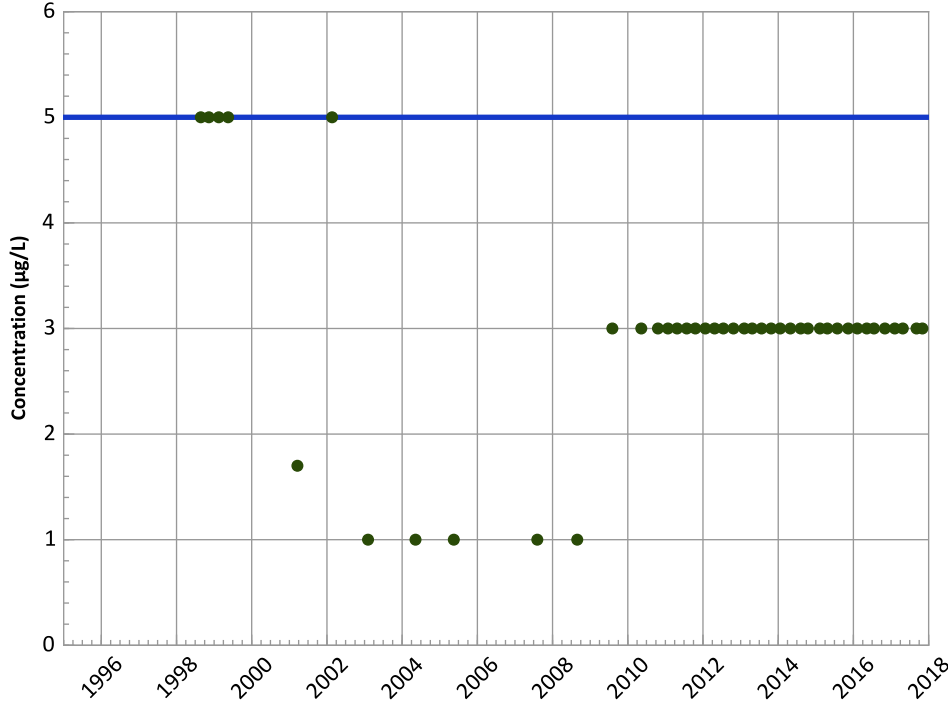


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/25/1998 to 11/01/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1037 in Perched Aquifer
USDOE/NNSA Pantex Plant

Tetrachloroethylene (PCE) Trend



Concentration Trend

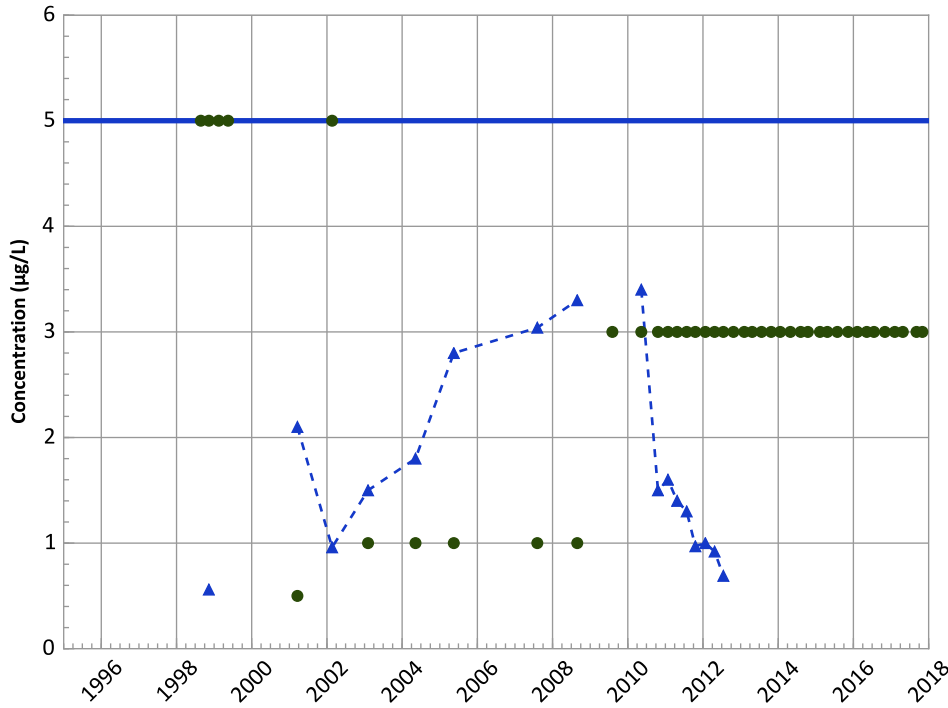
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Trichloroethene Trend



Concentration Trend

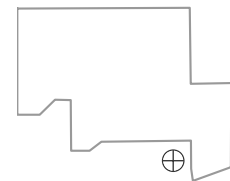
MAROS Mann-Kendall Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

Well Location

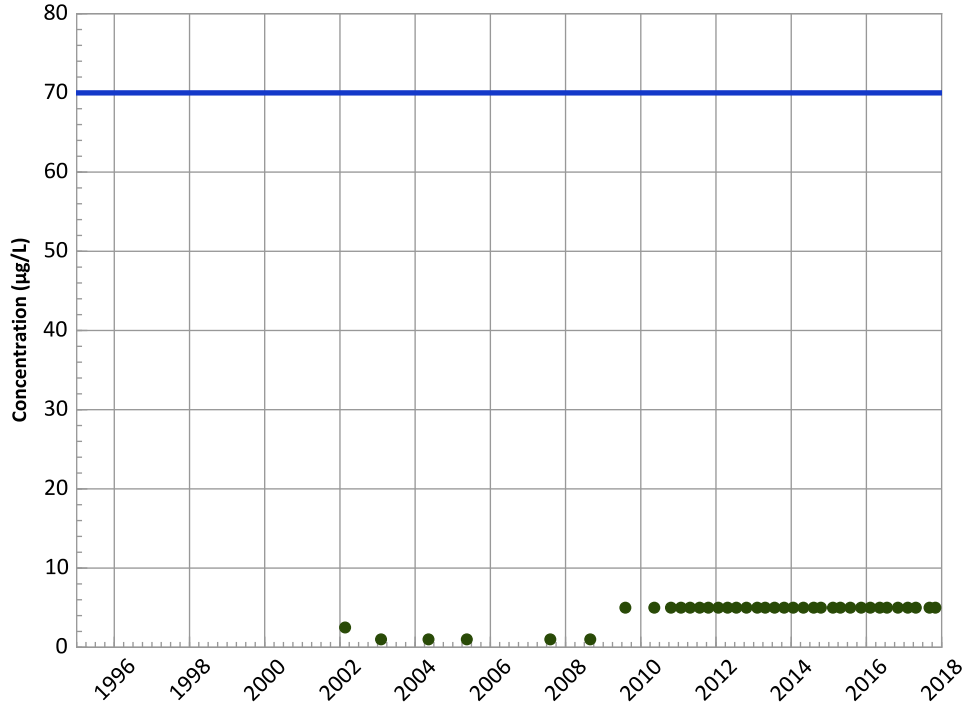


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/25/1998 to 11/01/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1037 in Perched Aquifer
USDOE/NNSA Pantex Plant

cis-1,2-Dichloroethene Trend



Concentration Trend

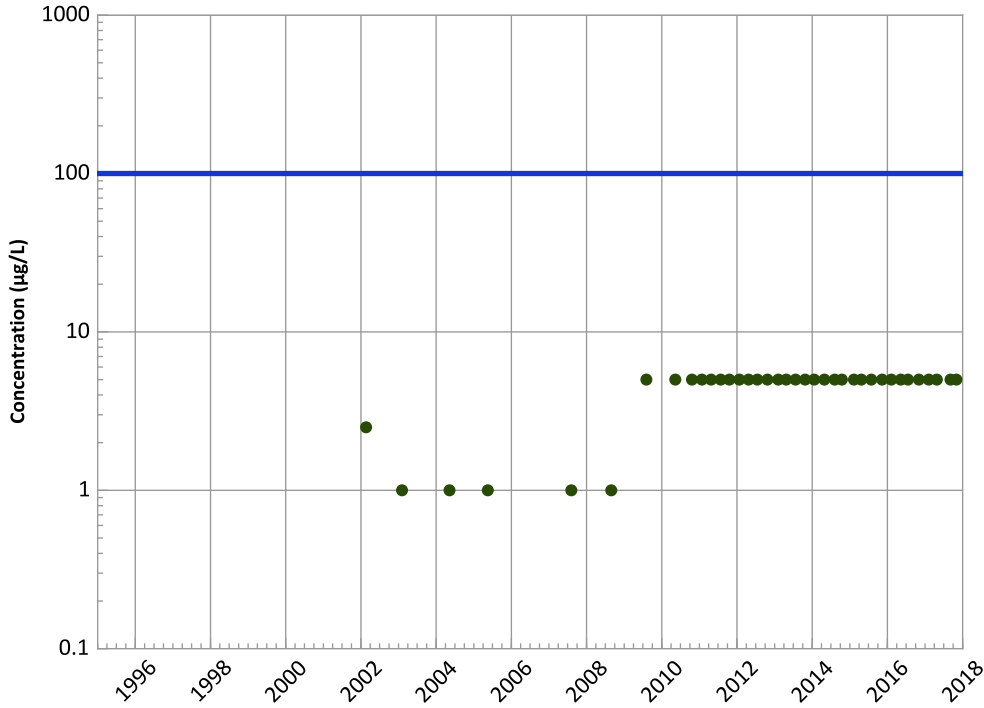
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

trans-1,2-Dichloroethene Trend



Concentration Trend

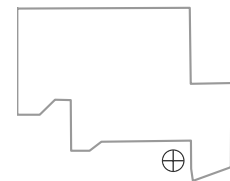
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

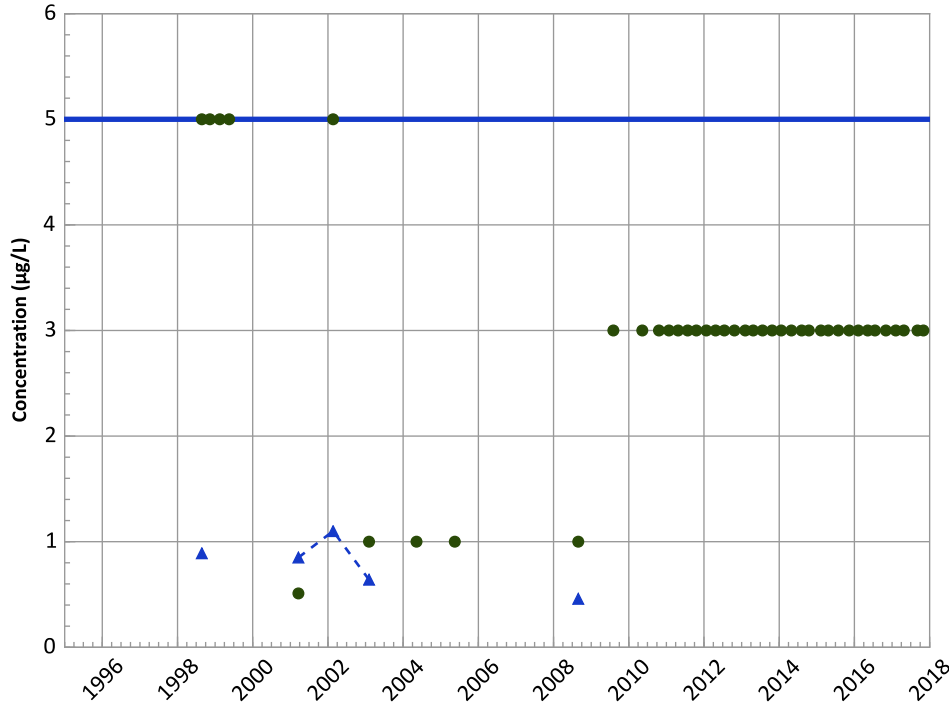
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/25/1998 to 11/01/2017
Analysis Date: 03/21/2018

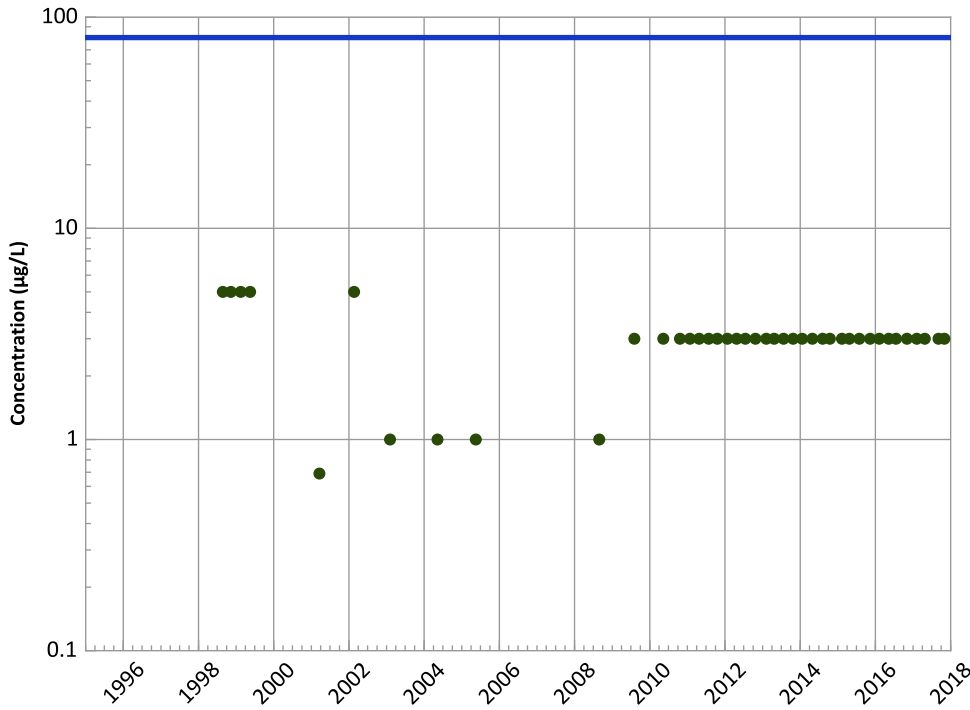
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1037 in Perched Aquifer
USDOE/NNSA Pantex Plant
1,2-Dichloroethane Trend**



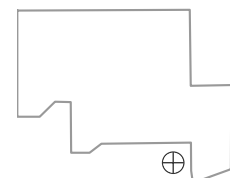
Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 All Non-Detect
 All Data
 Increasing
MAROS Linear Regression Method
 Data ():
 All Non-Detect
 All Data
 Decreasing

Chloroform Trend



Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect
MAROS Linear Regression Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect

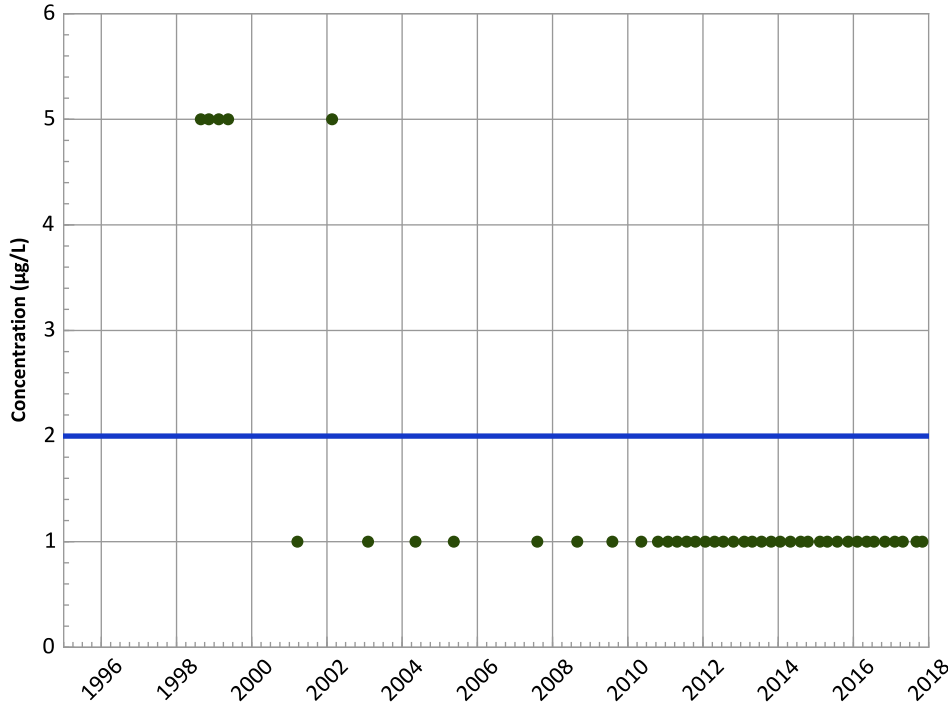
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 08/25/1998 to 11/01/2017
 Analysis Date: 03/21/2018

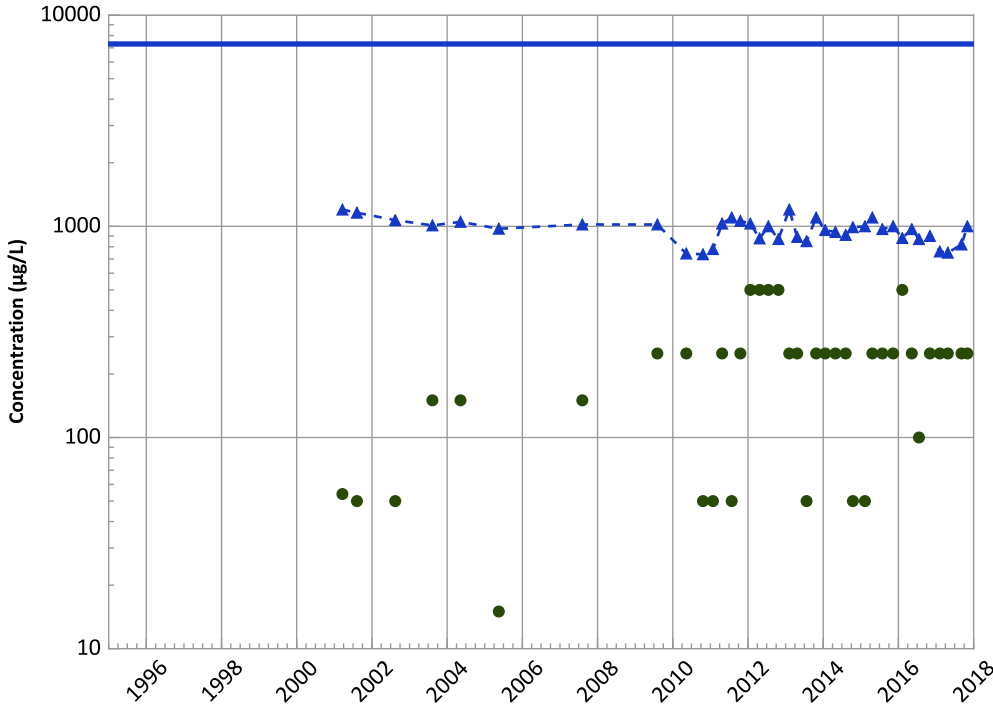
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1037 in Perched Aquifer
USDOE/NNSA Pantex Plant
Vinyl Chloride Trend**



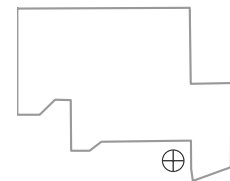
Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect
MAROS Linear Regression Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect

Boron Trend



Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 Decreasing
 All Data
 Decreasing
MAROS Linear Regression Method
 Data ():
 Stable
 All Data
 Decreasing

Well Location

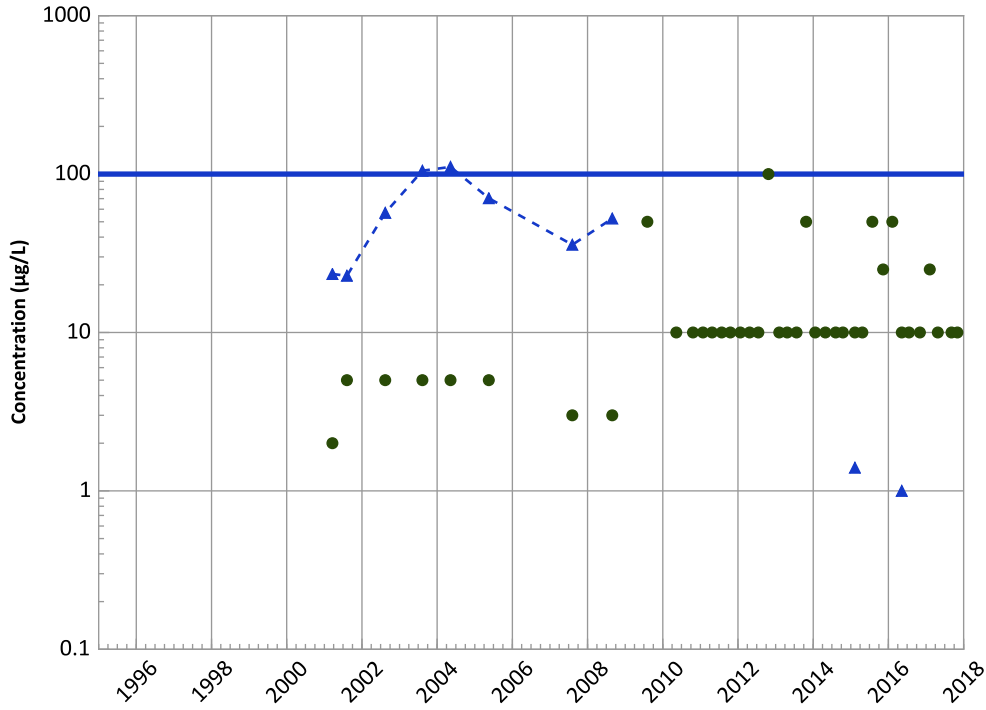


Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 08/25/1998 to 11/01/2017
 Analysis Date: 03/21/2018

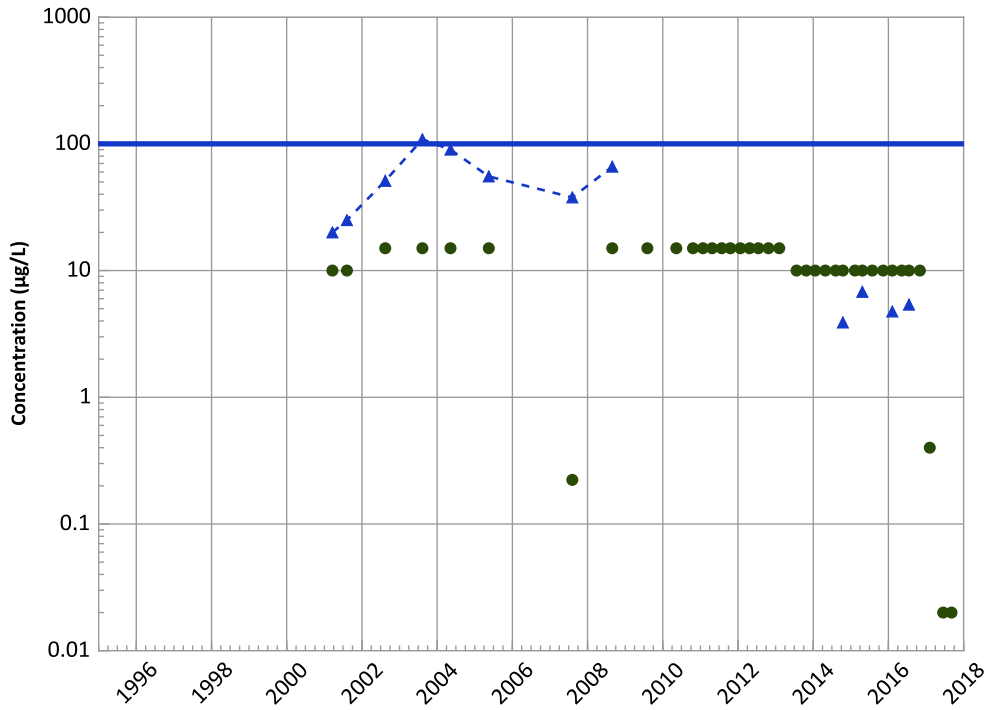
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1037 in Perched Aquifer
USDOE/NNSA Pantex Plant

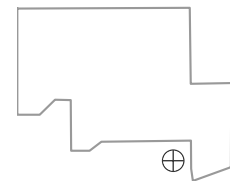
Chromium, Total Trend



Chromium, Hexavalent Trend



Well Location

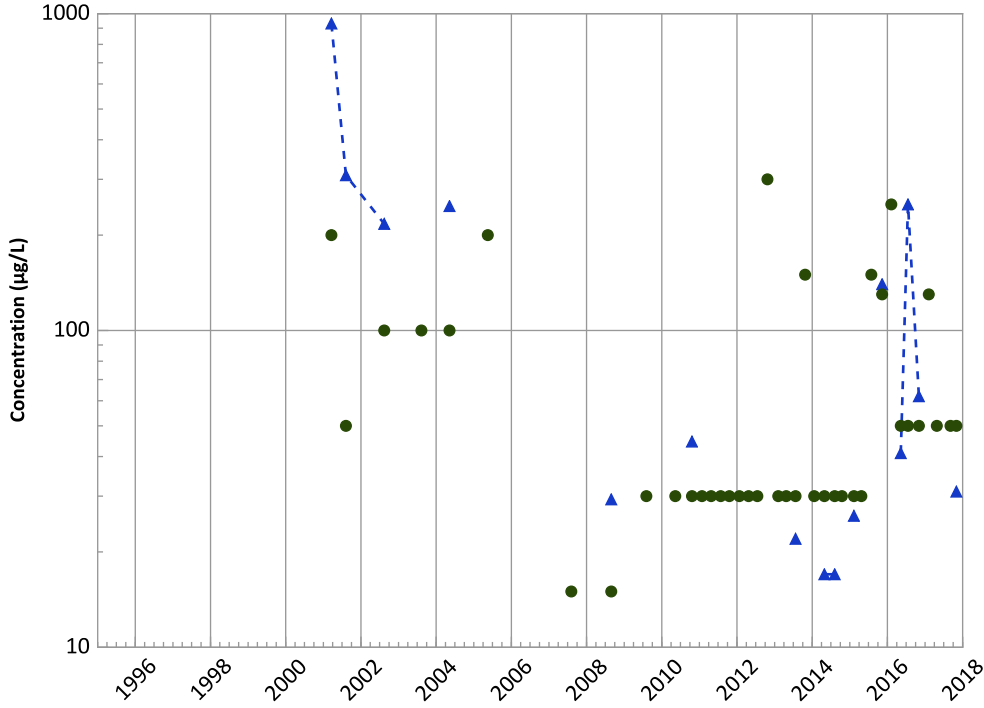


Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 08/25/1998 to 11/01/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1037 in Perched Aquifer
USDOE/NNSA Pantex Plant

Aluminum Trend



Concentration Trend

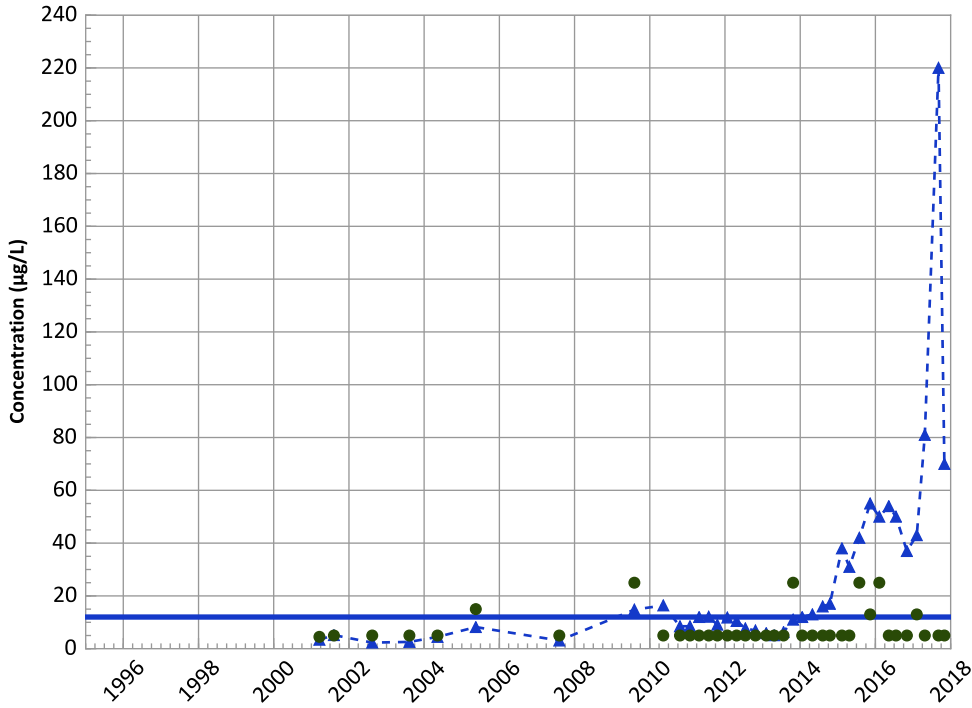
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
No Trend

MAROS Linear Regression Method

Data ():
Increasing
All Data
Decreasing

Arsenic Trend



Concentration Trend

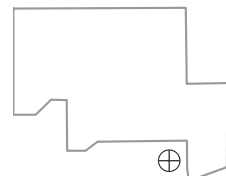
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

Well Location

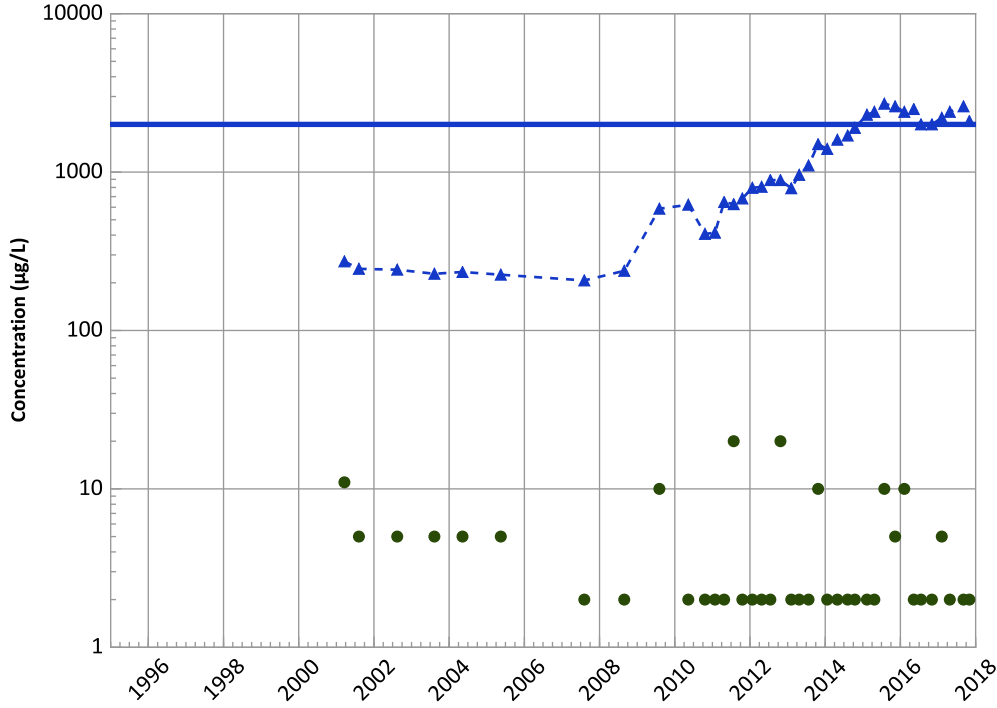


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/25/1998 to 11/01/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1037 in Perched Aquifer
USDOE/NNSA Pantex Plant

Barium Trend



Concentration Trend

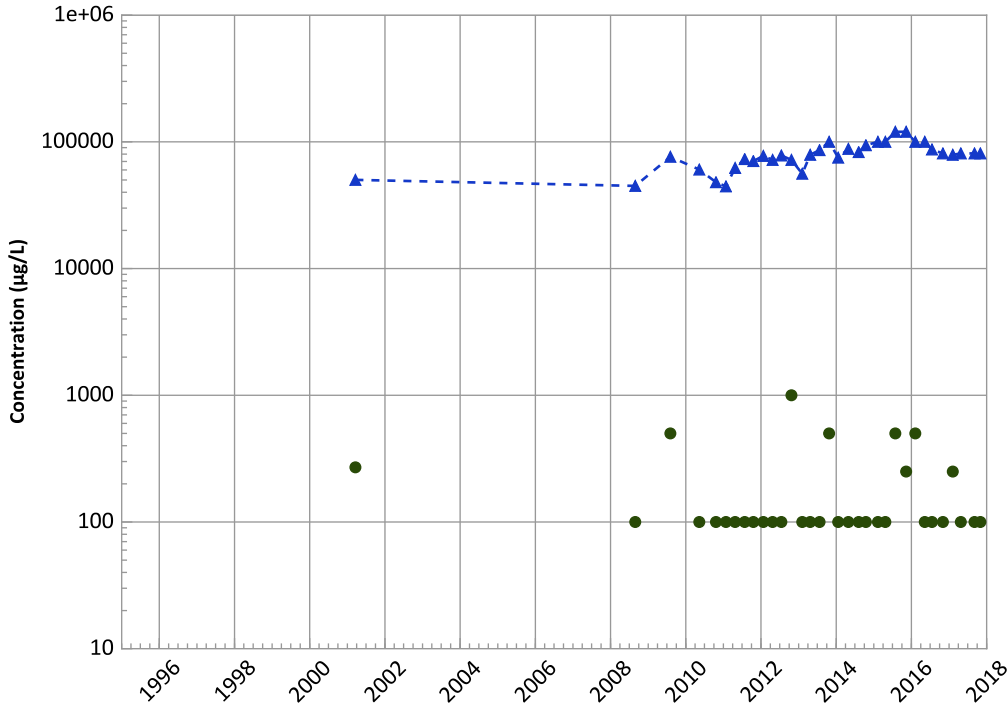
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

Calcium Trend



Concentration Trend

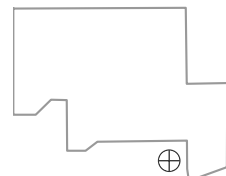
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

Well Location

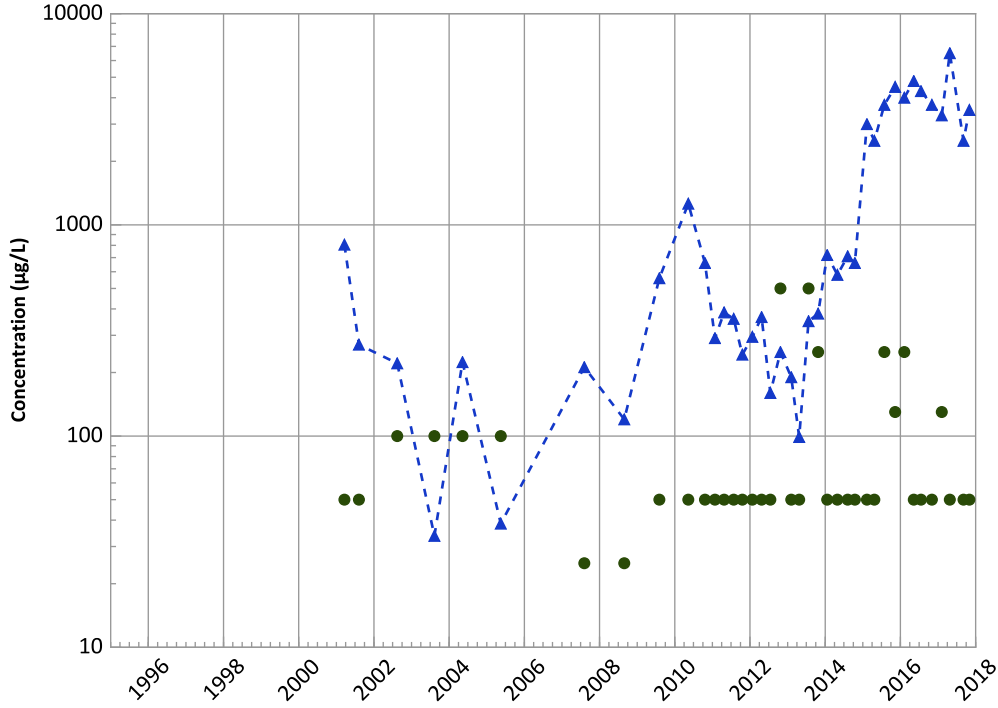


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/25/1998 to 11/01/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1037 in Perched Aquifer
USDOE/NNSA Pantex Plant

Iron Trend



Concentration Trend

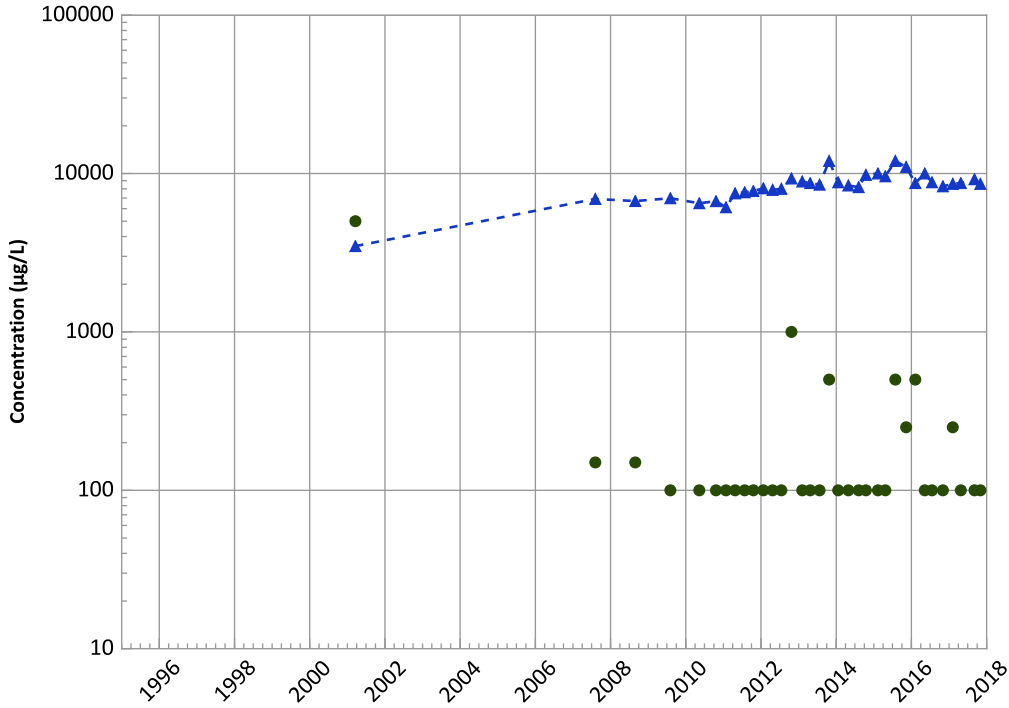
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

Potassium Trend



Concentration Trend

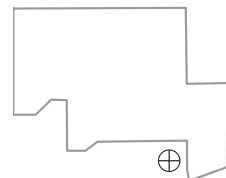
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Probably Increasing
All Data
Increasing

Well Location

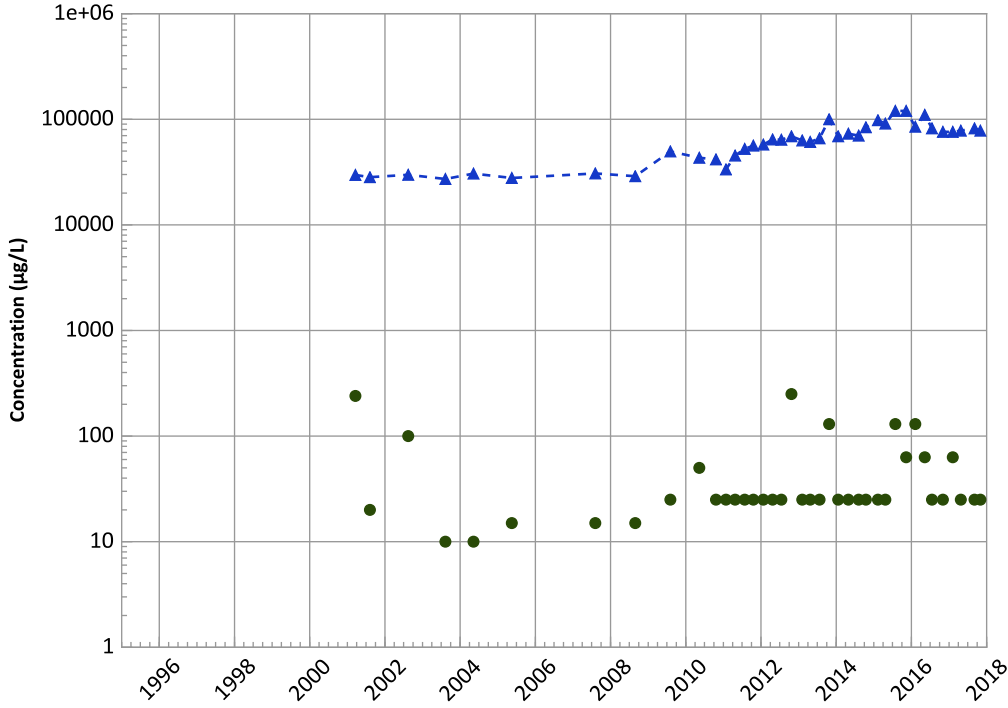


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/25/1998 to 11/01/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1037 in Perched Aquifer
USDOE/NNSA Pantex Plant

Magnesium Trend



Concentration Trend

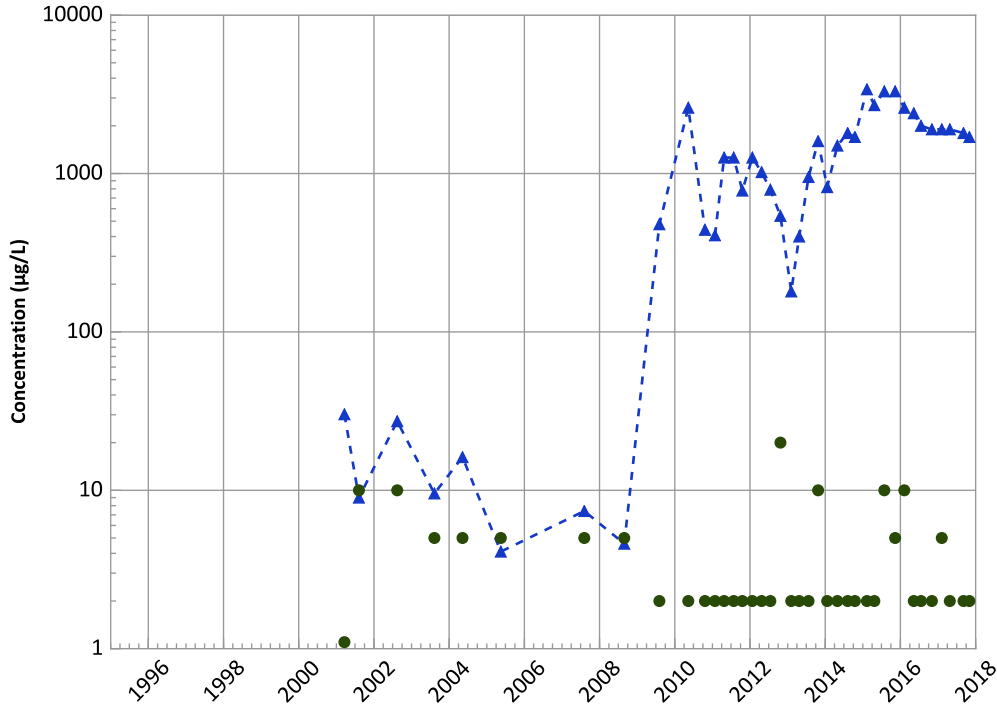
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

Manganese Trend



Concentration Trend

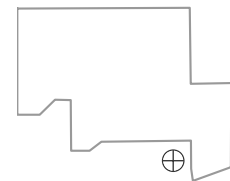
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

Well Location

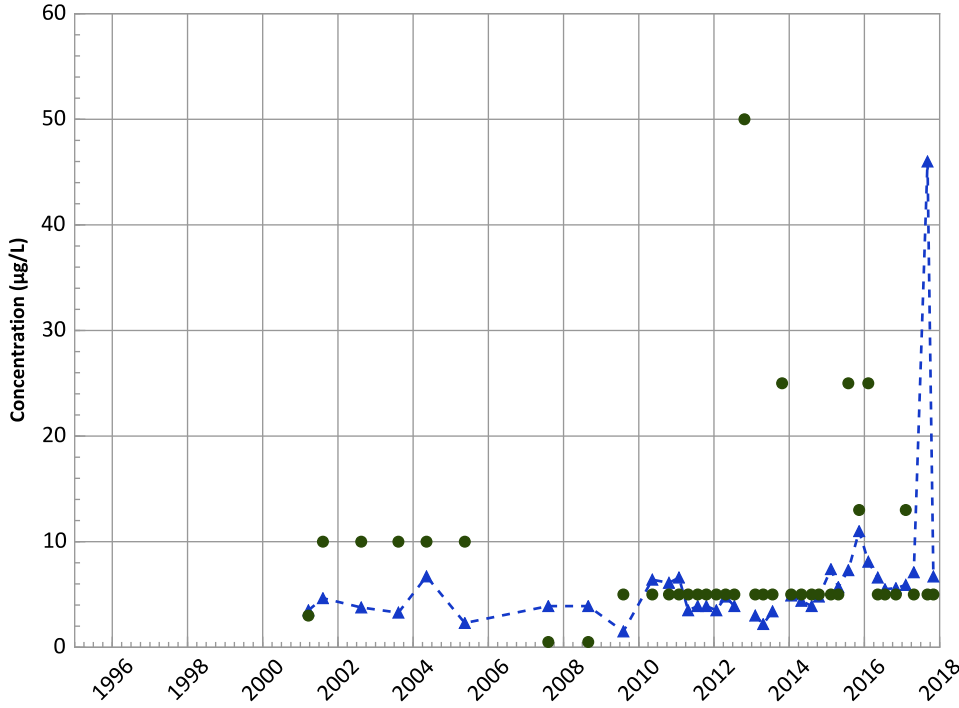


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/25/1998 to 11/01/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1037 in Perched Aquifer
USDOE/NNSA Pantex Plant

Molybdenum Trend



Concentration Trend

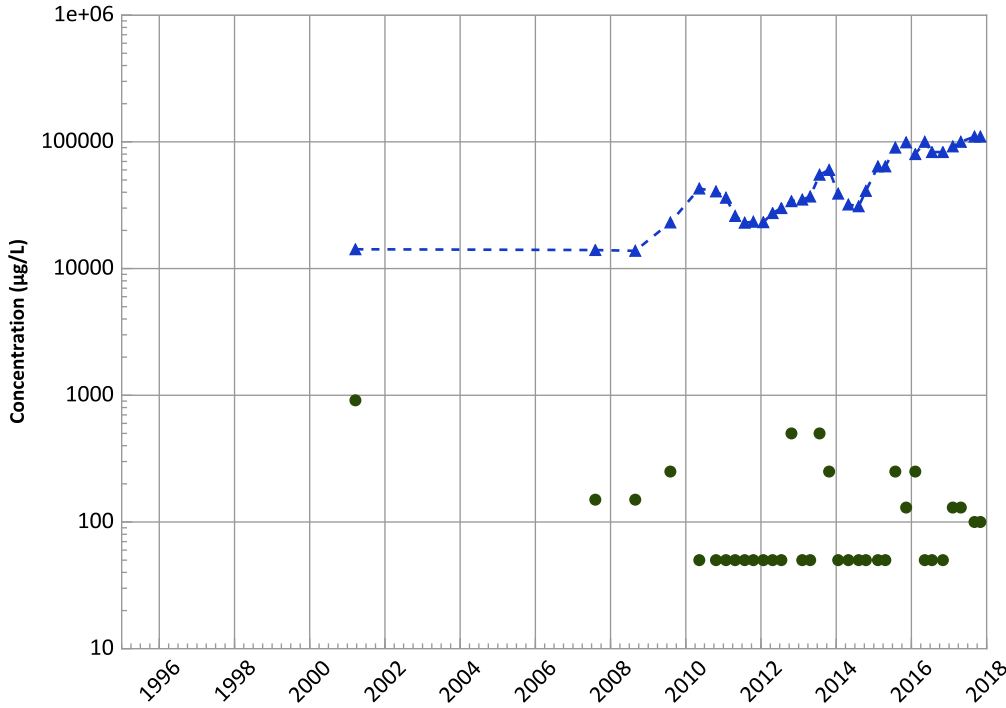
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

Sodium Trend



Concentration Trend

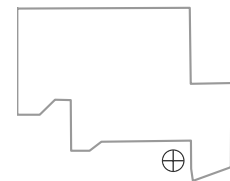
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

Well Location

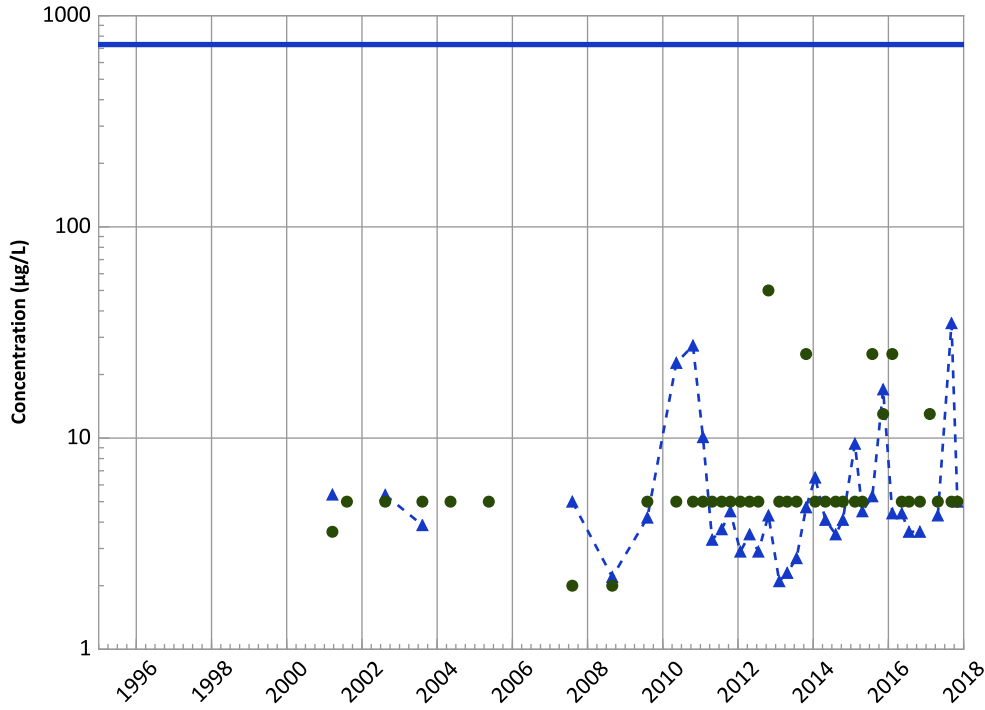


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/25/1998 to 11/01/2017
Analysis Date: 03/21/2018

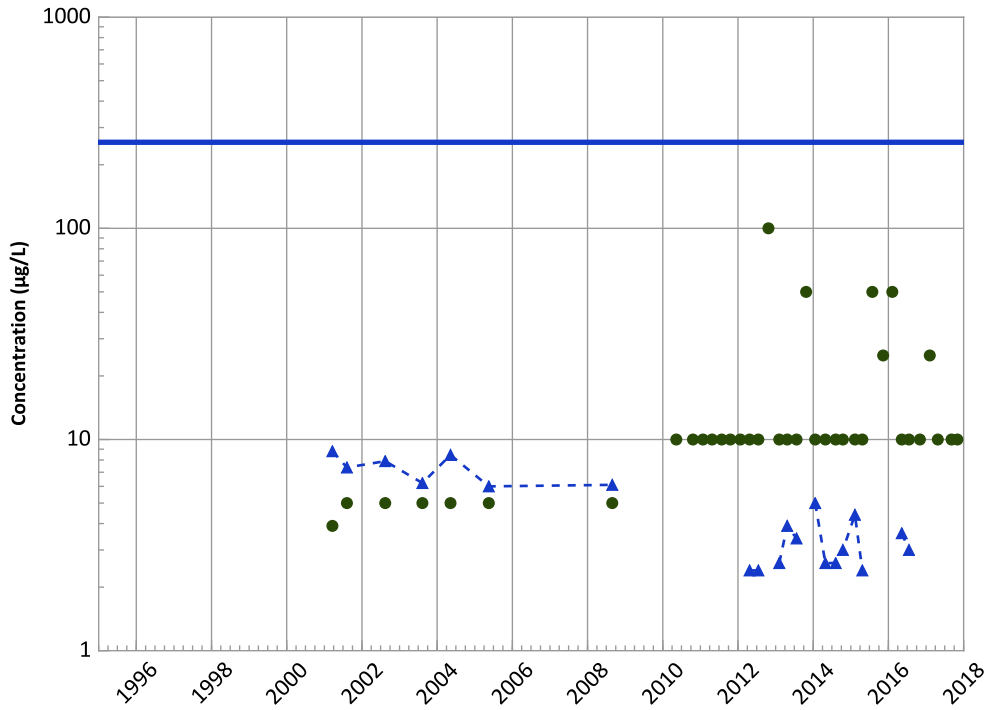
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1037 in Perched Aquifer
USDOE/NNSA Pantex Plant

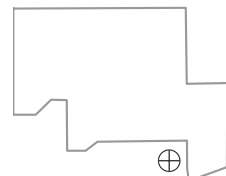
Nickel Trend



Vanadium Trend



Well Location

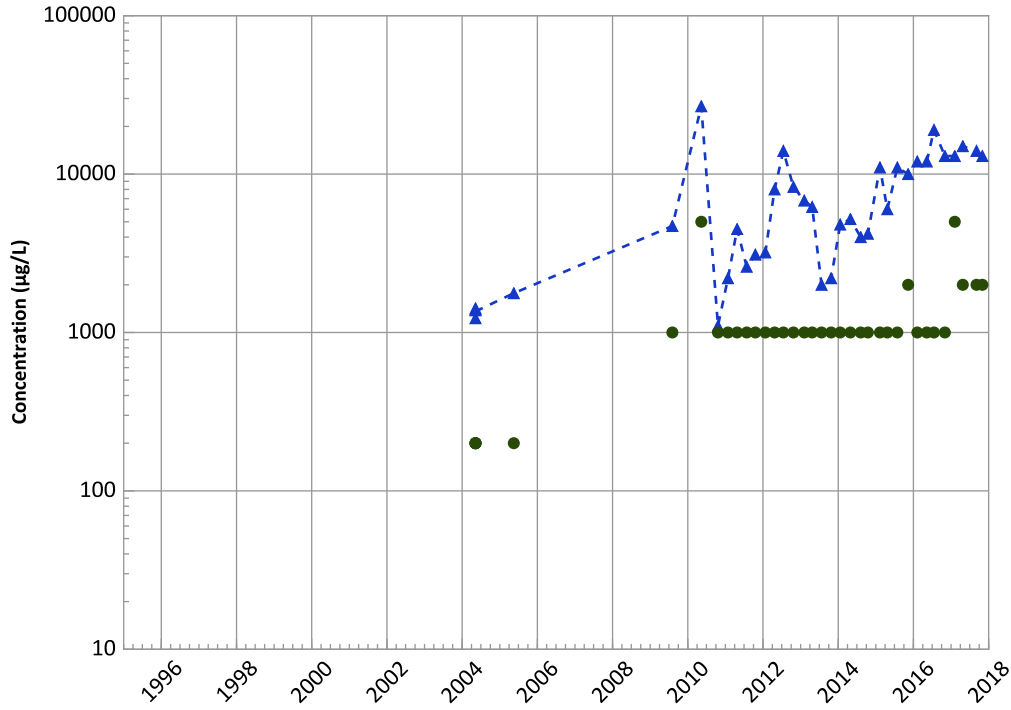


Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 08/25/1998 to 11/01/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1037 in Perched Aquifer
USDOE/NNSA Pantex Plant

Total Organic Carbon Trend



Concentration Trend

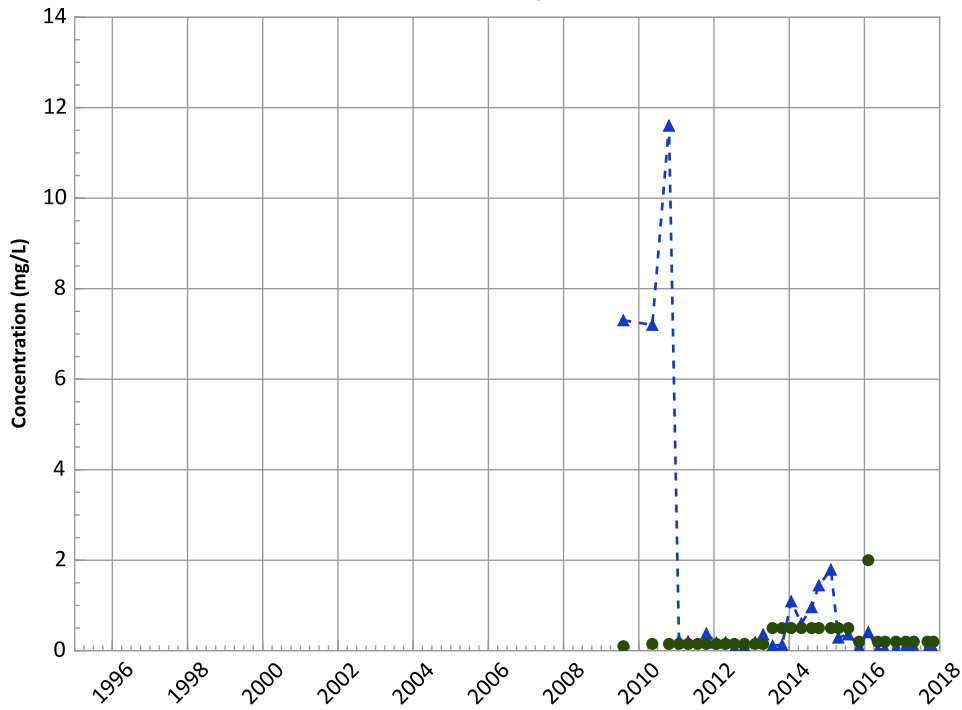
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

Total Volatile Fatty Acids Trend



Concentration Trend

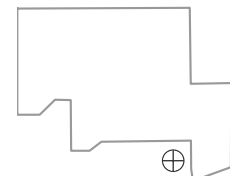
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
Decreasing

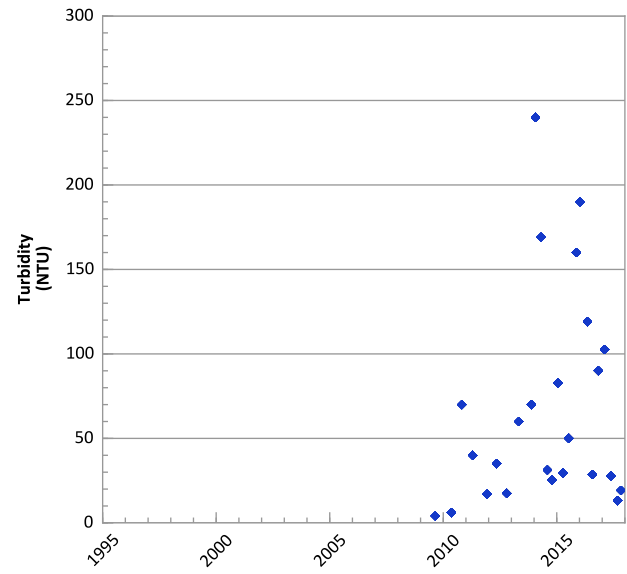
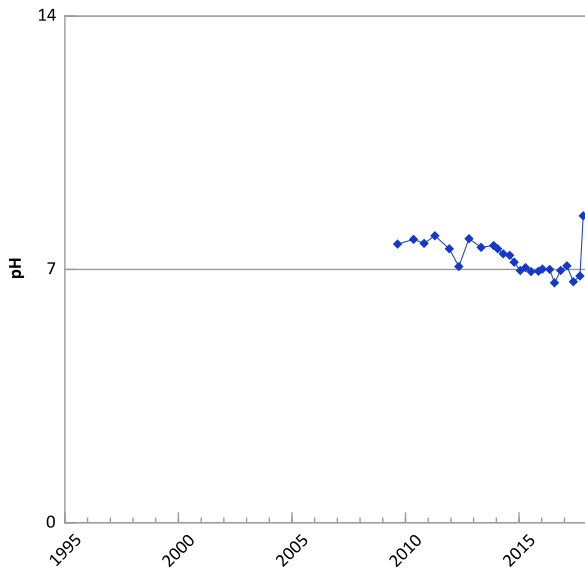
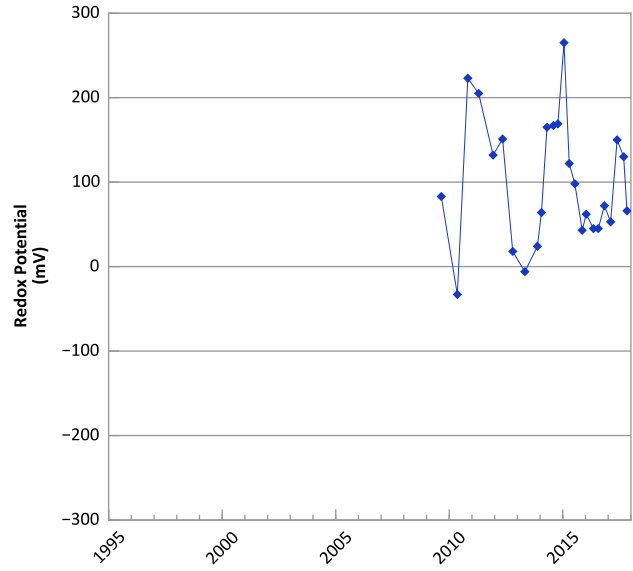
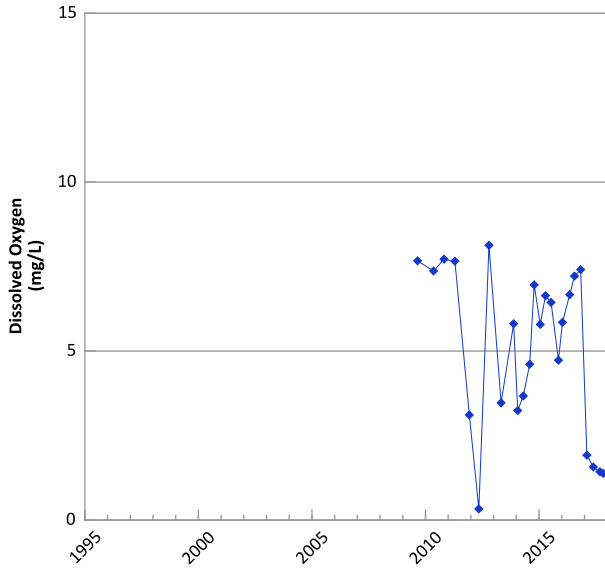
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/25/1998 to 11/01/2017
Analysis Date: 03/21/2018

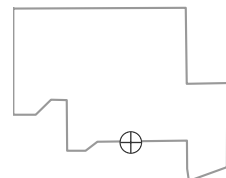
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1148 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



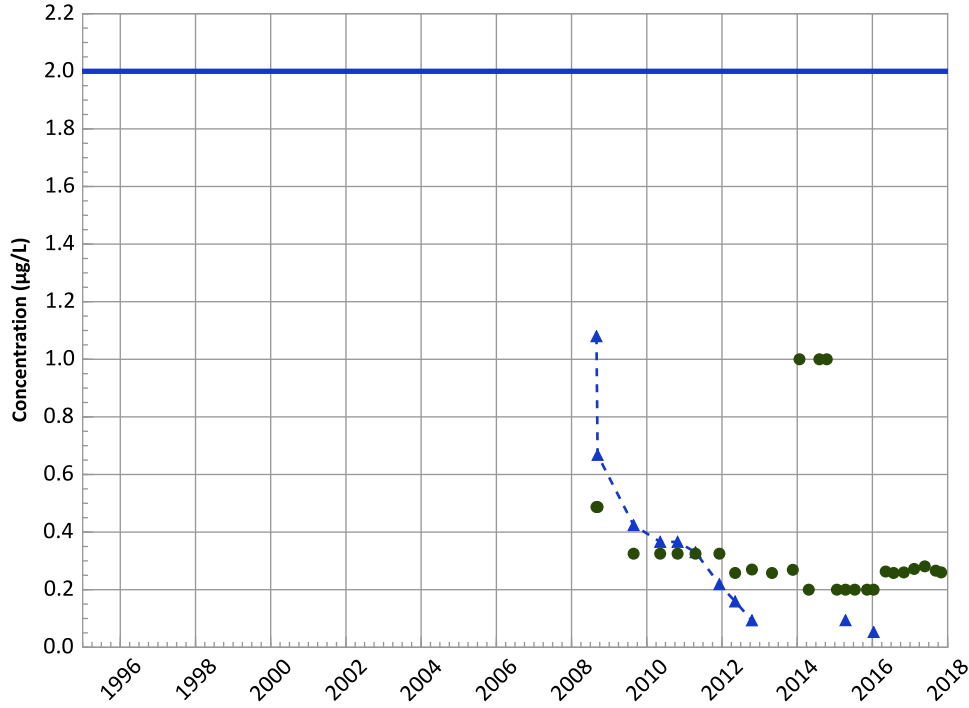
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 08/30/2008 to 10/30/2017
 Analysis Date: 03/21/2018

Well Location



PTX06-1148 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

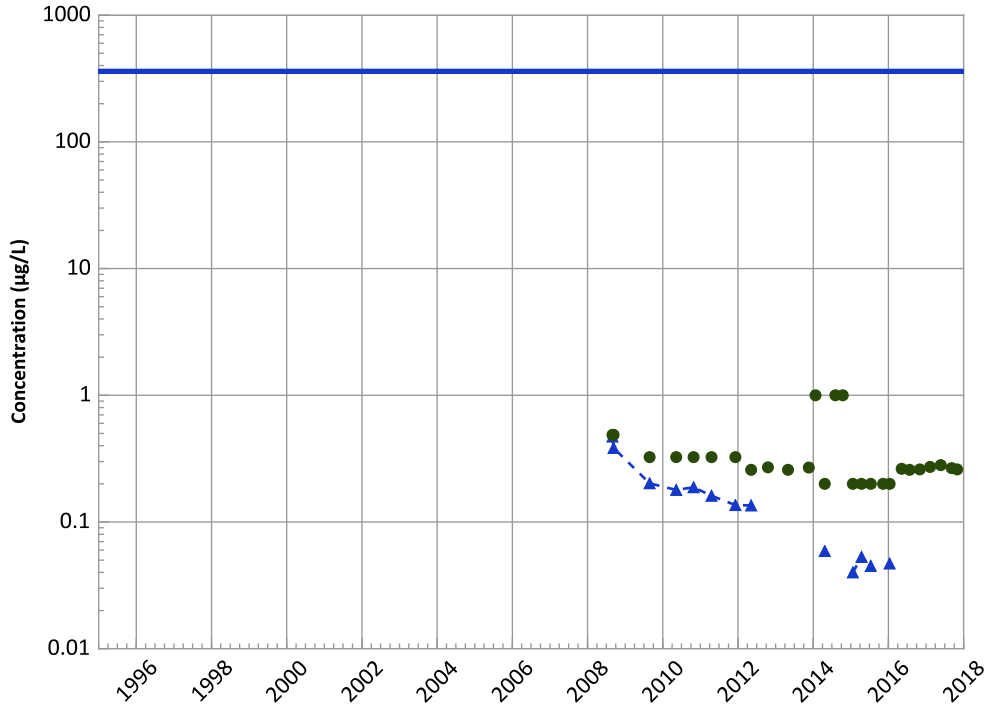
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Probably Decreasing
All Data
Decreasing

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

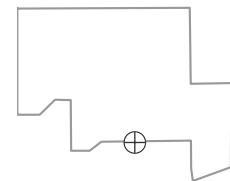
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

Well Location

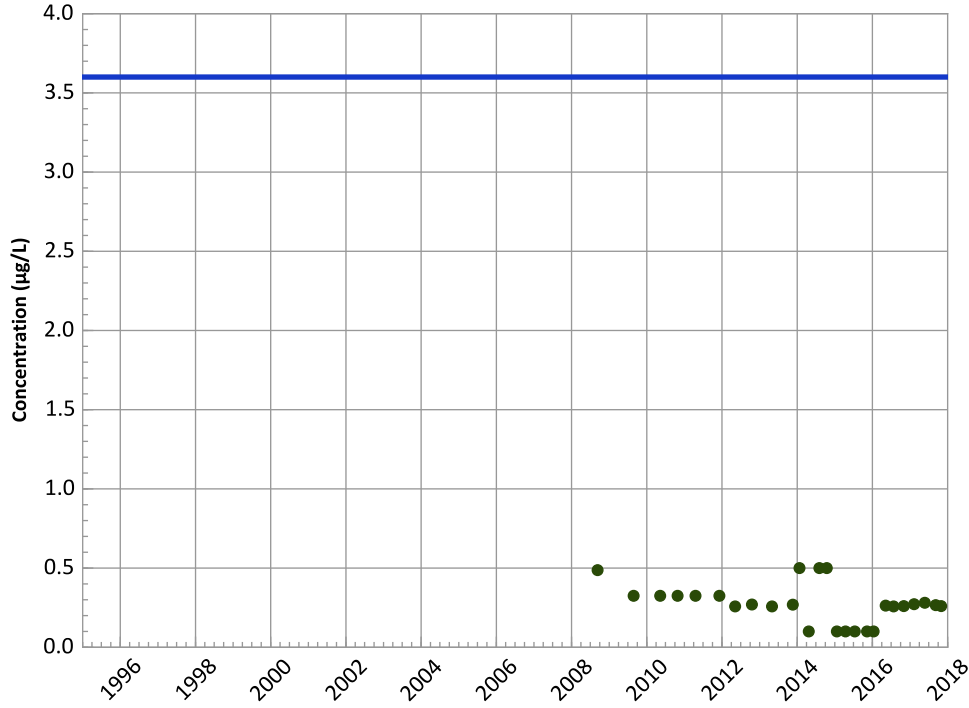


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/30/2008 to 10/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1148 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

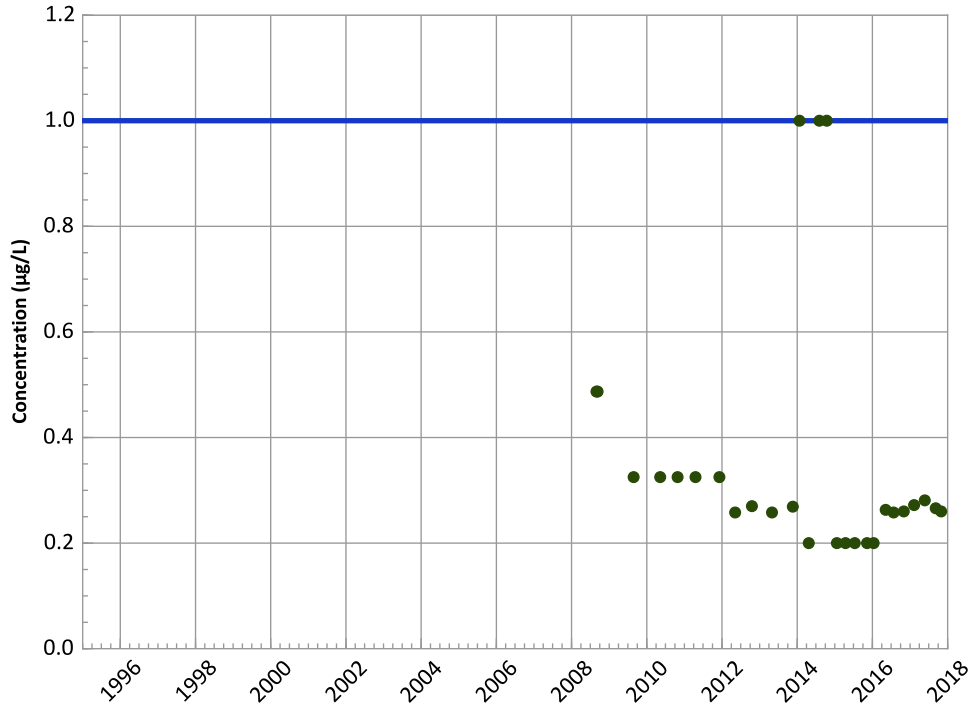
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

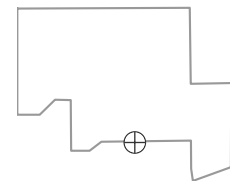
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

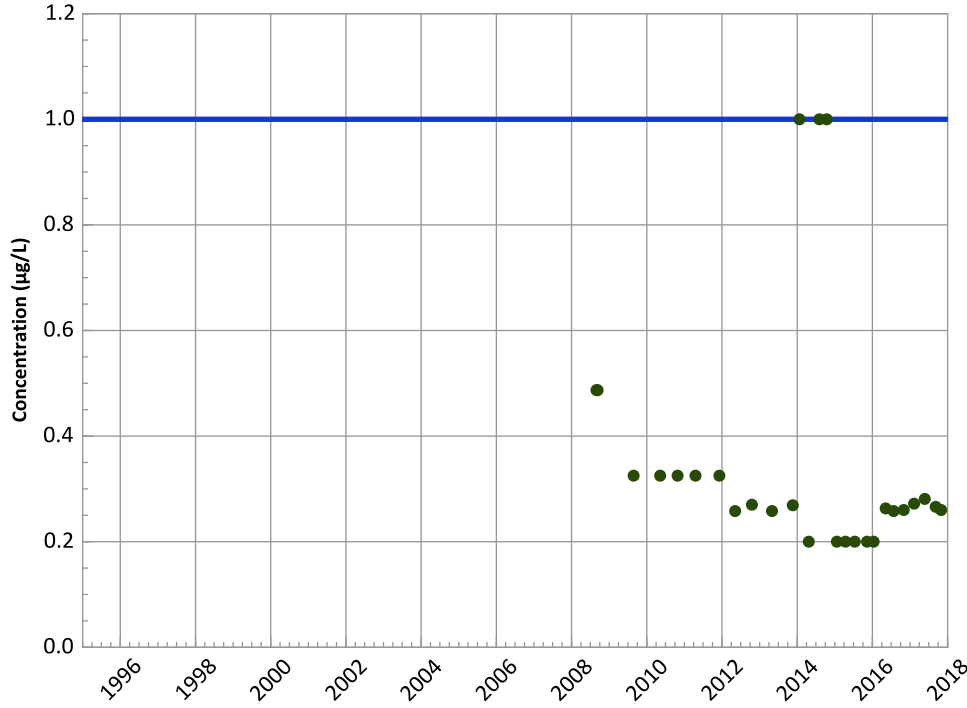


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/30/2008 to 10/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1148 in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

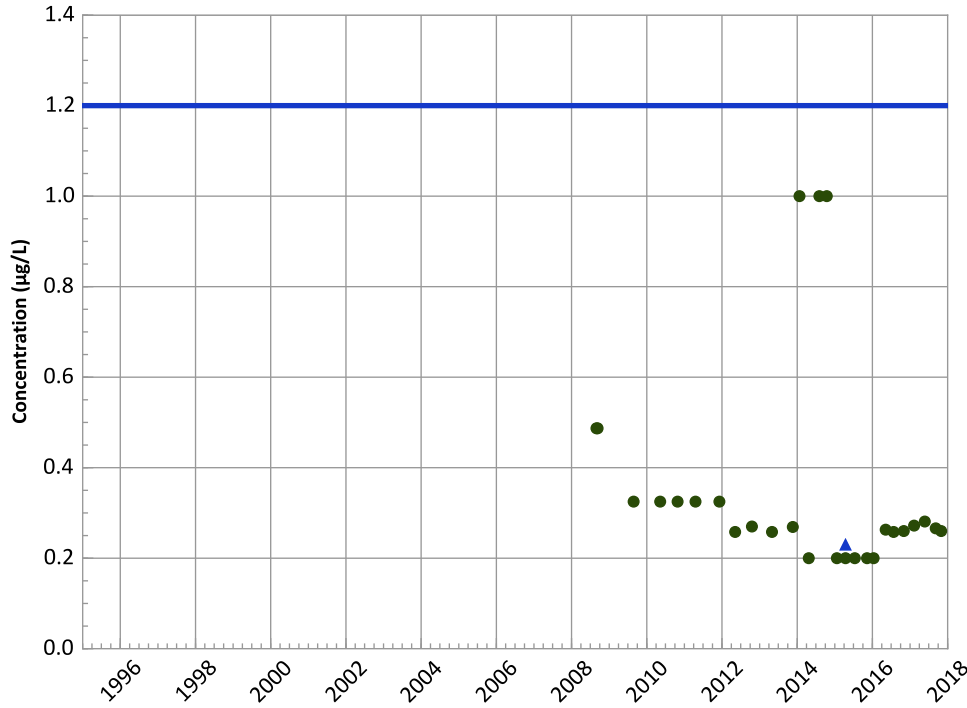
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

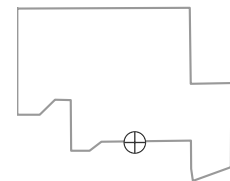
MAROS Mann-Kendall Method

Data ():
N/A (<4 Detections in Dataset)
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
N/A (<4 Detections in Dataset)

Well Location

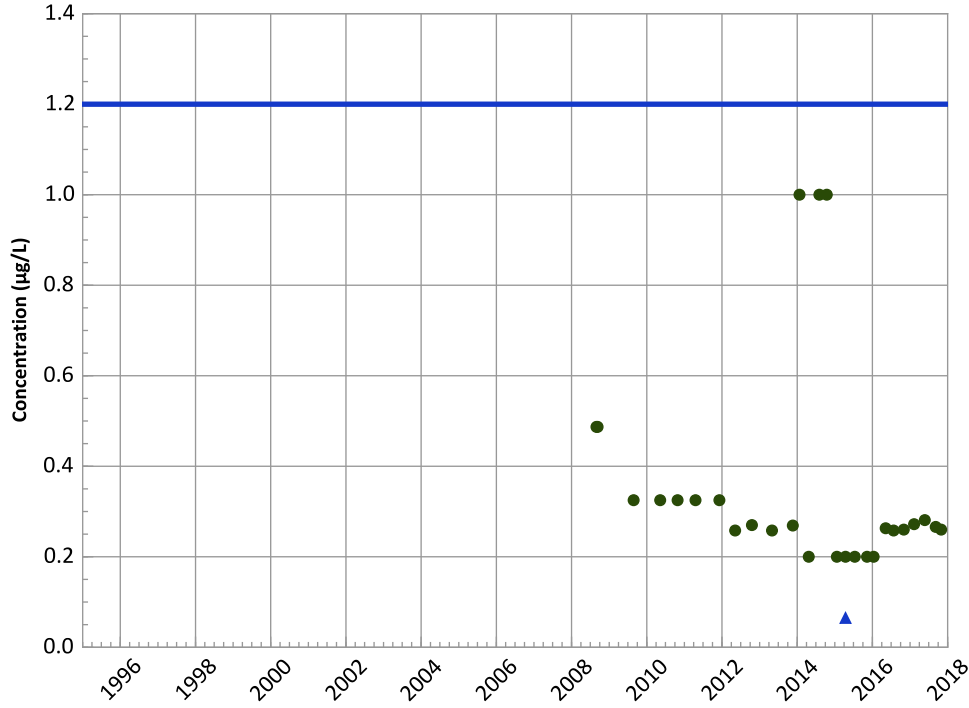


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/30/2008 to 10/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1148 in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

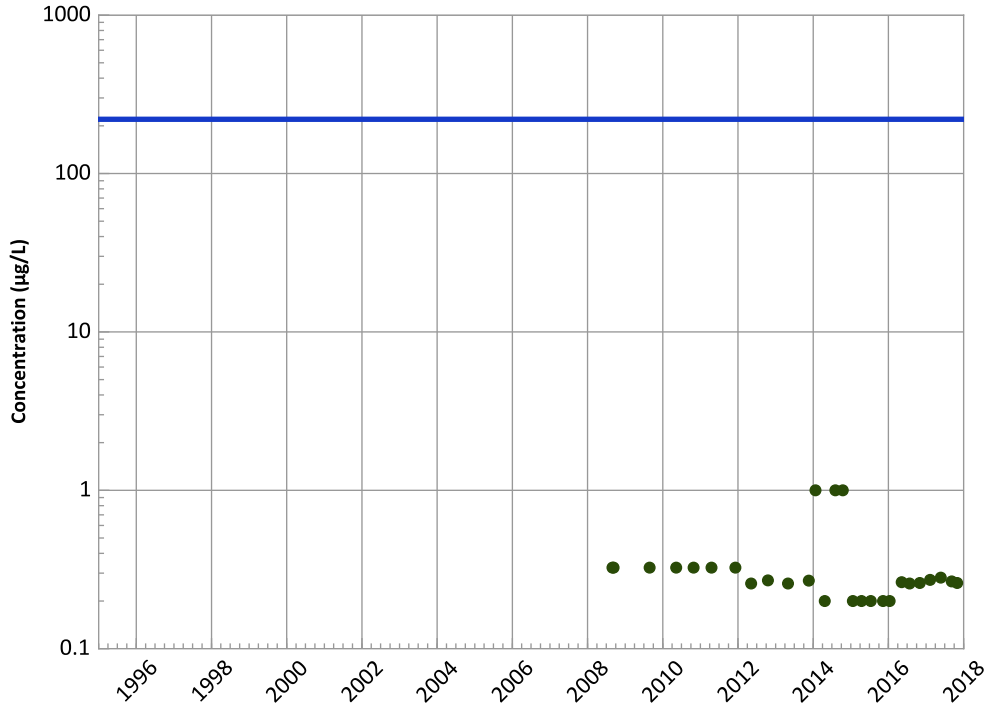
Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

1,3,5-Trinitrobenzene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

All Non-Detect

All Data

All Non-Detect

MAROS Linear Regression Method

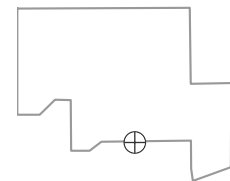
Data ():

All Non-Detect

All Data

All Non-Detect

Well Location

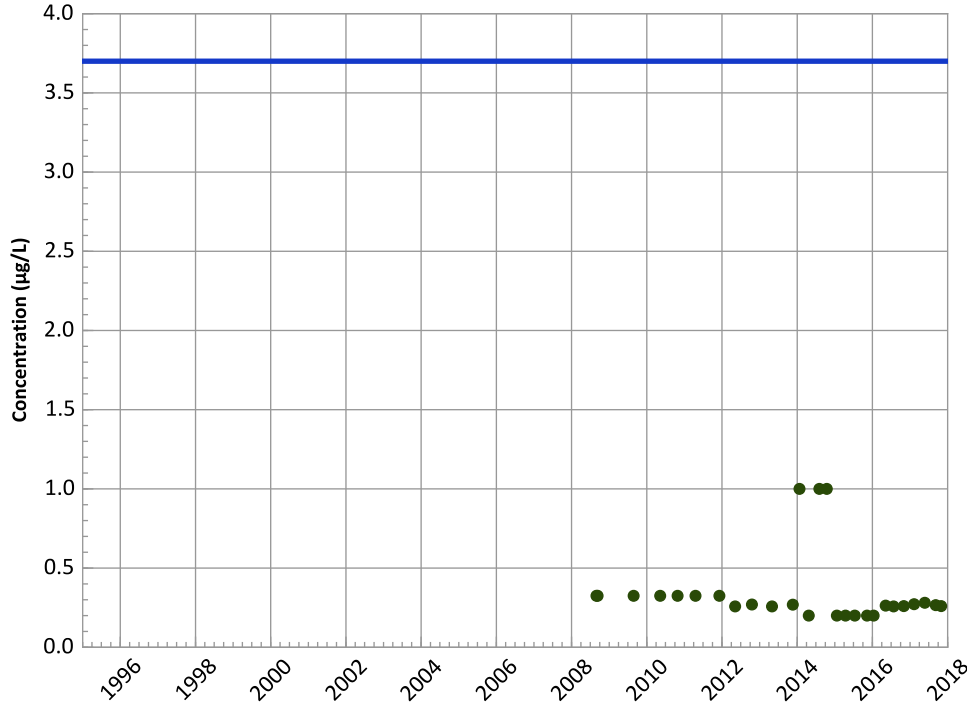


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/30/2008 to 10/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1148 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

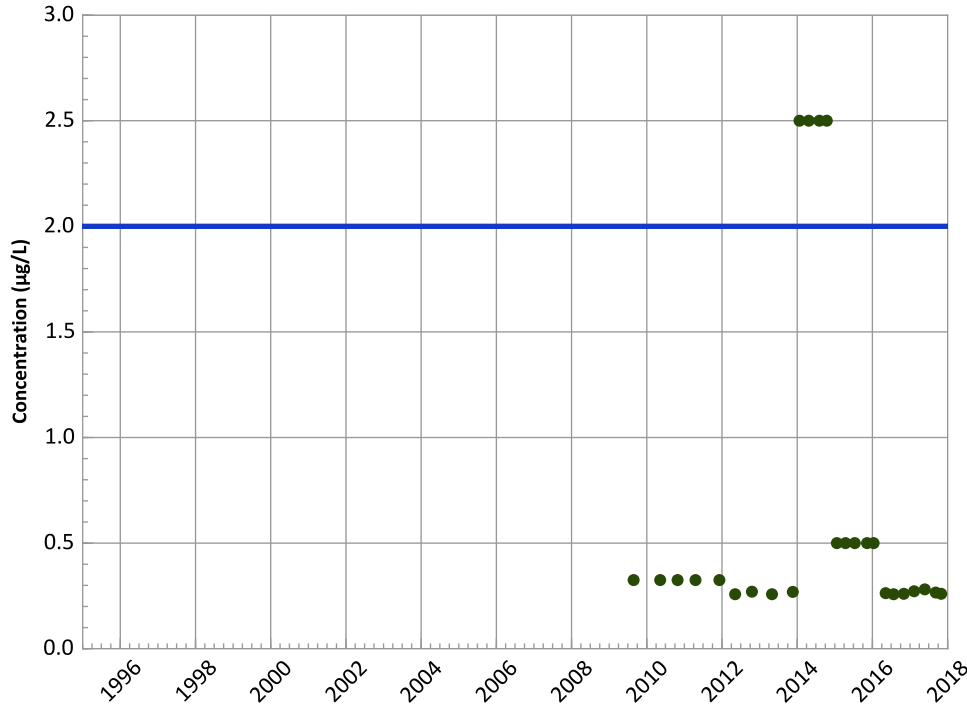
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Hexahydro-1-Nitroso-3,5-Dinitro-1,3,5-Triazine (MNX) Trend



Concentration Trend

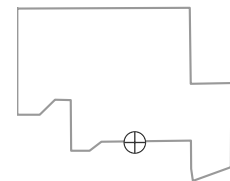
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

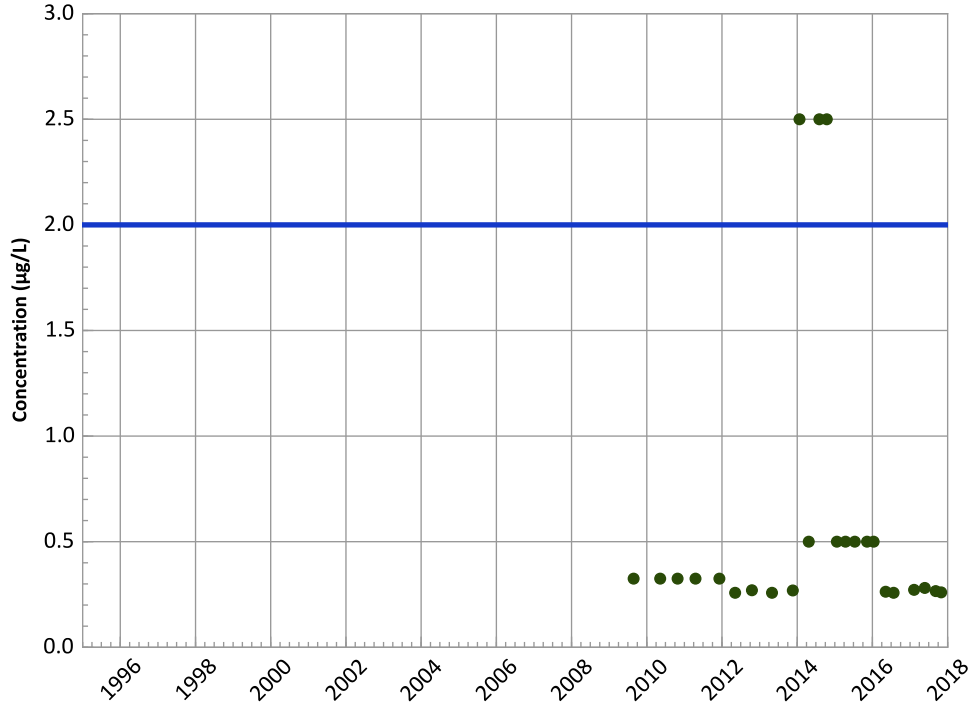


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/30/2008 to 10/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1148 in Perched Aquifer
USDOE/NNSA Pantex Plant

Hexahydro-1,3-Dinitroso-5-Nitro-1,3,5-Triazine (DNX) Trend



Concentration Trend

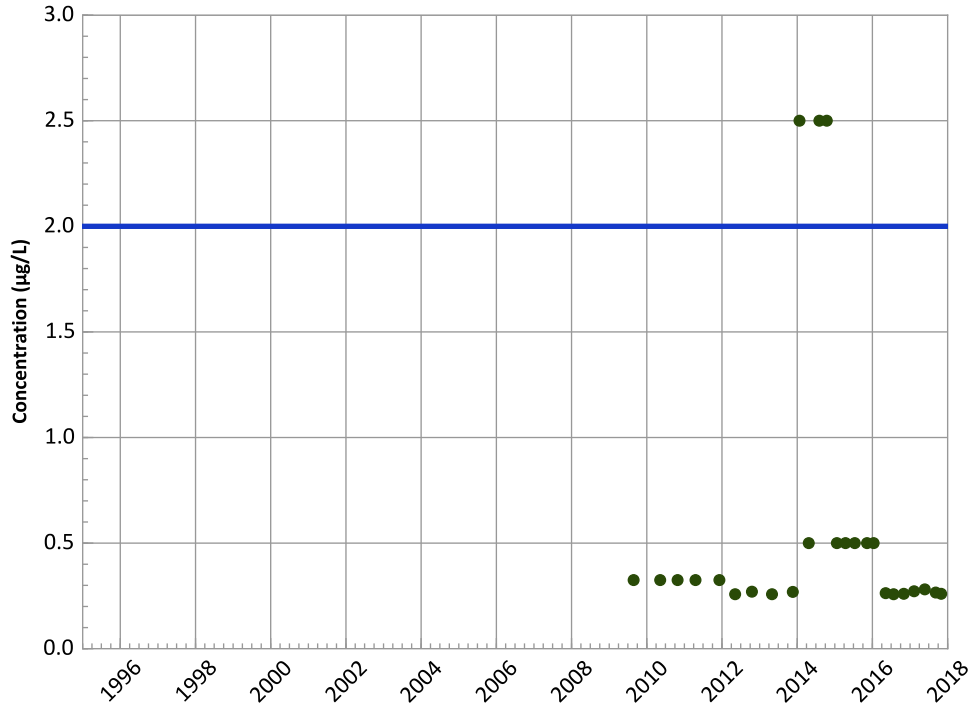
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Hexahydro-1,3,5-Trinitroso-1,3,5-Triazine (TNX) Trend



Concentration Trend

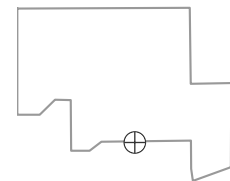
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

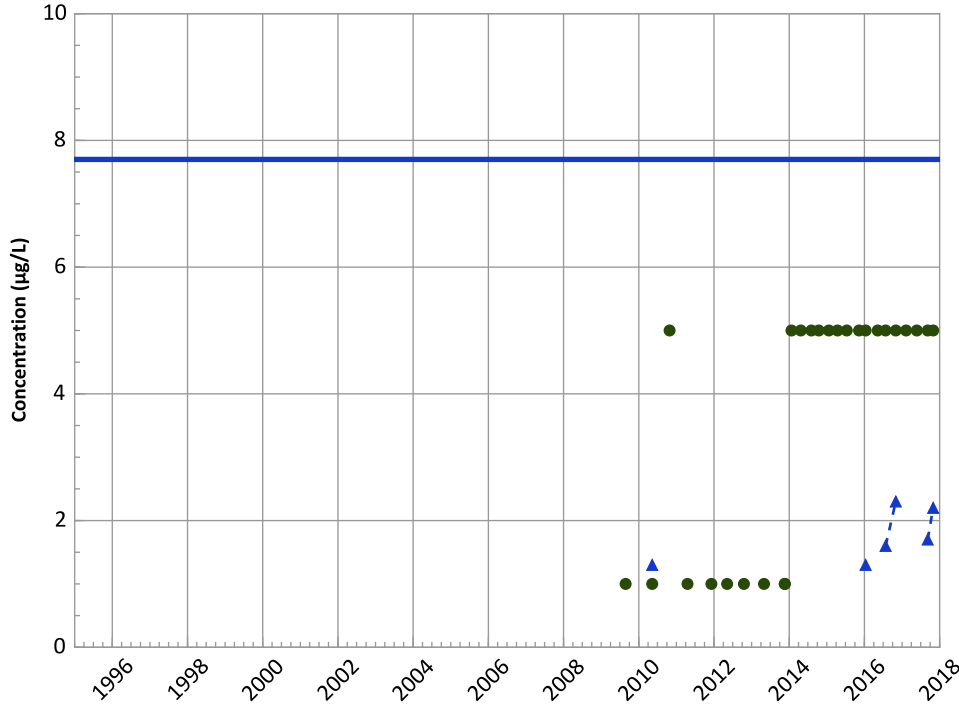


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/30/2008 to 10/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1148 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,4-Dioxane (p-Dioxane) Trend

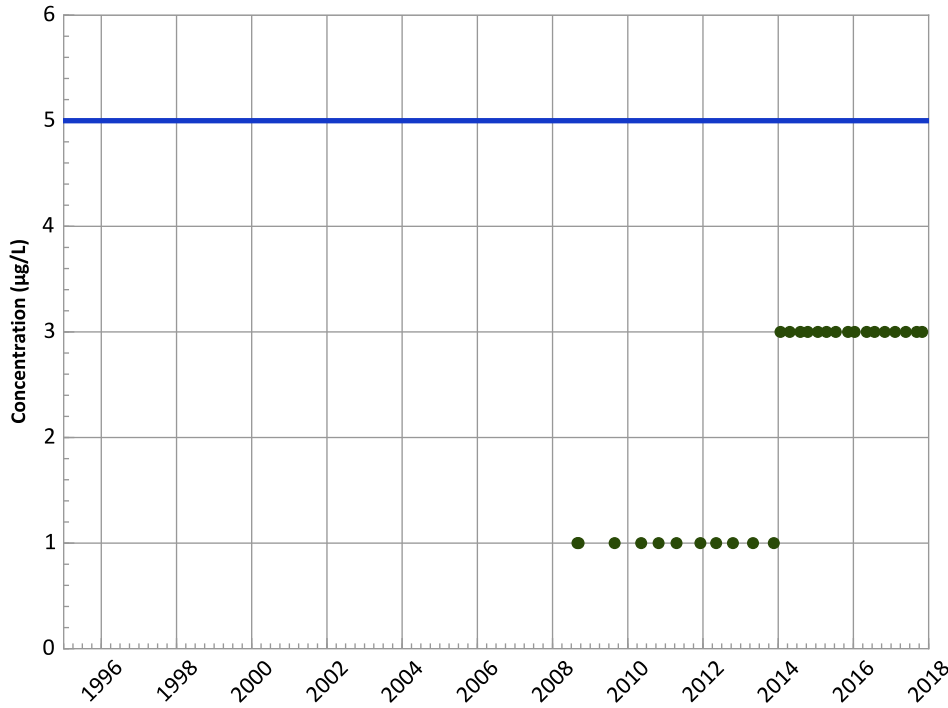


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Detections in Dataset)
All Data
Increasing

MAROS Linear Regression Method
Data ():
N/A (<4 Detections in Dataset)
All Data
Probably Increasing

Tetrachloroethylene (PCE) Trend

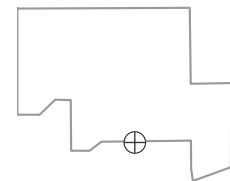


Concentration Trend

MAROS Mann-Kendall Method
Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method
Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

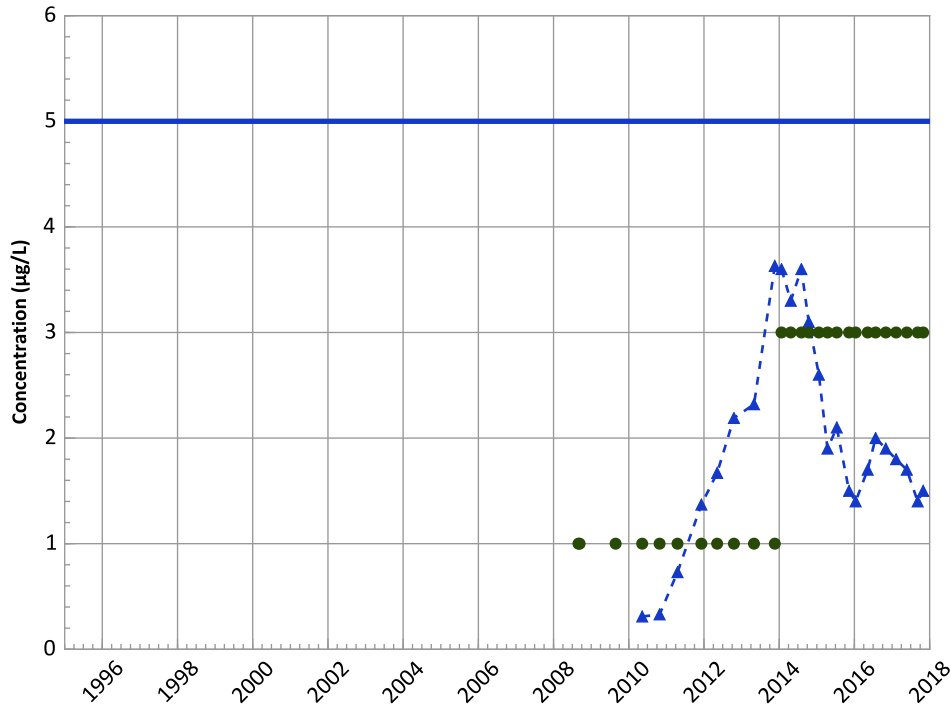


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/30/2008 to 10/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1148 in Perched Aquifer
USDOE/NNSA Pantex Plant

Trichloroethene Trend



Concentration Trend

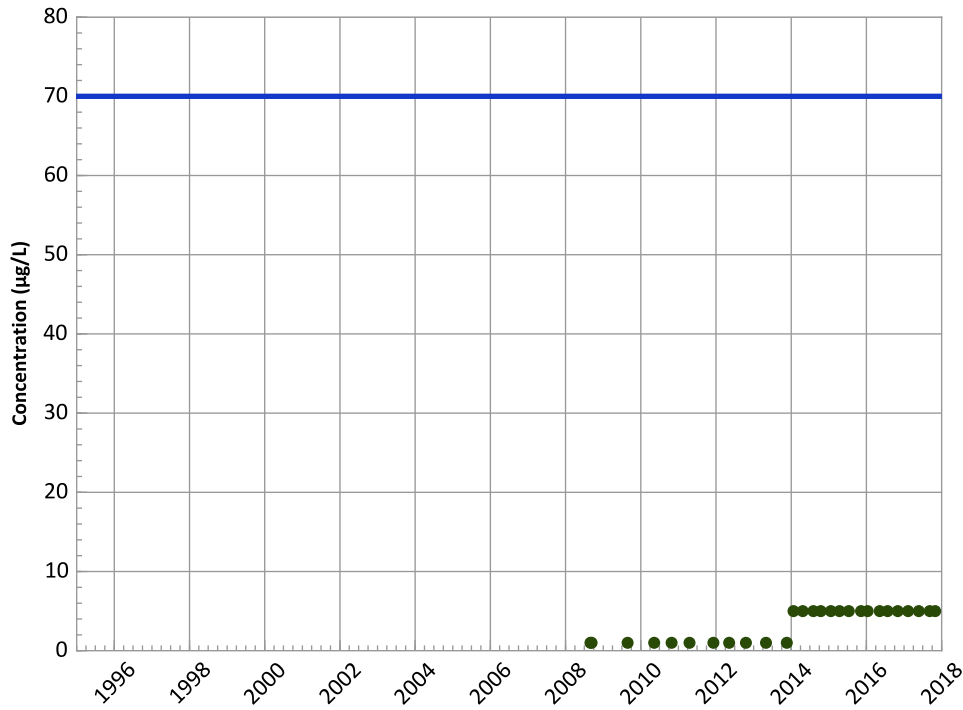
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
No Trend

MAROS Linear Regression Method

Data ():
Probably Decreasing
All Data
Increasing

cis-1,2-Dichloroethene Trend



Concentration Trend

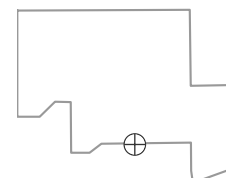
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

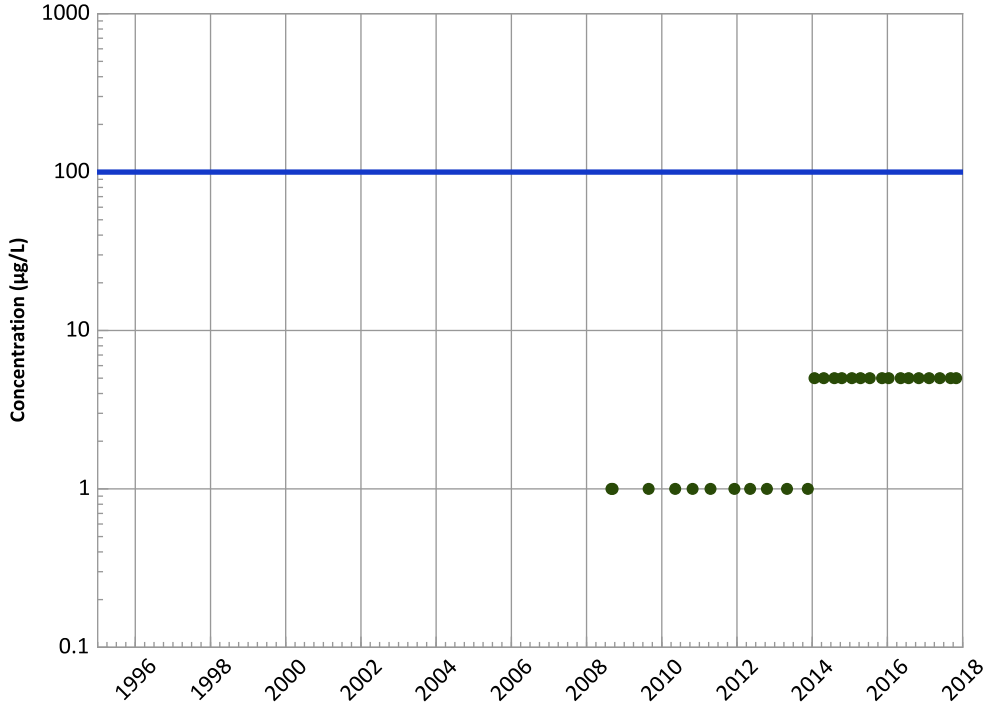


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/30/2008 to 10/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1148 in Perched Aquifer
USDOE/NNSA Pantex Plant

trans-1,2-Dichloroethene Trend



Concentration Trend

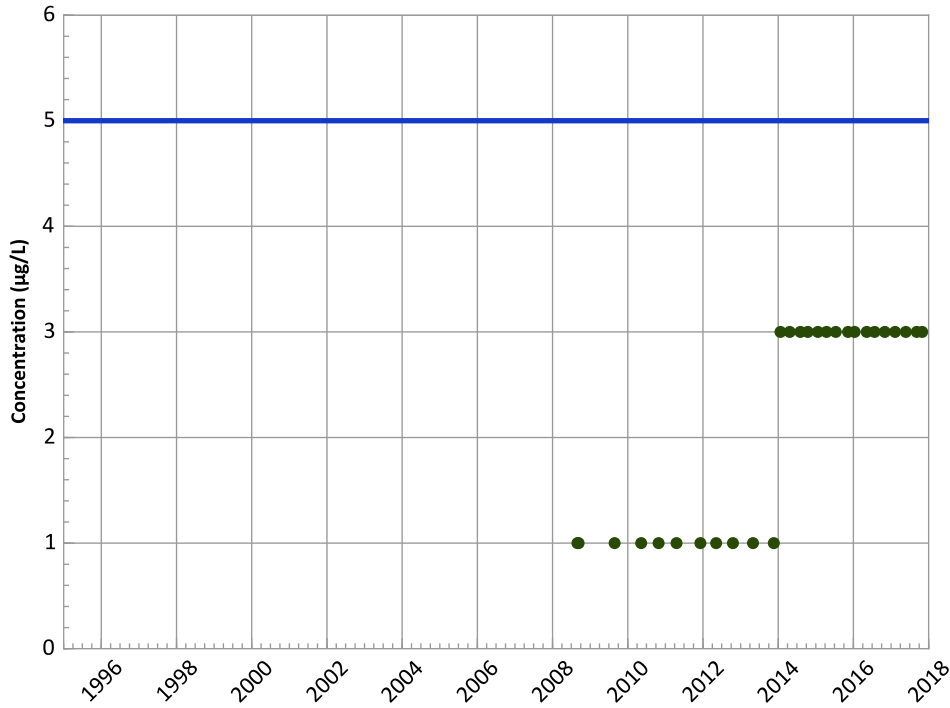
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,2-Dichloroethane Trend



Concentration Trend

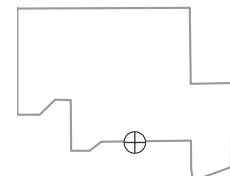
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

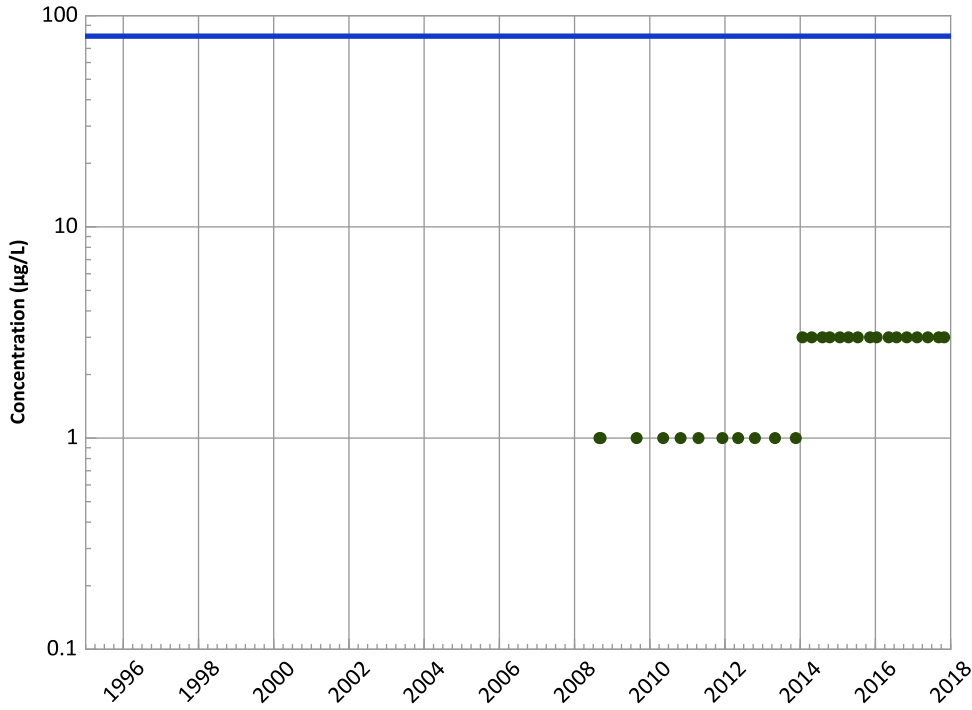
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/30/2008 to 10/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1148 in Perched Aquifer
USDOE/NNSA Pantex Plant
Chloroform Trend**



Concentration Trend

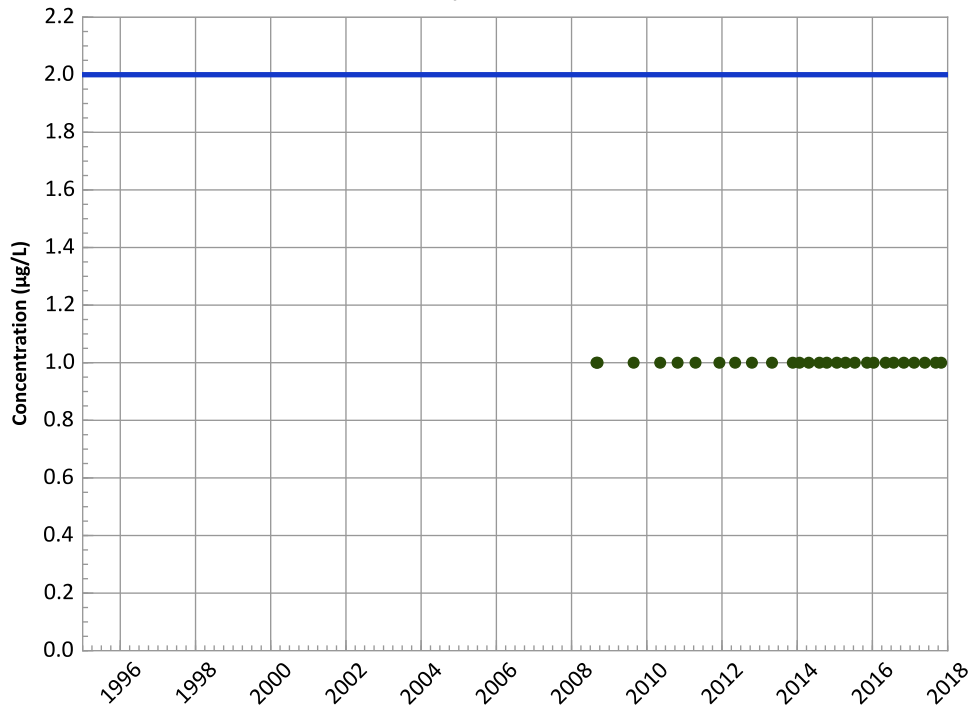
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Vinyl Chloride Trend



Concentration Trend

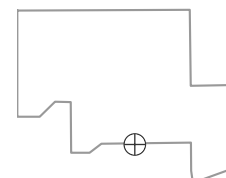
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

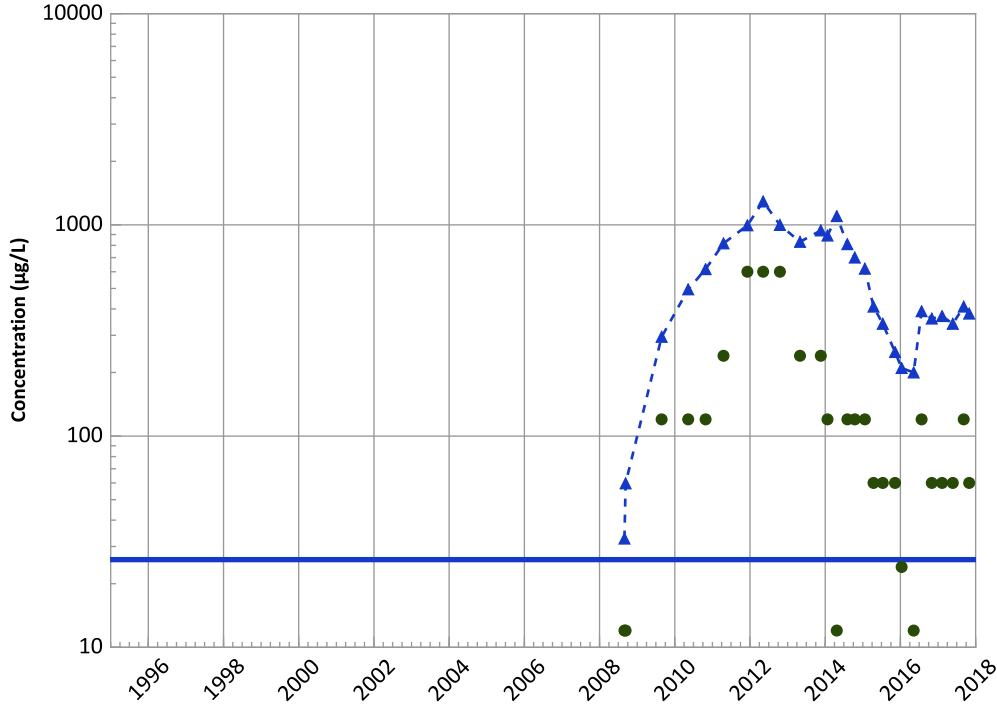


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/30/2008 to 10/30/2017
Analysis Date: 03/21/2018

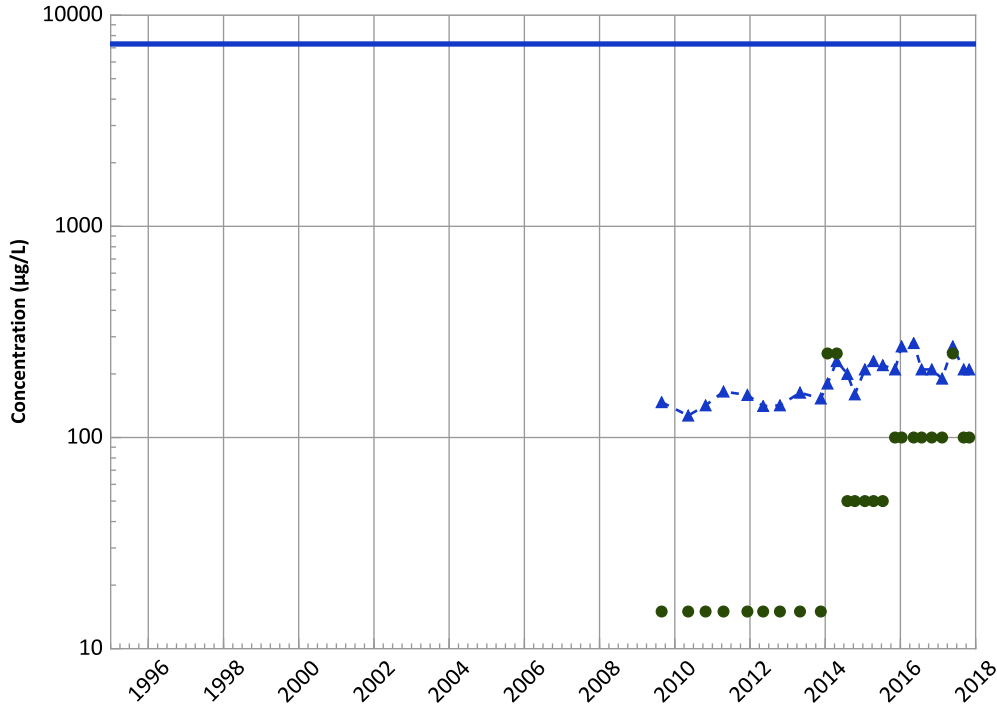
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1148 in Perched Aquifer
USDOE/NNSA Pantex Plant

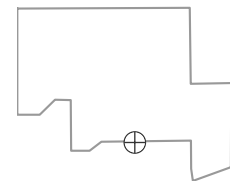
Perchlorate Trend



Boron Trend



Well Location

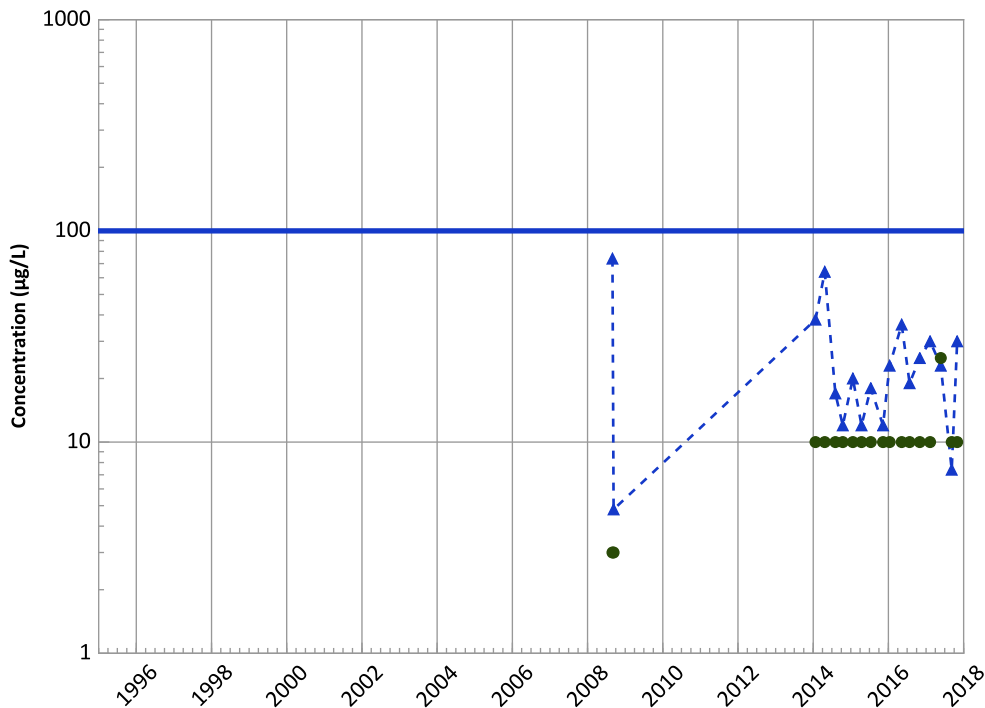


Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 08/30/2008 to 10/30/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1148 in Perched Aquifer
USDOE/NNSA Pantex Plant

Chromium, Total Trend



Concentration Trend

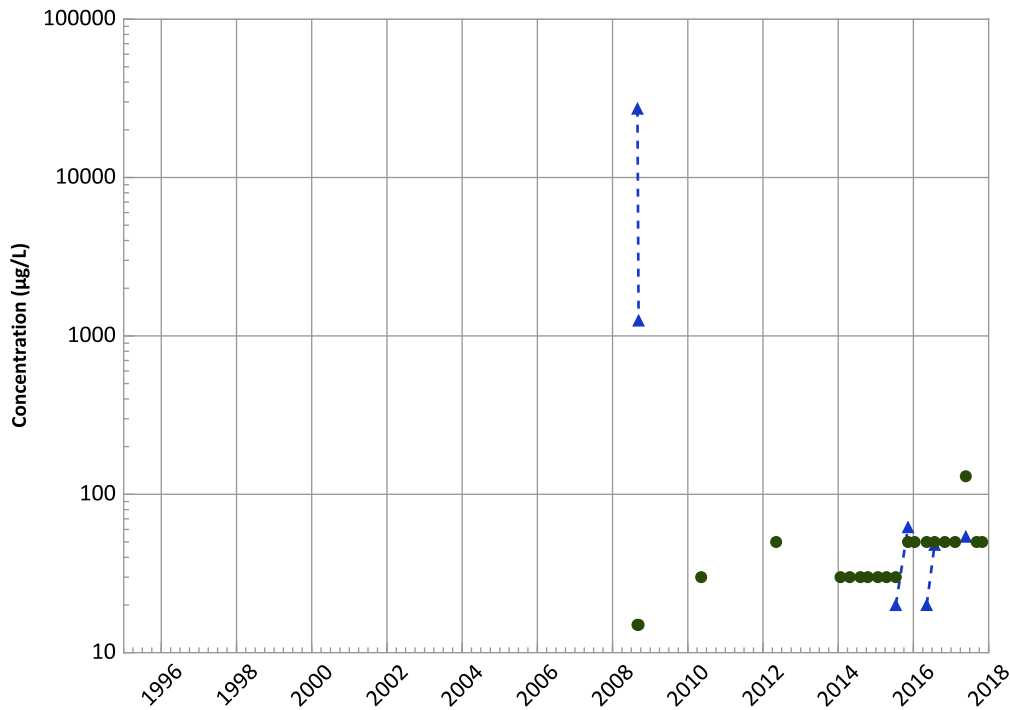
MAROS Mann-Kendall Method

Data ():
No Trend
All Data
No Trend

MAROS Linear Regression Method

Data ():
Stable
All Data
Decreasing

Aluminum Trend



Concentration Trend

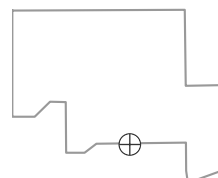
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
No Trend

MAROS Linear Regression Method

Data ():
No Trend
All Data
Decreasing

Well Location

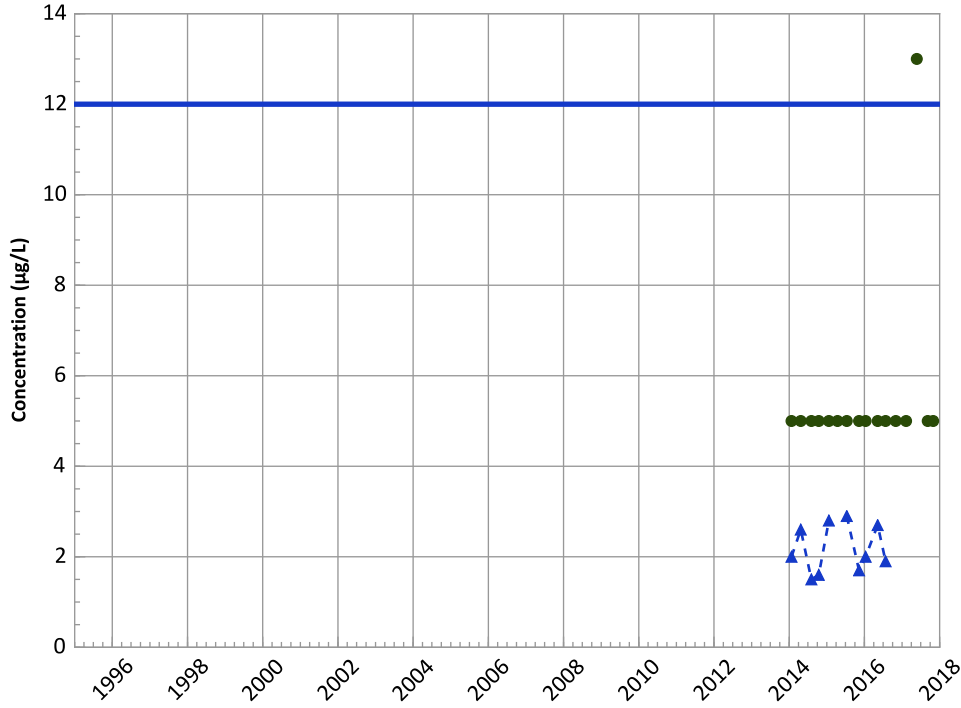


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/30/2008 to 10/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1148 in Perched Aquifer
USDOE/NNSA Pantex Plant

Arsenic Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

No Trend

All Data

No Trend

MAROS Linear Regression Method

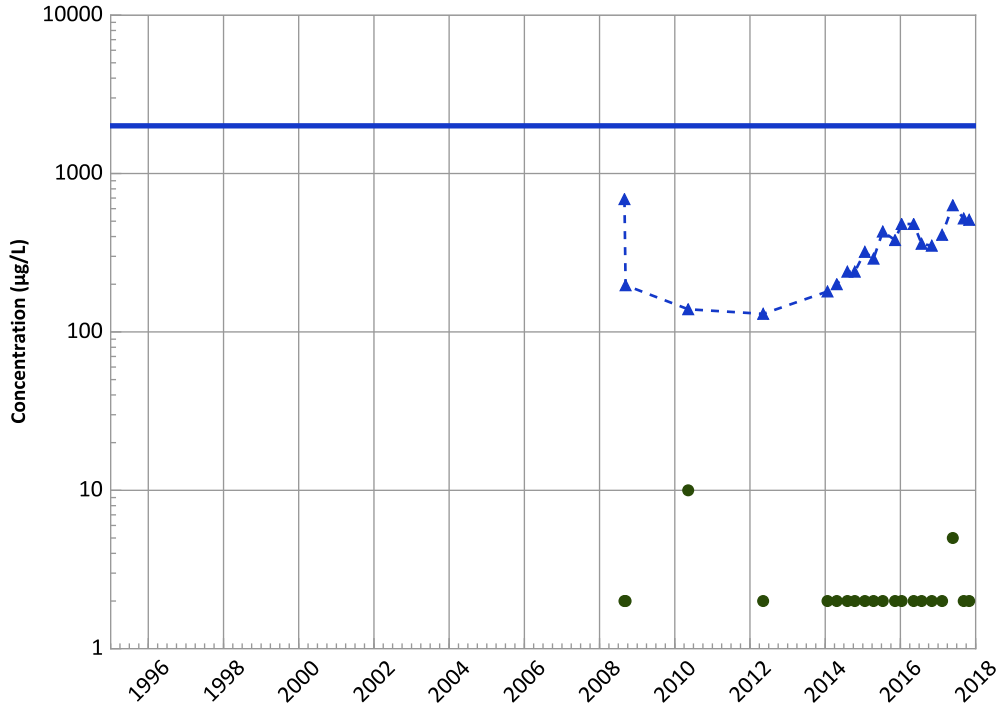
Data ():

No Trend

All Data

No Trend

Barium Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

Increasing

All Data

Increasing

MAROS Linear Regression Method

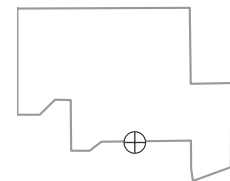
Data ():

Increasing

All Data

Increasing

Well Location

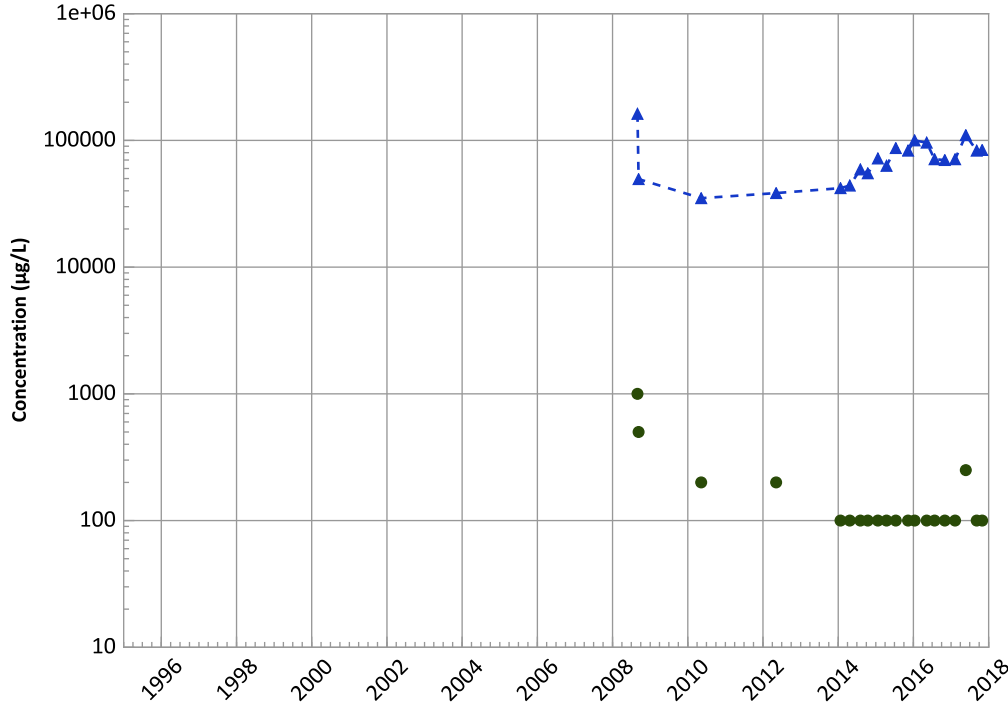


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/30/2008 to 10/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1148 in Perched Aquifer
USDOE/NNSA Pantex Plant

Calcium Trend



Concentration Trend

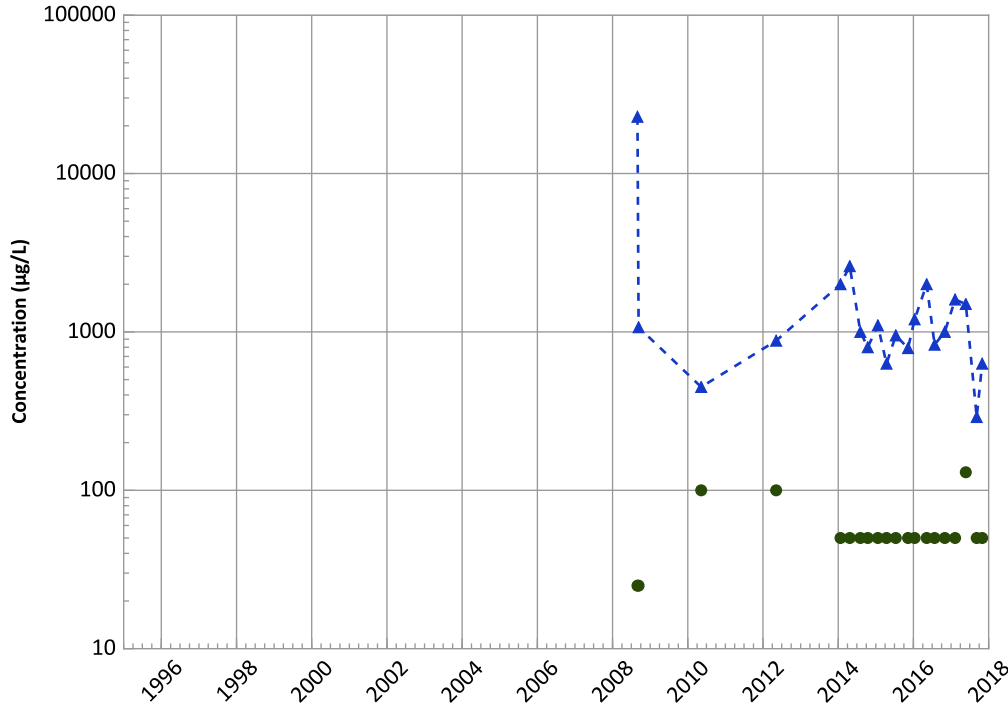
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
No Trend

Iron Trend



Concentration Trend

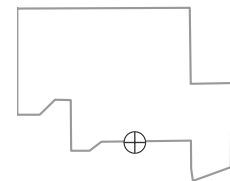
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Stable
All Data
Decreasing

Well Location

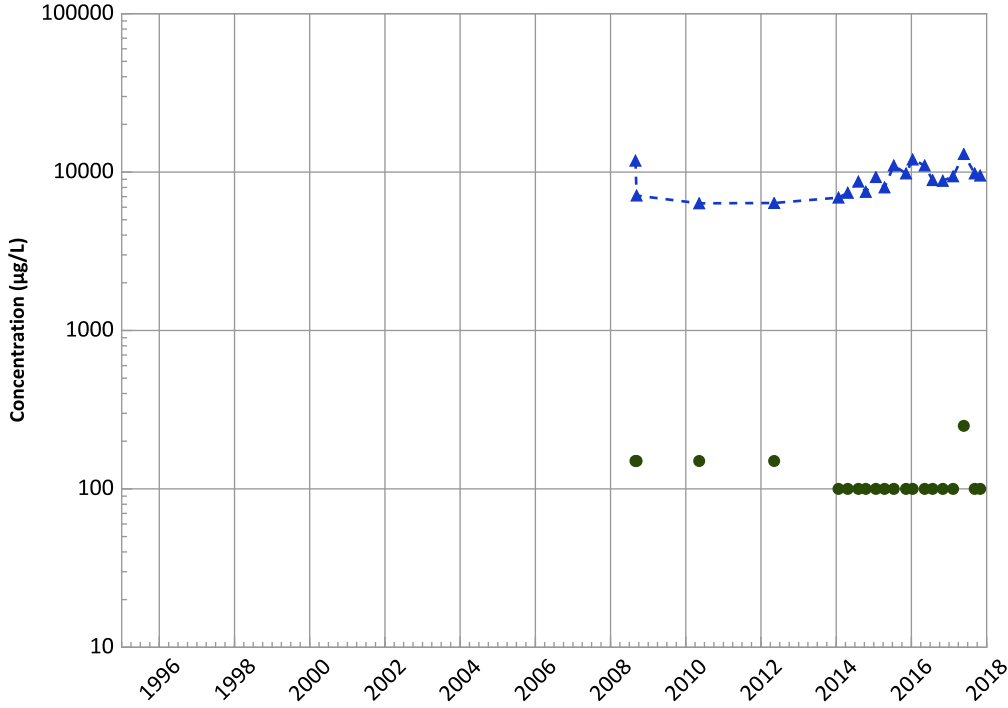


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/30/2008 to 10/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1148 in Perched Aquifer
USDOE/NNSA Pantex Plant

Potassium Trend



Concentration Trend

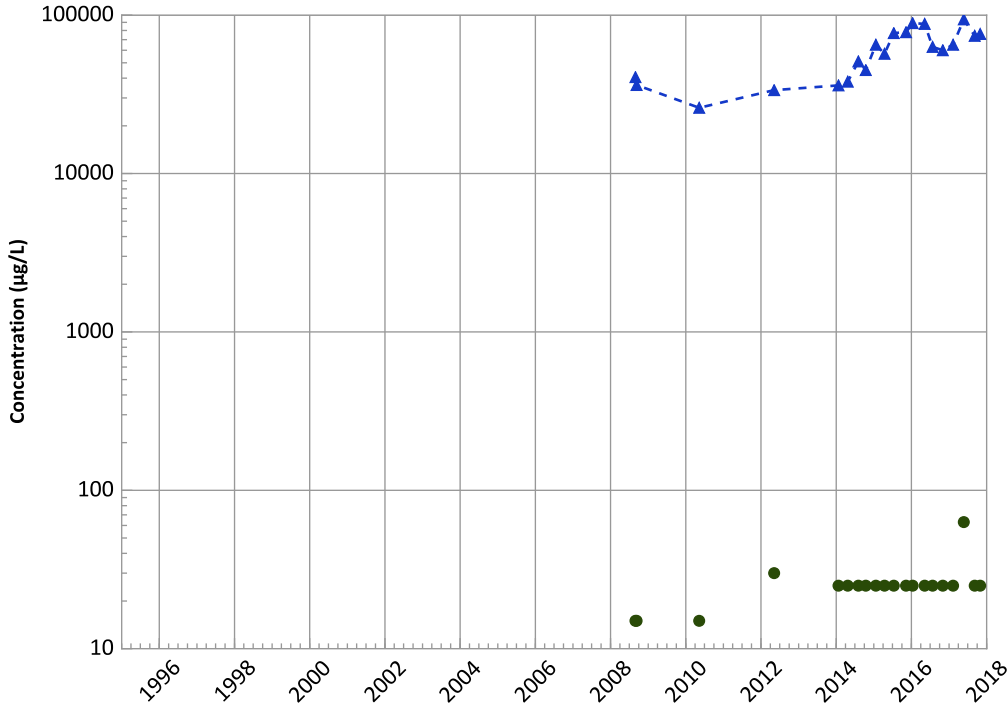
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

Magnesium Trend



Concentration Trend

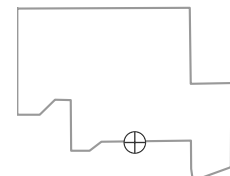
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

Well Location

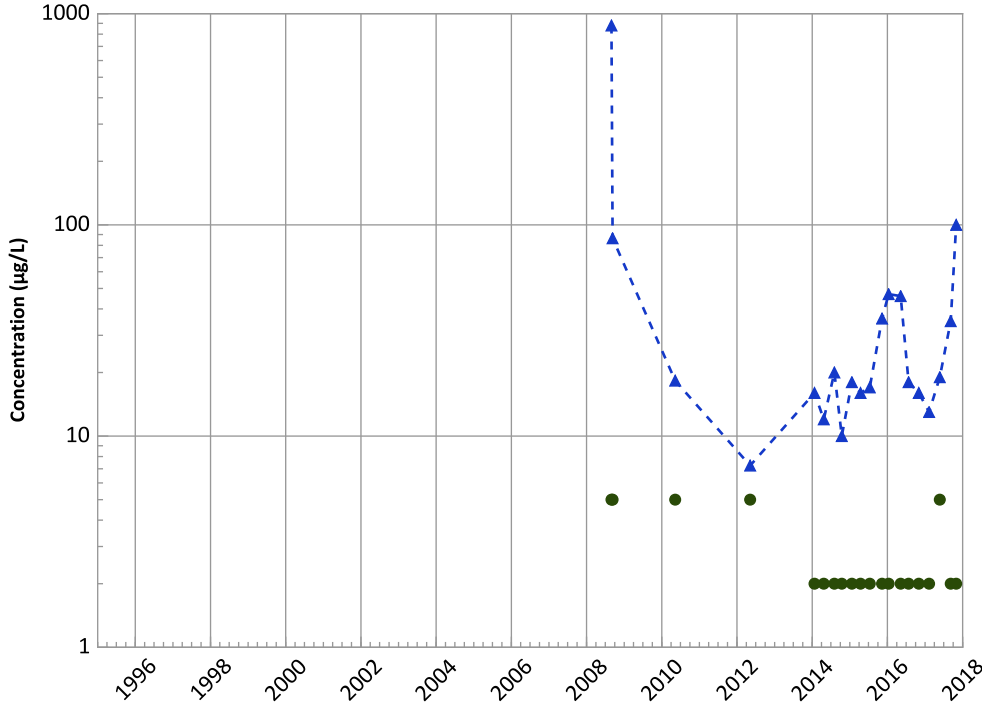


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/30/2008 to 10/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1148 in Perched Aquifer
USDOE/NNSA Pantex Plant

Manganese Trend



Concentration Trend

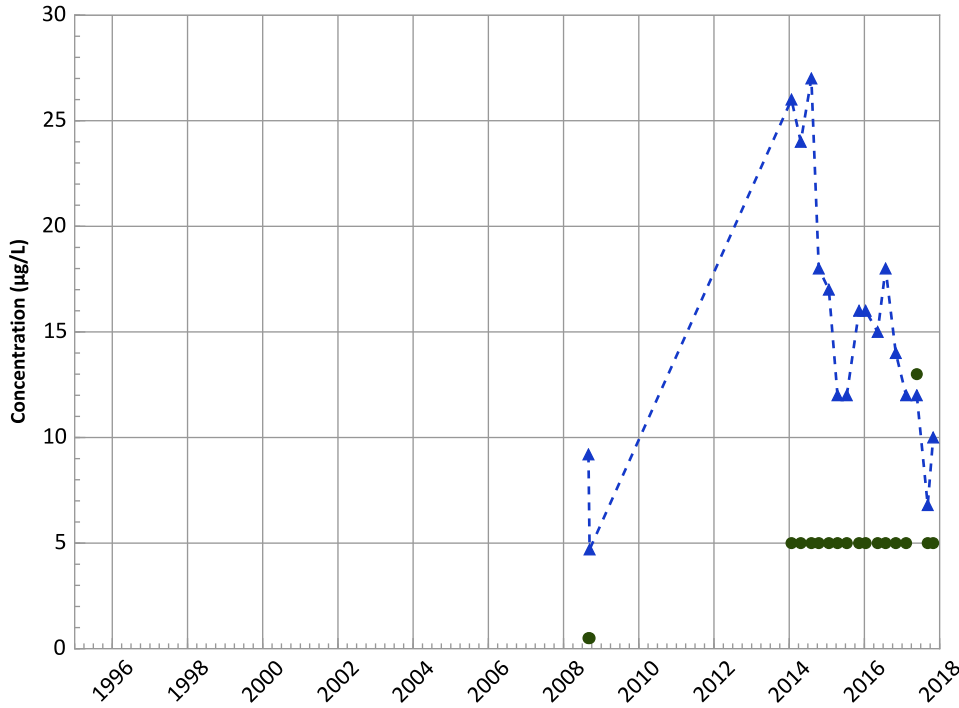
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
No Trend

MAROS Linear Regression Method

Data ():
Increasing
All Data
Decreasing

Molybdenum Trend



Concentration Trend

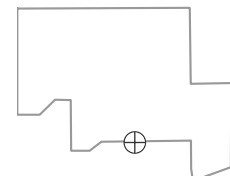
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
No Trend

Well Location

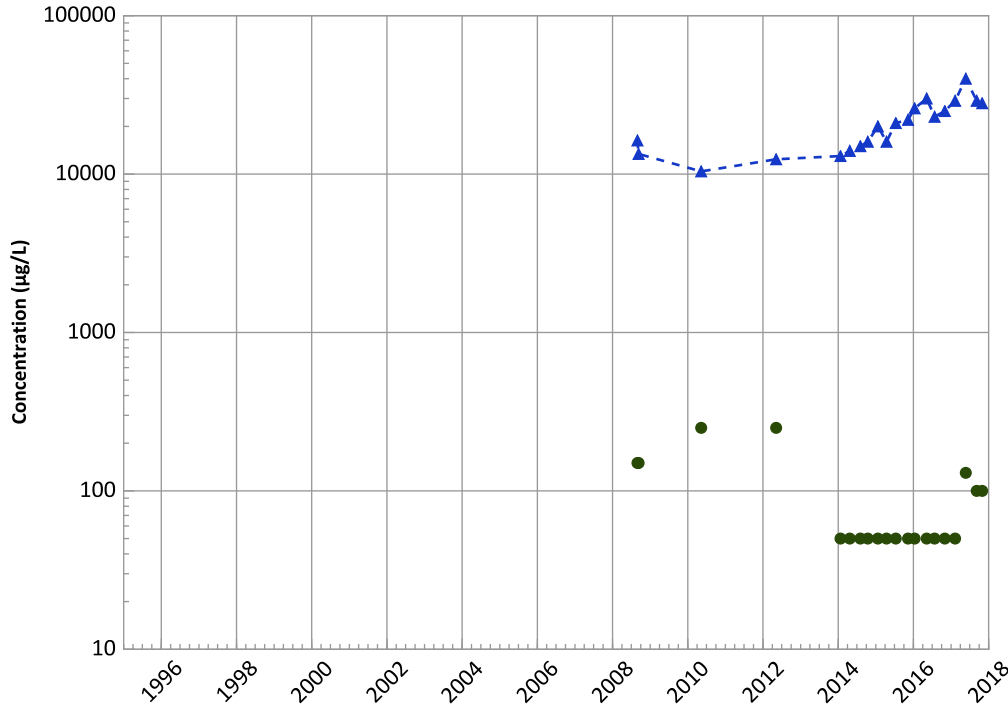


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/30/2008 to 10/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1148 in Perched Aquifer
USDOE/NNSA Pantex Plant

Sodium Trend



Concentration Trend

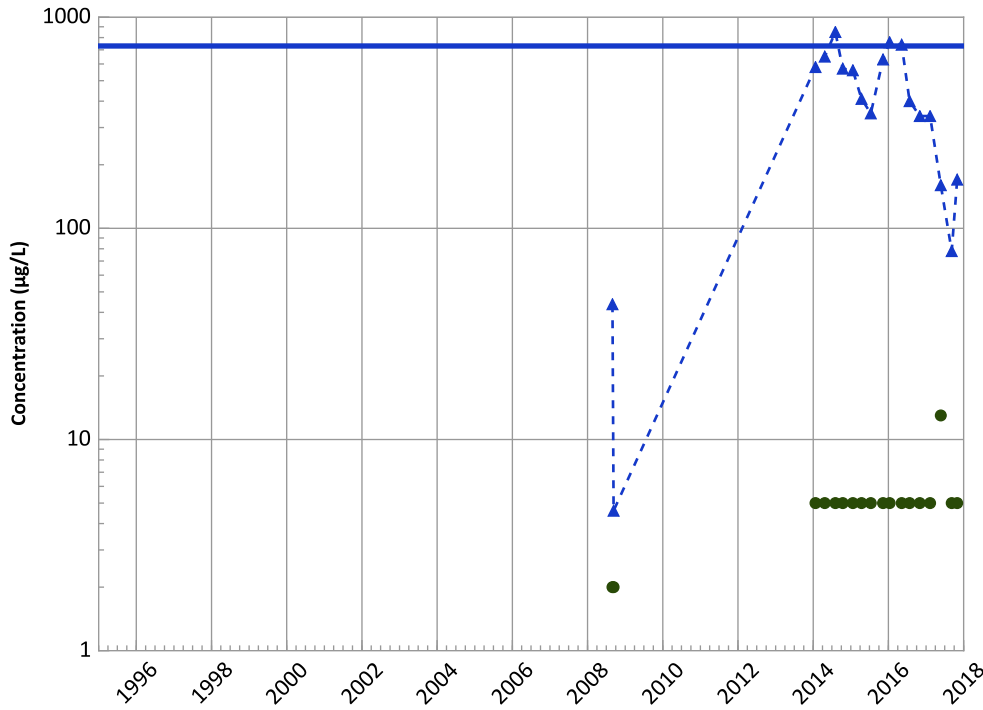
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

Nickel Trend



Concentration Trend

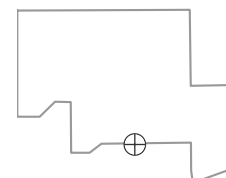
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Stable
All Data
Increasing

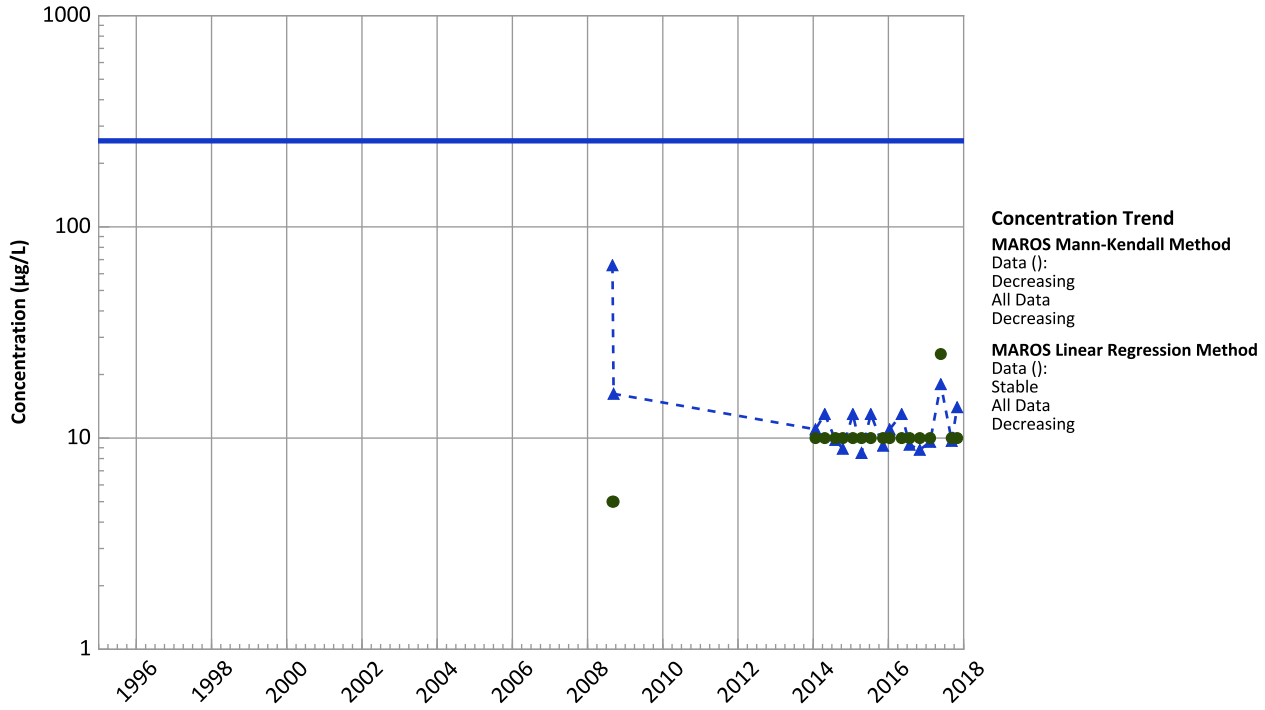
Well Location



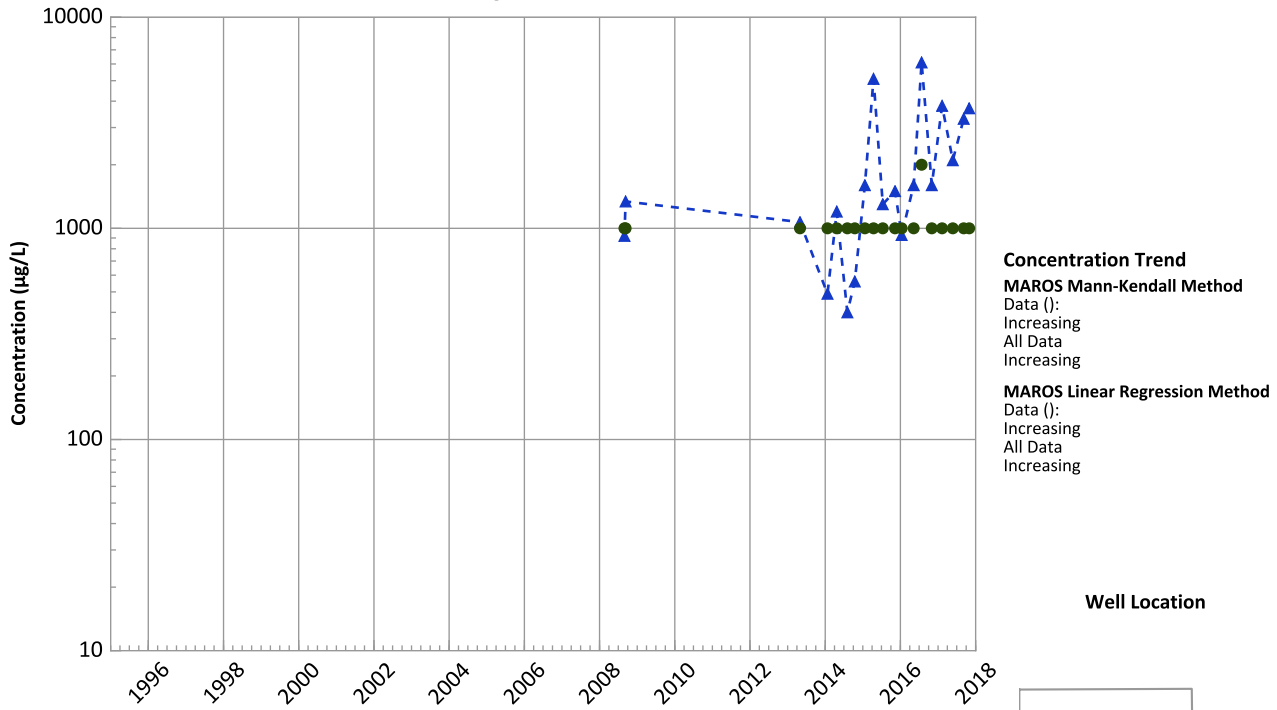
Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/30/2008 to 10/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

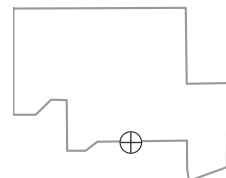
PTX06-1148 in Perched Aquifer
 USDOE/NNSA Pantex Plant
 Vanadium Trend



Total Organic Carbon Trend



Well Location

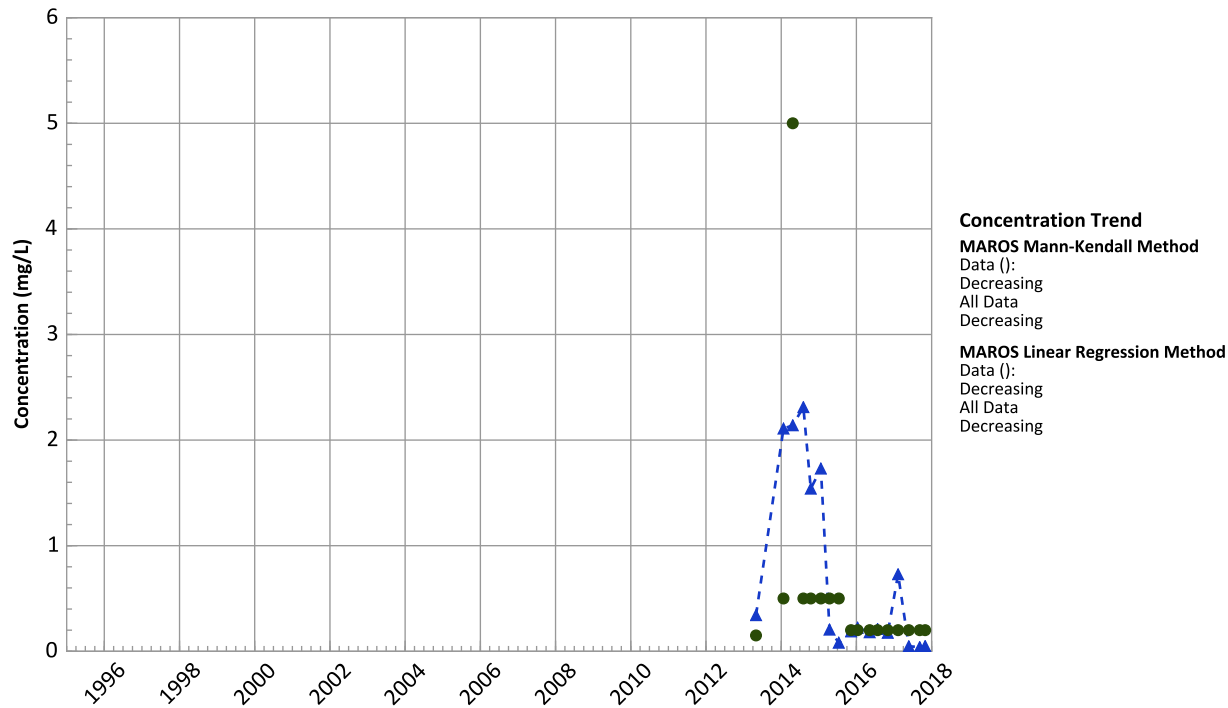


Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 08/30/2008 to 10/30/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1148 in Perched Aquifer
USDOE/NNSA Pantex Plant**

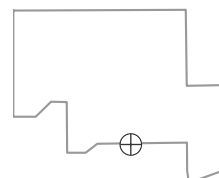
Total Volatile Fatty Acids Trend



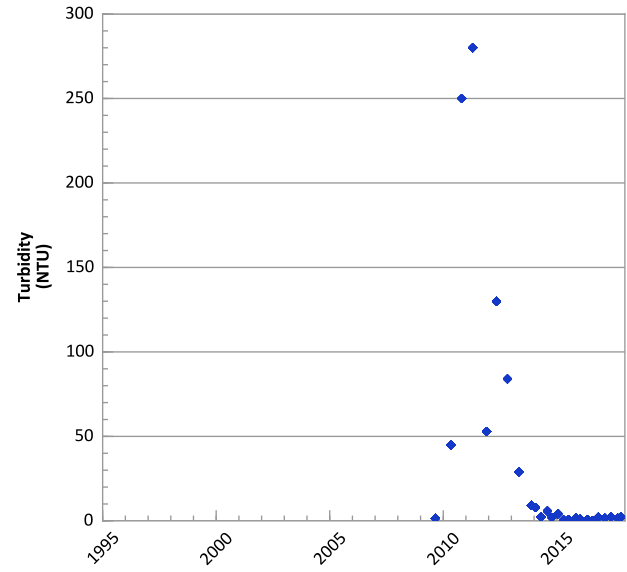
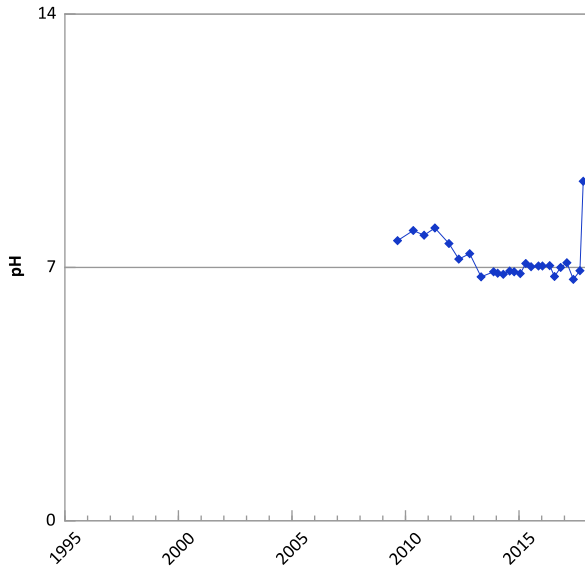
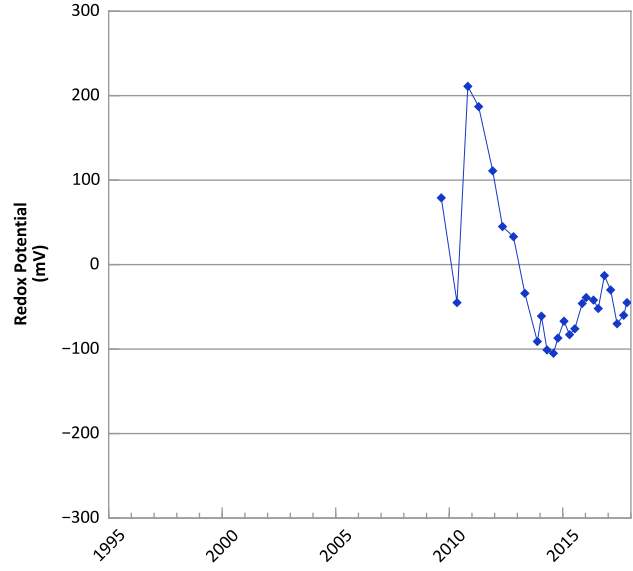
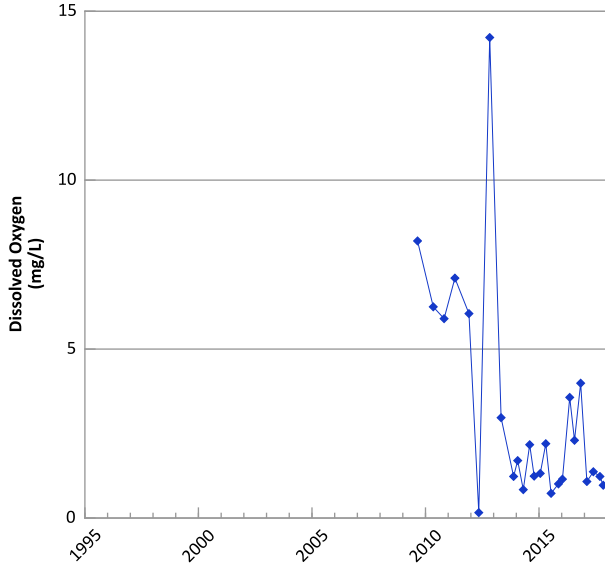
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 08/30/2008 to 10/30/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

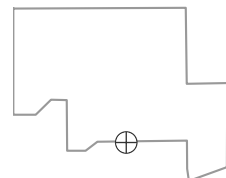


**PTX06-1149 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



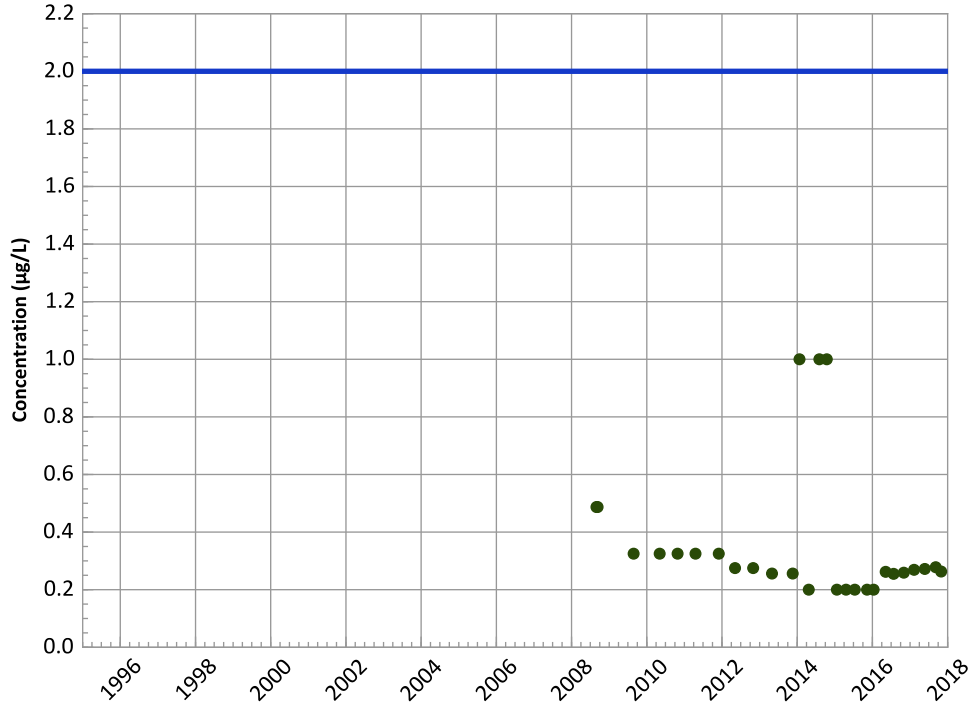
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 08/30/2008 to 10/30/2017
 Analysis Date: 03/21/2018

Well Location



PTX06-1149 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

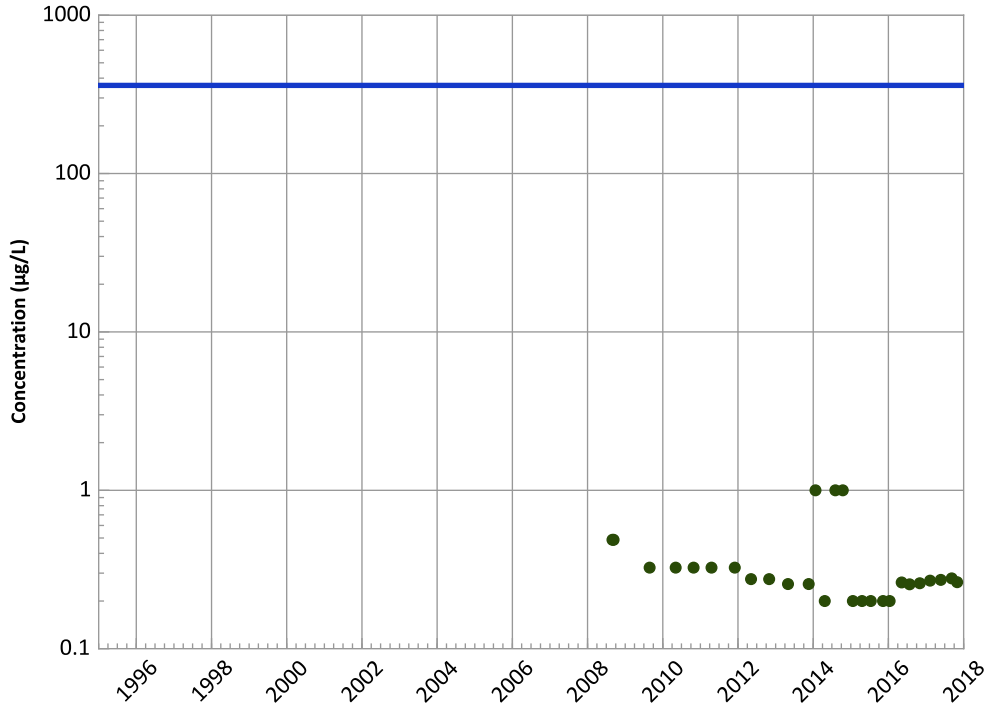
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

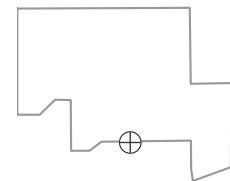
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

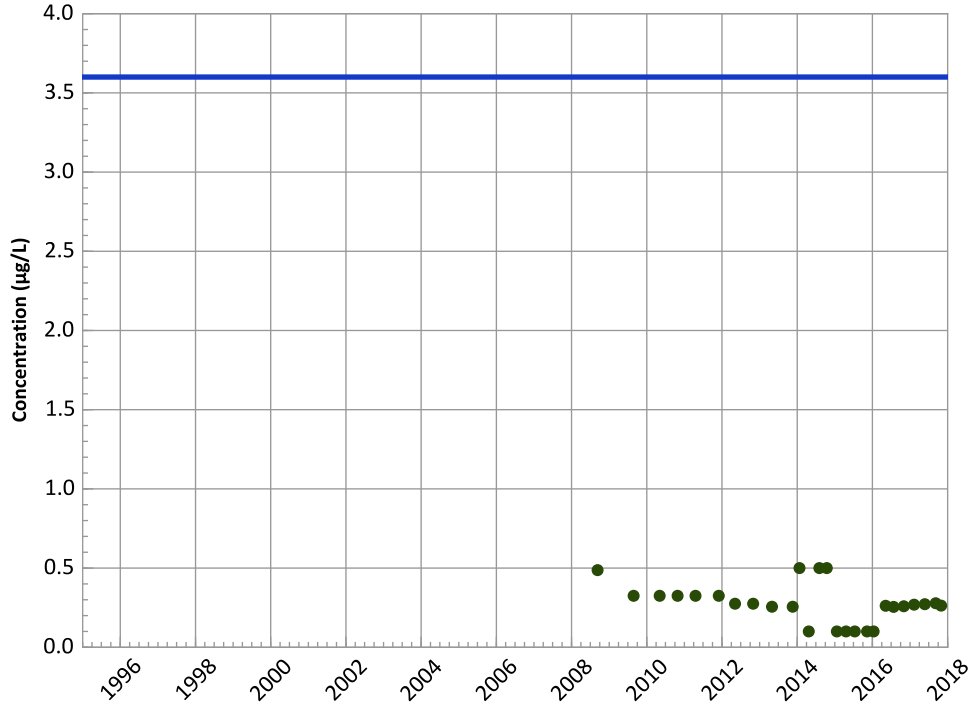


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/30/2008 to 10/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1149 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

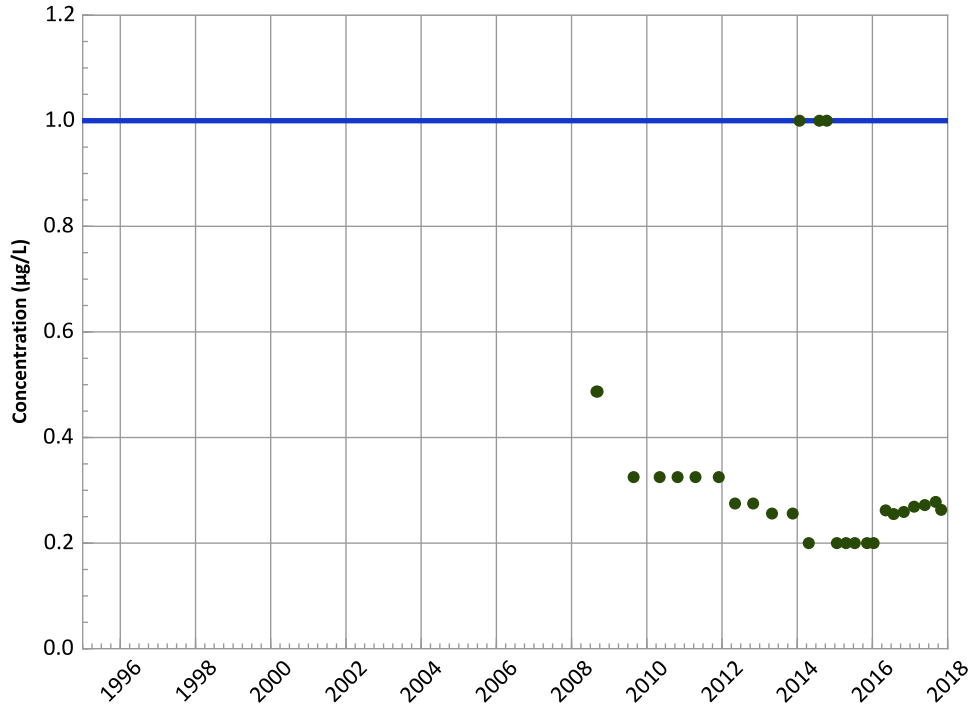
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

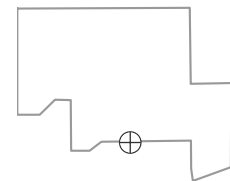
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

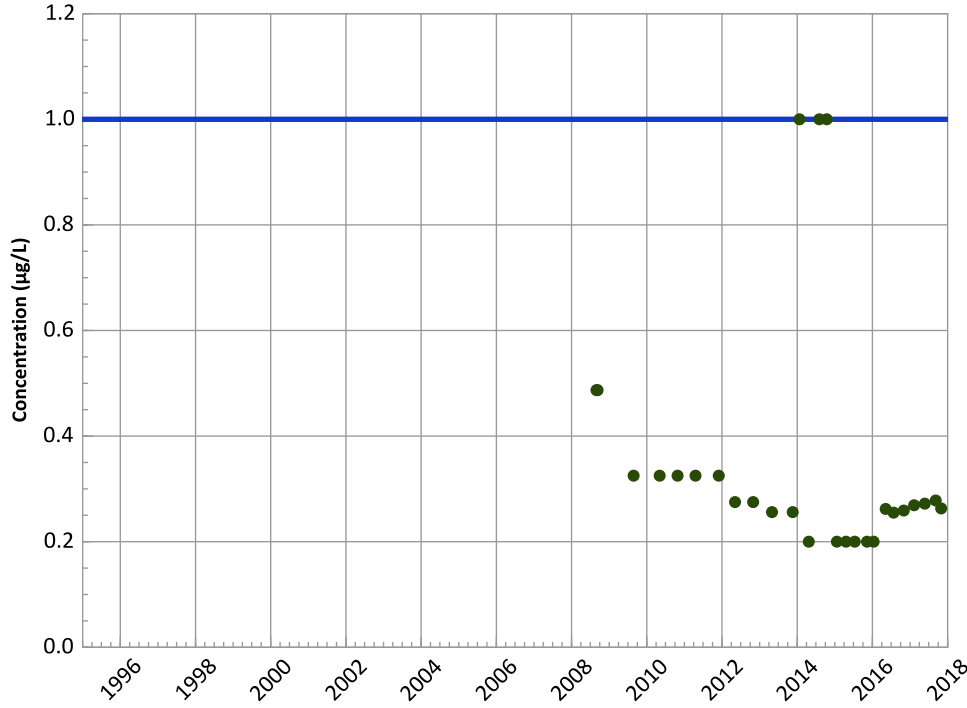


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/30/2008 to 10/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1149 in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

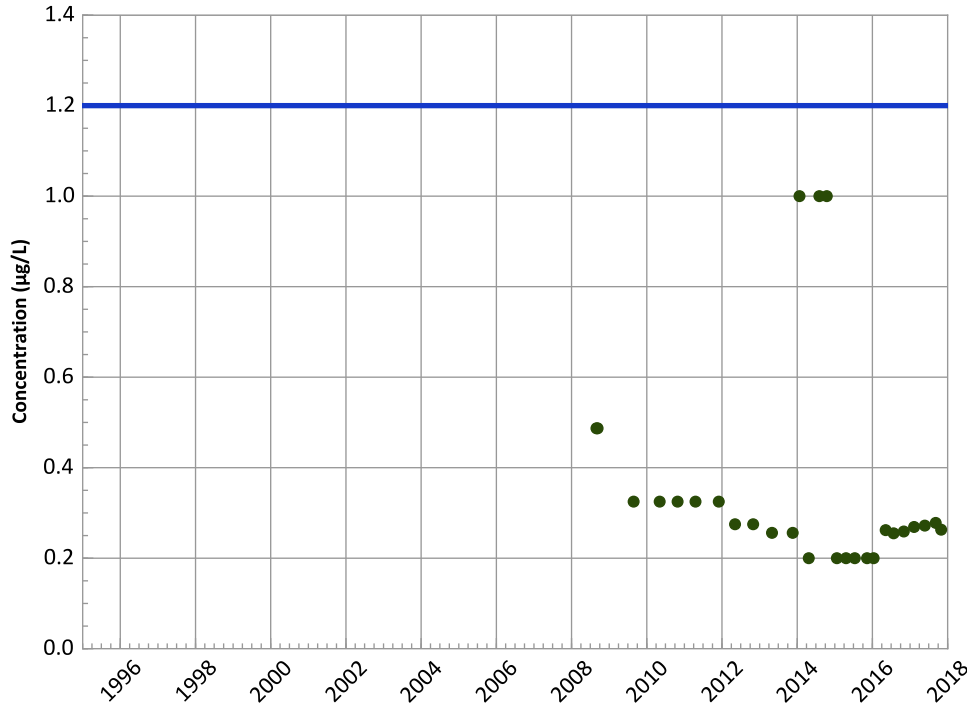
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

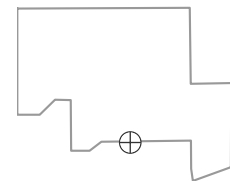
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

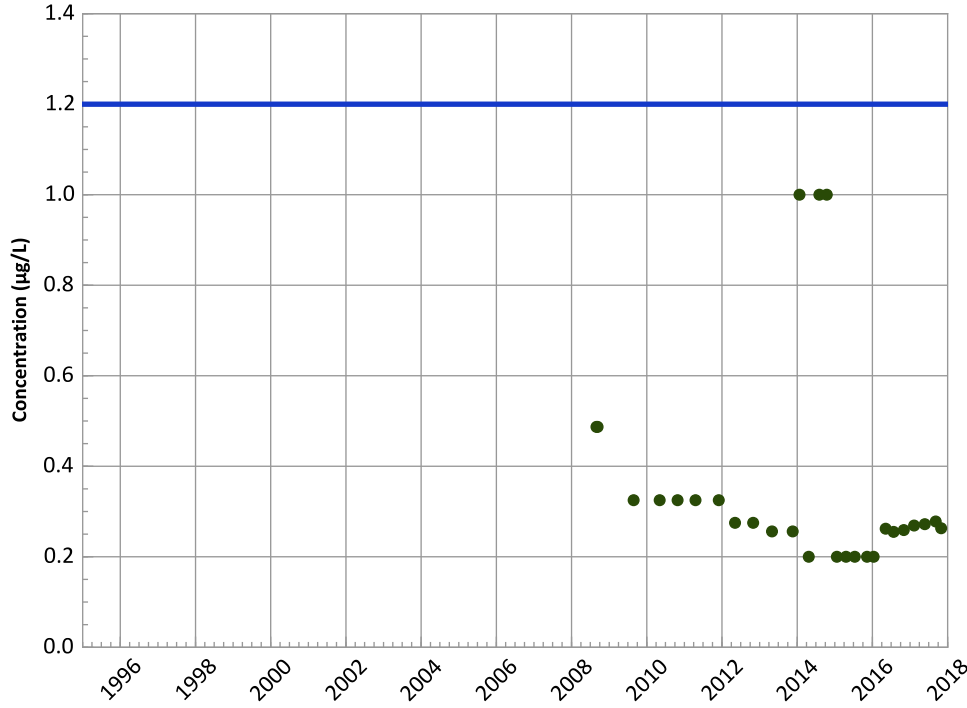


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/30/2008 to 10/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1149 in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

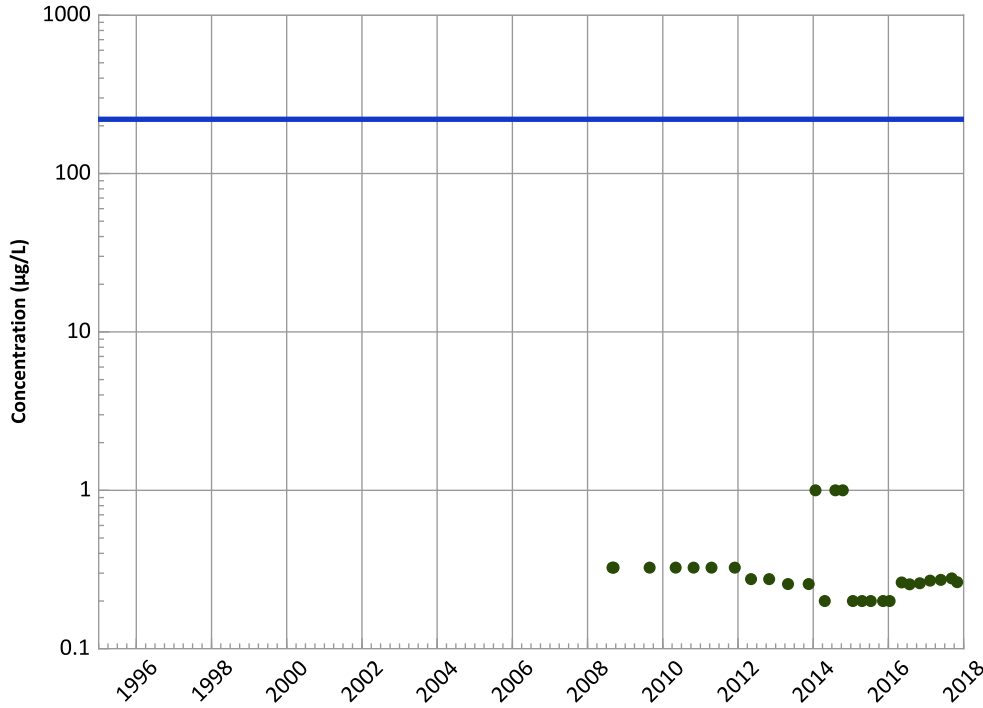
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,3,5-Trinitrobenzene Trend



Concentration Trend

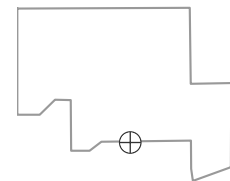
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

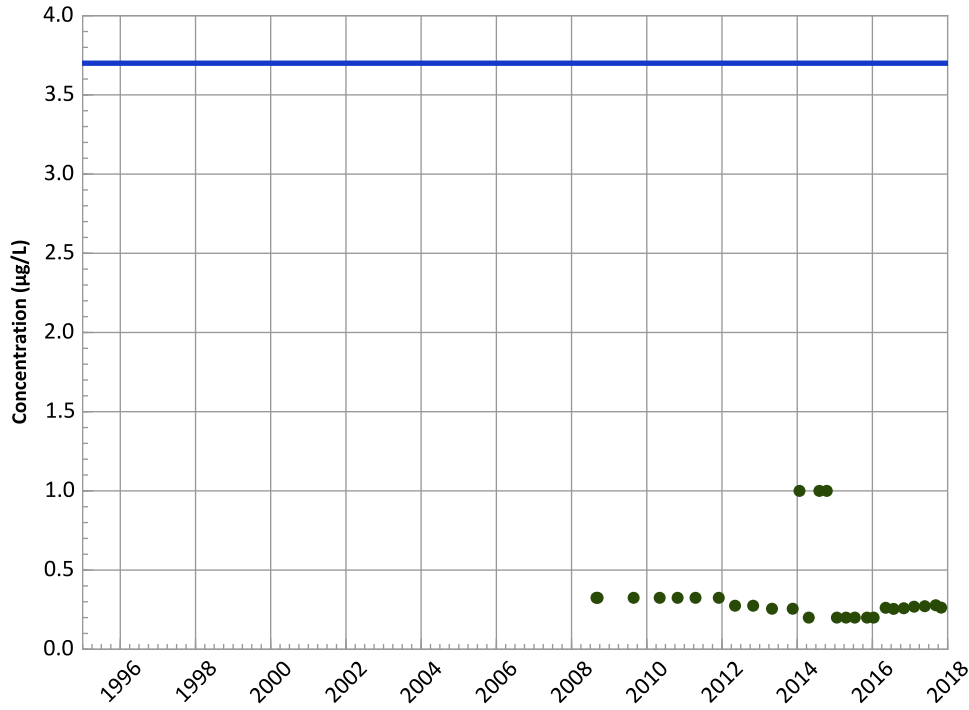
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/30/2008 to 10/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1149 in Perched Aquifer
USDOE/NNSA Pantex Plant
1,3-Dinitrobenzene Trend**



Concentration Trend

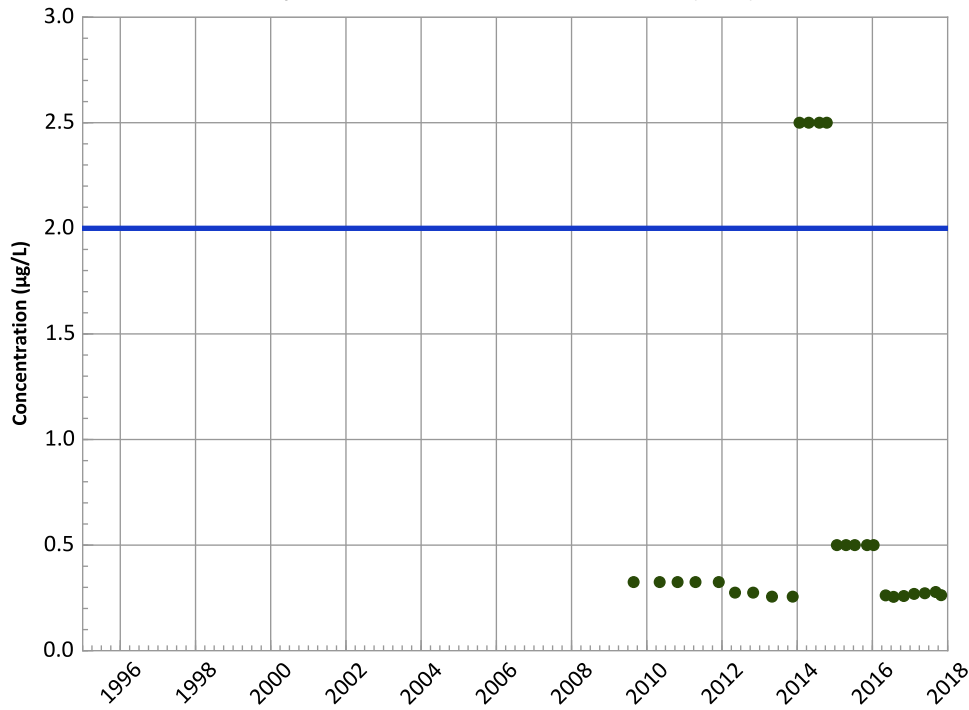
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Hexahydro-1-Nitroso-3,5-Dinitro-1,3,5-Triazine (MNX) Trend



Concentration Trend

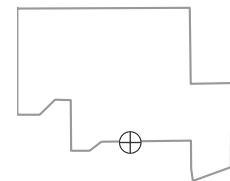
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

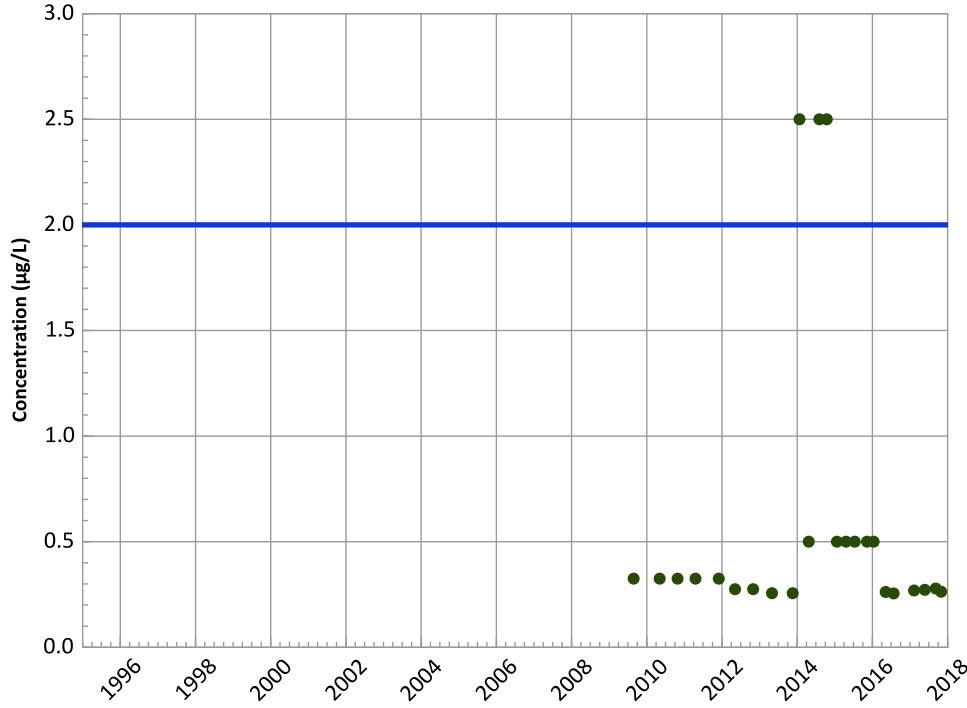


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/30/2008 to 10/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1149 in Perched Aquifer
USDOE/NNSA Pantex Plant

Hexahydro-1,3-Dinitroso-5-Nitro-1,3,5-Triazine (DNX) Trend



Concentration Trend

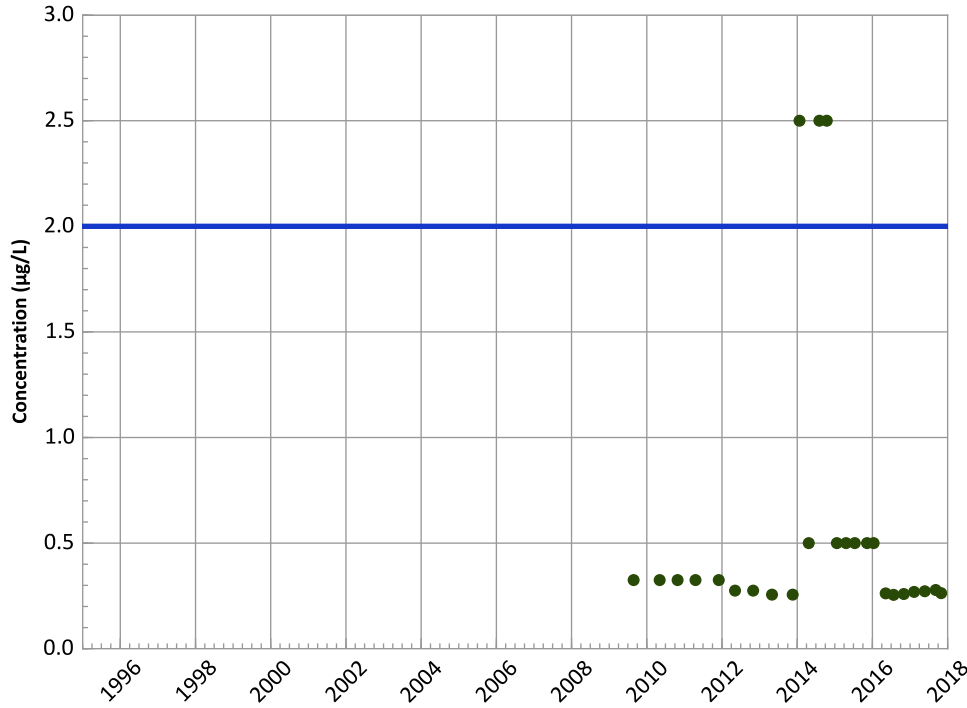
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Hexahydro-1,3,5-Trinitroso-1,3,5-Triazine (TNX) Trend



Concentration Trend

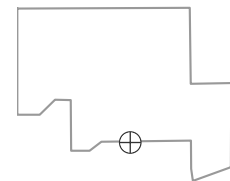
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

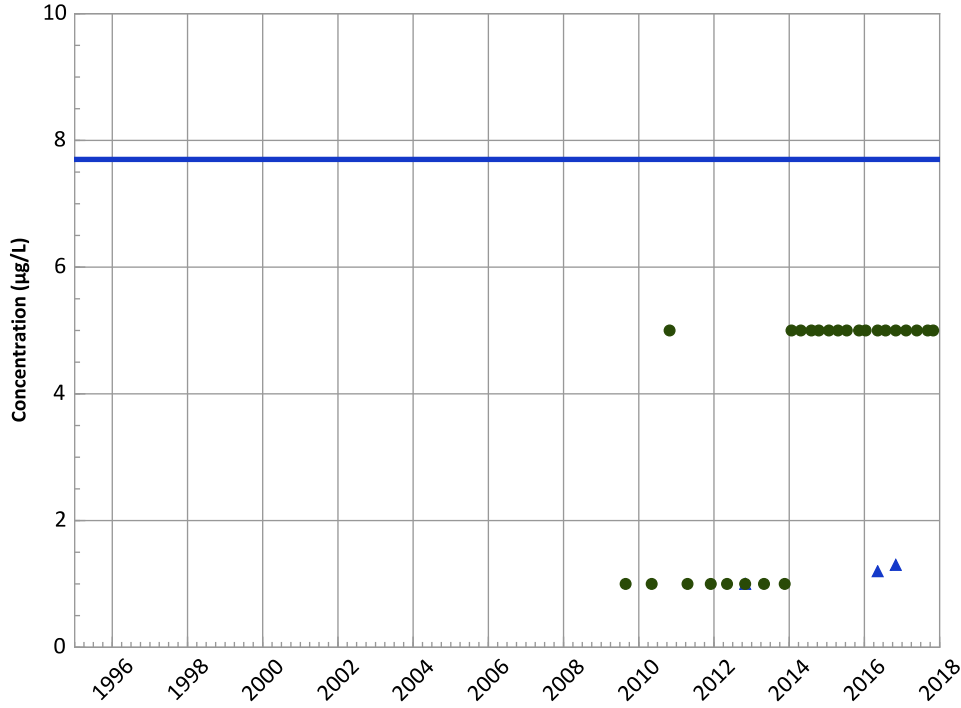


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/30/2008 to 10/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1149 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,4-Dioxane (p-Dioxane) Trend



Concentration Trend

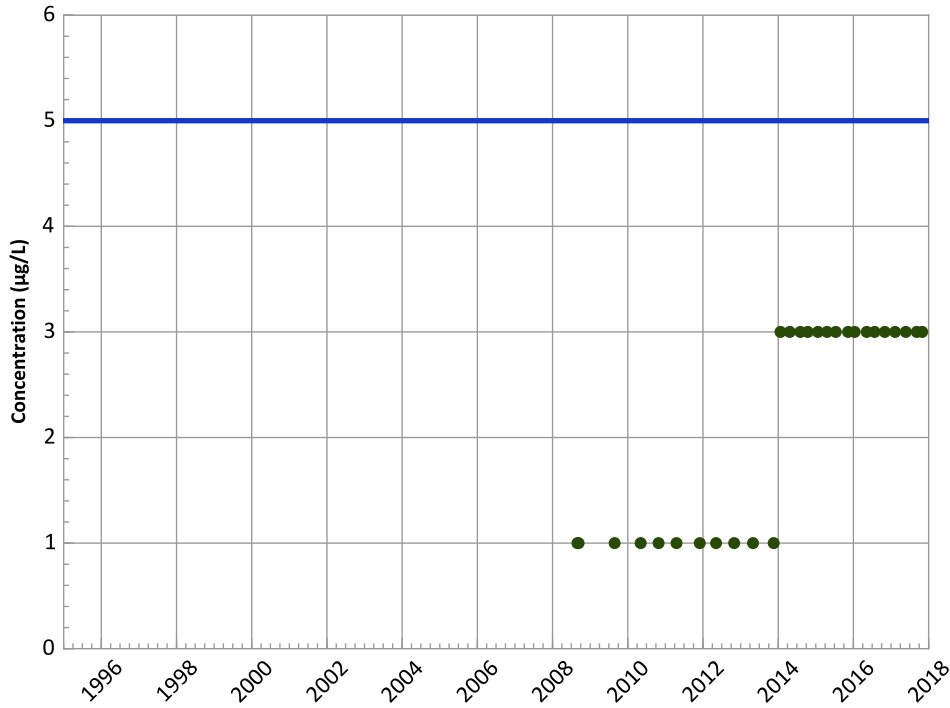
MAROS Mann-Kendall Method

Data ():
N/A (<4 Detections in Dataset)
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
N/A (<4 Detections in Dataset)

Tetrachloroethylene (PCE) Trend



Concentration Trend

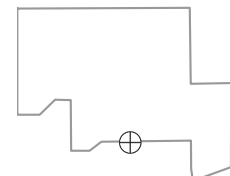
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

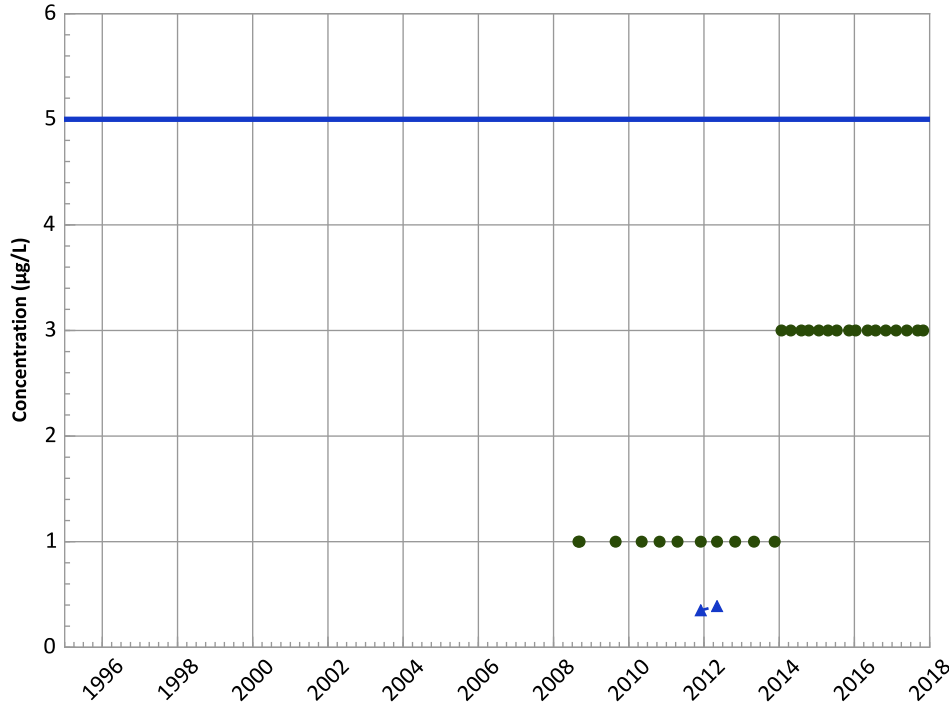


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/30/2008 to 10/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1149 in Perched Aquifer
USDOE/NNSA Pantex Plant

Trichloroethene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

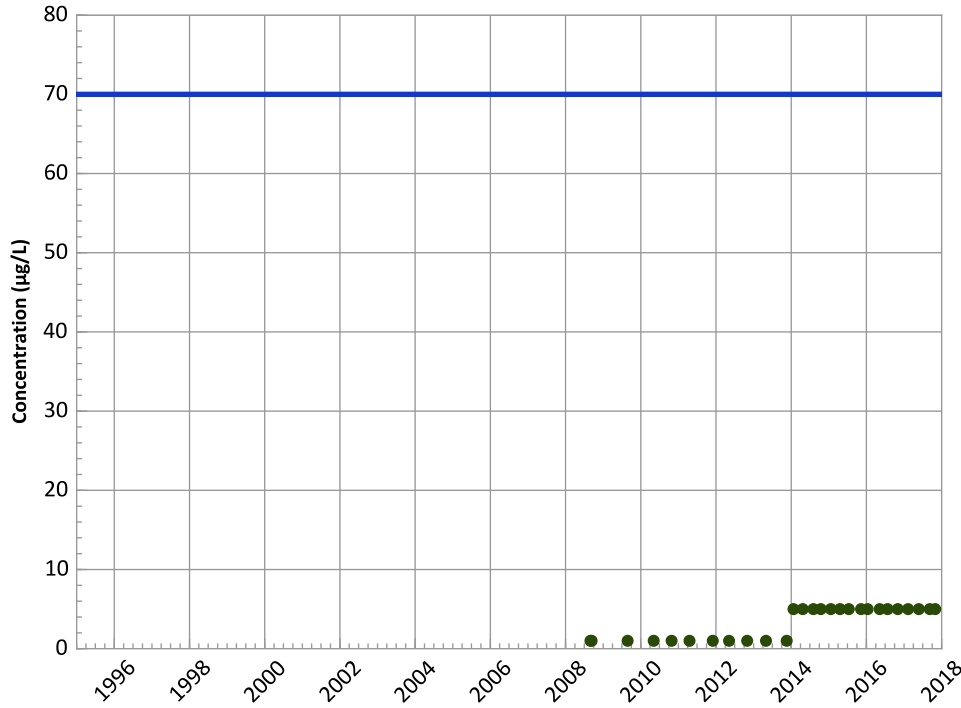
Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

cis-1,2-Dichloroethene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

All Non-Detect

All Data

All Non-Detect

MAROS Linear Regression Method

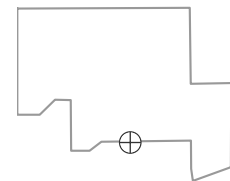
Data ():

All Non-Detect

All Data

All Non-Detect

Well Location

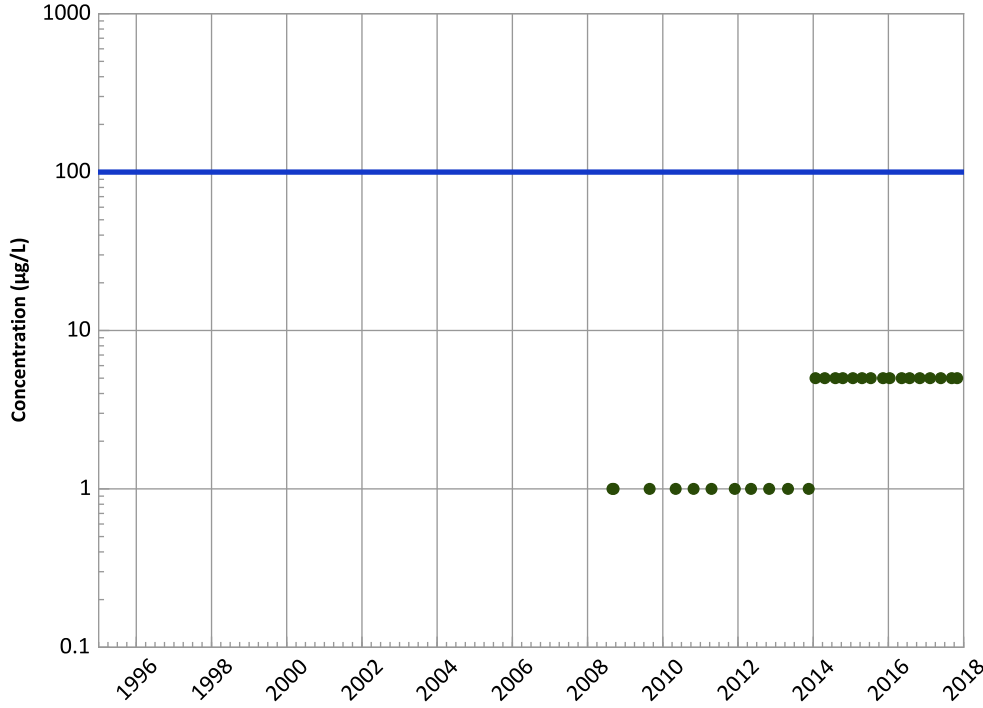


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/30/2008 to 10/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1149 in Perched Aquifer
USDOE/NNSA Pantex Plant

trans-1,2-Dichloroethene Trend



Concentration Trend

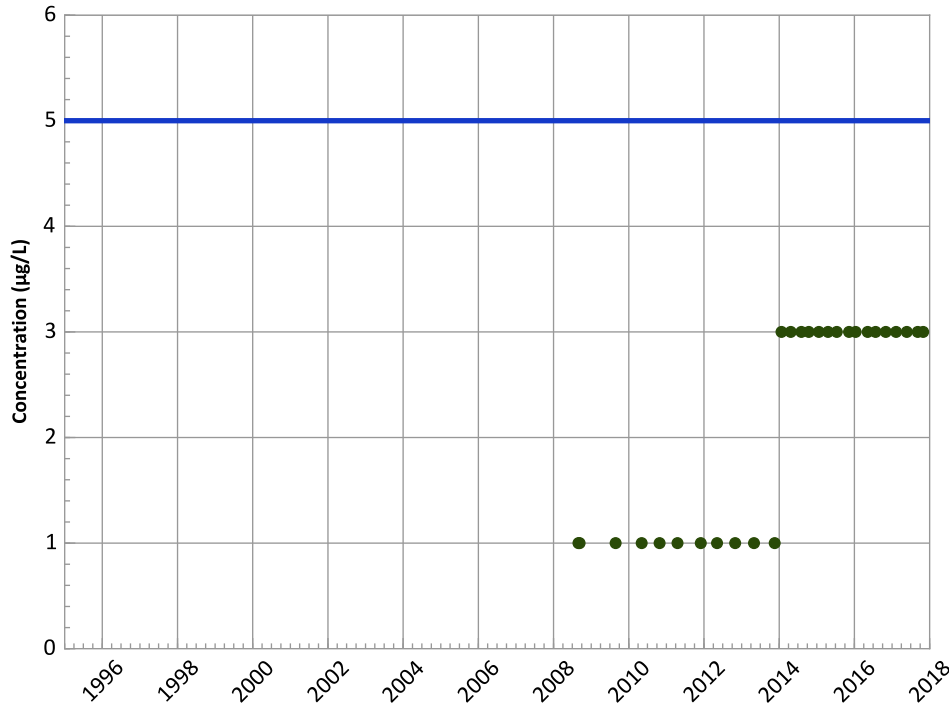
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,2-Dichloroethane Trend



Concentration Trend

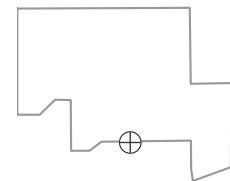
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

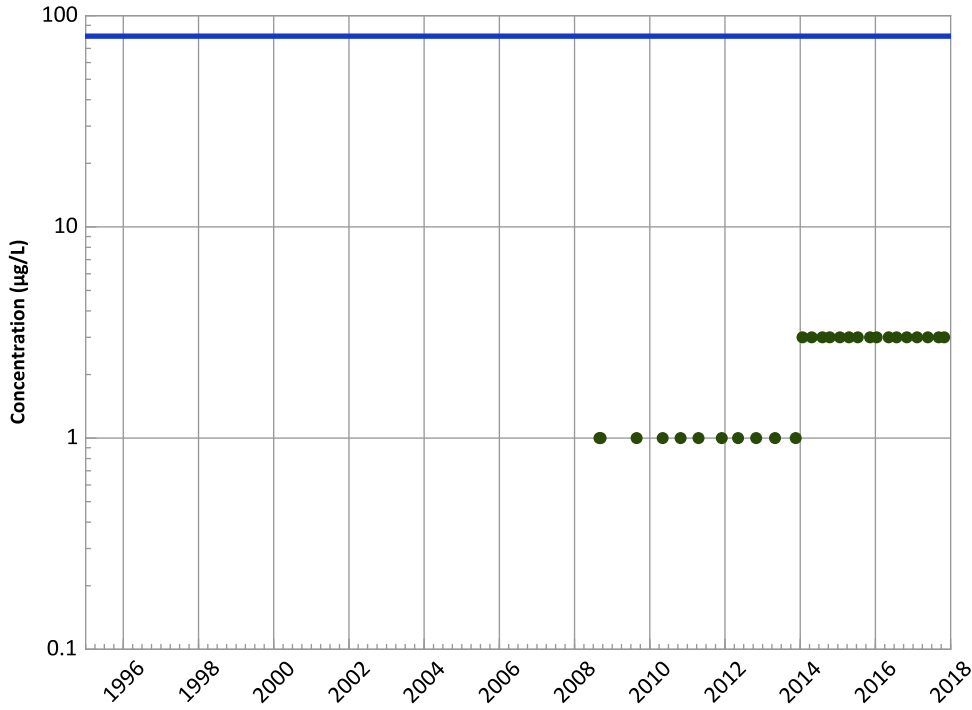
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/30/2008 to 10/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1149 in Perched Aquifer
USDOE/NNSA Pantex Plant
Chloroform Trend**



Concentration Trend

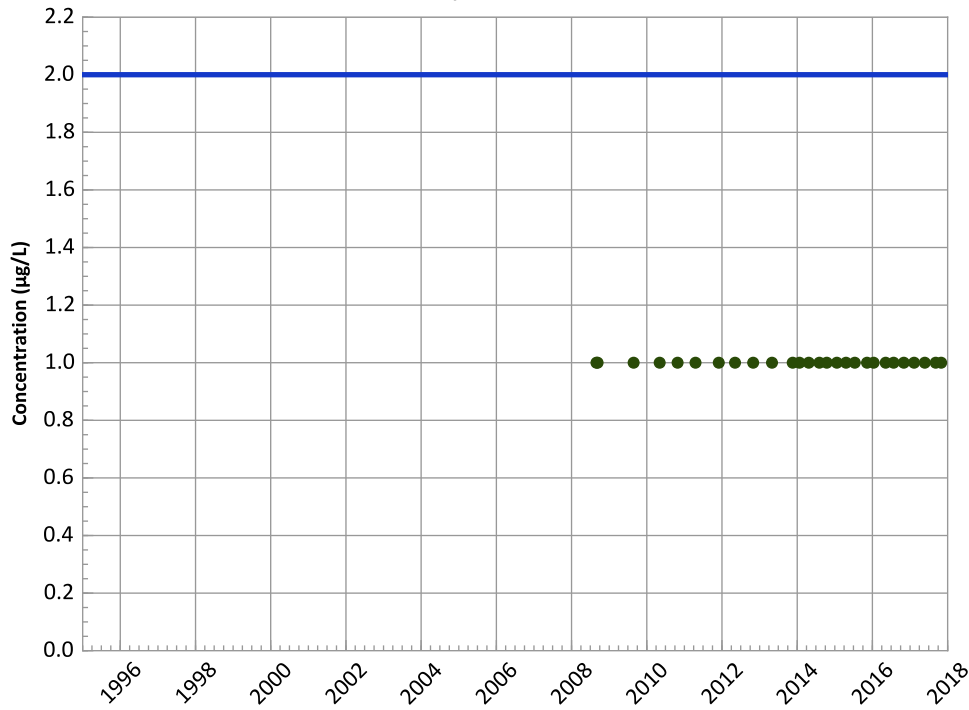
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Vinyl Chloride Trend



Concentration Trend

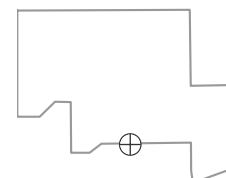
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

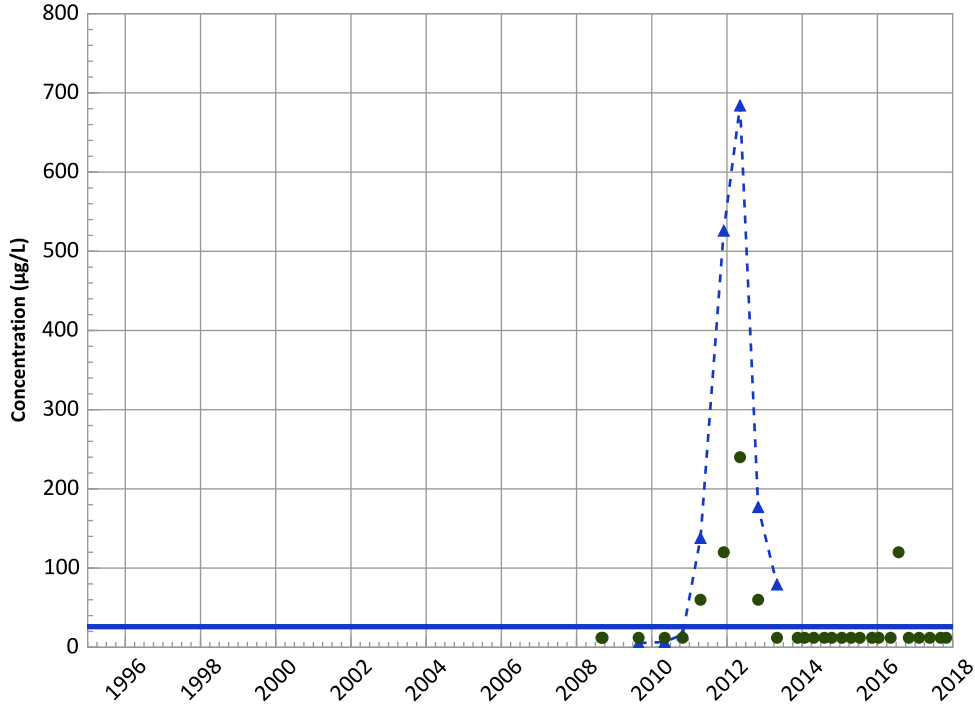


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/30/2008 to 10/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1149 in Perched Aquifer
USDOE/NNSA Pantex Plant

Perchlorate Trend

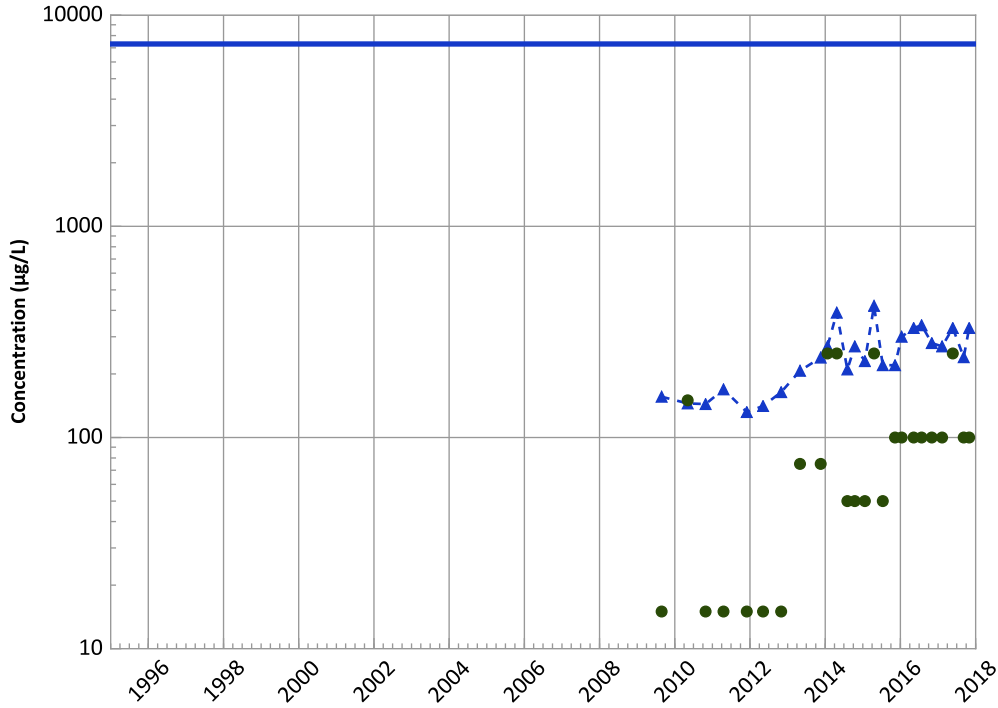


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

MAROS Linear Regression Method
Data ():
N/A (<4 Detections in Dataset)
All Data
Increasing

Boron Trend

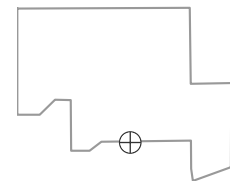


Concentration Trend

MAROS Mann-Kendall Method
Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method
Data ():
Increasing
All Data
Increasing

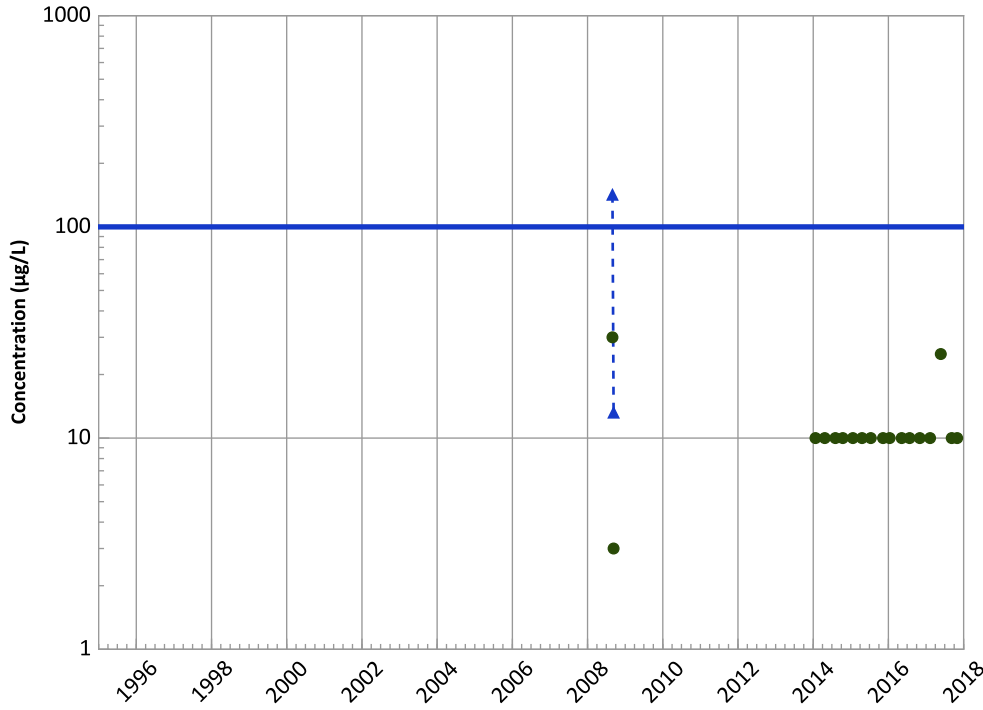
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/30/2008 to 10/30/2017
Analysis Date: 03/21/2018

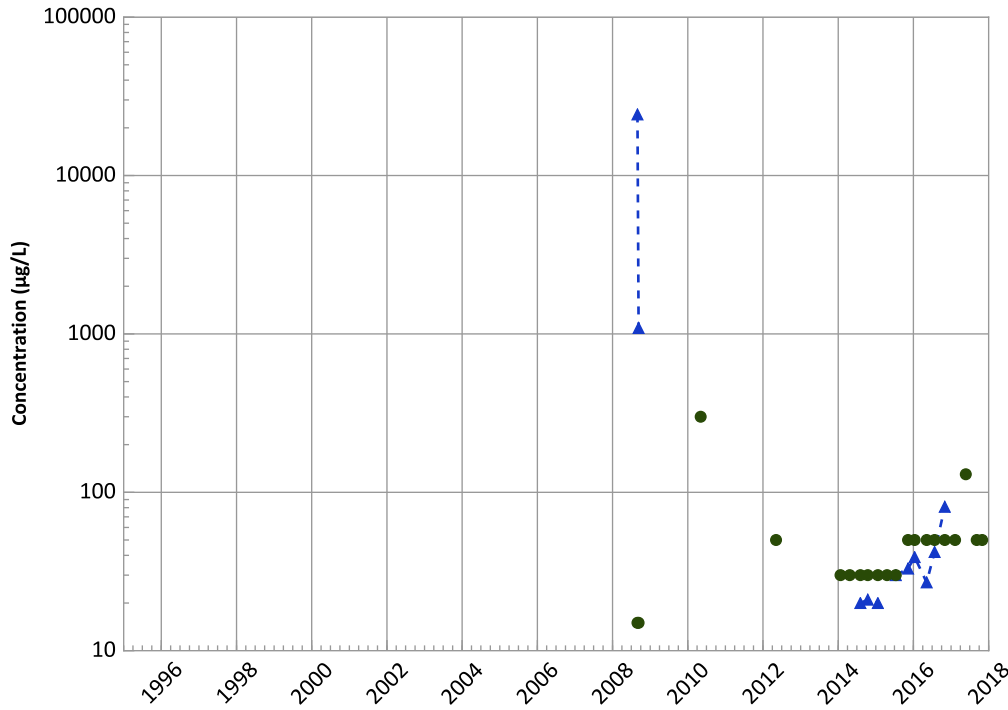
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1149 in Perched Aquifer
USDOE/NNSA Pantex Plant
Chromium, Total Trend**



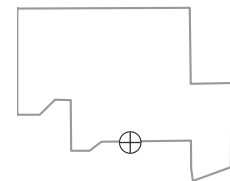
Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 All Non-Detect
 All Data
 N/A (<4 Detections in Dataset)
MAROS Linear Regression Method
 Data ():
 All Non-Detect
 All Data
 N/A (<4 Detections in Dataset)

Aluminum Trend



Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 Increasing
 All Data
 Increasing
MAROS Linear Regression Method
 Data ():
 Increasing
 All Data
 Decreasing

Well Location

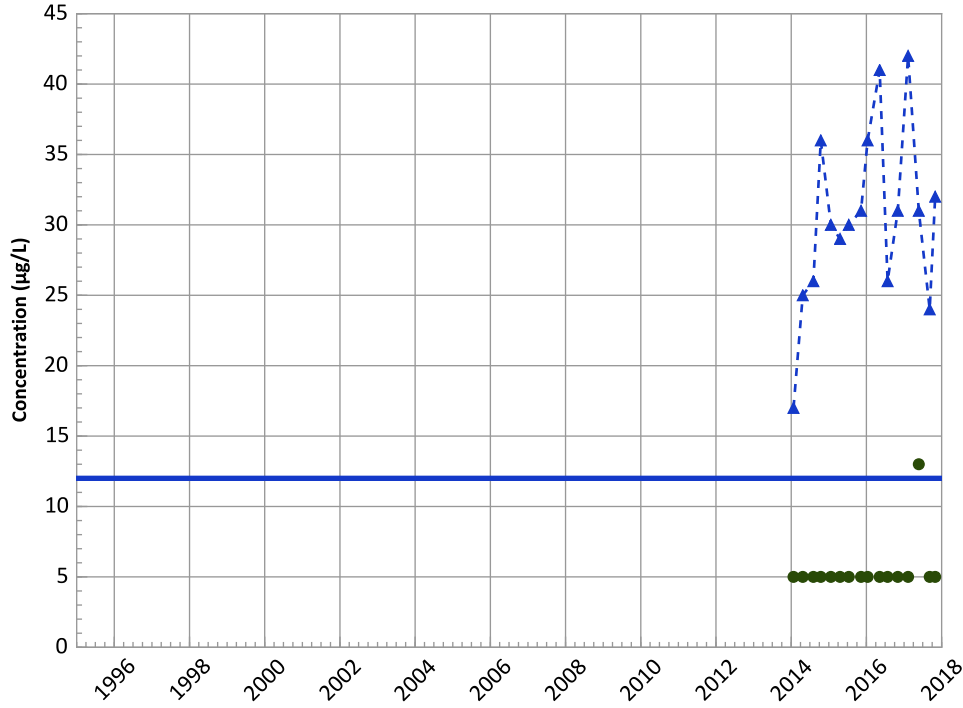


Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 08/30/2008 to 10/30/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1149 in Perched Aquifer
USDOE/NNSA Pantex Plant

Arsenic Trend



Concentration Trend

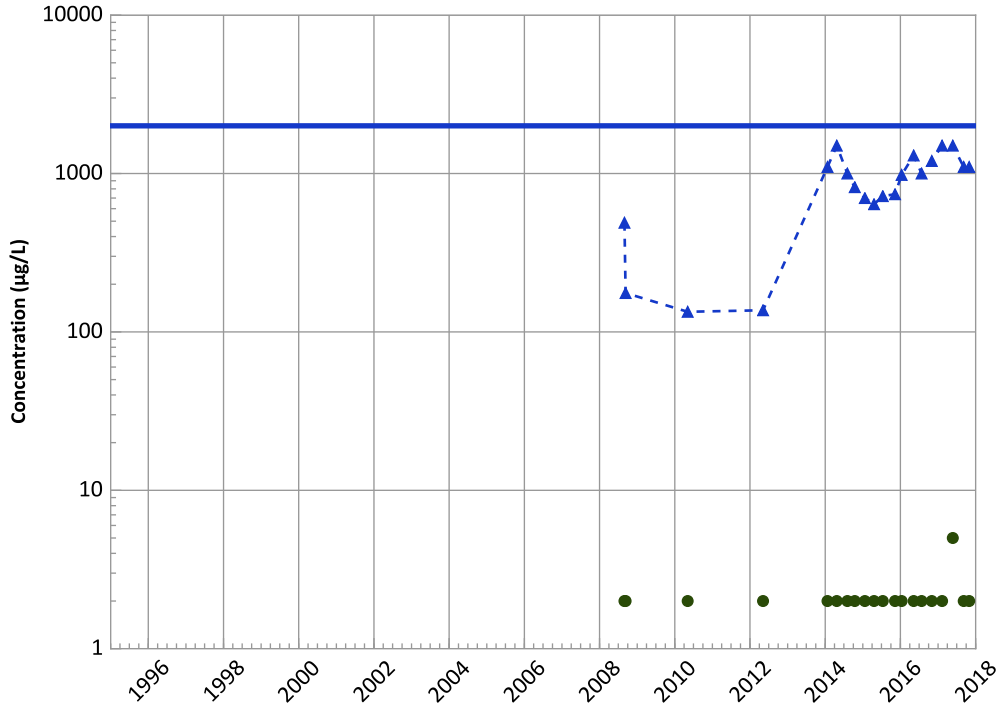
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Probably Increasing

Barium Trend



Concentration Trend

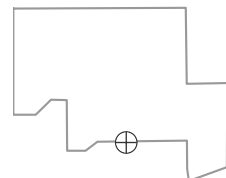
MAROS Mann-Kendall Method

Data ():
No Trend
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

Well Location

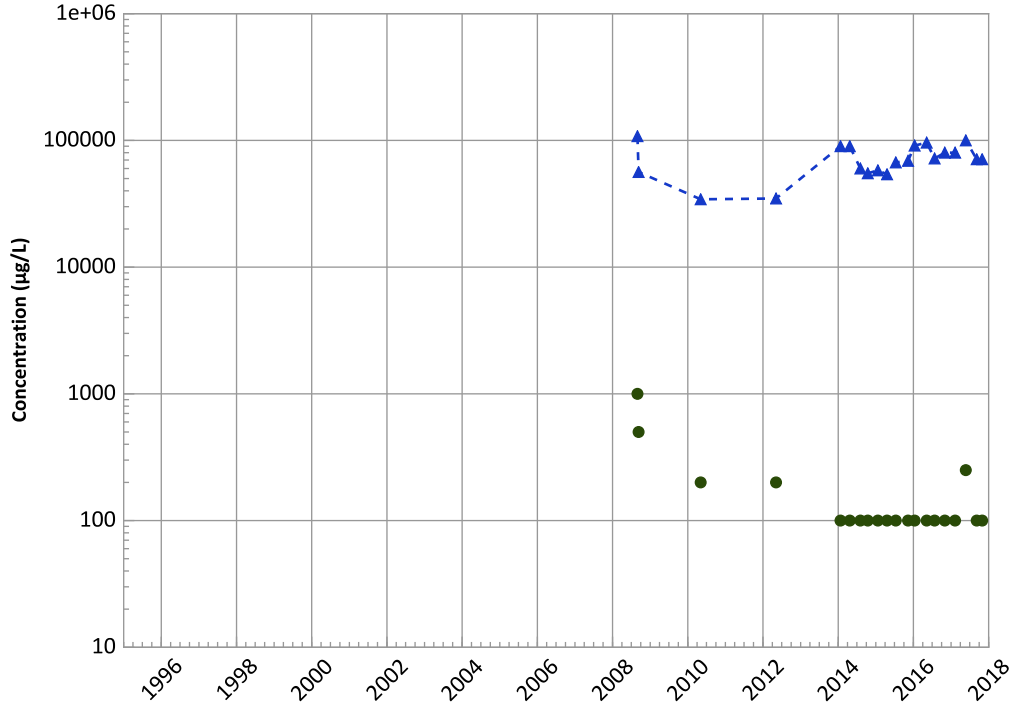


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/30/2008 to 10/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1149 in Perched Aquifer
USDOE/NNSA Pantex Plant

Calcium Trend



Concentration Trend

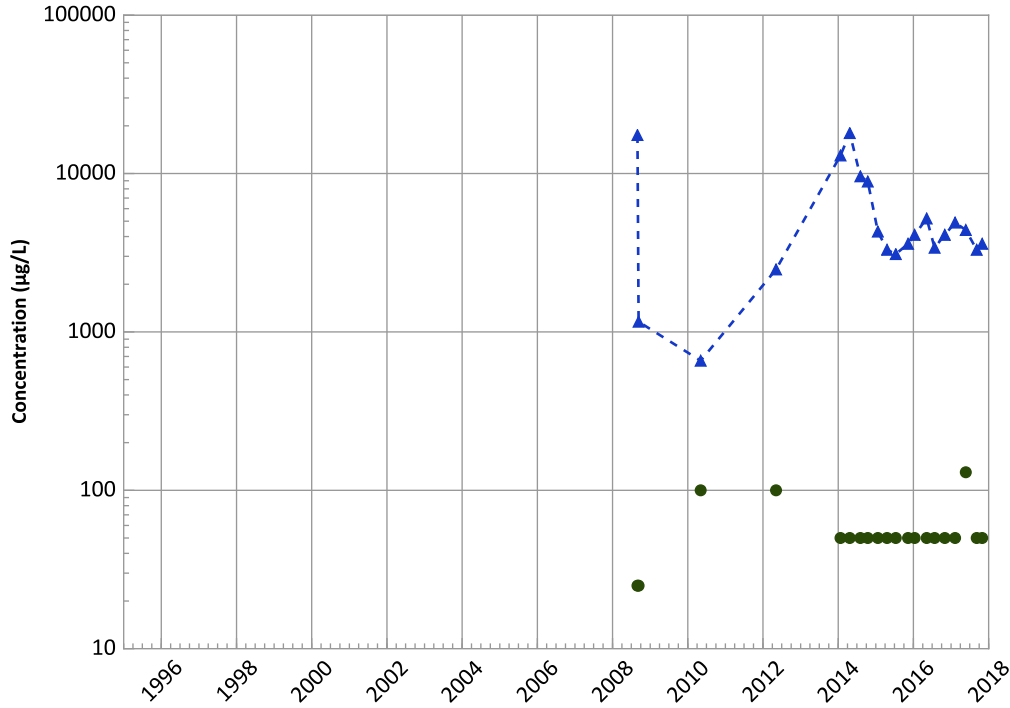
MAROS Mann-Kendall Method

Data ():
Probably Increasing
All Data
Probably Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Probably Increasing

Iron Trend



Concentration Trend

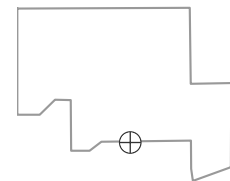
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Stable
All Data
No Trend

Well Location

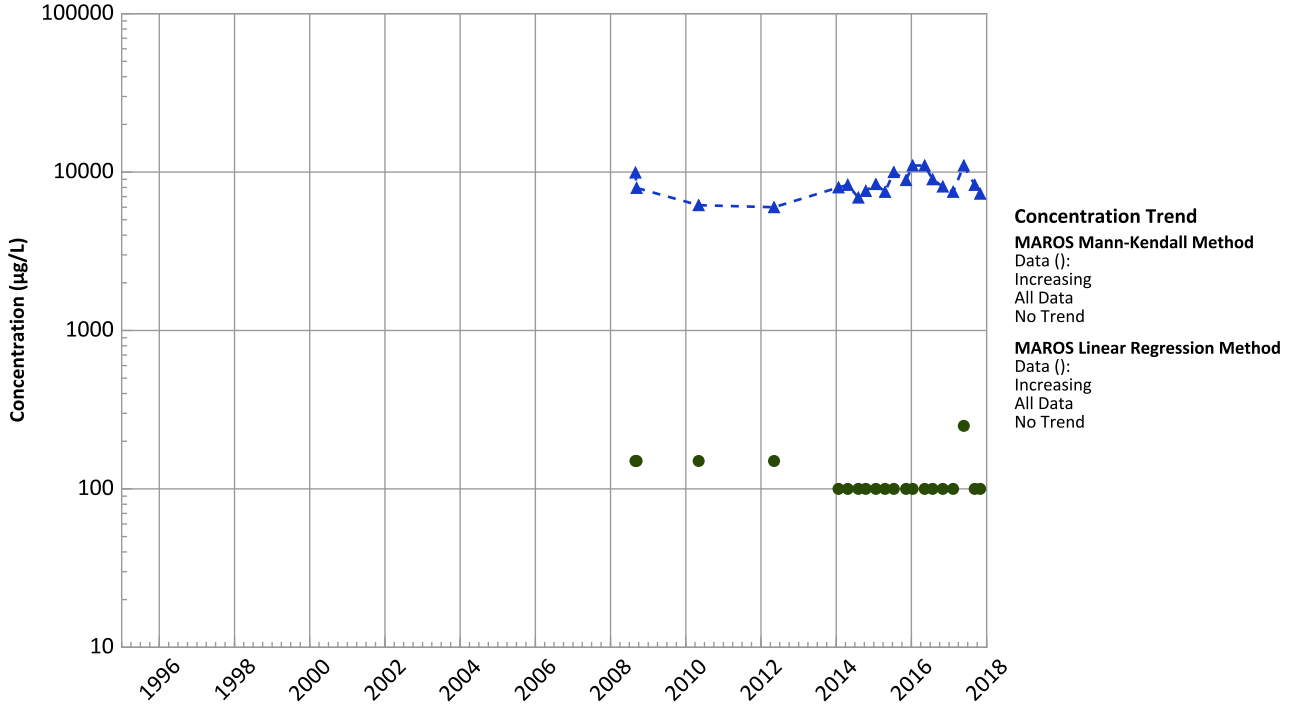


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/30/2008 to 10/30/2017
Analysis Date: 03/21/2018

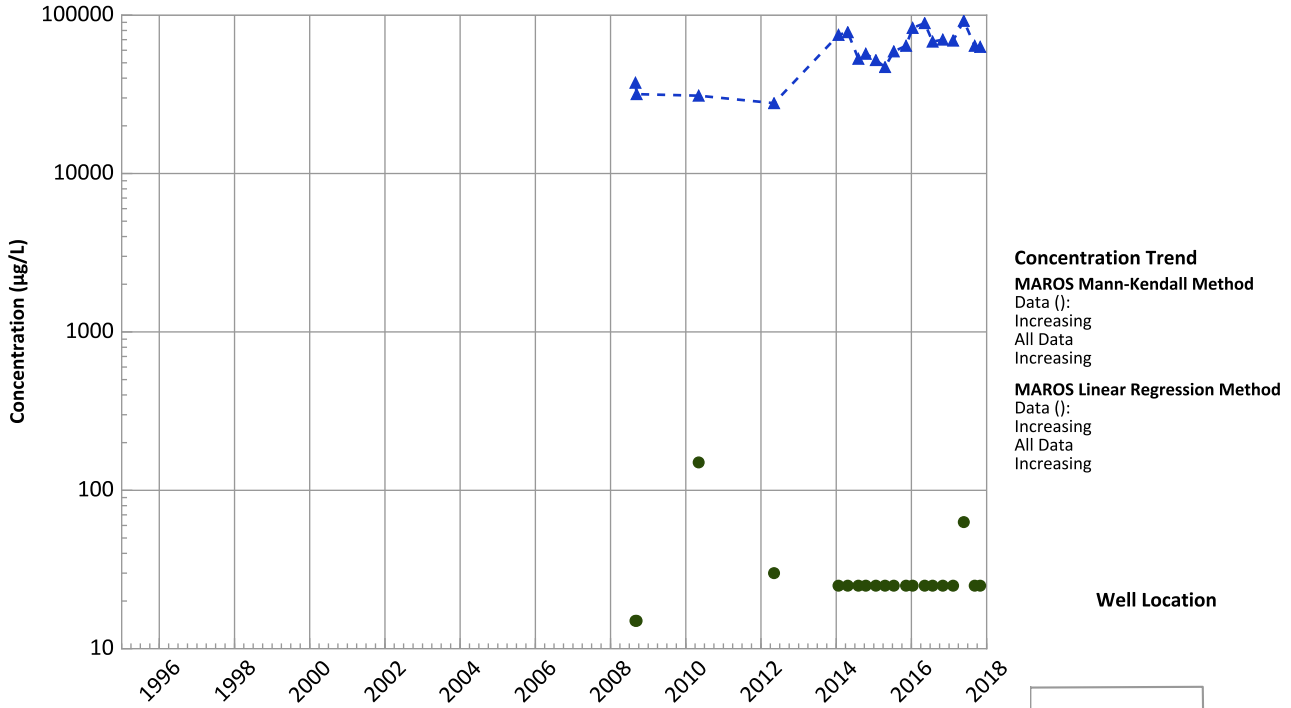
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1149 in Perched Aquifer
USDOE/NNSA Pantex Plant

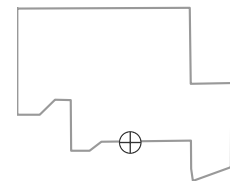
Potassium Trend



Magnesium Trend



Well Location

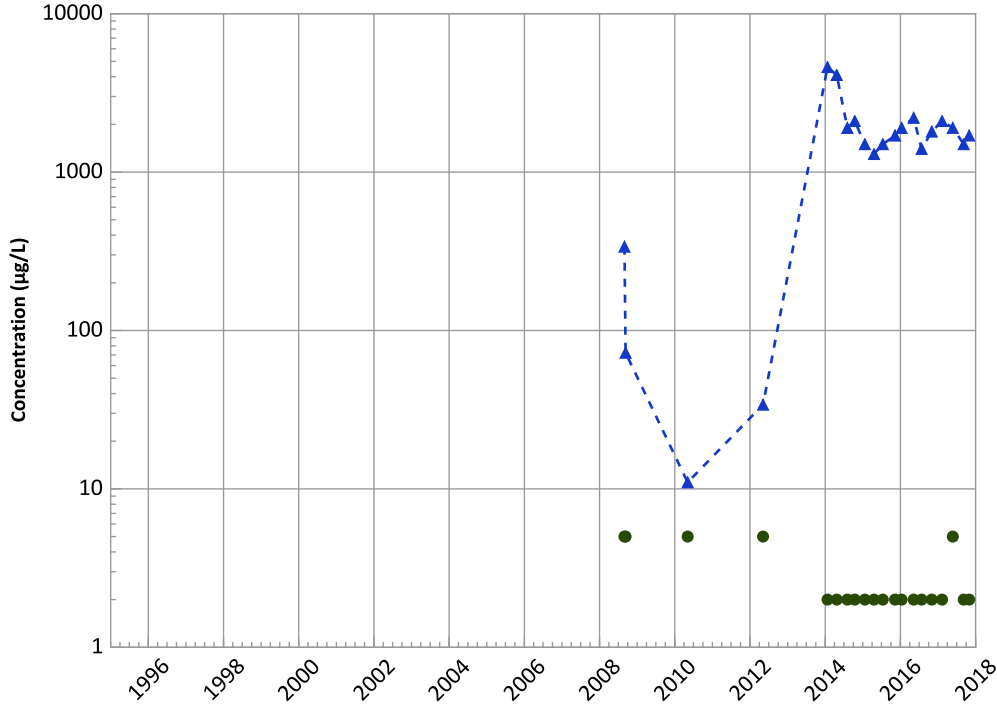


Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 08/30/2008 to 10/30/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1149 in Perched Aquifer
USDOE/NNSA Pantex Plant

Manganese Trend



Concentration Trend

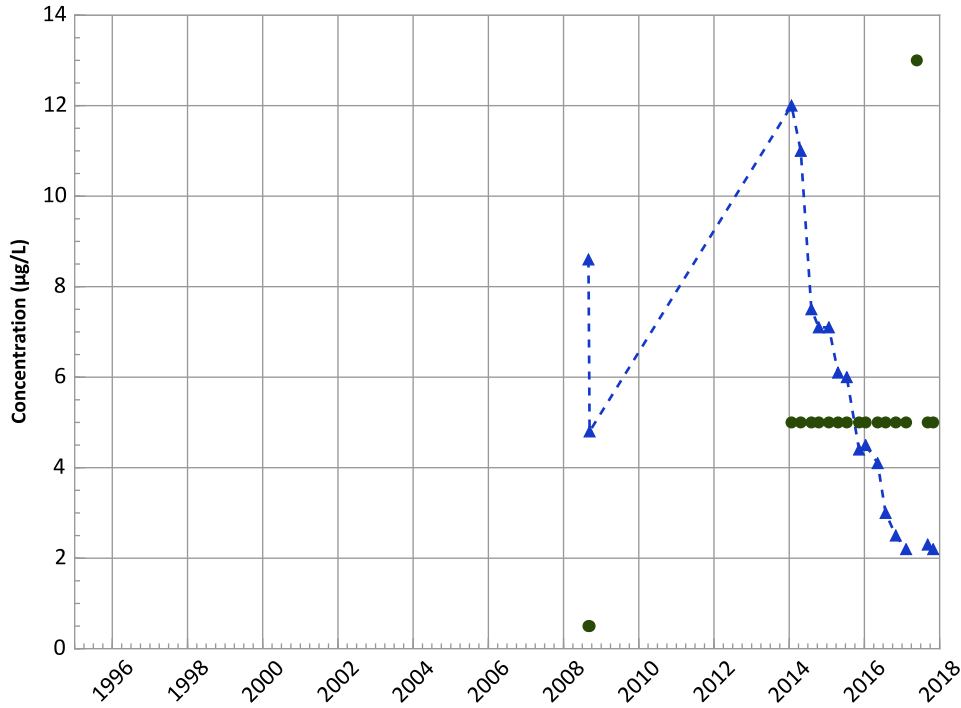
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
No Trend

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

Molybdenum Trend



Concentration Trend

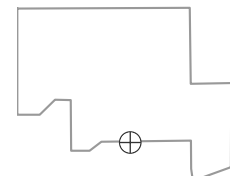
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

Well Location

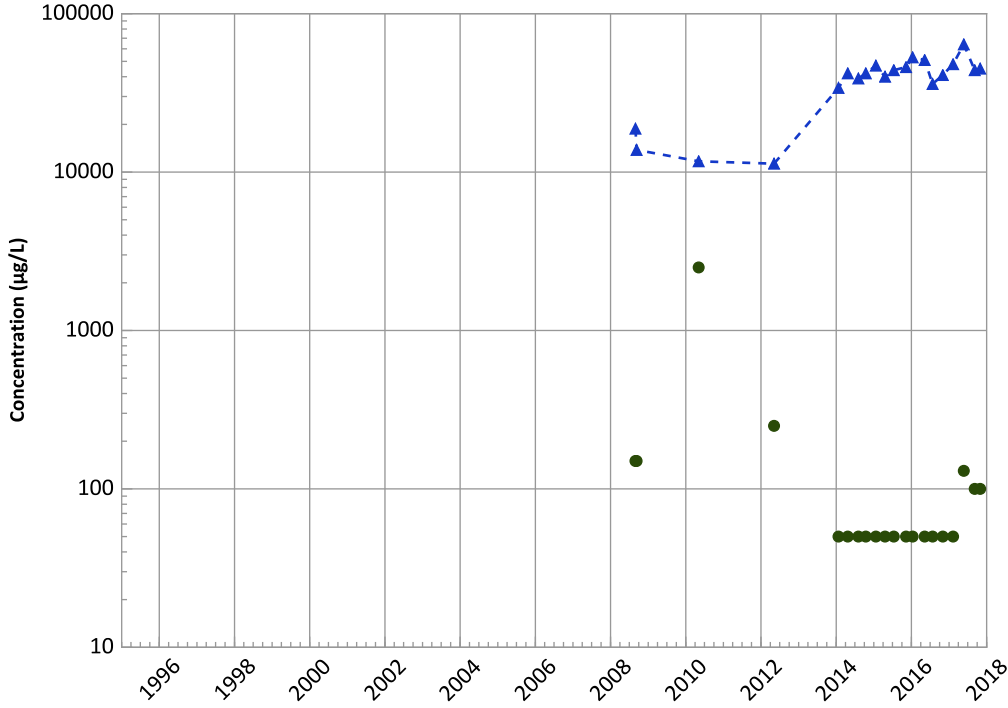


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/30/2008 to 10/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1149 in Perched Aquifer
USDOE/NNSA Pantex Plant

Sodium Trend



Concentration Trend

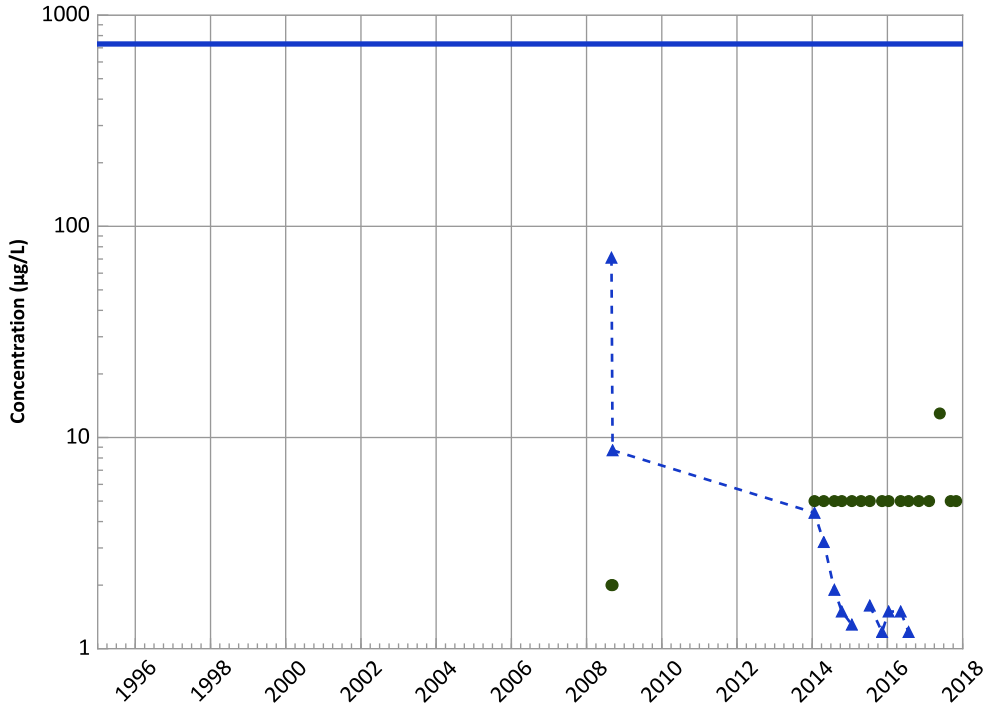
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

Nickel Trend



Concentration Trend

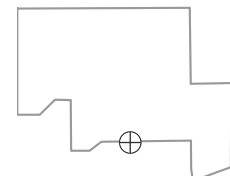
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

Well Location

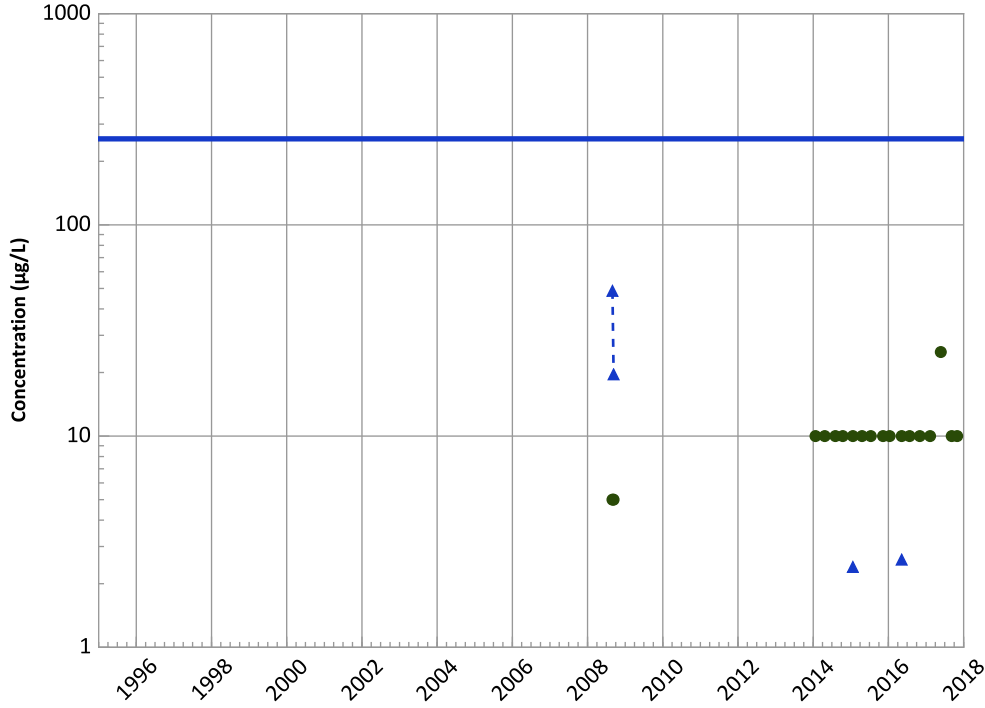


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/30/2008 to 10/30/2017
Analysis Date: 03/21/2018

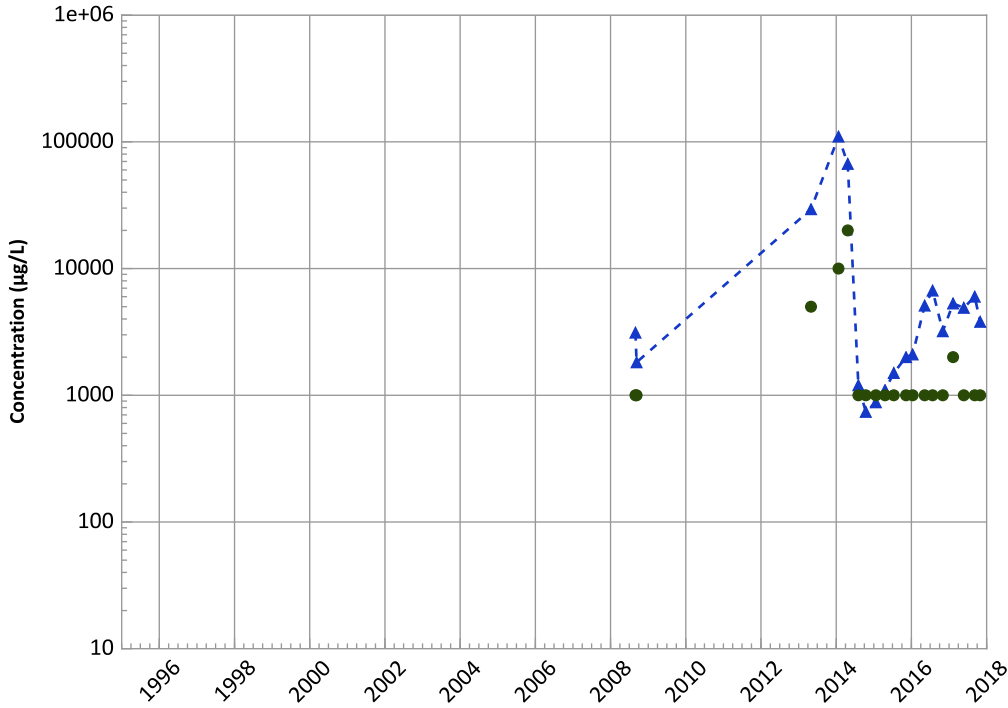
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1149 in Perched Aquifer
USDOE/NNSA Pantex Plant

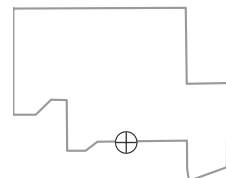
Vanadium Trend



Total Organic Carbon Trend



Well Location

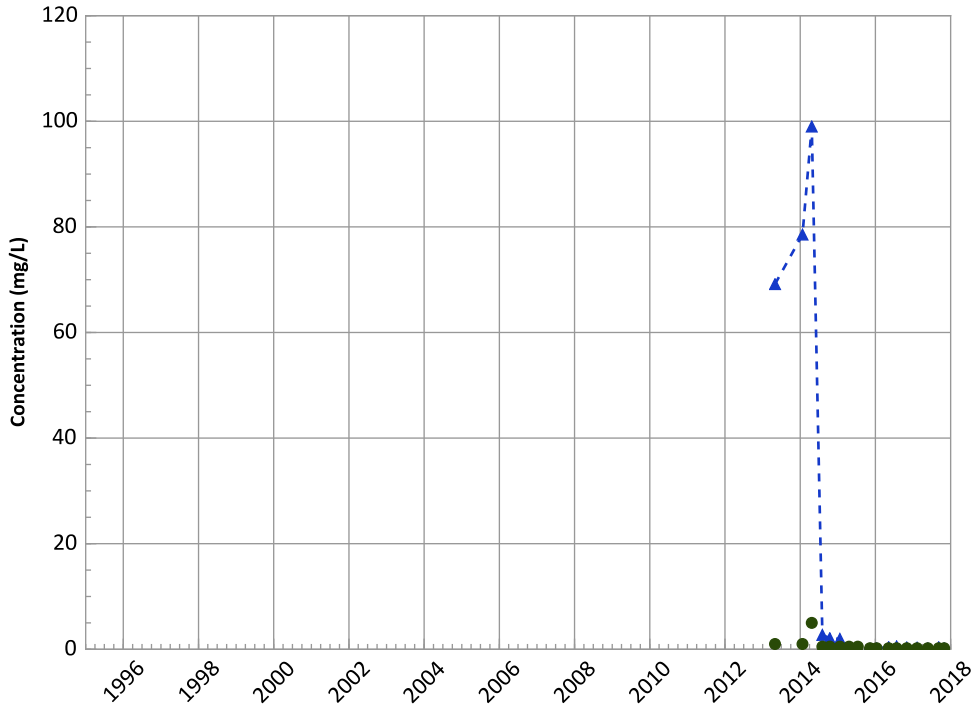


Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 08/30/2008 to 10/30/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1149 in Perched Aquifer
USDOE/NNSA Pantex Plant

Total Volatile Fatty Acids Trend



Concentration Trend

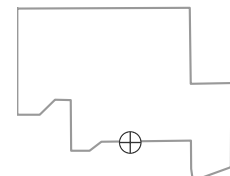
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

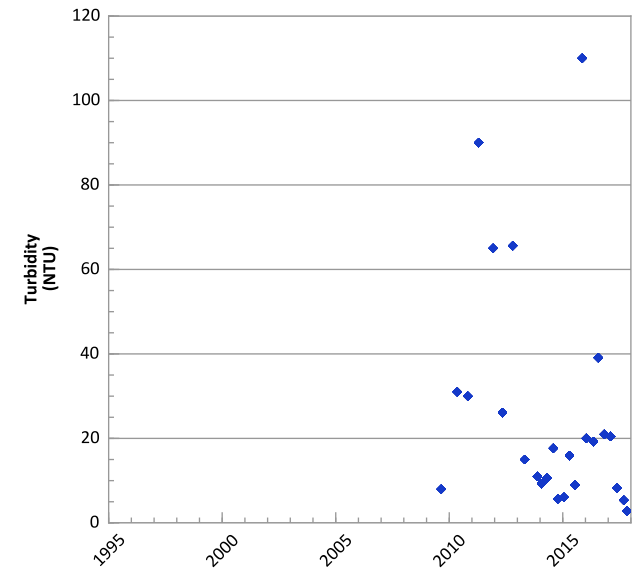
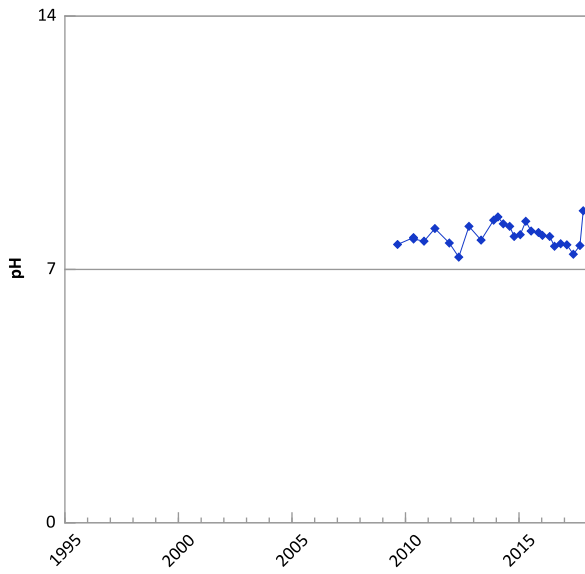
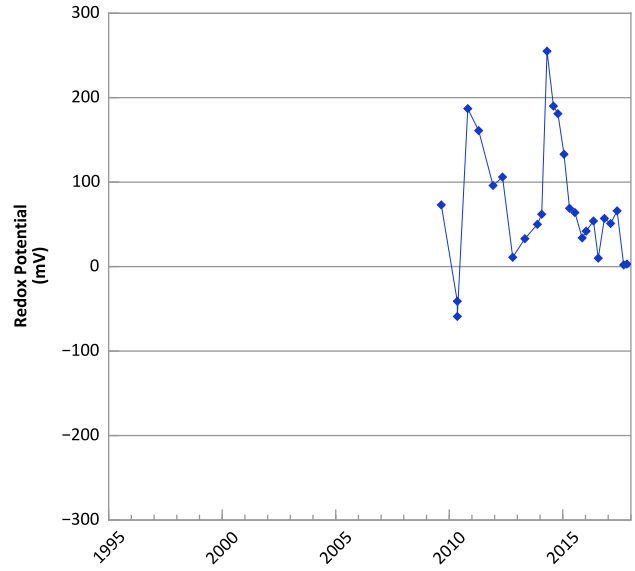
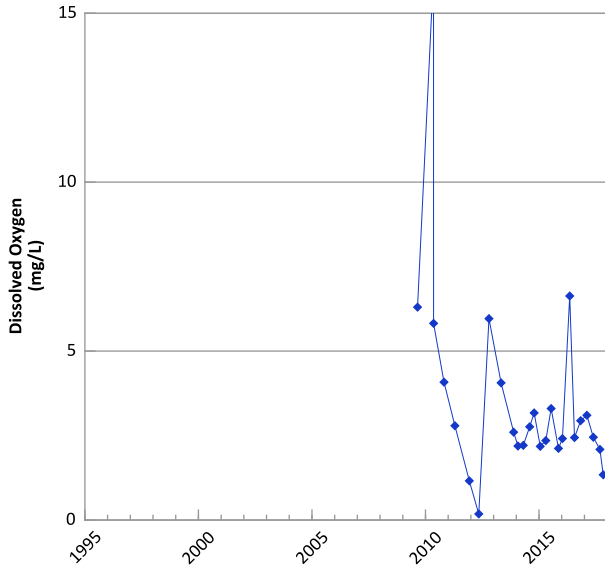
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/30/2008 to 10/30/2017
Analysis Date: 03/21/2018

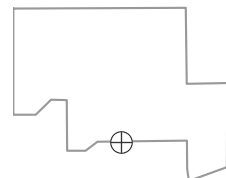
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1150 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



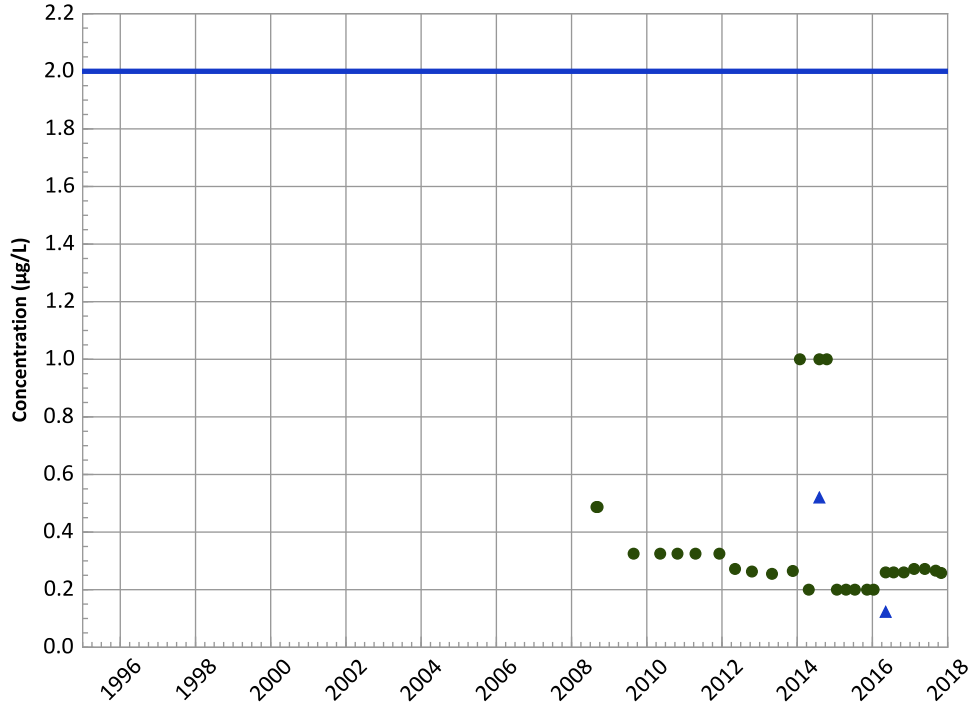
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 08/30/2008 to 10/30/2017
 Analysis Date: 03/21/2018

Well Location



PTX06-1150 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

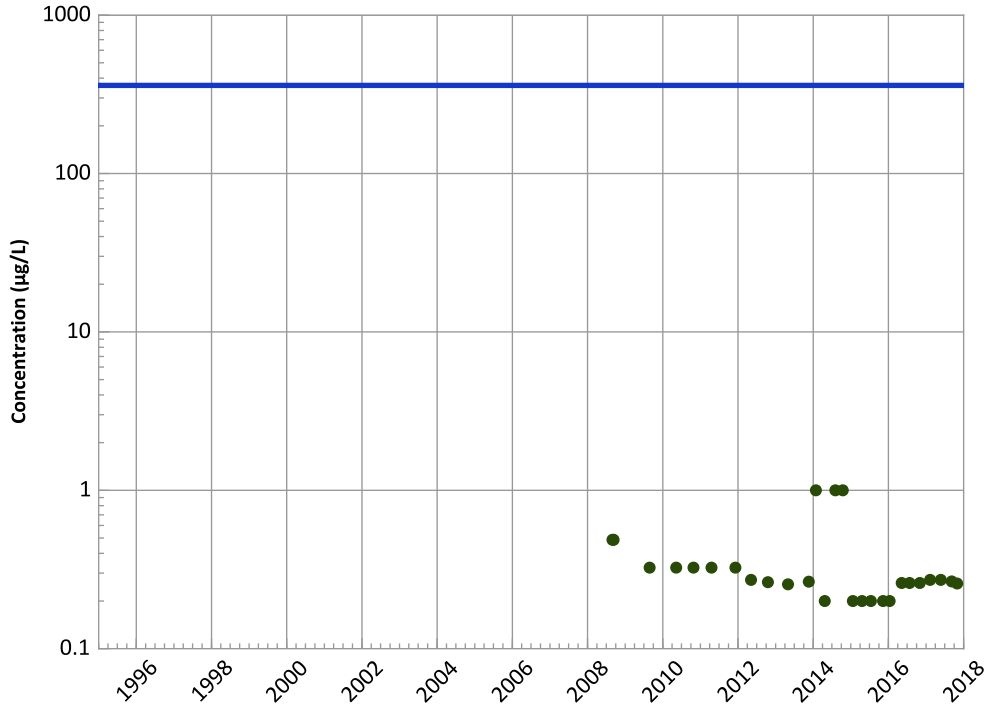
Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

All Non-Detect

All Data

All Non-Detect

MAROS Linear Regression Method

Data ():

All Non-Detect

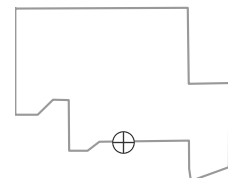
All Data

All Non-Detect

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/30/2008 to 10/30/2017
Analysis Date: 03/21/2018

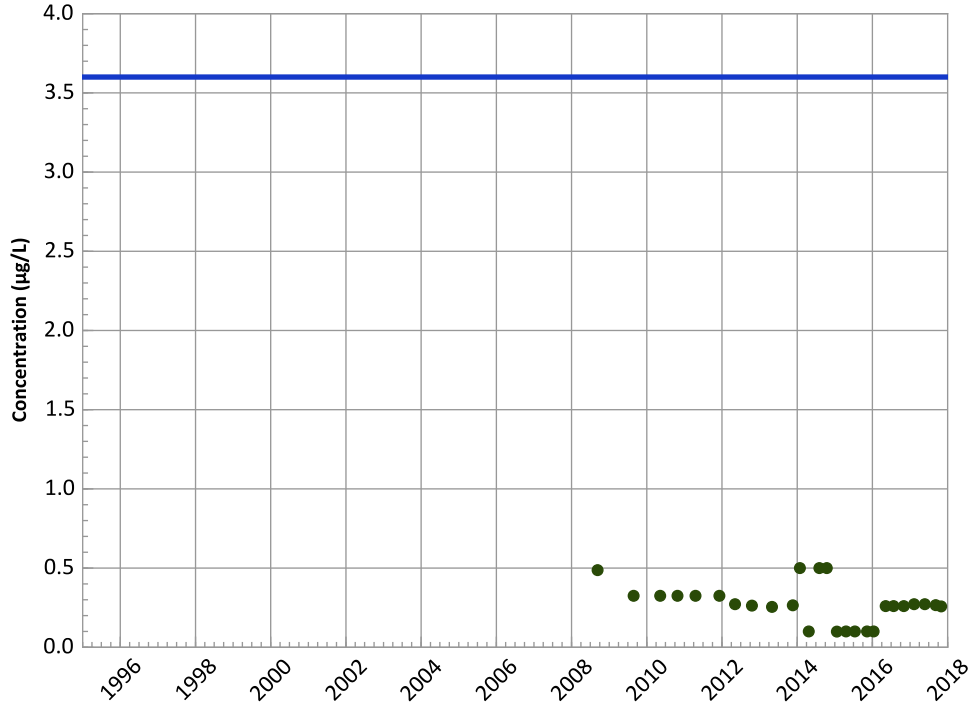
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1150 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

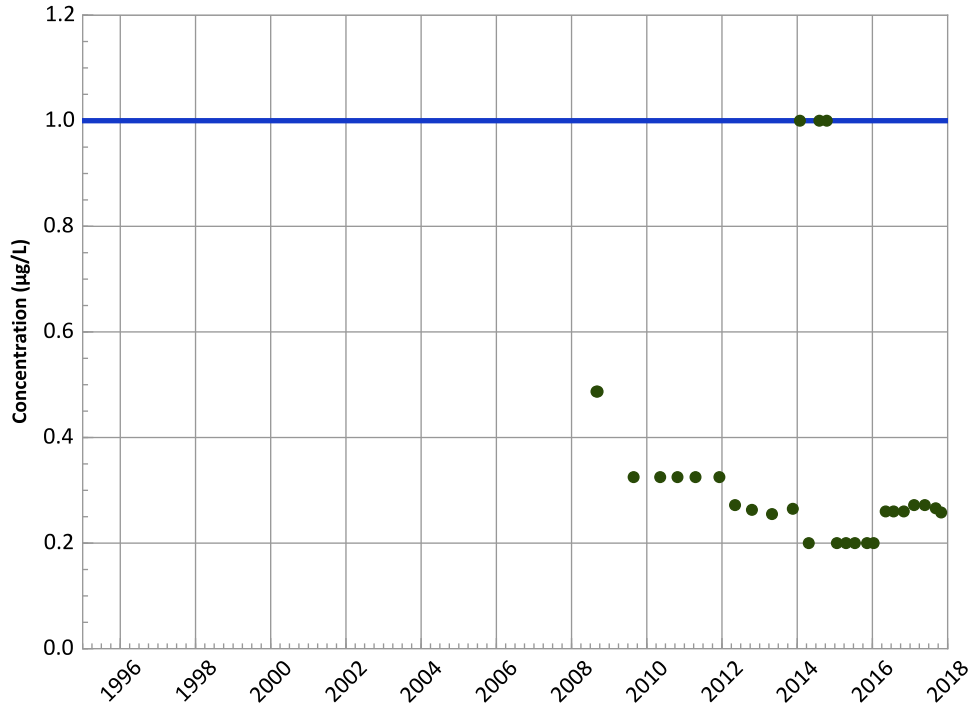
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

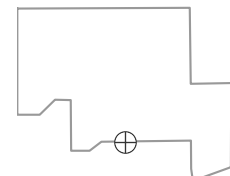
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

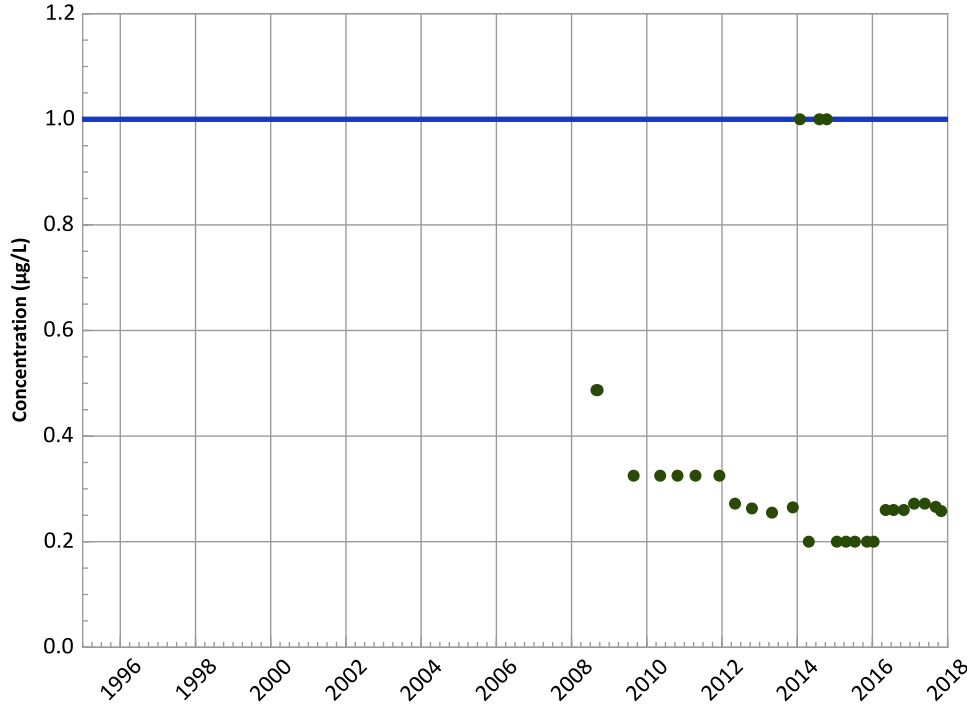


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/30/2008 to 10/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1150 in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

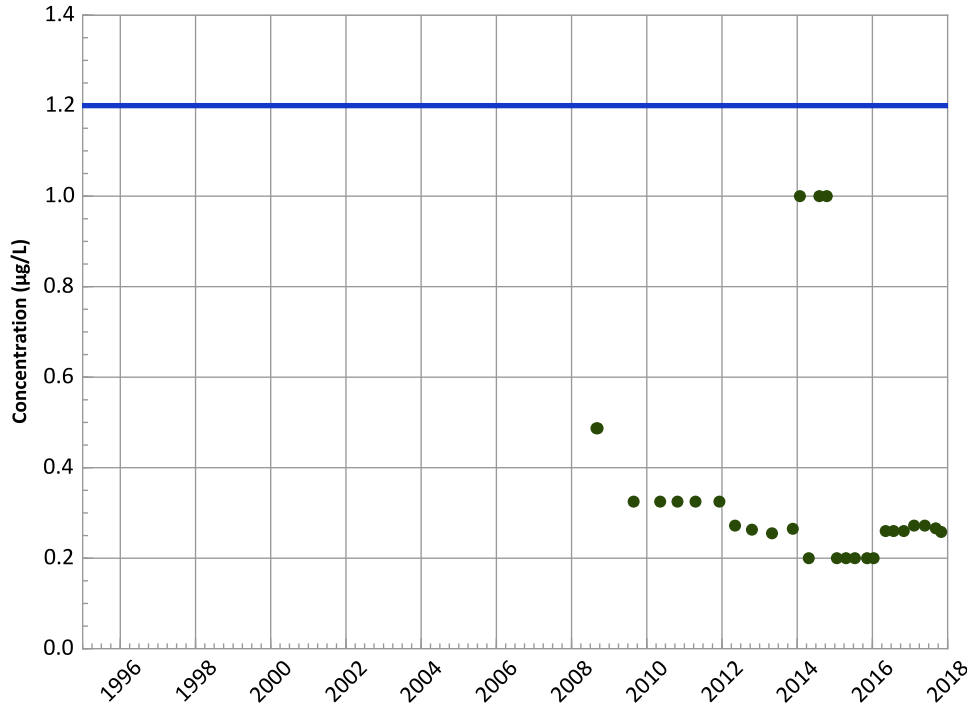
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

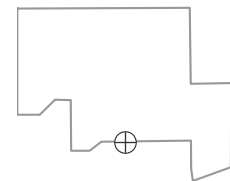
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

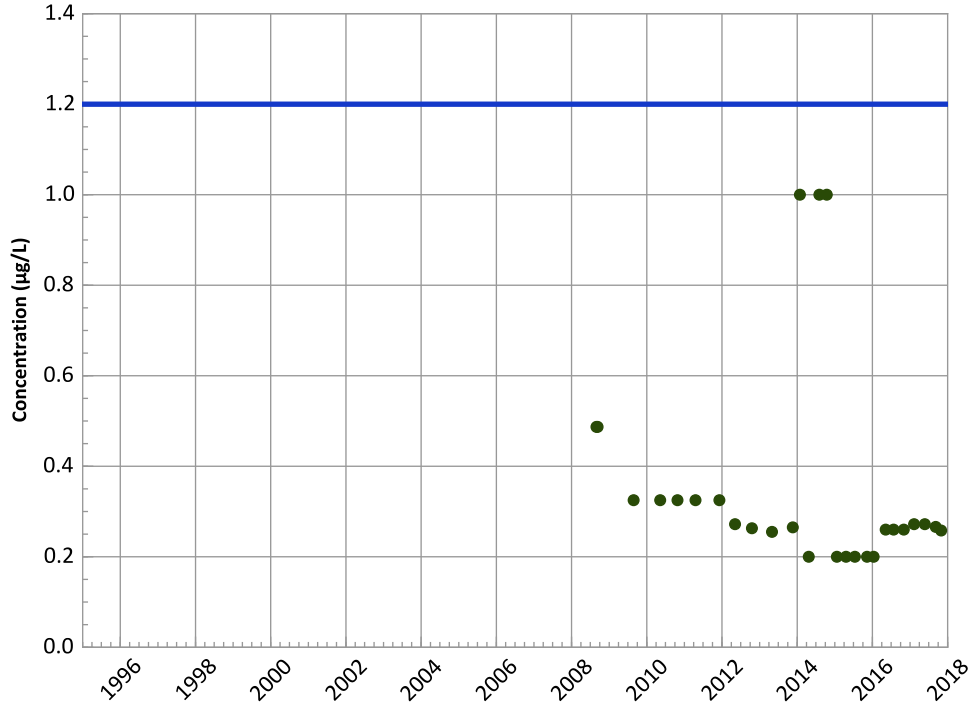


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/30/2008 to 10/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1150 in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

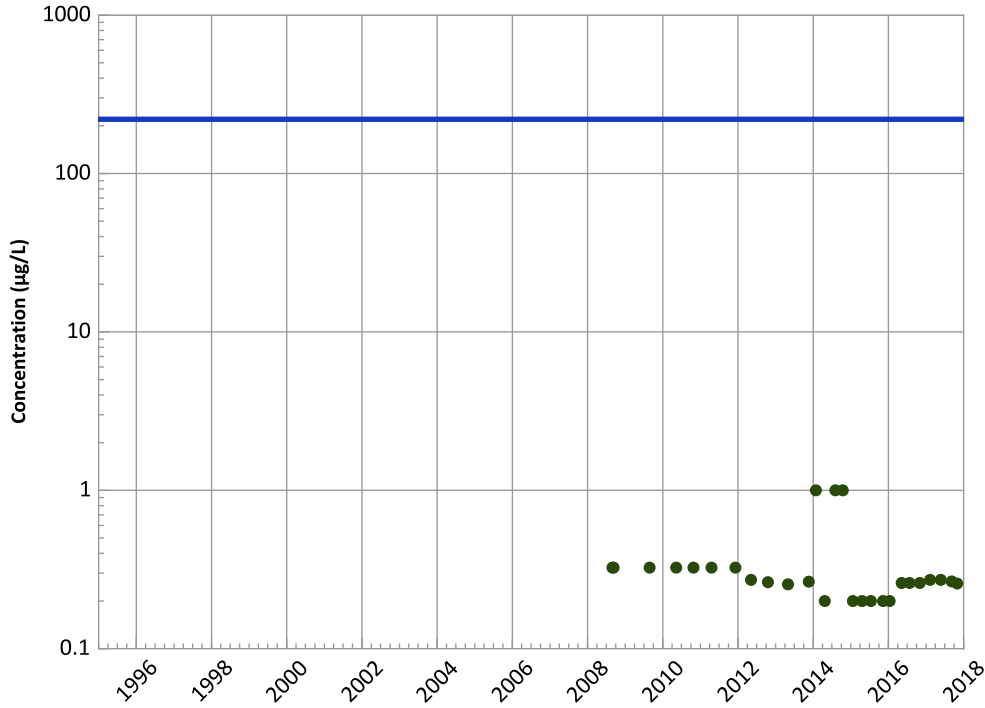
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,3,5-Trinitrobenzene Trend



Concentration Trend

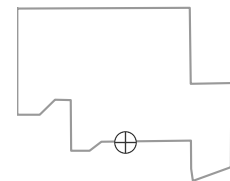
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

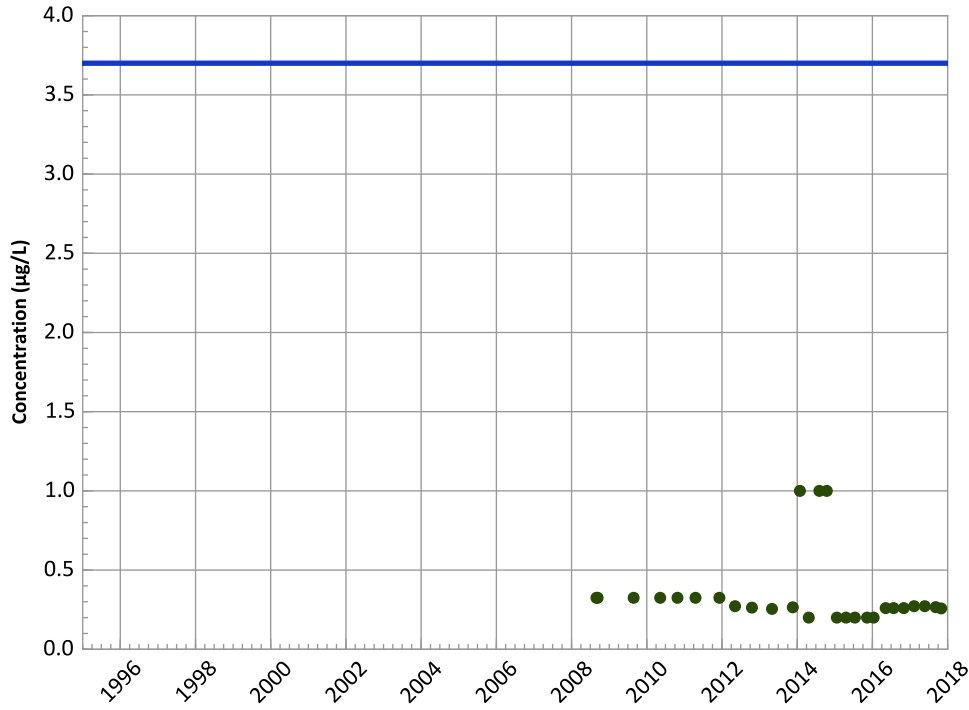
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/30/2008 to 10/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1150 in Perched Aquifer
USDOE/NNSA Pantex Plant
1,3-Dinitrobenzene Trend**



Concentration Trend

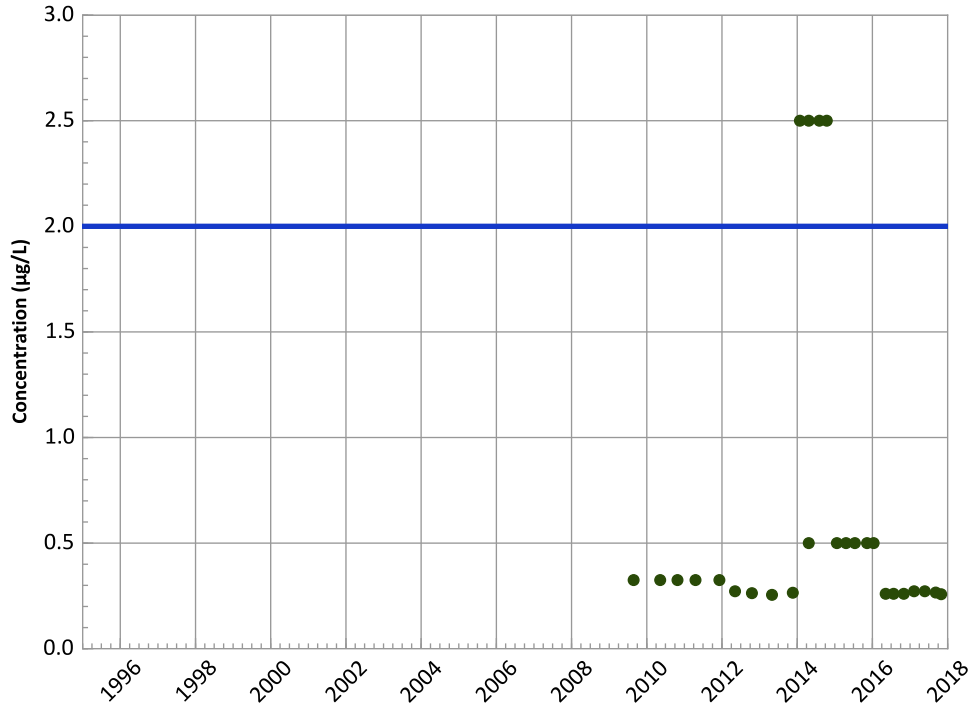
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Hexahydro-1-Nitroso-3,5-Dinitro-1,3,5-Triazine (MNX) Trend



Concentration Trend

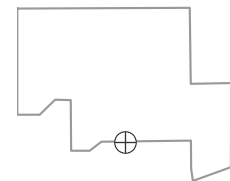
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

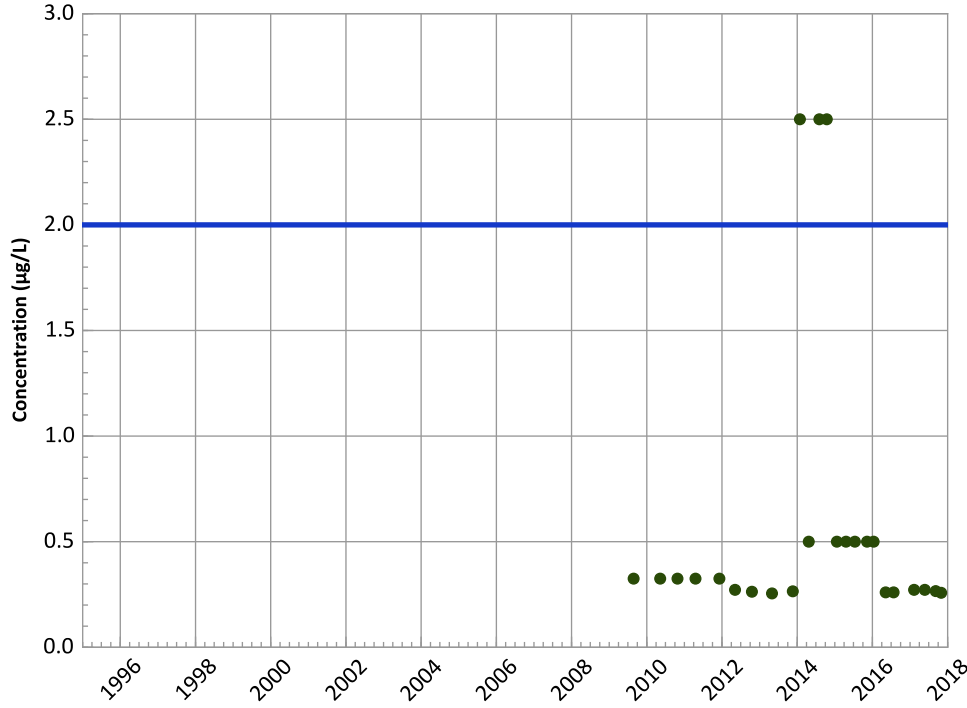


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/30/2008 to 10/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1150 in Perched Aquifer
USDOE/NNSA Pantex Plant

Hexahydro-1,3-Dinitroso-5-Nitro-1,3,5-Triazine (DNX) Trend



Concentration Trend

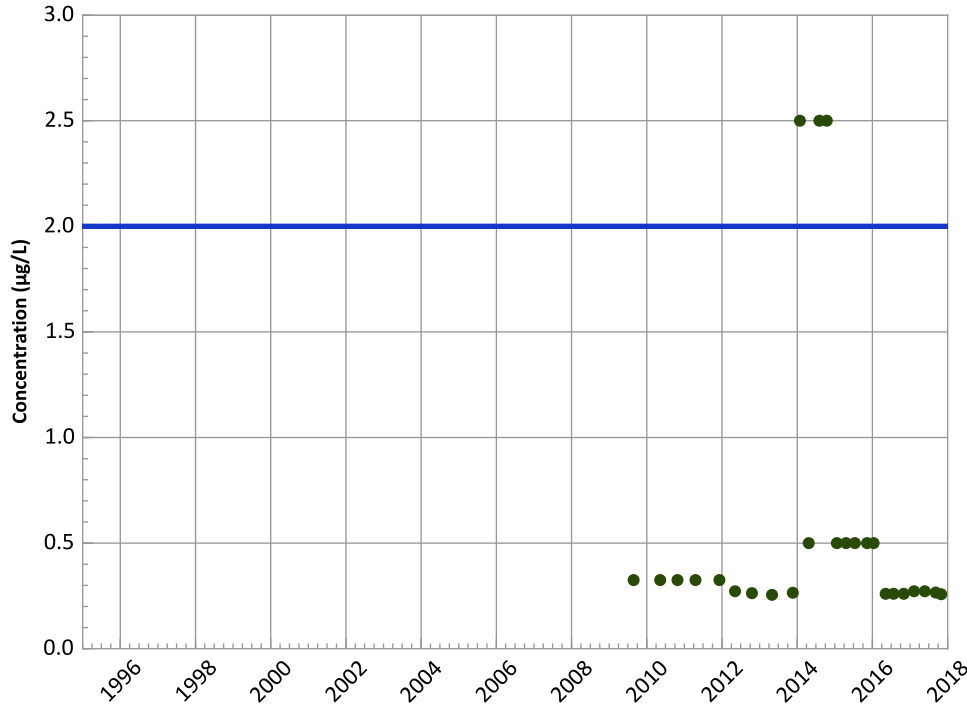
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Hexahydro-1,3,5-Trinitroso-1,3,5-Triazine (TNX) Trend



Concentration Trend

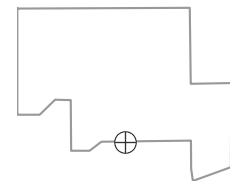
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

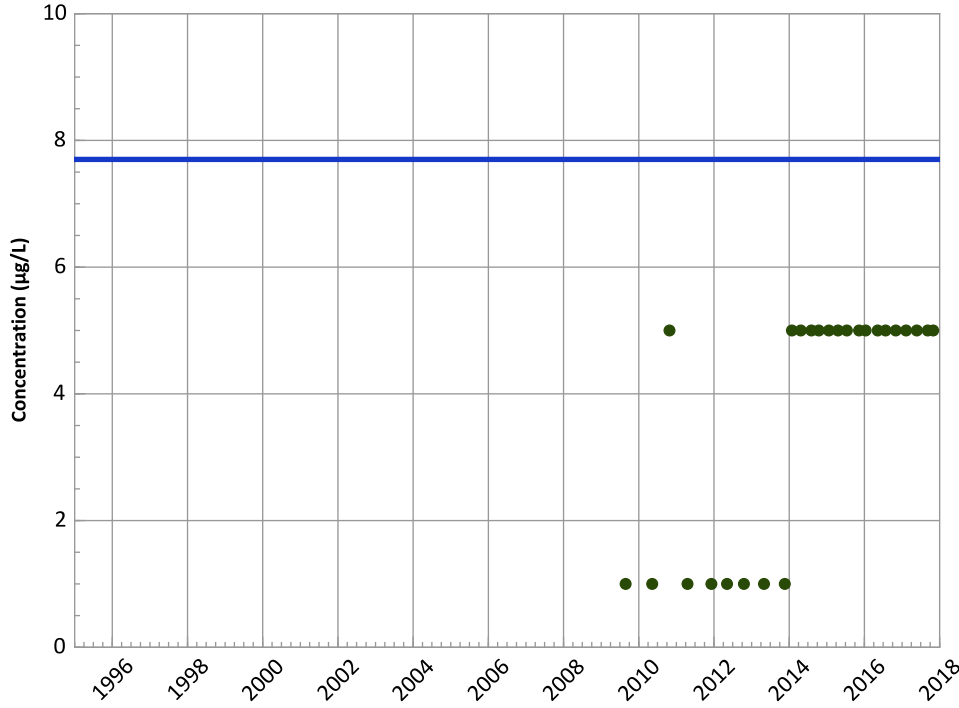


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/30/2008 to 10/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1150 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,4-Dioxane (p-Dioxane) Trend



Concentration Trend

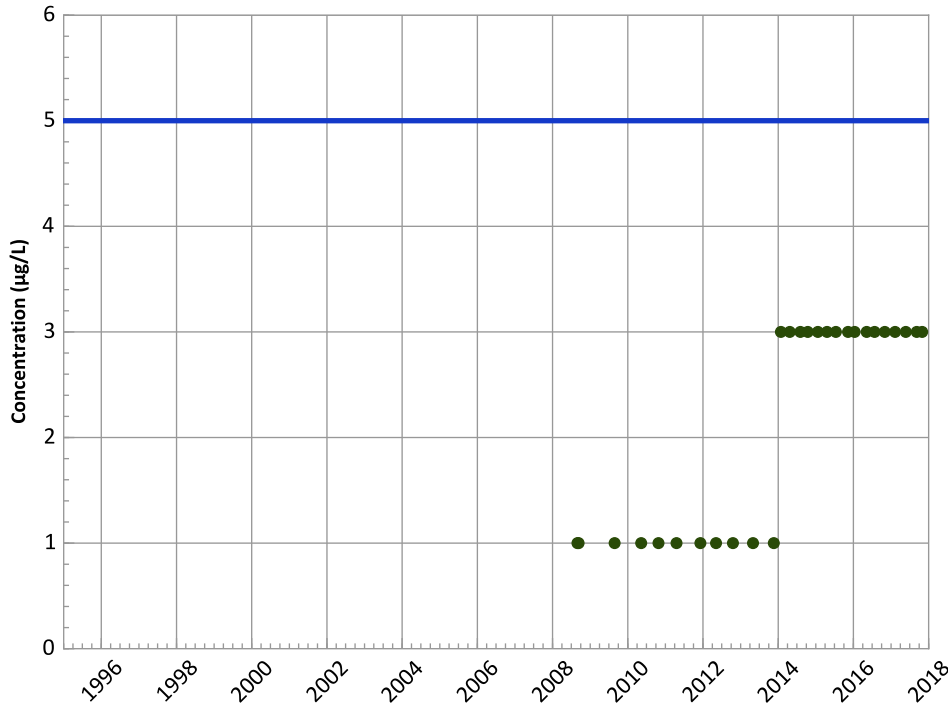
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Tetrachloroethylene (PCE) Trend



Concentration Trend

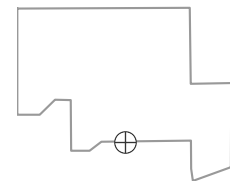
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

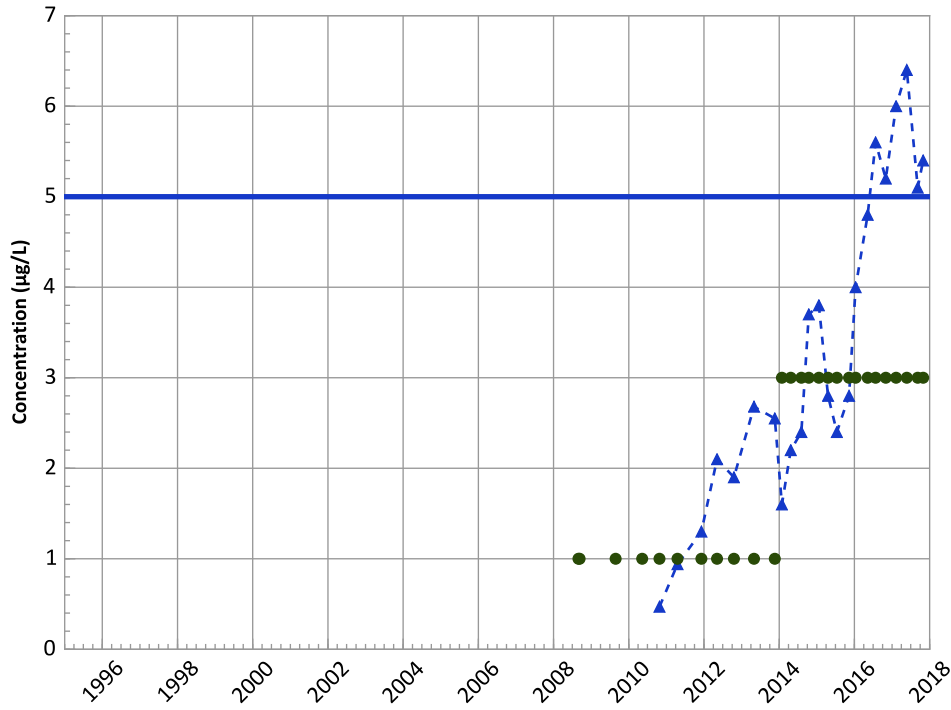


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/30/2008 to 10/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1150 in Perched Aquifer
USDOE/NNSA Pantex Plant

Trichloroethene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

Increasing

All Data

Increasing

MAROS Linear Regression Method

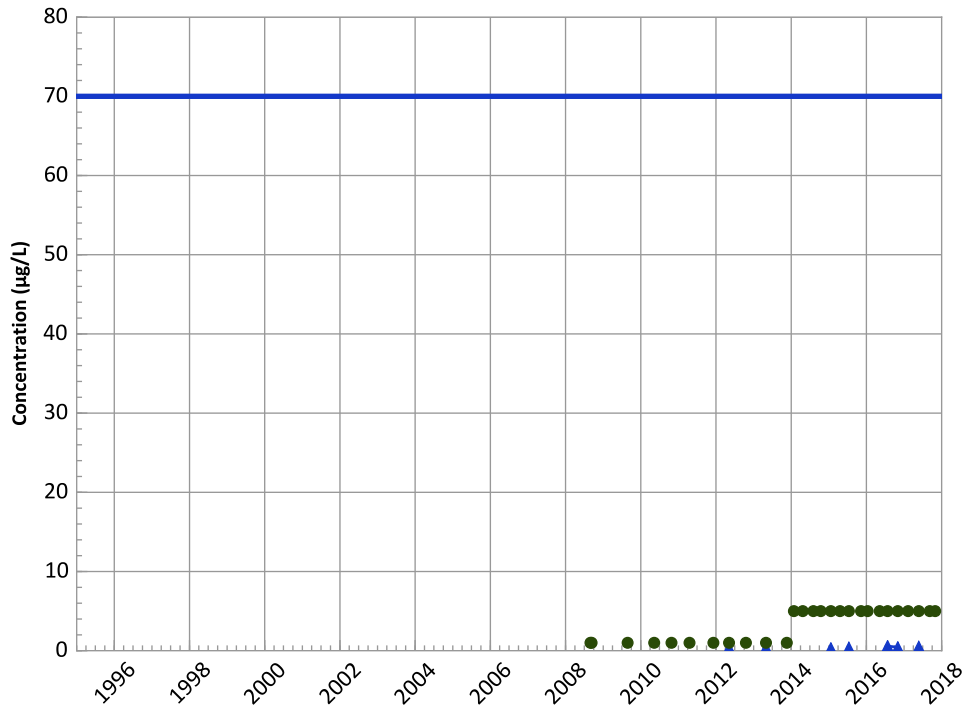
Data ():

Increasing

All Data

Increasing

cis-1,2-Dichloroethene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

No Trend

All Data

Increasing

MAROS Linear Regression Method

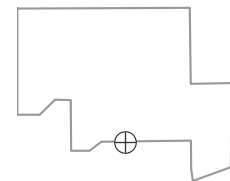
Data ():

No Trend

All Data

Probably Increasing

Well Location

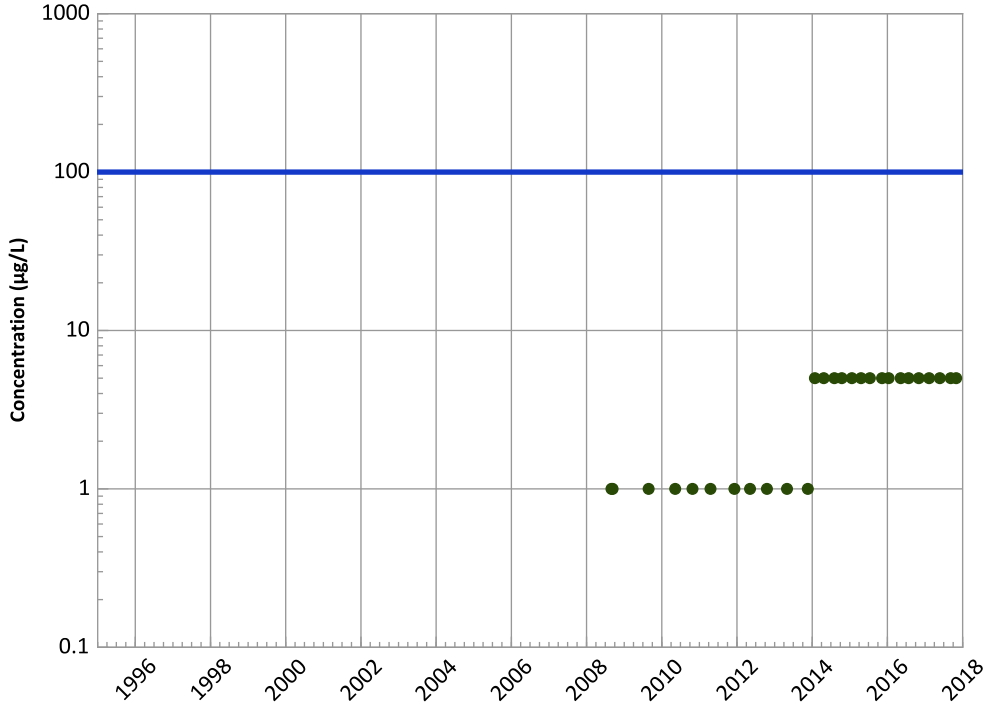


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/30/2008 to 10/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1150 in Perched Aquifer
USDOE/NNSA Pantex Plant

trans-1,2-Dichloroethene Trend



Concentration Trend

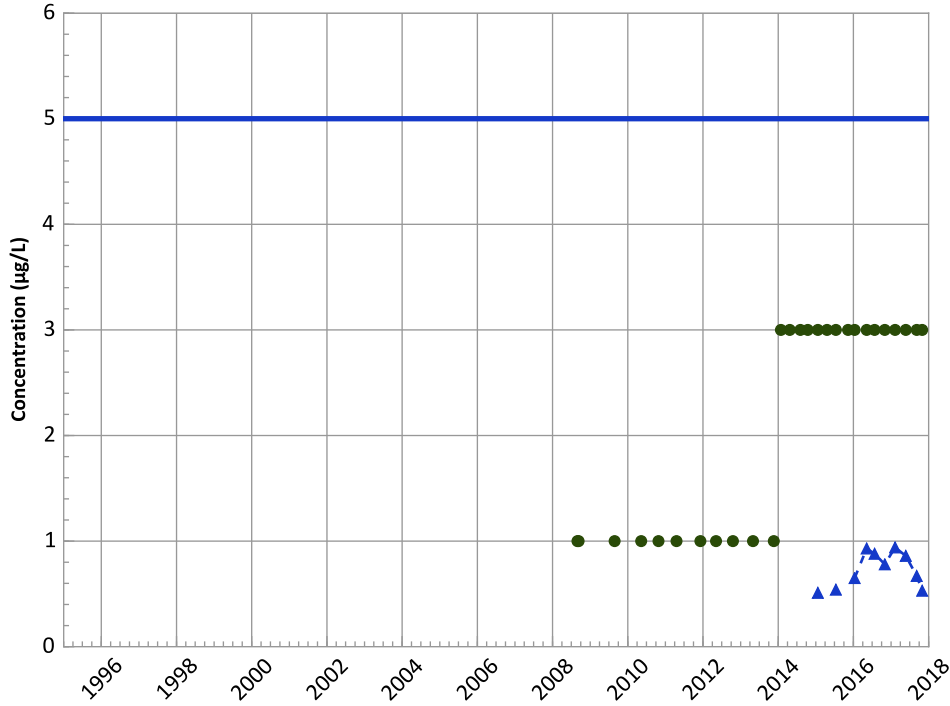
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,2-Dichloroethane Trend



Concentration Trend

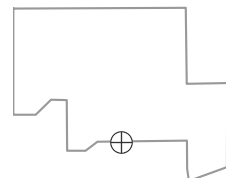
MAROS Mann-Kendall Method

Data ():
No Trend
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
No Trend

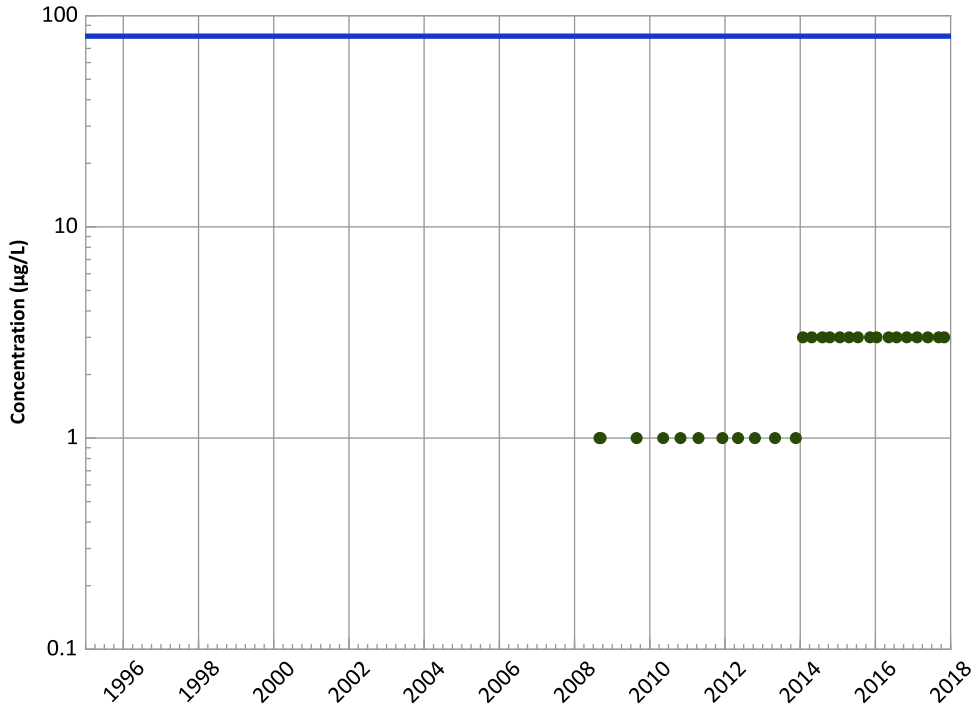
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/30/2008 to 10/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1150 in Perched Aquifer
USDOE/NNSA Pantex Plant
Chloroform Trend**



Concentration Trend

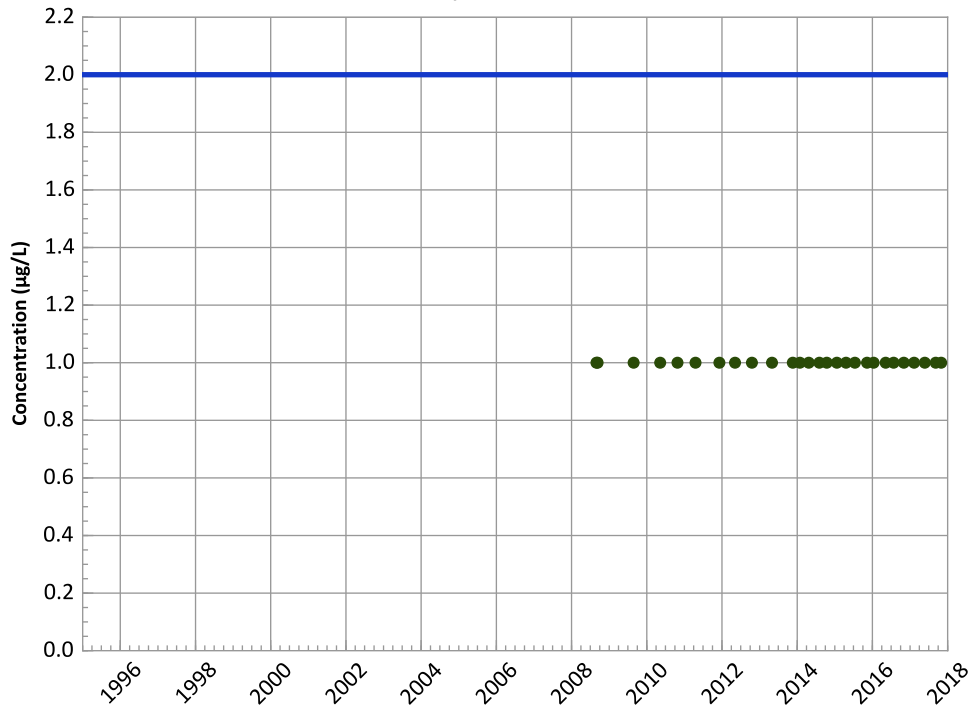
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Vinyl Chloride Trend



Concentration Trend

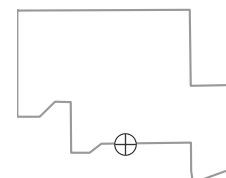
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

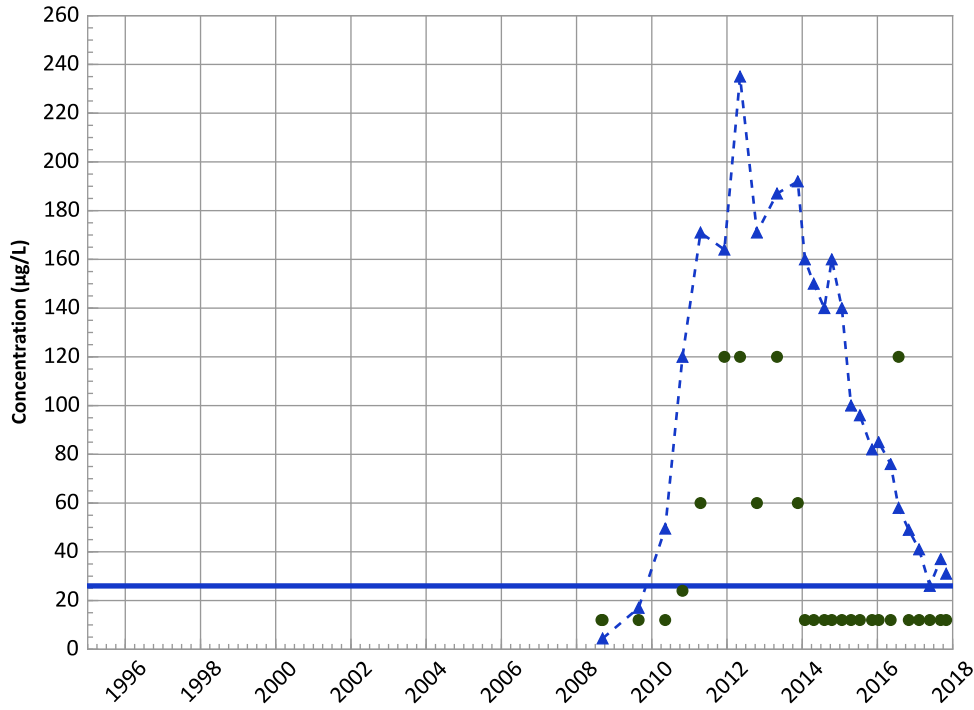
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/30/2008 to 10/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1150 in Perched Aquifer
USDOE/NNSA Pantex Plant
Perchlorate Trend**



Concentration Trend

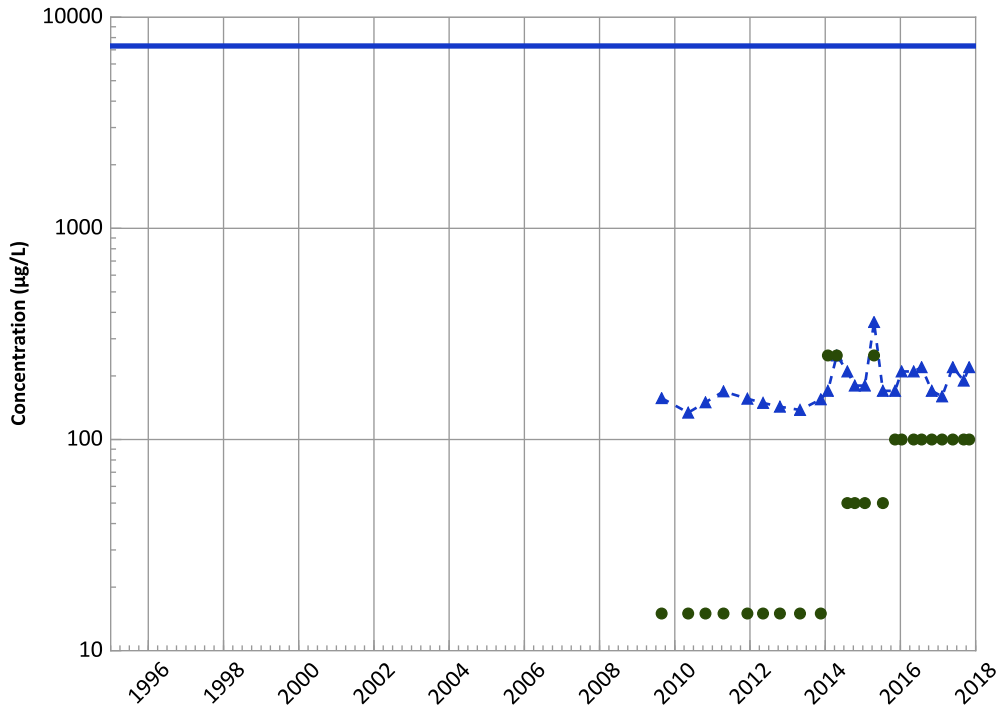
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
No Trend

Boron Trend



Concentration Trend

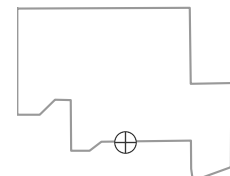
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

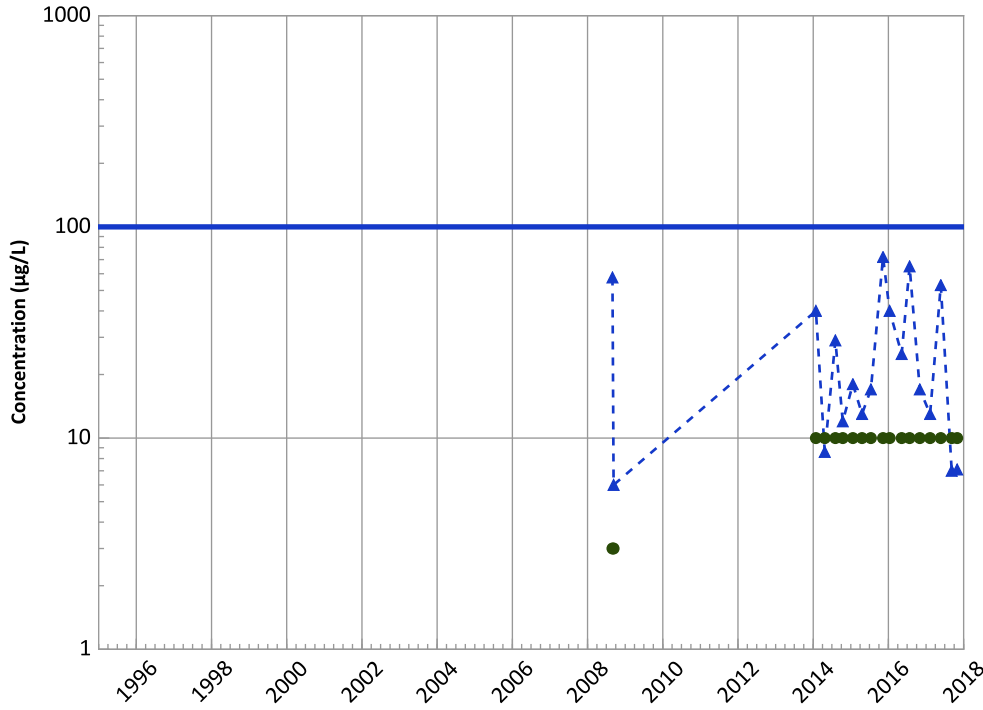
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/30/2008 to 10/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1150 in Perched Aquifer
 USDOE/NNSA Pantex Plant
 Chromium, Total Trend



Concentration Trend

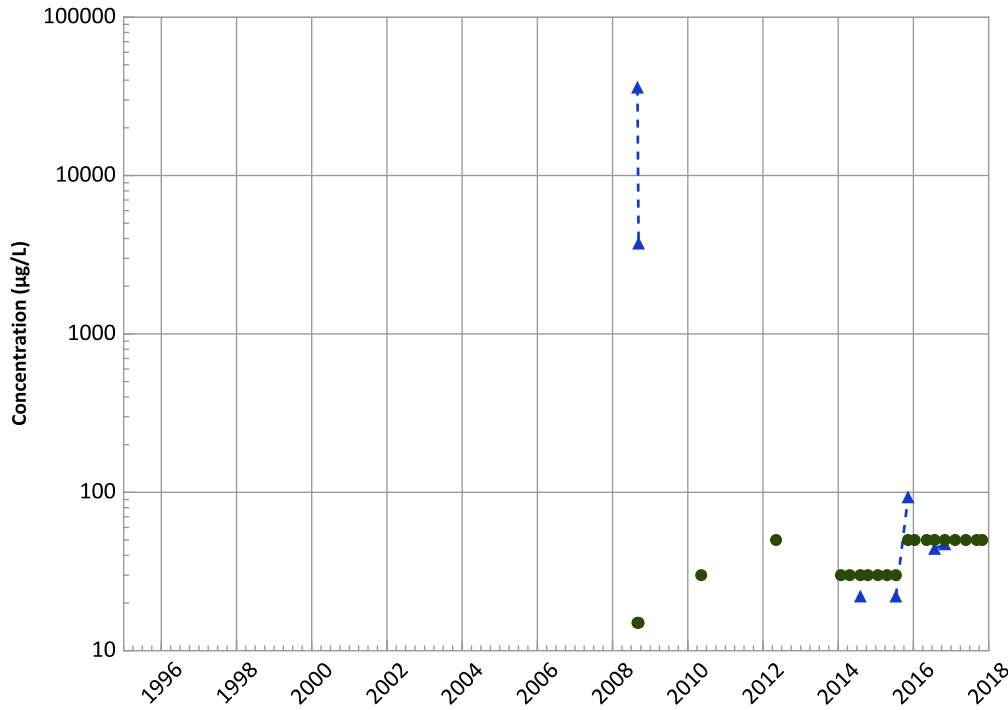
MAROS Mann-Kendall Method

Data ():
 No Trend
 All Data
 Decreasing

MAROS Linear Regression Method

Data ():
 No Trend
 All Data
 Decreasing

Aluminum Trend



Concentration Trend

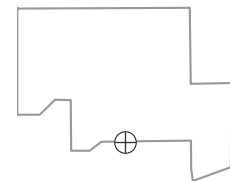
MAROS Mann-Kendall Method

Data ():
 Increasing
 All Data
 No Trend

MAROS Linear Regression Method

Data ():
 No Trend
 All Data
 Decreasing

Well Location

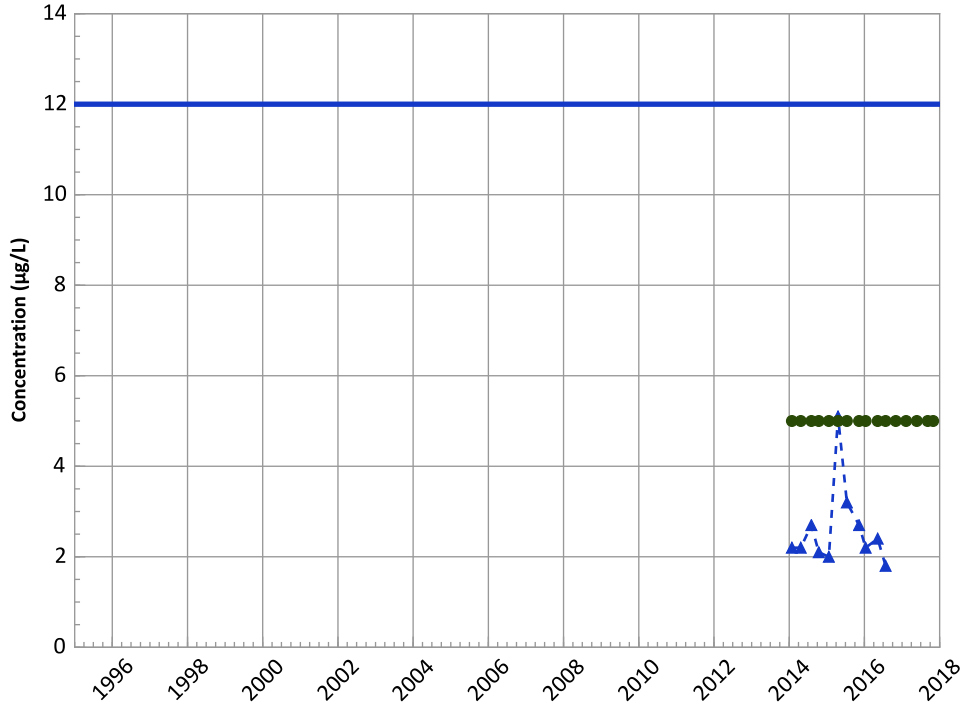


Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 08/30/2008 to 10/30/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1150 in Perched Aquifer
USDOE/NNSA Pantex Plant

Arsenic Trend



Concentration Trend

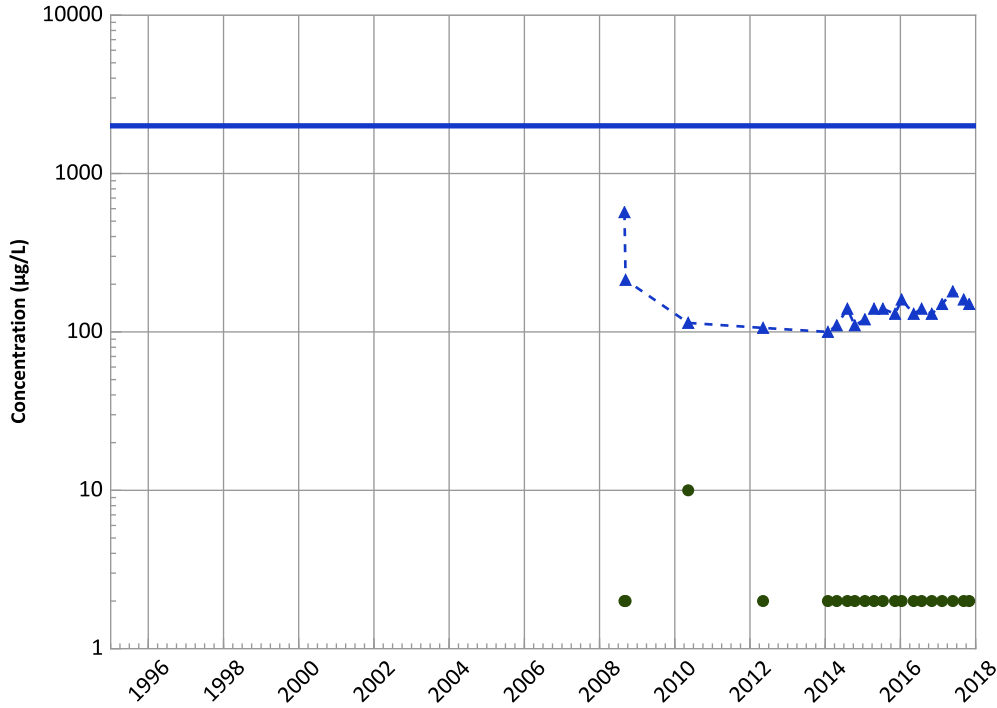
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
No Trend

MAROS Linear Regression Method

Data ():
Stable
All Data
Stable

Barium Trend



Concentration Trend

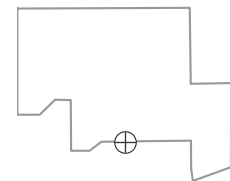
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Decreasing

Well Location

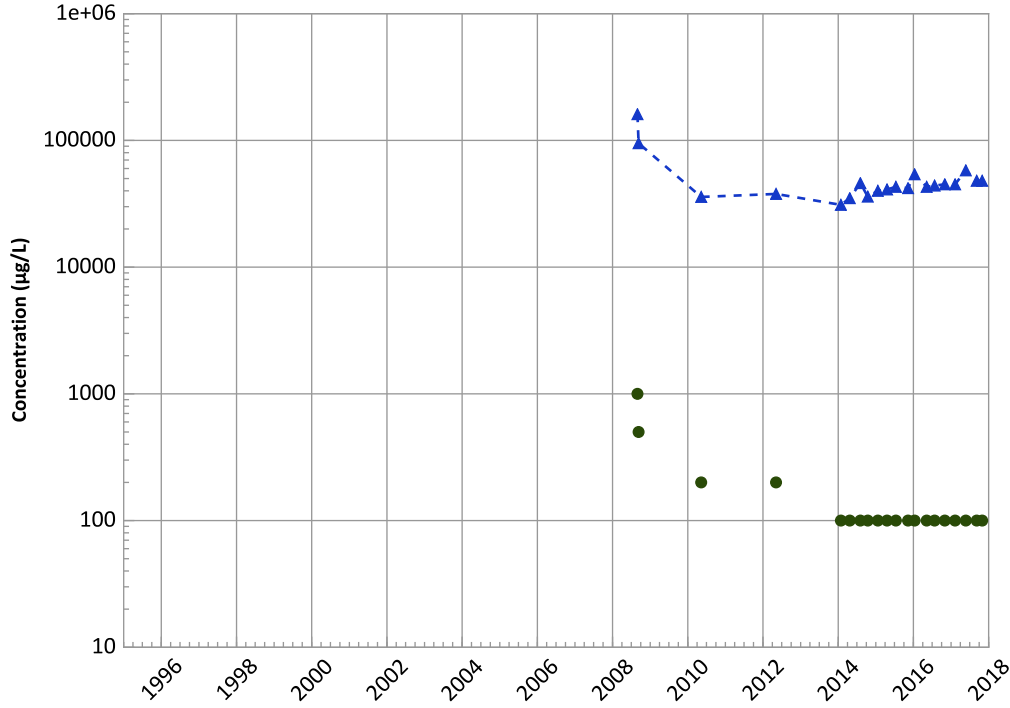


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/30/2008 to 10/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1150 in Perched Aquifer
USDOE/NNSA Pantex Plant

Calcium Trend



Concentration Trend

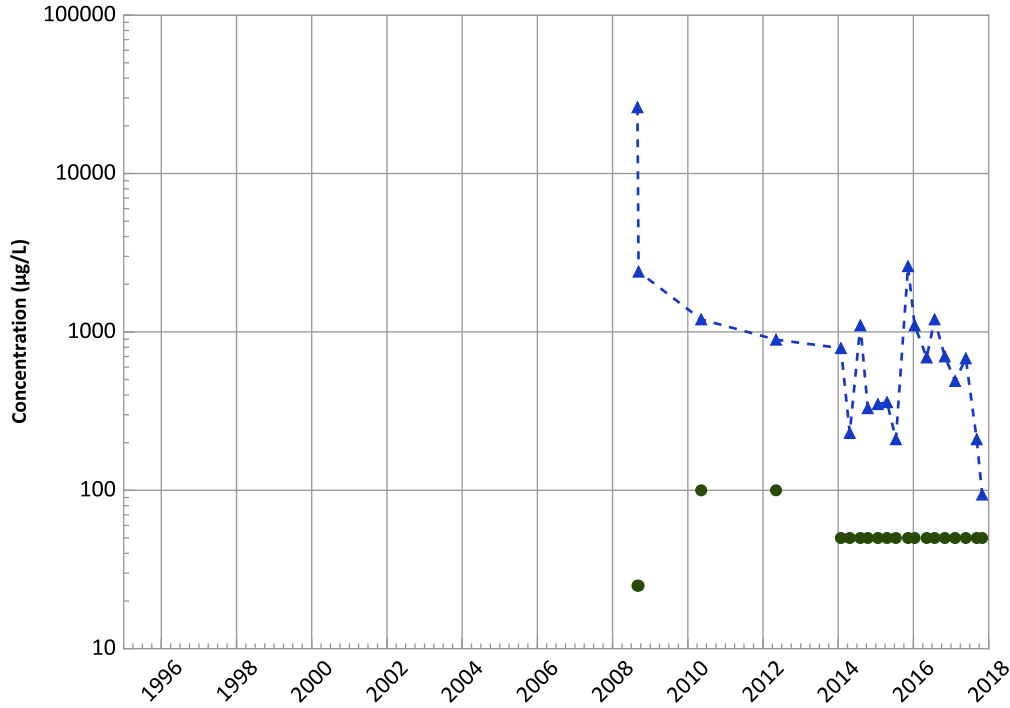
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Decreasing

Iron Trend



Concentration Trend

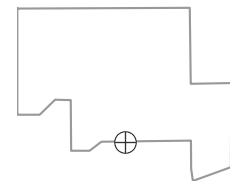
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
Decreasing

Well Location

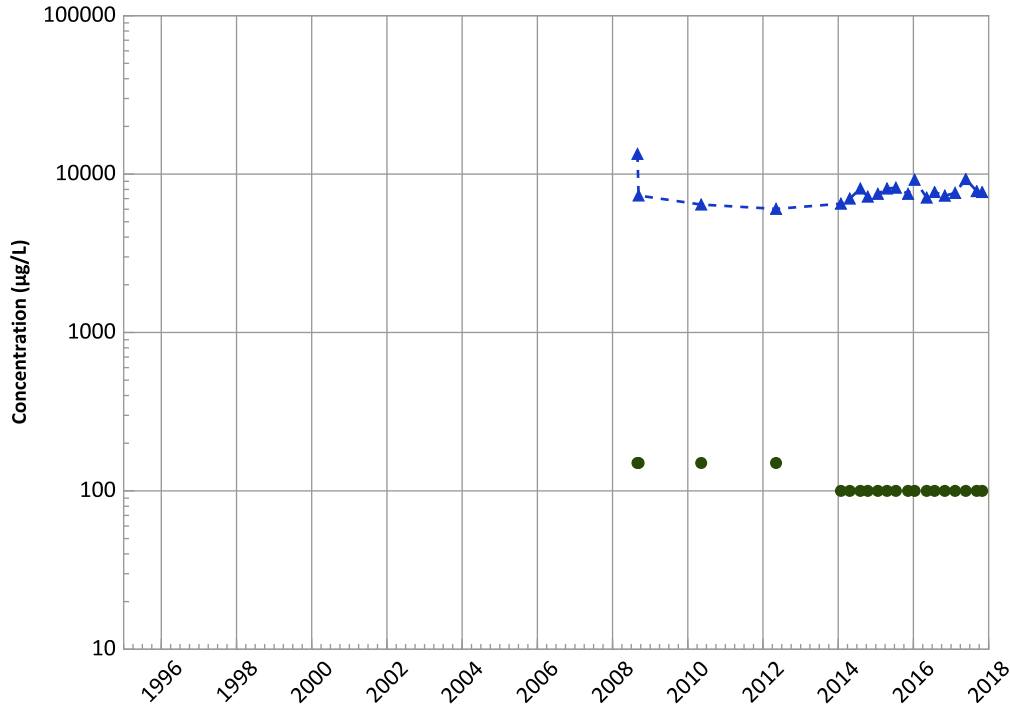


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/30/2008 to 10/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1150 in Perched Aquifer
USDOE/NNSA Pantex Plant

Potassium Trend



Concentration Trend

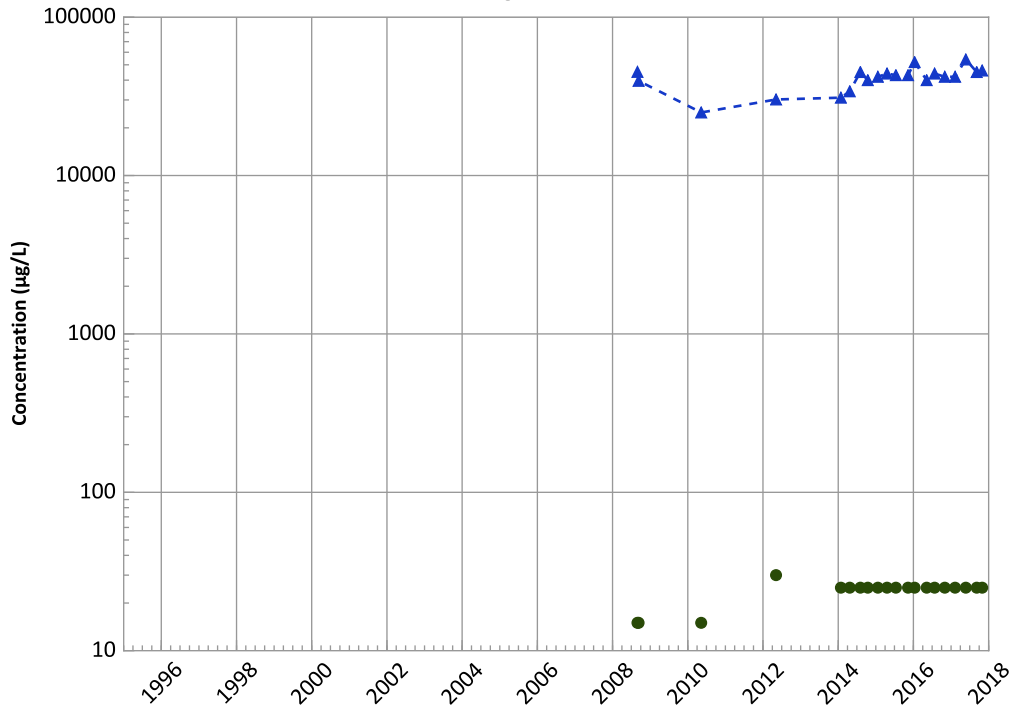
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Stable

Magnesium Trend



Concentration Trend

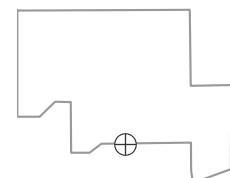
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

Well Location

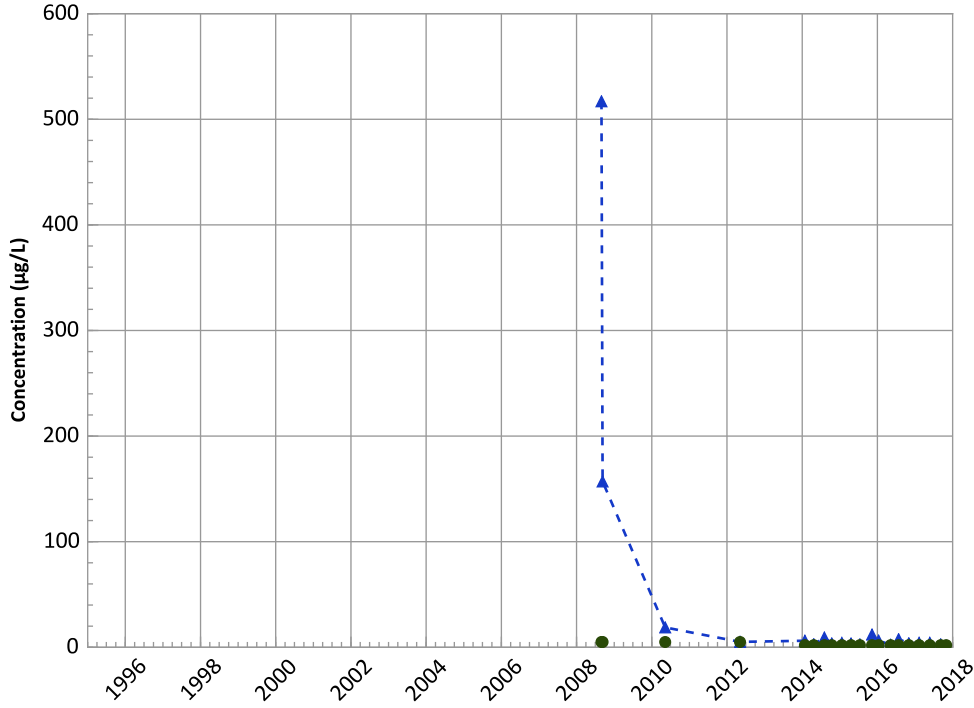


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/30/2008 to 10/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1150 in Perched Aquifer
USDOE/NNSA Pantex Plant

Manganese Trend



Concentration Trend

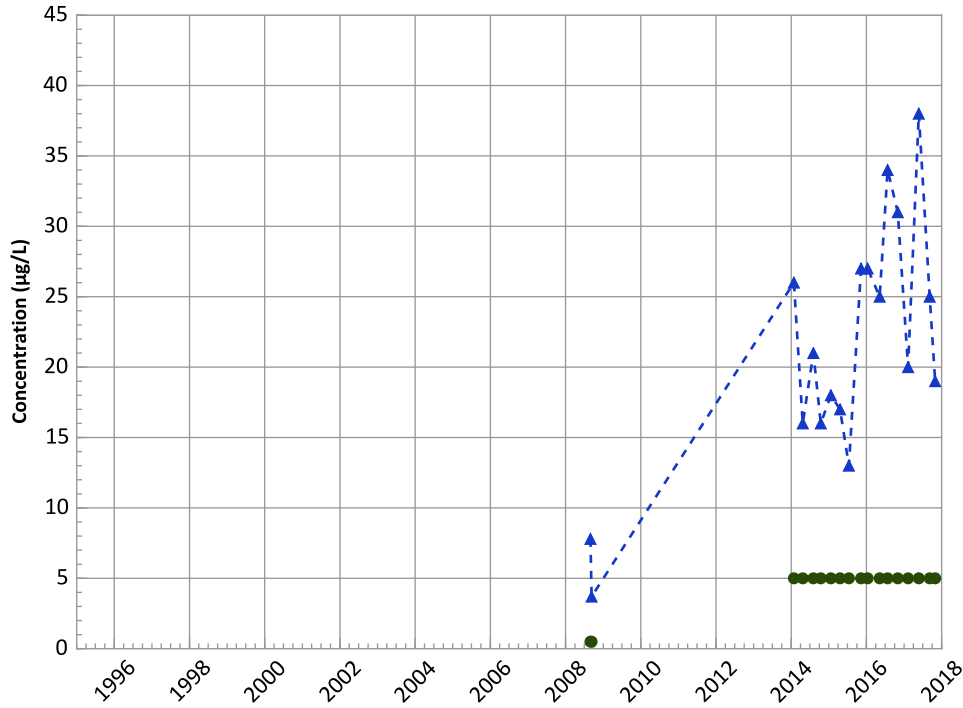
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Stable
All Data
Decreasing

Molybdenum Trend



Concentration Trend

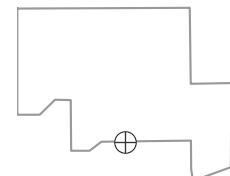
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

Well Location

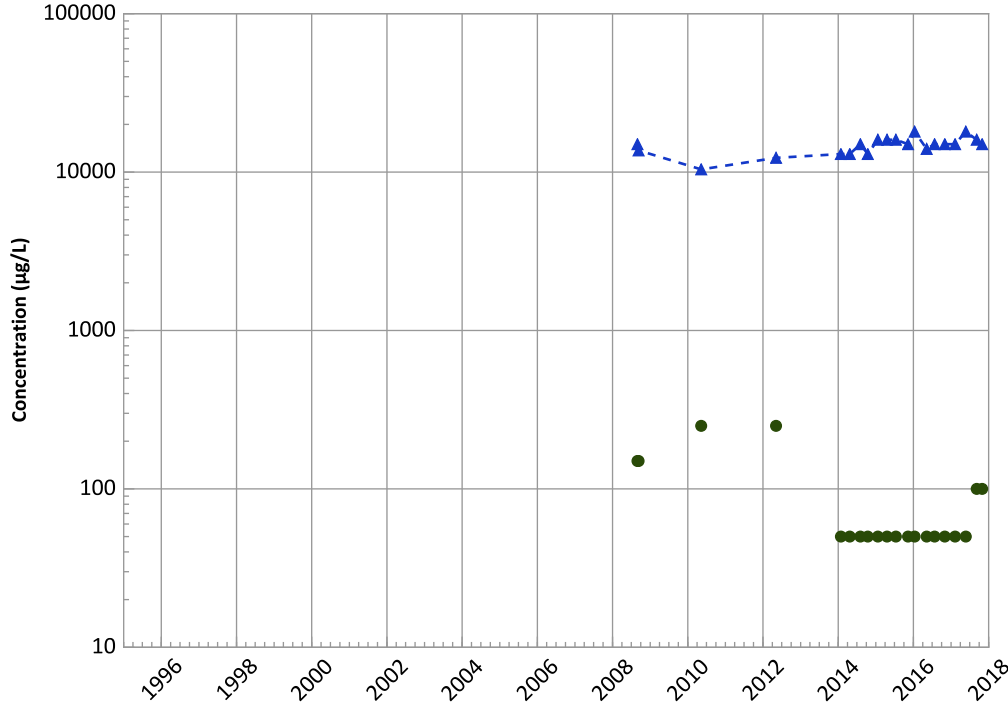


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/30/2008 to 10/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1150 in Perched Aquifer
USDOE/NNSA Pantex Plant

Sodium Trend



Concentration Trend

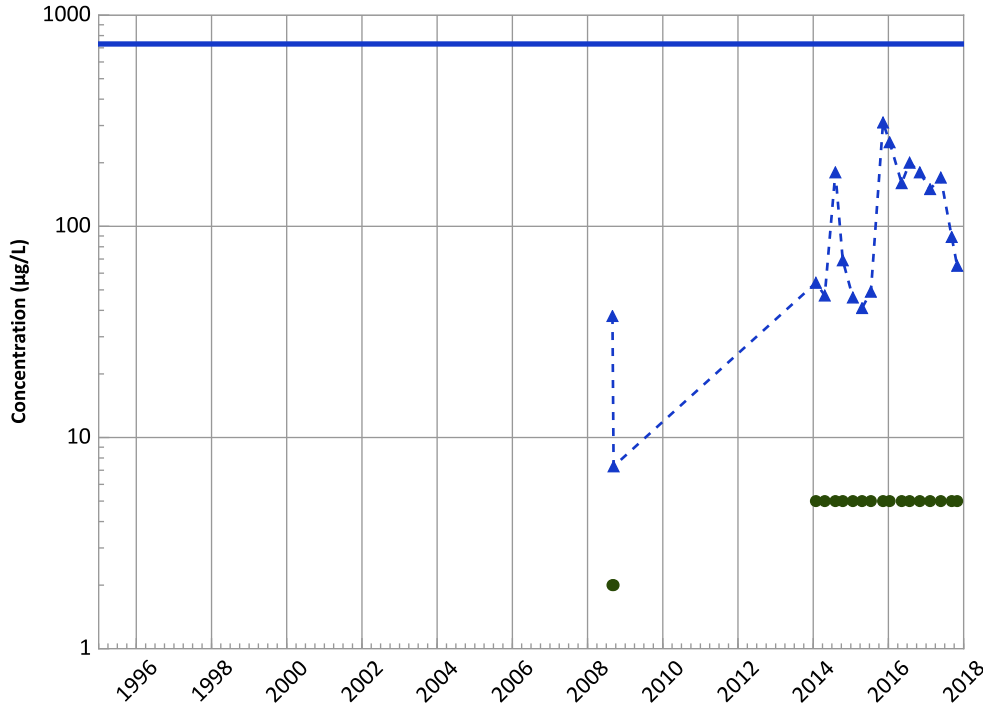
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

Nickel Trend



Concentration Trend

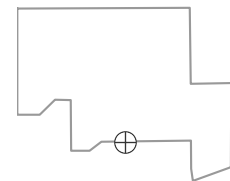
MAROS Mann-Kendall Method

Data ():
No Trend
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

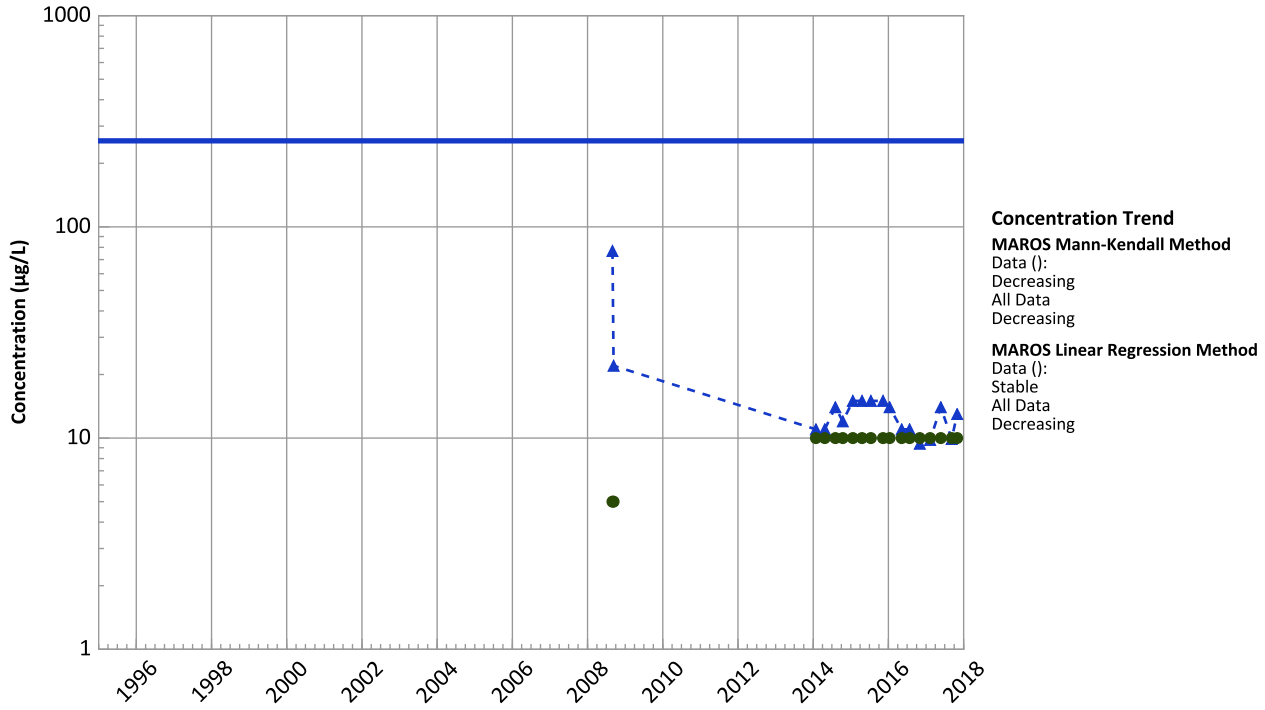
Well Location



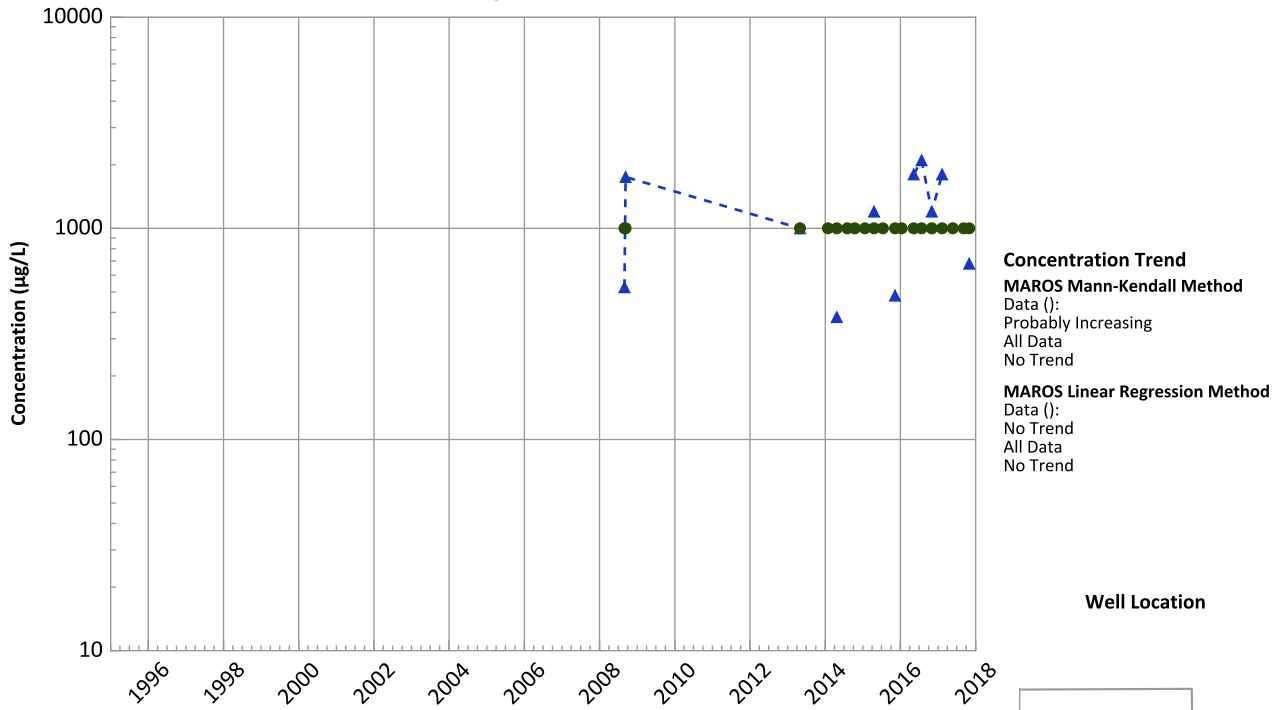
Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/30/2008 to 10/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

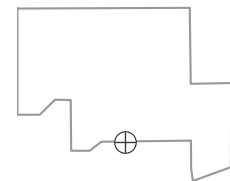
**PTX06-1150 in Perched Aquifer
USDOE/NNSA Pantex Plant
Vanadium Trend**



Total Organic Carbon Trend



Well Location

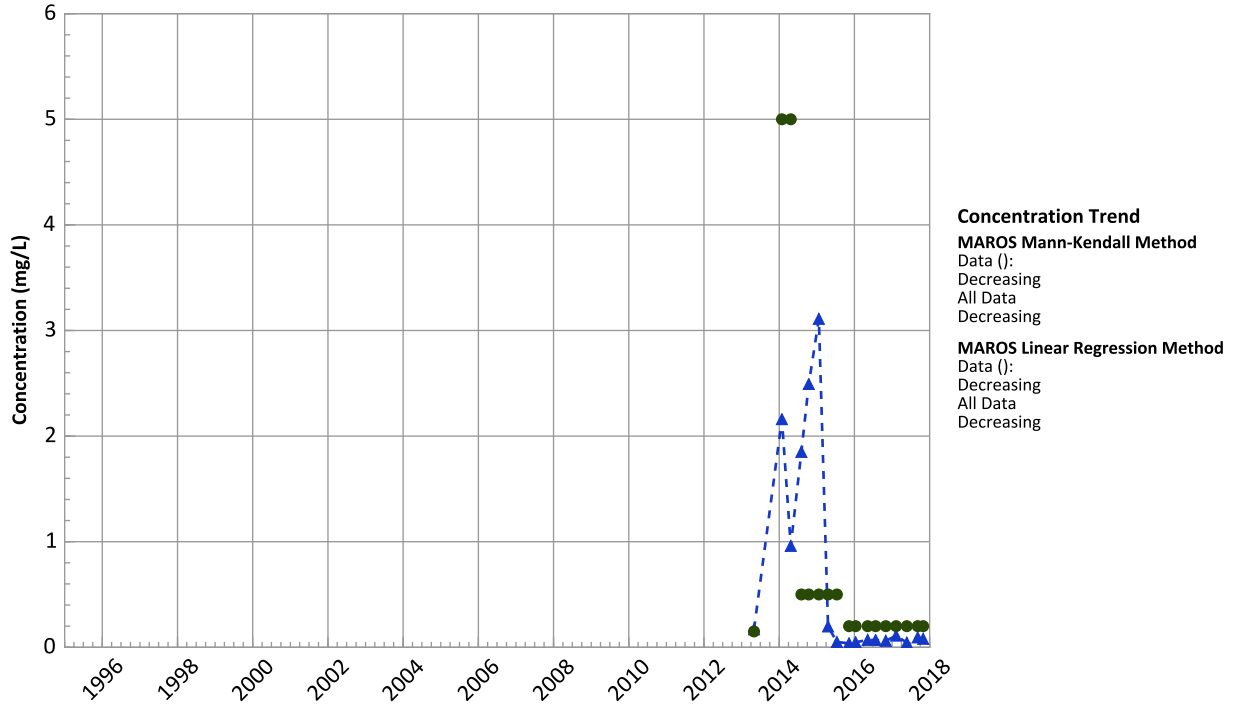


Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 08/30/2008 to 10/30/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1150 in Perched Aquifer
USDOE/NNSA Pantex Plant

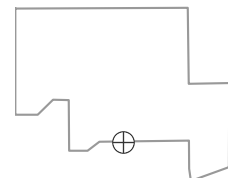
Total Volatile Fatty Acids Trend



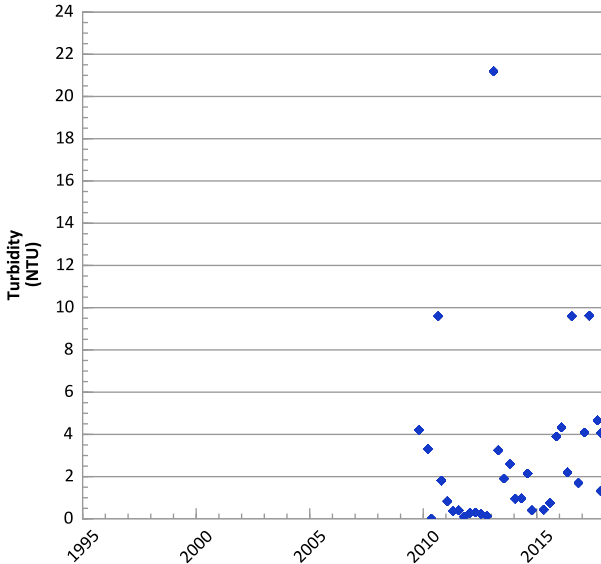
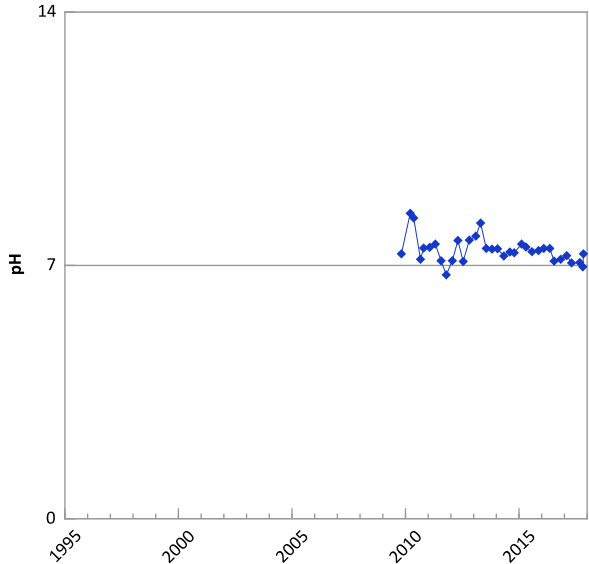
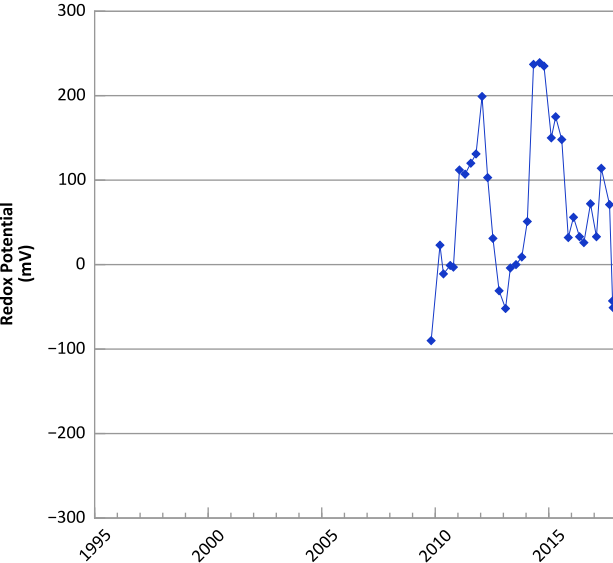
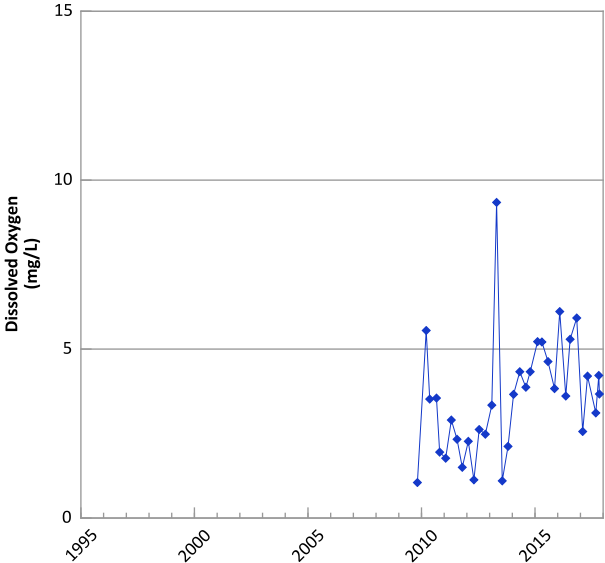
Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/30/2008 to 10/30/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

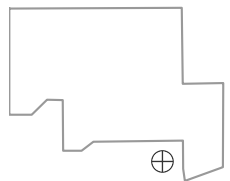


PTX06-1153 in Perched Aquifer USDOE/NNSA Pantex Plant Field Parameters



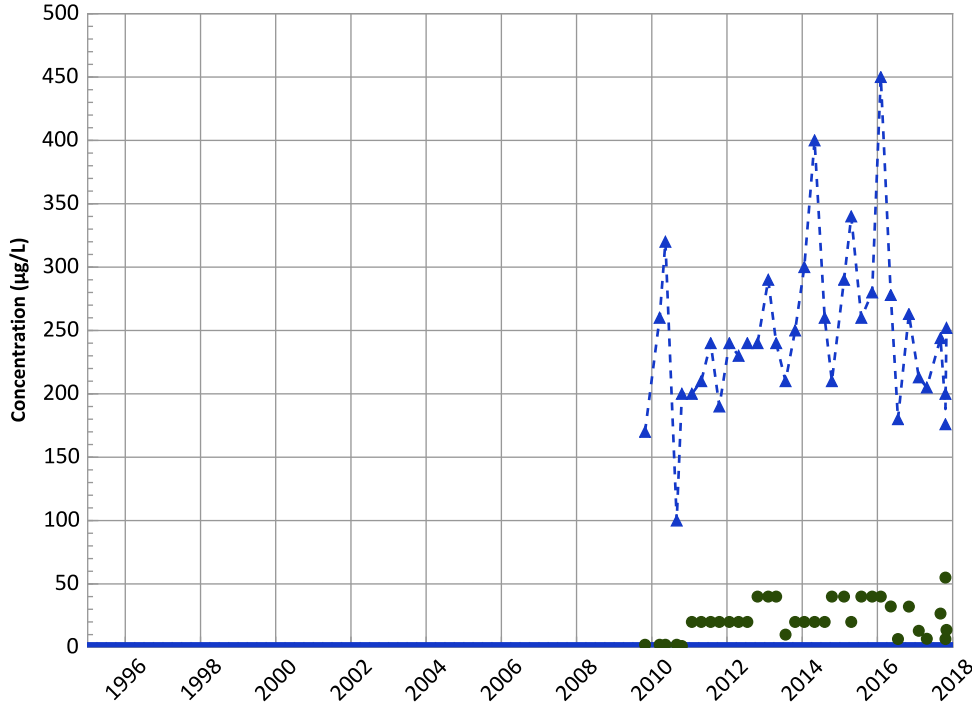
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 10/27/2009 to 11/02/2017
 Analysis Date: 03/21/2018

Well Location



PTX06-1153 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

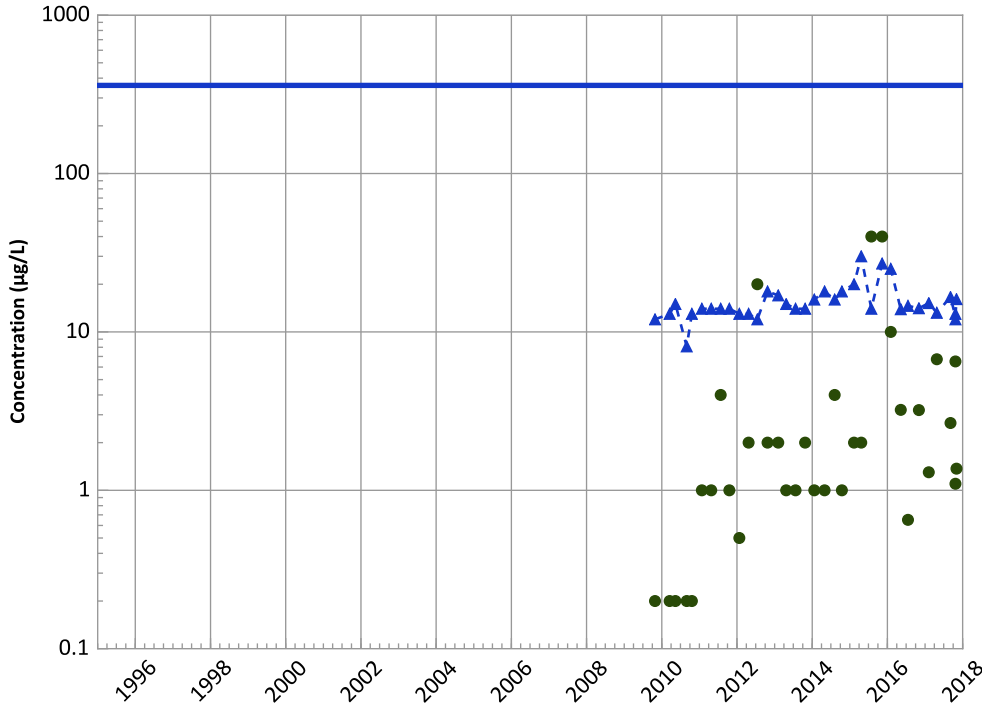
MAROS Mann-Kendall Method

Data ():
Probably Increasing
All Data
Probably Increasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
Probably Increasing

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

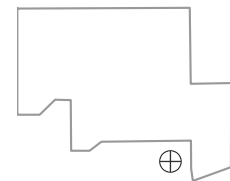
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

Well Location

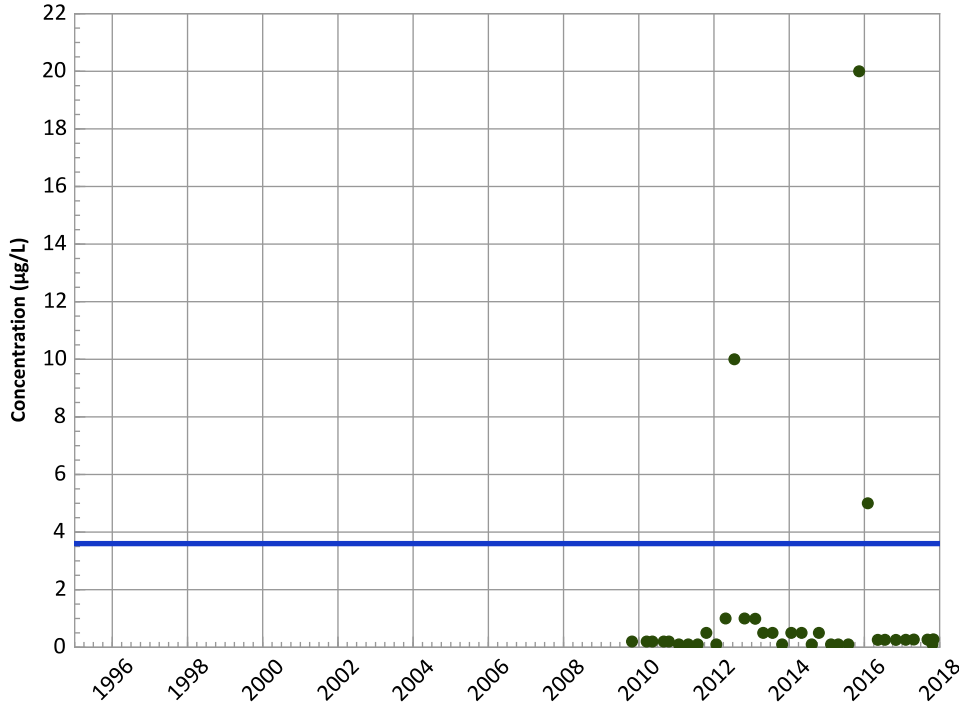


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/27/2009 to 11/02/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1153 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

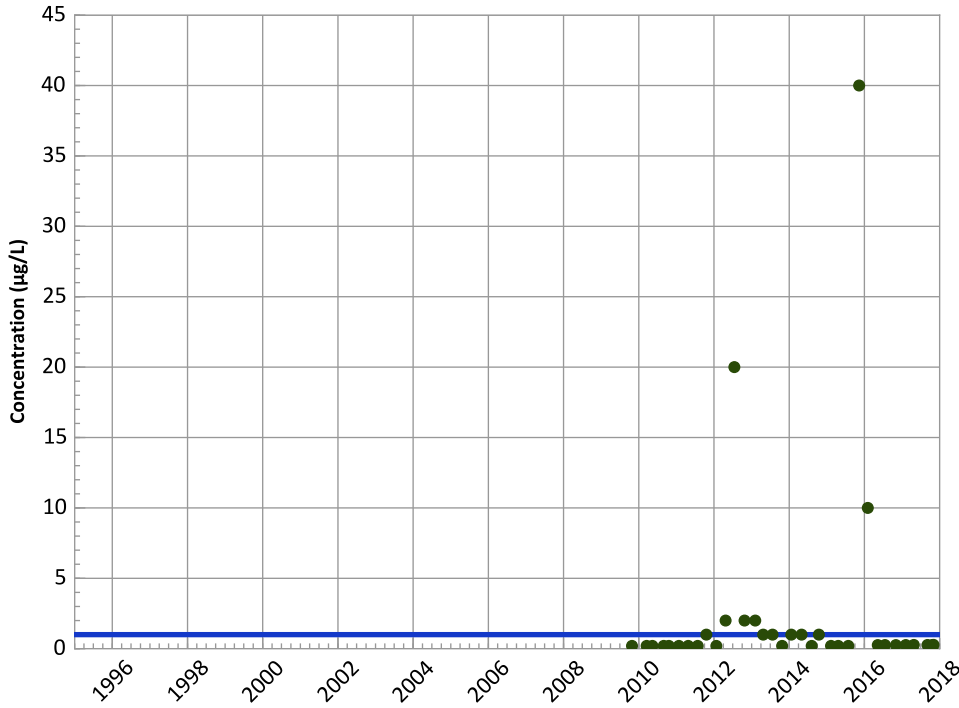
Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

2,4-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

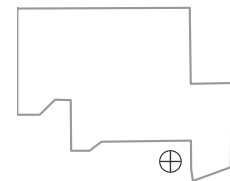
Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

Well Location

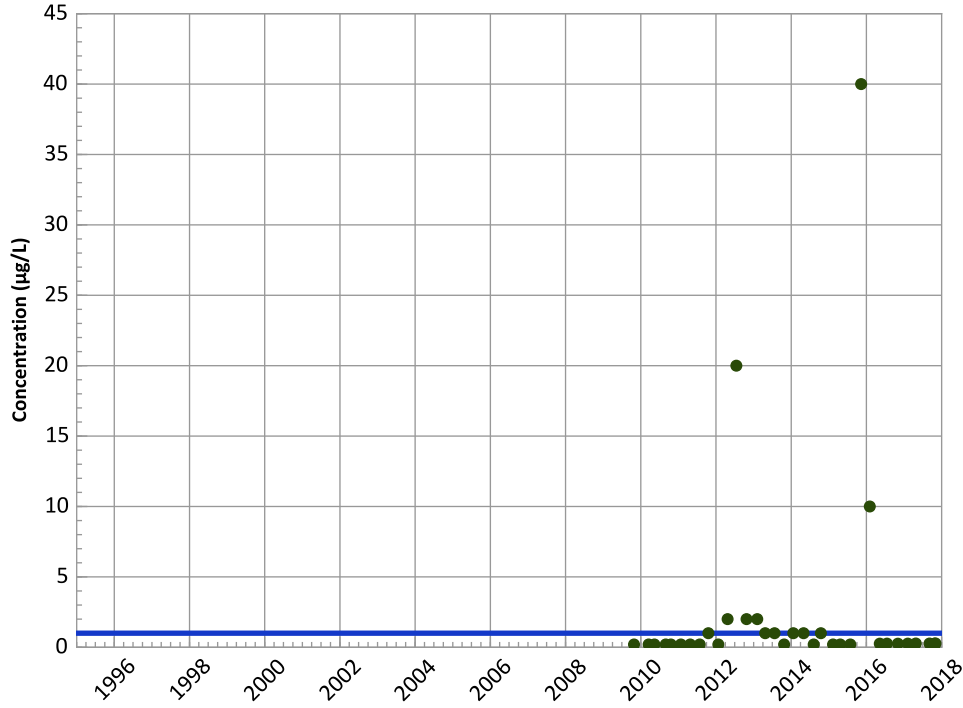


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/27/2009 to 11/02/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1153 in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

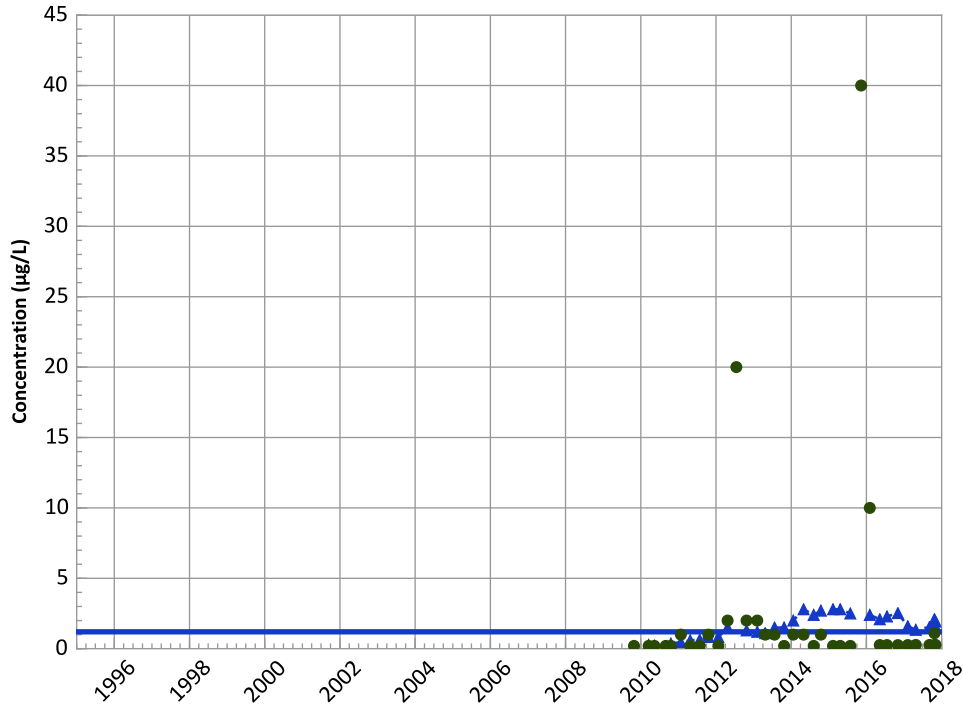
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
No Trend

MAROS Linear Regression Method

Data ():
No Trend
All Data
Probably Decreasing

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

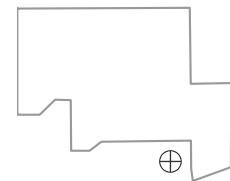
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

Well Location

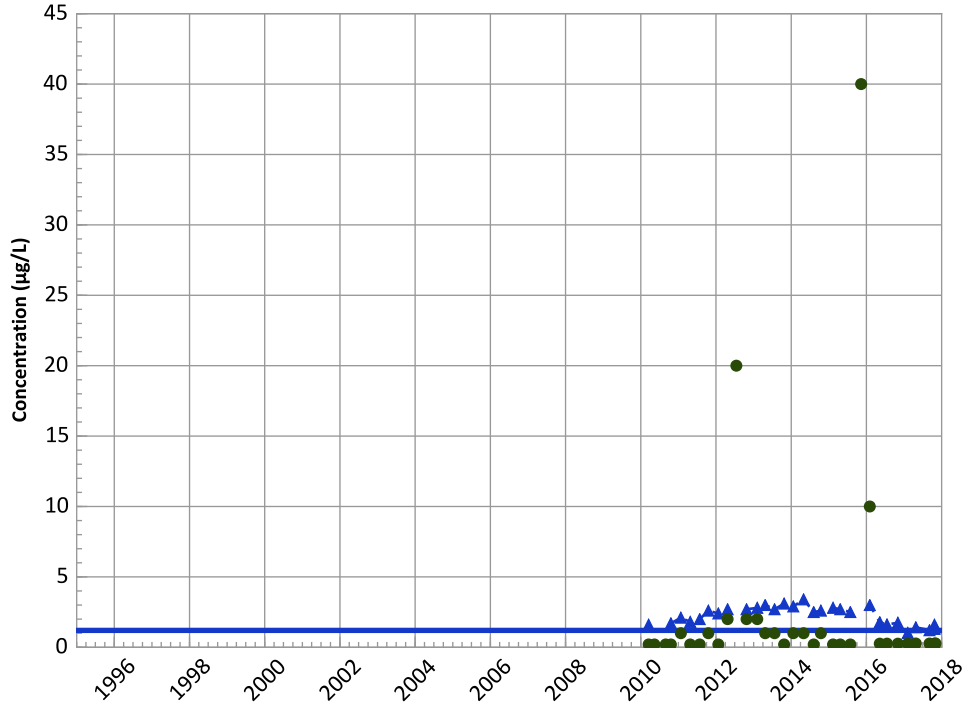


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/27/2009 to 11/02/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1153 in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

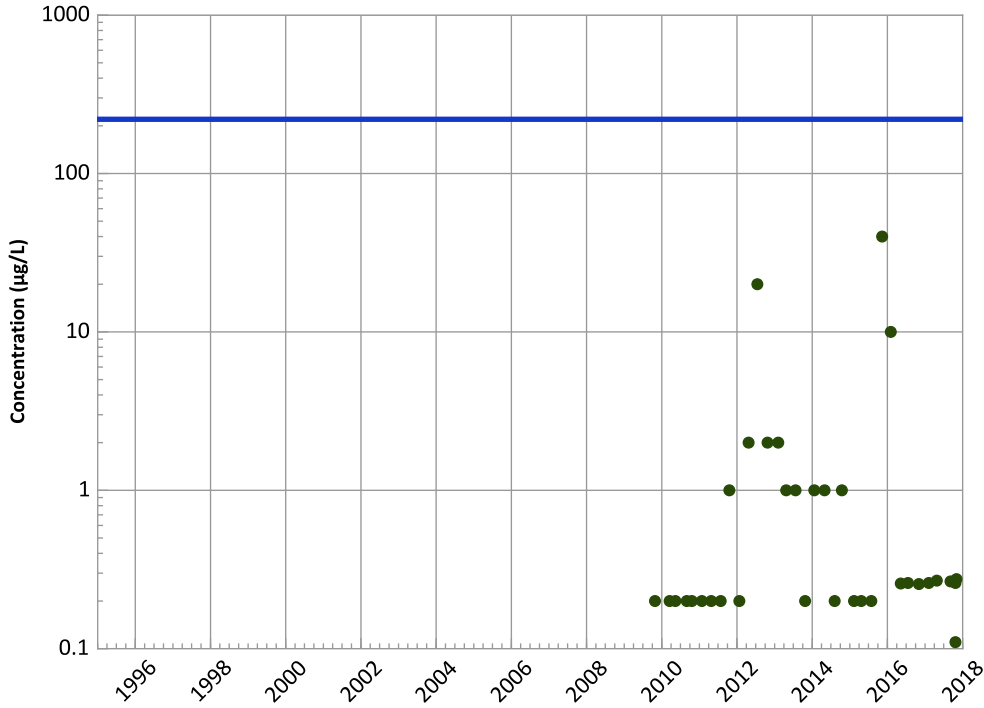
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

1,3,5-Trinitrobenzene Trend



Concentration Trend

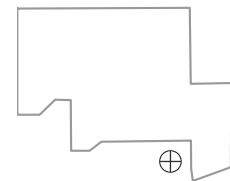
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

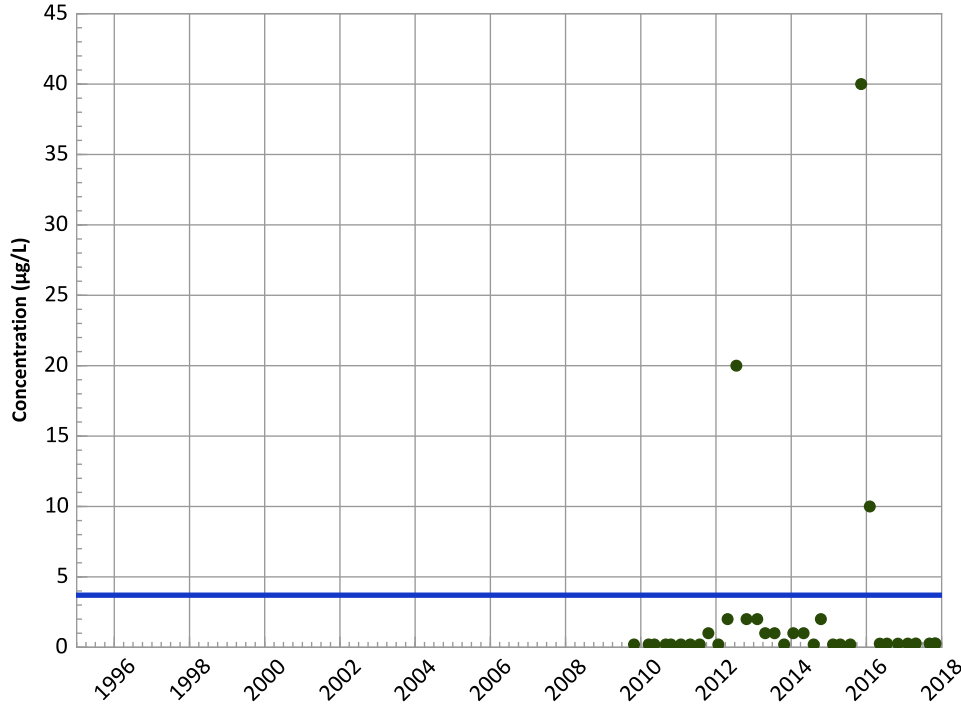


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/27/2009 to 11/02/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1153 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

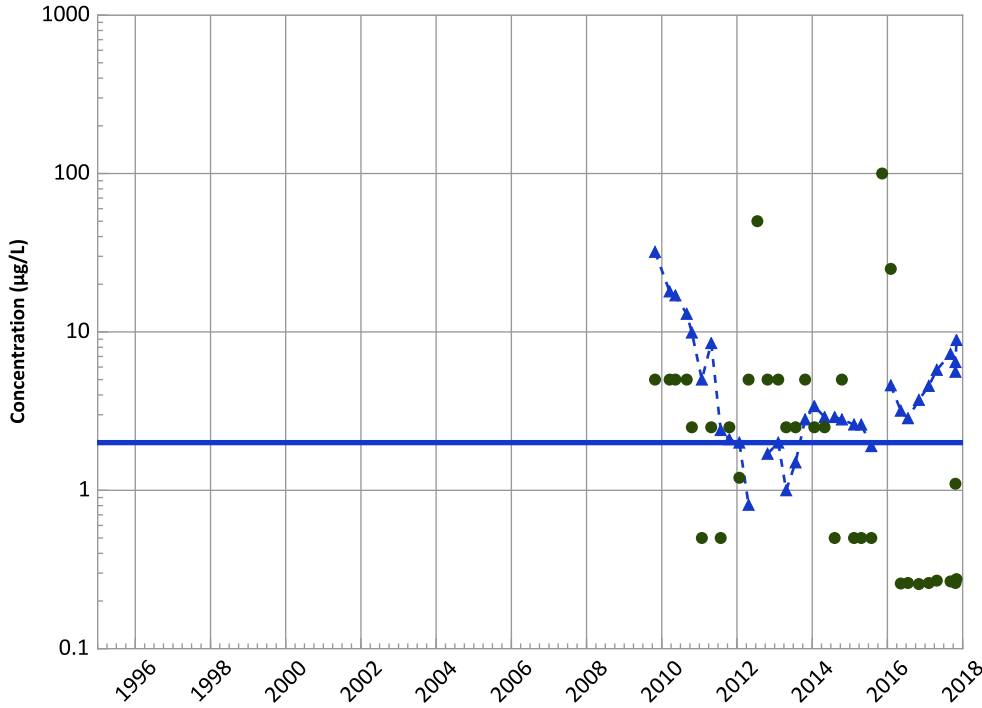
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Hexahydro-1-Nitroso-3,5-Dinitro-1,3,5-Triazine (MNX) Trend



Concentration Trend

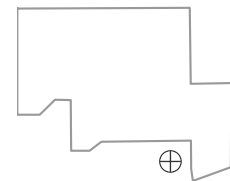
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
No Trend

MAROS Linear Regression Method

Data ():
Increasing
All Data
No Trend

Well Location

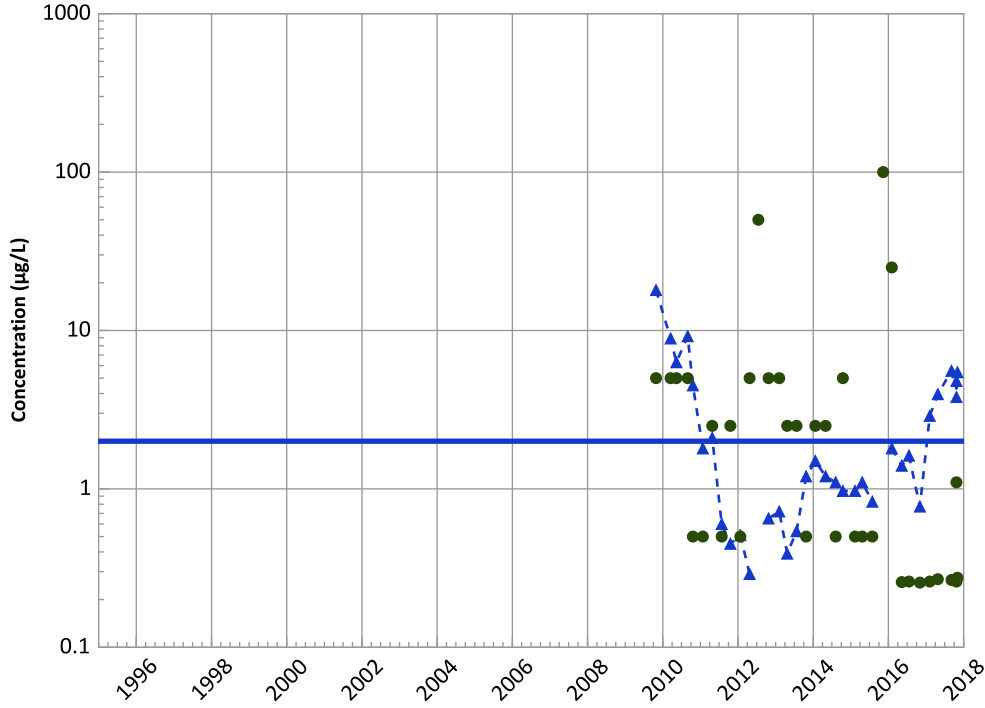


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/27/2009 to 11/02/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1153 in Perched Aquifer
USDOE/NNSA Pantex Plant

Hexahydro-1,3-Dinitroso-5-Nitro-1,3,5-Triazine (DNX) Trend



Concentration Trend

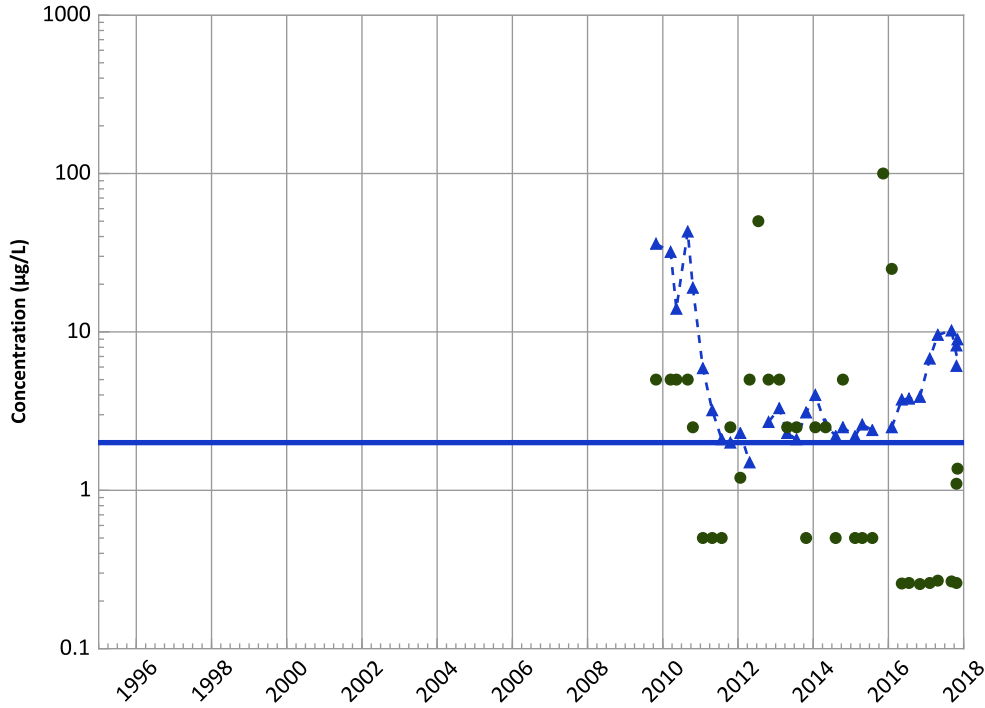
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
No Trend

MAROS Linear Regression Method

Data ():
Increasing
All Data
No Trend

Hexahydro-1,3,5-Trinitroso-1,3,5-Triazine (TNX) Trend



Concentration Trend

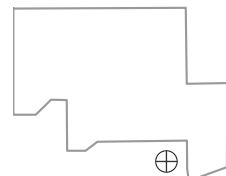
MAROS Mann-Kendall Method

Data ():
Probably Increasing
All Data
No Trend

MAROS Linear Regression Method

Data ():
Increasing
All Data
Probably Decreasing

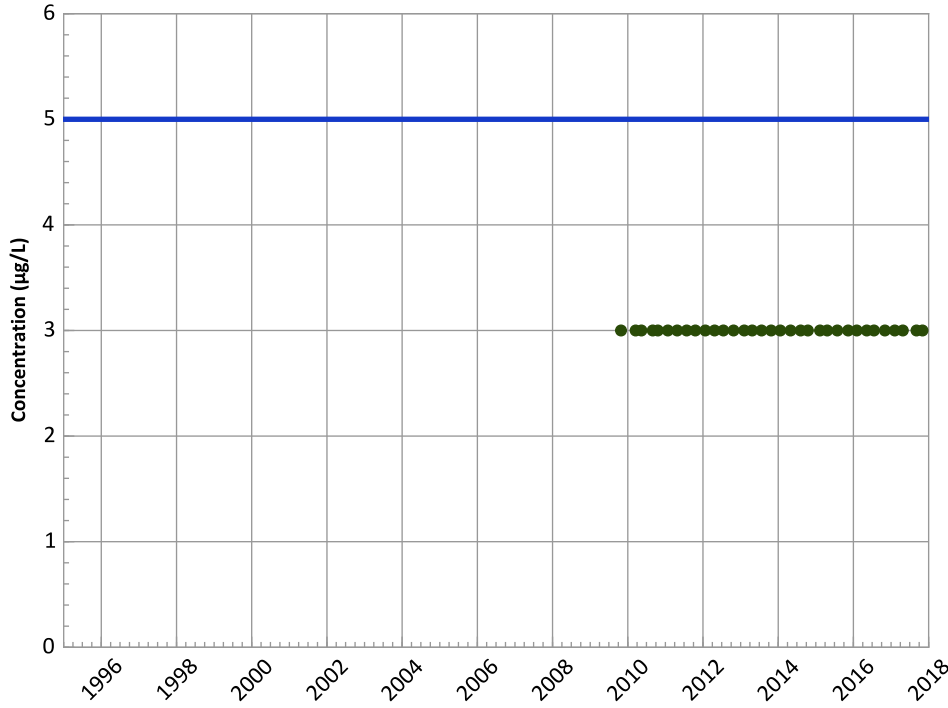
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/27/2009 to 11/02/2017
Analysis Date: 03/21/2018

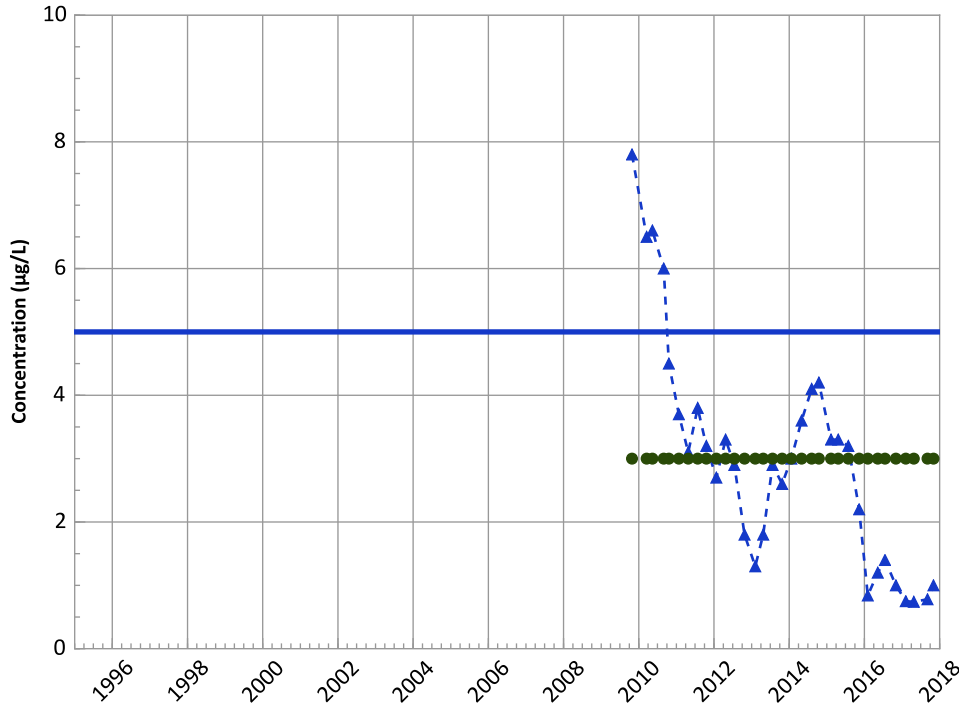
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1153 in Perched Aquifer
USDOE/NNSA Pantex Plant
Tetrachloroethylene (PCE) Trend**



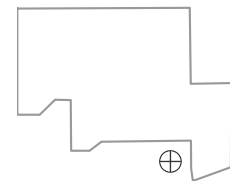
Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect
MAROS Linear Regression Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect

Trichloroethene Trend



Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 Decreasing
 All Data
 Decreasing
MAROS Linear Regression Method
 Data ():
 Decreasing
 All Data
 Decreasing

Well Location

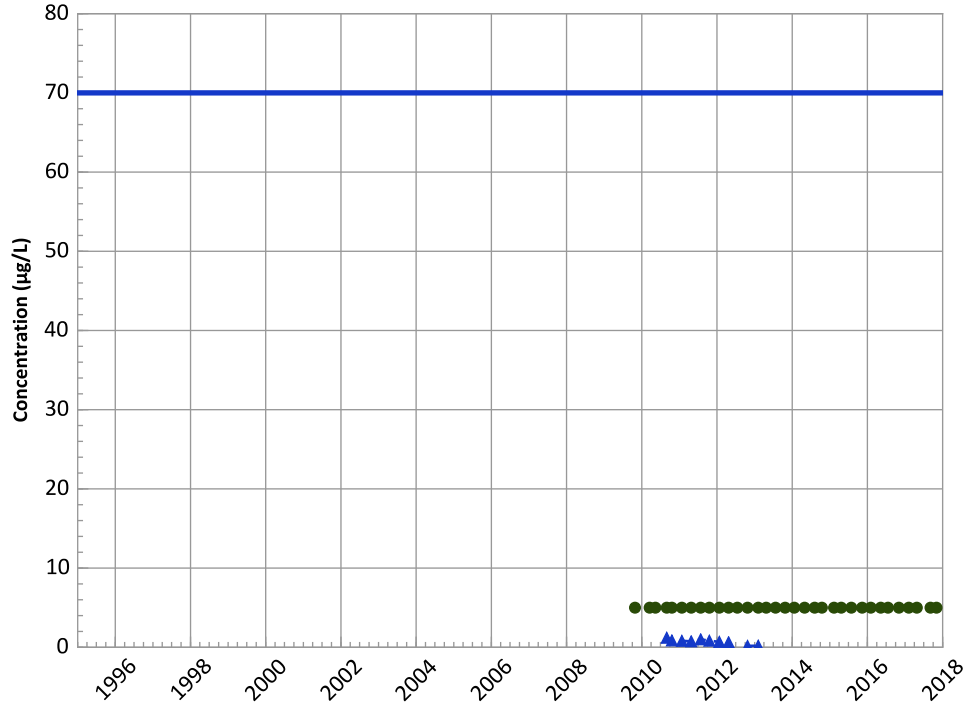


Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 10/27/2009 to 11/02/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1153 in Perched Aquifer
USDOE/NNSA Pantex Plant

cis-1,2-Dichloroethene Trend



Concentration Trend

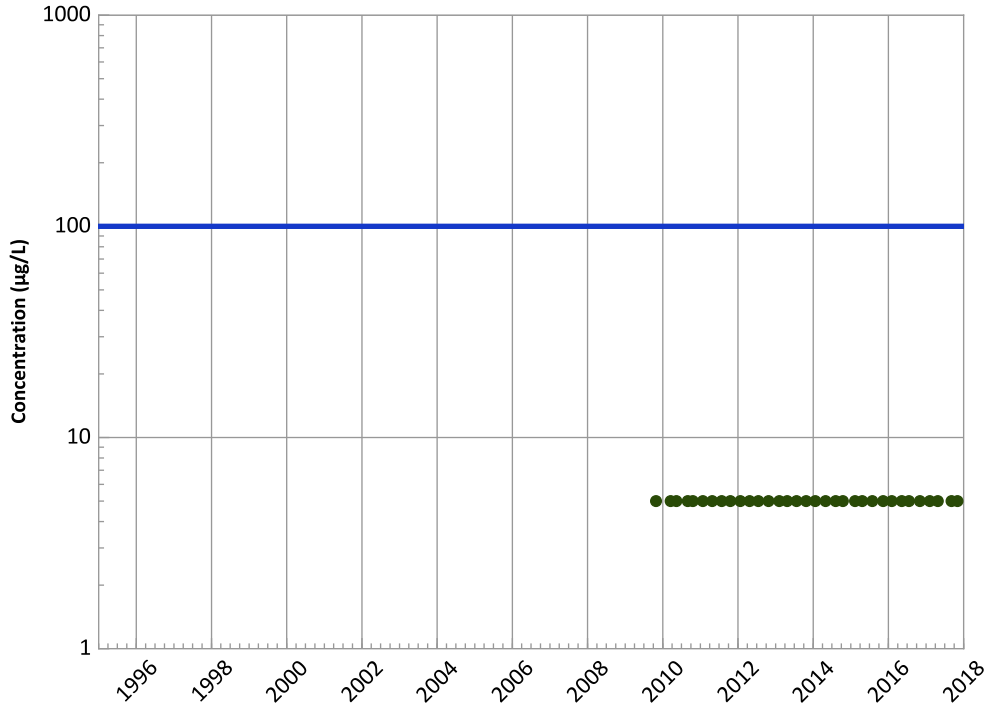
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

trans-1,2-Dichloroethene Trend



Concentration Trend

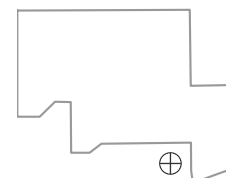
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

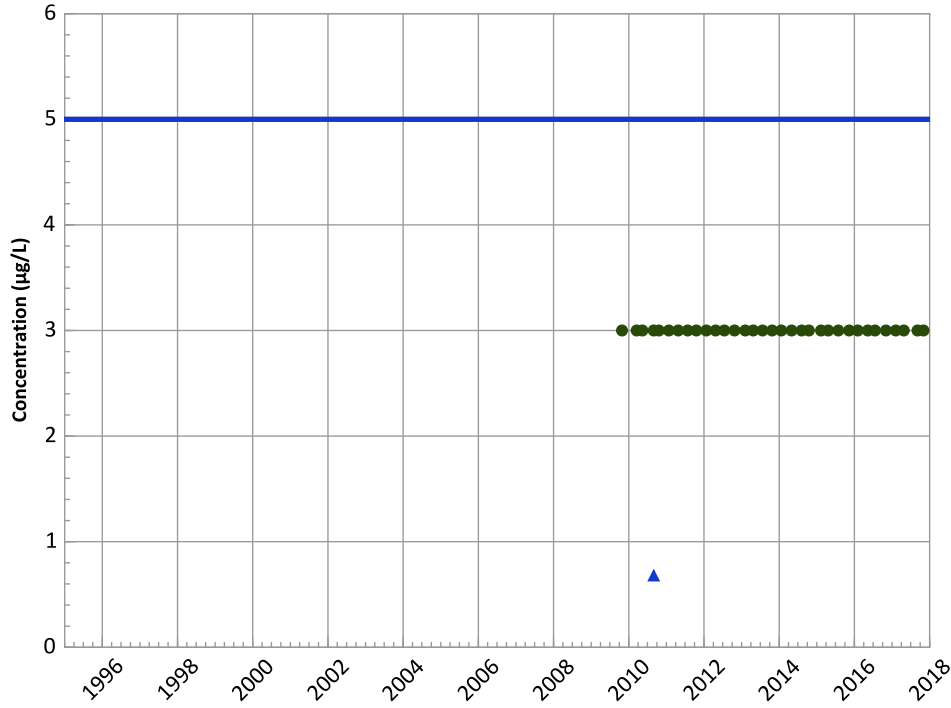
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/27/2009 to 11/02/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1153 in Perched Aquifer
USDOE/NNSA Pantex Plant
1,2-Dichloroethane Trend**



Concentration Trend

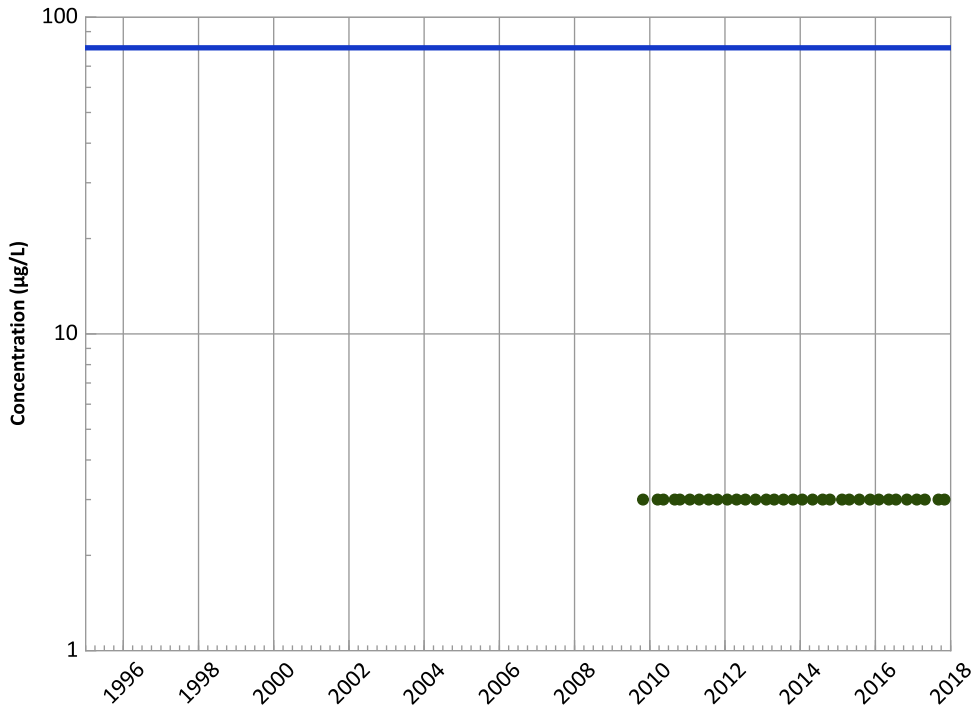
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

Chloroform Trend



Concentration Trend

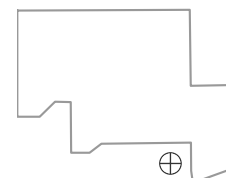
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

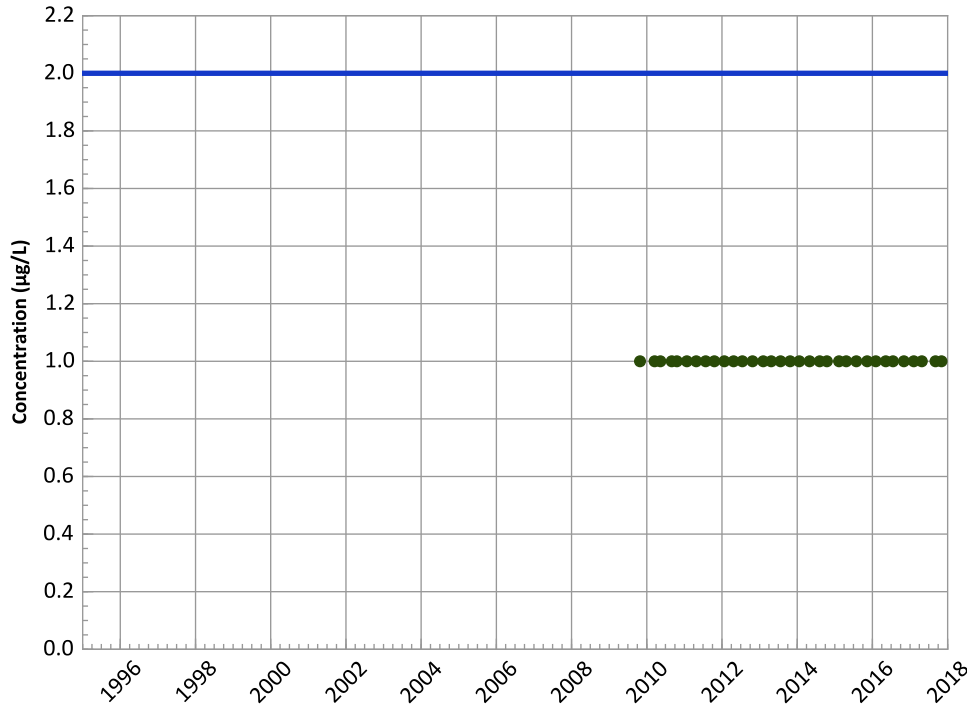
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/27/2009 to 11/02/2017
Analysis Date: 03/21/2018

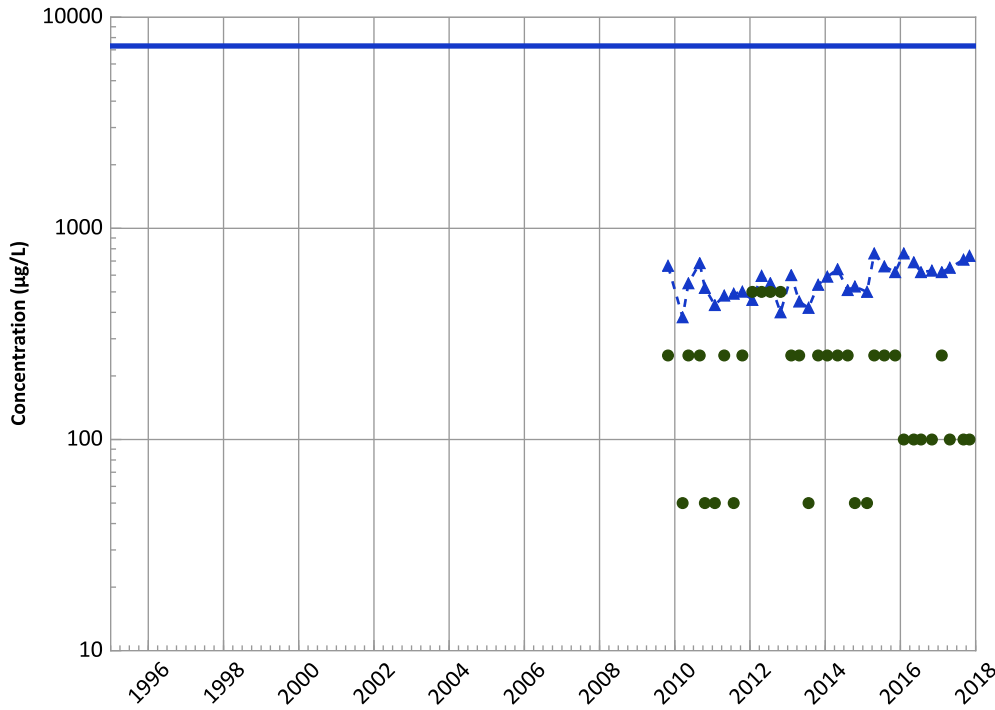
- ▲ Measured Value
- Sample Detection Limit
- Concentration Trend
- Groundwater Protection Standard

**PTX06-1153 in Perched Aquifer
USDOE/NNSA Pantex Plant
Vinyl Chloride Trend**



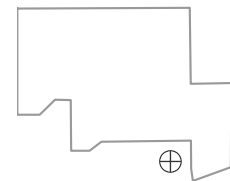
Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect
MAROS Linear Regression Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect

Boron Trend



Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 Increasing
 All Data
 Increasing
MAROS Linear Regression Method
 Data ():
 Increasing
 All Data
 Increasing

Well Location

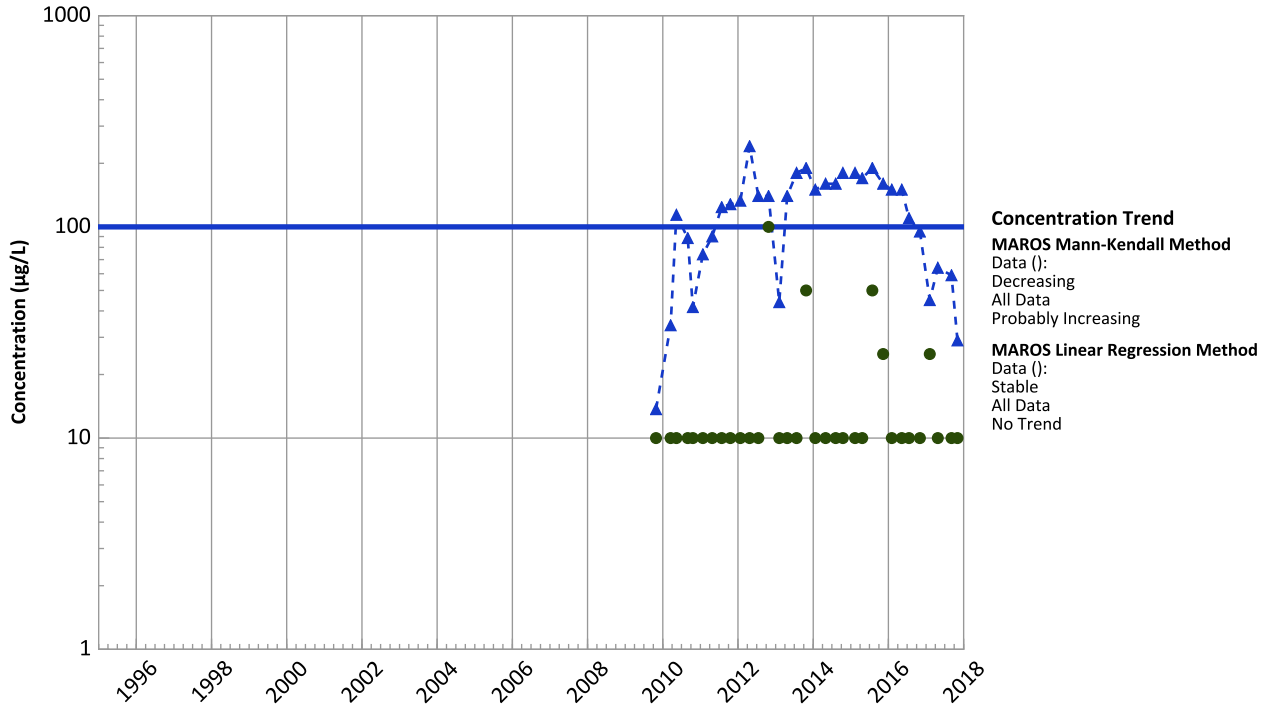


Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 10/27/2009 to 11/02/2017
 Analysis Date: 03/21/2018

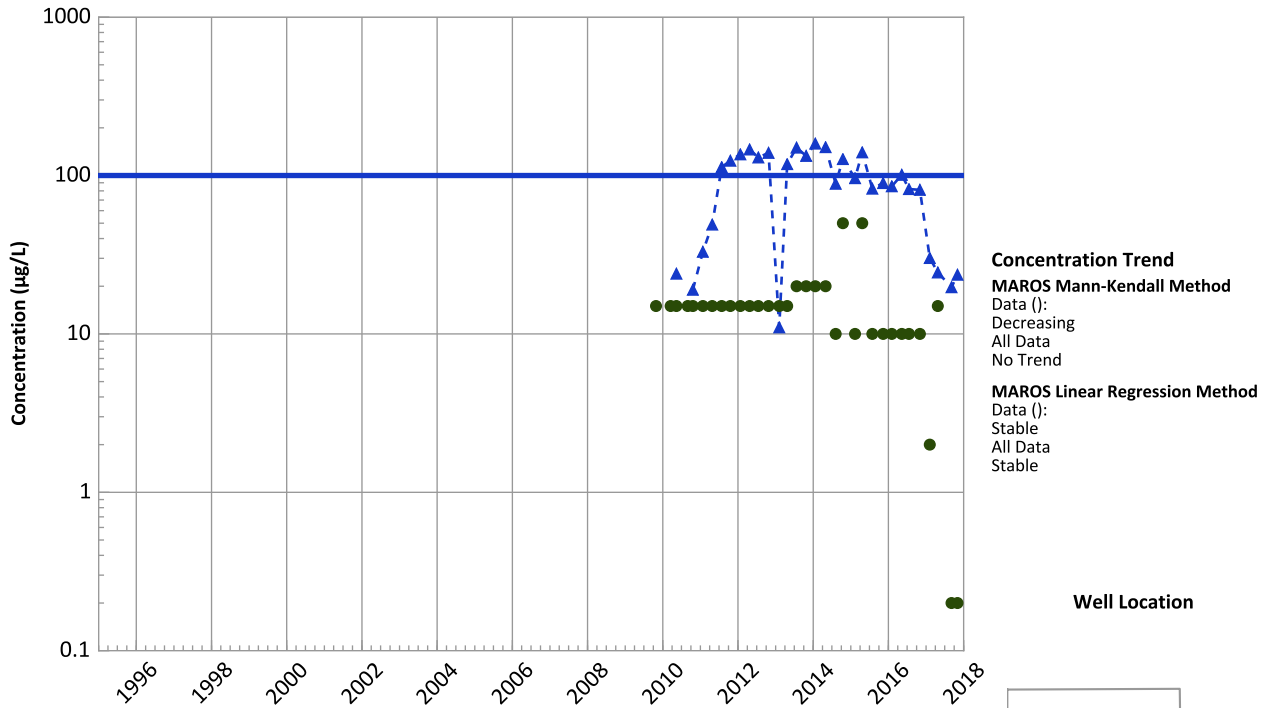
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1153 in Perched Aquifer
USDOE/NNSA Pantex Plant

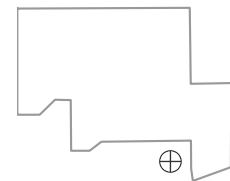
Chromium, Total Trend



Chromium, Hexavalent Trend



Well Location

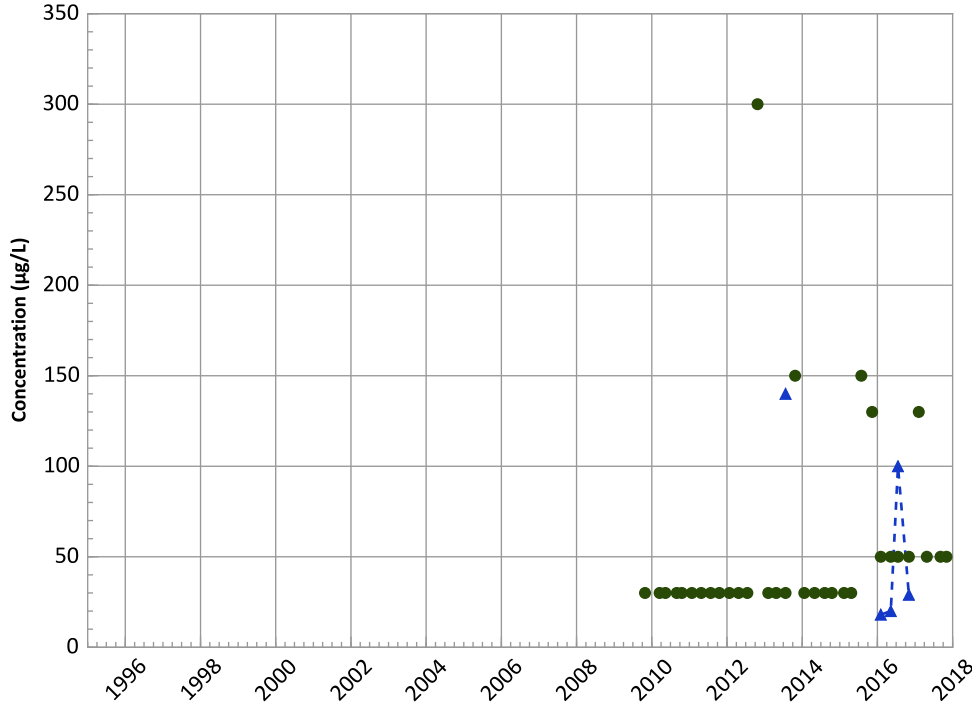


Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 10/27/2009 to 11/02/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1153 in Perched Aquifer
USDOE/NNSA Pantex Plant

Aluminum Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

No Trend

All Data

Increasing

MAROS Linear Regression Method

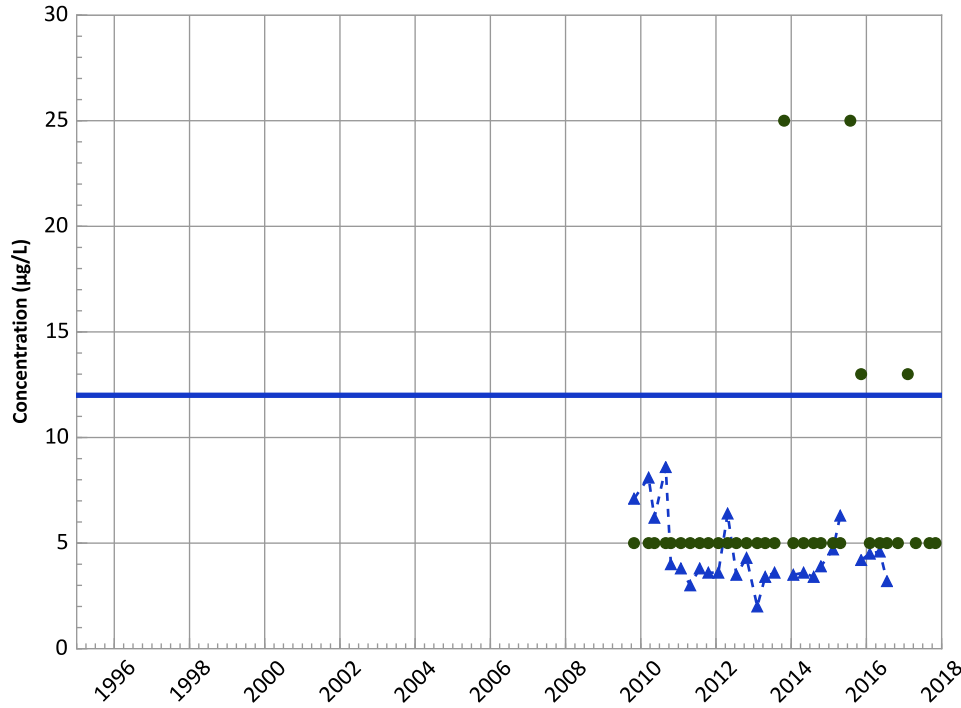
Data ():

Stable

All Data

Stable

Arsenic Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

Increasing

All Data

Decreasing

MAROS Linear Regression Method

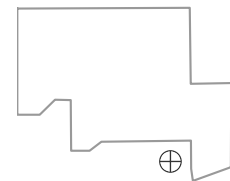
Data ():

No Trend

All Data

Probably Decreasing

Well Location

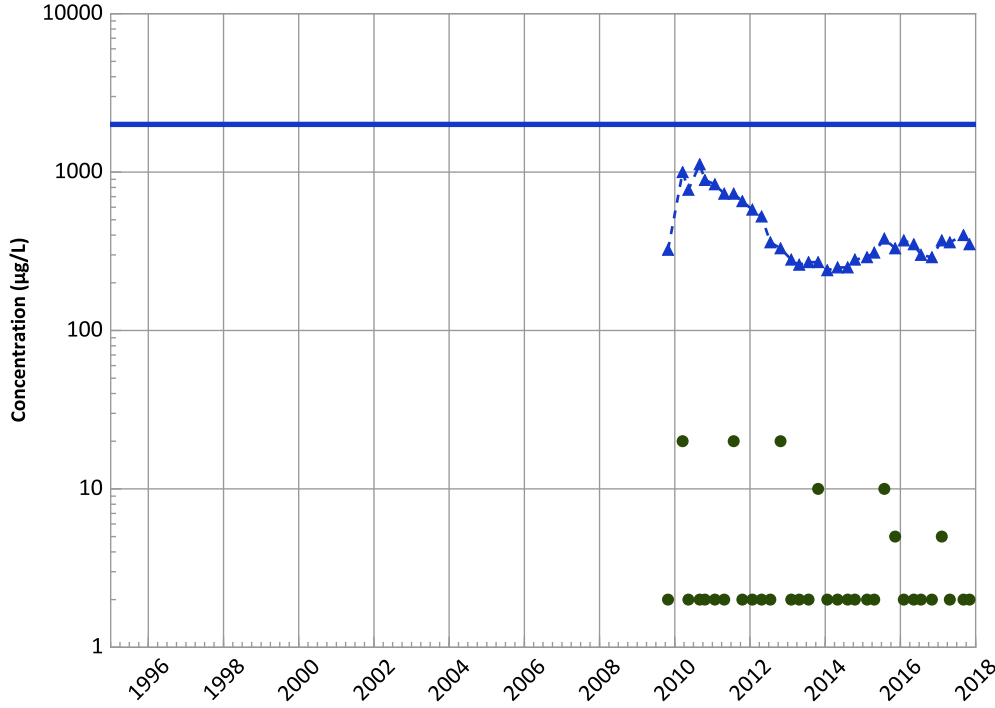


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/27/2009 to 11/02/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1153 in Perched Aquifer
USDOE/NNSA Pantex Plant

Barium Trend



Concentration Trend

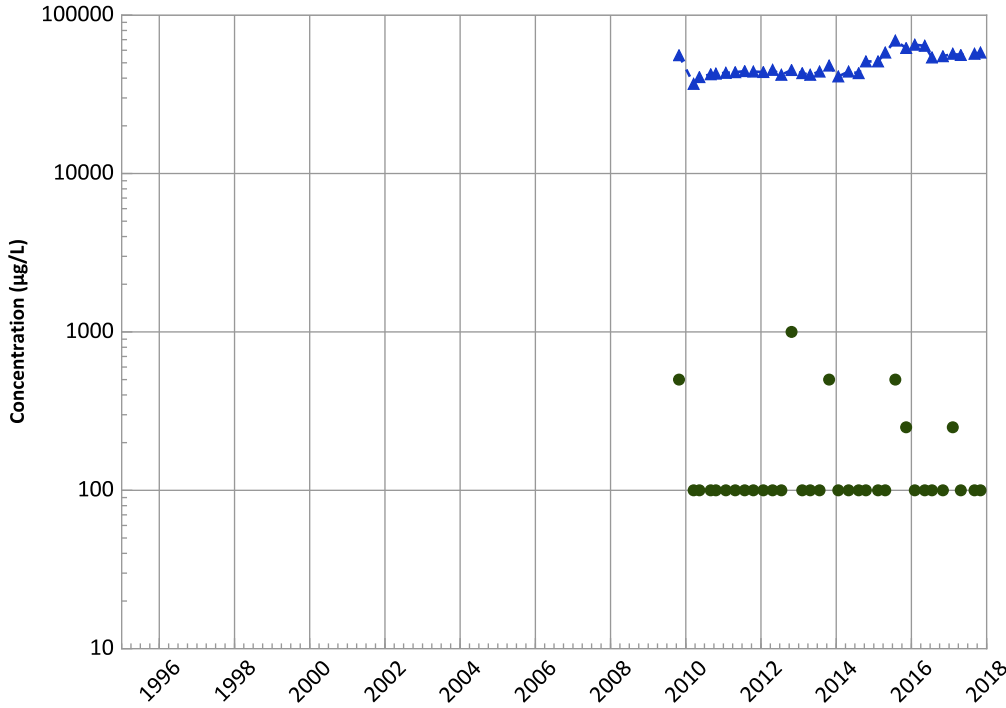
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Stable
All Data
Decreasing

Calcium Trend



Concentration Trend

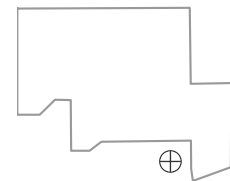
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

Well Location

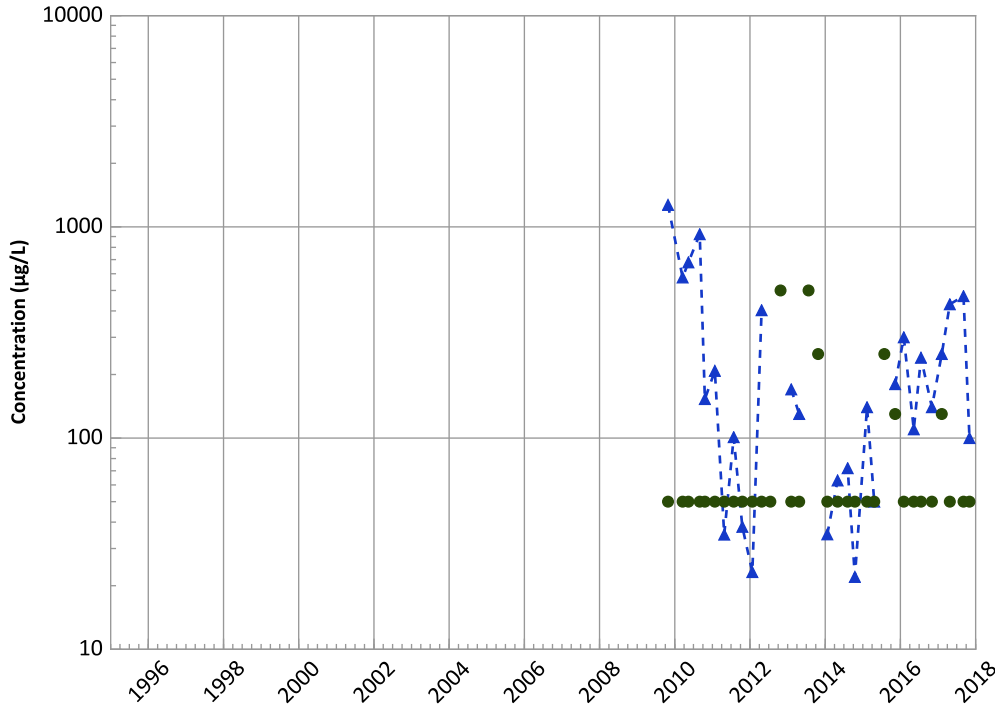


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/27/2009 to 11/02/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- Concentration Trend
- Groundwater Protection Standard

PTX06-1153 in Perched Aquifer
USDOE/NNSA Pantex Plant

Iron Trend



Concentration Trend

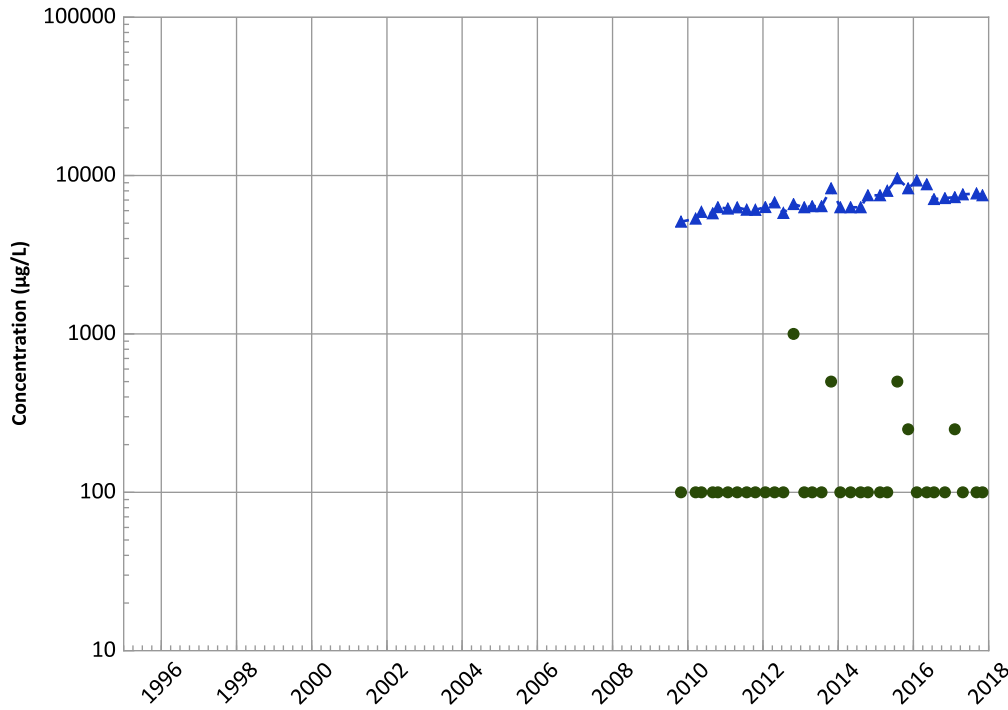
MAROS Mann-Kendall Method

Data ():
No Trend
All Data
Decreasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
No Trend

Potassium Trend



Concentration Trend

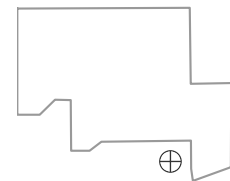
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

Well Location

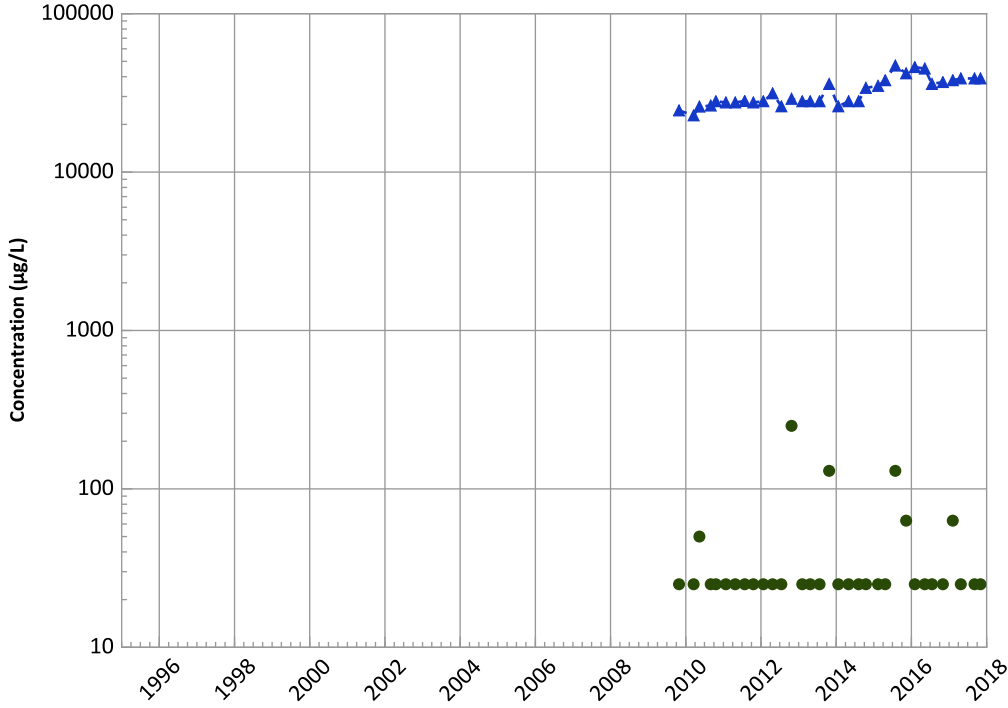


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/27/2009 to 11/02/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1153 in Perched Aquifer
USDOE/NNSA Pantex Plant

Magnesium Trend



Concentration Trend

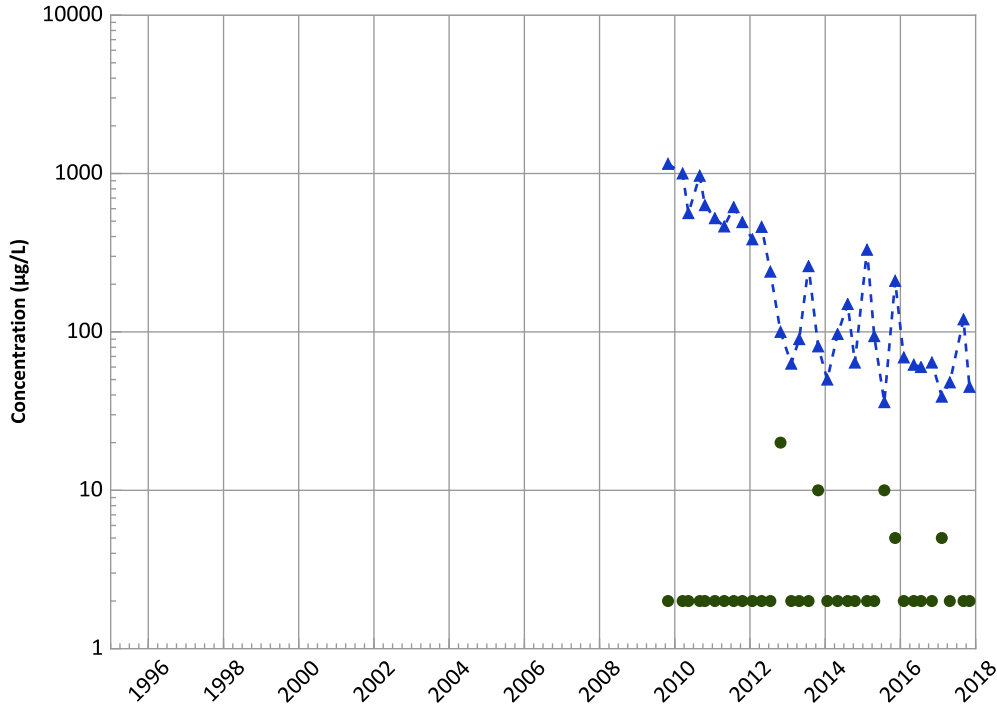
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

Manganese Trend



Concentration Trend

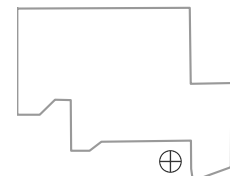
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

Well Location

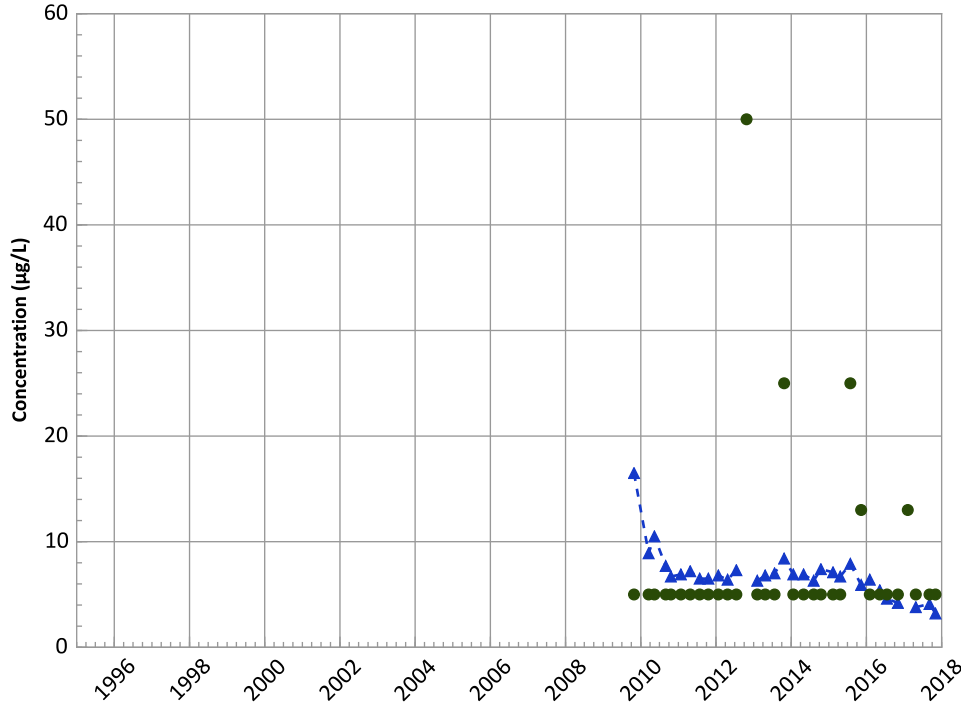


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/27/2009 to 11/02/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1153 in Perched Aquifer
USDOE/NNSA Pantex Plant

Molybdenum Trend



Concentration Trend

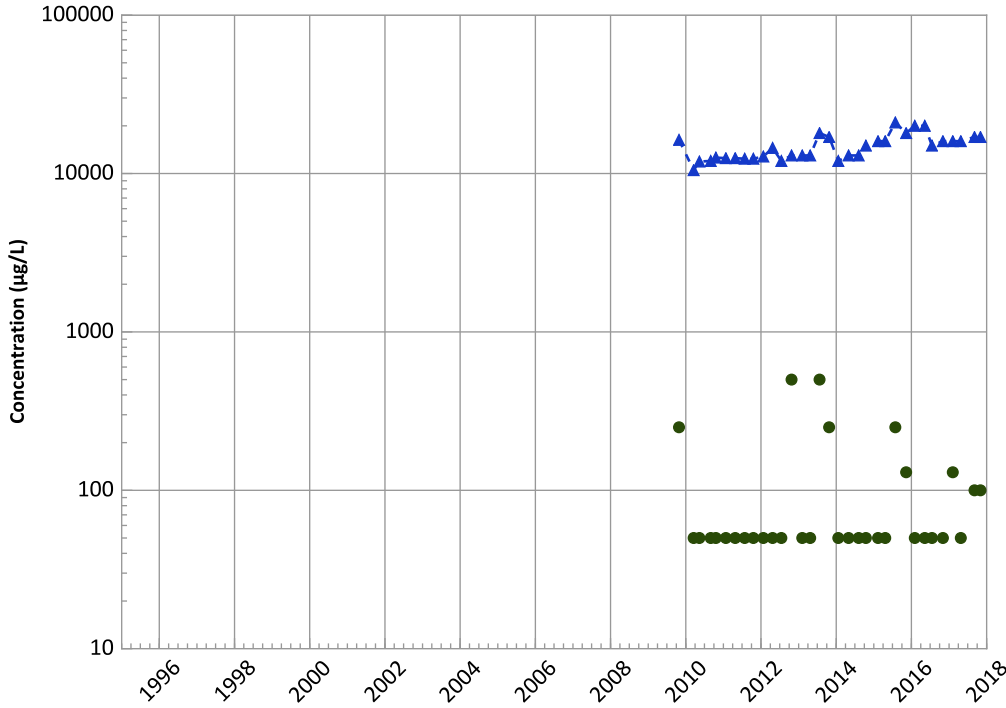
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

Sodium Trend



Concentration Trend

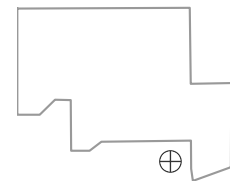
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

Well Location

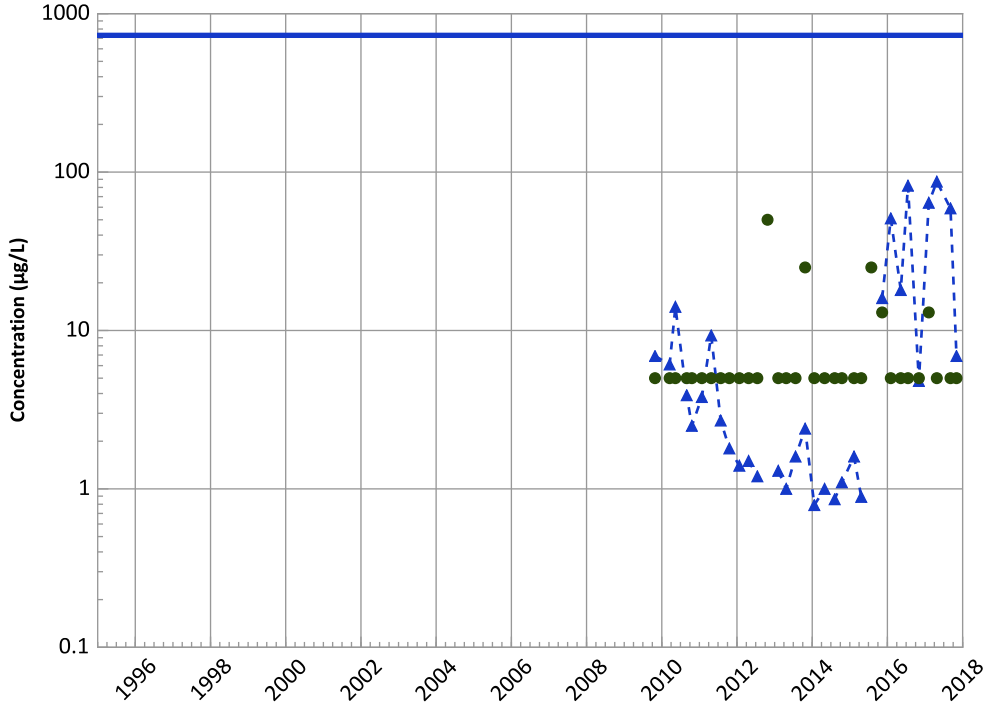


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/27/2009 to 11/02/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1153 in Perched Aquifer
USDOE/NNSA Pantex Plant

Nickel Trend



Concentration Trend

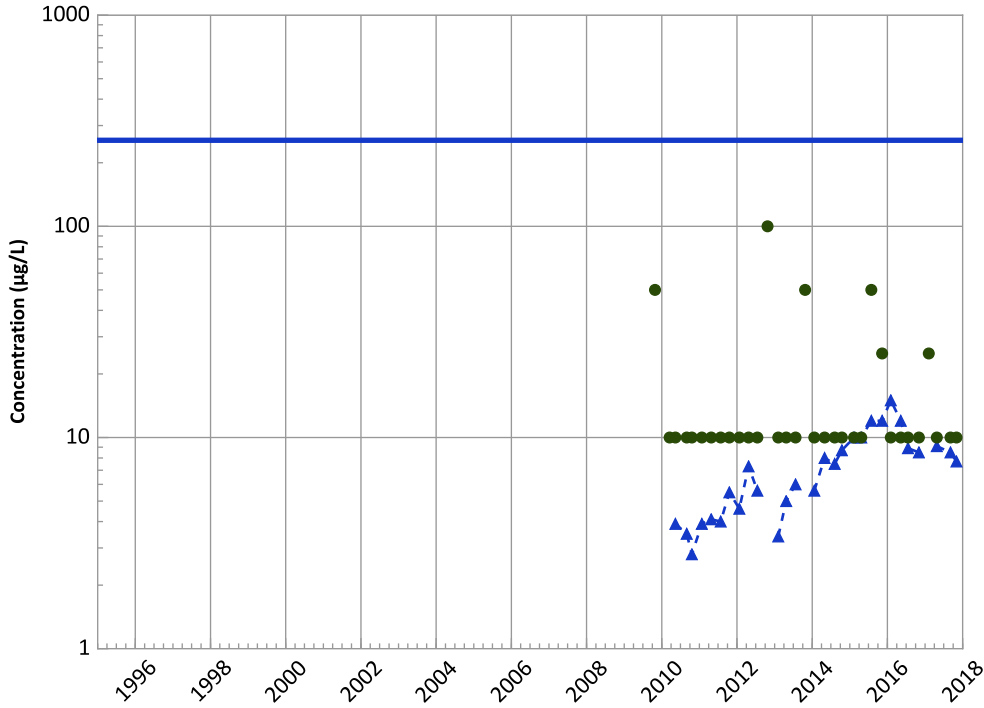
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
No Trend

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

Vanadium Trend



Concentration Trend

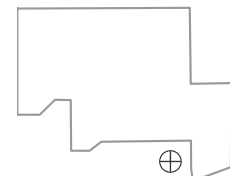
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

Well Location

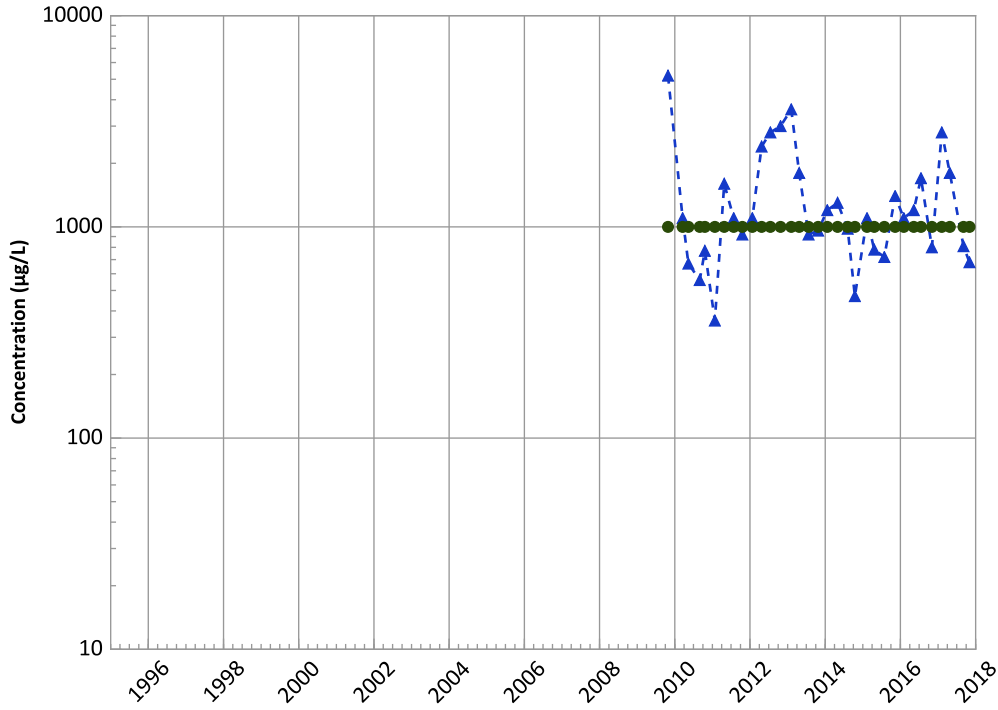


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/27/2009 to 11/02/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1153 in Perched Aquifer
USDOE/NNSA Pantex Plant

Total Organic Carbon Trend



Concentration Trend

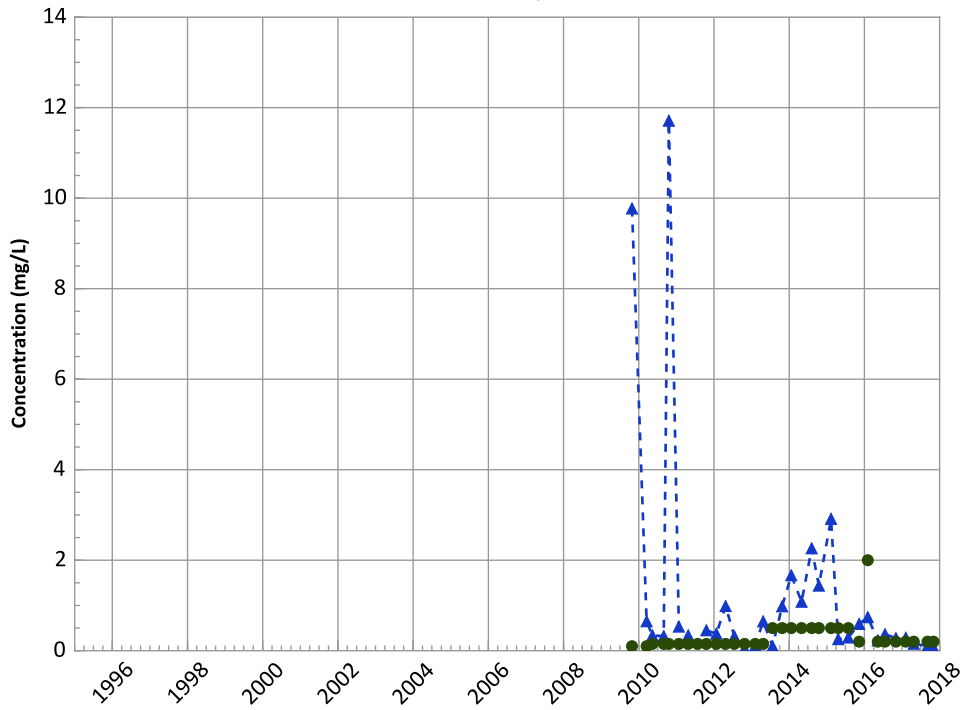
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
No Trend

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Stable

Total Volatile Fatty Acids Trend



Concentration Trend

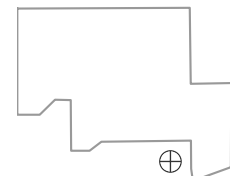
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
Decreasing

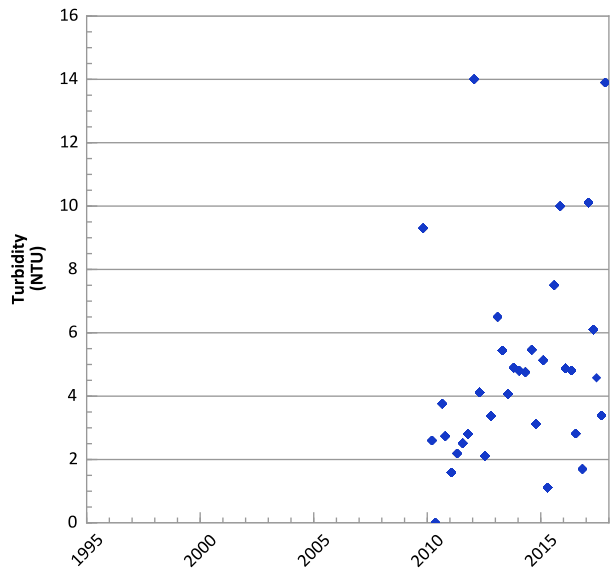
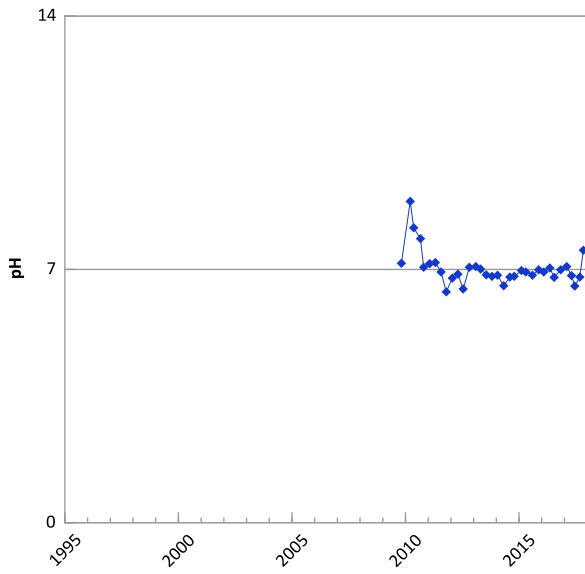
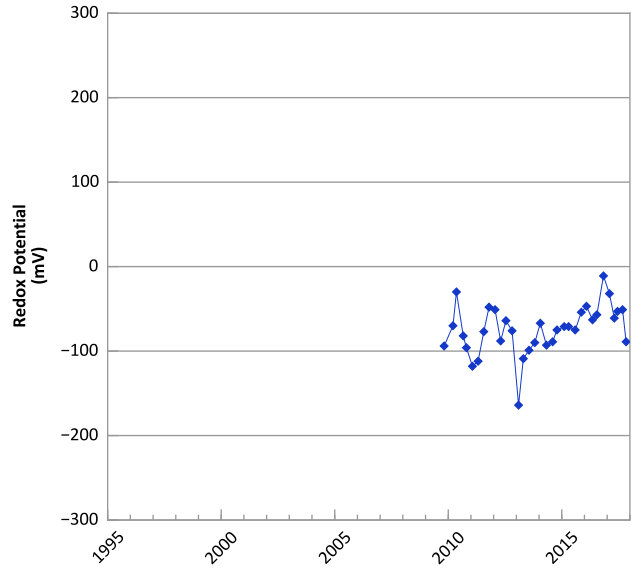
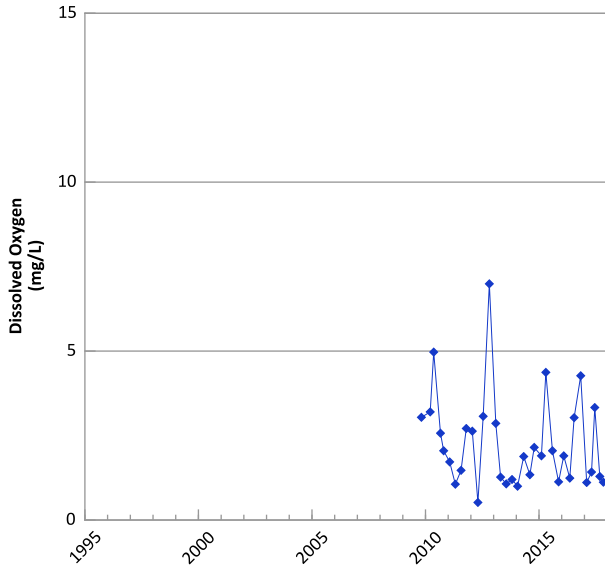
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/27/2009 to 11/02/2017
Analysis Date: 03/21/2018

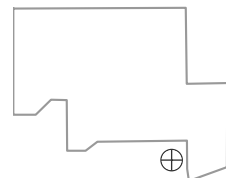
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1154 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



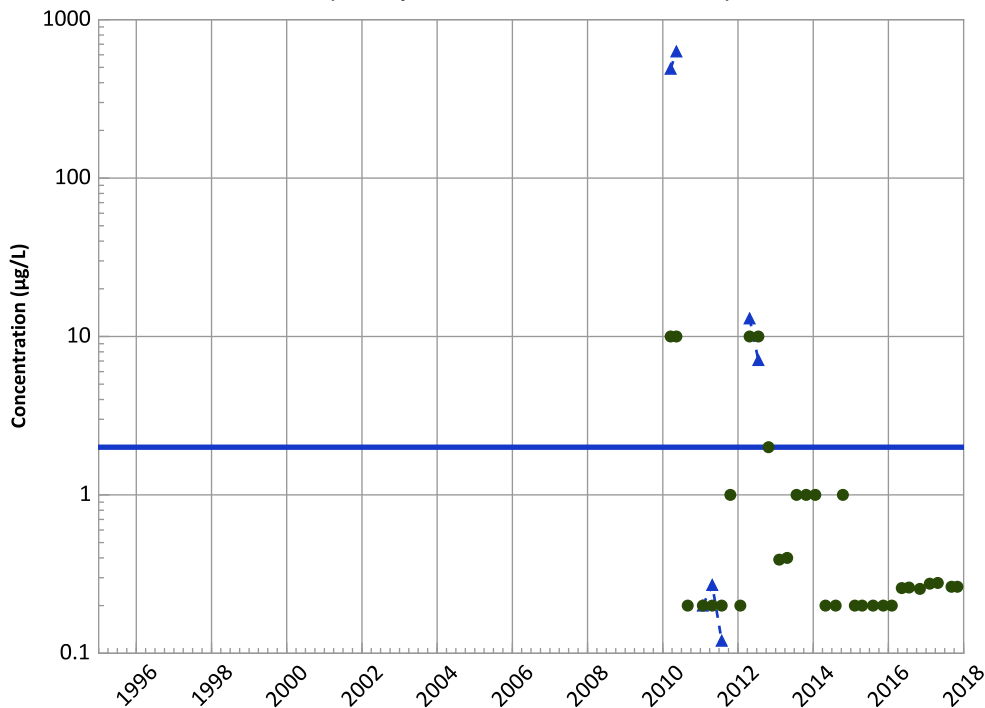
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 10/27/2009 to 11/01/2017
 Analysis Date: 03/21/2018

Well Location



PTX06-1154 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend

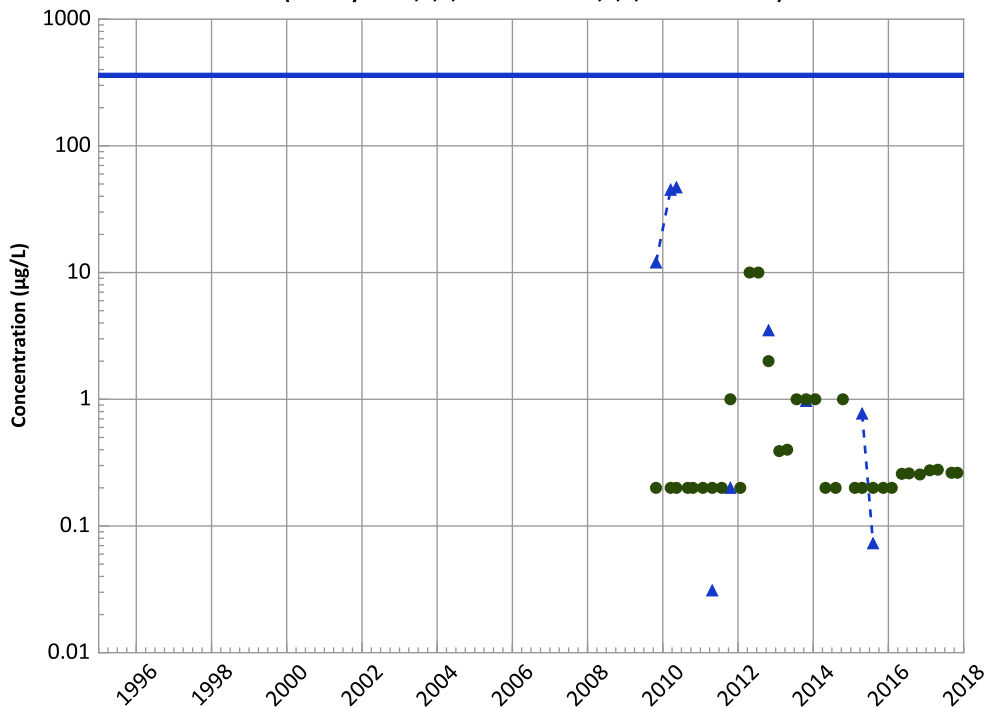


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

MAROS Linear Regression Method
Data ():
N/A (<4 Detections in Dataset)
All Data
No Trend

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend

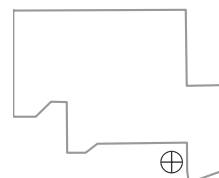


Concentration Trend

MAROS Mann-Kendall Method
Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method
Data ():
Probably Decreasing
All Data
Probably Decreasing

Well Location

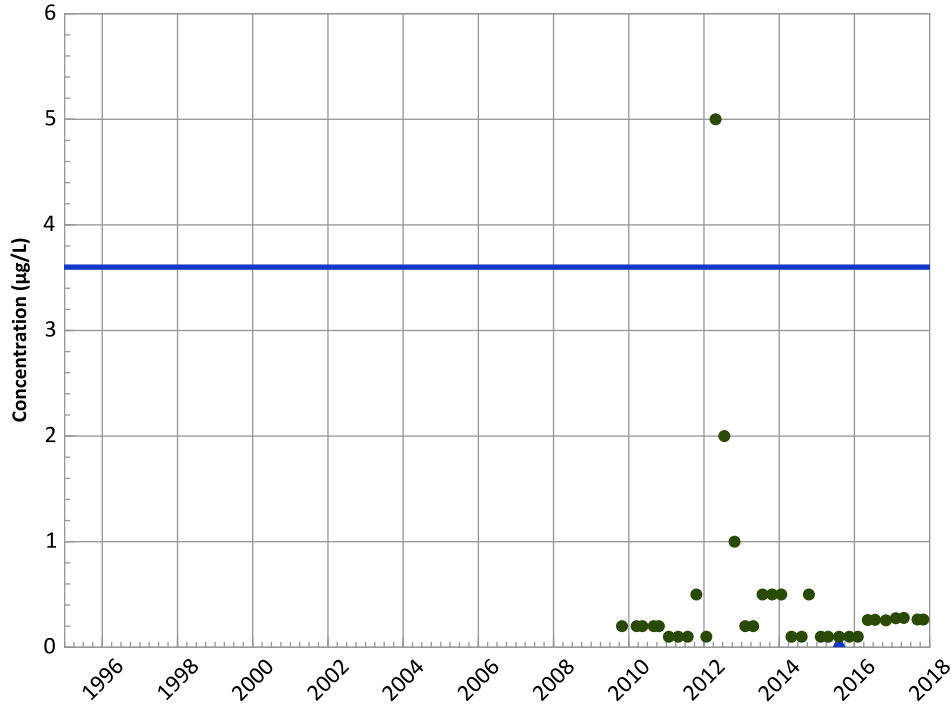


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/27/2009 to 11/01/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1154 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

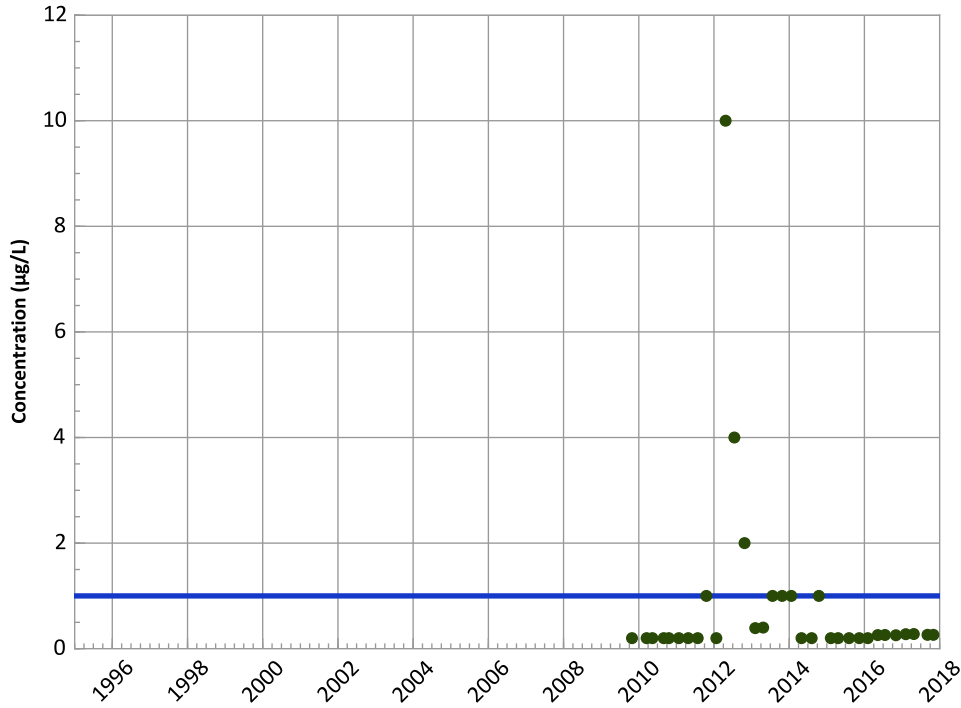
MAROS Mann-Kendall Method

Data ():
N/A (<4 Detections in Dataset)
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
N/A (<4 Detections in Dataset)

2,4-Dinitrotoluene Trend



Concentration Trend

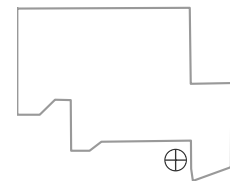
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

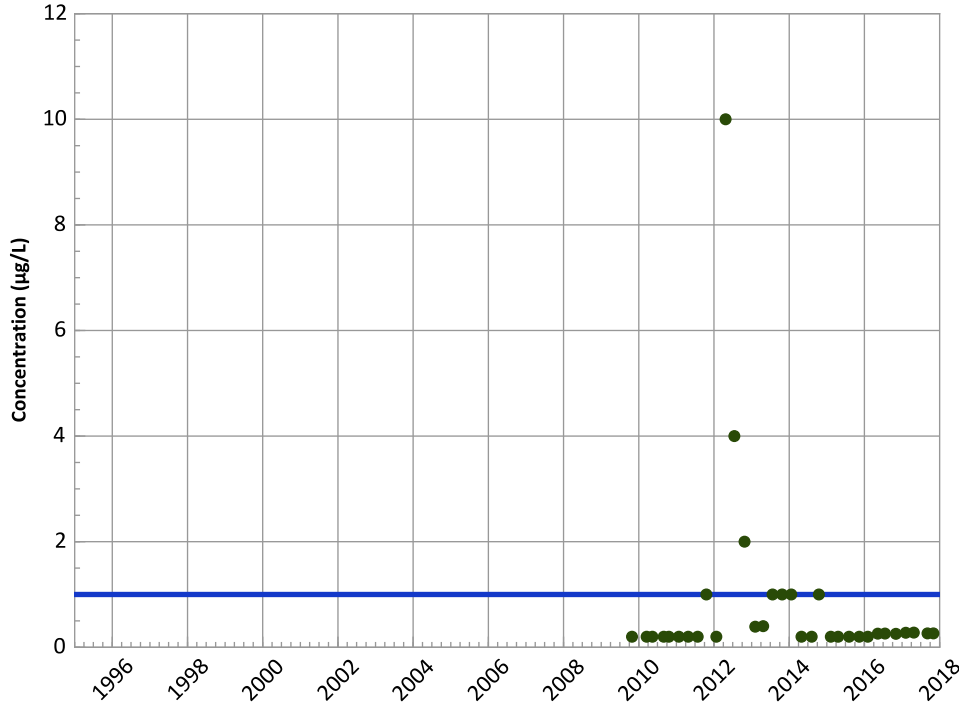


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/27/2009 to 11/01/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1154 in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

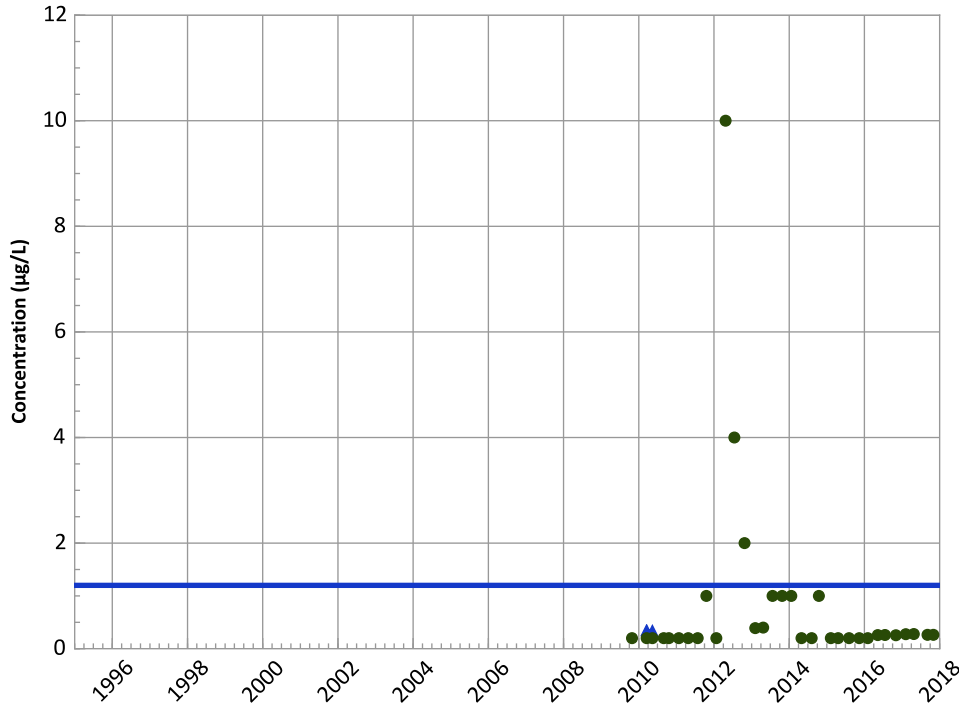
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

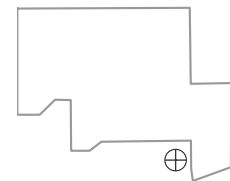
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

Well Location

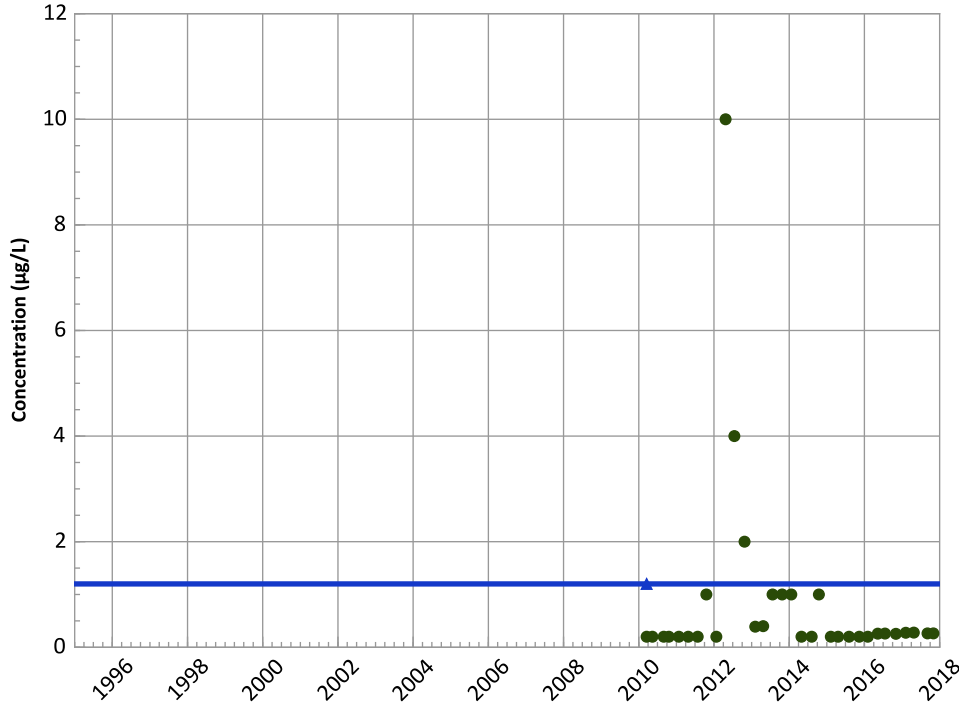


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/27/2009 to 11/01/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1154 in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

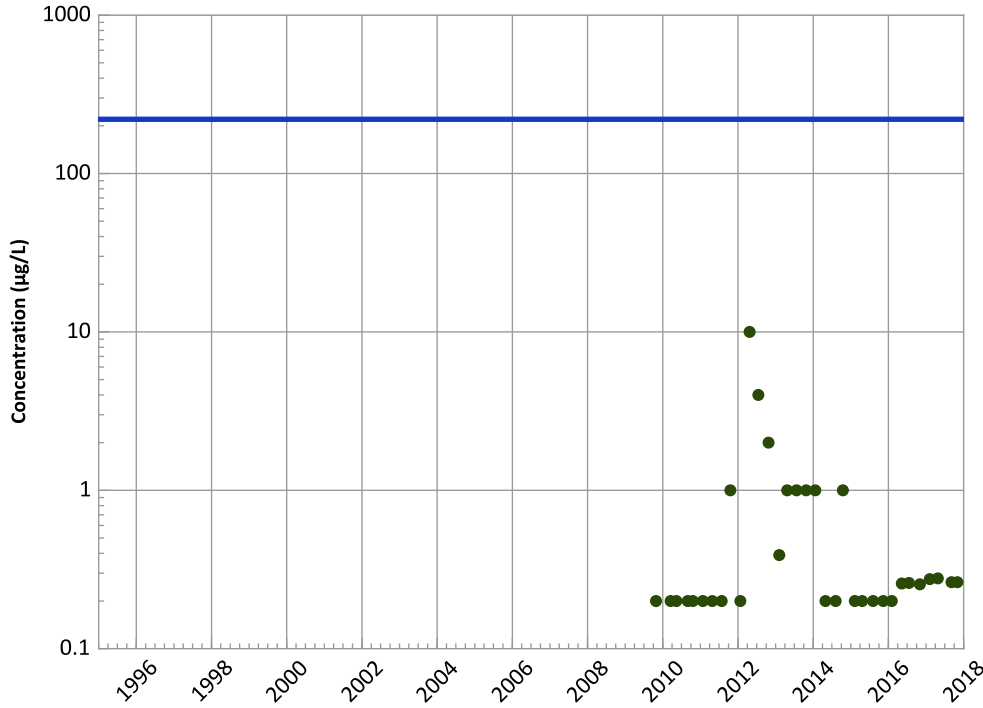
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

1,3,5-Trinitrobenzene Trend



Concentration Trend

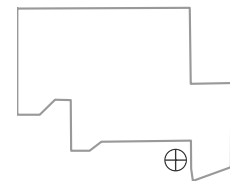
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

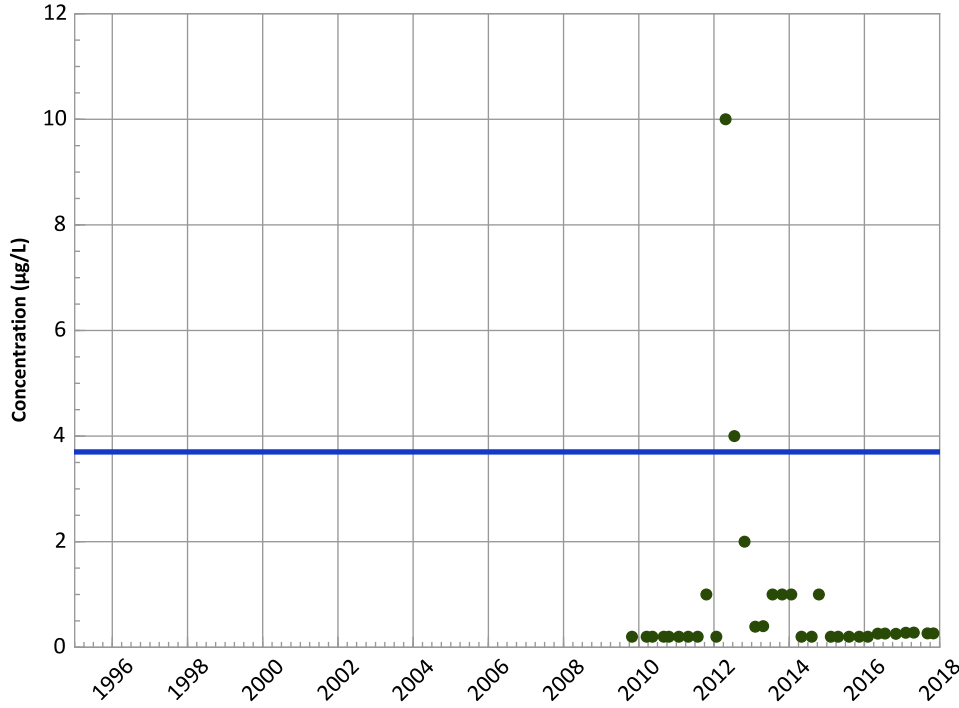


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/27/2009 to 11/01/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- Concentration Trend
- Groundwater Protection Standard

PTX06-1154 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

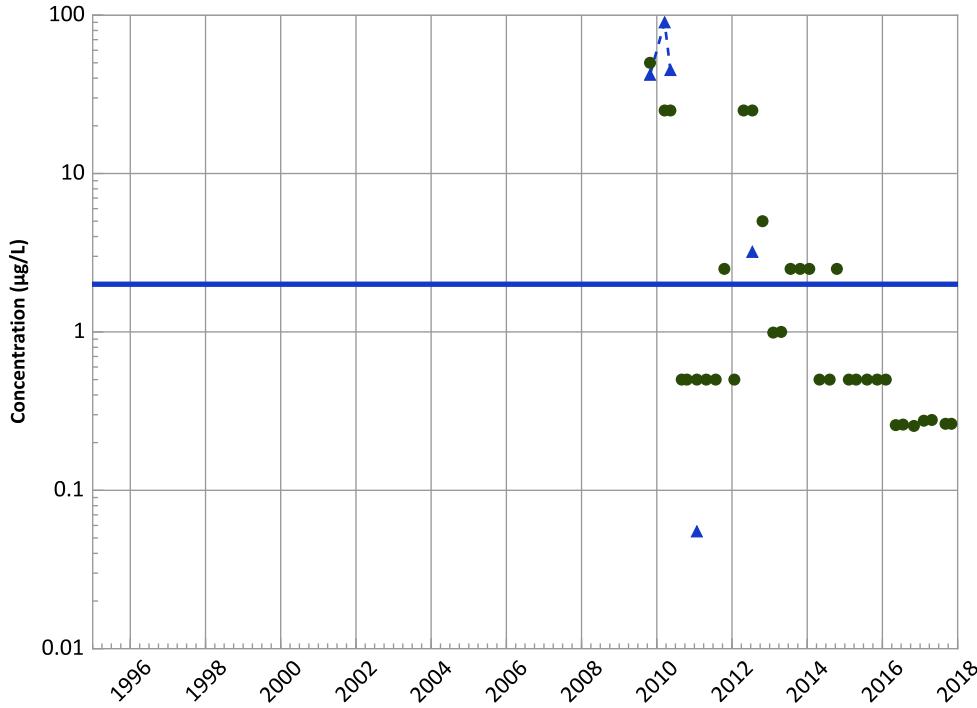
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Hexahydro-1-Nitroso-3,5-Dinitro-1,3,5-Triazine (MNX) Trend



Concentration Trend

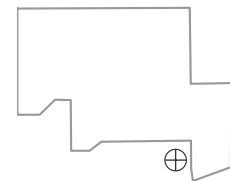
MAROS Mann-Kendall Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
No Trend

Well Location

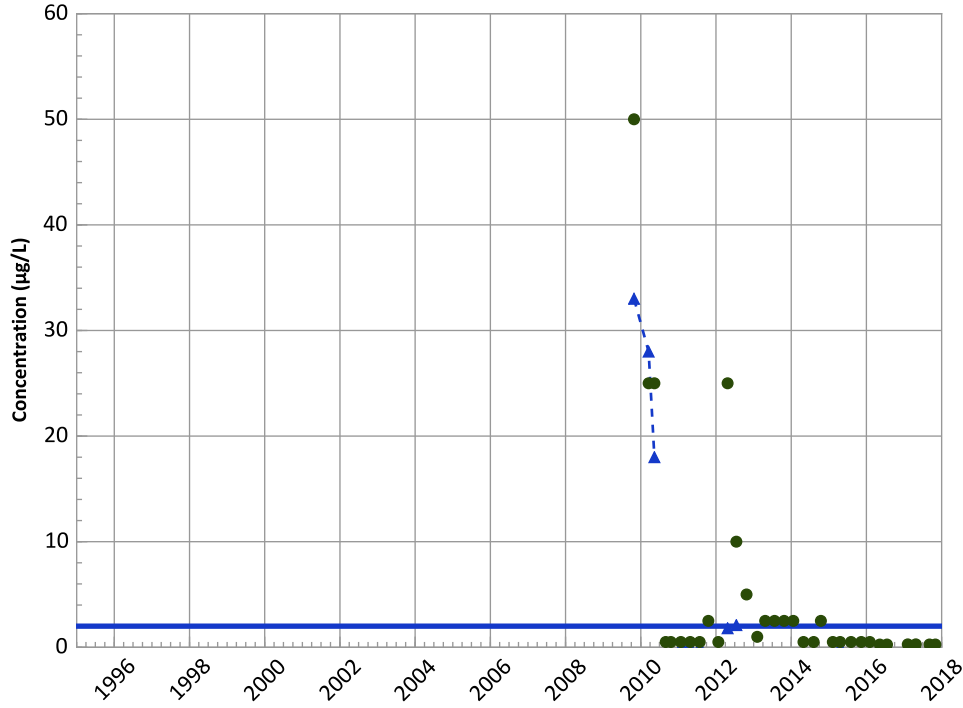


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/27/2009 to 11/01/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1154 in Perched Aquifer
USDOE/NNSA Pantex Plant

Hexahydro-1,3-Dinitroso-5-Nitro-1,3,5-Triazine (DNX) Trend

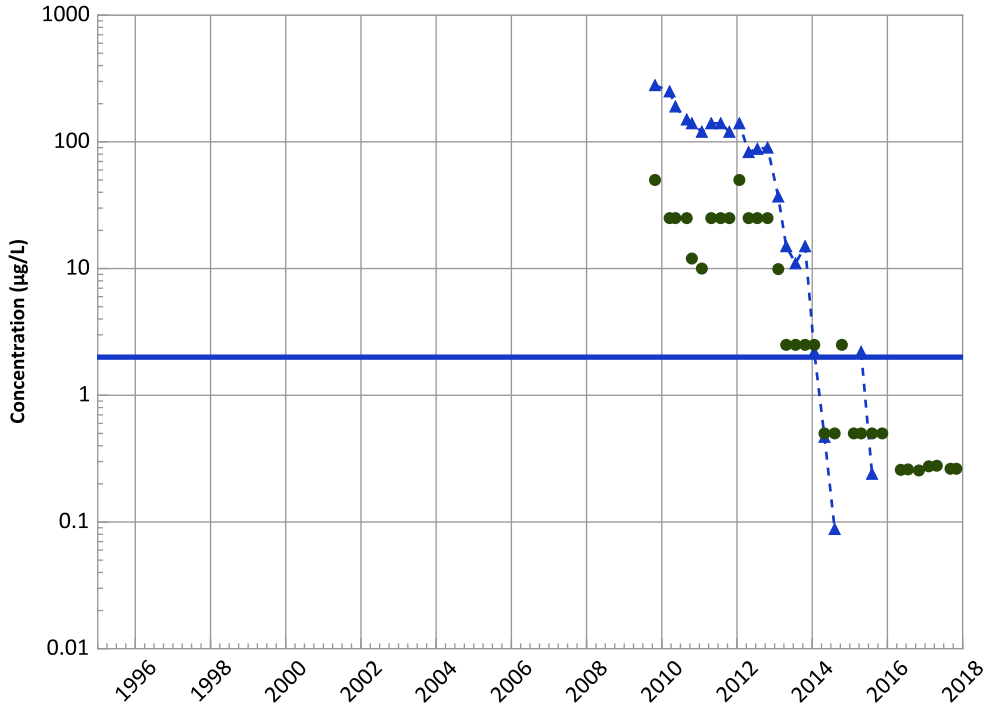


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

MAROS Linear Regression Method
Data ():
N/A (<4 Detections in Dataset)
All Data
Probably Decreasing

Hexahydro-1,3,5-Trinitroso-1,3,5-Triazine (TNX) Trend

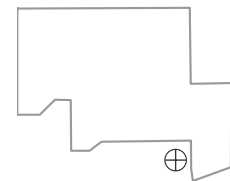


Concentration Trend

MAROS Mann-Kendall Method
Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method
Data ():
Decreasing
All Data
Decreasing

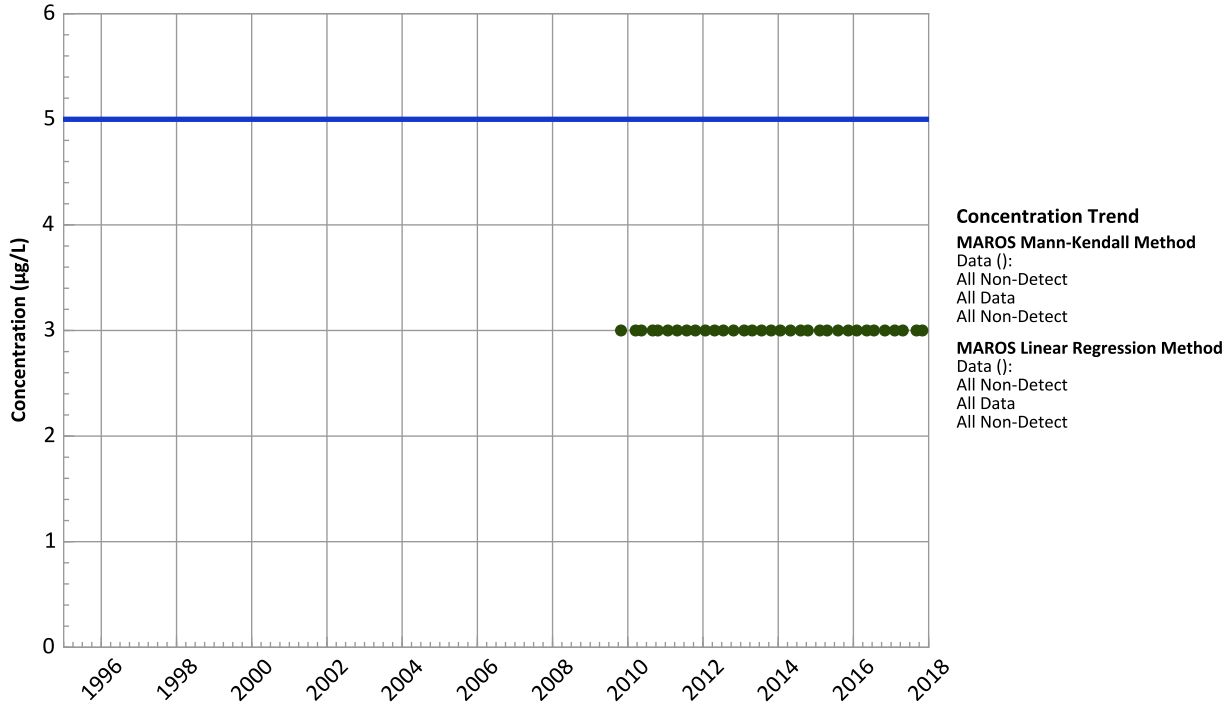
Well Location



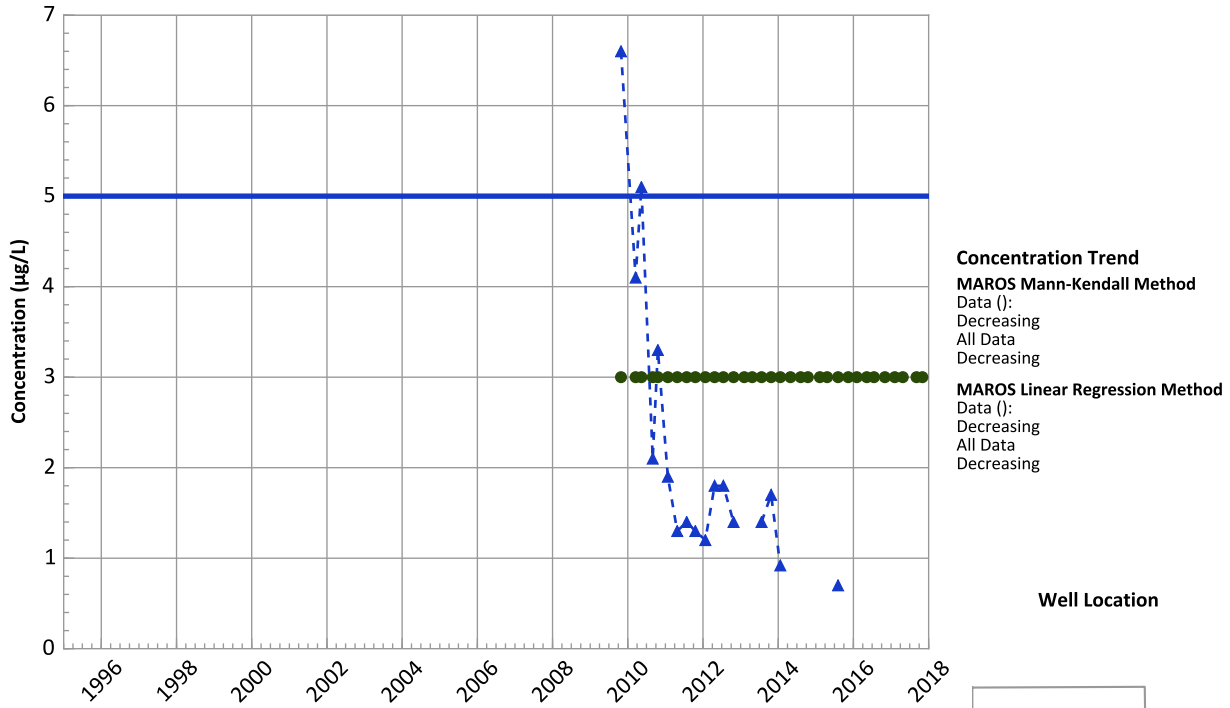
Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/27/2009 to 11/01/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

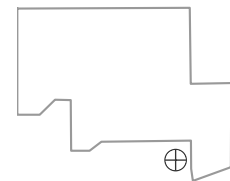
**PTX06-1154 in Perched Aquifer
USDOE/NNSA Pantex Plant
Tetrachloroethylene (PCE) Trend**



Trichloroethene Trend



Well Location

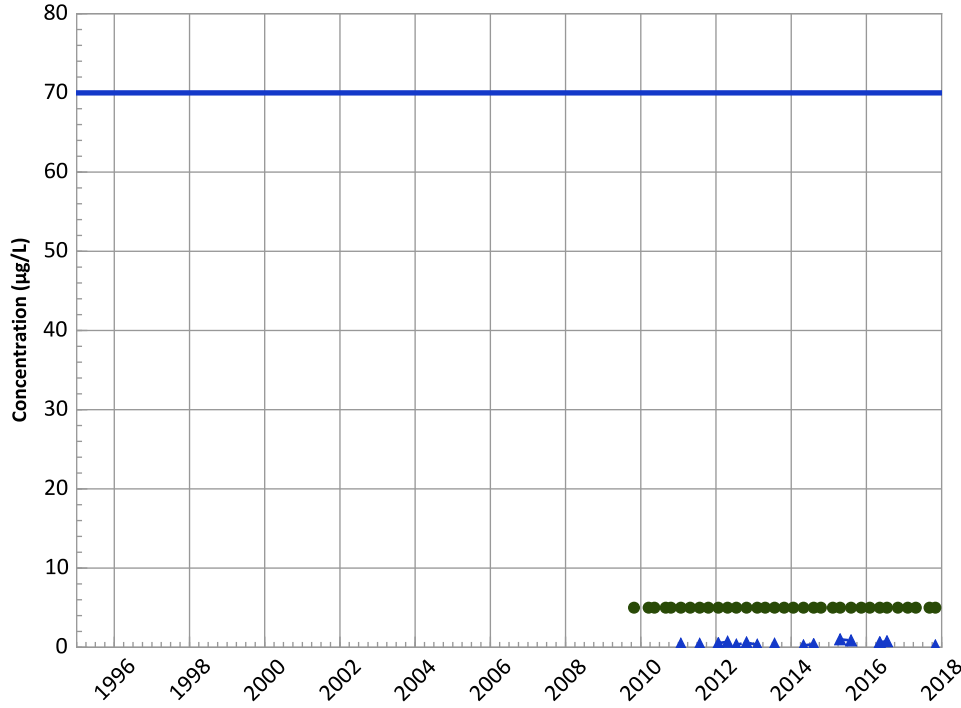


Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 10/27/2009 to 11/01/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1154 in Perched Aquifer
USDOE/NNSA Pantex Plant

cis-1,2-Dichloroethene Trend



Concentration Trend

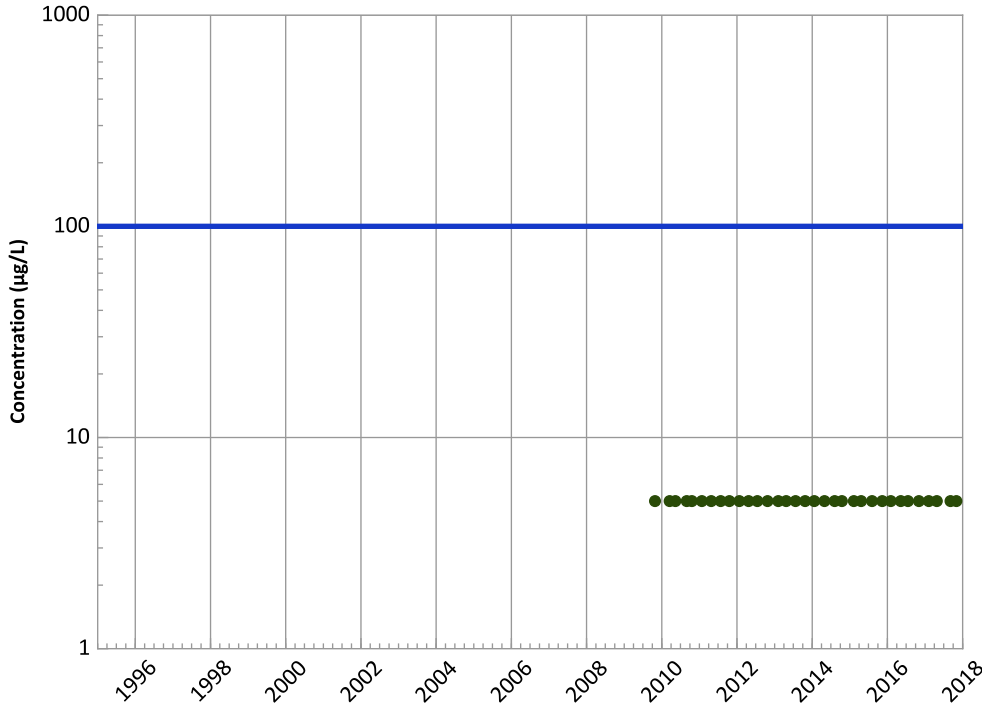
MAROS Mann-Kendall Method

Data ():
Probably Increasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Probably Increasing
All Data
No Trend

trans-1,2-Dichloroethene Trend



Concentration Trend

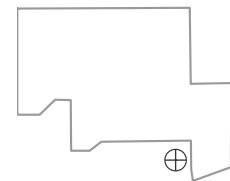
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

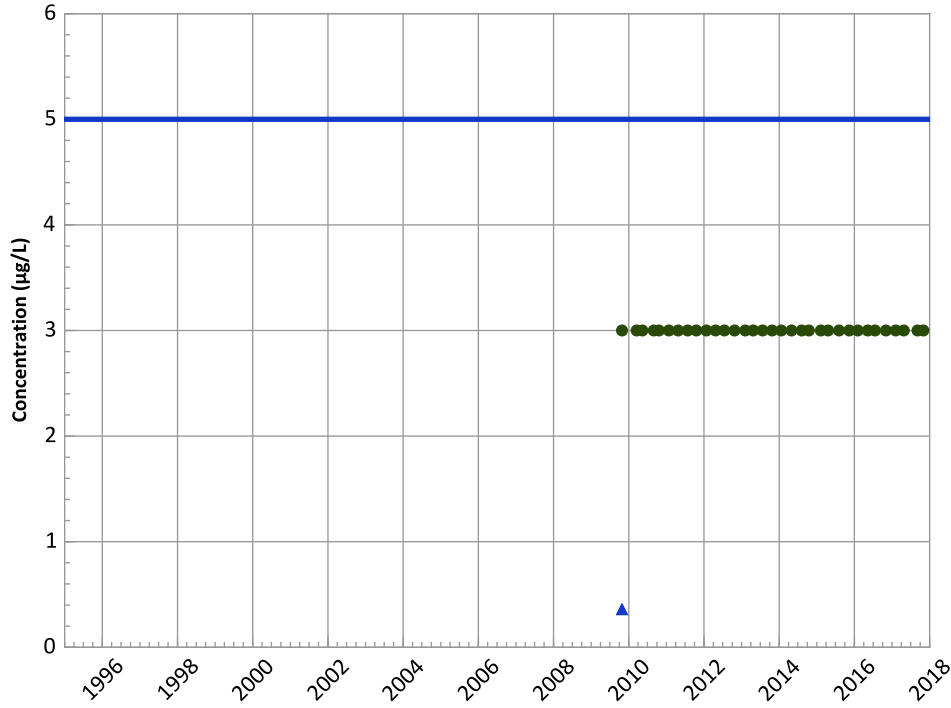
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/27/2009 to 11/01/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1154 in Perched Aquifer
USDOE/NNSA Pantex Plant
1,2-Dichloroethane Trend**



Concentration Trend

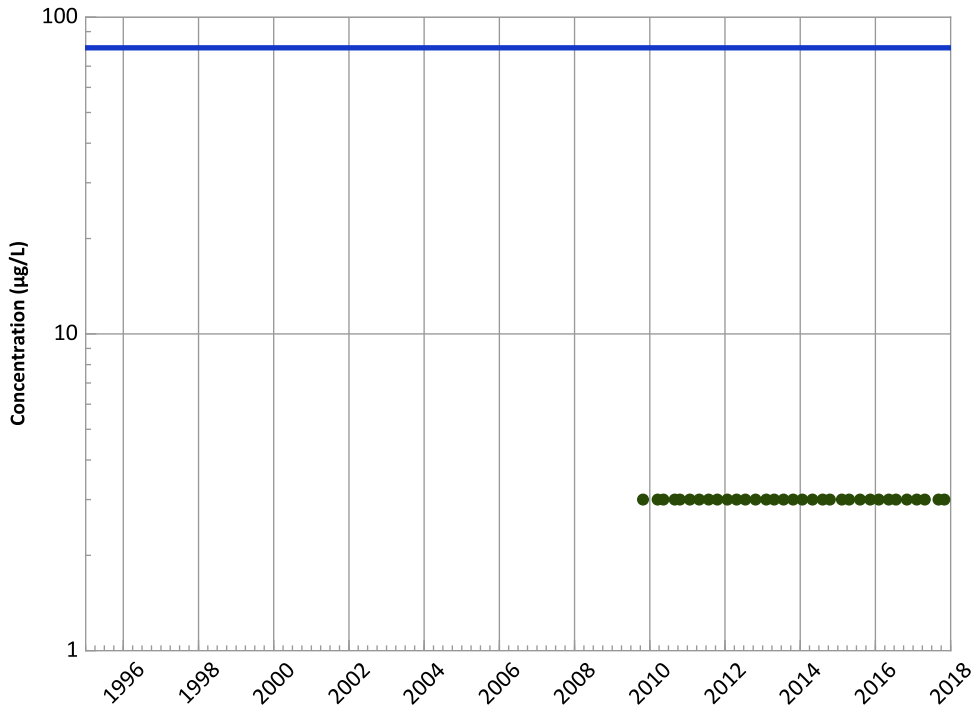
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

Chloroform Trend



Concentration Trend

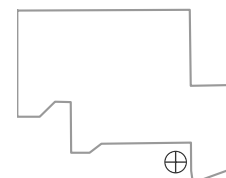
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

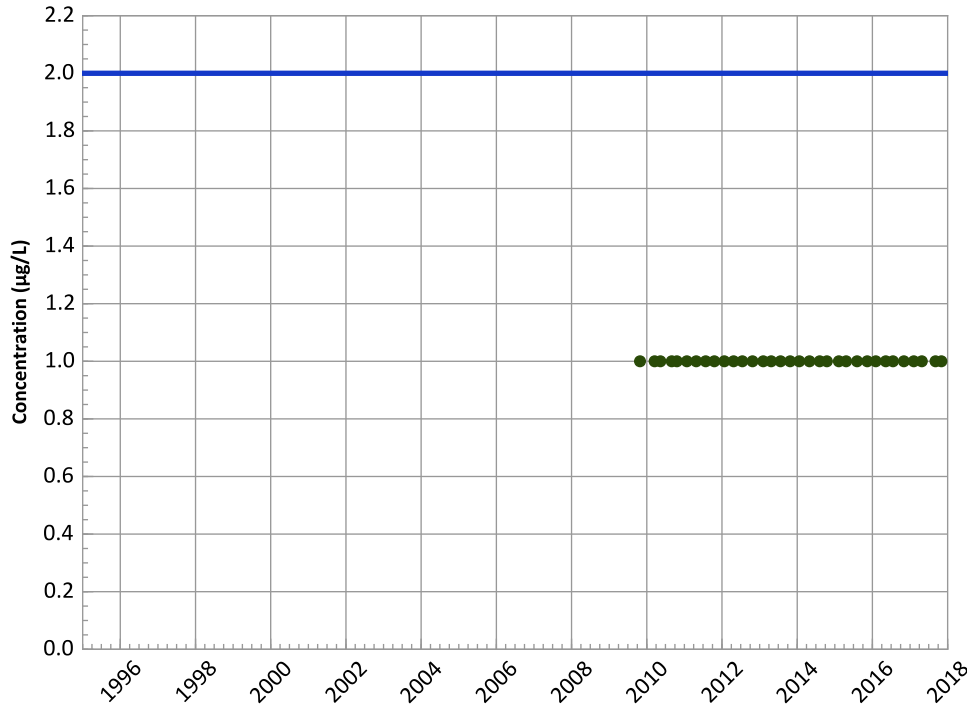
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/27/2009 to 11/01/2017
Analysis Date: 03/21/2018

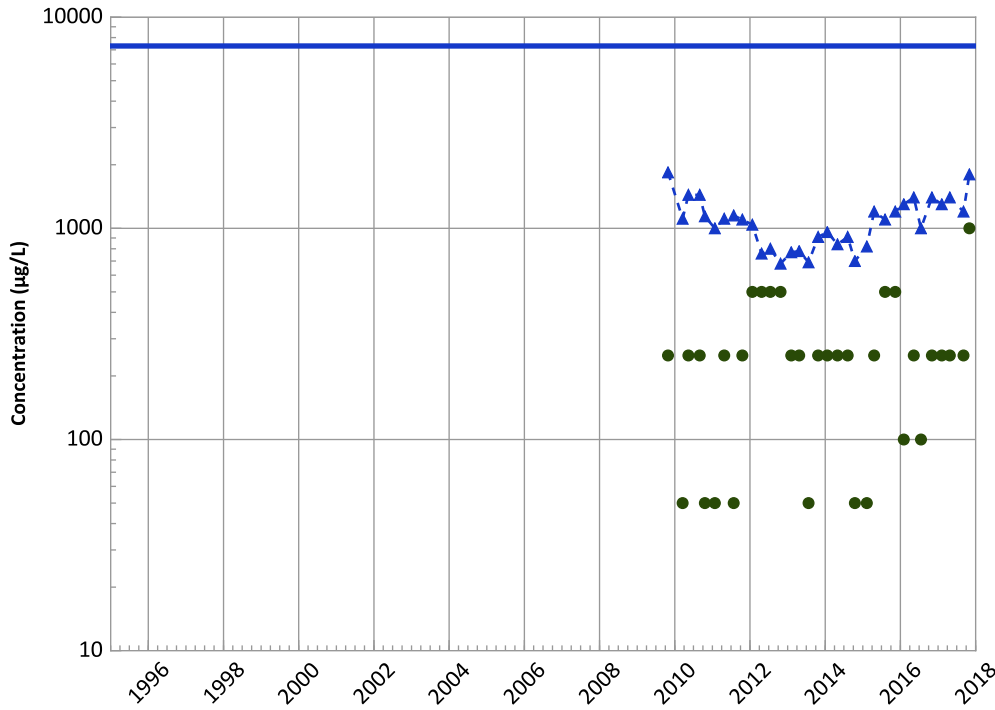
- ▲ Measured Value
- Sample Detection Limit
- Concentration Trend
- Groundwater Protection Standard

**PTX06-1154 in Perched Aquifer
USDOE/NNSA Pantex Plant
Vinyl Chloride Trend**



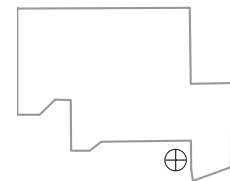
Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect
MAROS Linear Regression Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect

Boron Trend



Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 Increasing
 All Data
 No Trend
MAROS Linear Regression Method
 Data ():
 Increasing
 All Data
 No Trend

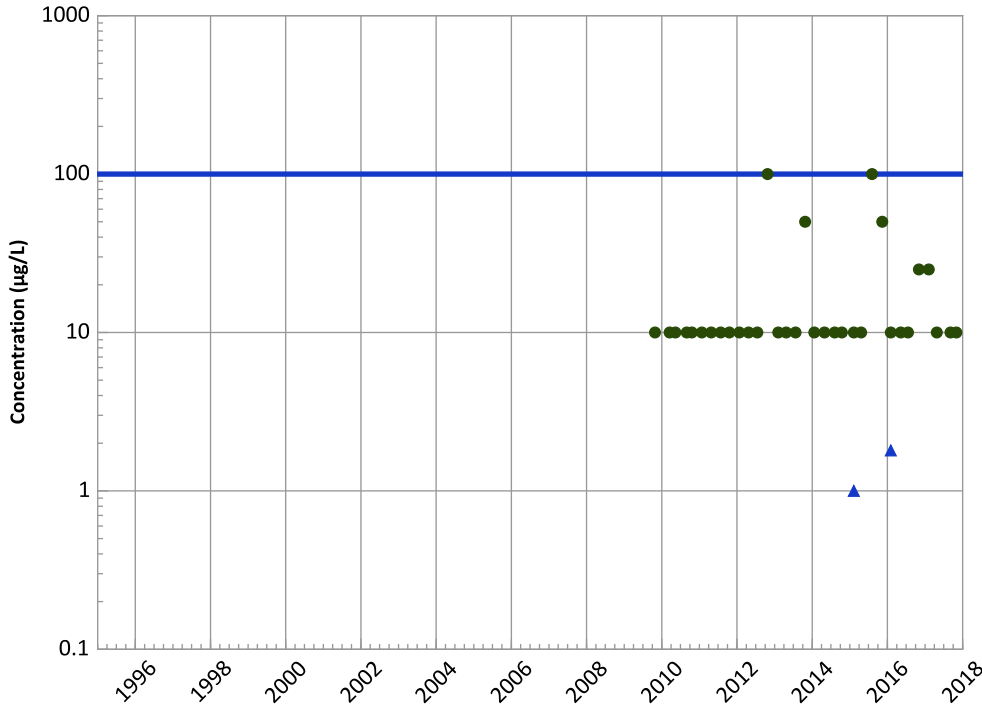
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 10/27/2009 to 11/01/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1154 in Perched Aquifer
USDOE/NNSA Pantex Plant
Chromium, Total Trend**



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

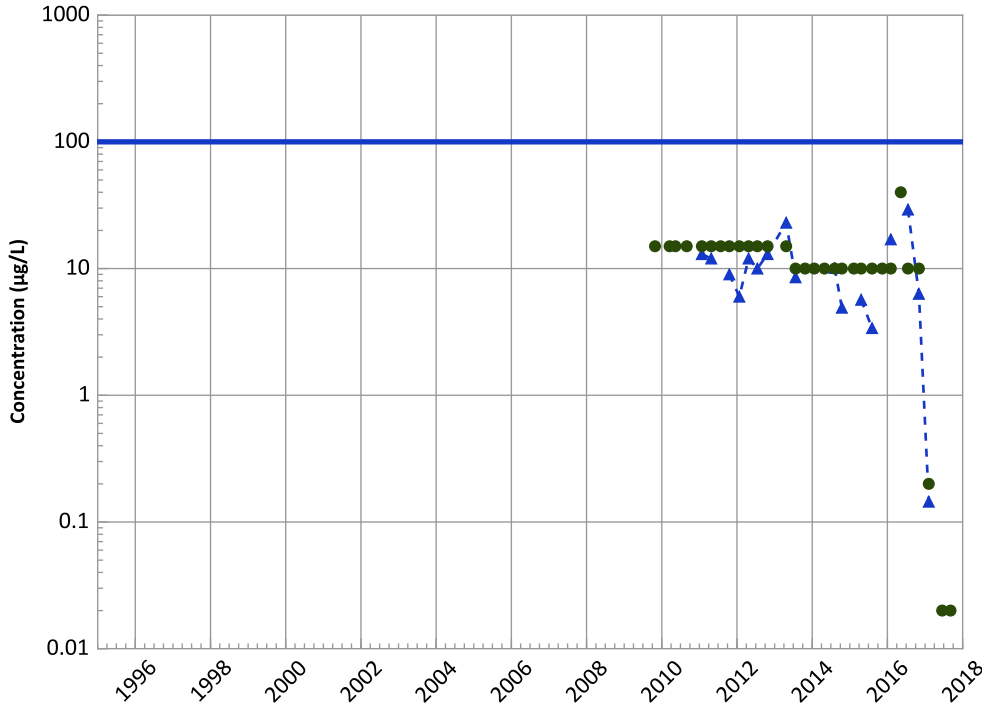
Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

Chromium, Hexavalent Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

Decreasing

All Data

Decreasing

MAROS Linear Regression Method

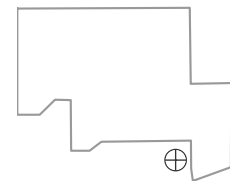
Data ():

Stable

All Data

Probably Decreasing

Well Location

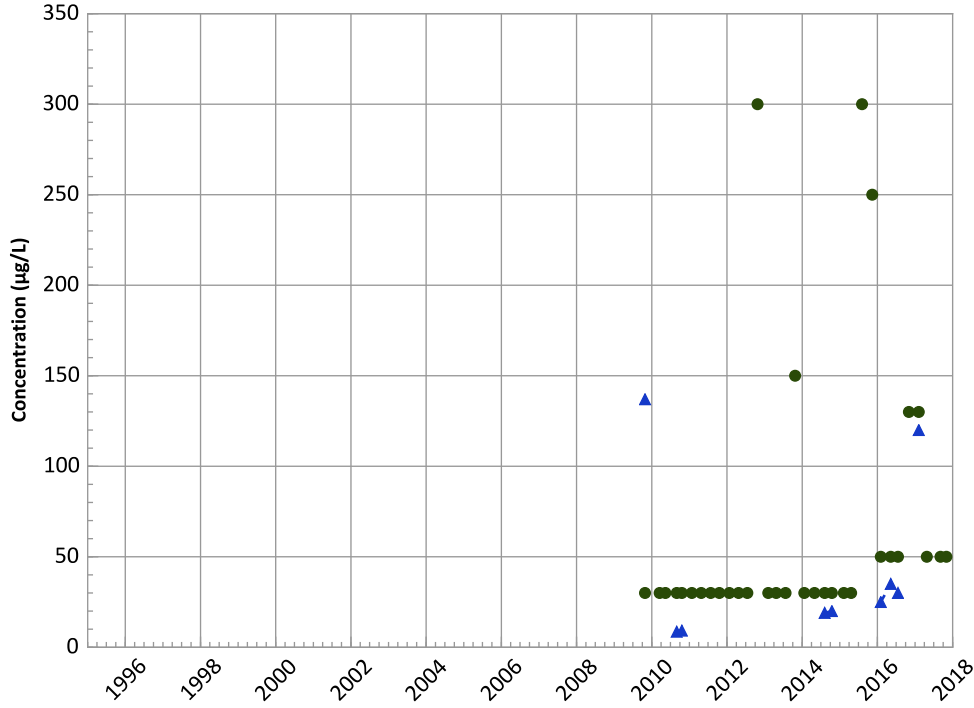


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/27/2009 to 11/01/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1154 in Perched Aquifer
USDOE/NNSA Pantex Plant

Aluminum Trend



Concentration Trend

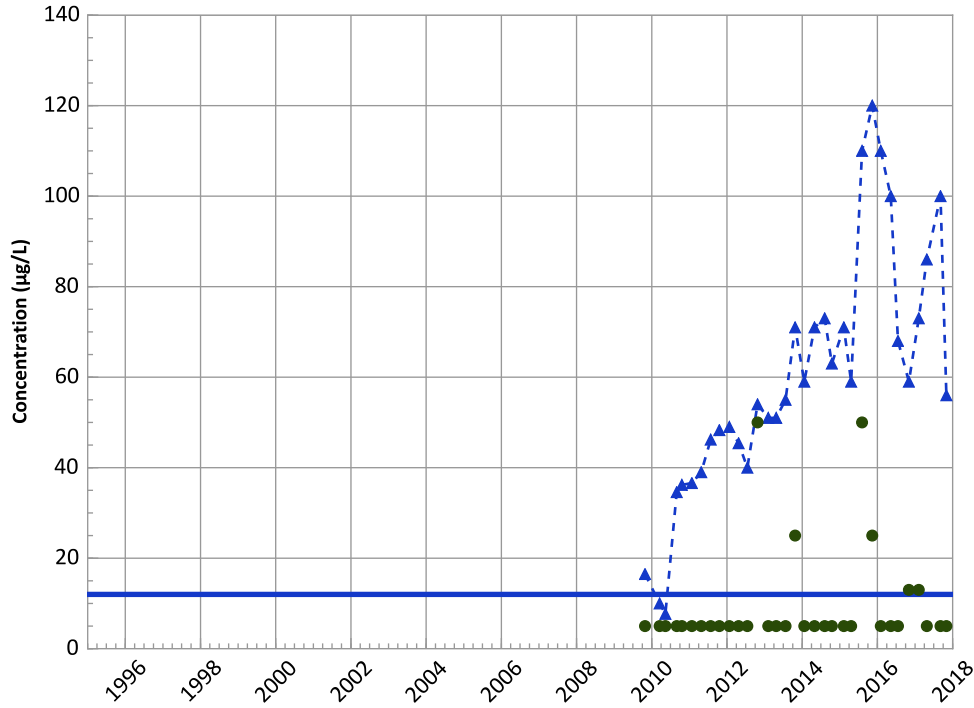
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
No Trend

Arsenic Trend



Concentration Trend

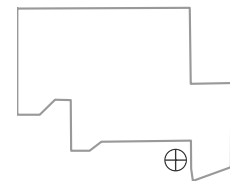
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

Well Location

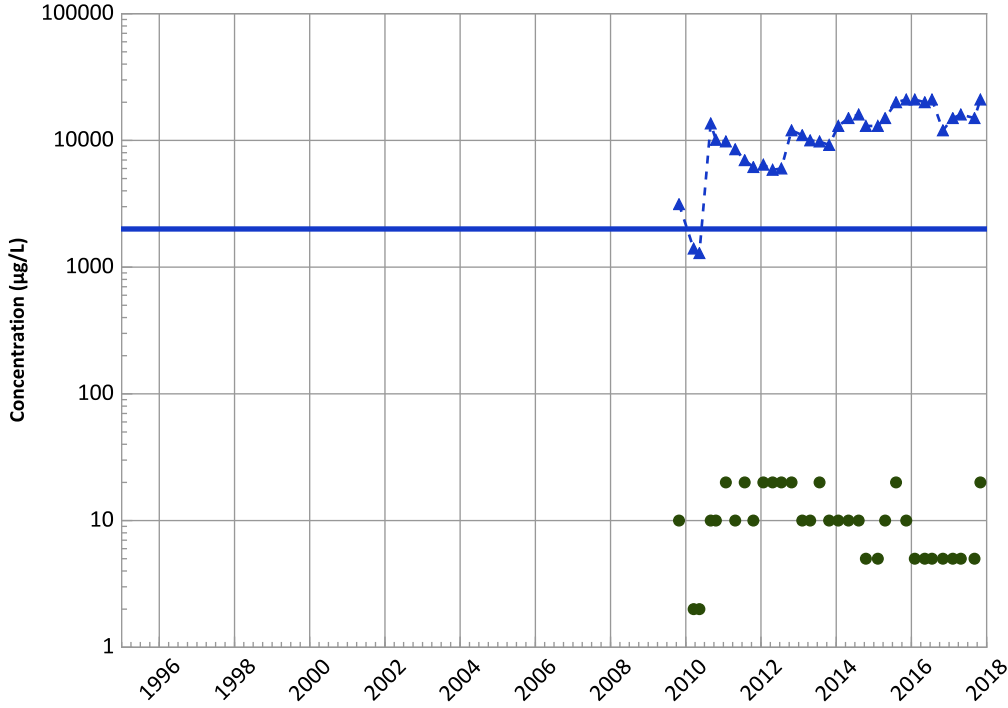


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/27/2009 to 11/01/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1154 in Perched Aquifer
USDOE/NNSA Pantex Plant

Barium Trend



Concentration Trend

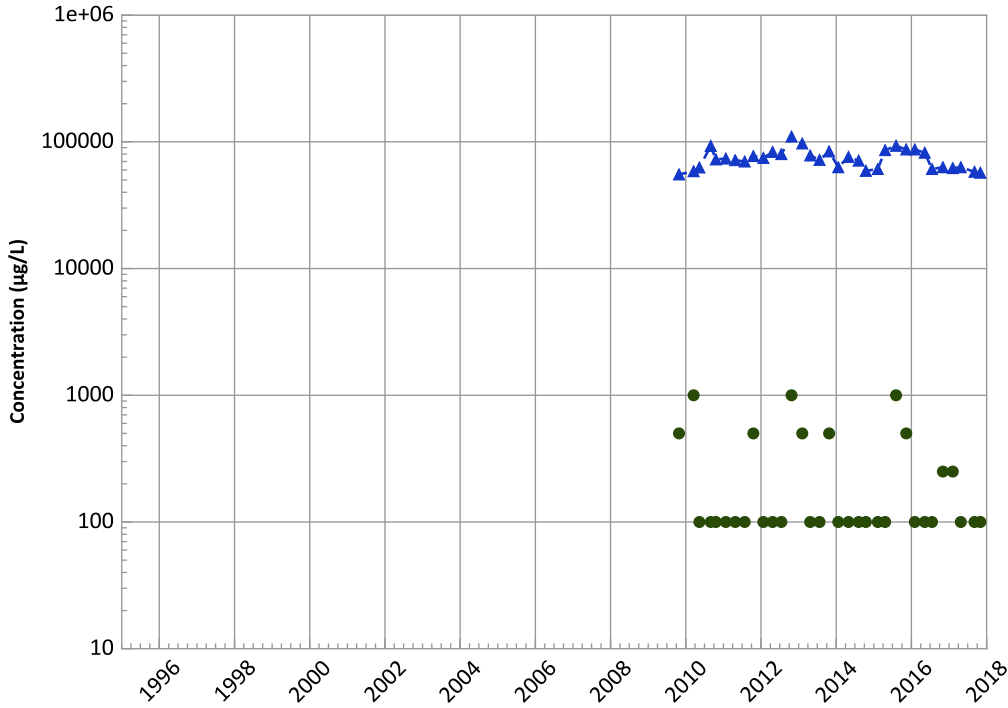
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

Calcium Trend



Concentration Trend

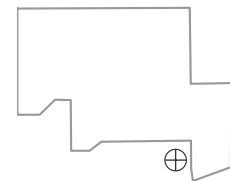
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Stable
All Data
Stable

Well Location

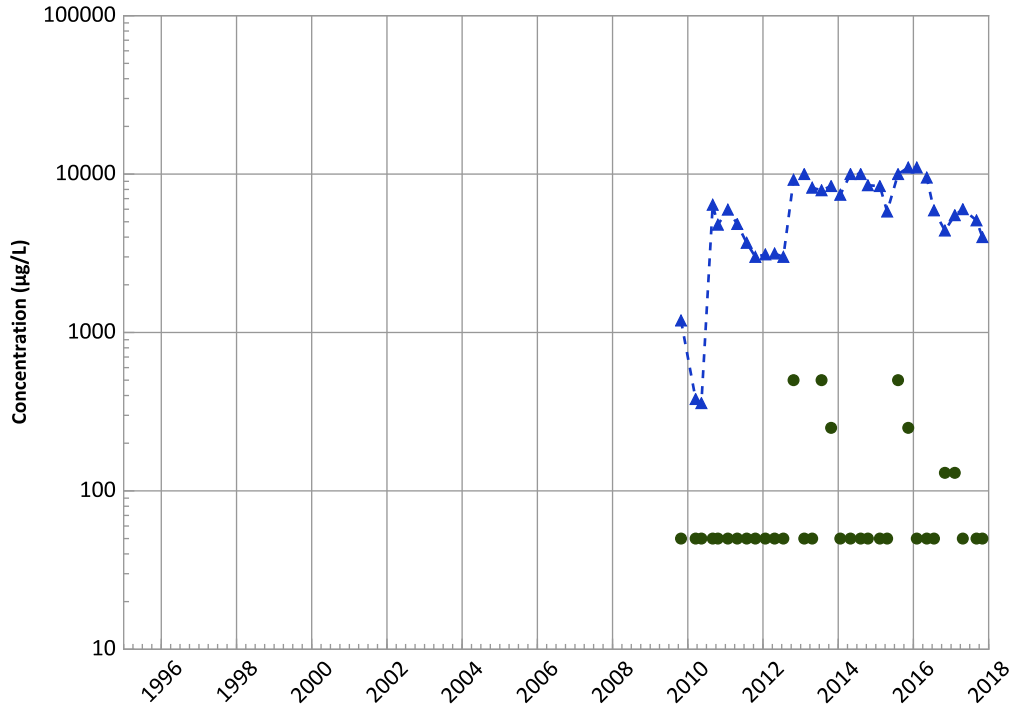


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/27/2009 to 11/01/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- Concentration Trend
- Groundwater Protection Standard

PTX06-1154 in Perched Aquifer
USDOE/NNSA Pantex Plant

Iron Trend



Concentration Trend

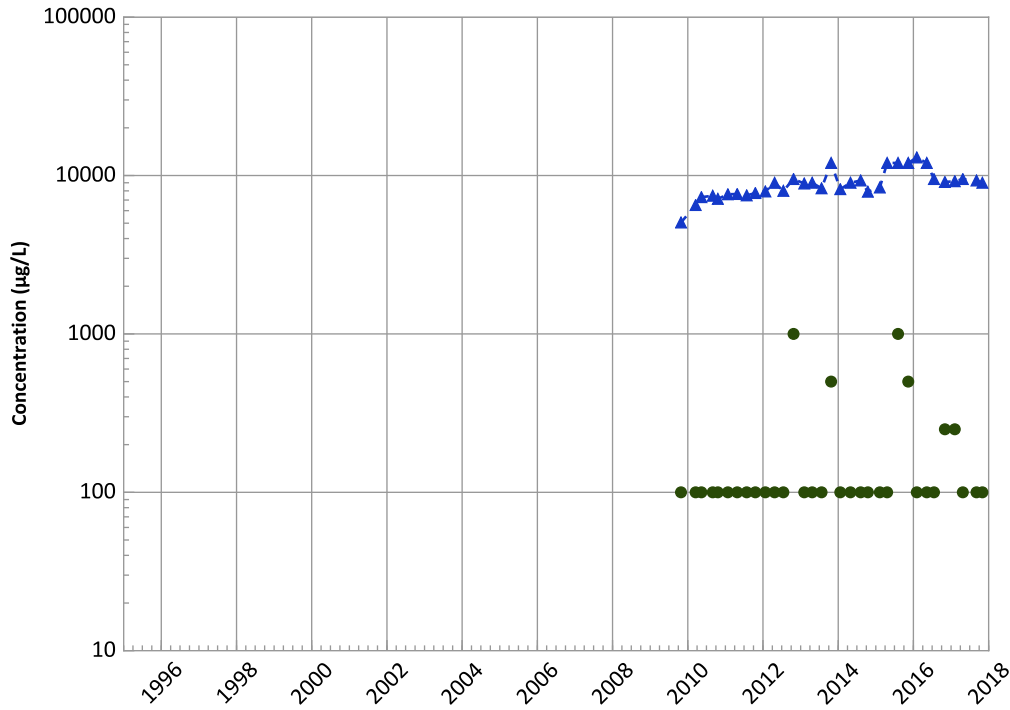
MAROS Mann-Kendall Method

Data ():
Probably Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

Potassium Trend



Concentration Trend

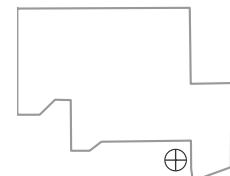
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

Well Location

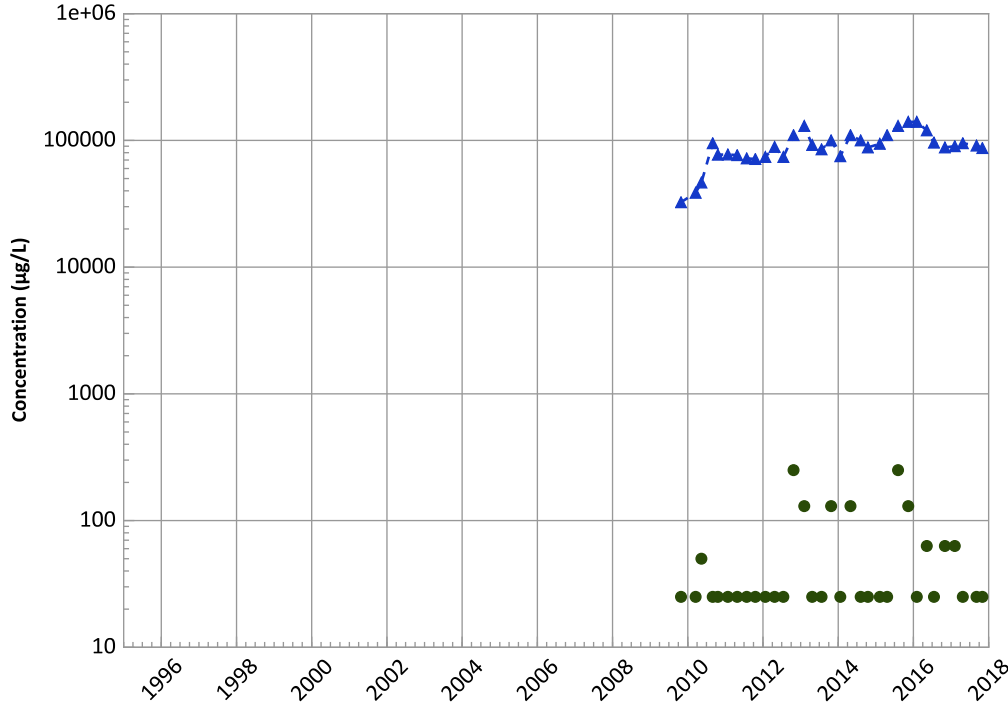


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/27/2009 to 11/01/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1154 in Perched Aquifer
USDOE/NNSA Pantex Plant

Magnesium Trend



Concentration Trend

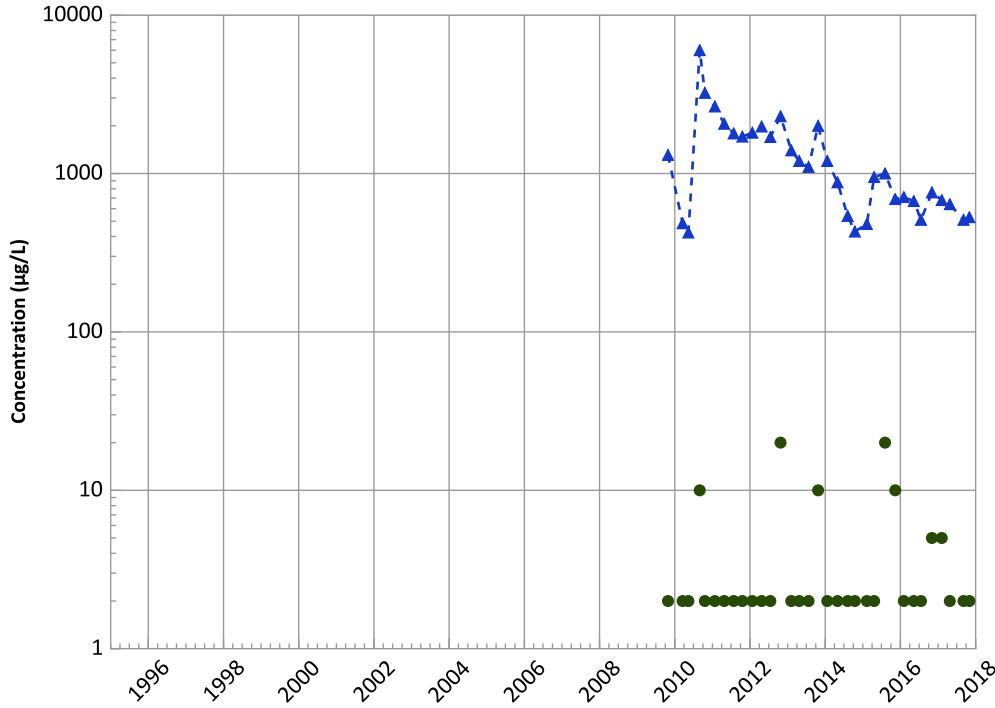
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

Manganese Trend



Concentration Trend

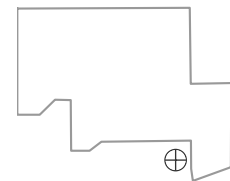
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

Well Location

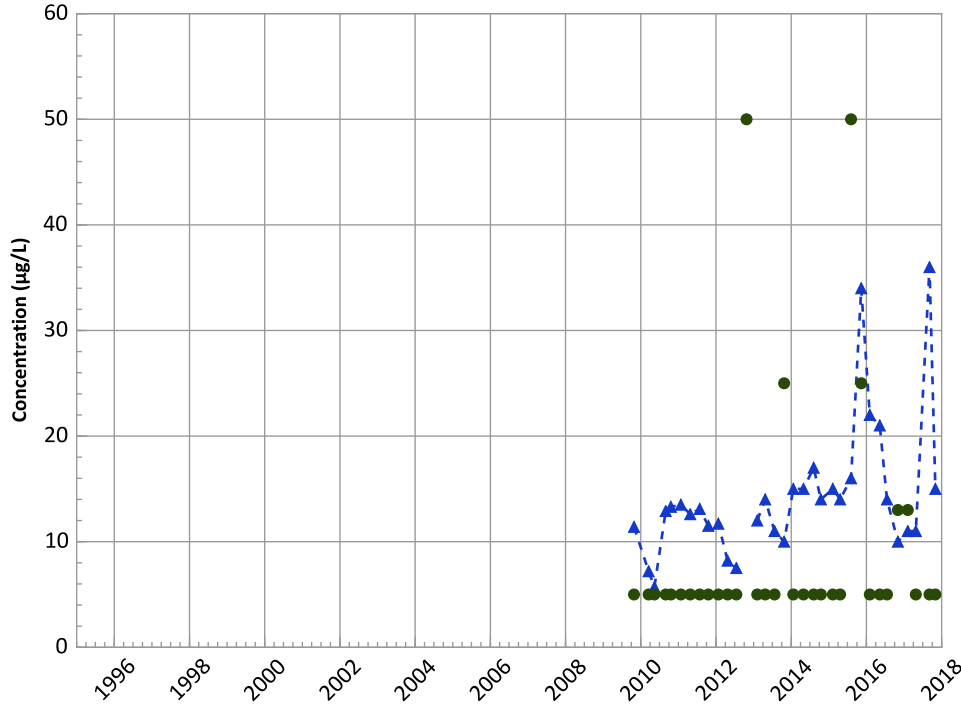


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/27/2009 to 11/01/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1154 in Perched Aquifer
USDOE/NNSA Pantex Plant

Molybdenum Trend



Concentration Trend

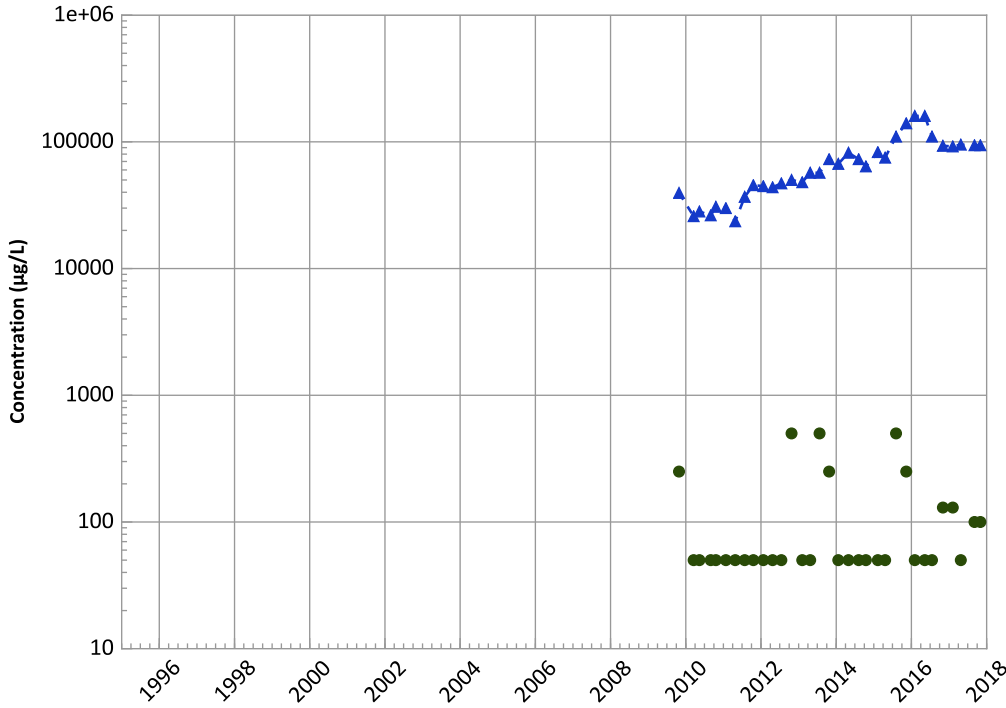
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

Sodium Trend



Concentration Trend

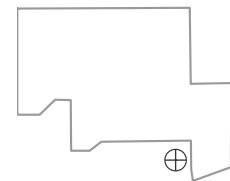
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

Well Location

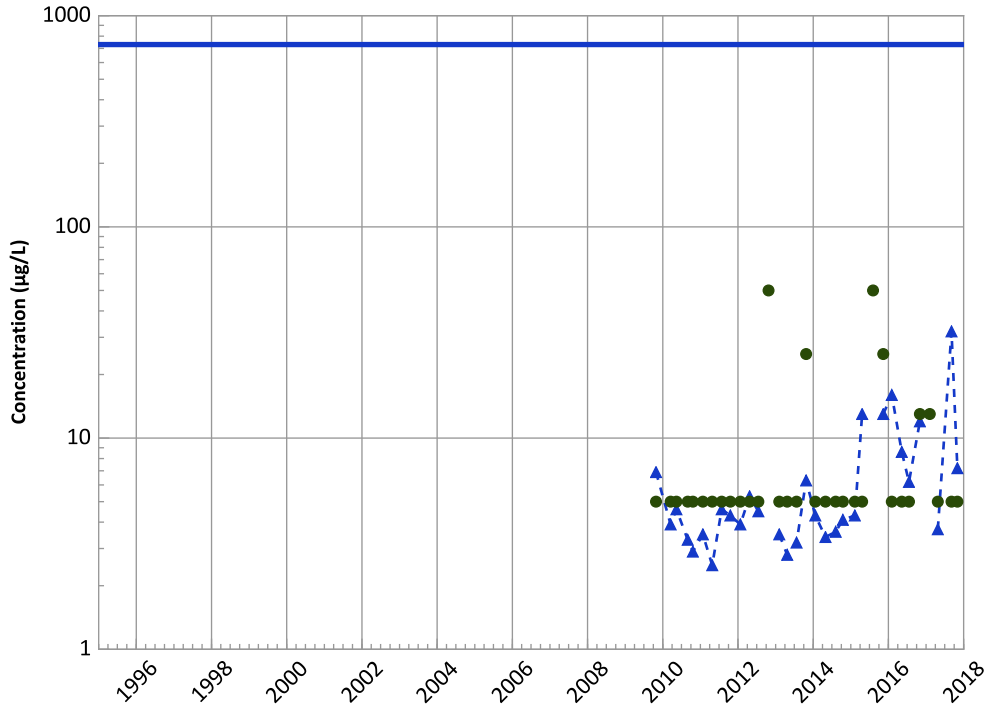


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/27/2009 to 11/01/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1154 in Perched Aquifer
USDOE/NNSA Pantex Plant

Nickel Trend



Concentration Trend

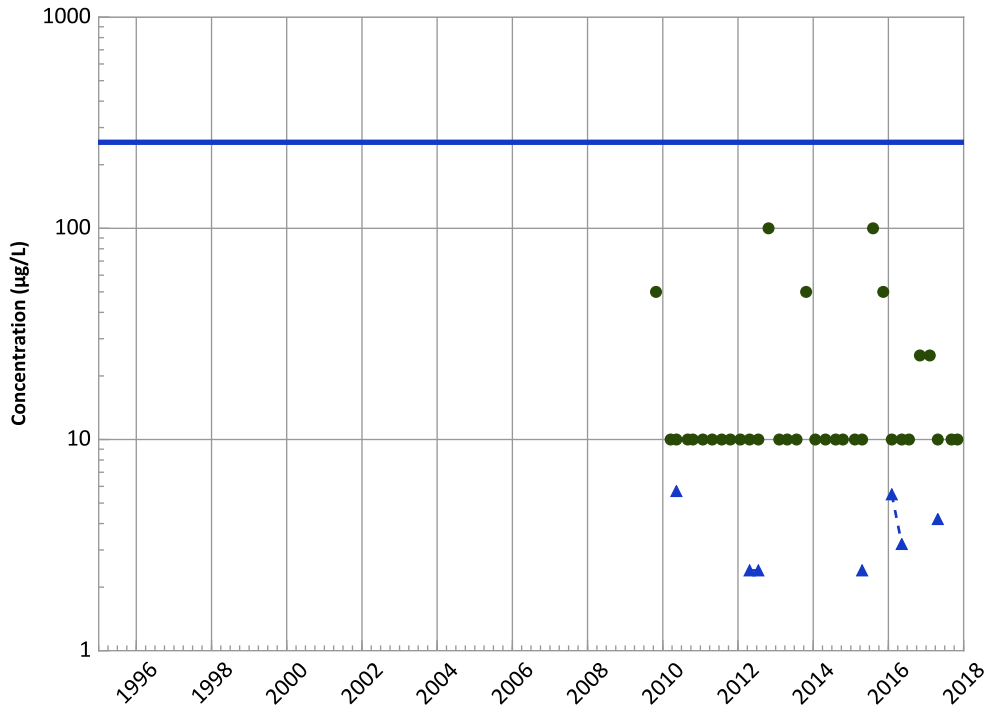
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

Vanadium Trend



Concentration Trend

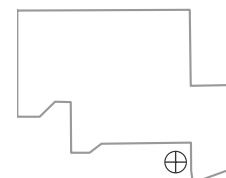
MAROS Mann-Kendall Method

Data ():
No Trend
All Data
Decreasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
No Trend

Well Location

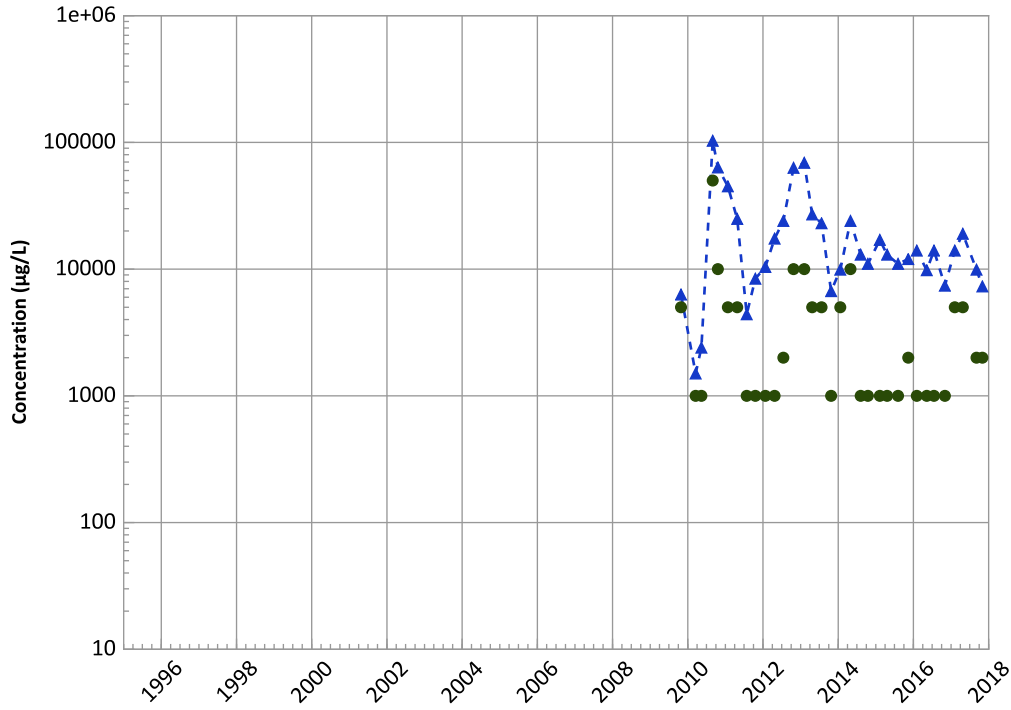


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/27/2009 to 11/01/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1154 in Perched Aquifer
USDOE/NNSA Pantex Plant

Total Organic Carbon Trend



Concentration Trend

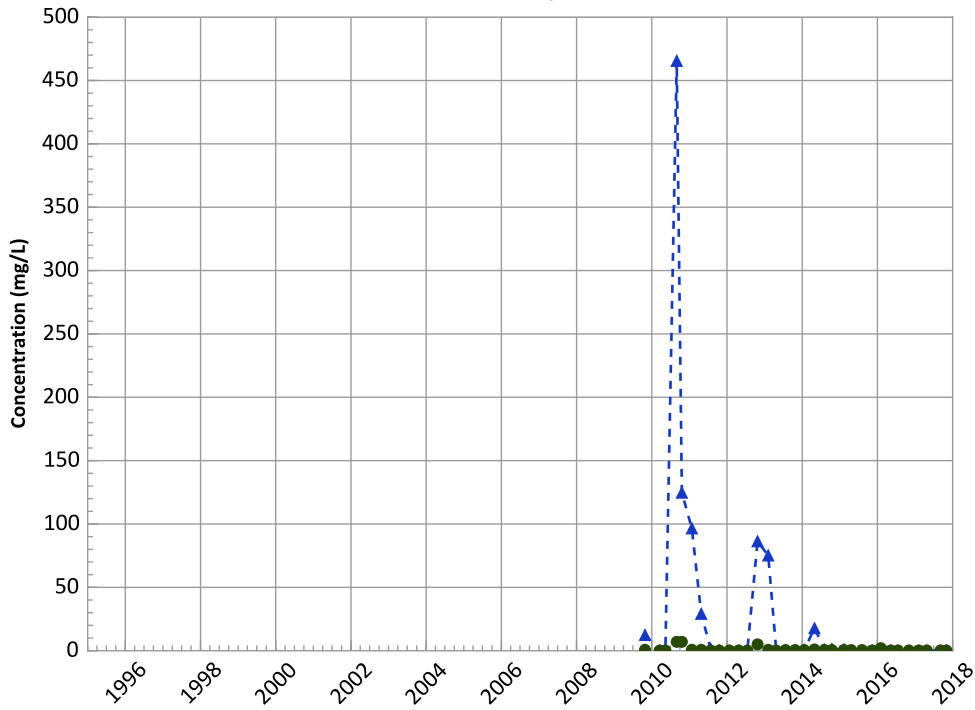
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
No Trend

Total Volatile Fatty Acids Trend



Concentration Trend

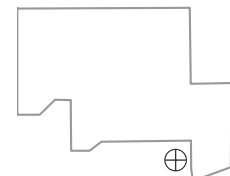
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

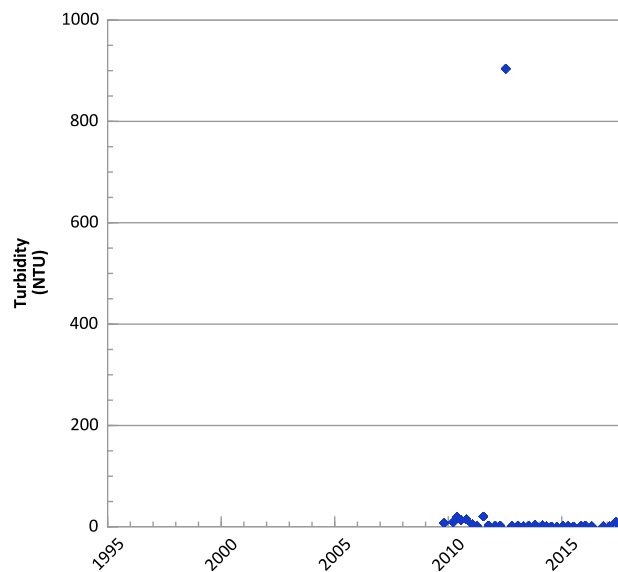
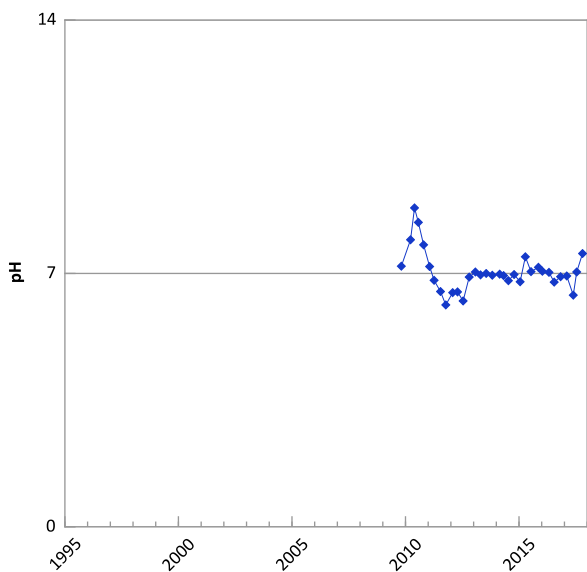
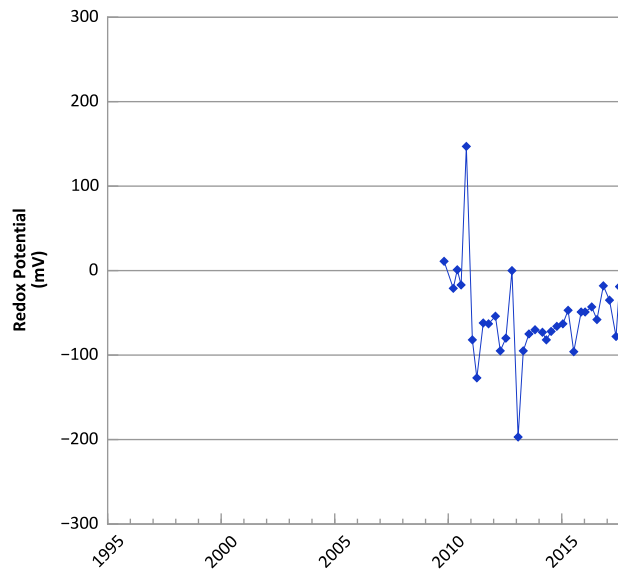
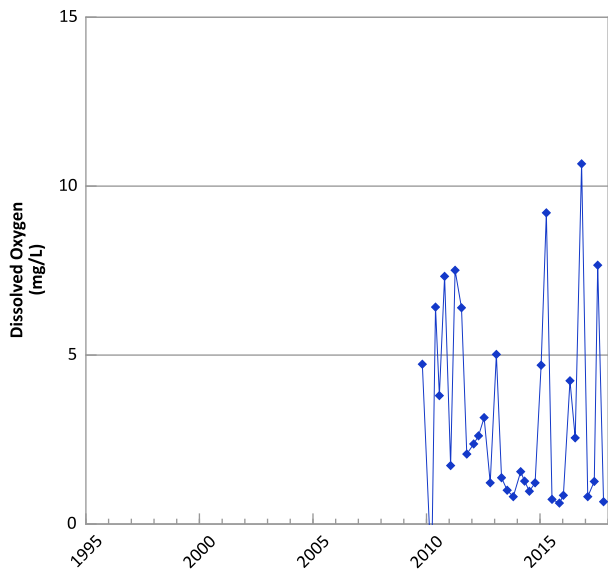
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/27/2009 to 11/01/2017
Analysis Date: 03/21/2018

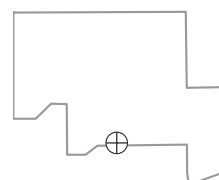
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1155 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



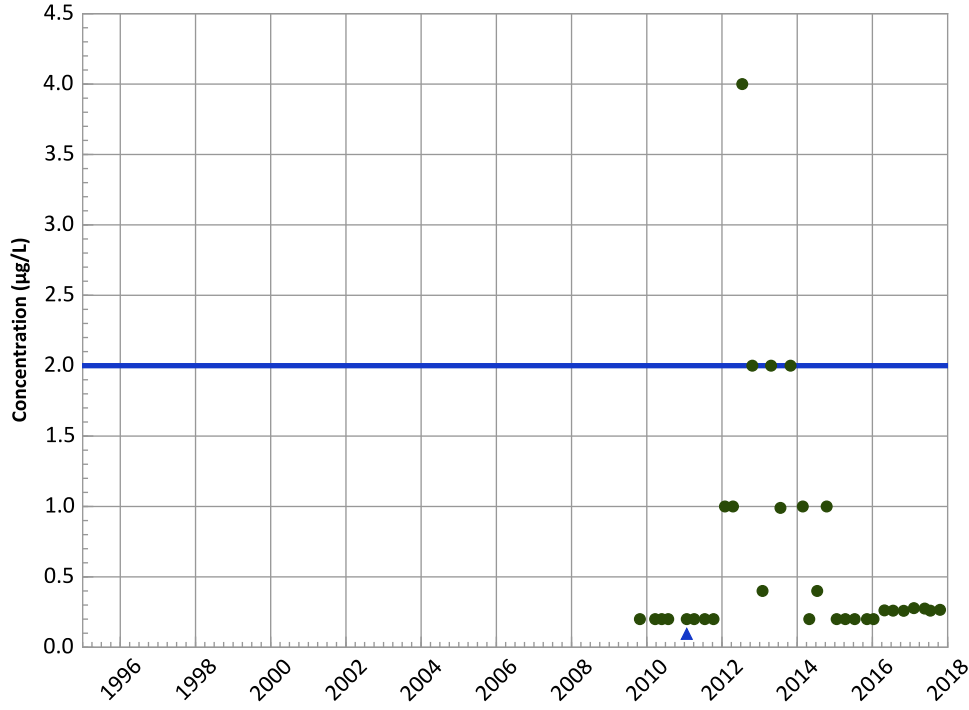
Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/26/2009 to 10/19/2017
Analysis Date: 03/21/2018

Well Location

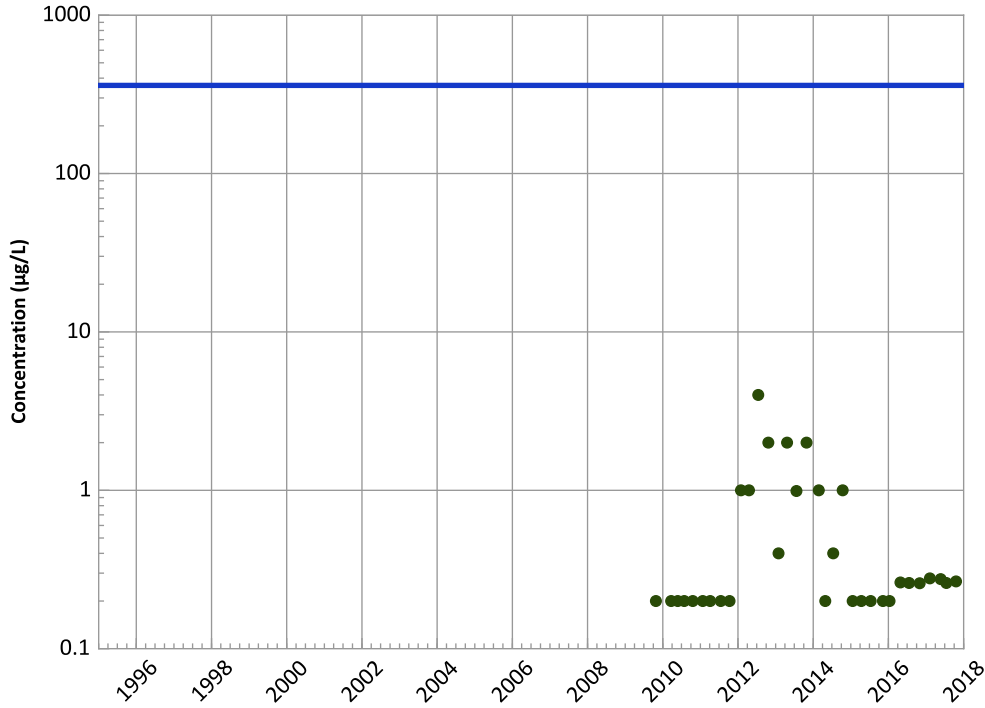


PTX06-1155 in Perched Aquifer
USDOE/NNSA Pantex Plant

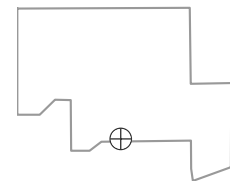
RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Well Location

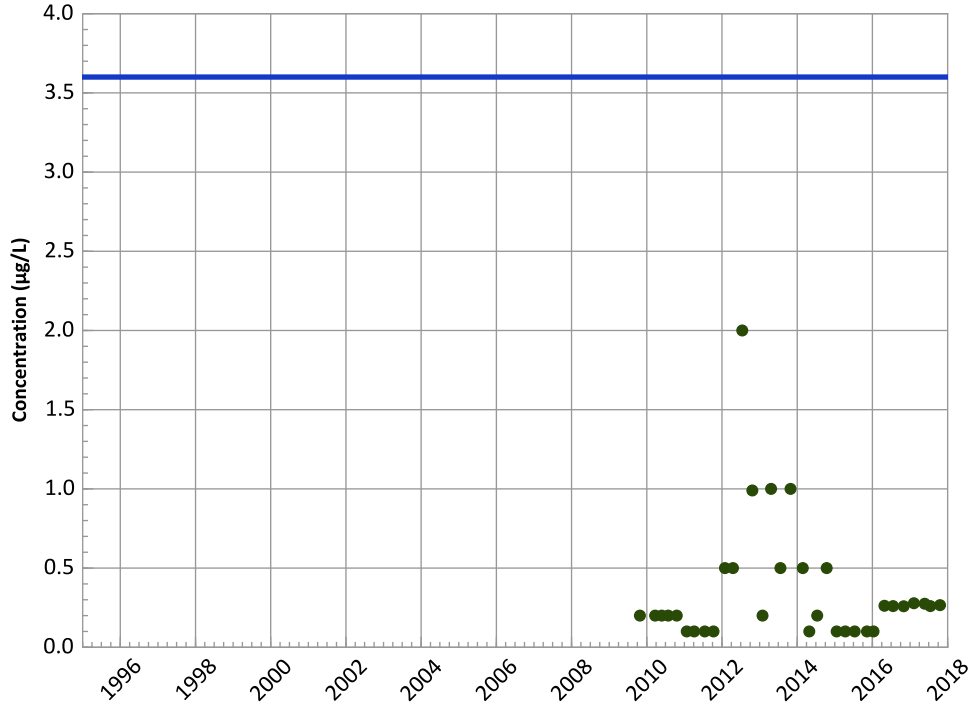


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/26/2009 to 10/19/2017
Analysis Date: 03/21/2018

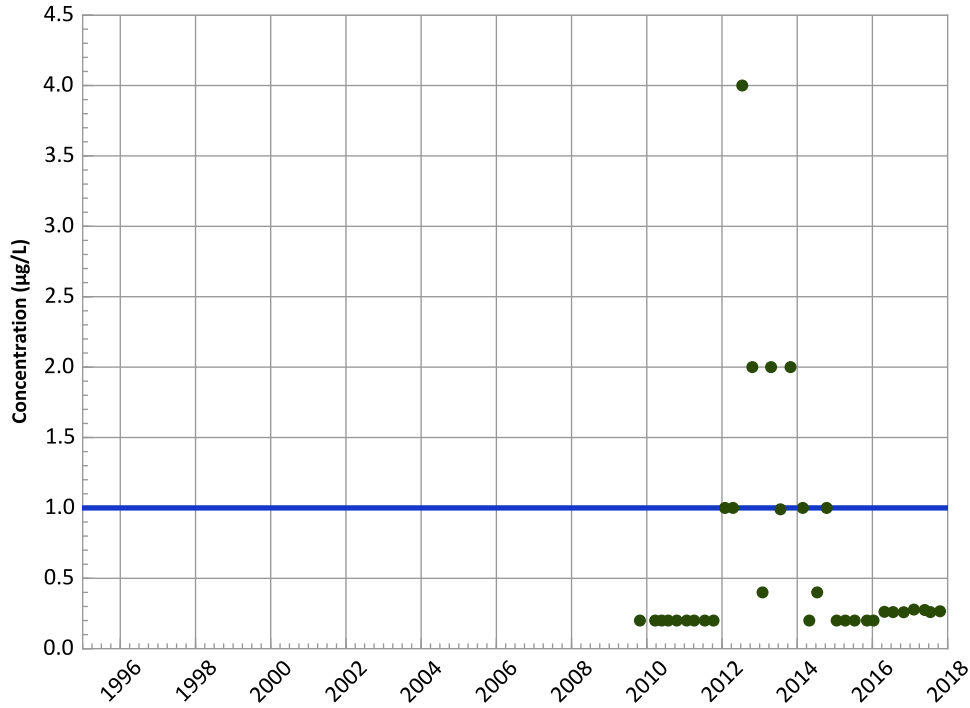
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1155 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



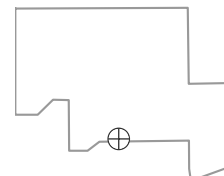
2,4-Dinitrotoluene Trend



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/26/2009 to 10/19/2017
Analysis Date: 03/21/2018

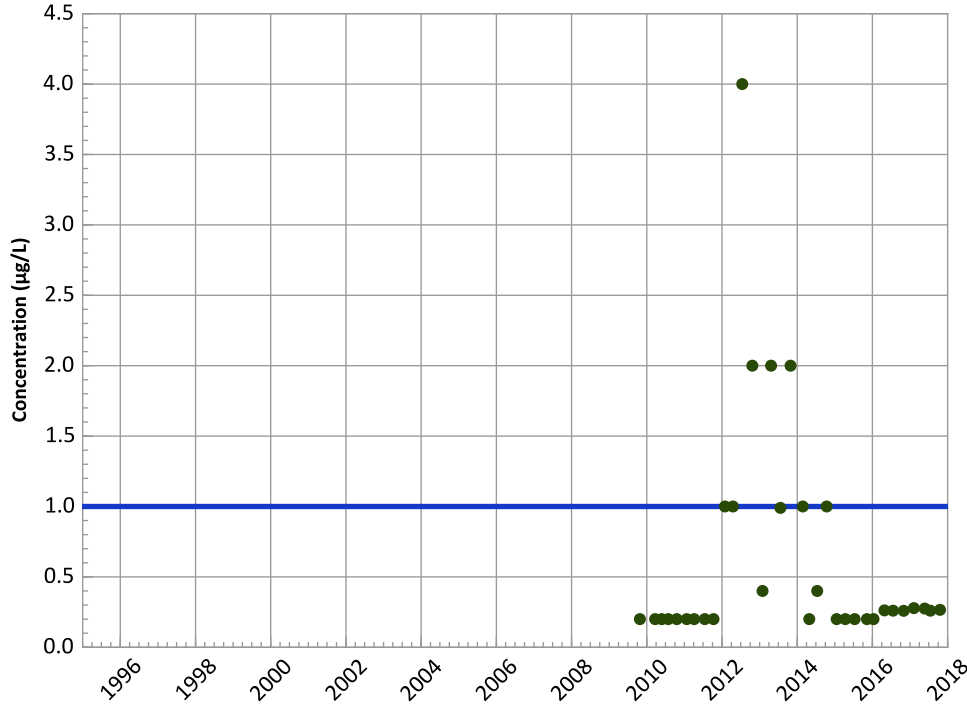
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

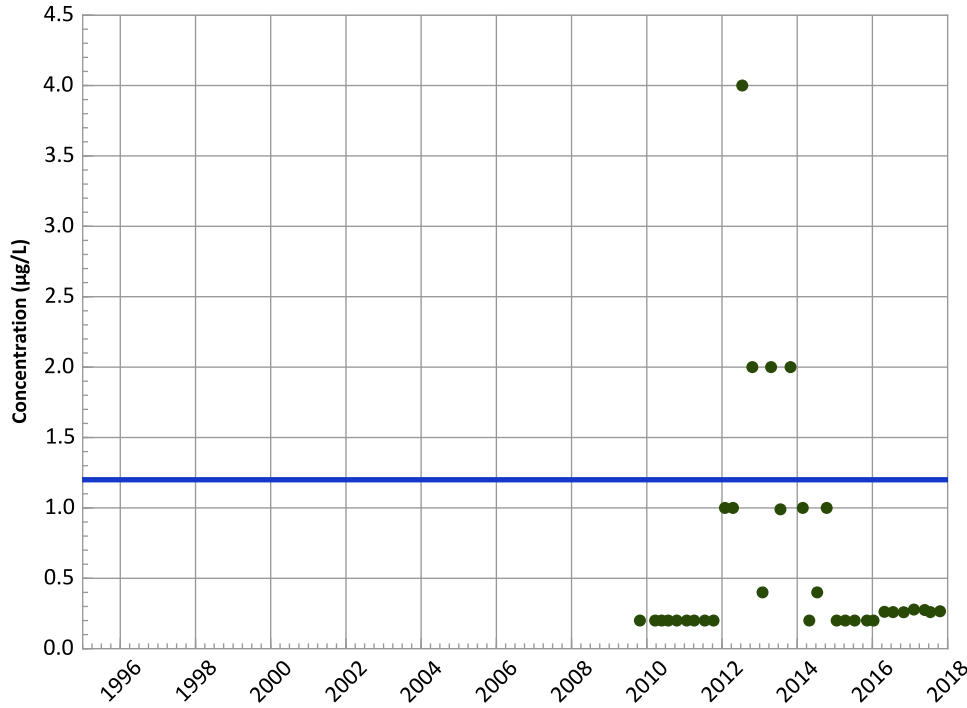


PTX06-1155 in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



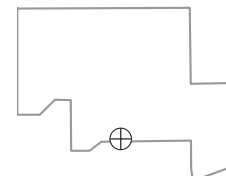
2-Amino-4,6-Dinitrotoluene Trend



Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 10/26/2009 to 10/19/2017
 Analysis Date: 03/21/2018

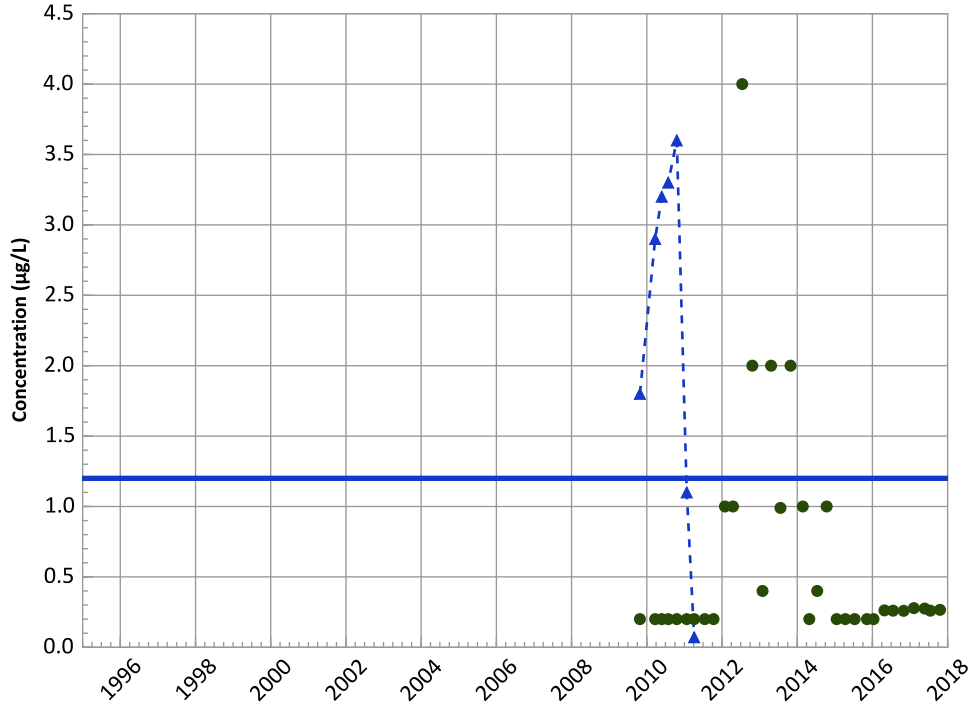
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

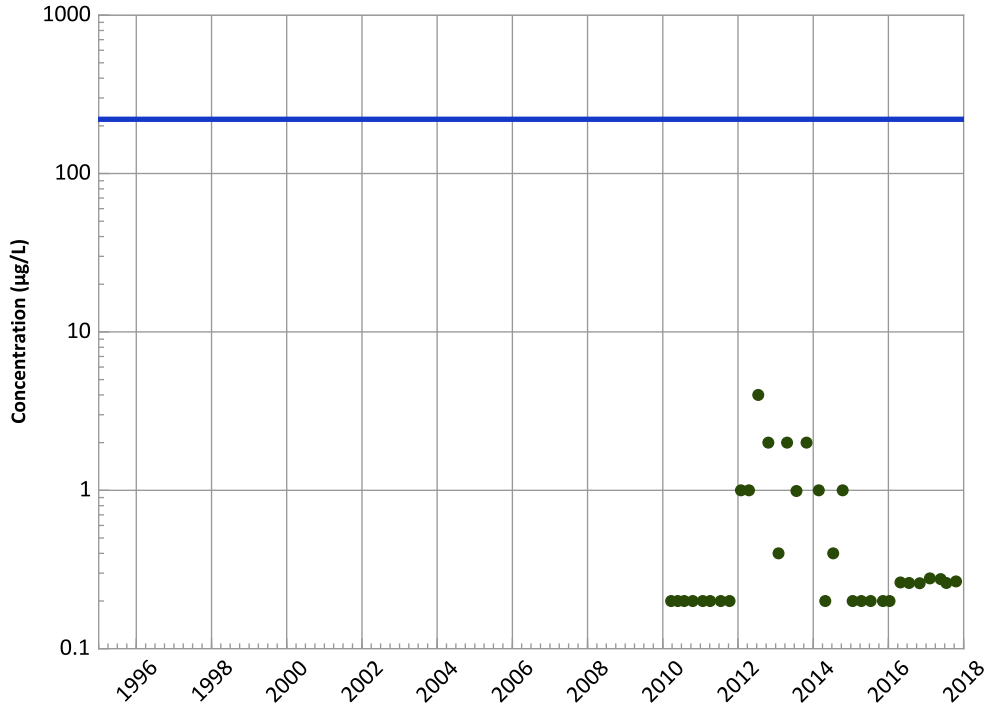


PTX06-1155 in Perched Aquifer
USDOE/NNSA Pantex Plant

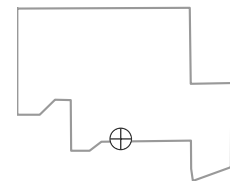
4-Amino-2,6-Dinitrotoluene Trend



1,3,5-Trinitrobenzene Trend



Well Location

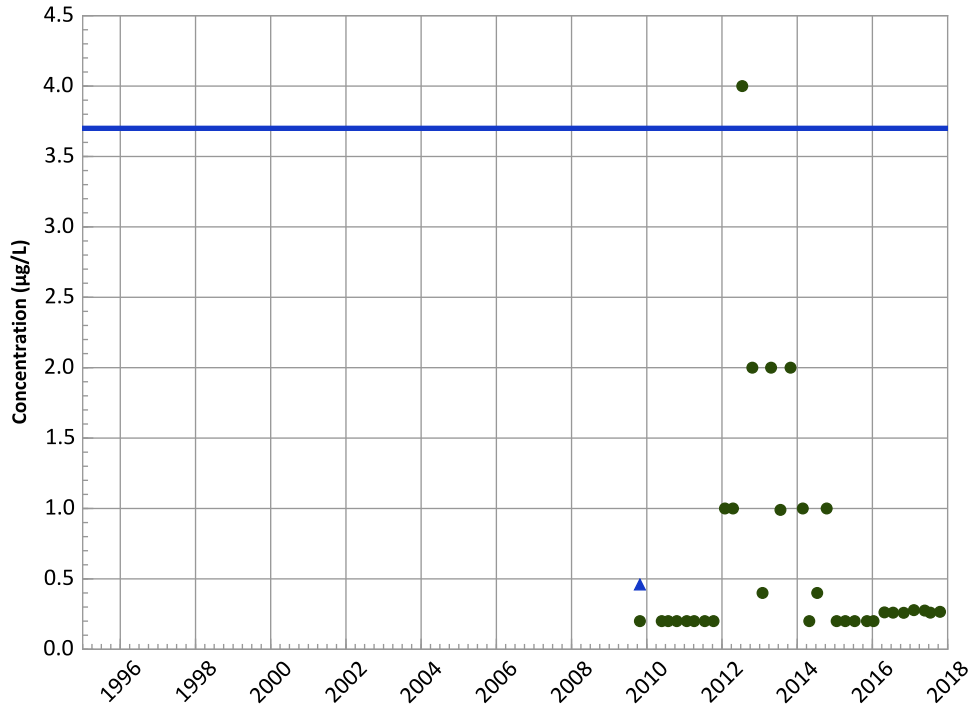


Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 10/26/2009 to 10/19/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1155 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

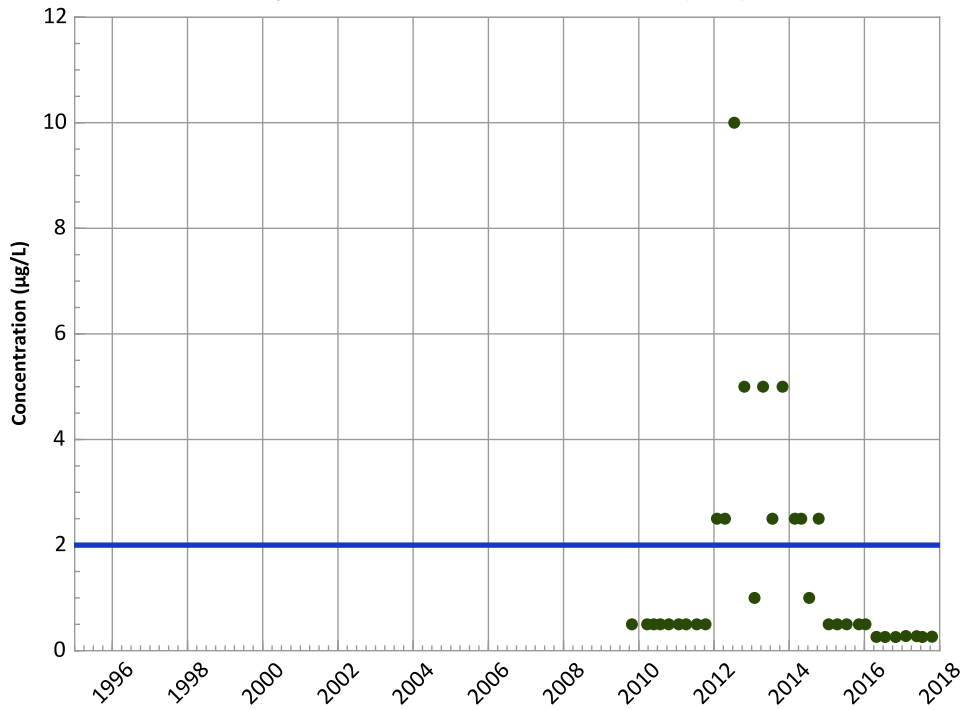
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

Hexahydro-1-Nitroso-3,5-Dinitro-1,3,5-Triazine (MNX) Trend



Concentration Trend

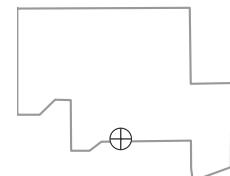
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

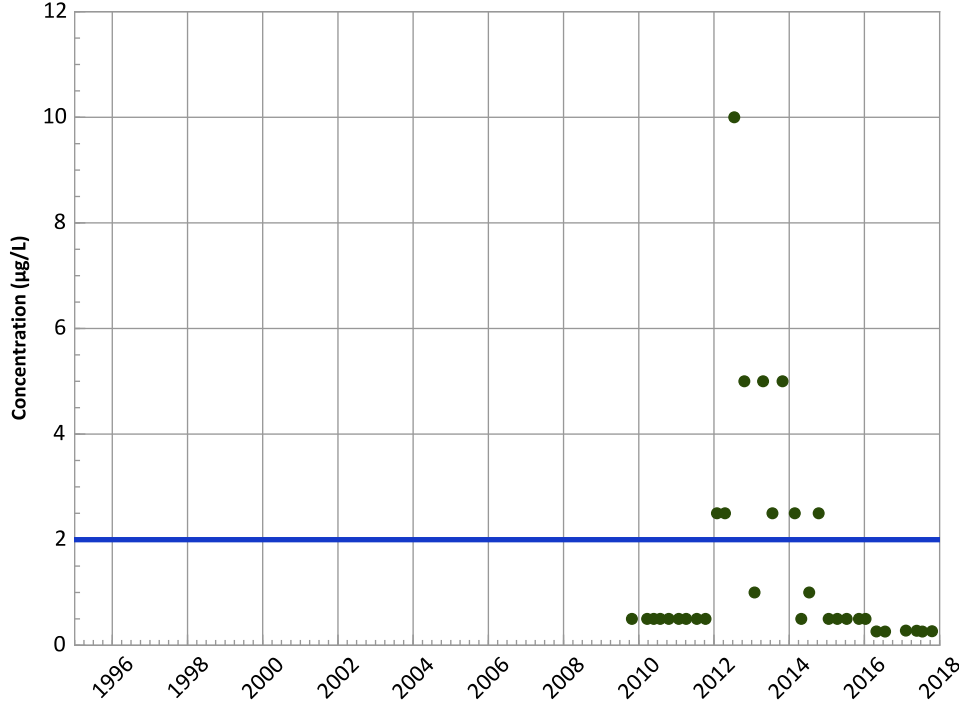


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/26/2009 to 10/19/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1155 in Perched Aquifer
USDOE/NNSA Pantex Plant

Hexahydro-1,3-Dinitroso-5-Nitro-1,3,5-Triazine (DNX) Trend



Concentration Trend

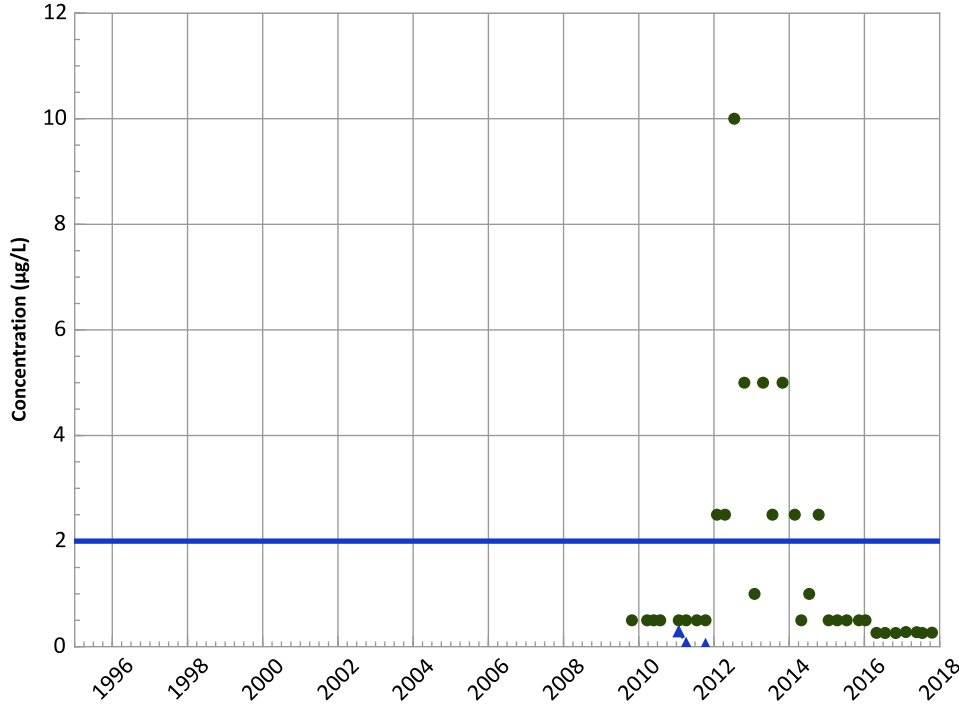
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Hexahydro-1,3,5-Trinitroso-1,3,5-Triazine (TNX) Trend



Concentration Trend

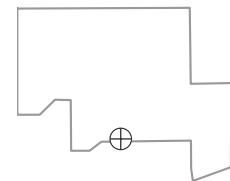
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

Well Location

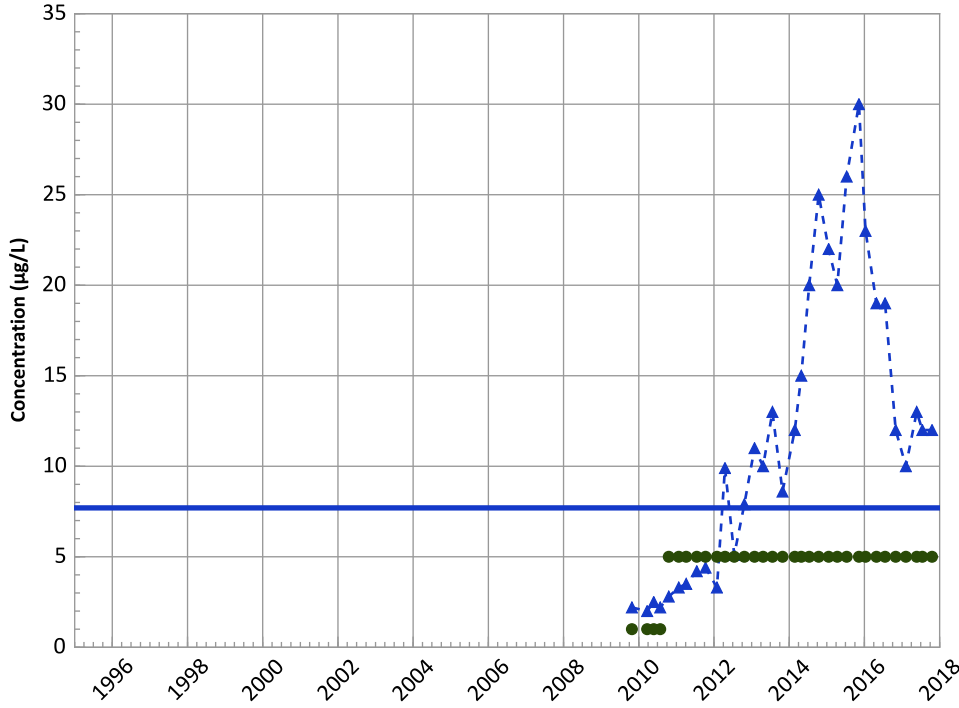


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/26/2009 to 10/19/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1155 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,4-Dioxane (p-Dioxane) Trend



Concentration Trend

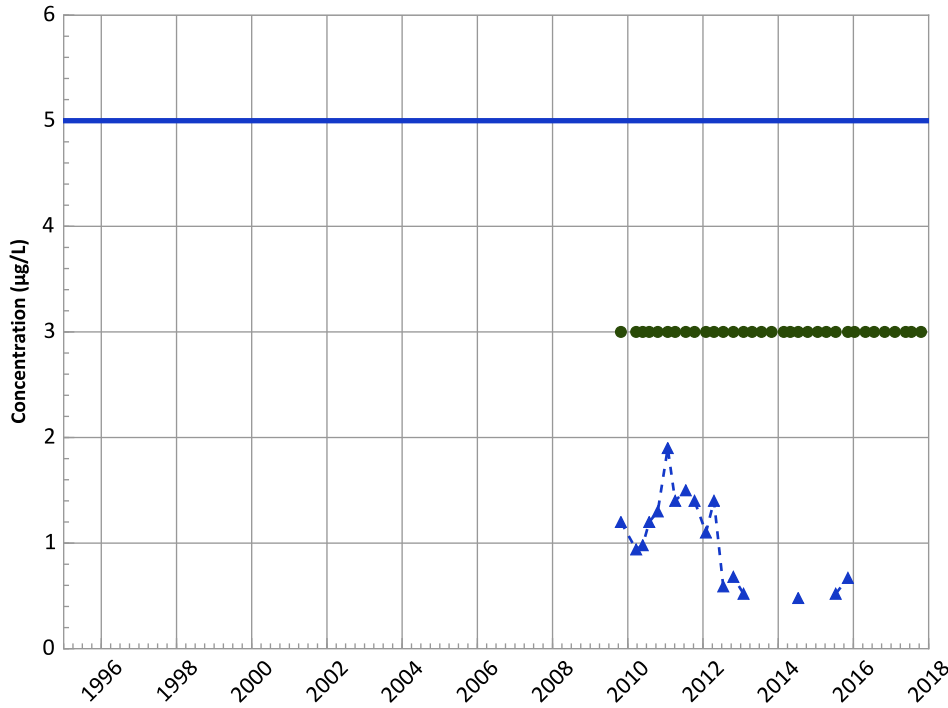
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

Tetrachloroethylene (PCE) Trend



Concentration Trend

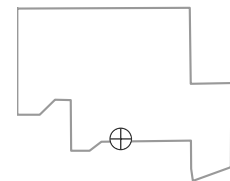
MAROS Mann-Kendall Method

Data ():
Probably Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Probably Decreasing
All Data
Decreasing

Well Location

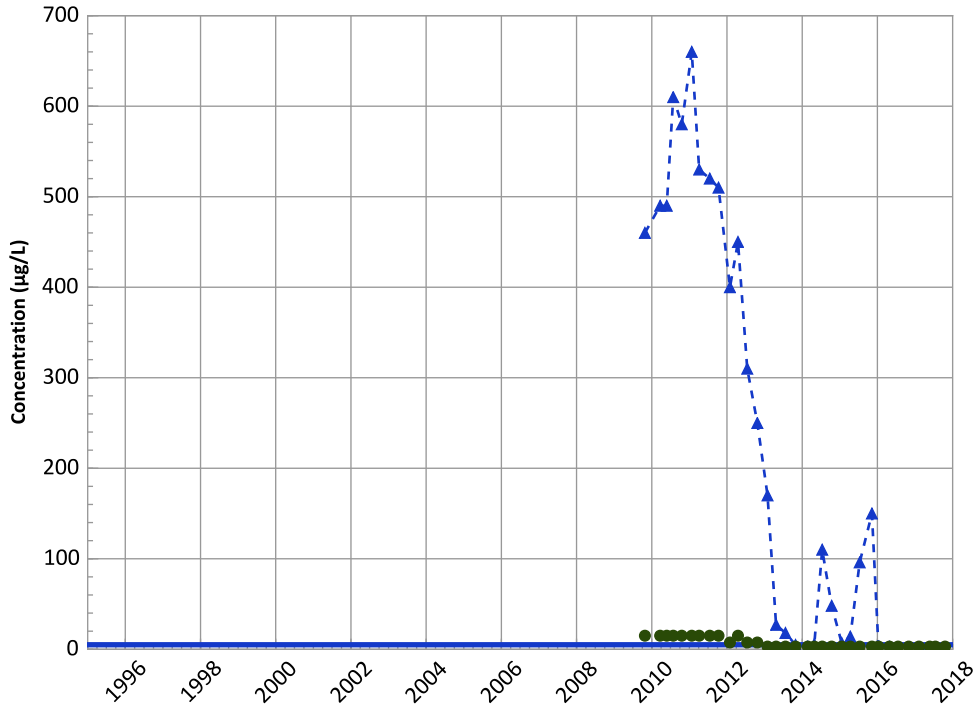


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/26/2009 to 10/19/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1155 in Perched Aquifer
USDOE/NNSA Pantex Plant

Trichloroethene Trend



Concentration Trend

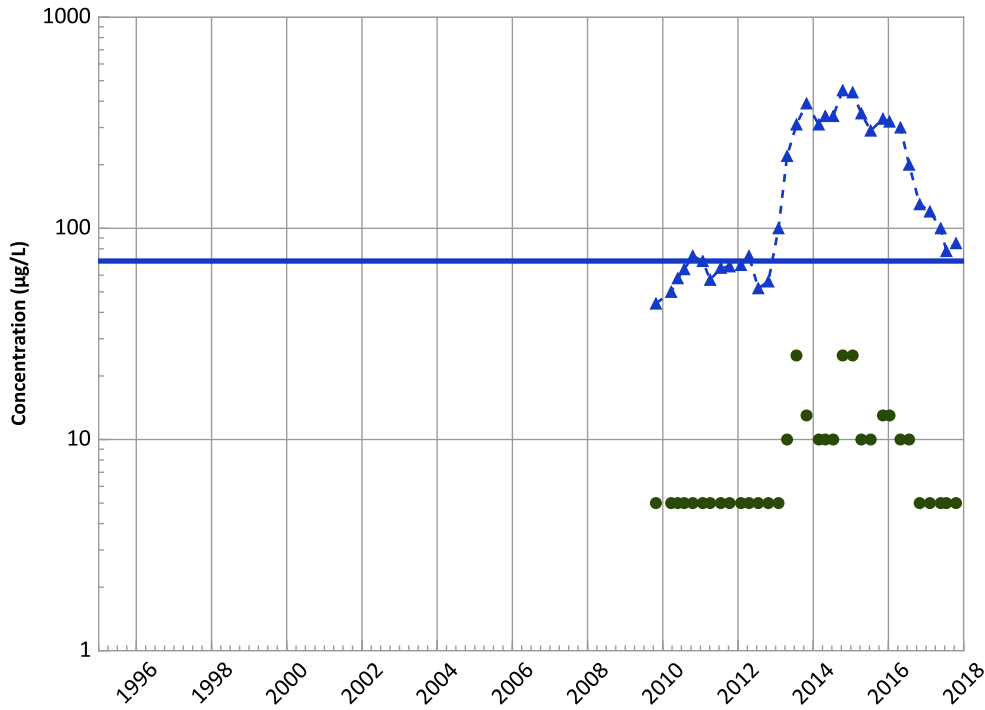
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

cis-1,2-Dichloroethene Trend



Concentration Trend

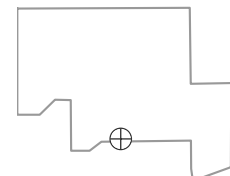
MAROS Mann-Kendall Method

Data ():
Probably Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

Well Location

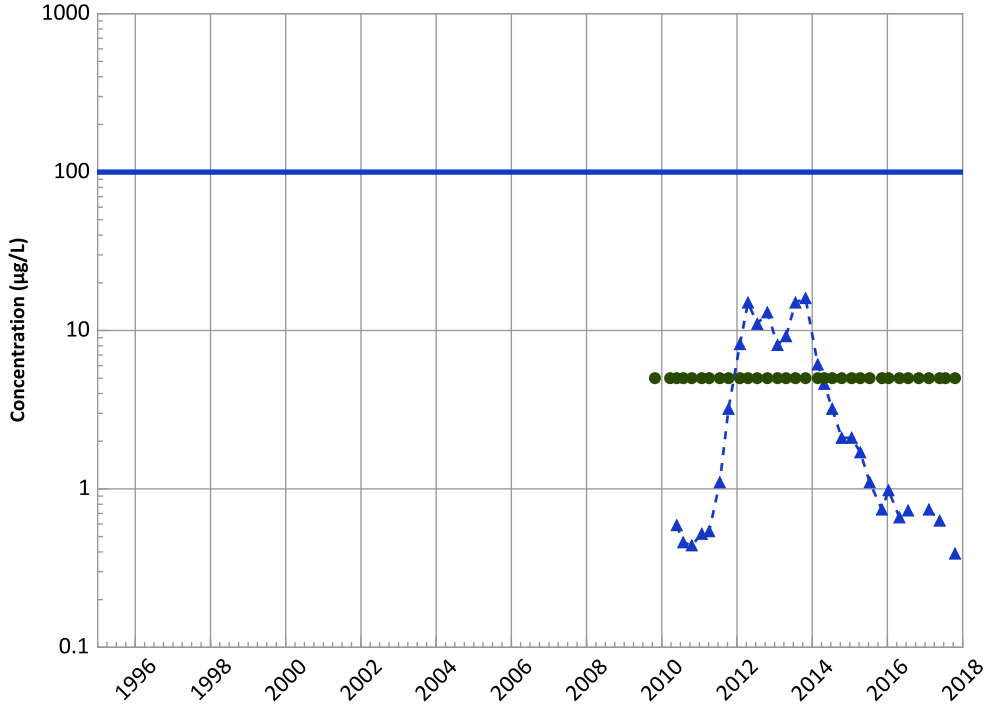


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/26/2009 to 10/19/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1155 in Perched Aquifer
USDOE/NNSA Pantex Plant

trans-1,2-Dichloroethene Trend



Concentration Trend

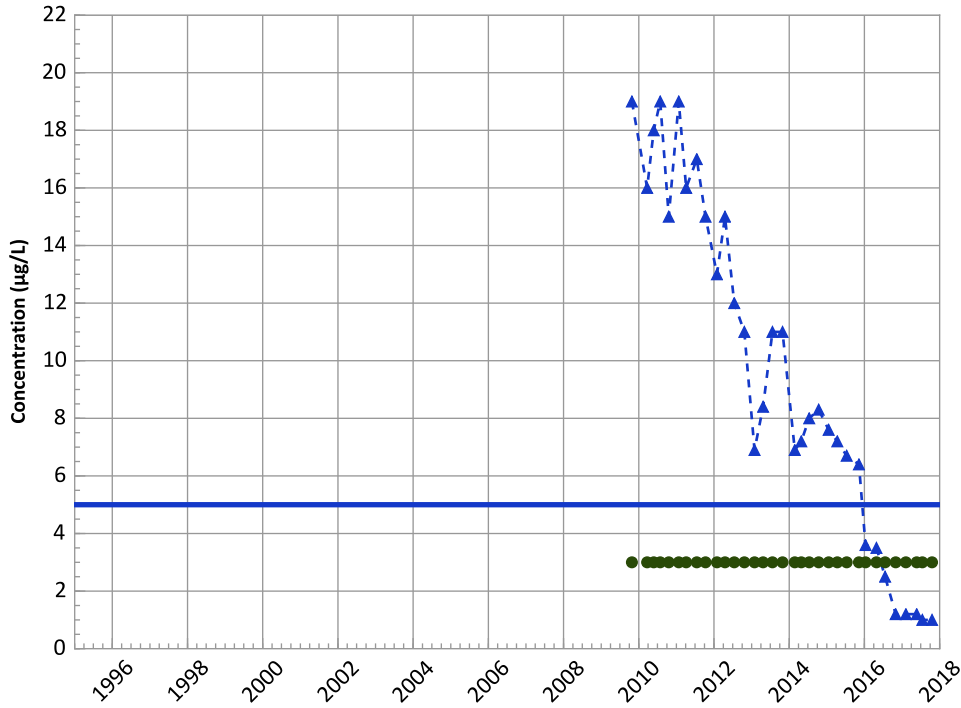
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
No Trend

1,2-Dichloroethane Trend



Concentration Trend

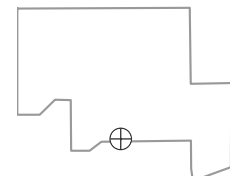
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

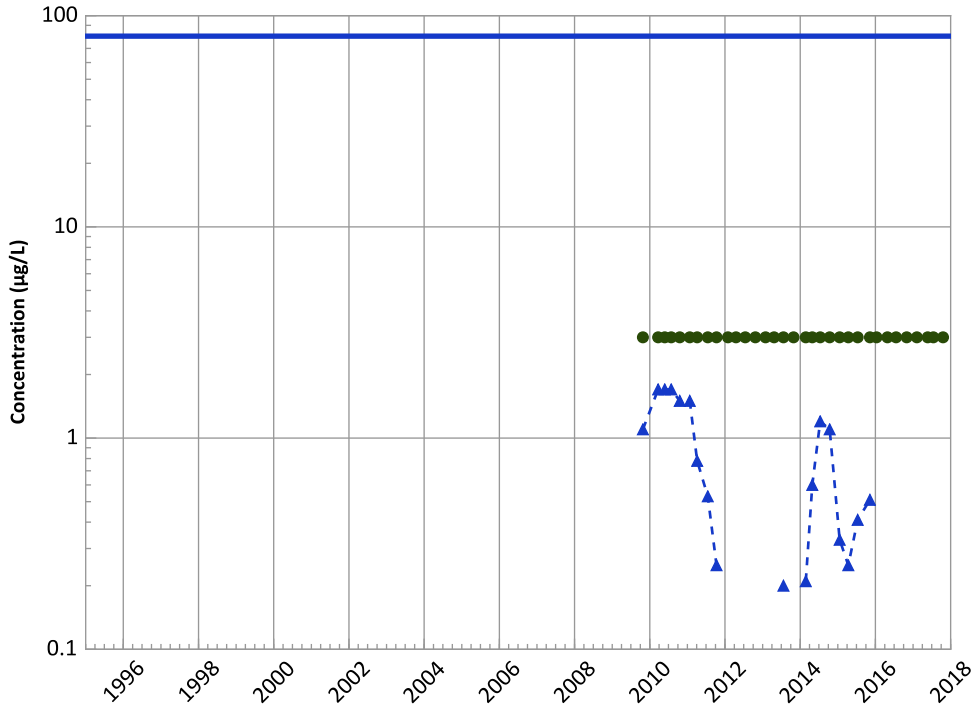
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/26/2009 to 10/19/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1155 in Perched Aquifer
USDOE/NNSA Pantex Plant
Chloroform Trend**



Concentration Trend

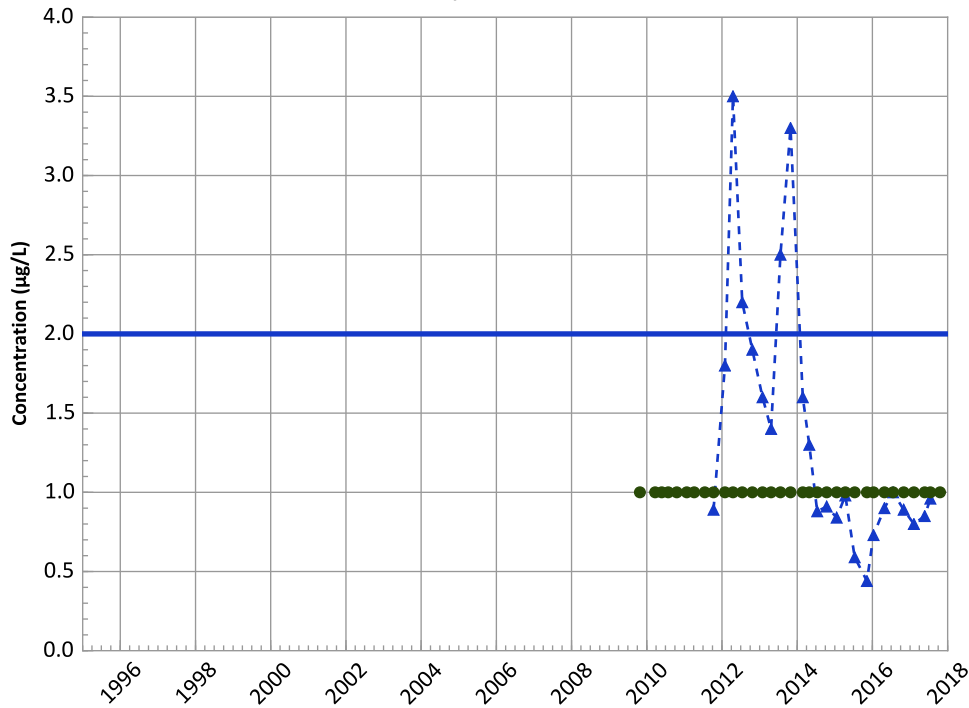
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
Decreasing

Vinyl Chloride Trend



Concentration Trend

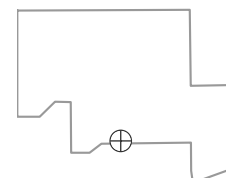
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
No Trend

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

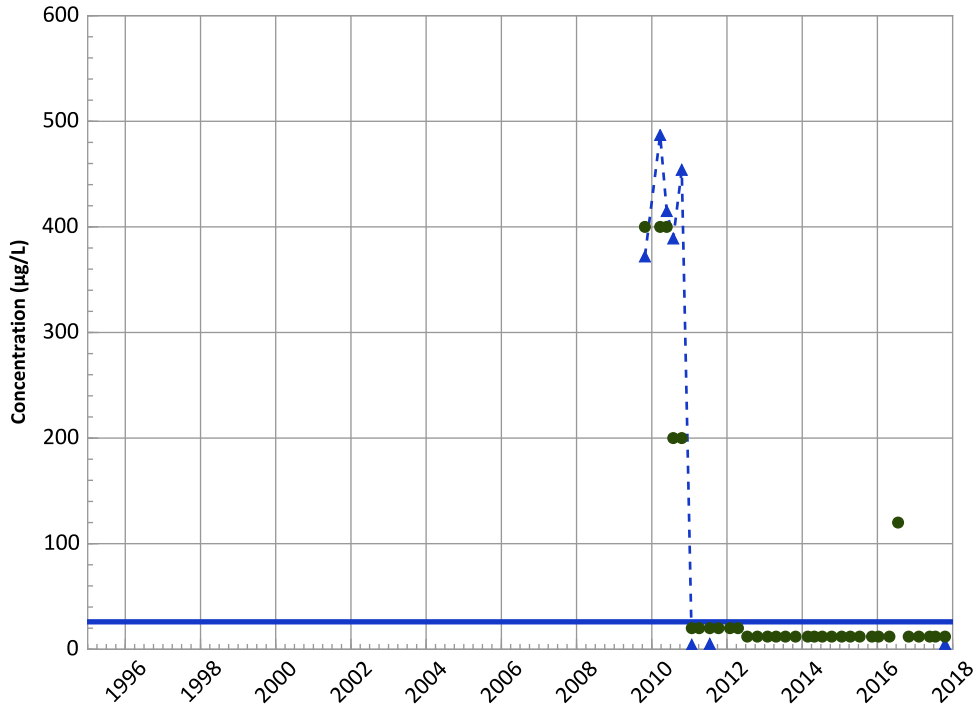
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/26/2009 to 10/19/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

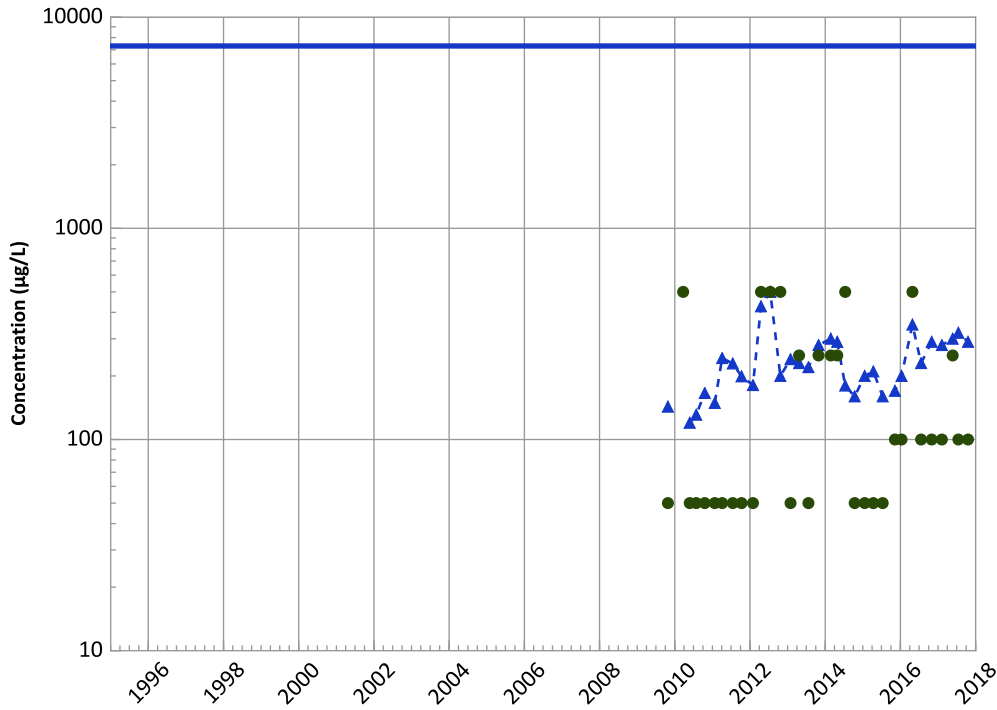
**PTX06-1155 in Perched Aquifer
USDOE/NNSA Pantex Plant
Perchlorate Trend**



Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 All Non-Detect
 All Data
 Decreasing

MAROS Linear Regression Method
 Data ():
 All Non-Detect
 All Data
 Probably Decreasing

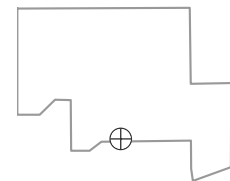
Boron Trend



Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 Decreasing
 All Data
 Increasing

MAROS Linear Regression Method
 Data ():
 Stable
 All Data
 Increasing

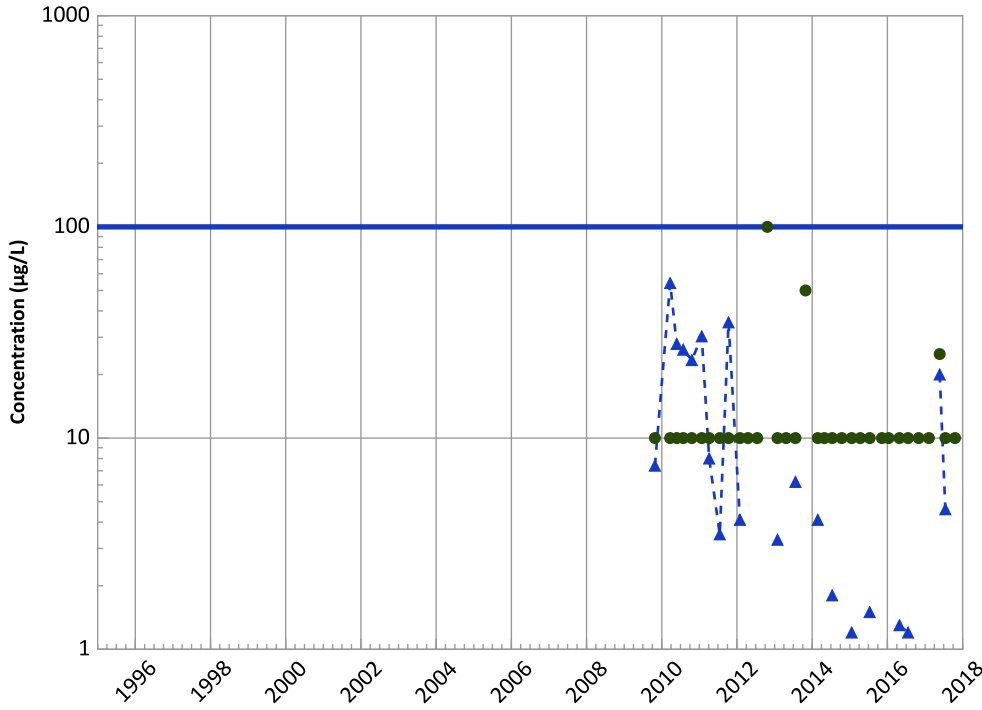
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 10/26/2009 to 10/19/2017
 Analysis Date: 03/21/2018

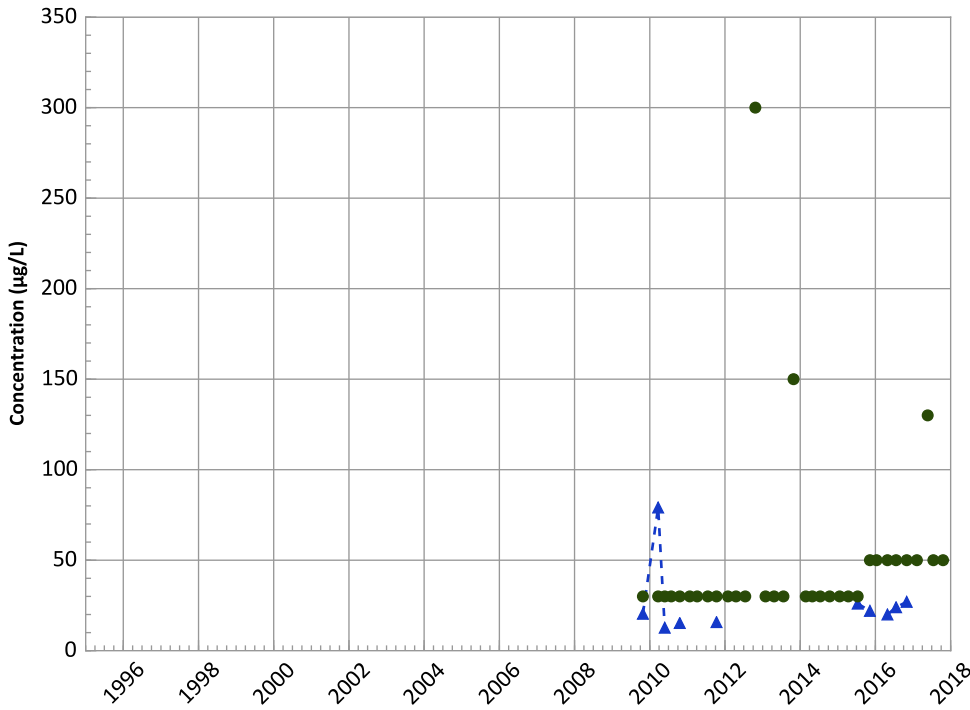
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1155 in Perched Aquifer
USDOE/NNSA Pantex Plant
Chromium, Total Trend**



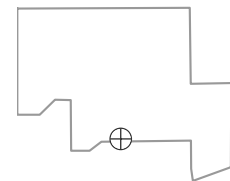
Concentration Trend
MAROS Mann-Kendall Method
 Data (): Decreasing
 All Data Decreasing
MAROS Linear Regression Method
 Data (): Decreasing
 All Data Decreasing

Aluminum Trend



Concentration Trend
MAROS Mann-Kendall Method
 Data (): Increasing
 All Data Increasing
MAROS Linear Regression Method
 Data (): No Trend
 All Data No Trend

Well Location

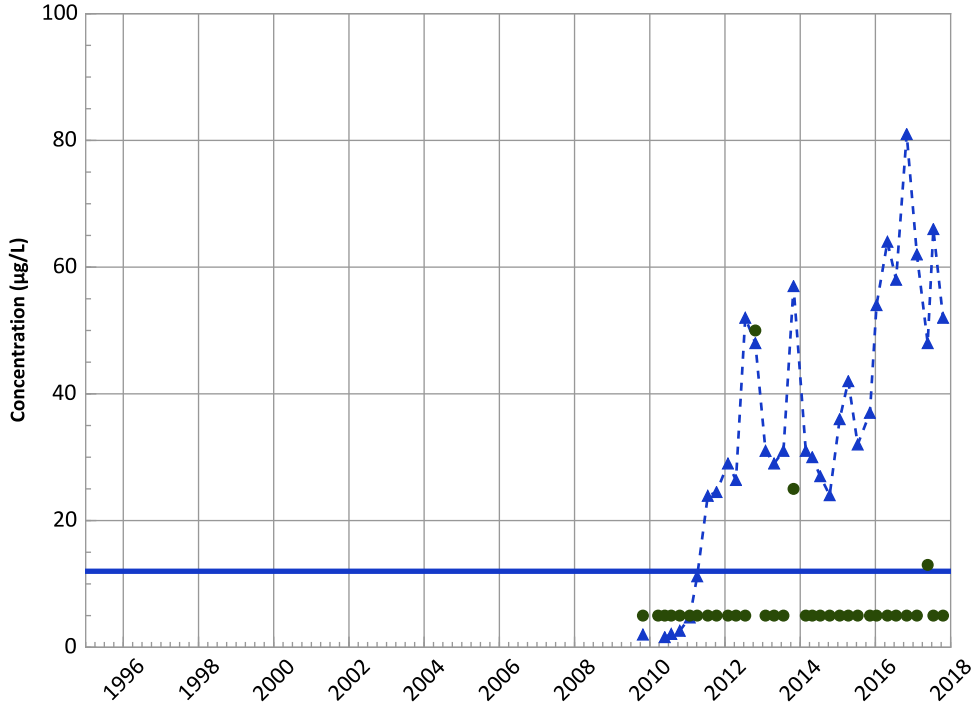


Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 10/26/2009 to 10/19/2017
 Analysis Date: 03/21/2018

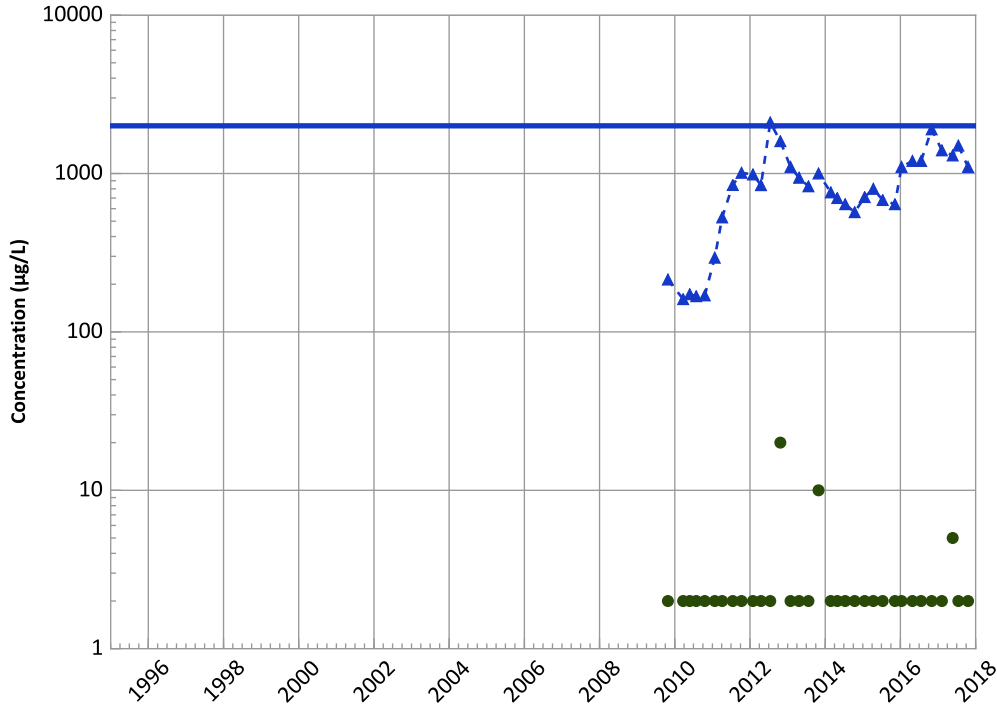
- ▲ Measured Value
- Sample Detection Limit
- Concentration Trend
- Groundwater Protection Standard

PTX06-1155 in Perched Aquifer
USDOE/NNSA Pantex Plant

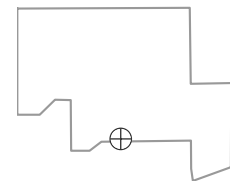
Arsenic Trend



Barium Trend



Well Location

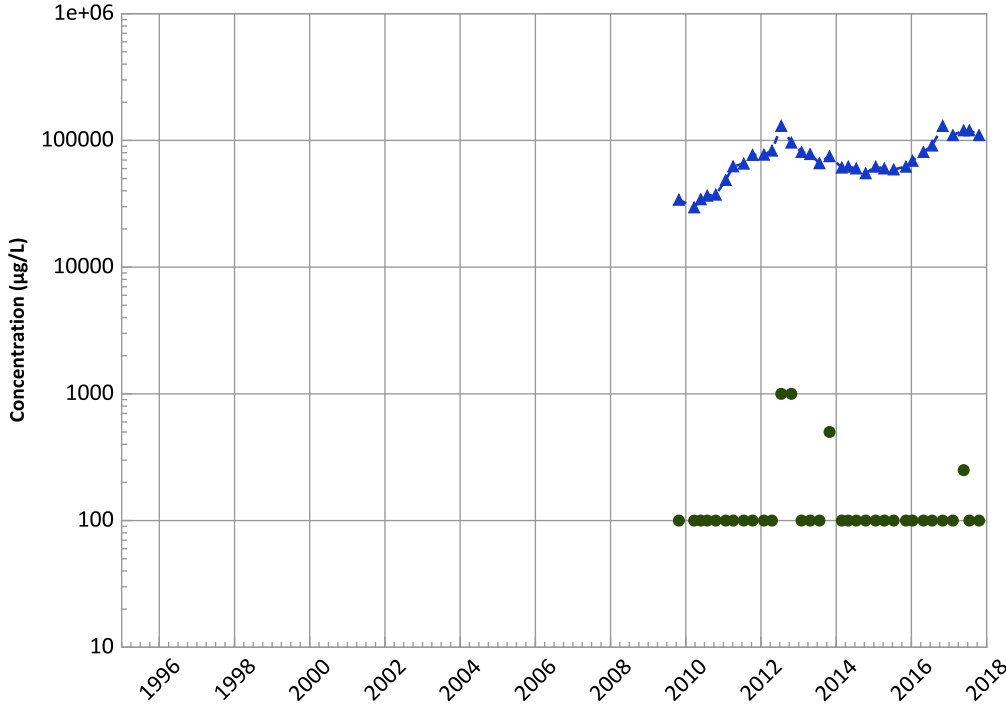


Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 10/26/2009 to 10/19/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1155 in Perched Aquifer
USDOE/NNSA Pantex Plant

Calcium Trend



Concentration Trend

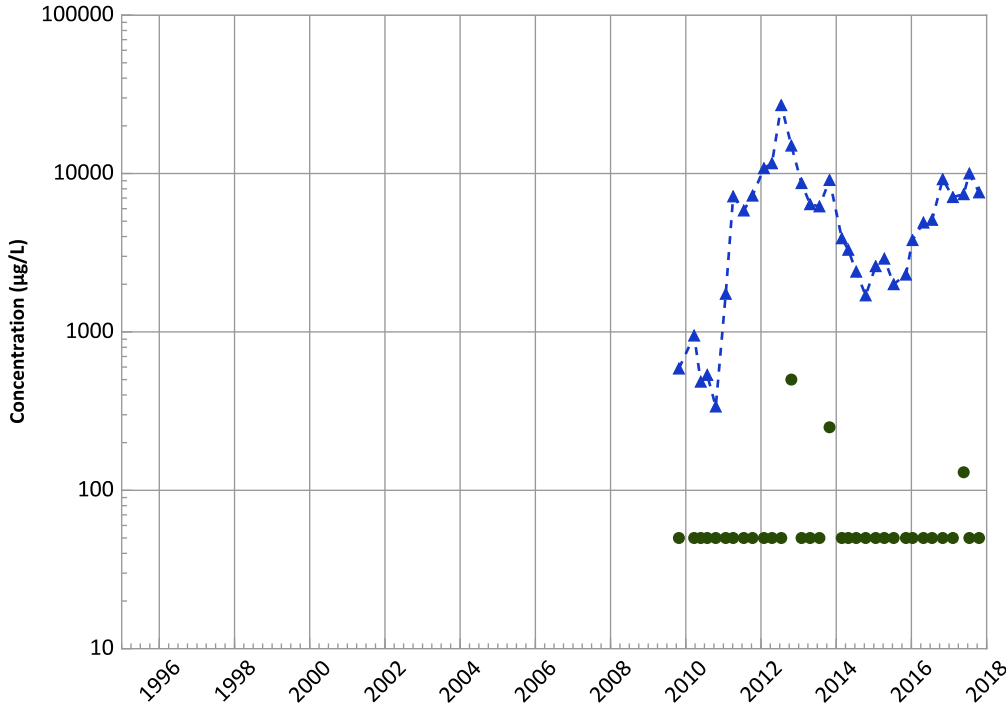
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Stable
All Data
Increasing

Iron Trend



Concentration Trend

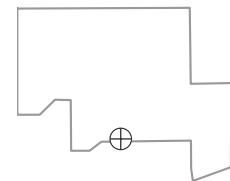
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Increasing

Well Location

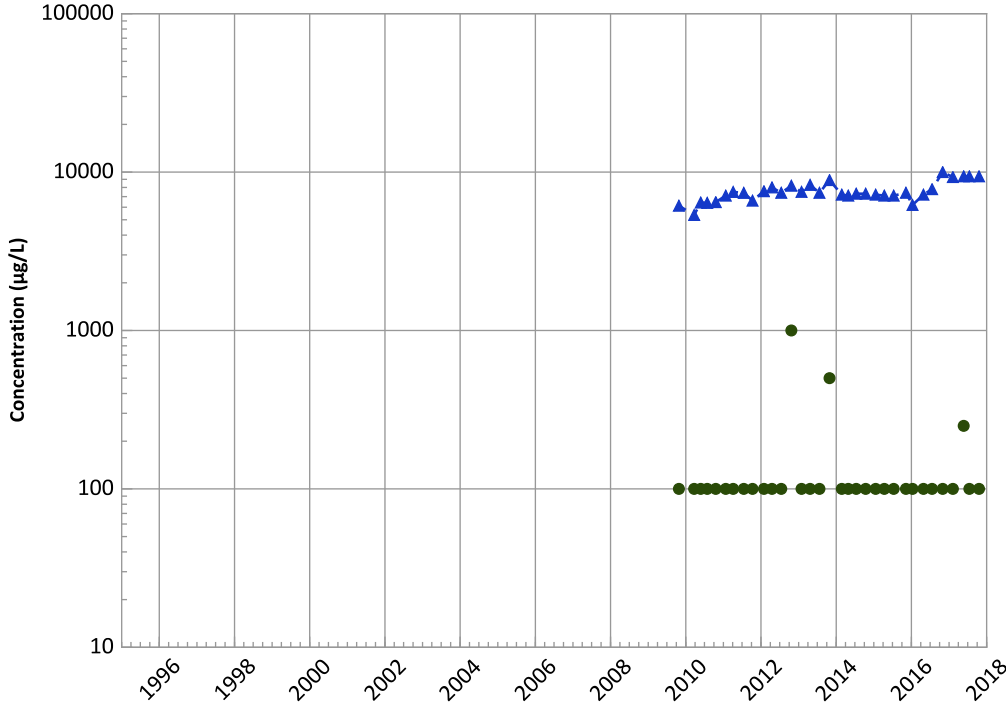


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/26/2009 to 10/19/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1155 in Perched Aquifer
USDOE/NNSA Pantex Plant

Potassium Trend



Concentration Trend

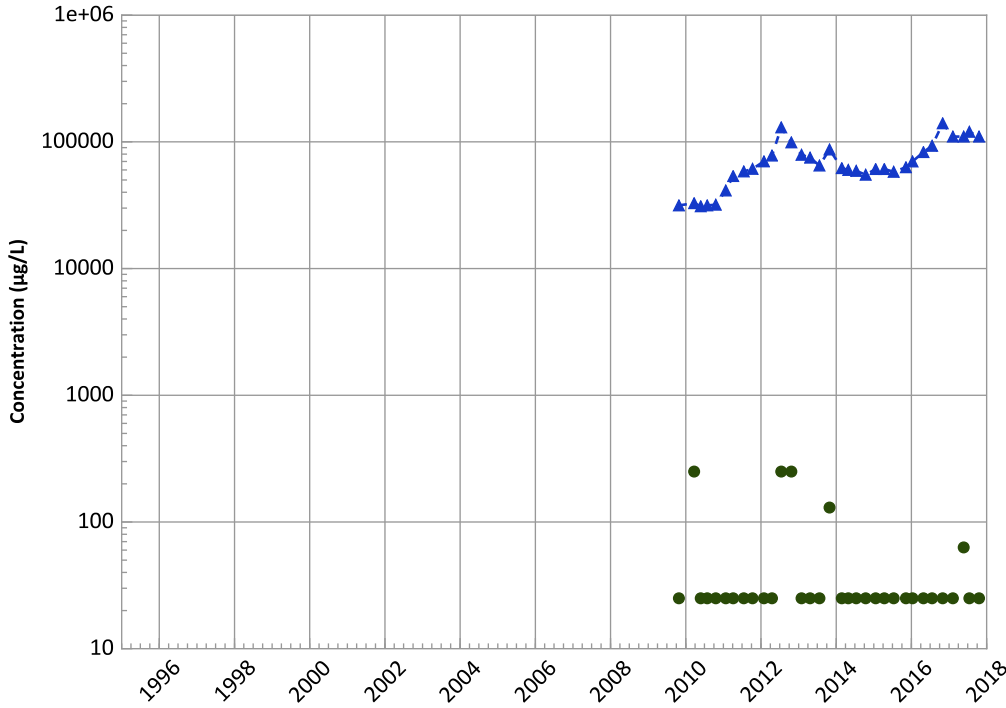
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Stable
All Data
Increasing

Magnesium Trend



Concentration Trend

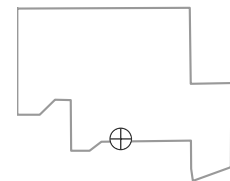
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Stable
All Data
Increasing

Well Location

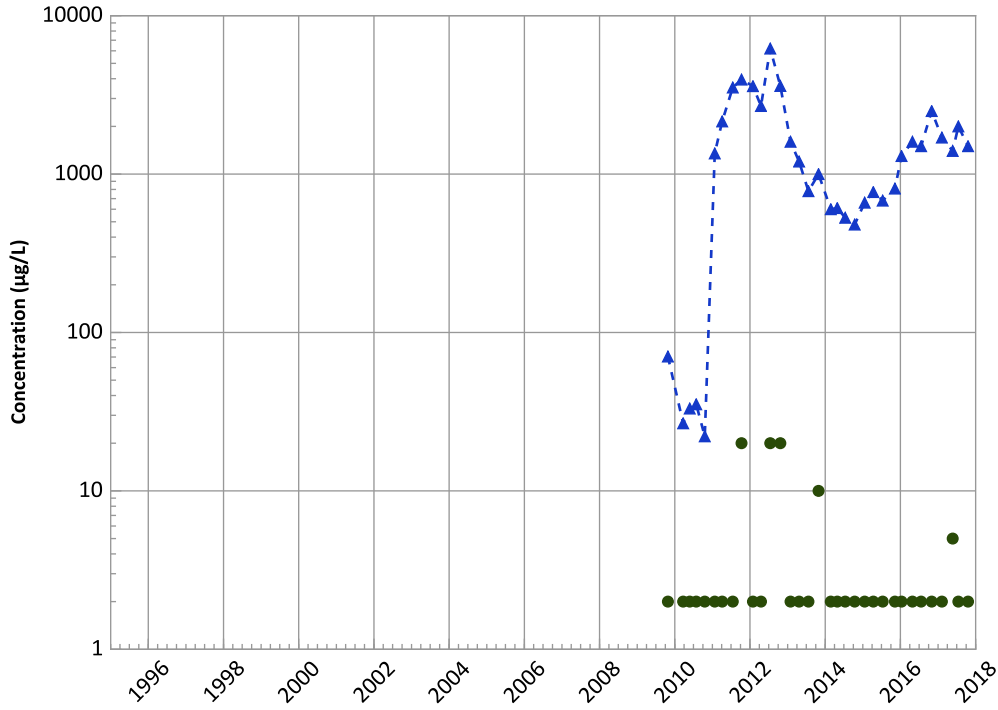


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/26/2009 to 10/19/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1155 in Perched Aquifer
USDOE/NNSA Pantex Plant

Manganese Trend



Concentration Trend

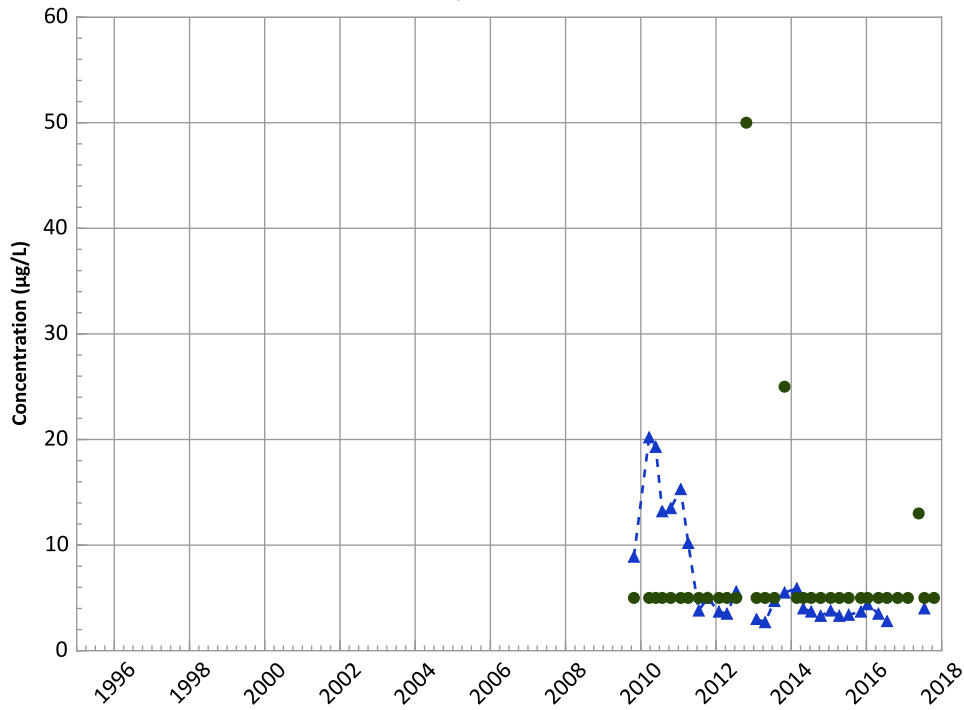
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Probably Increasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Increasing

Molybdenum Trend



Concentration Trend

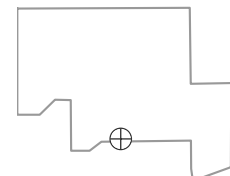
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Stable
All Data
Decreasing

Well Location

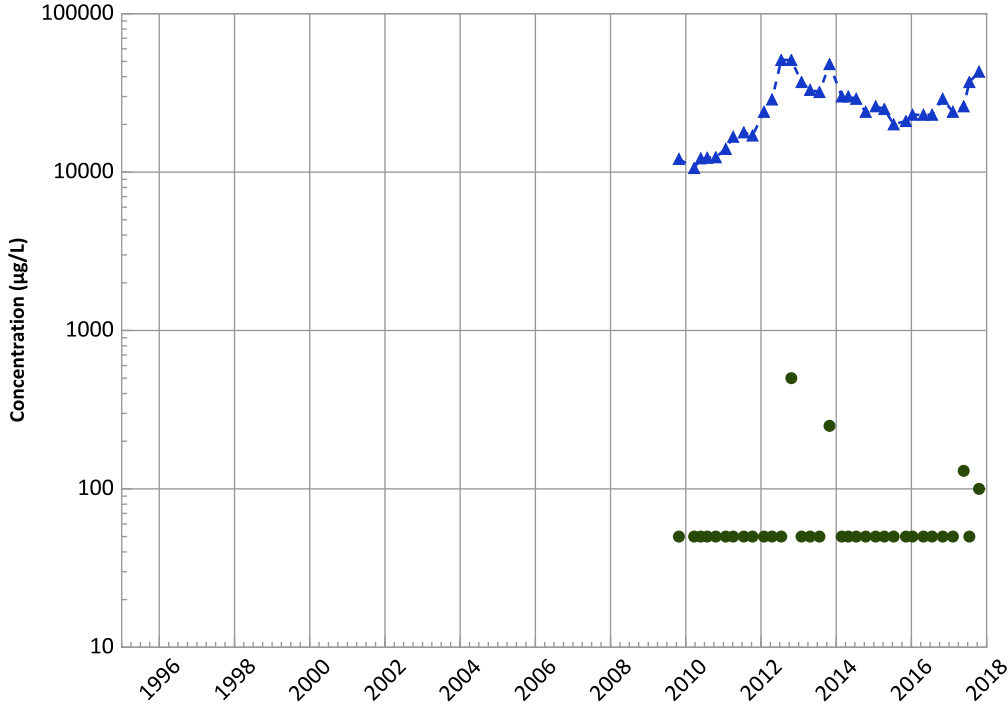


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/26/2009 to 10/19/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1155 in Perched Aquifer
USDOE/NNSA Pantex Plant

Sodium Trend



Concentration Trend

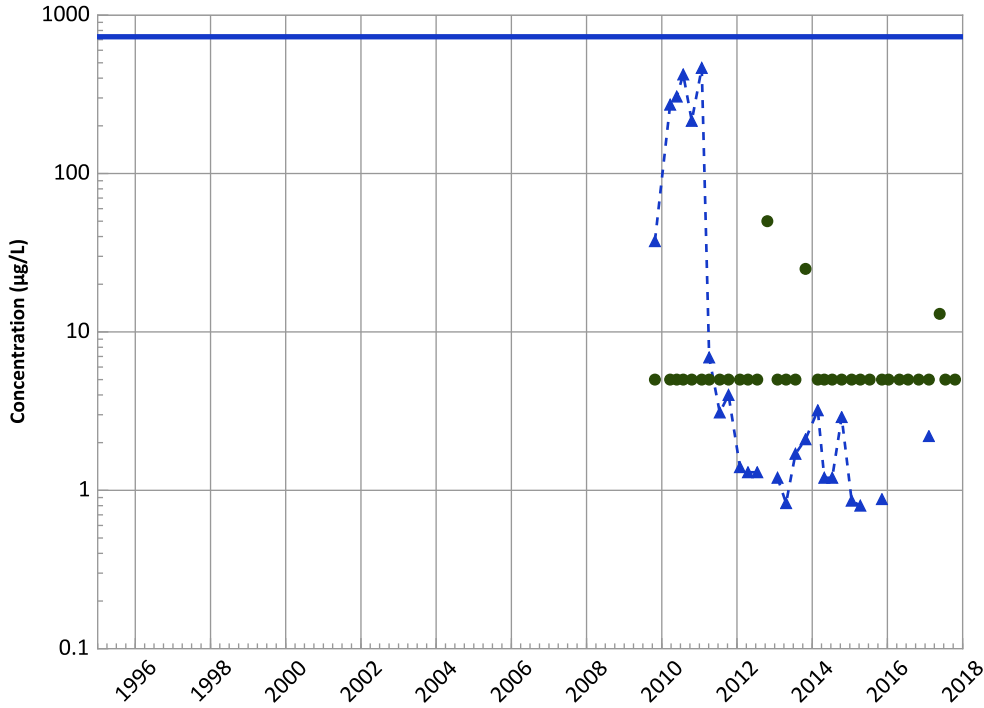
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Increasing

Nickel Trend



Concentration Trend

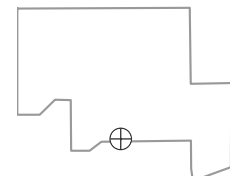
MAROS Mann-Kendall Method

Data ():
No Trend
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Stable
All Data
Decreasing

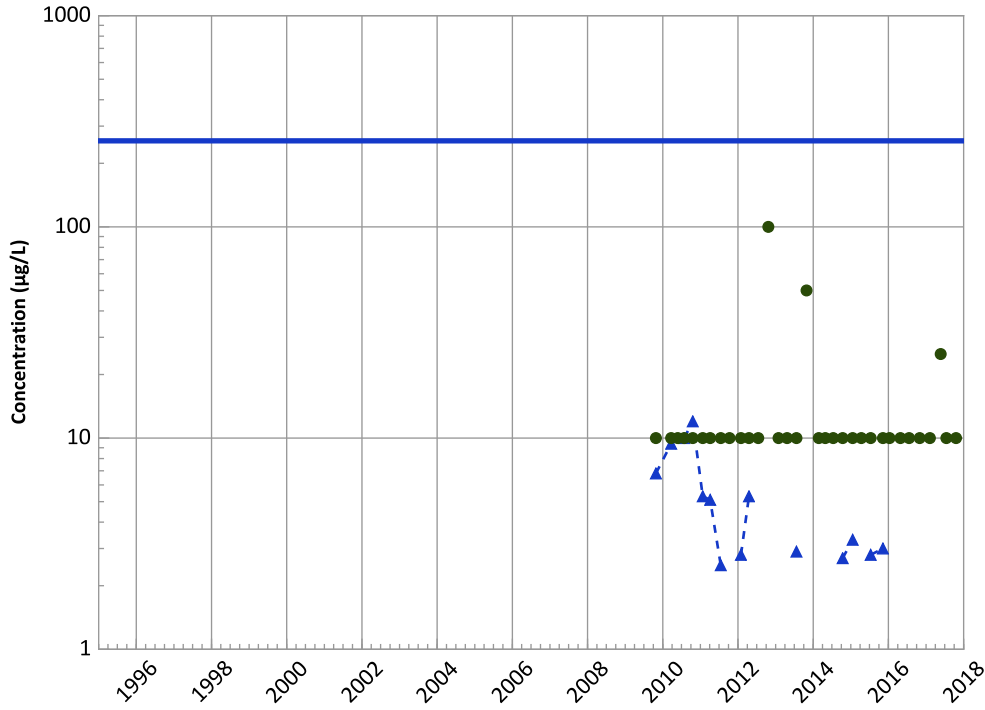
Well Location



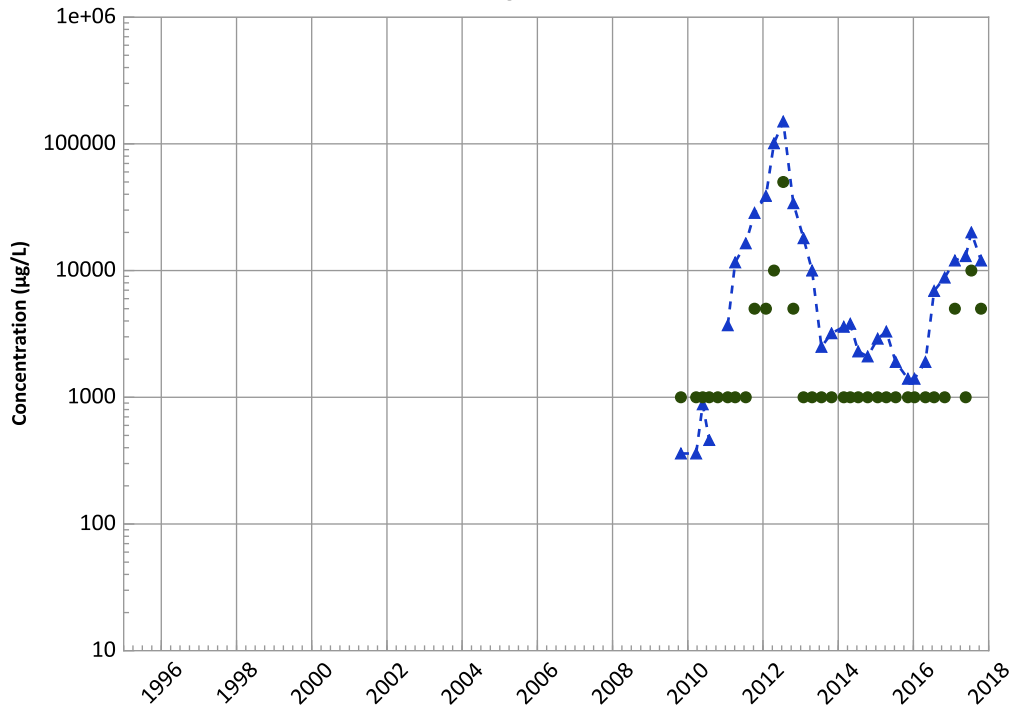
Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/26/2009 to 10/19/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

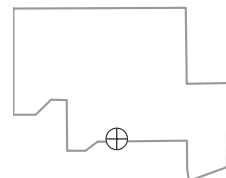
PTX06-1155 in Perched Aquifer
USDOE/NNSA Pantex Plant
Vanadium Trend



Total Organic Carbon Trend



Well Location

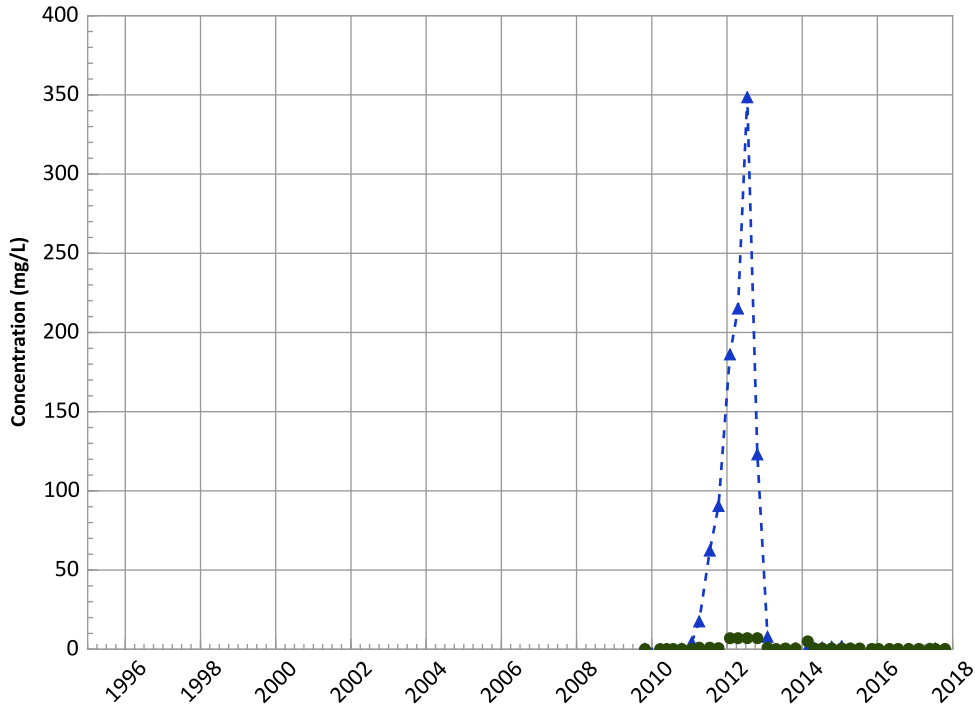


Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 10/26/2009 to 10/19/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1155 in Perched Aquifer
USDOE/NNSA Pantex Plant

Total Volatile Fatty Acids Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

Decreasing

All Data

Decreasing

MAROS Linear Regression Method

Data ():

Decreasing

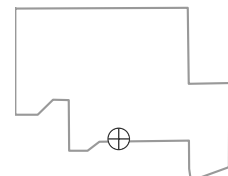
All Data

Decreasing

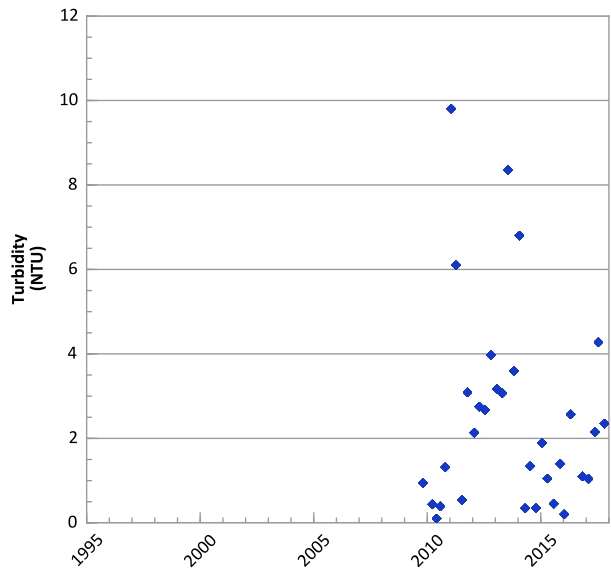
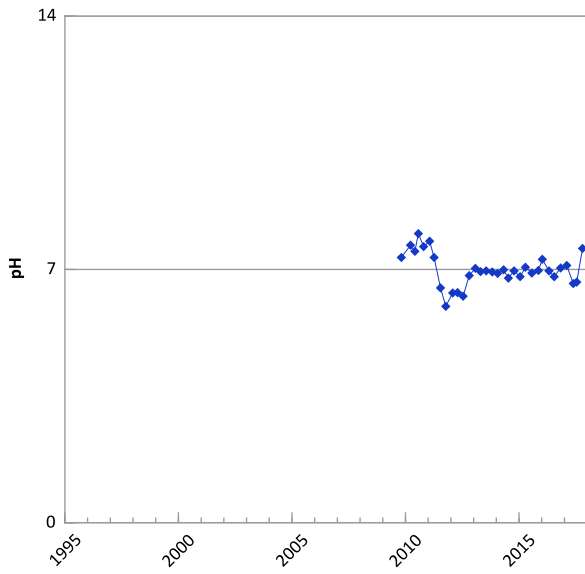
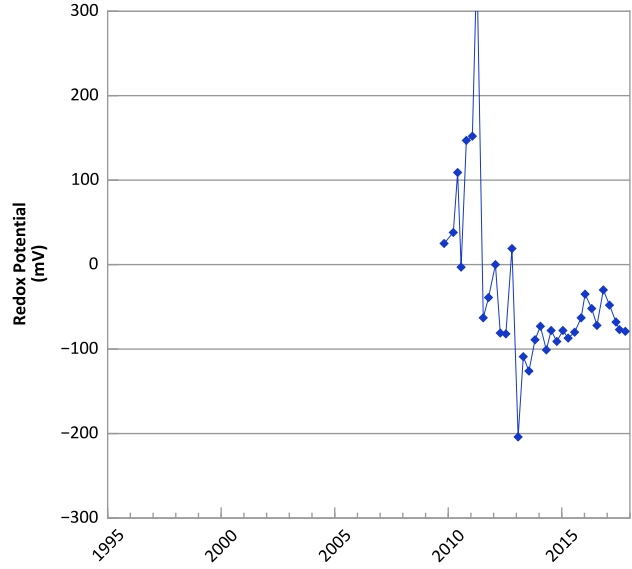
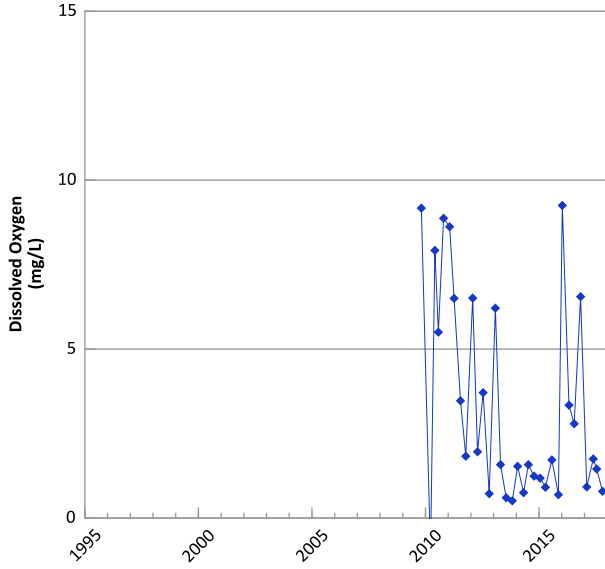
Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/26/2009 to 10/19/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

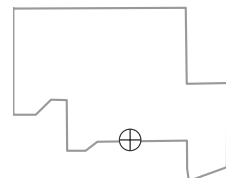


**PTX06-1156 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



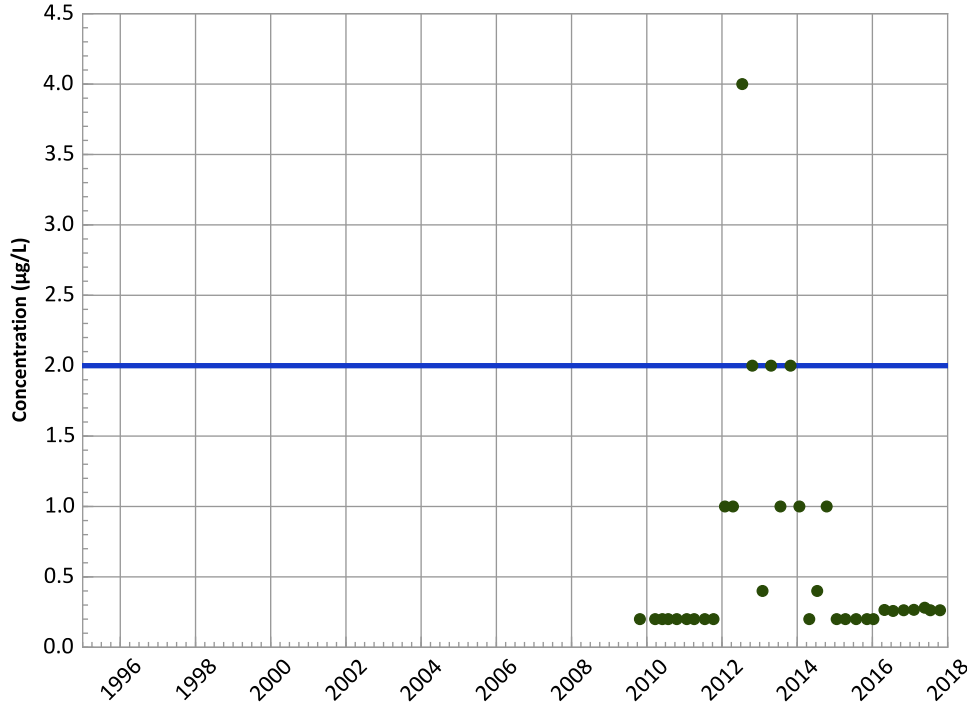
Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/26/2009 to 10/19/2017
Analysis Date: 03/21/2018

Well Location



PTX06-1156 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

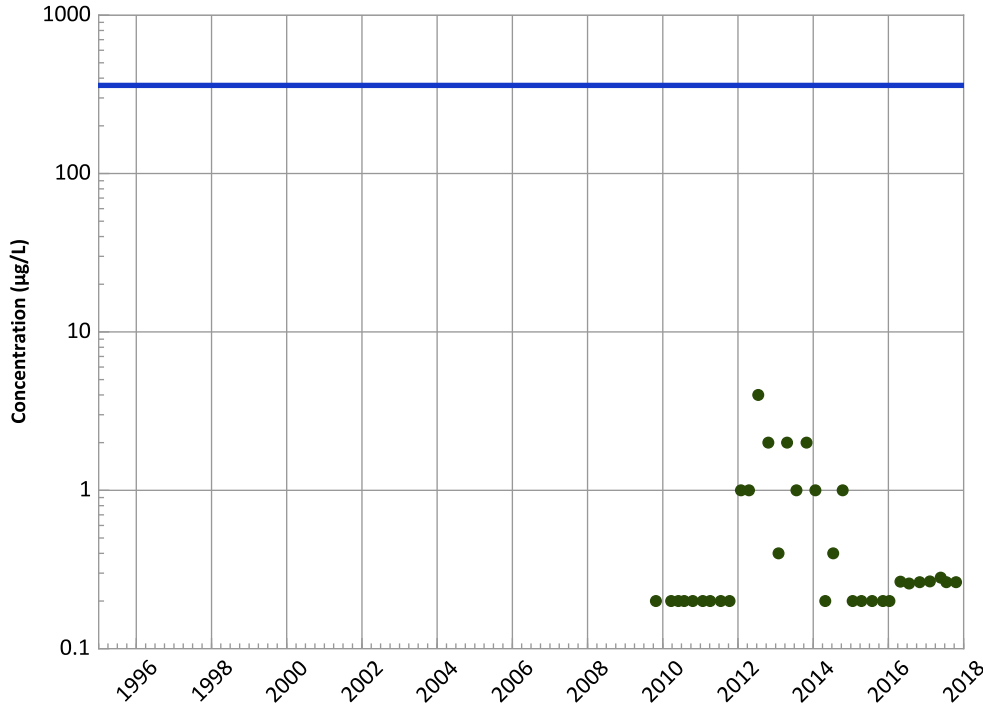
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

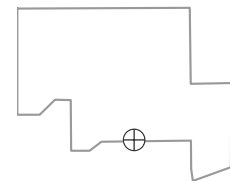
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

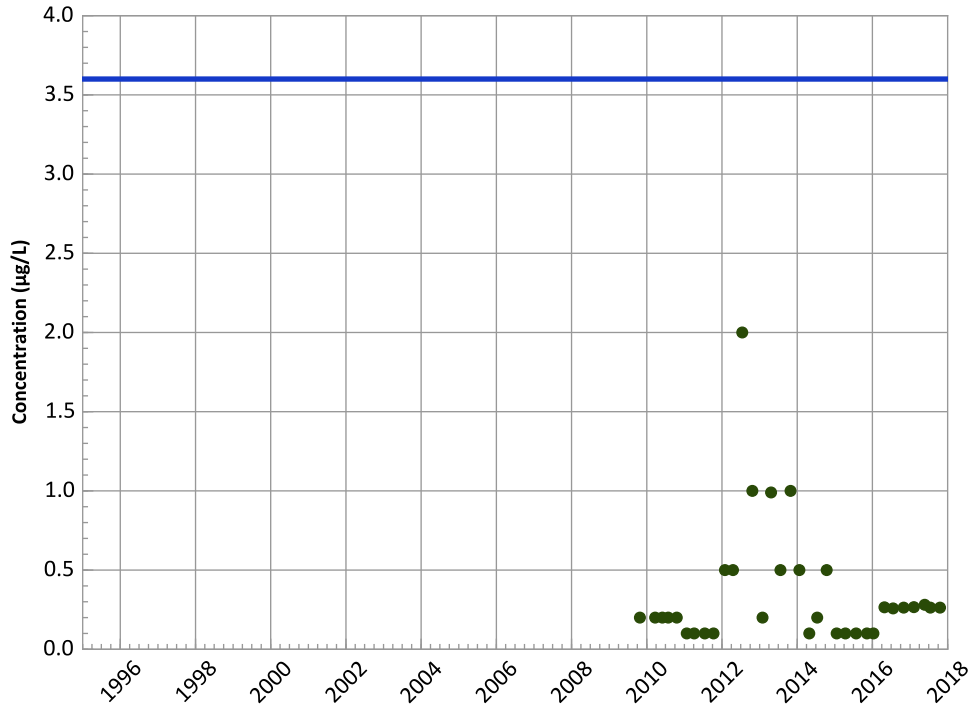


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/26/2009 to 10/19/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1156 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

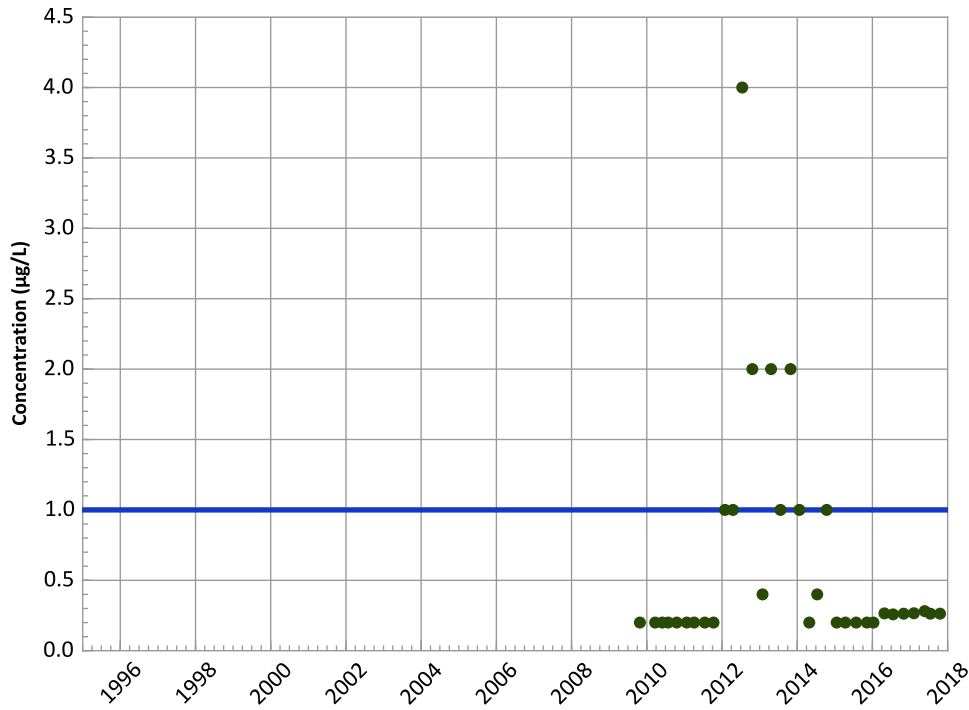
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

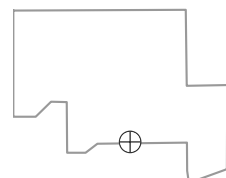
MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/26/2009 to 10/19/2017
Analysis Date: 03/21/2018

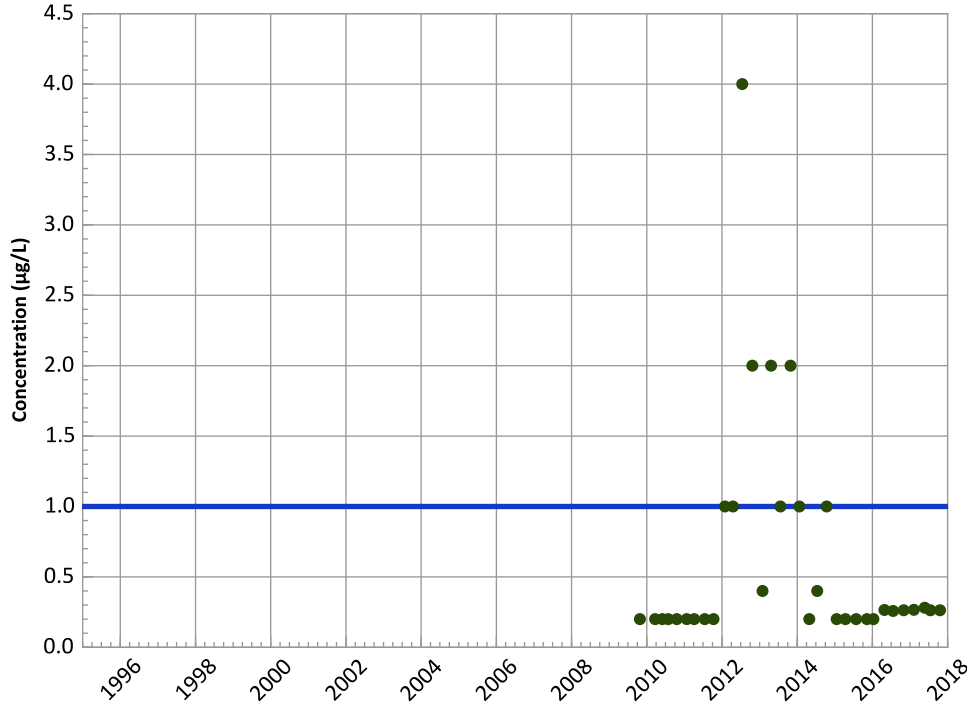
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

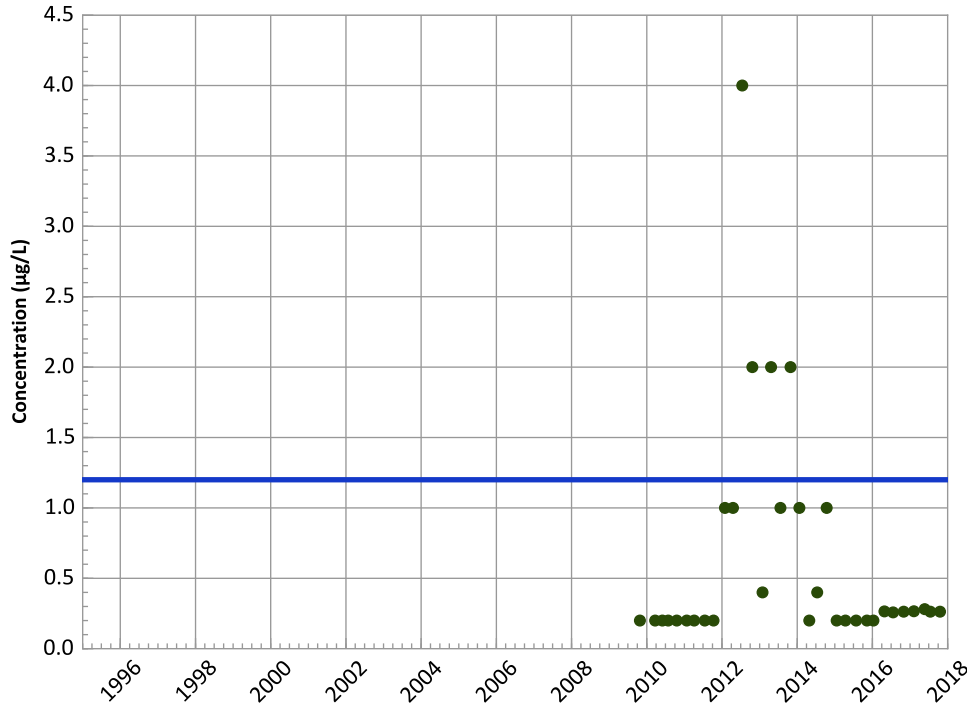


PTX06-1156 in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



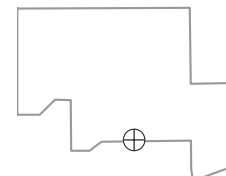
2-Amino-4,6-Dinitrotoluene Trend



Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 10/26/2009 to 10/19/2017
 Analysis Date: 03/21/2018

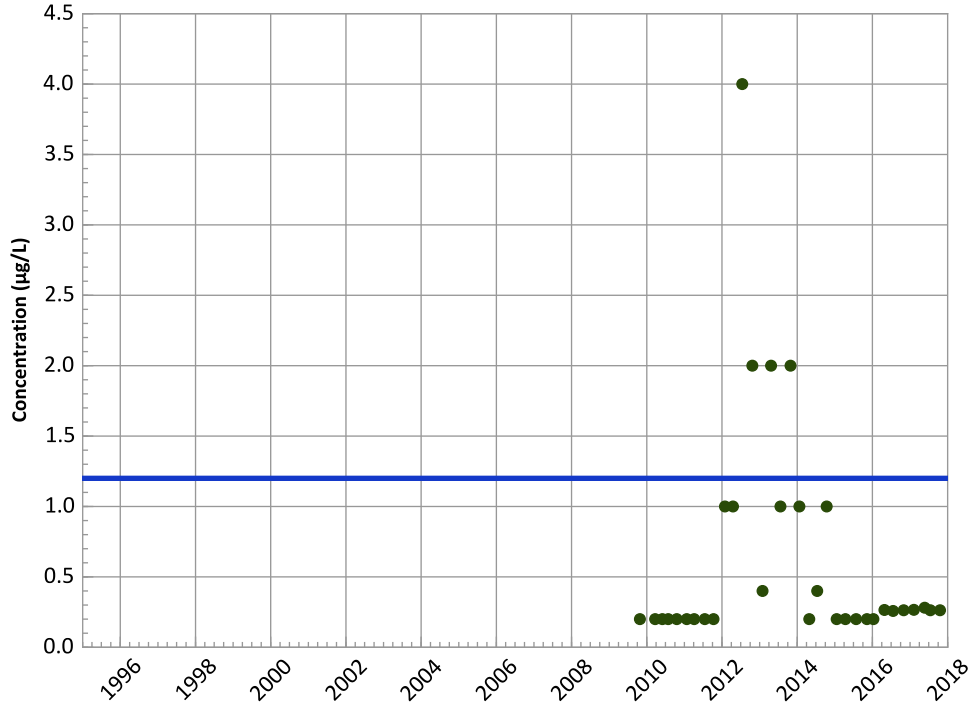
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

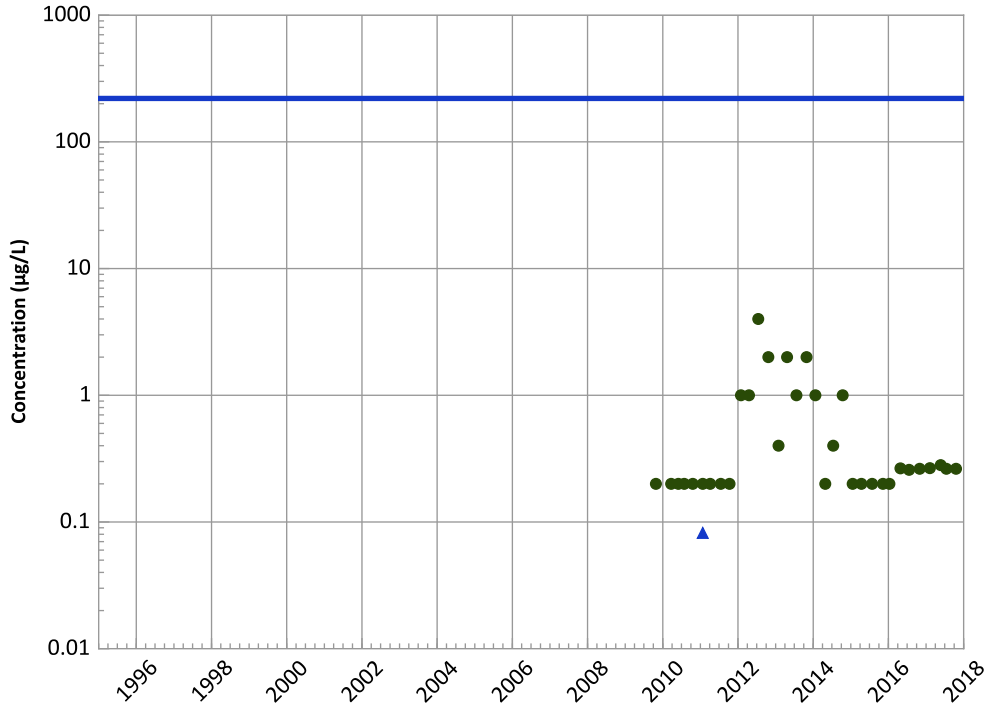


PTX06-1156 in Perched Aquifer
USDOE/NNSA Pantex Plant

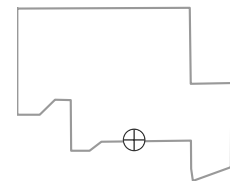
4-Amino-2,6-Dinitrotoluene Trend



1,3,5-Trinitrobenzene Trend



Well Location

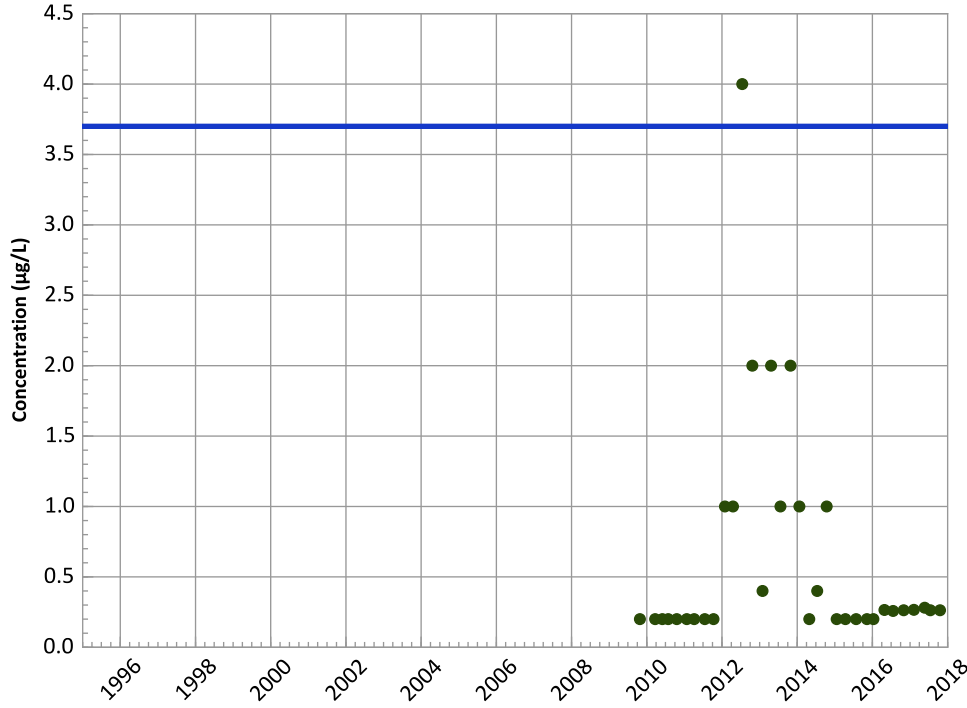


Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 10/26/2009 to 10/19/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- Concentration Trend
- Groundwater Protection Standard

PTX06-1156 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

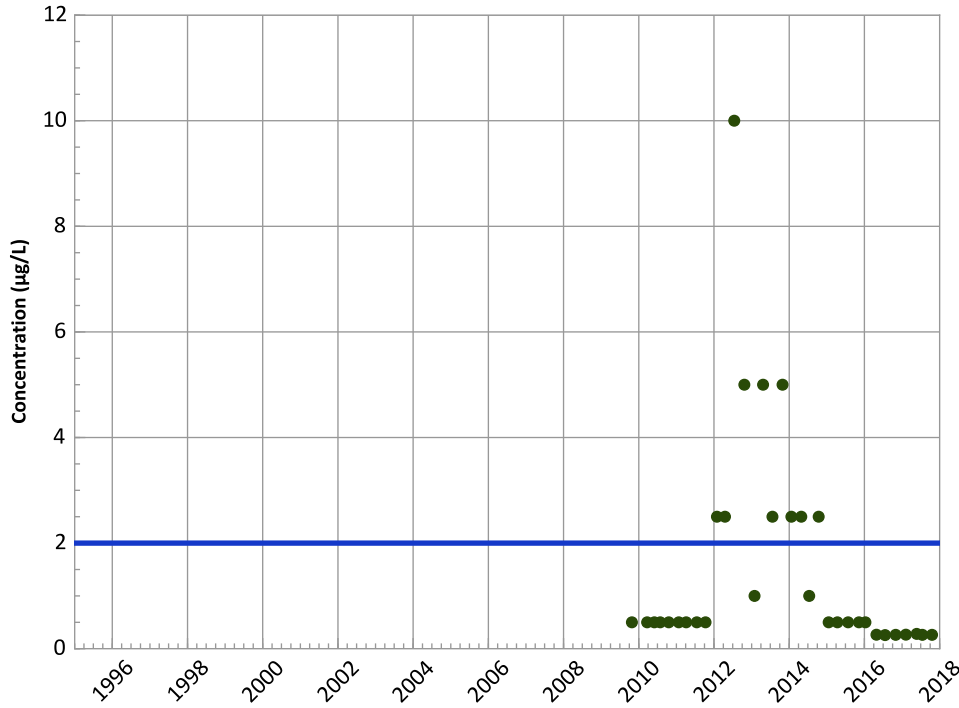
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Hexahydro-1-Nitroso-3,5-Dinitro-1,3,5-Triazine (MNX) Trend



Concentration Trend

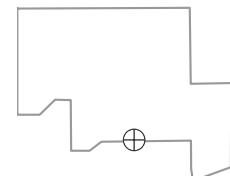
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

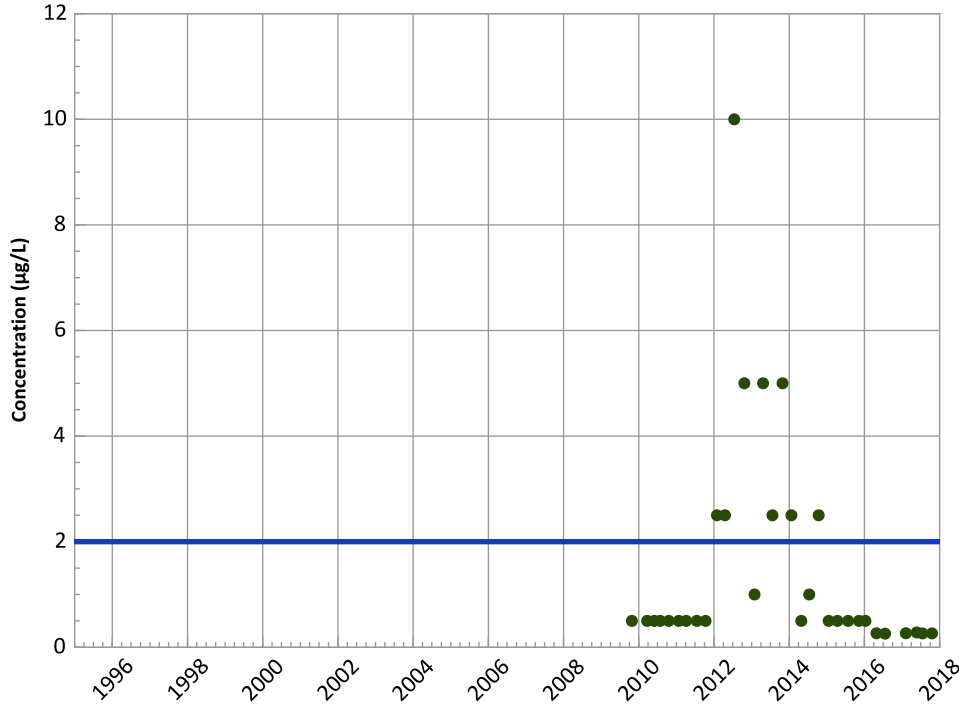


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/26/2009 to 10/19/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1156 in Perched Aquifer
USDOE/NNSA Pantex Plant

Hexahydro-1,3-Dinitroso-5-Nitro-1,3,5-Triazine (DNX) Trend



Concentration Trend

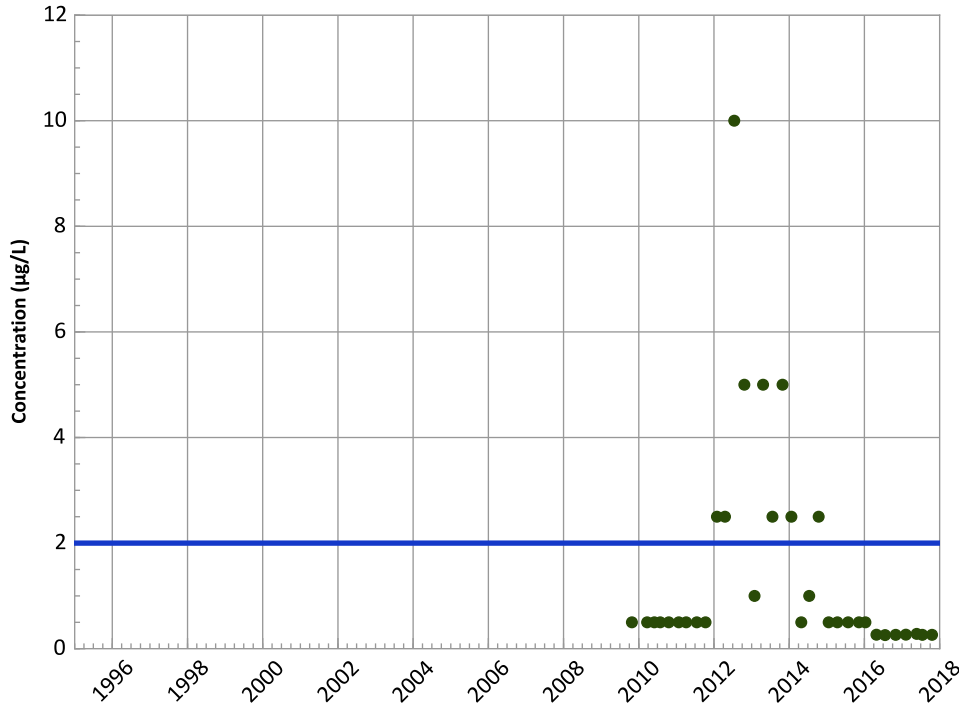
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Hexahydro-1,3,5-Trinitroso-1,3,5-Triazine (TNX) Trend



Concentration Trend

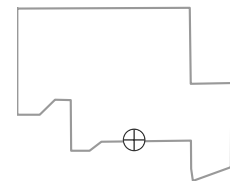
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

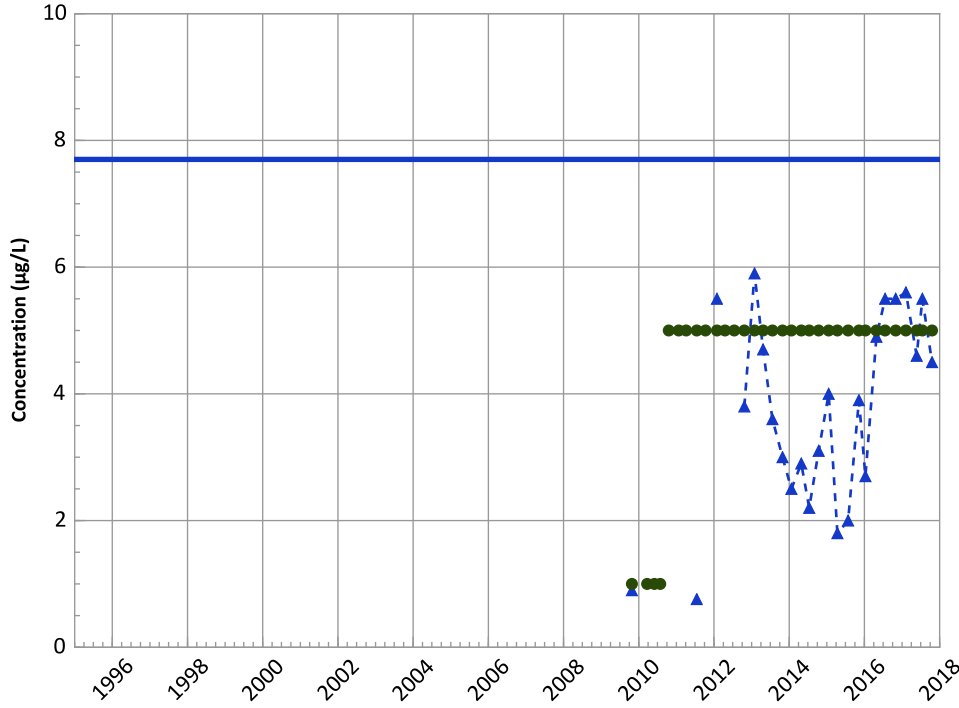


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/26/2009 to 10/19/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1156 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,4-Dioxane (p-Dioxane) Trend



Concentration Trend

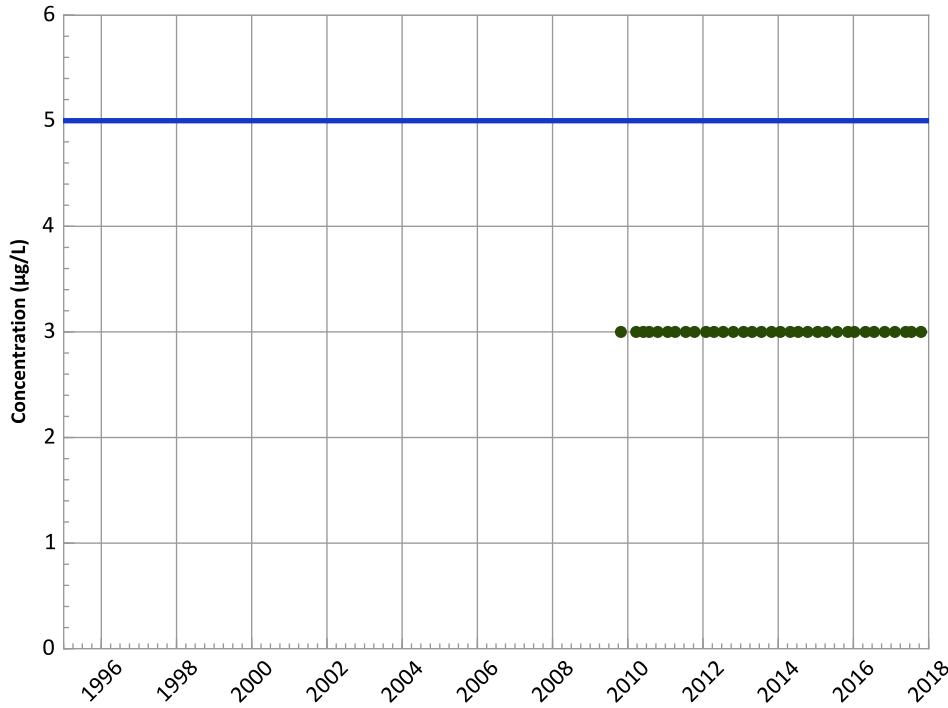
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Stable
All Data
Increasing

Tetrachloroethylene (PCE) Trend



Concentration Trend

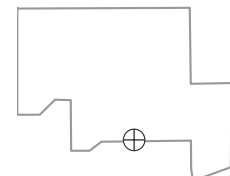
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

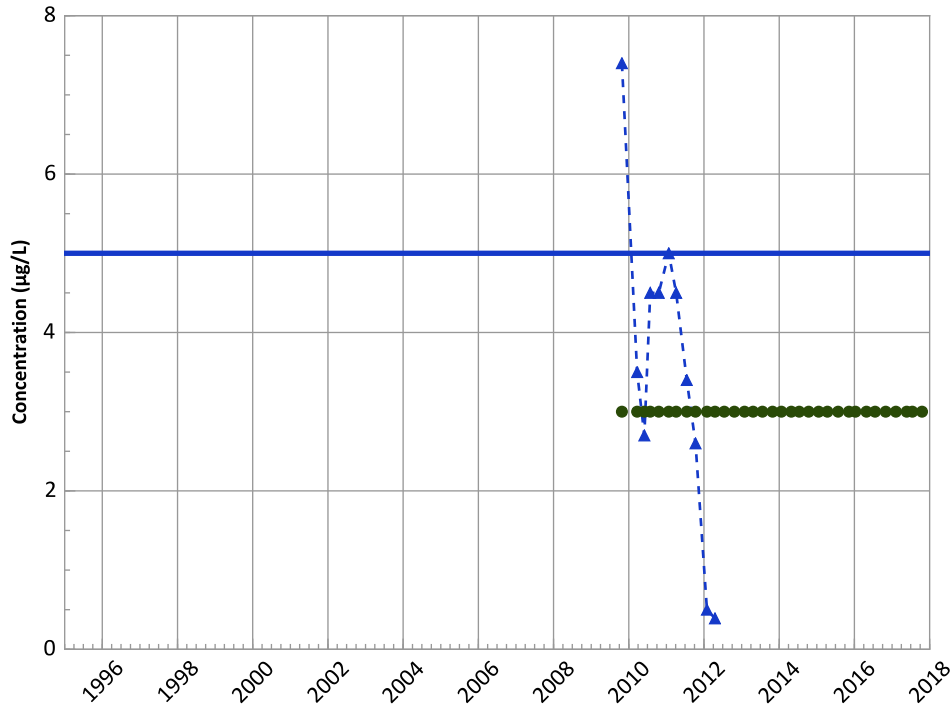


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/26/2009 to 10/19/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1156 in Perched Aquifer
USDOE/NNSA Pantex Plant

Trichloroethene Trend

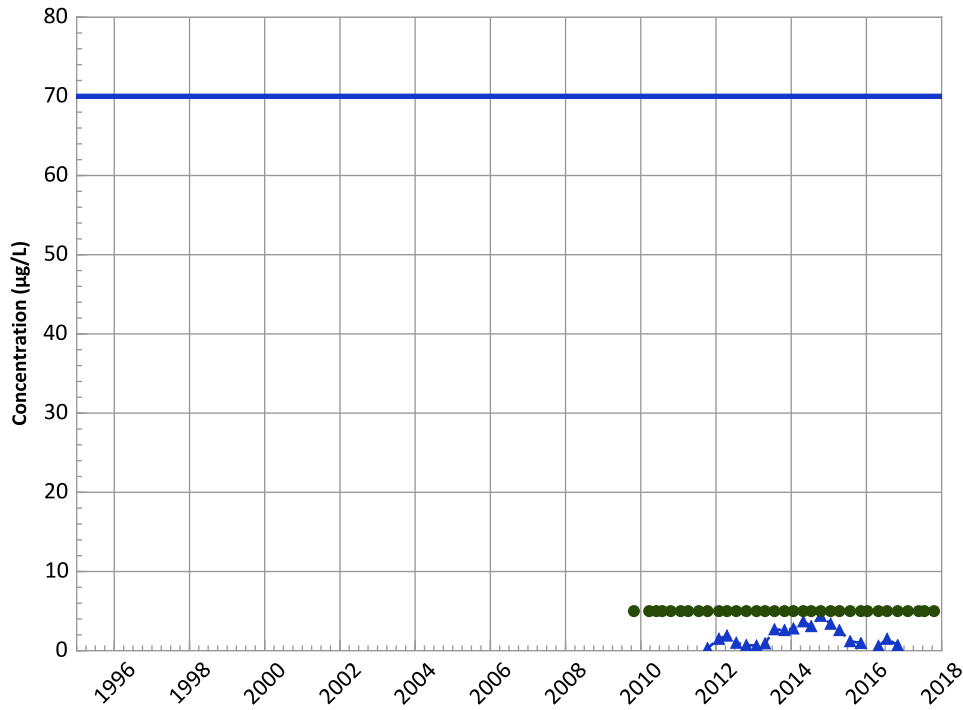


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

MAROS Linear Regression Method
Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

cis-1,2-Dichloroethene Trend

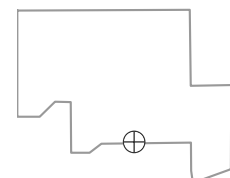


Concentration Trend

MAROS Mann-Kendall Method
Data ():
Decreasing
All Data
No Trend

MAROS Linear Regression Method
Data ():
Stable
All Data
No Trend

Well Location

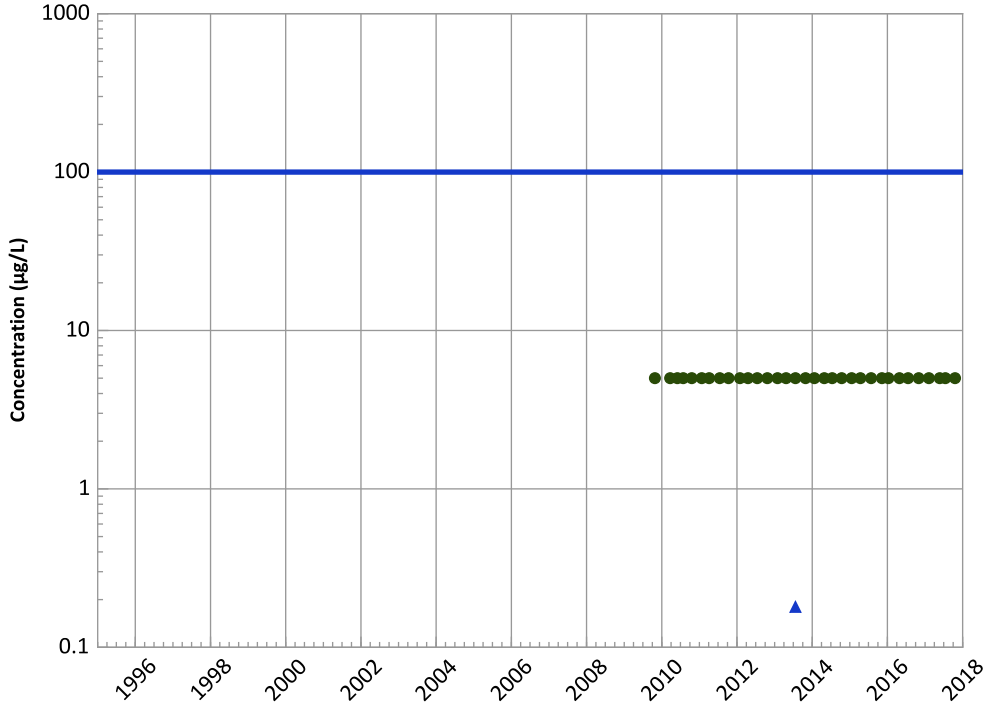


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/26/2009 to 10/19/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1156 in Perched Aquifer
USDOE/NNSA Pantex Plant

trans-1,2-Dichloroethene Trend



Concentration Trend

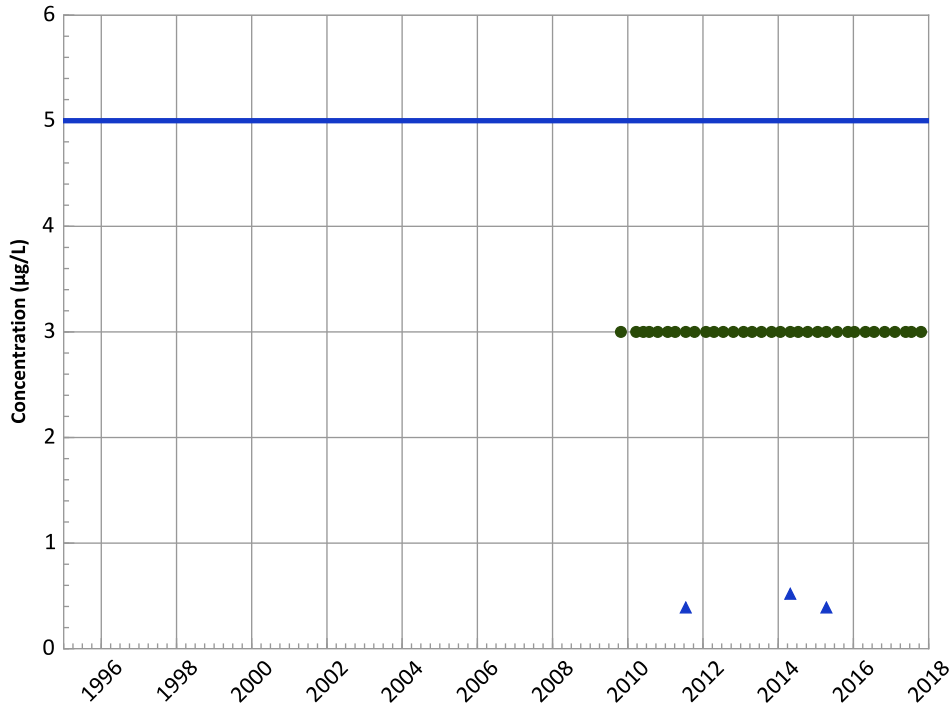
MAROS Mann-Kendall Method

Data ():
N/A (<4 Detections in Dataset)
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
N/A (<4 Detections in Dataset)

1,2-Dichloroethane Trend



Concentration Trend

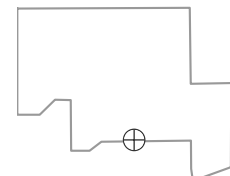
MAROS Mann-Kendall Method

Data ():
N/A (<4 Detections in Dataset)
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
N/A (<4 Detections in Dataset)

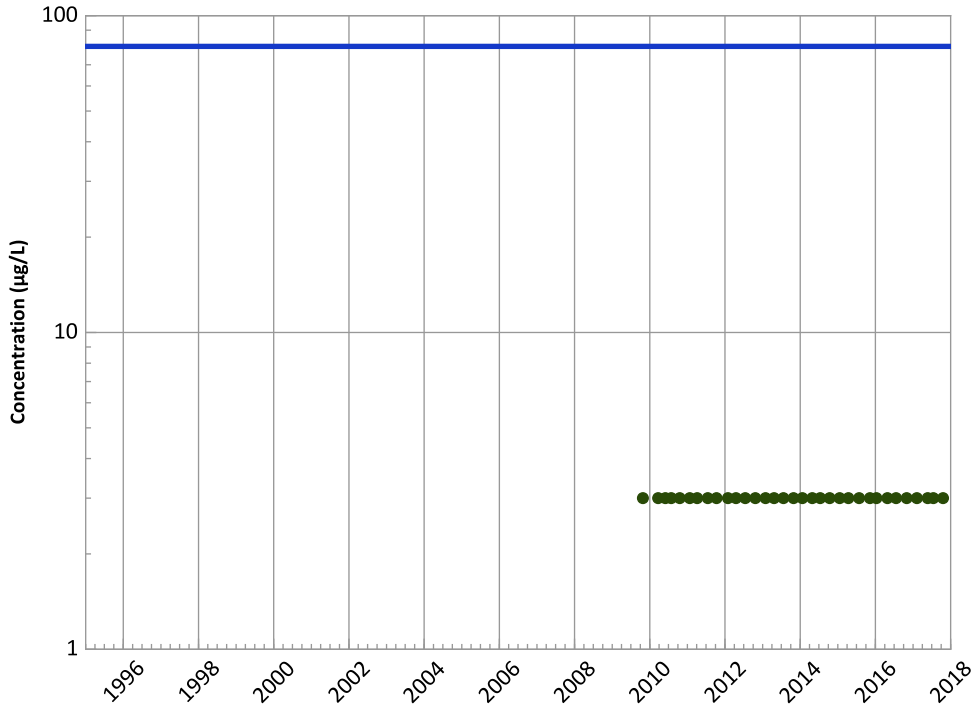
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/26/2009 to 10/19/2017
Analysis Date: 03/21/2018

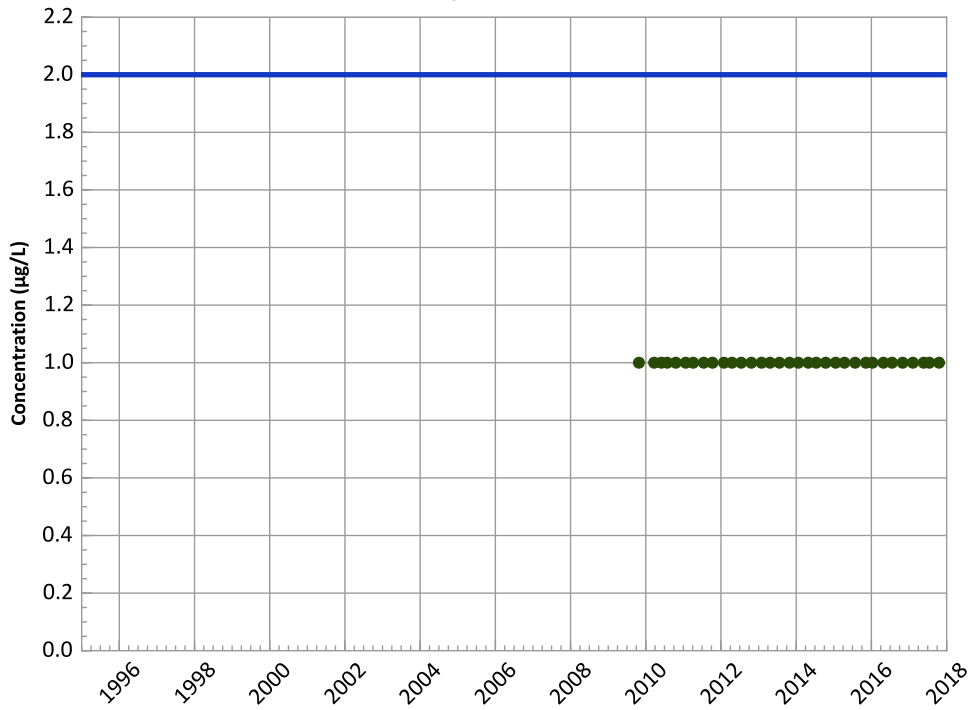
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1156 in Perched Aquifer
USDOE/NNSA Pantex Plant
Chloroform Trend**



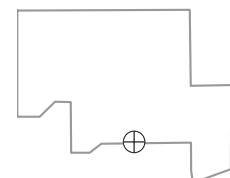
Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect
MAROS Linear Regression Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect

Vinyl Chloride Trend



Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect
MAROS Linear Regression Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect

Well Location

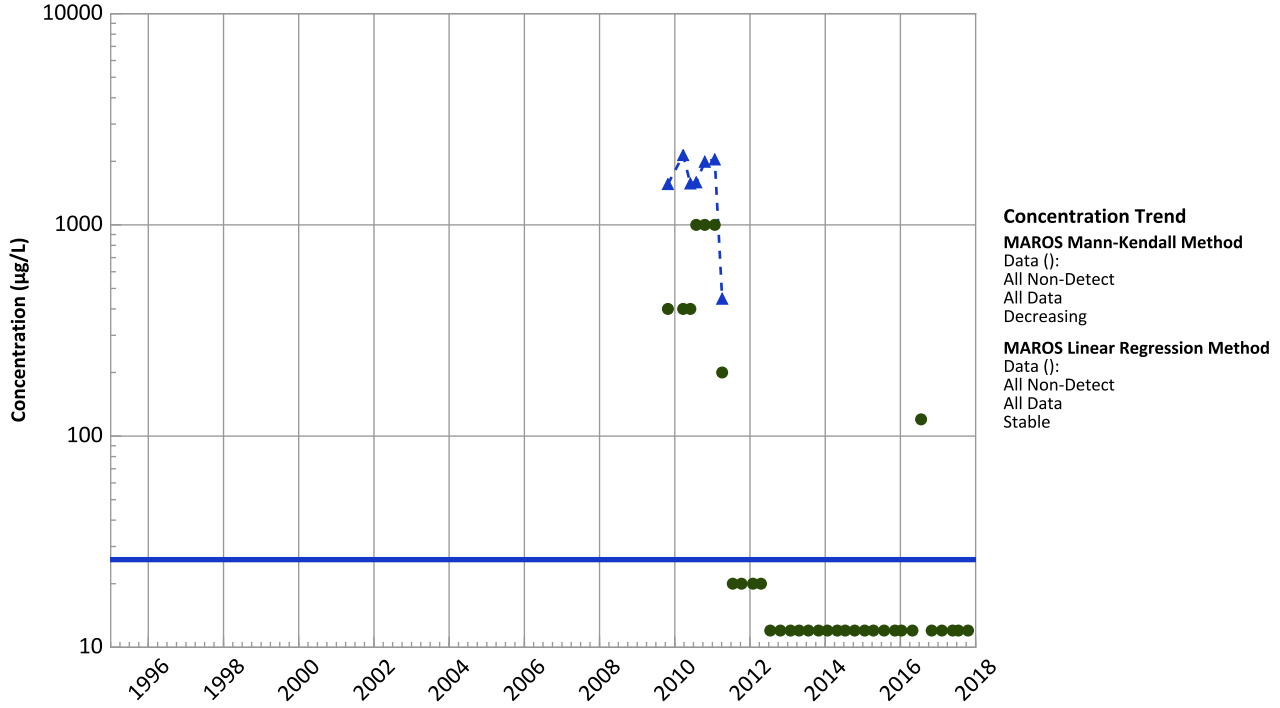


Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 10/26/2009 to 10/19/2017
 Analysis Date: 03/21/2018

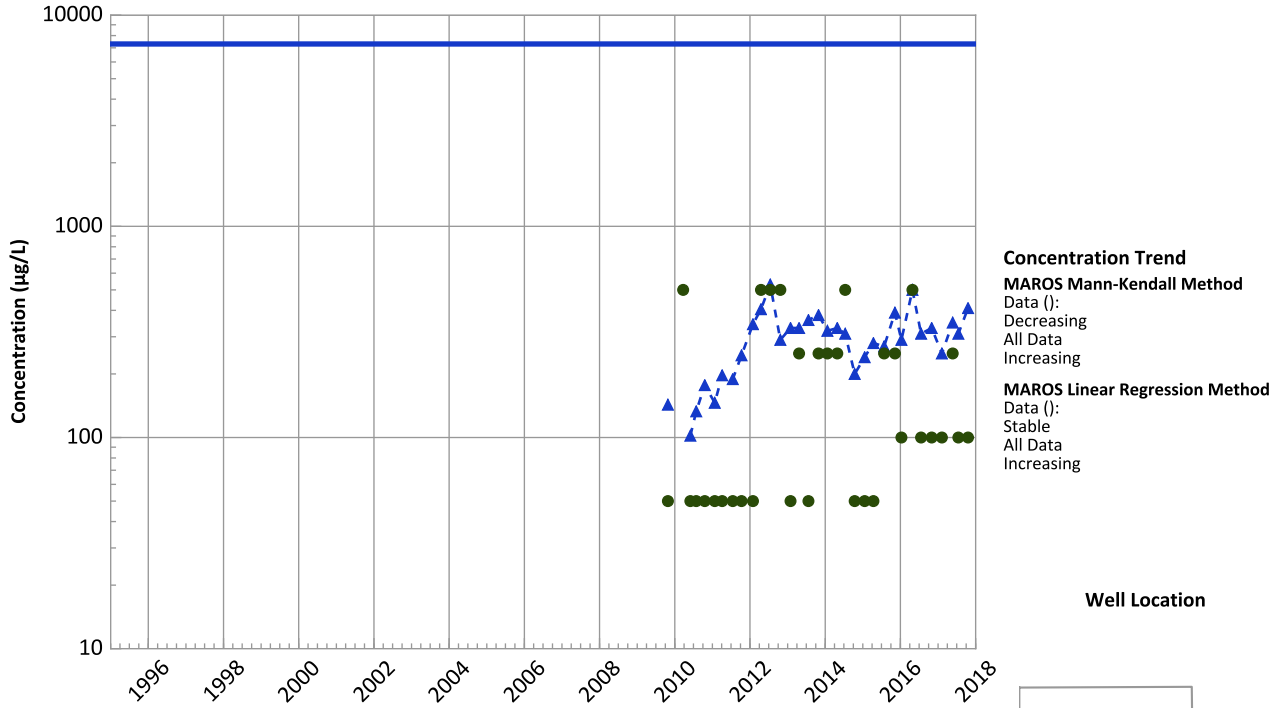
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1156 in Perched Aquifer
USDOE/NNSA Pantex Plant

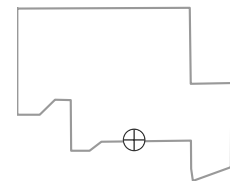
Perchlorate Trend



Boron Trend



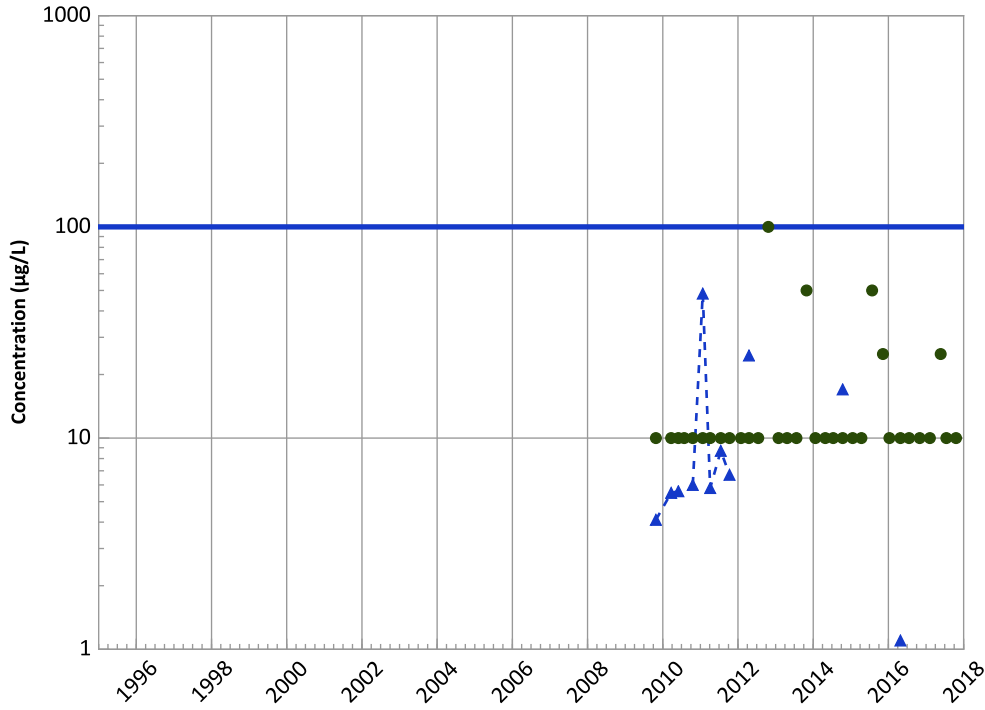
Well Location



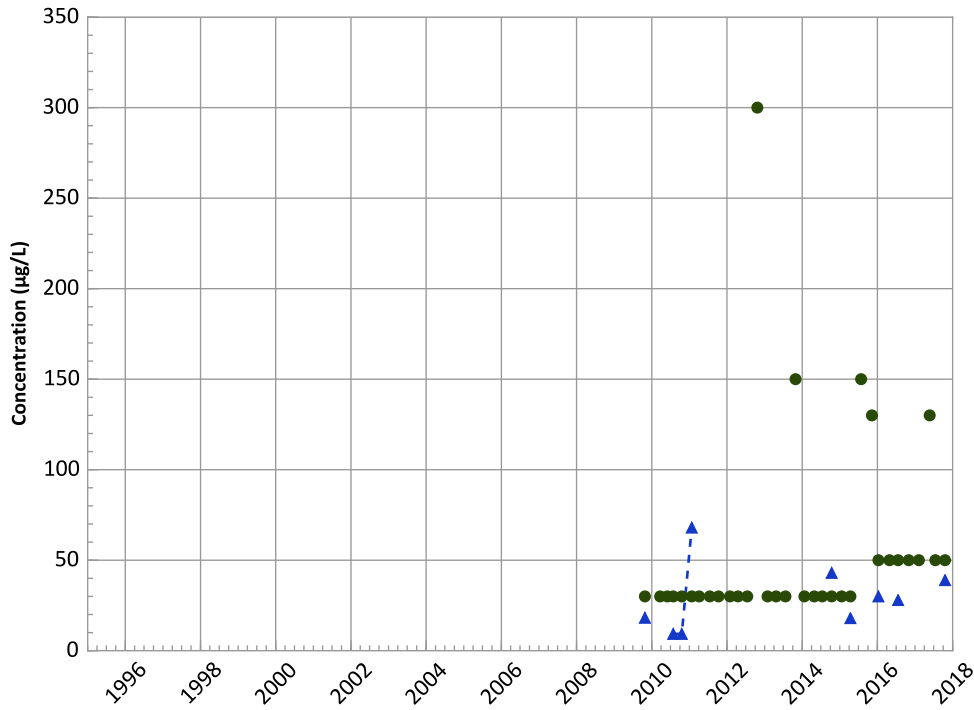
Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/26/2009 to 10/19/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1156 in Perched Aquifer
USDOE/NNSA Pantex Plant
Chromium, Total Trend**



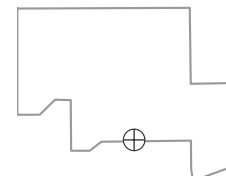
Aluminum Trend



Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 10/26/2009 to 10/19/2017
 Analysis Date: 03/21/2018

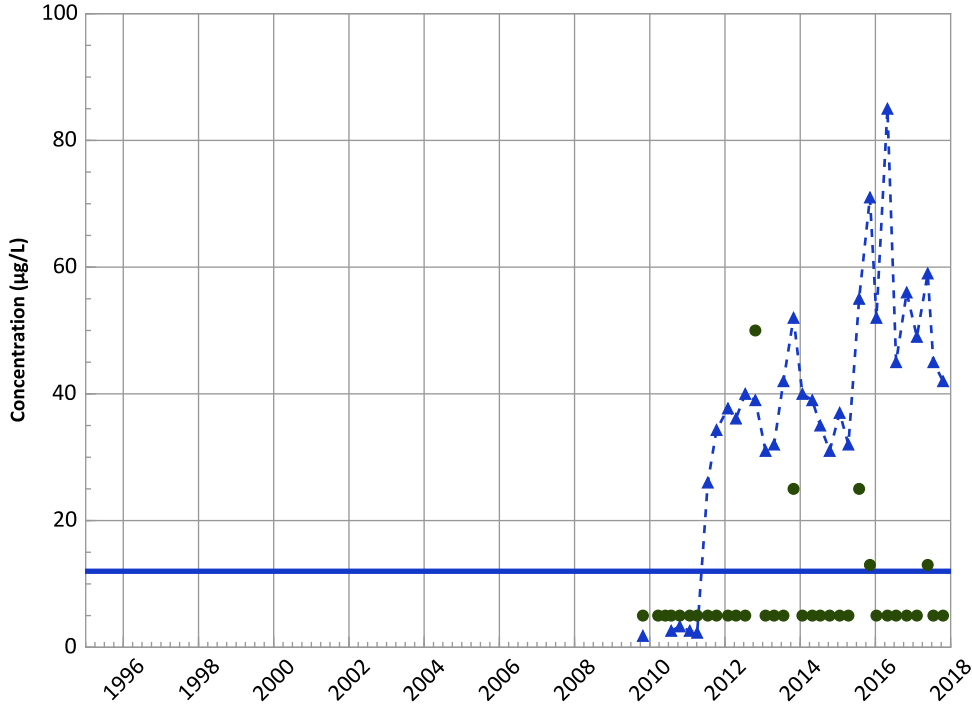
- ▲ Measured Value
- Sample Detection Limit
- Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1156 in Perched Aquifer
USDOE/NNSA Pantex Plant

Arsenic Trend



Concentration Trend

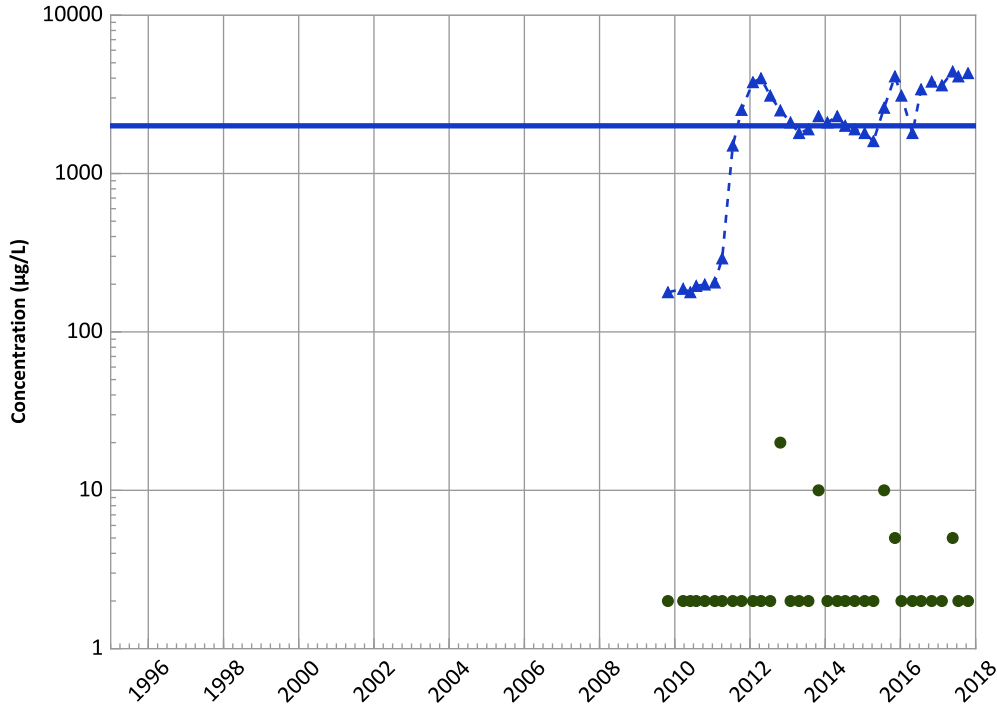
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

Barium Trend



Concentration Trend

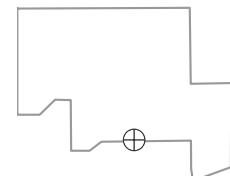
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

Well Location

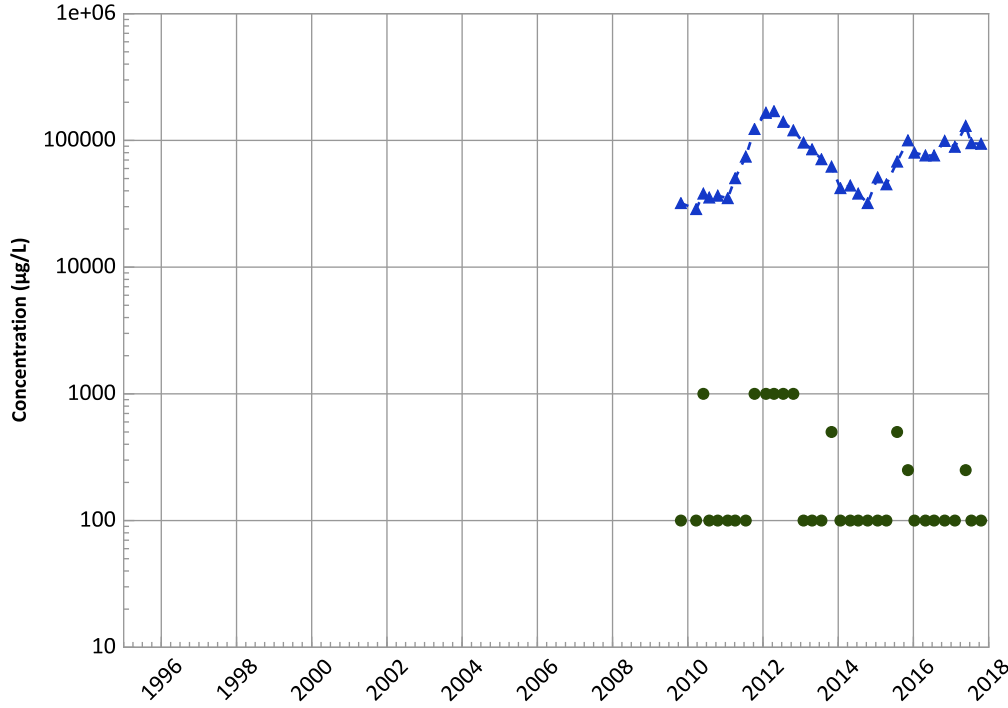


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/26/2009 to 10/19/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1156 in Perched Aquifer
USDOE/NNSA Pantex Plant

Calcium Trend



Concentration Trend

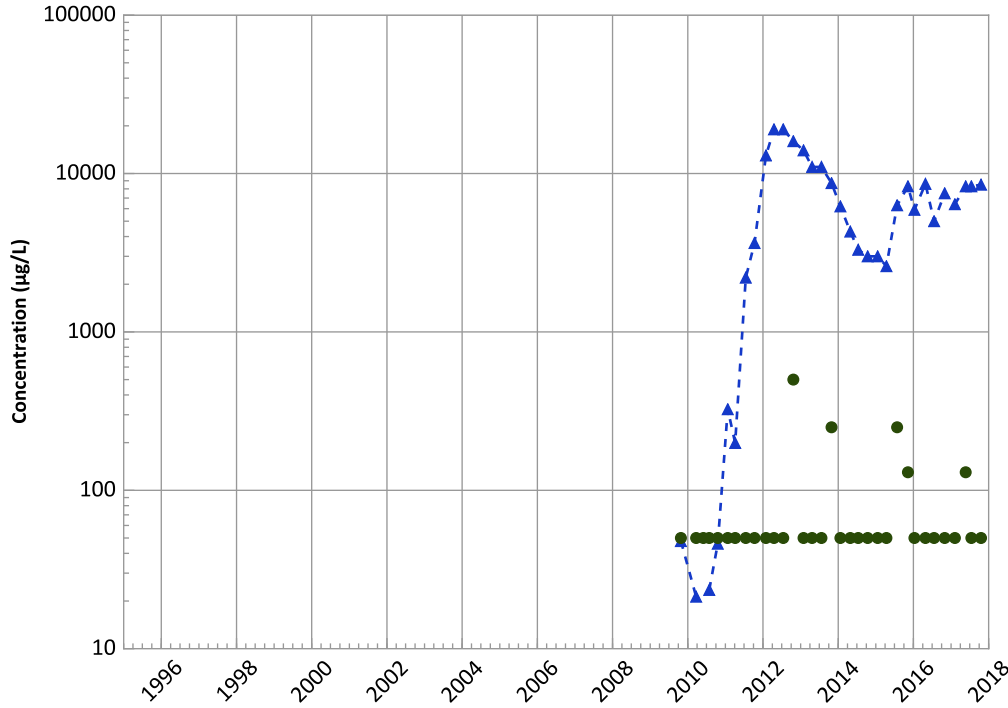
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Increasing

Iron Trend



Concentration Trend

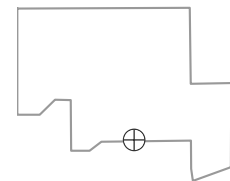
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Increasing

Well Location

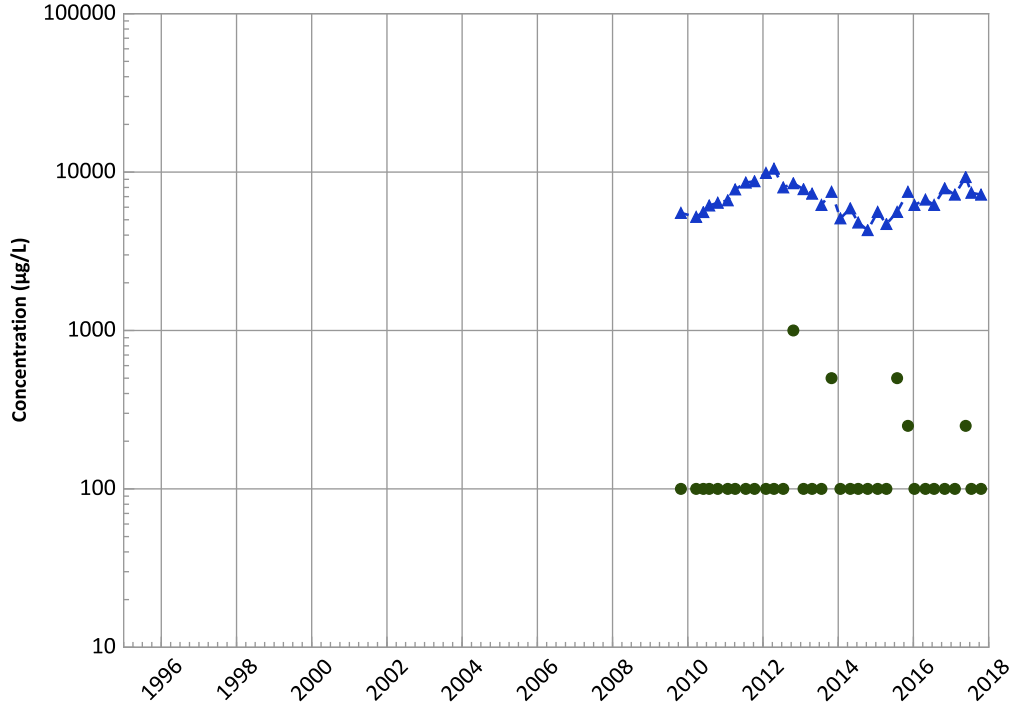


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/26/2009 to 10/19/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1156 in Perched Aquifer
USDOE/NNSA Pantex Plant

Potassium Trend



Concentration Trend

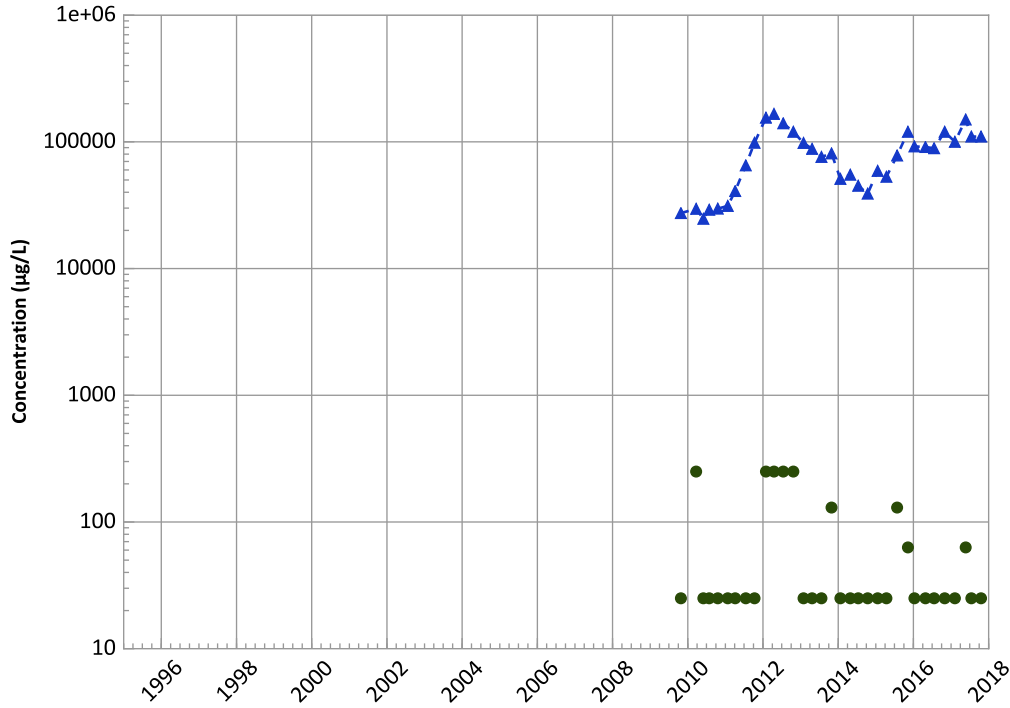
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
No Trend

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

Magnesium Trend



Concentration Trend

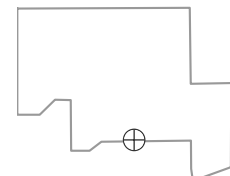
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Probably Decreasing
All Data
Increasing

Well Location

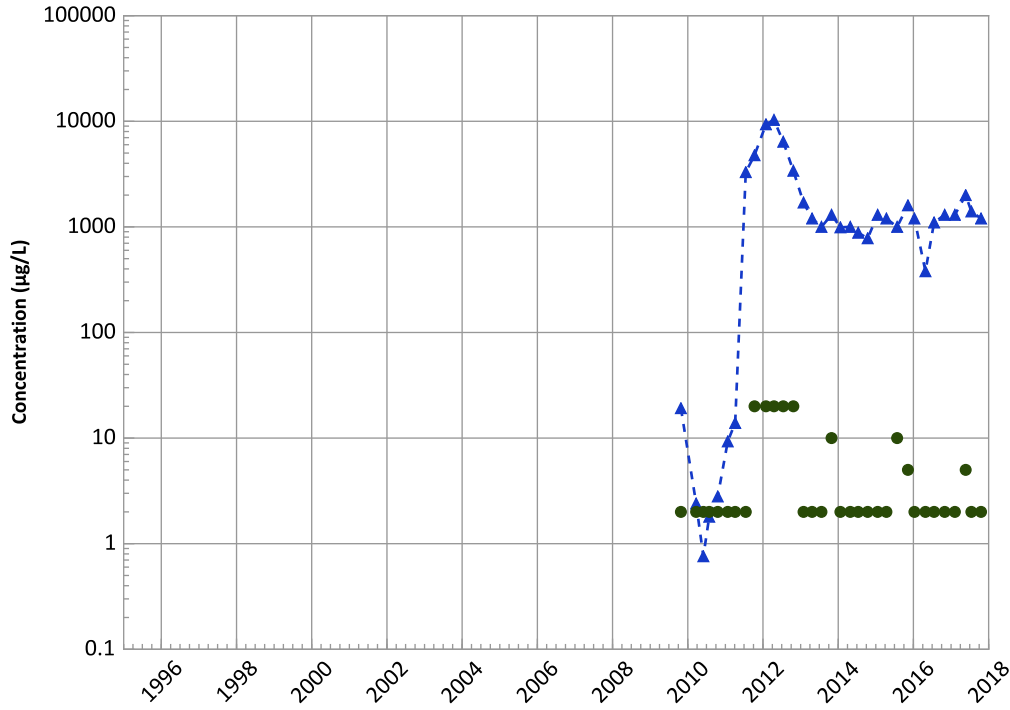


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/26/2009 to 10/19/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1156 in Perched Aquifer
USDOE/NNSA Pantex Plant

Manganese Trend



Concentration Trend

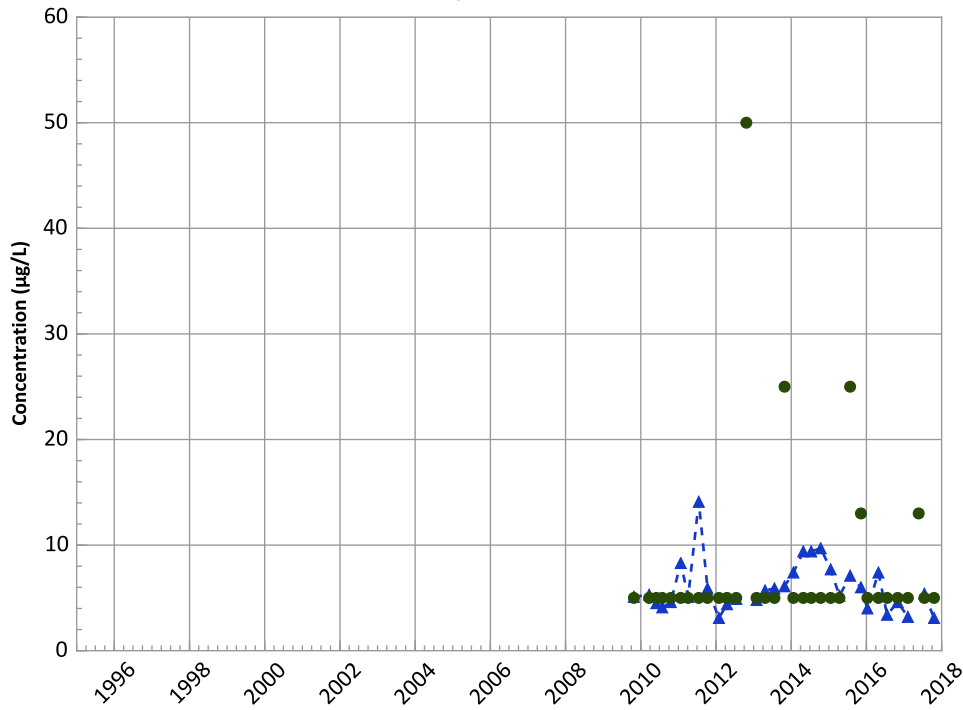
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Probably Increasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Increasing

Molybdenum Trend



Concentration Trend

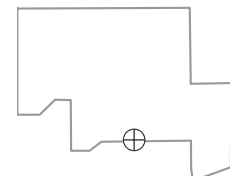
MAROS Mann-Kendall Method

Data ():
No Trend
All Data
Stable

MAROS Linear Regression Method

Data ():
No Trend
All Data
Stable

Well Location

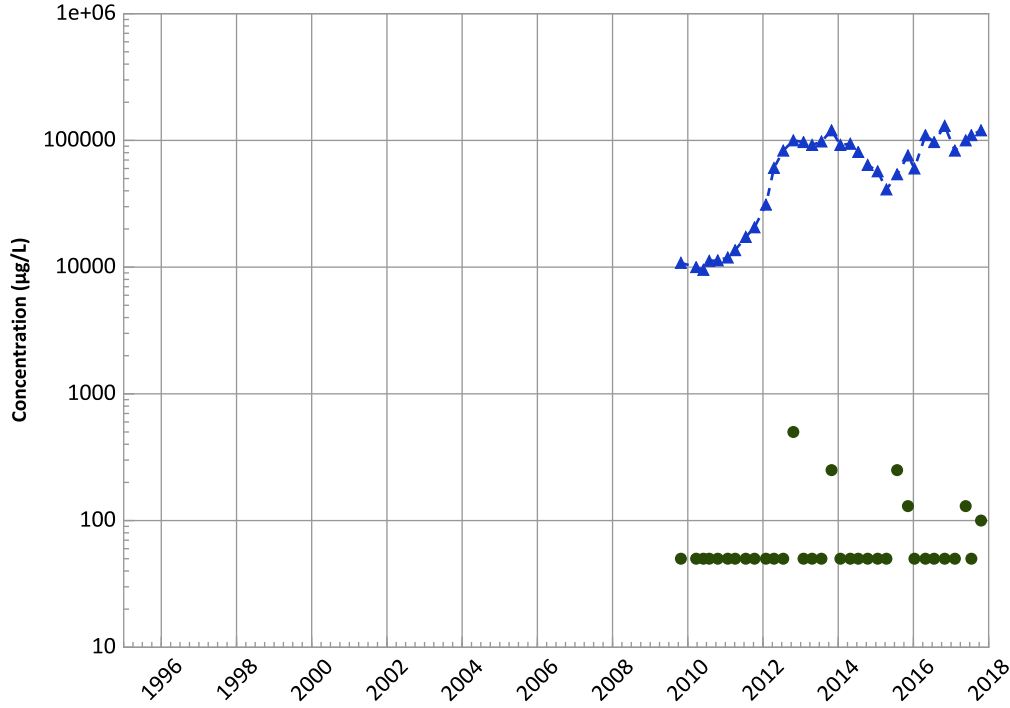


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/26/2009 to 10/19/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1156 in Perched Aquifer
USDOE/NNSA Pantex Plant

Sodium Trend



Concentration Trend

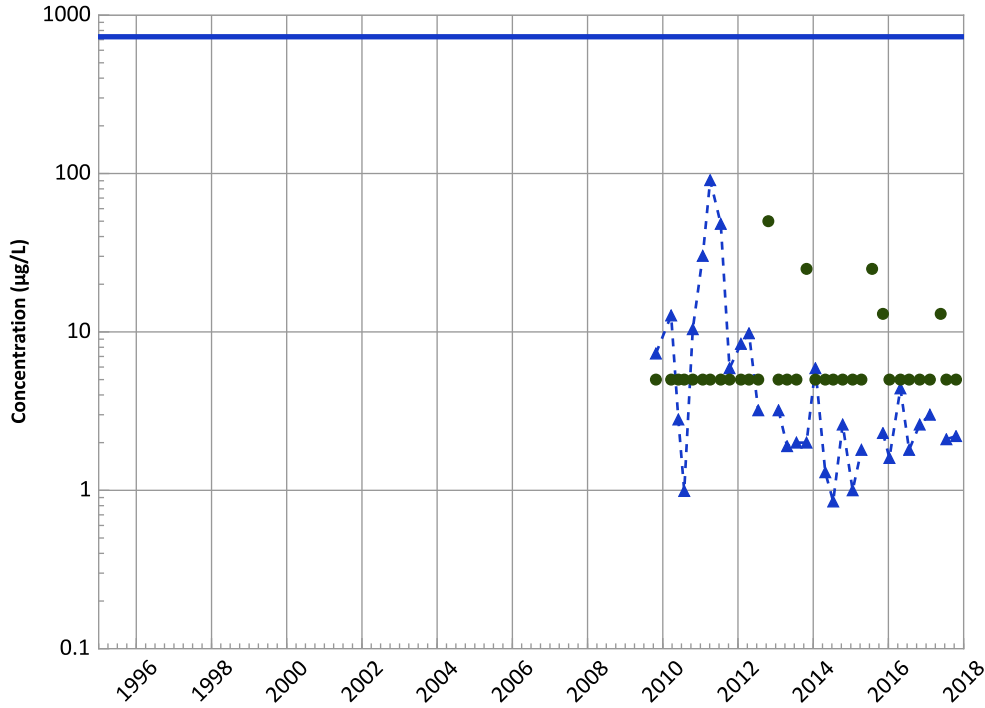
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
Increasing

Nickel Trend



Concentration Trend

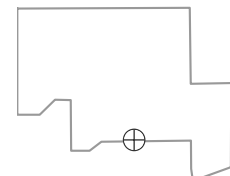
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

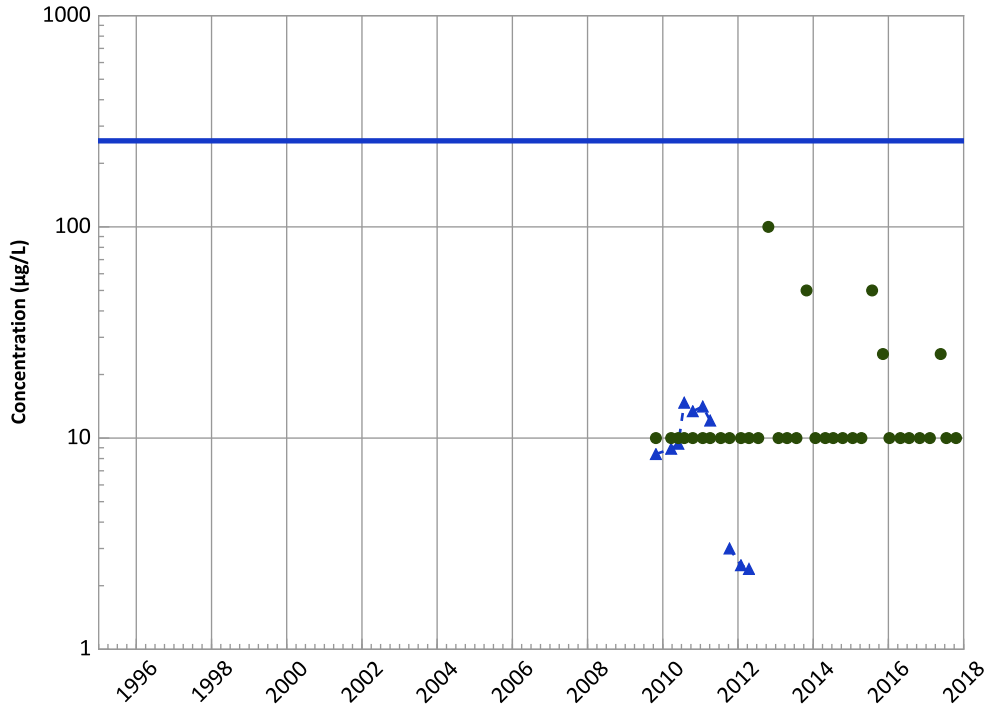
Well Location



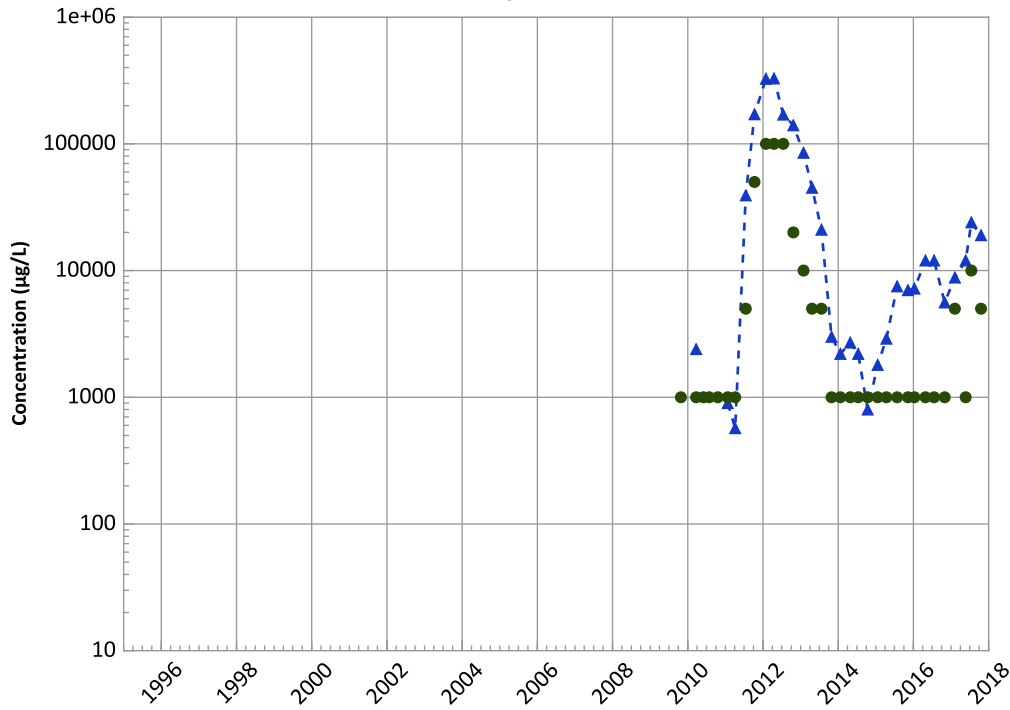
Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/26/2009 to 10/19/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1156 in Perched Aquifer
USDOE/NNSA Pantex Plant
Vanadium Trend**



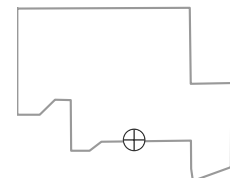
Total Organic Carbon Trend



Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 10/26/2009 to 10/19/2017
 Analysis Date: 03/21/2018

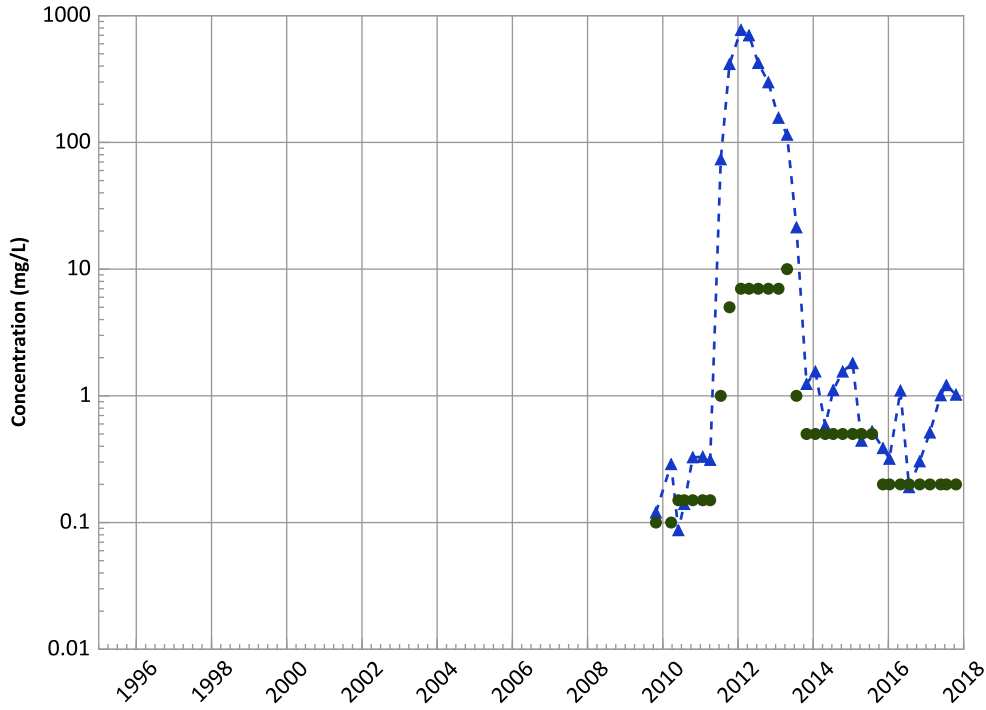
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1156 in Perched Aquifer
USDOE/NNSA Pantex Plant

Total Volatile Fatty Acids Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

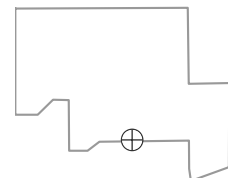
MAROS Linear Regression Method

Data ():
Decreasing
All Data
No Trend

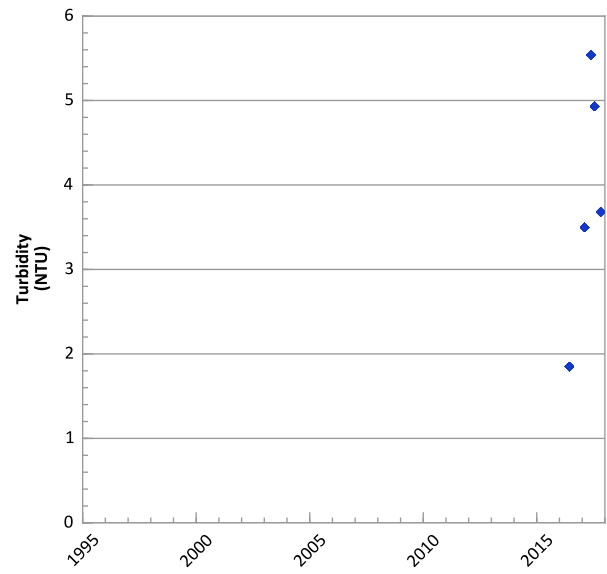
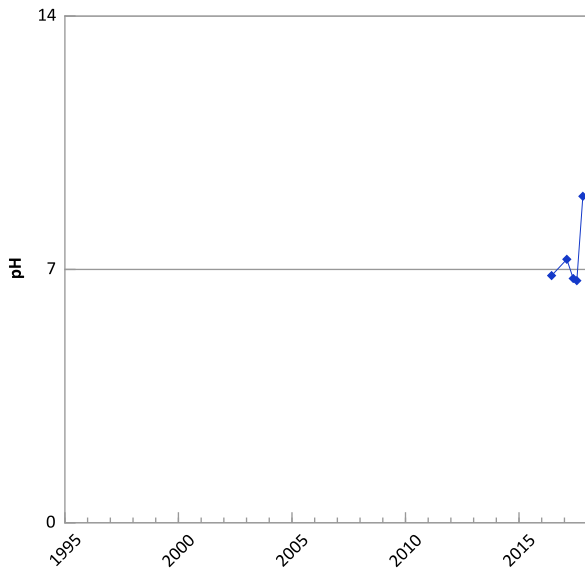
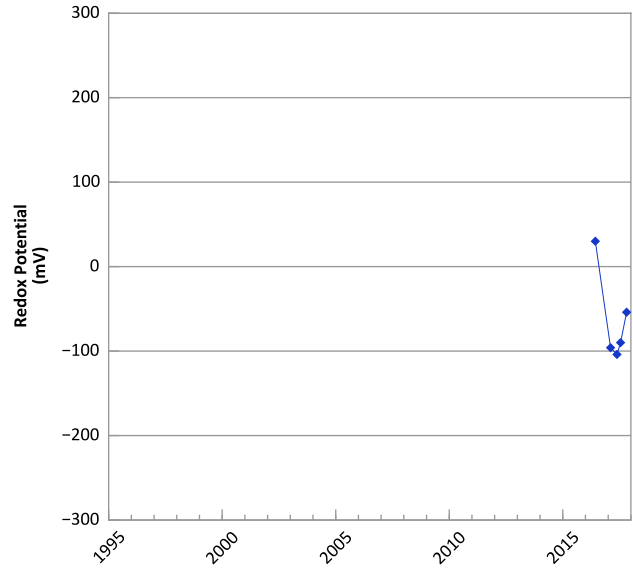
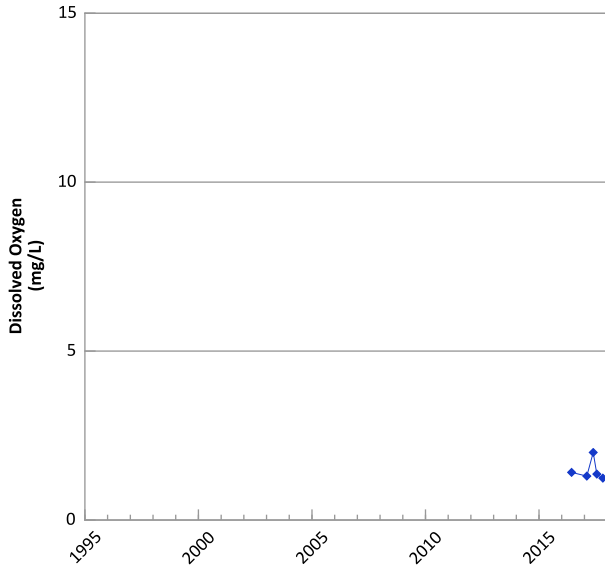
Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/26/2009 to 10/19/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

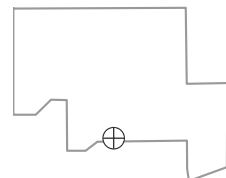


**PTX06-1173 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



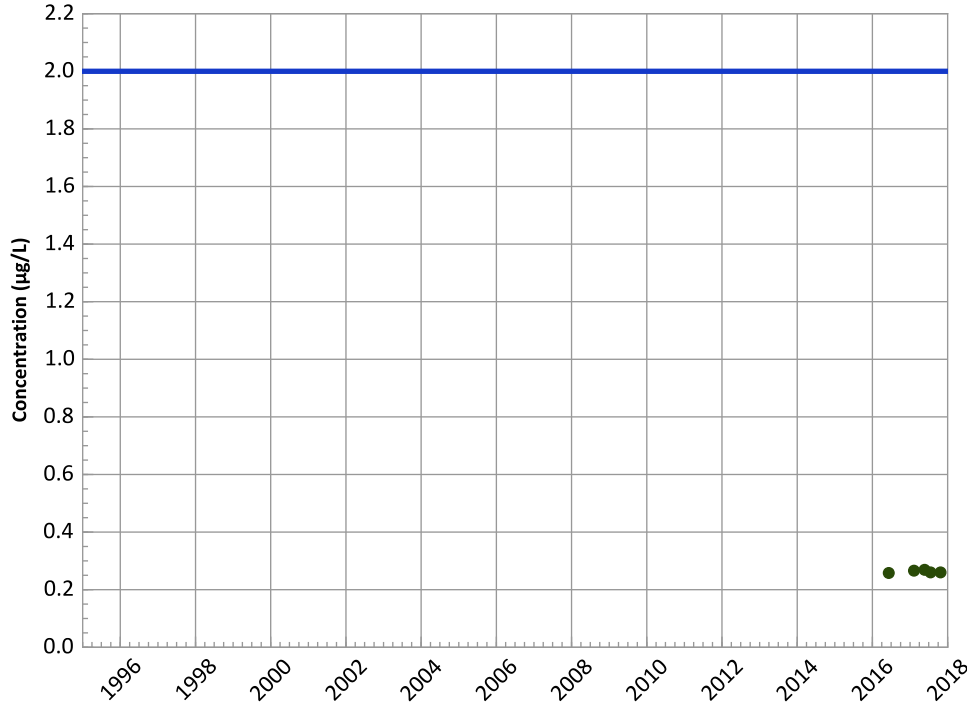
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 06/08/2016 to 10/24/2017
 Analysis Date: 03/21/2018

Well Location



PTX06-1173 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

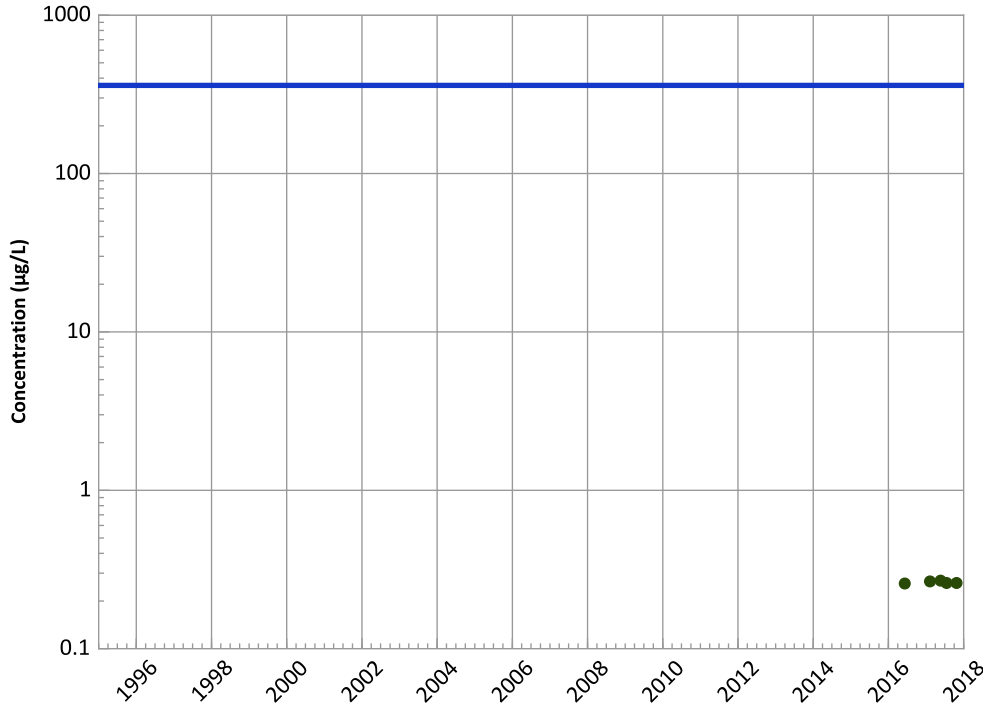
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

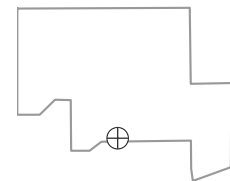
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

Well Location

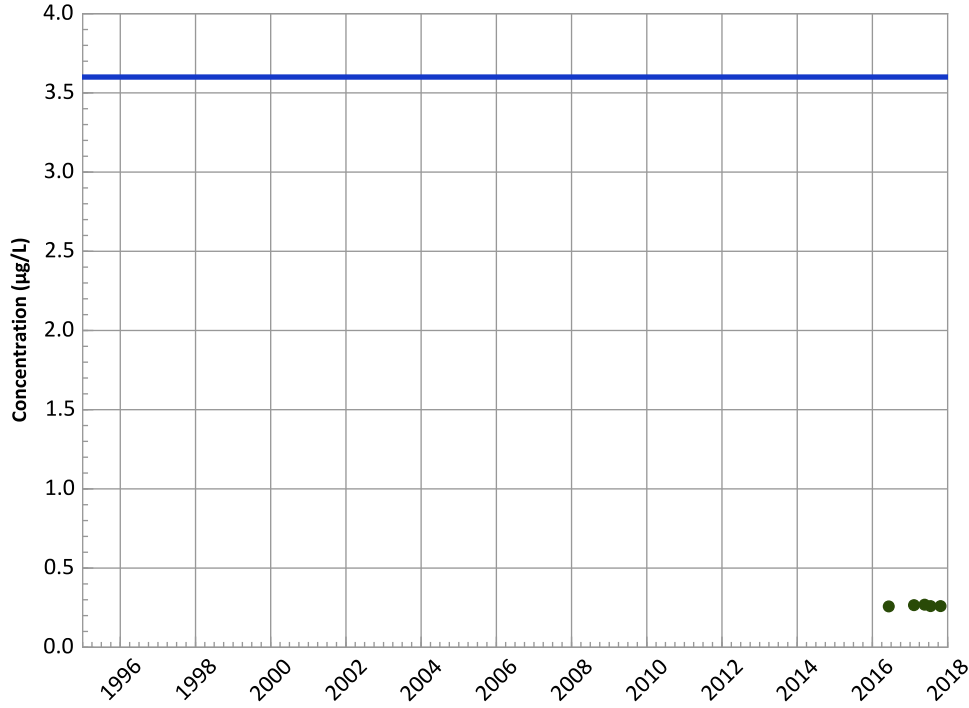


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/08/2016 to 10/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1173 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

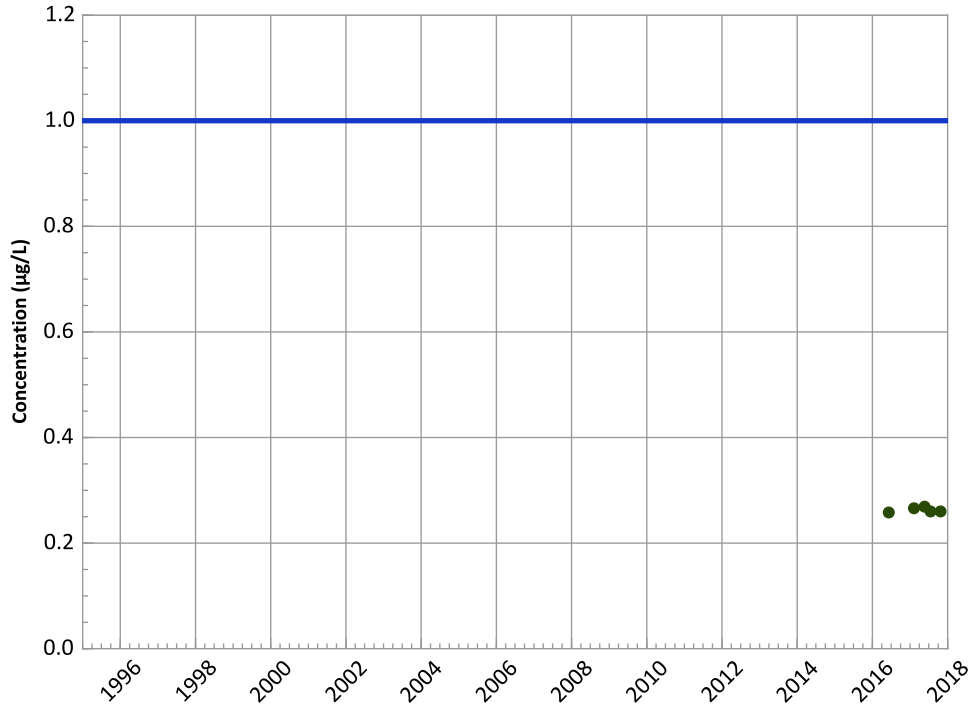
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

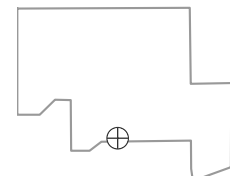
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

Well Location

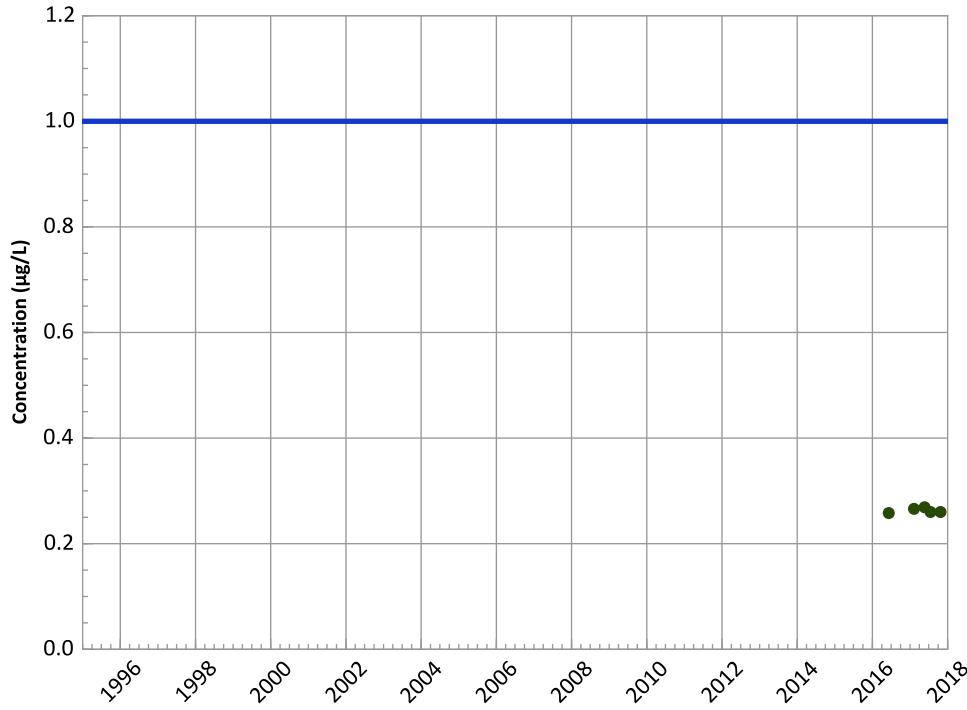


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/08/2016 to 10/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1173 in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

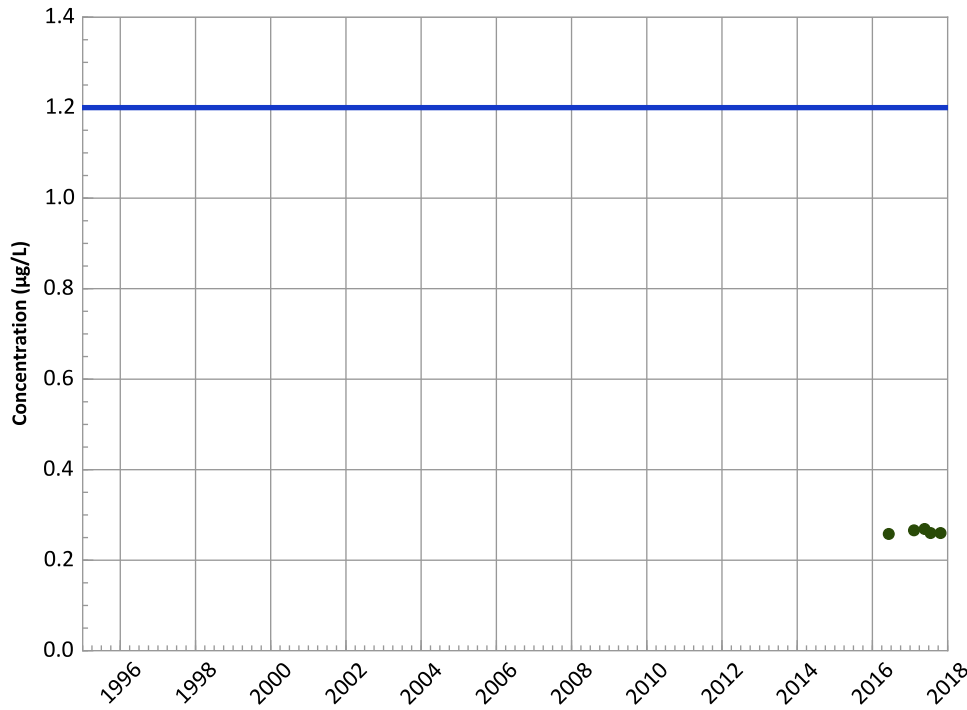
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

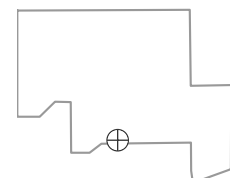
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

Well Location

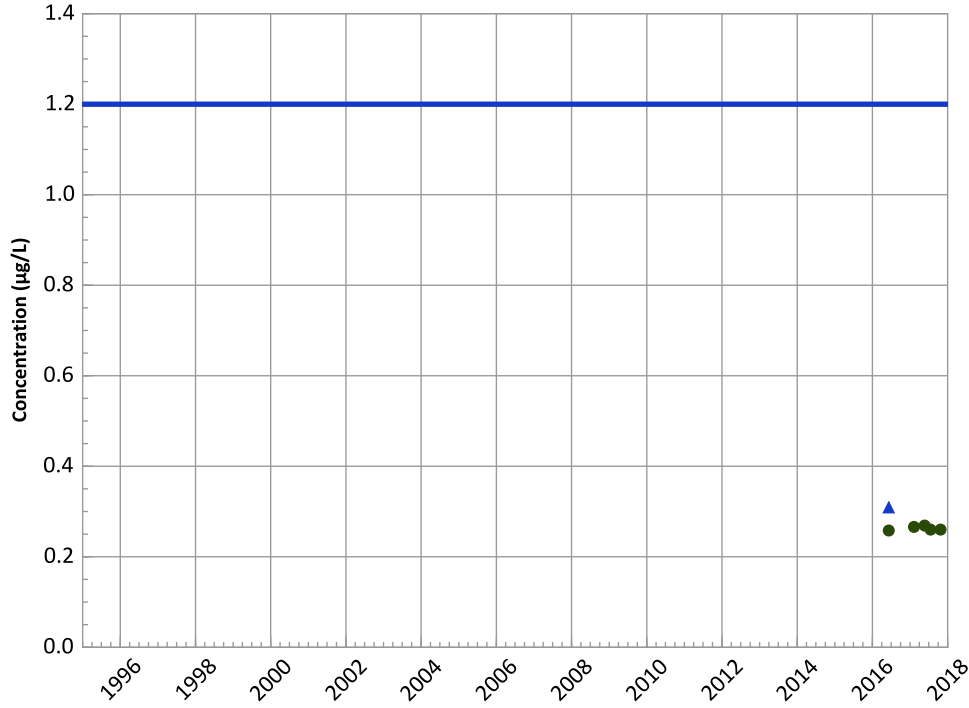


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/08/2016 to 10/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1173 in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

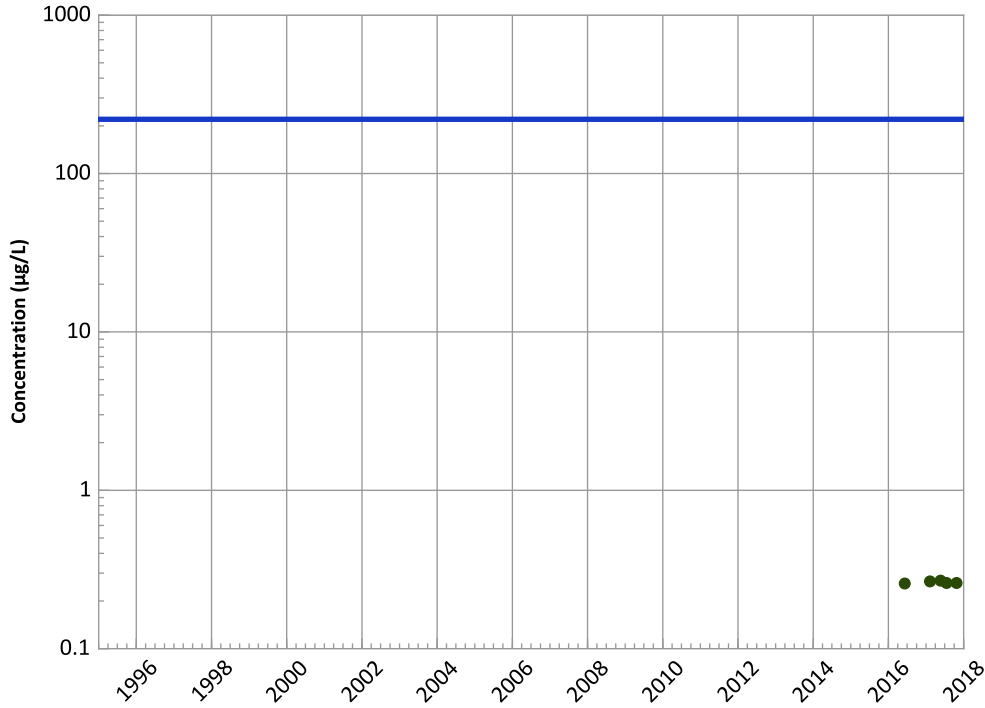
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
N/A (<4 Detections in Dataset)

1,3,5-Trinitrobenzene Trend



Concentration Trend

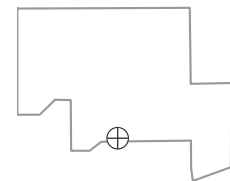
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

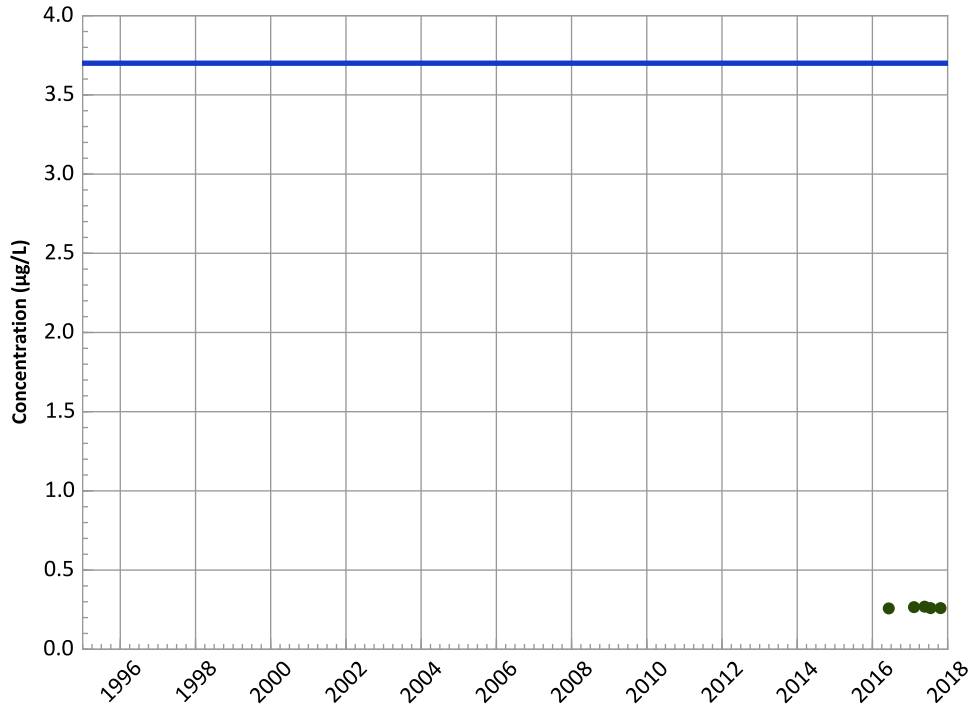
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/08/2016 to 10/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1173 in Perched Aquifer
USDOE/NNSA Pantex Plant
1,3-Dinitrobenzene Trend**

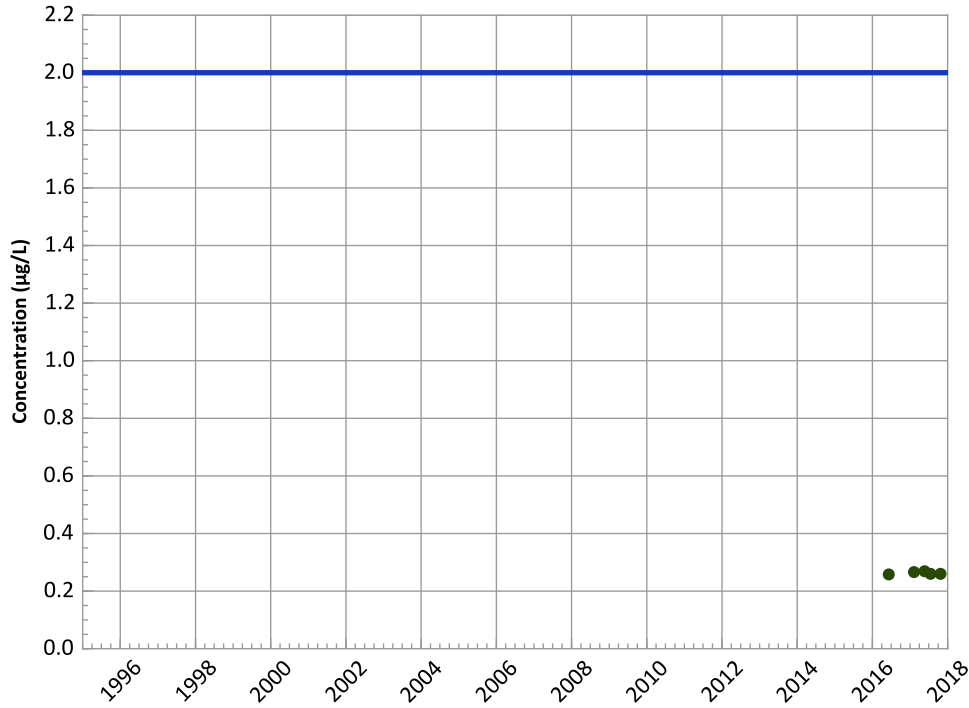


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

MAROS Linear Regression Method
Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

Hexahydro-1-Nitroso-3,5-Dinitro-1,3,5-Triazine (MNX) Trend

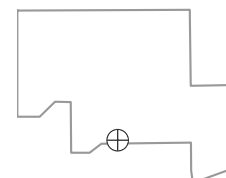


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

MAROS Linear Regression Method
Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

Well Location

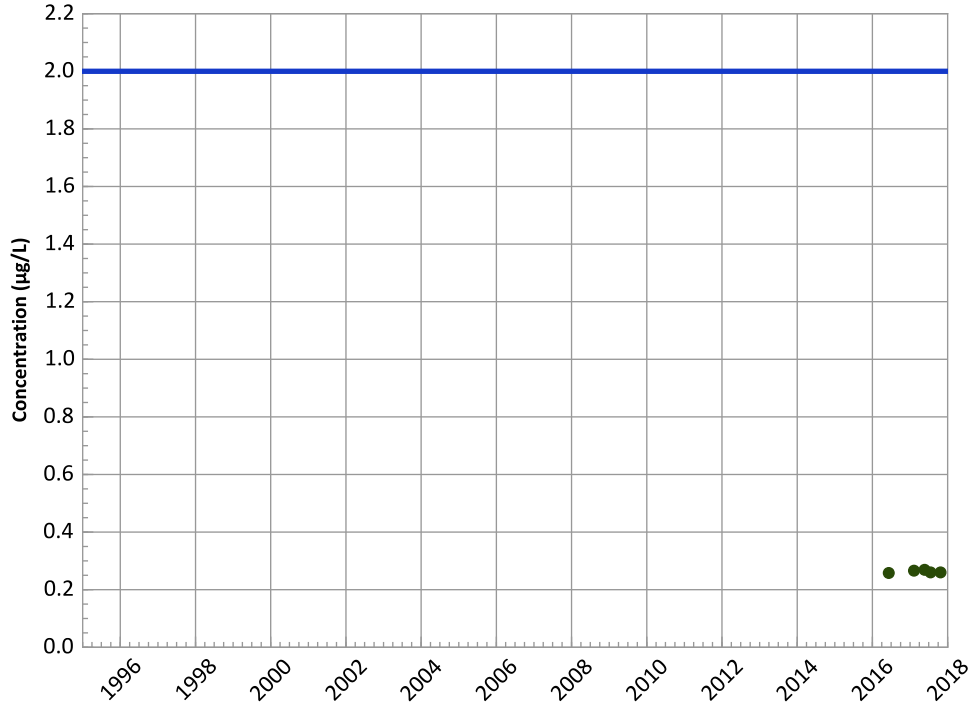


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/08/2016 to 10/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1173 in Perched Aquifer
USDOE/NNSA Pantex Plant

Hexahydro-1,3-Dinitroso-5-Nitro-1,3,5-Triazine (DNX) Trend



Concentration Trend

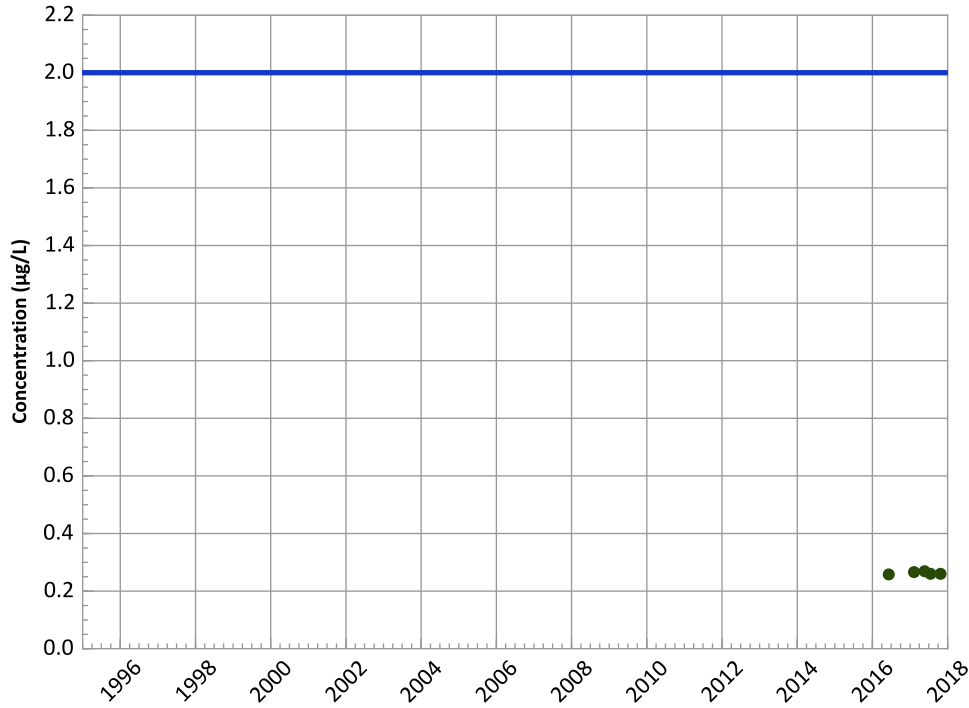
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

Hexahydro-1,3,5-Trinitroso-1,3,5-Triazine (TNX) Trend



Concentration Trend

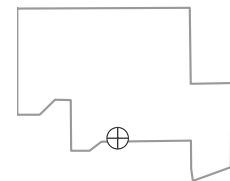
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

Well Location

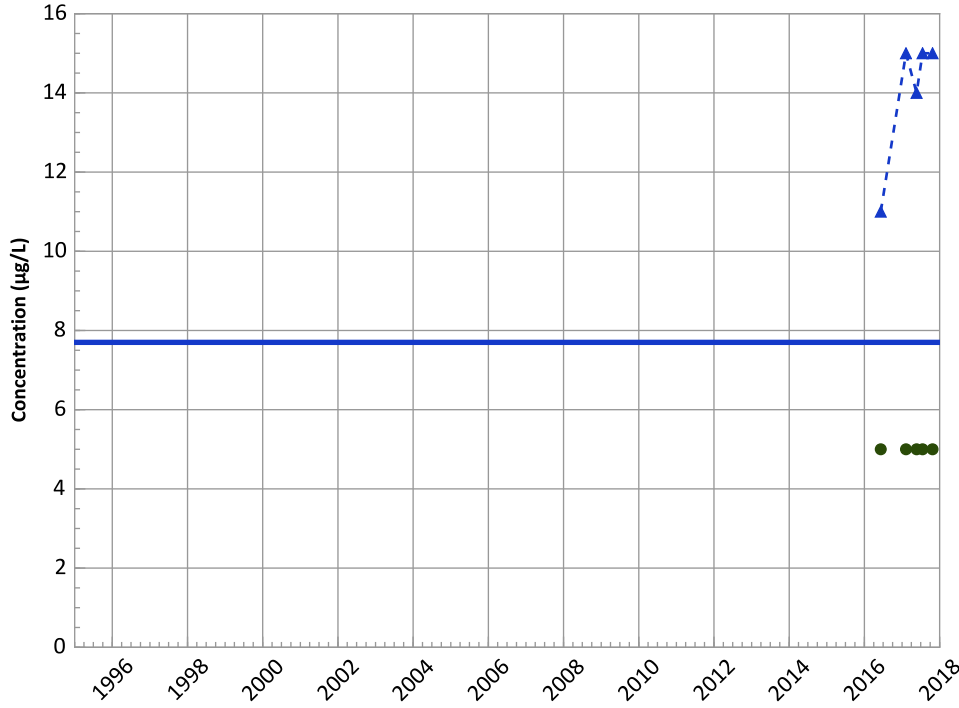


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/08/2016 to 10/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1173 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,4-Dioxane (p-Dioxane) Trend

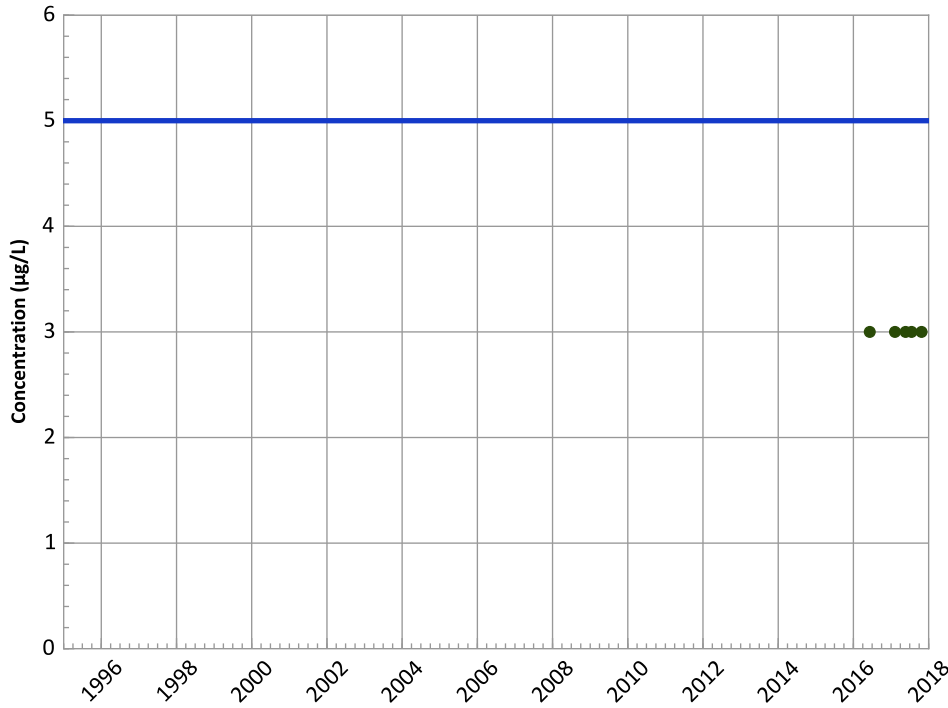


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Samples in Dataset)
All Data
No Trend

MAROS Linear Regression Method
Data ():
N/A (<4 Detections in Dataset)
All Data
Increasing

Tetrachloroethylene (PCE) Trend

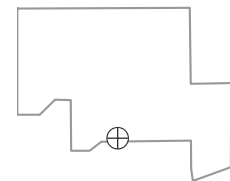


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

MAROS Linear Regression Method
Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

Well Location

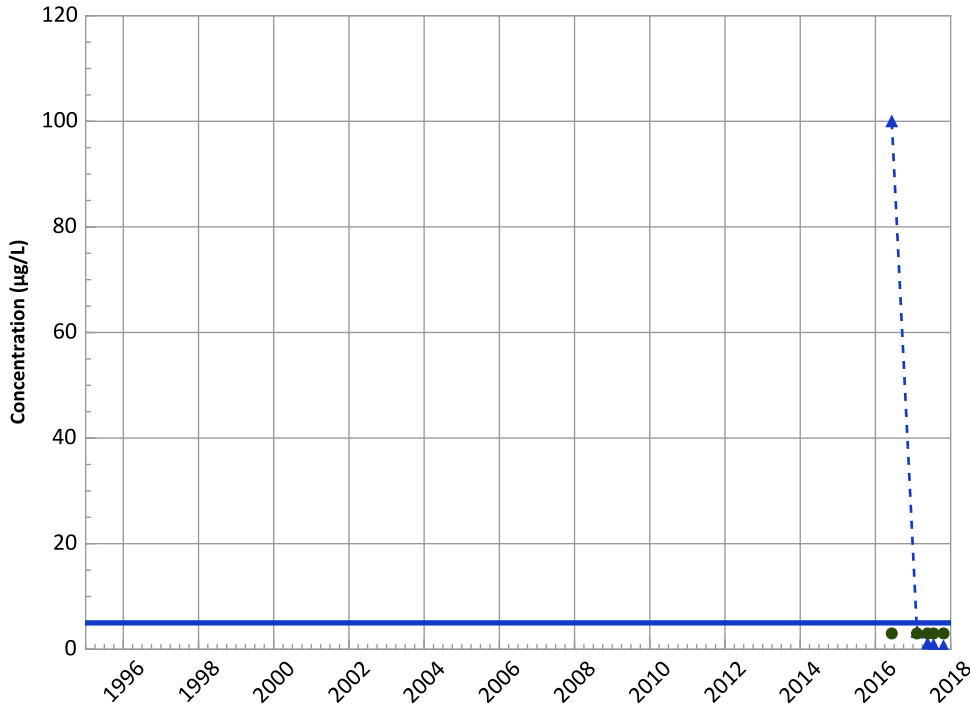


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/08/2016 to 10/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1173 in Perched Aquifer
USDOE/NNSA Pantex Plant

Trichloroethene Trend



Concentration Trend

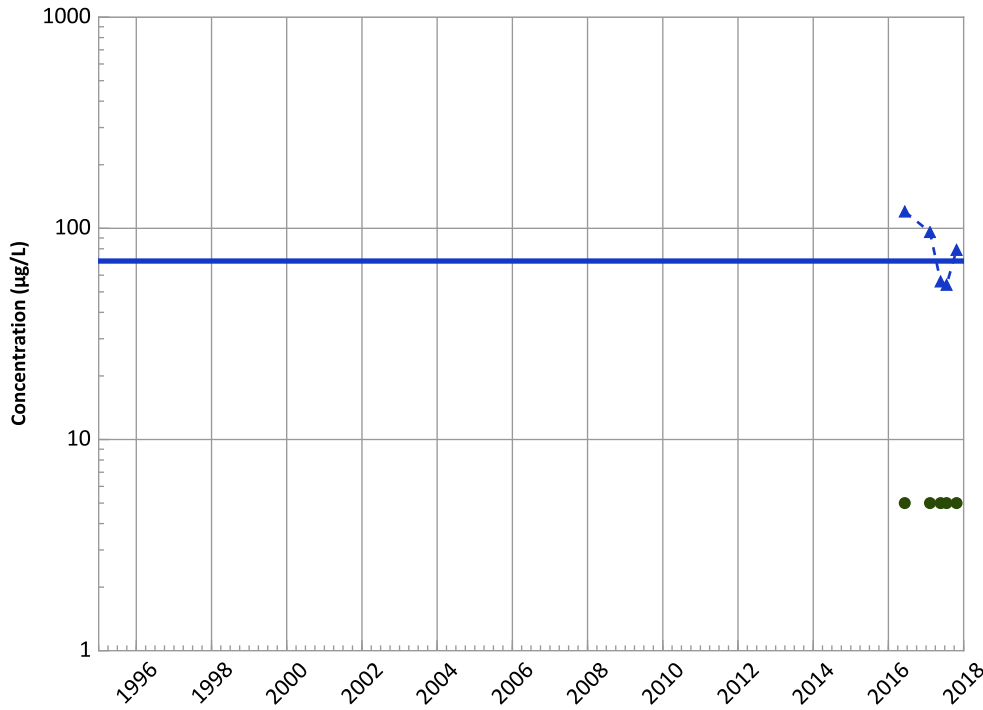
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
Decreasing

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

cis-1,2-Dichloroethene Trend



Concentration Trend

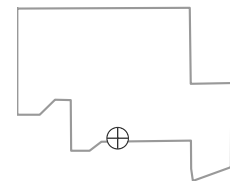
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
Decreasing

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Probably Decreasing

Well Location

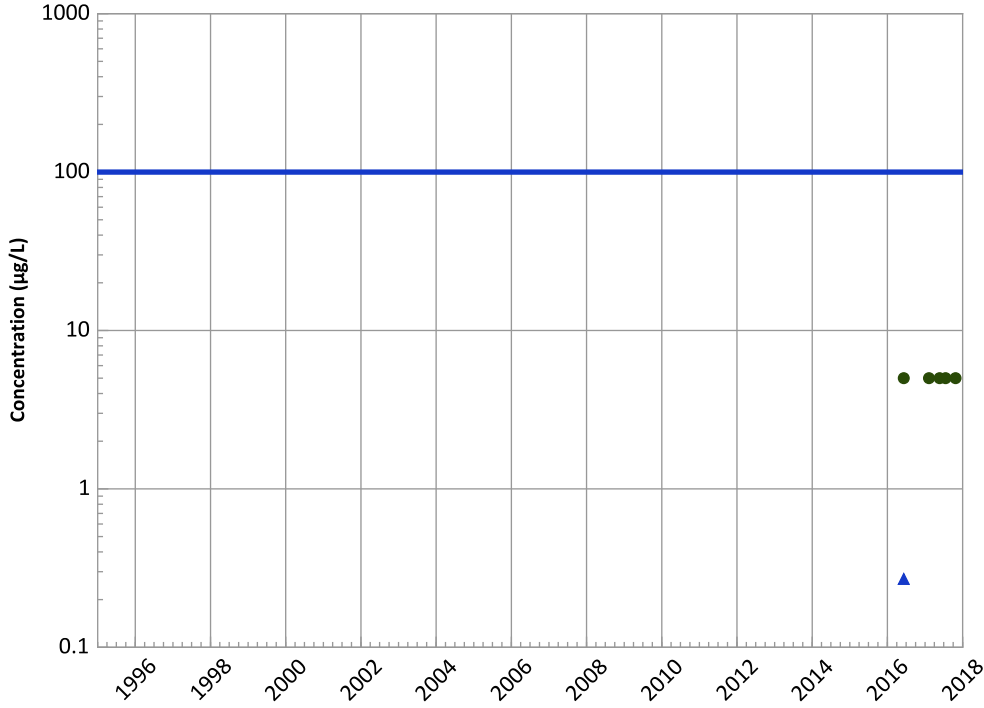


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/08/2016 to 10/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1173 in Perched Aquifer
USDOE/NNSA Pantex Plant

trans-1,2-Dichloroethene Trend



Concentration Trend

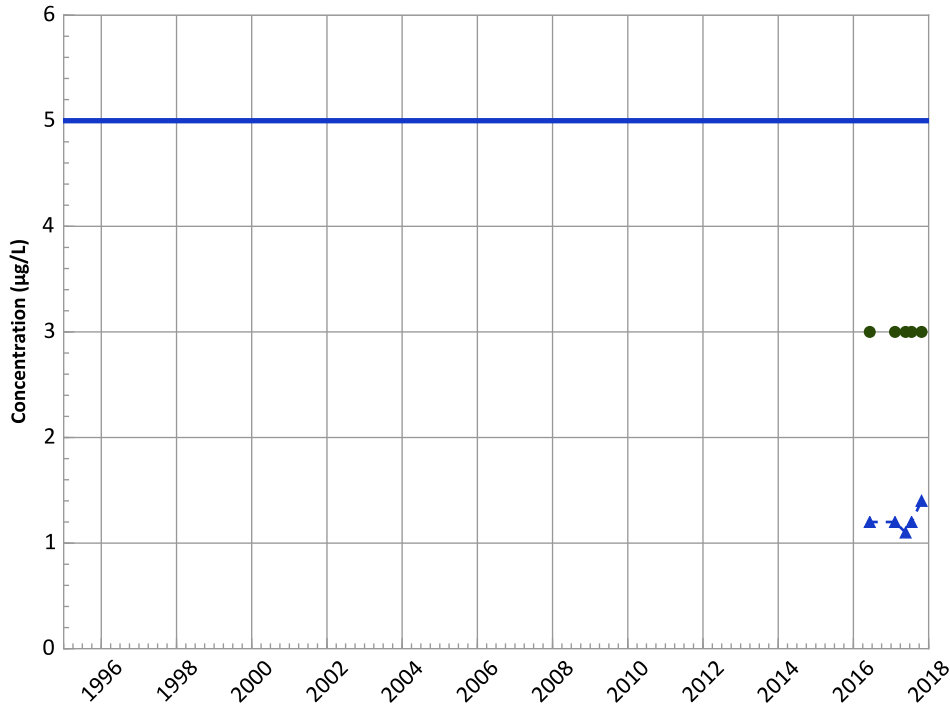
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
N/A (<4 Detections in Dataset)

1,2-Dichloroethane Trend



Concentration Trend

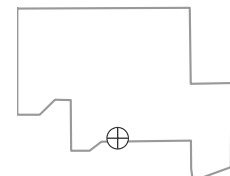
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
No Trend

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
No Trend

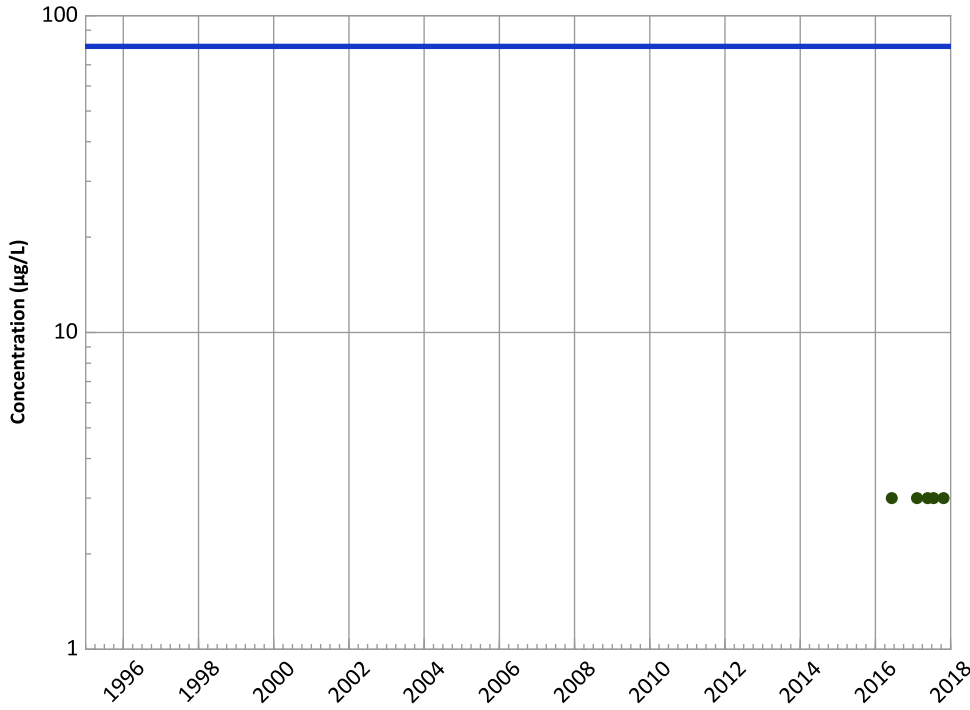
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/08/2016 to 10/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1173 in Perched Aquifer
USDOE/NNSA Pantex Plant
Chloroform Trend**

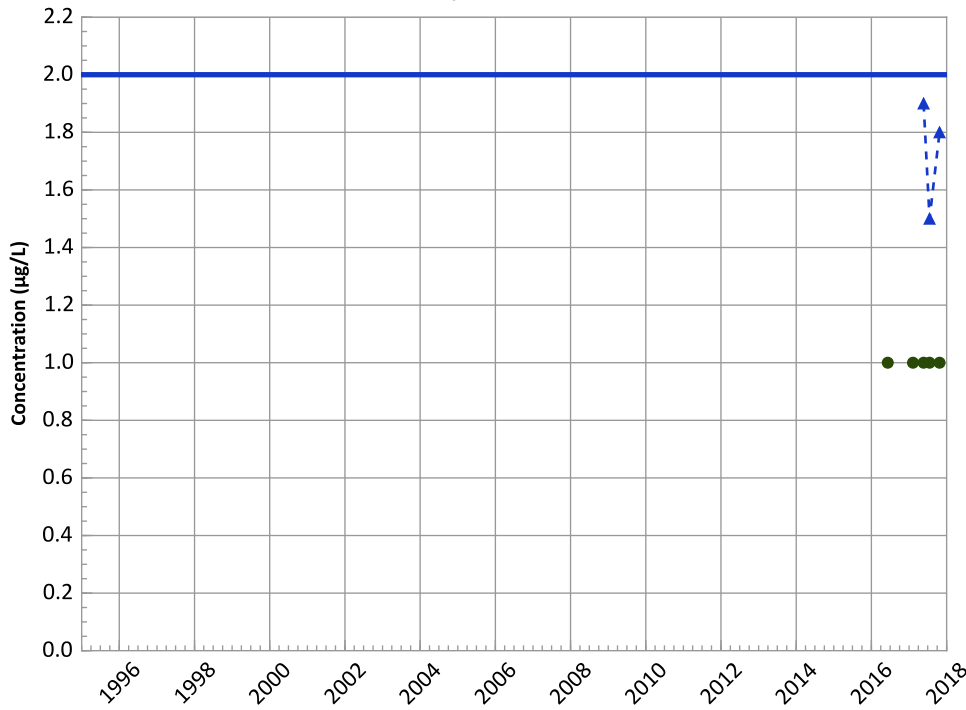


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

MAROS Linear Regression Method
Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

Vinyl Chloride Trend

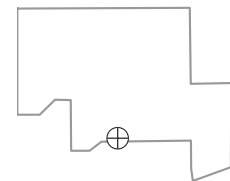


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Samples in Dataset)
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method
Data ():
N/A (<4 Samples in Dataset)
All Data
N/A (<4 Detections in Dataset)

Well Location

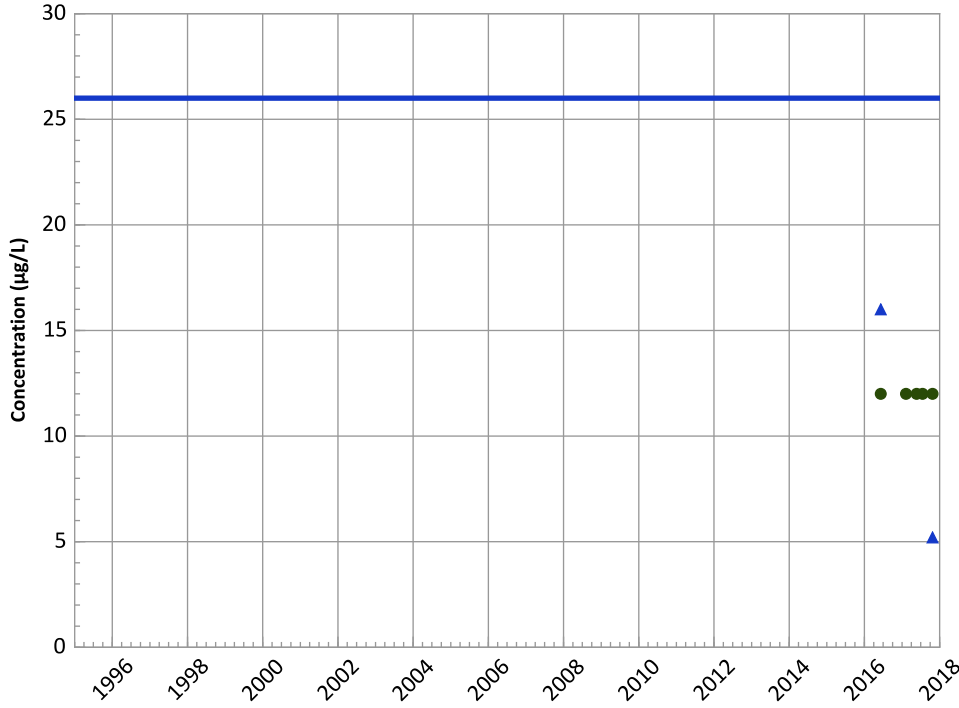


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/08/2016 to 10/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1173 in Perched Aquifer
USDOE/NNSA Pantex Plant

Perchlorate Trend



Concentration Trend

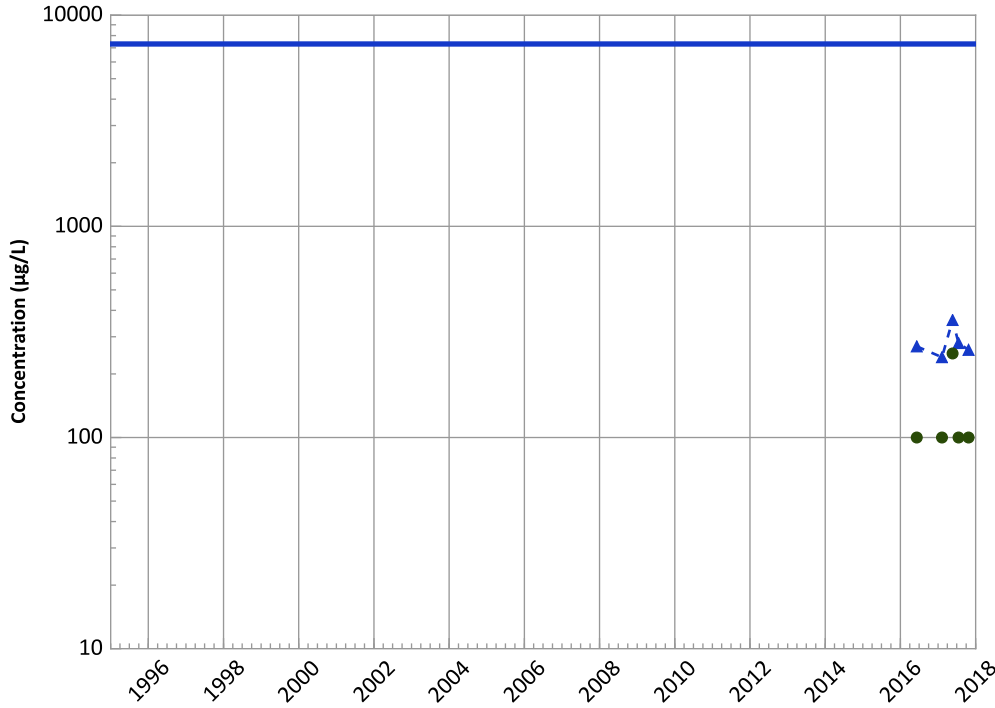
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
N/A (<4 Detections in Dataset)

Boron Trend



Concentration Trend

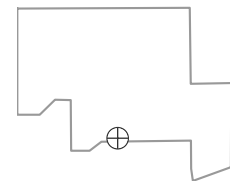
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
Stable

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
No Trend

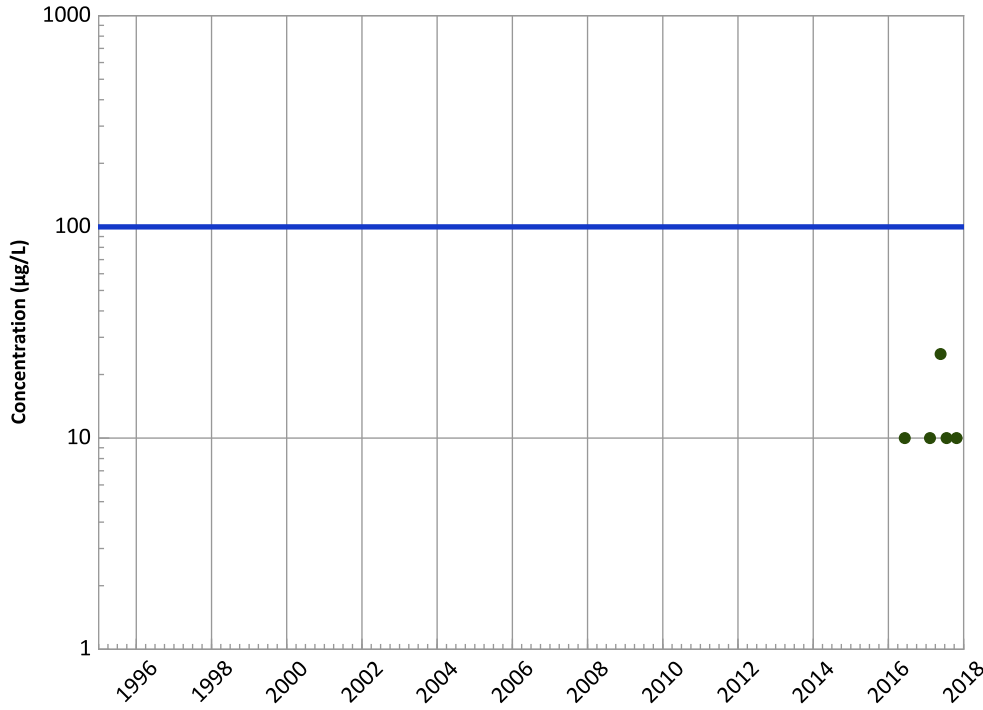
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/08/2016 to 10/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1173 in Perched Aquifer
USDOE/NNSA Pantex Plant
Chromium, Total Trend**

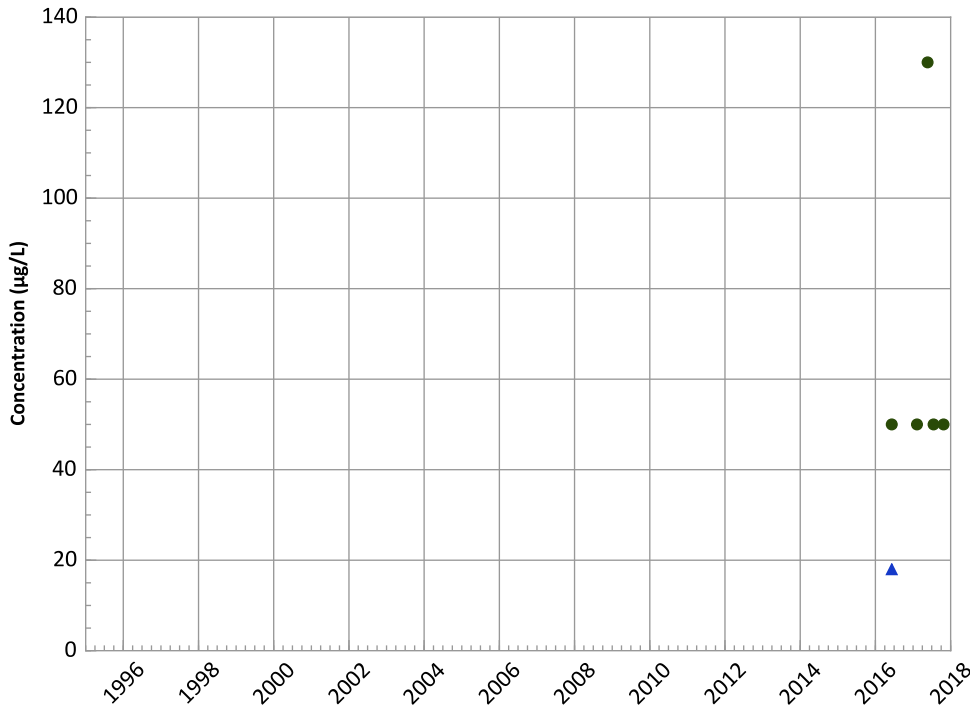


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

MAROS Linear Regression Method
Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

Aluminum Trend

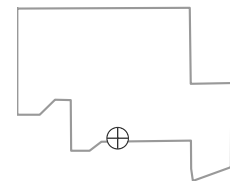


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Samples in Dataset)
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method
Data ():
N/A (<4 Detections in Dataset)
All Data
N/A (<4 Detections in Dataset)

Well Location

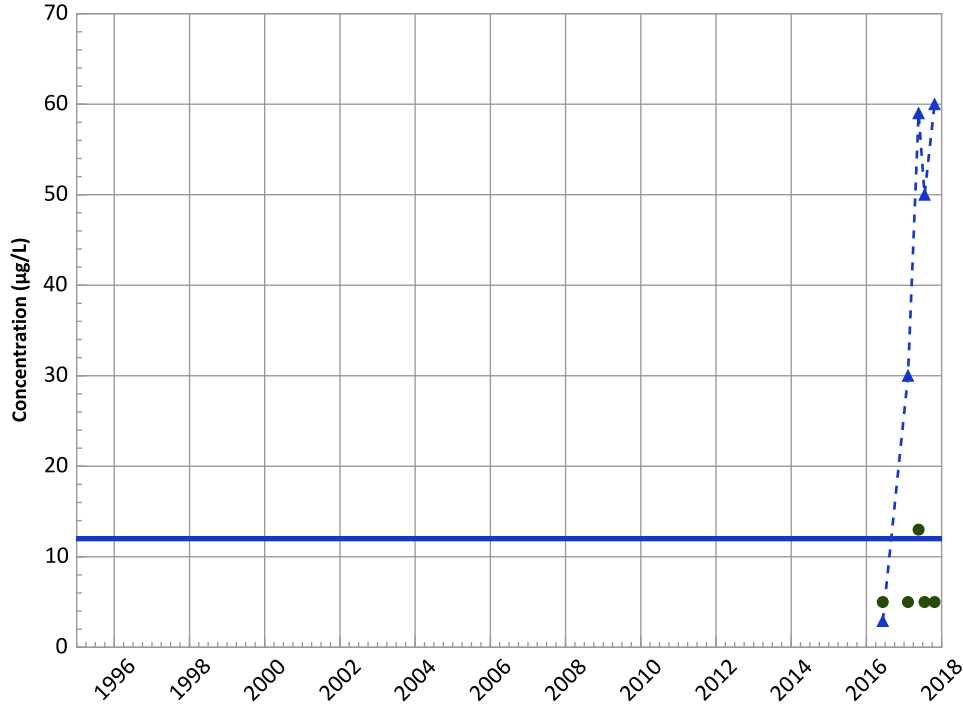


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/08/2016 to 10/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1173 in Perched Aquifer
USDOE/NNSA Pantex Plant

Arsenic Trend



Concentration Trend

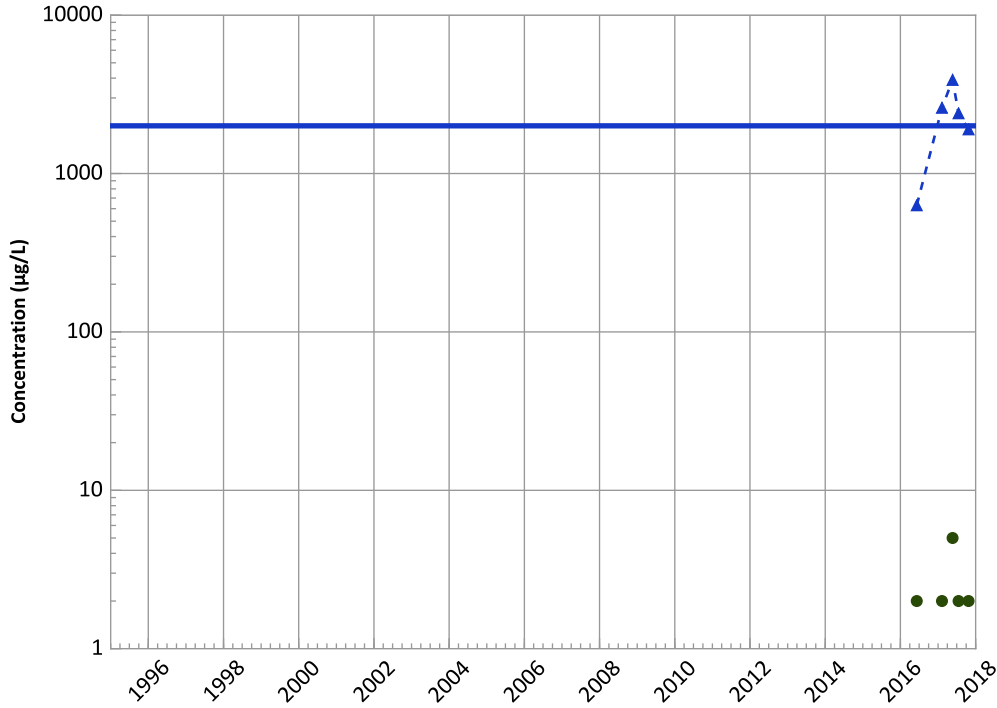
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
Increasing

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Increasing

Barium Trend



Concentration Trend

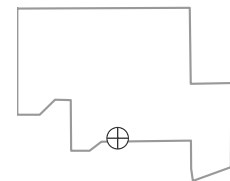
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
Stable

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Probably Increasing

Well Location

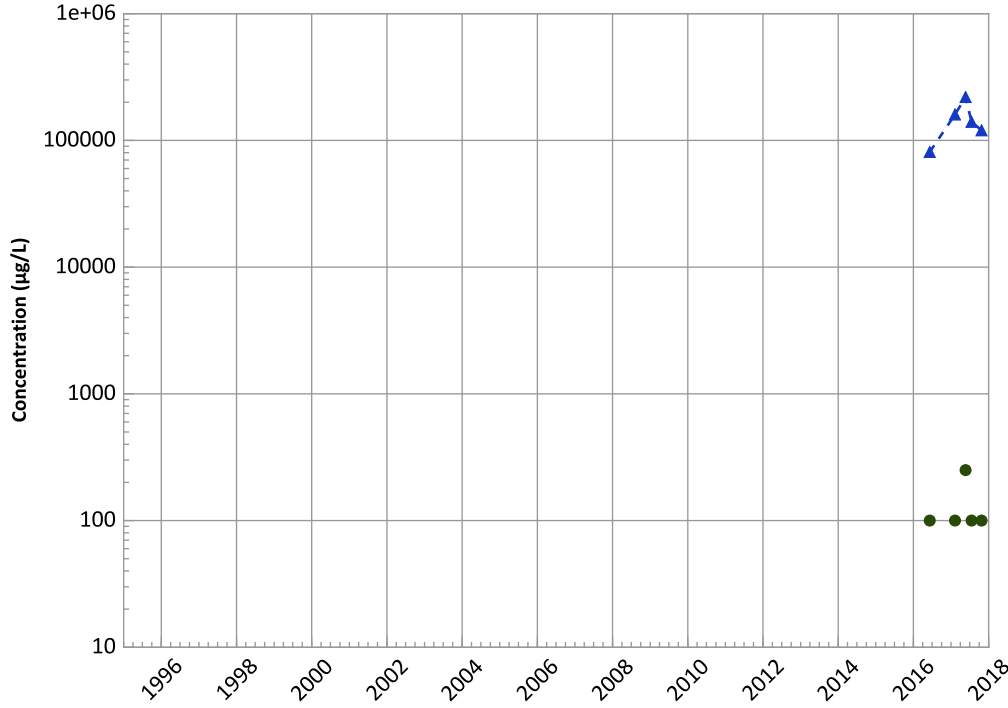


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/08/2016 to 10/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1173 in Perched Aquifer
USDOE/NNSA Pantex Plant

Calcium Trend



Concentration Trend

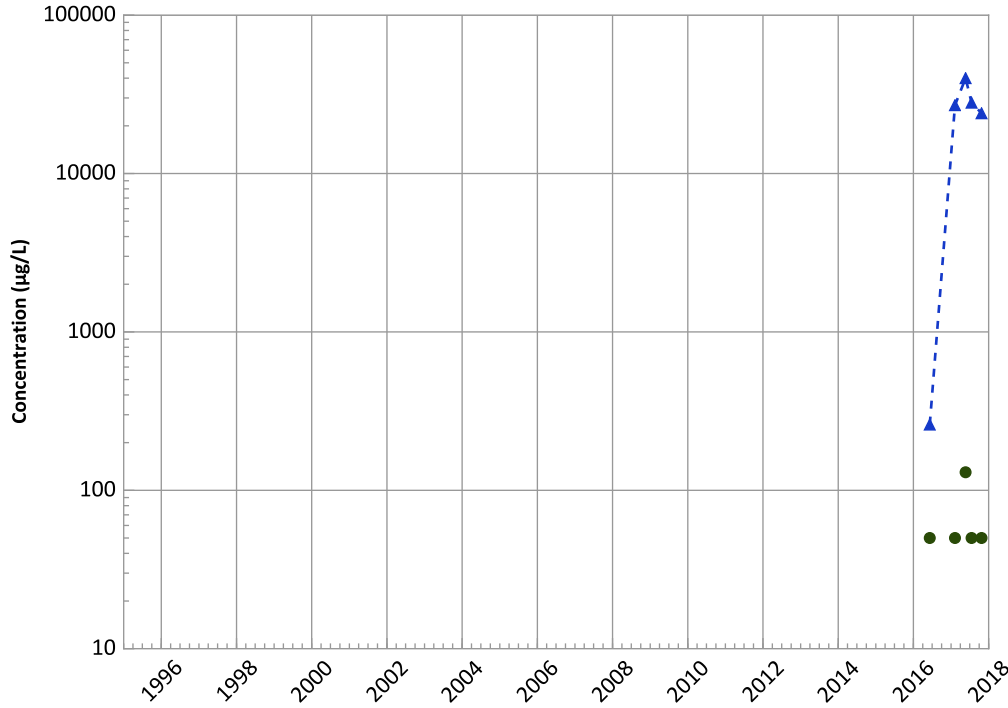
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
Stable

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
No Trend

Iron Trend



Concentration Trend

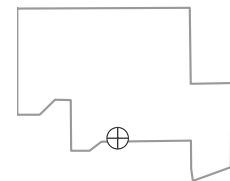
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
No Trend

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Increasing

Well Location

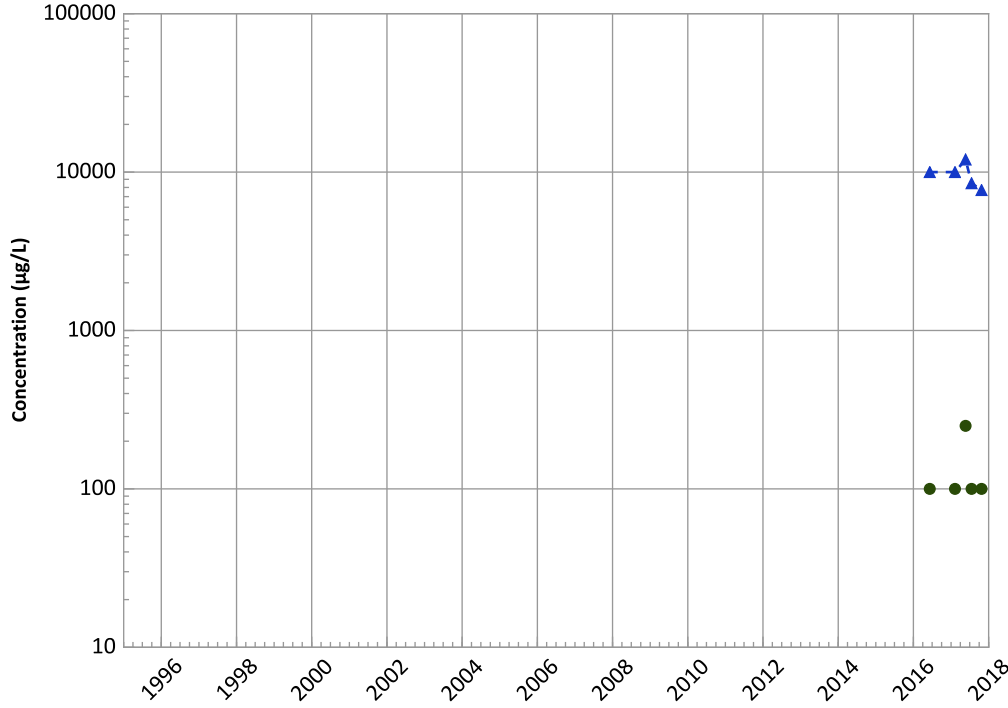


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/08/2016 to 10/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1173 in Perched Aquifer
USDOE/NNSA Pantex Plant

Potassium Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

Decreasing

MAROS Linear Regression Method

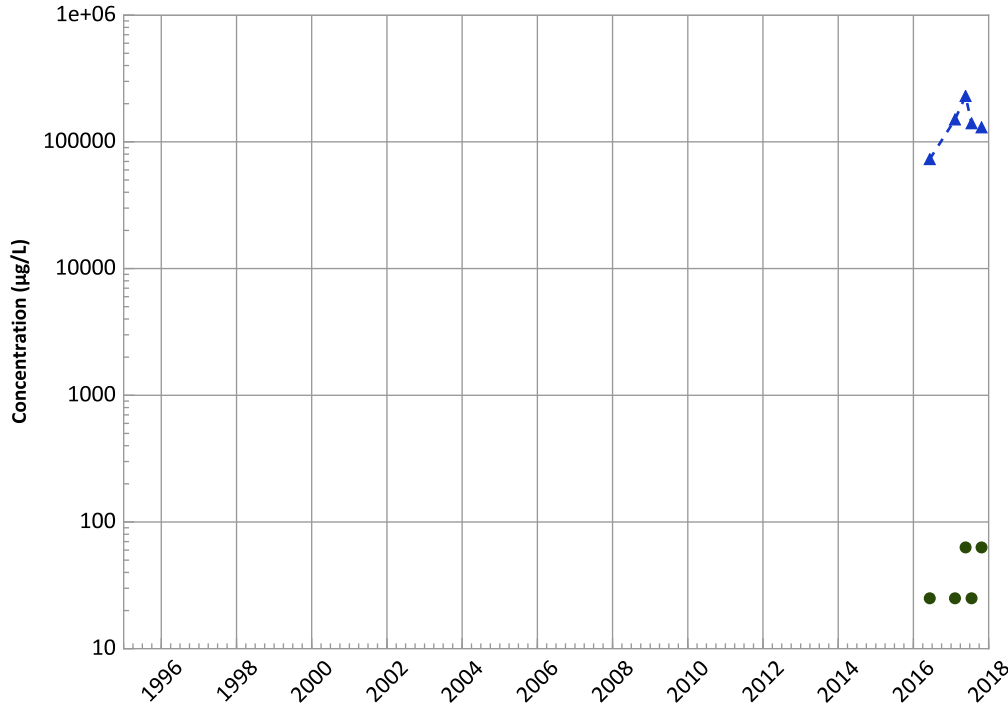
Data ():

N/A (<4 Detections in Dataset)

All Data

Stable

Magnesium Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

Stable

MAROS Linear Regression Method

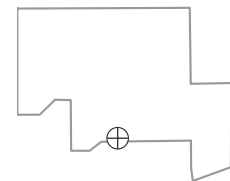
Data ():

N/A (<4 Detections in Dataset)

All Data

No Trend

Well Location

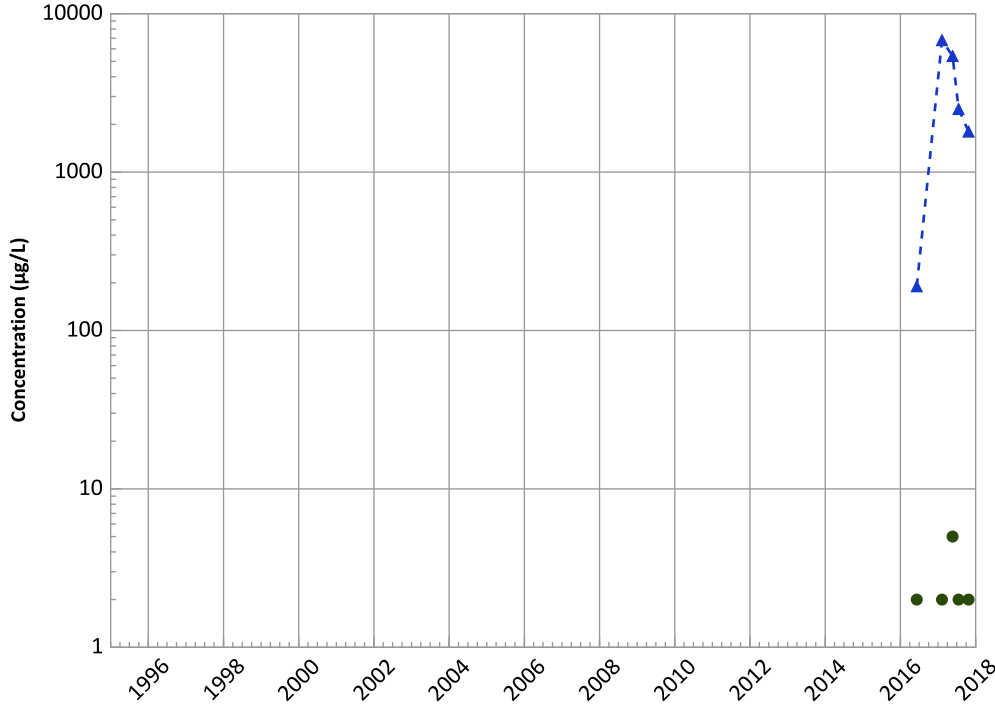


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/08/2016 to 10/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1173 in Perched Aquifer
USDOE/NNSA Pantex Plant

Manganese Trend

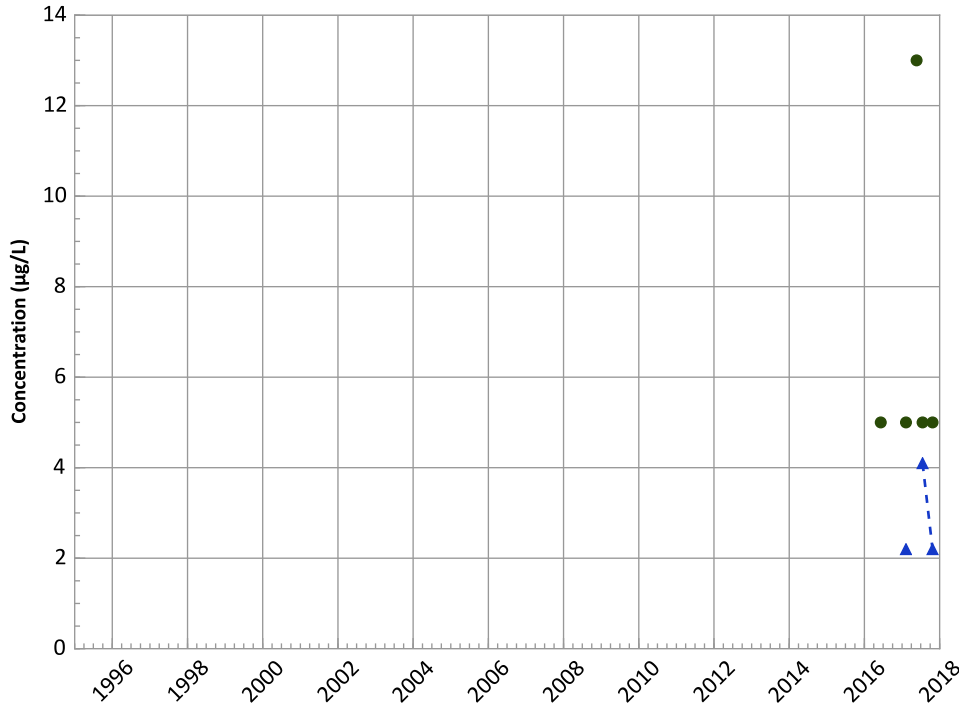


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Samples in Dataset)
All Data
Decreasing

MAROS Linear Regression Method
Data ():
N/A (<4 Detections in Dataset)
All Data
No Trend

Molybdenum Trend

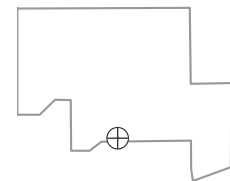


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Samples in Dataset)
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method
Data ():
N/A (<4 Samples in Dataset)
All Data
N/A (<4 Detections in Dataset)

Well Location

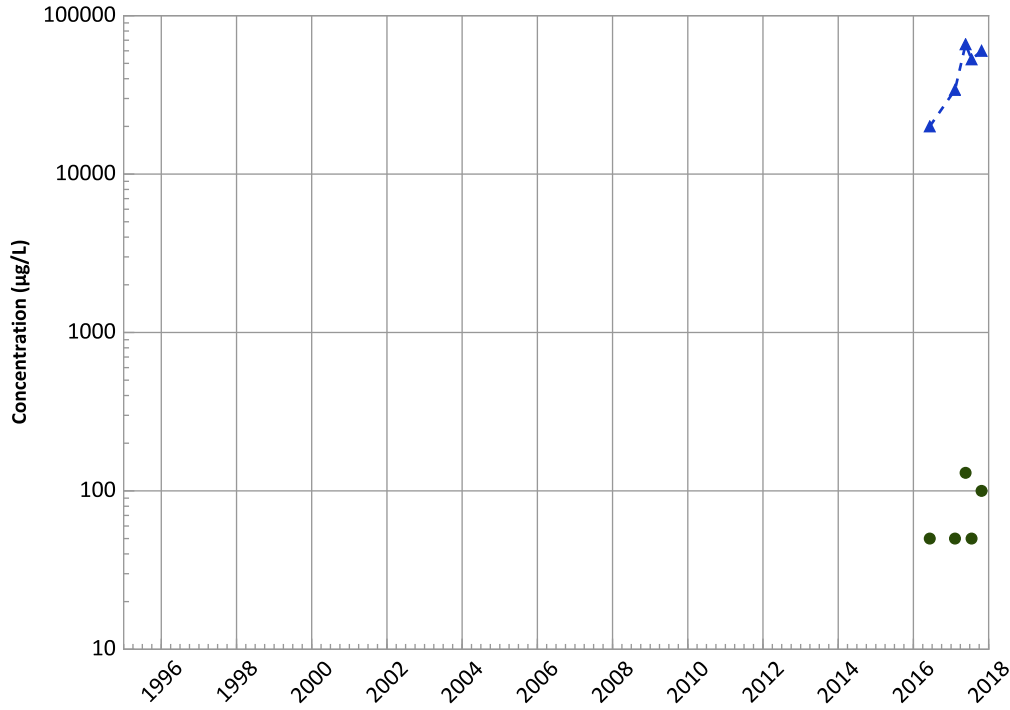


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/08/2016 to 10/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1173 in Perched Aquifer
USDOE/NNSA Pantex Plant

Sodium Trend



Concentration Trend

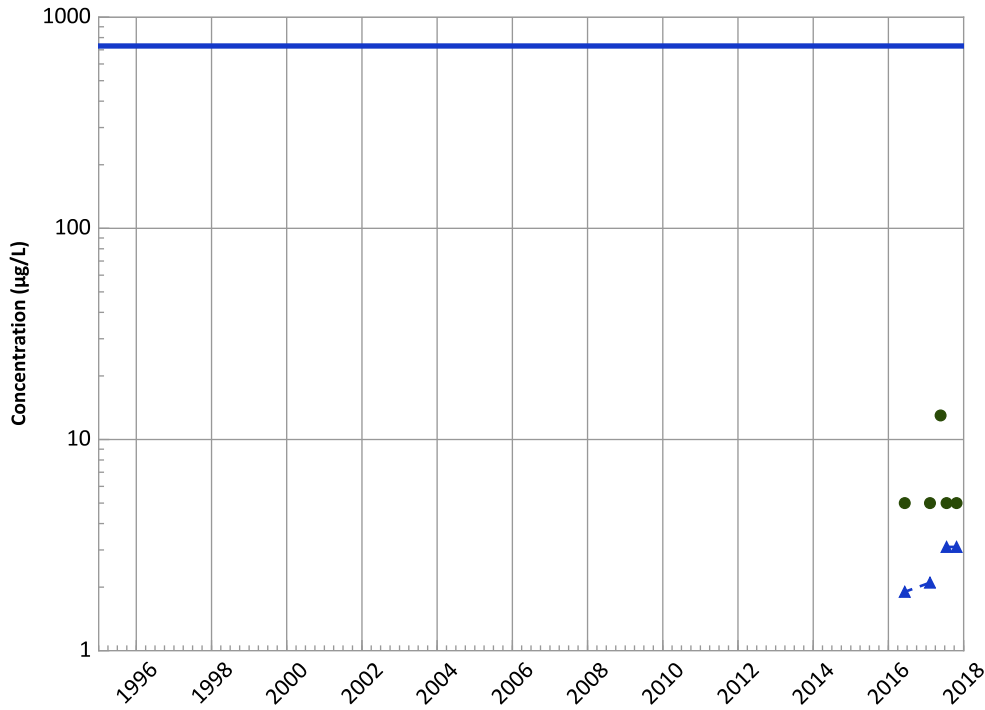
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
No Trend

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Increasing

Nickel Trend



Concentration Trend

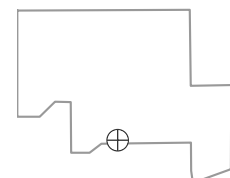
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
No Trend

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Increasing

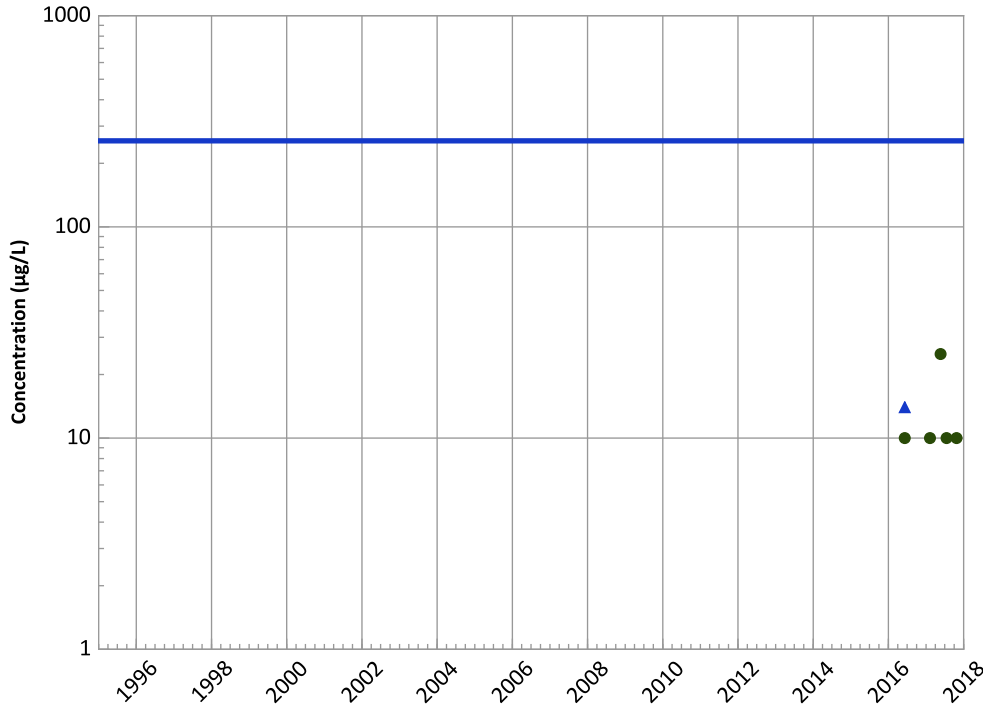
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/08/2016 to 10/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1173 in Perched Aquifer
USDOE/NNSA Pantex Plant
Vanadium Trend**

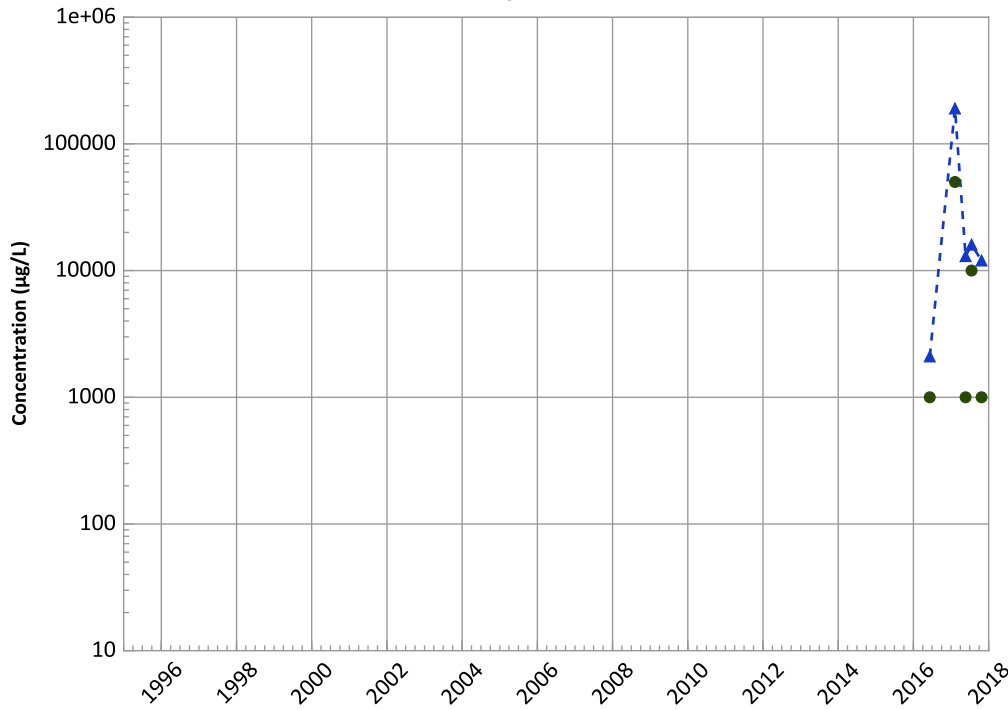


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Samples in Dataset)
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method
Data ():
N/A (<4 Detections in Dataset)
All Data
N/A (<4 Detections in Dataset)

Total Organic Carbon Trend

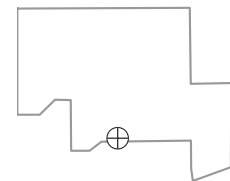


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Samples in Dataset)
All Data
No Trend

MAROS Linear Regression Method
Data ():
N/A (<4 Detections in Dataset)
All Data
No Trend

Well Location

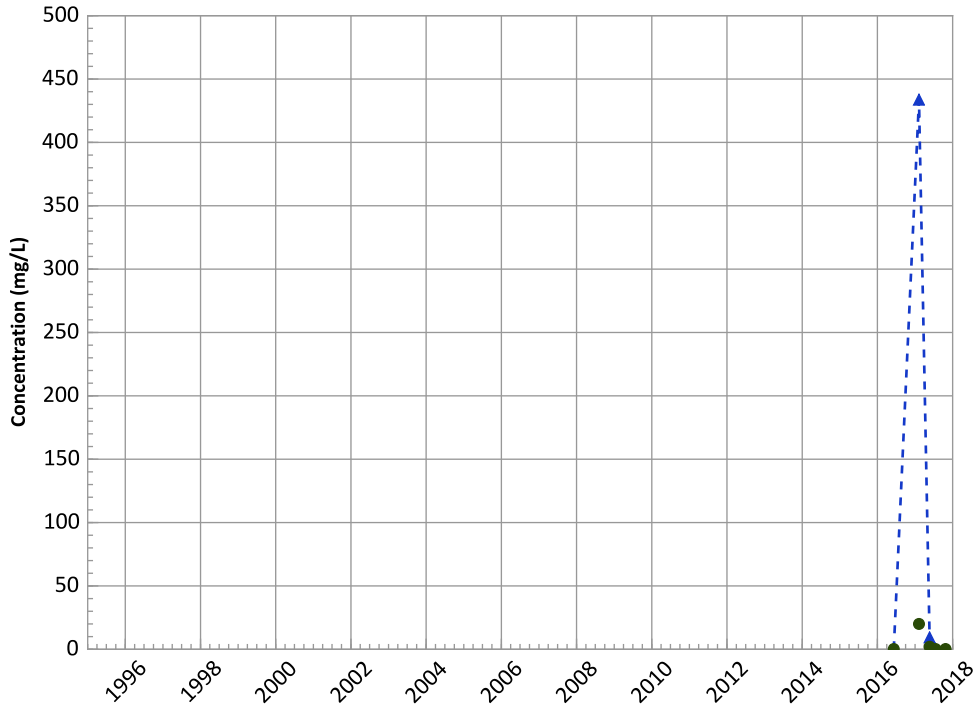


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/08/2016 to 10/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1173 in Perched Aquifer
USDOE/NNSA Pantex Plant

Total Volatile Fatty Acids Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
Decreasing

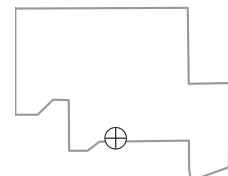
MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
No Trend

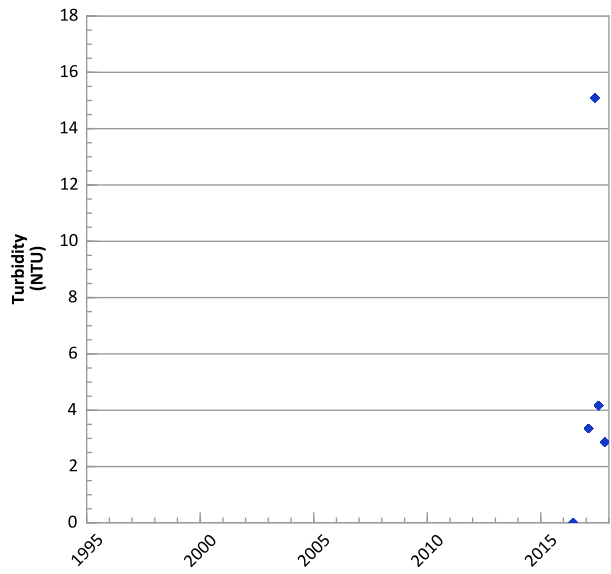
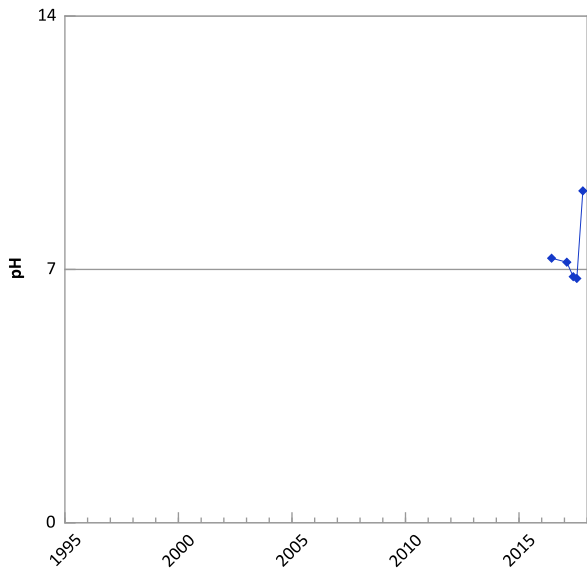
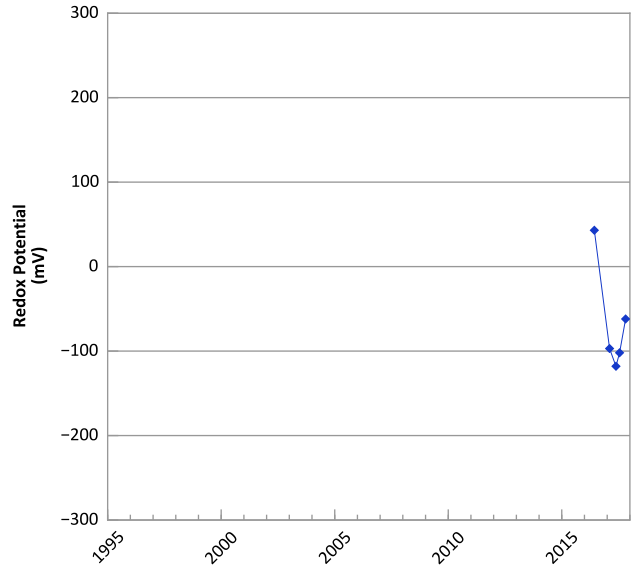
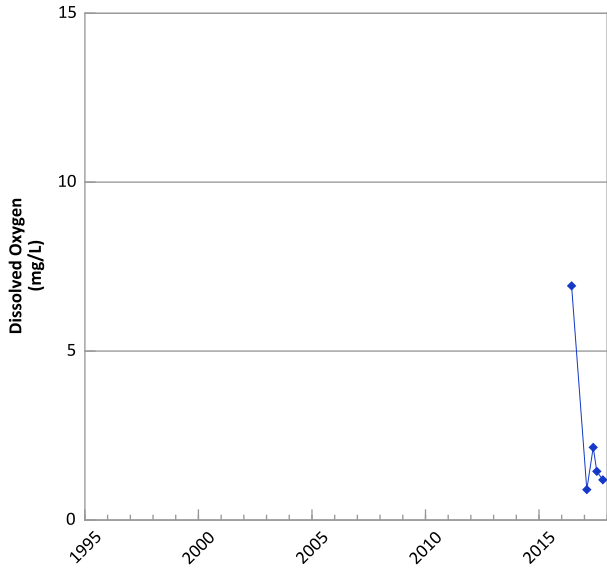
Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/08/2016 to 10/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

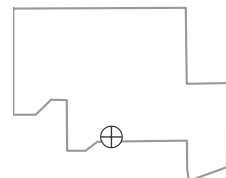


**PTX06-1174 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



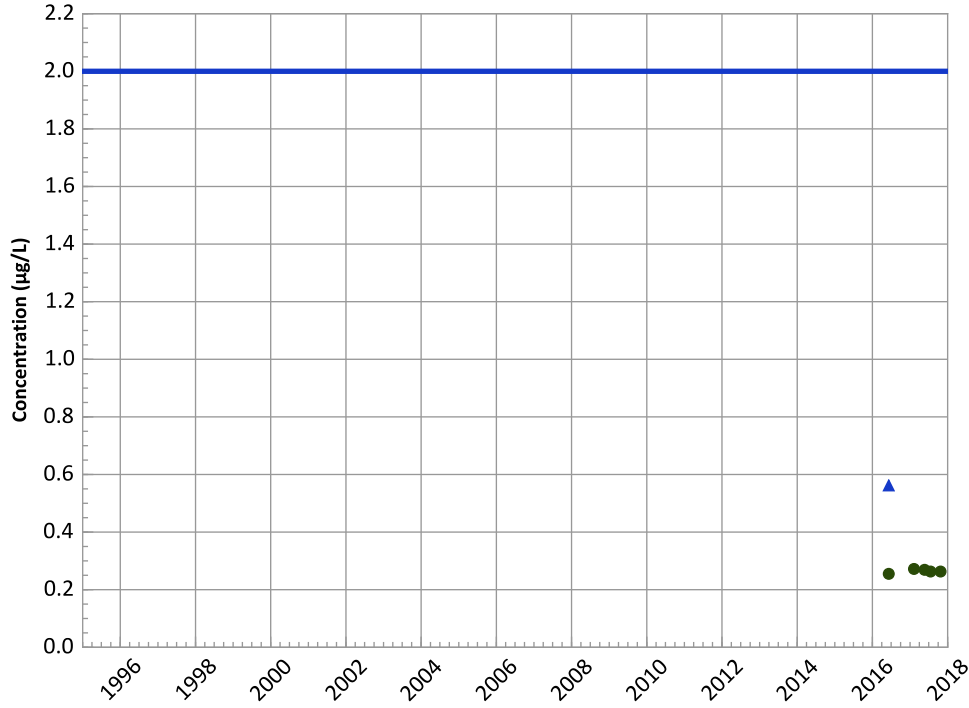
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 06/08/2016 to 10/24/2017
 Analysis Date: 03/21/2018

Well Location



PTX06-1174 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

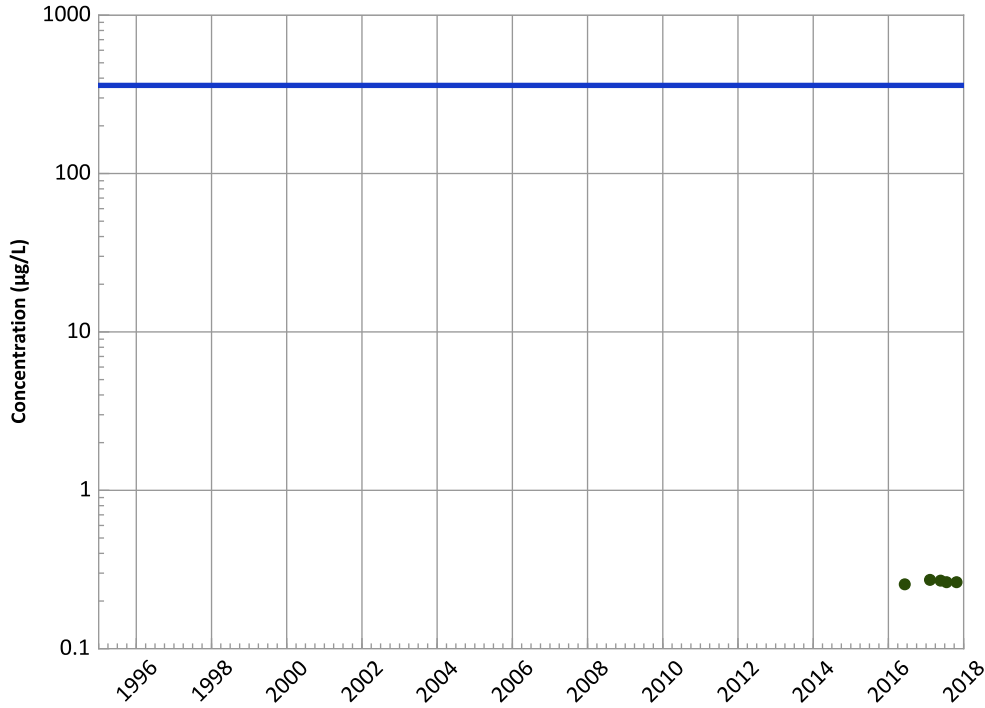
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
N/A (<4 Detections in Dataset)

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

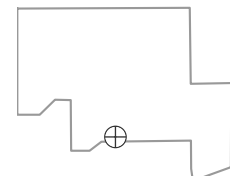
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

Well Location

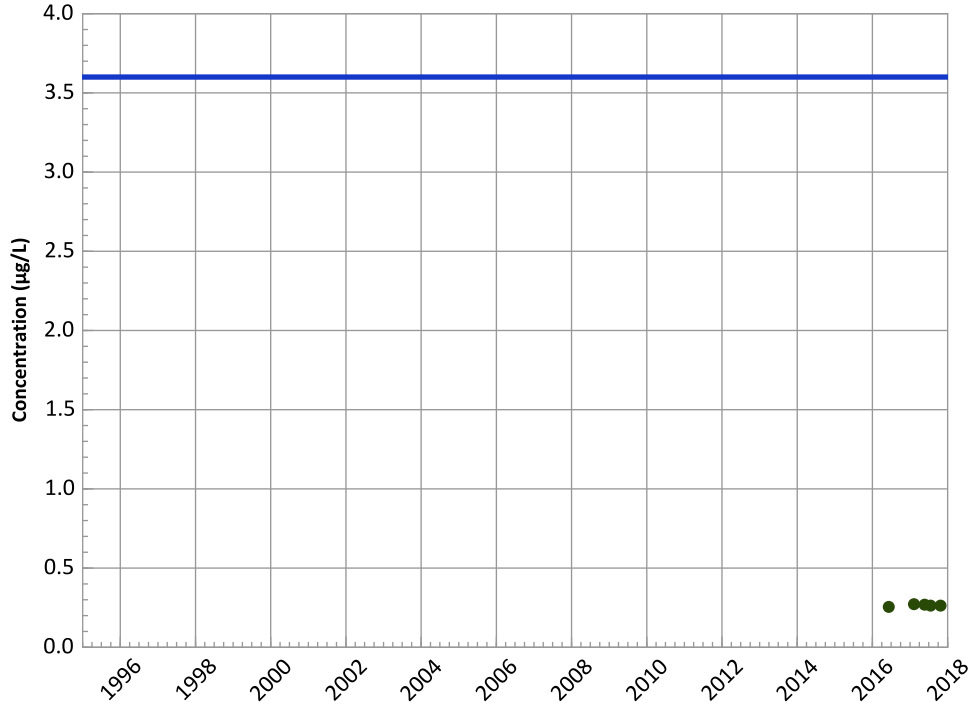


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/08/2016 to 10/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1174 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

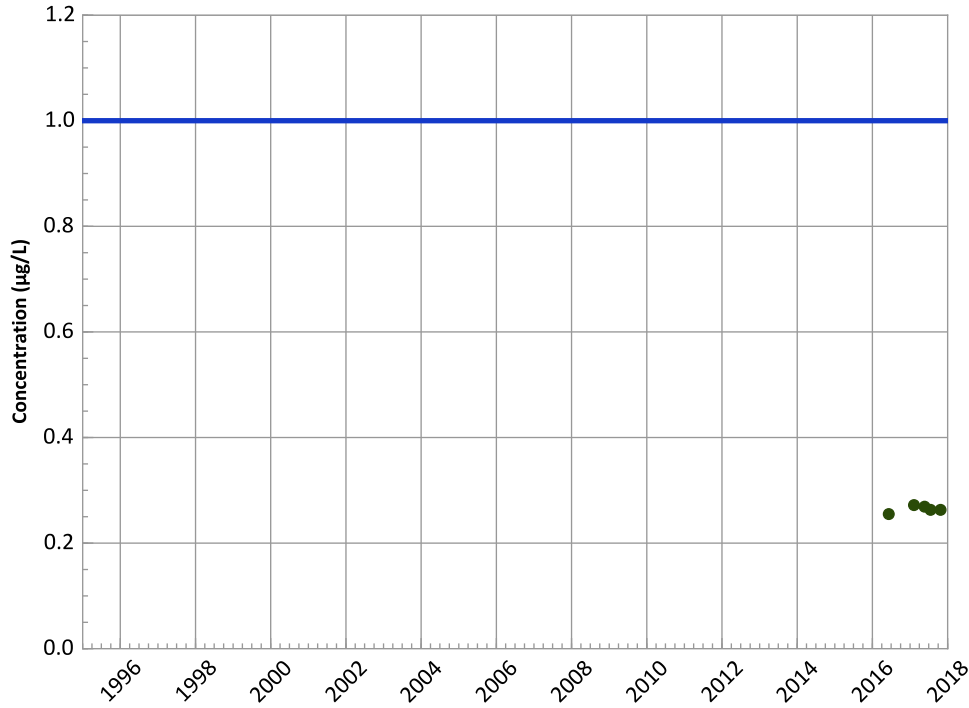
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

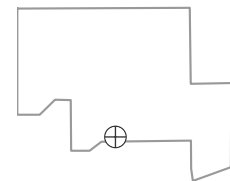
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

Well Location

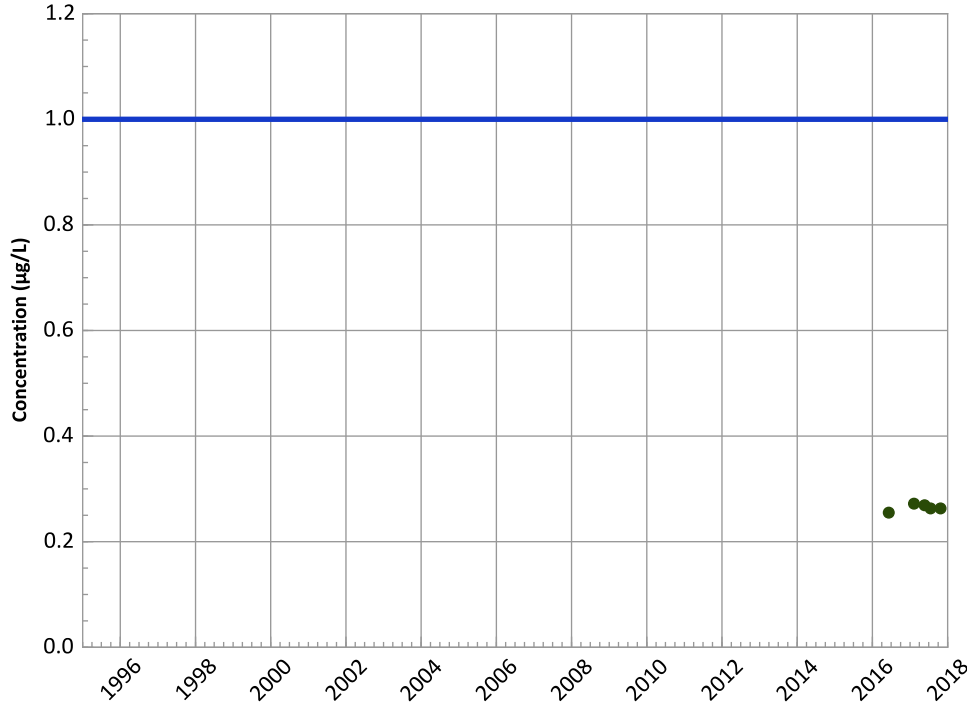


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/08/2016 to 10/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1174 in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

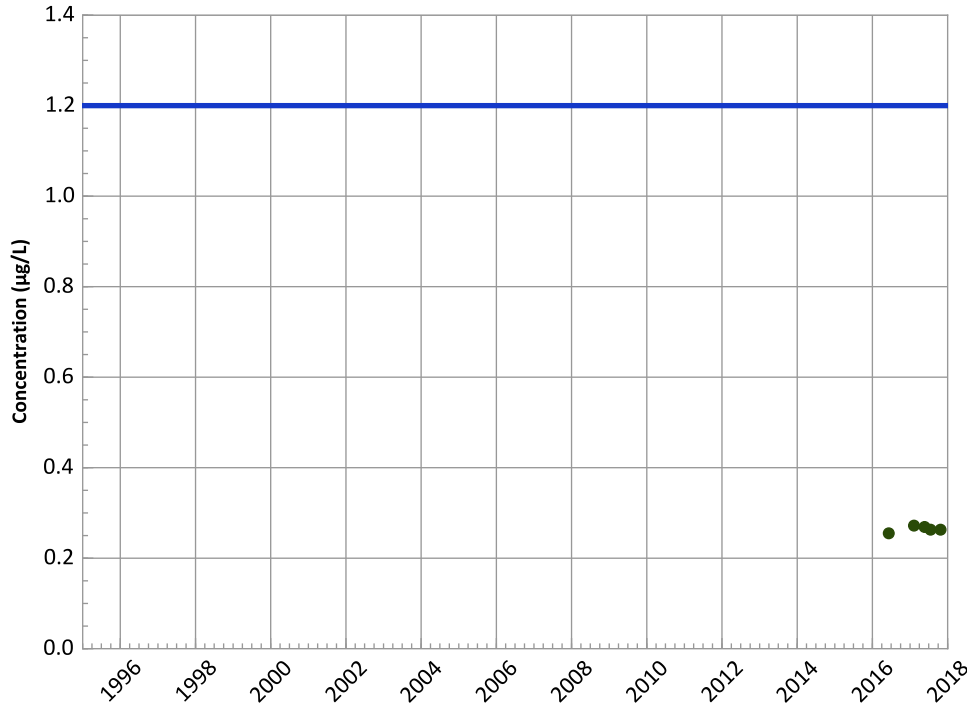
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

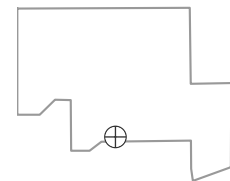
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

Well Location

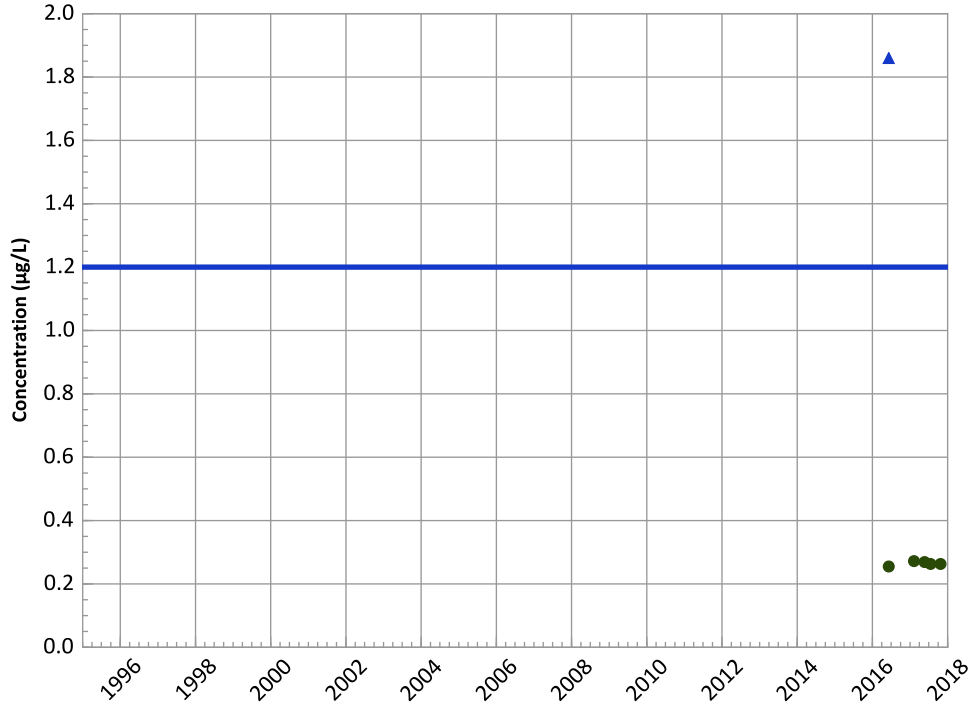


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/08/2016 to 10/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1174 in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

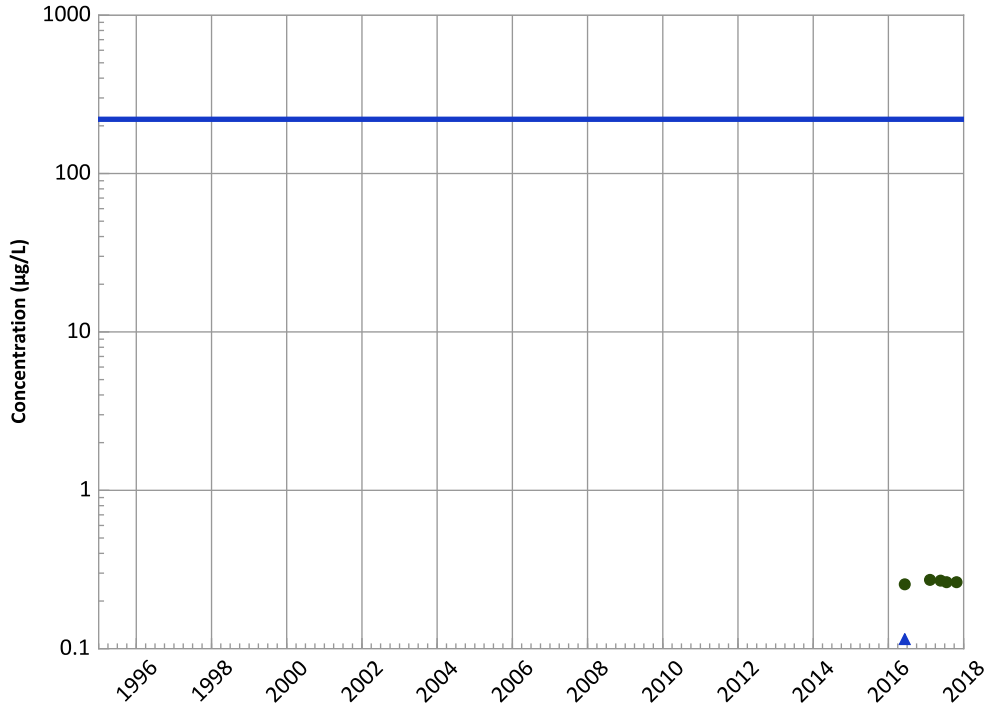
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
N/A (<4 Detections in Dataset)

1,3,5-Trinitrobenzene Trend



Concentration Trend

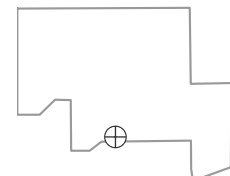
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
N/A (<4 Detections in Dataset)

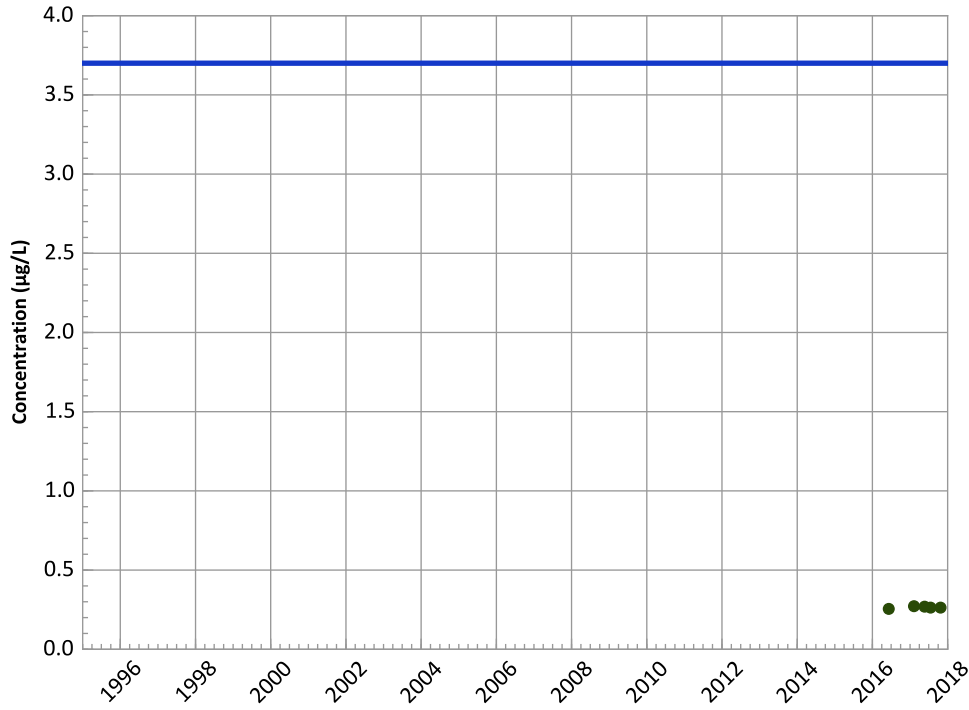
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/08/2016 to 10/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1174 in Perched Aquifer
USDOE/NNSA Pantex Plant
1,3-Dinitrobenzene Trend**

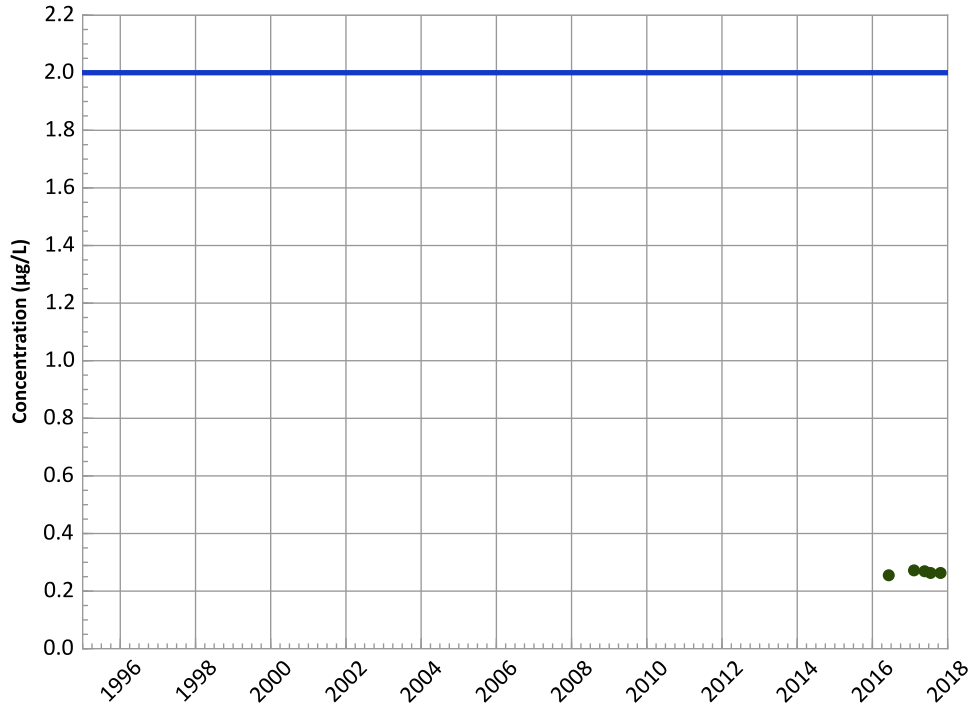


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

MAROS Linear Regression Method
Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

Hexahydro-1-Nitroso-3,5-Dinitro-1,3,5-Triazine (MNX) Trend



Concentration Trend

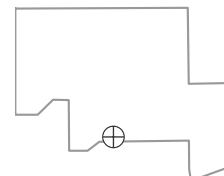
MAROS Mann-Kendall Method
Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

MAROS Linear Regression Method
Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/08/2016 to 10/24/2017
Analysis Date: 03/21/2018

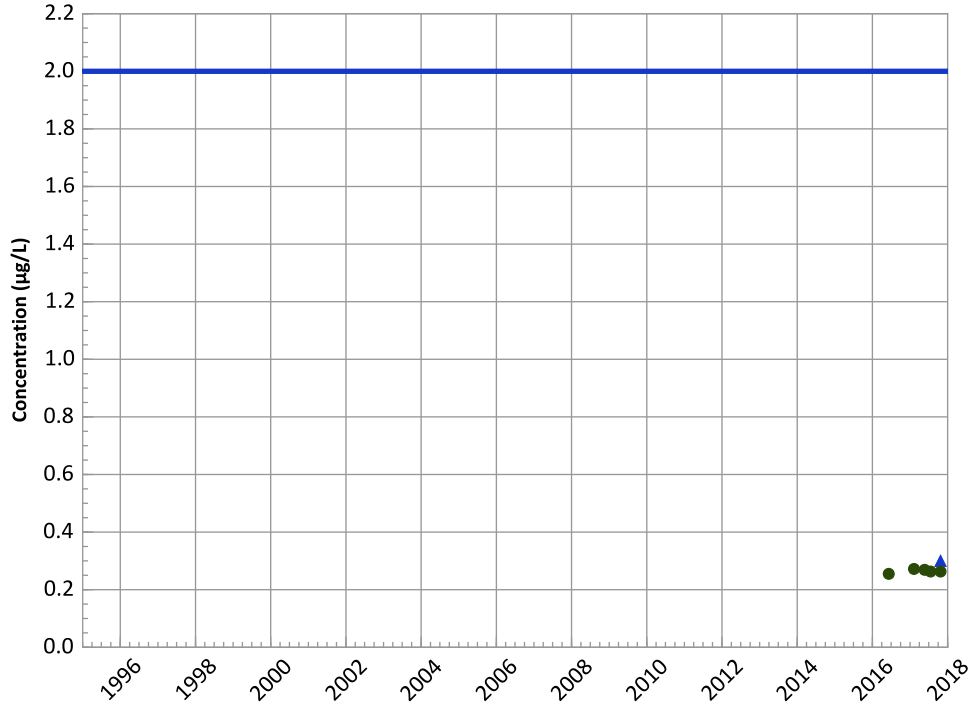
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1174 in Perched Aquifer
USDOE/NNSA Pantex Plant

Hexahydro-1,3-Dinitroso-5-Nitro-1,3,5-Triazine (DNX) Trend



Concentration Trend

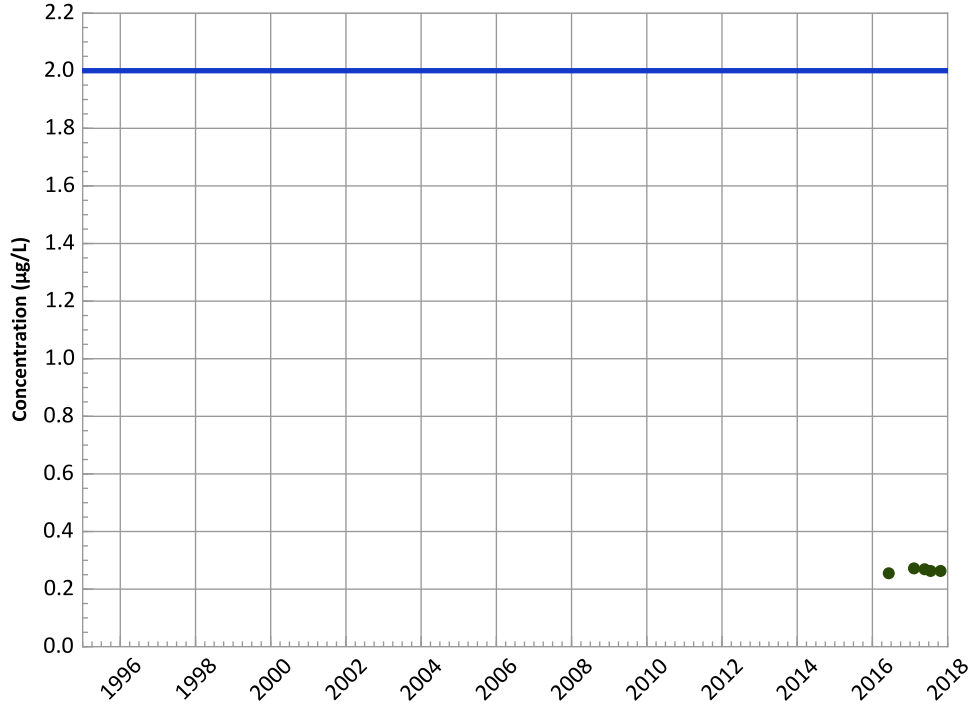
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
N/A (<4 Samples in Dataset)
All Data
N/A (<4 Detections in Dataset)

Hexahydro-1,3,5-Trinitroso-1,3,5-Triazine (TNX) Trend



Concentration Trend

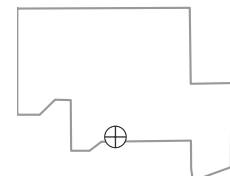
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

Well Location

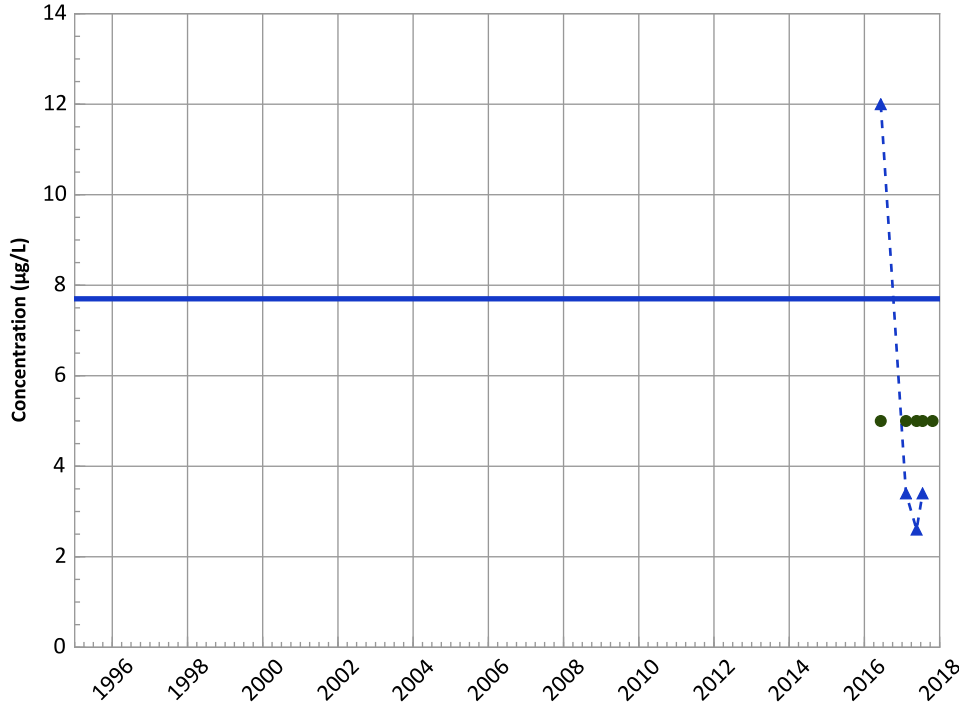


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/08/2016 to 10/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1174 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,4-Dioxane (p-Dioxane) Trend



Concentration Trend

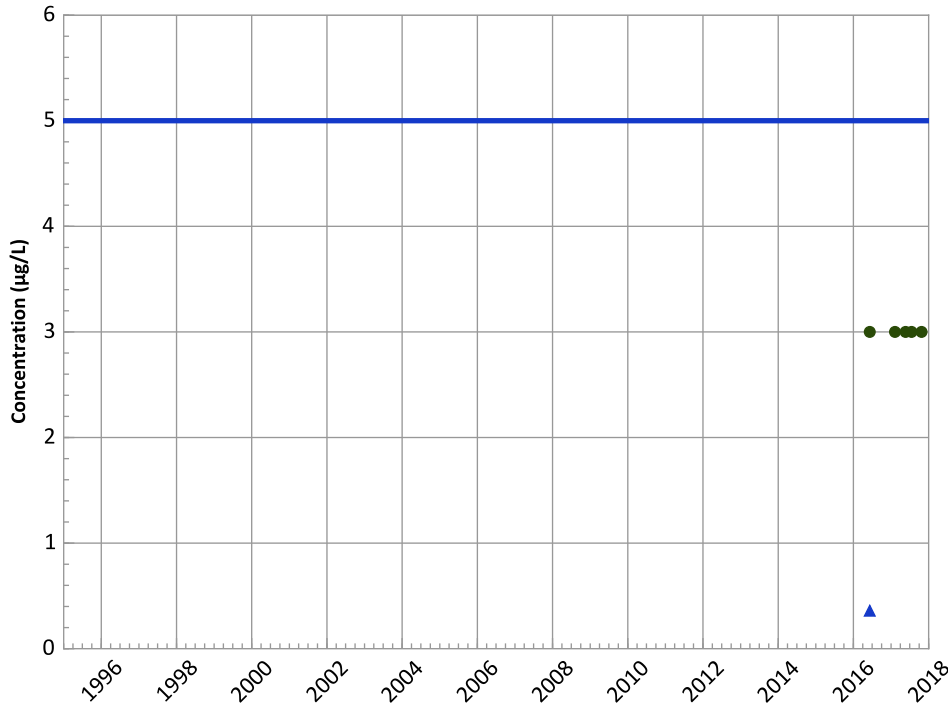
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
Decreasing

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

Tetrachloroethylene (PCE) Trend



Concentration Trend

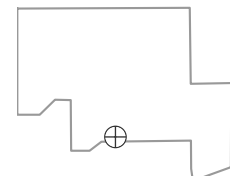
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
N/A (<4 Detections in Dataset)

Well Location

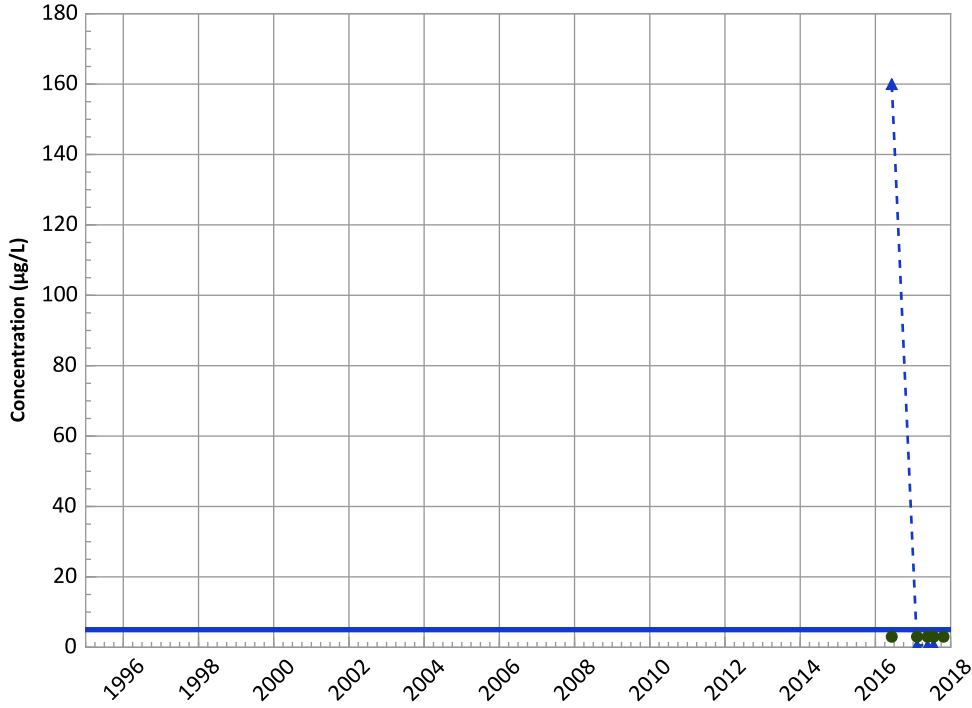


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/08/2016 to 10/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1174 in Perched Aquifer
USDOE/NNSA Pantex Plant

Trichloroethene Trend



Concentration Trend

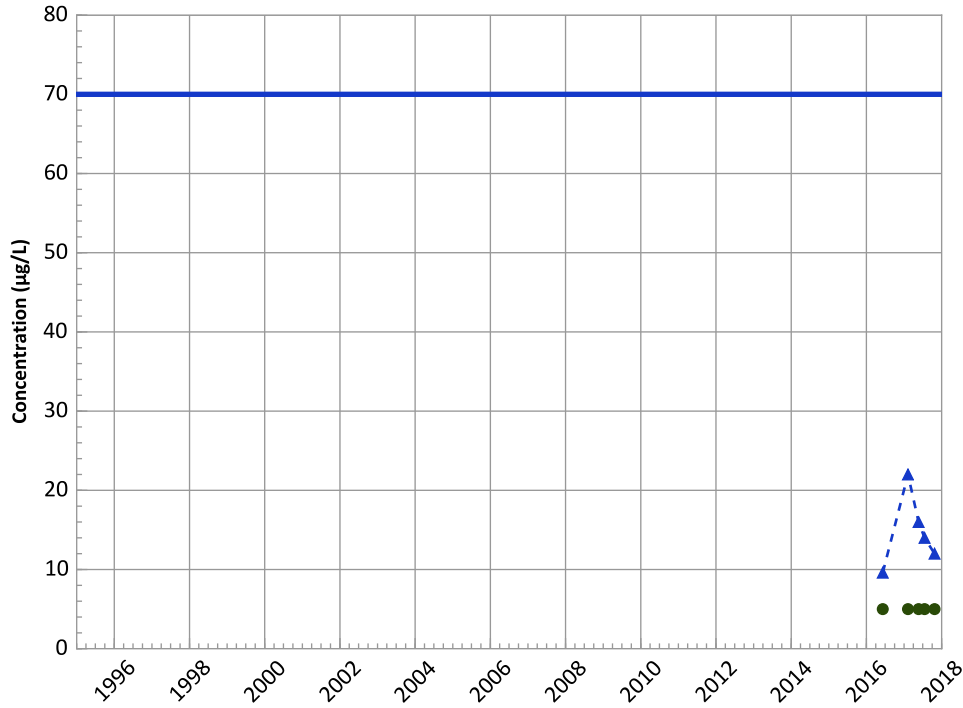
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
No Trend

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

cis-1,2-Dichloroethene Trend



Concentration Trend

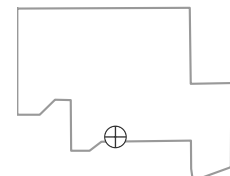
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
Decreasing

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
No Trend

Well Location

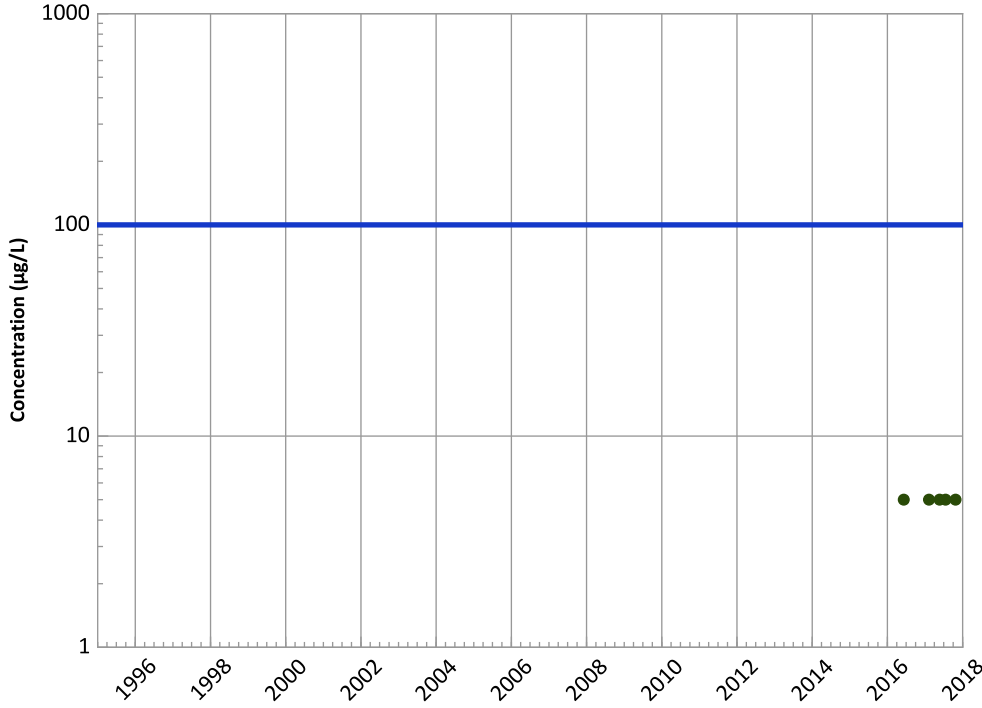


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/08/2016 to 10/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1174 in Perched Aquifer
USDOE/NNSA Pantex Plant

trans-1,2-Dichloroethene Trend



Concentration Trend

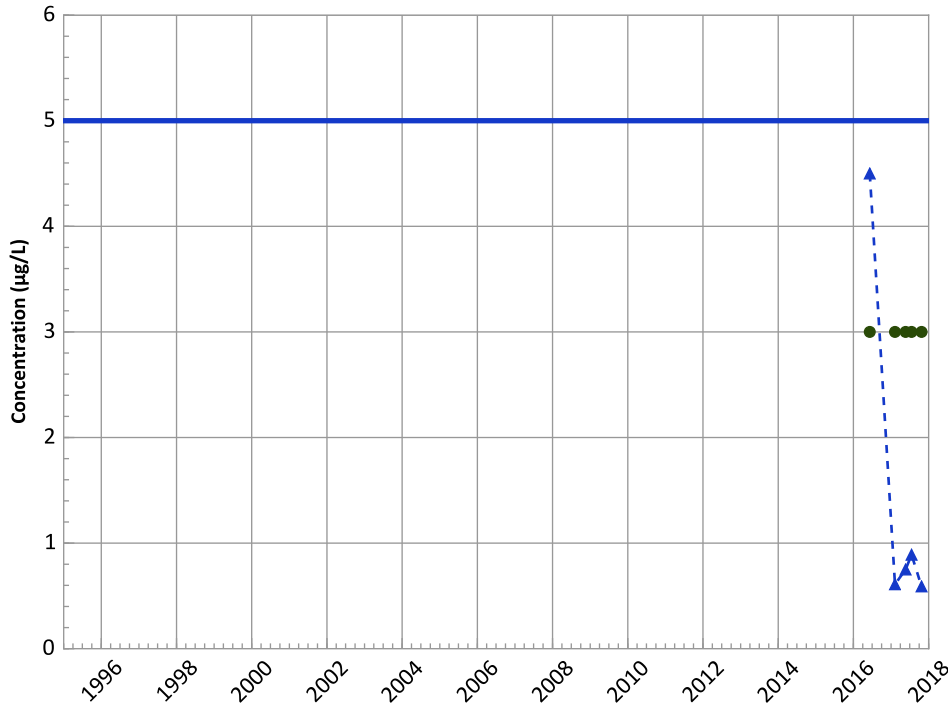
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

1,2-Dichloroethane Trend



Concentration Trend

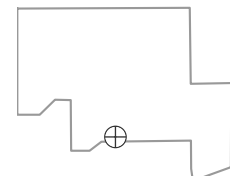
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
Decreasing

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

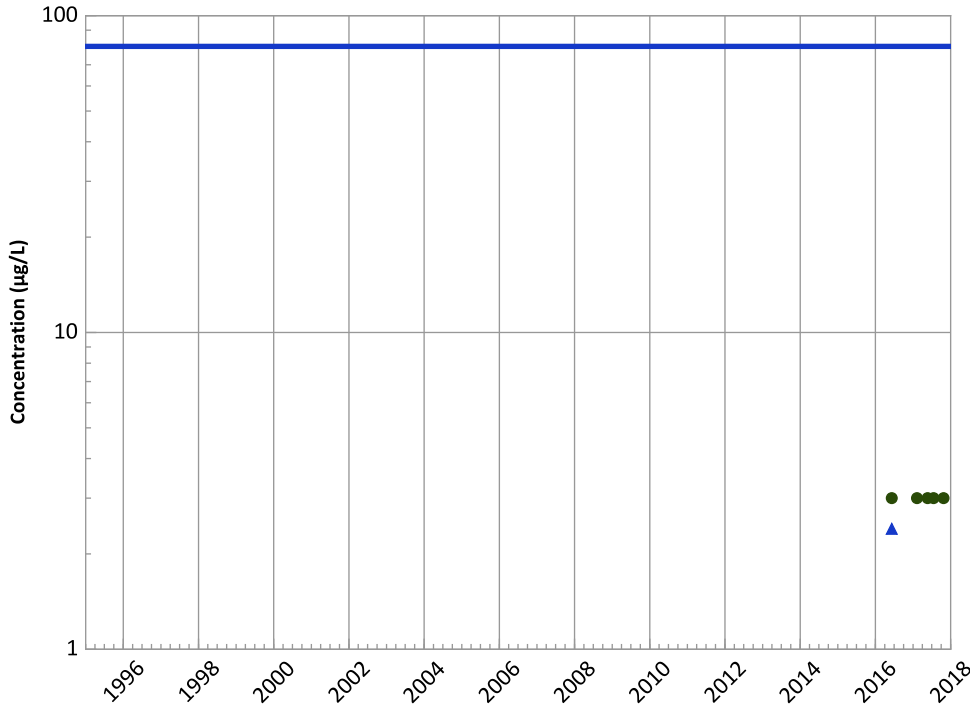
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/08/2016 to 10/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1174 in Perched Aquifer
USDOE/NNSA Pantex Plant
Chloroform Trend**



Concentration Trend

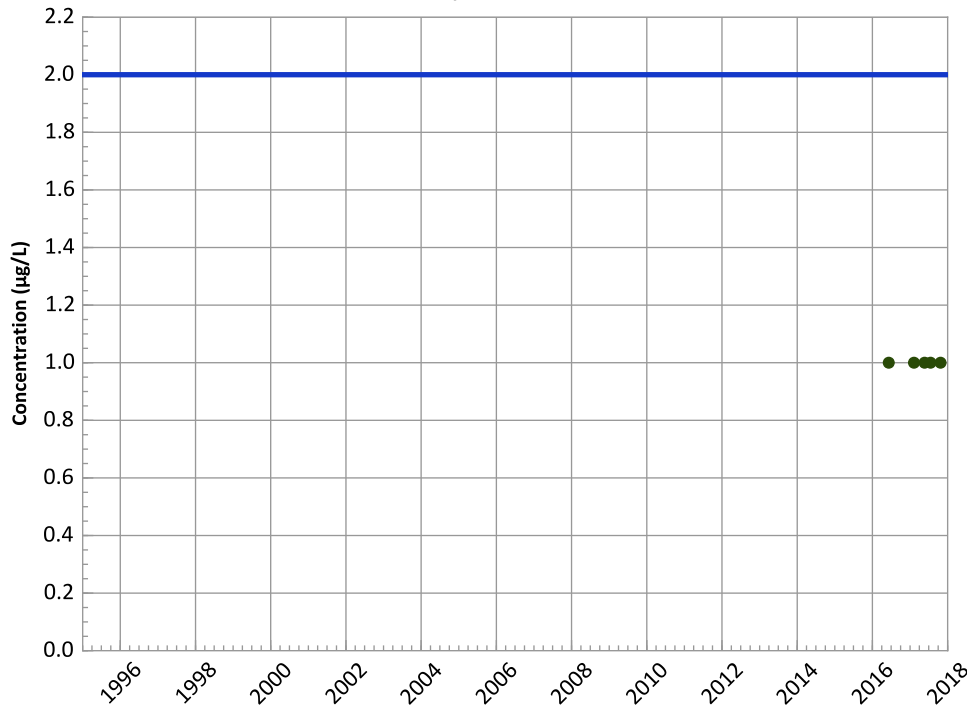
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
N/A (<4 Detections in Dataset)

Vinyl Chloride Trend



Concentration Trend

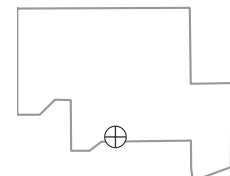
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

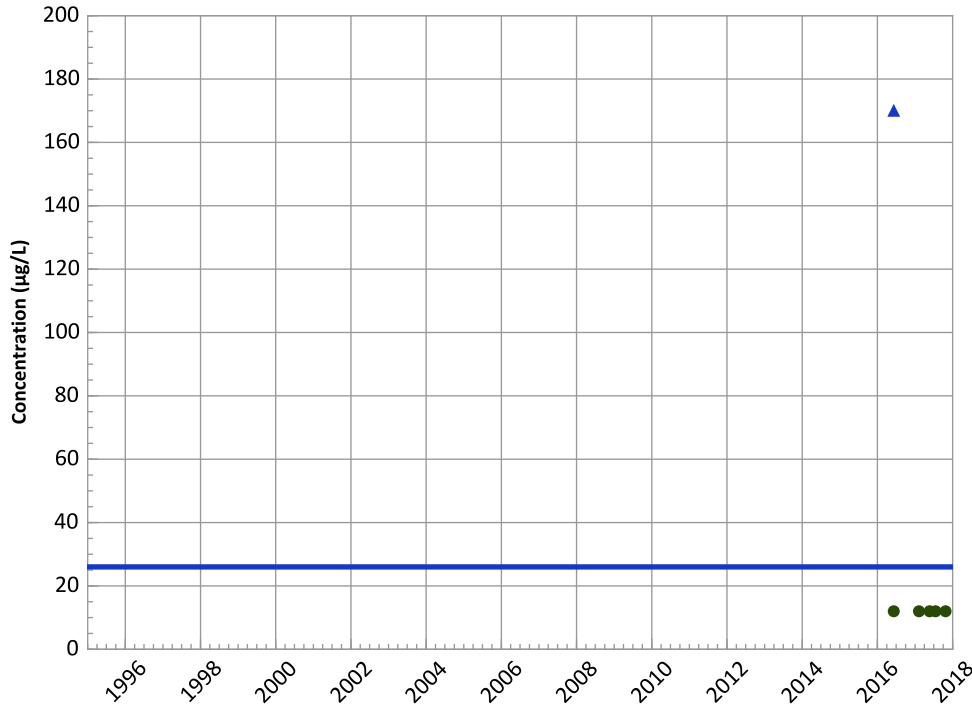
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/08/2016 to 10/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- Concentration Trend
- Groundwater Protection Standard

**PTX06-1174 in Perched Aquifer
USDOE/NNSA Pantex Plant
Perchlorate Trend**

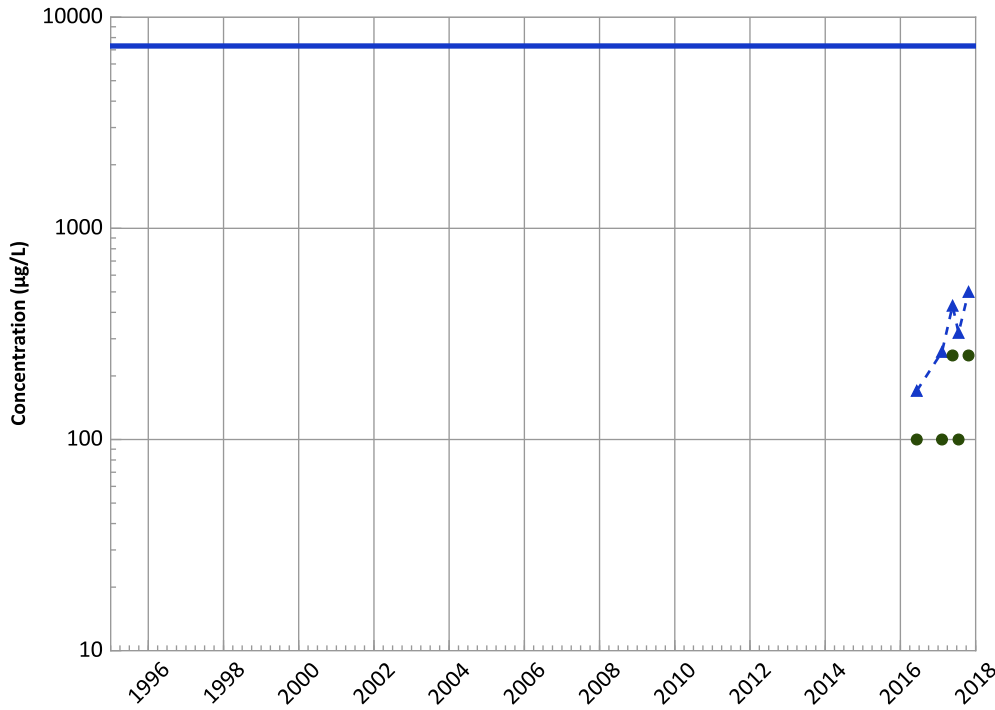


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Samples in Dataset)
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method
Data ():
N/A (<4 Detections in Dataset)
All Data
N/A (<4 Detections in Dataset)

Boron Trend

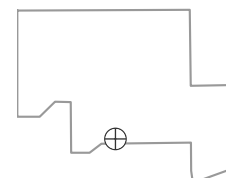


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Samples in Dataset)
All Data
Increasing

MAROS Linear Regression Method
Data ():
N/A (<4 Detections in Dataset)
All Data
Increasing

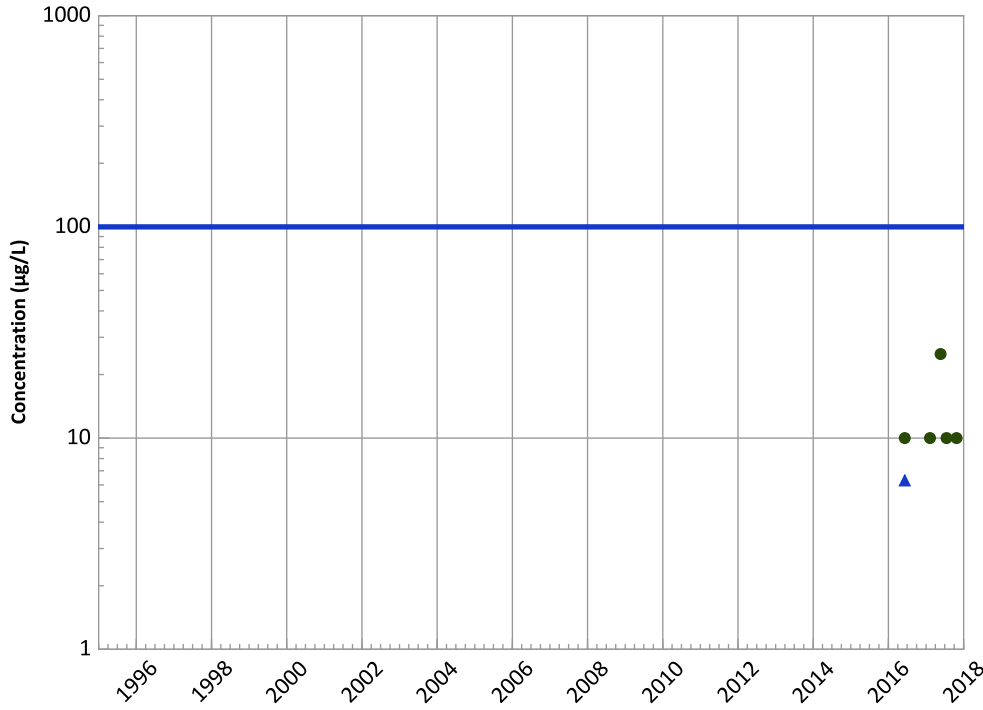
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/08/2016 to 10/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1174 in Perched Aquifer
USDOE/NNSA Pantex Plant
Chromium, Total Trend**

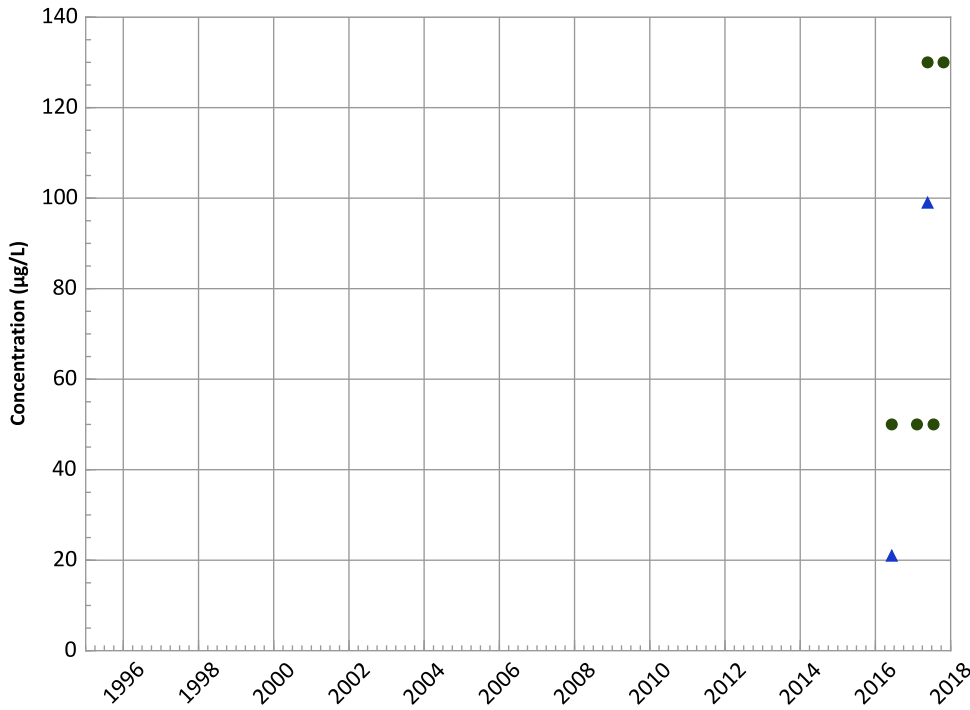


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Samples in Dataset)
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method
Data ():
N/A (<4 Detections in Dataset)
All Data
N/A (<4 Detections in Dataset)

Aluminum Trend

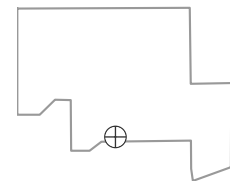


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Samples in Dataset)
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method
Data ():
N/A (<4 Detections in Dataset)
All Data
N/A (<4 Detections in Dataset)

Well Location

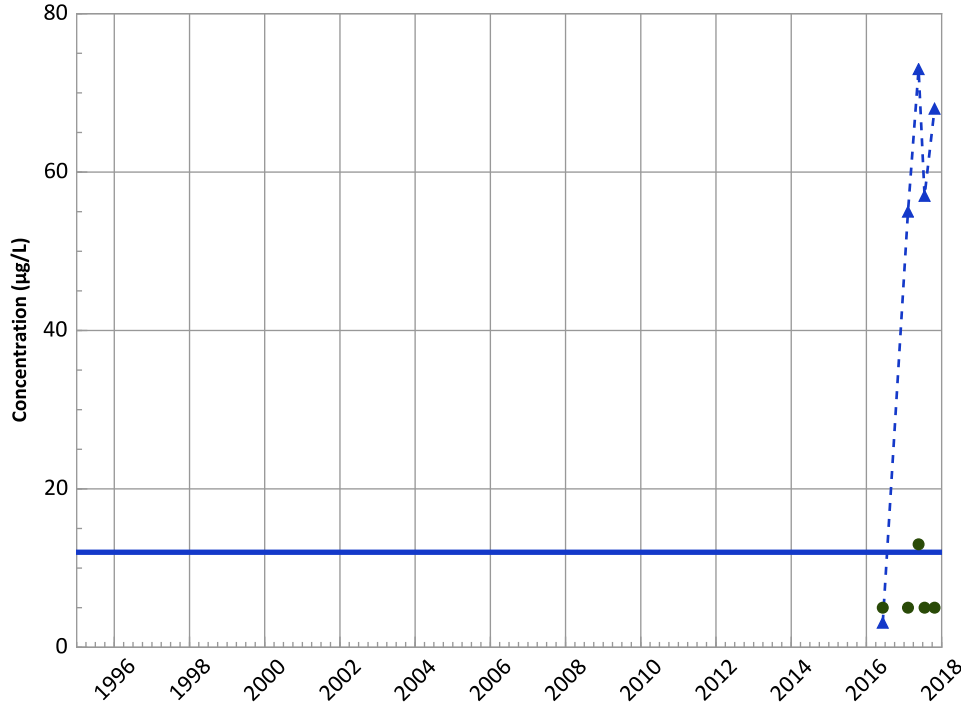


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/08/2016 to 10/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- Concentration Trend
- Groundwater Protection Standard

PTX06-1174 in Perched Aquifer
USDOE/NNSA Pantex Plant

Arsenic Trend



Concentration Trend

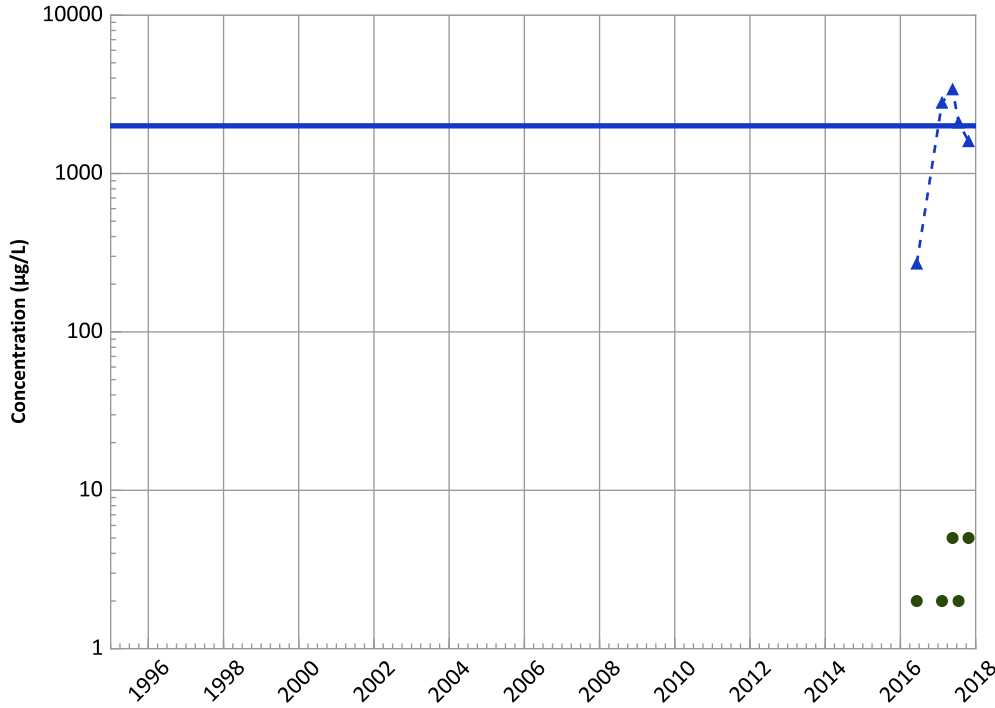
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
No Trend

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Increasing

Barium Trend



Concentration Trend

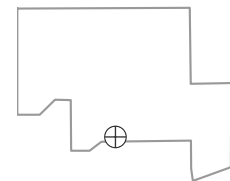
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
Stable

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Probably Increasing

Well Location

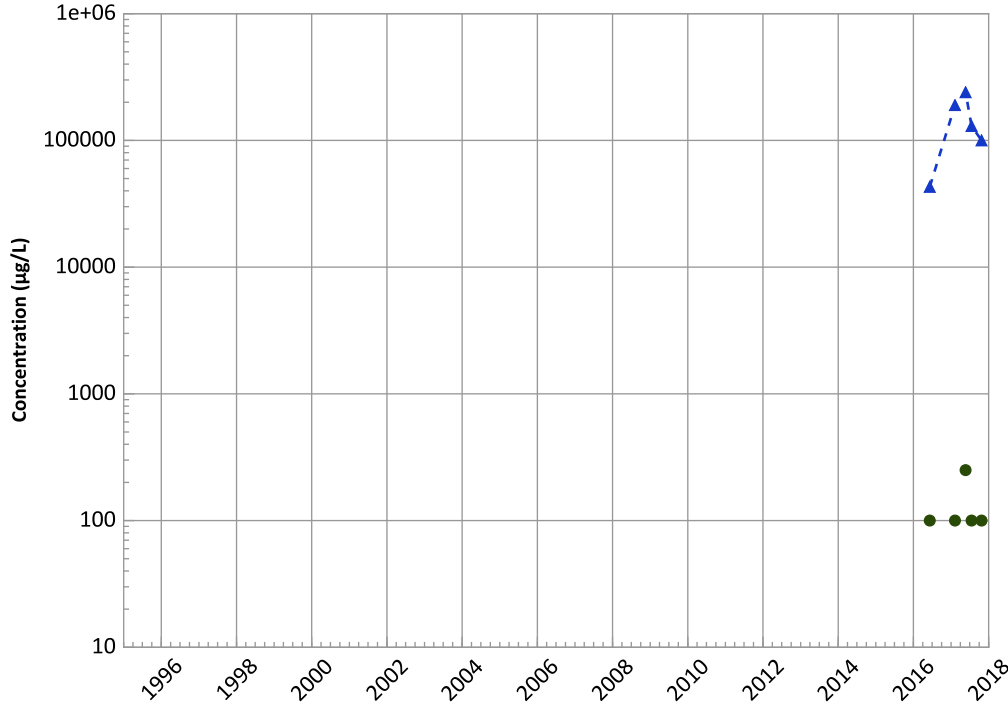


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/08/2016 to 10/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1174 in Perched Aquifer
USDOE/NNSA Pantex Plant

Calcium Trend

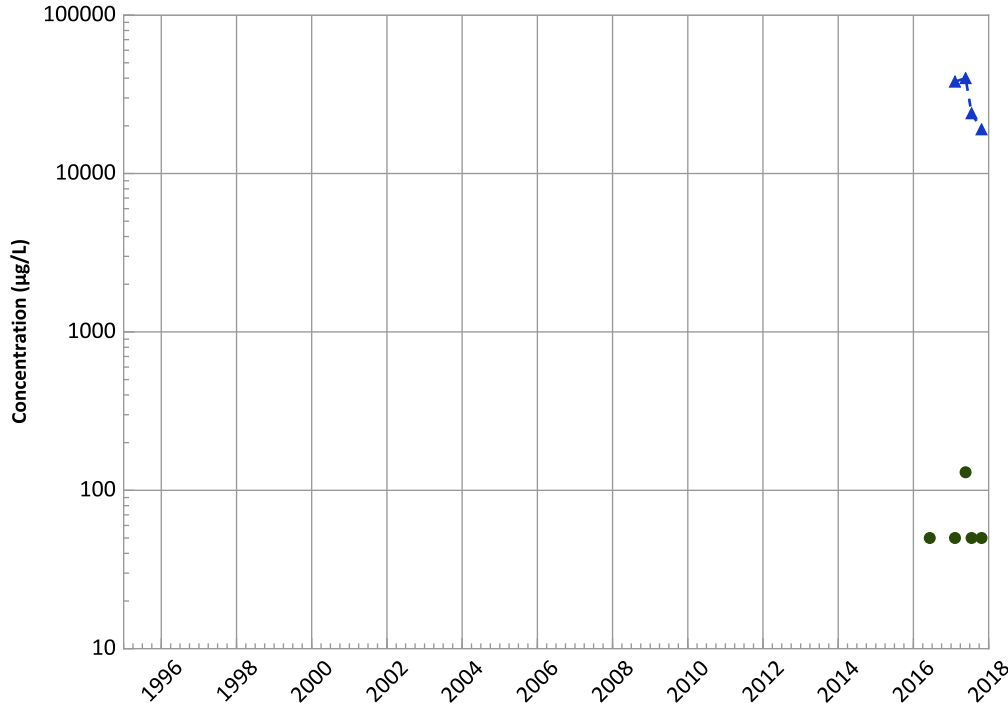


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Samples in Dataset)
All Data
Stable

MAROS Linear Regression Method
Data ():
N/A (<4 Detections in Dataset)
All Data
No Trend

Iron Trend

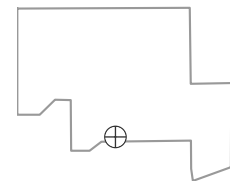


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Samples in Dataset)
All Data
Stable

MAROS Linear Regression Method
Data ():
N/A (<4 Samples in Dataset)
All Data
Probably Decreasing

Well Location

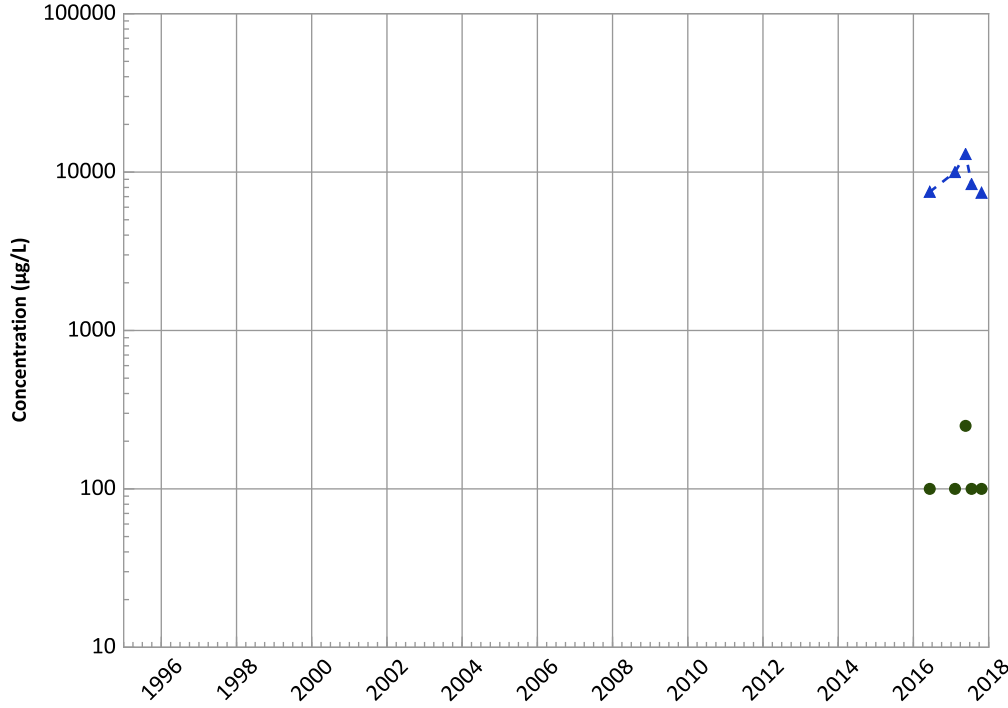


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/08/2016 to 10/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1174 in Perched Aquifer
USDOE/NNSA Pantex Plant

Potassium Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

Decreasing

MAROS Linear Regression Method

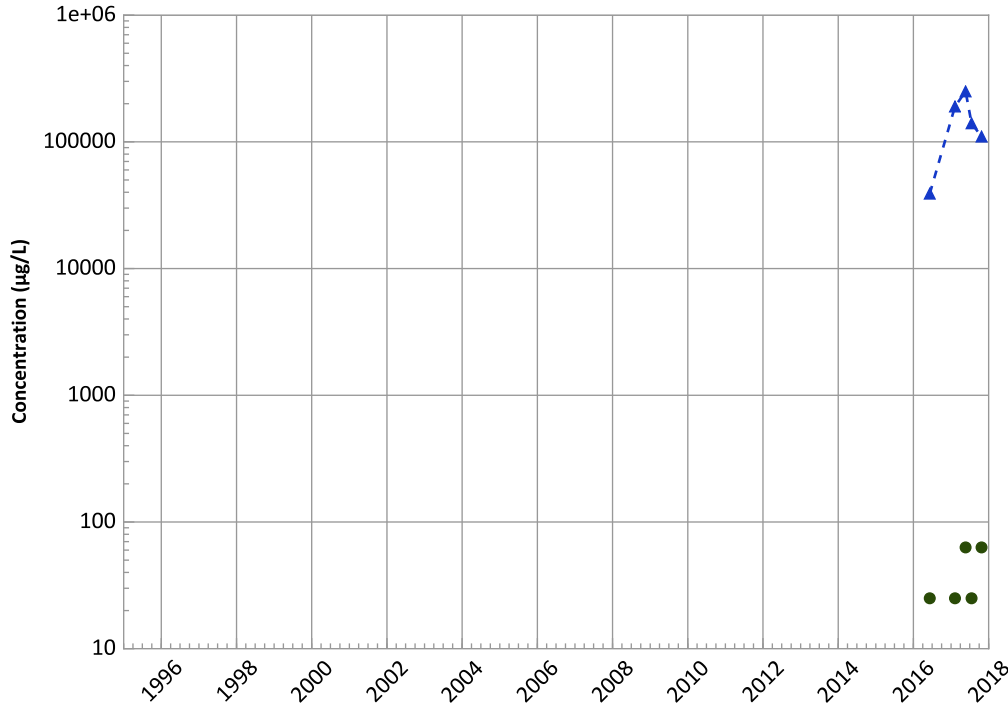
Data ():

N/A (<4 Detections in Dataset)

All Data

No Trend

Magnesium Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

Stable

MAROS Linear Regression Method

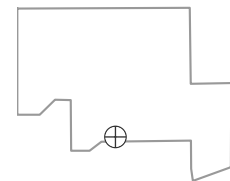
Data ():

N/A (<4 Detections in Dataset)

All Data

No Trend

Well Location

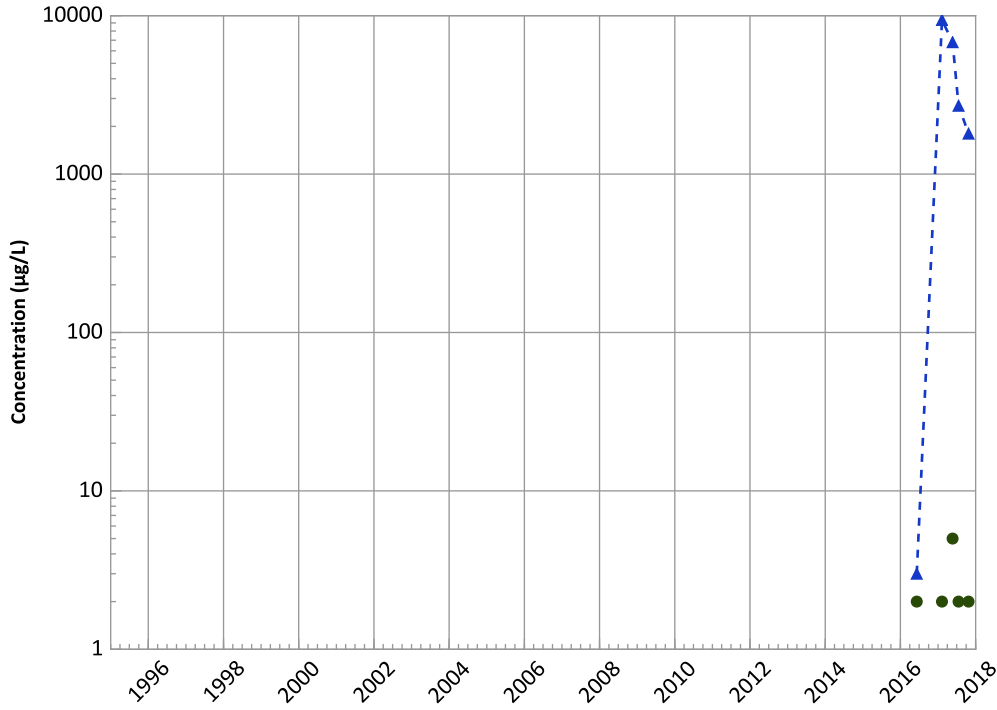


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/08/2016 to 10/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1174 in Perched Aquifer
USDOE/NNSA Pantex Plant

Manganese Trend



Concentration Trend

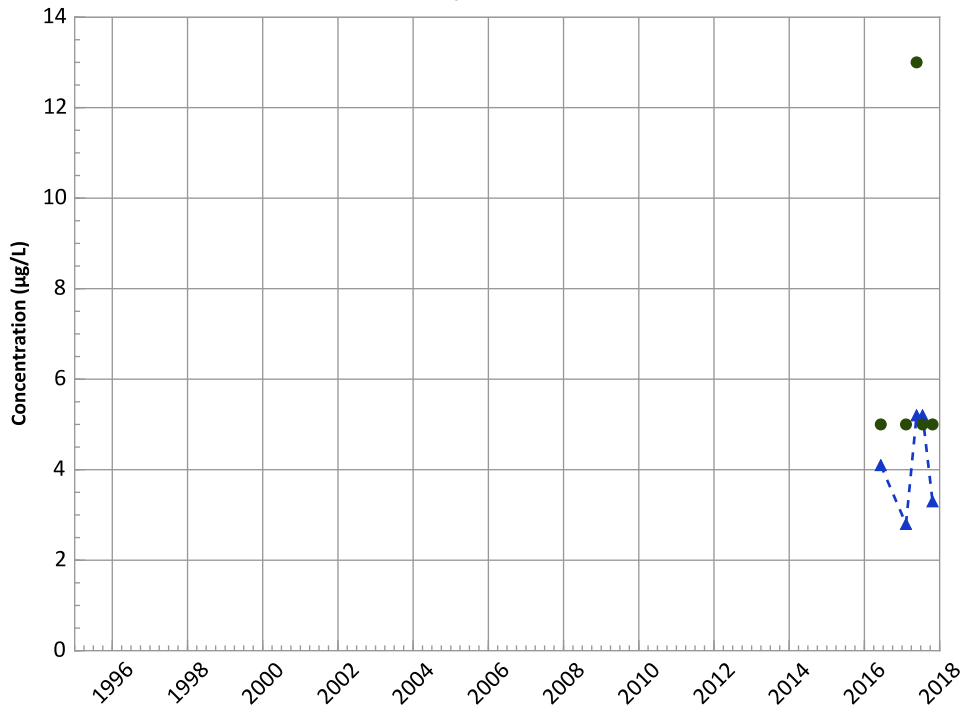
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
Decreasing

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Probably Increasing

Molybdenum Trend



Concentration Trend

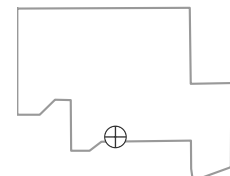
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
No Trend

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
No Trend

Well Location

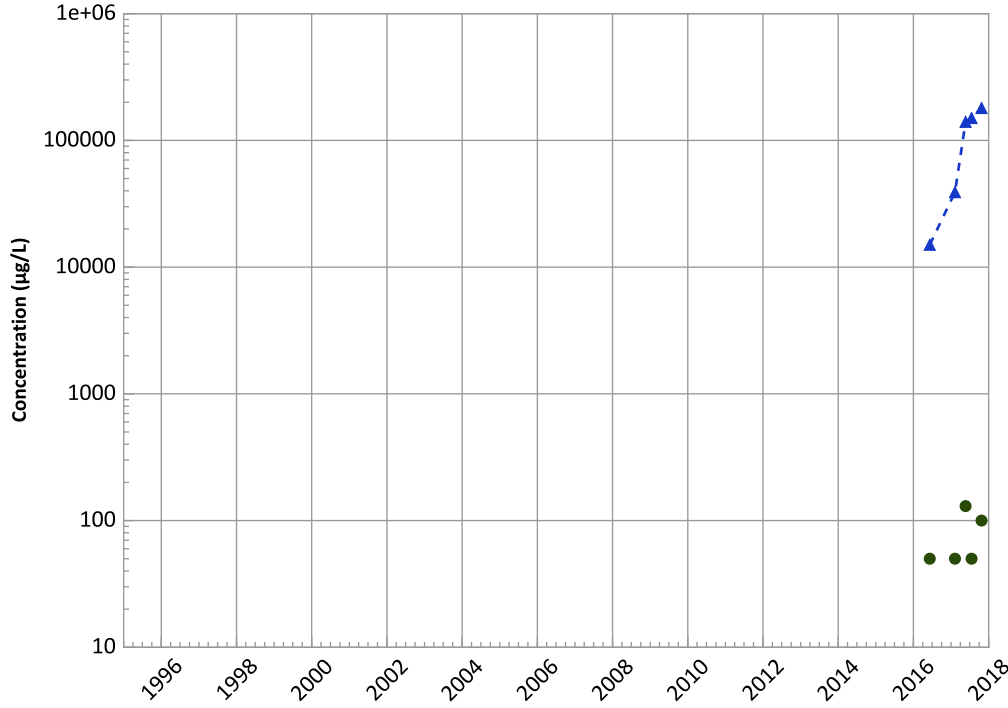


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/08/2016 to 10/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1174 in Perched Aquifer
USDOE/NNSA Pantex Plant

Sodium Trend

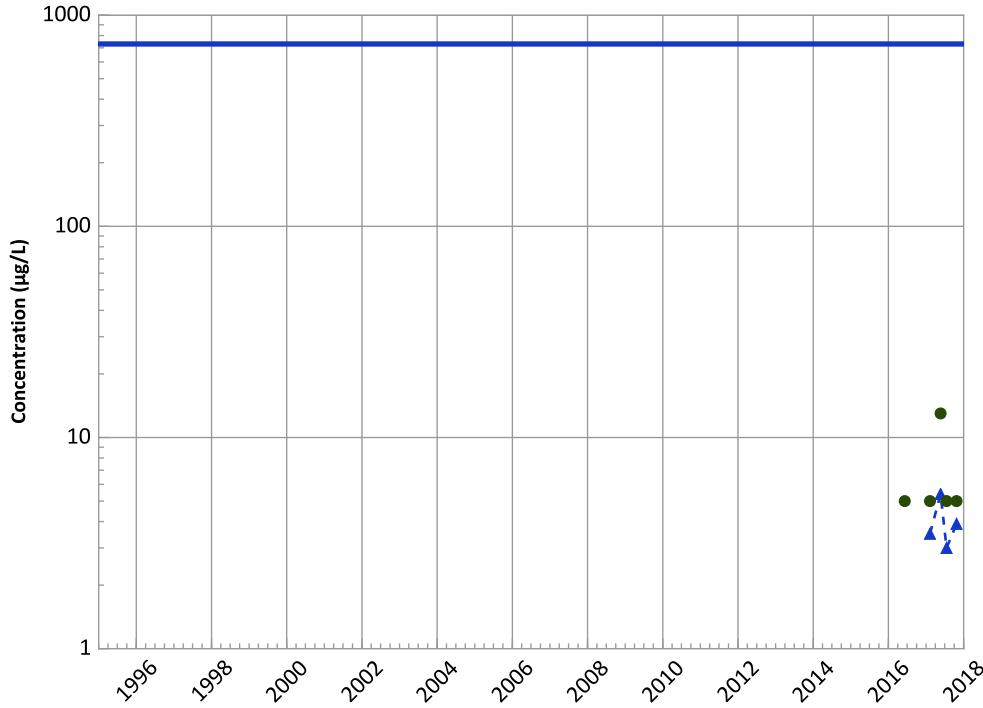


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Samples in Dataset)
All Data
Increasing

MAROS Linear Regression Method
Data ():
N/A (<4 Detections in Dataset)
All Data
Increasing

Nickel Trend

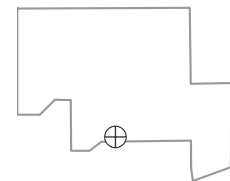


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Samples in Dataset)
All Data
No Trend

MAROS Linear Regression Method
Data ():
N/A (<4 Samples in Dataset)
All Data
Stable

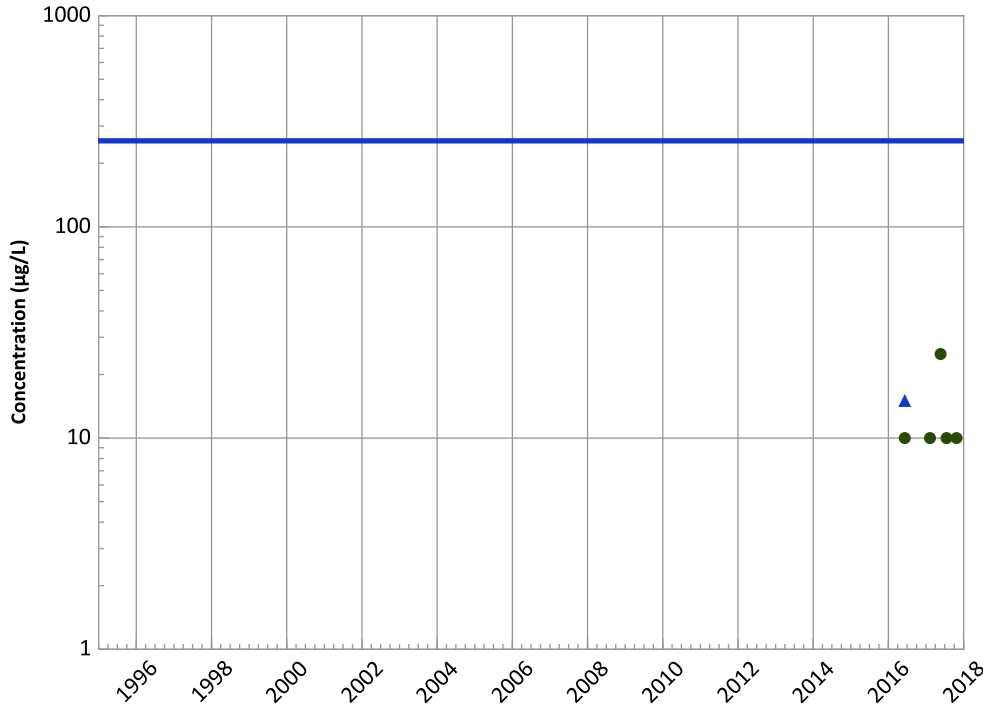
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/08/2016 to 10/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1174 in Perched Aquifer
 USDOE/NNSA Pantex Plant
 Vanadium Trend

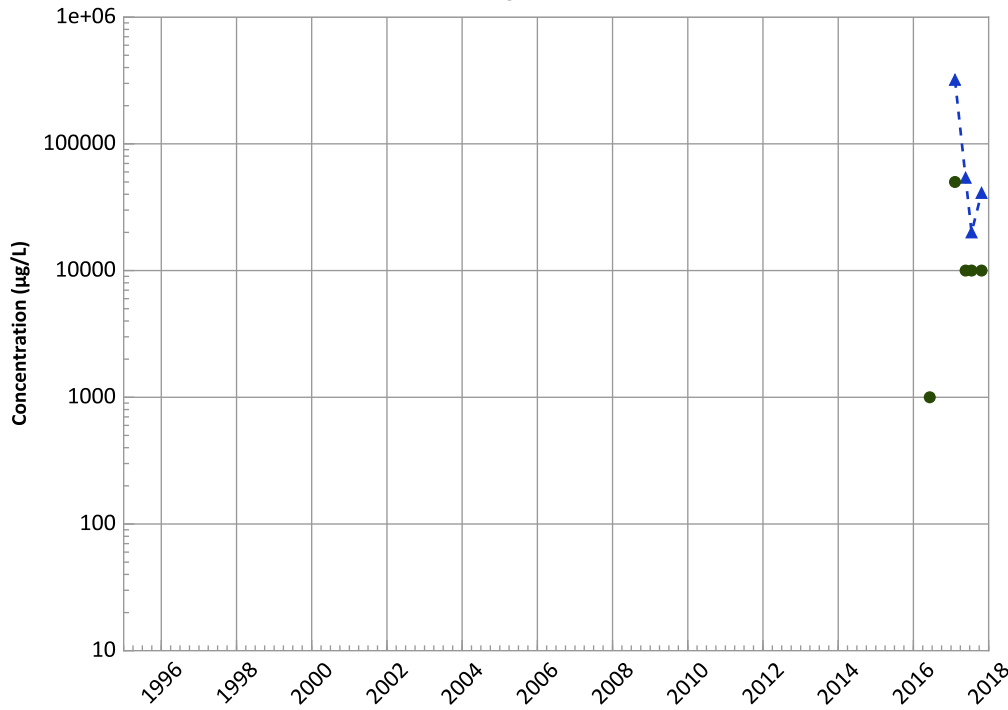


Concentration Trend

MAROS Mann-Kendall Method
 Data ():
 N/A (<4 Samples in Dataset)
 All Data
 N/A (<4 Detections in Dataset)

MAROS Linear Regression Method
 Data ():
 N/A (<4 Detections in Dataset)
 All Data
 N/A (<4 Detections in Dataset)

Total Organic Carbon Trend

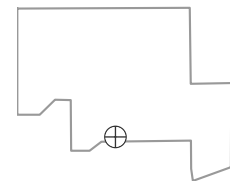


Concentration Trend

MAROS Mann-Kendall Method
 Data ():
 N/A (<4 Samples in Dataset)
 All Data
 No Trend

MAROS Linear Regression Method
 Data ():
 N/A (<4 Samples in Dataset)
 All Data
 No Trend

Well Location

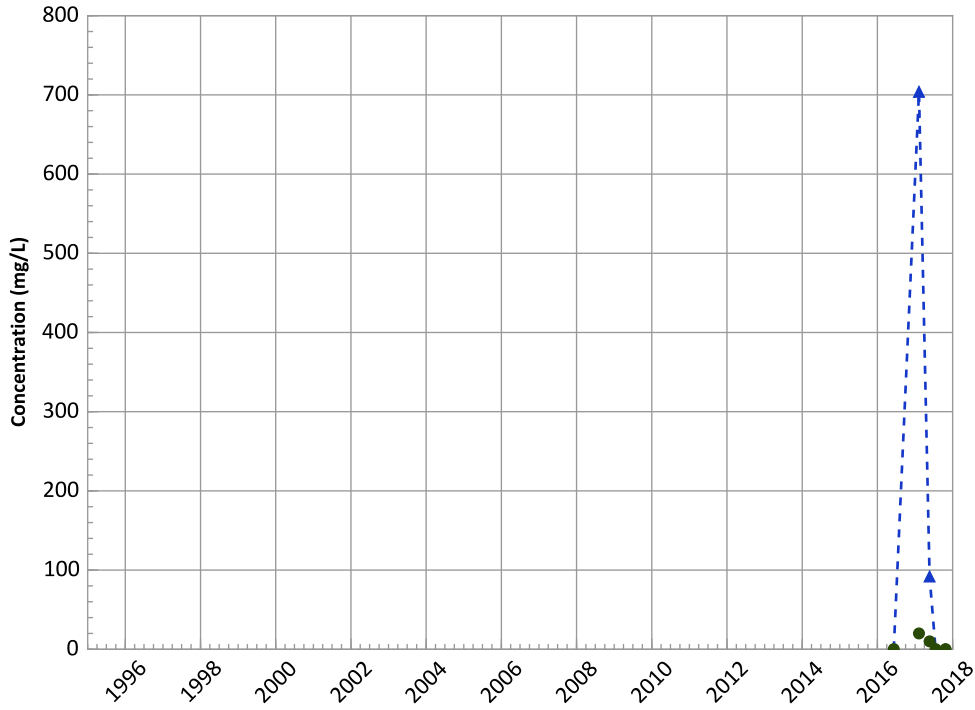


Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 06/08/2016 to 10/24/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1174 in Perched Aquifer
USDOE/NNSA Pantex Plant

Total Volatile Fatty Acids Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
Decreasing

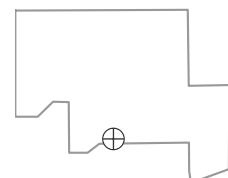
MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
No Trend

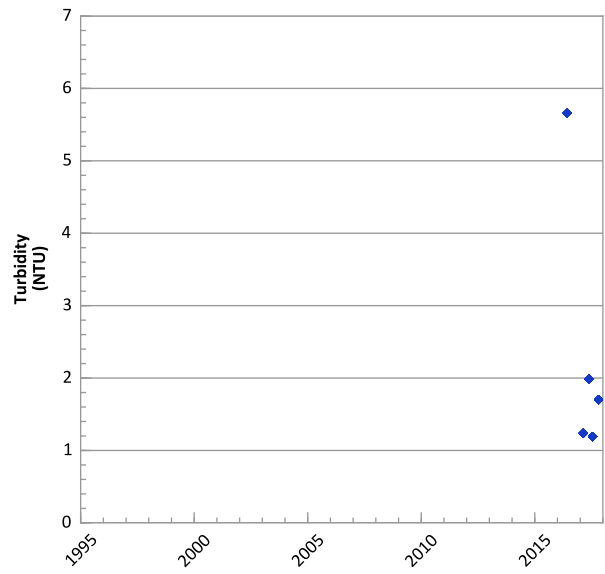
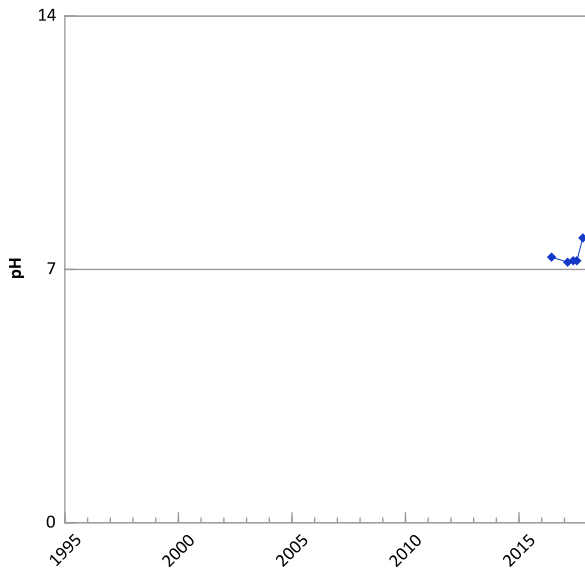
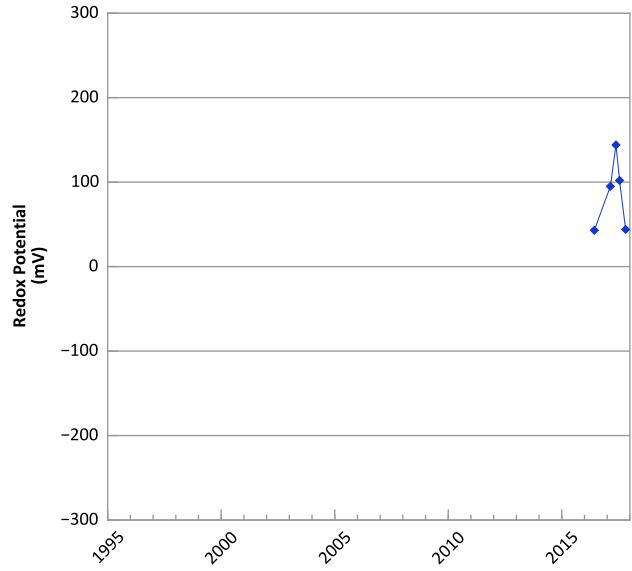
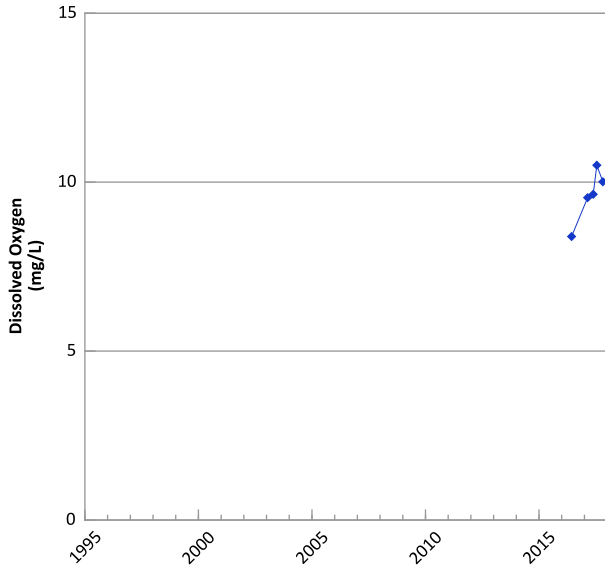
Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/08/2016 to 10/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

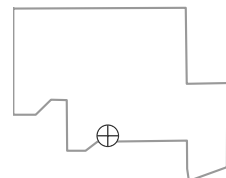


**PTX06-1175 in Perched Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



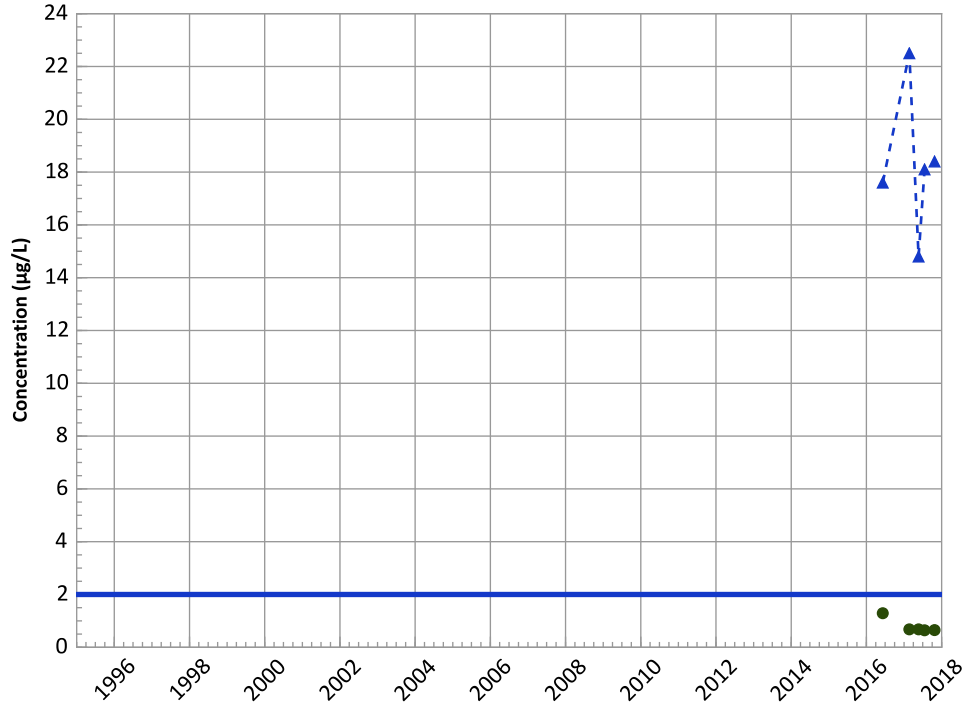
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 06/08/2016 to 10/24/2017
 Analysis Date: 03/21/2018

Well Location



PTX06-1175 in Perched Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend

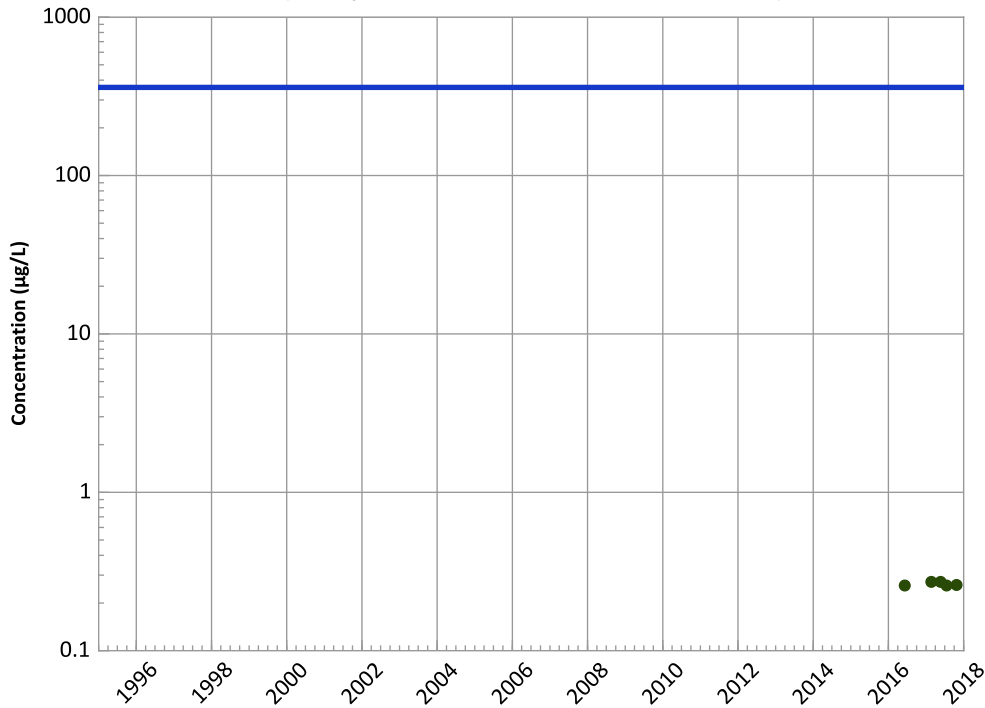


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Samples in Dataset)
All Data
No Trend

MAROS Linear Regression Method
Data ():
N/A (<4 Detections in Dataset)
All Data
Stable

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend

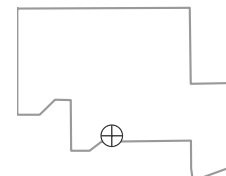


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

MAROS Linear Regression Method
Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

Well Location

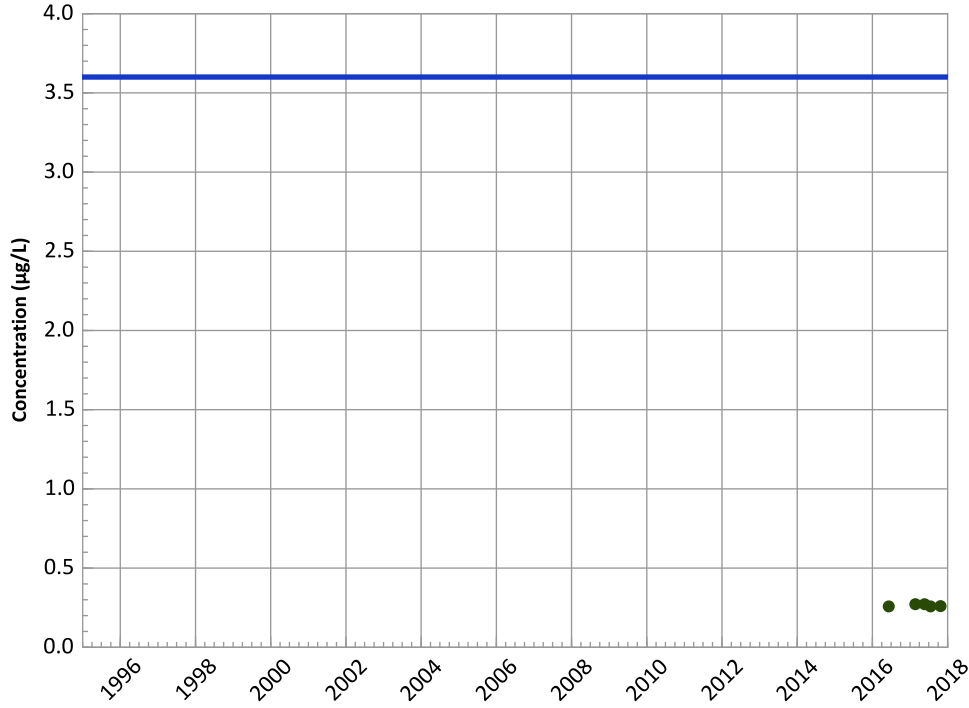


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/08/2016 to 10/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1175 in Perched Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

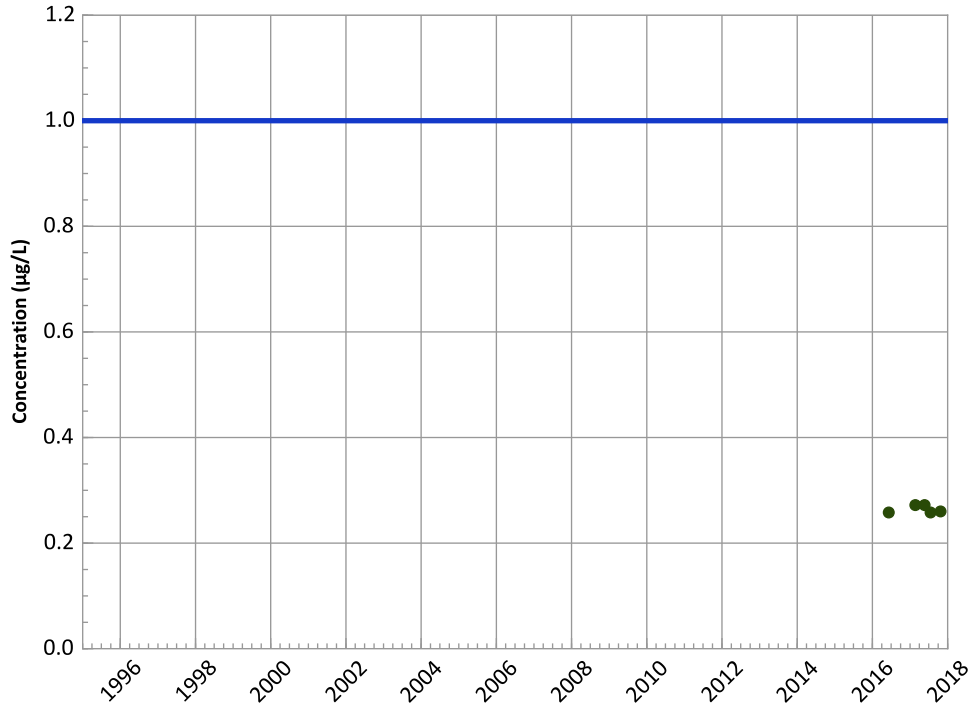
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

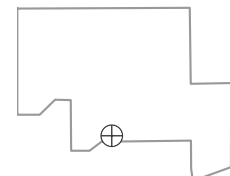
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

Well Location

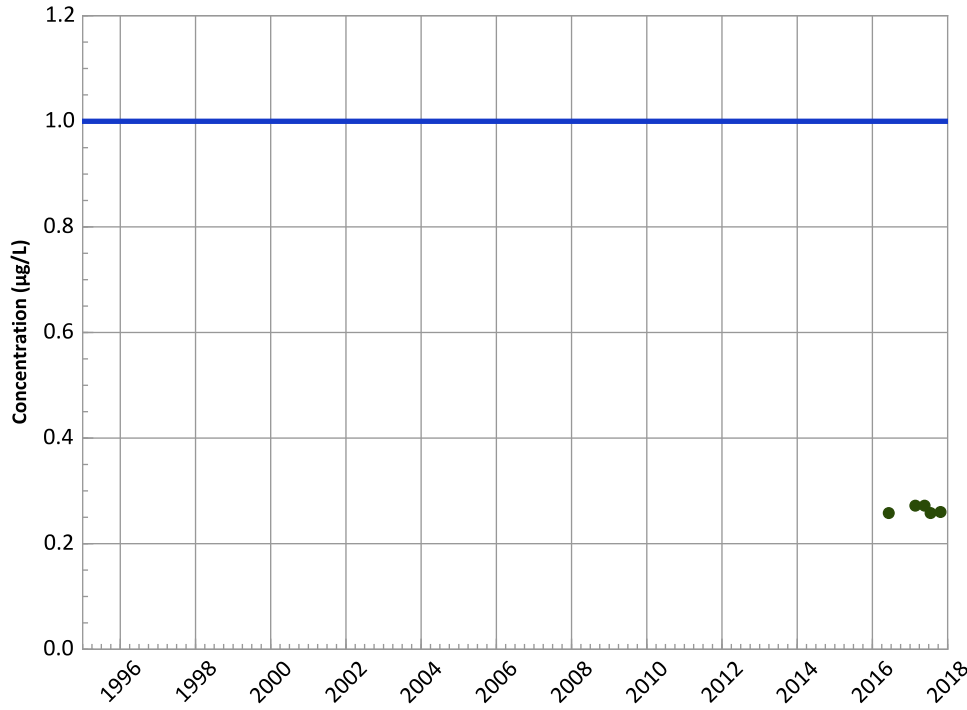


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/08/2016 to 10/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1175 in Perched Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

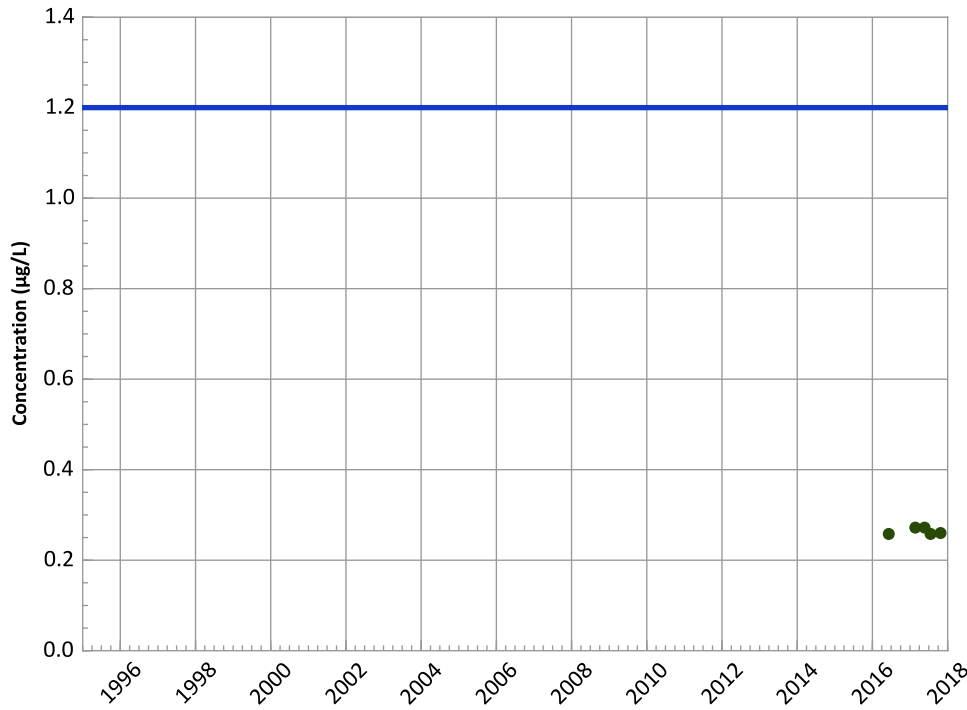
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

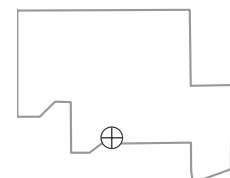
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

Well Location

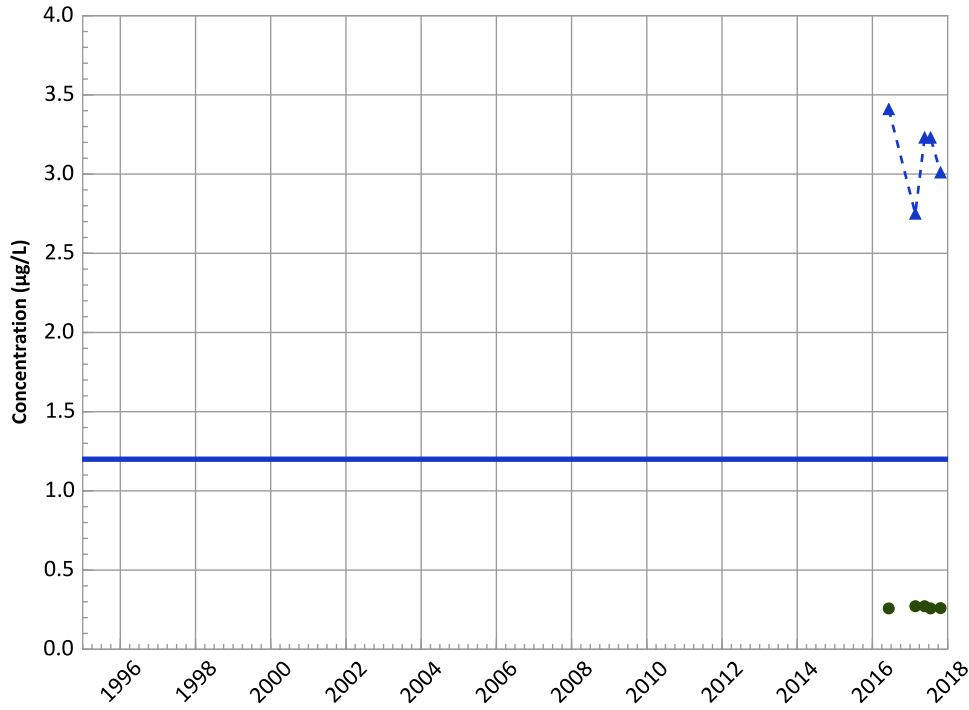


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/08/2016 to 10/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1175 in Perched Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend

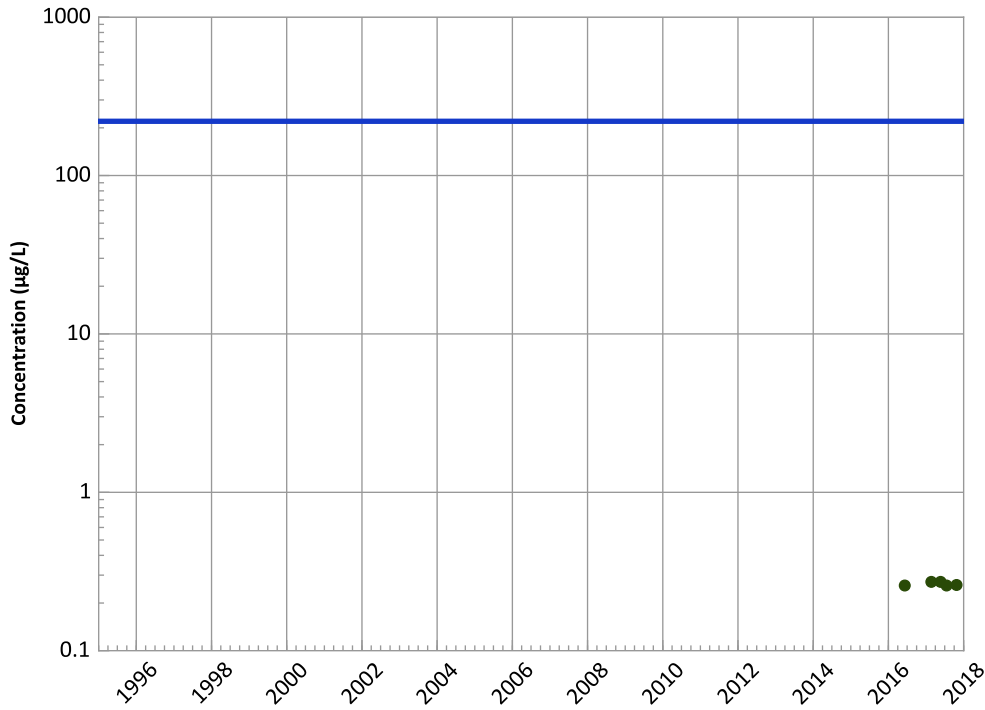


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Samples in Dataset)
All Data
Decreasing

MAROS Linear Regression Method
Data ():
N/A (<4 Detections in Dataset)
All Data
Stable

1,3,5-Trinitrobenzene Trend

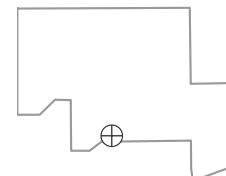


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

MAROS Linear Regression Method
Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

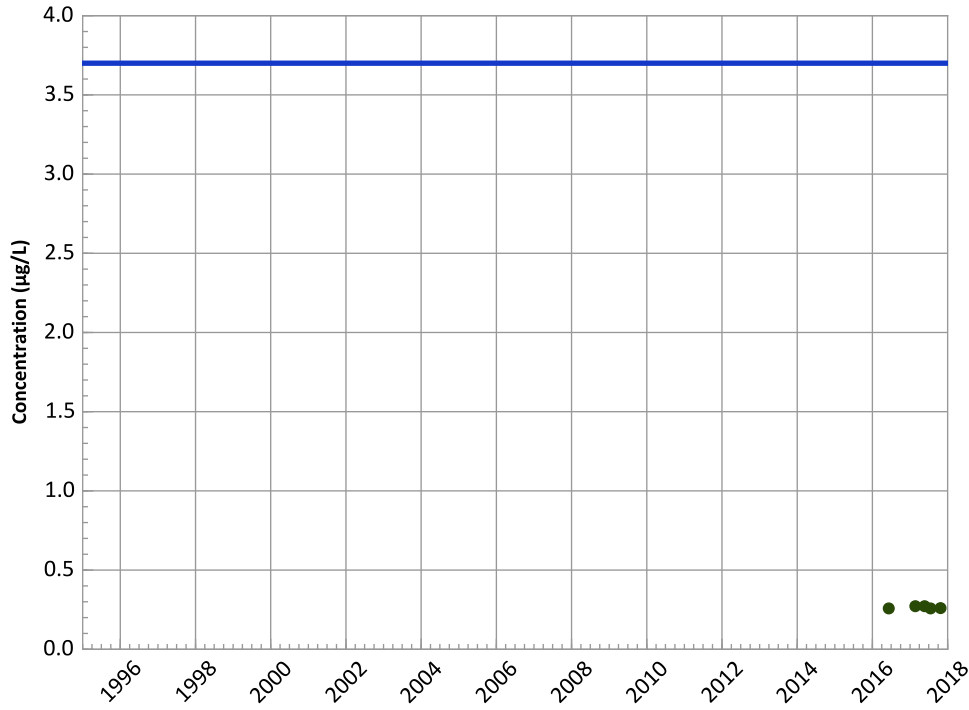
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/08/2016 to 10/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1175 in Perched Aquifer
USDOE/NNSA Pantex Plant
1,3-Dinitrobenzene Trend**

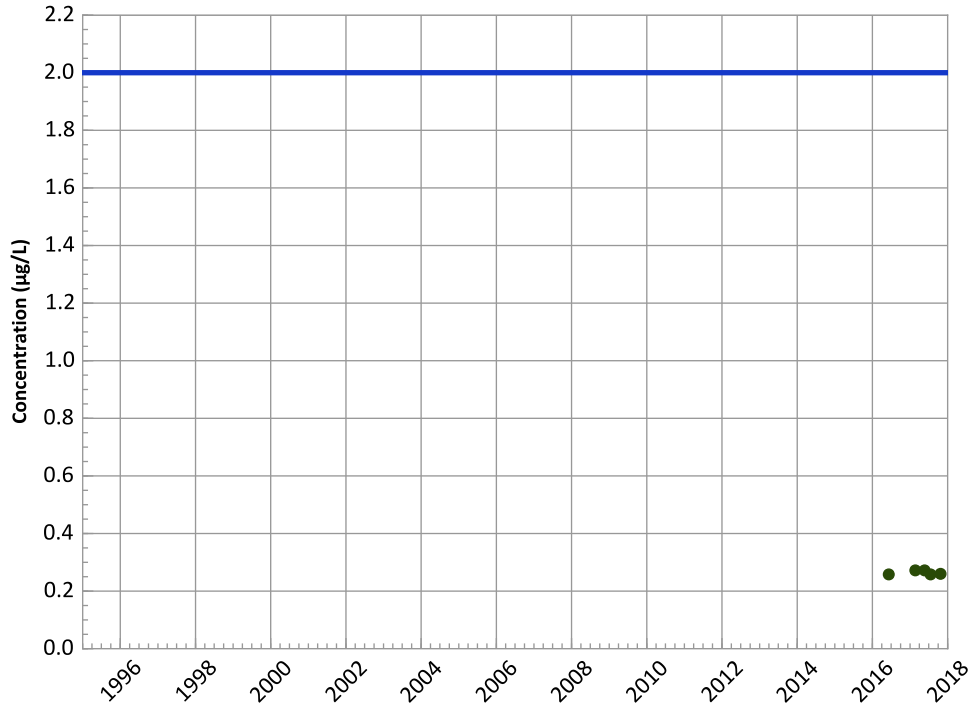


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

MAROS Linear Regression Method
Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

Hexahydro-1-Nitroso-3,5-Dinitro-1,3,5-Triazine (MNX) Trend

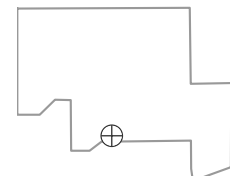


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

MAROS Linear Regression Method
Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

Well Location

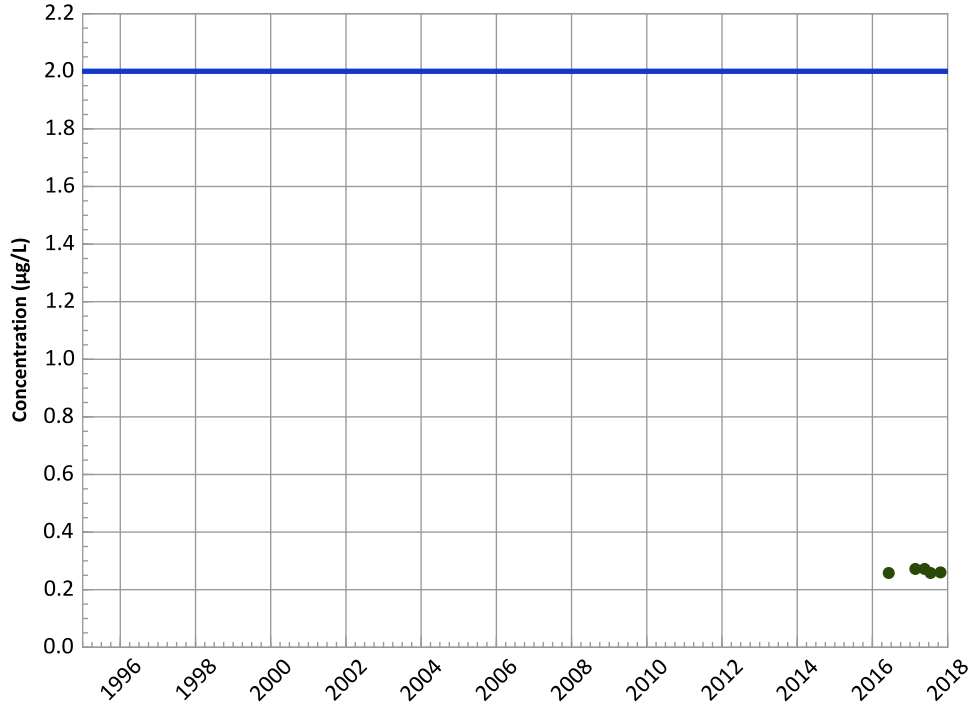


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/08/2016 to 10/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1175 in Perched Aquifer
USDOE/NNSA Pantex Plant

Hexahydro-1,3-Dinitroso-5-Nitro-1,3,5-Triazine (DNX) Trend



Concentration Trend

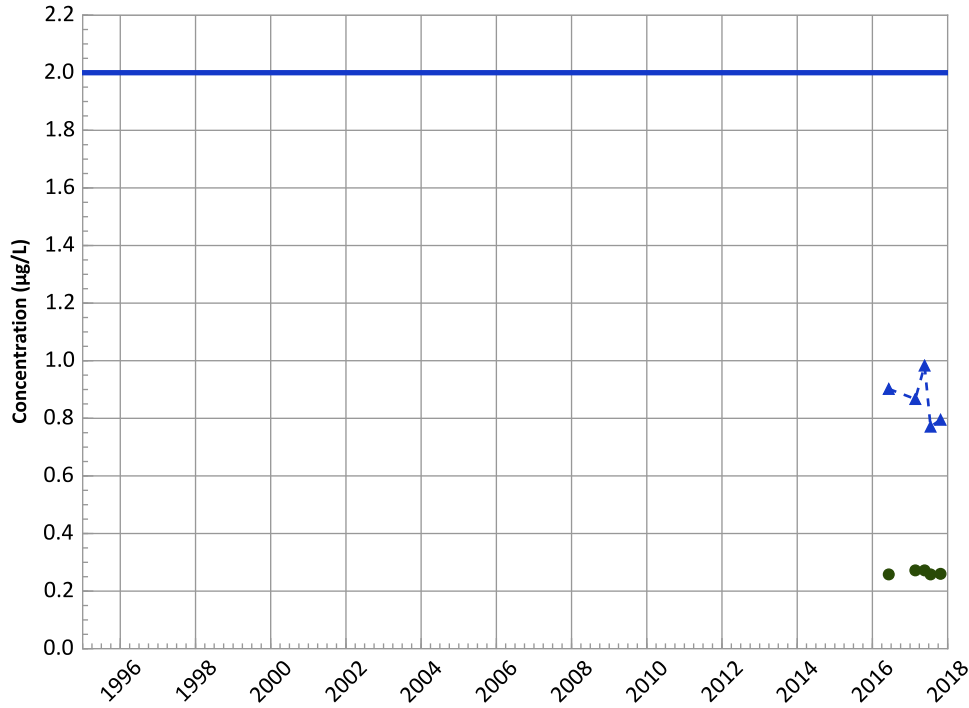
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

Hexahydro-1,3,5-Trinitroso-1,3,5-Triazine (TNX) Trend



Concentration Trend

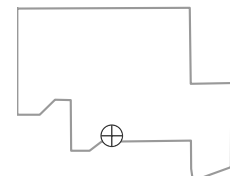
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
Decreasing

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Stable

Well Location

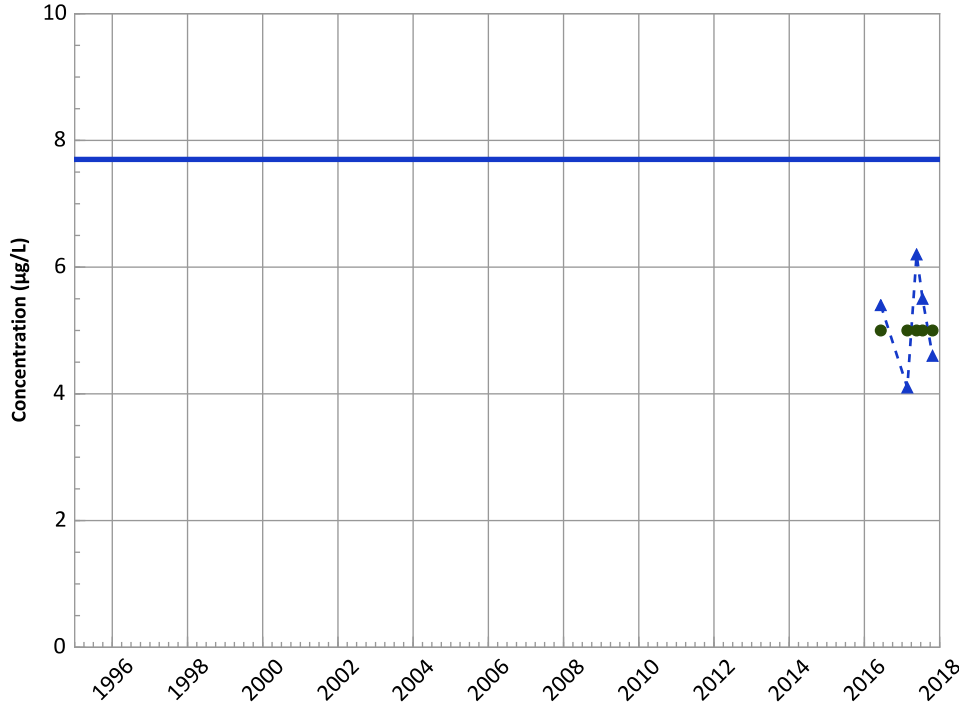


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/08/2016 to 10/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1175 in Perched Aquifer
USDOE/NNSA Pantex Plant

1,4-Dioxane (p-Dioxane) Trend



Concentration Trend

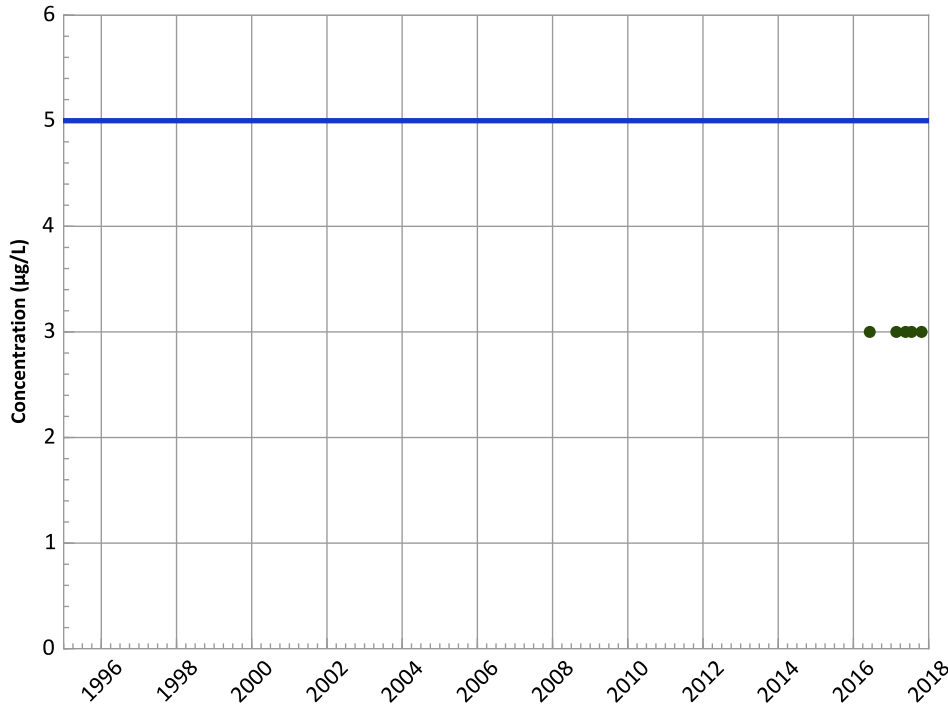
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
Stable

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Stable

Tetrachloroethylene (PCE) Trend



Concentration Trend

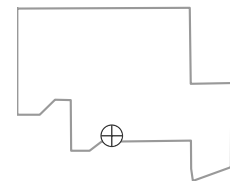
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

Well Location

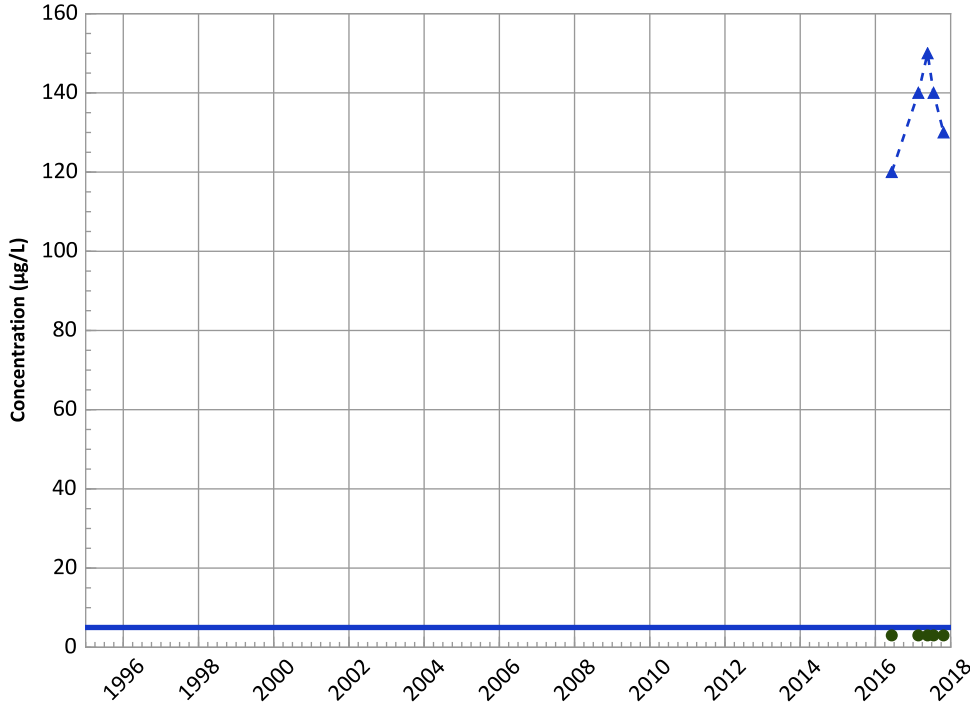


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/08/2016 to 10/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1175 in Perched Aquifer
USDOE/NNSA Pantex Plant

Trichloroethene Trend

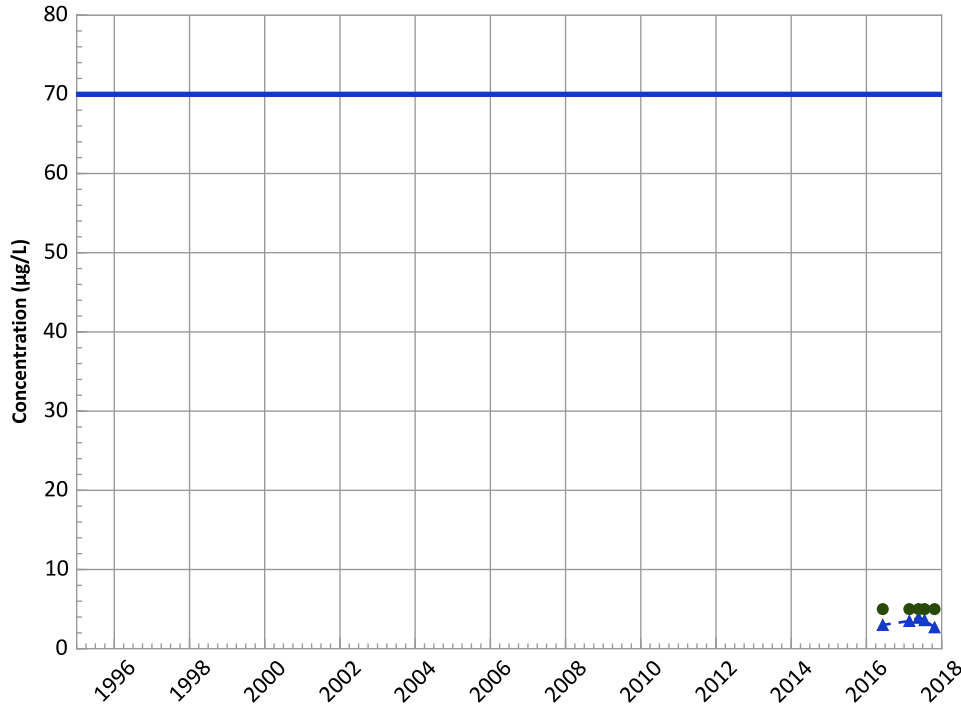


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Samples in Dataset)
All Data
No Trend

MAROS Linear Regression Method
Data ():
N/A (<4 Detections in Dataset)
All Data
No Trend

cis-1,2-Dichloroethene Trend

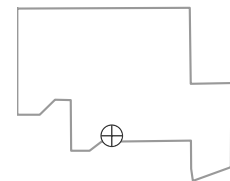


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Samples in Dataset)
All Data
Stable

MAROS Linear Regression Method
Data ():
N/A (<4 Detections in Dataset)
All Data
No Trend

Well Location

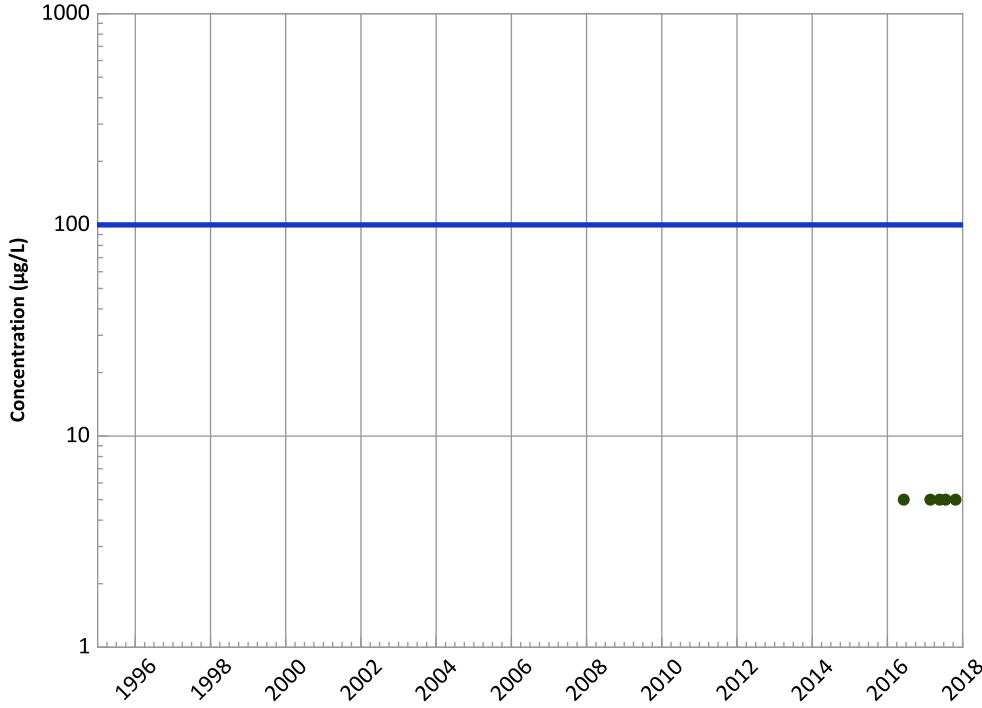


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/08/2016 to 10/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1175 in Perched Aquifer
USDOE/NNSA Pantex Plant

trans-1,2-Dichloroethene Trend



Concentration Trend

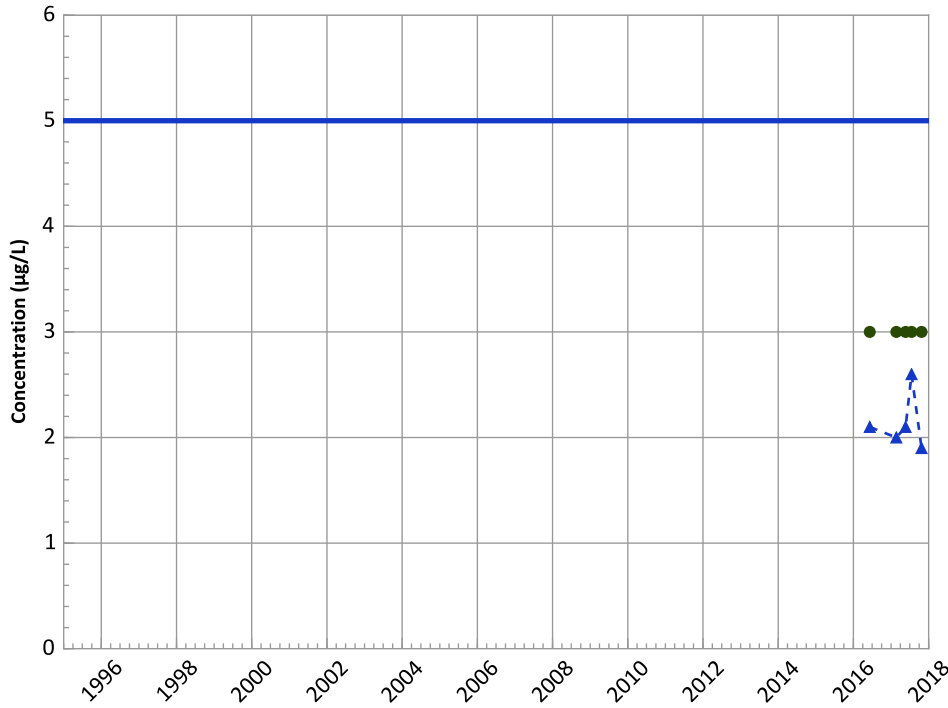
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

1,2-Dichloroethane Trend



Concentration Trend

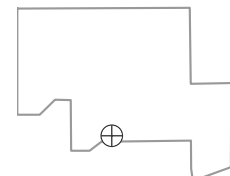
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
Decreasing

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
No Trend

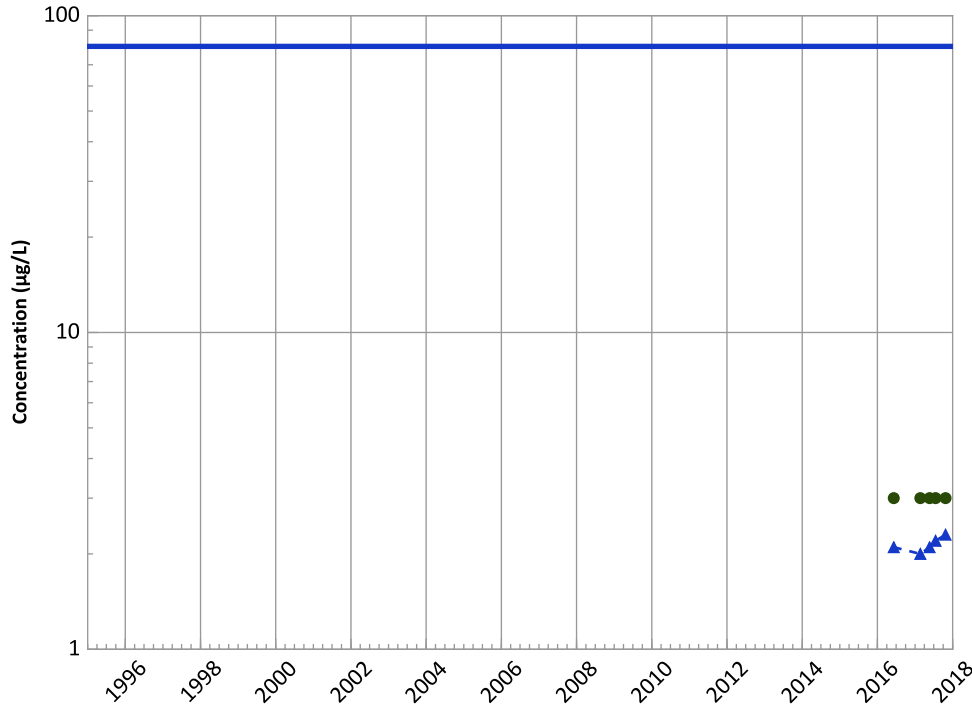
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/08/2016 to 10/24/2017
Analysis Date: 03/21/2018

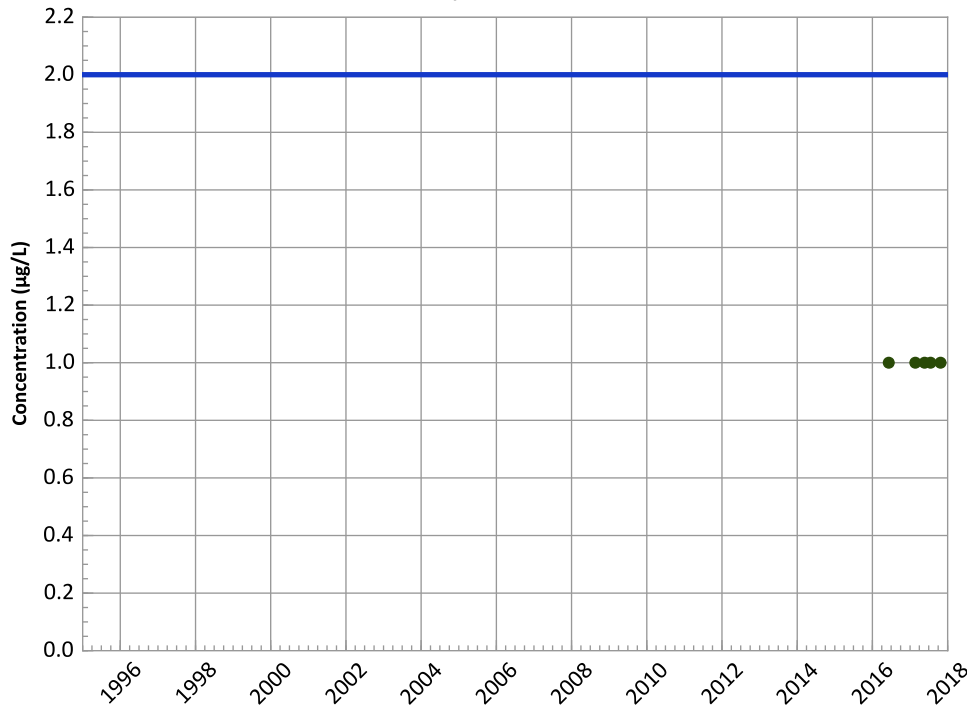
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1175 in Perched Aquifer
USDOE/NNSA Pantex Plant
Chloroform Trend**



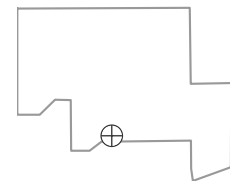
Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 N/A (<4 Samples in Dataset)
 All Data
 Probably Increasing
MAROS Linear Regression Method
 Data ():
 N/A (<4 Detections in Dataset)
 All Data
 No Trend

Vinyl Chloride Trend



Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 N/A (<4 Samples in Dataset)
 All Data
 All Non-Detect
MAROS Linear Regression Method
 Data ():
 N/A (<4 Samples in Dataset)
 All Data
 All Non-Detect

Well Location

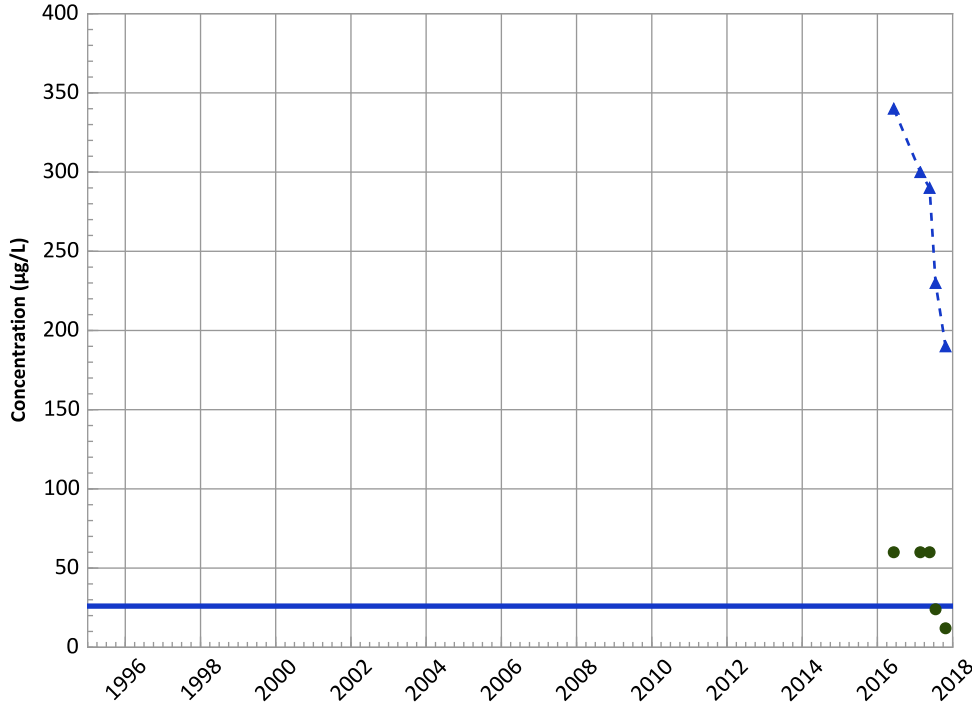


Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 06/08/2016 to 10/24/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1175 in Perched Aquifer
USDOE/NNSA Pantex Plant

Perchlorate Trend

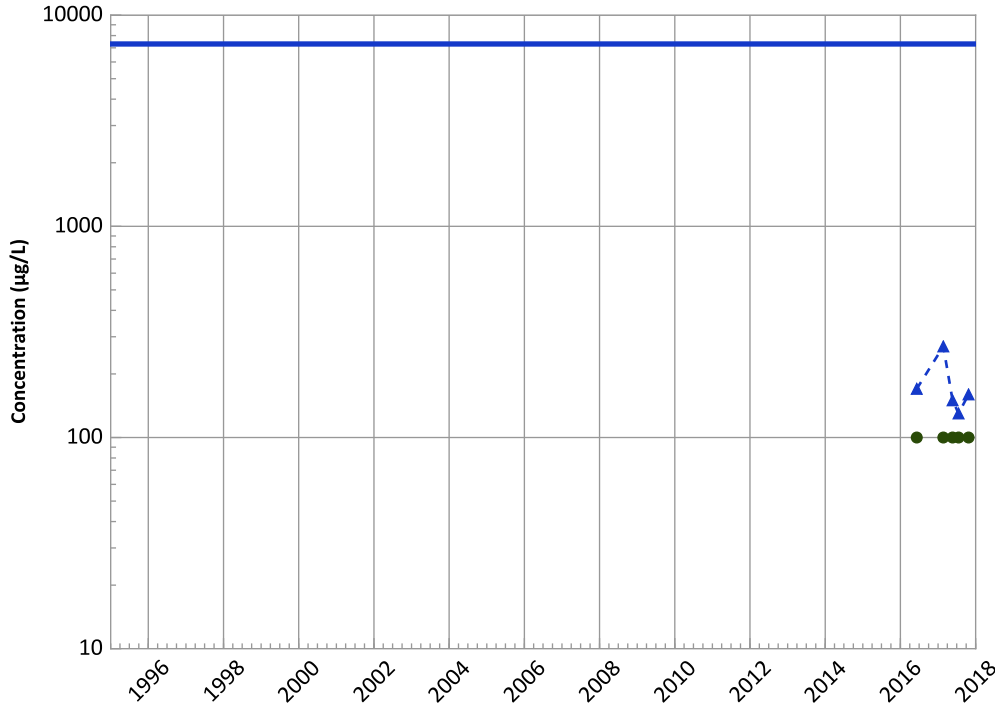


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Samples in Dataset)
All Data
Decreasing

MAROS Linear Regression Method
Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

Boron Trend

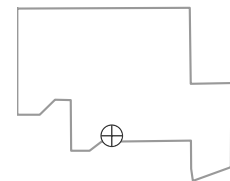


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Samples in Dataset)
All Data
Decreasing

MAROS Linear Regression Method
Data ():
N/A (<4 Detections in Dataset)
All Data
Stable

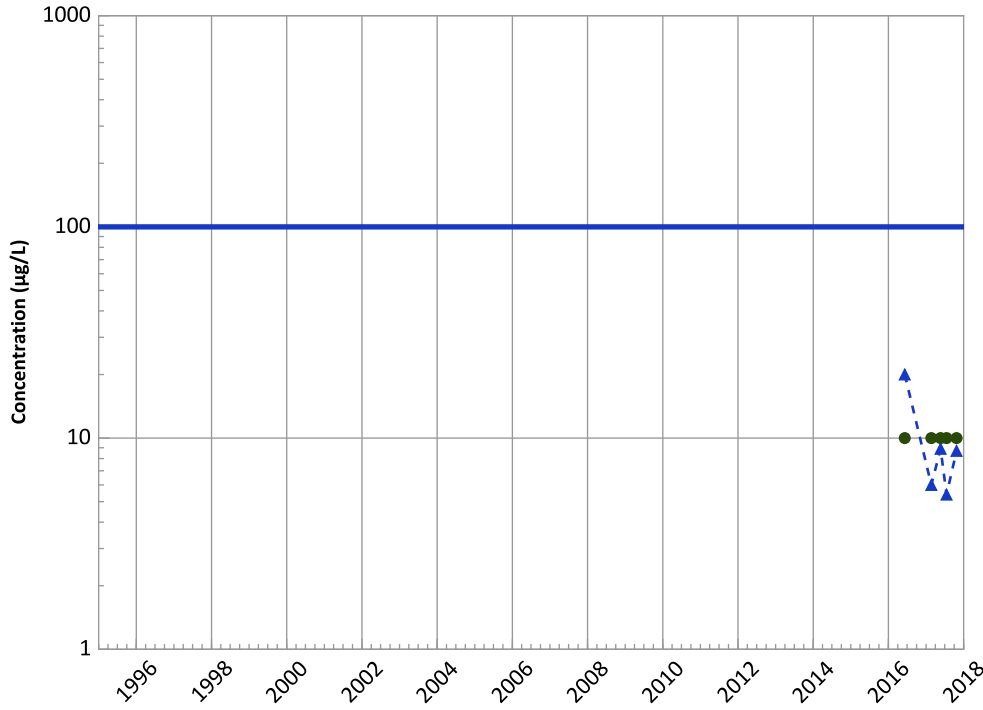
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/08/2016 to 10/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1175 in Perched Aquifer
USDOE/NNSA Pantex Plant
Chromium, Total Trend**

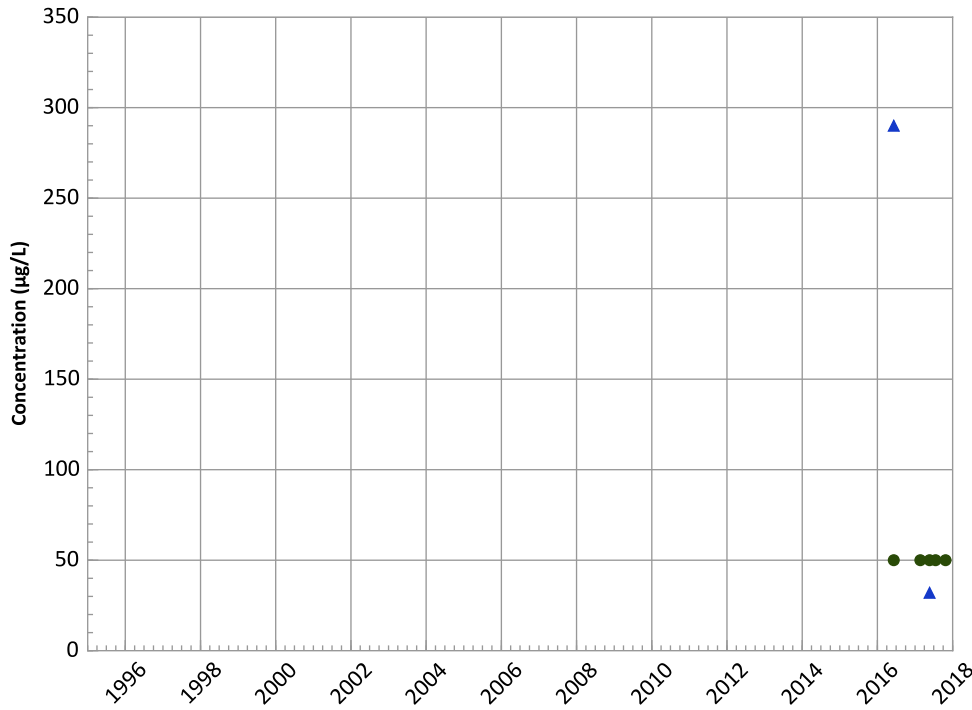


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Samples in Dataset)
All Data
Decreasing

MAROS Linear Regression Method
Data ():
N/A (<4 Detections in Dataset)
All Data
Probably Decreasing

Aluminum Trend

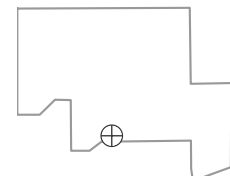


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Samples in Dataset)
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method
Data ():
N/A (<4 Detections in Dataset)
All Data
N/A (<4 Detections in Dataset)

Well Location

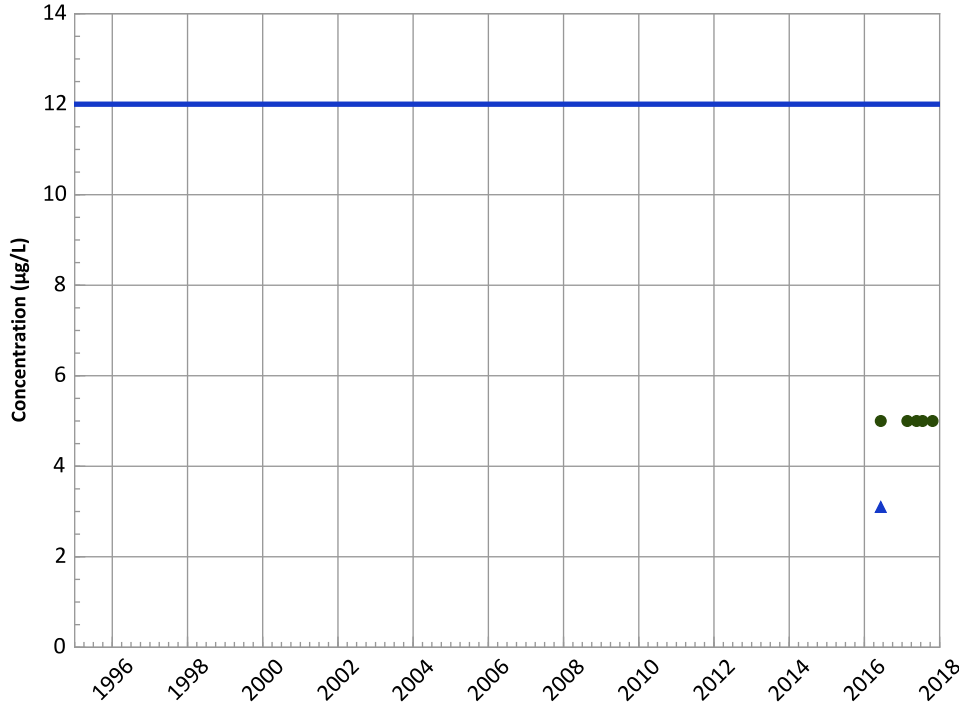


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/08/2016 to 10/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1175 in Perched Aquifer
USDOE/NNSA Pantex Plant

Arsenic Trend

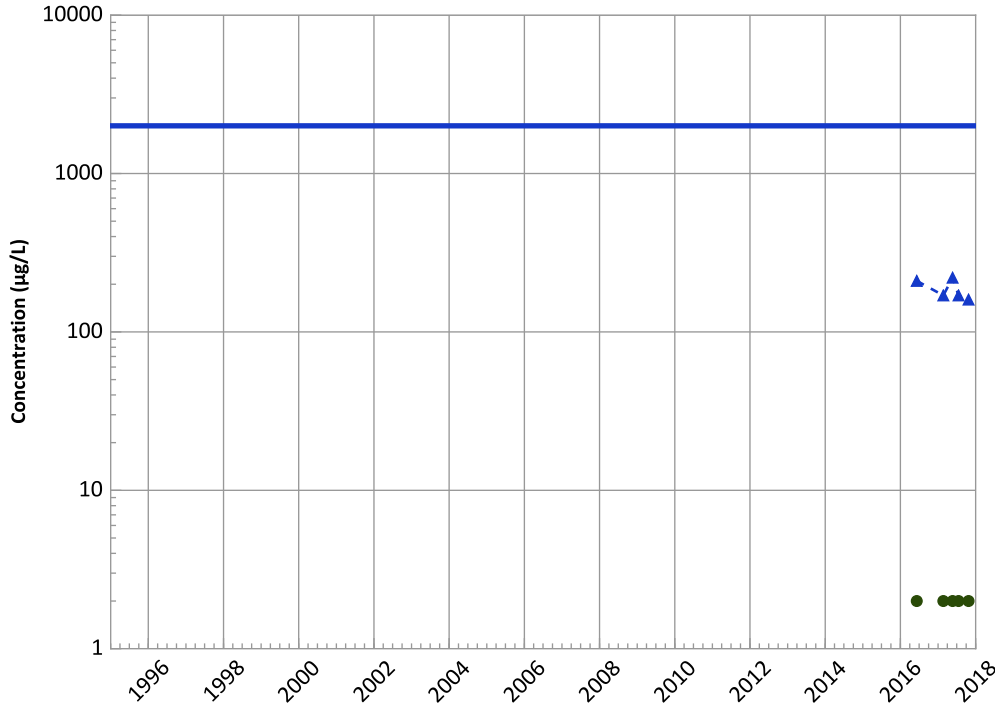


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Samples in Dataset)
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method
Data ():
N/A (<4 Detections in Dataset)
All Data
N/A (<4 Detections in Dataset)

Barium Trend

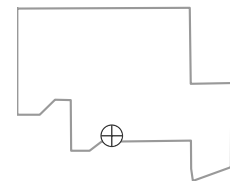


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Samples in Dataset)
All Data
Decreasing

MAROS Linear Regression Method
Data ():
N/A (<4 Detections in Dataset)
All Data
Stable

Well Location

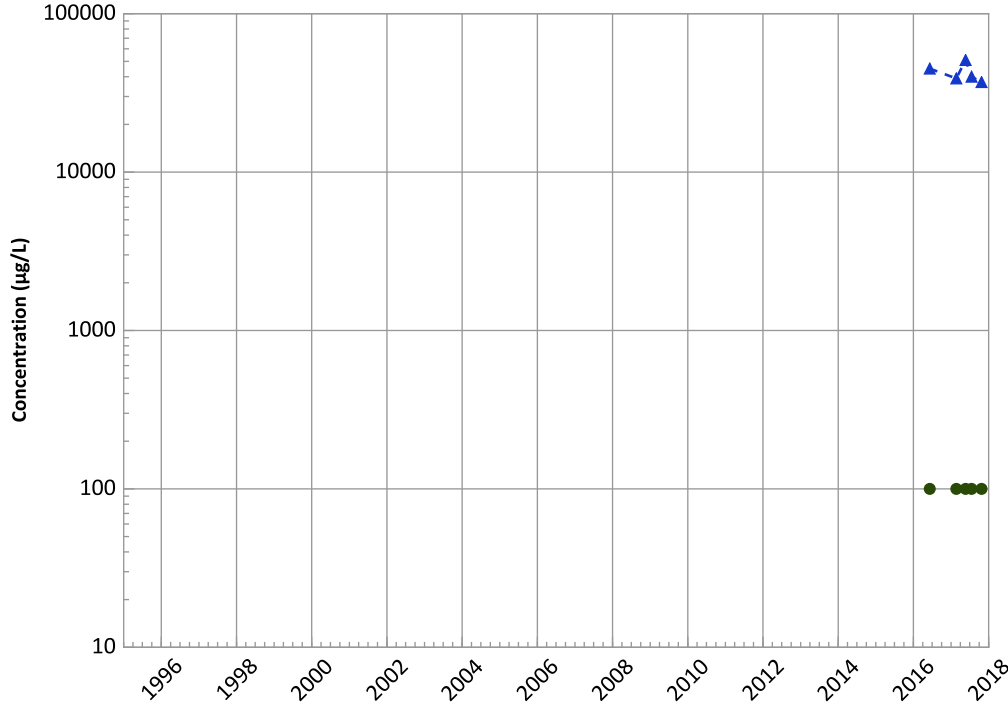


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/08/2016 to 10/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1175 in Perched Aquifer
USDOE/NNSA Pantex Plant

Calcium Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

Decreasing

MAROS Linear Regression Method

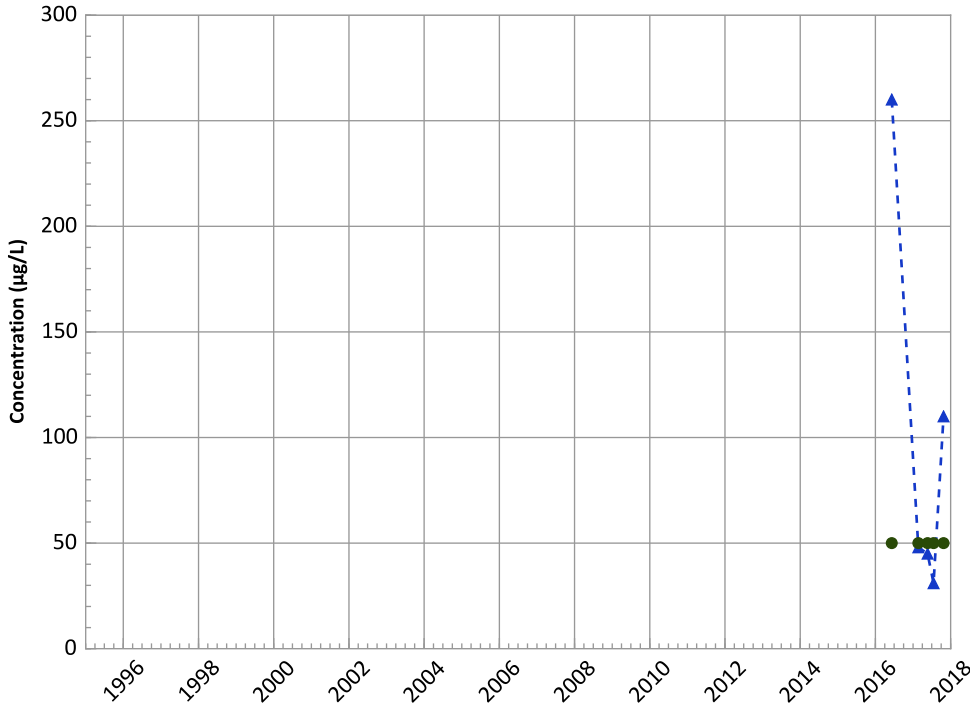
Data ():

N/A (<4 Detections in Dataset)

All Data

Stable

Iron Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

Decreasing

MAROS Linear Regression Method

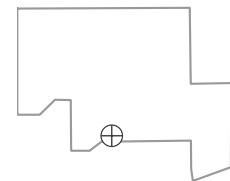
Data ():

N/A (<4 Detections in Dataset)

All Data

Stable

Well Location

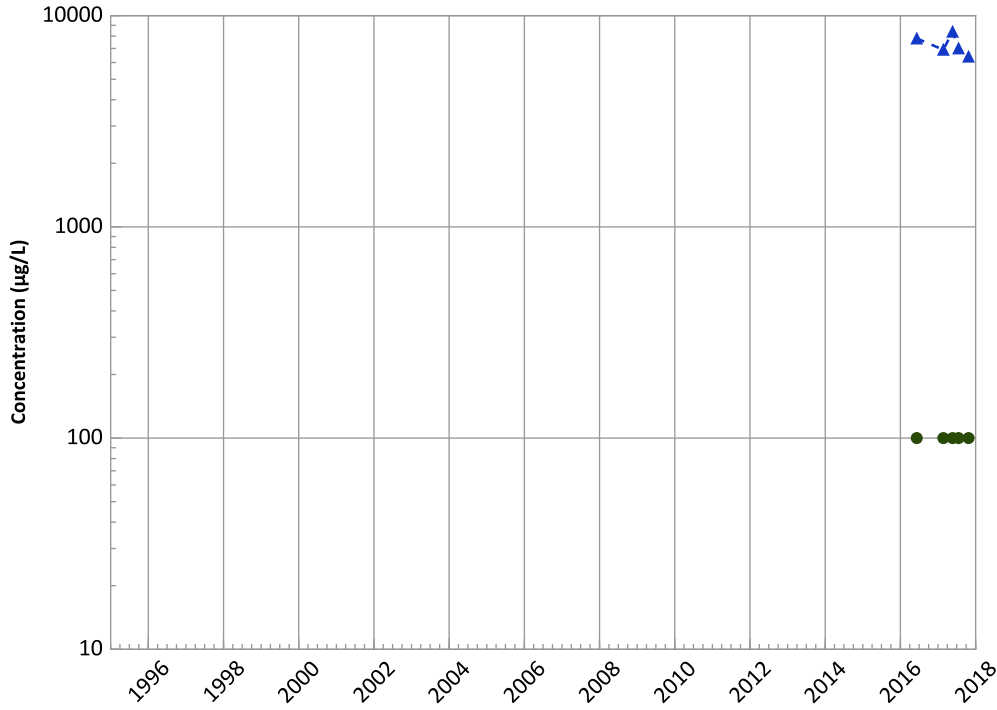


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/08/2016 to 10/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1175 in Perched Aquifer
USDOE/NNSA Pantex Plant

Potassium Trend

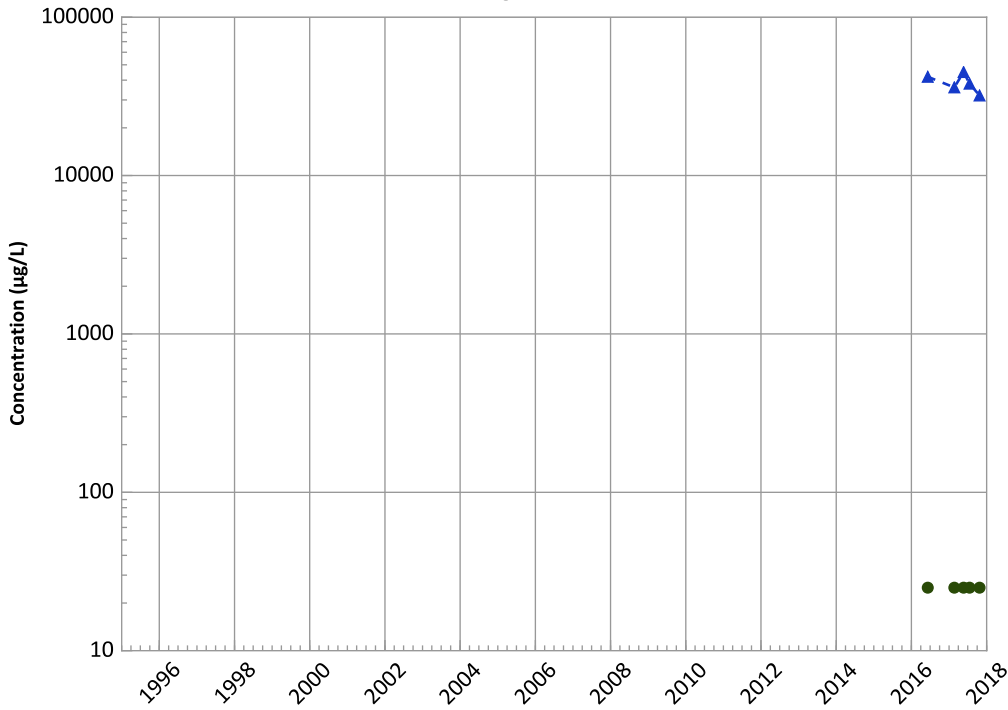


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Samples in Dataset)
All Data
Decreasing

MAROS Linear Regression Method
Data ():
N/A (<4 Detections in Dataset)
All Data
Stable

Magnesium Trend

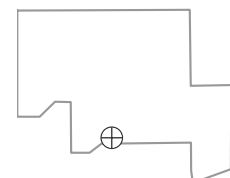


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Samples in Dataset)
All Data
Decreasing

MAROS Linear Regression Method
Data ():
N/A (<4 Detections in Dataset)
All Data
Stable

Well Location

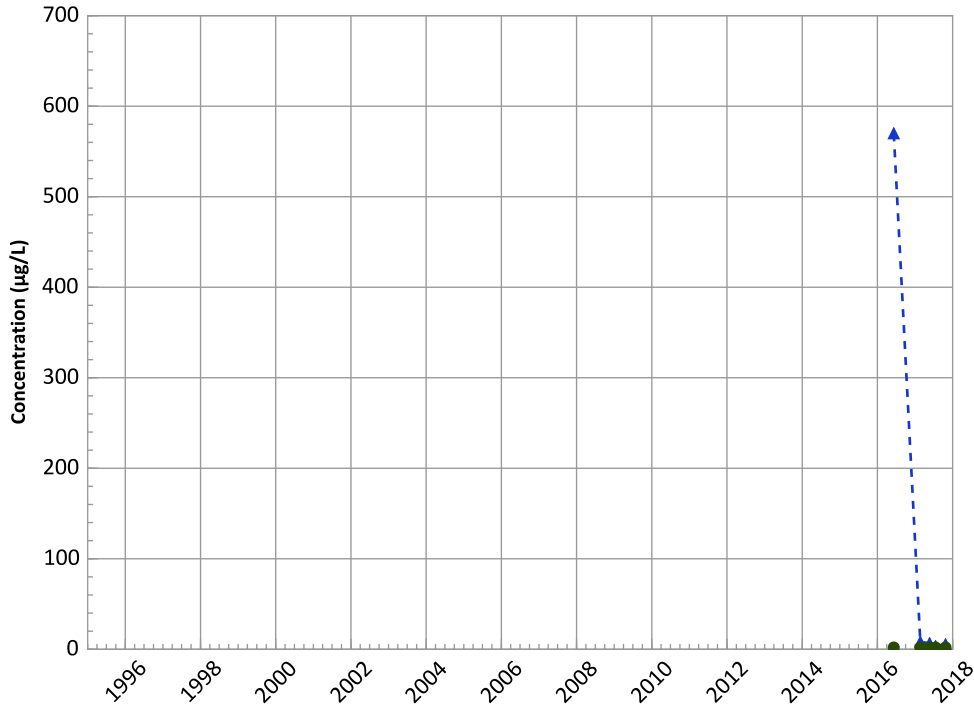


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/08/2016 to 10/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1175 in Perched Aquifer
USDOE/NNSA Pantex Plant

Manganese Trend



Concentration Trend

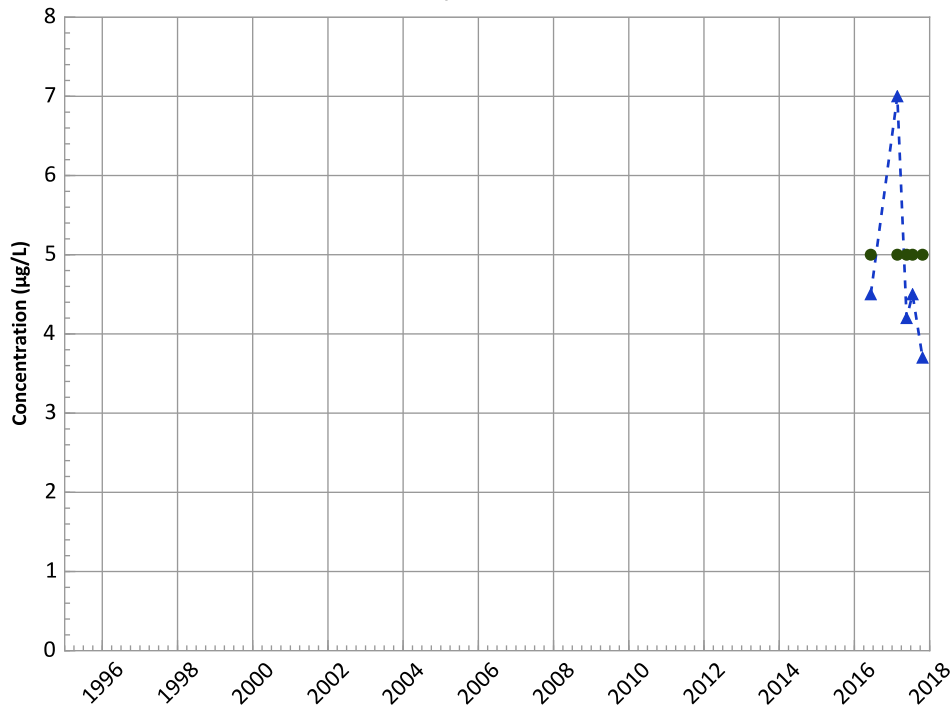
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
Decreasing

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

Molybdenum Trend



Concentration Trend

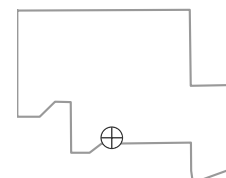
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
Decreasing

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Stable

Well Location

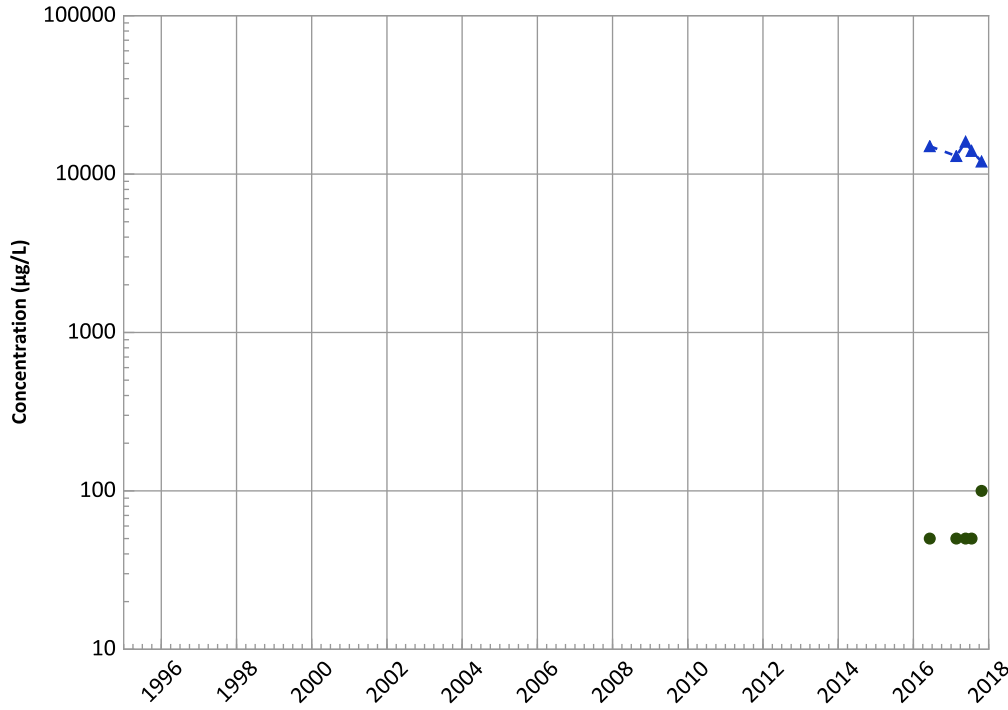


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/08/2016 to 10/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1175 in Perched Aquifer
USDOE/NNSA Pantex Plant

Sodium Trend

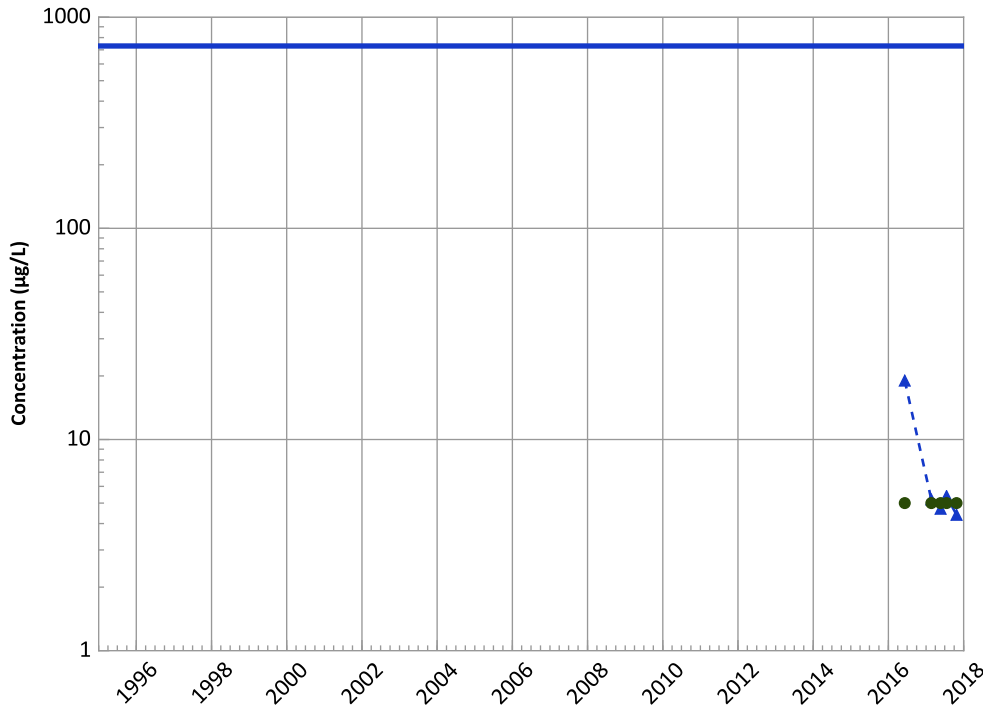


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Samples in Dataset)
All Data
Decreasing

MAROS Linear Regression Method
Data ():
N/A (<4 Detections in Dataset)
All Data
Stable

Nickel Trend

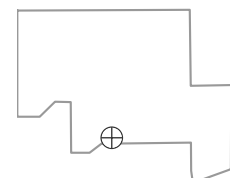


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Samples in Dataset)
All Data
Decreasing

MAROS Linear Regression Method
Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

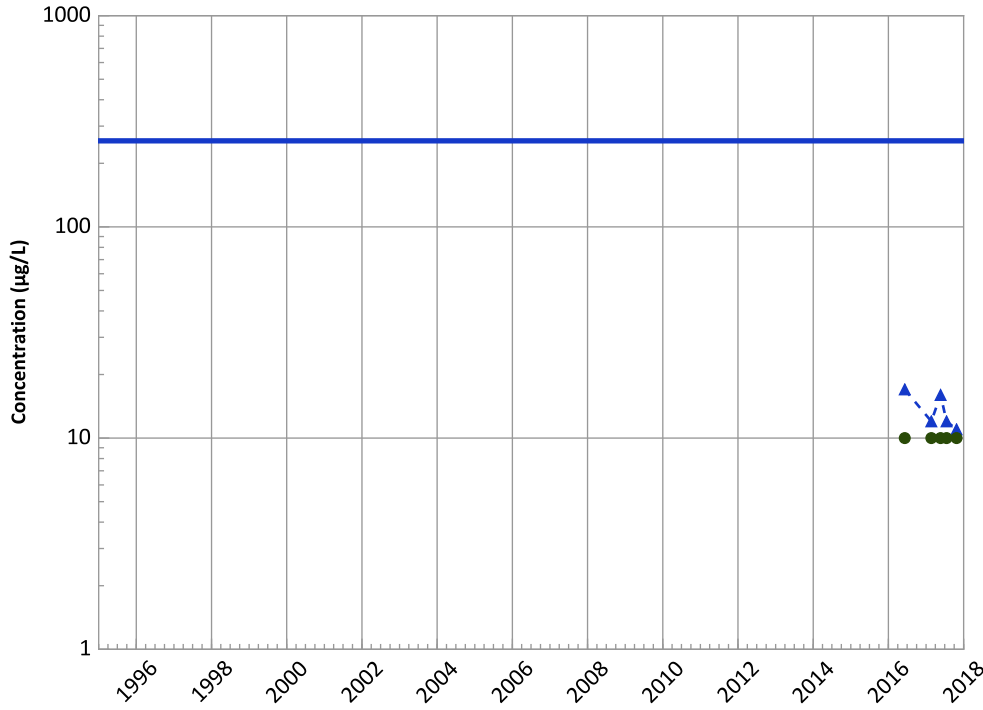
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/08/2016 to 10/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1175 in Perched Aquifer
 USDOE/NNSA Pantex Plant
 Vanadium Trend

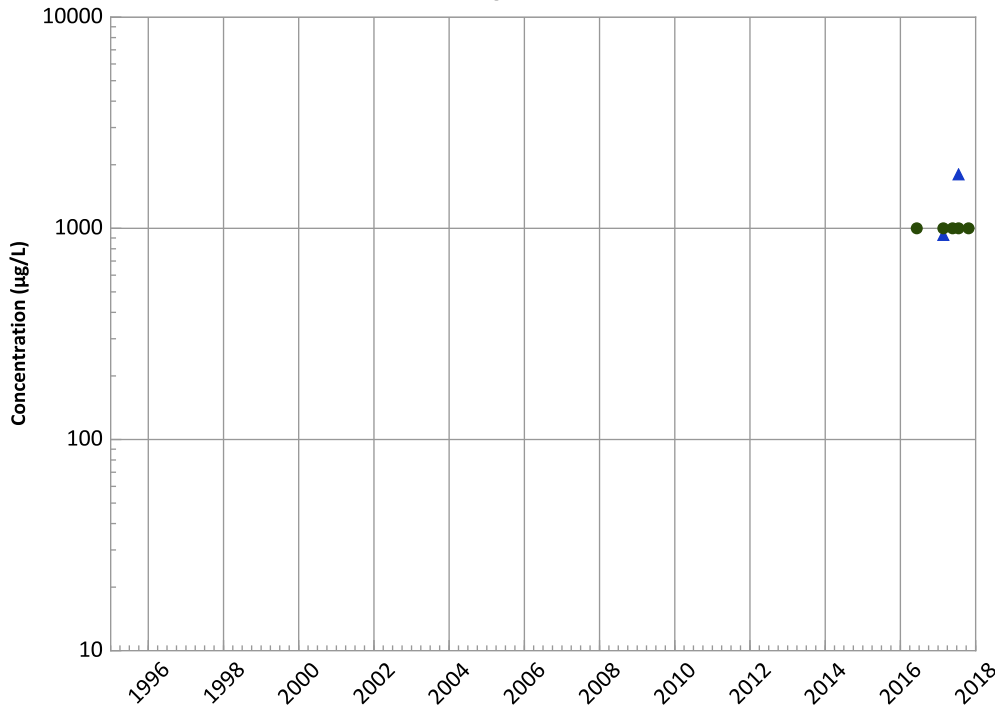


Concentration Trend

MAROS Mann-Kendall Method
 Data ():
 N/A (<4 Samples in Dataset)
 All Data
 Decreasing

MAROS Linear Regression Method
 Data ():
 N/A (<4 Detections in Dataset)
 All Data
 Probably Decreasing

Total Organic Carbon Trend

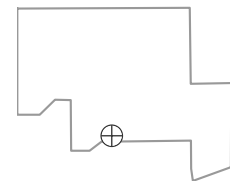


Concentration Trend

MAROS Mann-Kendall Method
 Data ():
 N/A (<4 Samples in Dataset)
 All Data
 N/A (<4 Detections in Dataset)

MAROS Linear Regression Method
 Data ():
 N/A (<4 Samples in Dataset)
 All Data
 N/A (<4 Detections in Dataset)

Well Location

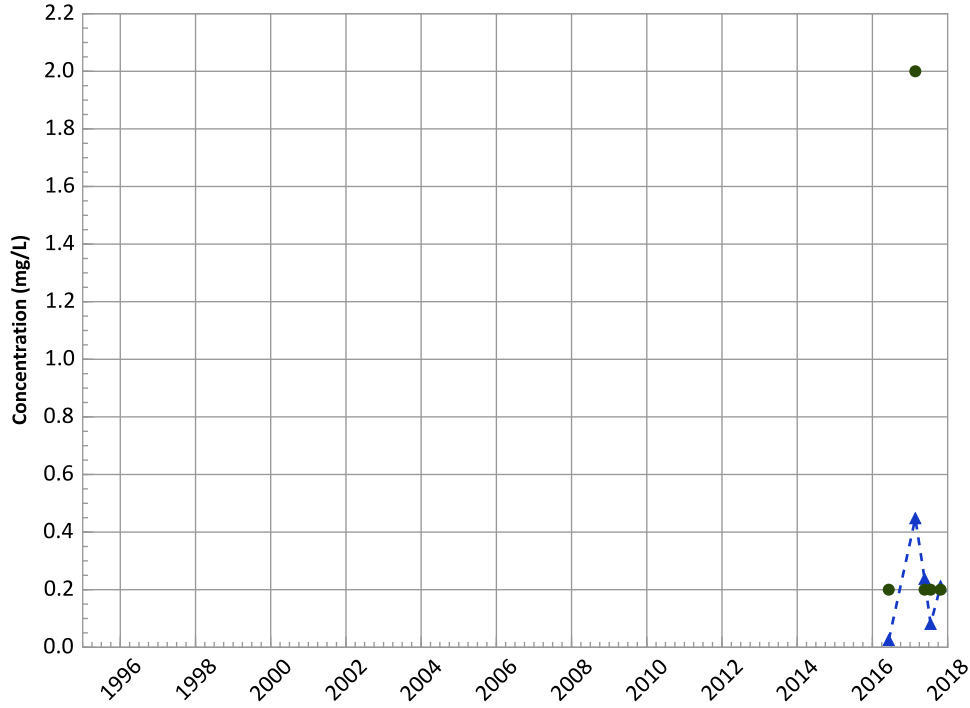


Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 06/08/2016 to 10/24/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1175 in Perched Aquifer
USDOE/NNSA Pantex Plant

Total Volatile Fatty Acids Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Samples in Dataset)

All Data

Stable

MAROS Linear Regression Method

Data ():

N/A (<4 Detections in Dataset)

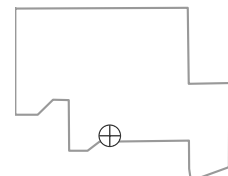
All Data

No Trend

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/08/2016 to 10/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

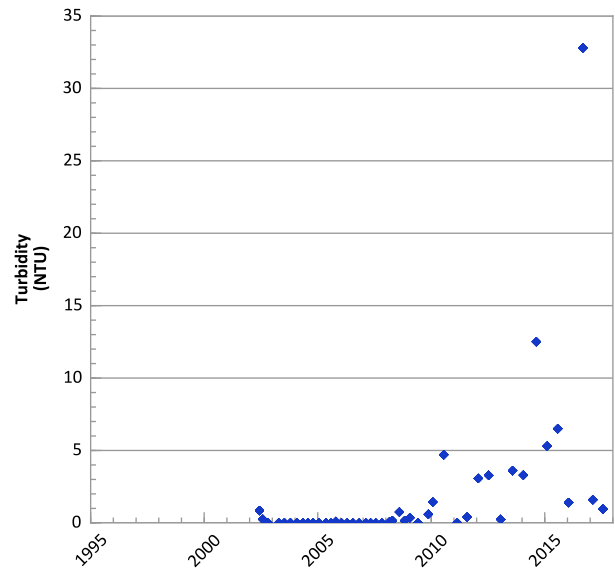
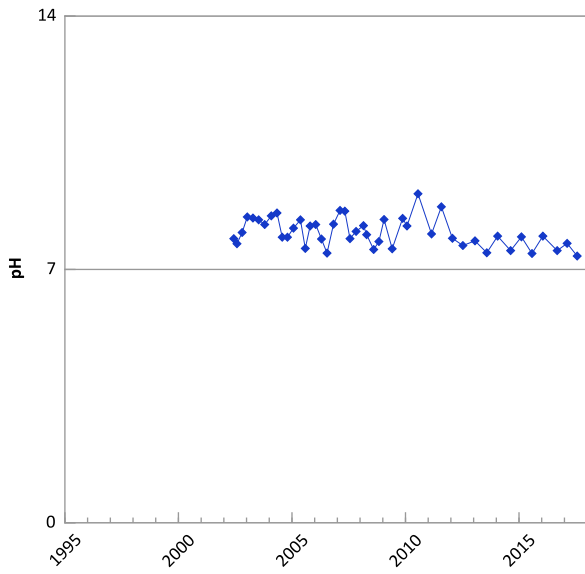
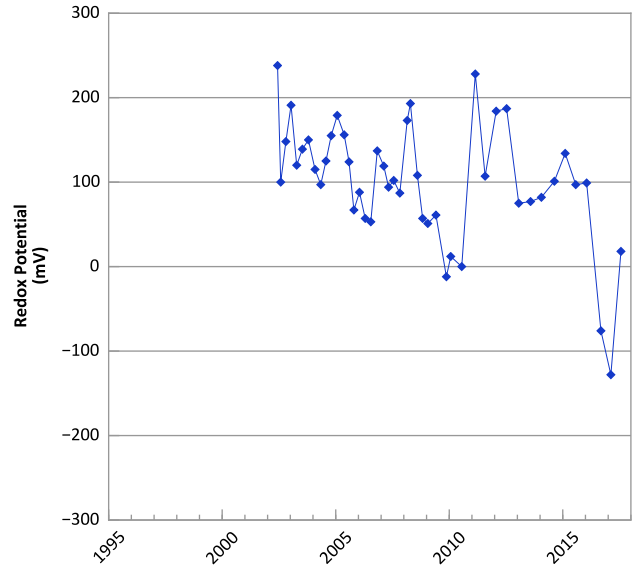
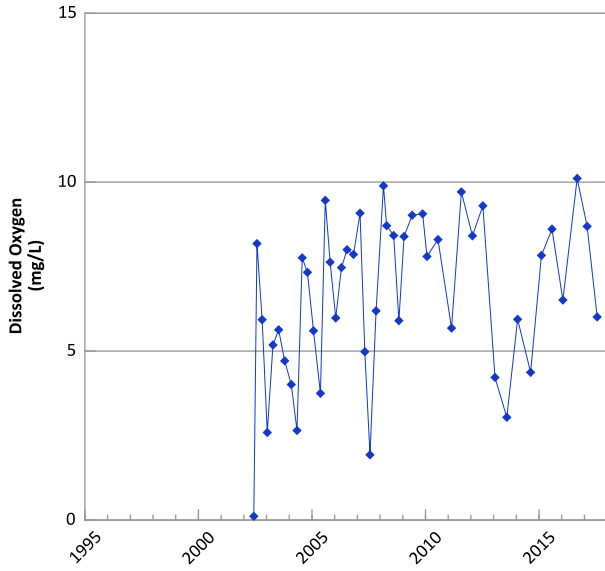
Well Location



Ogallala Aquifer Well Analyte Concentration Trends

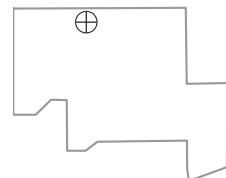
Well	COC	First_Date	Last_Date	NumS_AD	NumD_AD	AIIND_AD	CV_AD	MKS_AD	Conf_AD	Trend_AD	NumS_L4S	NumD_L4S	AIIND_L4S	CV_L4S	MKS_L4S	Conf_L4S	Trend_L4S	NumS_SSRA	NumD_SSRA	AIIND_SSRA	CV_SSRA	MKS_SSRA	Conf_SSRA	Trend_SSRA
PTX07-1R01	TNT	9/19/2000	10/31/2017	28	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	17	0	Yes	0	0.00	0	All Non-Detect
PTX07-1R01	DNT24	9/19/2000	10/31/2017	25	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	17	0	Yes	0	0.00	0	All Non-Detect
PTX07-1R01	DNT26	9/19/2000	10/31/2017	25	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	17	0	Yes	0	0.00	0	All Non-Detect
PTX07-1R01	DNT2A	9/19/2000	10/31/2017	25	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	17	0	Yes	0	0.00	0	All Non-Detect
PTX07-1R01	DNT4A	9/19/2000	10/31/2017	25	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	17	0	Yes	0	0.00	0	All Non-Detect
PTX07-1R01	TNB135	9/19/2000	10/31/2017	25	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	17	0	Yes	0	0.00	0	All Non-Detect
PTX07-1R01	DNB13	9/19/2000	10/31/2017	25	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	17	0	Yes	0	0.00	0	All Non-Detect
PTX07-1R01	DIOXANE14	7/26/2001	10/31/2017	10	1	No	0	0.00	0	N/A (<4 Detections in Dataset)	4	1	No	0	0.00	0	N/A (<4 Detections in Dataset)	8	1	No	0	0.00	0	N/A (<4 Detections in Dataset)
PTX07-1R01	PCE	5/8/2000	10/31/2017	28	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	17	0	Yes	0	0.00	0	All Non-Detect
PTX07-1R01	TCE	5/8/2000	10/31/2017	28	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	17	0	Yes	0	0.00	0	All Non-Detect
PTX07-1R01	DCE12C	5/8/2000	10/31/2017	24	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	17	0	Yes	0	0.00	0	All Non-Detect
PTX07-1R01	DCA12	5/8/2000	10/31/2017	26	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	17	0	Yes	0	0.00	0	All Non-Detect
PTX07-1R01	TCLME	5/8/2000	10/31/2017	25	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	17	0	Yes	0	0.00	0	All Non-Detect
PTX07-1R01	PERC	9/19/2000	10/31/2017	27	1	No	0	0.00	0	N/A (<4 Detections in Dataset)	4	0	Yes	0	0.00	0	All Non-Detect	17	1	No	0	0.00	0	N/A (<4 Detections in Dataset)
PTX07-1R01	B	9/19/2000	10/31/2017	26	26	No	0.067470263	14.00	0.6115	No Trend	4	4	No	0.073871231	-3.00	1	Decreasing	17	17	No	0.068050121	-1.00	1	Decreasing
PTX07-1R01	MN	9/19/2000	10/31/2017	20	13	No	1.715234254	-115.00	1	Decreasing	4	0	Yes	0	0.00	0	All Non-Detect	10	4	No	1.432859199	-7.00	1	Decreasing
PTX-BEG2	RDY	3/19/1996	7/27/2017	40	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	17	0	Yes	0	0.00	0	All Non-Detect
PTX-BEG2	HMX	3/19/1996	7/27/2017	40	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	17	0	Yes	0	0.00	0	All Non-Detect
PTX-BEG2	TNT	3/19/1996	7/27/2017	40	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	17	0	Yes	0	0.00	0	All Non-Detect
PTX-BEG2	DNT24	3/19/1996	7/27/2017	35	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	17	0	Yes	0	0.00	0	All Non-Detect
PTX-BEG2	DNT26	3/19/1996	7/27/2017	35	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	17	0	Yes	0	0.00	0	All Non-Detect
PTX-BEG2	DNT2A	3/19/1996	7/27/2017	35	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	17	0	Yes	0	0.00	0	All Non-Detect
PTX-BEG2	DNT4A	3/19/1996	7/27/2017	35	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	17	0	Yes	0	0.00	0	All Non-Detect
PTX-BEG2	TNB135	3/19/1996	7/27/2017	34	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	17	0	Yes	0	0.00	0	All Non-Detect
PTX-BEG2	DNB13	3/19/1996	7/27/2017	35	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	17	0	Yes	0	0.00	0	All Non-Detect
PTX-BEG2	DIOXANE14	8/13/2014	7/27/2017	7	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	7	0	Yes	0	0.00	0	All Non-Detect
PTX-BEG2	PCE	12/11/1995	7/27/2017	42	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	17	0	Yes	0	0.00	0	All Non-Detect
PTX-BEG2	TCE	3/19/1996	7/27/2017	41	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	17	0	Yes	0	0.00	0	All Non-Detect
PTX-BEG2	DCE12C	3/19/1996	7/27/2017	41	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	17	0	Yes	0	0.00	0	All Non-Detect
PTX-BEG2	DCA12	3/19/1996	7/27/2017	37	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	17	0	Yes	0	0.00	0	All Non-Detect
PTX-BEG2	TCLME	12/11/1995	7/27/2017	37	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	17	0	Yes	0	0.00	0	All Non-Detect
PTX-BEG2	PERC	8/4/2000	7/27/2017	31	0	Yes	0	0.00	0	All Non-Detect	4	0	Yes	0	0.00	0	All Non-Detect	17	0	Yes	0	0.00	0	All Non-Detect
PTX-BEG2	B	12/11/1995	7/27/2017	38	38	No	0.133858312	-100.00	1	Decreasing	4	4	No	0.076670992	0.00	0.375	Stable	17	17	No	0.081756448	-26.00	1	Decreasing
PTX-BEG2	MN	12/11/1995	7/27/2017	33	9	No	2.116005175	149.00	0.9895	Increasing	4	1	No	0	0.00	0	N/A (<4 Detections in Dataset)	10	4	No	0.998745558	-11.00	1	Decreasing

**PTX01-1010 in Ogallala Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



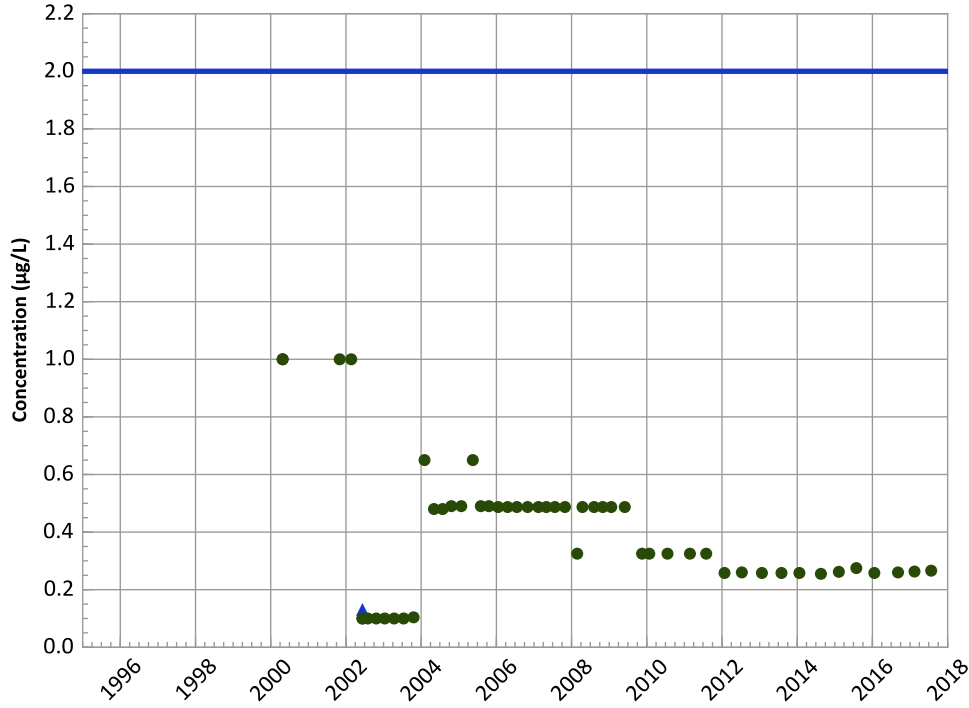
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 04/26/2000 to 07/25/2017
 Analysis Date: 03/21/2018

Well Location



PTX01-1010 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

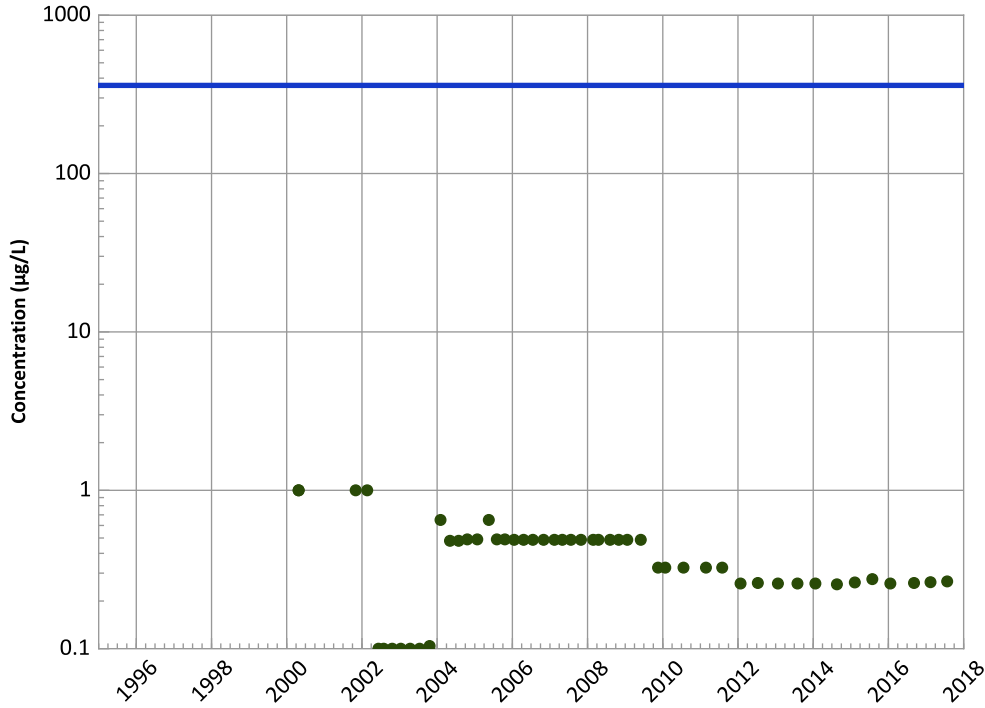
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

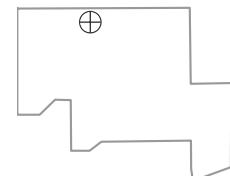
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

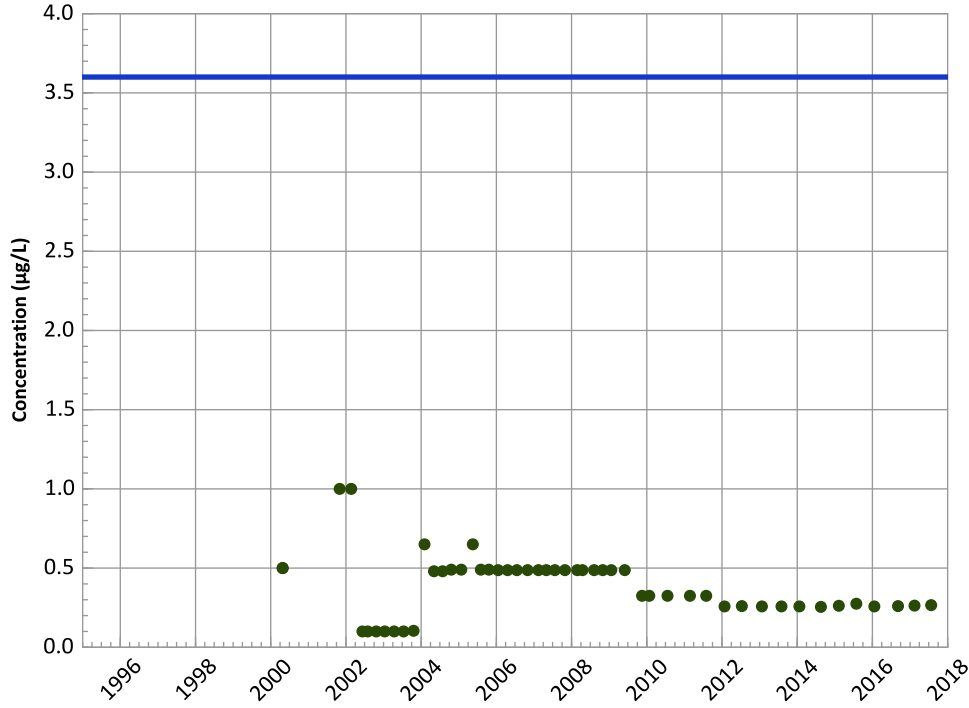


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 04/26/2000 to 07/25/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX01-1010 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

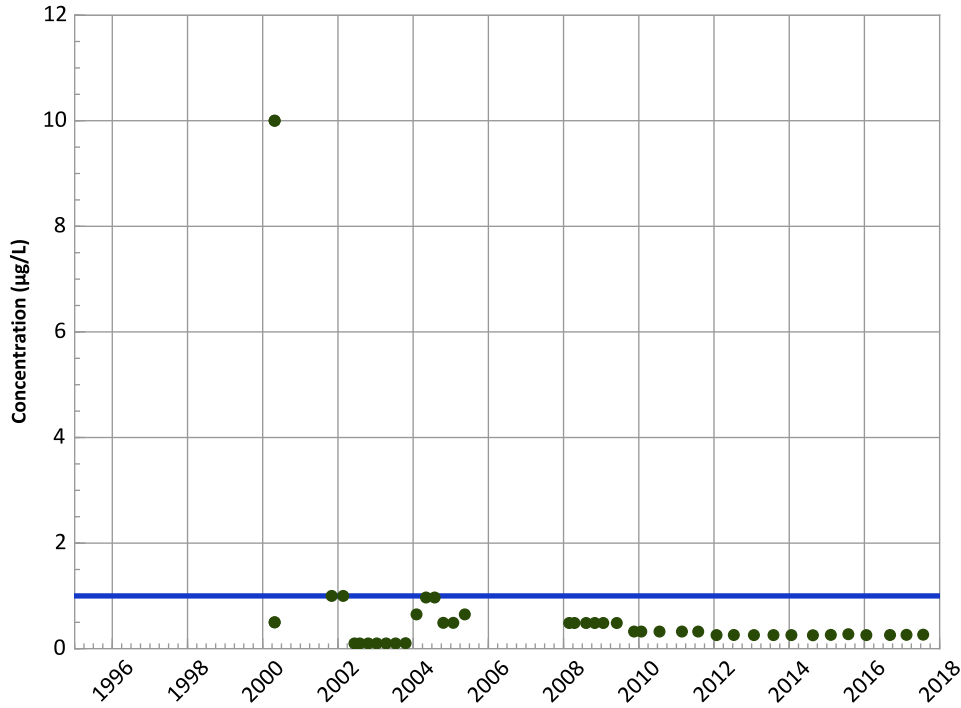
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

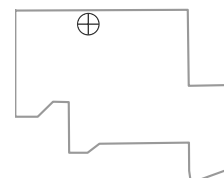
MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 04/26/2000 to 07/25/2017
Analysis Date: 03/21/2018

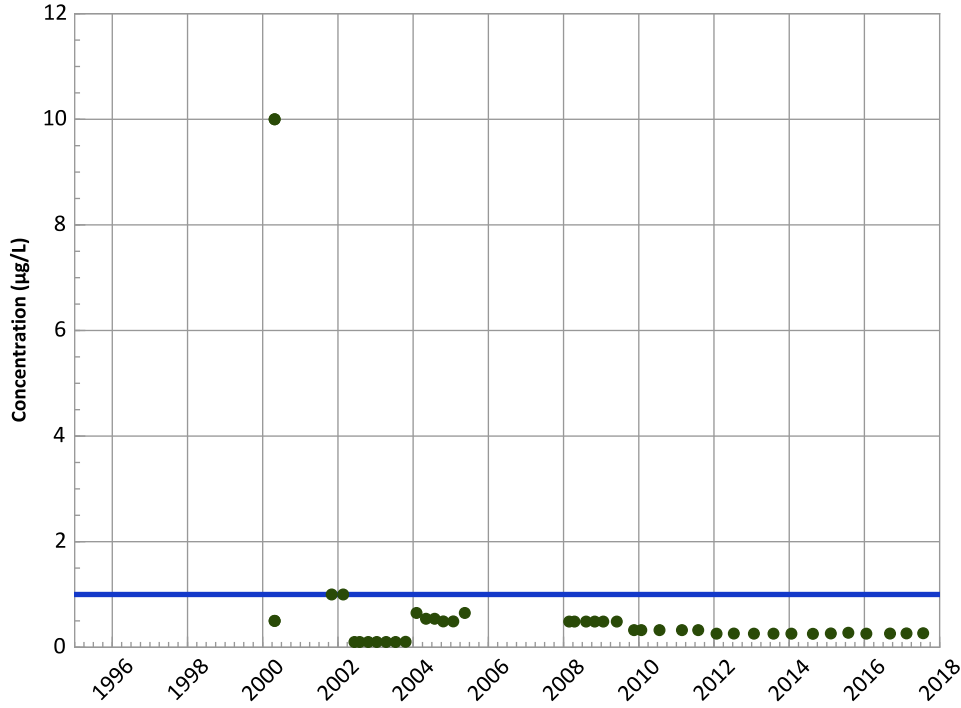
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX01-1010 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

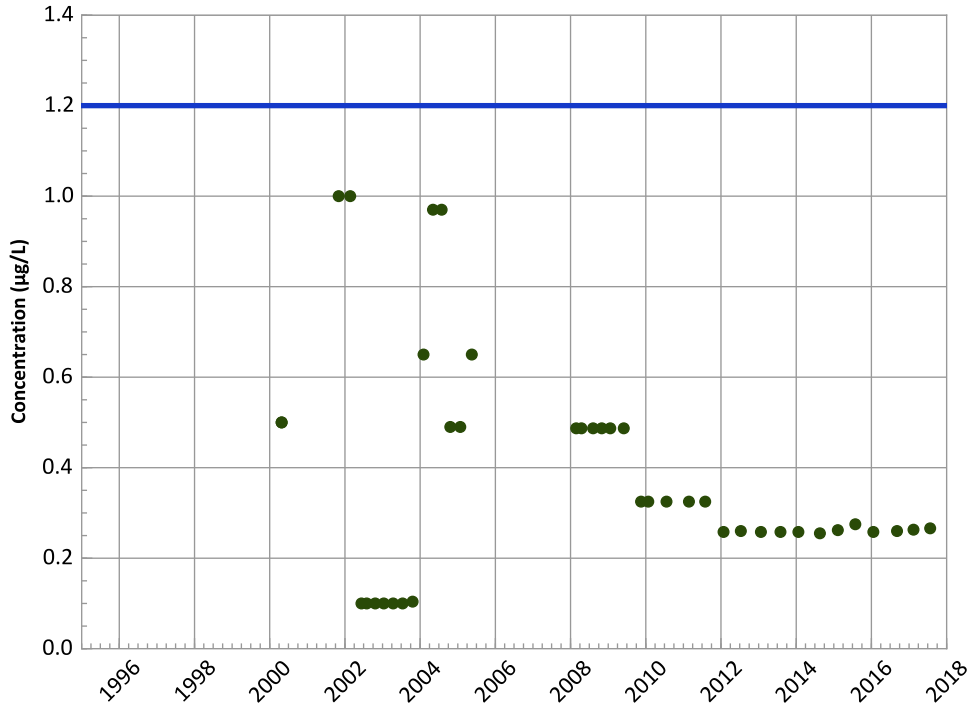
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

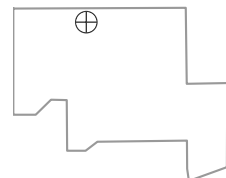
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

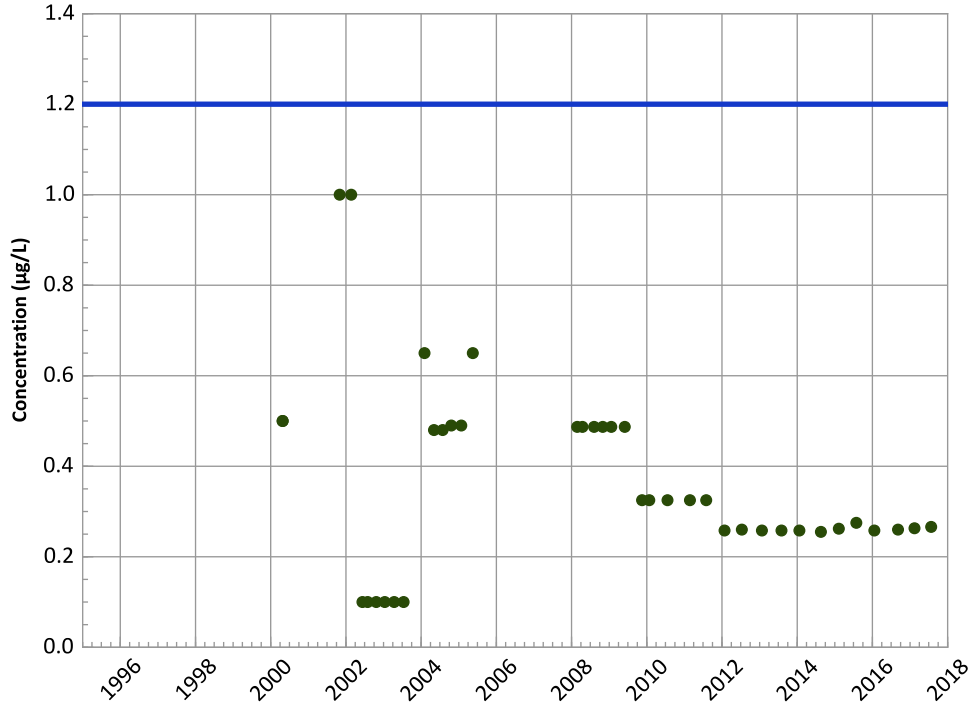


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 04/26/2000 to 07/25/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX01-1010 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

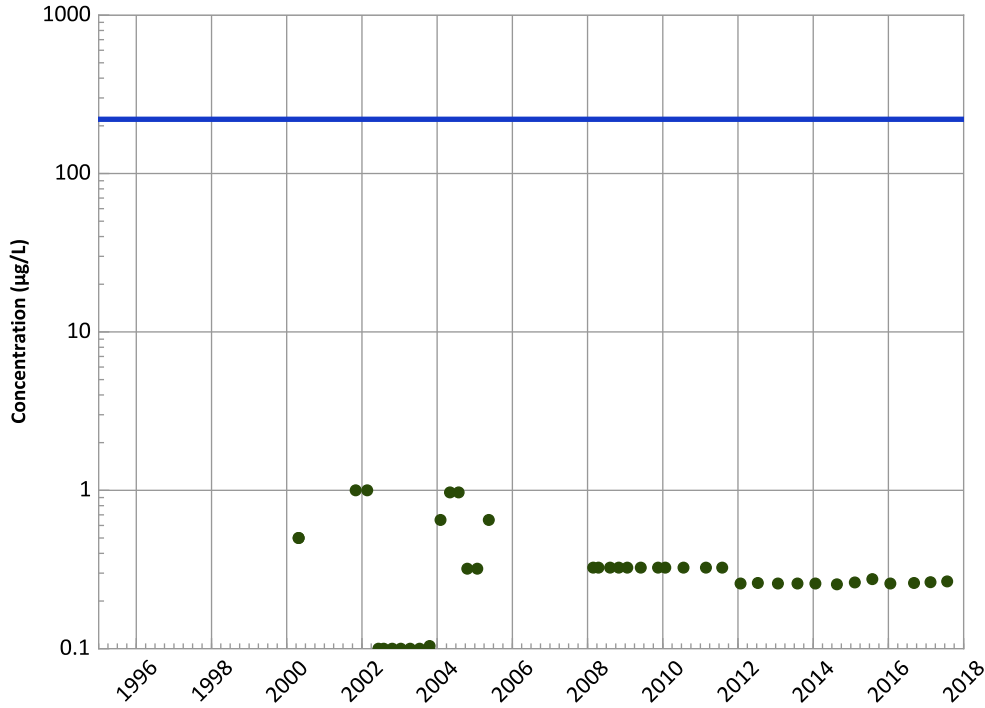
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,3,5-Trinitrobenzene Trend



Concentration Trend

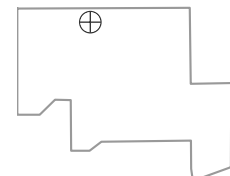
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

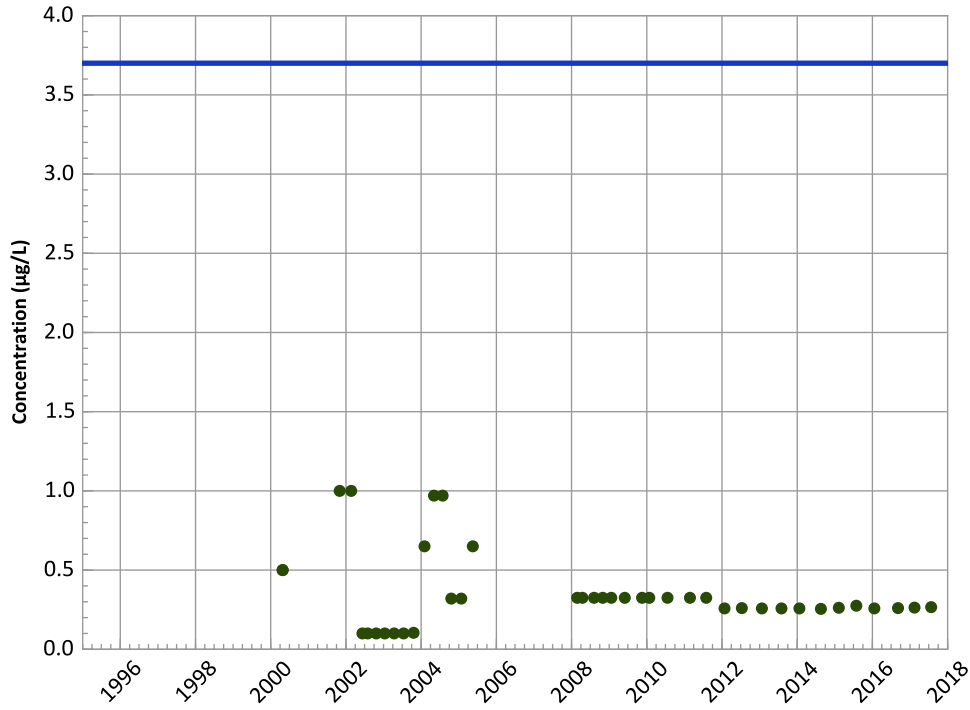


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 04/26/2000 to 07/25/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX01-1010 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

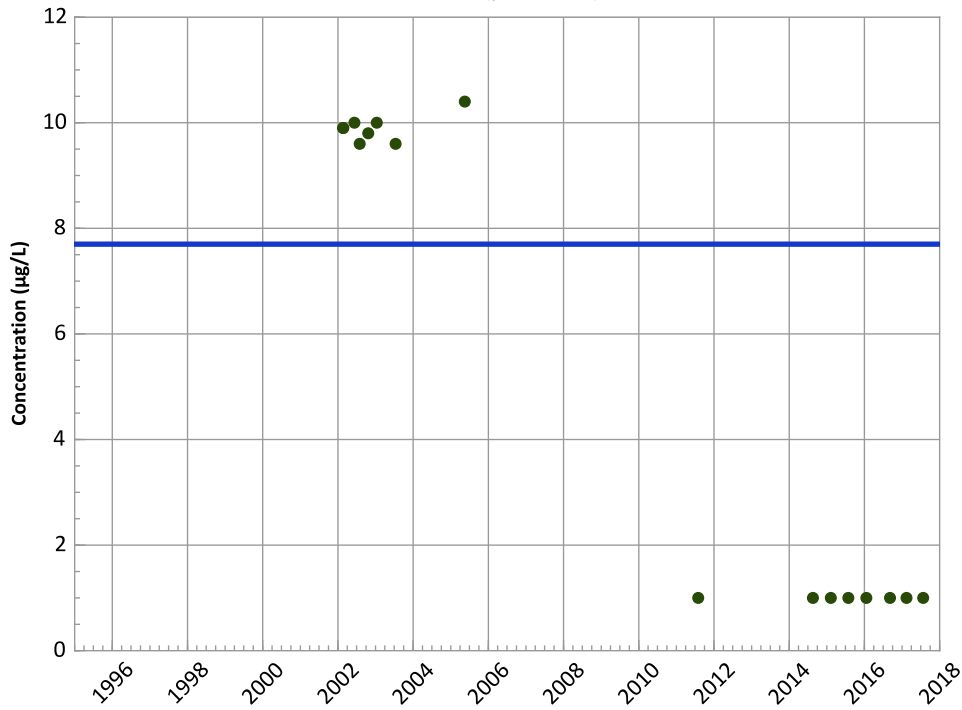
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,4-Dioxane (p-Dioxane) Trend



Concentration Trend

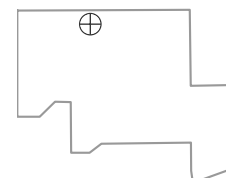
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

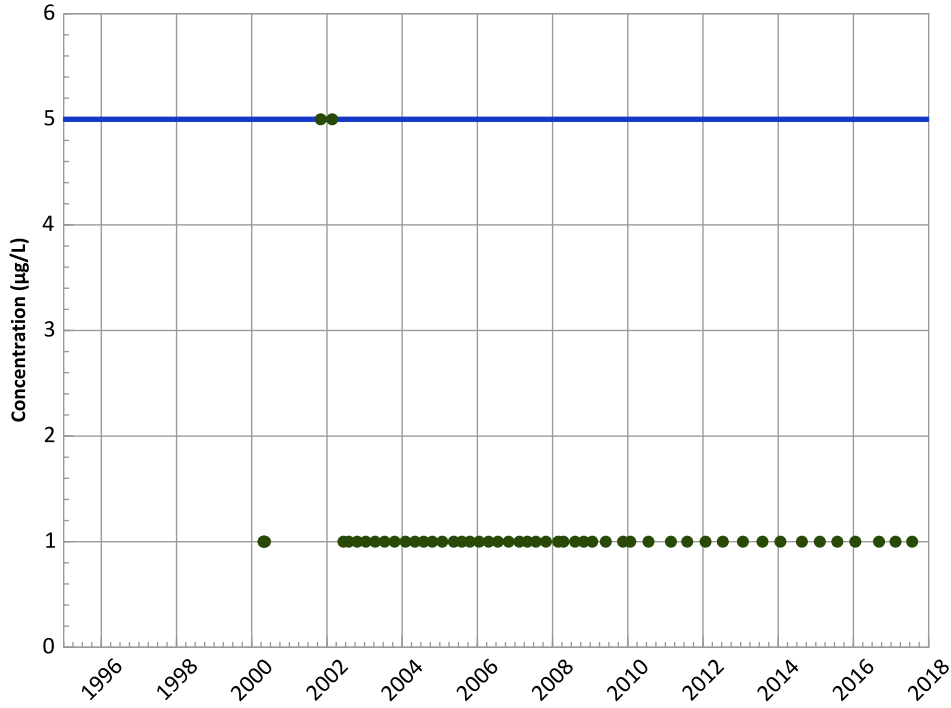
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 04/26/2000 to 07/25/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX01-1010 in Ogallala Aquifer
USDOE/NNSA Pantex Plant
Tetrachloroethylene (PCE) Trend**



Concentration Trend

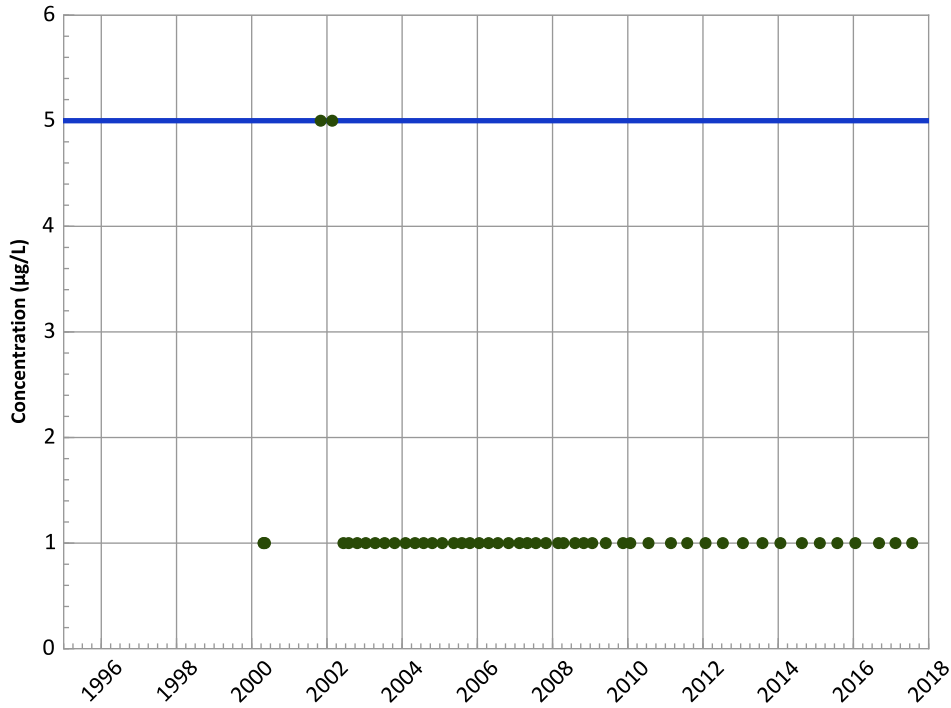
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Trichloroethene Trend



Concentration Trend

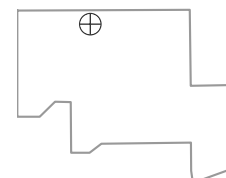
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

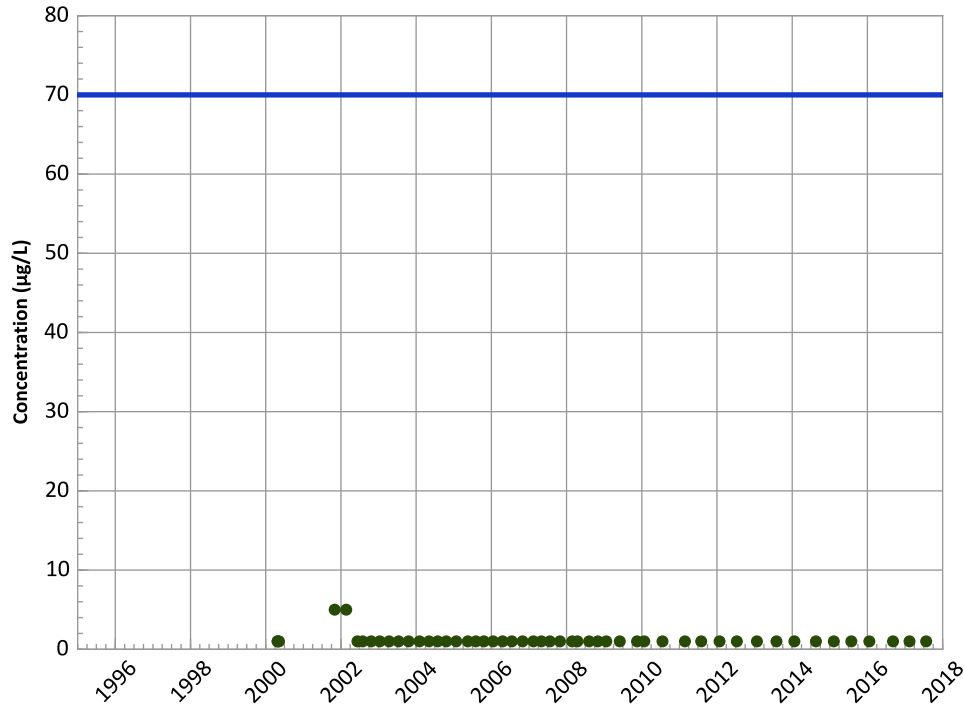
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 04/26/2000 to 07/25/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX01-1010 in Ogallala Aquifer
USDOE/NNSA Pantex Plant
cis-1,2-Dichloroethene Trend**



Concentration Trend

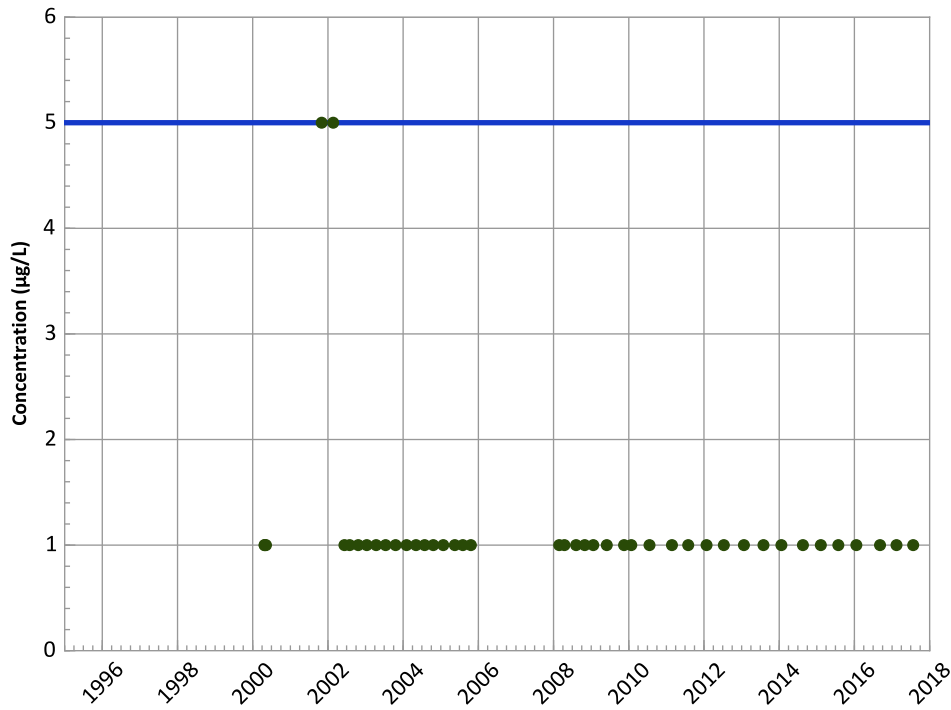
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,2-Dichloroethane Trend



Concentration Trend

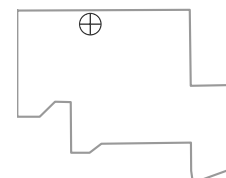
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

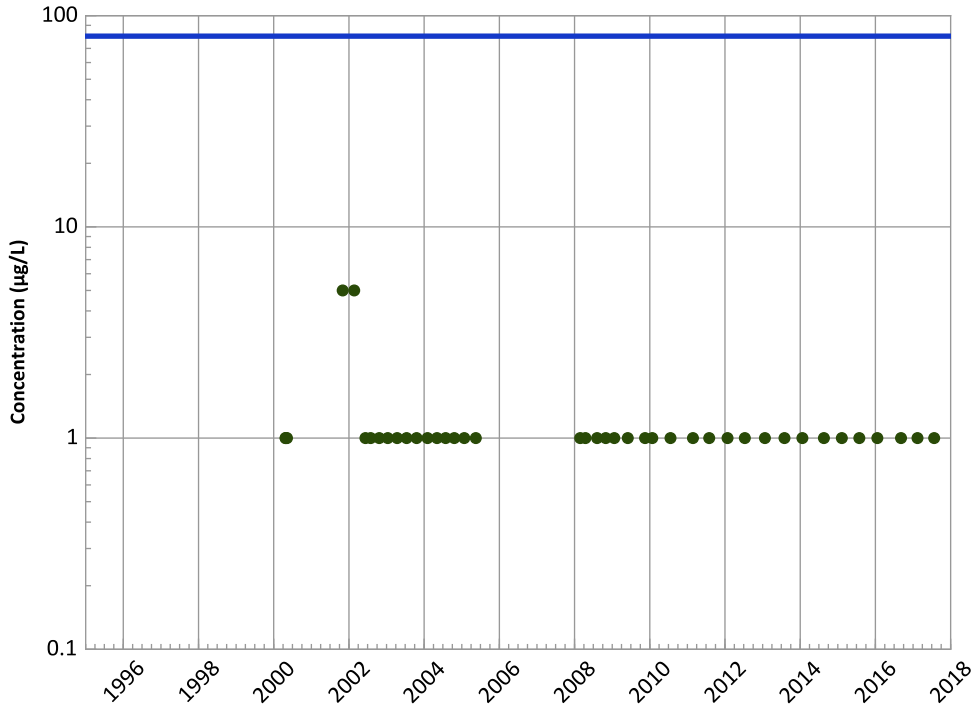
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 04/26/2000 to 07/25/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX01-1010 in Ogallala Aquifer
USDOE/NNSA Pantex Plant
Chloroform Trend**



Concentration Trend

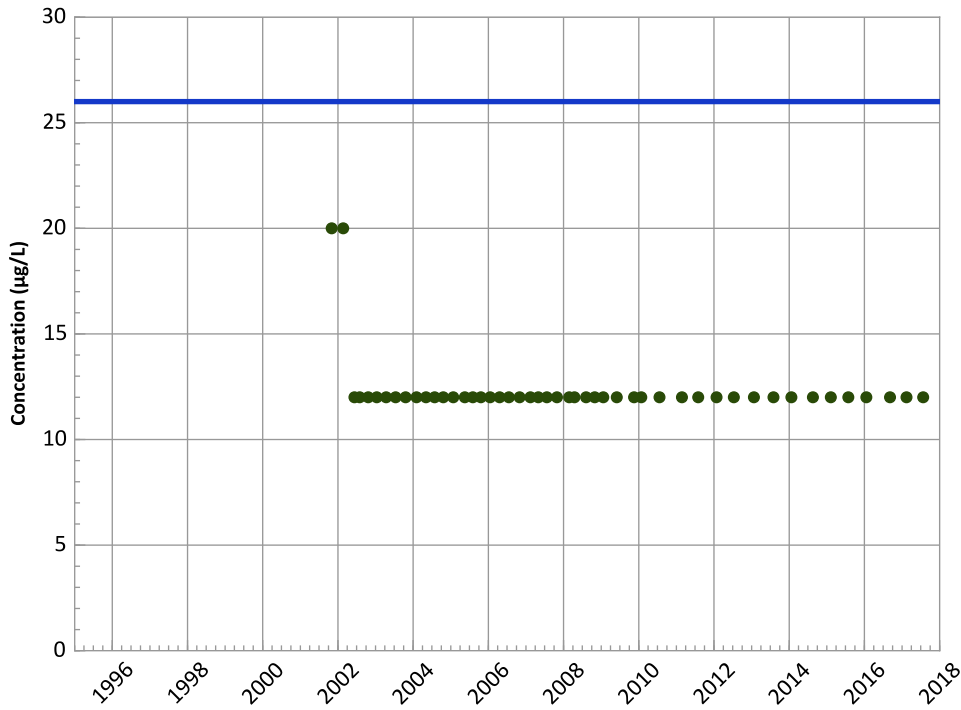
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Perchlorate Trend



Concentration Trend

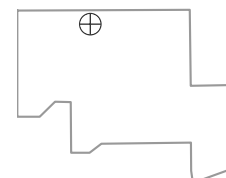
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

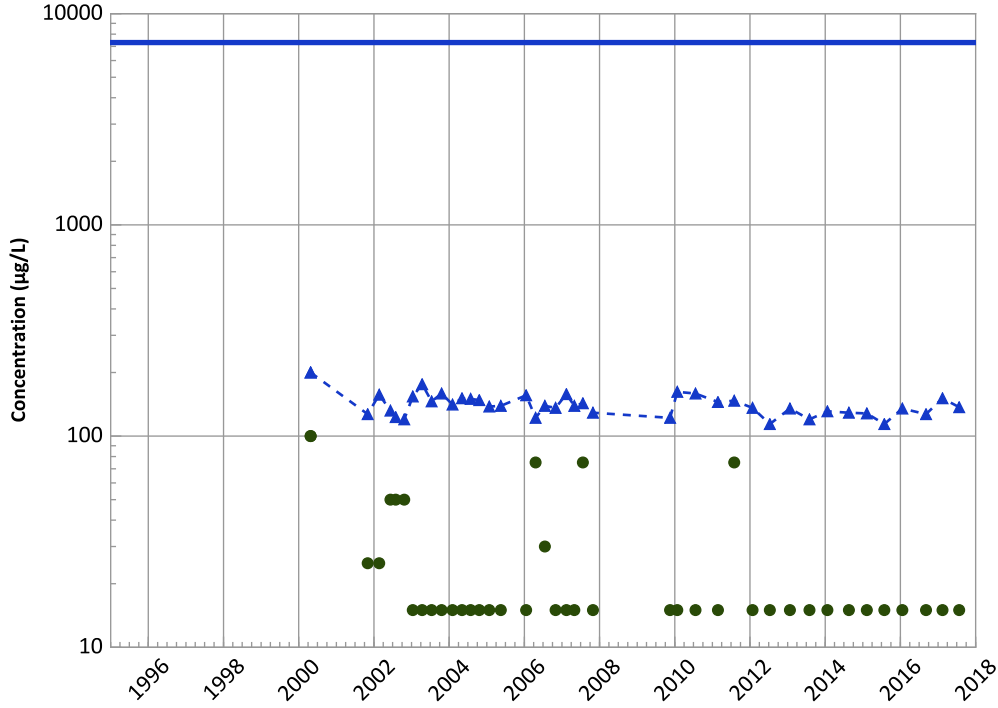


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 04/26/2000 to 07/25/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX01-1010 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

Boron Trend



Concentration Trend

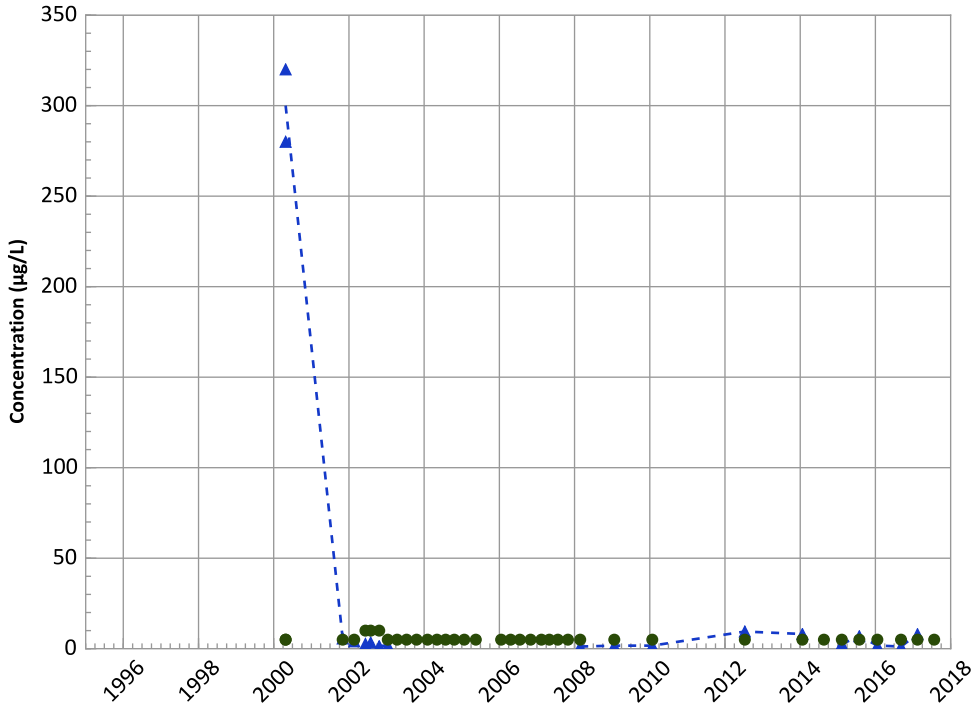
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

Manganese Trend



Concentration Trend

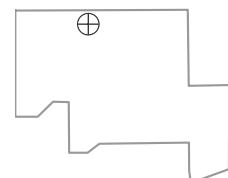
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
No Trend

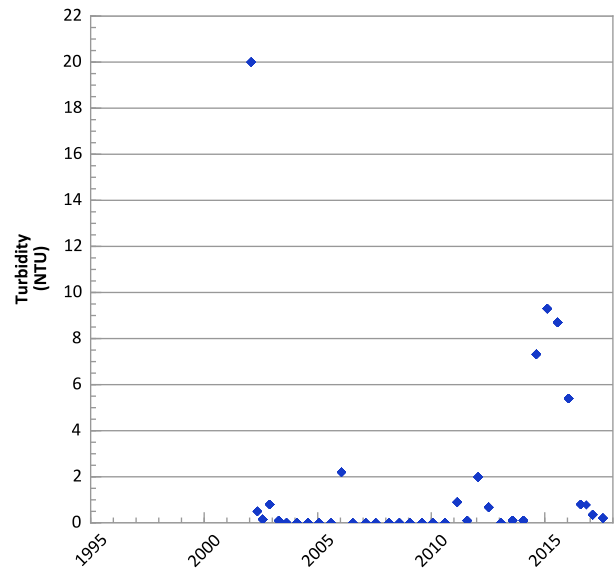
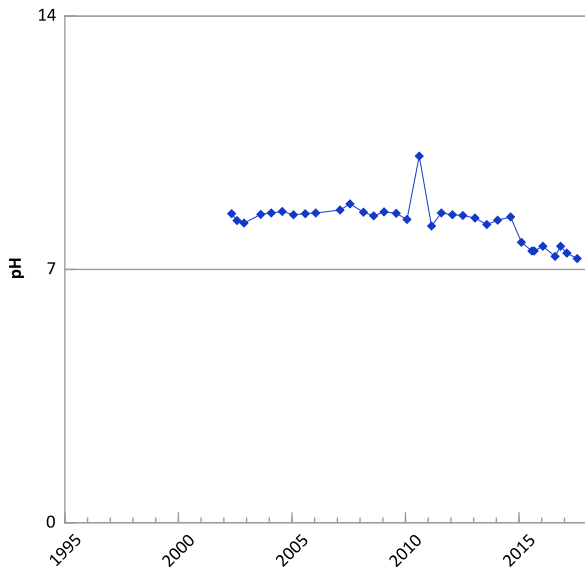
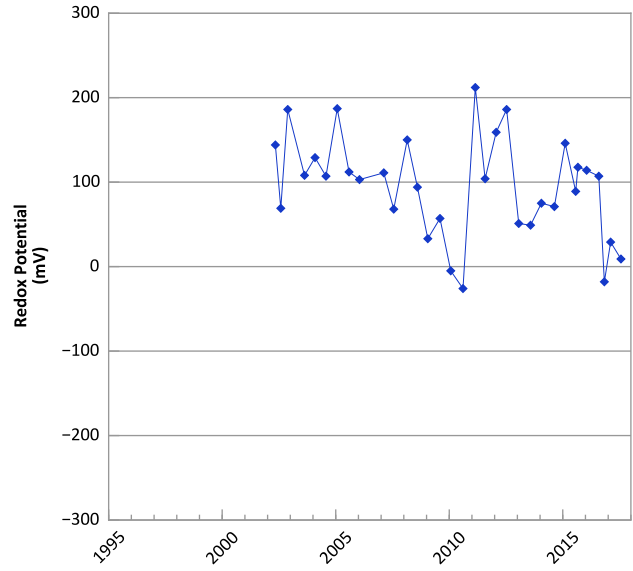
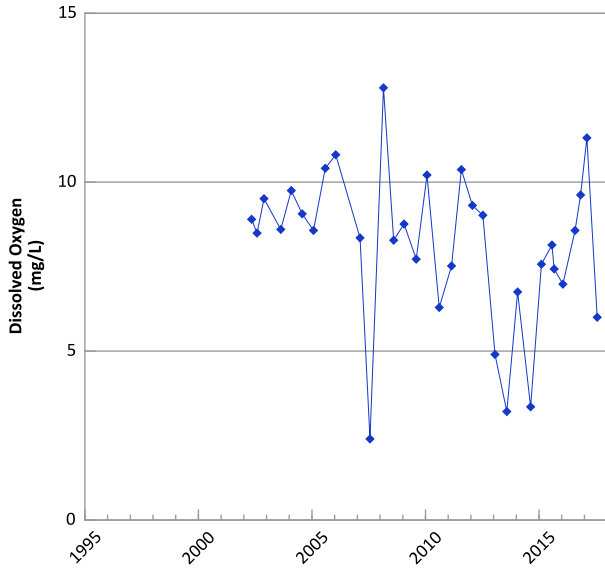
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 04/26/2000 to 07/25/2017
Analysis Date: 03/21/2018

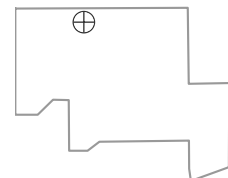
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX01-1011 in Ogallala Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



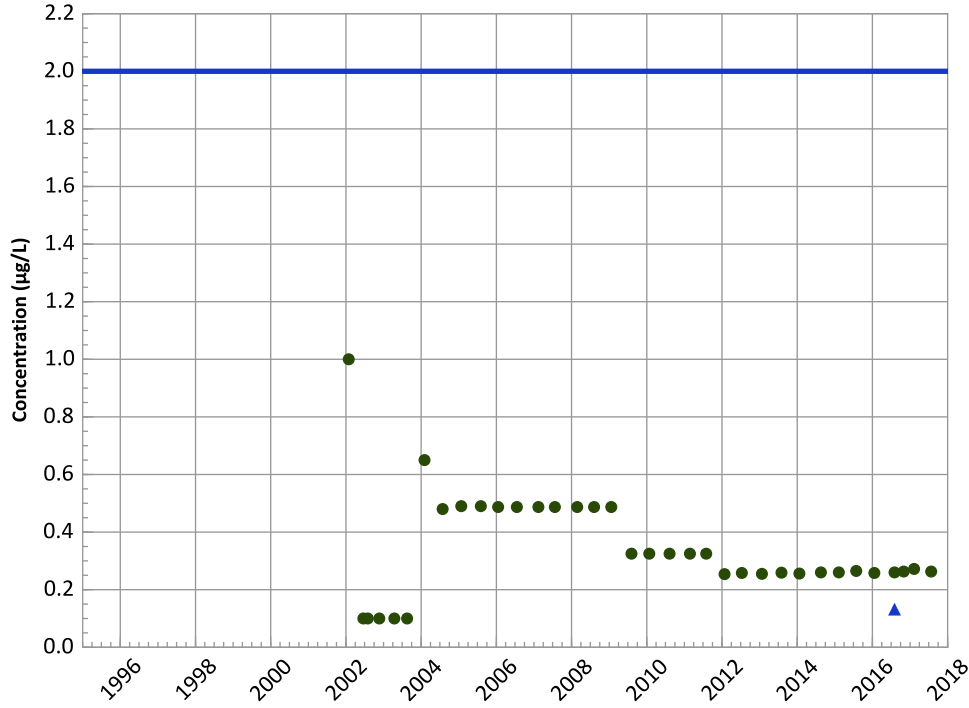
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 01/28/2002 to 07/25/2017
 Analysis Date: 03/21/2018

Well Location



PTX01-1011 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

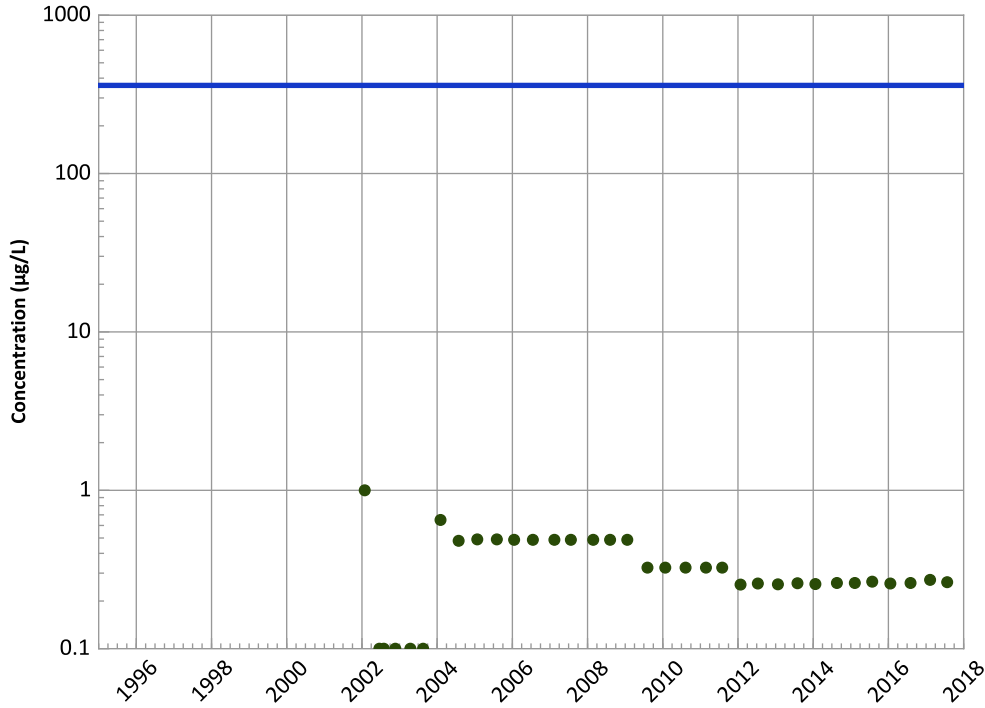
Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

All Non-Detect

All Data

All Non-Detect

MAROS Linear Regression Method

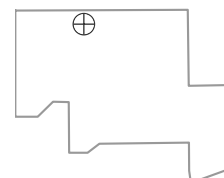
Data ():

All Non-Detect

All Data

All Non-Detect

Well Location

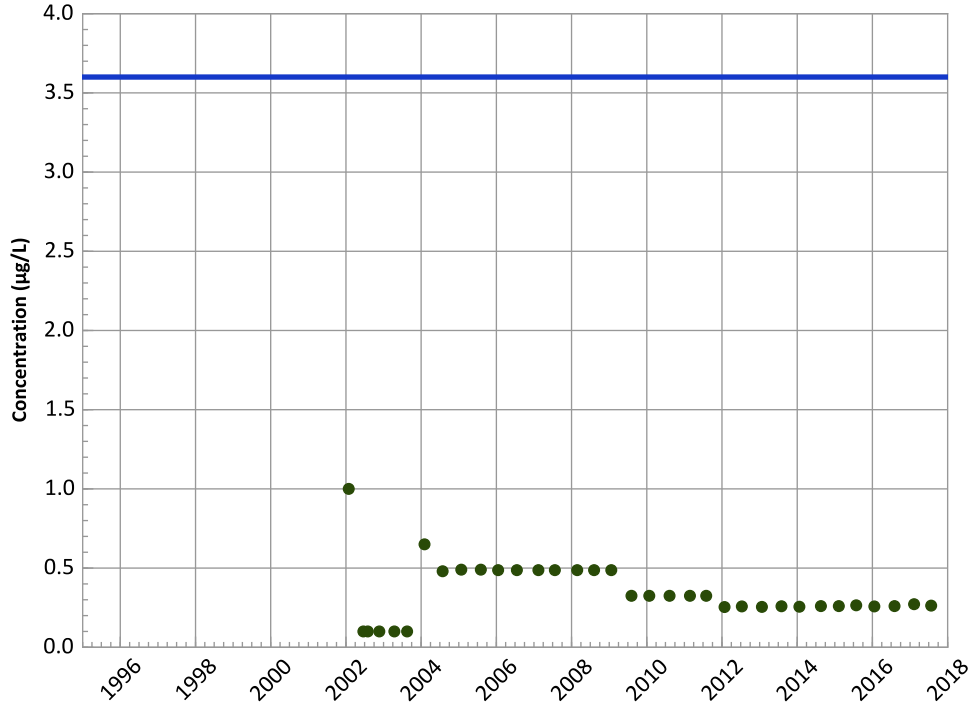


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 01/28/2002 to 07/25/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX01-1011 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

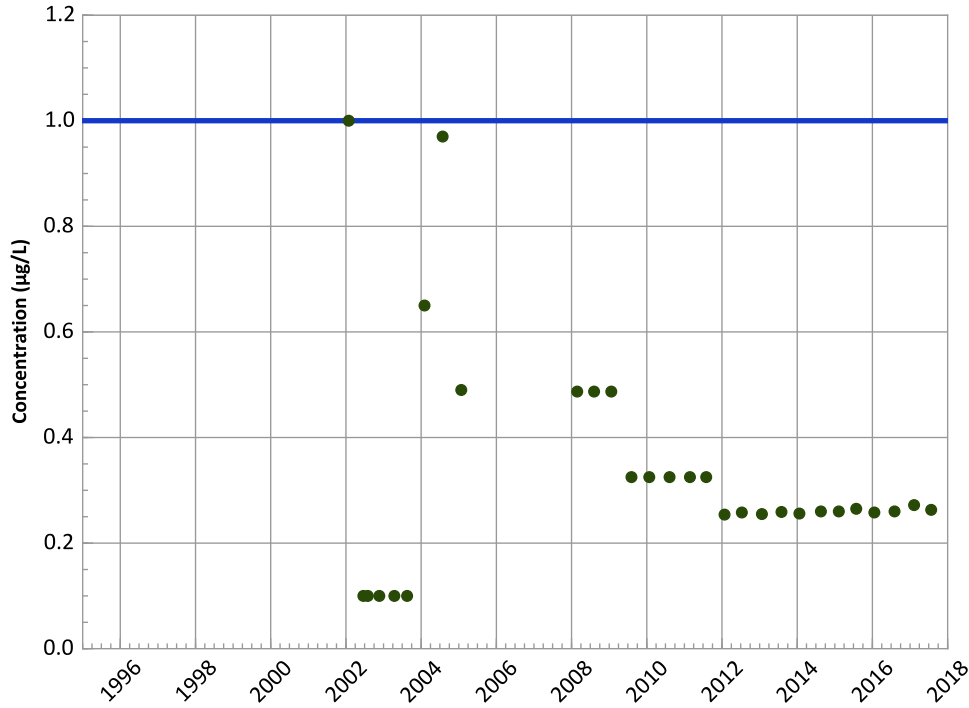
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

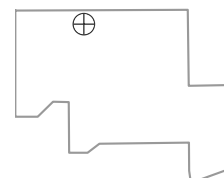
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

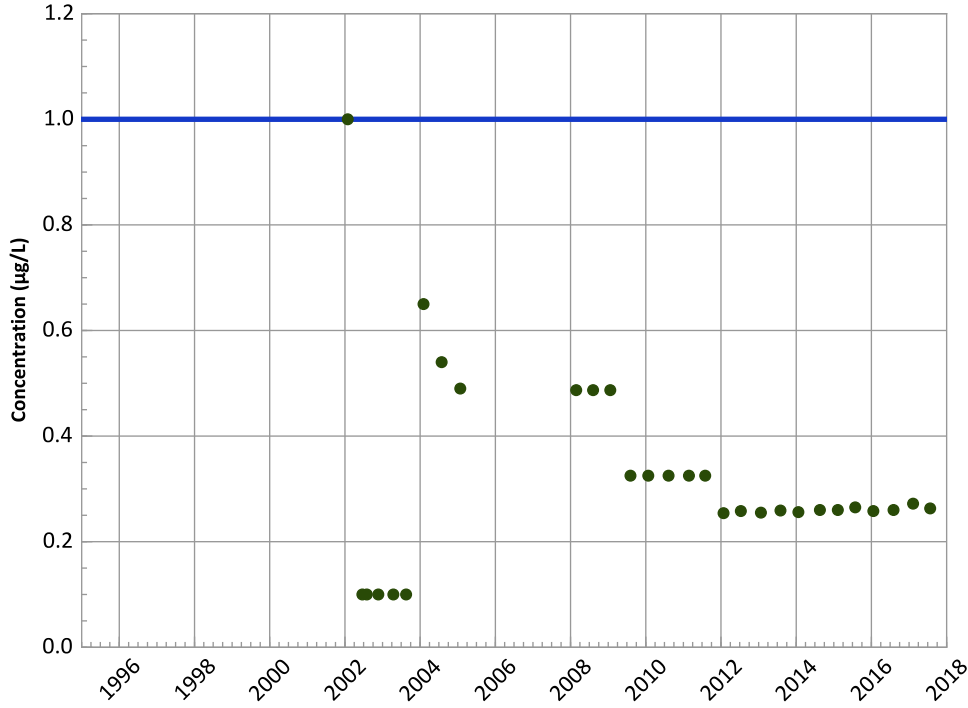


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 01/28/2002 to 07/25/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX01-1011 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

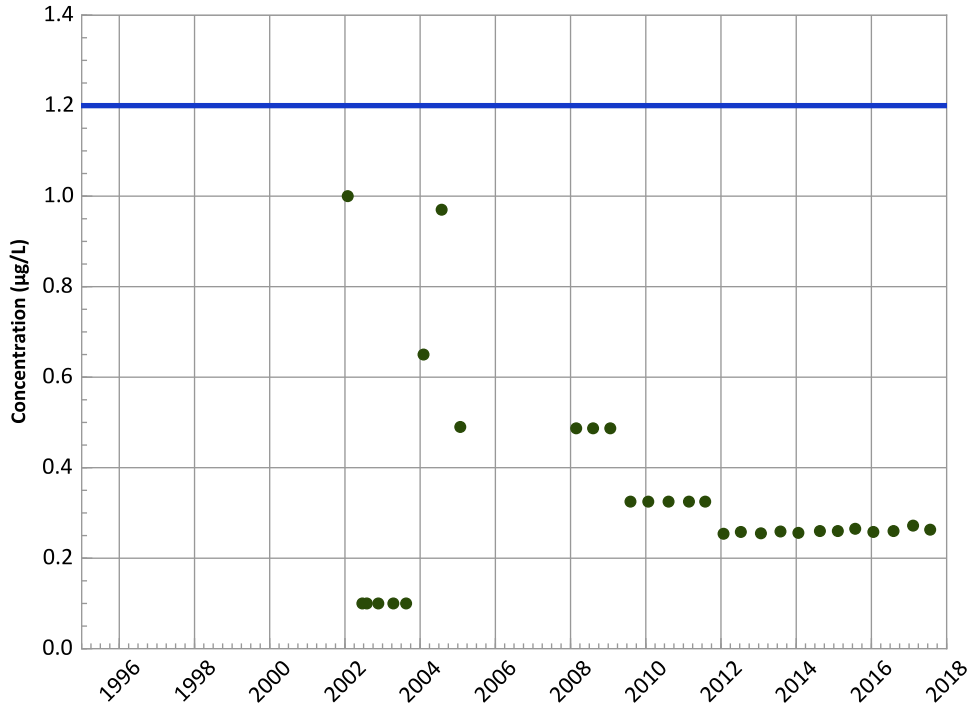
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

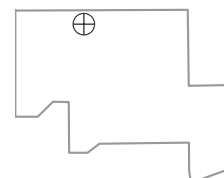
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

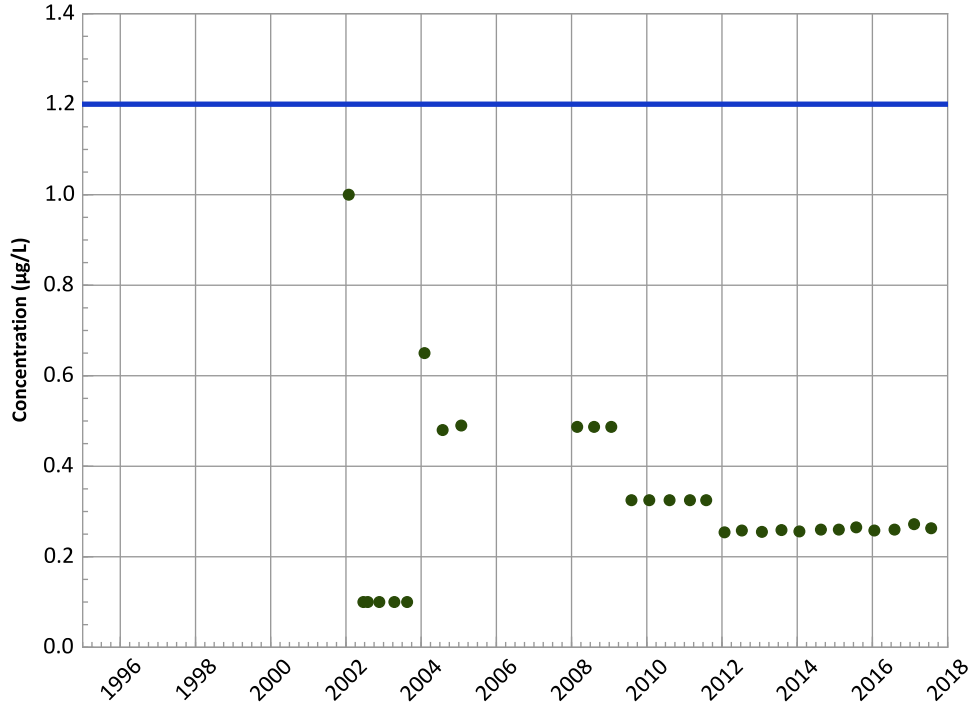


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 01/28/2002 to 07/25/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX01-1011 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

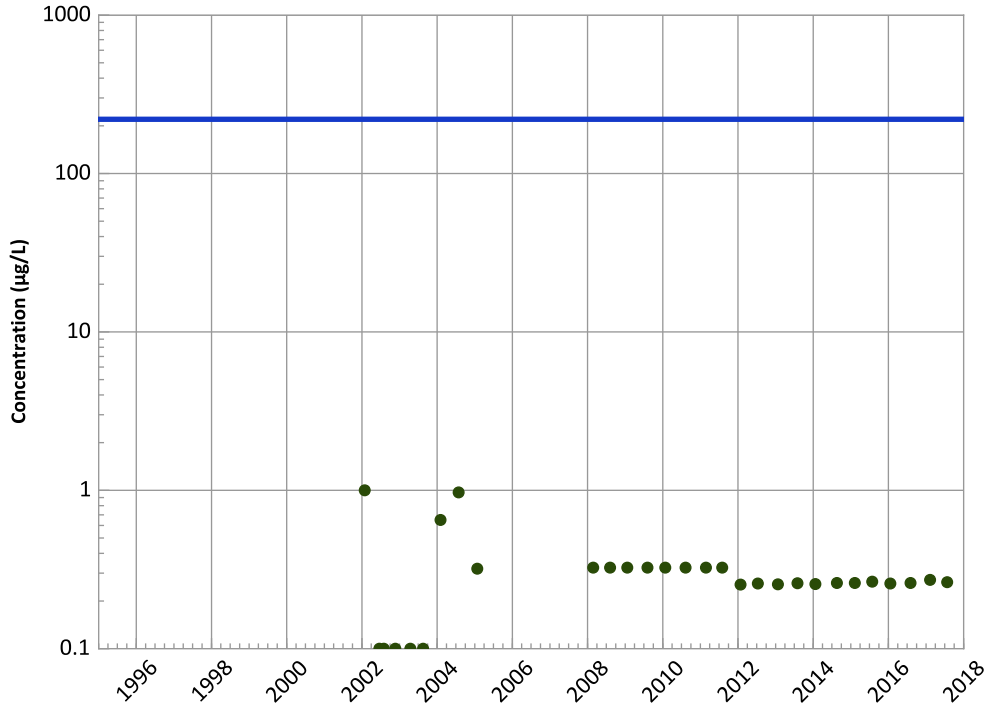
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,3,5-Trinitrobenzene Trend



Concentration Trend

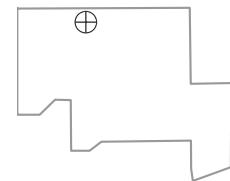
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

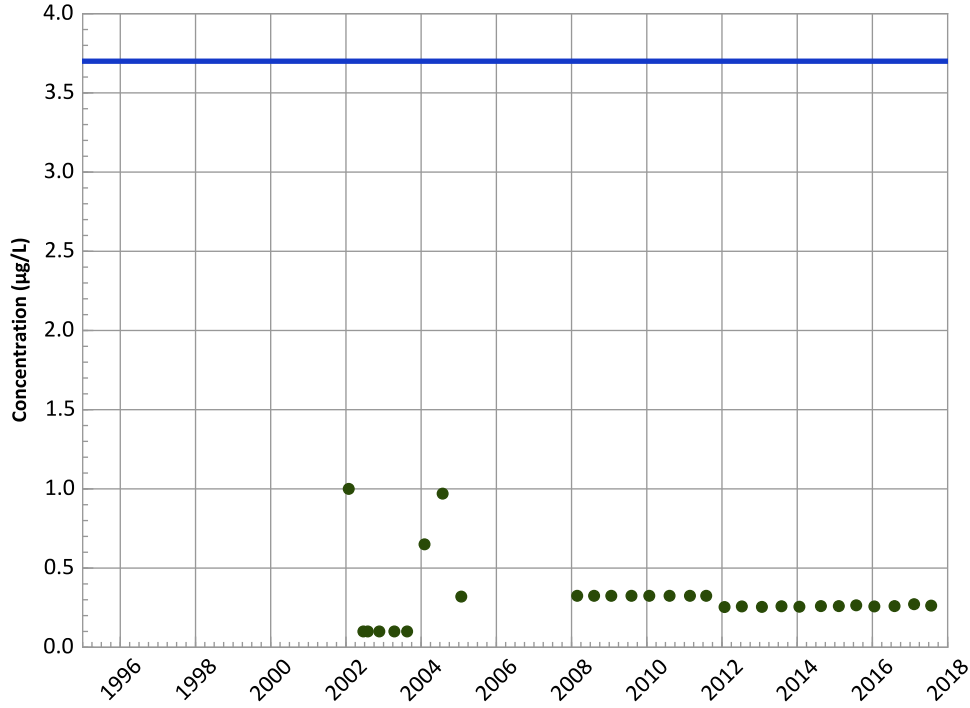


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 01/28/2002 to 07/25/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX01-1011 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

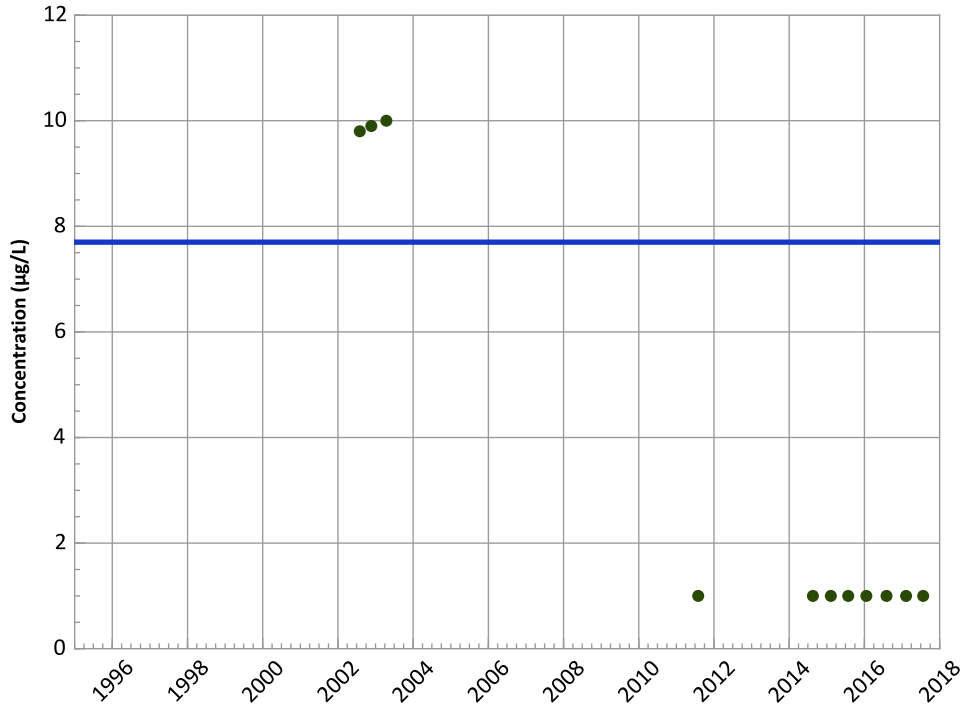
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,4-Dioxane (p-Dioxane) Trend



Concentration Trend

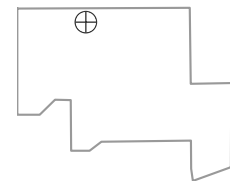
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

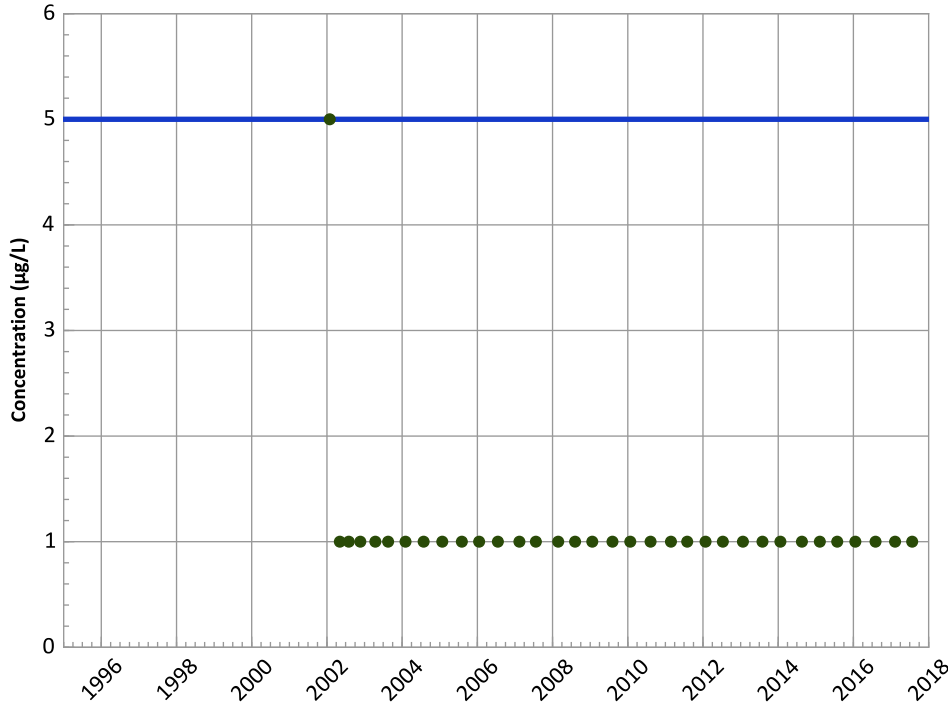


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 01/28/2002 to 07/25/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX01-1011 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

Tetrachloroethylene (PCE) Trend



Concentration Trend

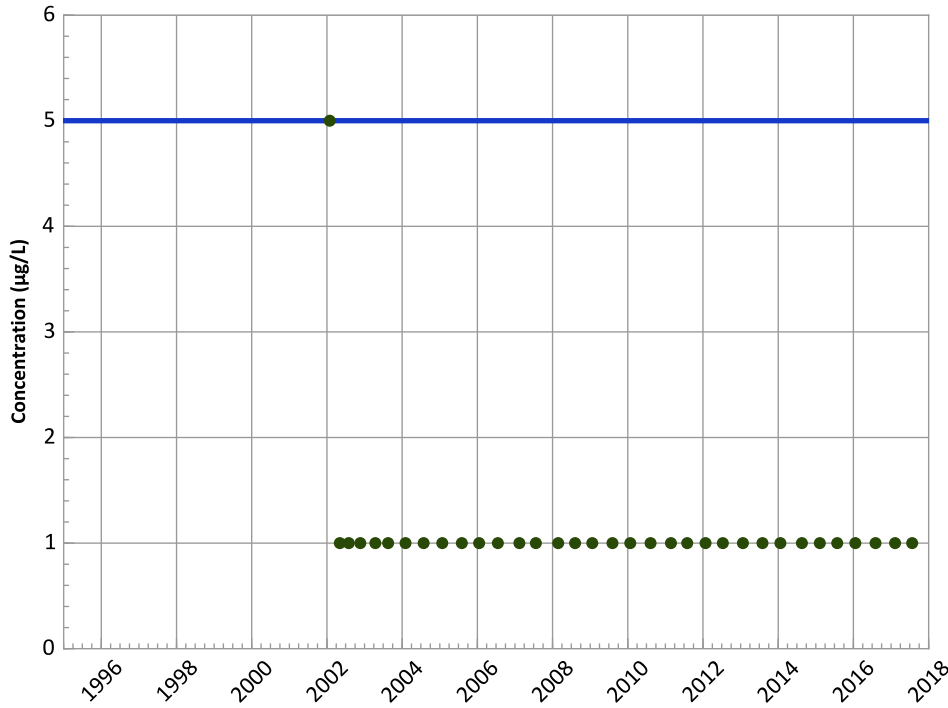
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Trichloroethene Trend



Concentration Trend

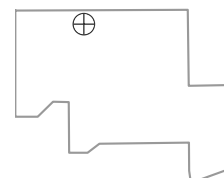
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

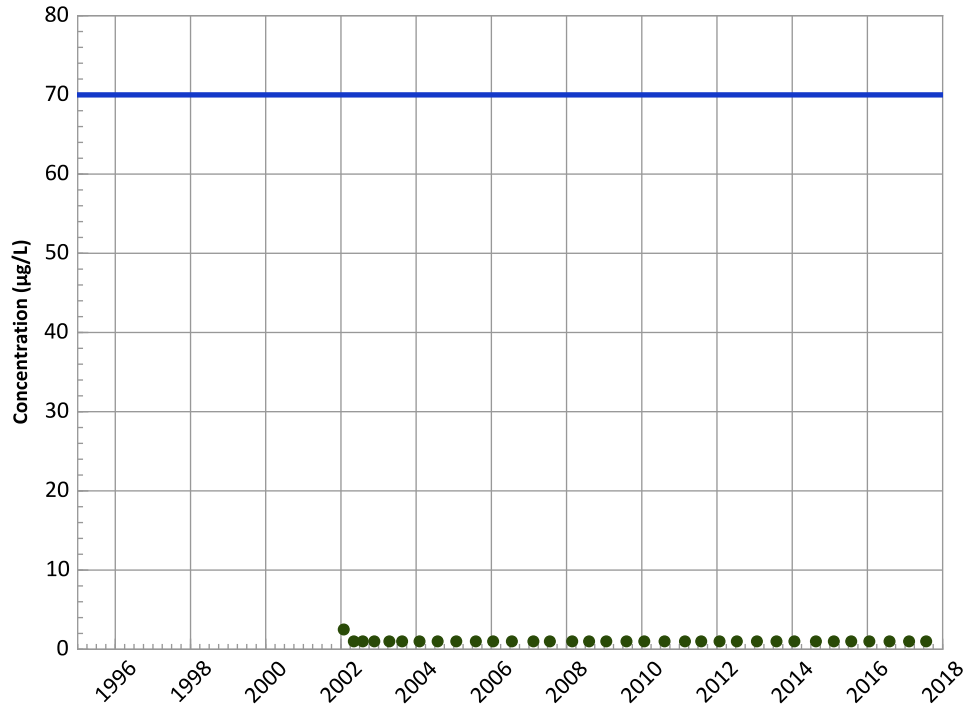
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 01/28/2002 to 07/25/2017
Analysis Date: 03/21/2018

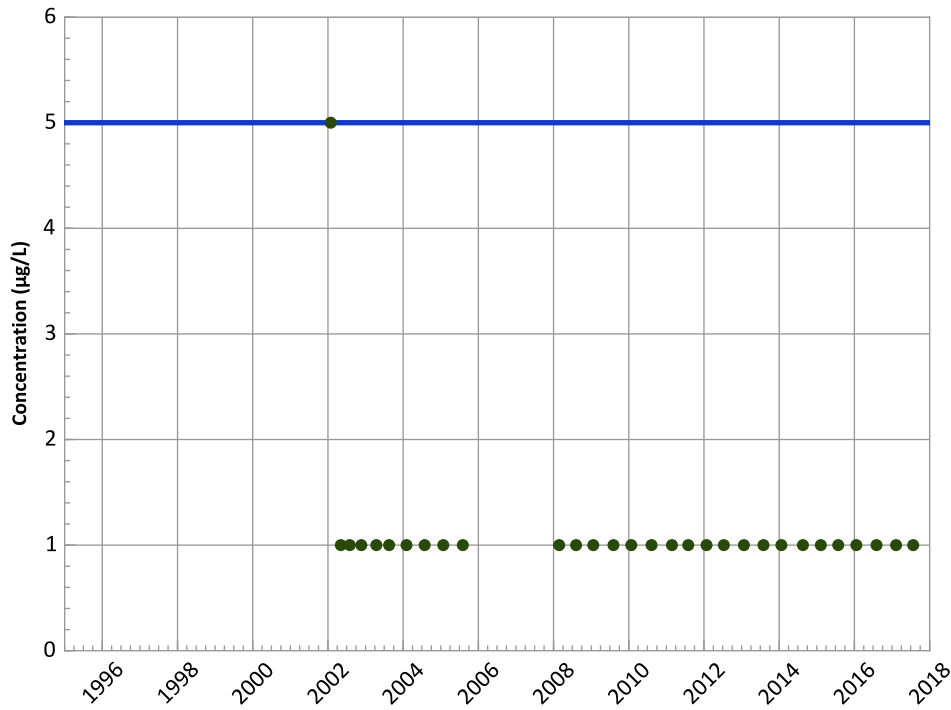
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX01-1011 in Ogallala Aquifer
USDOE/NNSA Pantex Plant**
cis-1,2-Dichloroethene Trend



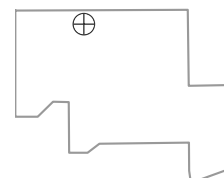
Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect
MAROS Linear Regression Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect

1,2-Dichloroethane Trend



Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect
MAROS Linear Regression Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect

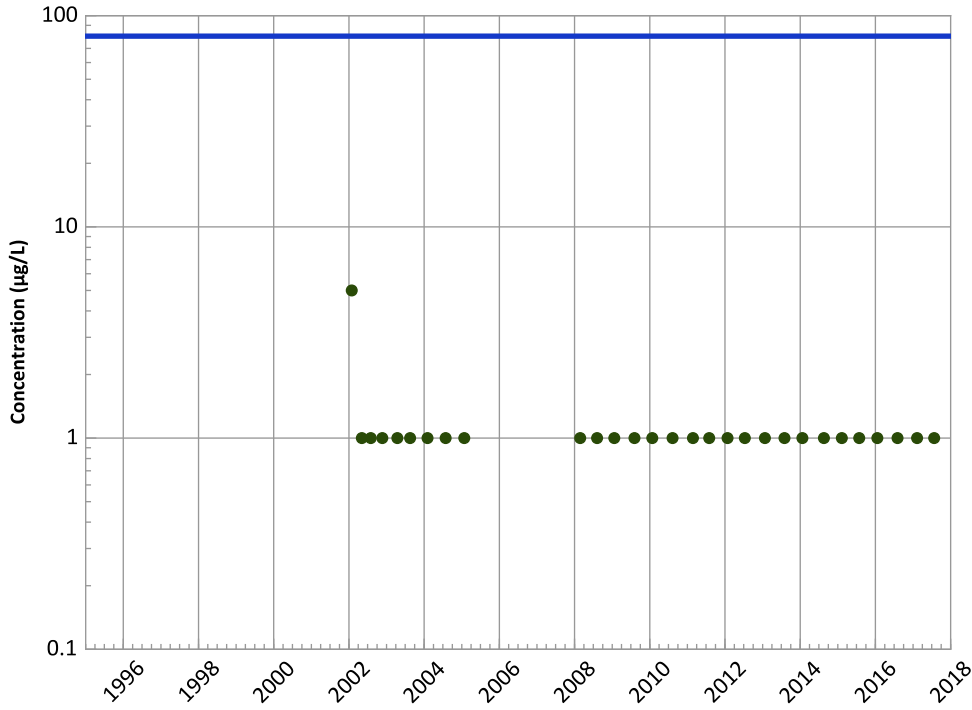
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 01/28/2002 to 07/25/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX01-1011 in Ogallala Aquifer
 USDOE/NNSA Pantex Plant
 Chloroform Trend



Concentration Trend

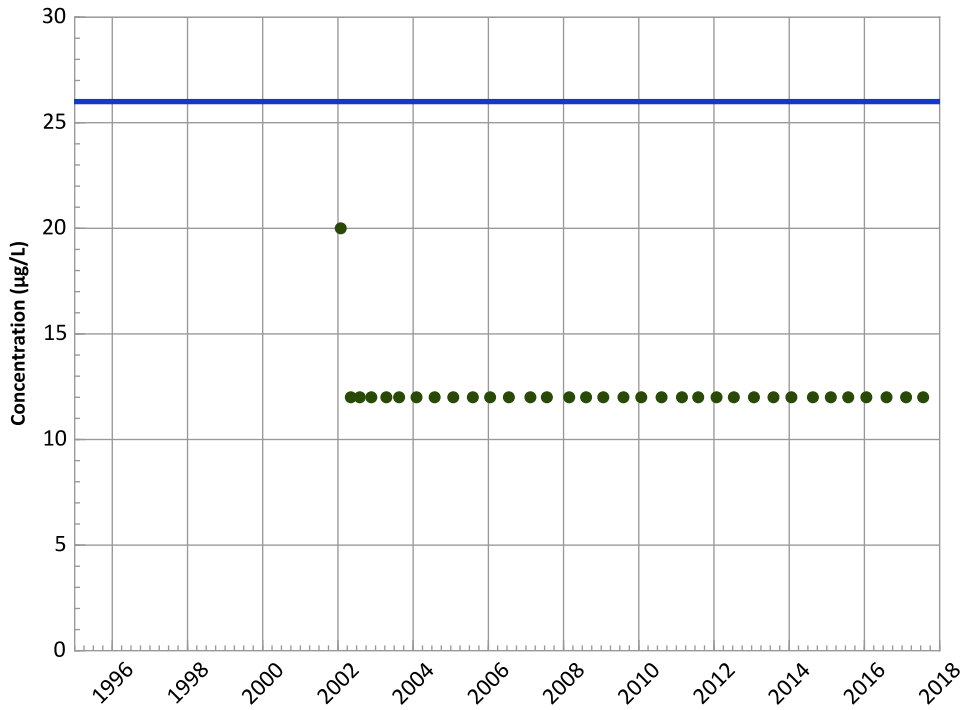
MAROS Mann-Kendall Method

Data ():
 All Non-Detect
 All Data
 All Non-Detect

MAROS Linear Regression Method

Data ():
 All Non-Detect
 All Data
 All Non-Detect

Perchlorate Trend



Concentration Trend

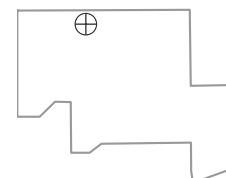
MAROS Mann-Kendall Method

Data ():
 All Non-Detect
 All Data
 All Non-Detect

MAROS Linear Regression Method

Data ():
 All Non-Detect
 All Data
 All Non-Detect

Well Location

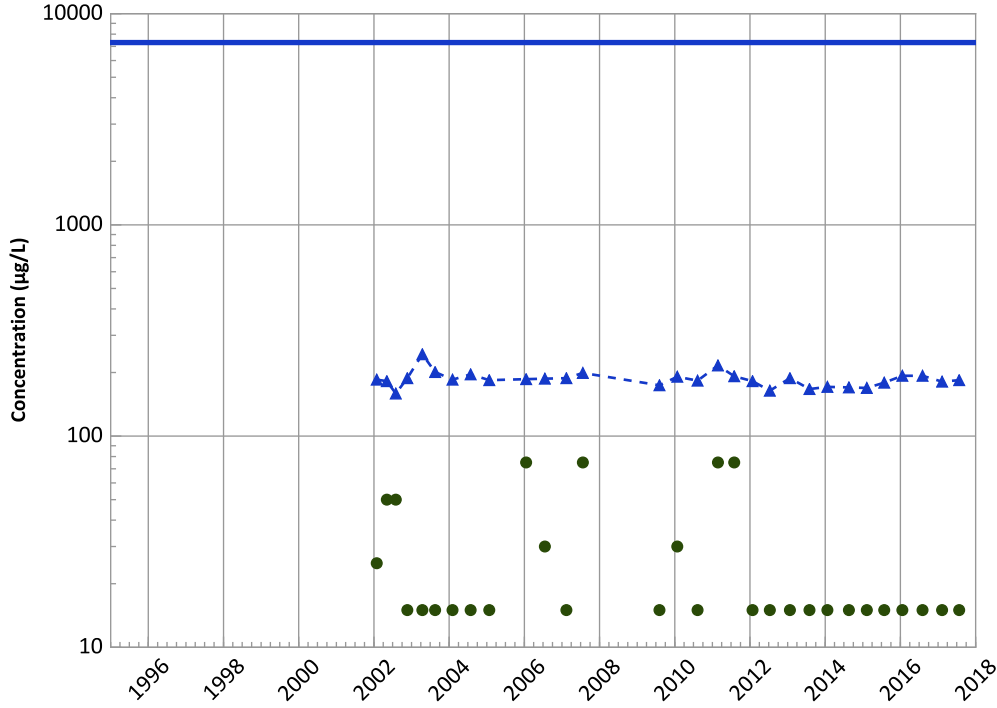


Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 01/28/2002 to 07/25/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX01-1011 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

Boron Trend



Concentration Trend

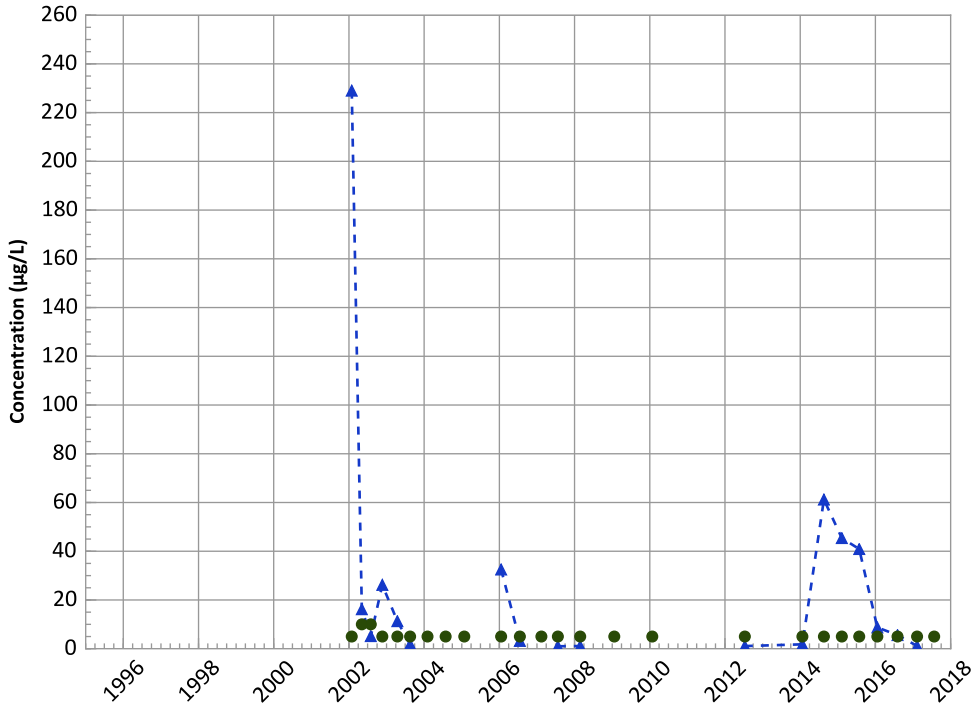
MAROS Mann-Kendall Method

Data ():
Probably Increasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
Probably Decreasing

Manganese Trend



Concentration Trend

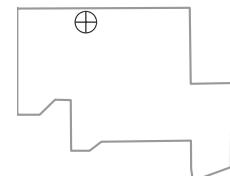
MAROS Mann-Kendall Method

Data ():
No Trend
All Data
Decreasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
No Trend

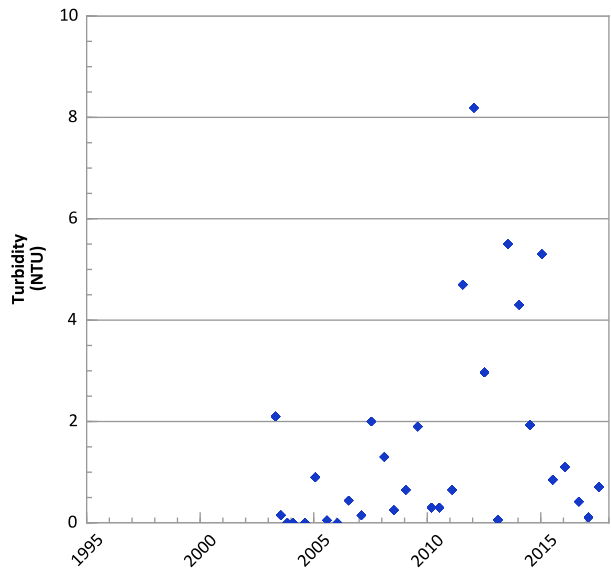
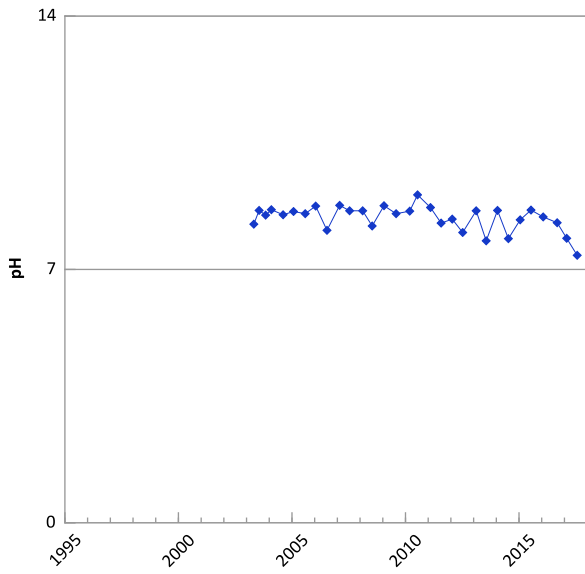
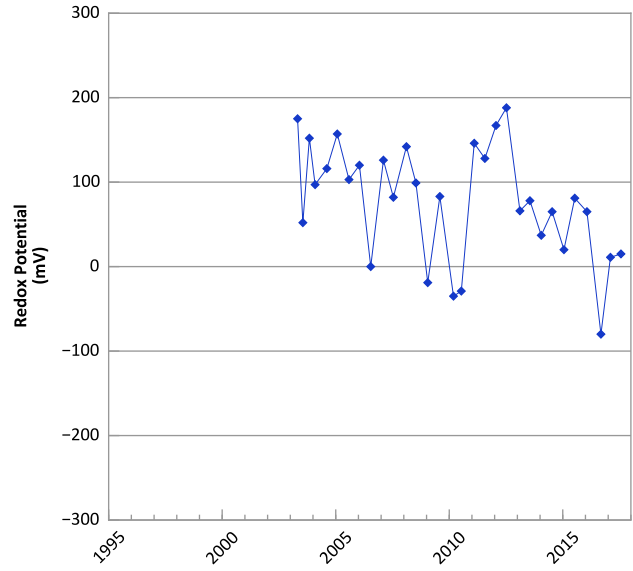
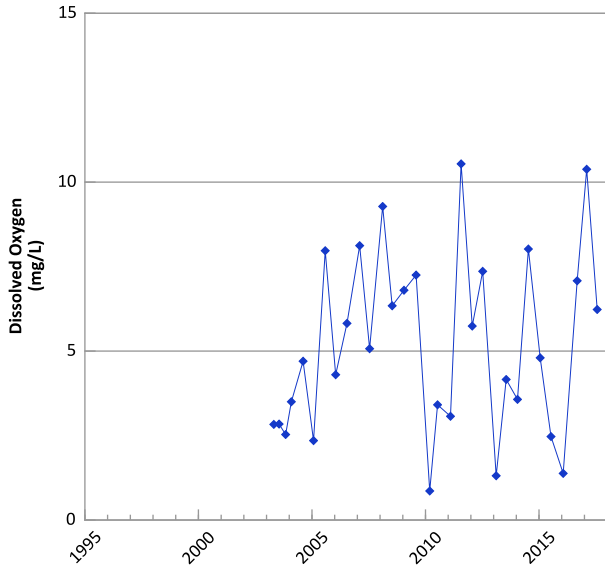
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 01/28/2002 to 07/25/2017
Analysis Date: 03/21/2018

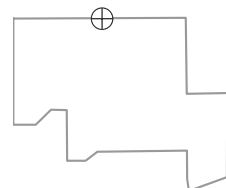
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX01-1012 in Ogallala Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



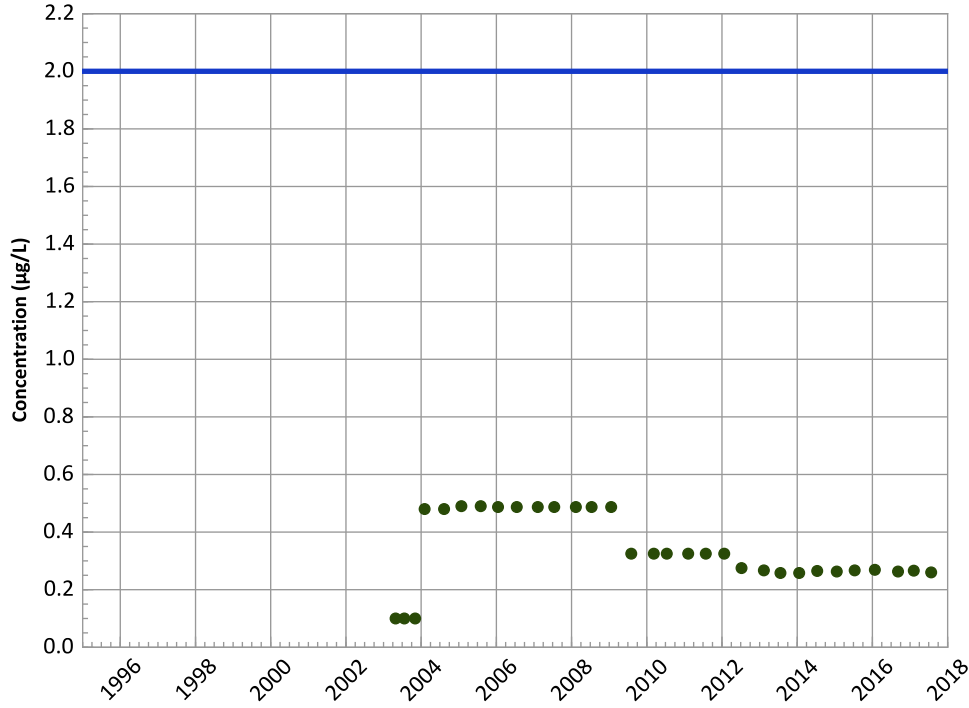
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 06/01/2000 to 07/25/2017
 Analysis Date: 03/21/2018

Well Location



PTX01-1012 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

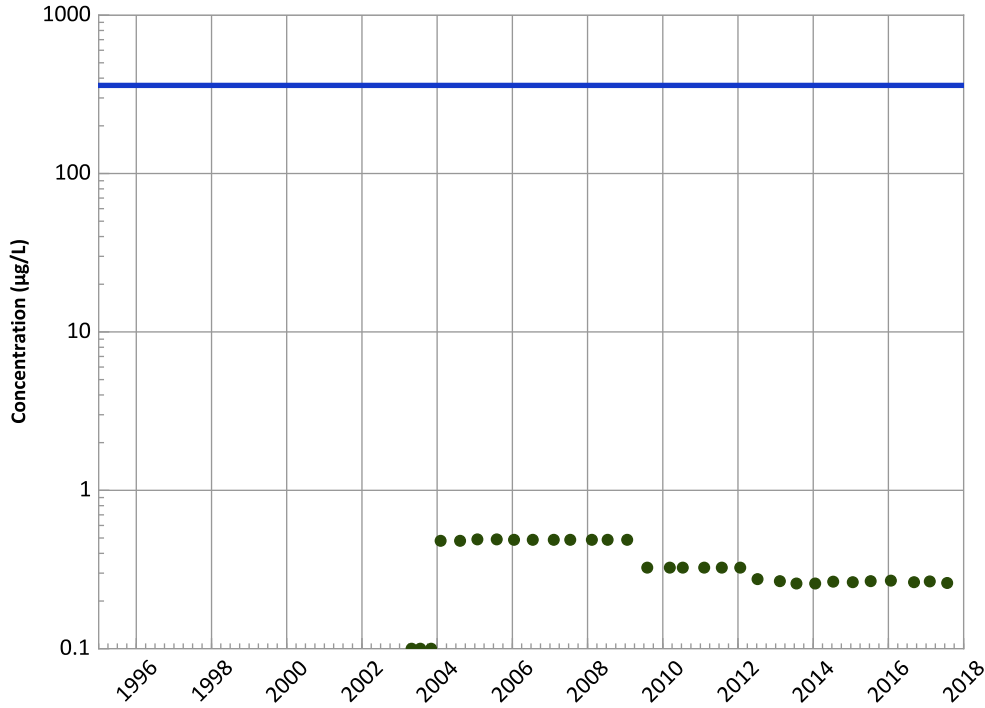
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

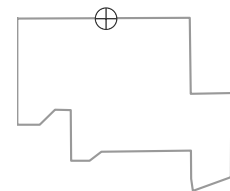
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

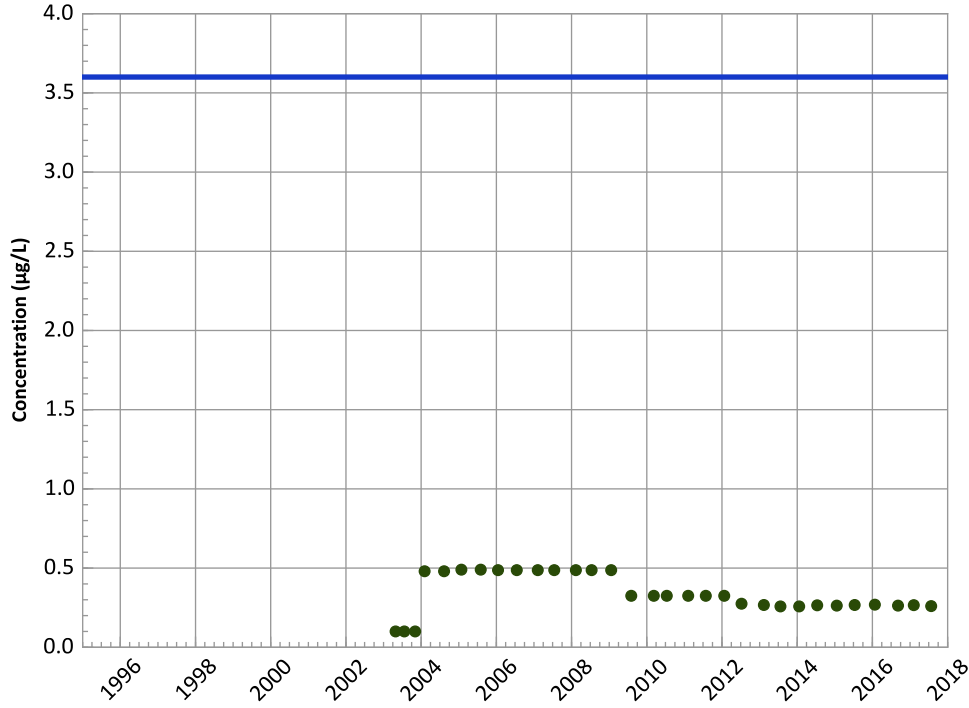


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/01/2000 to 07/25/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX01-1012 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

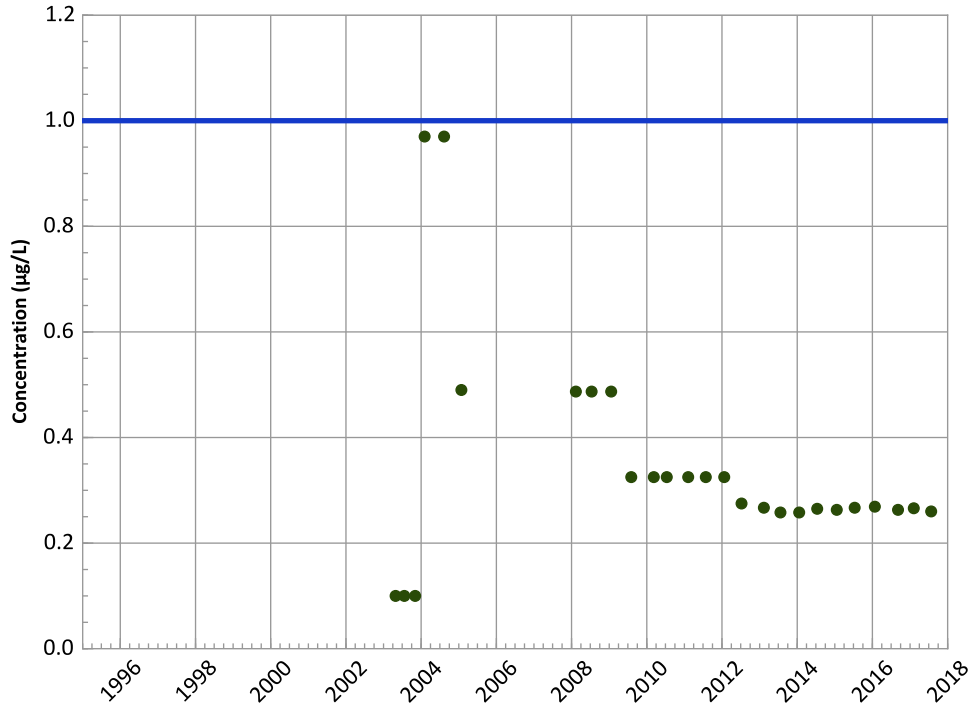
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

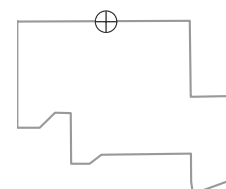
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

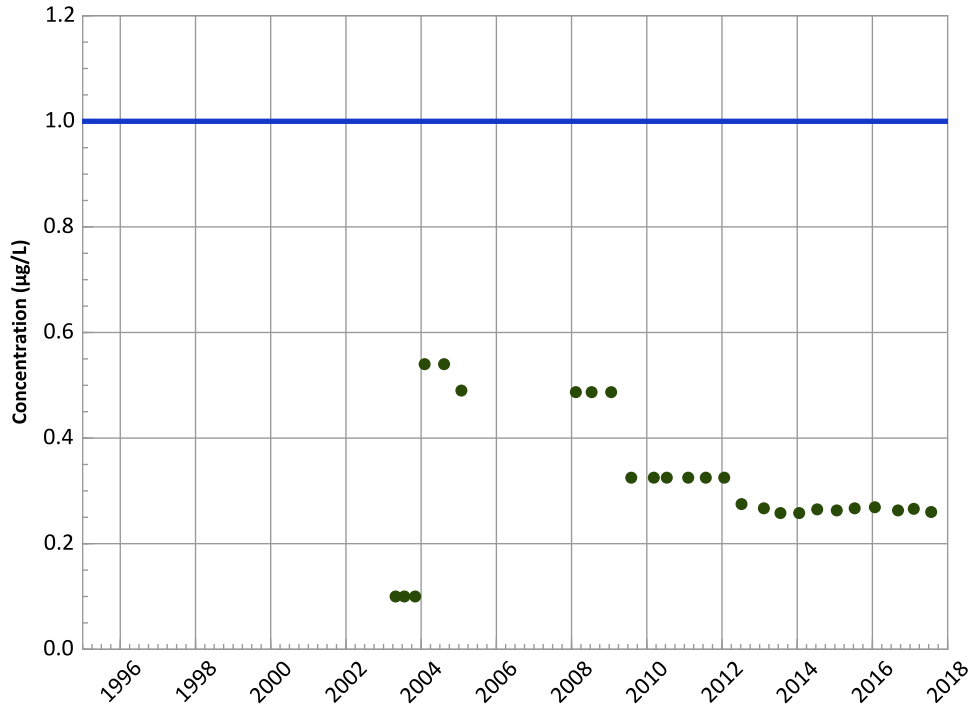


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/01/2000 to 07/25/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX01-1012 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

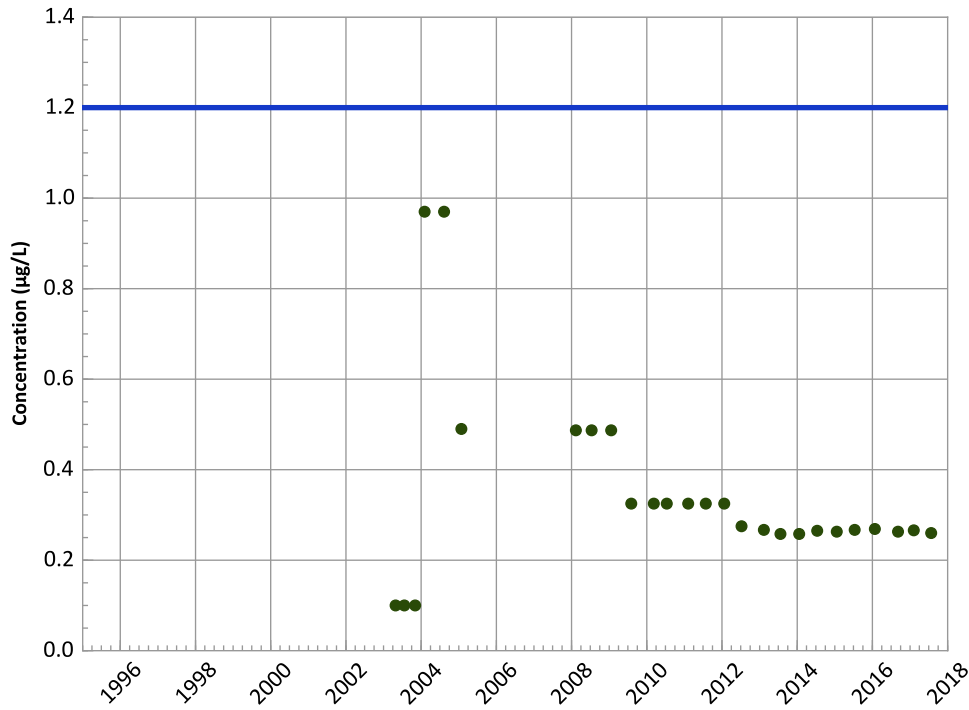
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

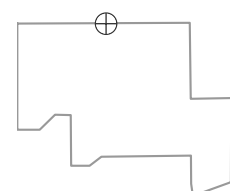
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

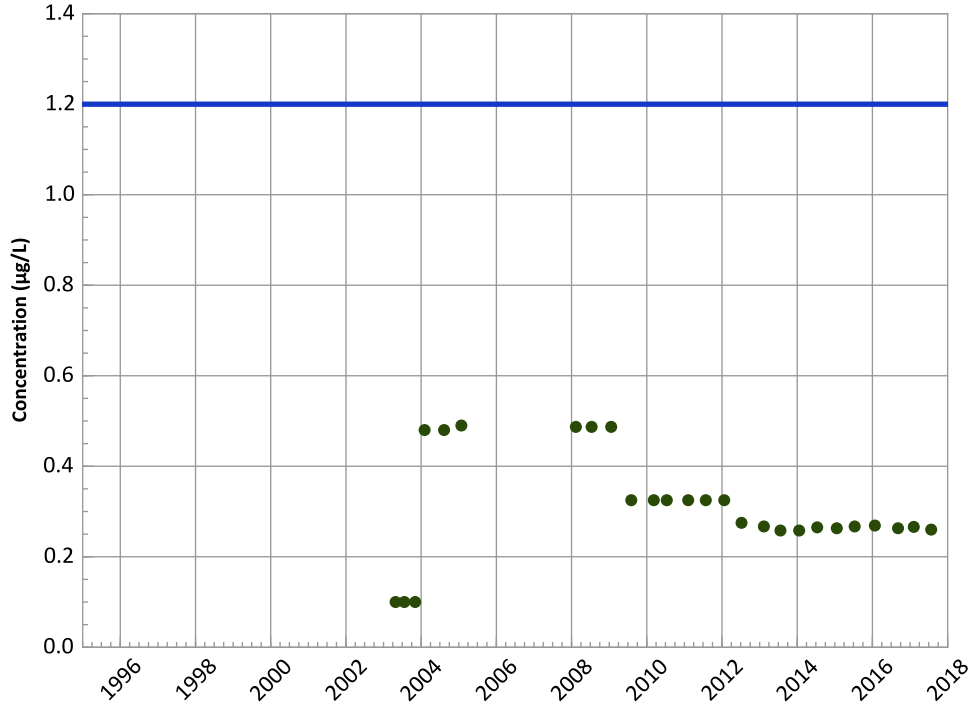


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/01/2000 to 07/25/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX01-1012 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

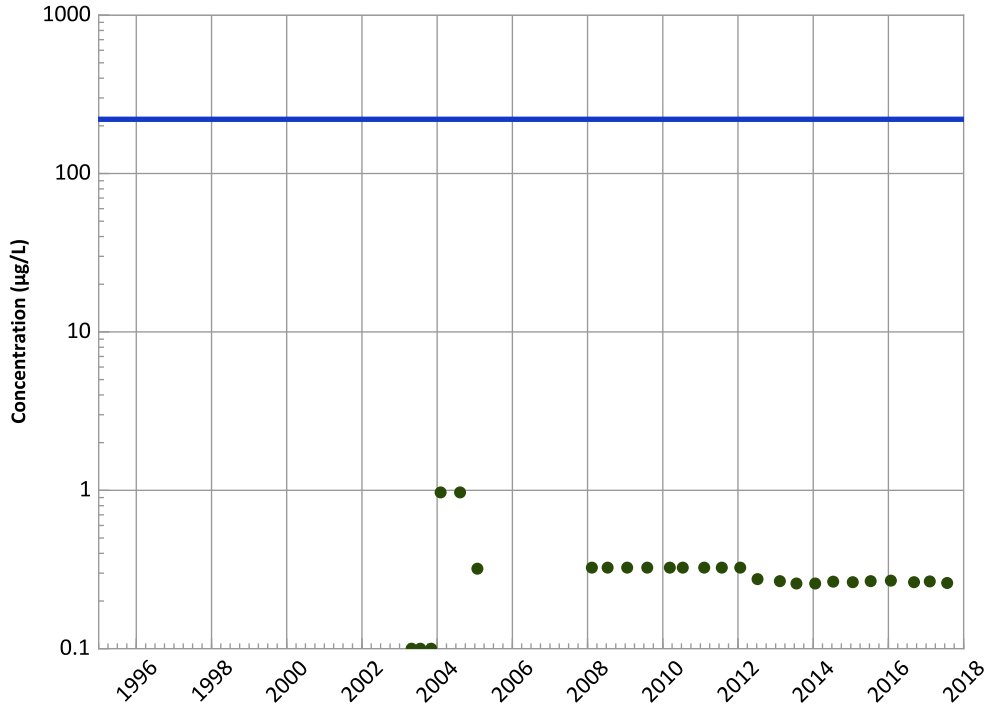
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,3,5-Trinitrobenzene Trend



Concentration Trend

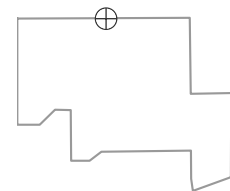
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

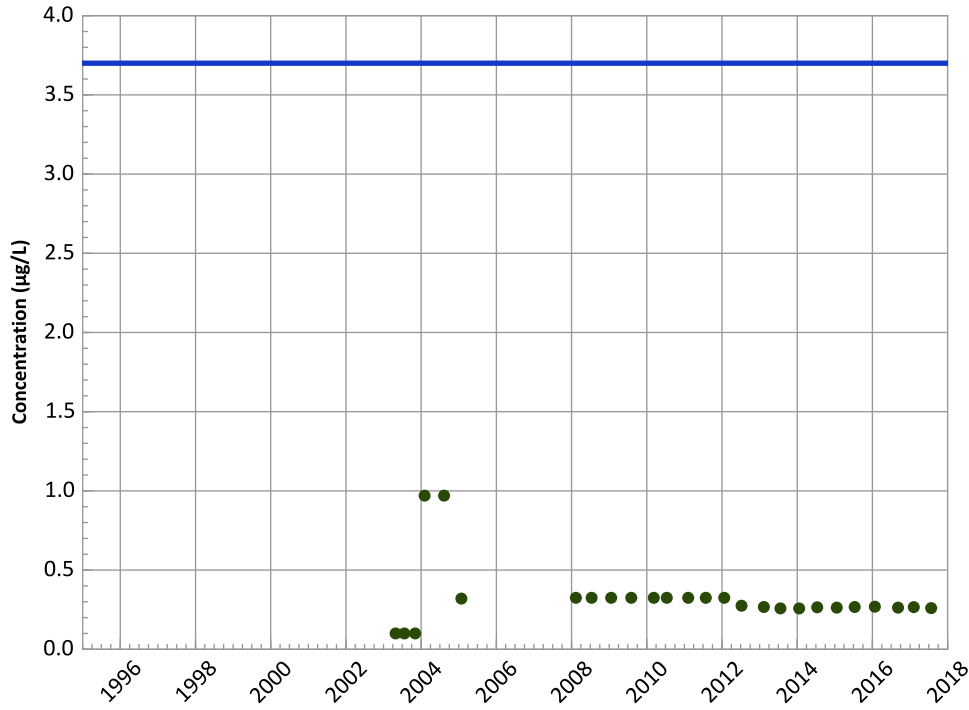


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/01/2000 to 07/25/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX01-1012 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

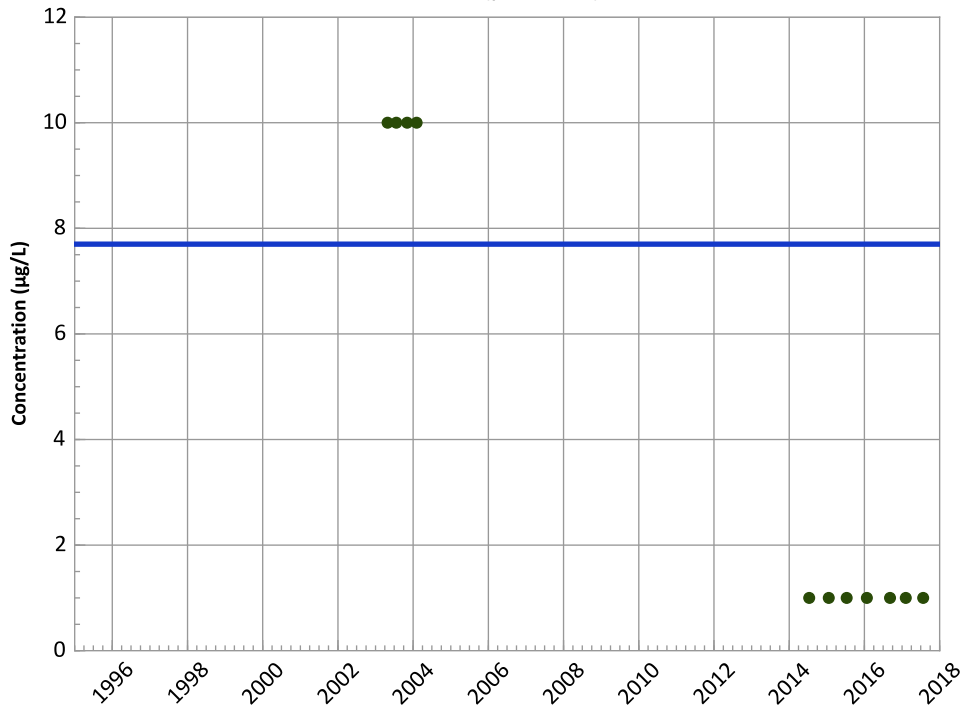
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,4-Dioxane (p-Dioxane) Trend



Concentration Trend

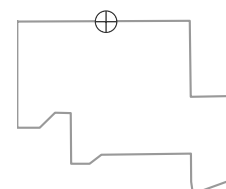
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

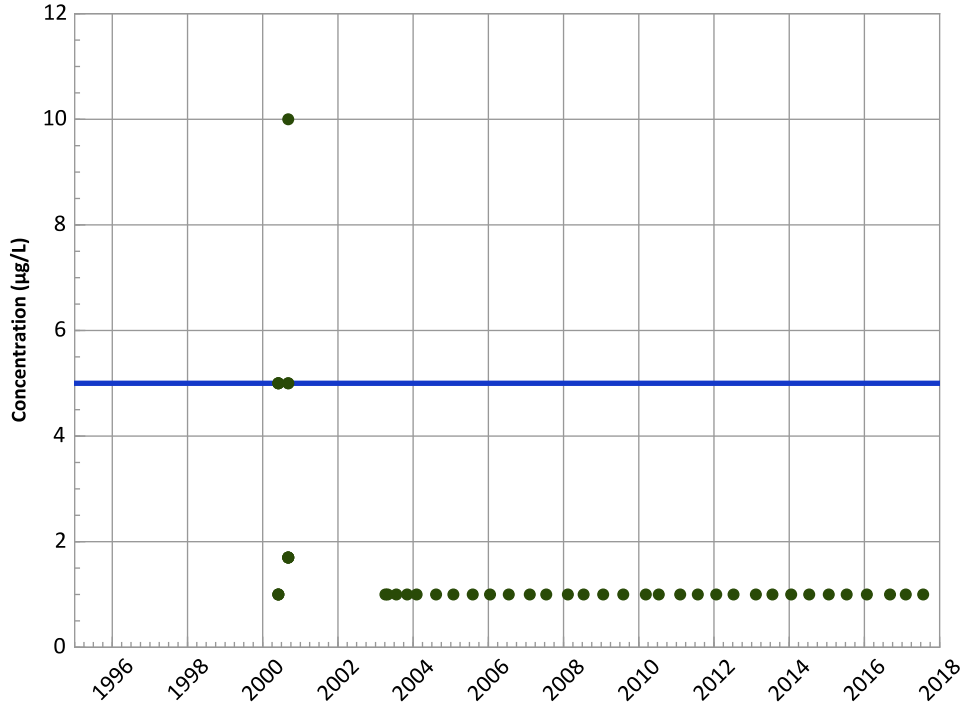


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/01/2000 to 07/25/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX01-1012 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

Tetrachloroethylene (PCE) Trend



Concentration Trend

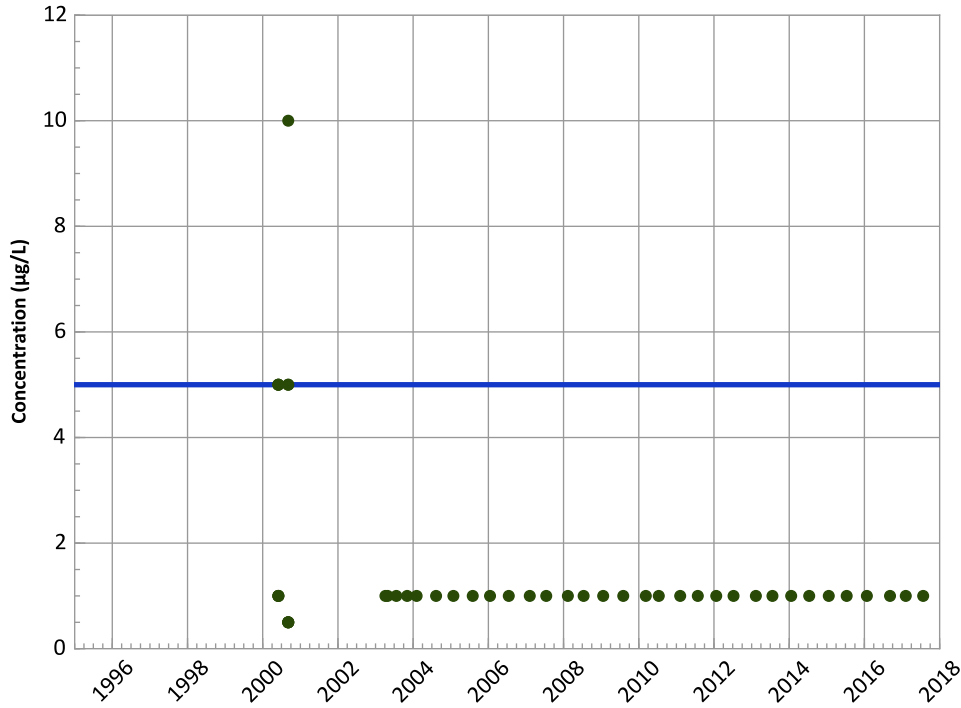
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Trichloroethene Trend



Concentration Trend

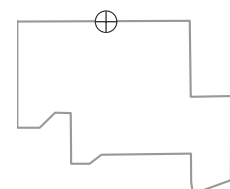
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

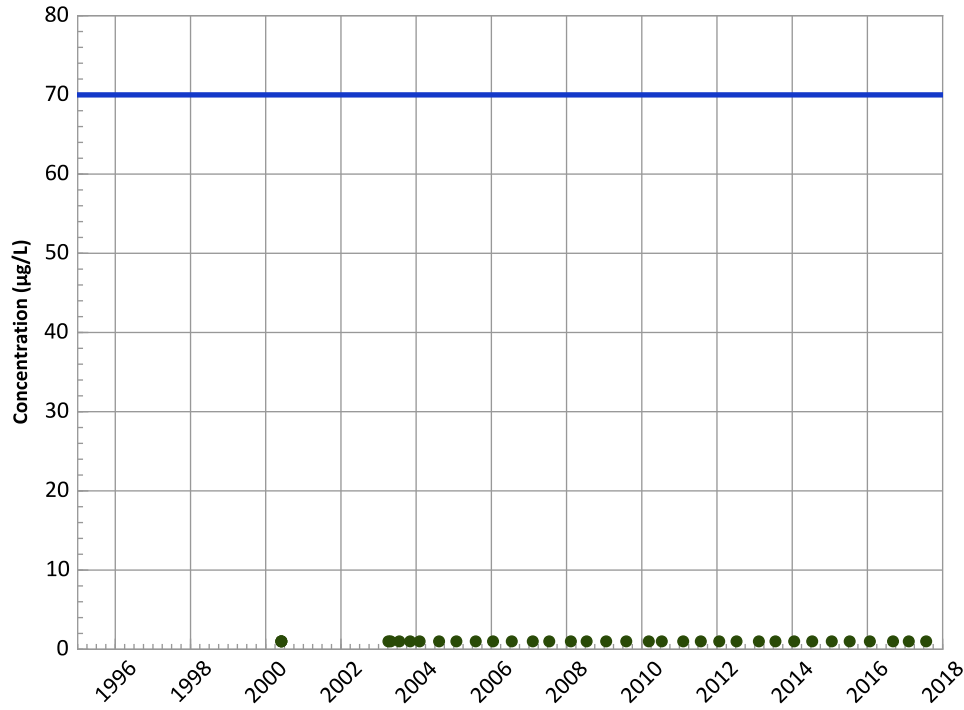
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/01/2000 to 07/25/2017
Analysis Date: 03/21/2018

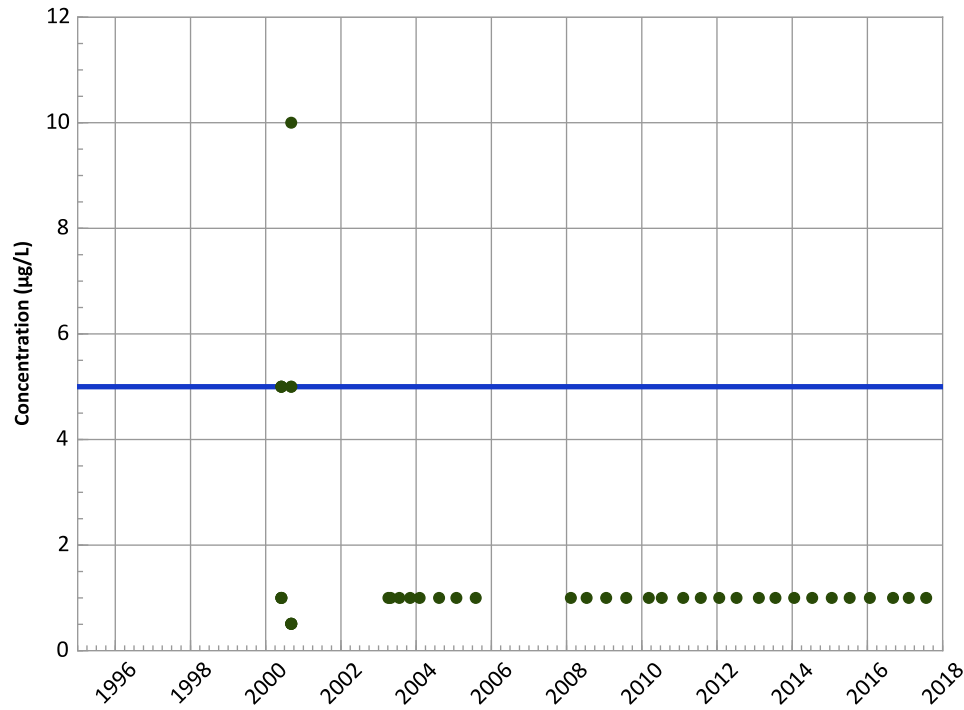
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX01-1012 in Ogallala Aquifer
USDOE/NNSA Pantex Plant**
cis-1,2-Dichloroethene Trend



Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect
MAROS Linear Regression Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect

1,2-Dichloroethane Trend

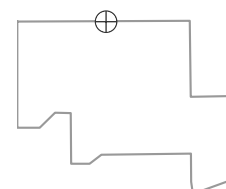


Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect
MAROS Linear Regression Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect

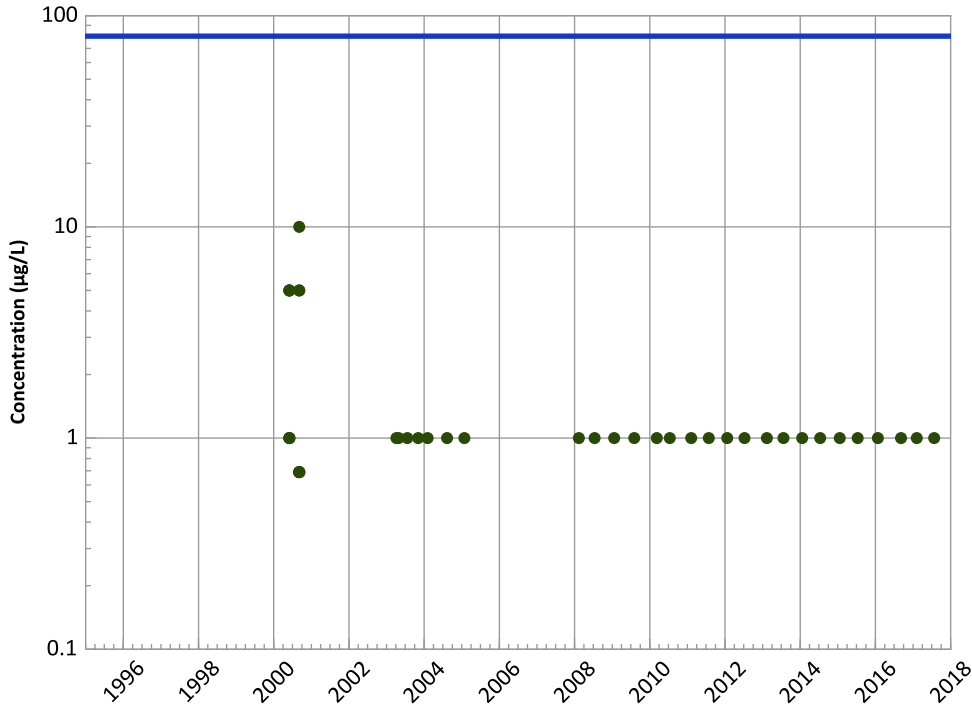
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 06/01/2000 to 07/25/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

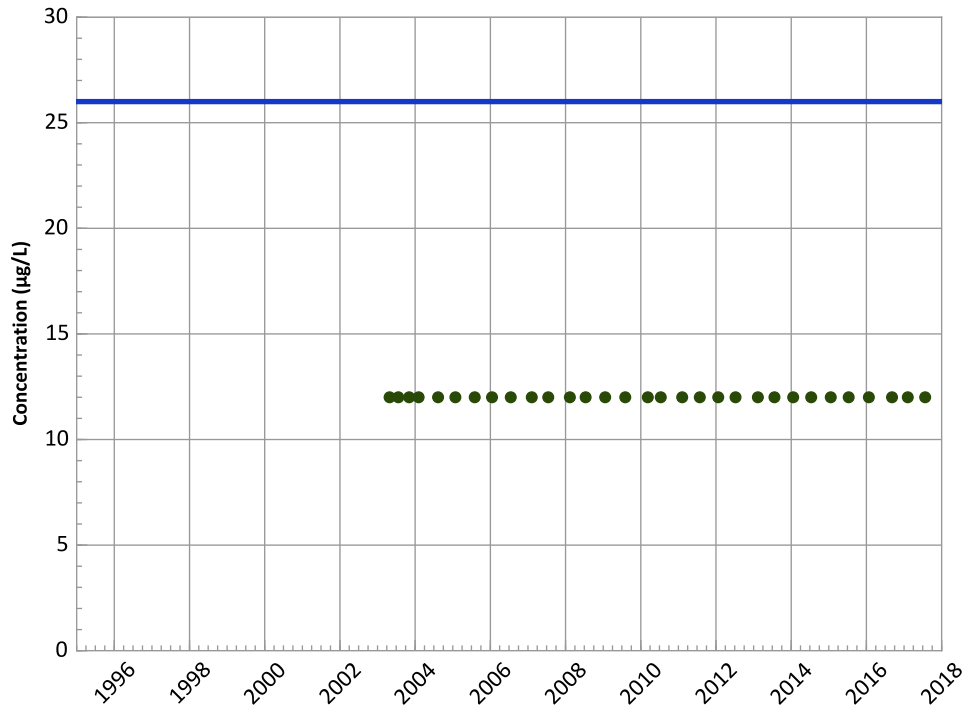


**PTX01-1012 in Ogallala Aquifer
USDOE/NNSA Pantex Plant
Chloroform Trend**



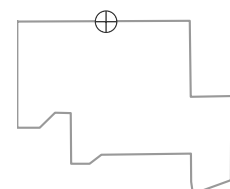
Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect
MAROS Linear Regression Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect

Perchlorate Trend



Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect
MAROS Linear Regression Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect

Well Location

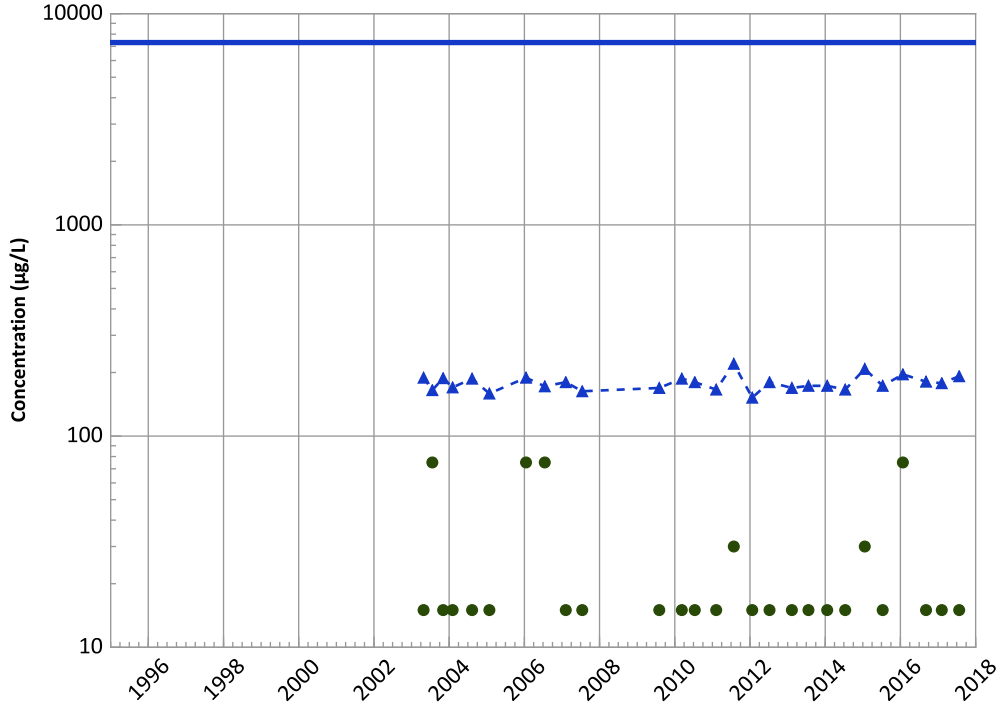


Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 06/01/2000 to 07/25/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX01-1012 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

Boron Trend



Concentration Trend

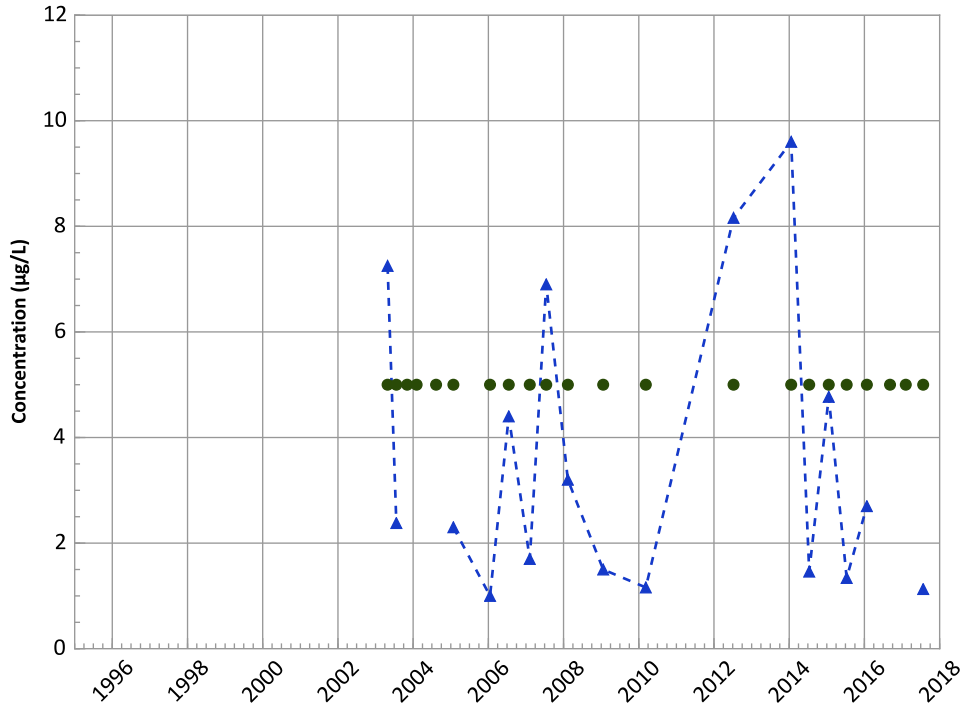
MAROS Mann-Kendall Method

Data ():
Probably Increasing
All Data
No Trend

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

Manganese Trend



Concentration Trend

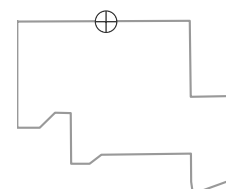
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Probably Decreasing
All Data
Stable

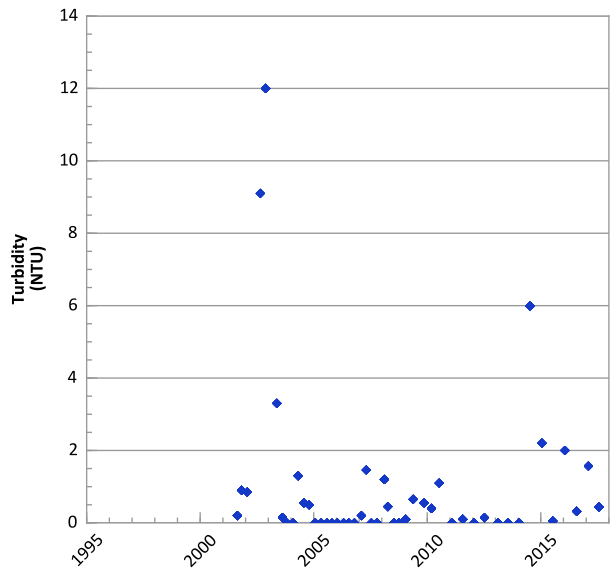
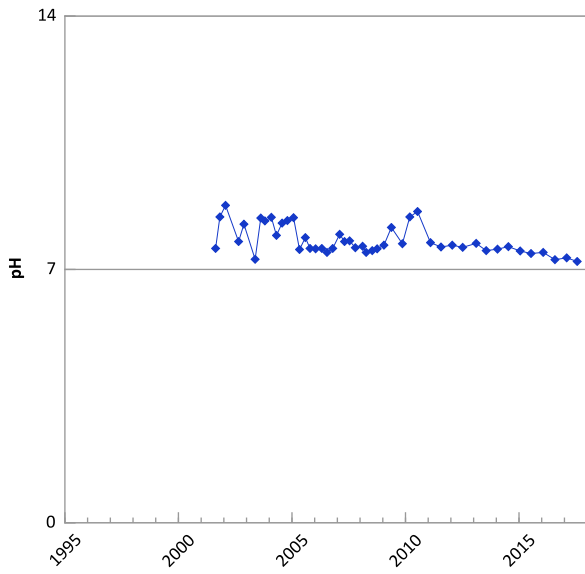
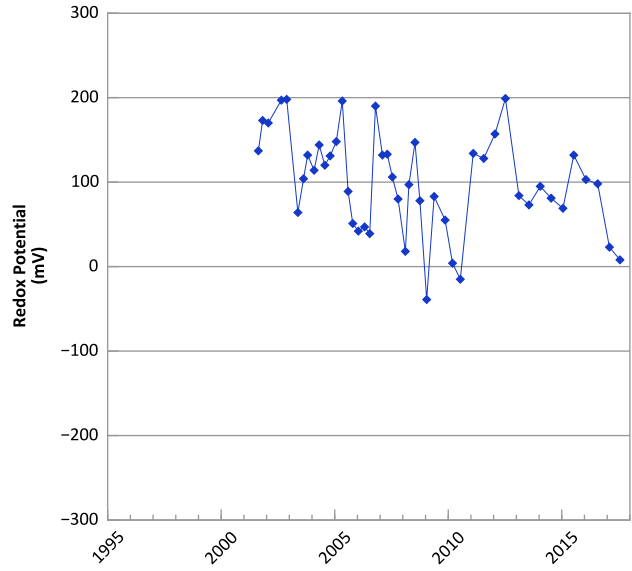
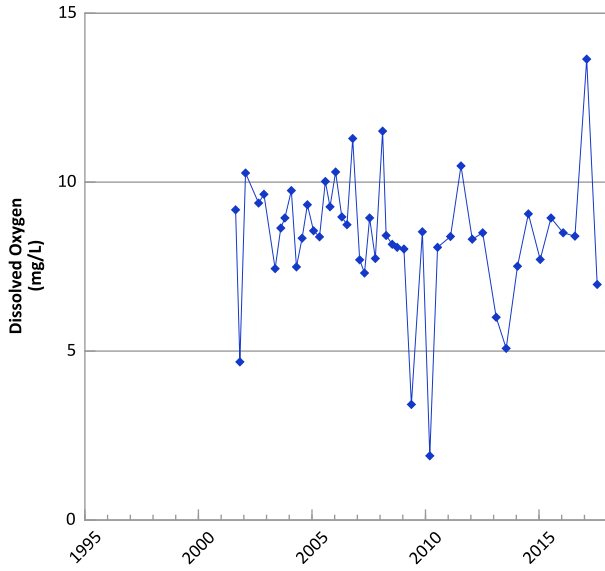
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/01/2000 to 07/25/2017
Analysis Date: 03/21/2018

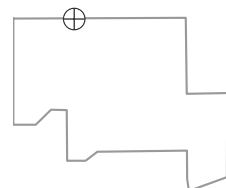
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX01-1013 in Ogallala Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



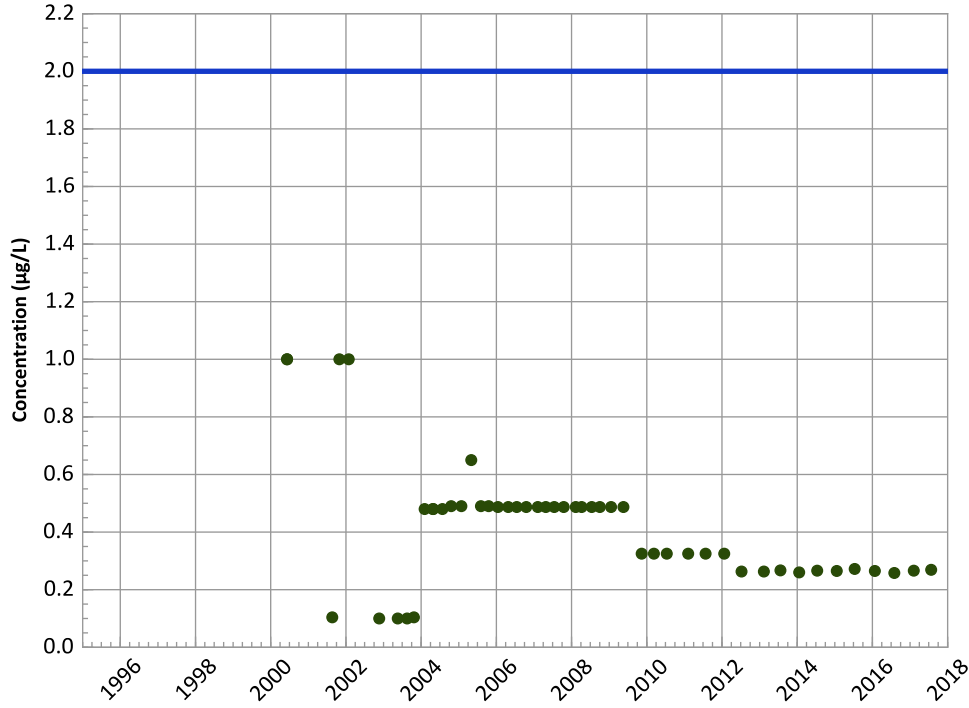
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 06/01/2000 to 07/25/2017
 Analysis Date: 03/21/2018

Well Location



PTX01-1013 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

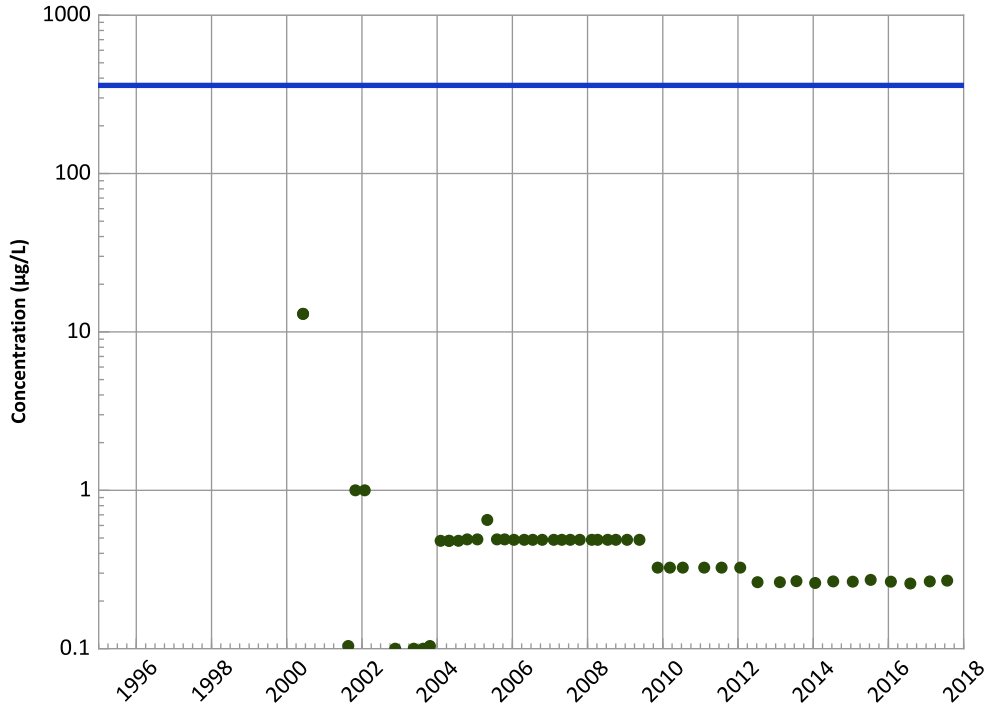
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

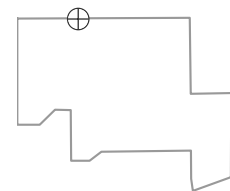
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

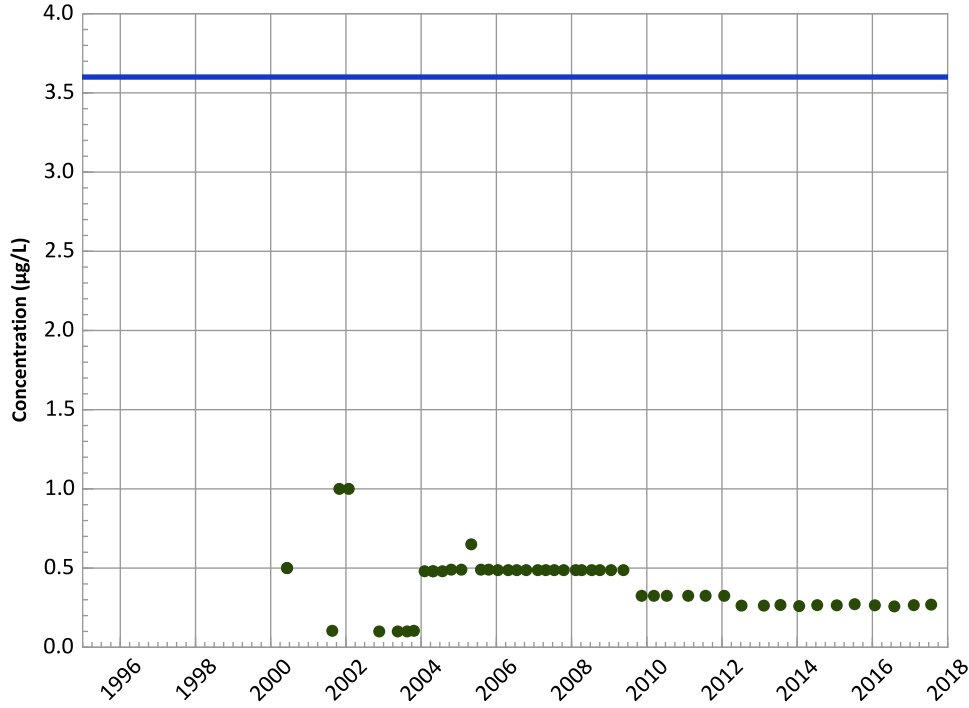


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/01/2000 to 07/25/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX01-1013 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

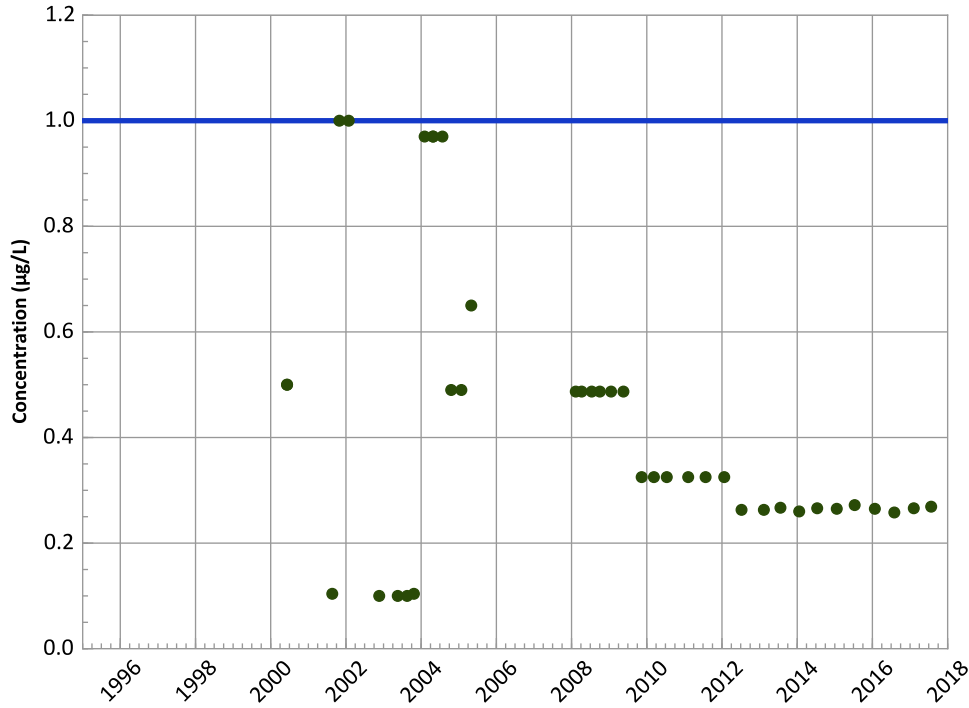
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

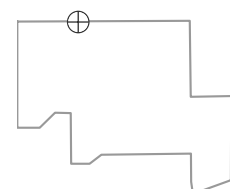
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

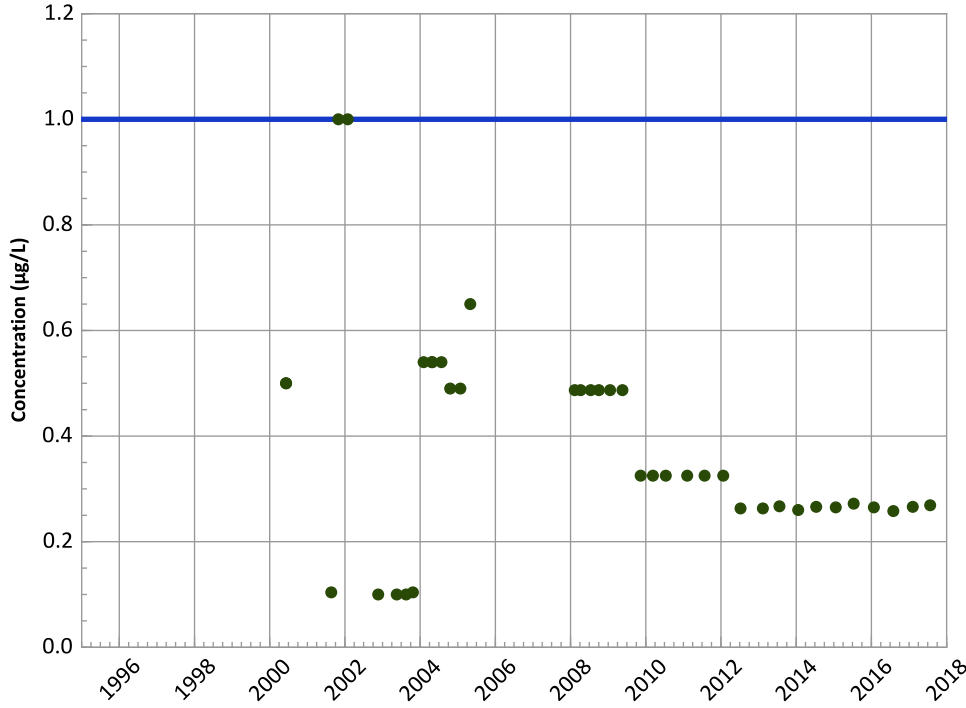


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/01/2000 to 07/25/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX01-1013 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

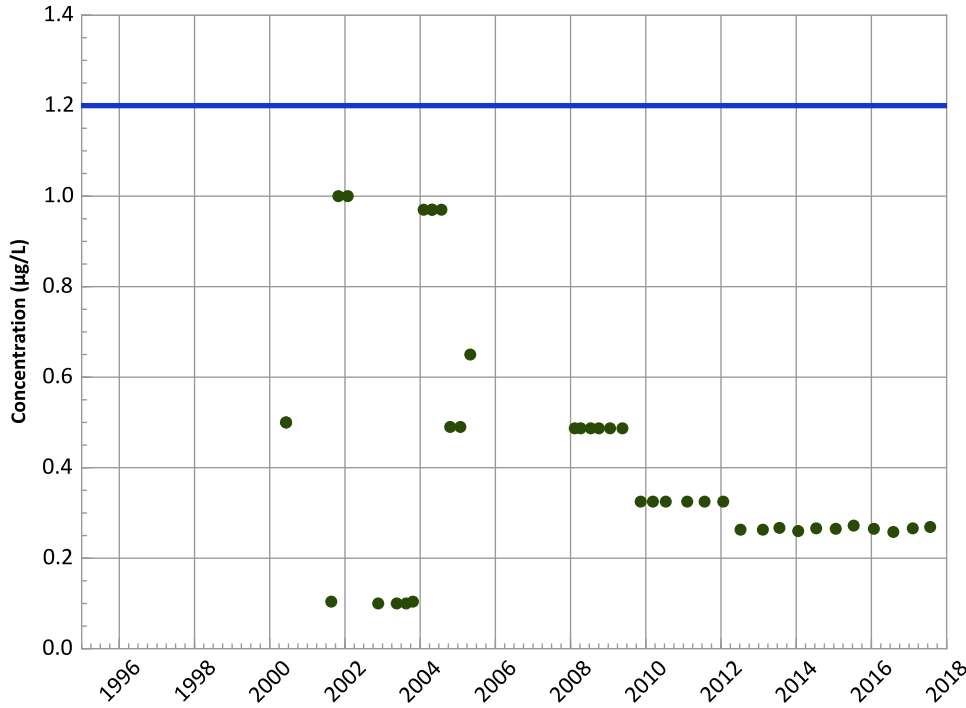
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

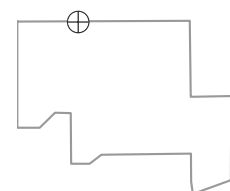
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

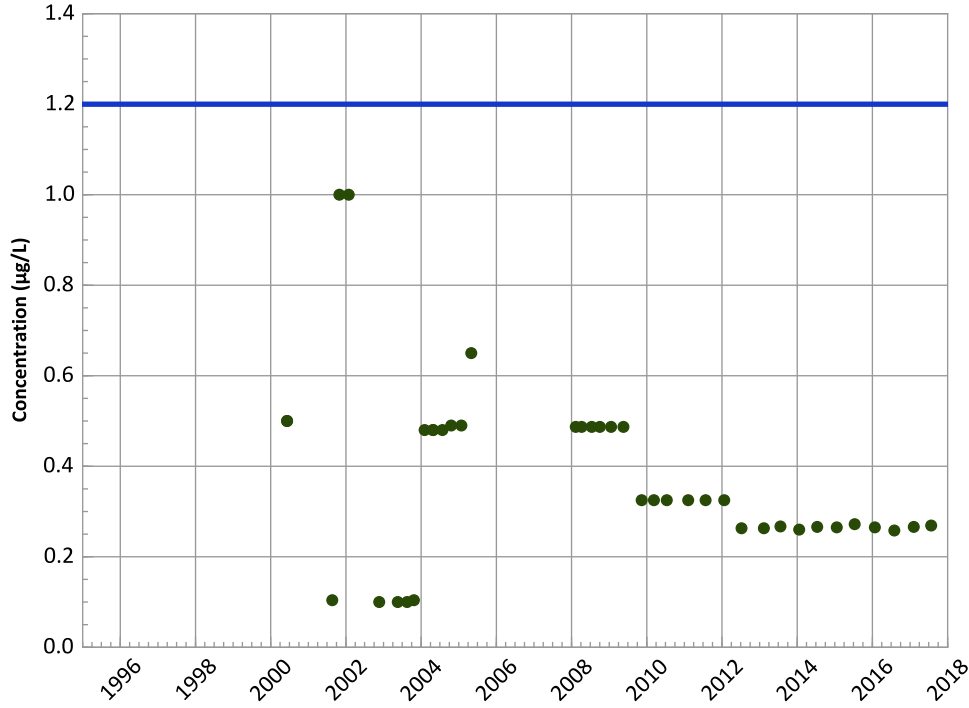


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/01/2000 to 07/25/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX01-1013 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

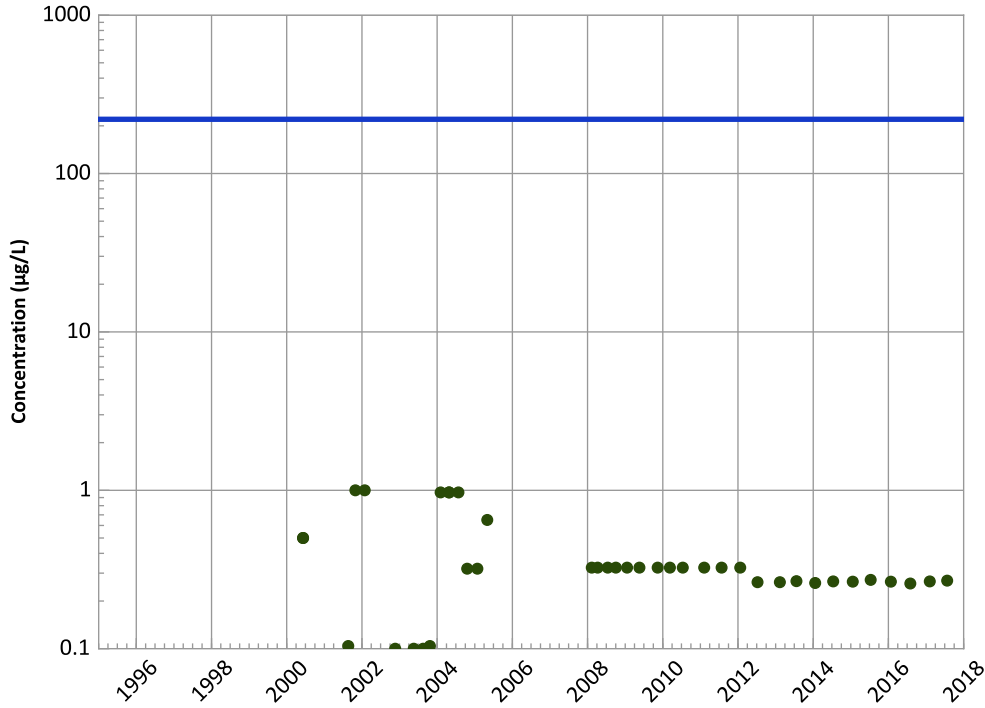
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,3,5-Trinitrobenzene Trend



Concentration Trend

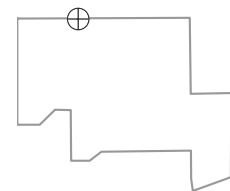
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

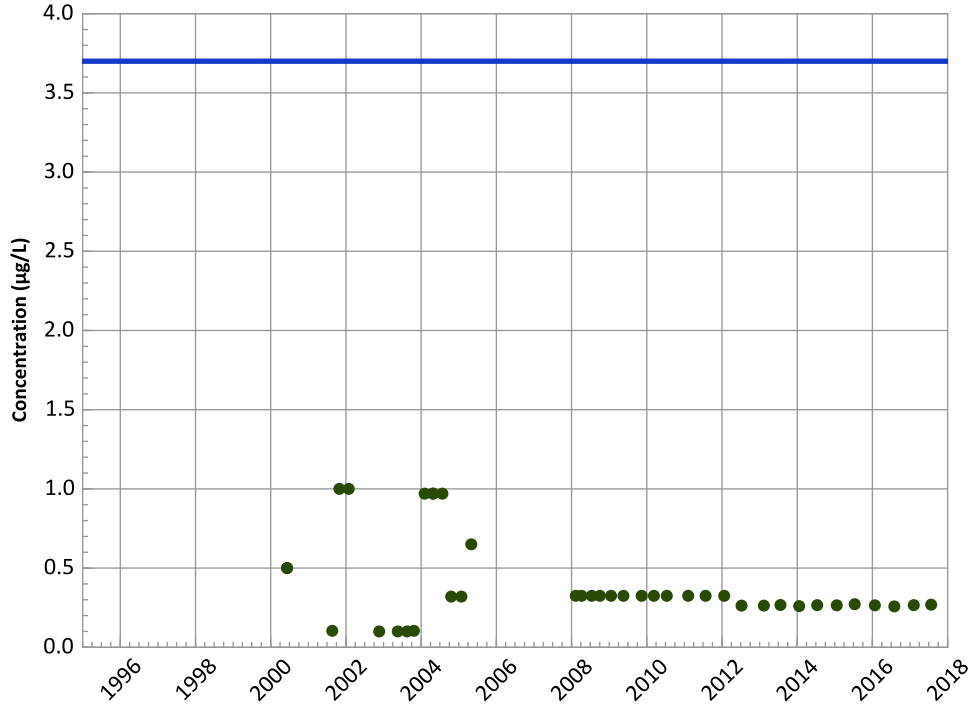


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/01/2000 to 07/25/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX01-1013 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

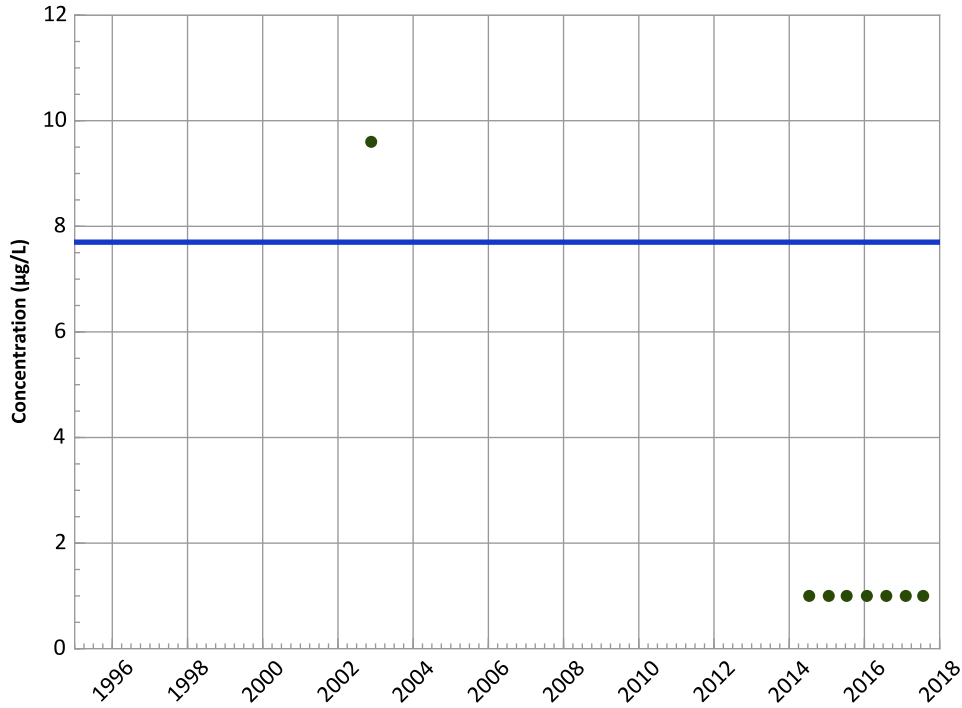
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,4-Dioxane (p-Dioxane) Trend



Concentration Trend

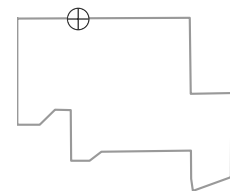
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

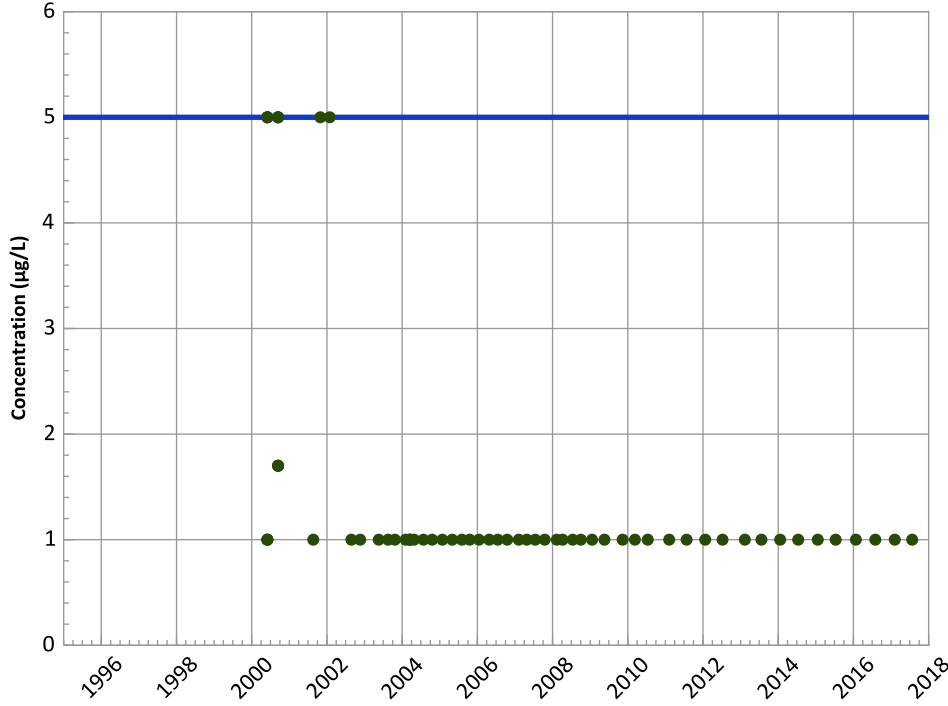


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/01/2000 to 07/25/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX01-1013 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

Tetrachloroethylene (PCE) Trend



Concentration Trend

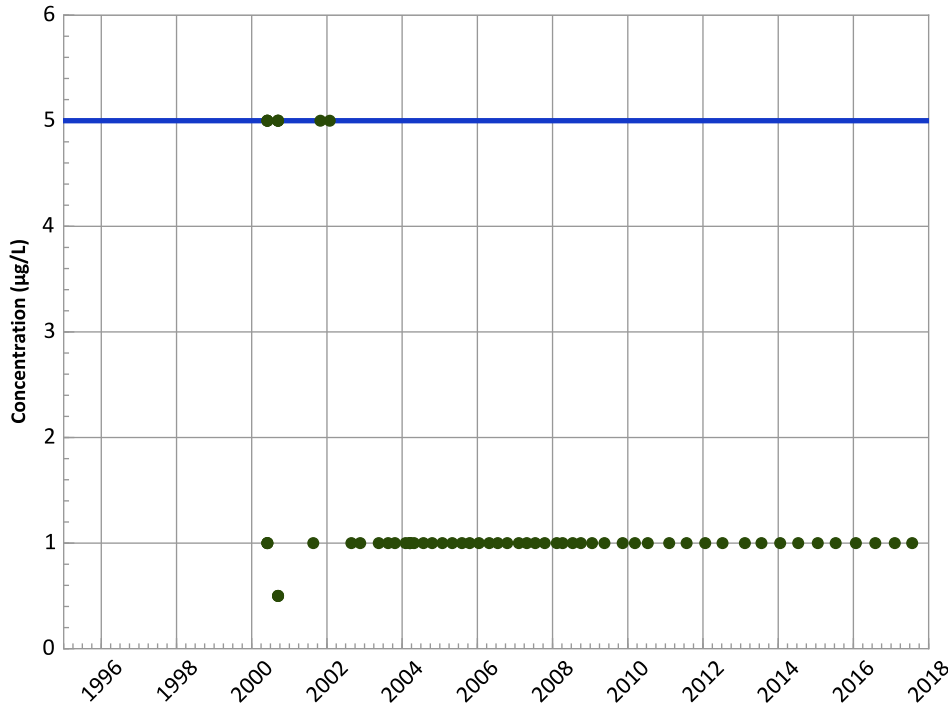
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Trichloroethene Trend



Concentration Trend

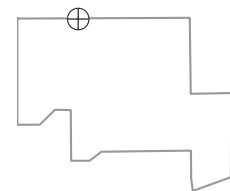
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

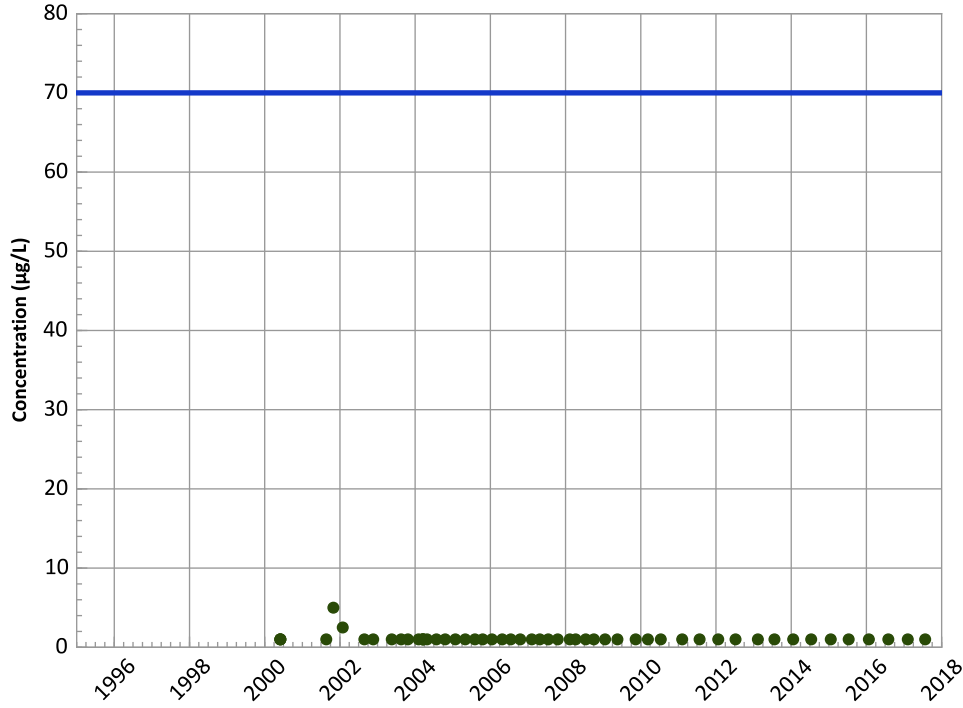


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/01/2000 to 07/25/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX01-1013 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

cis-1,2-Dichloroethene Trend



Concentration Trend

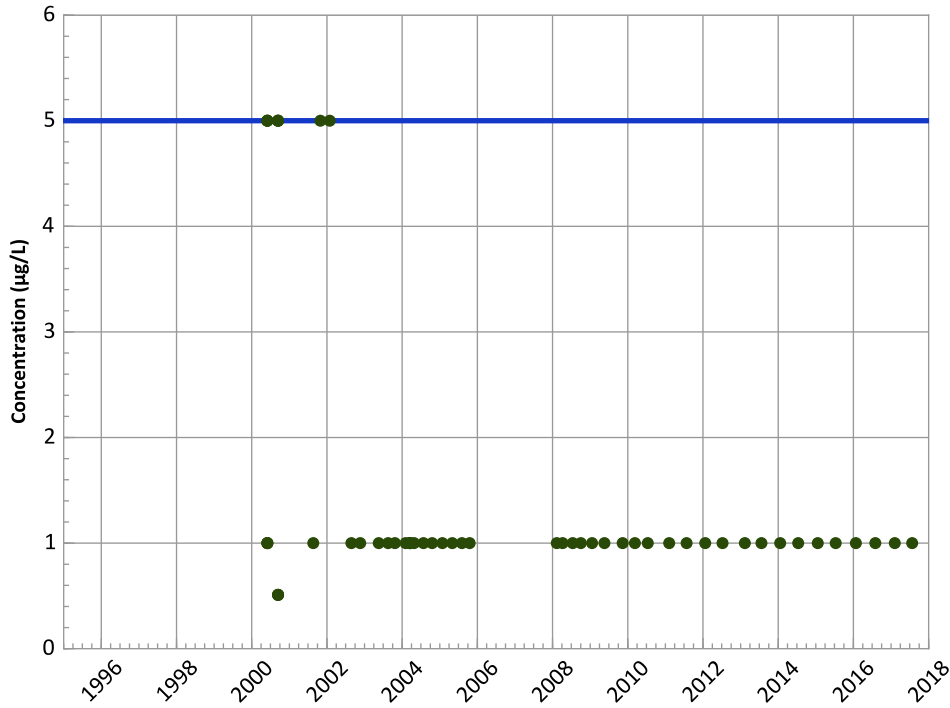
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,2-Dichloroethane Trend



Concentration Trend

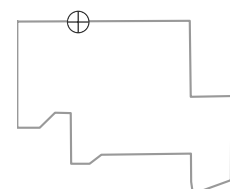
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

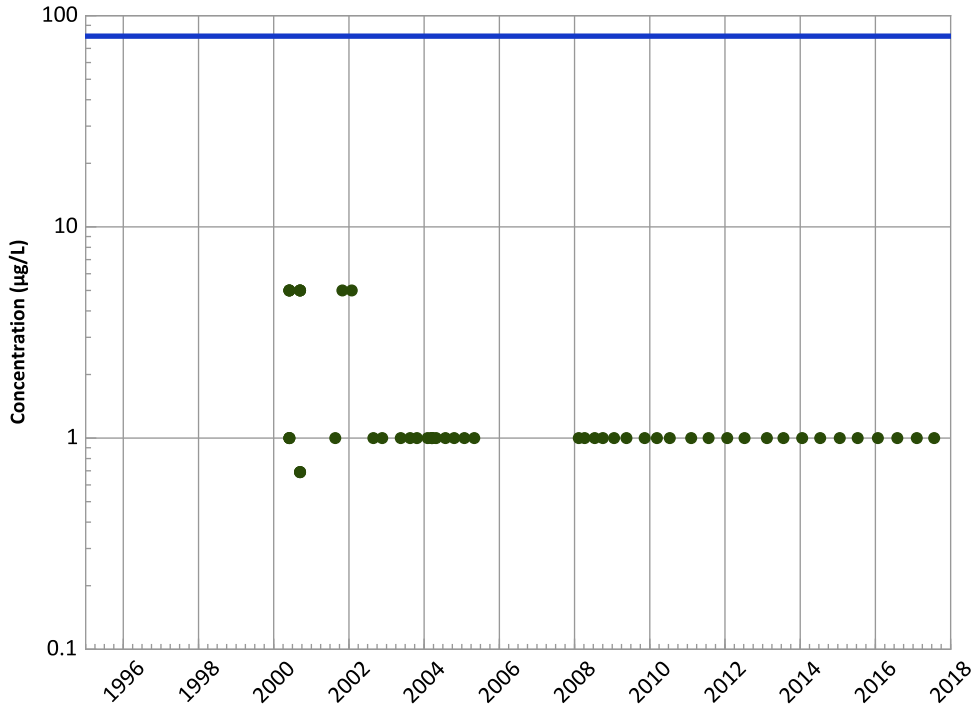
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/01/2000 to 07/25/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX01-1013 in Ogallala Aquifer
USDOE/NNSA Pantex Plant
Chloroform Trend**



Concentration Trend

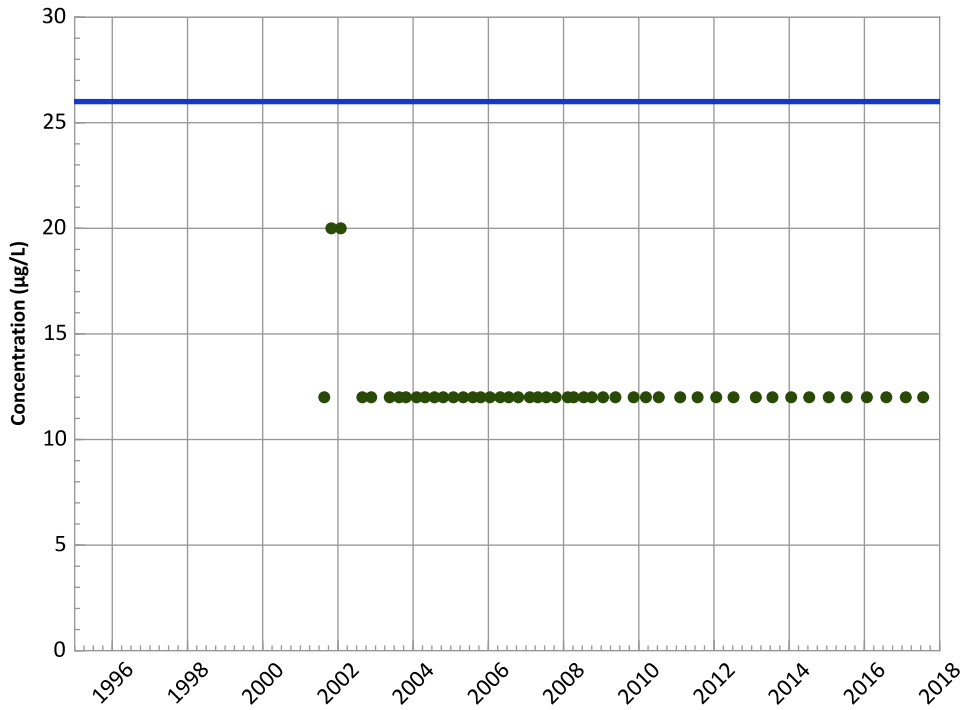
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Perchlorate Trend



Concentration Trend

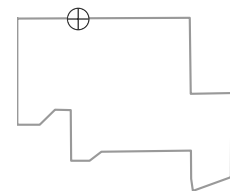
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

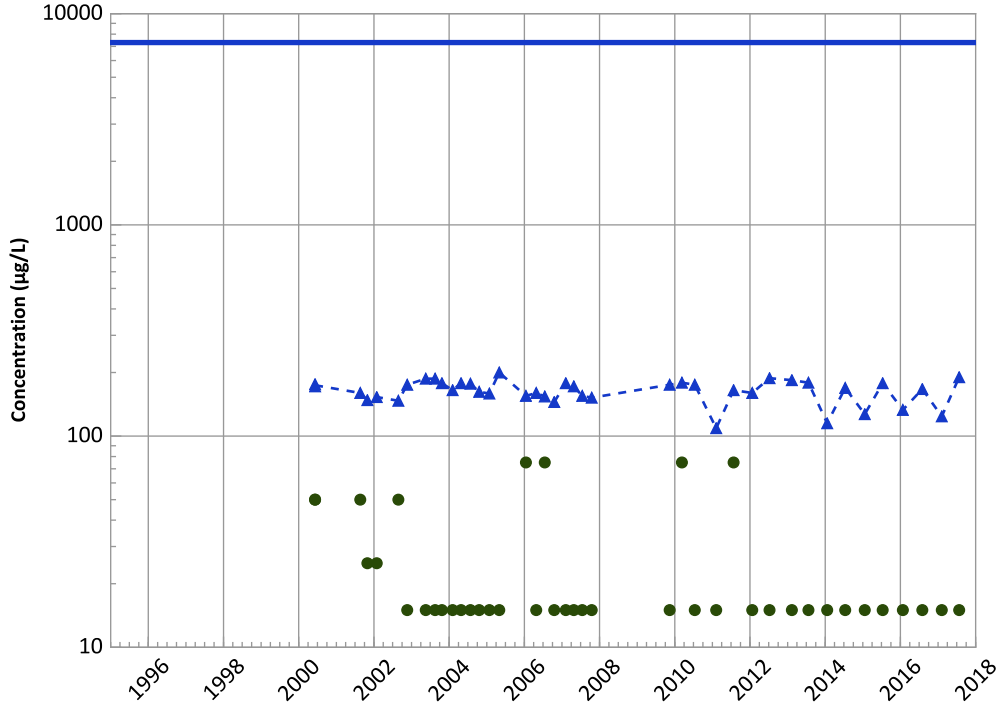


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/01/2000 to 07/25/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- Concentration Trend
- Groundwater Protection Standard

PTX01-1013 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

Boron Trend



Concentration Trend

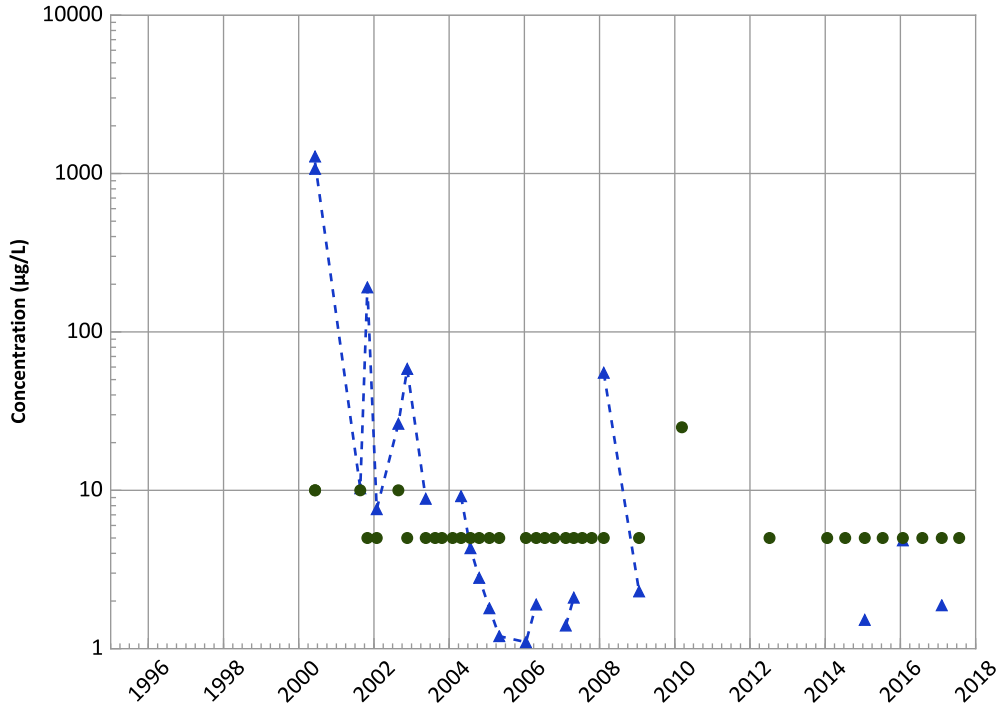
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Stable
All Data
Probably Decreasing

Manganese Trend



Concentration Trend

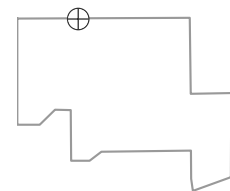
MAROS Mann-Kendall Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

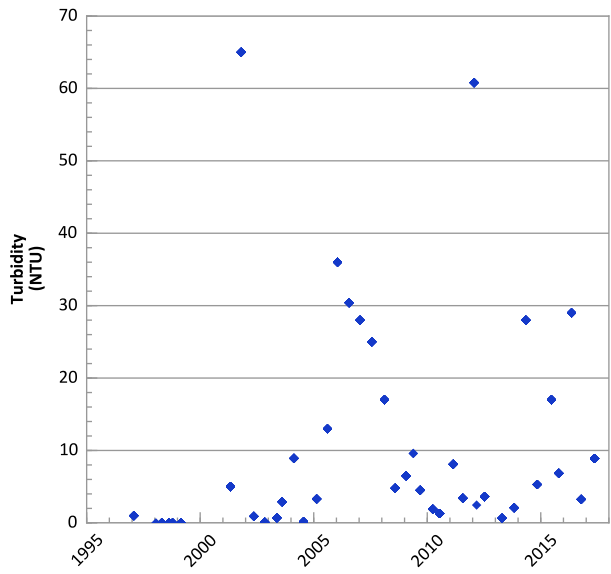
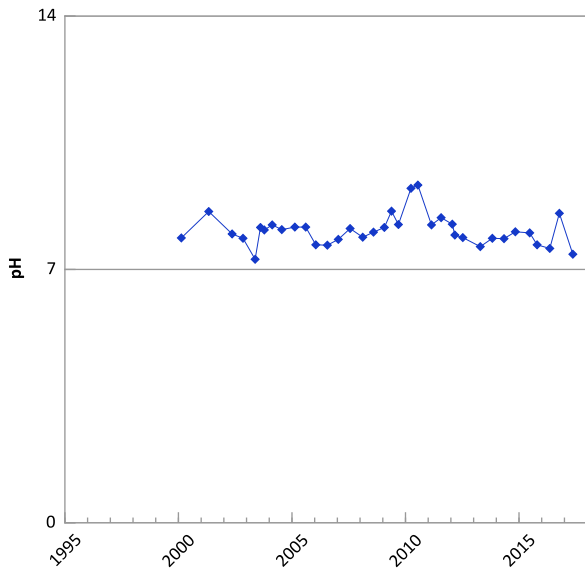
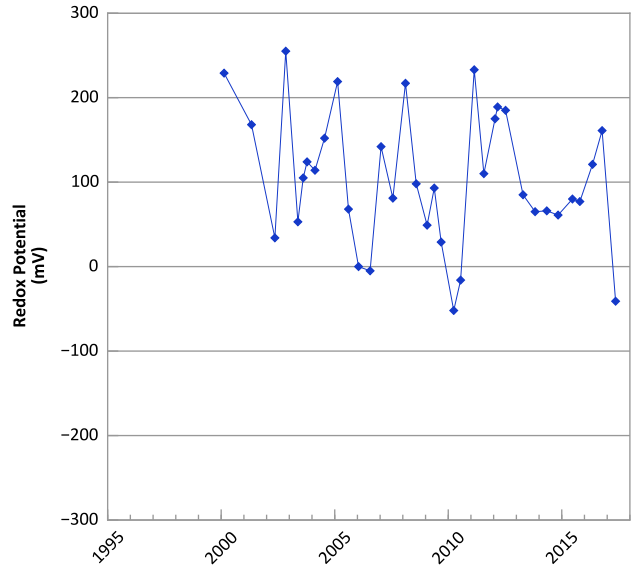
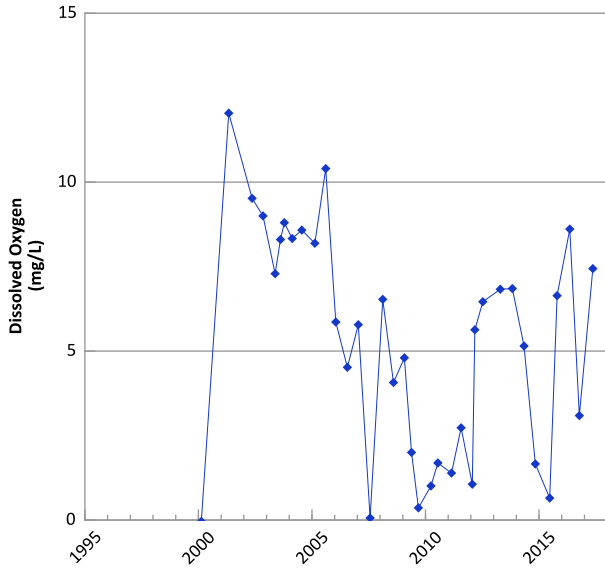
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/01/2000 to 07/25/2017
Analysis Date: 03/21/2018

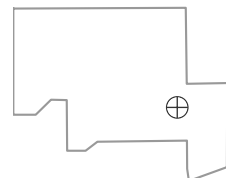
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1033 in Ogallala Aquifer
 USDOE/NNSA Pantex Plant
 Field Parameters



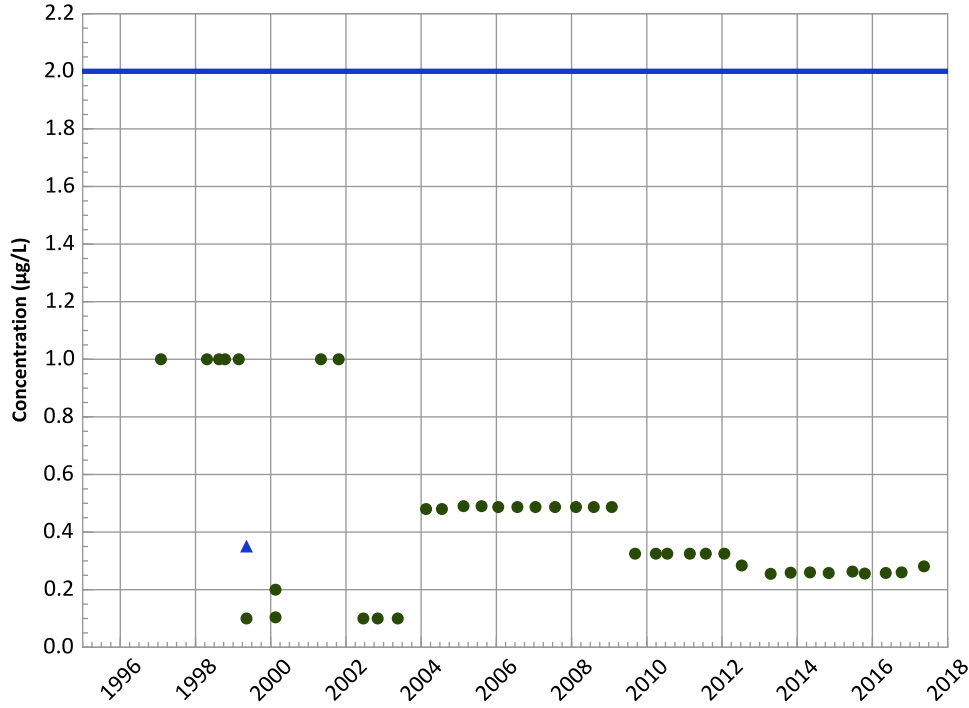
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 01/30/1997 to 05/16/2017
 Analysis Date: 03/21/2018

Well Location



PTX06-1033 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

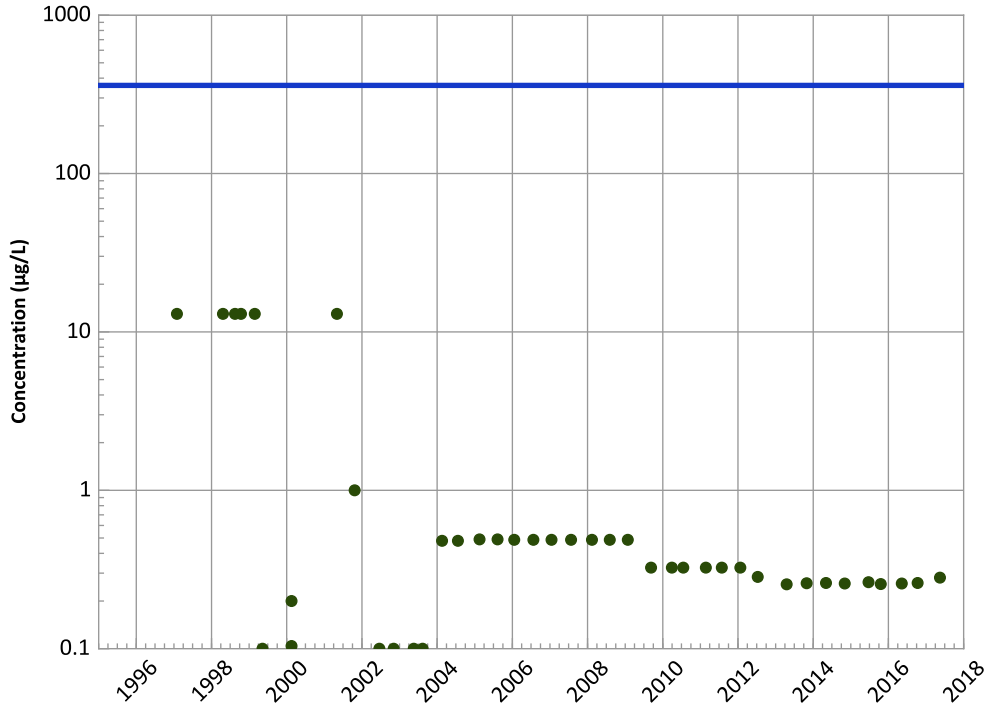
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

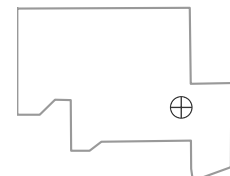
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

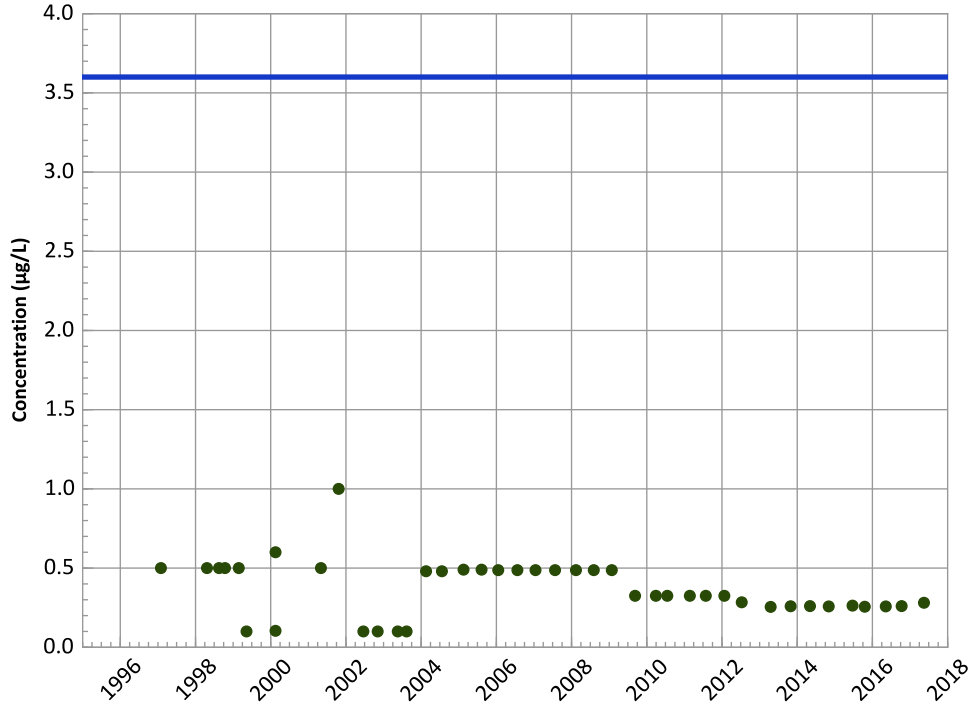


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 01/30/1997 to 05/16/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1033 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

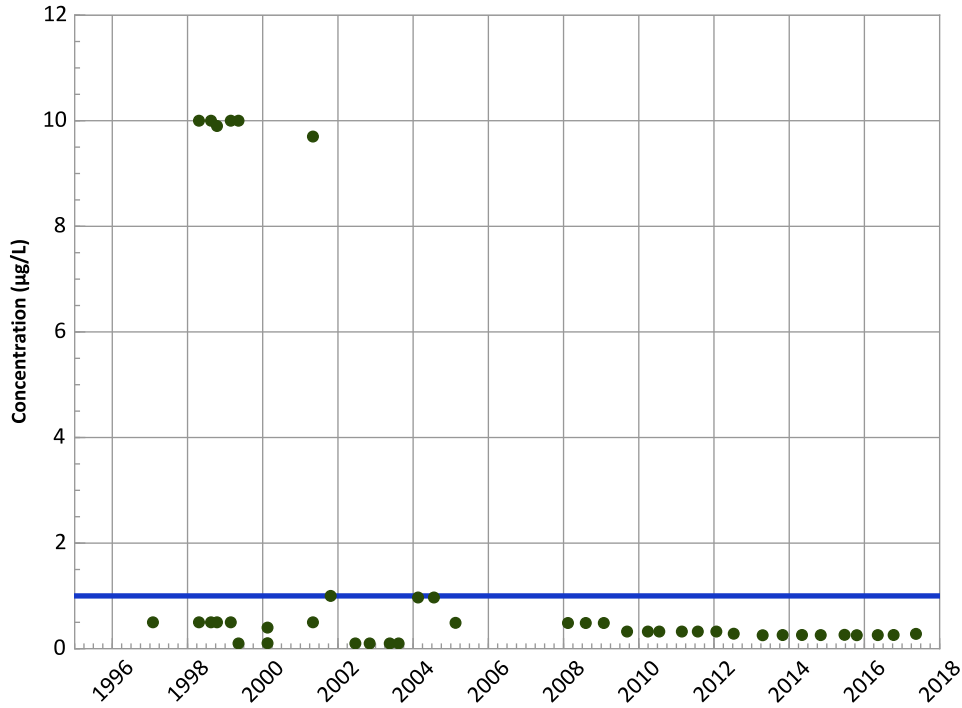
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

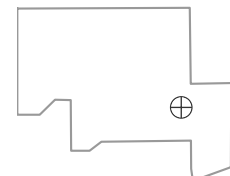
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

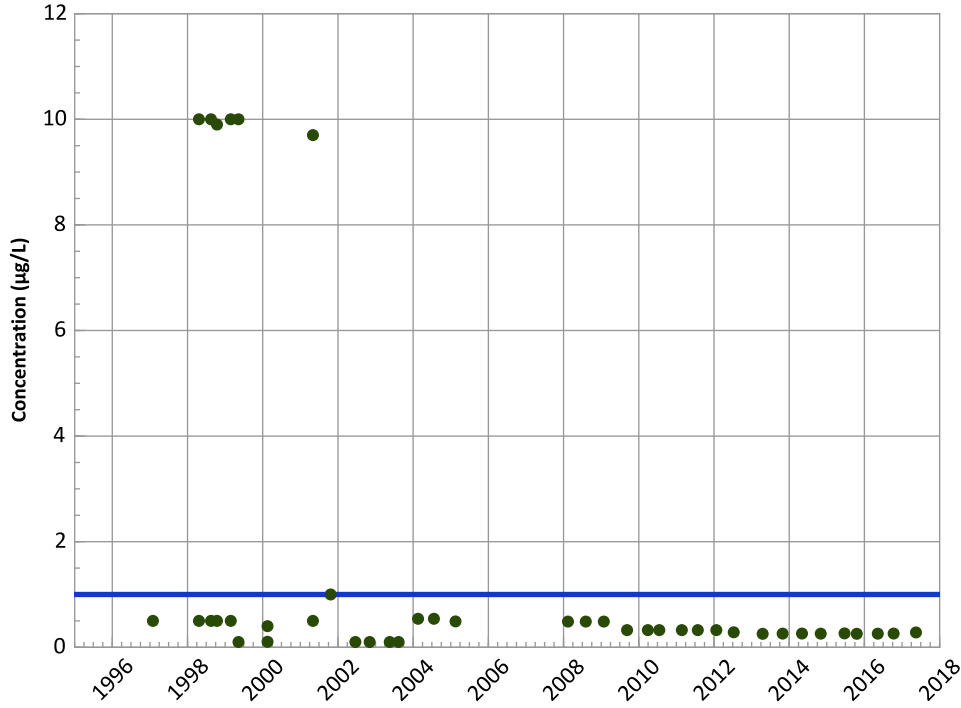


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 01/30/1997 to 05/16/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1033 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

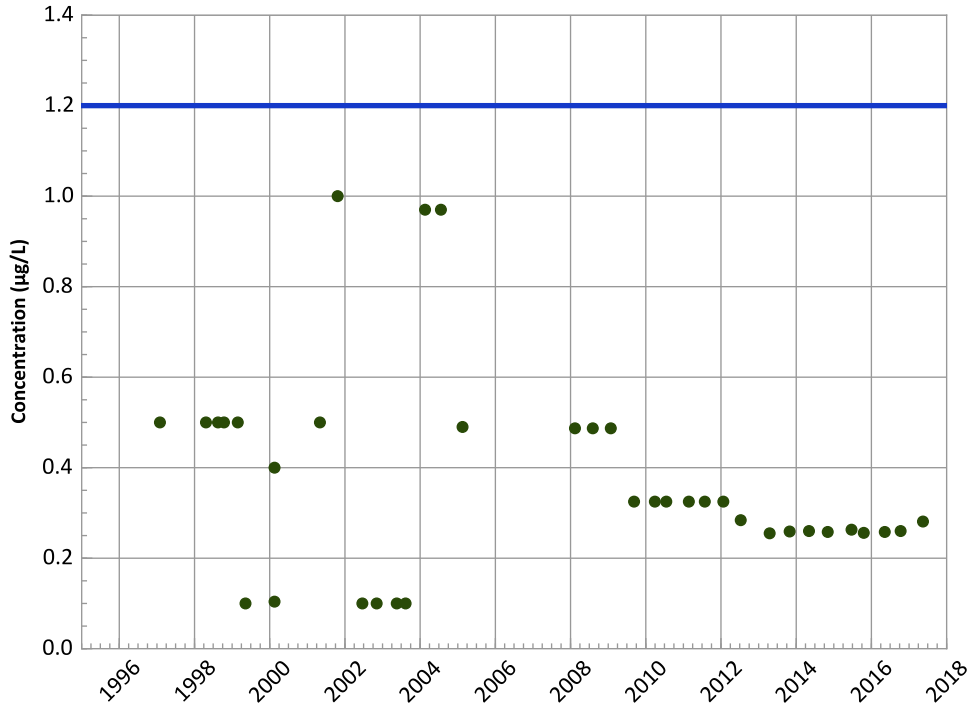
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

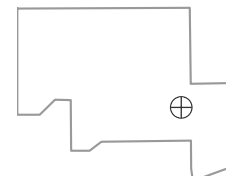
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

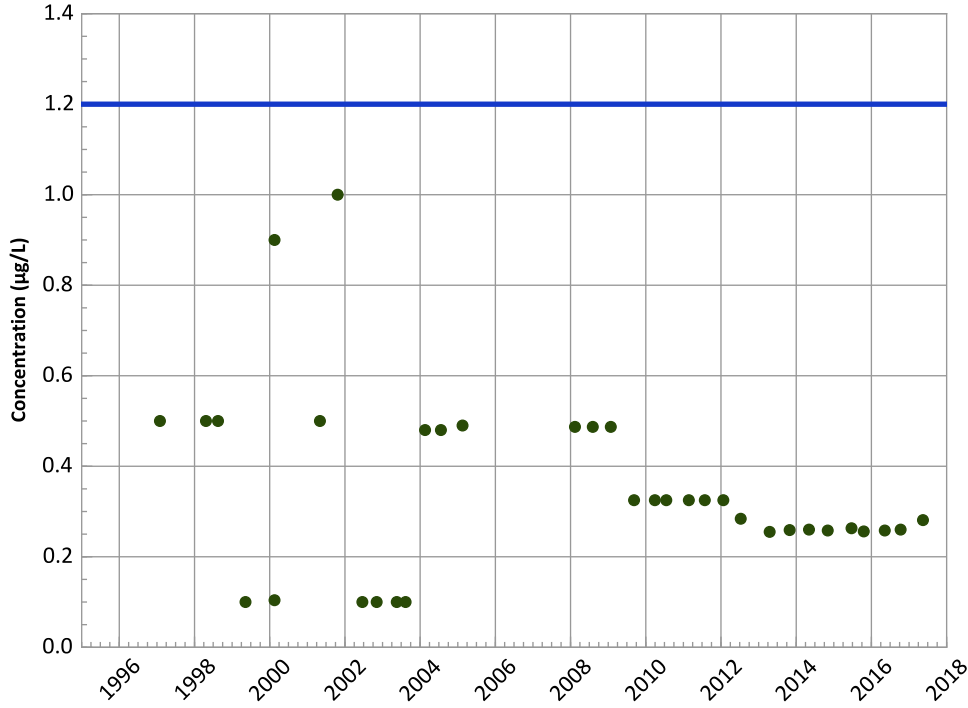


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 01/30/1997 to 05/16/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1033 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

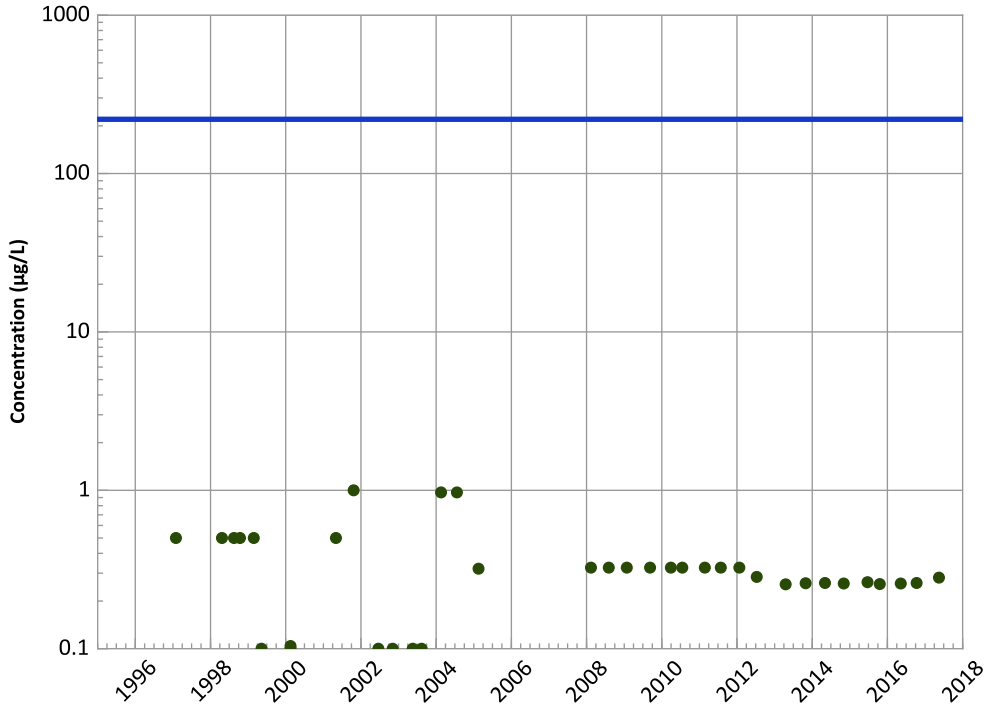
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,3,5-Trinitrobenzene Trend



Concentration Trend

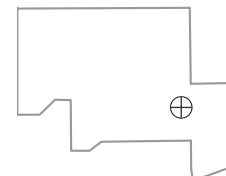
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

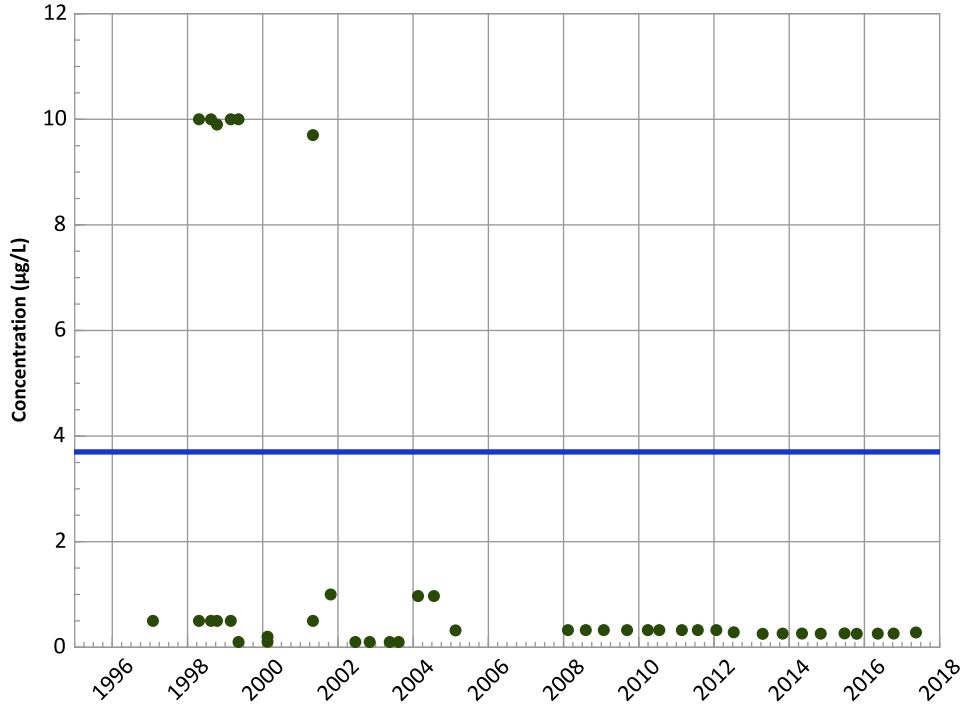


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 01/30/1997 to 05/16/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1033 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

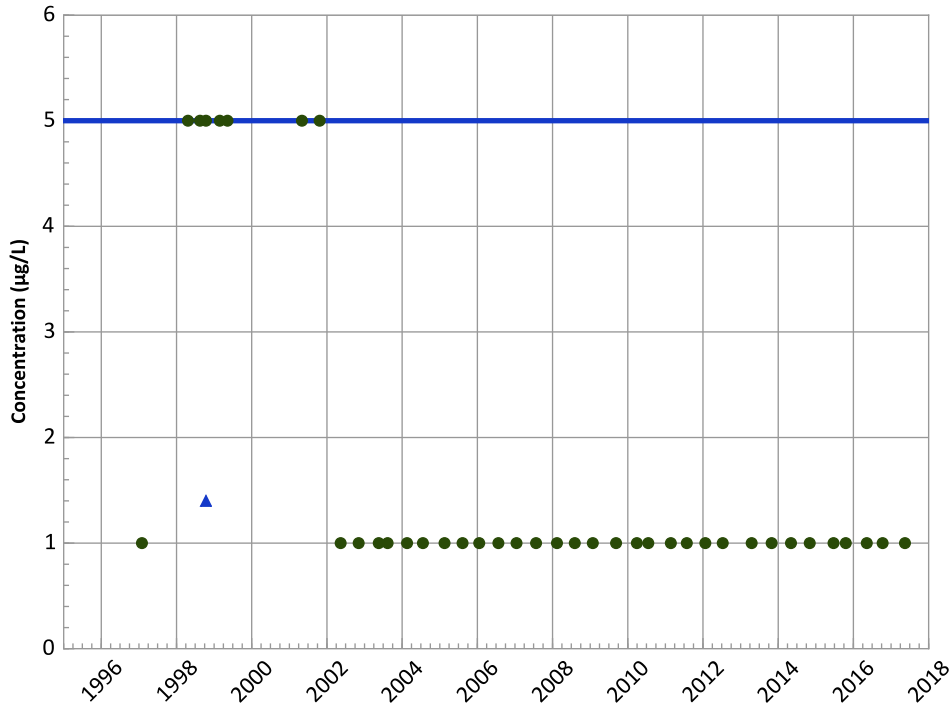
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Tetrachloroethylene (PCE) Trend



Concentration Trend

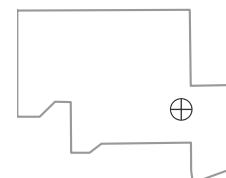
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

Well Location

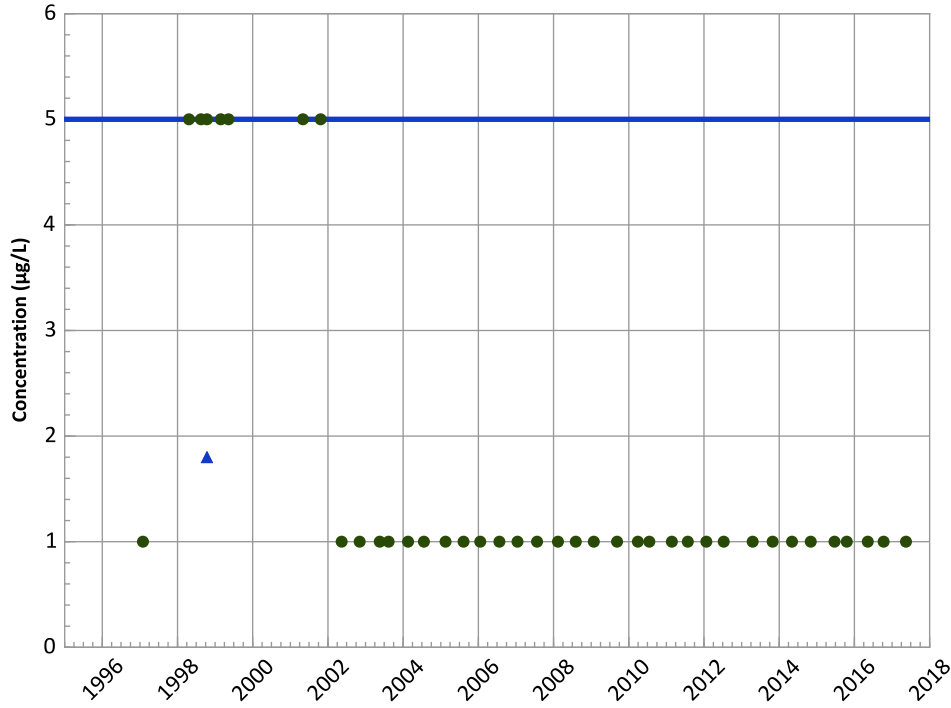


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 01/30/1997 to 05/16/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1033 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

Trichloroethene Trend



Concentration Trend

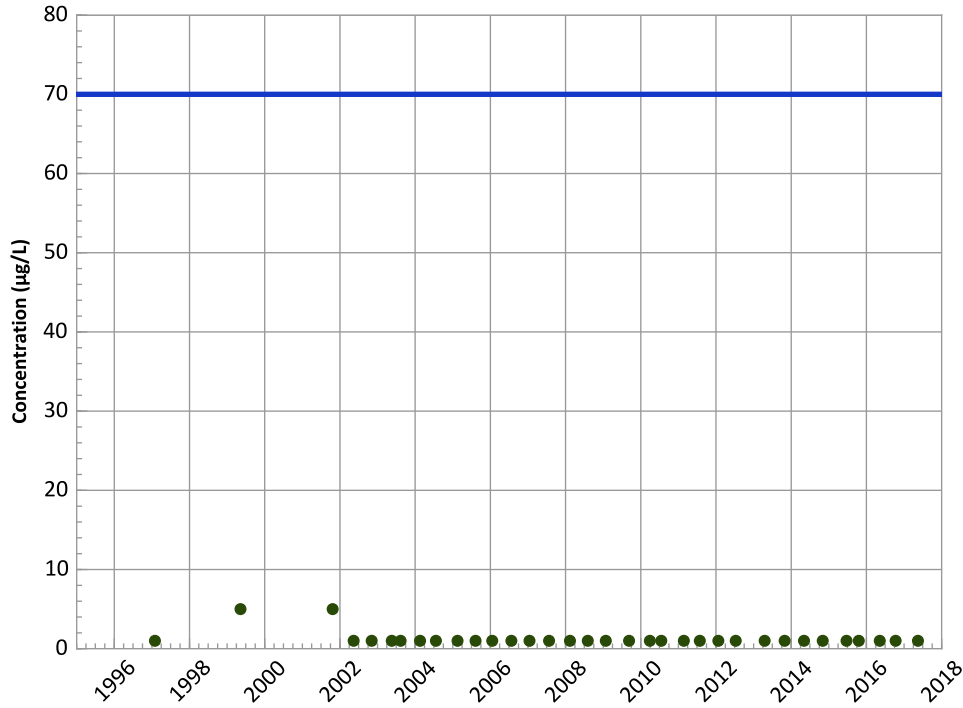
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

cis-1,2-Dichloroethene Trend



Concentration Trend

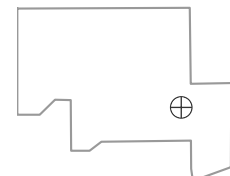
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

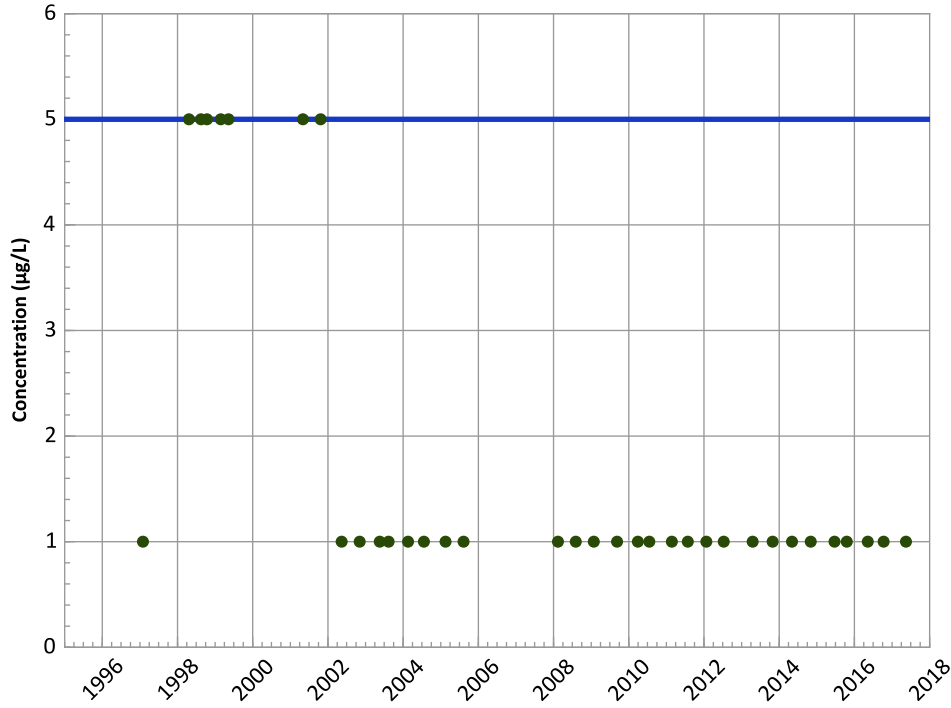


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 01/30/1997 to 05/16/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1033 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

1,2-Dichloroethane Trend



Concentration Trend

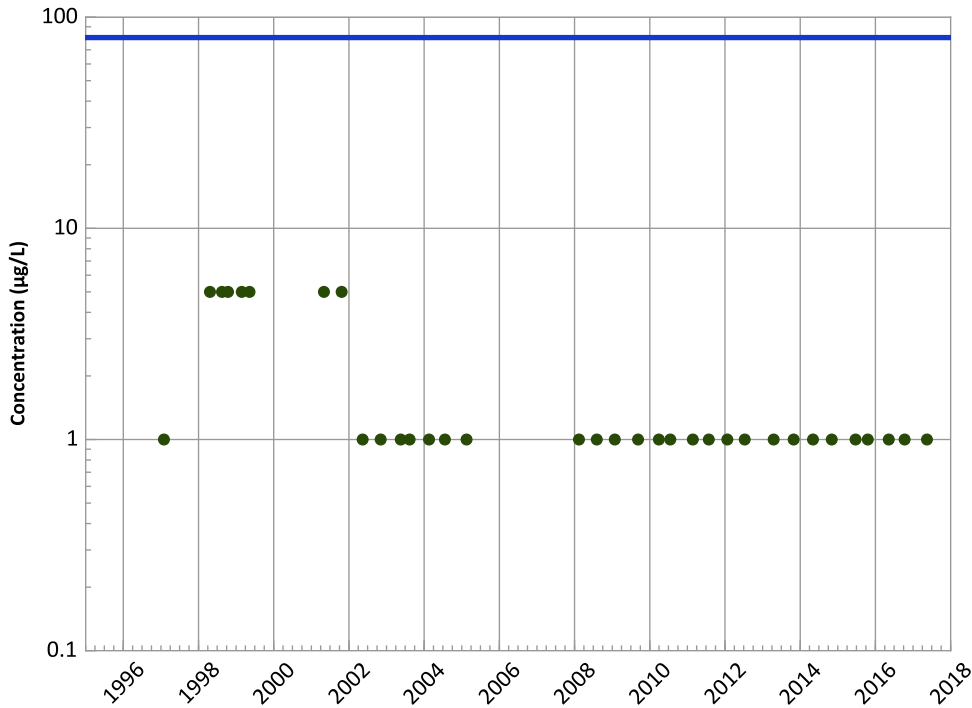
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Chloroform Trend



Concentration Trend

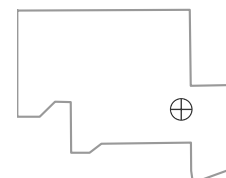
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

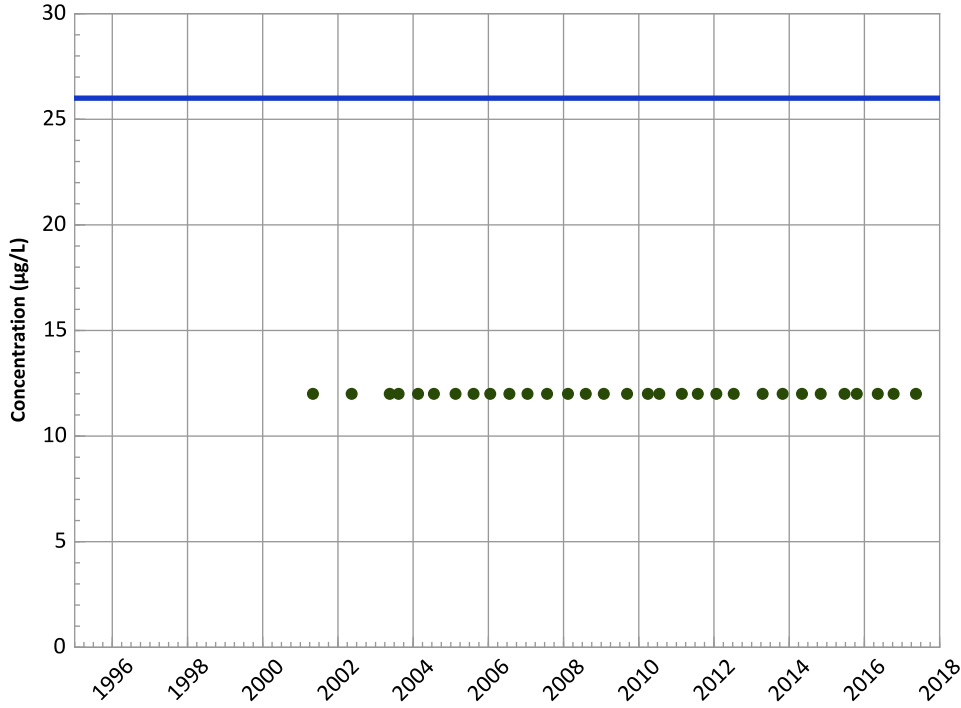


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 01/30/1997 to 05/16/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1033 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

Perchlorate Trend



Concentration Trend

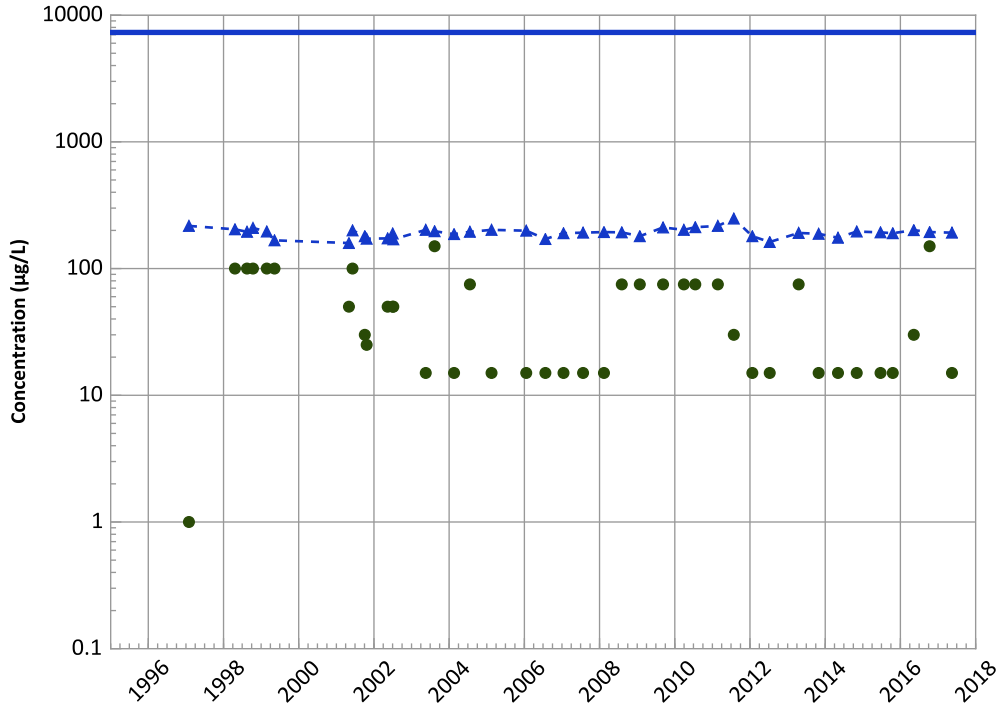
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Boron Trend



Concentration Trend

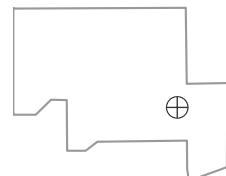
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

Well Location

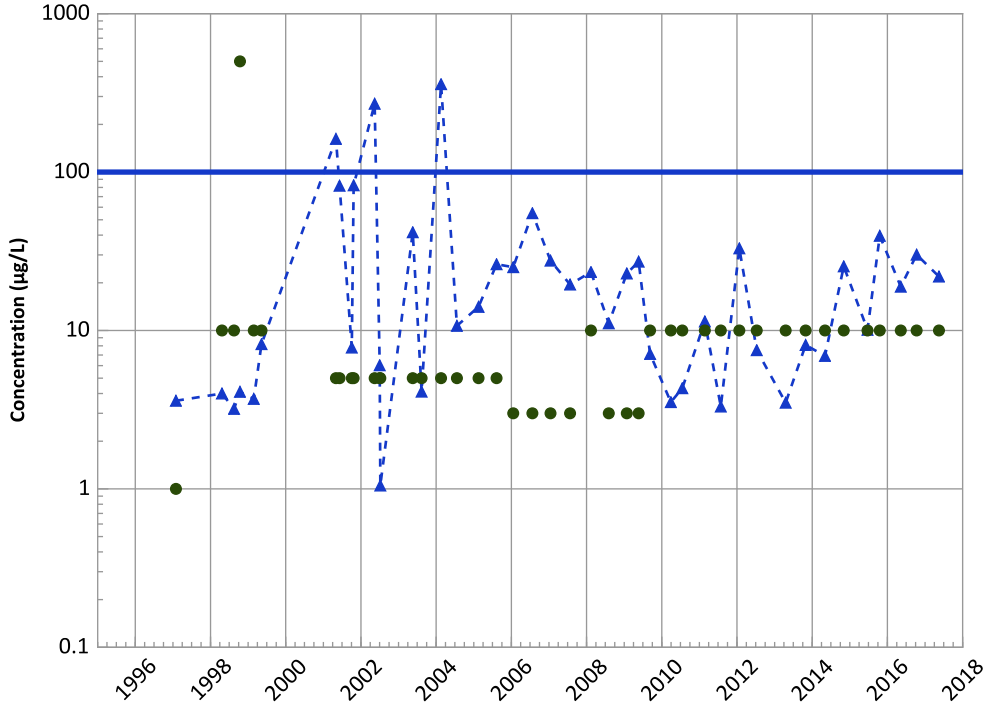


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 01/30/1997 to 05/16/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1033 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

Chromium, Total Trend



Concentration Trend

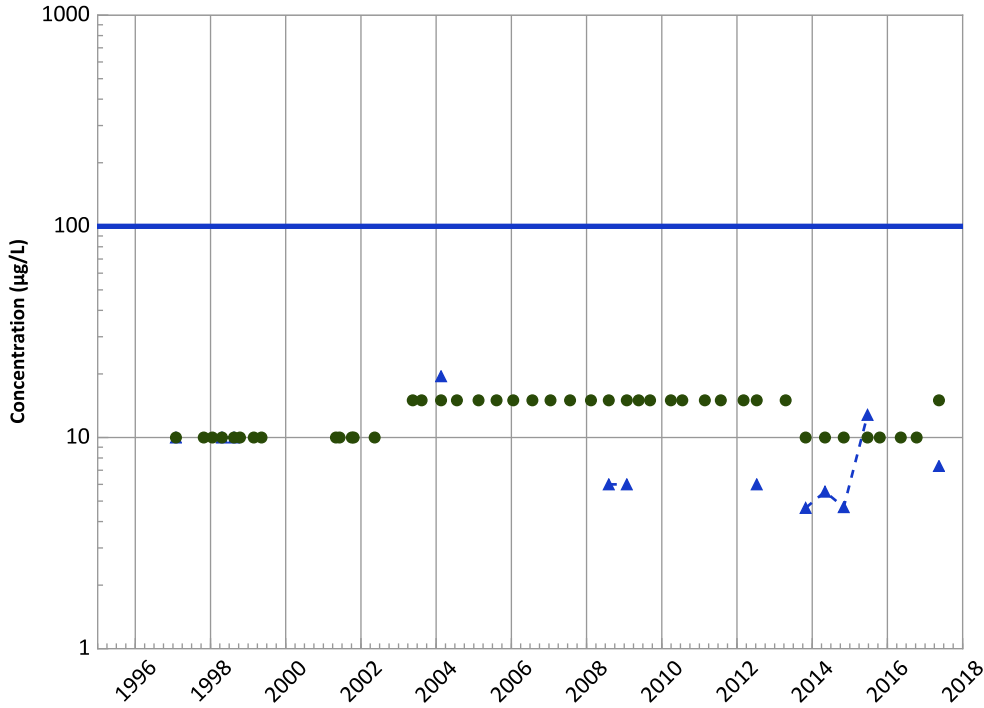
MAROS Mann-Kendall Method

Data ():
No Trend
All Data
Increasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
No Trend

Chromium, Hexavalent Trend



Concentration Trend

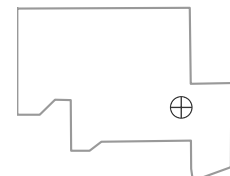
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
Decreasing

Well Location

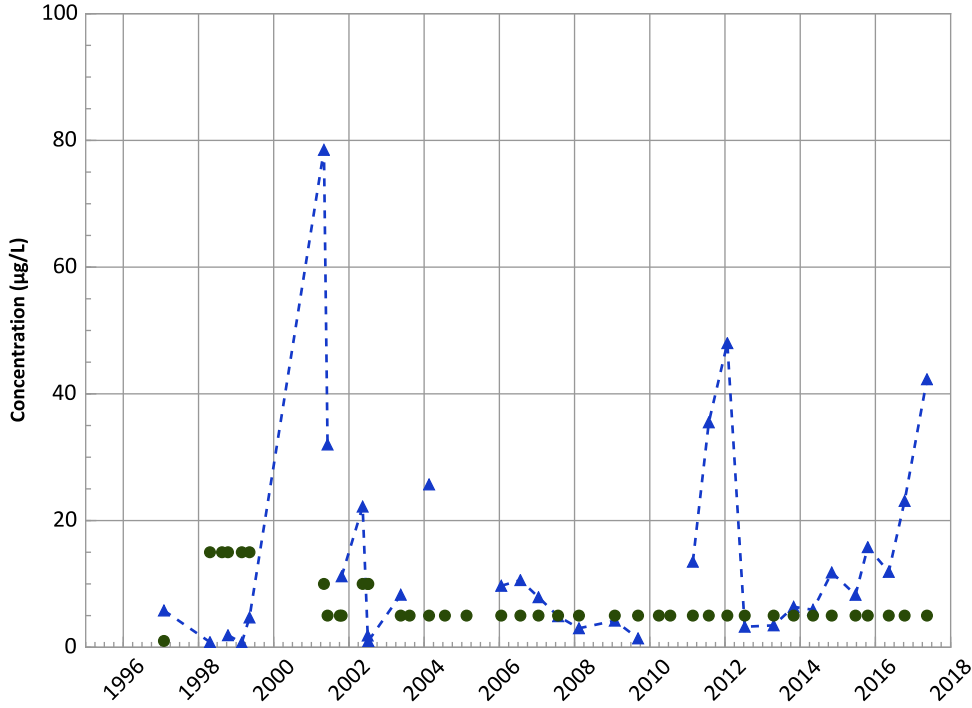


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 01/30/1997 to 05/16/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1033 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

Manganese Trend



Concentration Trend

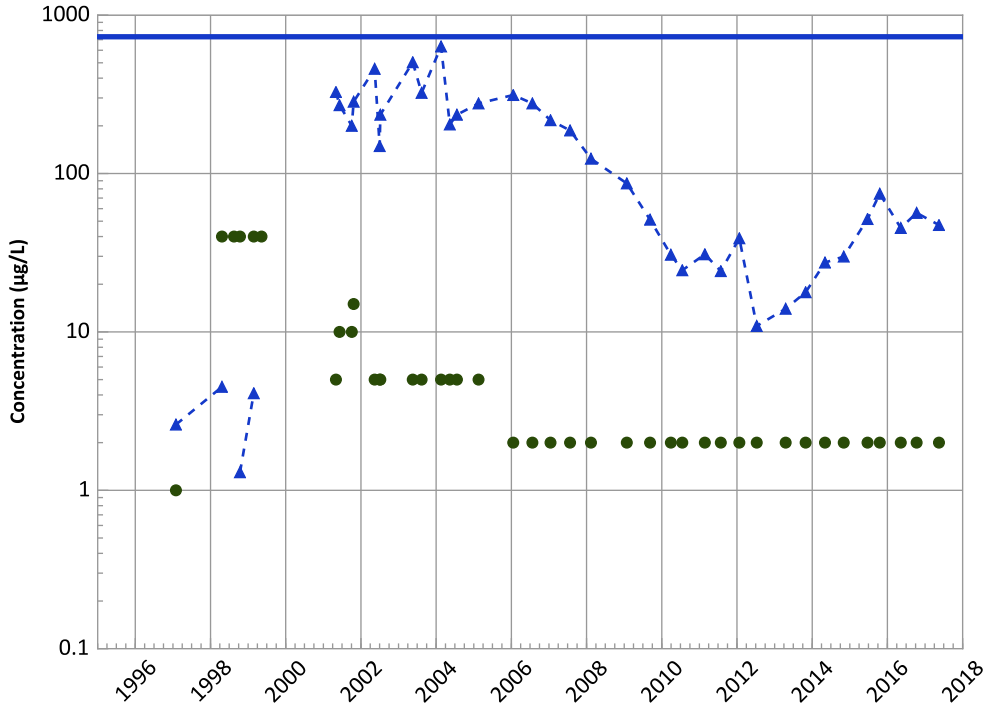
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
Increasing

Nickel Trend



Concentration Trend

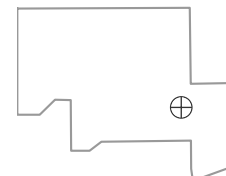
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
No Trend

Well Location

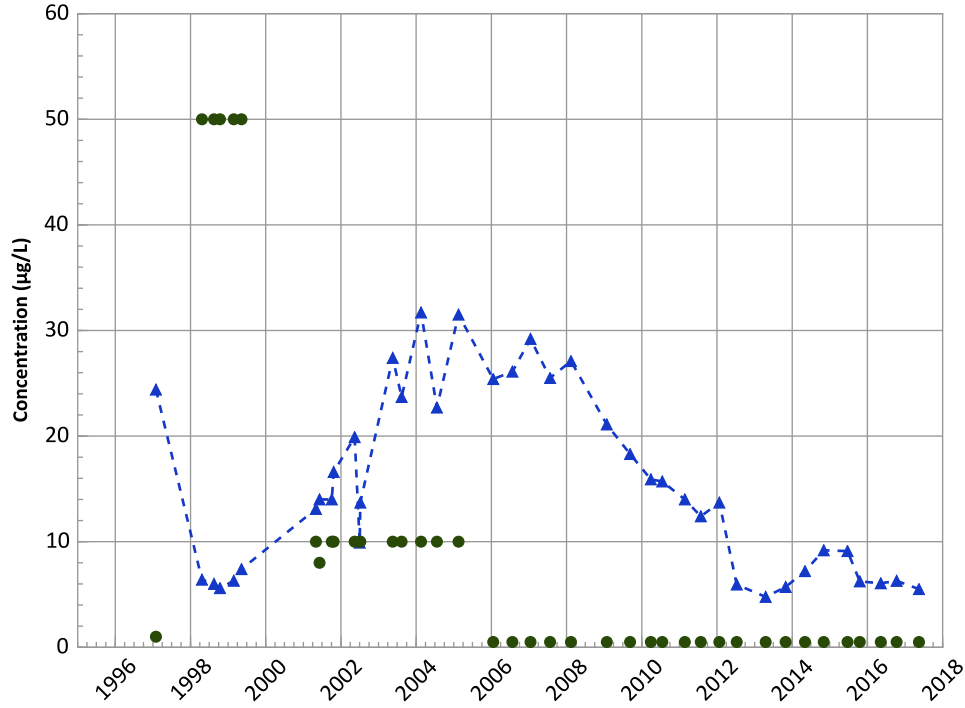


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 01/30/1997 to 05/16/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1033 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

Molybdenum Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Decreasing

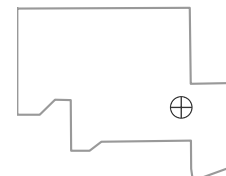
MAROS Linear Regression Method

Data ():
Stable
All Data
Decreasing

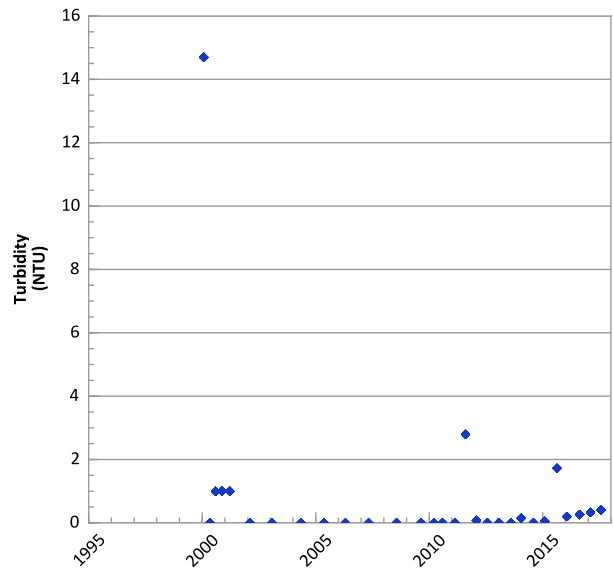
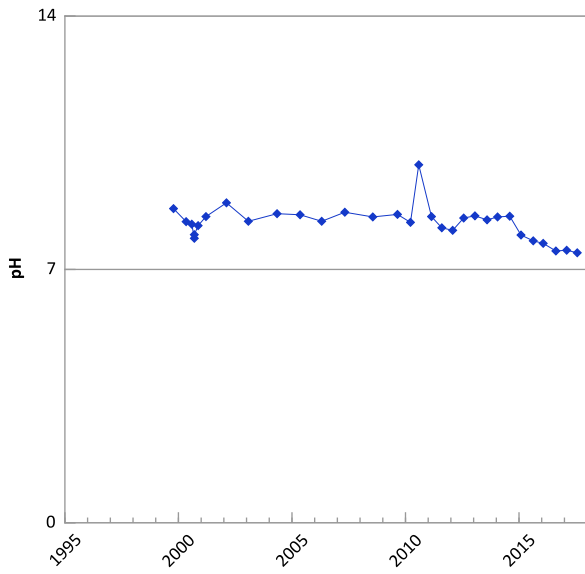
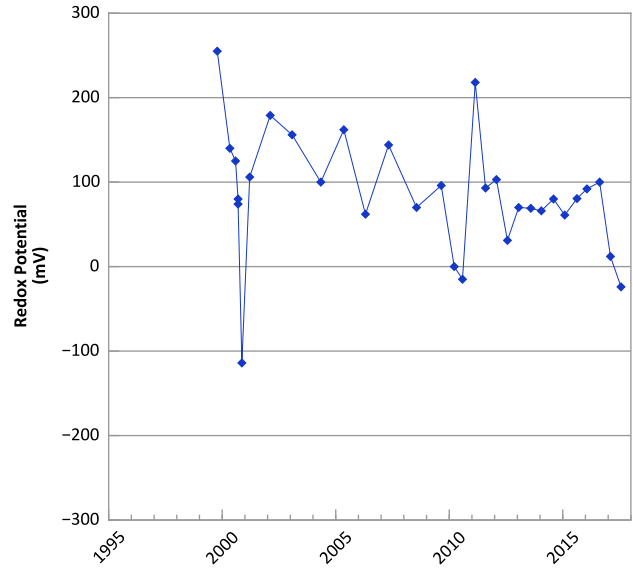
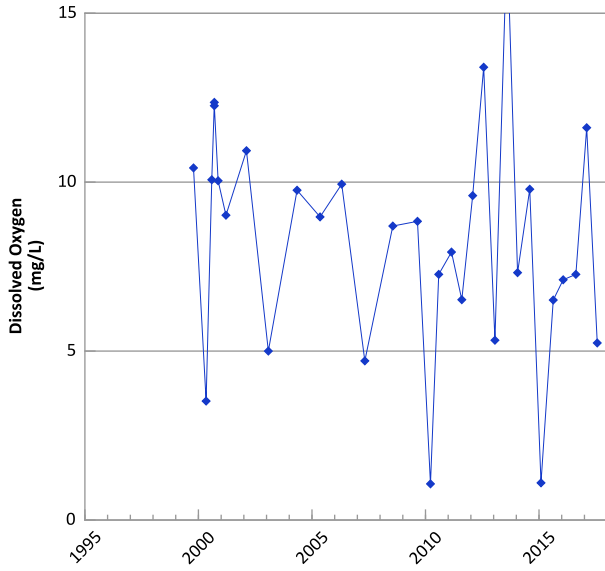
Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 01/30/1997 to 05/16/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

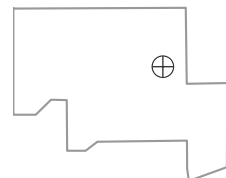


**PTX06-1043 in Ogallala Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



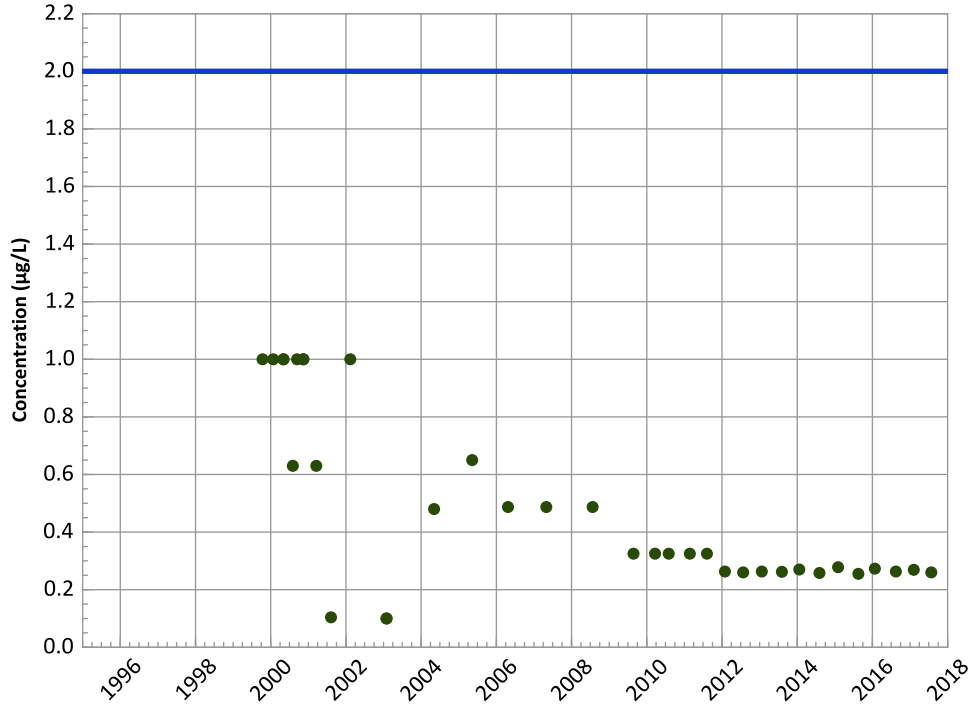
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 10/14/1999 to 07/26/2017
 Analysis Date: 03/21/2018

Well Location



PTX06-1043 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

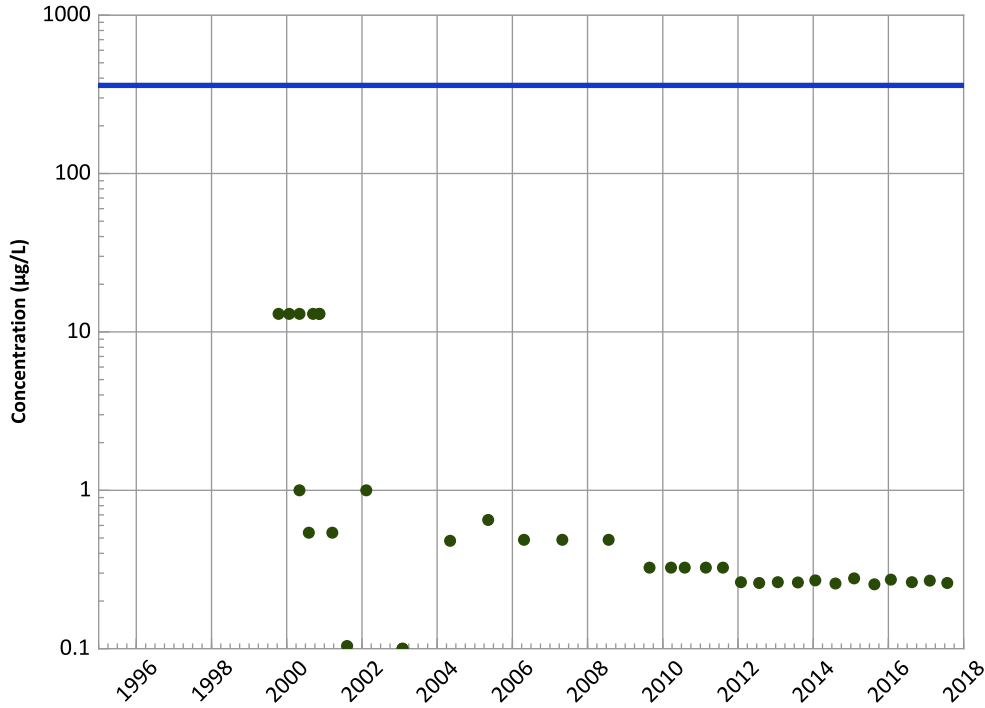
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

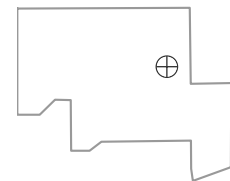
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

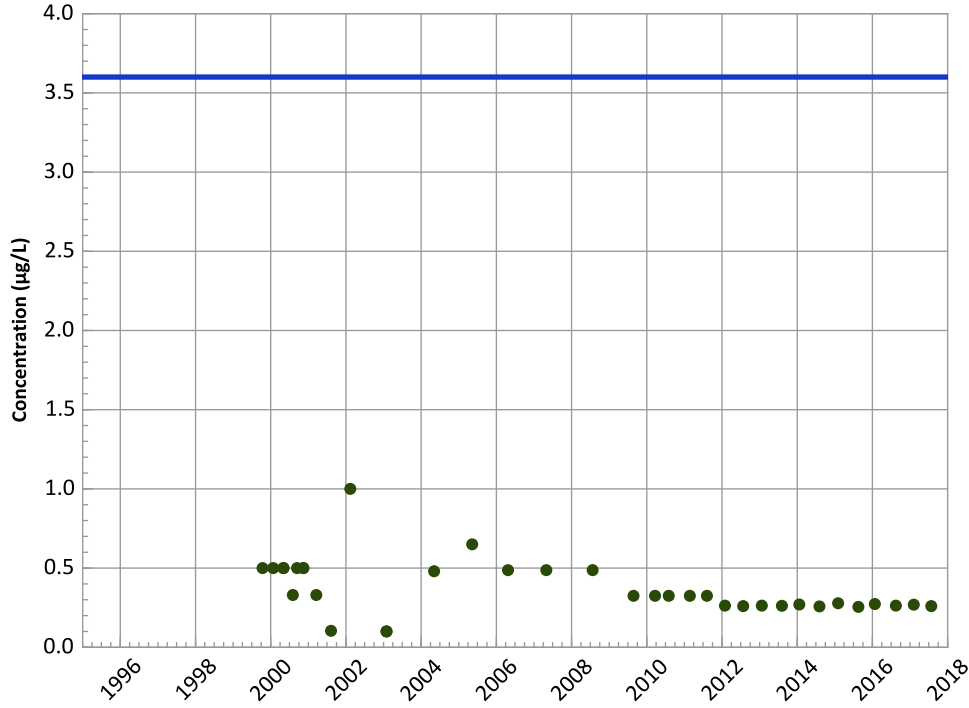


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/14/1999 to 07/26/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1043 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

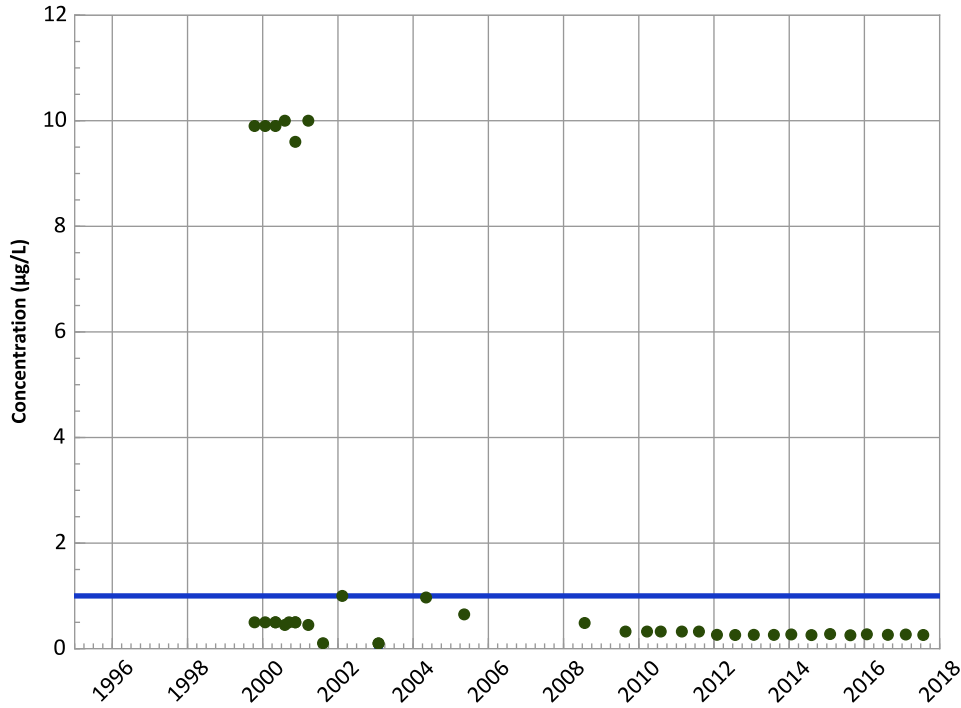
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

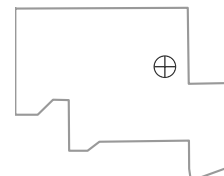
MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/14/1999 to 07/26/2017
Analysis Date: 03/21/2018

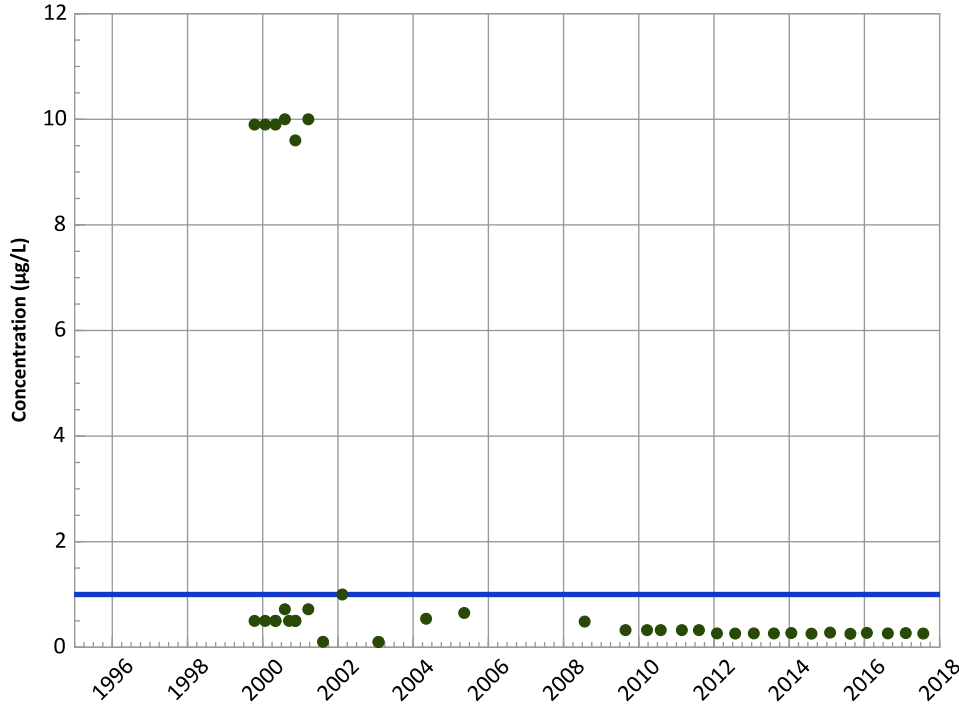
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1043 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

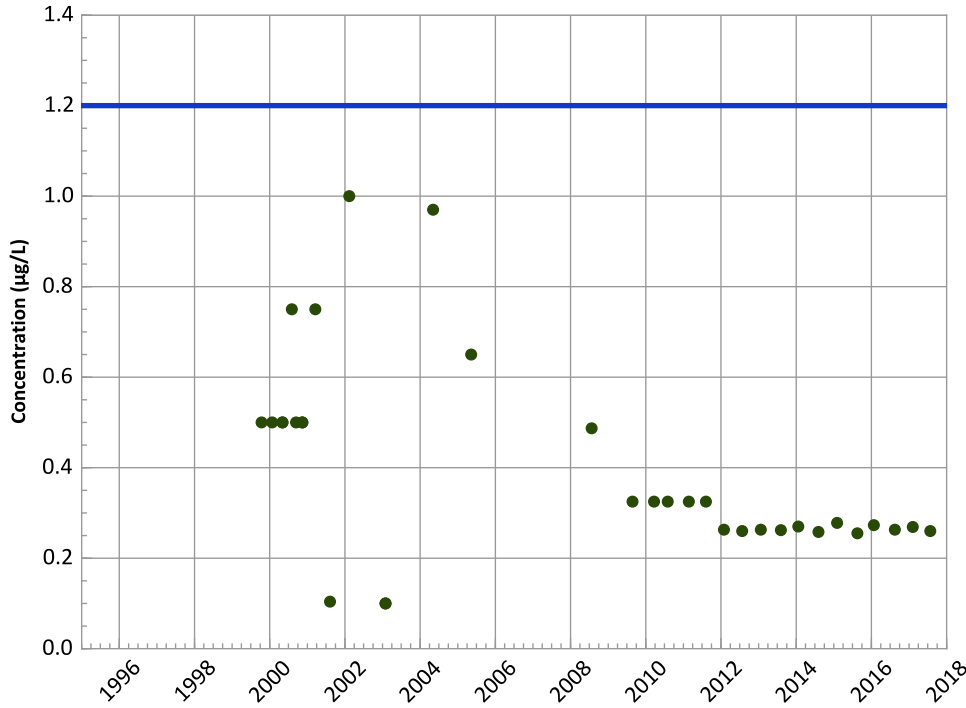
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

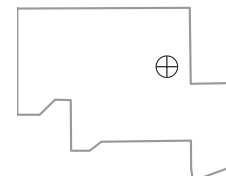
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

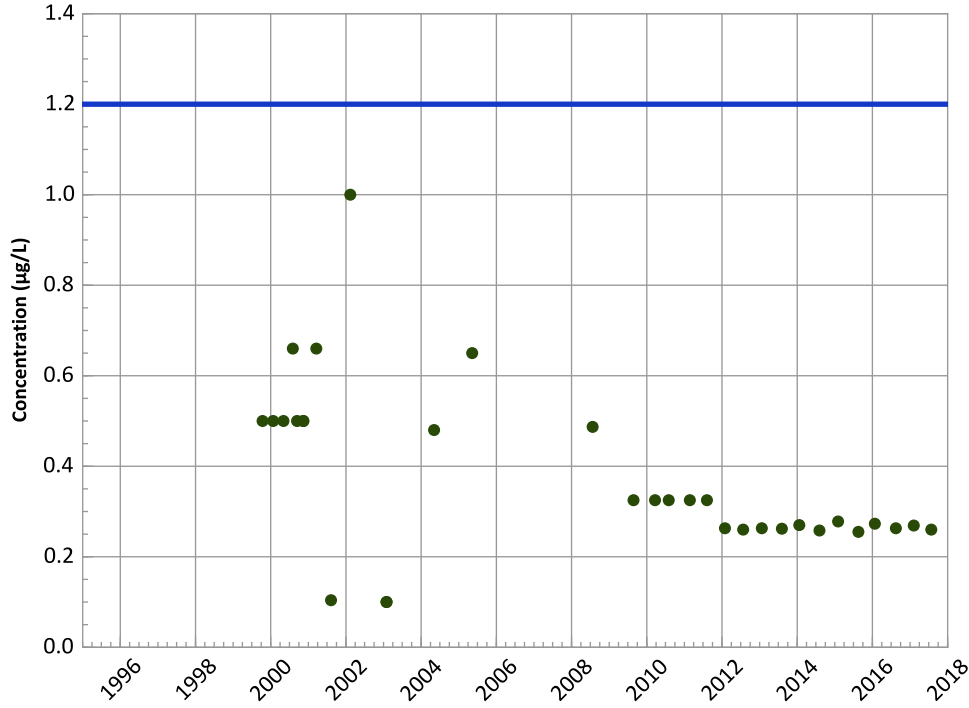


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/14/1999 to 07/26/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1043 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

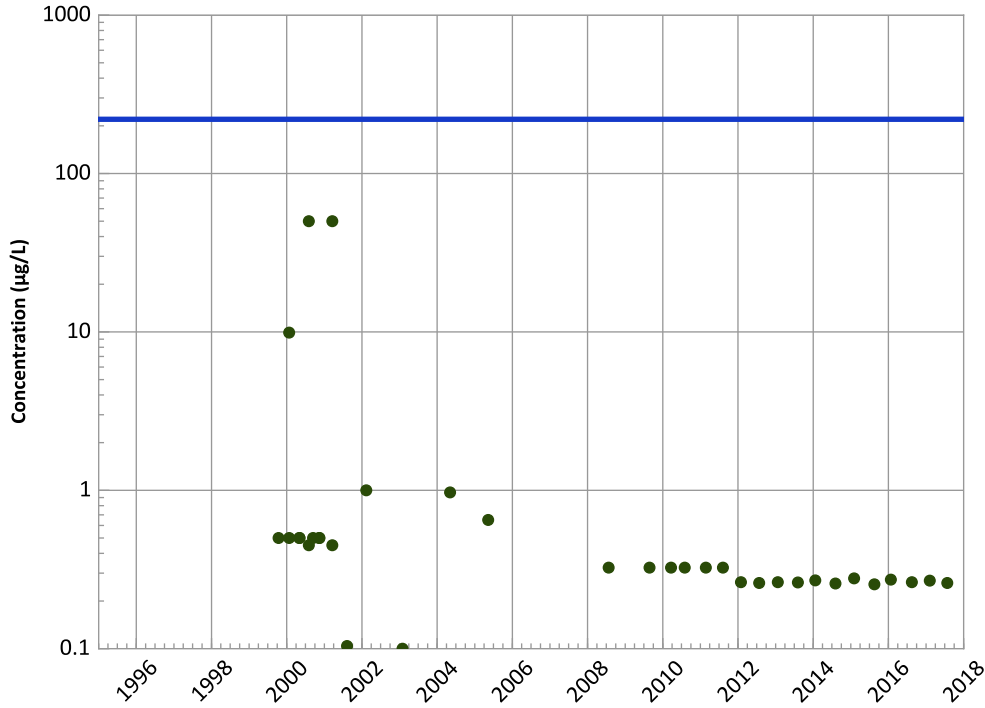
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,3,5-Trinitrobenzene Trend



Concentration Trend

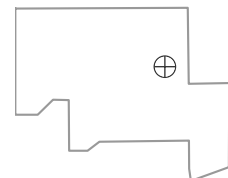
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

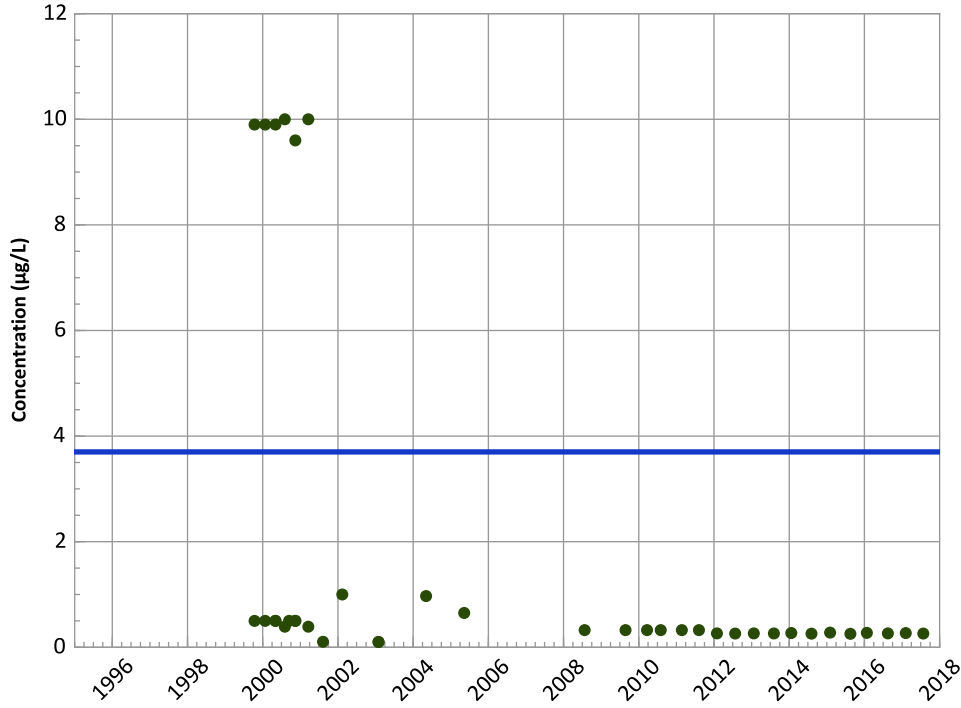


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/14/1999 to 07/26/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1043 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

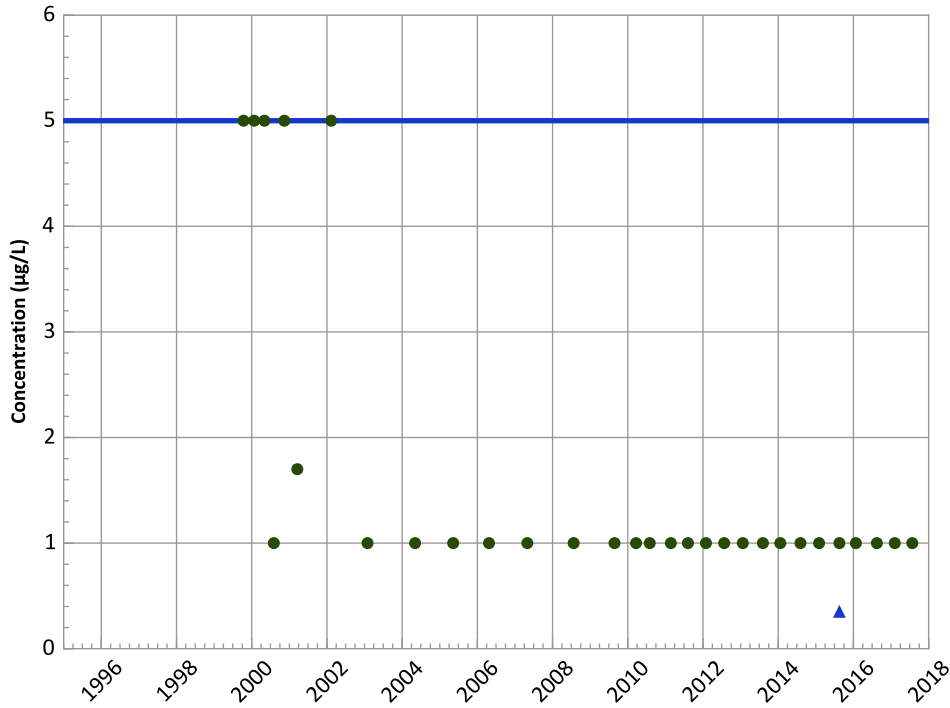
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Tetrachloroethylene (PCE) Trend



Concentration Trend

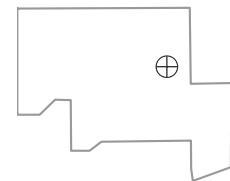
MAROS Mann-Kendall Method

Data ():
N/A (<4 Detections in Dataset)
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
N/A (<4 Detections in Dataset)

Well Location

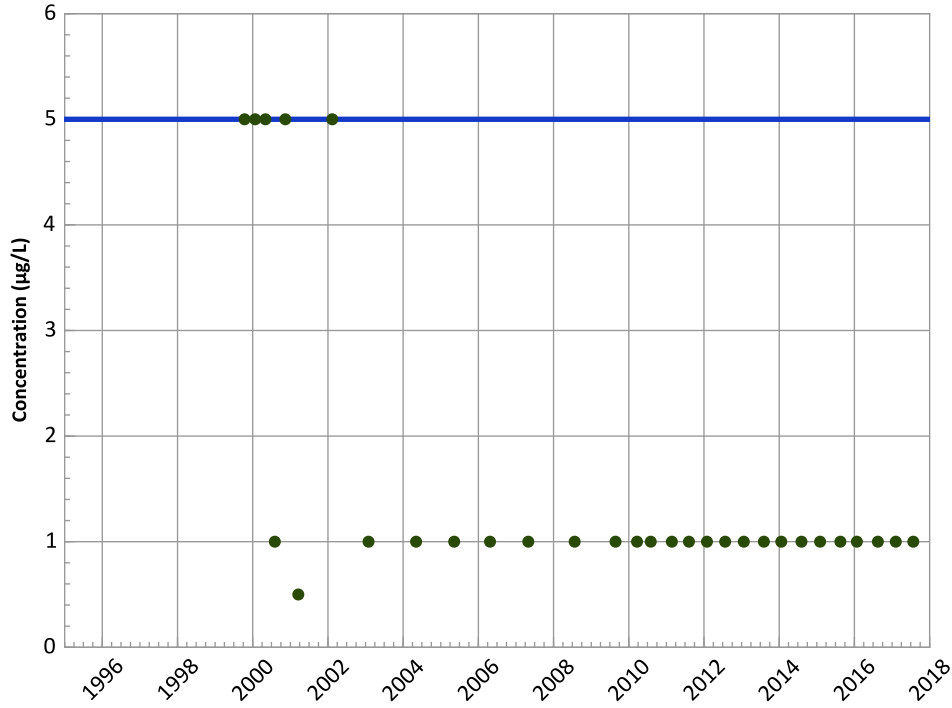


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/14/1999 to 07/26/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1043 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

Trichloroethene Trend



Concentration Trend

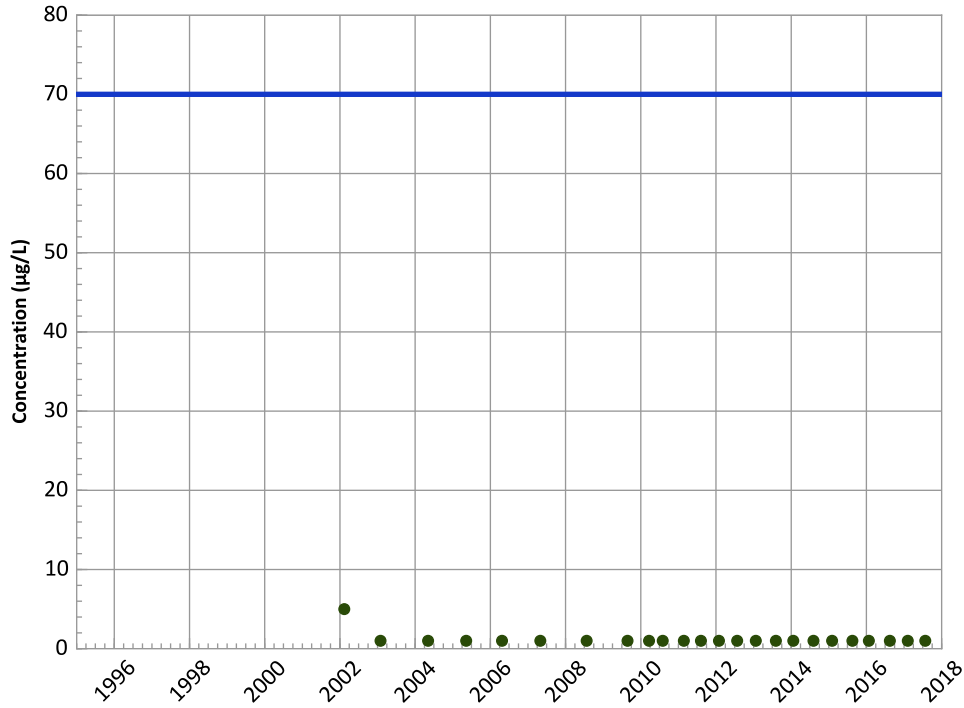
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

cis-1,2-Dichloroethene Trend



Concentration Trend

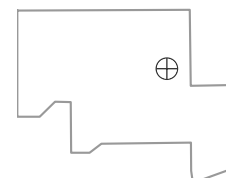
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

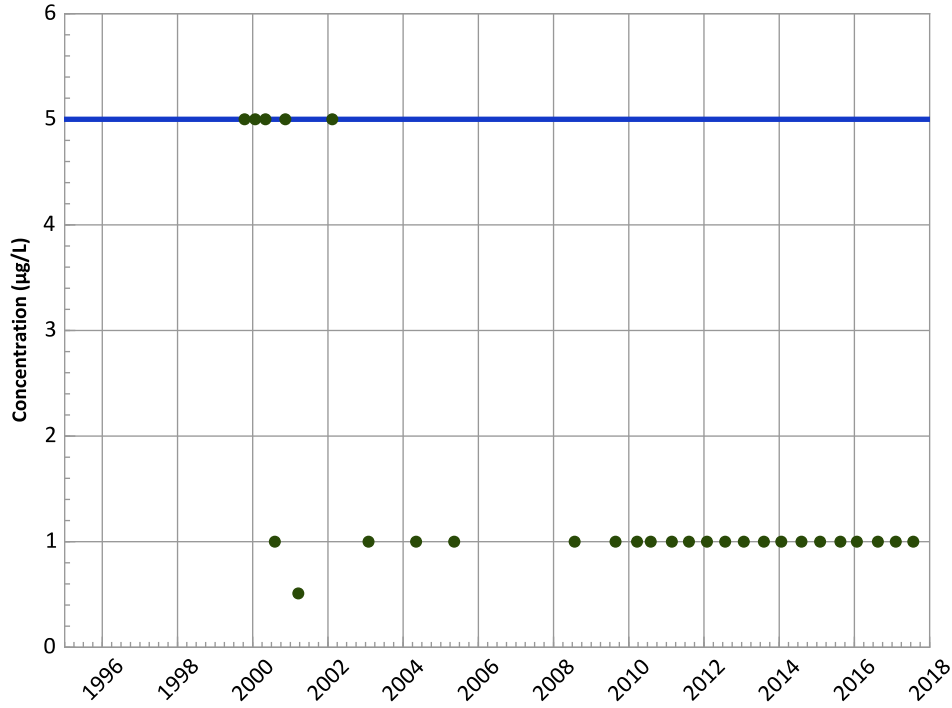


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/14/1999 to 07/26/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1043 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

1,2-Dichloroethane Trend



Concentration Trend

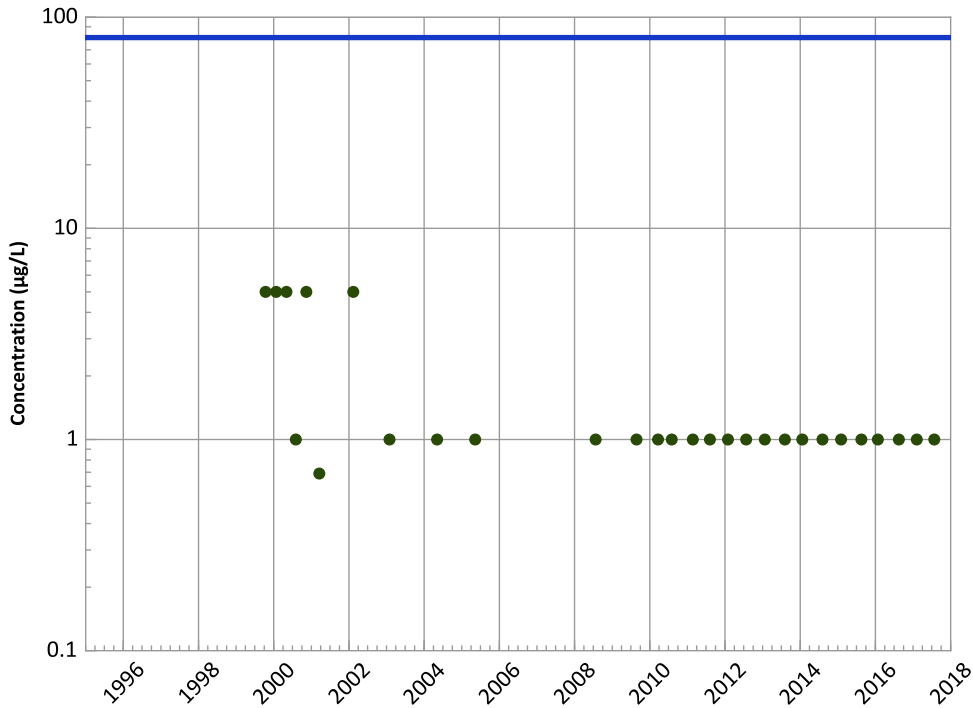
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Chloroform Trend



Concentration Trend

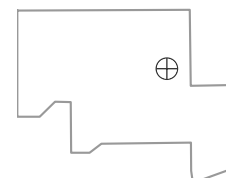
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

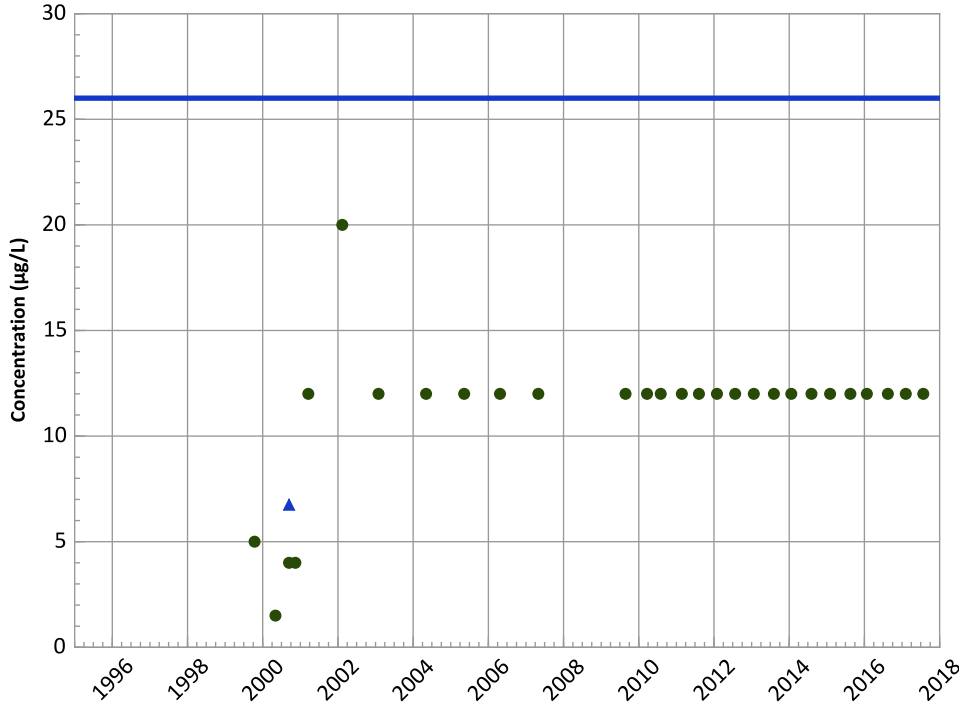


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/14/1999 to 07/26/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1043 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

Perchlorate Trend



Concentration Trend

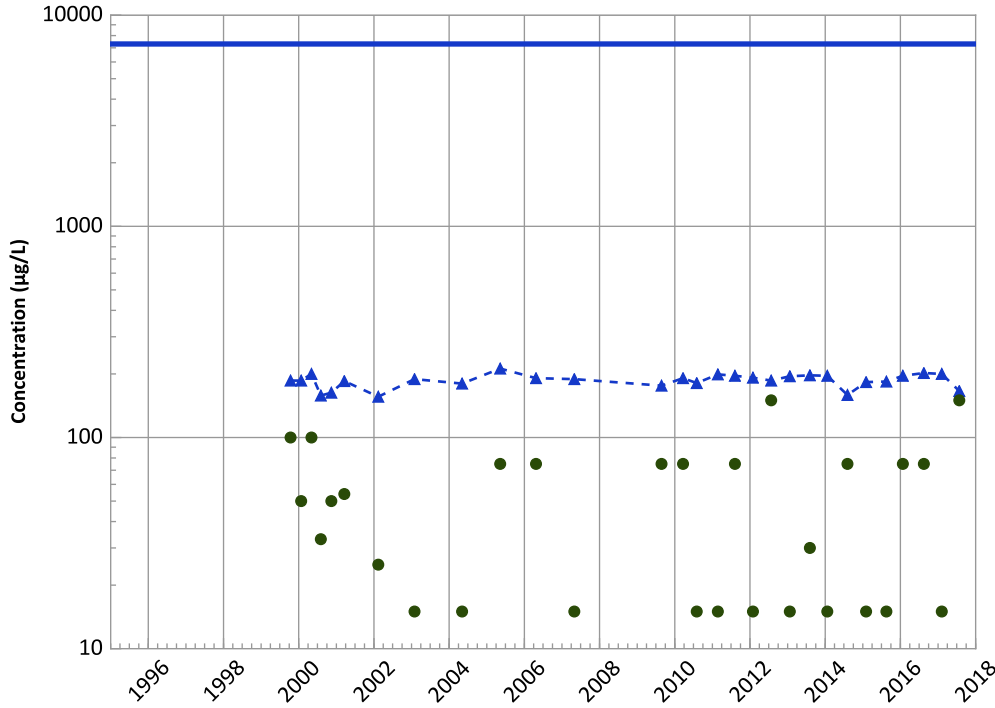
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

Boron Trend



Concentration Trend

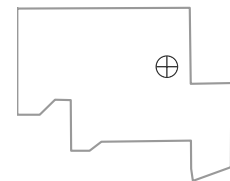
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Probably Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

Well Location

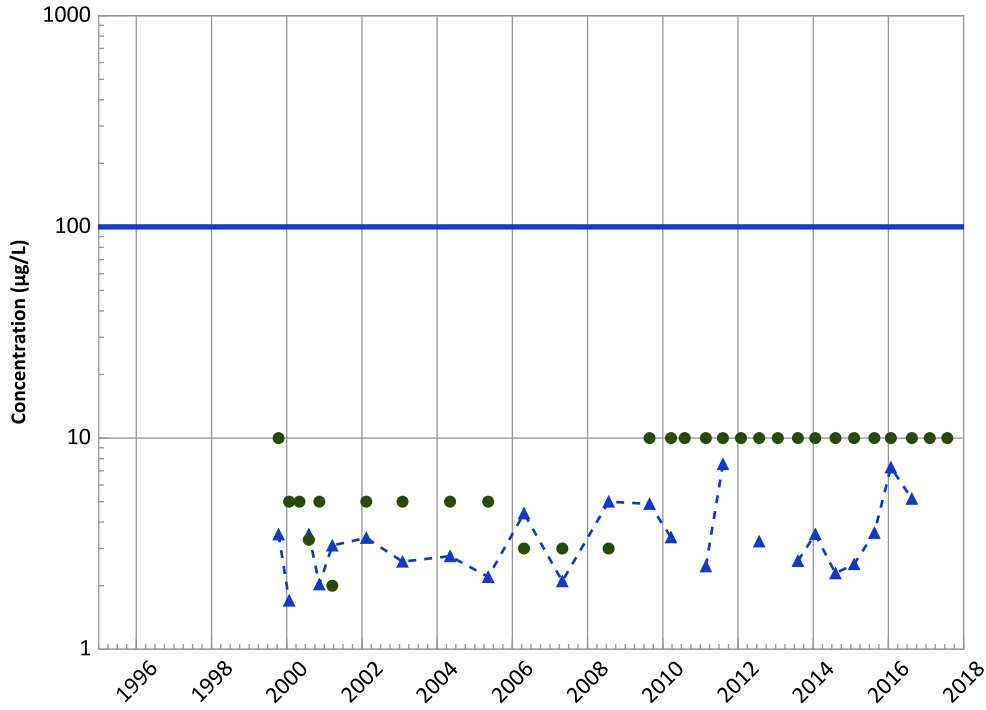


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/14/1999 to 07/26/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1043 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

Chromium, Total Trend



Concentration Trend

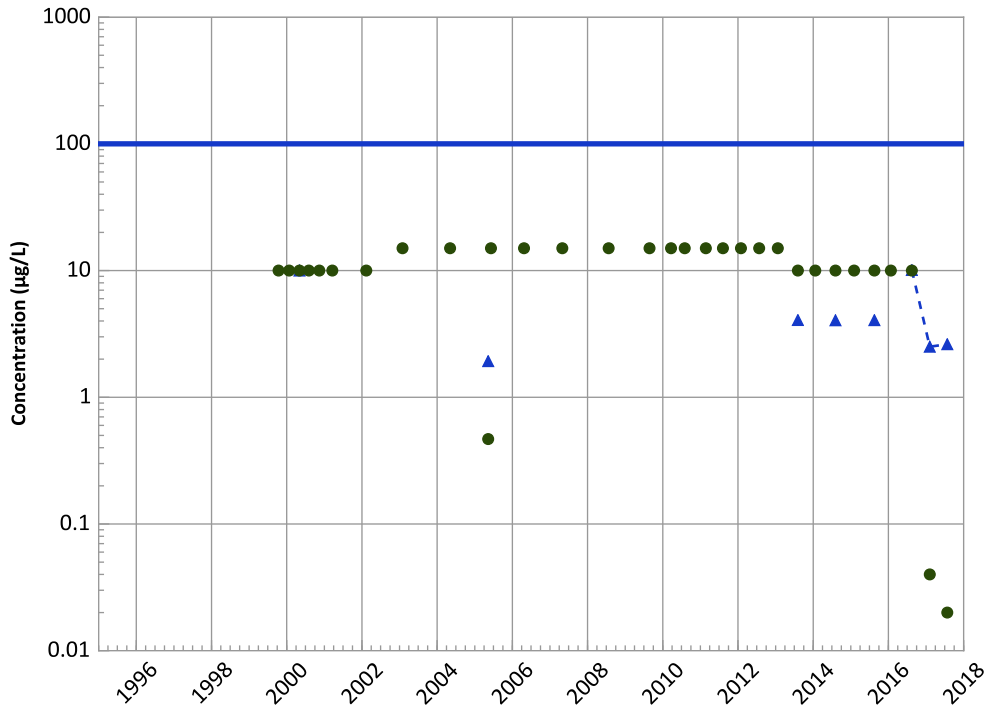
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Probably Increasing
All Data
Increasing

Chromium, Hexavalent Trend



Concentration Trend

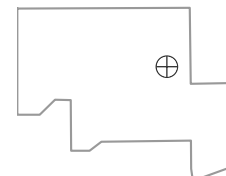
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
Stable

Well Location

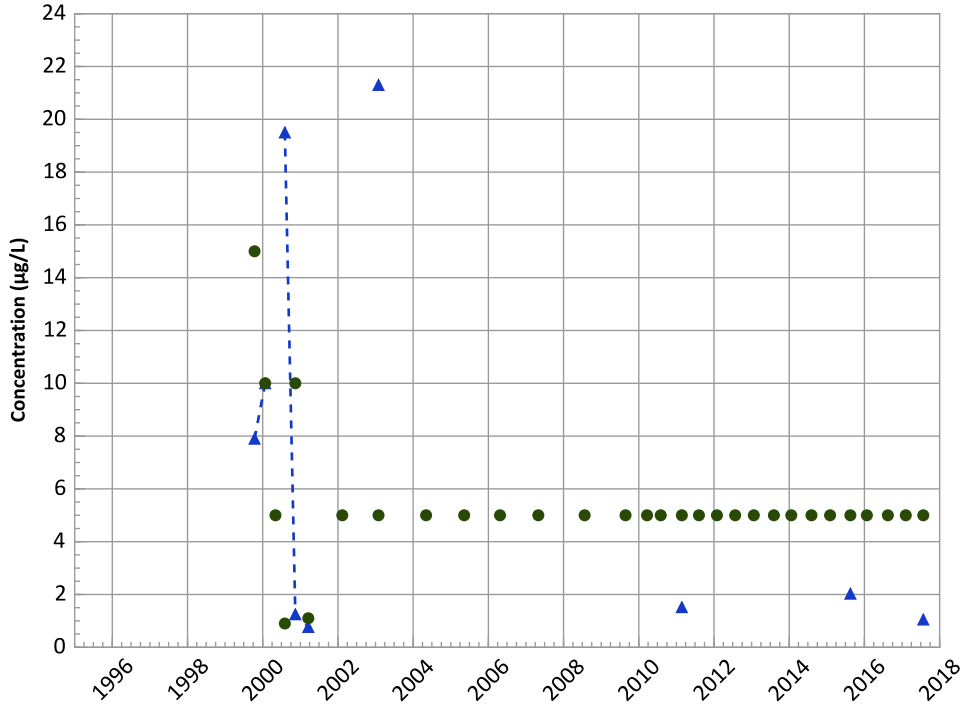


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/14/1999 to 07/26/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1043 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

Manganese Trend



Concentration Trend

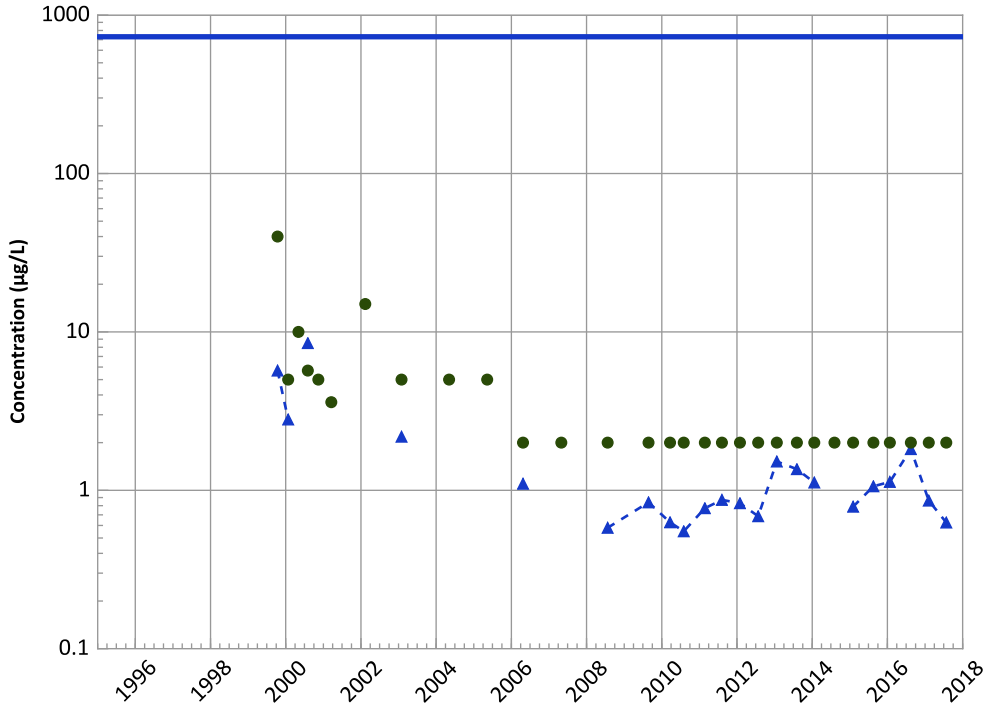
MAROS Mann-Kendall Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Probably Decreasing

Nickel Trend



Concentration Trend

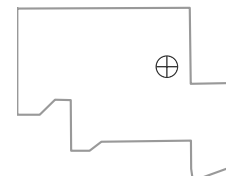
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
Decreasing

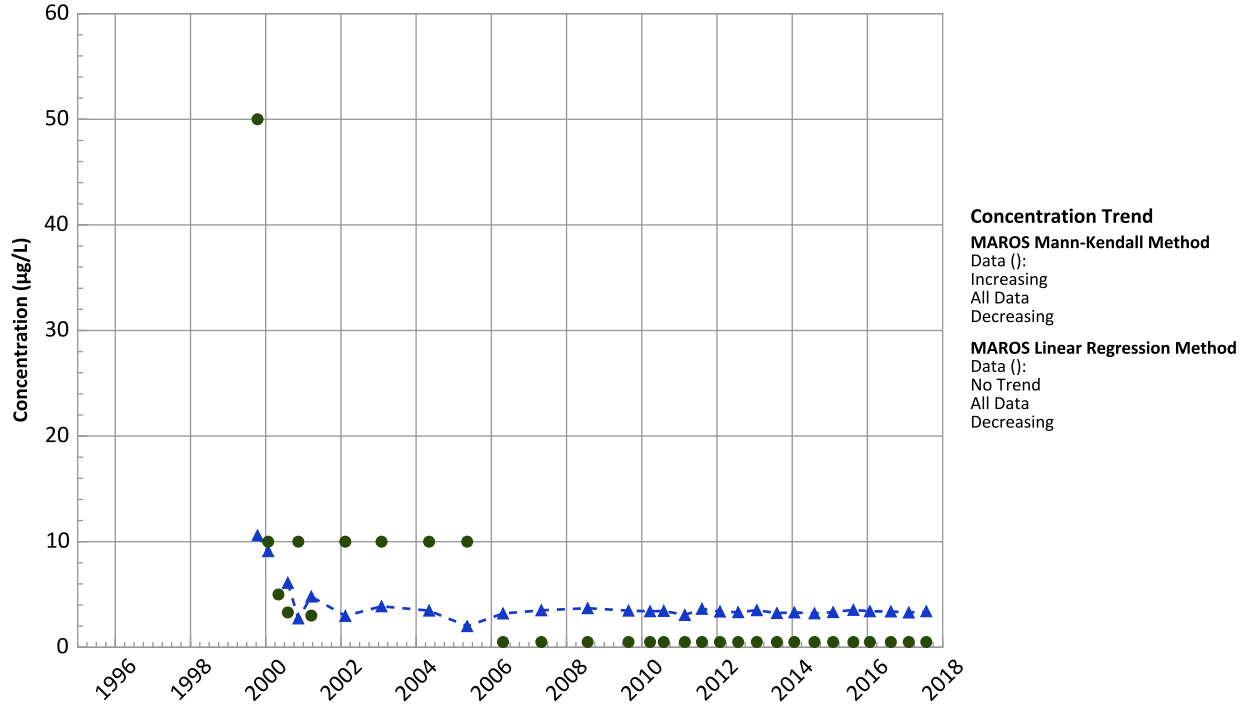
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/14/1999 to 07/26/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

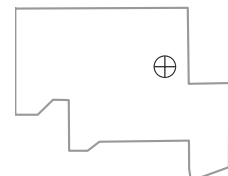
**PTX06-1043 in Ogallala Aquifer
USDOE/NNSA Pantex Plant
Molybdenum Trend**



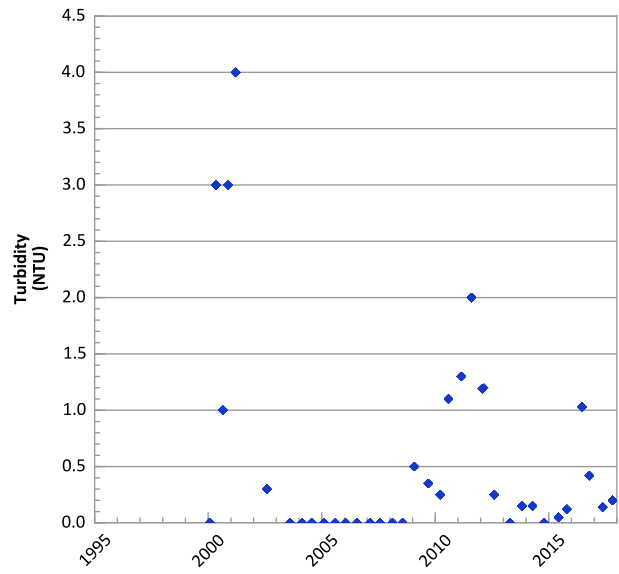
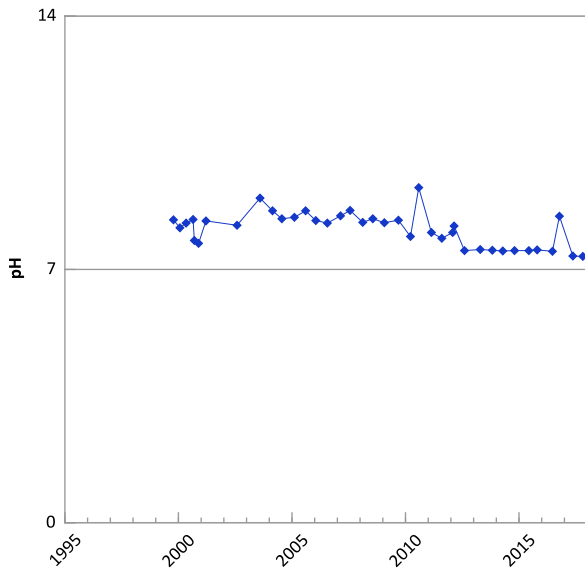
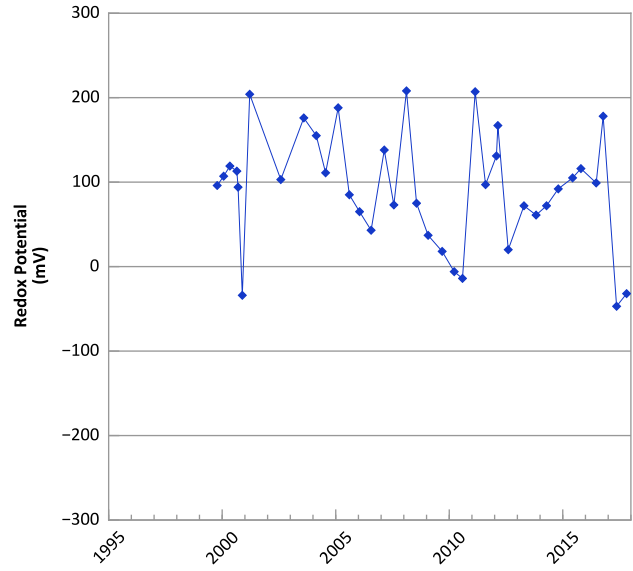
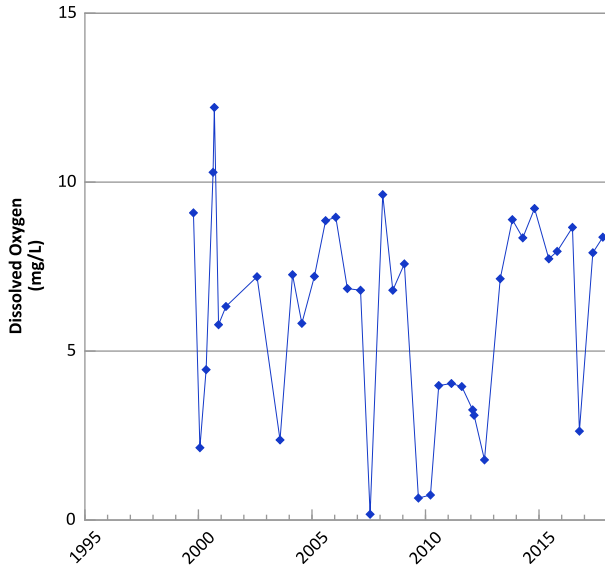
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 10/14/1999 to 07/26/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

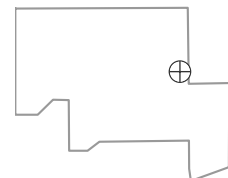


**PTX06-1044 in Ogallala Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



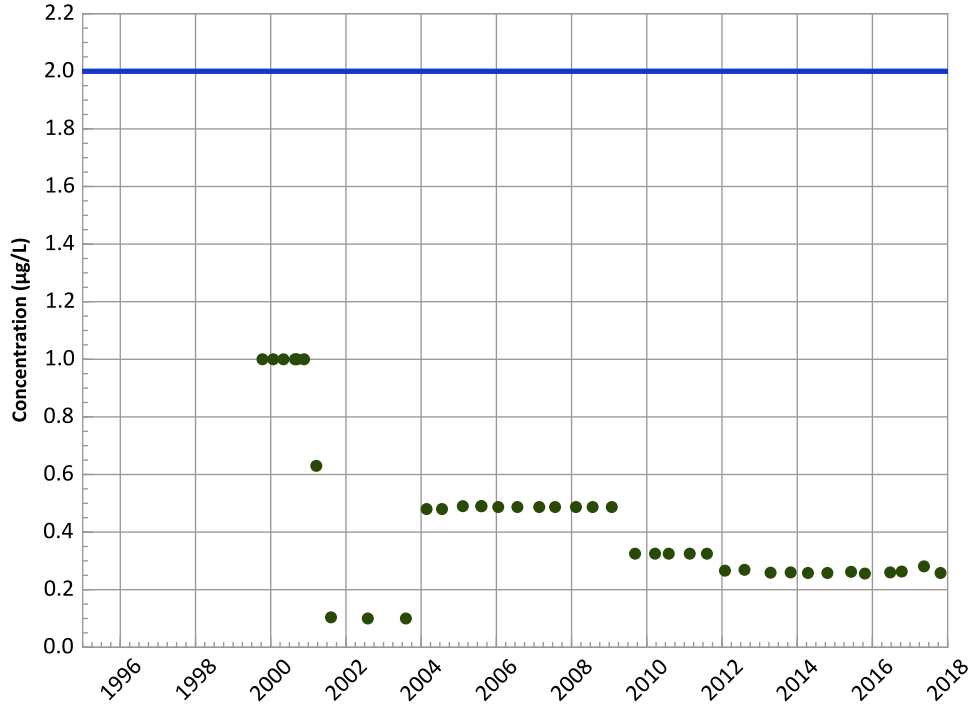
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 10/13/1999 to 10/24/2017
 Analysis Date: 03/21/2018

Well Location



PTX06-1044 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

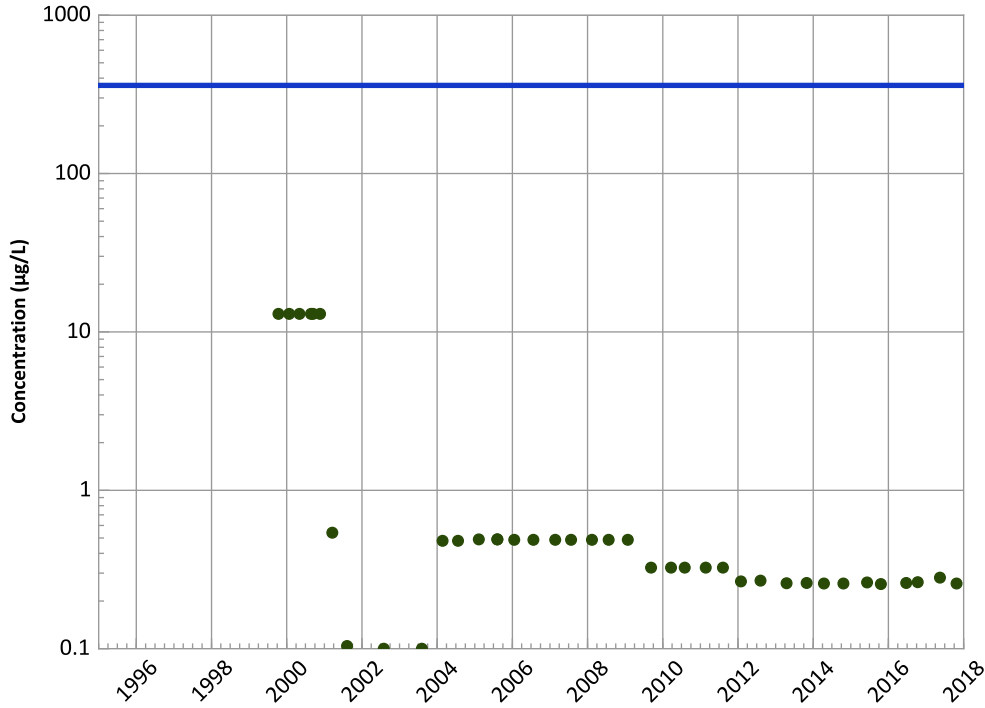
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

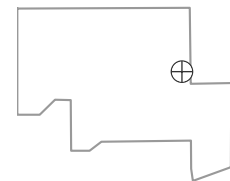
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

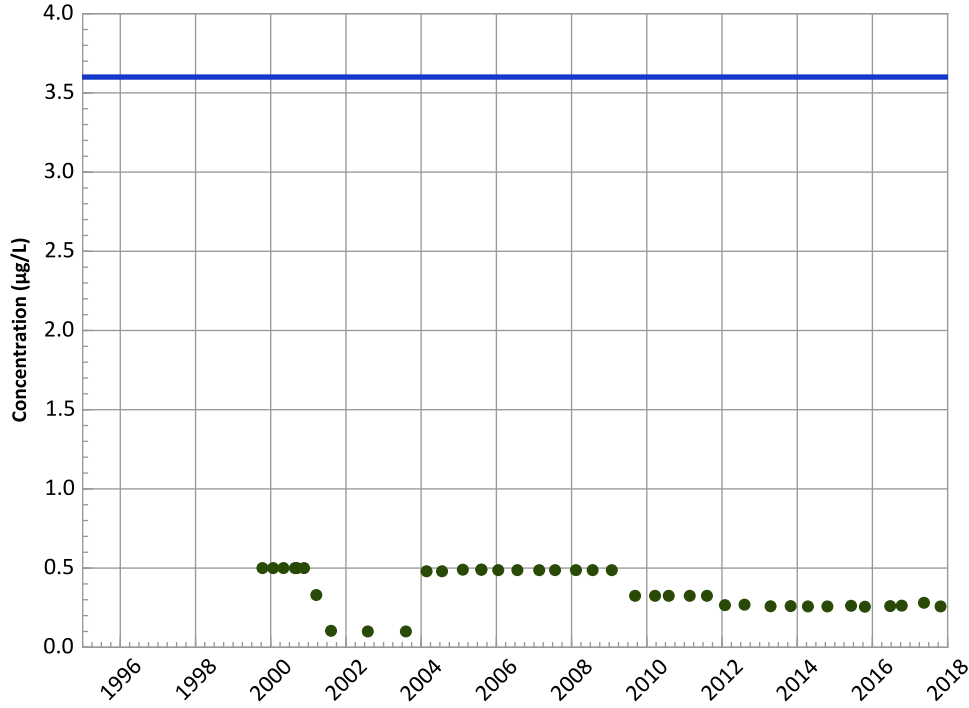


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/13/1999 to 10/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1044 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

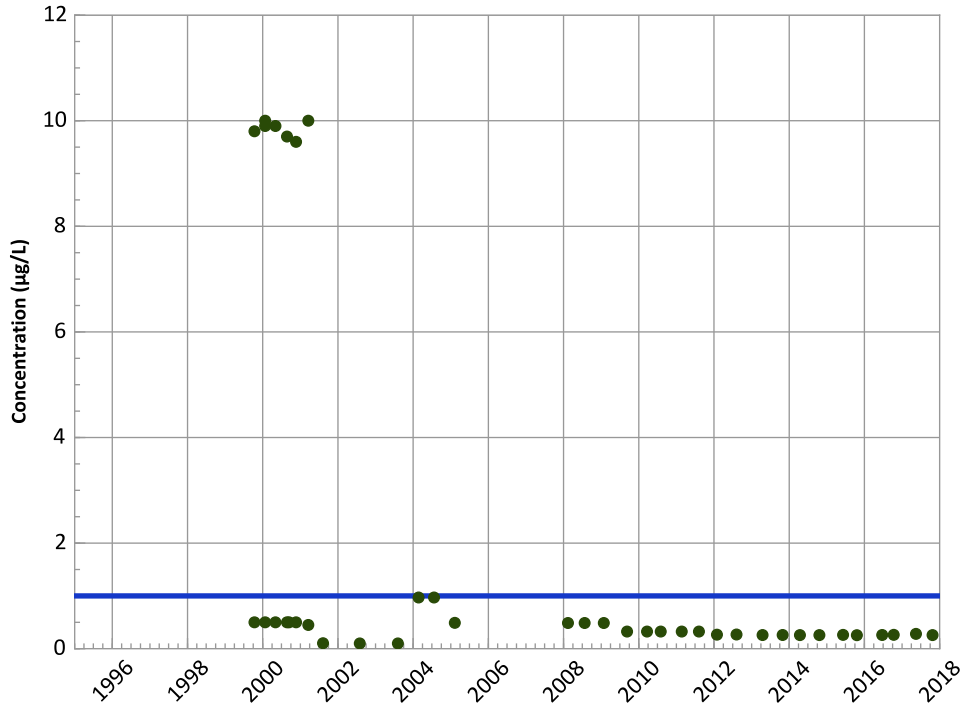
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

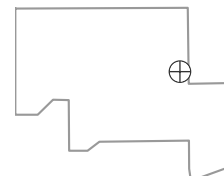
MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/13/1999 to 10/24/2017
Analysis Date: 03/21/2018

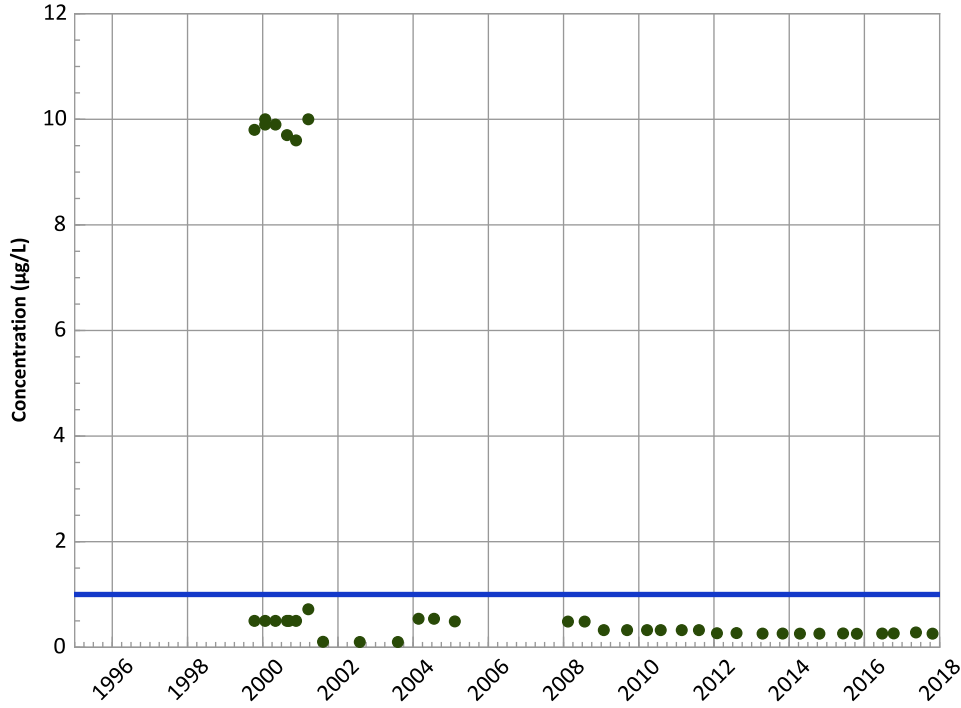
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1044 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

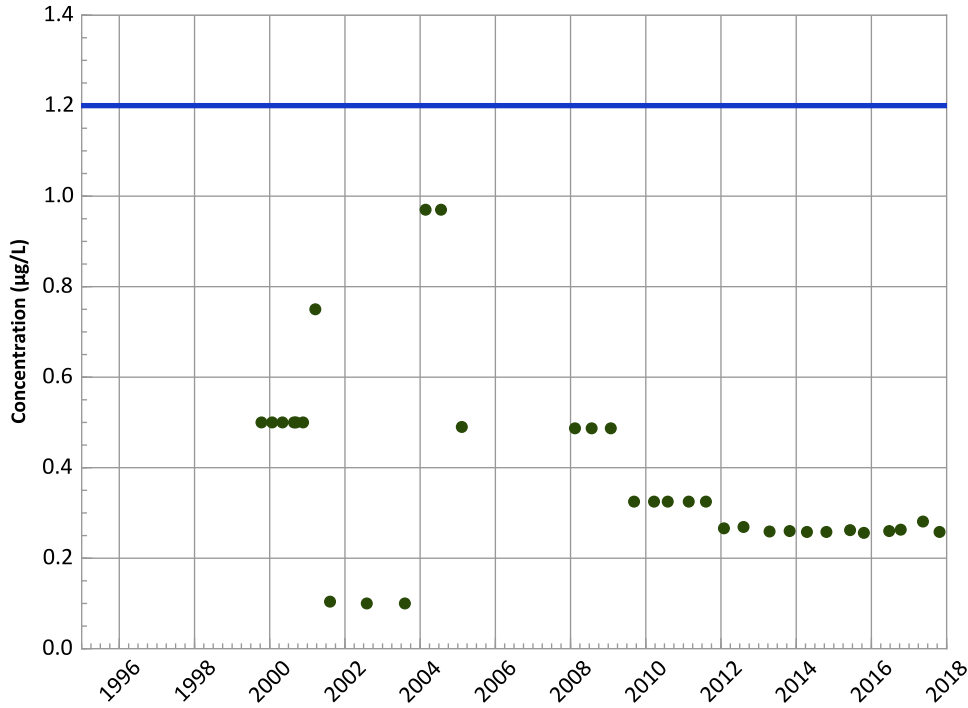
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

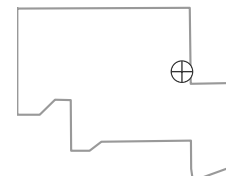
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

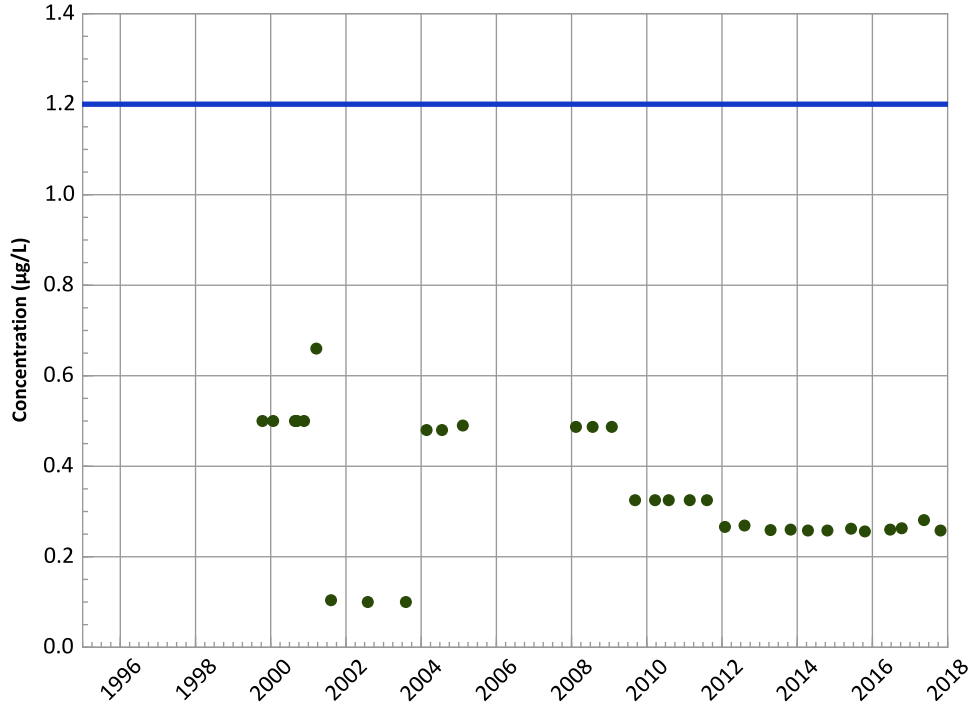


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/13/1999 to 10/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1044 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

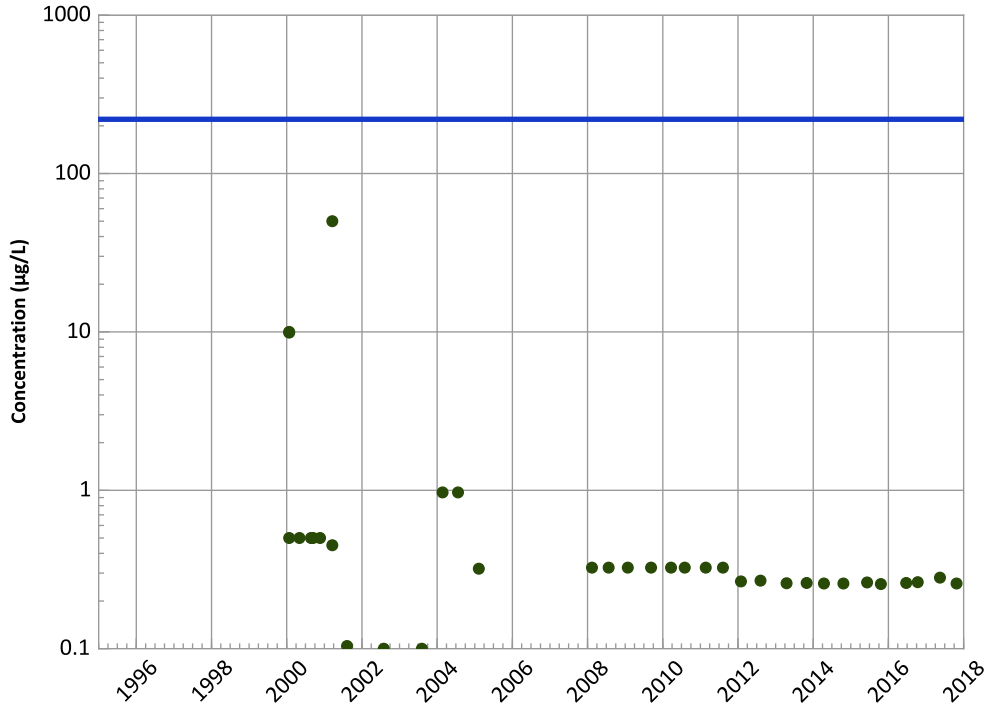
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,3,5-Trinitrobenzene Trend



Concentration Trend

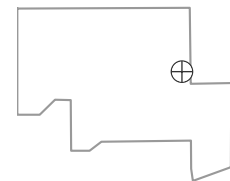
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

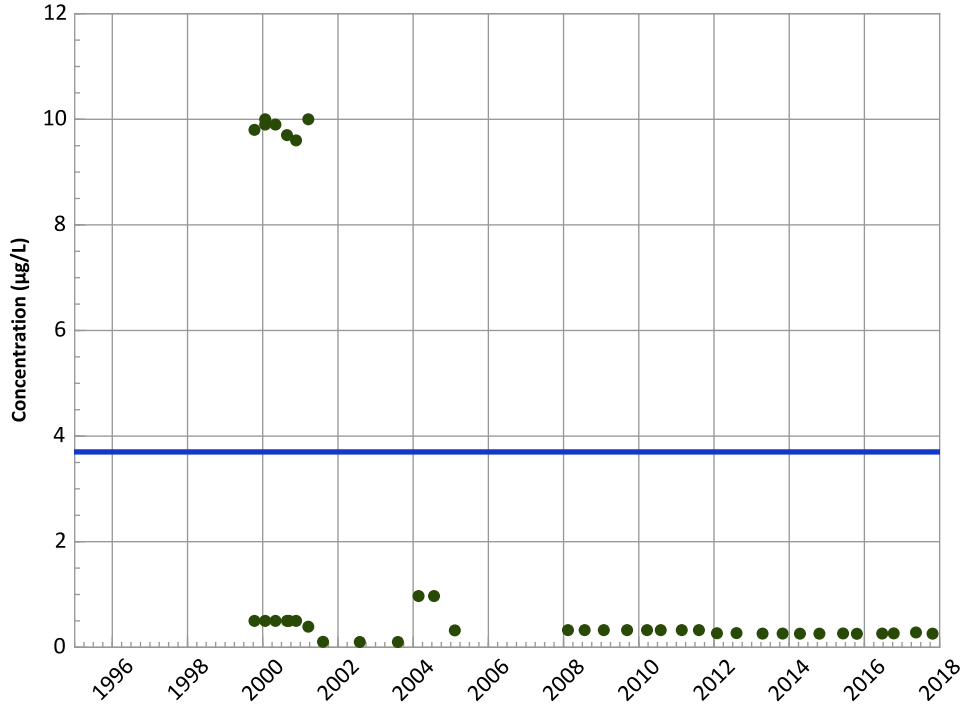


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/13/1999 to 10/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1044 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

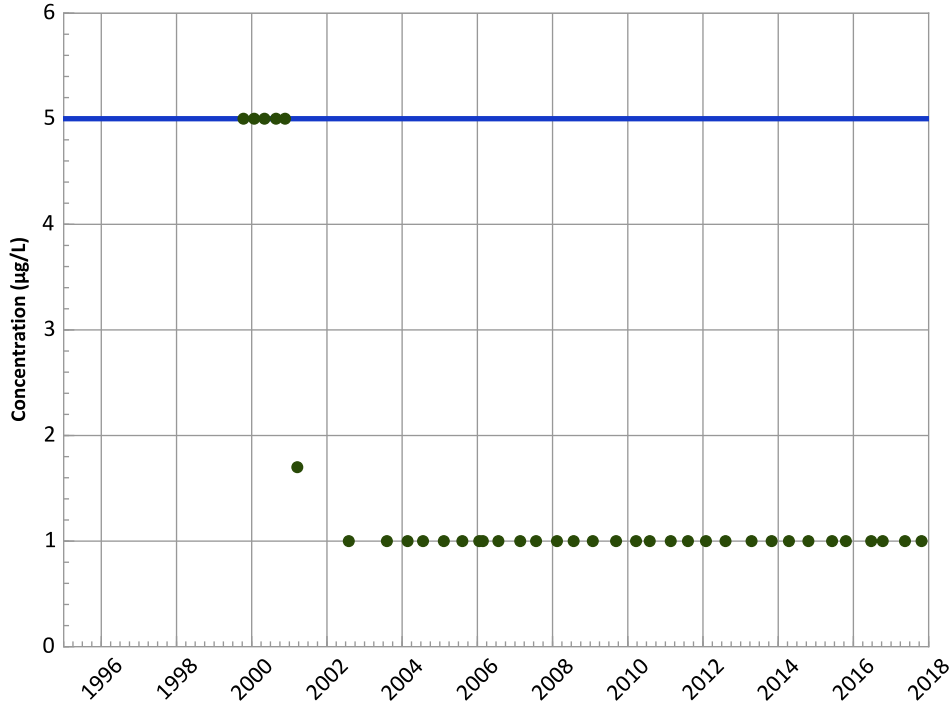
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Tetrachloroethylene (PCE) Trend



Concentration Trend

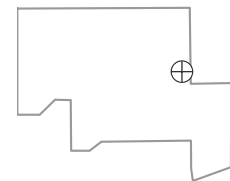
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

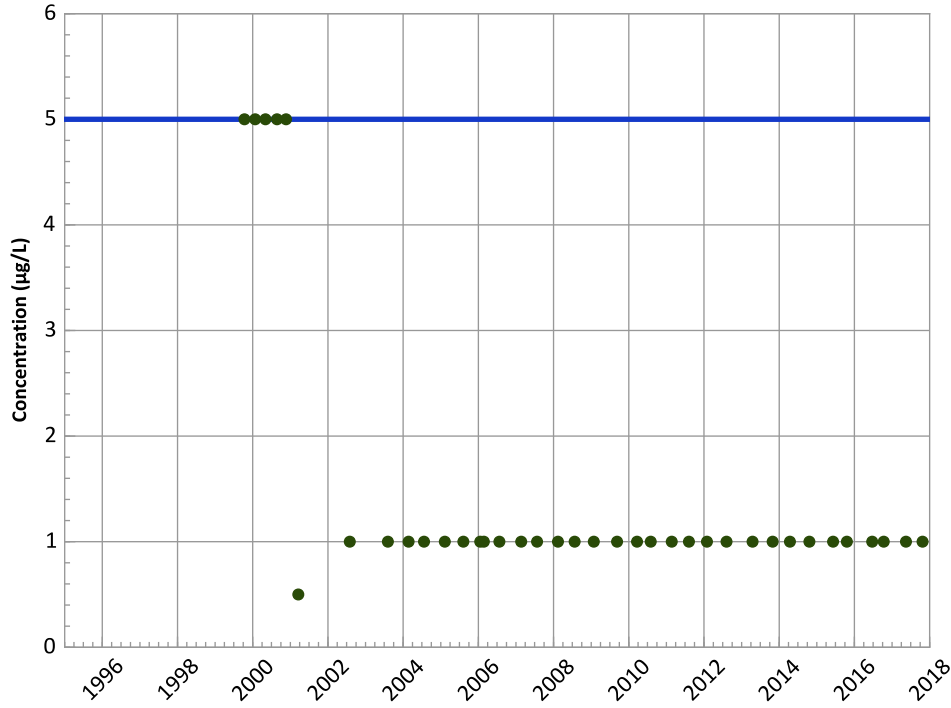


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/13/1999 to 10/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1044 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

Trichloroethene Trend



Concentration Trend

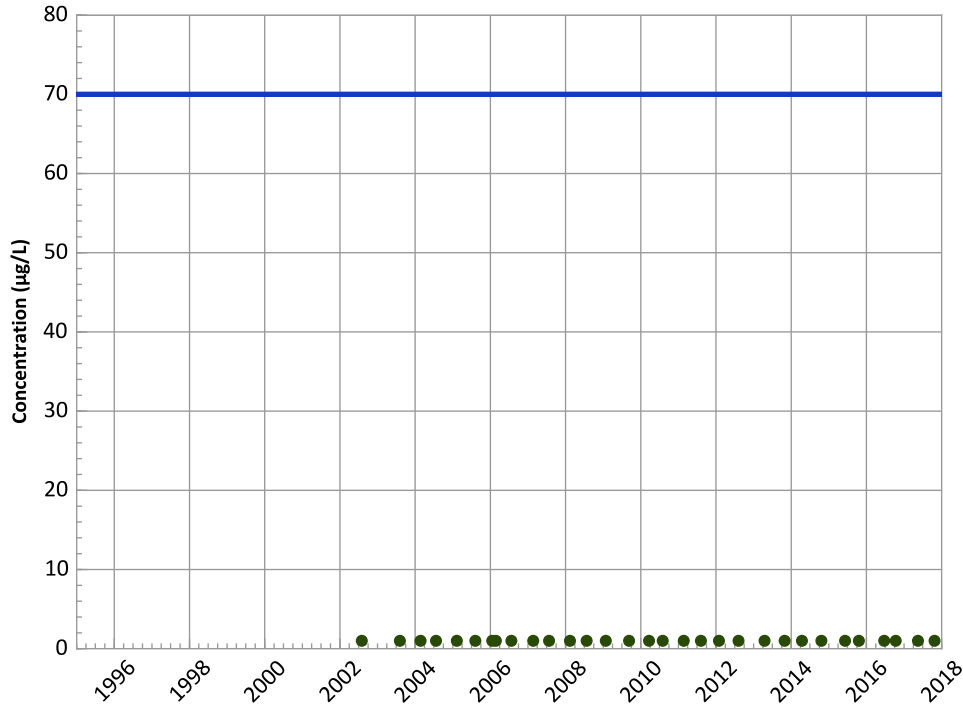
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

cis-1,2-Dichloroethene Trend



Concentration Trend

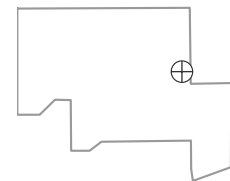
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

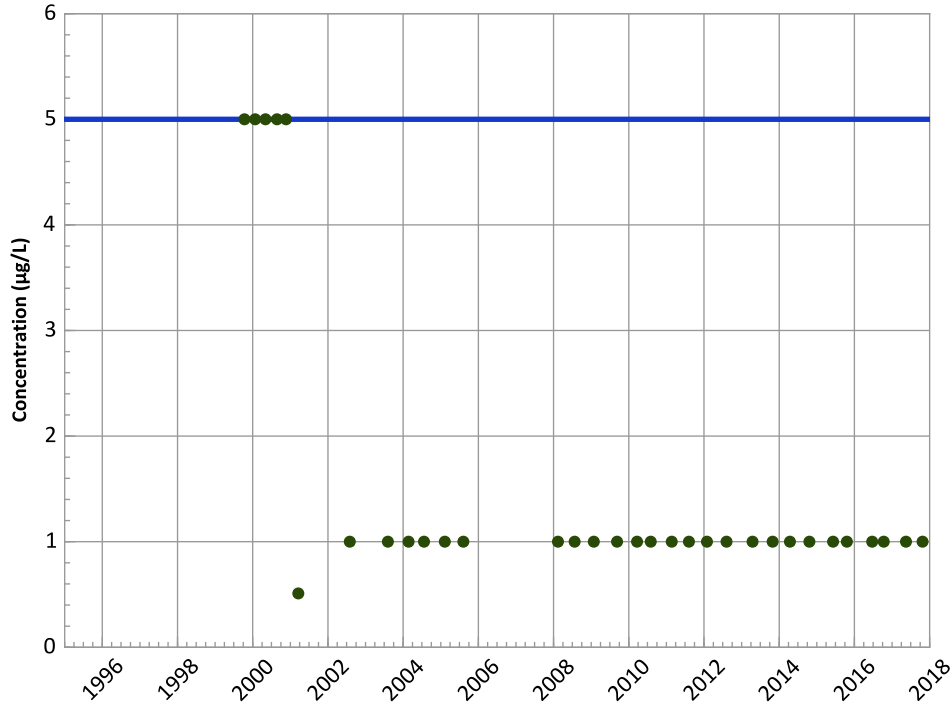
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/13/1999 to 10/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1044 in Ogallala Aquifer
USDOE/NNSA Pantex Plant
1,2-Dichloroethane Trend**



Concentration Trend

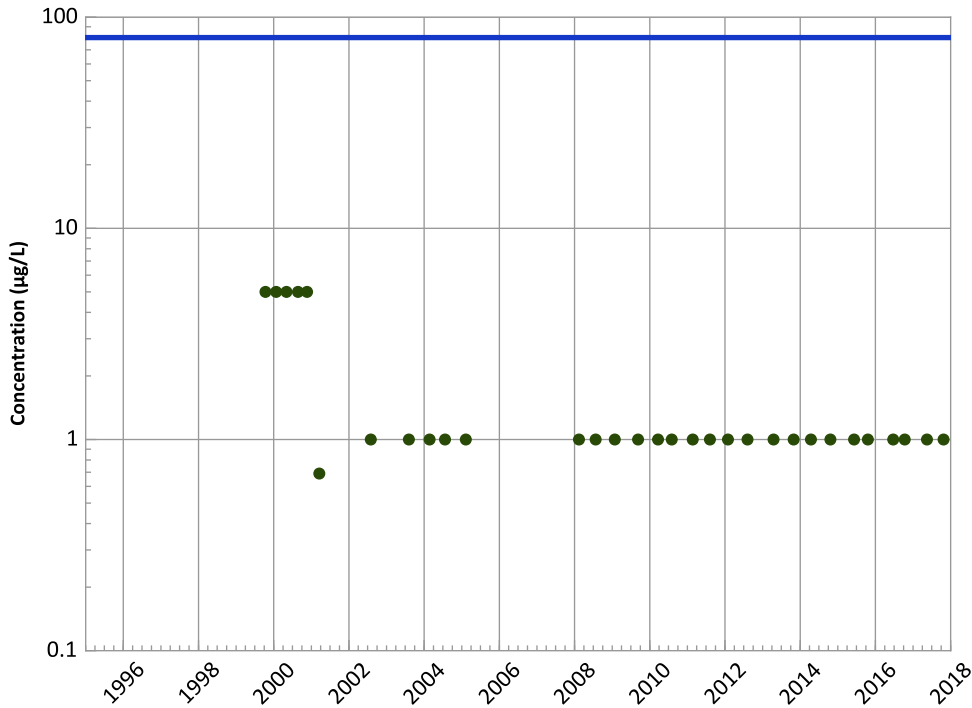
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Chloroform Trend



Concentration Trend

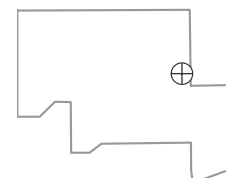
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

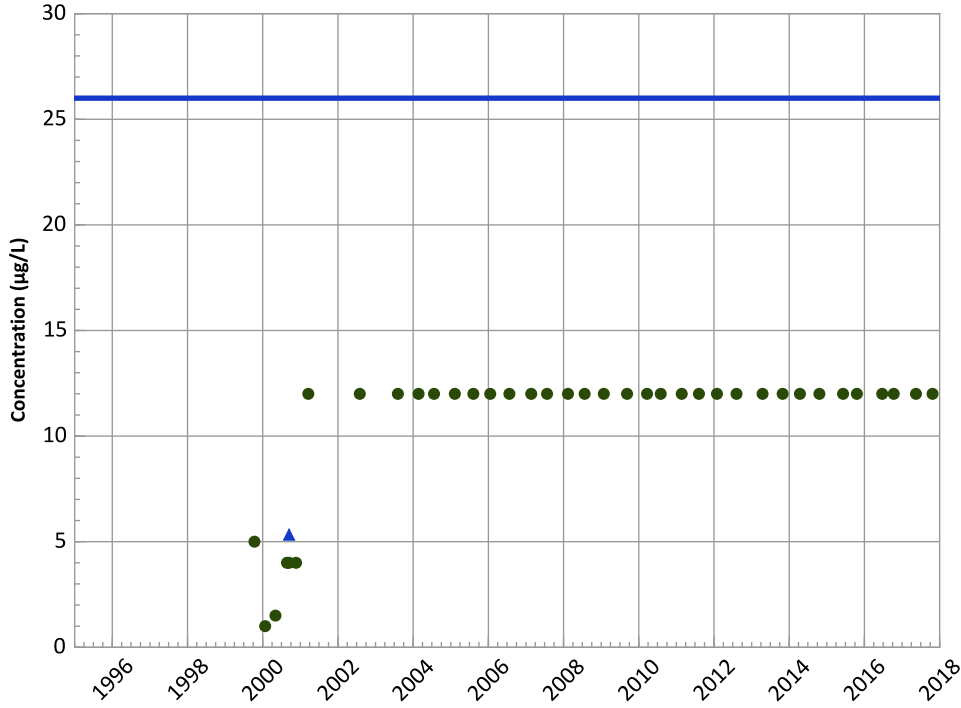


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/13/1999 to 10/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1044 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

Perchlorate Trend



Concentration Trend

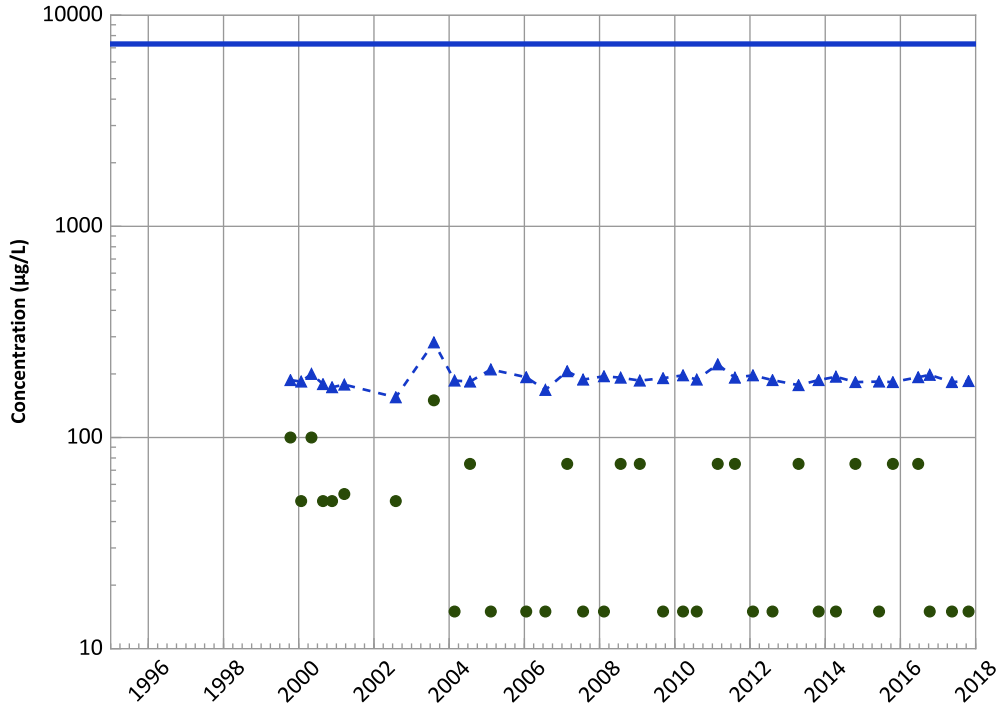
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

Boron Trend



Concentration Trend

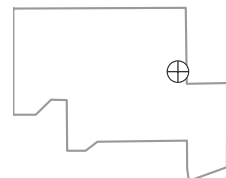
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
No Trend

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

Well Location

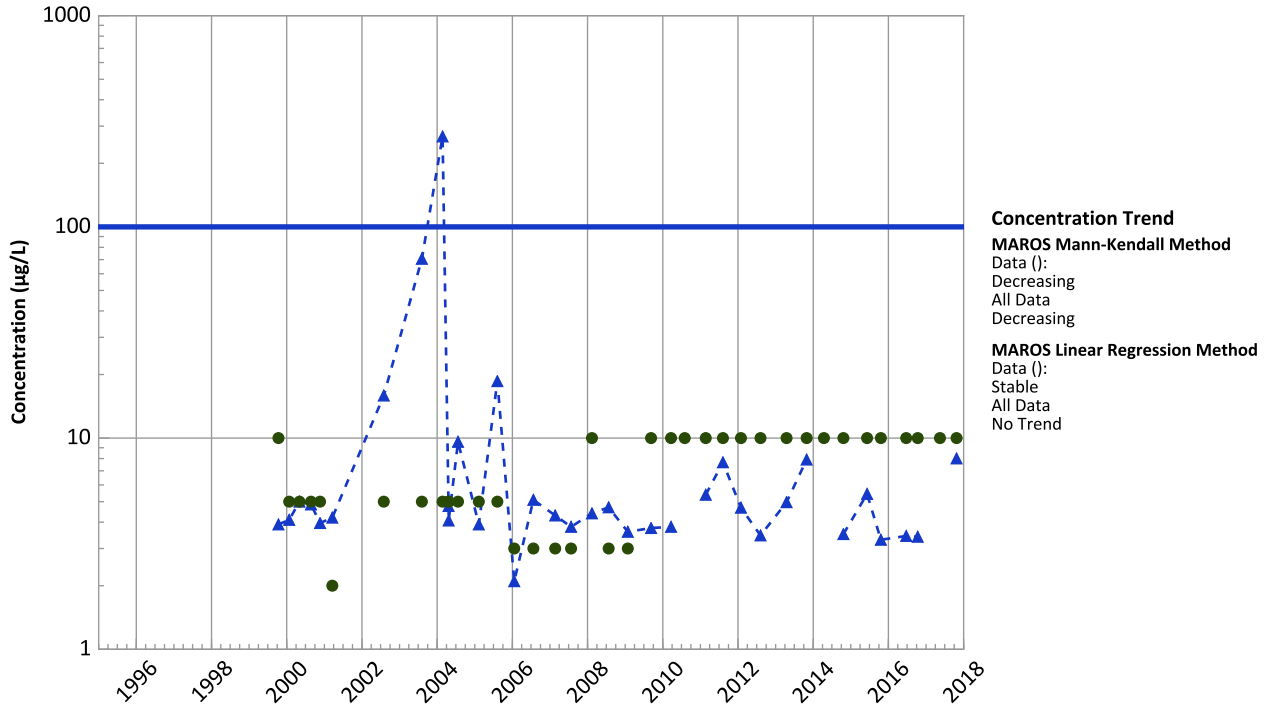


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/13/1999 to 10/24/2017
Analysis Date: 03/21/2018

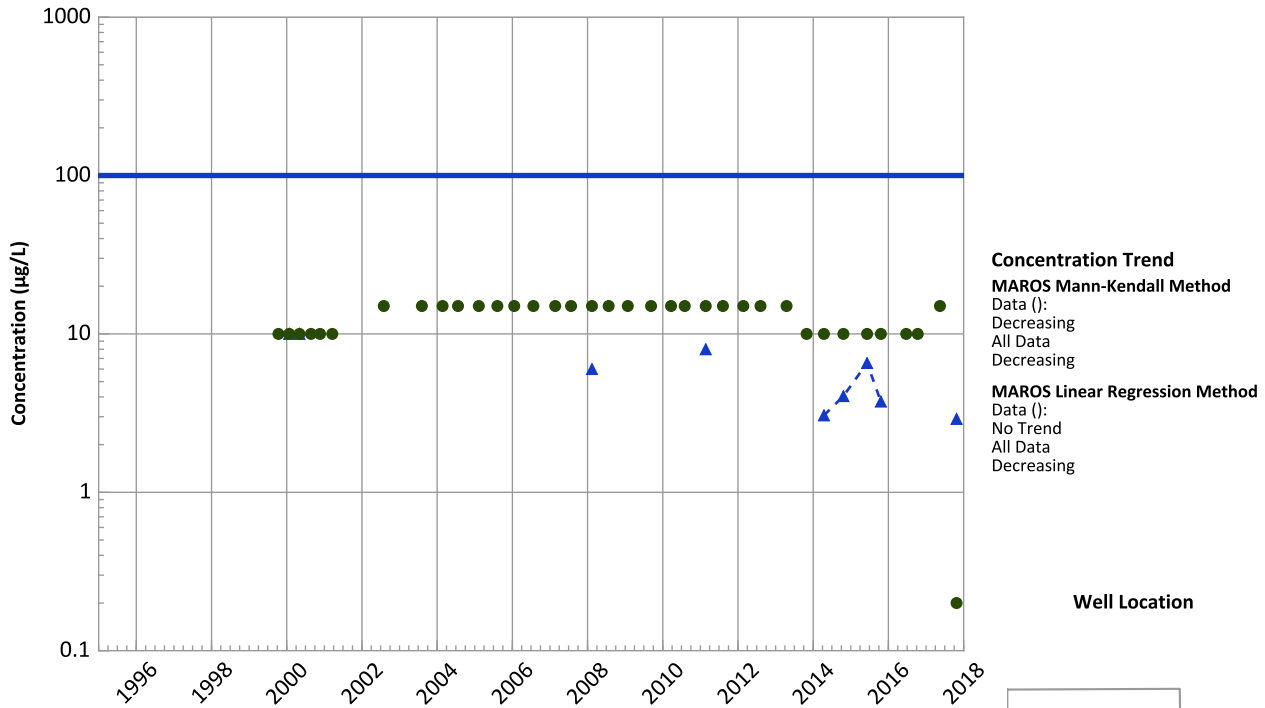
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1044 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

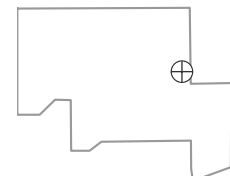
Chromium, Total Trend



Chromium, Hexavalent Trend



Well Location

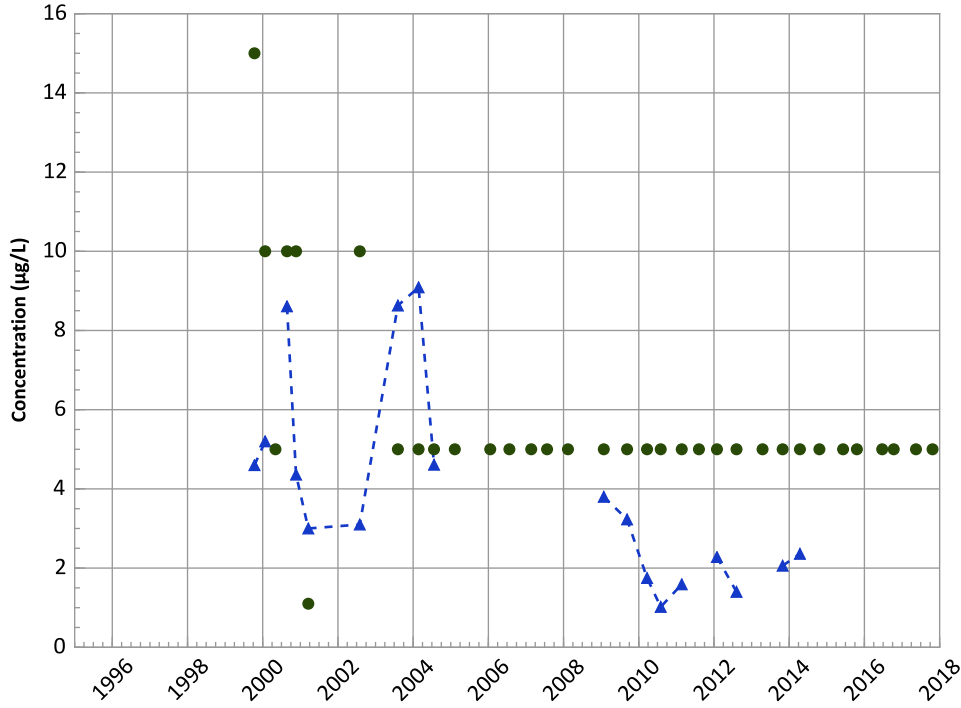


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/13/1999 to 10/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1044 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

Manganese Trend



Concentration Trend

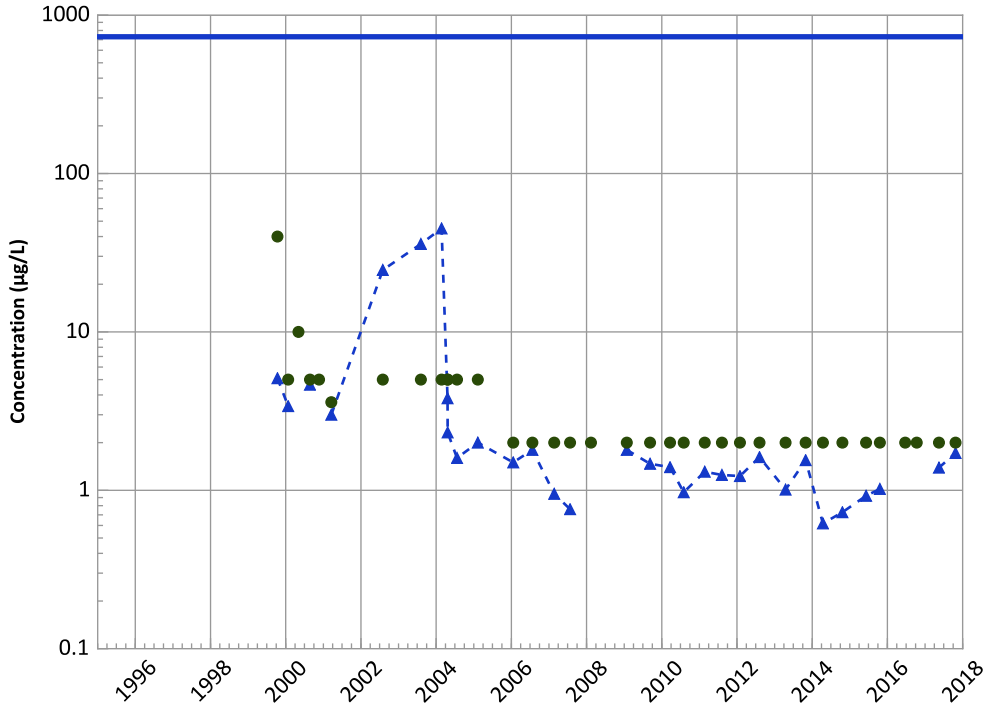
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
Decreasing

Nickel Trend



Concentration Trend

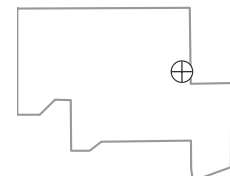
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Probably Decreasing
All Data
Decreasing

Well Location

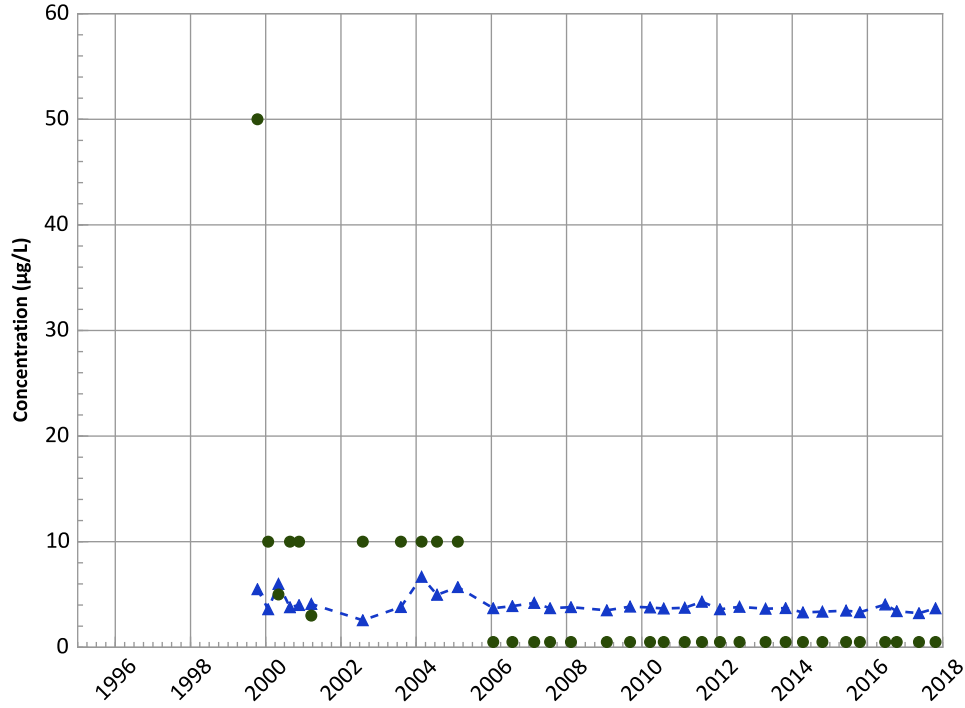


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/13/1999 to 10/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1044 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

Molybdenum Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

Decreasing

All Data

Decreasing

MAROS Linear Regression Method

Data ():

Stable

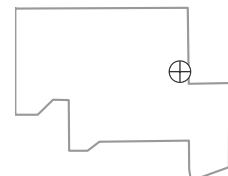
All Data

Decreasing

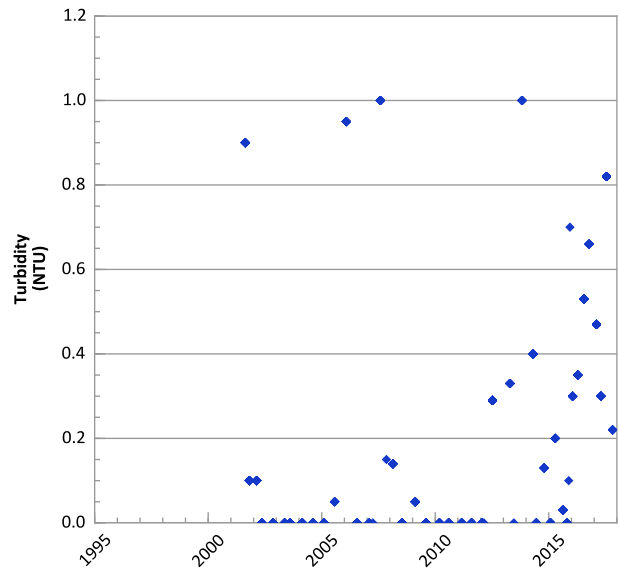
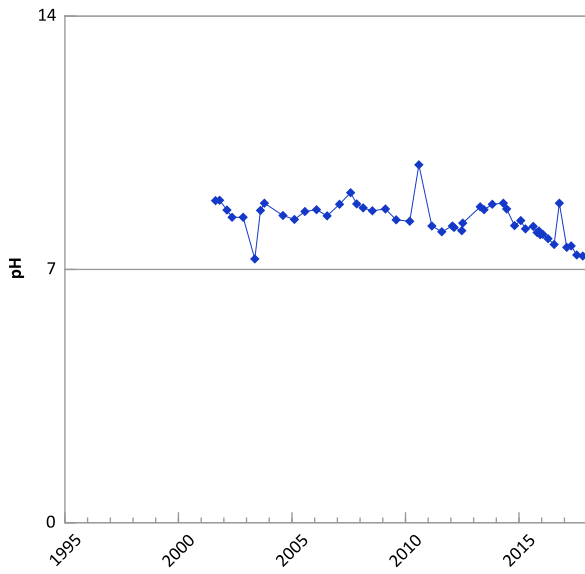
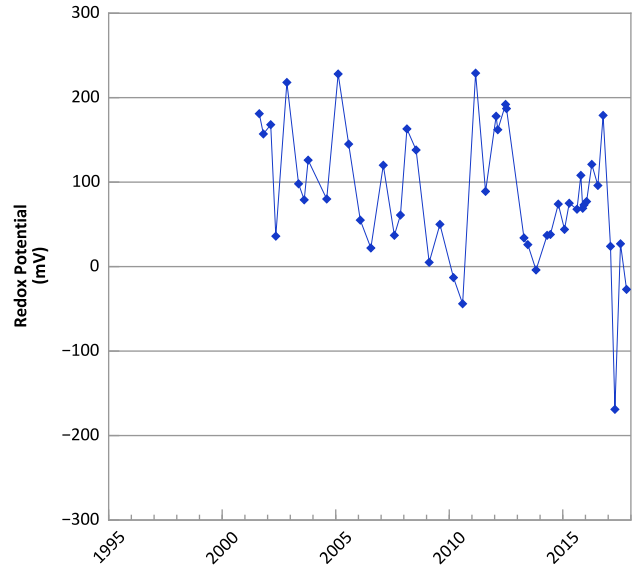
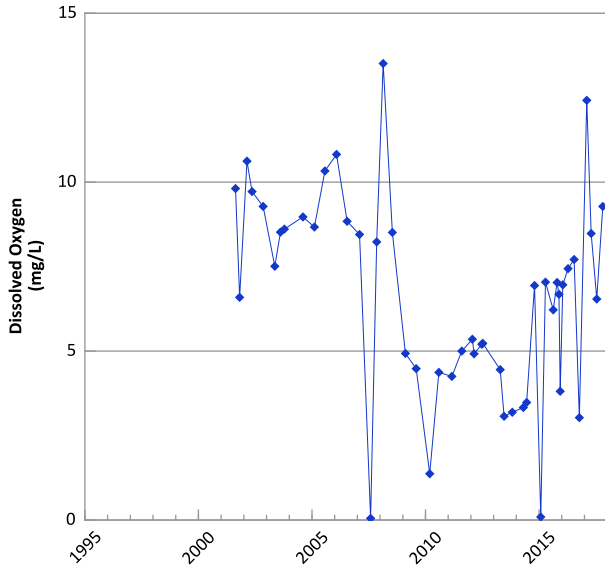
Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/13/1999 to 10/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

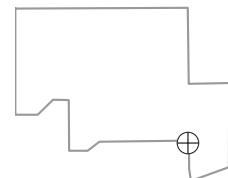


**PTX06-1056 in Ogallala Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



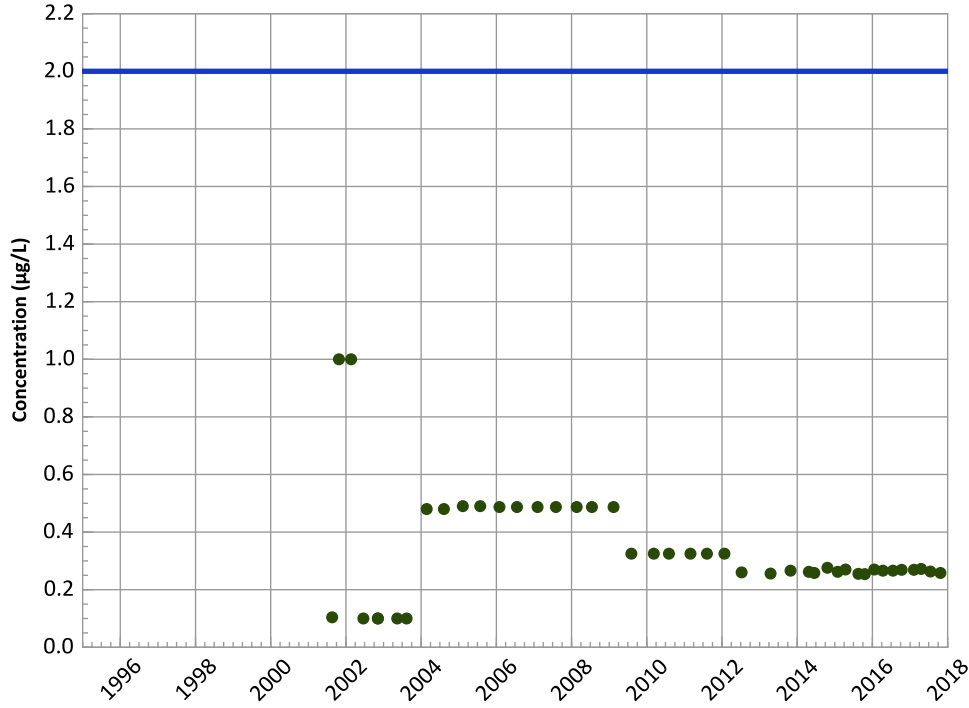
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 08/09/2000 to 10/23/2017
 Analysis Date: 03/21/2018

Well Location

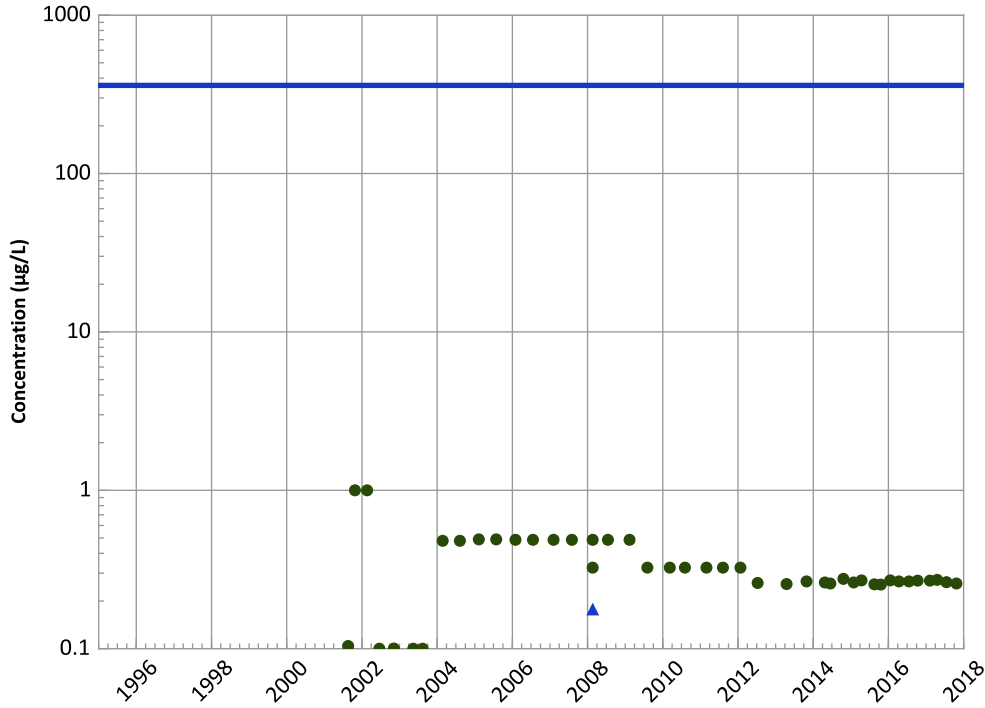


PTX06-1056 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



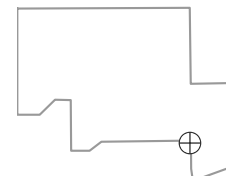
HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 08/09/2000 to 10/23/2017
 Analysis Date: 03/21/2018

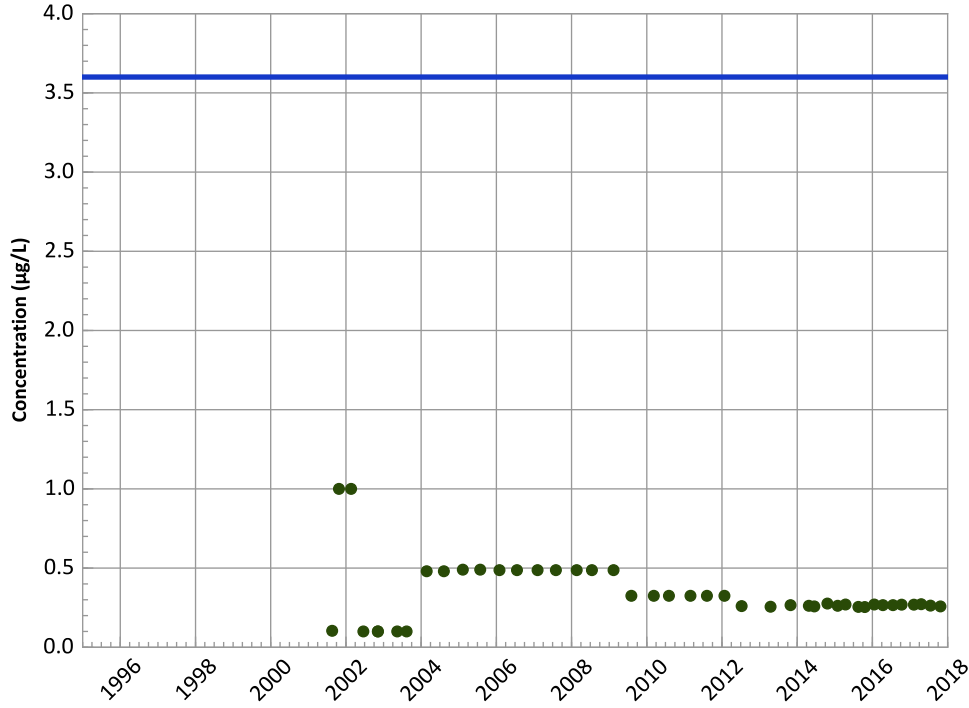
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1056 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

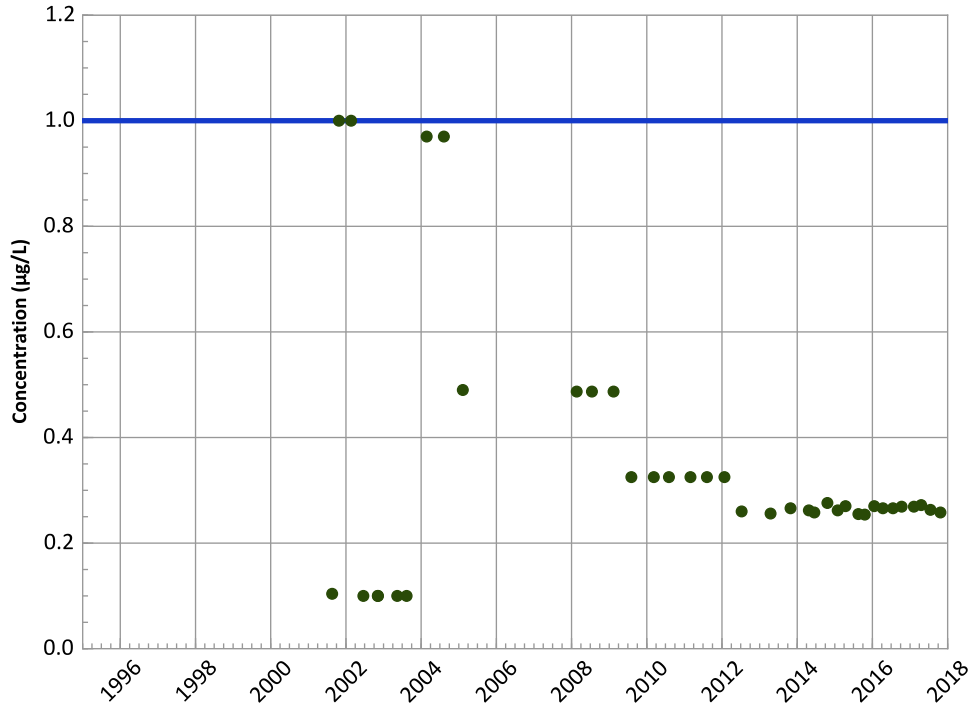
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

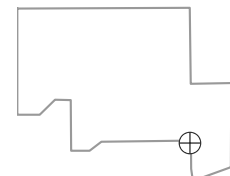
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

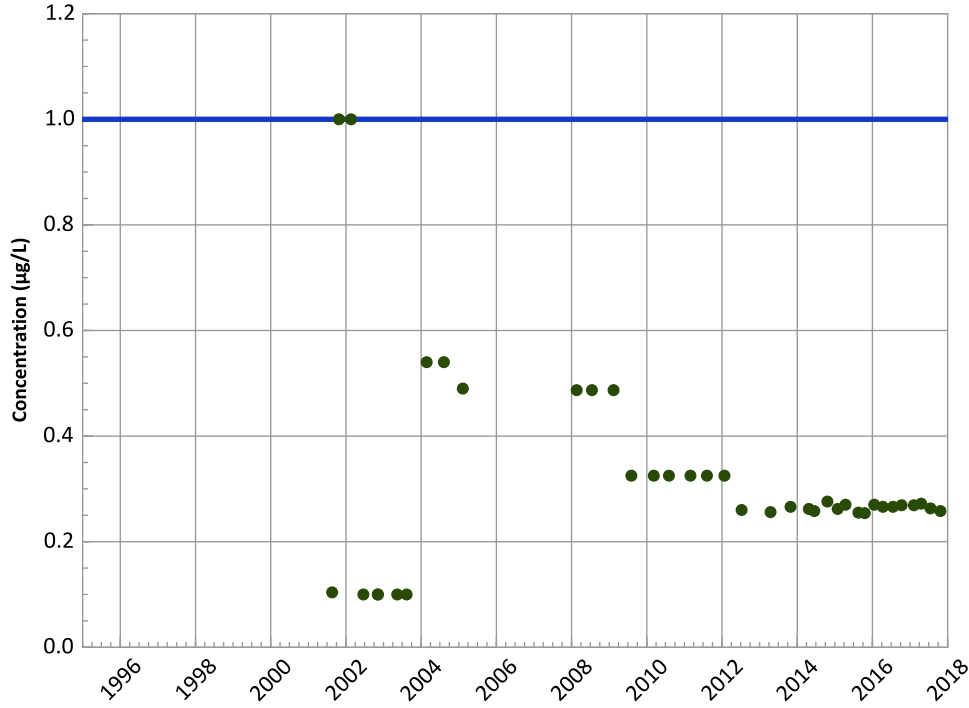


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/09/2000 to 10/23/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1056 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

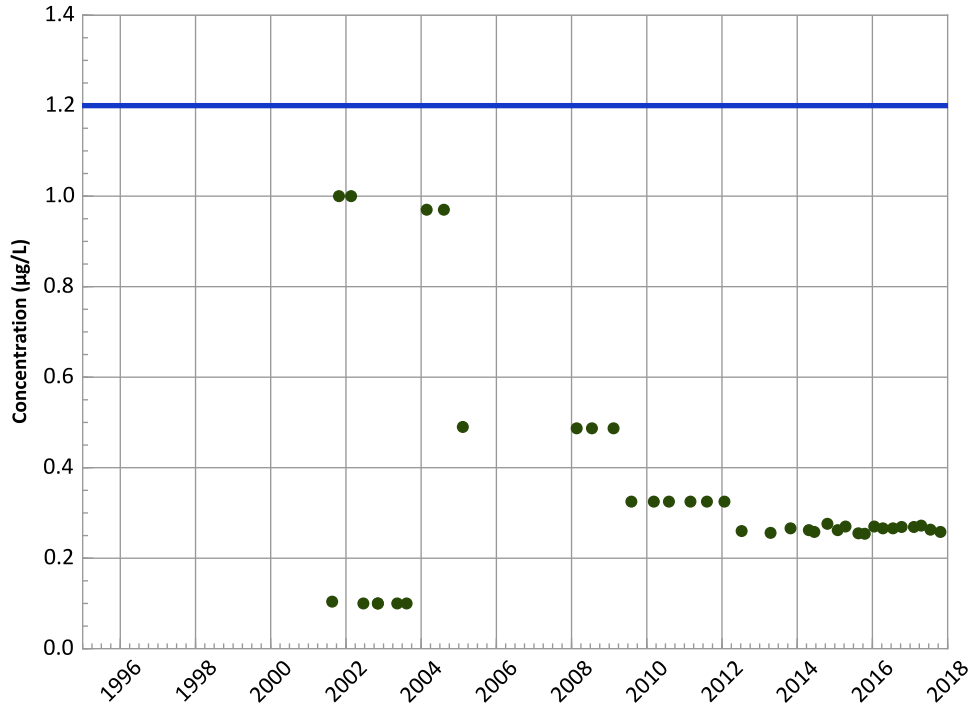
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

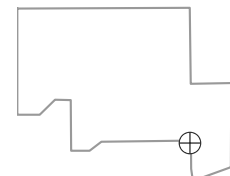
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

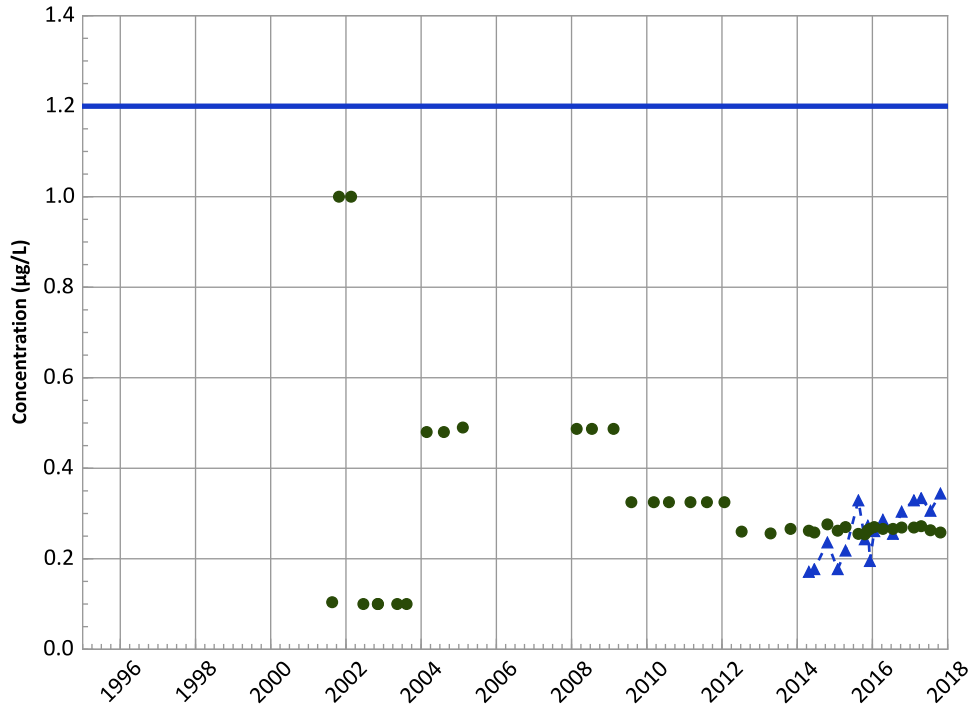


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/09/2000 to 10/23/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1056 in Ogallala Aquifer
USDOE/NNSA Pantex Plant**

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

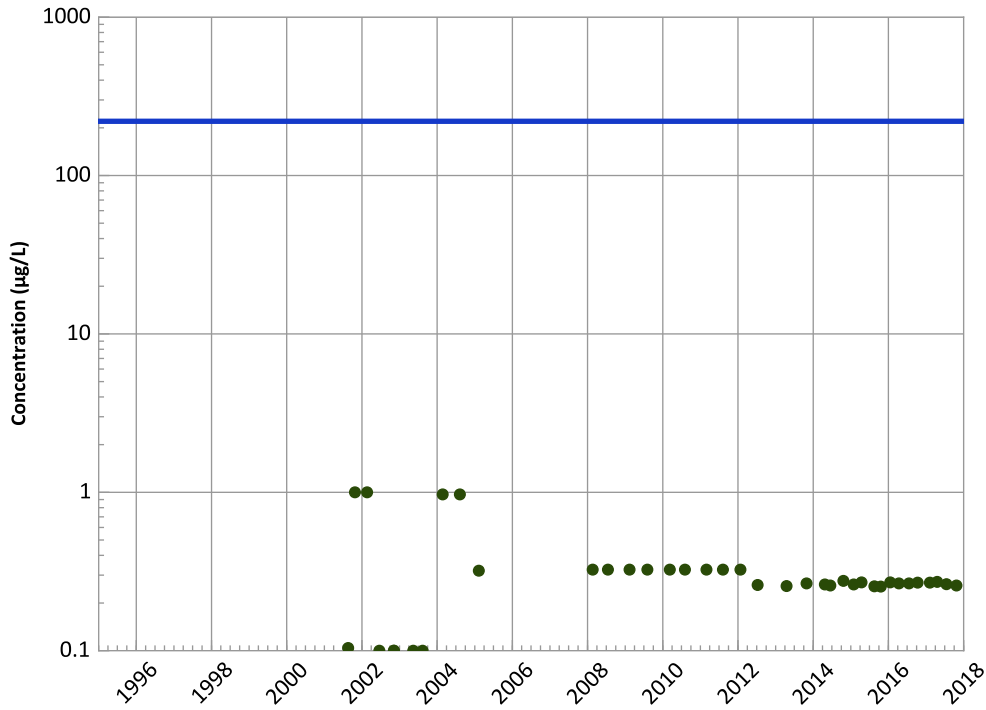
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

1,3,5-Trinitrobenzene Trend



Concentration Trend

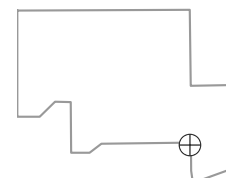
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

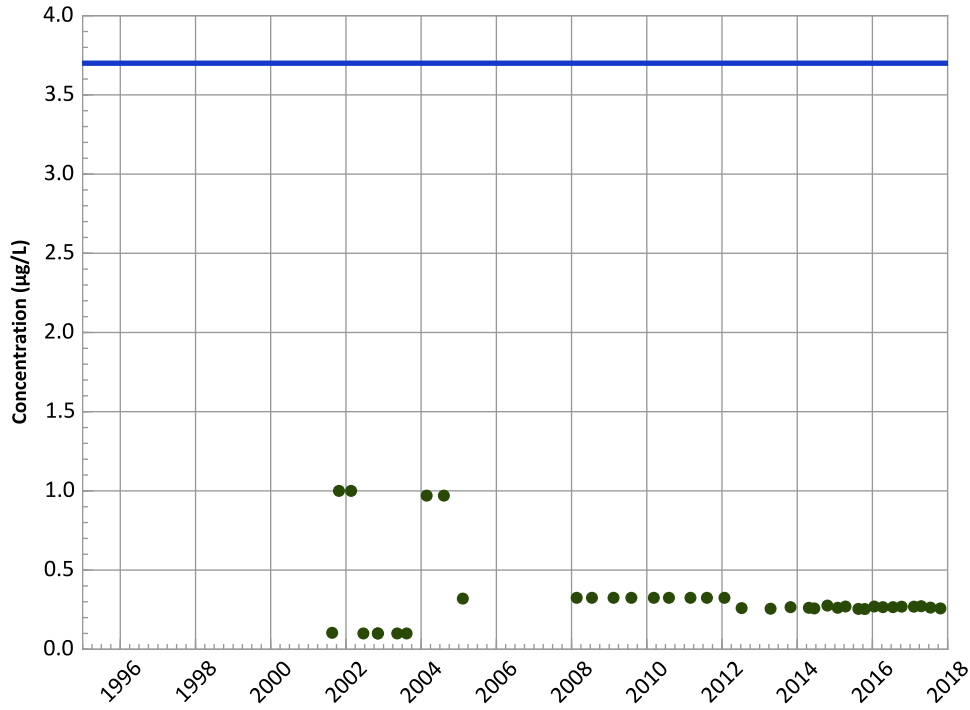


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/09/2000 to 10/23/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1056 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

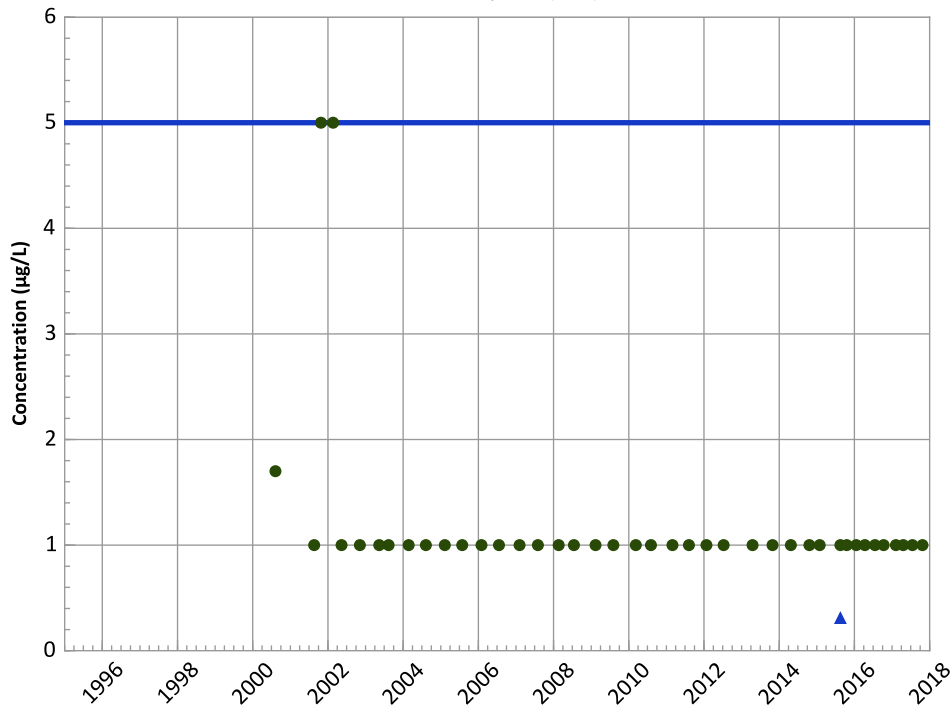
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Tetrachloroethylene (PCE) Trend



Concentration Trend

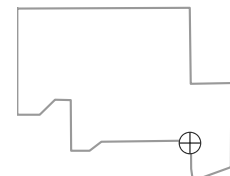
MAROS Mann-Kendall Method

Data ():
N/A (<4 Detections in Dataset)
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
N/A (<4 Detections in Dataset)

Well Location

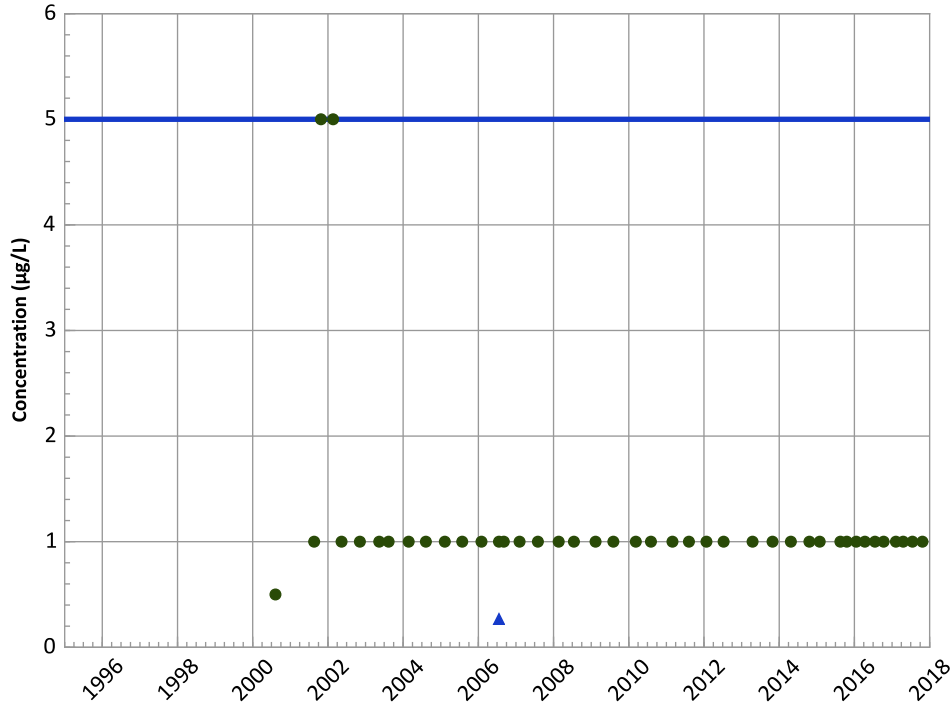


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/09/2000 to 10/23/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1056 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

Trichloroethene Trend



Concentration Trend

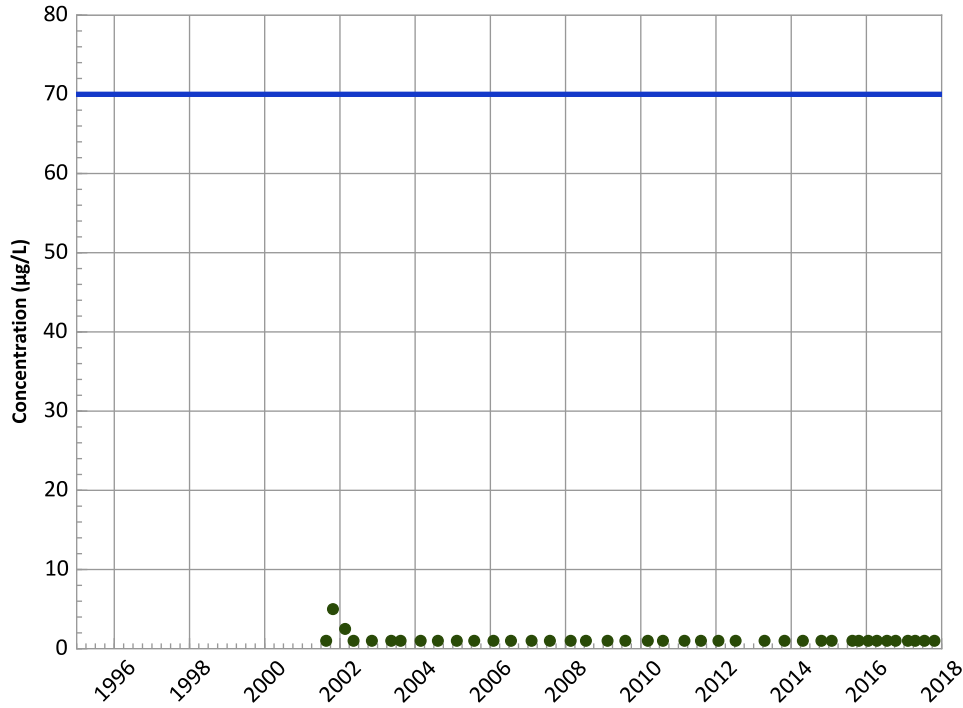
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

cis-1,2-Dichloroethene Trend



Concentration Trend

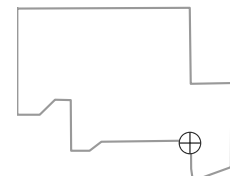
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

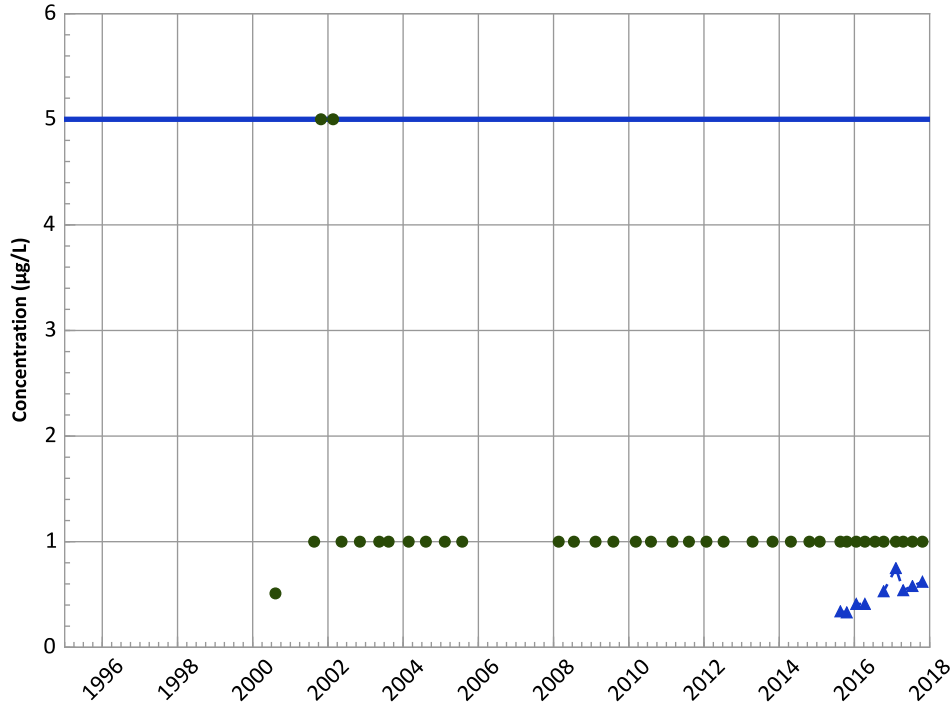
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/09/2000 to 10/23/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1056 in Ogallala Aquifer
USDOE/NNSA Pantex Plant
1,2-Dichloroethane Trend**



Concentration Trend

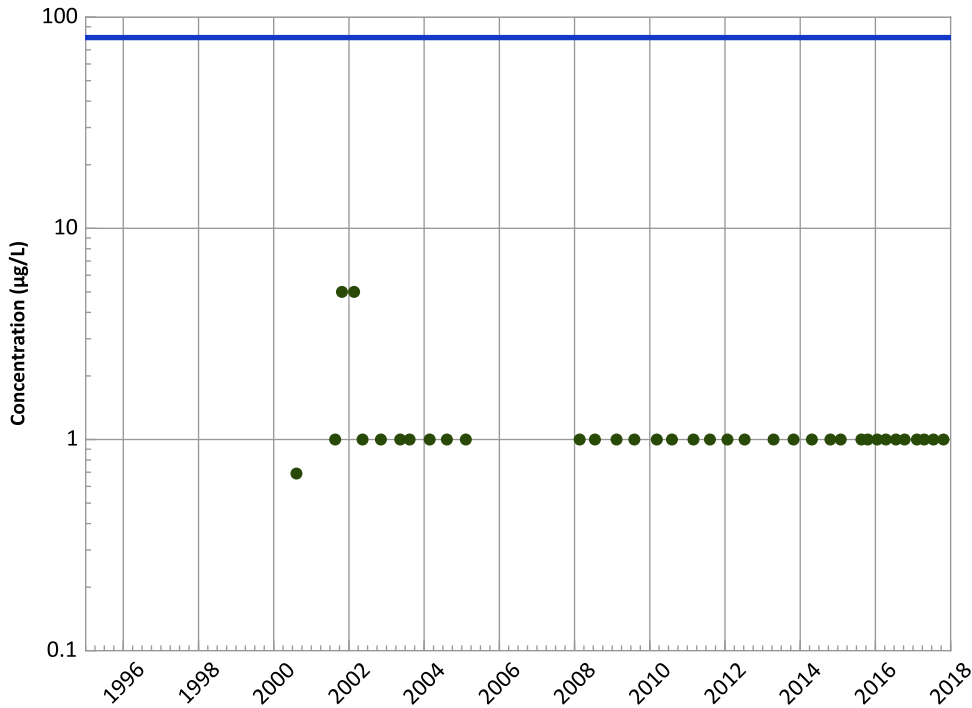
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
No Trend

MAROS Linear Regression Method

Data ():
Increasing
All Data
Increasing

Chloroform Trend



Concentration Trend

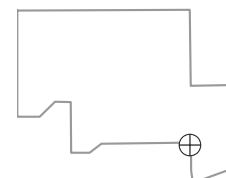
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

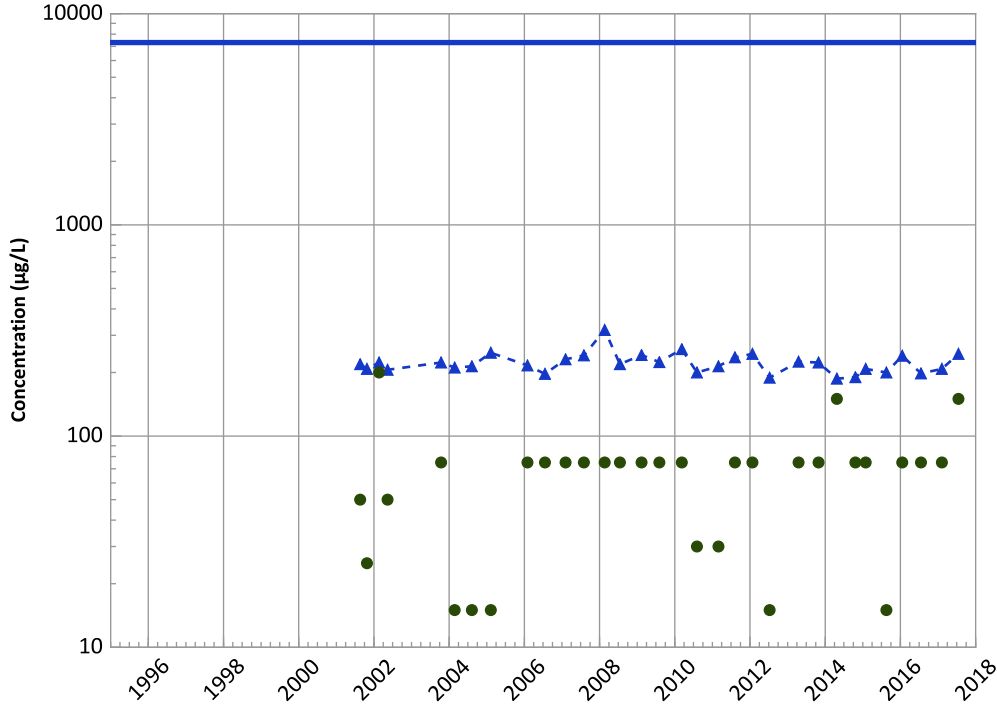


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/09/2000 to 10/23/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1056 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

Boron Trend



Concentration Trend

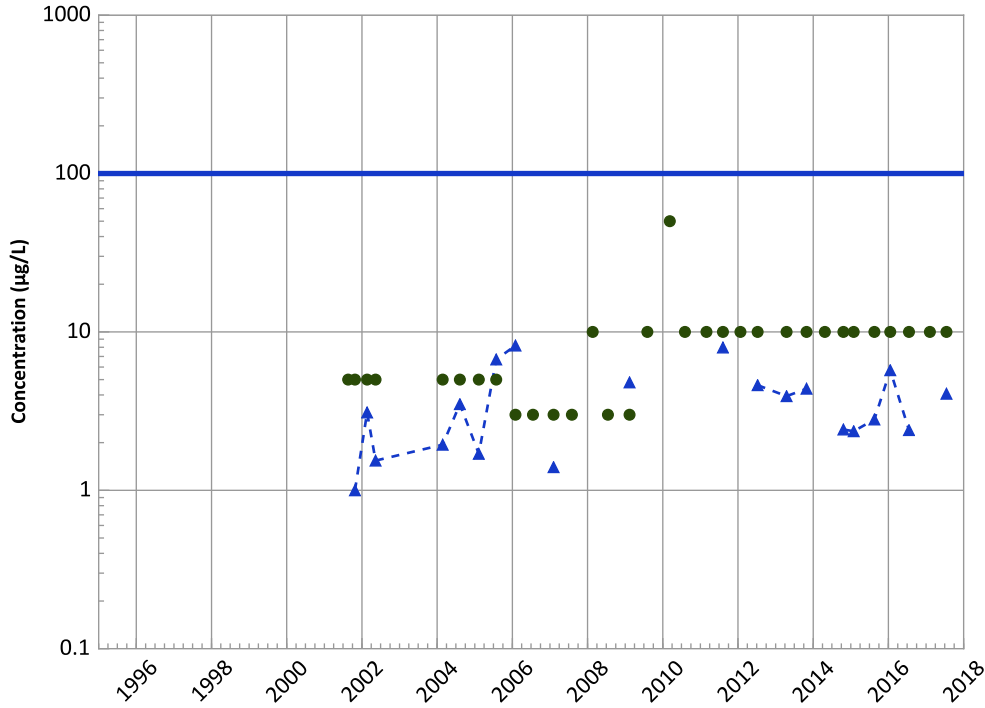
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Stable
All Data
Decreasing

Chromium, Total Trend



Concentration Trend

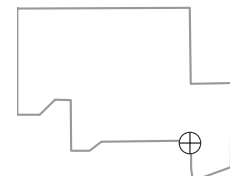
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Probably Increasing

MAROS Linear Regression Method

Data ():
Stable
All Data
Probably Increasing

Well Location

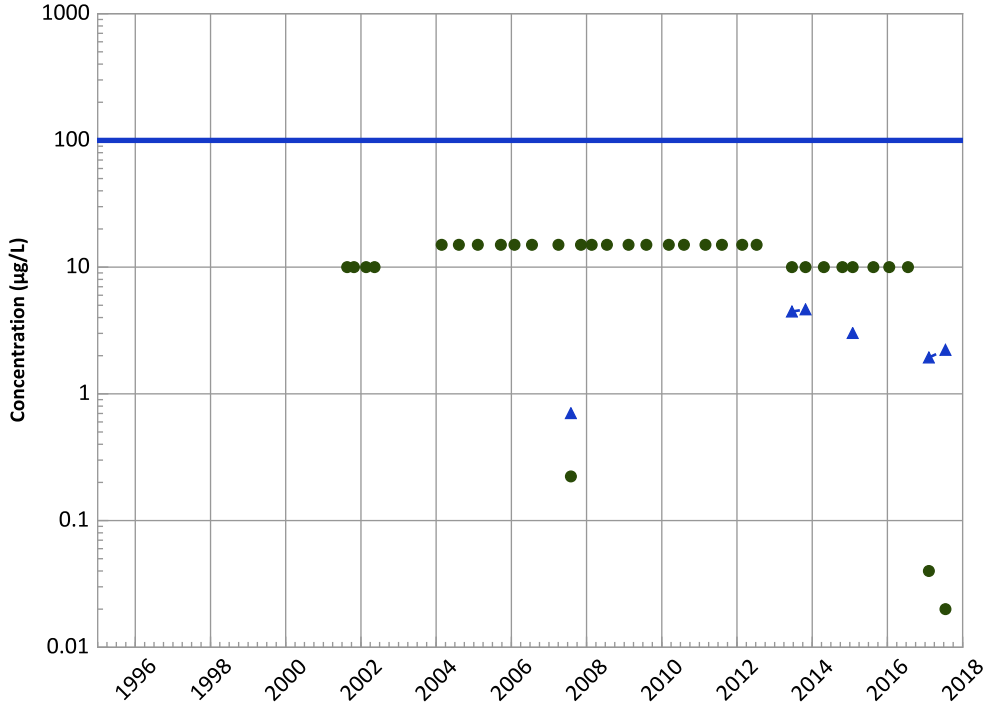


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/09/2000 to 10/23/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1056 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

Chromium, Hexavalent Trend

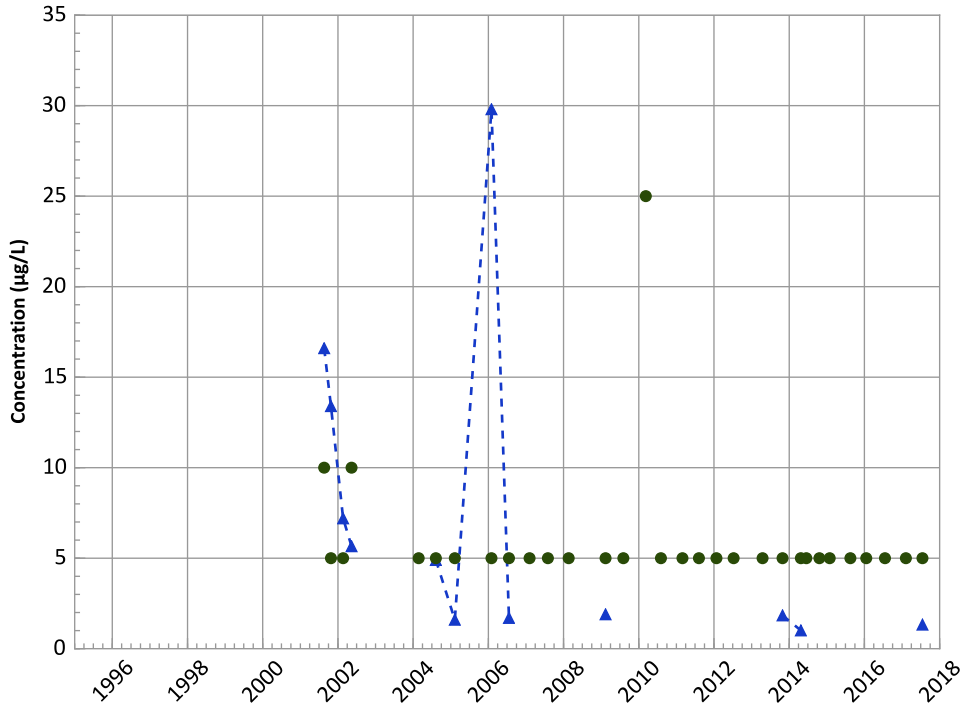


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

MAROS Linear Regression Method
Data ():
N/A (<4 Detections in Dataset)
All Data
No Trend

Manganese Trend

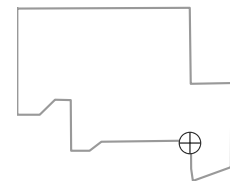


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

MAROS Linear Regression Method
Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

Well Location

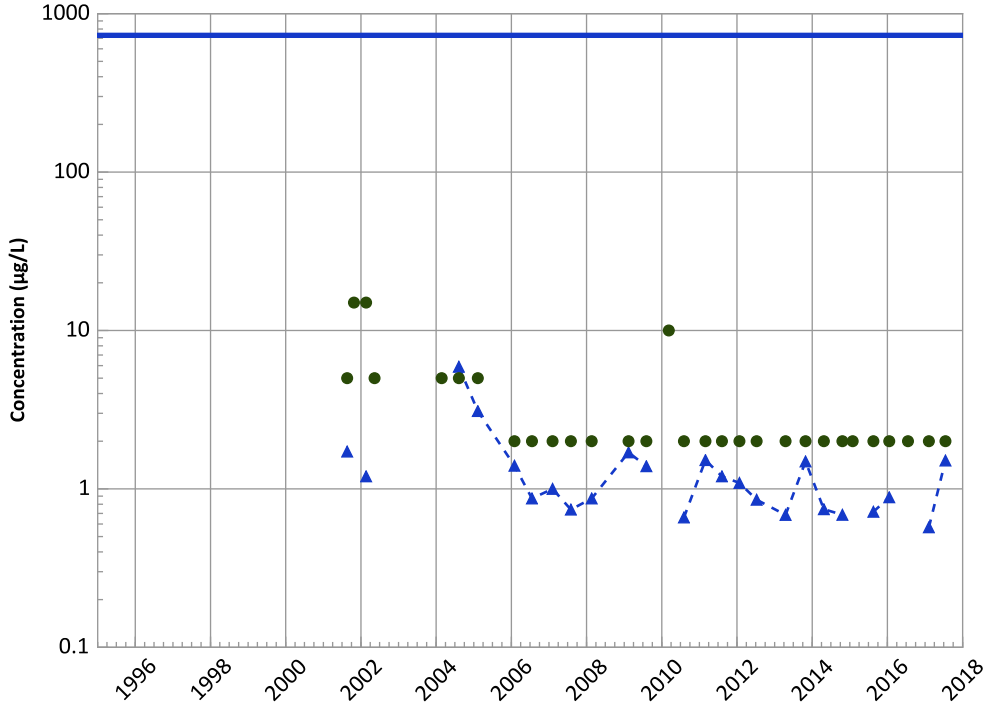


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/09/2000 to 10/23/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1056 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

Nickel Trend



Concentration Trend

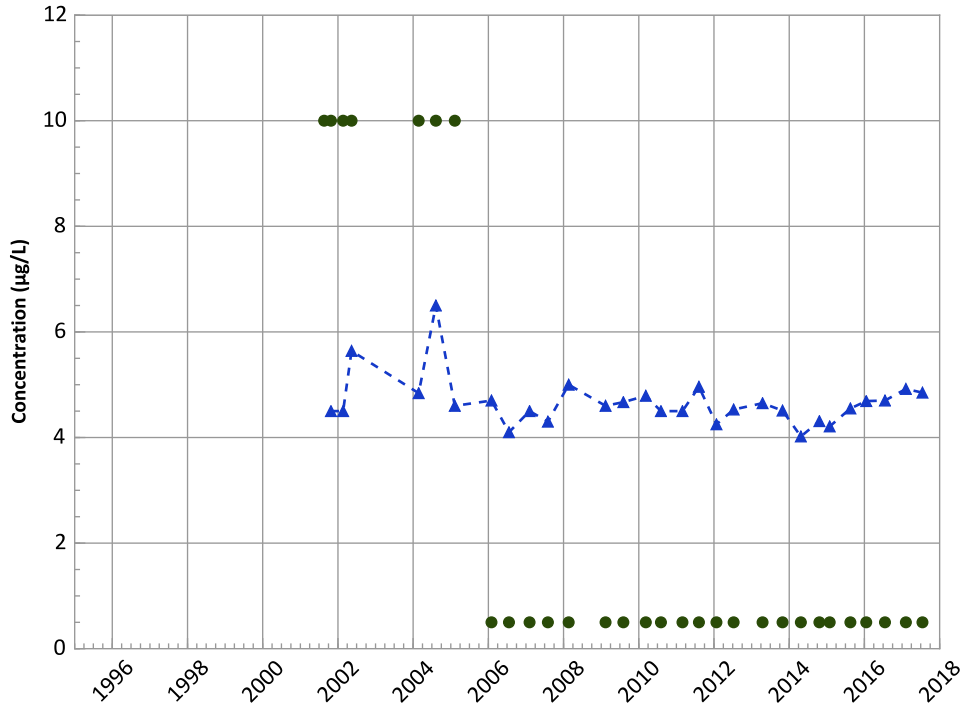
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Stable
All Data
Decreasing

Molybdenum Trend



Concentration Trend

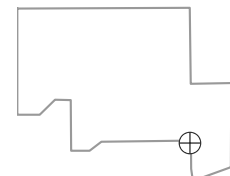
MAROS Mann-Kendall Method

Data ():
No Trend
All Data
Decreasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
Probably Decreasing

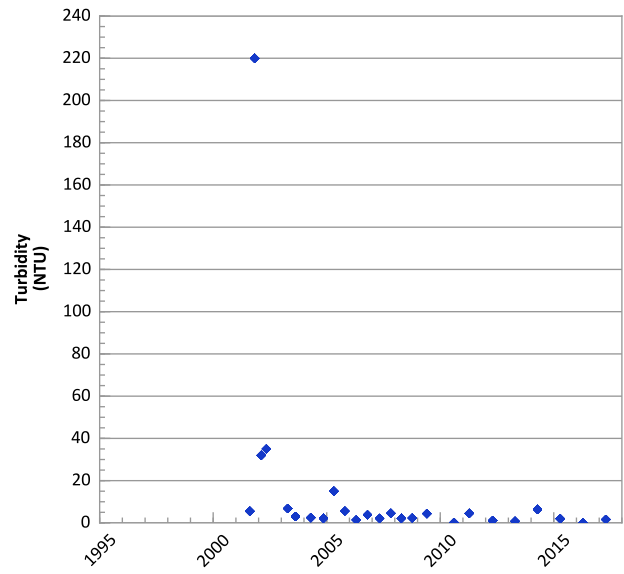
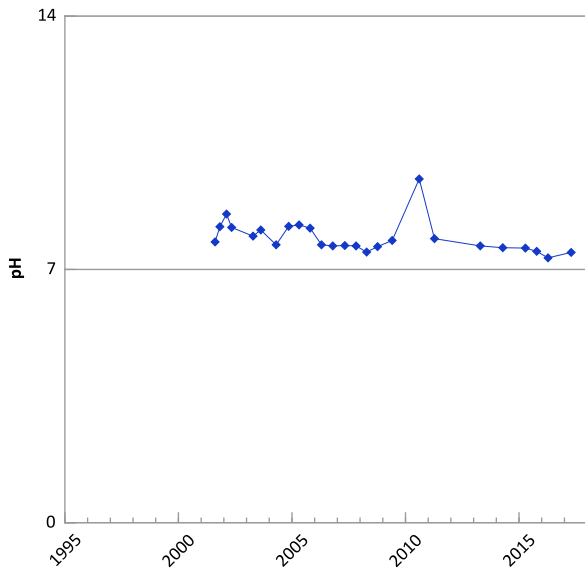
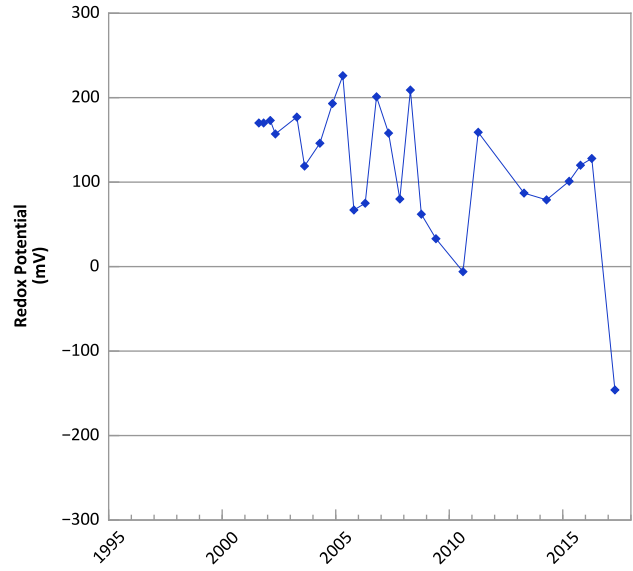
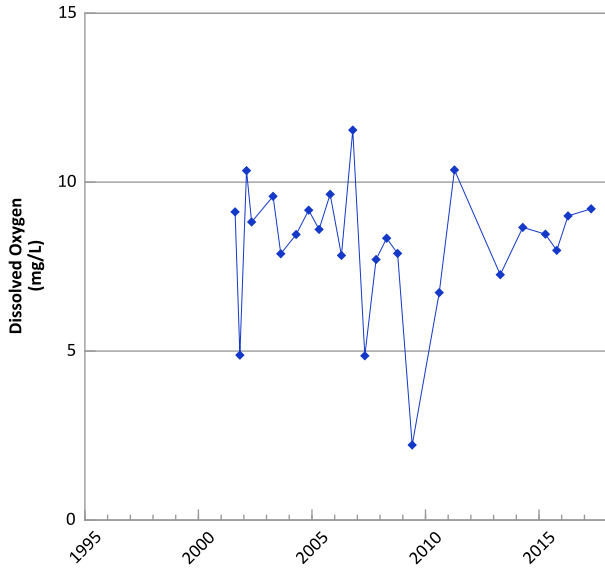
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/09/2000 to 10/23/2017
Analysis Date: 03/21/2018

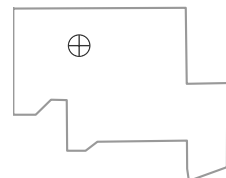
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1057A in Ogallala Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



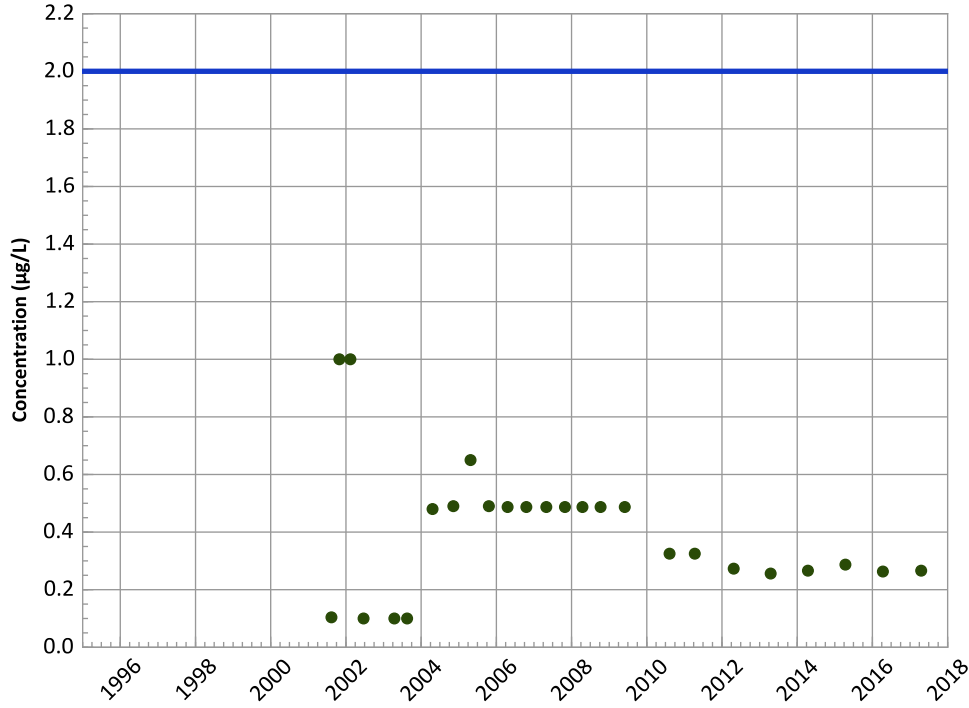
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 08/13/2001 to 04/19/2017
 Analysis Date: 03/21/2018

Well Location



PTX06-1057A in Ogallala Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

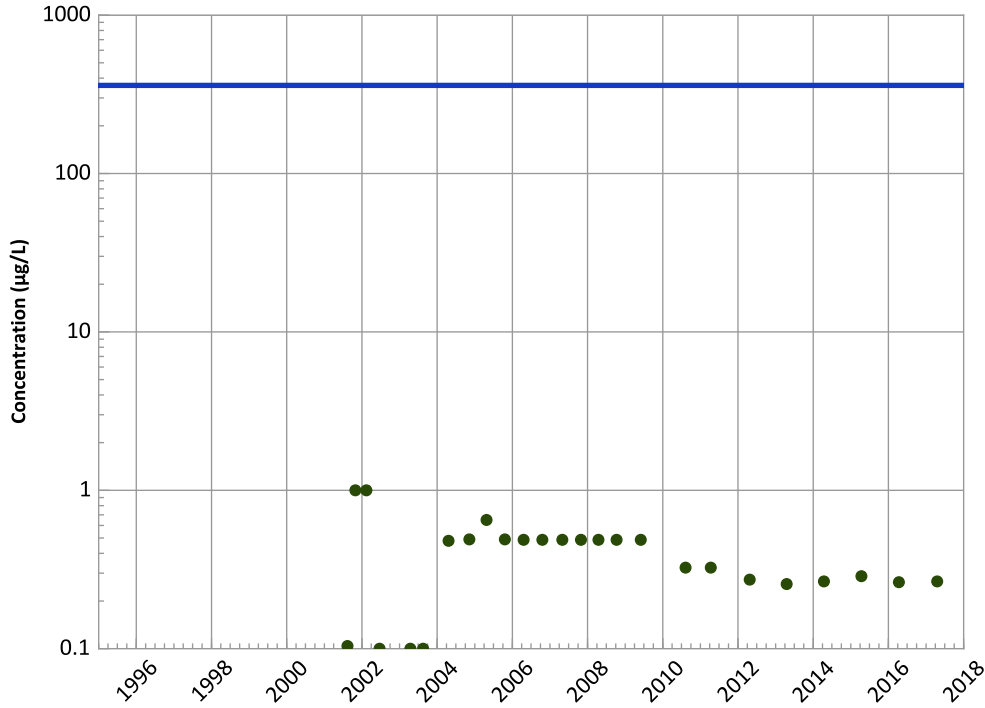
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

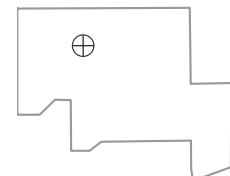
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

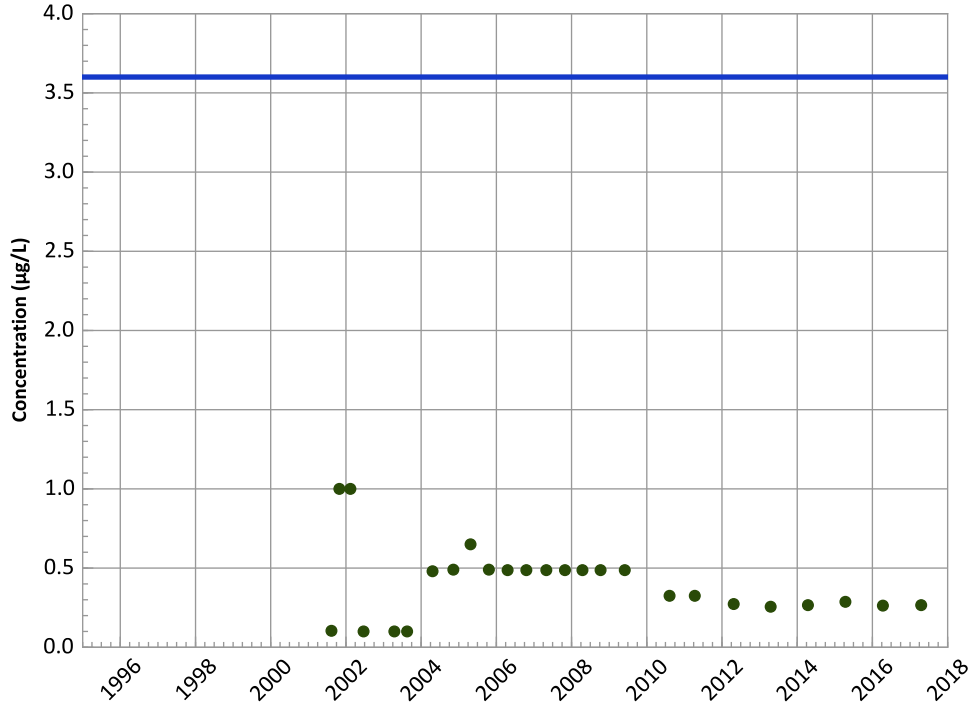


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/13/2001 to 04/19/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1057A in Ogallala Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

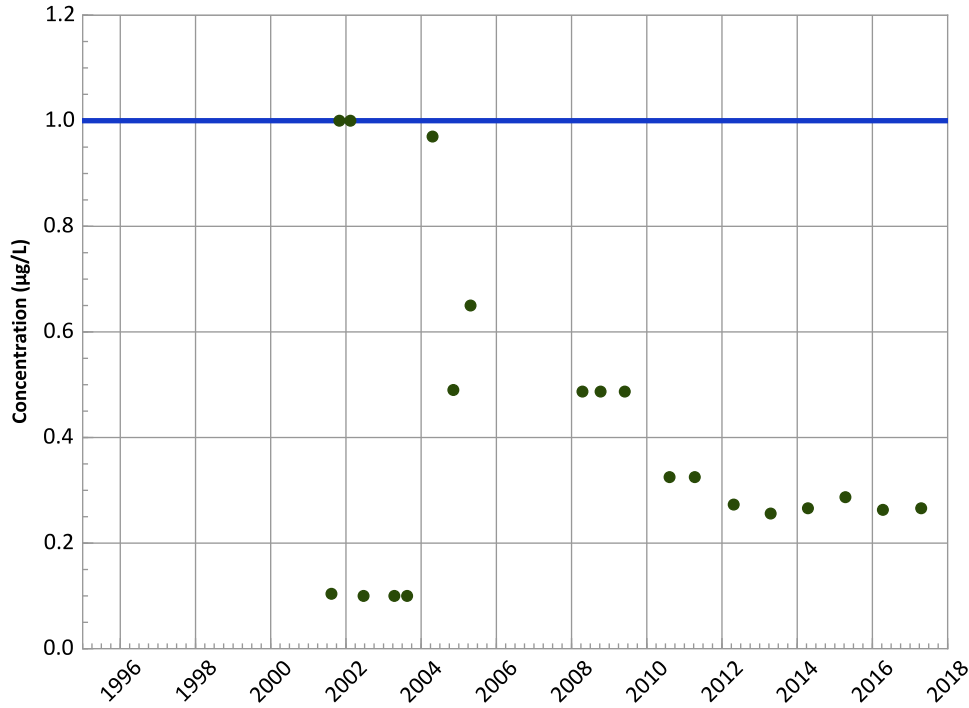
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

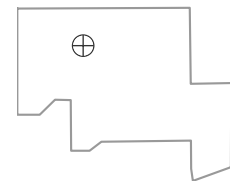
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

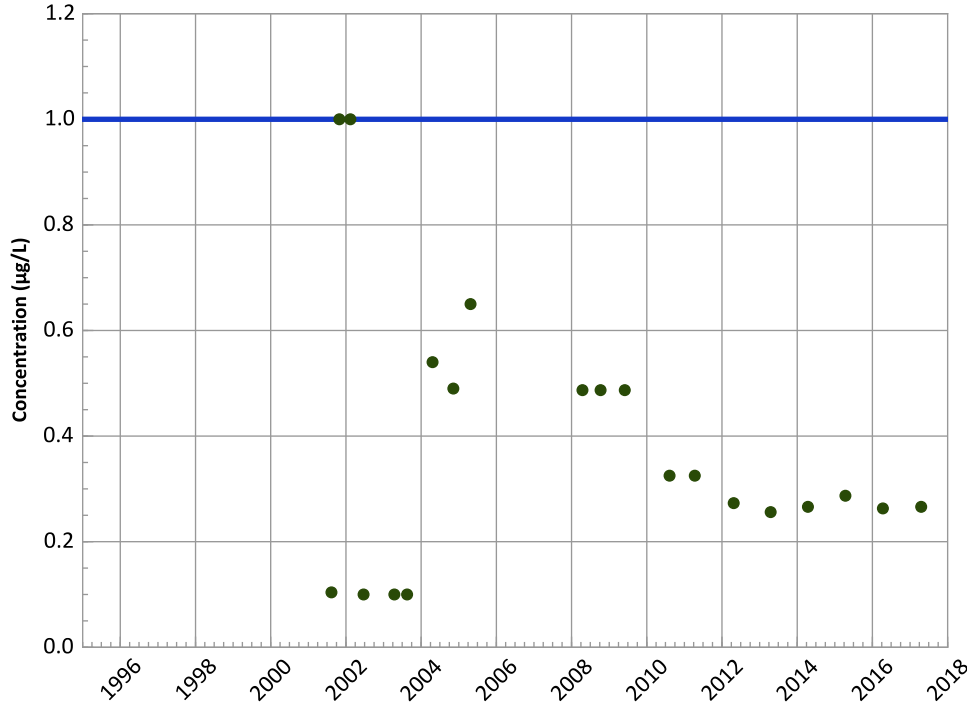


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/13/2001 to 04/19/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1057A in Ogallala Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

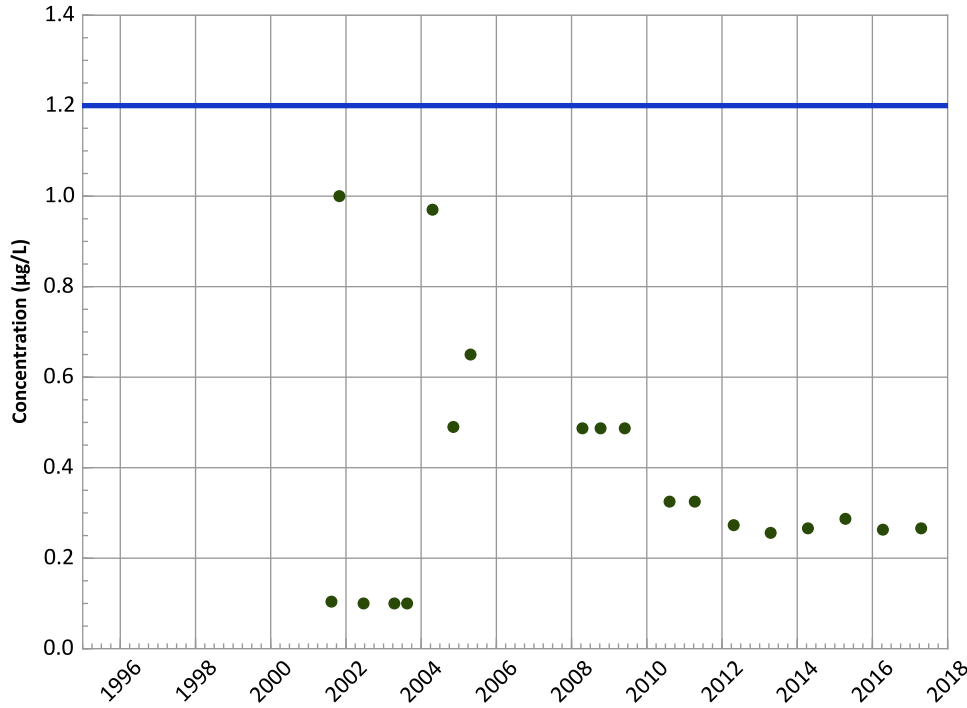
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

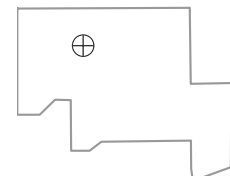
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

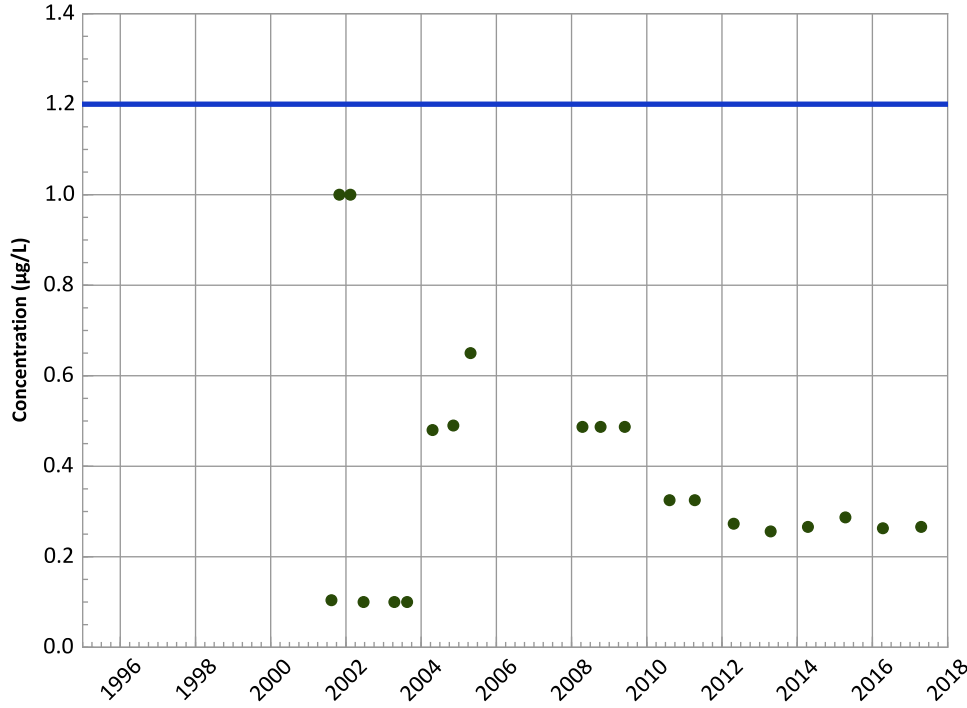


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/13/2001 to 04/19/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1057A in Ogallala Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

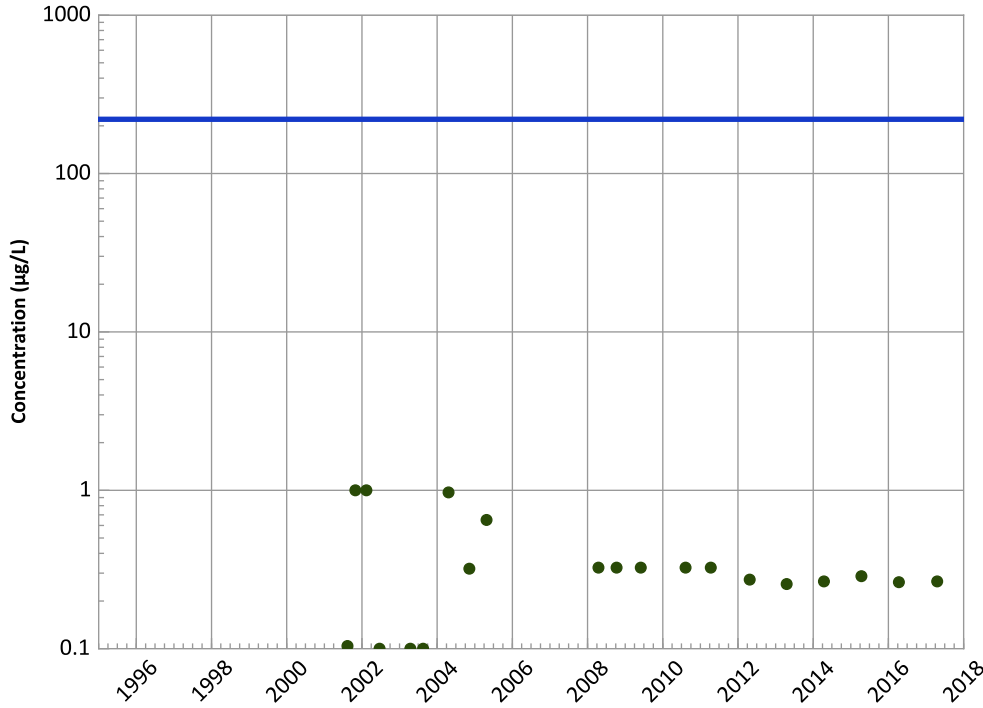
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,3,5-Trinitrobenzene Trend



Concentration Trend

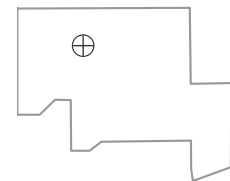
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

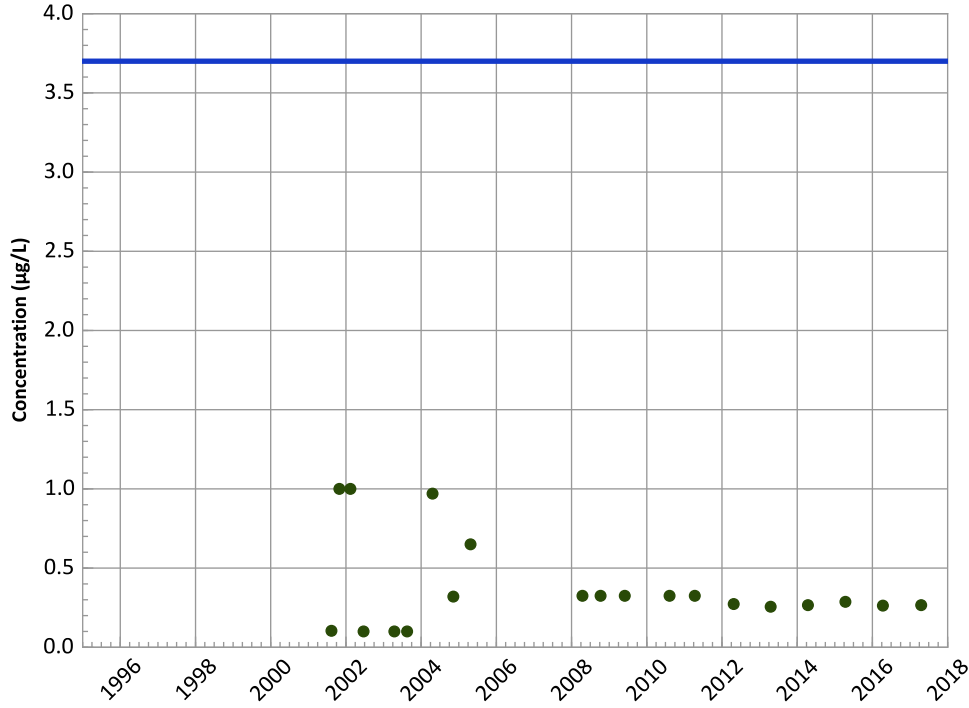


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/13/2001 to 04/19/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1057A in Ogallala Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

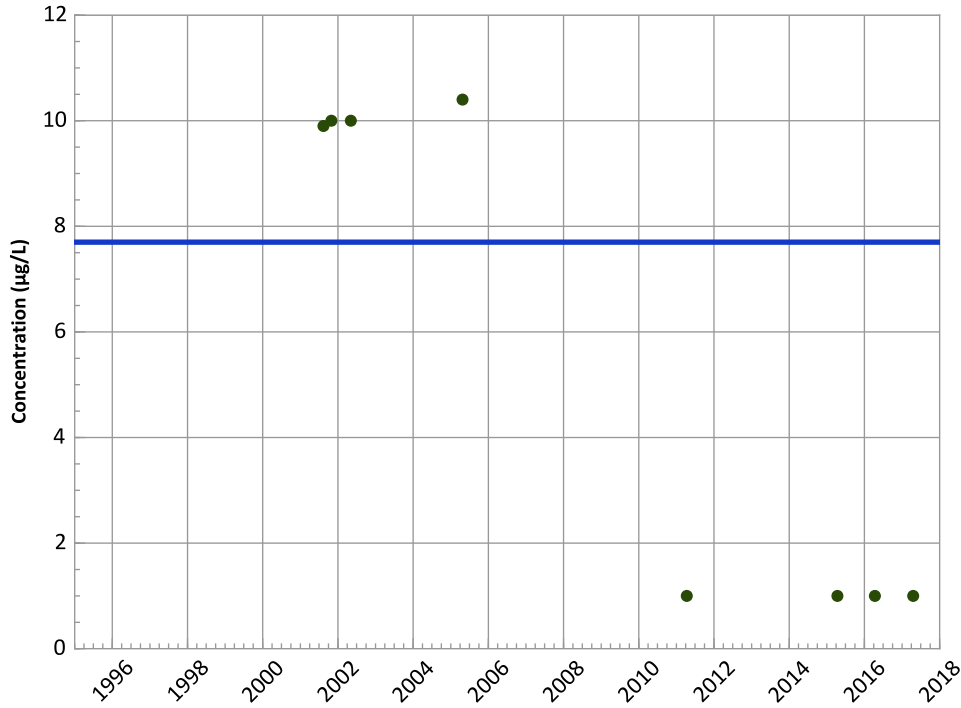
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,4-Dioxane (p-Dioxane) Trend



Concentration Trend

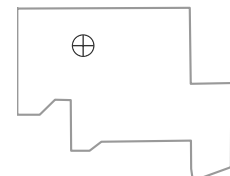
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

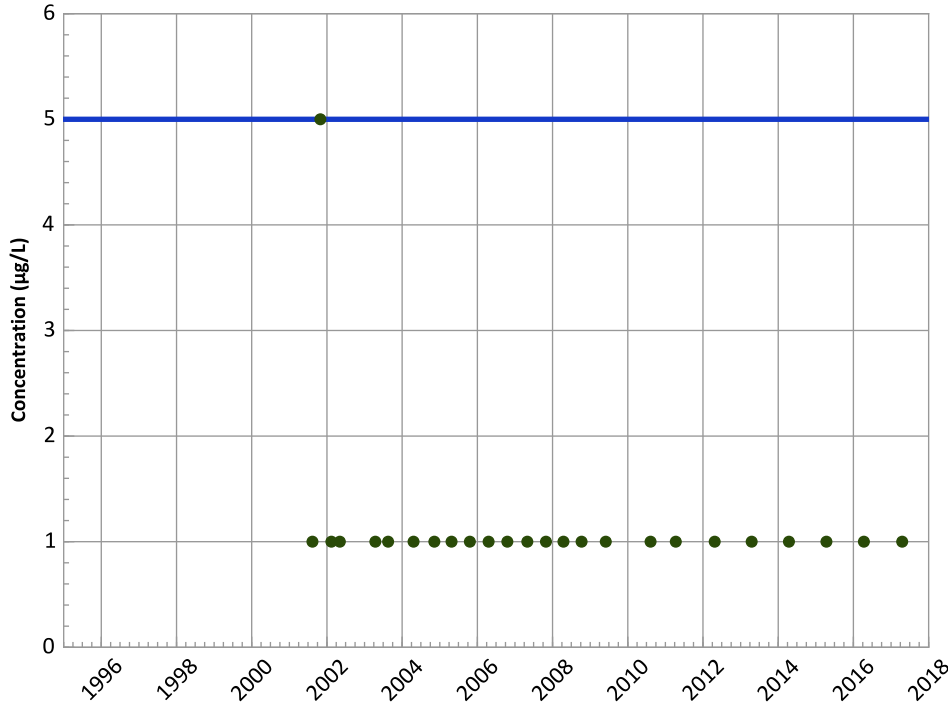
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/13/2001 to 04/19/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1057A in Ogallala Aquifer
USDOE/NNSA Pantex Plant
Tetrachloroethylene (PCE) Trend**



Concentration Trend

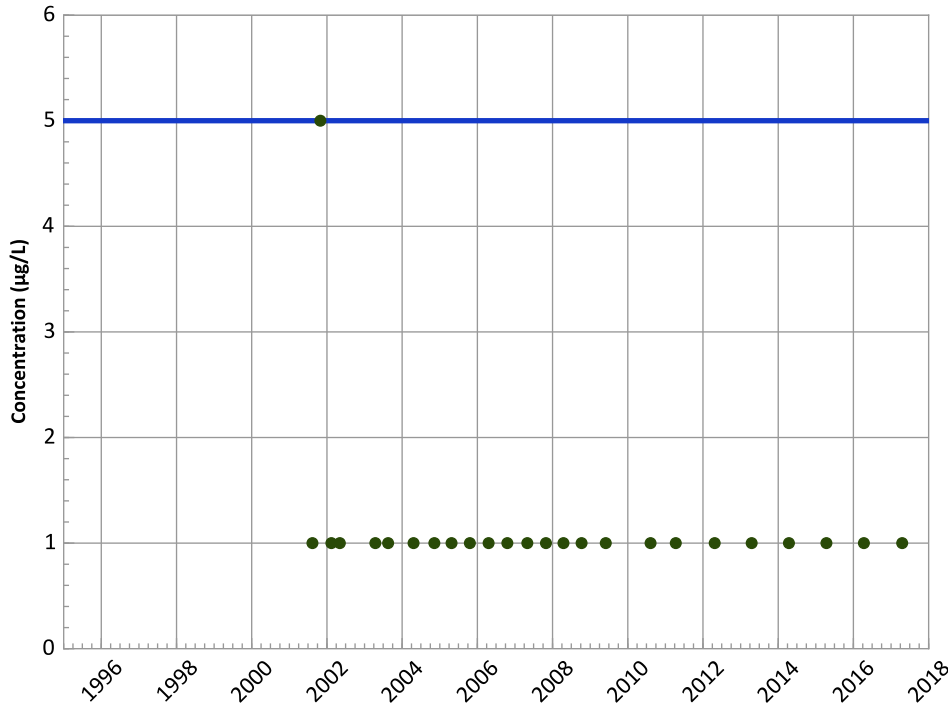
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Trichloroethene Trend



Concentration Trend

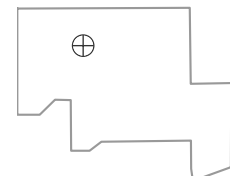
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

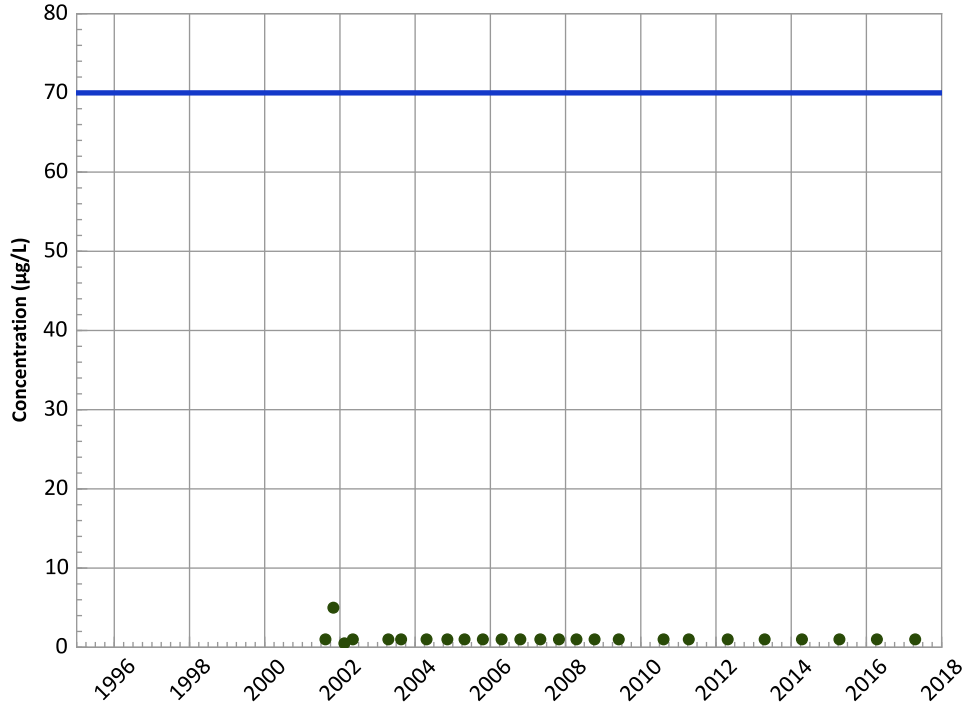


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/13/2001 to 04/19/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- Concentration Trend
- Groundwater Protection Standard

PTX06-1057A in Ogallala Aquifer
USDOE/NNSA Pantex Plant

cis-1,2-Dichloroethene Trend



Concentration Trend

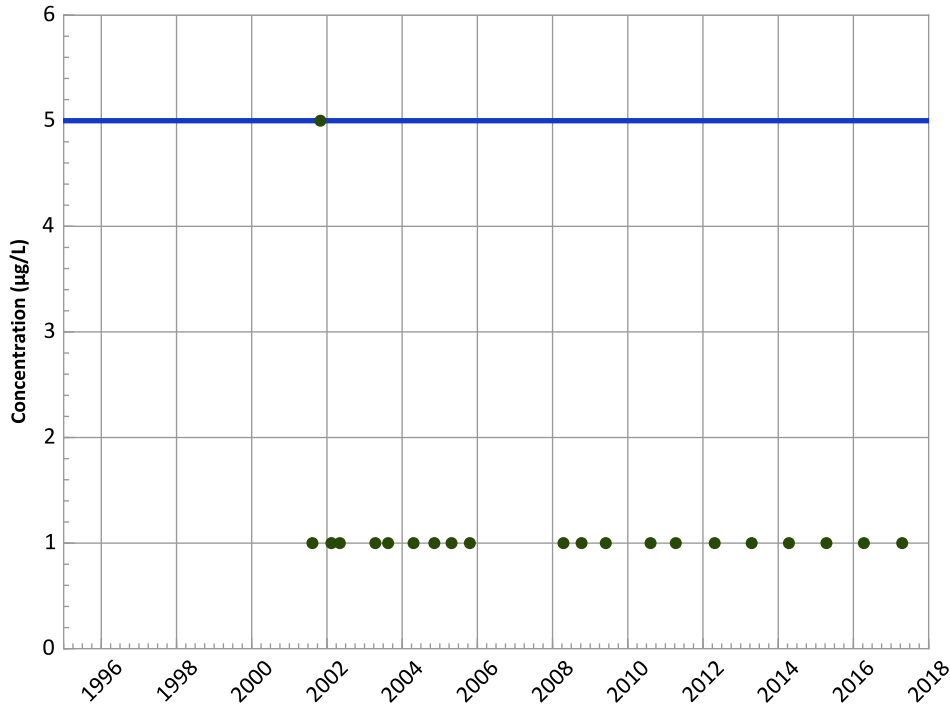
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,2-Dichloroethane Trend



Concentration Trend

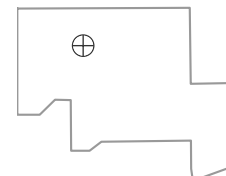
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

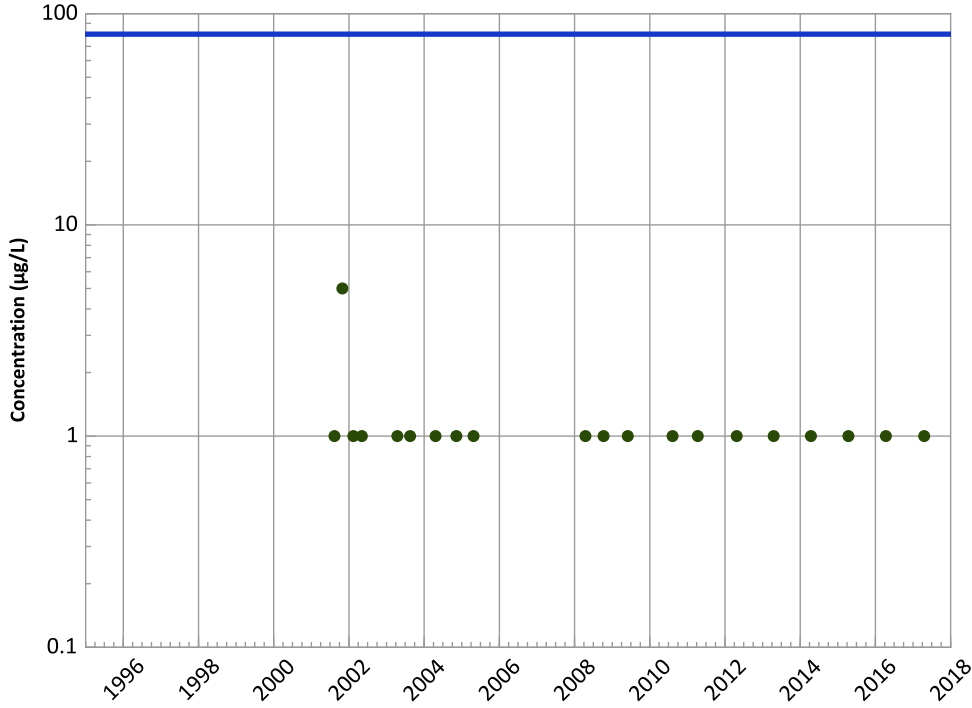


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/13/2001 to 04/19/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1057A in Ogallala Aquifer
USDOE/NNSA Pantex Plant

Chloroform Trend



Concentration Trend

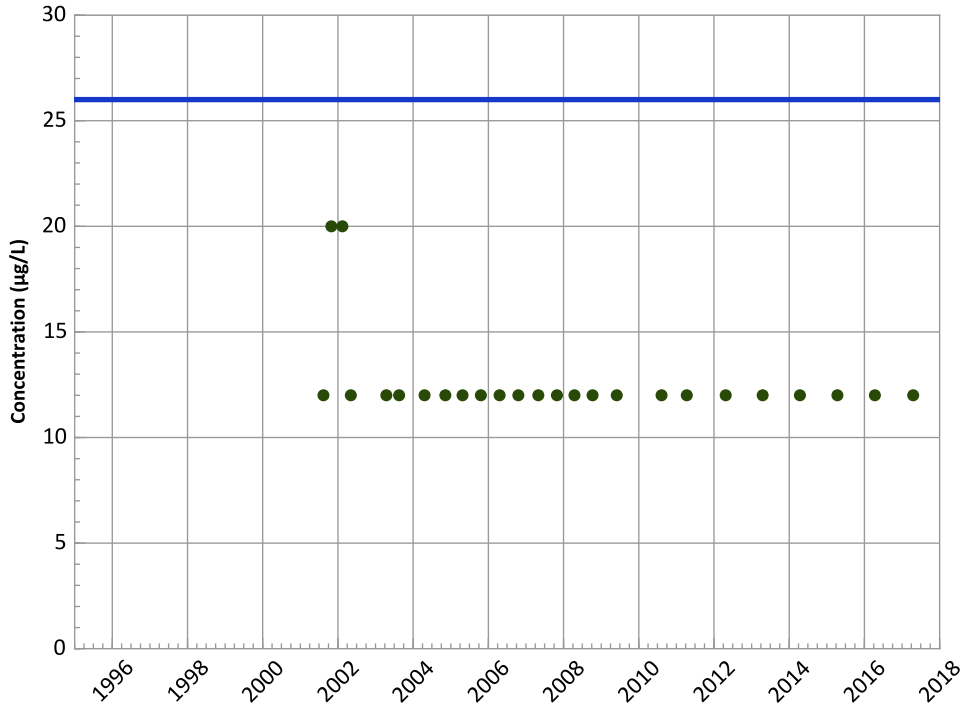
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Perchlorate Trend



Concentration Trend

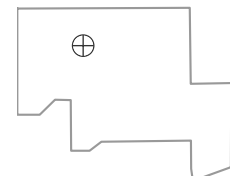
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

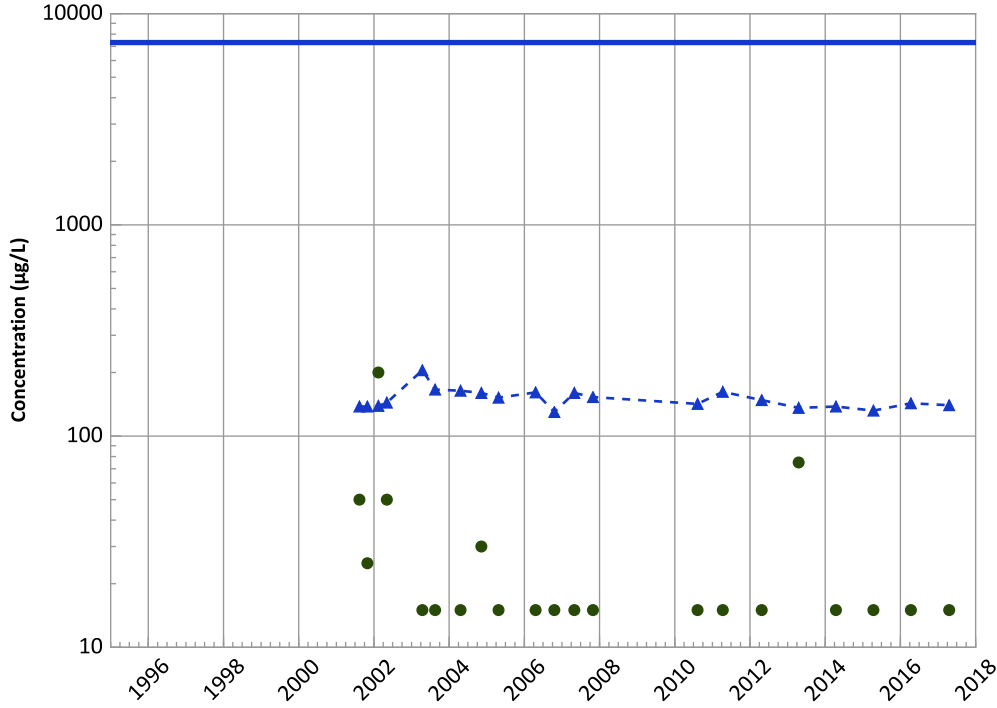


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/13/2001 to 04/19/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1057A in Ogallala Aquifer
USDOE/NNSA Pantex Plant

Boron Trend



Concentration Trend

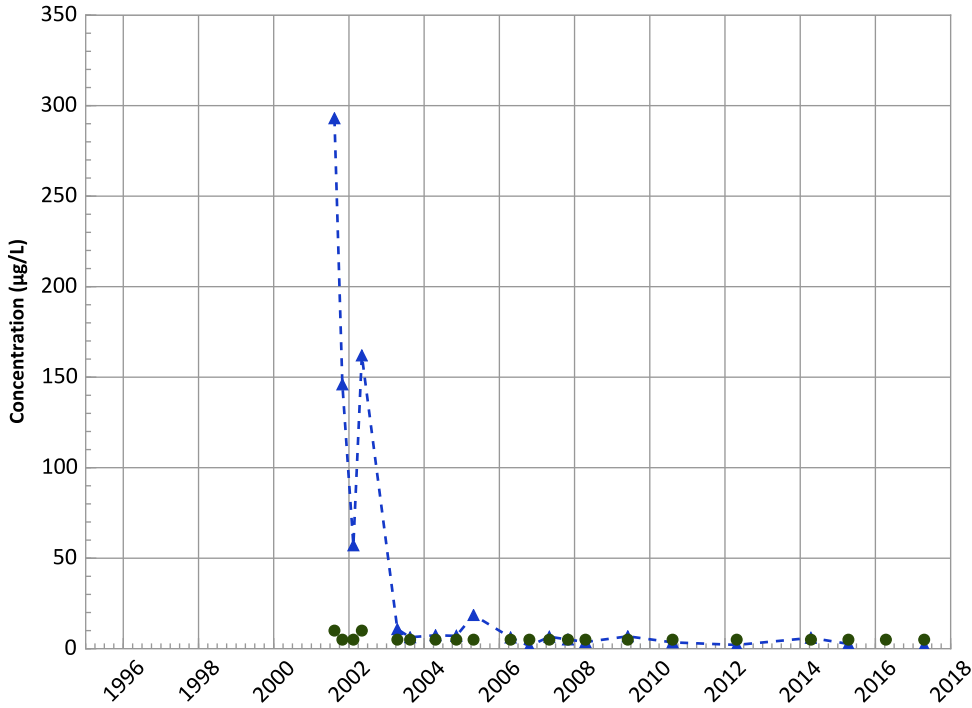
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Stable
All Data
Probably Decreasing

Manganese Trend



Concentration Trend

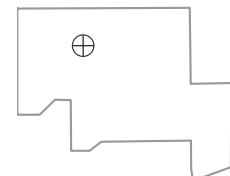
MAROS Mann-Kendall Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

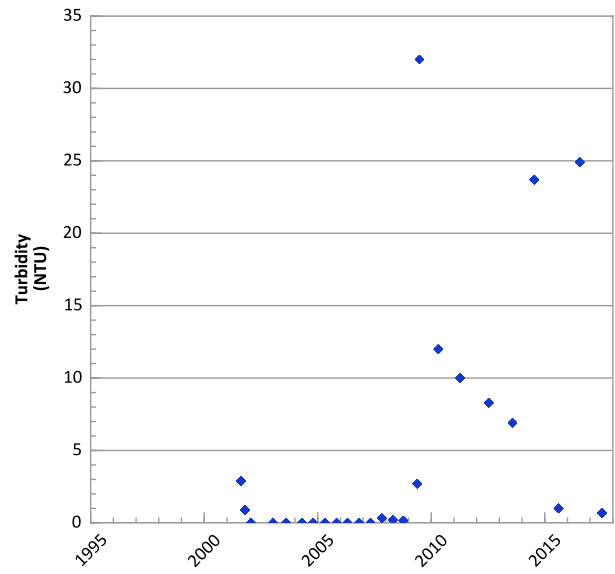
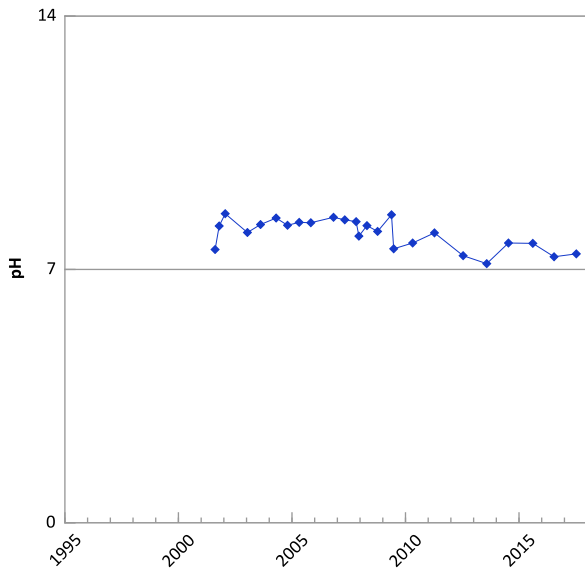
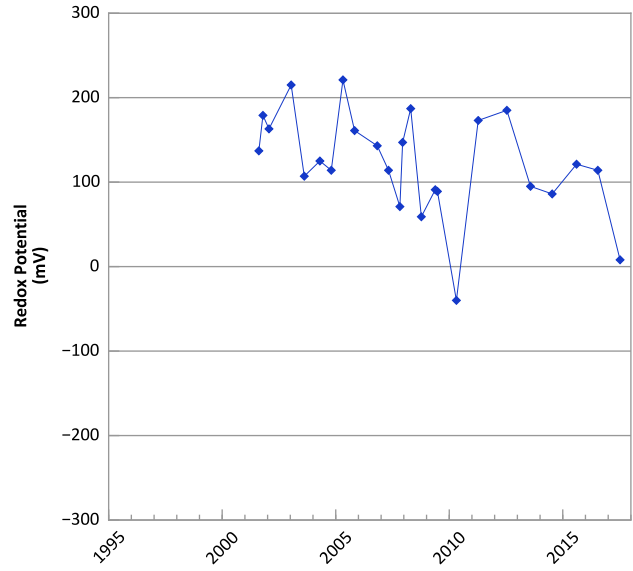
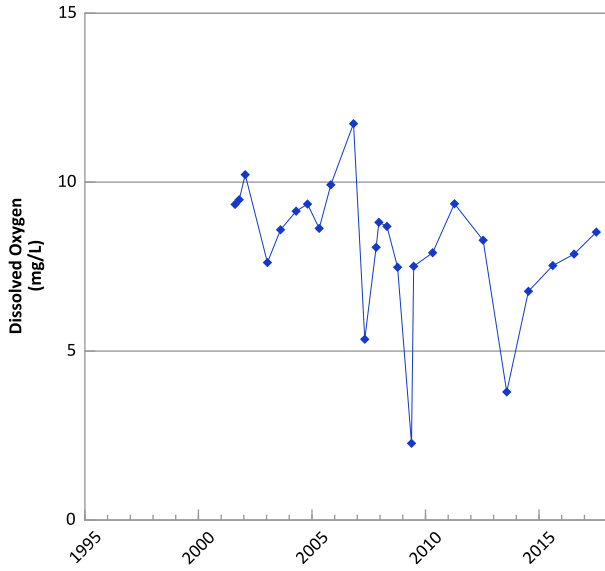
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/13/2001 to 04/19/2017
Analysis Date: 03/21/2018

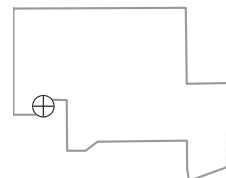
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1058 in Ogallala Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



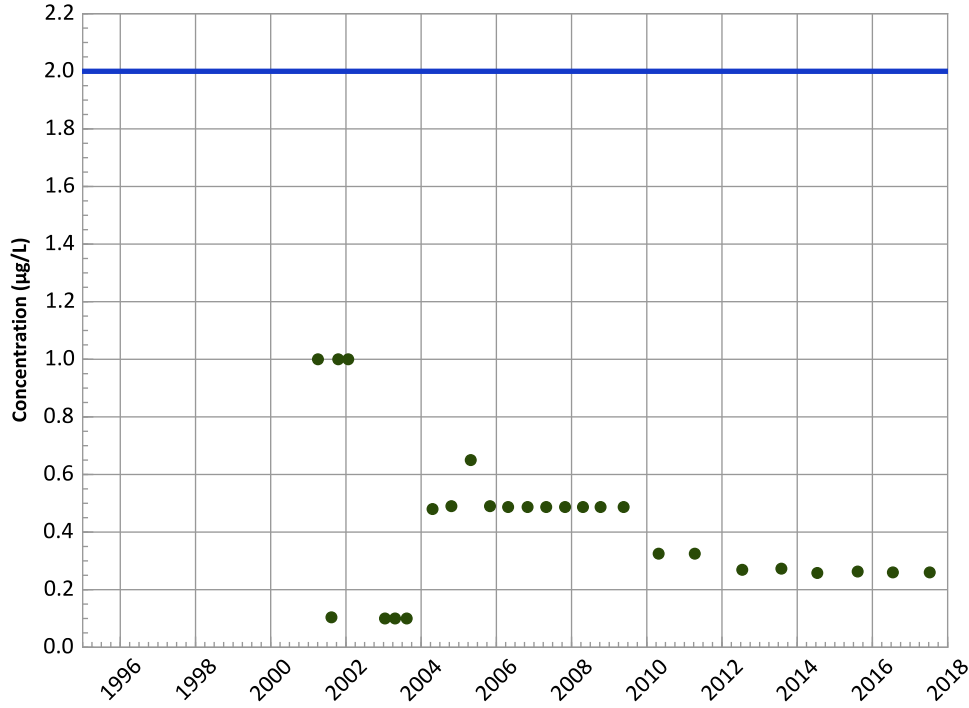
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 04/04/2001 to 07/11/2017
 Analysis Date: 03/21/2018

Well Location



PTX06-1058 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

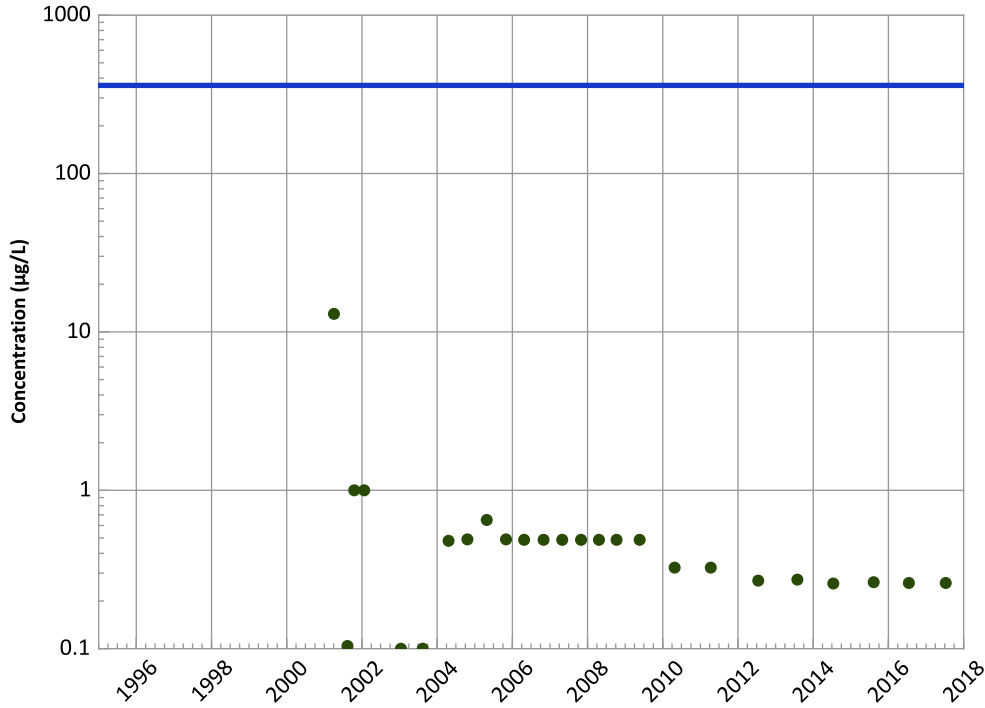
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

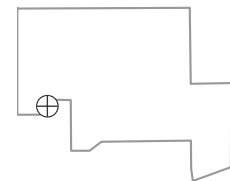
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

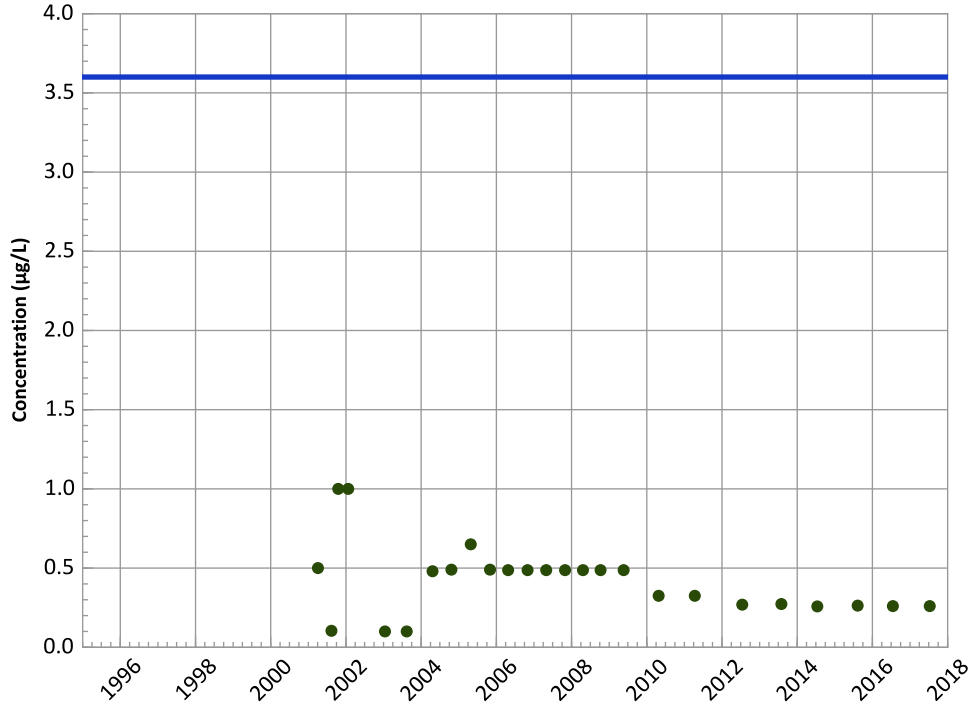


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 04/04/2001 to 07/11/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1058 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

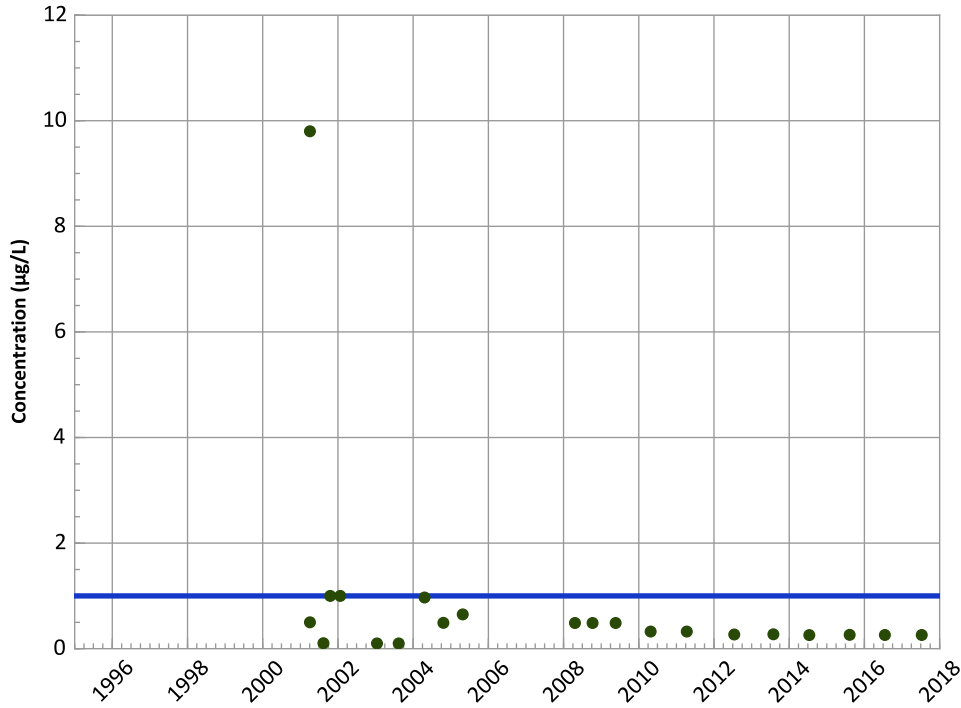
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

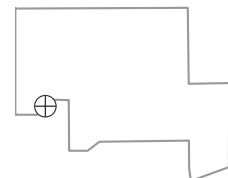
MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 04/04/2001 to 07/11/2017
Analysis Date: 03/21/2018

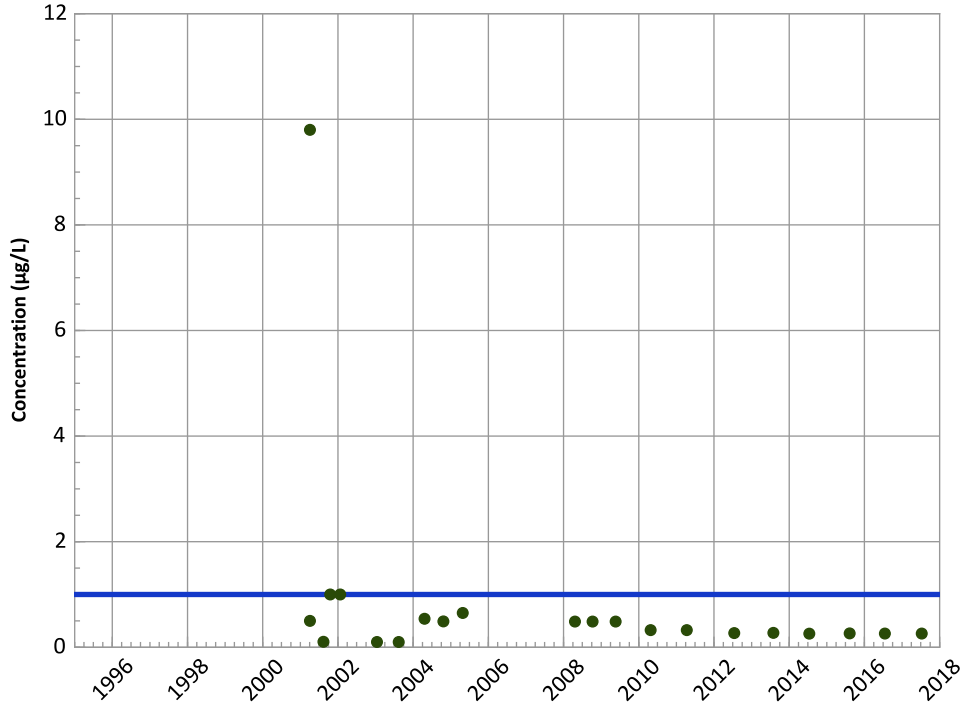
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1058 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

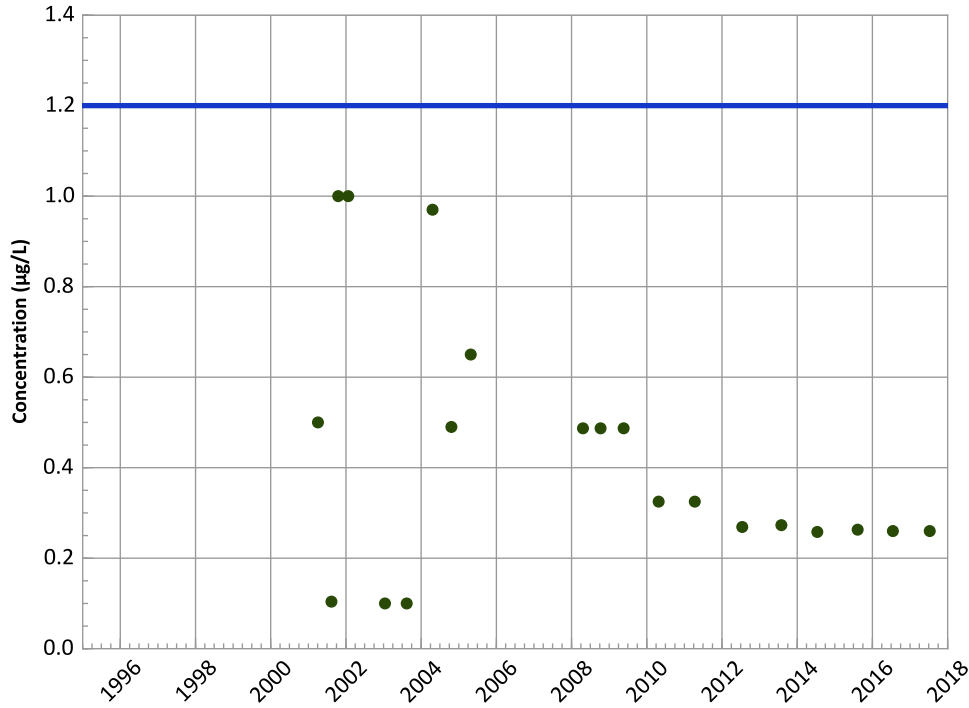
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

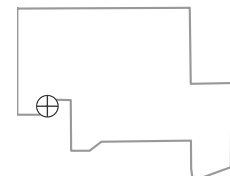
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

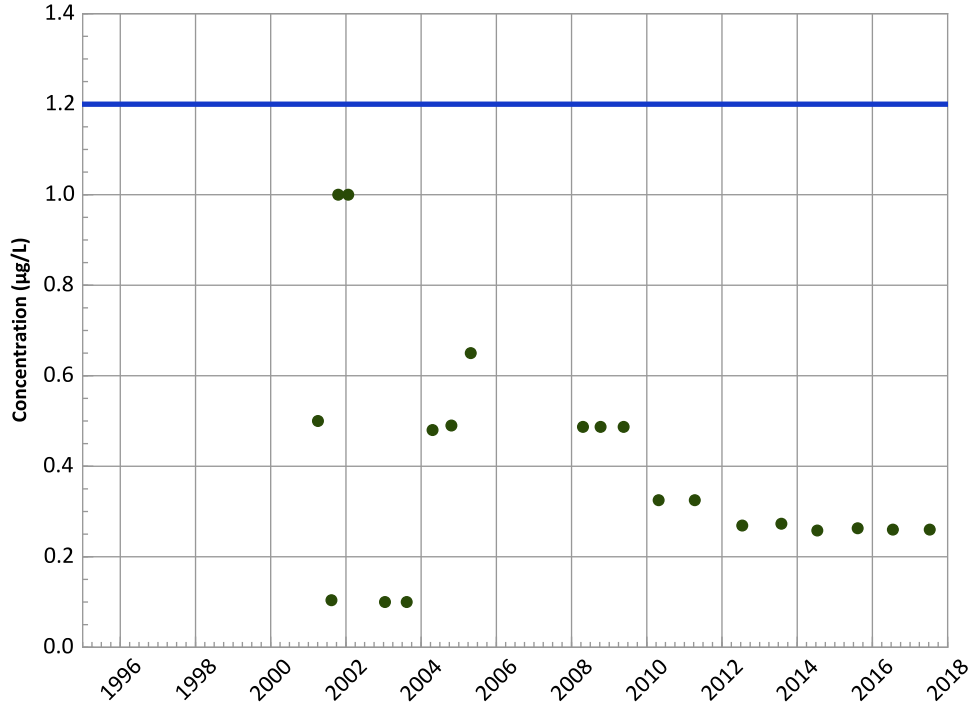


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 04/04/2001 to 07/11/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1058 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

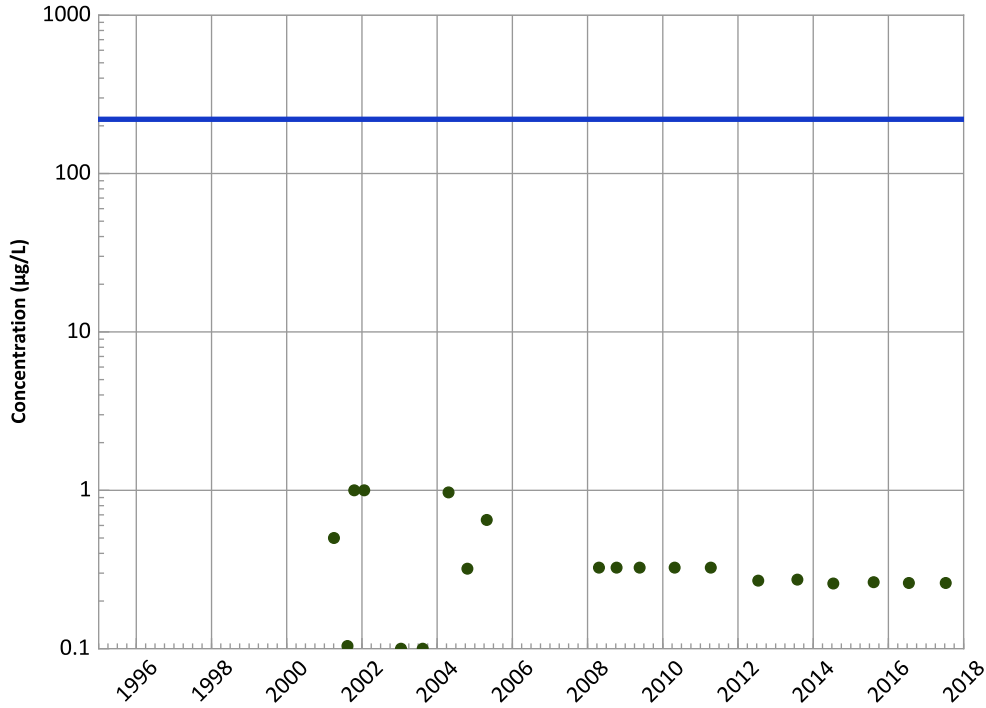
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,3,5-Trinitrobenzene Trend



Concentration Trend

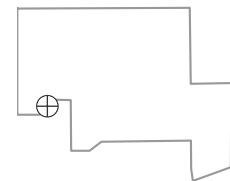
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

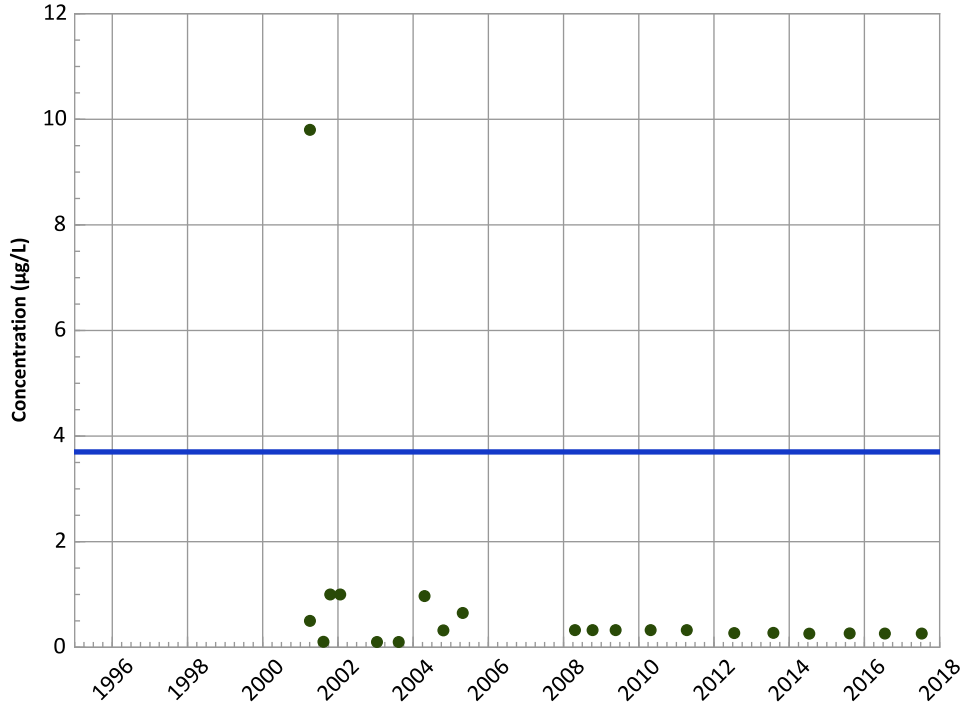


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 04/04/2001 to 07/11/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1058 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

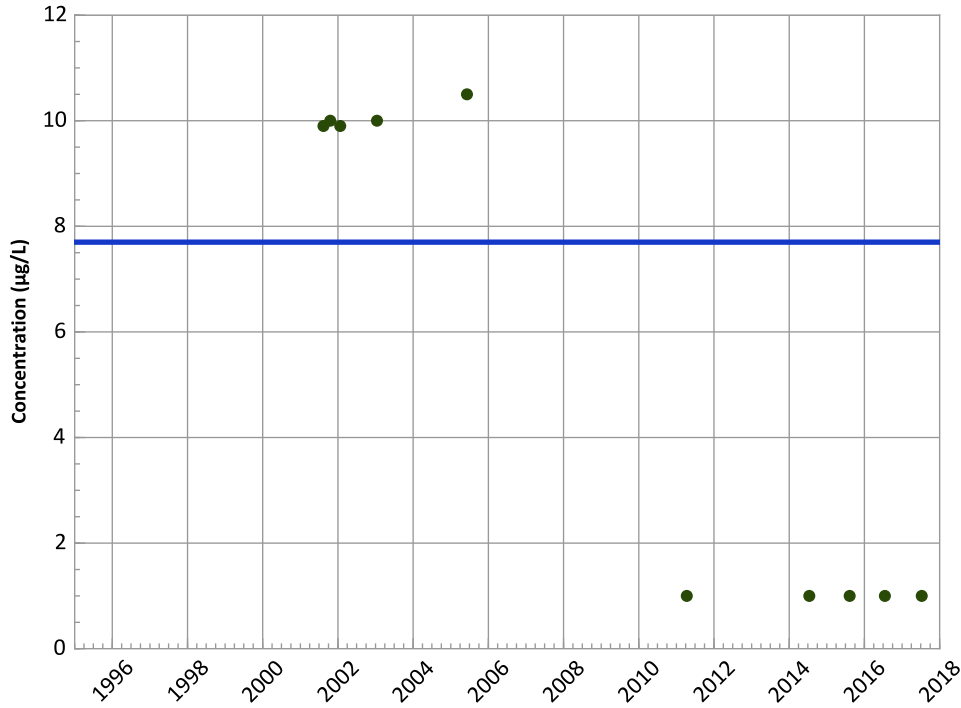
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,4-Dioxane (p-Dioxane) Trend



Concentration Trend

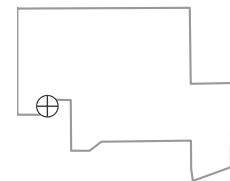
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

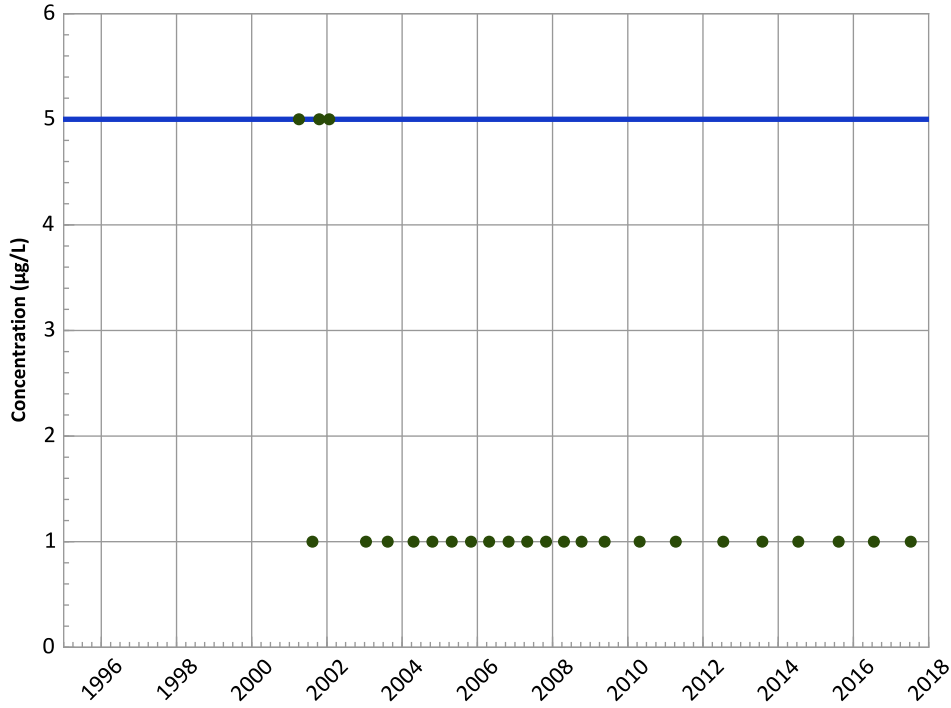
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 04/04/2001 to 07/11/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1058 in Ogallala Aquifer
USDOE/NNSA Pantex Plant
Tetrachloroethylene (PCE) Trend**



Concentration Trend

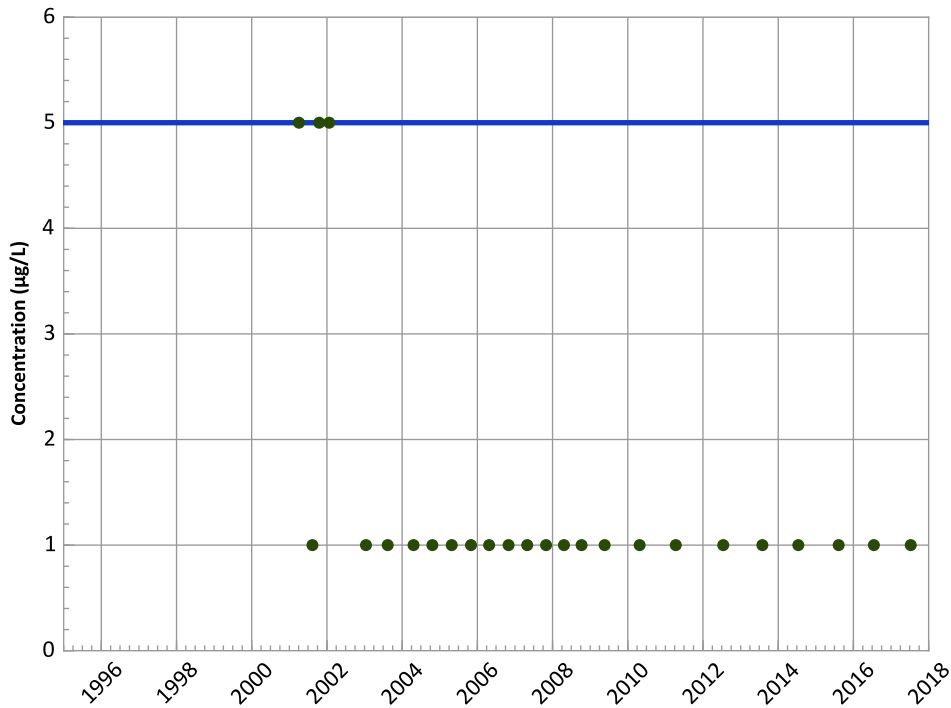
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Trichloroethene Trend



Concentration Trend

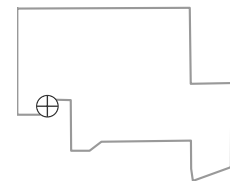
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

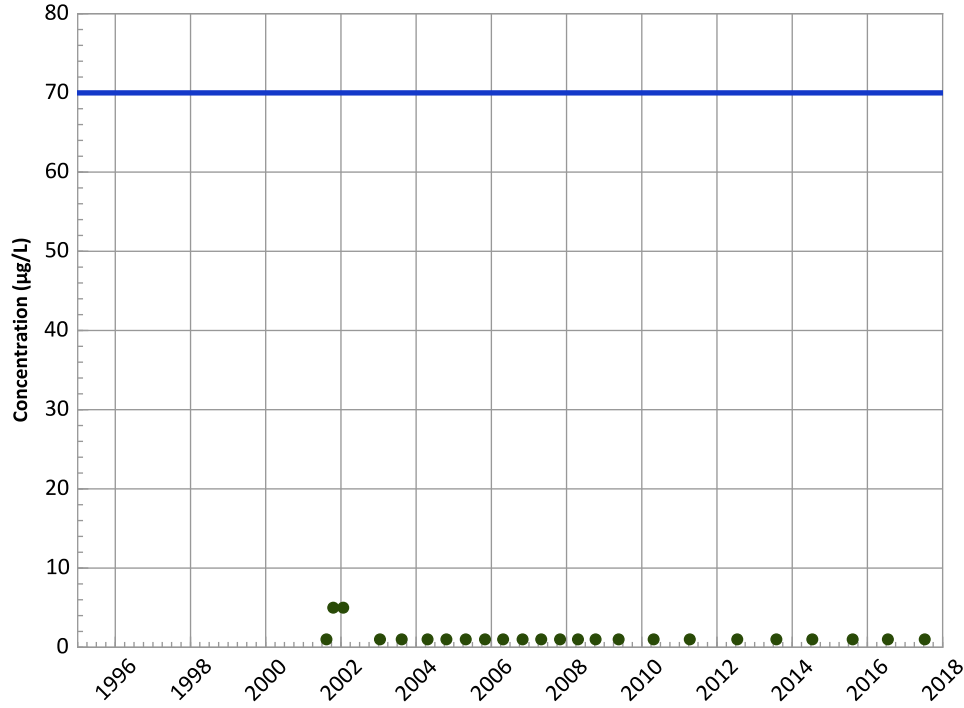
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 04/04/2001 to 07/11/2017
Analysis Date: 03/21/2018

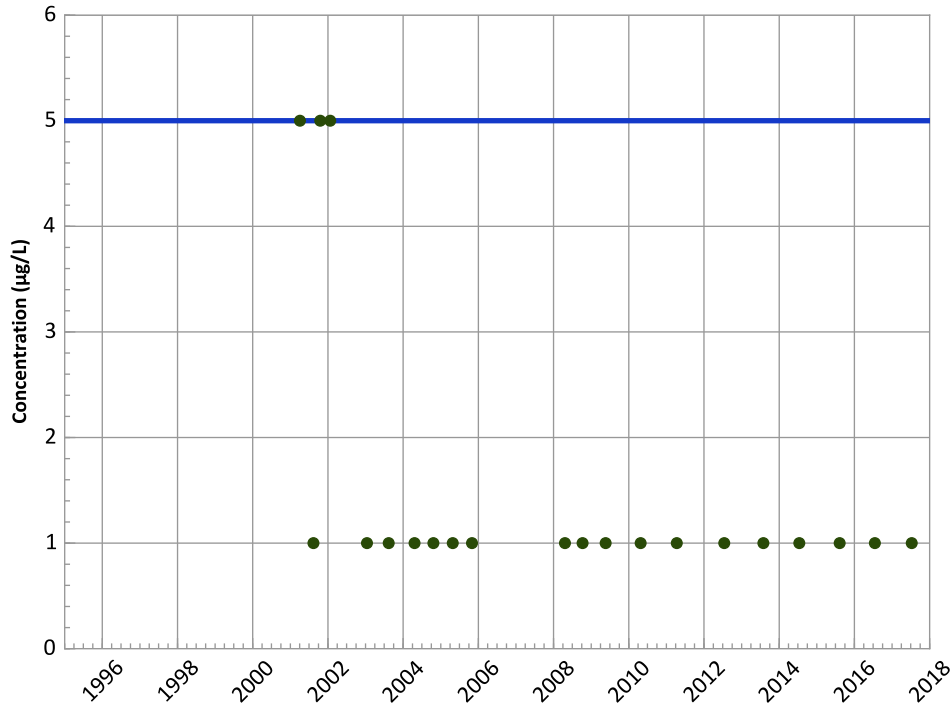
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1058 in Ogallala Aquifer
USDOE/NNSA Pantex Plant**
cis-1,2-Dichloroethene Trend



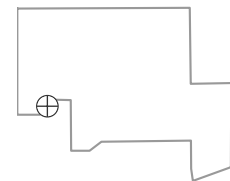
Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect
MAROS Linear Regression Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect

1,2-Dichloroethane Trend



Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect
MAROS Linear Regression Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect

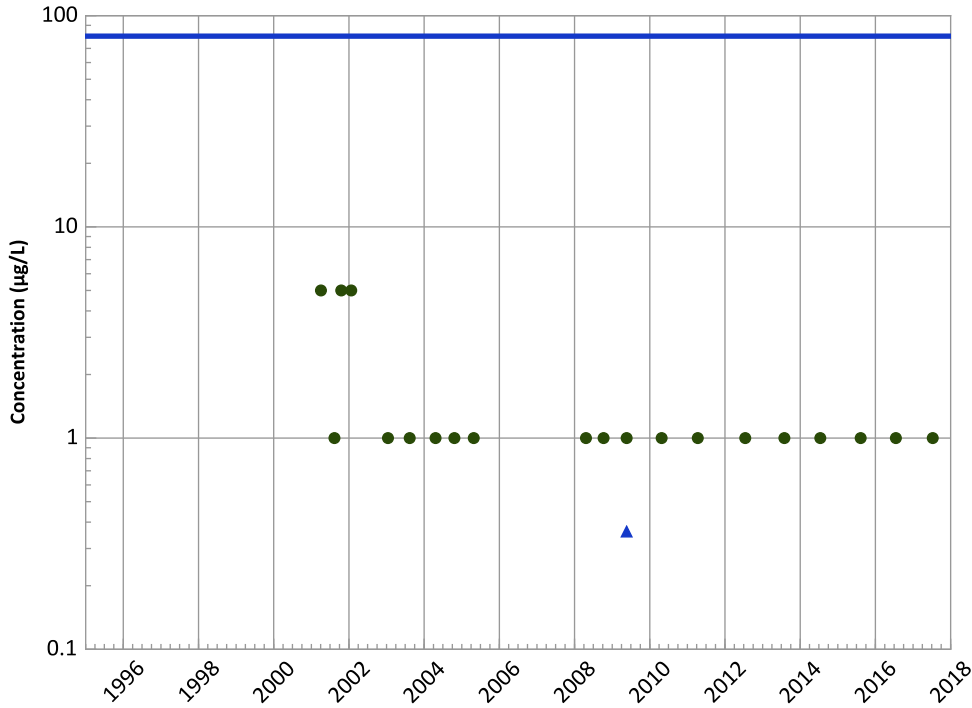
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 04/04/2001 to 07/11/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1058 in Ogallala Aquifer
 USDOE/NNSA Pantex Plant
 Chloroform Trend



Concentration Trend

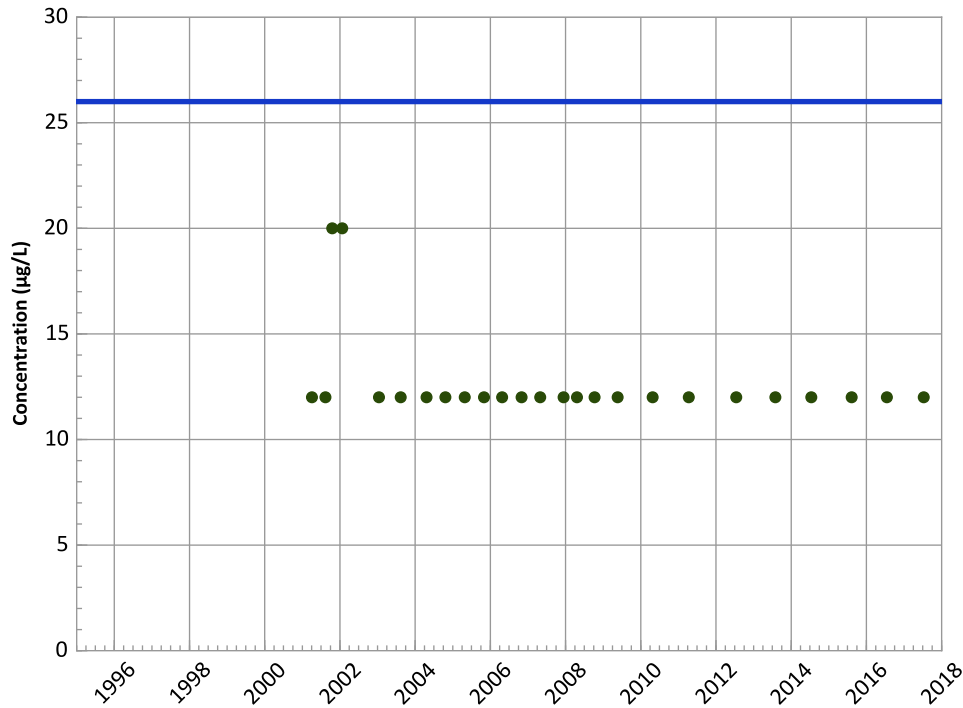
MAROS Mann-Kendall Method

Data ():
 All Non-Detect
 All Data
 N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
 All Non-Detect
 All Data
 N/A (<4 Detections in Dataset)

Perchlorate Trend



Concentration Trend

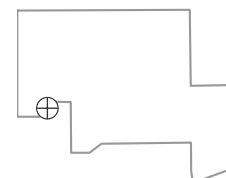
MAROS Mann-Kendall Method

Data ():
 All Non-Detect
 All Data
 All Non-Detect

MAROS Linear Regression Method

Data ():
 All Non-Detect
 All Data
 All Non-Detect

Well Location

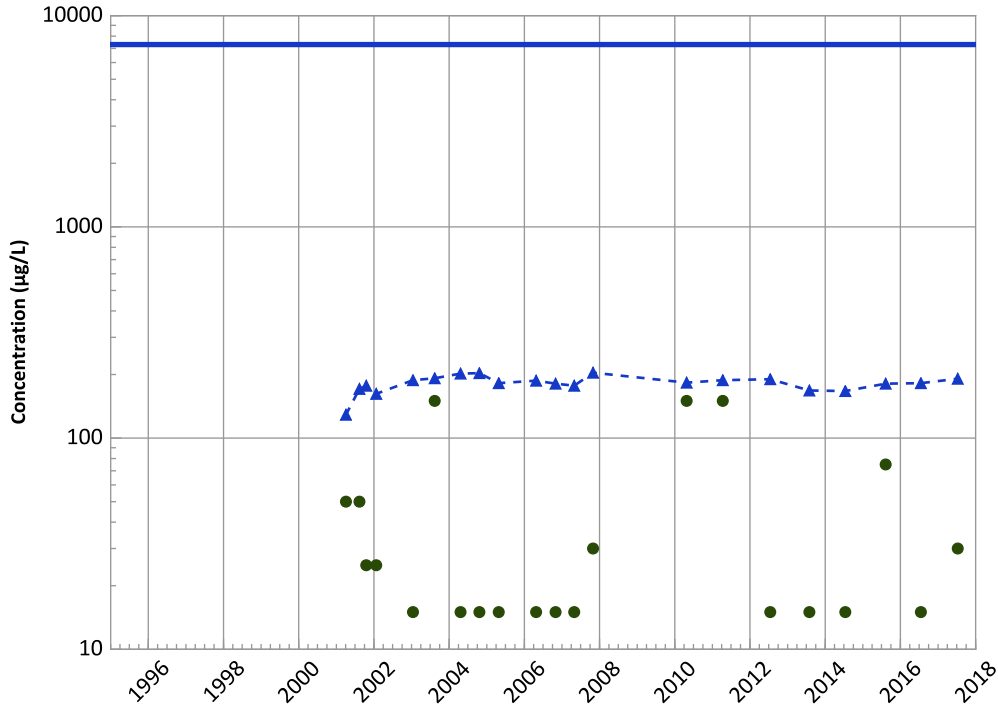


Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 04/04/2001 to 07/11/2017
 Analysis Date: 03/21/2018

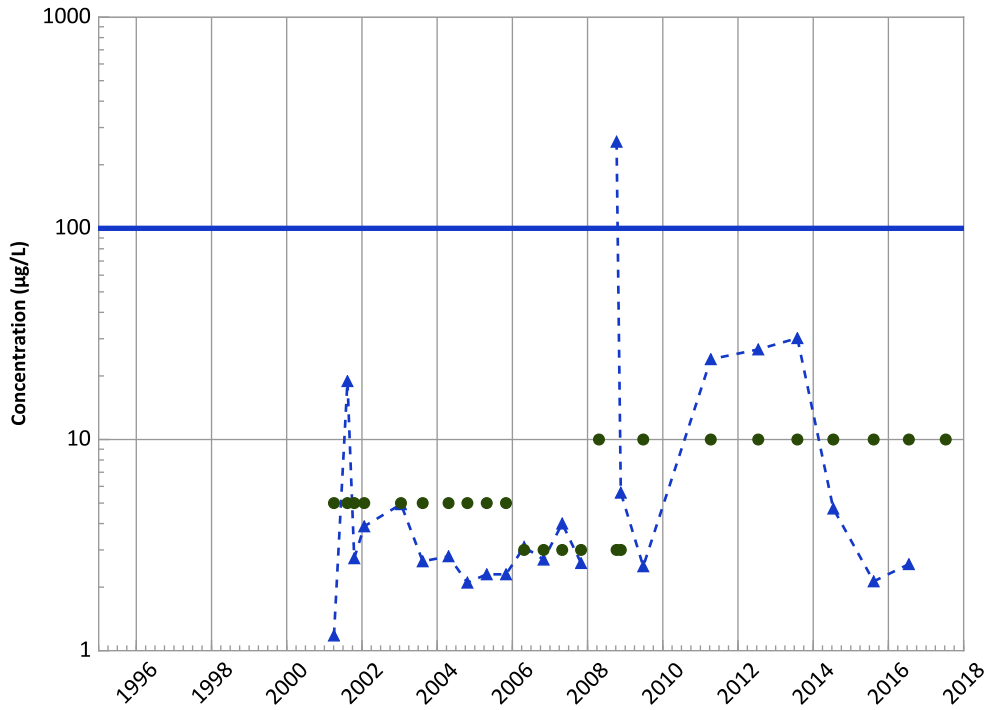
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1058 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

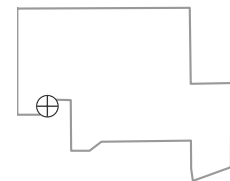
Boron Trend



Chromium, Total Trend



Well Location

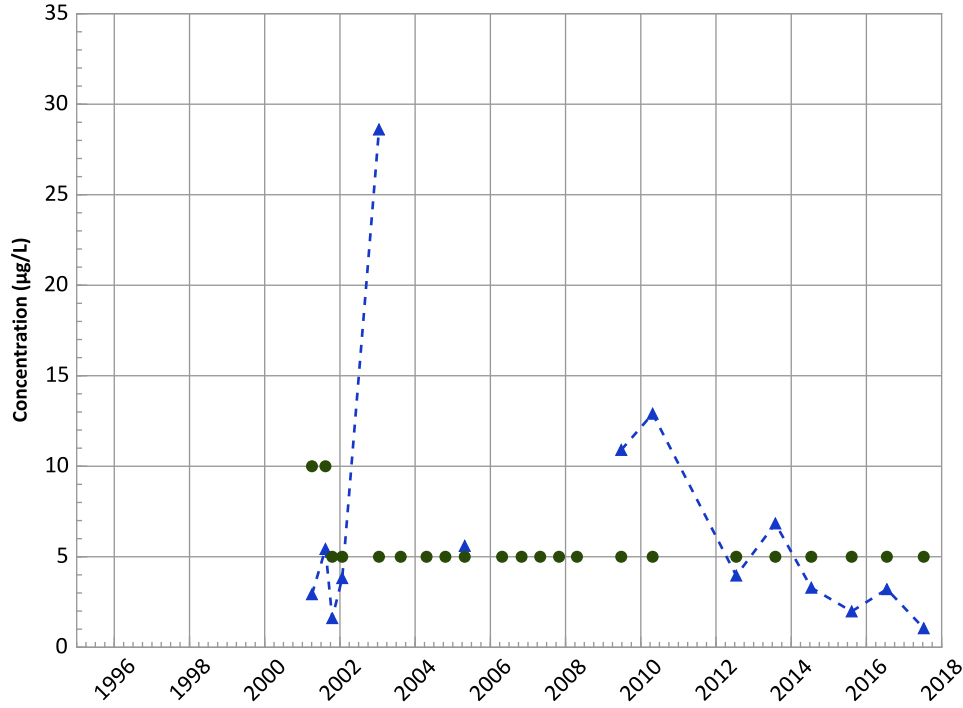


Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 04/04/2001 to 07/11/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1058 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

Manganese Trend



Concentration Trend

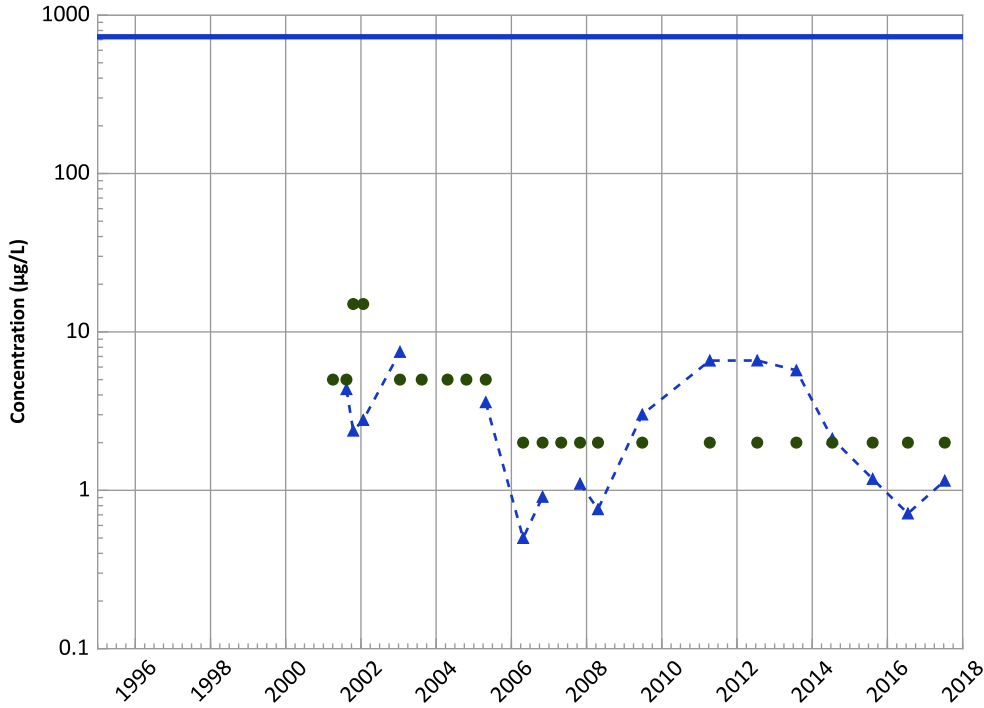
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Stable
All Data
No Trend

Nickel Trend



Concentration Trend

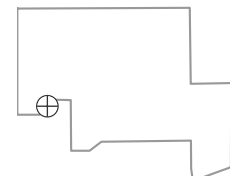
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Stable

Well Location

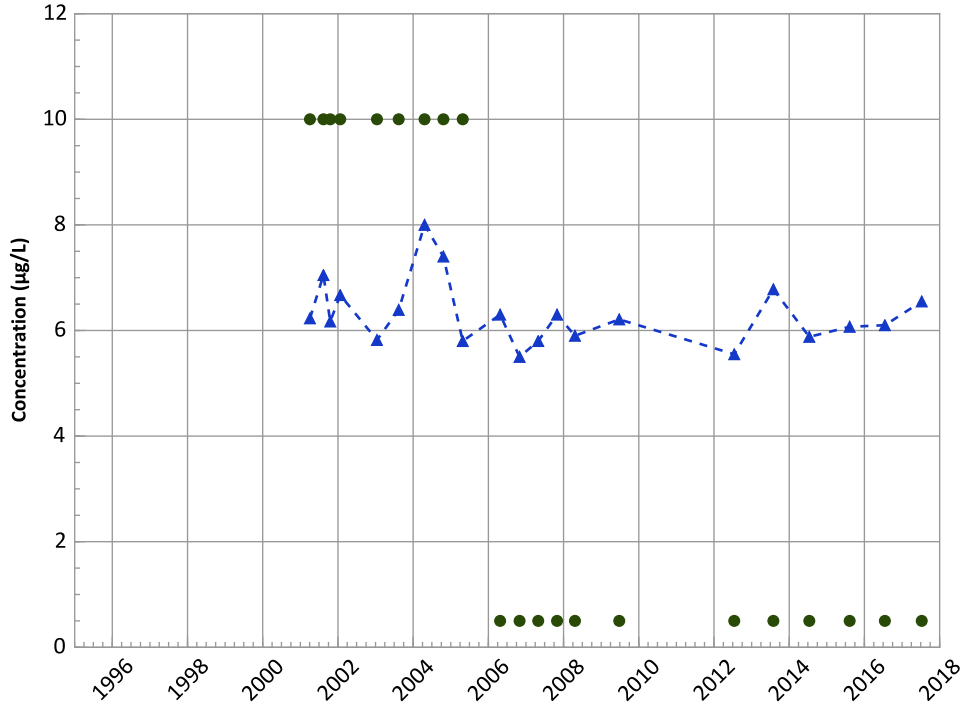


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 04/04/2001 to 07/11/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1058 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

Molybdenum Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
No Trend
All Data
Decreasing

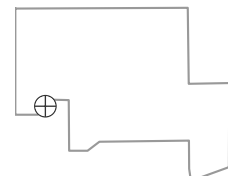
MAROS Linear Regression Method

Data ():
No Trend
All Data
Stable

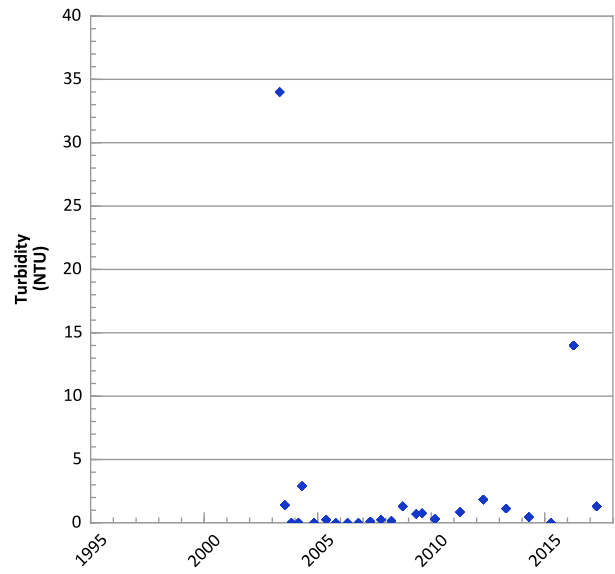
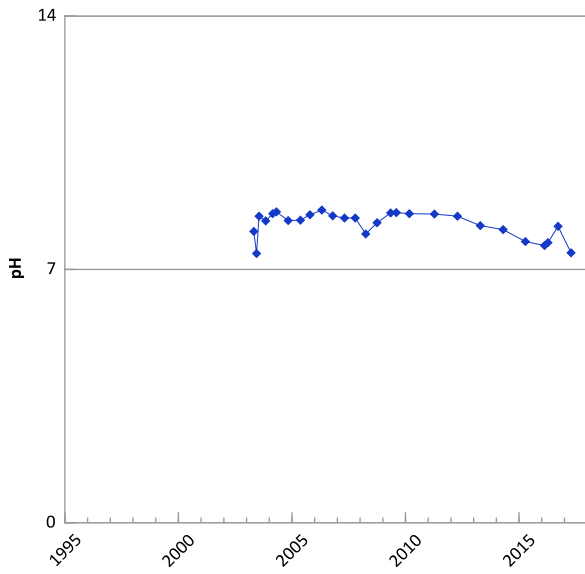
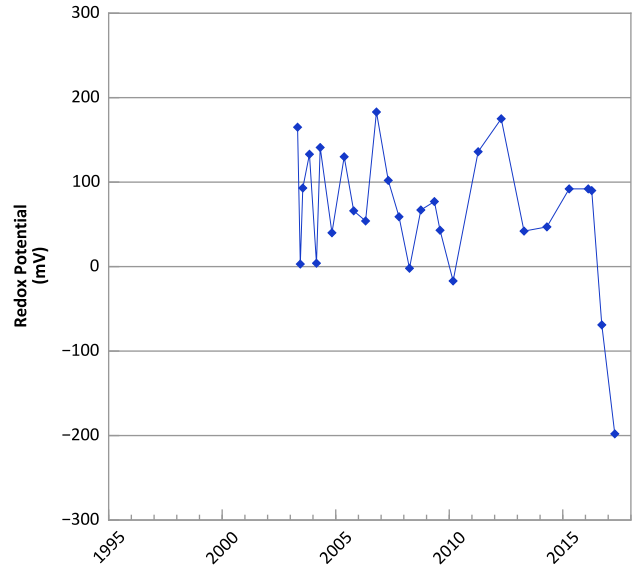
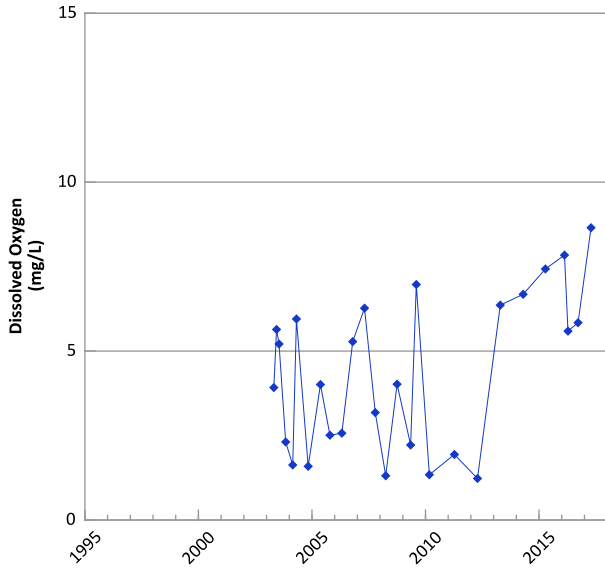
Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 04/04/2001 to 07/11/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

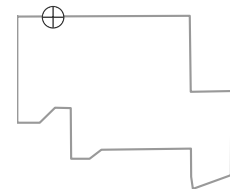


**PTX06-1061 in Ogallala Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



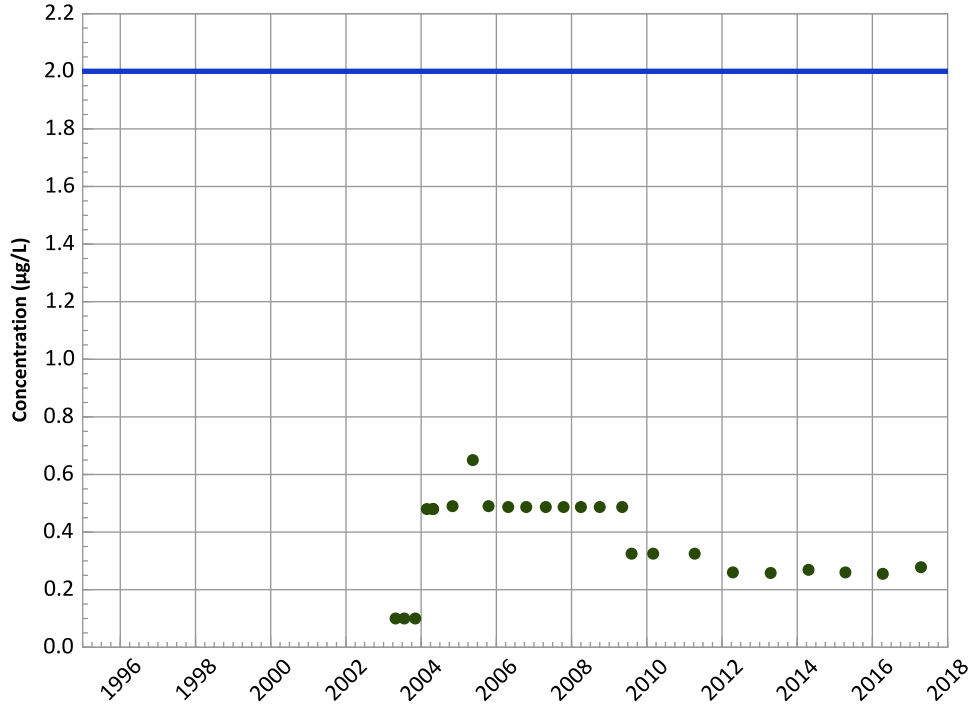
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 04/28/2003 to 04/17/2017
 Analysis Date: 03/21/2018

Well Location



PTX06-1061 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

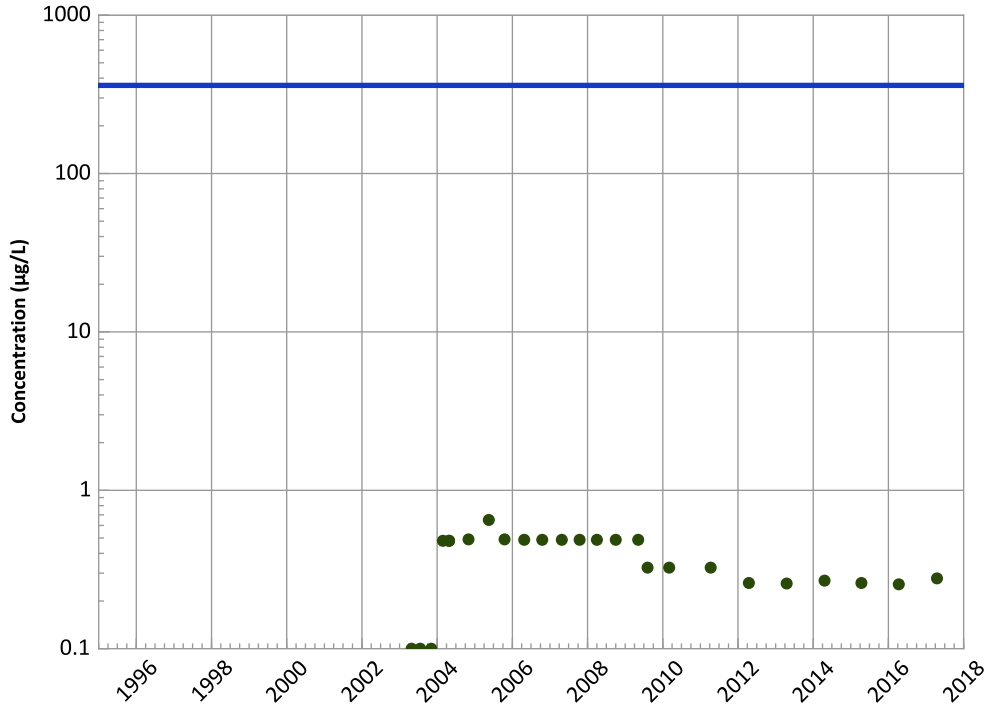
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

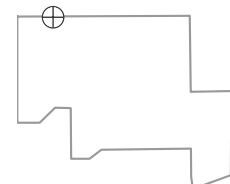
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

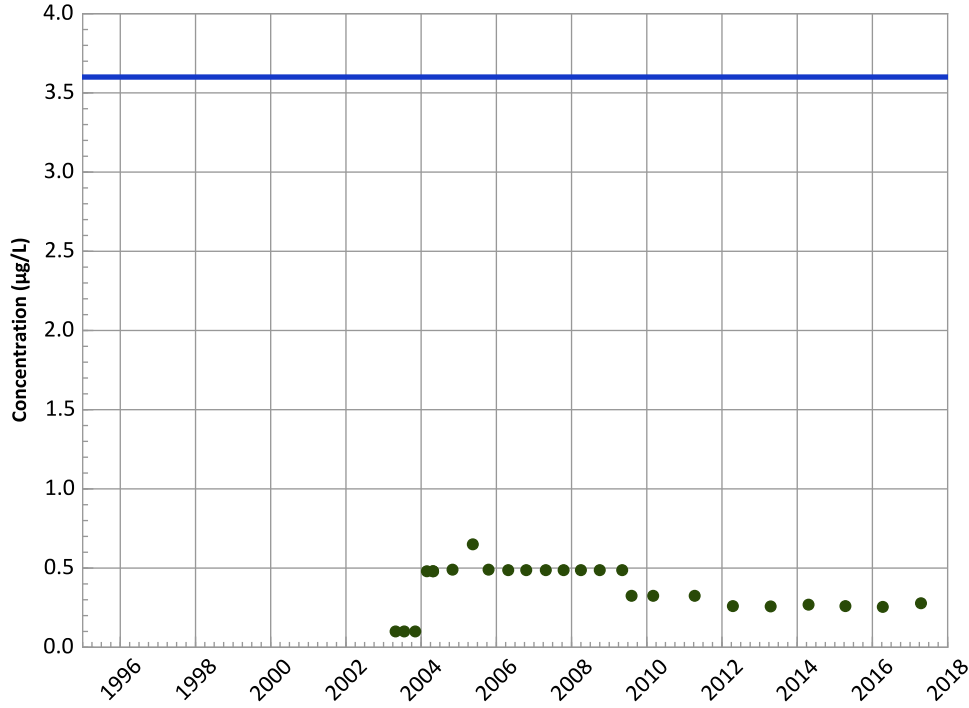


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 04/28/2003 to 04/17/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1061 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

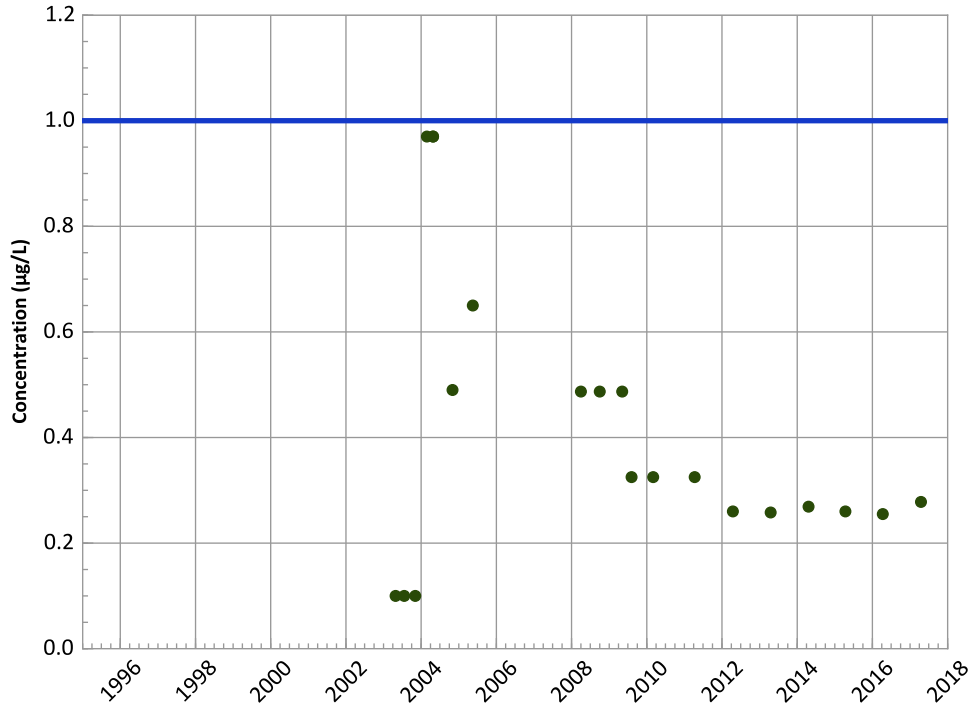
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

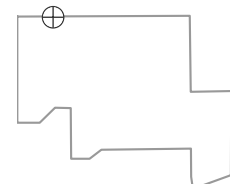
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

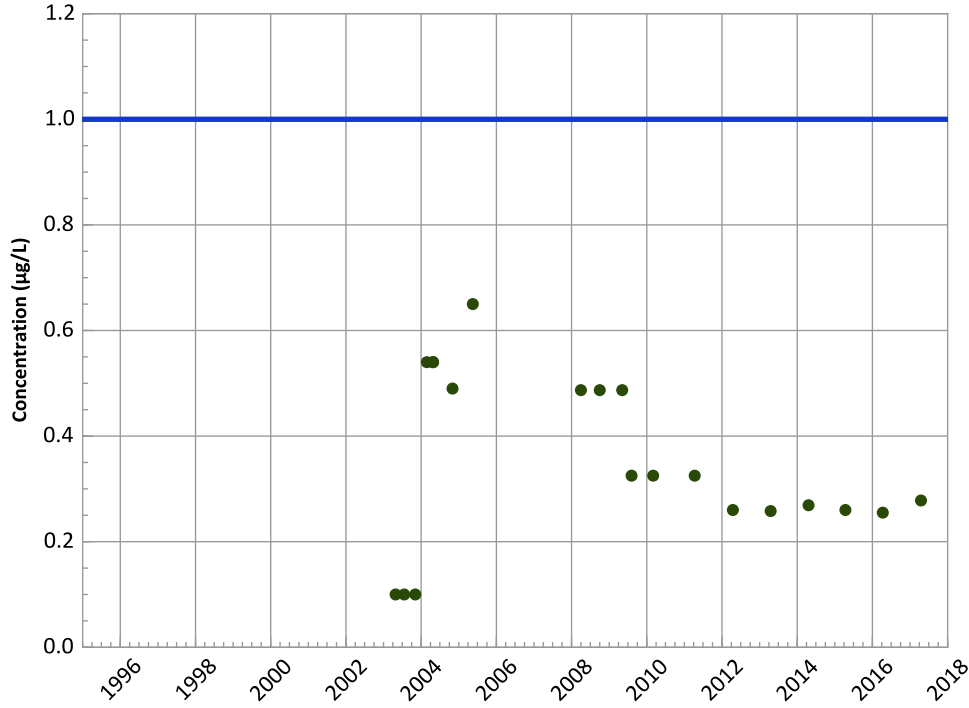


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 04/28/2003 to 04/17/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1061 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

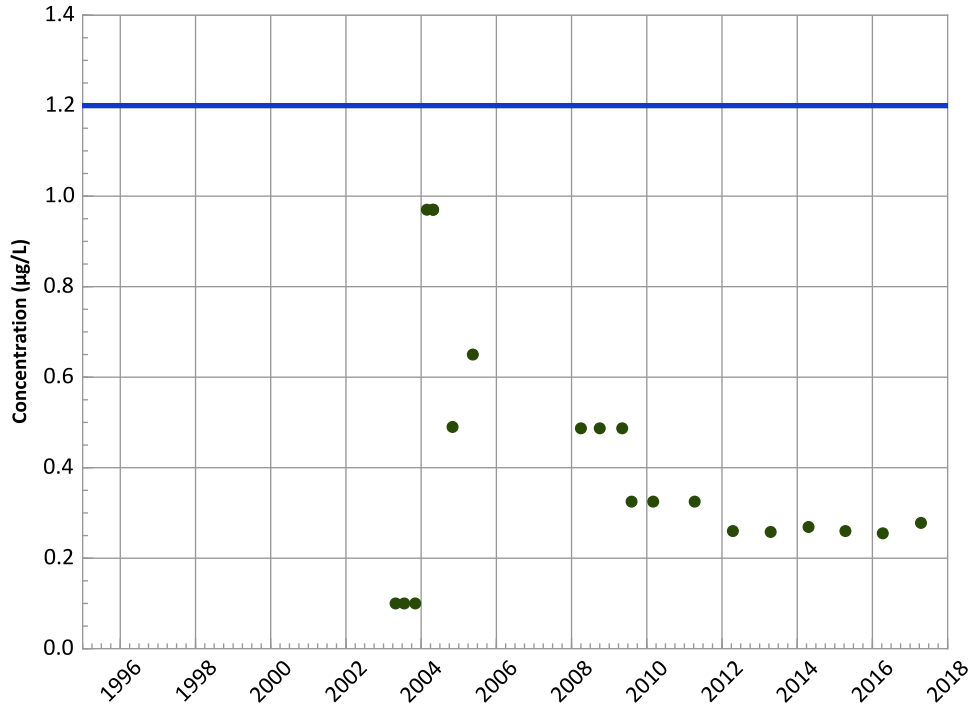
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

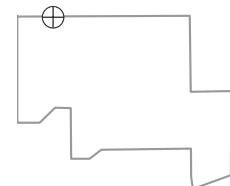
MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 04/28/2003 to 04/17/2017
Analysis Date: 03/21/2018

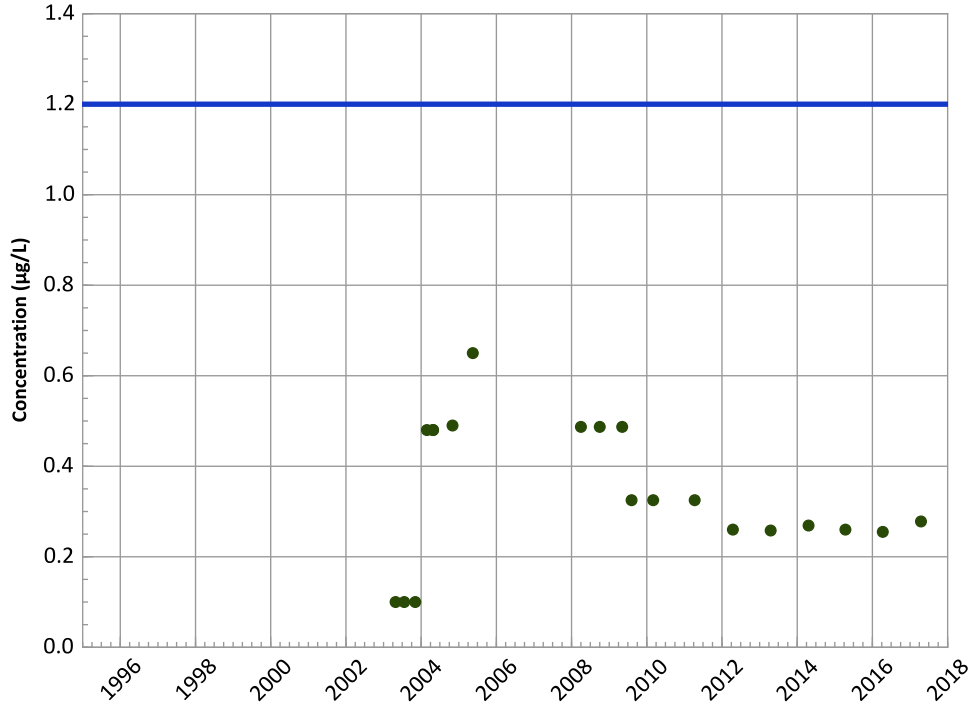
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1061 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

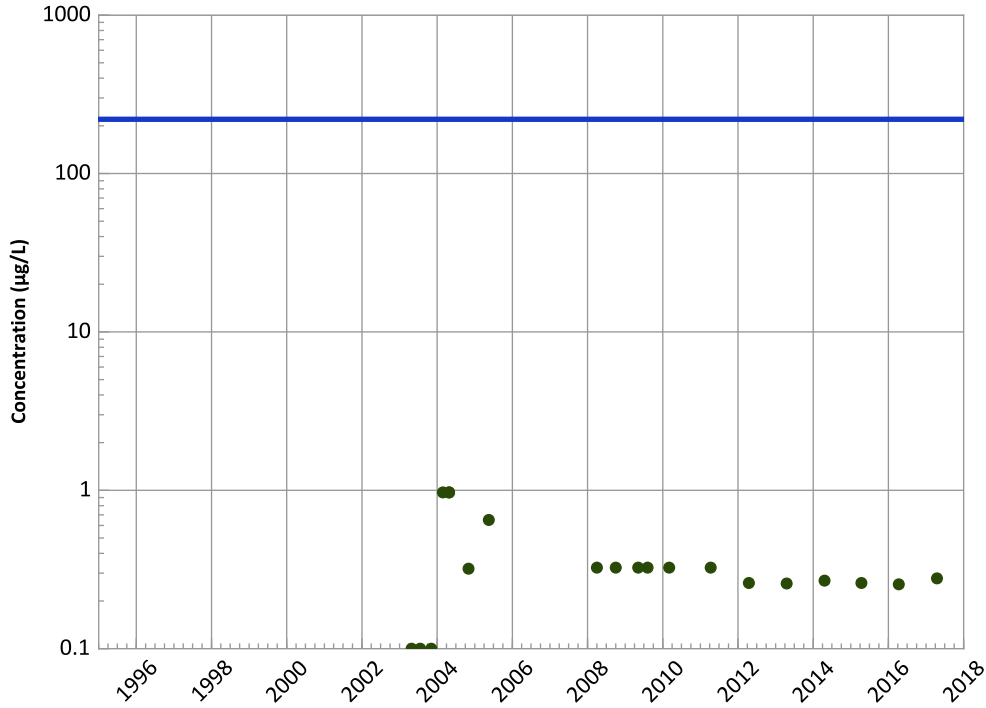
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,3,5-Trinitrobenzene Trend



Concentration Trend

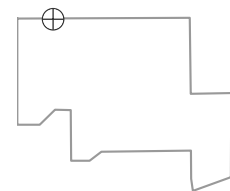
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

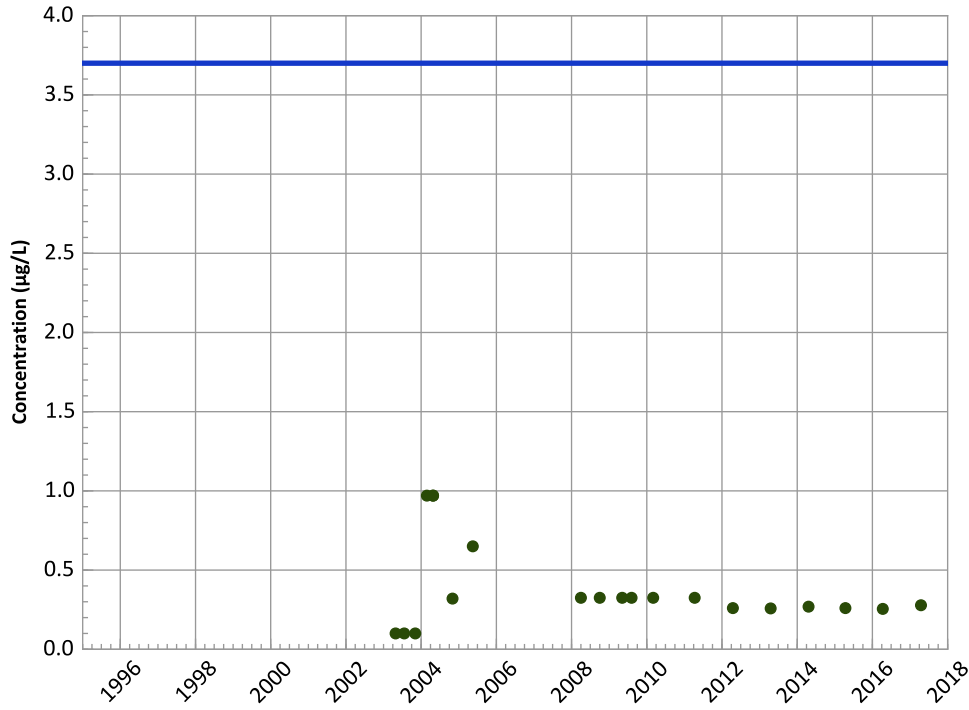


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 04/28/2003 to 04/17/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1061 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

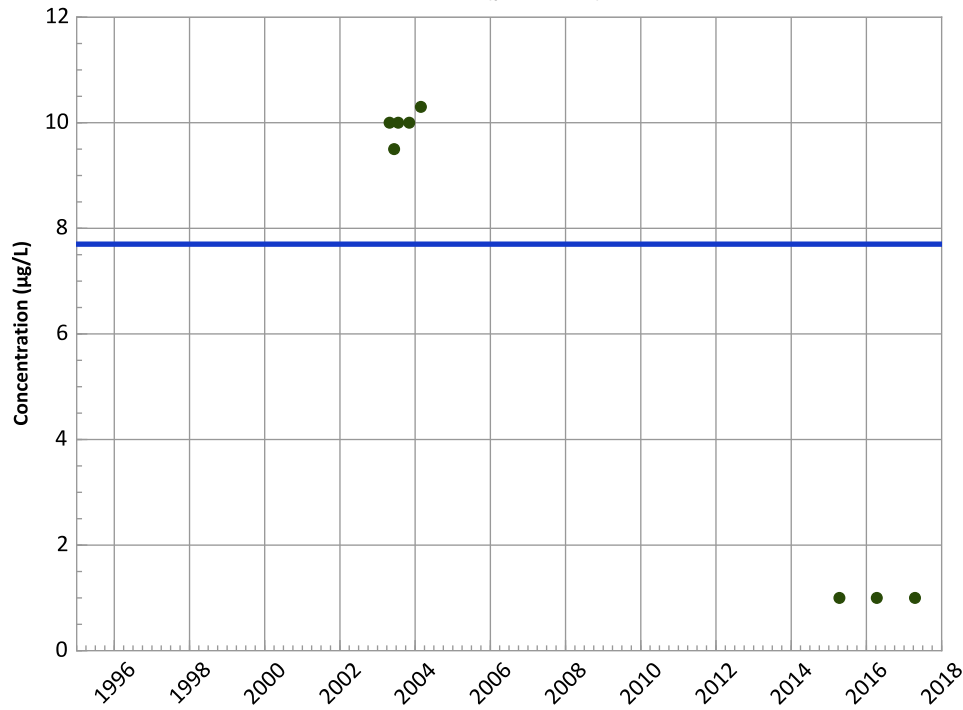
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,4-Dioxane (p-Dioxane) Trend



Concentration Trend

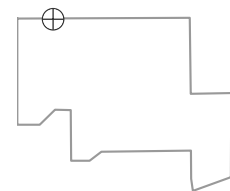
MAROS Mann-Kendall Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
N/A (<4 Samples in Dataset)
All Data
All Non-Detect

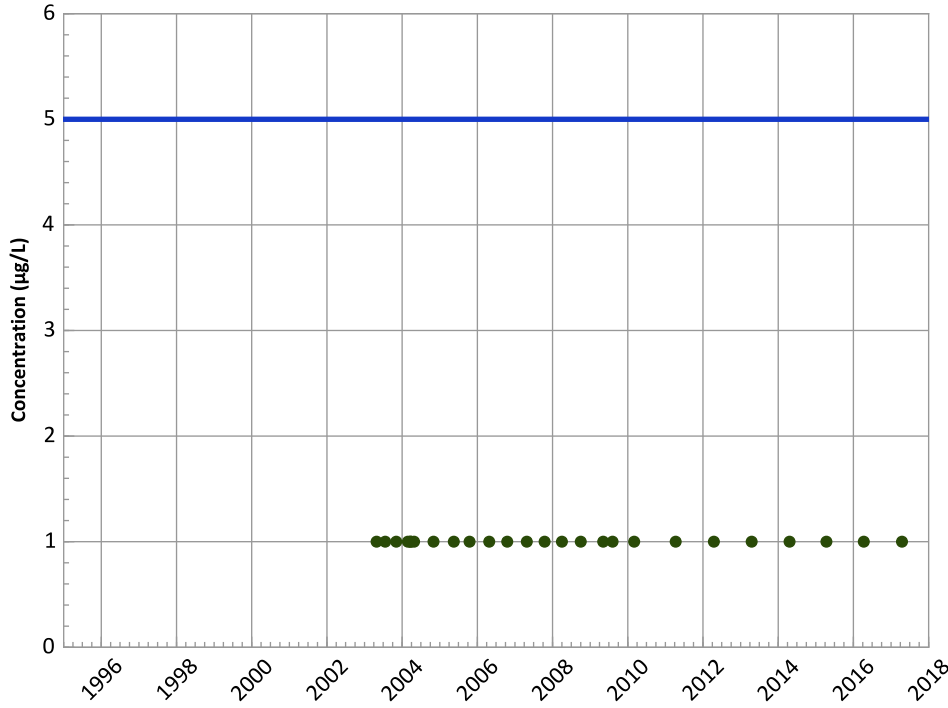
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 04/28/2003 to 04/17/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1061 in Ogallala Aquifer
USDOE/NNSA Pantex Plant
Tetrachloroethylene (PCE) Trend**



Concentration Trend

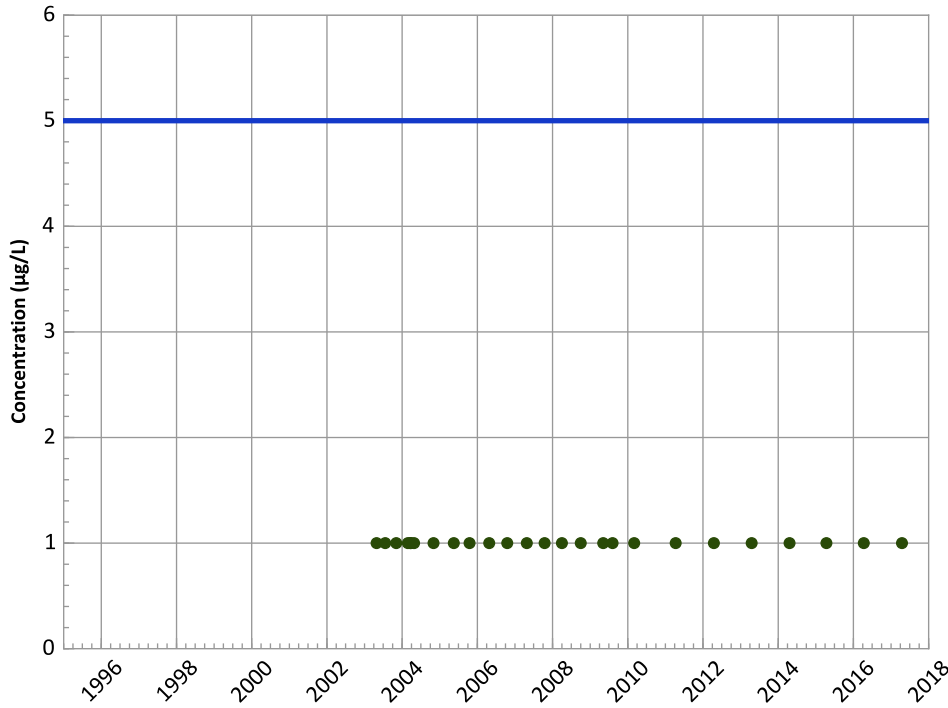
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Trichloroethene Trend



Concentration Trend

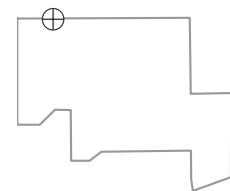
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

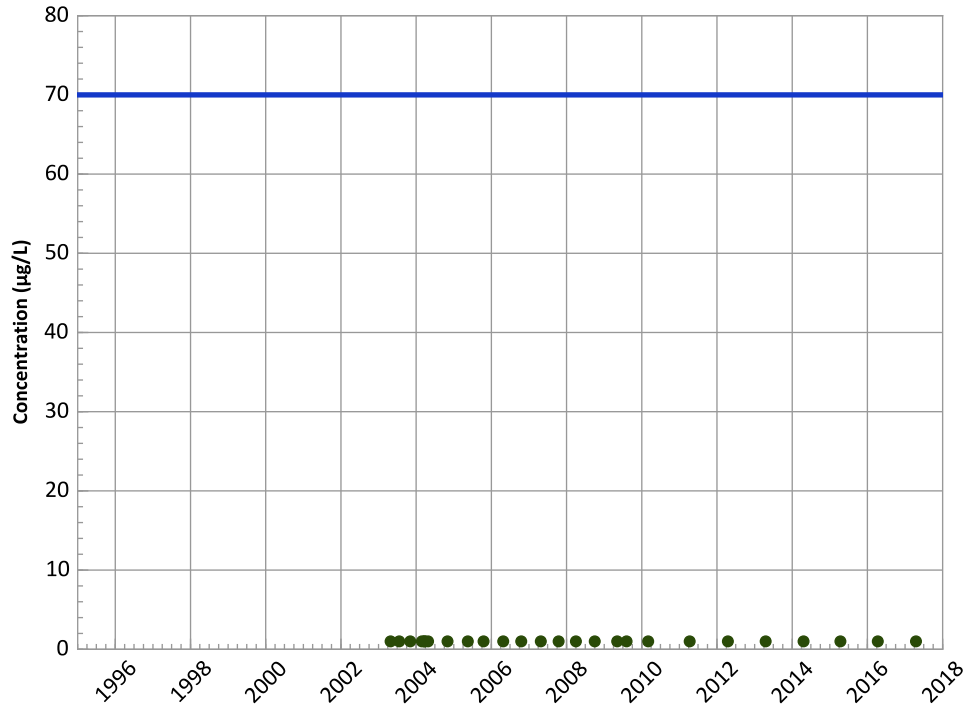
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 04/28/2003 to 04/17/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1061 in Ogallala Aquifer
USDOE/NNSA Pantex Plant**
cis-1,2-Dichloroethene Trend



Concentration Trend

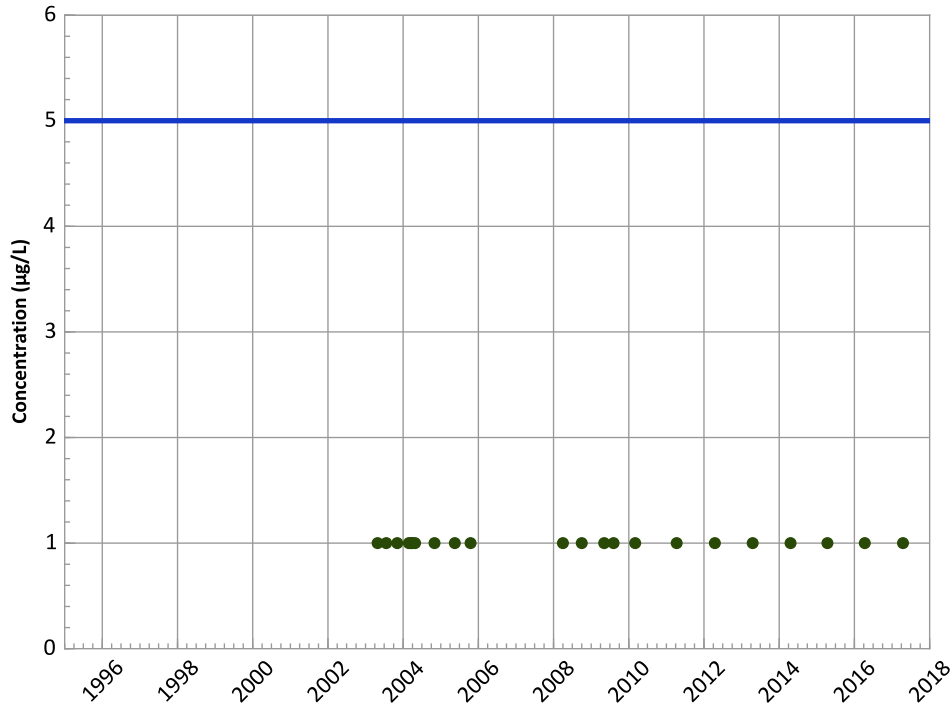
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,2-Dichloroethane Trend



Concentration Trend

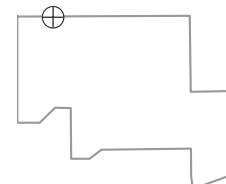
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

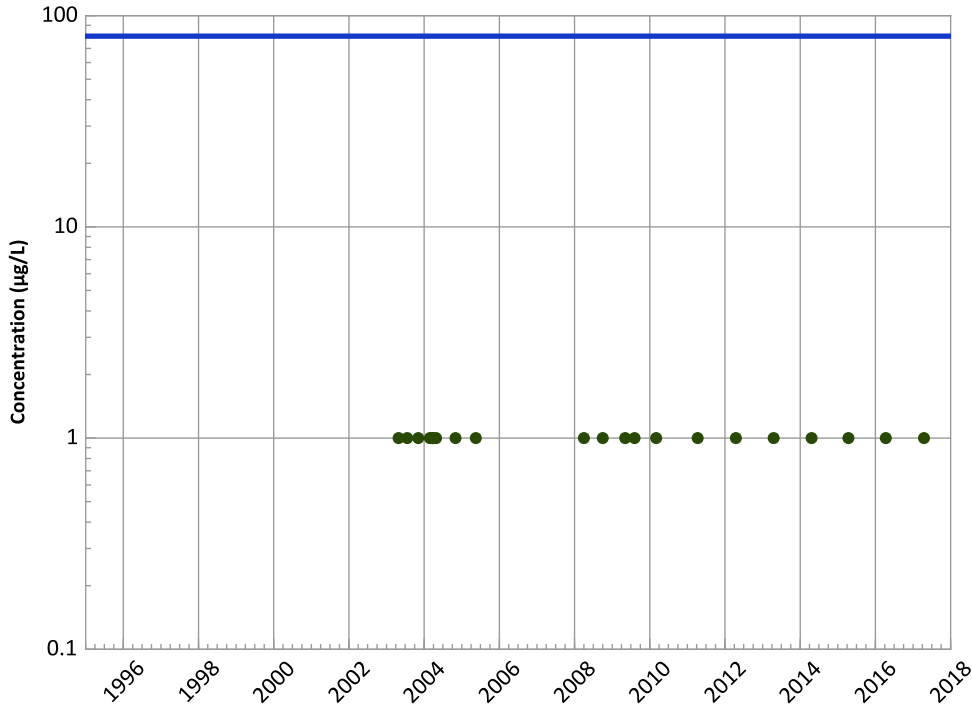
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 04/28/2003 to 04/17/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- Concentration Trend
- Groundwater Protection Standard

**PTX06-1061 in Ogallala Aquifer
USDOE/NNSA Pantex Plant
Chloroform Trend**



Concentration Trend

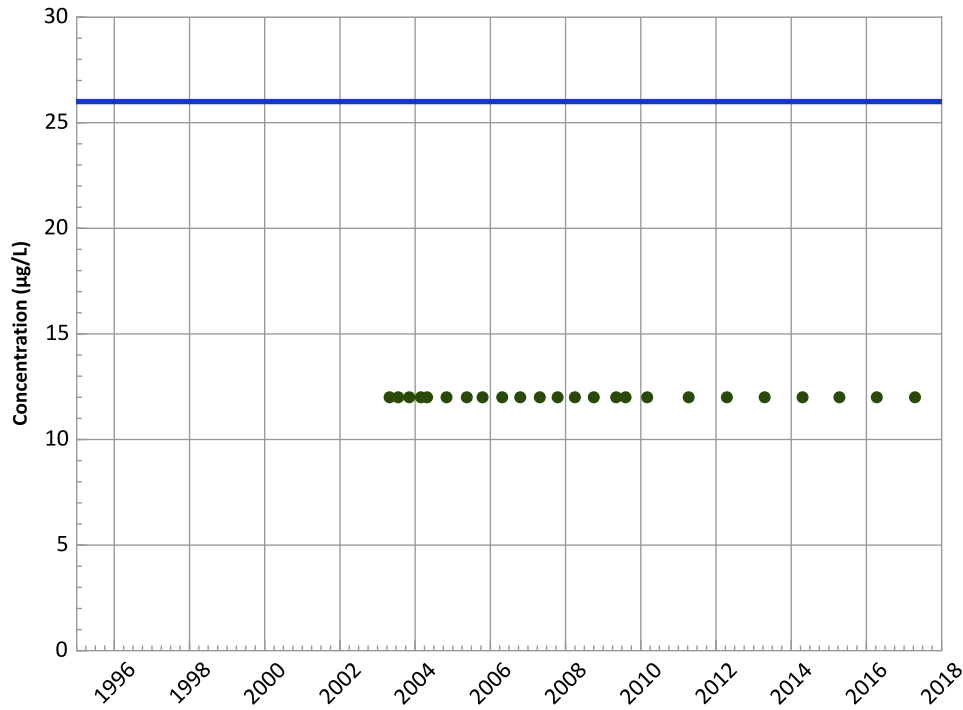
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Perchlorate Trend



Concentration Trend

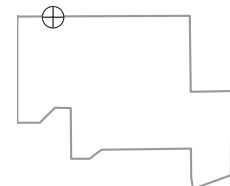
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

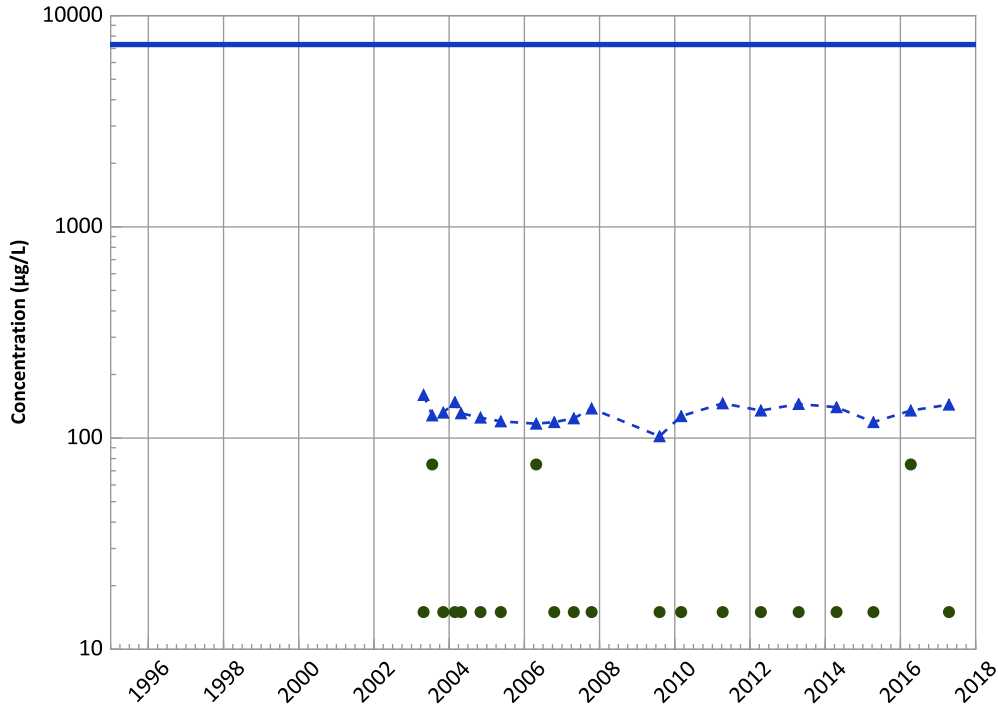


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 04/28/2003 to 04/17/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- Concentration Trend
- Groundwater Protection Standard

PTX06-1061 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

Boron Trend



Concentration Trend

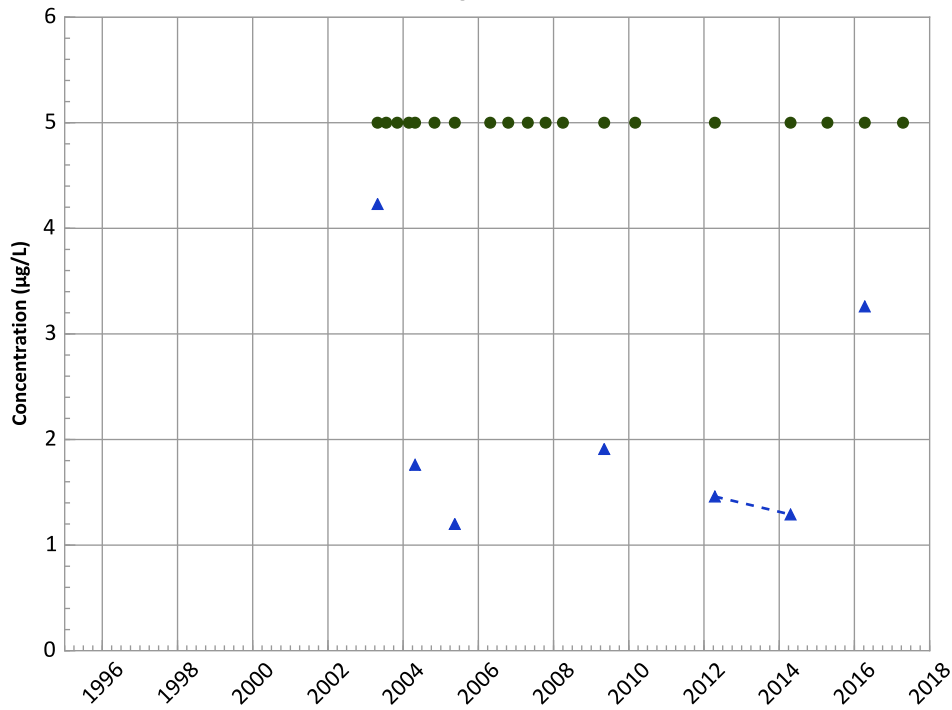
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Stable
All Data
Increasing

Manganese Trend



Concentration Trend

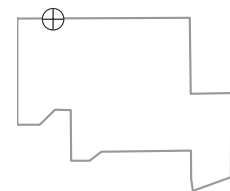
MAROS Mann-Kendall Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
Stable

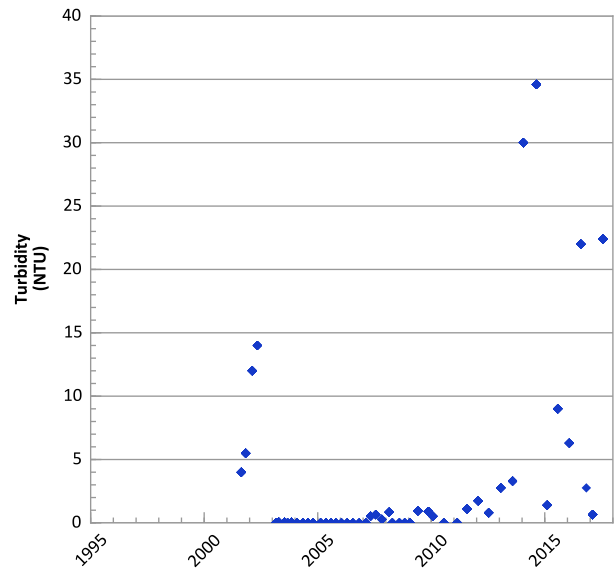
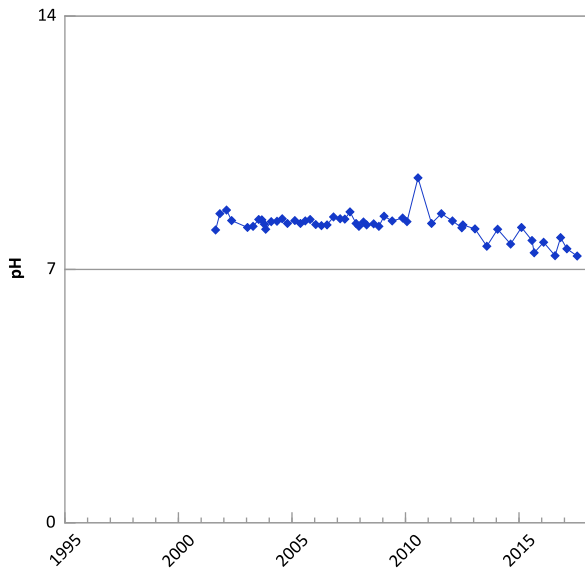
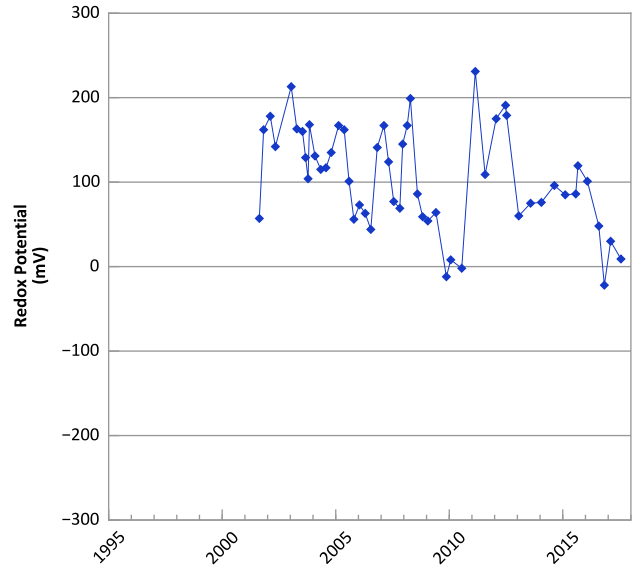
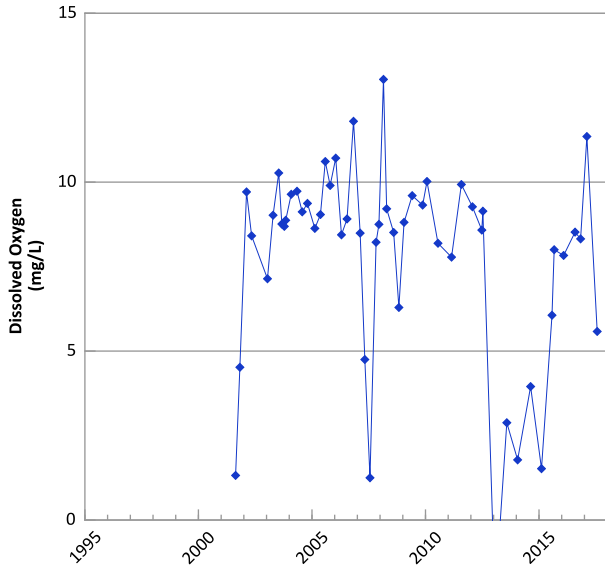
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 04/28/2003 to 04/17/2017
Analysis Date: 03/21/2018

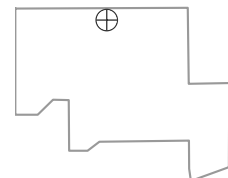
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1062A in Ogallala Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



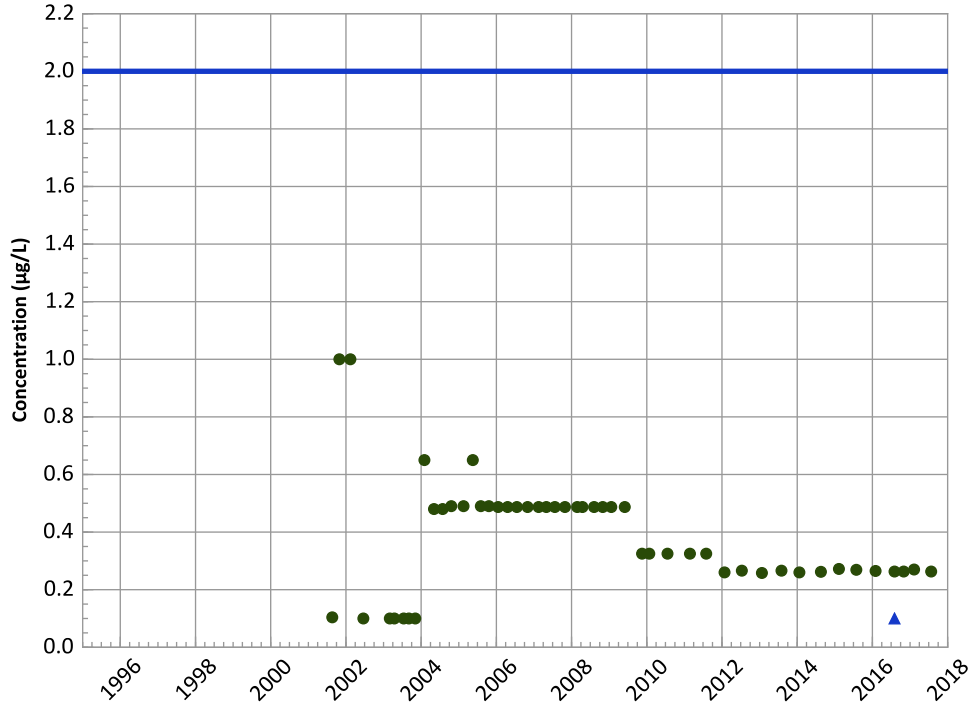
Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/21/2001 to 07/25/2017
Analysis Date: 03/21/2018

Well Location



PTX06-1062A in Ogallala Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

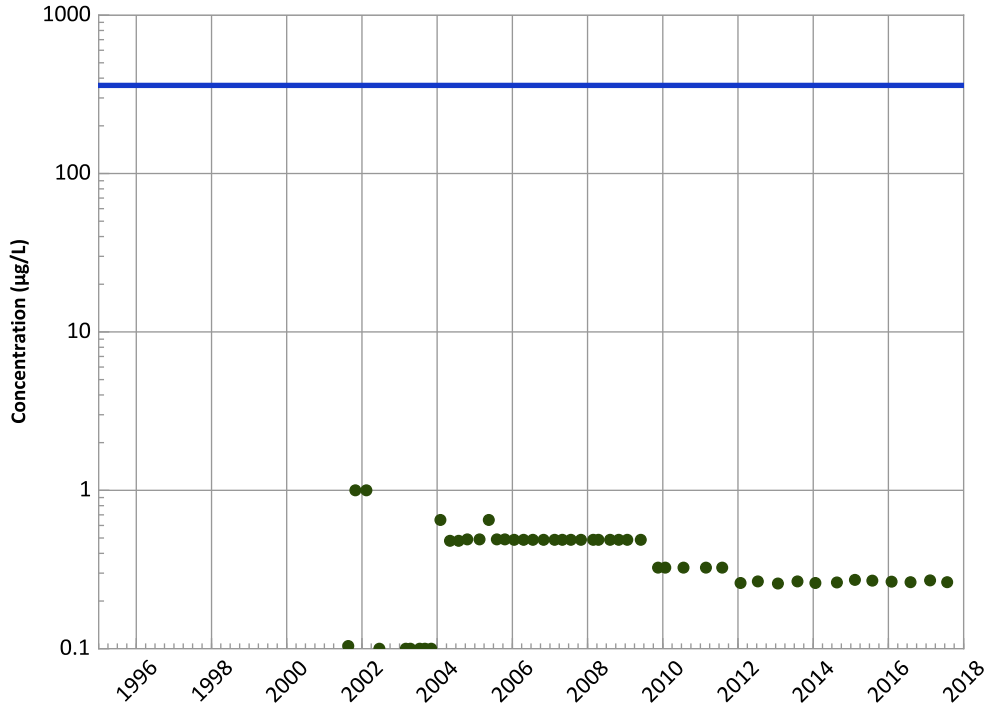
Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

All Non-Detect

All Data

All Non-Detect

MAROS Linear Regression Method

Data ():

All Non-Detect

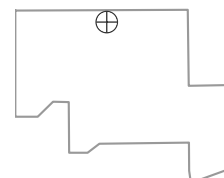
All Data

All Non-Detect

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/21/2001 to 07/25/2017
Analysis Date: 03/21/2018

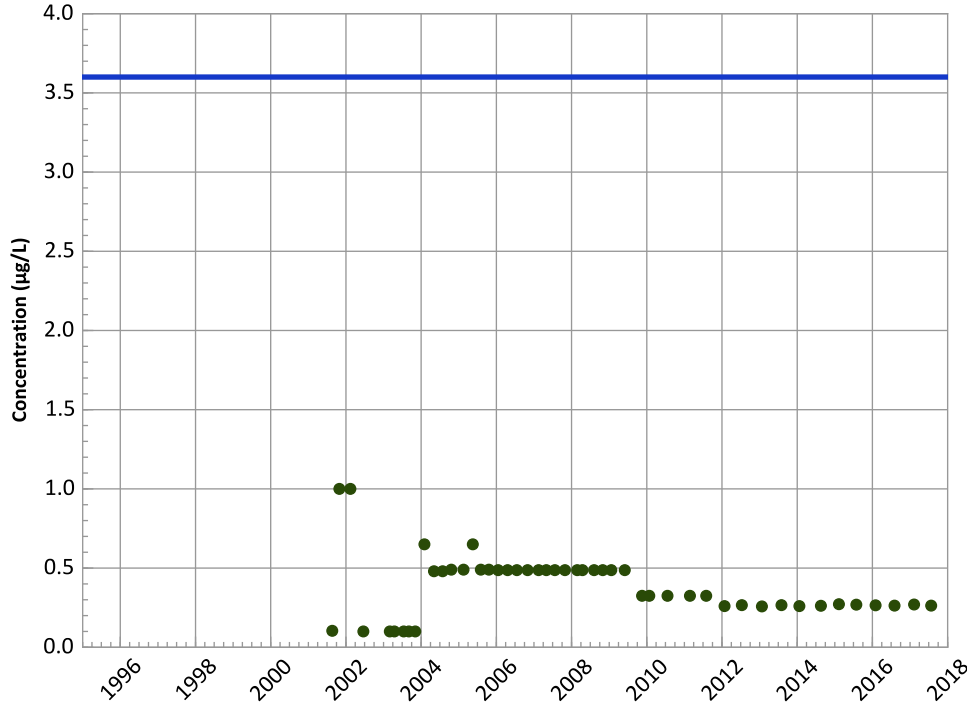
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1062A in Ogallala Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

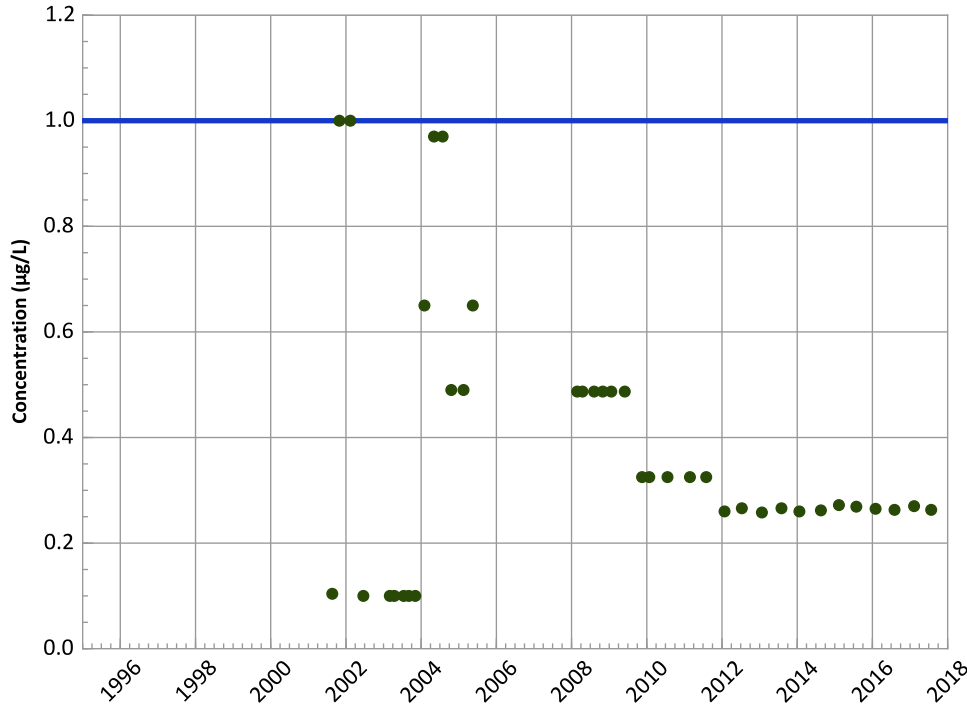
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

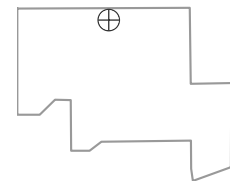
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

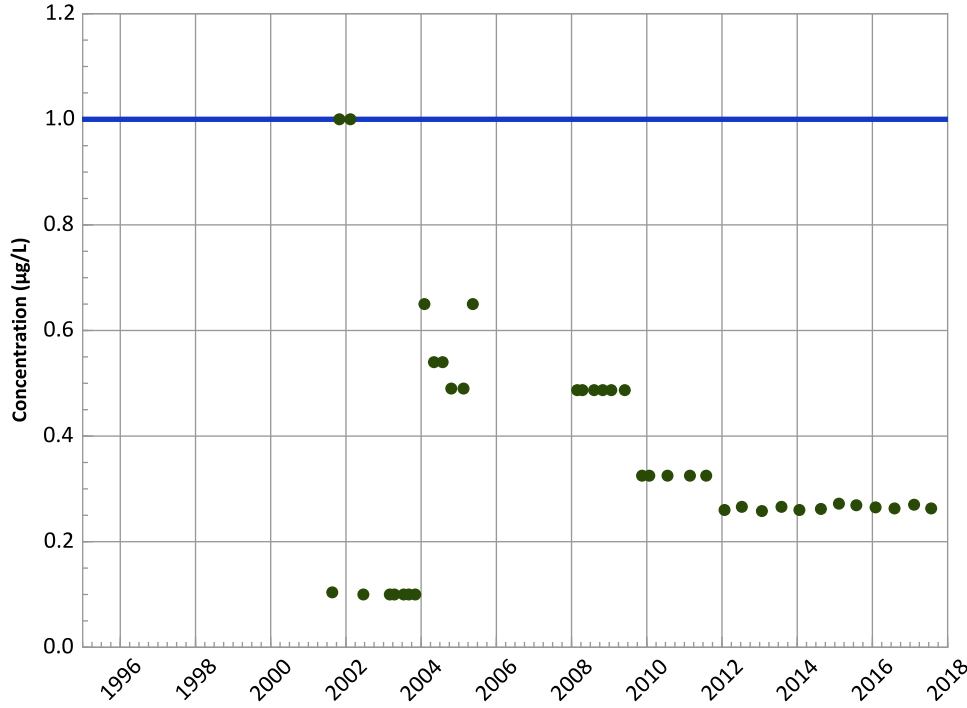


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/21/2001 to 07/25/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1062A in Ogallala Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

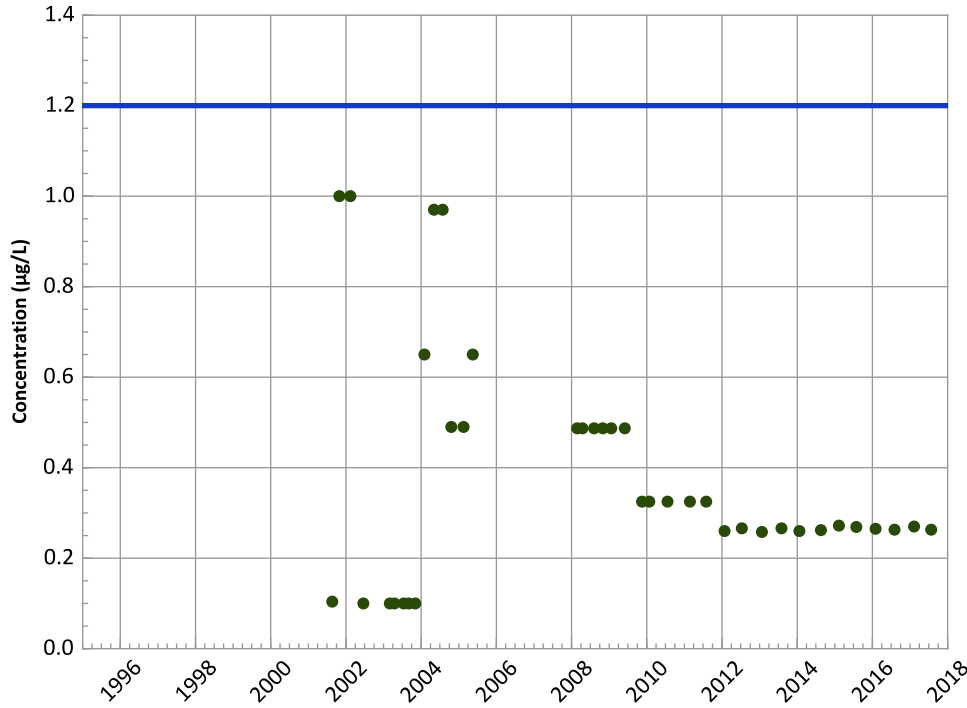
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

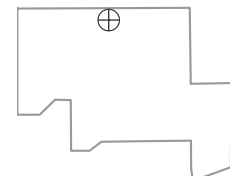
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

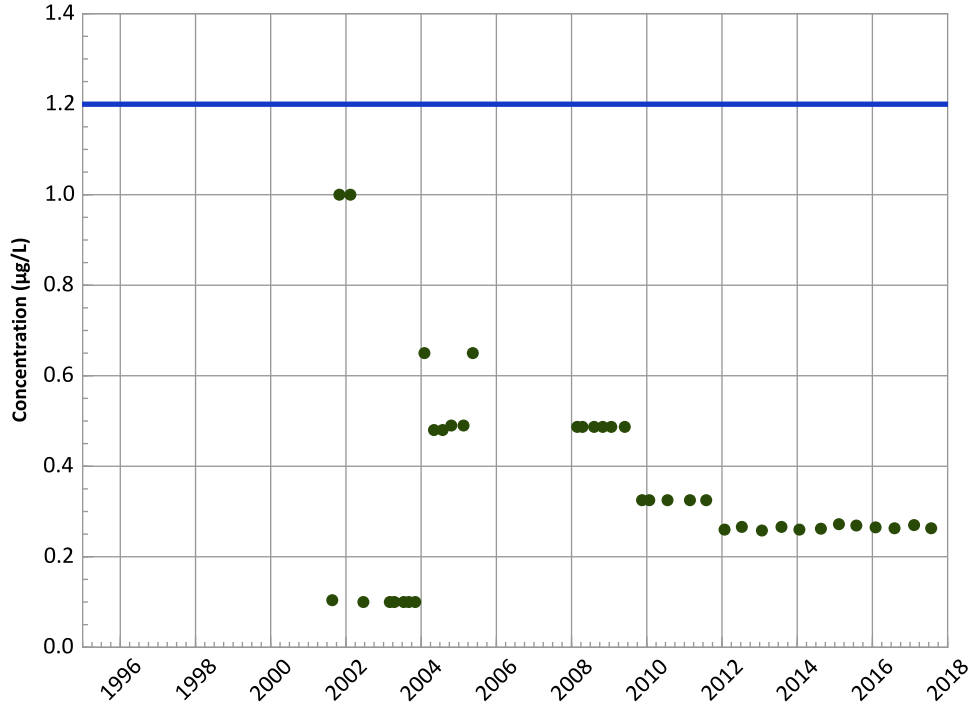


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/21/2001 to 07/25/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1062A in Ogallala Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

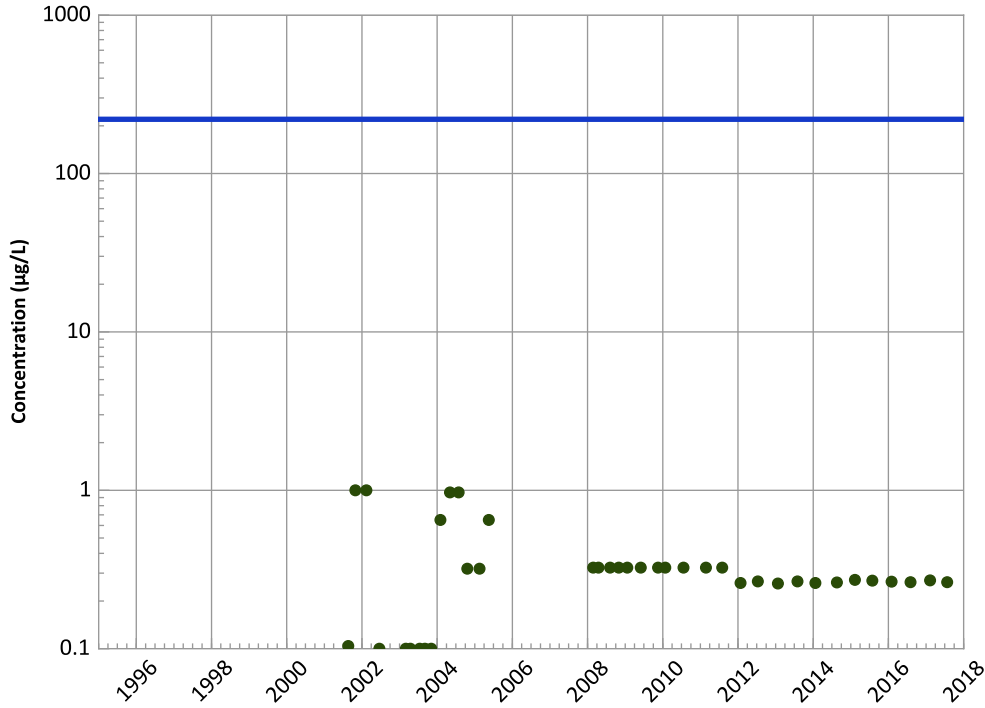
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,3,5-Trinitrobenzene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

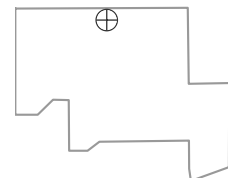
MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/21/2001 to 07/25/2017
Analysis Date: 03/21/2018

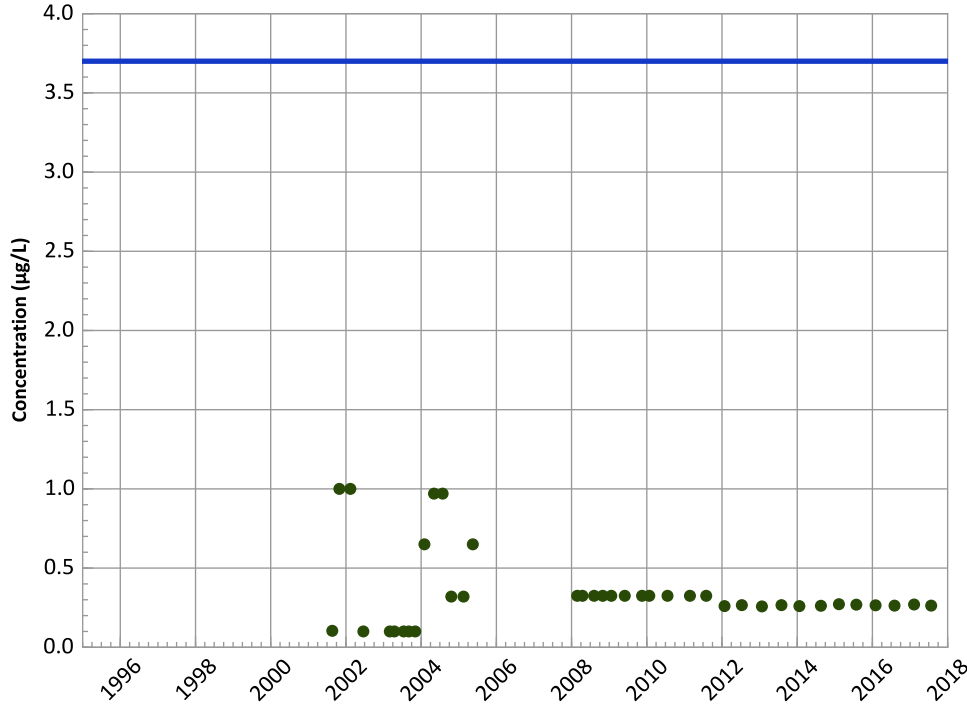
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1062A in Ogallala Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

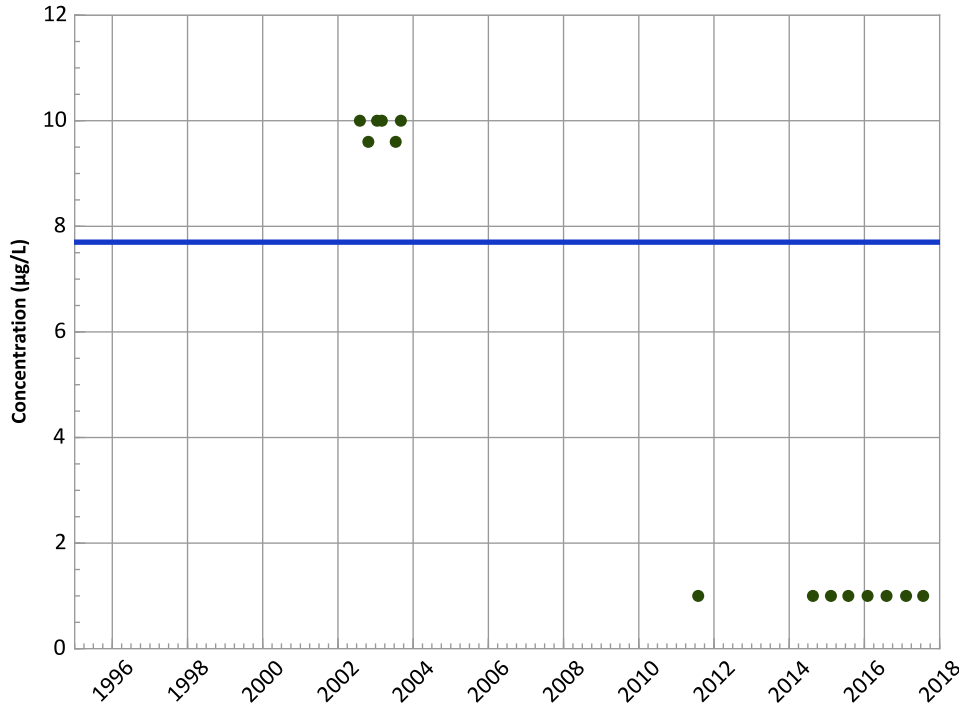
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,4-Dioxane (p-Dioxane) Trend



Concentration Trend

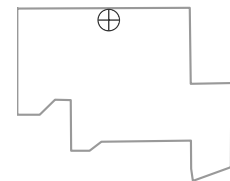
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

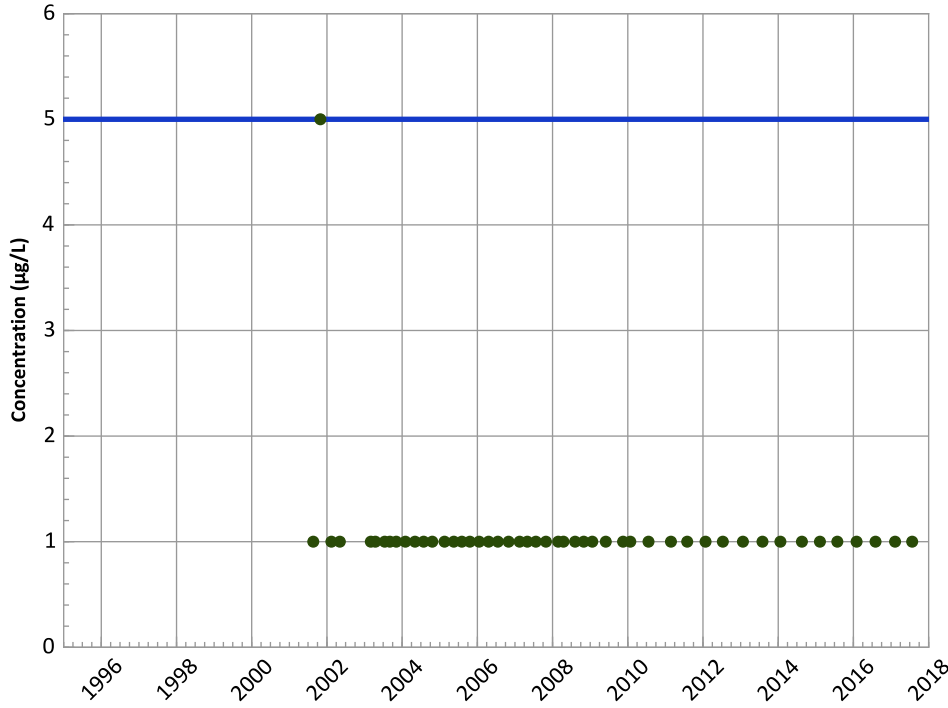
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/21/2001 to 07/25/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1062A in Ogallala Aquifer
USDOE/NNSA Pantex Plant
Tetrachloroethylene (PCE) Trend**



Concentration Trend

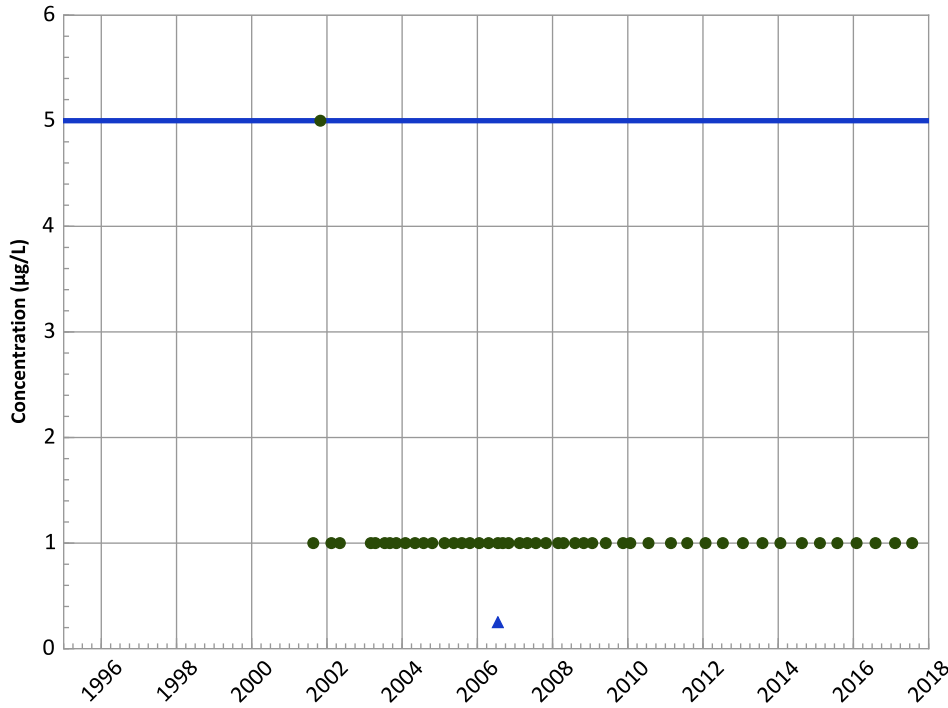
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Trichloroethene Trend



Concentration Trend

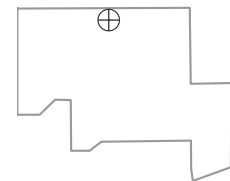
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

Well Location

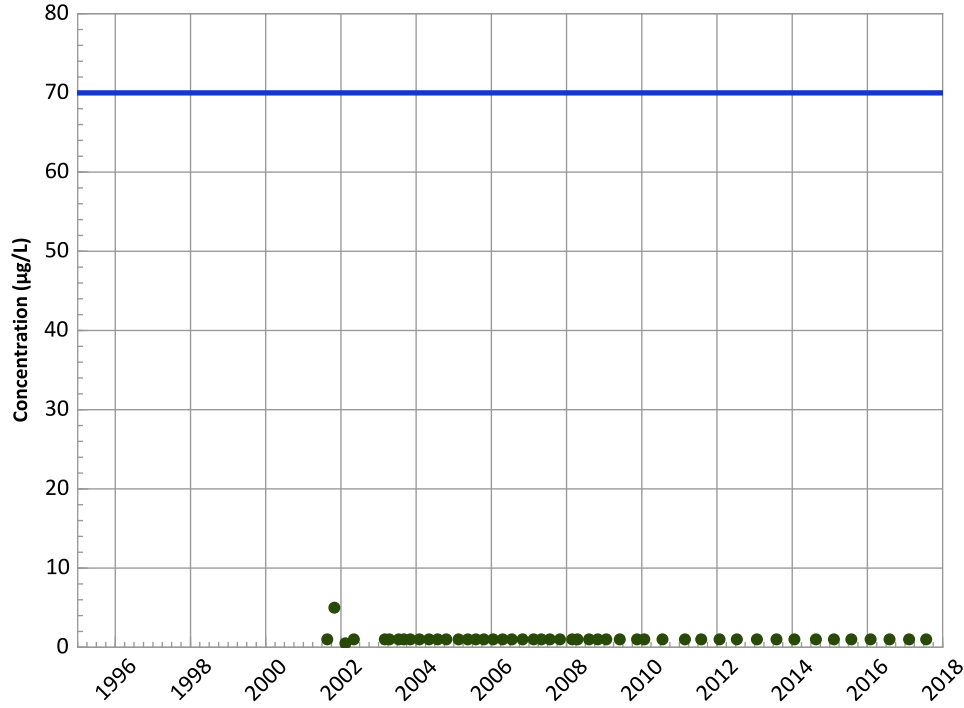


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/21/2001 to 07/25/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1062A in Ogallala Aquifer
USDOE/NNSA Pantex Plant

cis-1,2-Dichloroethene Trend



Concentration Trend

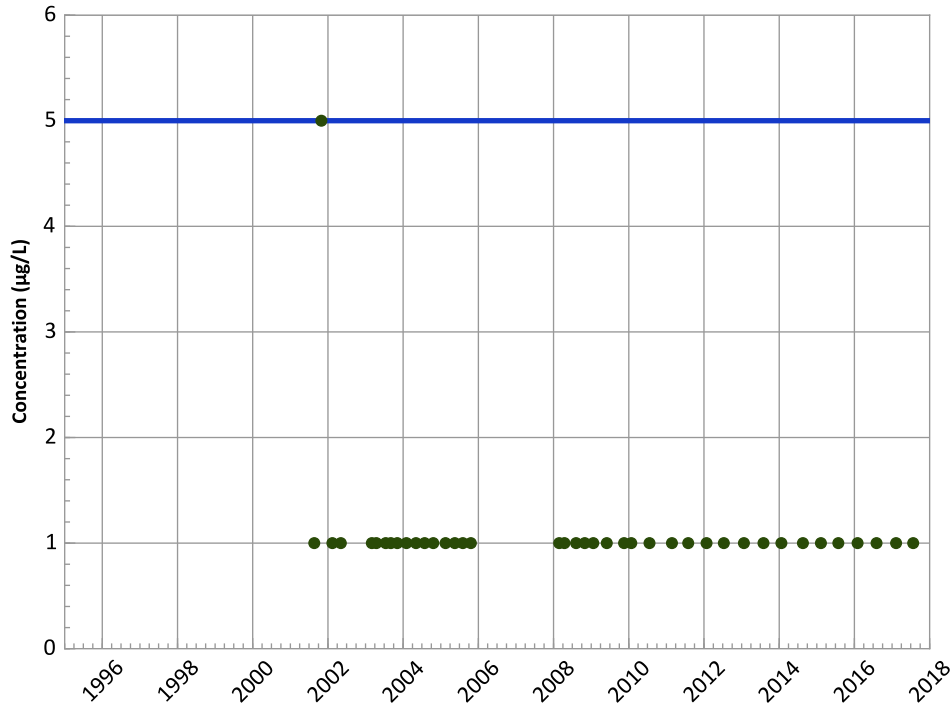
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,2-Dichloroethane Trend



Concentration Trend

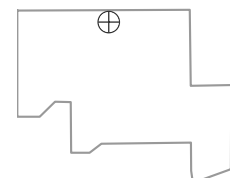
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

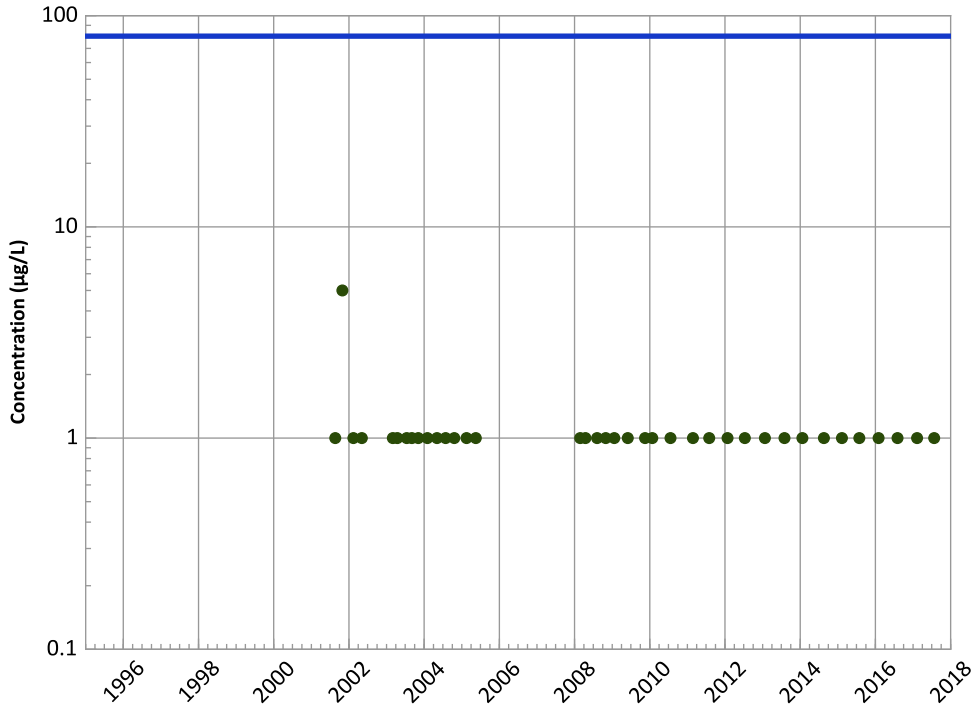
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/21/2001 to 07/25/2017
Analysis Date: 03/21/2018

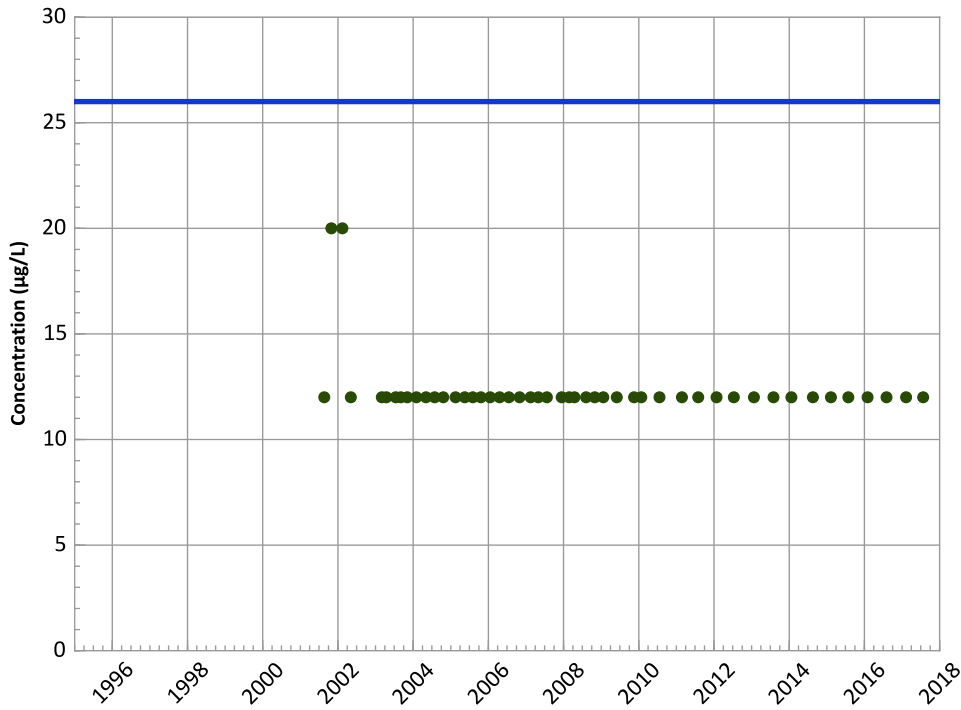
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1062A in Ogallala Aquifer
USDOE/NNSA Pantex Plant
Chloroform Trend**



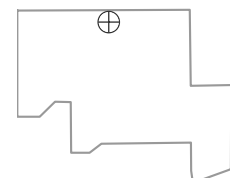
Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect
MAROS Linear Regression Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect

Perchlorate Trend



Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect
MAROS Linear Regression Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect

Well Location

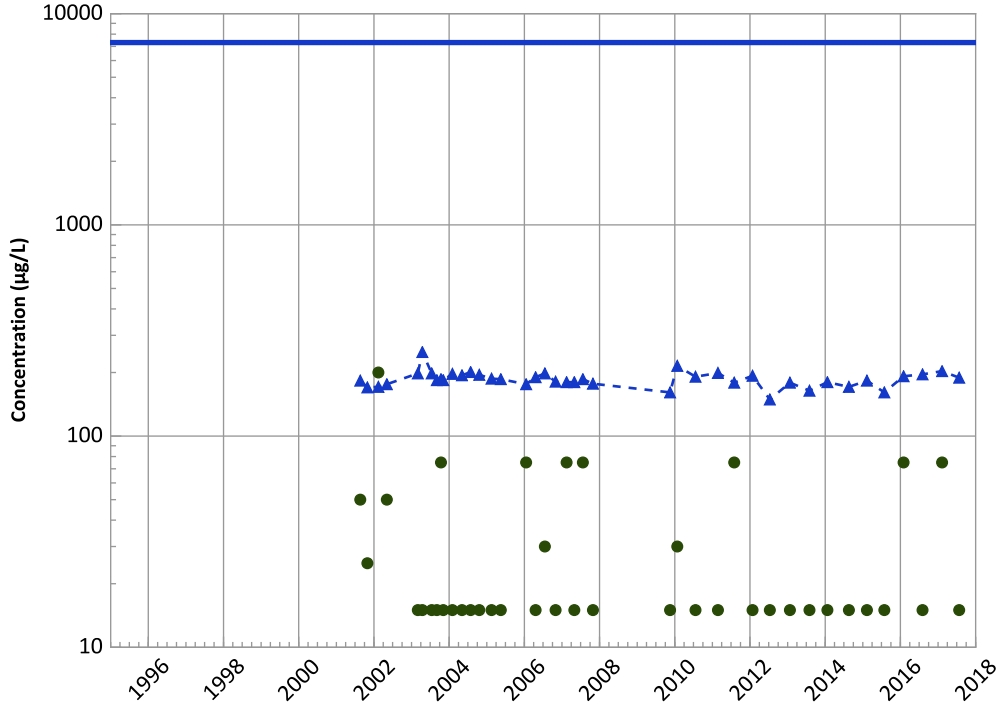


Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 08/21/2001 to 07/25/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1062A in Ogallala Aquifer
USDOE/NNSA Pantex Plant

Boron Trend



Concentration Trend

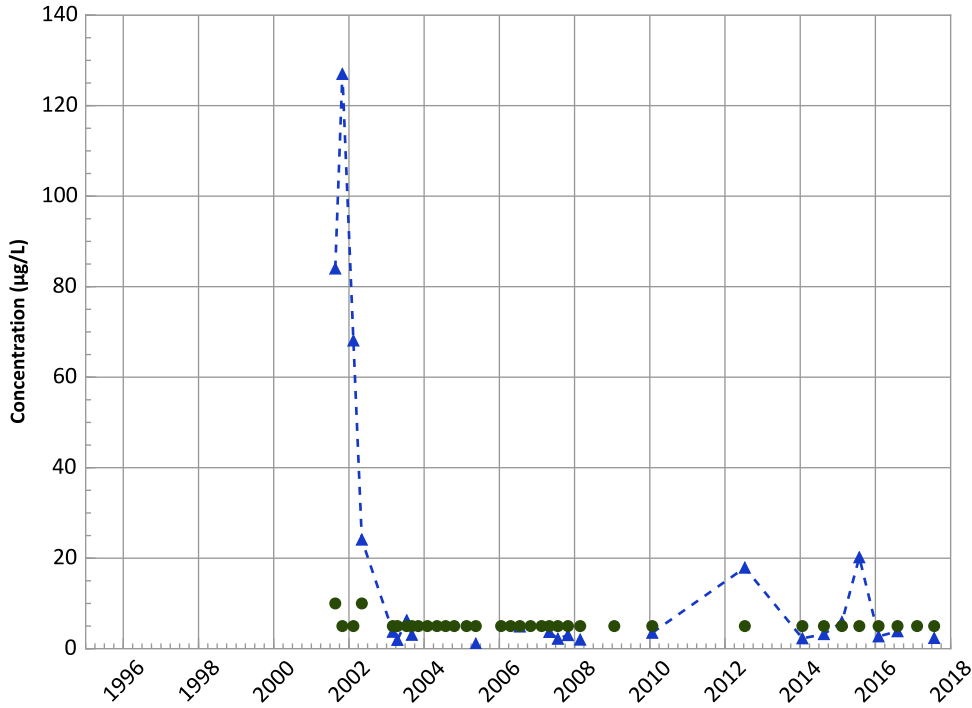
MAROS Mann-Kendall Method

Data ():
No Trend
All Data
Decreasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
Decreasing

Manganese Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
No Trend
All Data
Decreasing

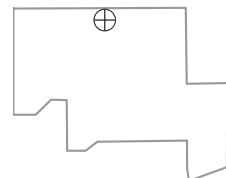
MAROS Linear Regression Method

Data ():
Stable
All Data
Decreasing

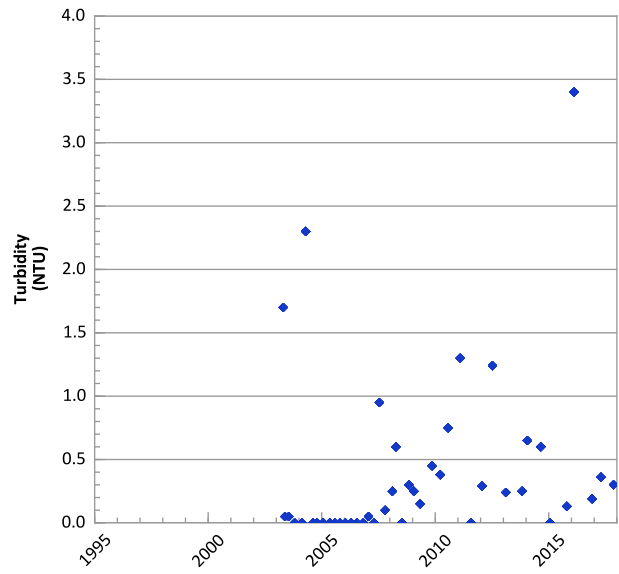
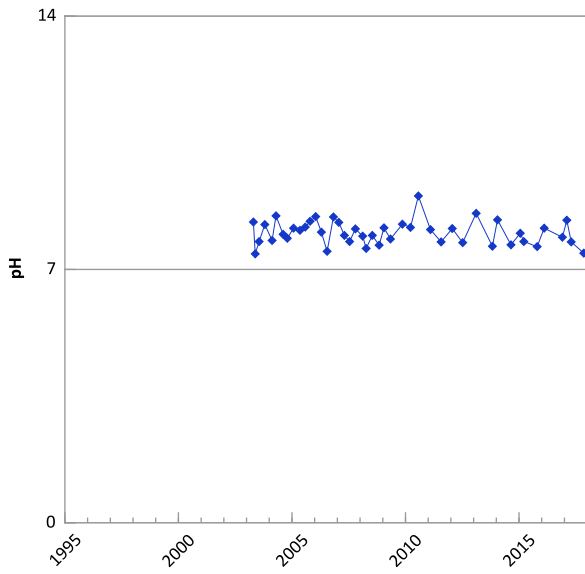
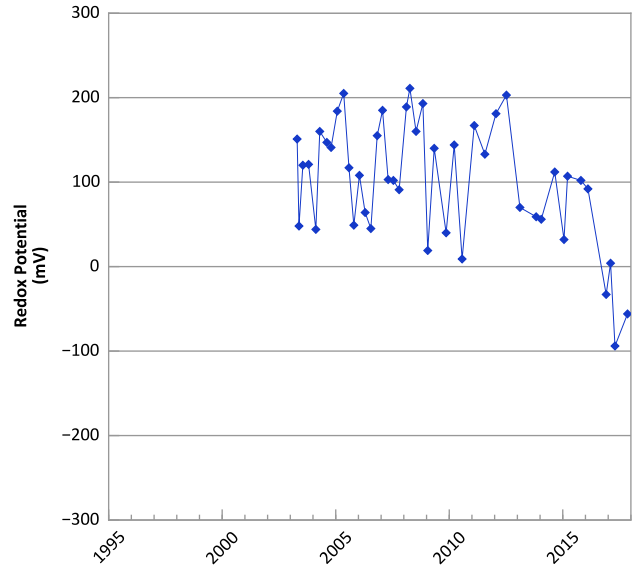
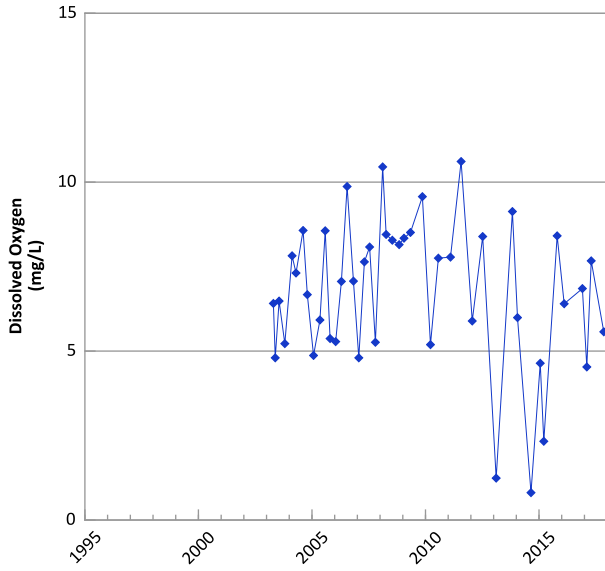
Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/21/2001 to 07/25/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

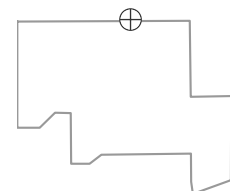


**PTX06-1064 in Ogallala Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



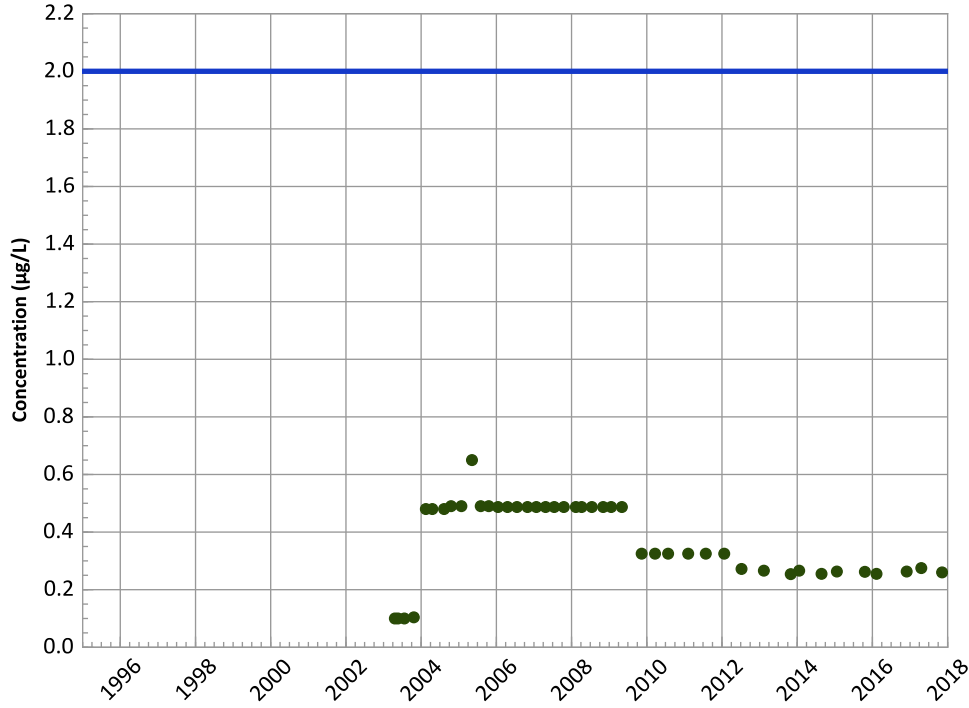
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 04/21/2003 to 11/08/2017
 Analysis Date: 03/21/2018

Well Location



PTX06-1064 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

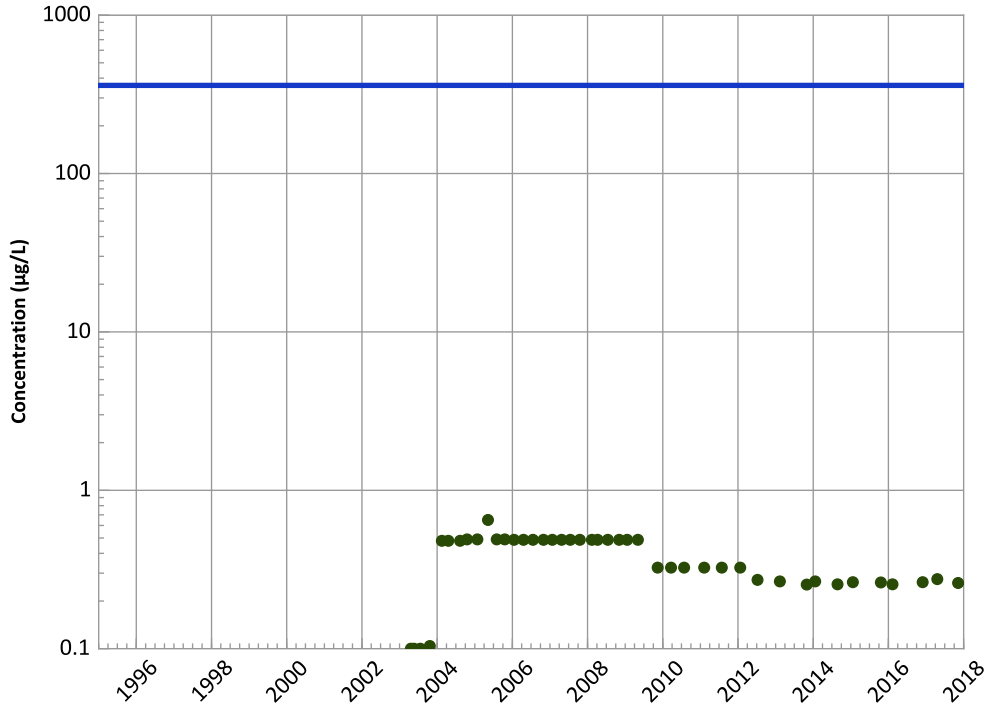
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

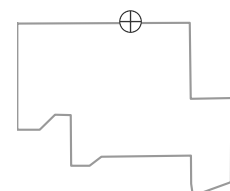
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

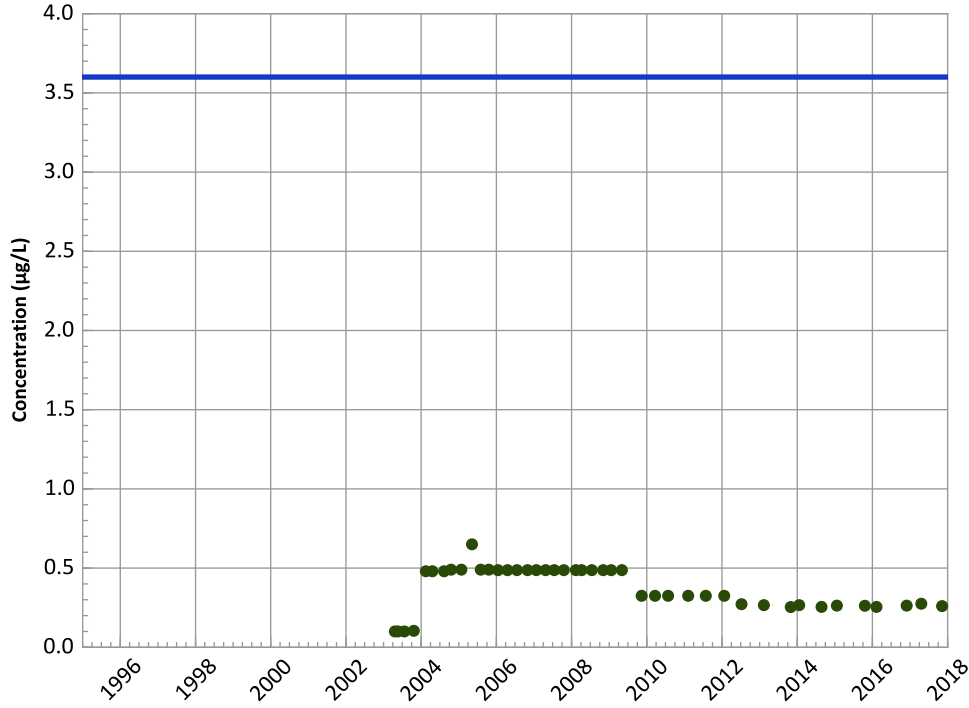


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 04/21/2003 to 11/08/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1064 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

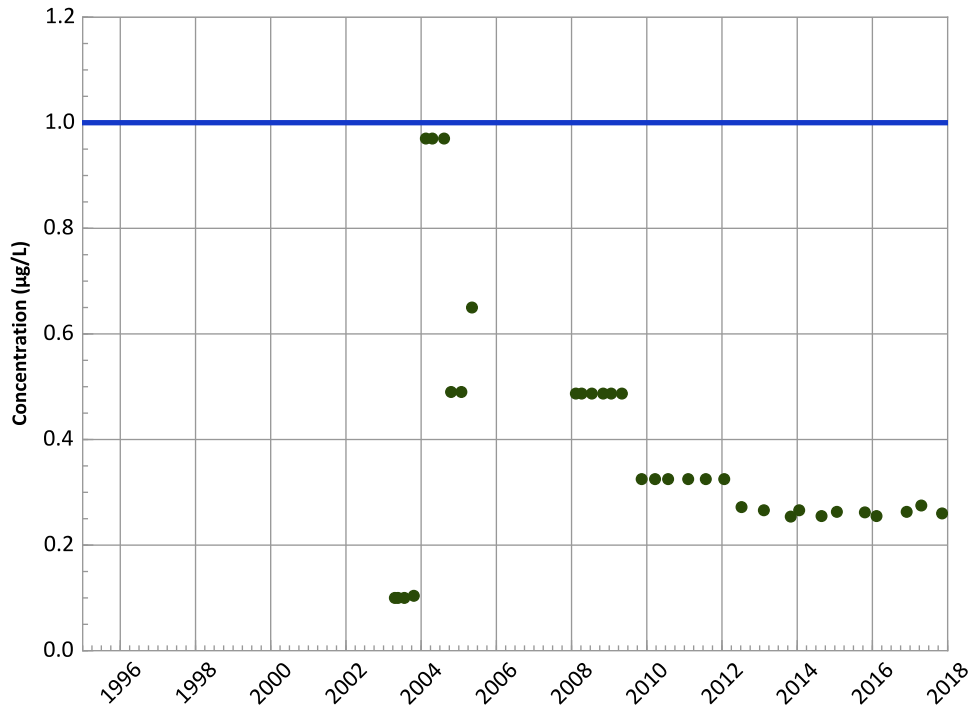
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

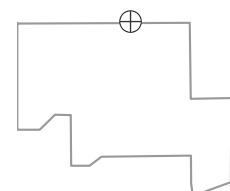
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

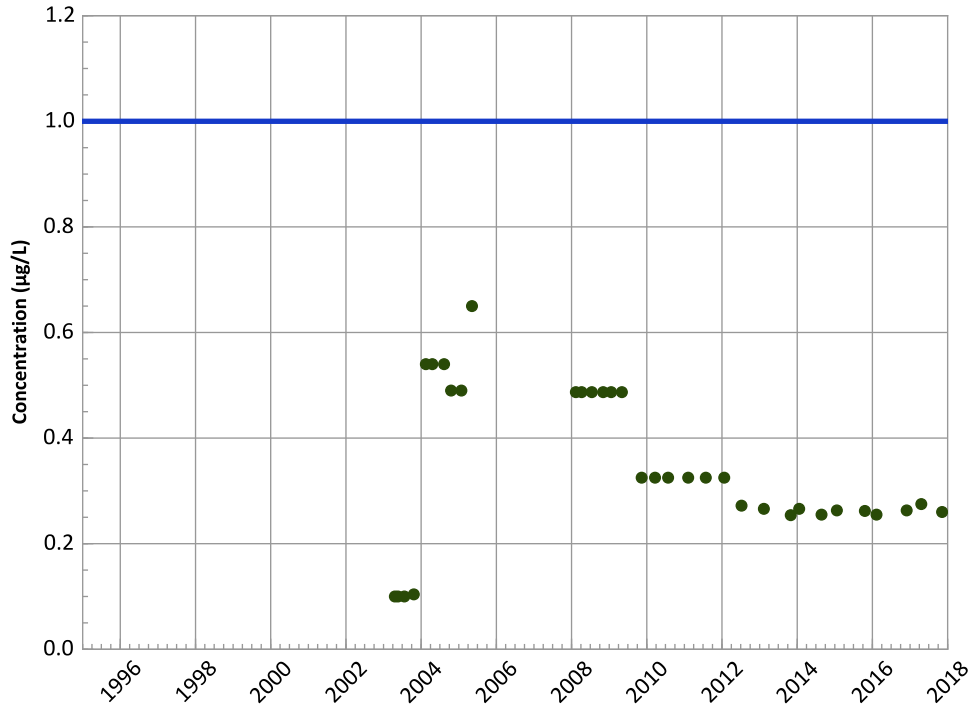


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 04/21/2003 to 11/08/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1064 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

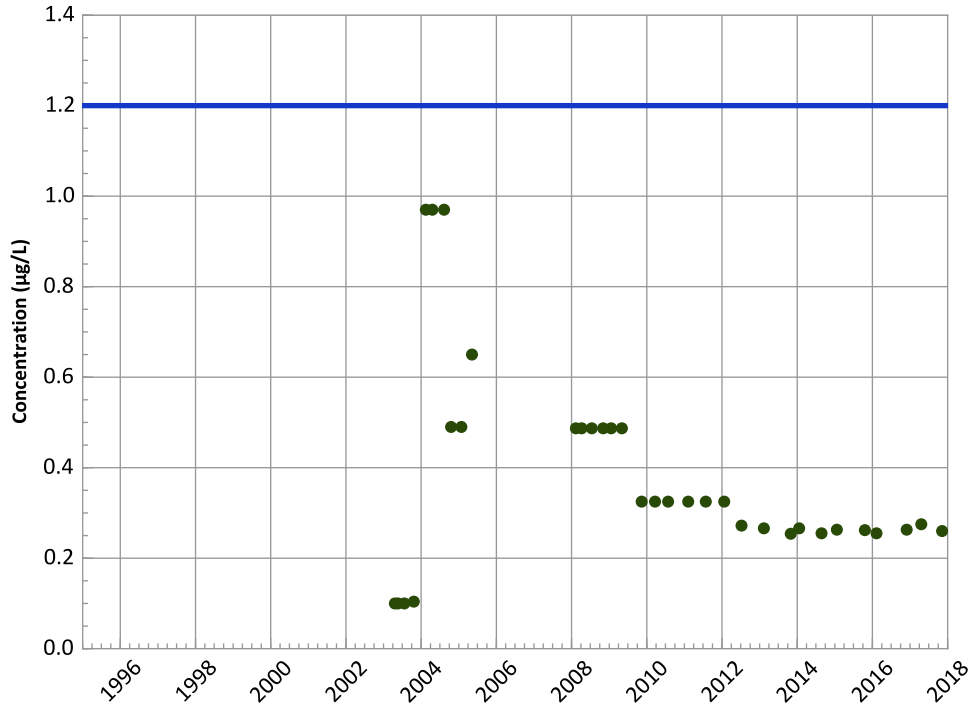
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

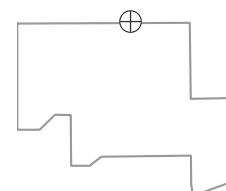
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

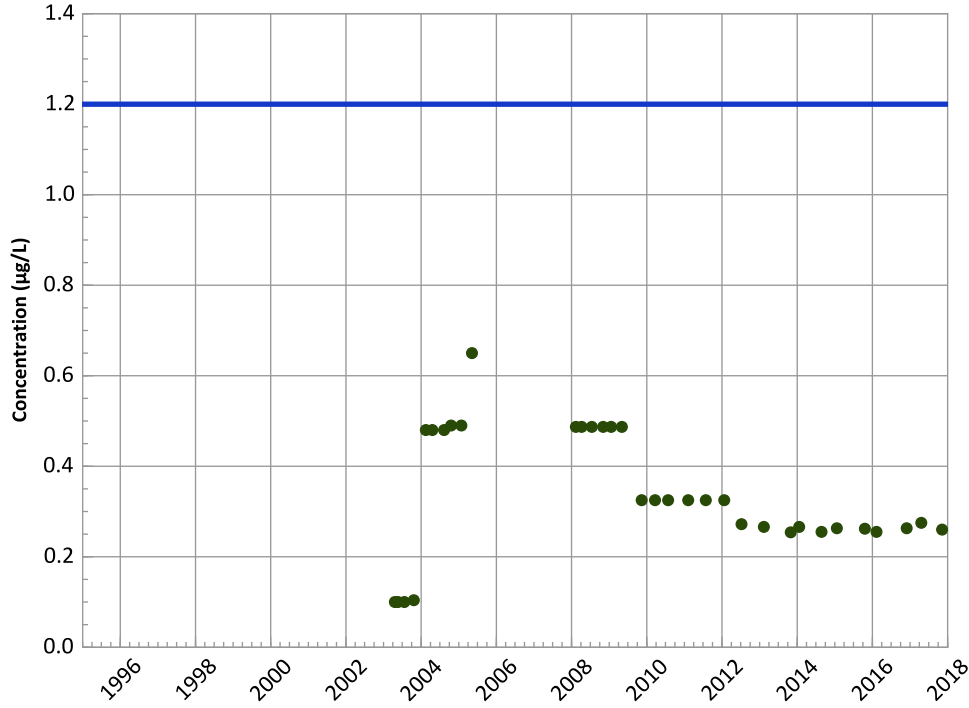


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 04/21/2003 to 11/08/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1064 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

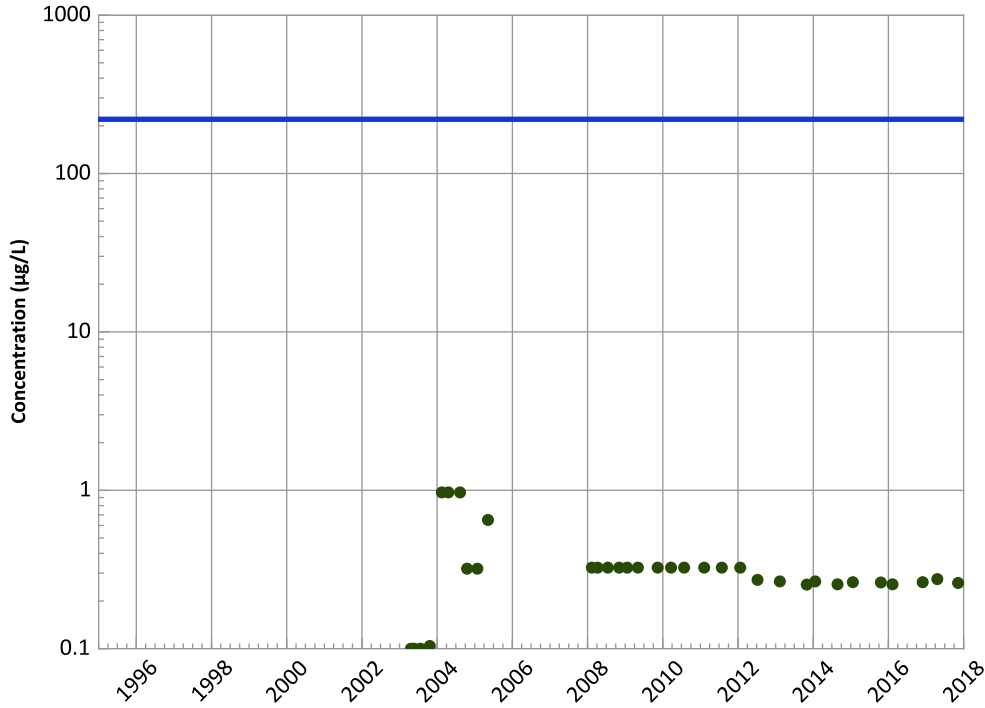
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,3,5-Trinitrobenzene Trend



Concentration Trend

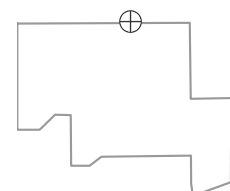
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

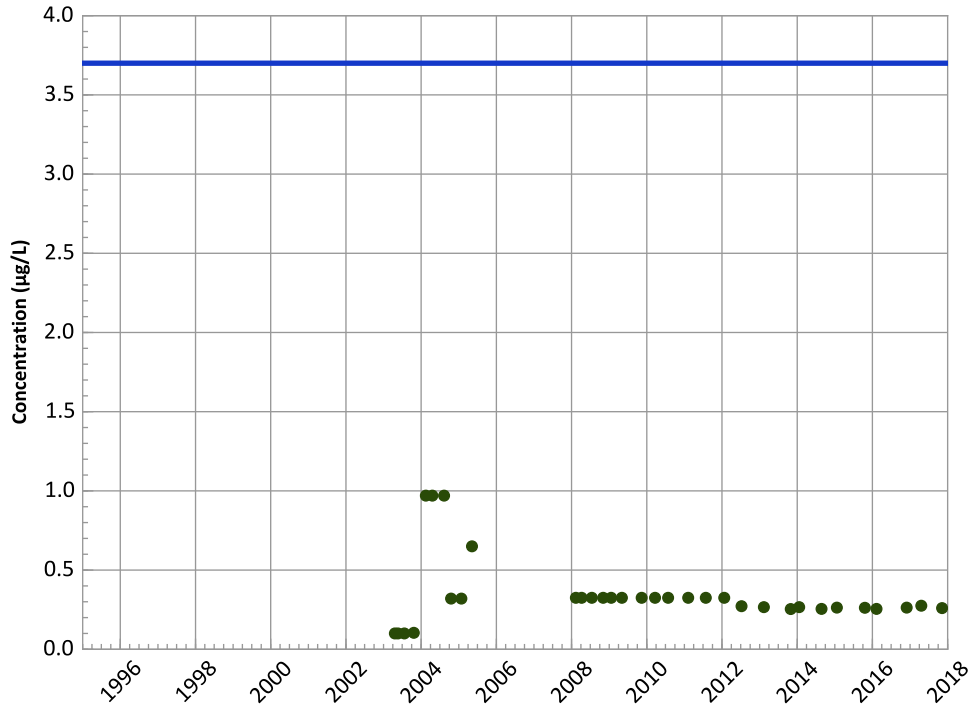


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 04/21/2003 to 11/08/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1064 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

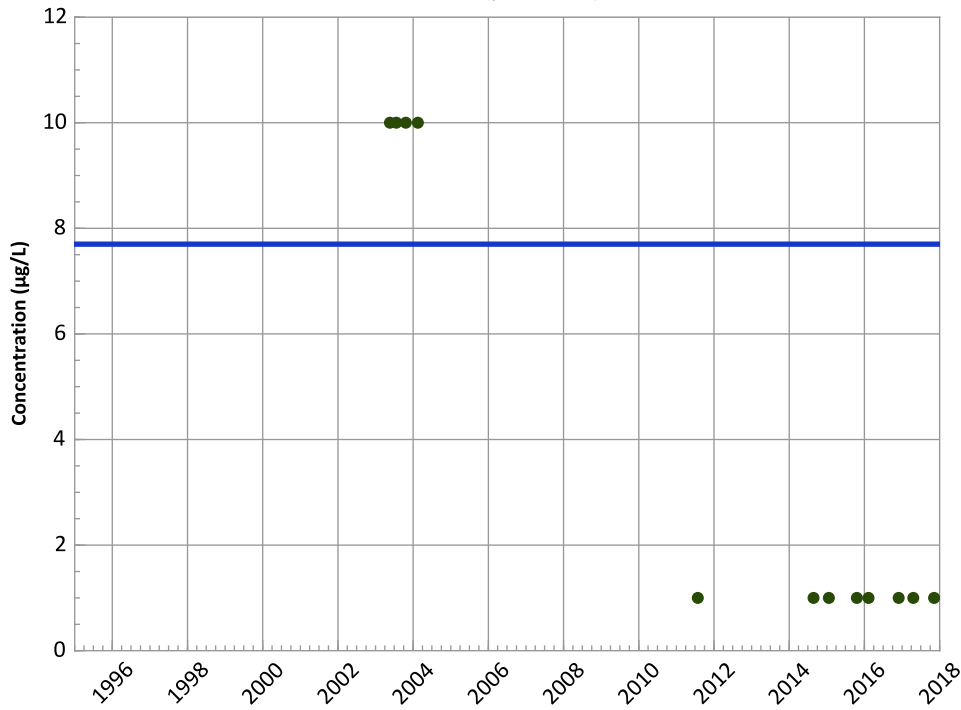
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,4-Dioxane (p-Dioxane) Trend



Concentration Trend

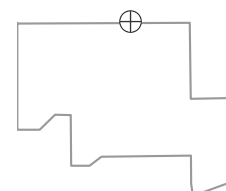
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

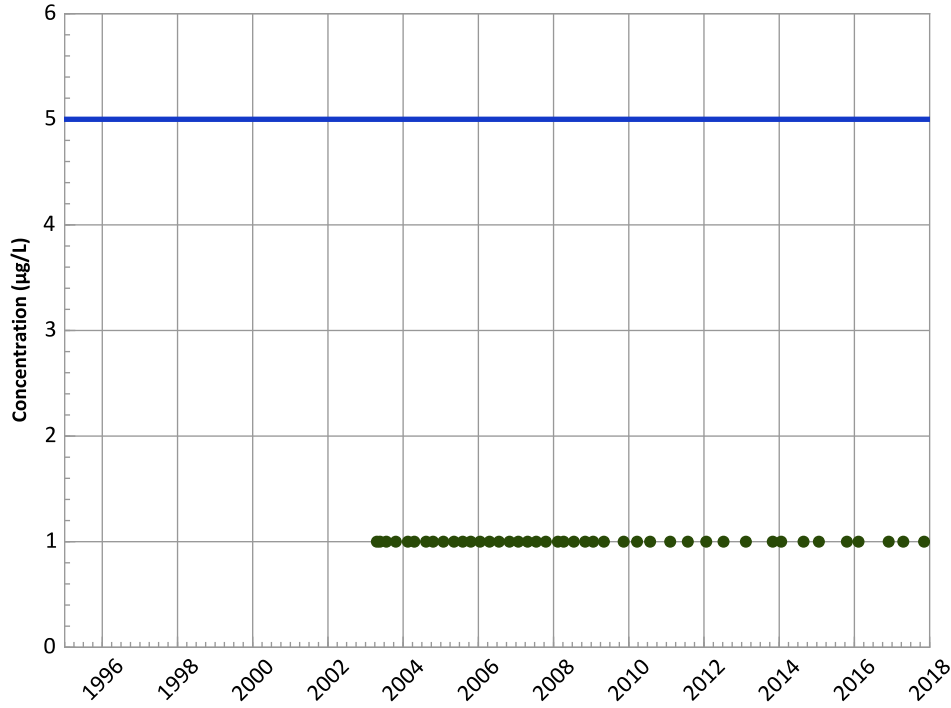
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 04/21/2003 to 11/08/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1064 in Ogallala Aquifer
USDOE/NNSA Pantex Plant
Tetrachloroethylene (PCE) Trend**



Concentration Trend

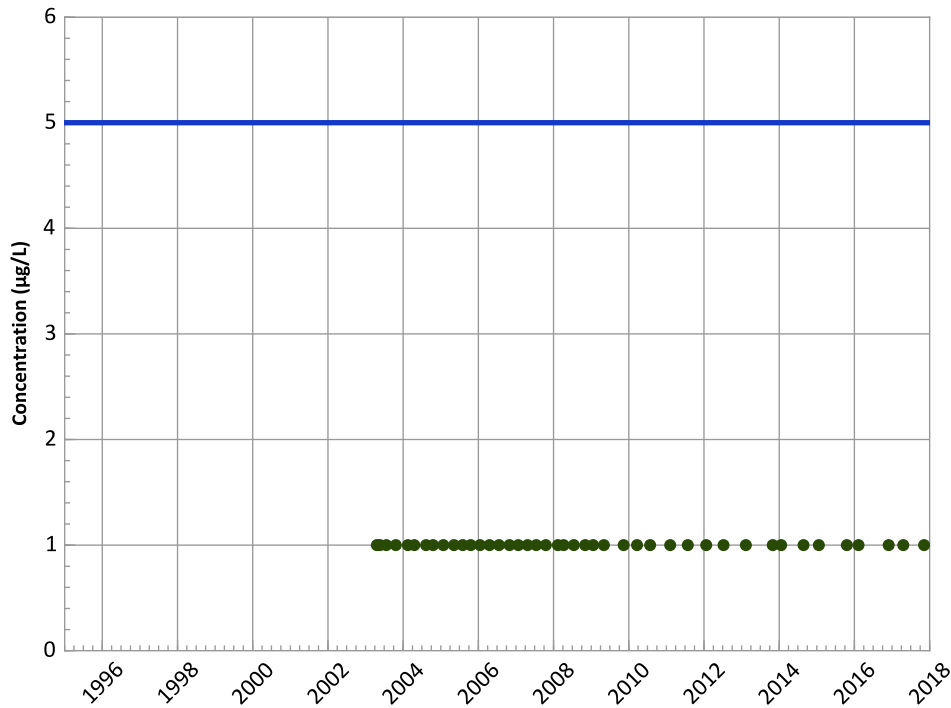
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Trichloroethene Trend



Concentration Trend

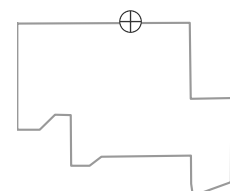
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

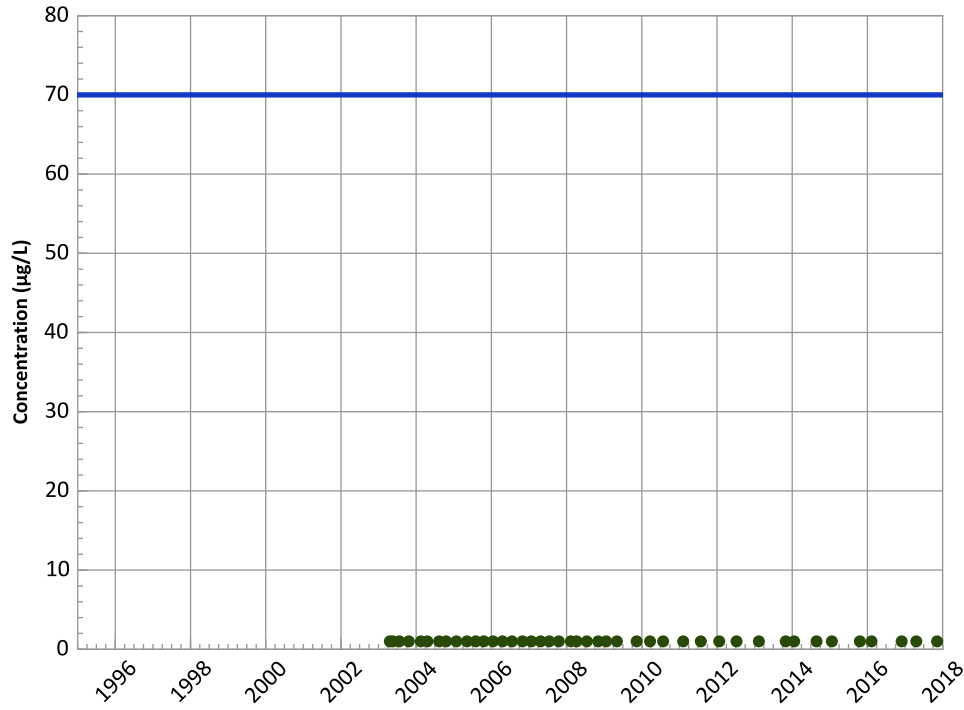
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 04/21/2003 to 11/08/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1064 in Ogallala Aquifer
USDOE/NNSA Pantex Plant**
cis-1,2-Dichloroethene Trend



Concentration Trend

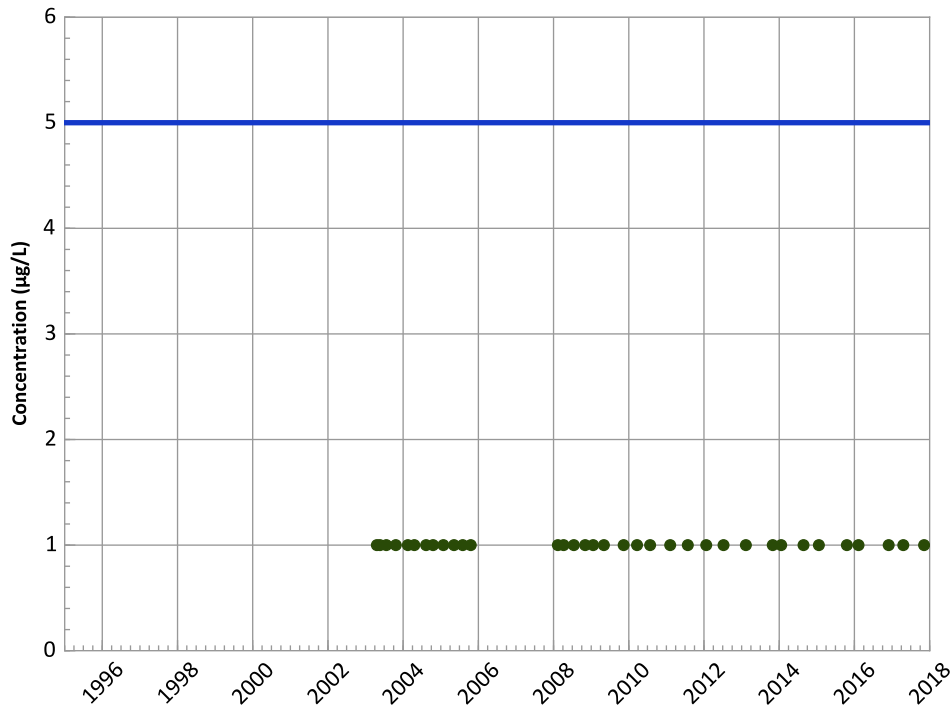
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,2-Dichloroethane Trend



Concentration Trend

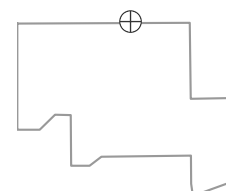
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

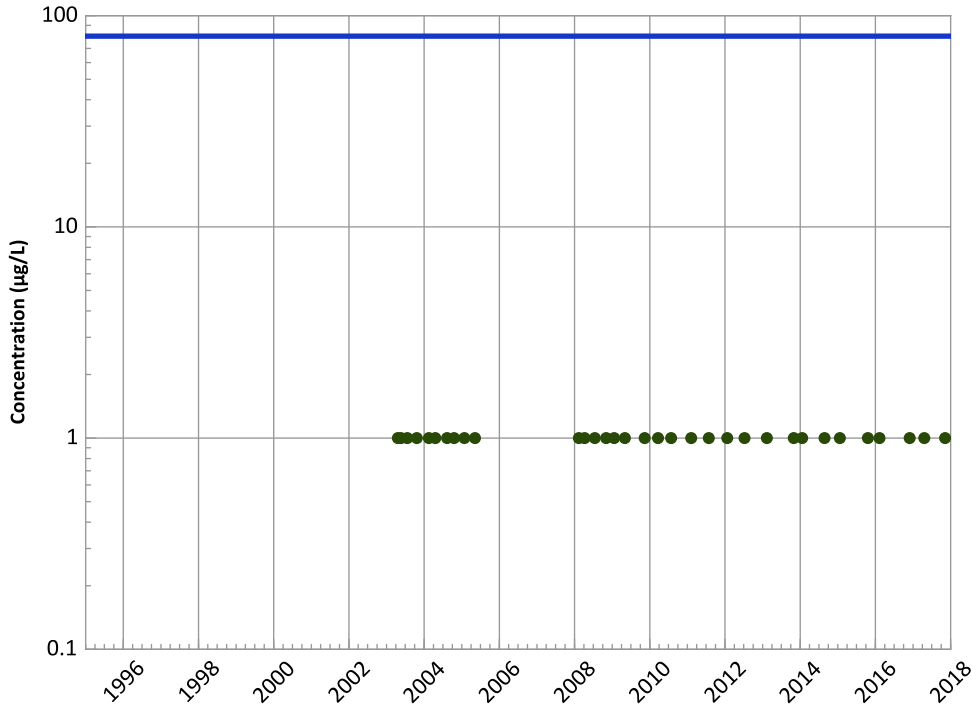
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 04/21/2003 to 11/08/2017
Analysis Date: 03/21/2018

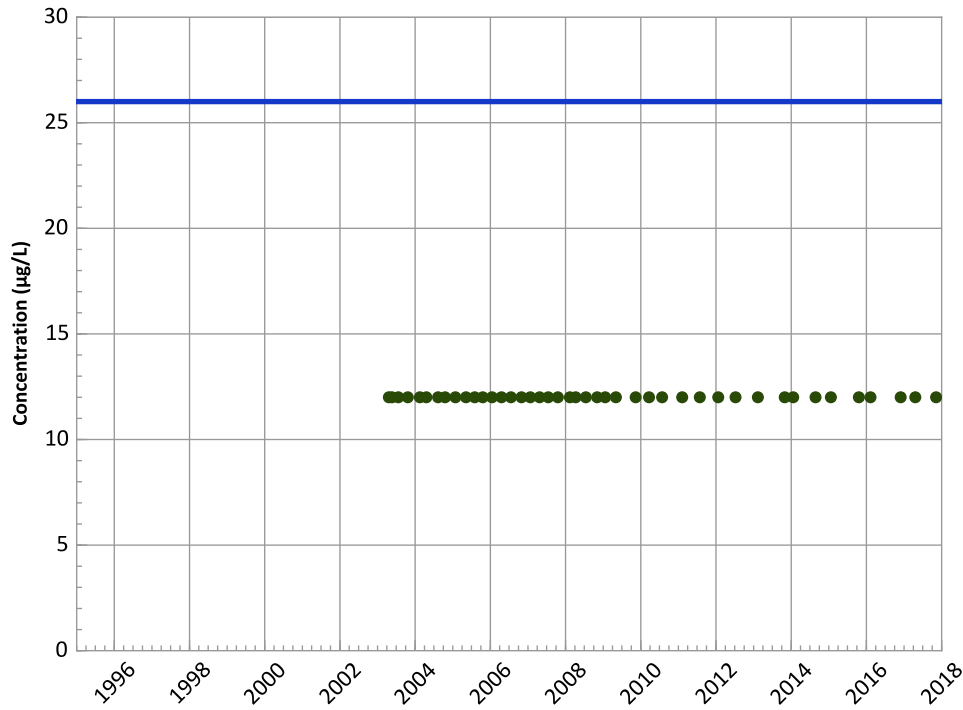
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1064 in Ogallala Aquifer
USDOE/NNSA Pantex Plant
Chloroform Trend**



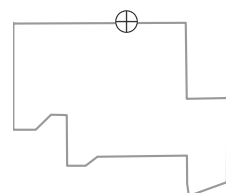
Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect
MAROS Linear Regression Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect

Perchlorate Trend



Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect
MAROS Linear Regression Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect

Well Location

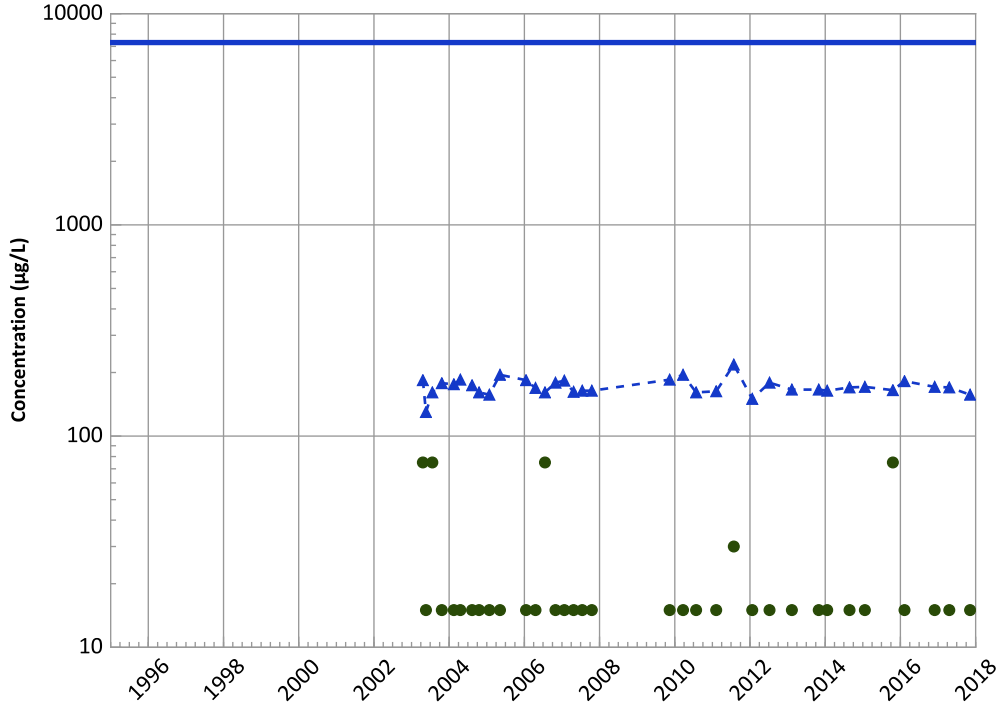


Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 04/21/2003 to 11/08/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1064 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

Boron Trend



Concentration Trend

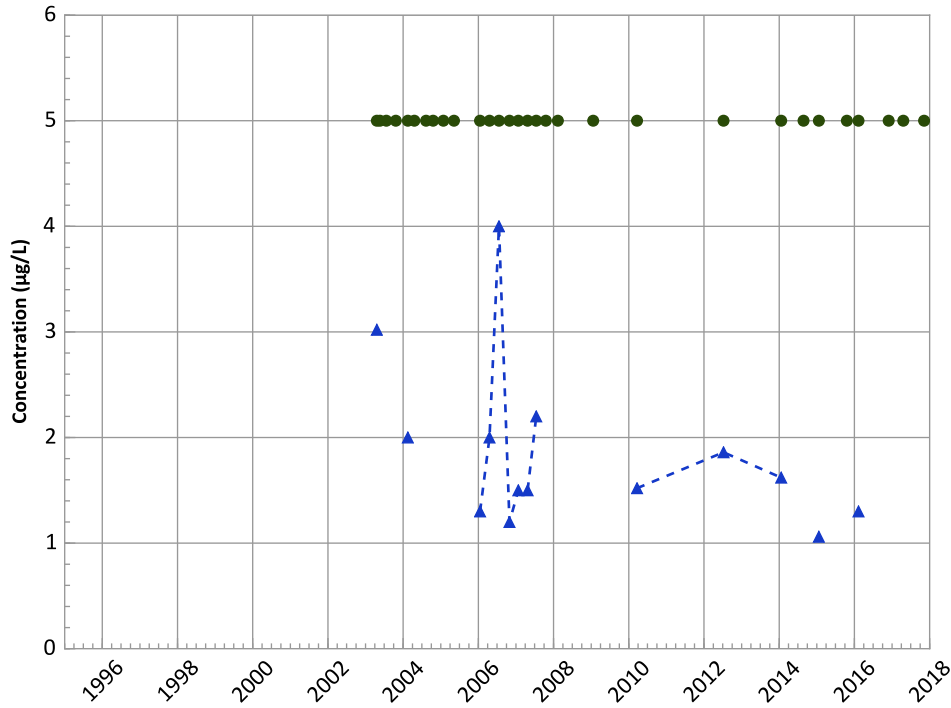
MAROS Mann-Kendall Method

Data ():
No Trend
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Probably Increasing
All Data
Increasing

Manganese Trend



Concentration Trend

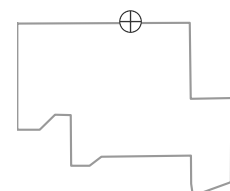
MAROS Mann-Kendall Method

Data ():
No Trend
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Stable
All Data
Decreasing

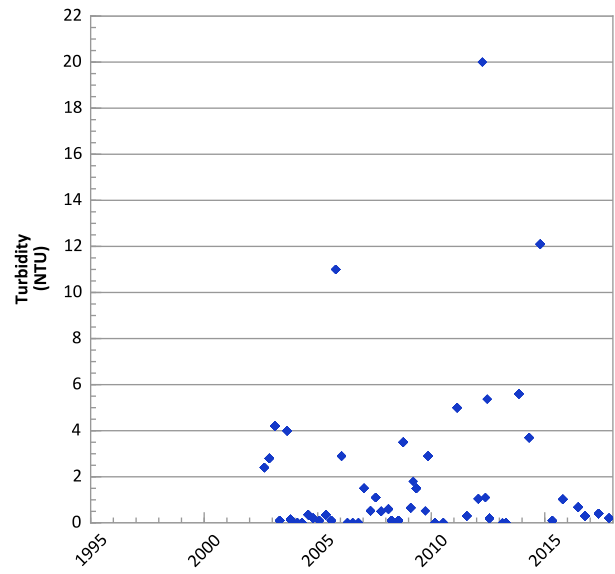
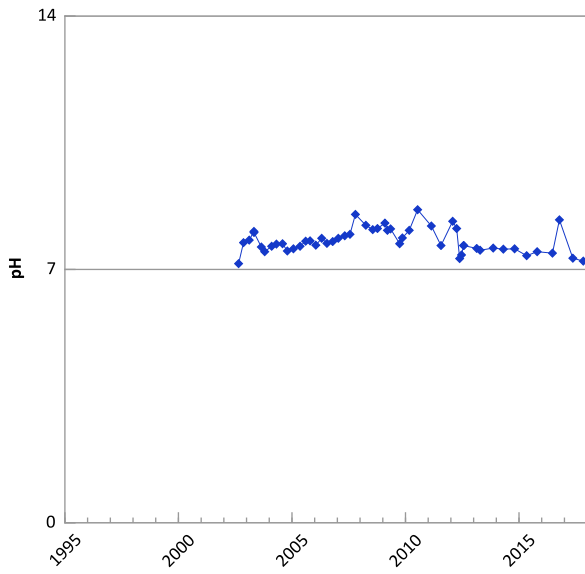
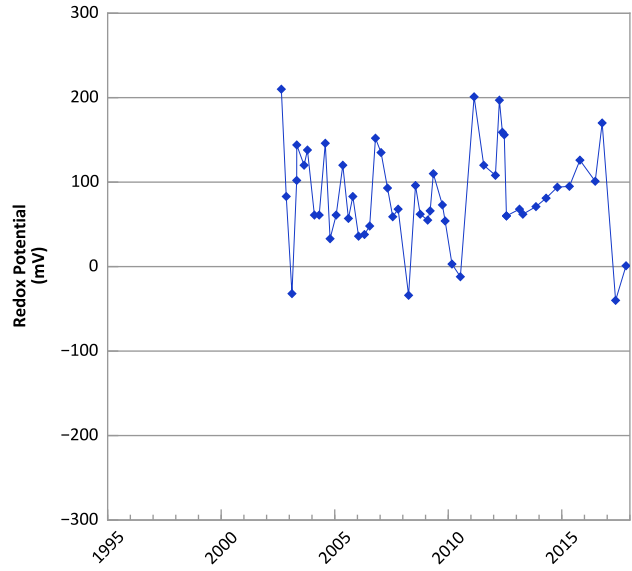
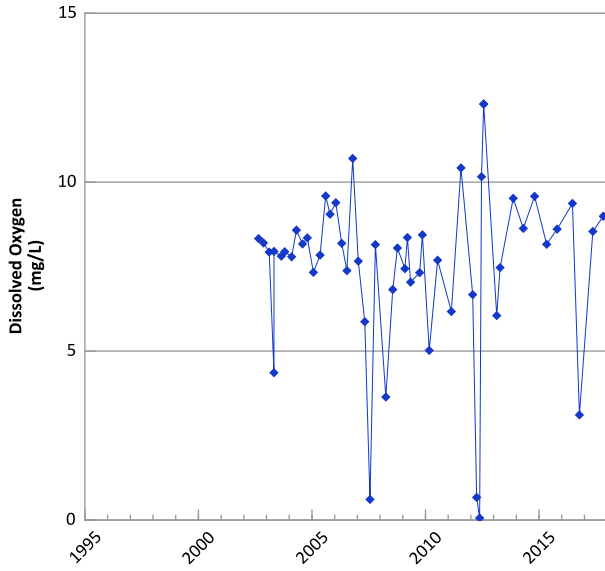
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 04/21/2003 to 11/08/2017
Analysis Date: 03/21/2018

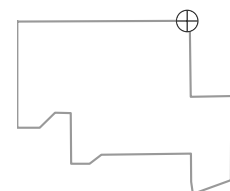
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1068 in Ogallala Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



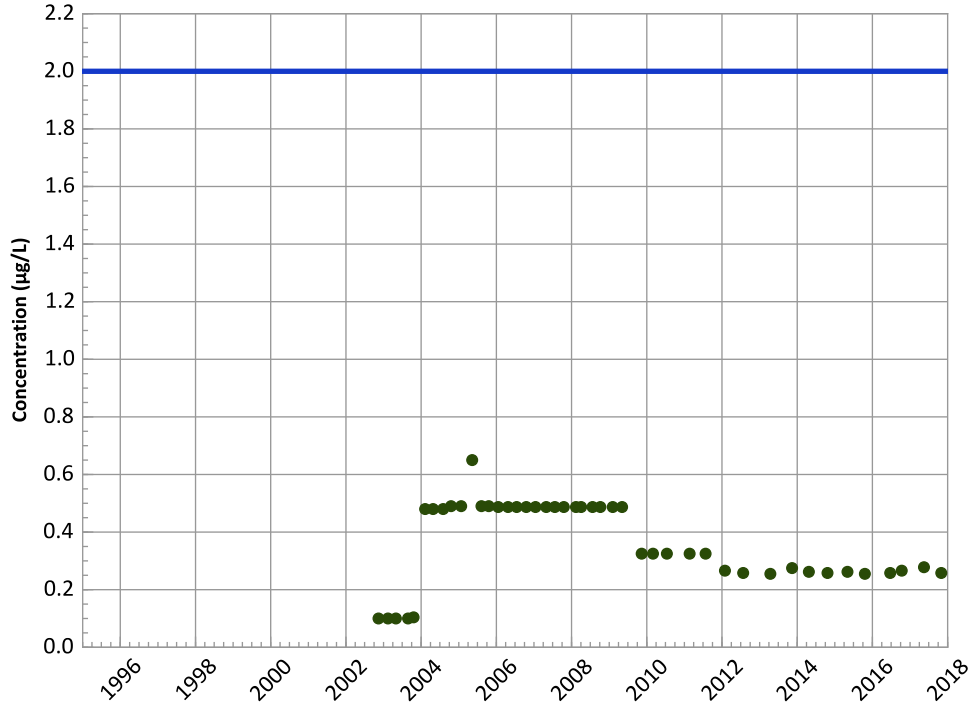
Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/26/2002 to 10/31/2017
Analysis Date: 03/21/2018

Well Location



PTX06-1068 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

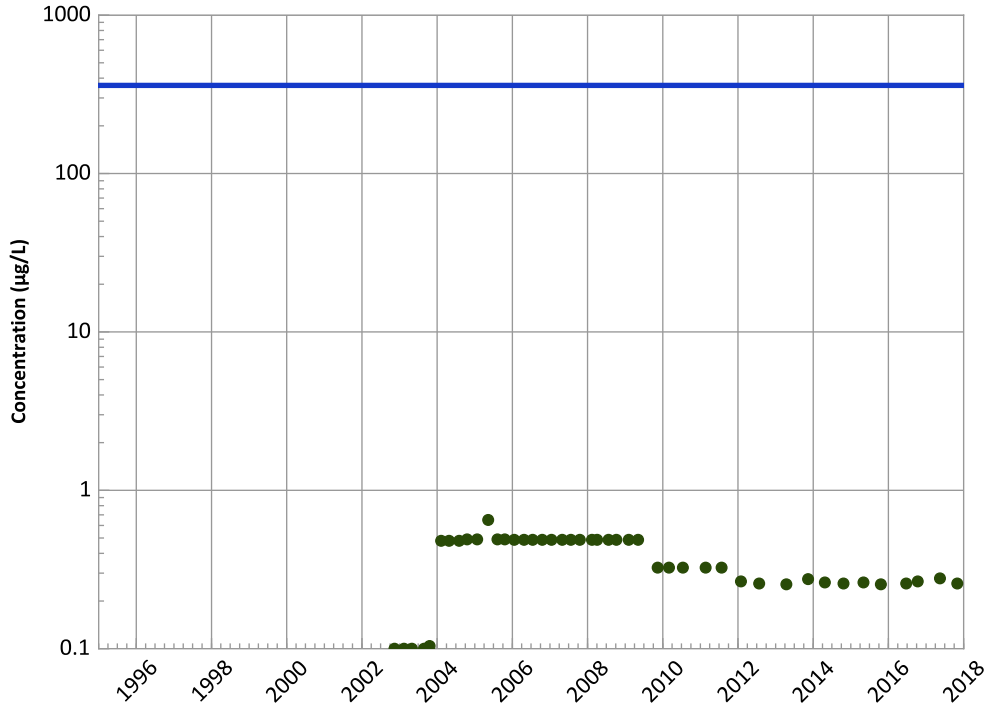
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

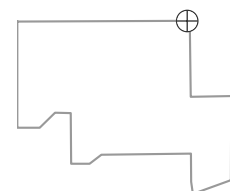
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

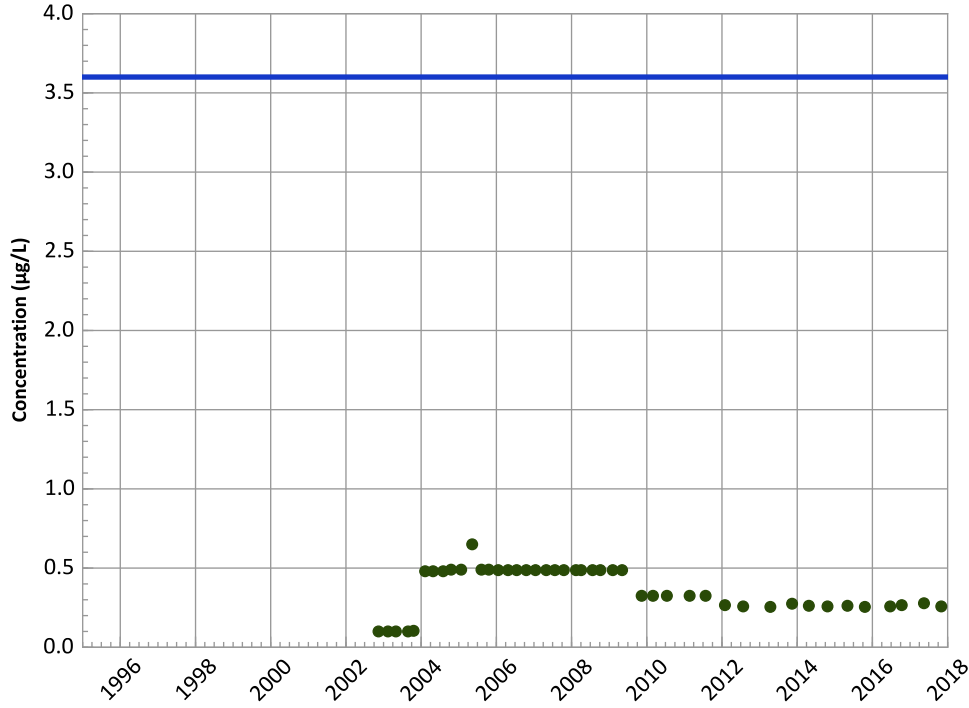


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/26/2002 to 10/31/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1068 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

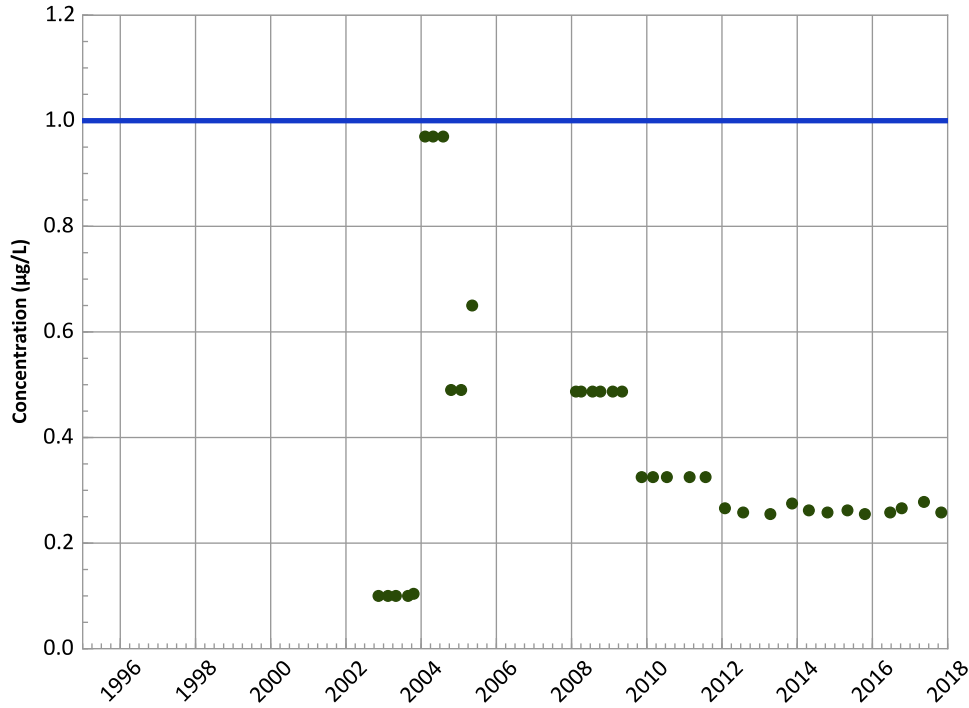
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

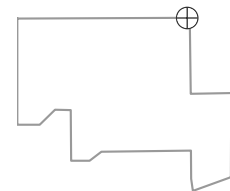
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

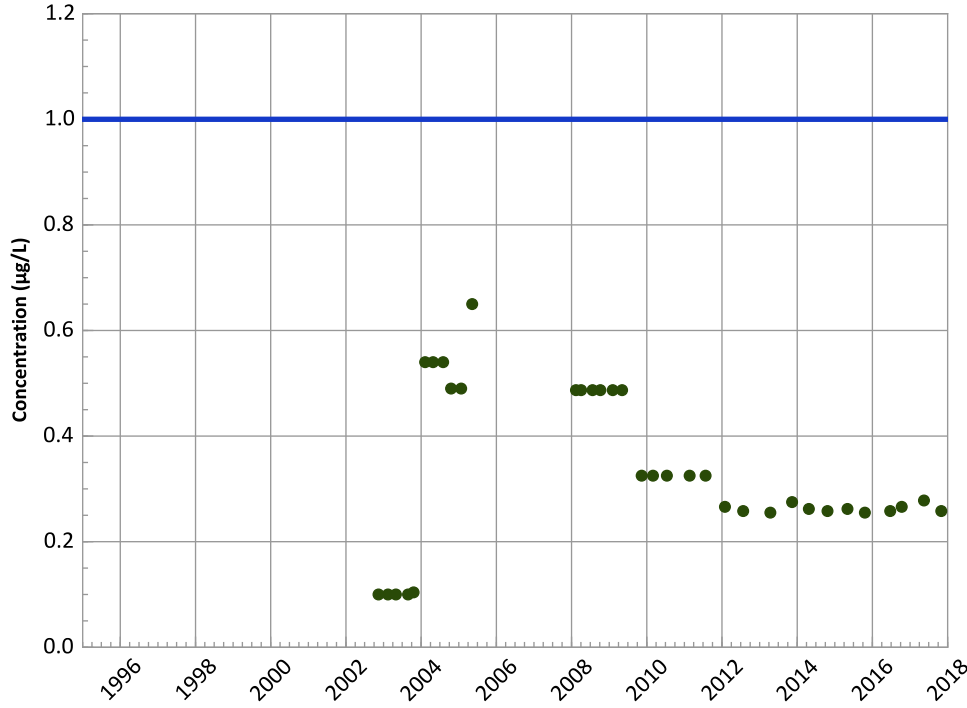


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/26/2002 to 10/31/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- Concentration Trend
- Groundwater Protection Standard

PTX06-1068 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

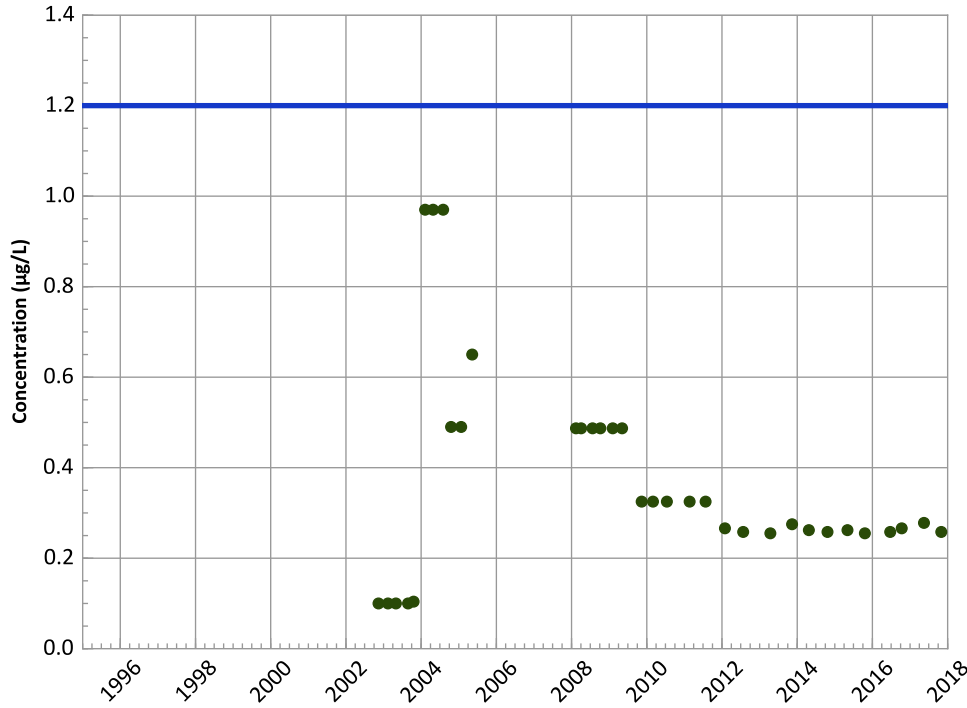
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

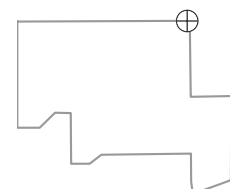
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

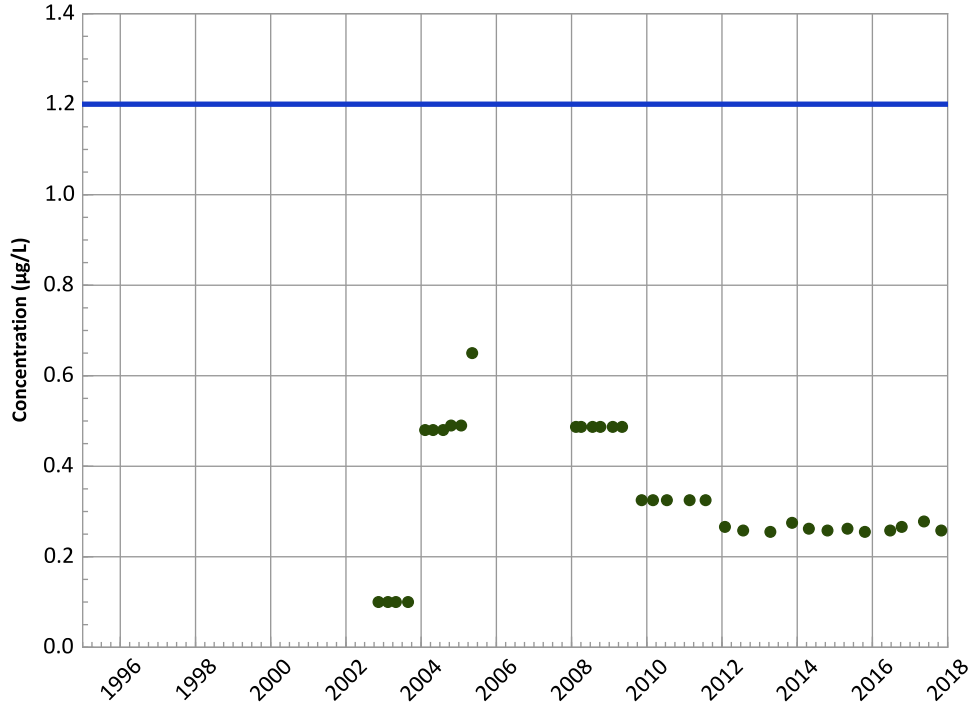


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/26/2002 to 10/31/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1068 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

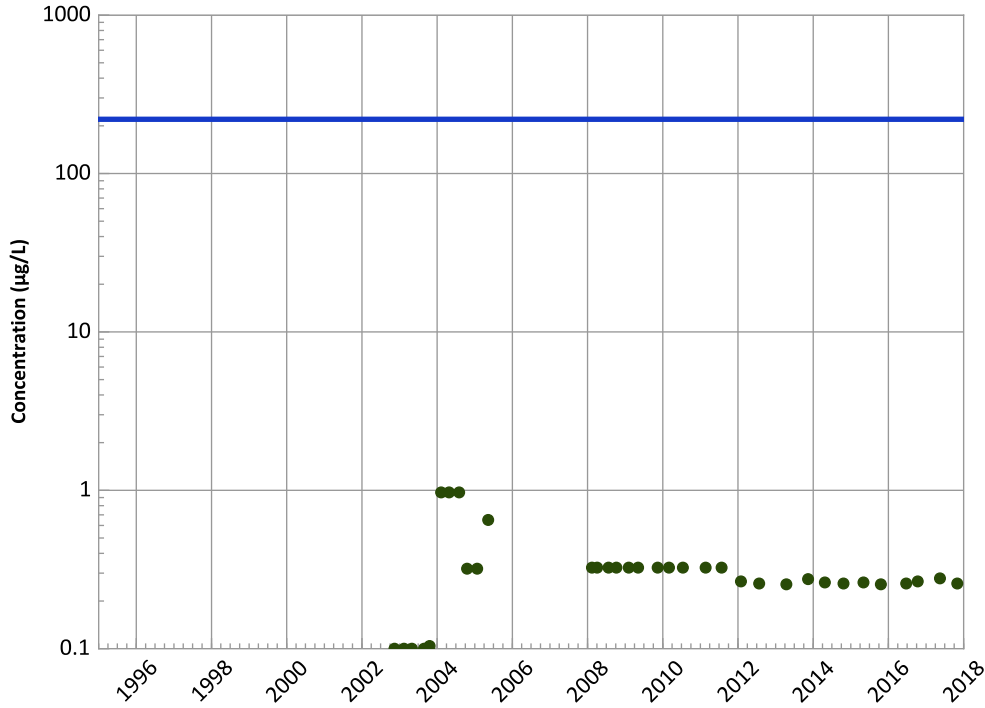
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,3,5-Trinitrobenzene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

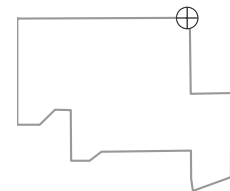
MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/26/2002 to 10/31/2017
Analysis Date: 03/21/2018

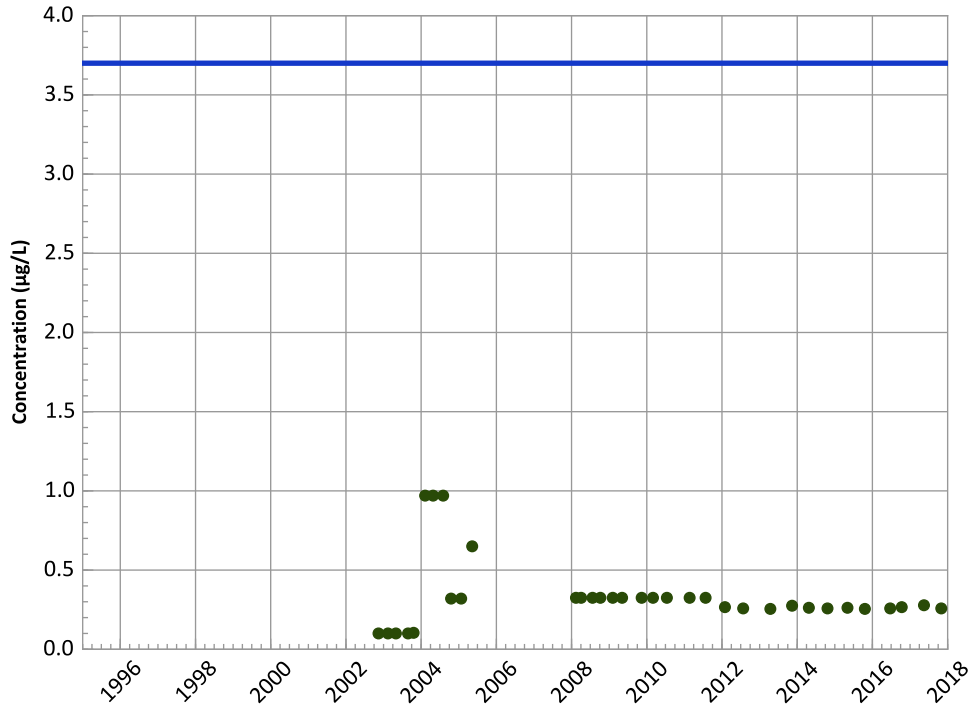
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1068 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

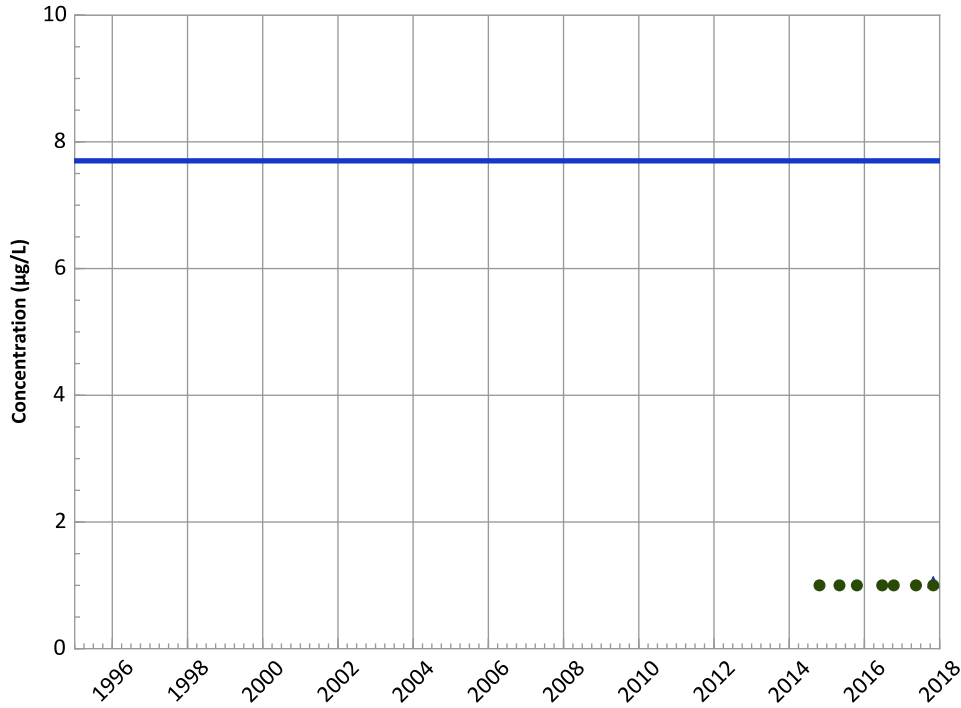
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,4-Dioxane (p-Dioxane) Trend



Concentration Trend

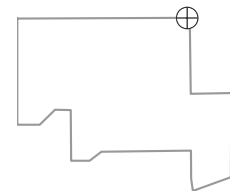
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

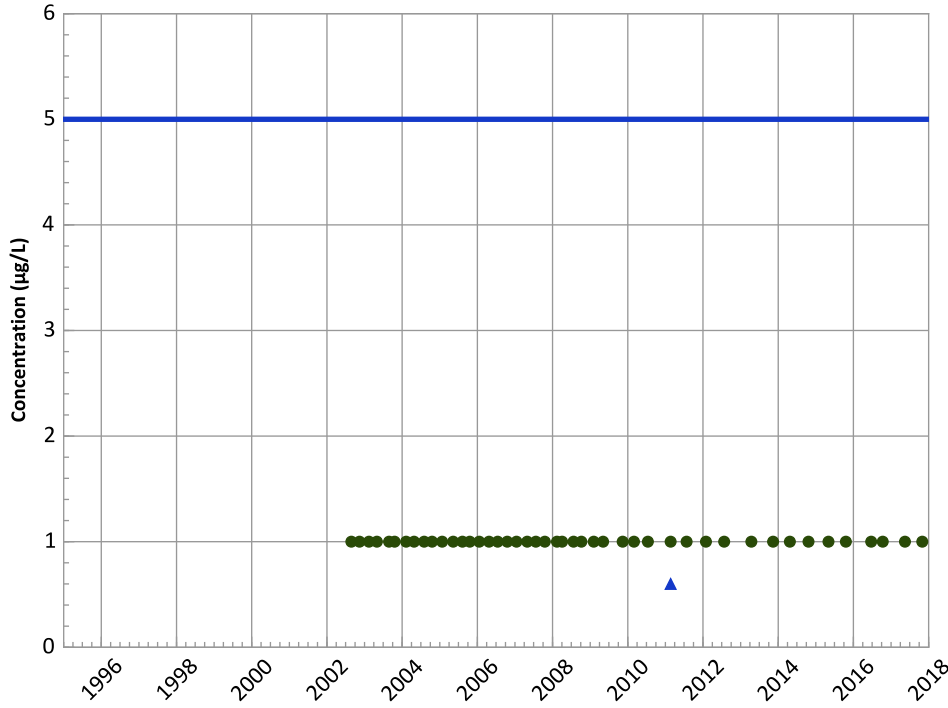
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/26/2002 to 10/31/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1068 in Ogallala Aquifer
USDOE/NNSA Pantex Plant
Tetrachloroethylene (PCE) Trend**



Concentration Trend

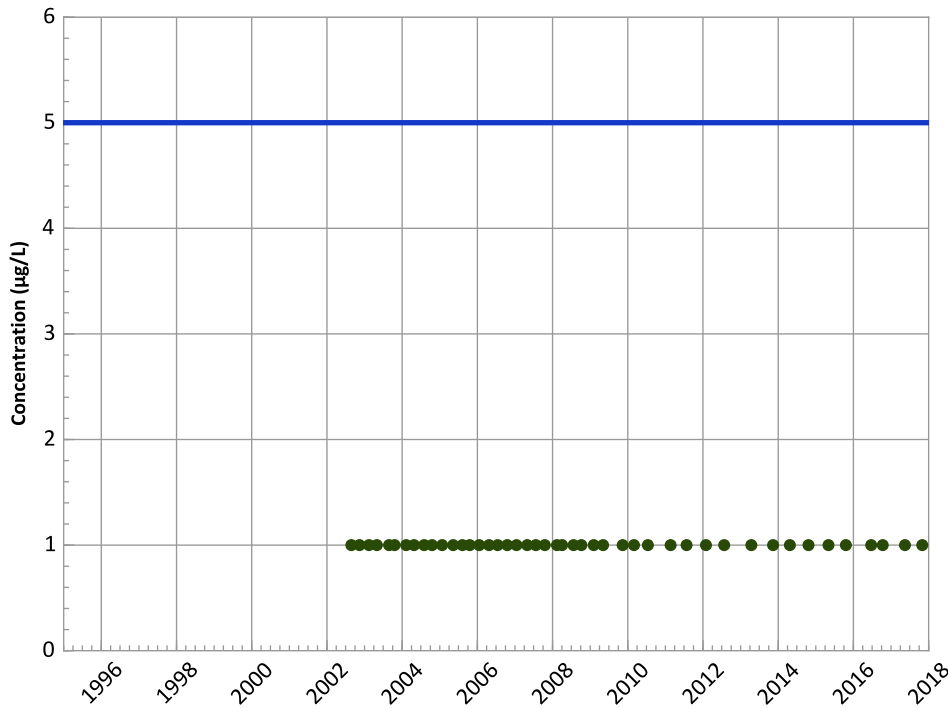
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

Trichloroethene Trend



Concentration Trend

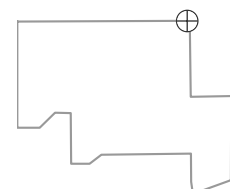
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

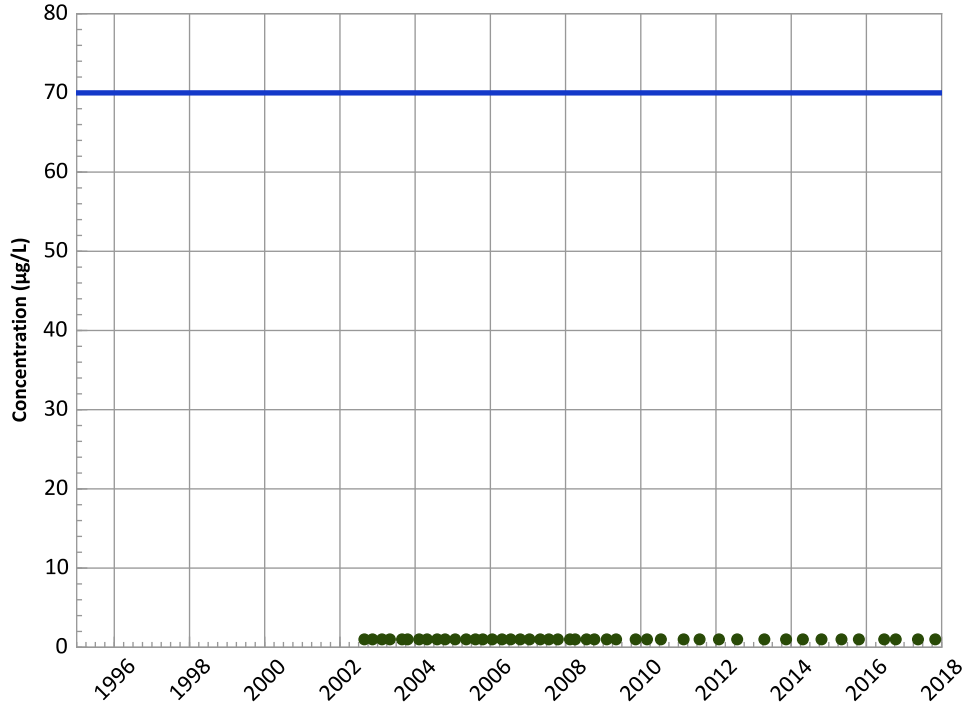


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/26/2002 to 10/31/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- Concentration Trend
- Groundwater Protection Standard

PTX06-1068 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

cis-1,2-Dichloroethene Trend



Concentration Trend

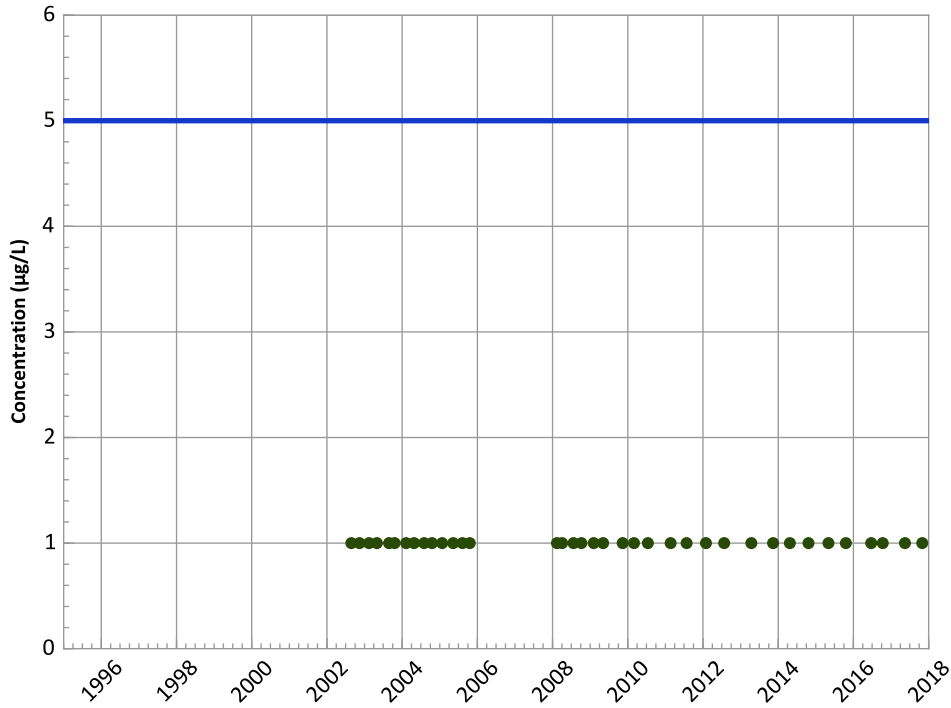
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,2-Dichloroethane Trend



Concentration Trend

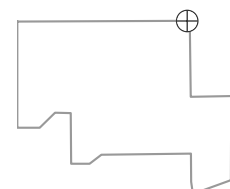
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

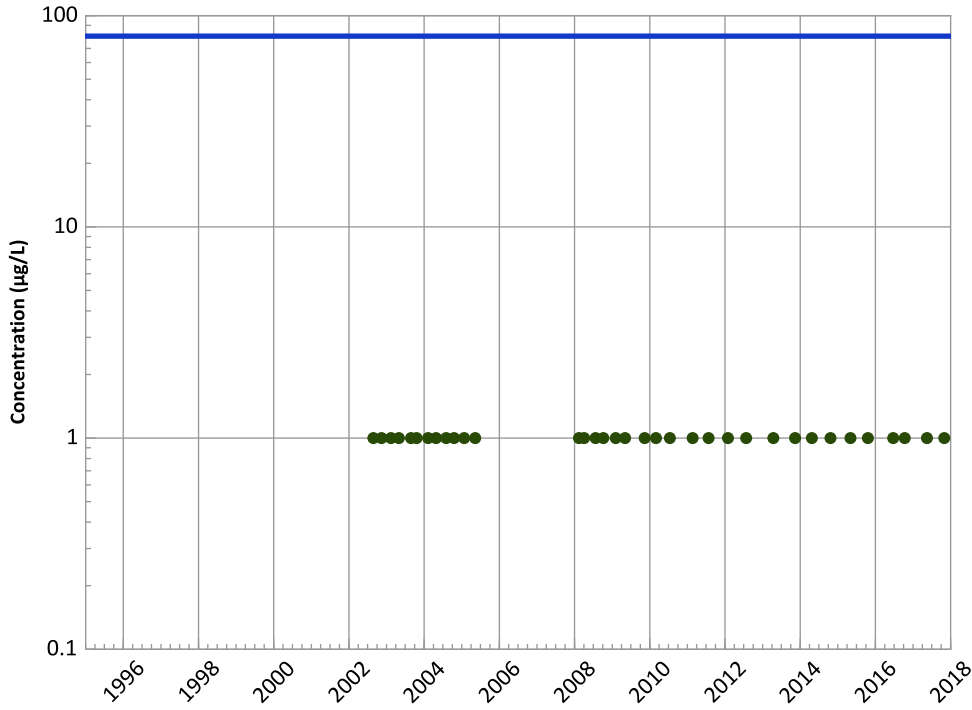
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/26/2002 to 10/31/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1068 in Ogallala Aquifer
USDOE/NNSA Pantex Plant
Chloroform Trend**



Concentration Trend

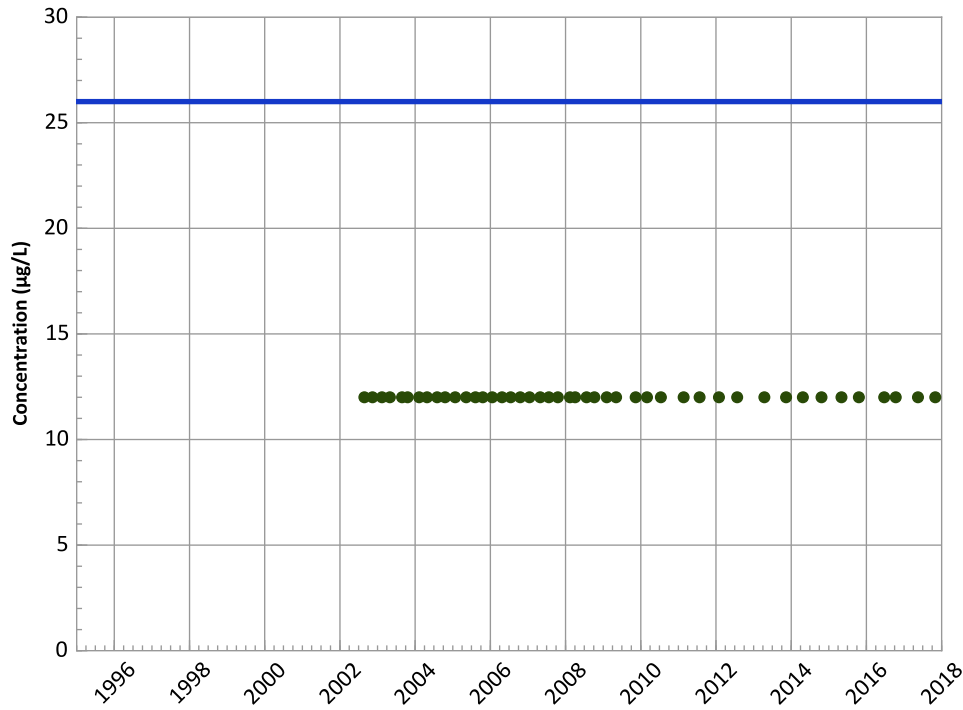
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Perchlorate Trend



Concentration Trend

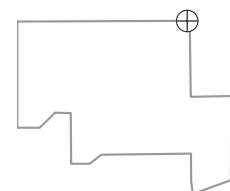
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

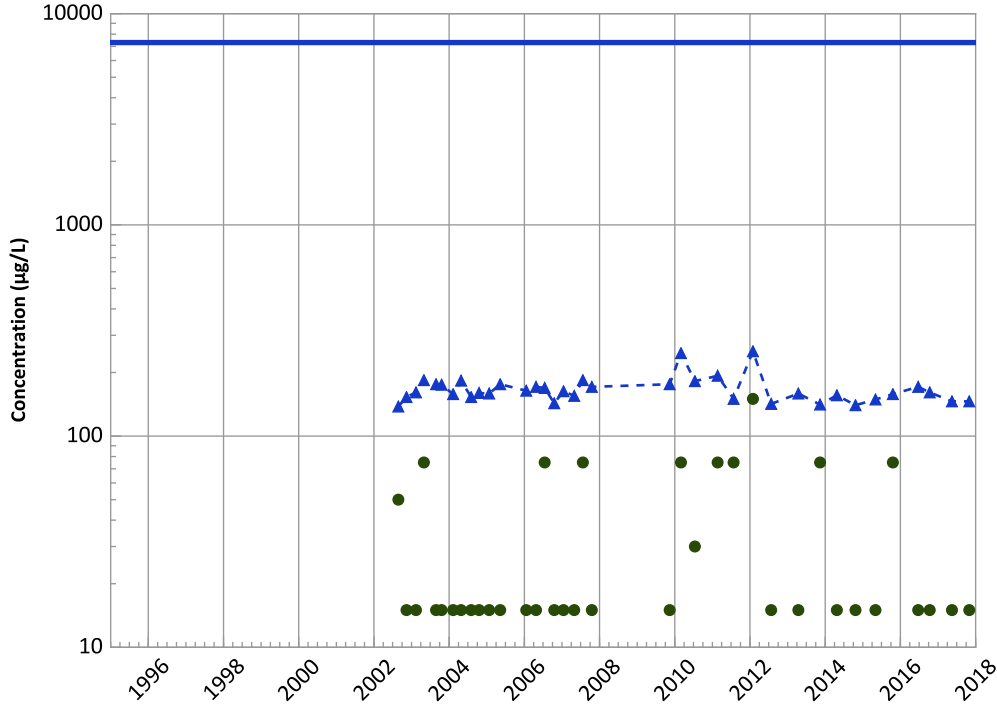


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/26/2002 to 10/31/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1068 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

Boron Trend



Concentration Trend

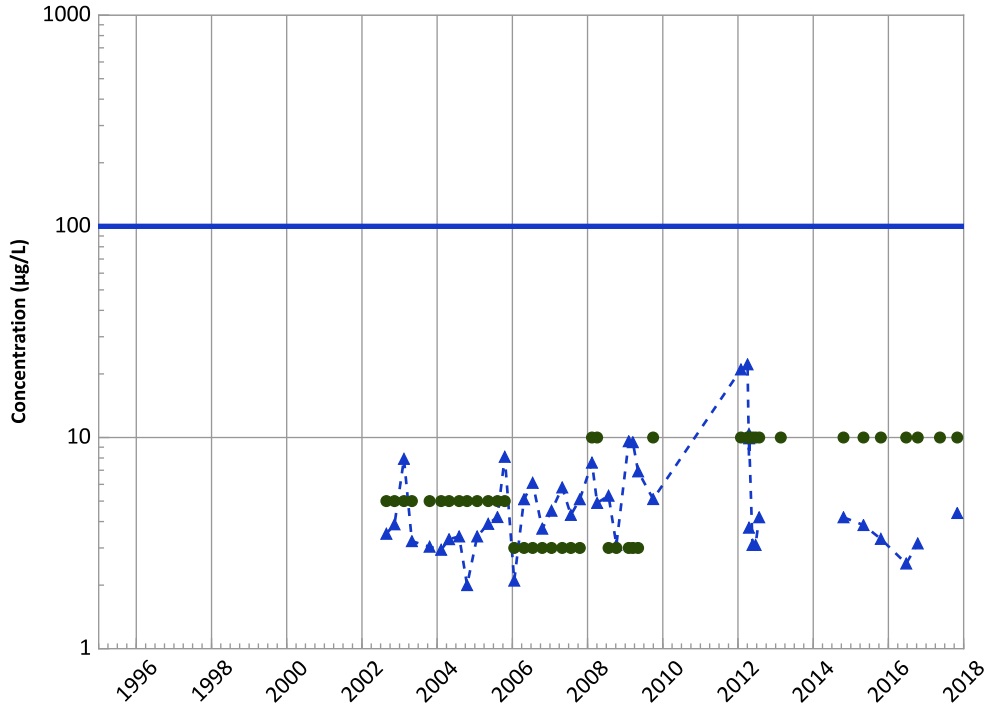
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Stable
All Data
Decreasing

Chromium, Total Trend



Concentration Trend

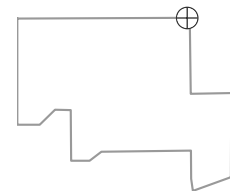
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
No Trend

Well Location

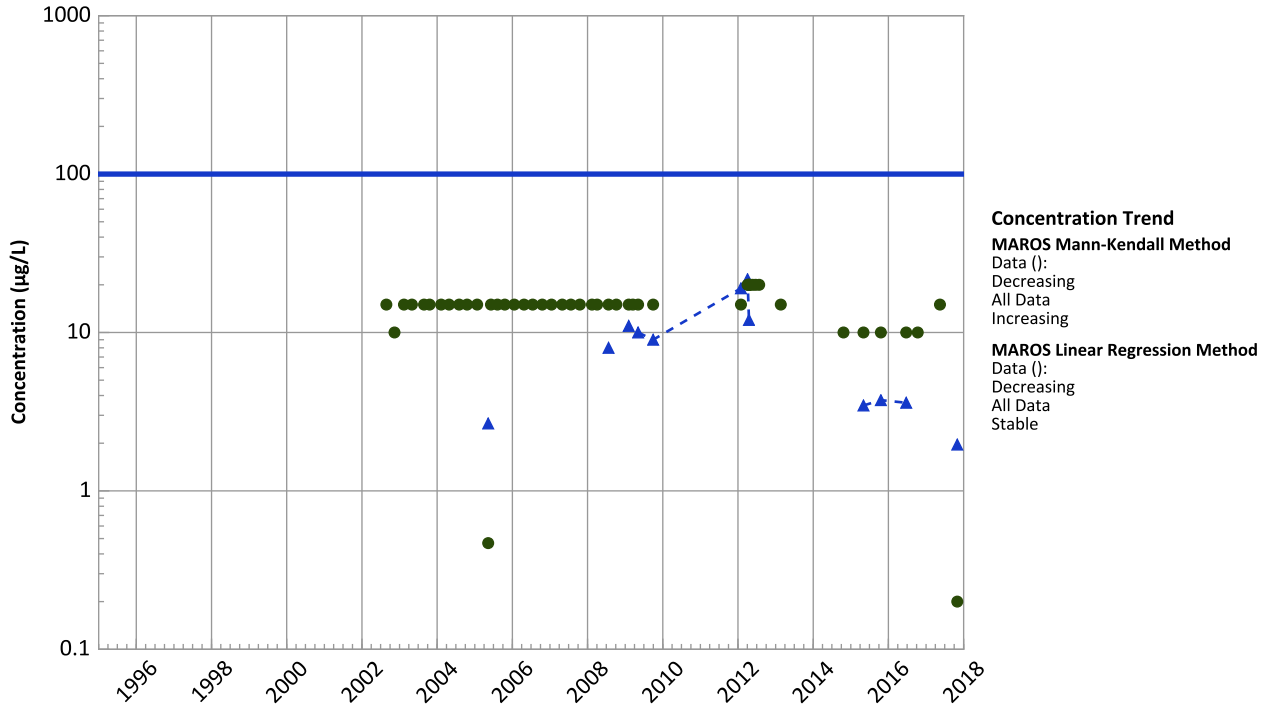


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 08/26/2002 to 10/31/2017
Analysis Date: 03/21/2018

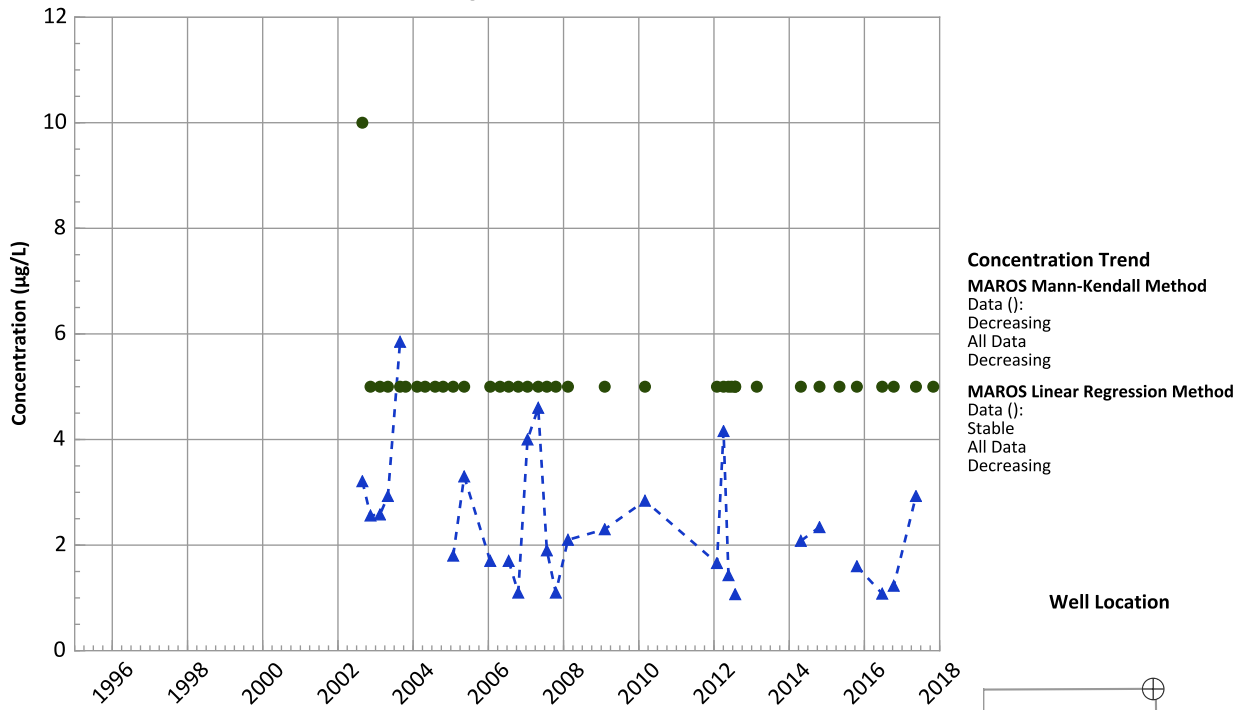
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1068 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

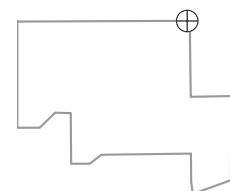
Chromium, Hexavalent Trend



Manganese Trend



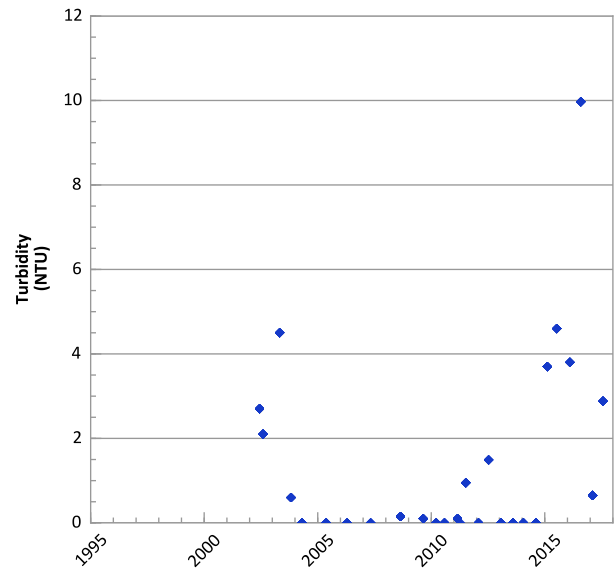
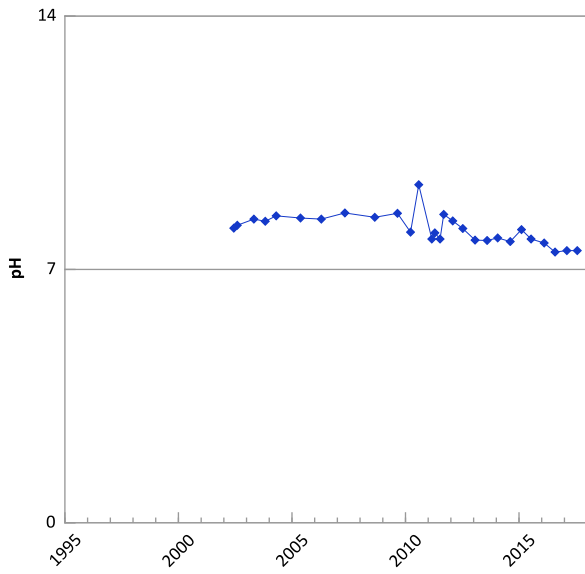
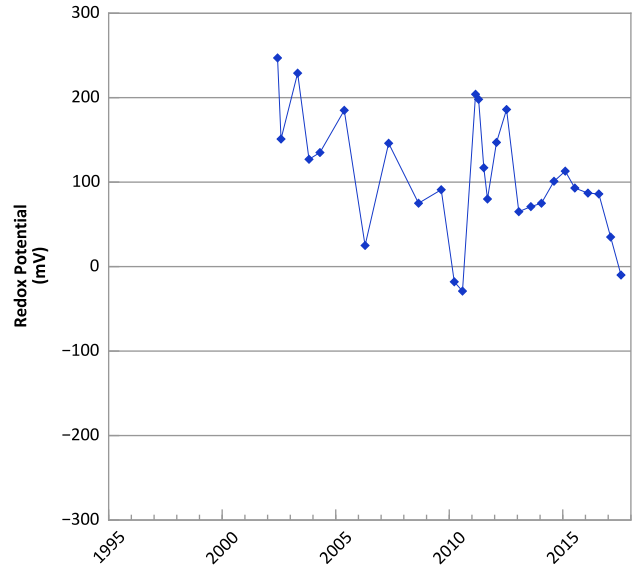
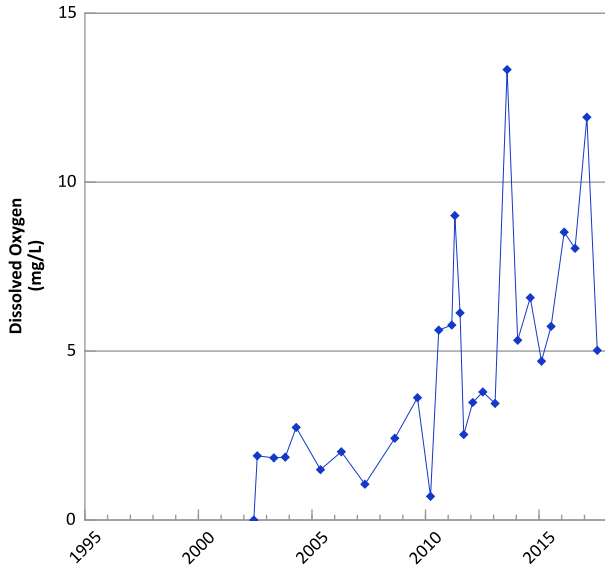
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 08/26/2002 to 10/31/2017
 Analysis Date: 03/21/2018

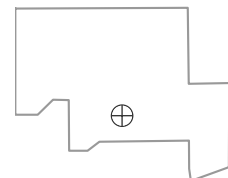
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1072 in Ogallala Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



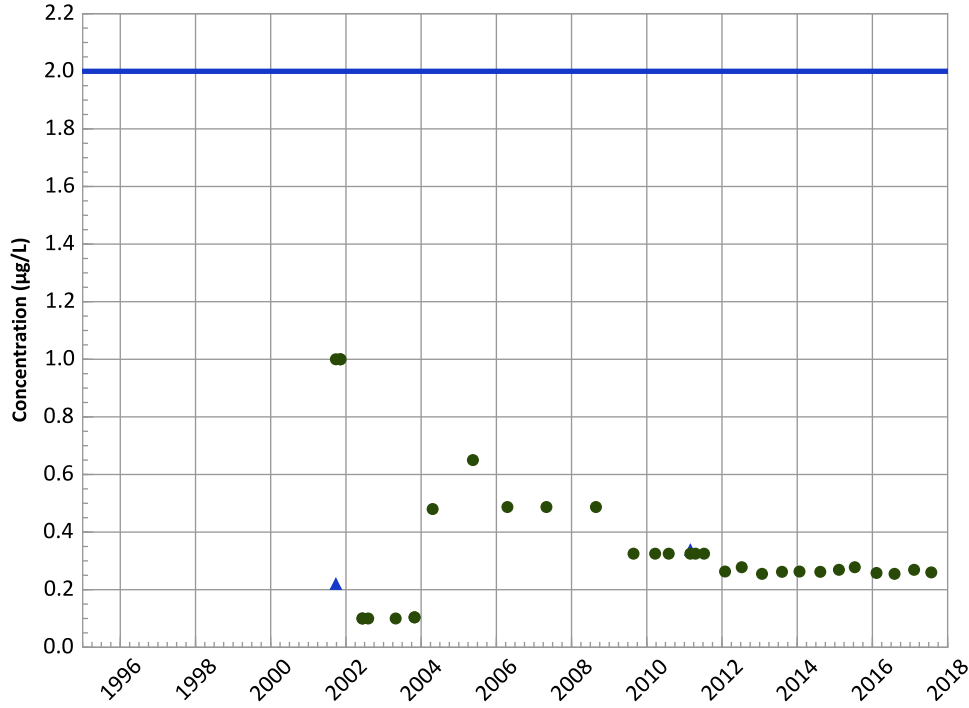
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 09/25/2001 to 07/26/2017
 Analysis Date: 03/21/2018

Well Location



PTX06-1072 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

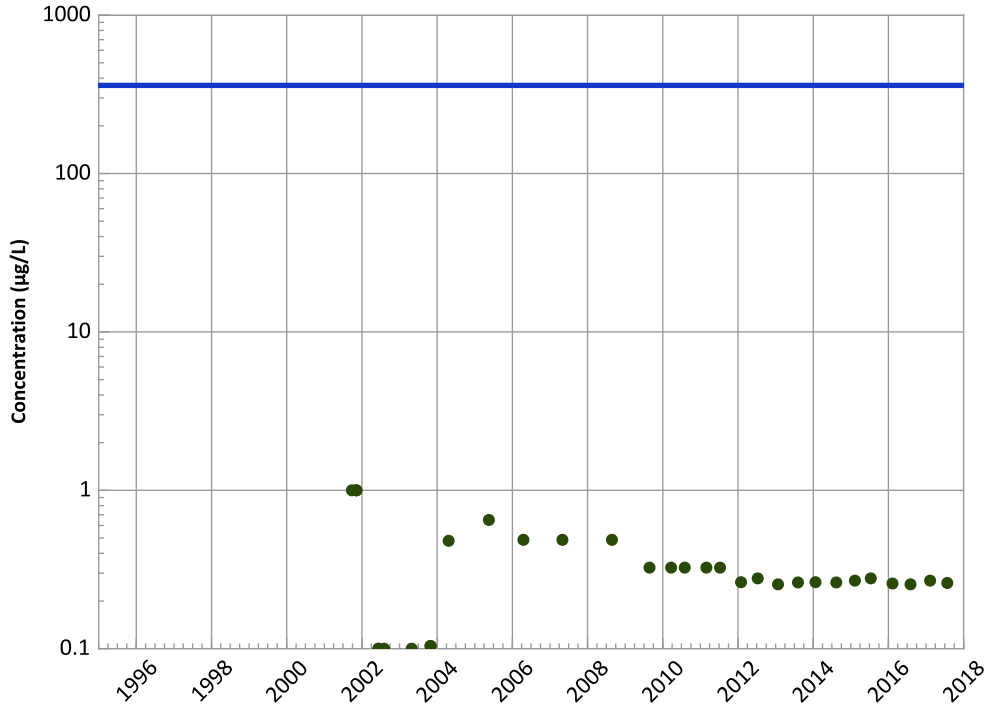
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

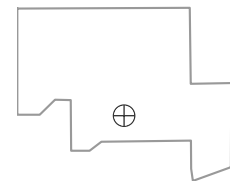
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

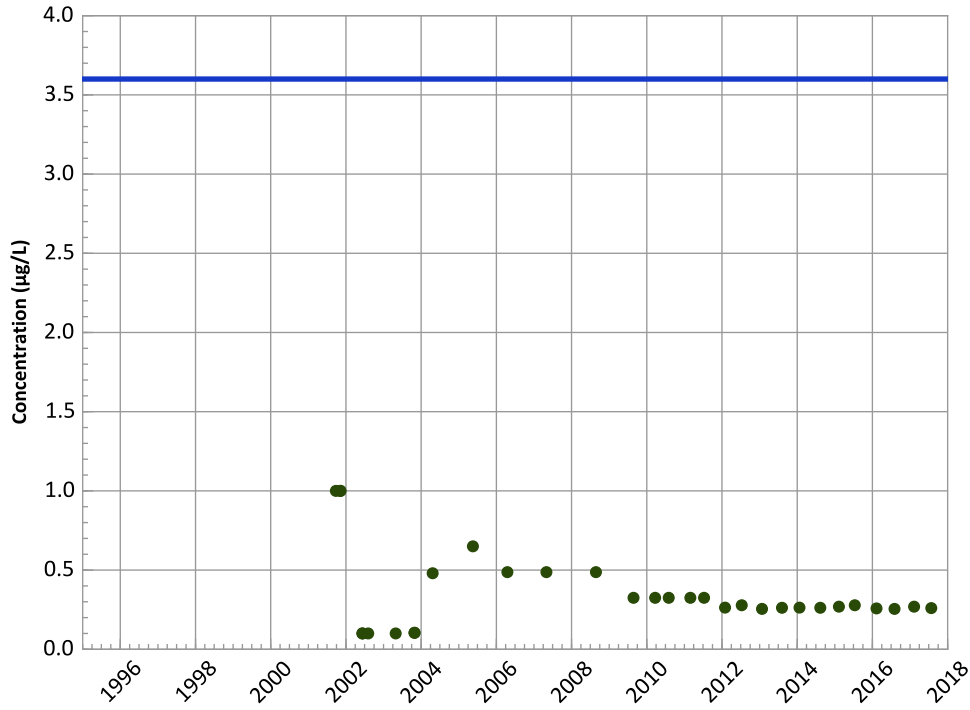


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/25/2001 to 07/26/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1072 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

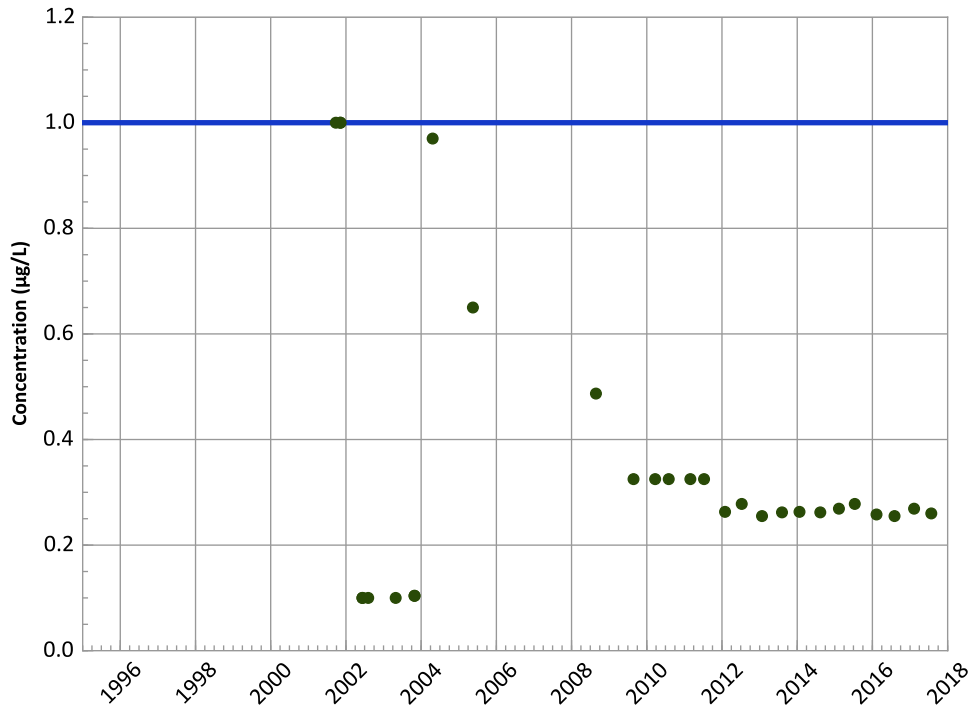
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

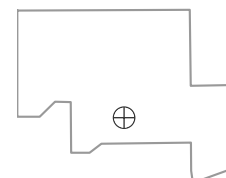
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

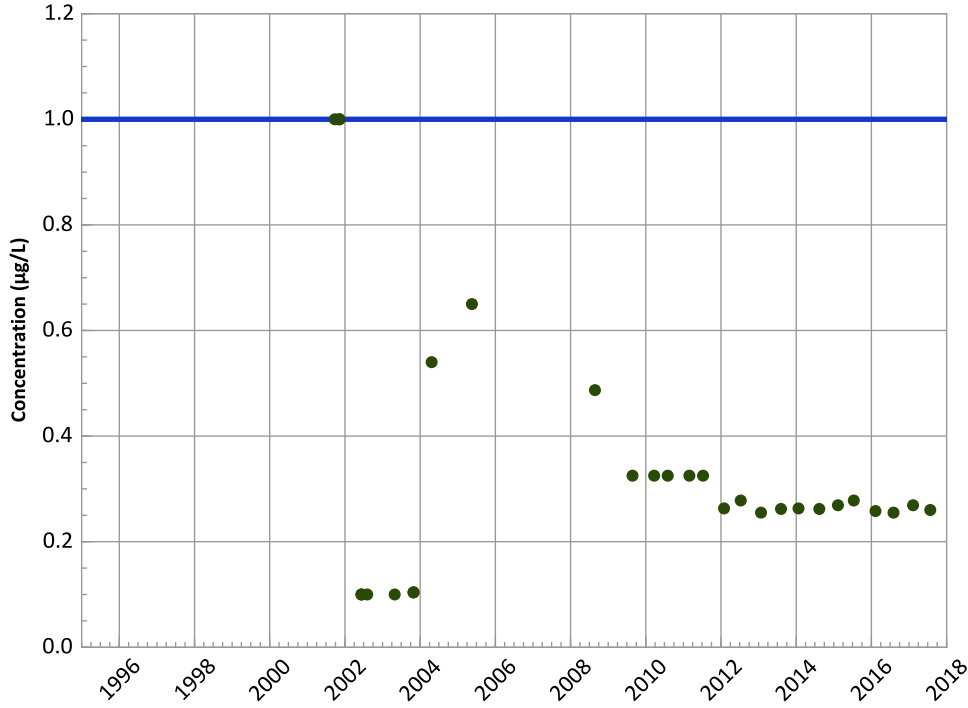


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/25/2001 to 07/26/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1072 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

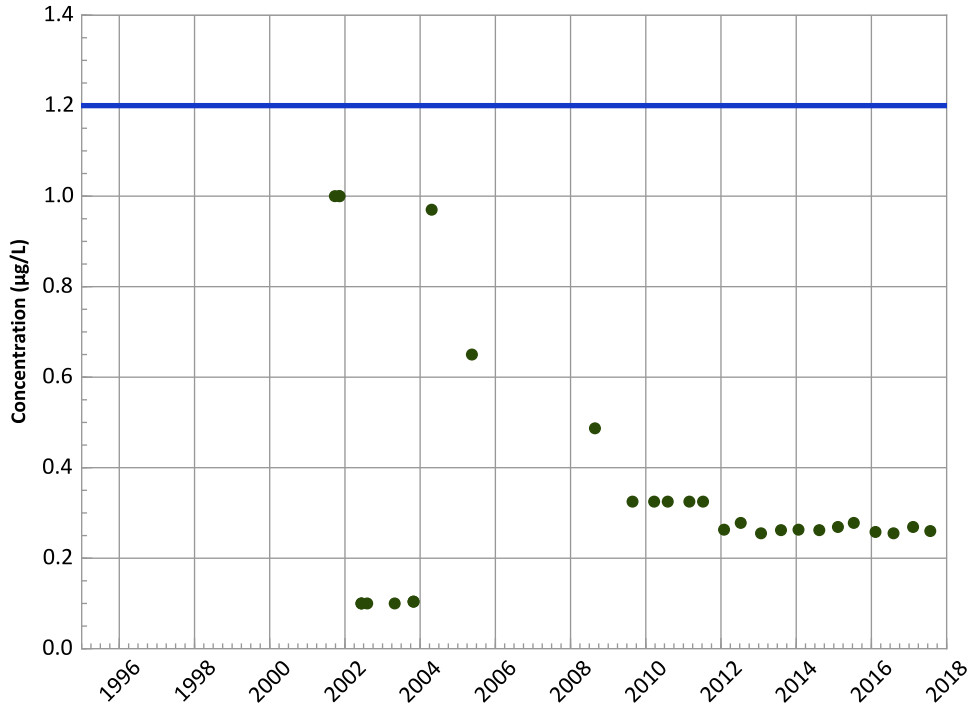
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

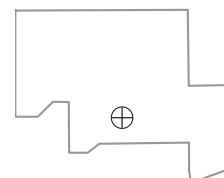
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

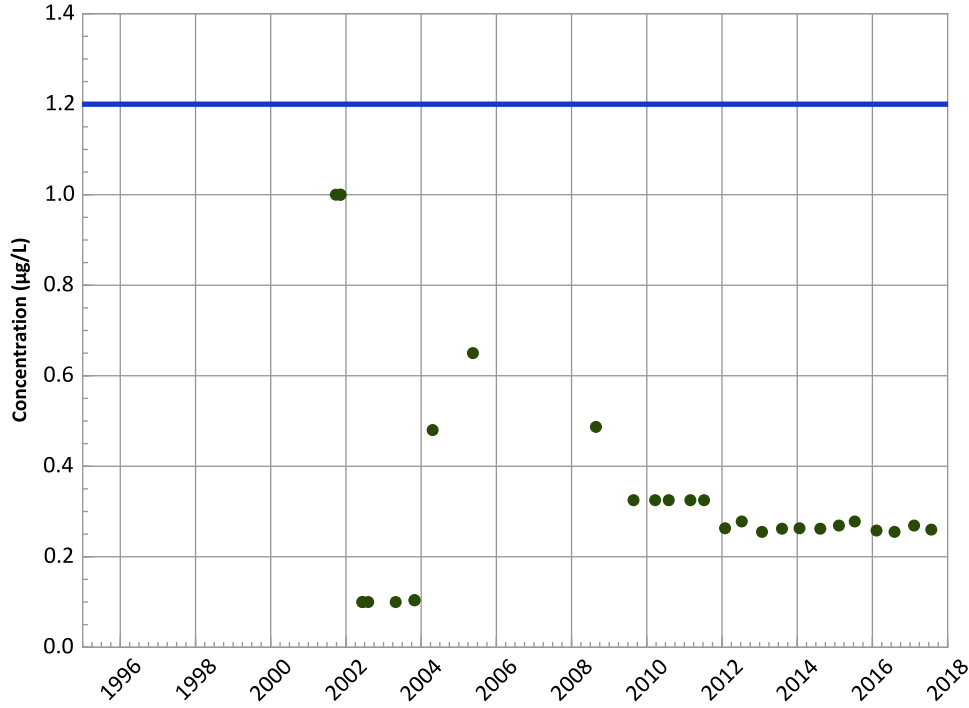


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/25/2001 to 07/26/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1072 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

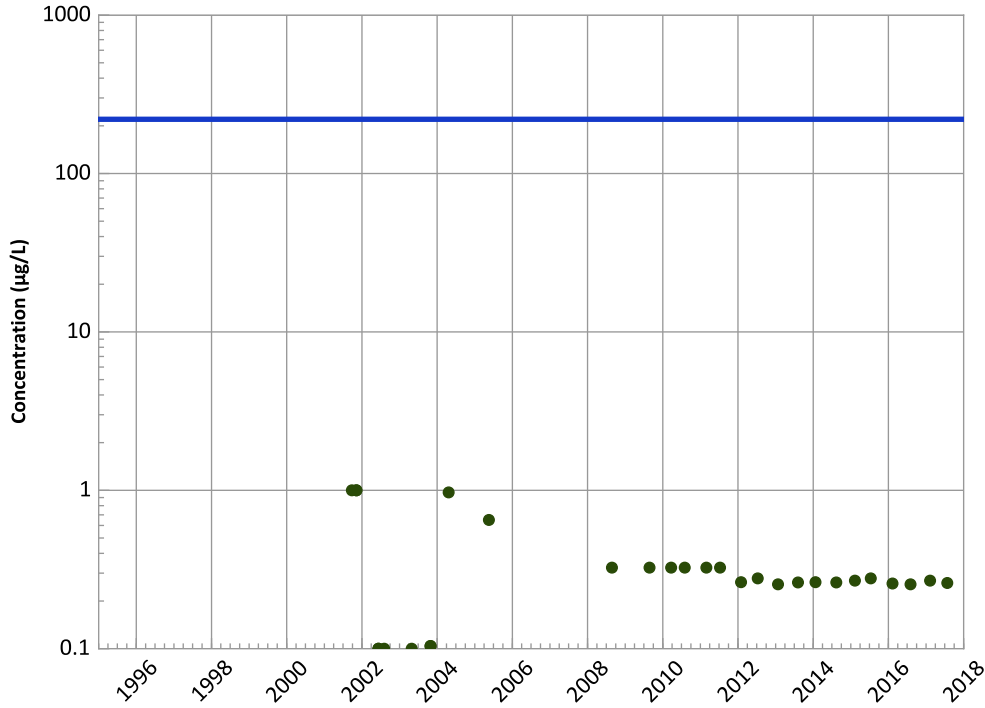
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,3,5-Trinitrobenzene Trend



Concentration Trend

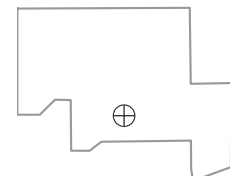
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

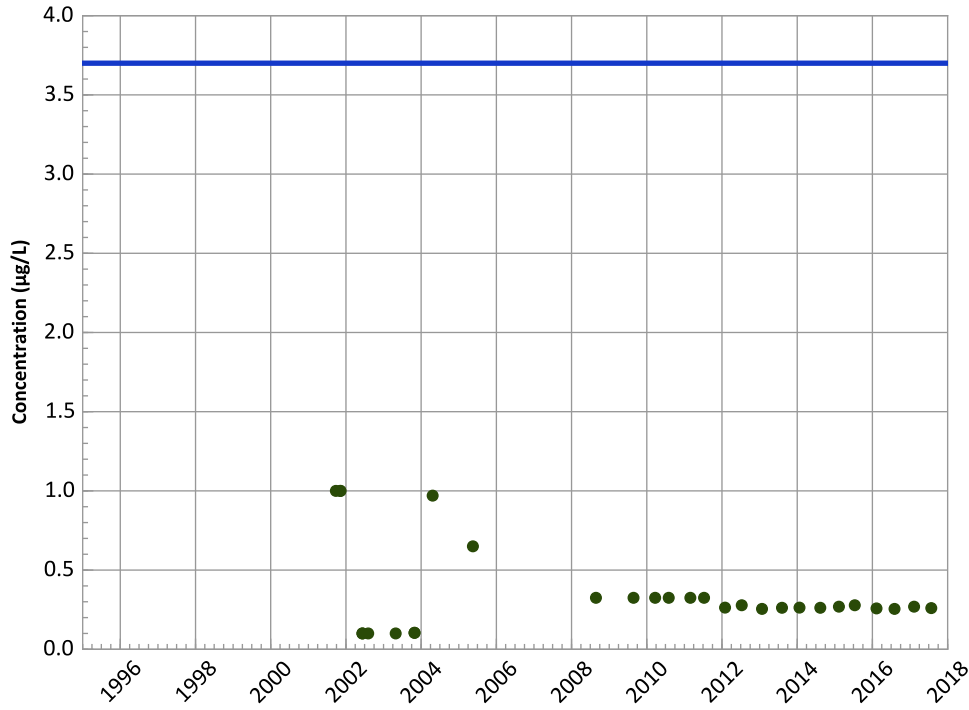


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/25/2001 to 07/26/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1072 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

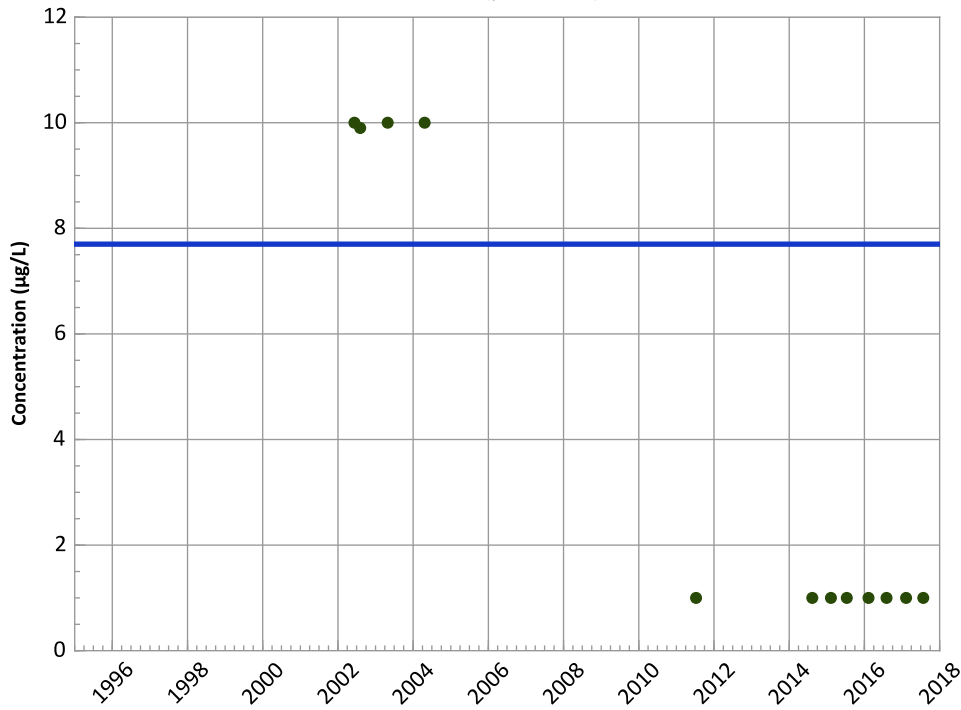
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,4-Dioxane (p-Dioxane) Trend



Concentration Trend

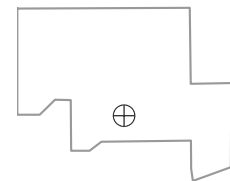
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

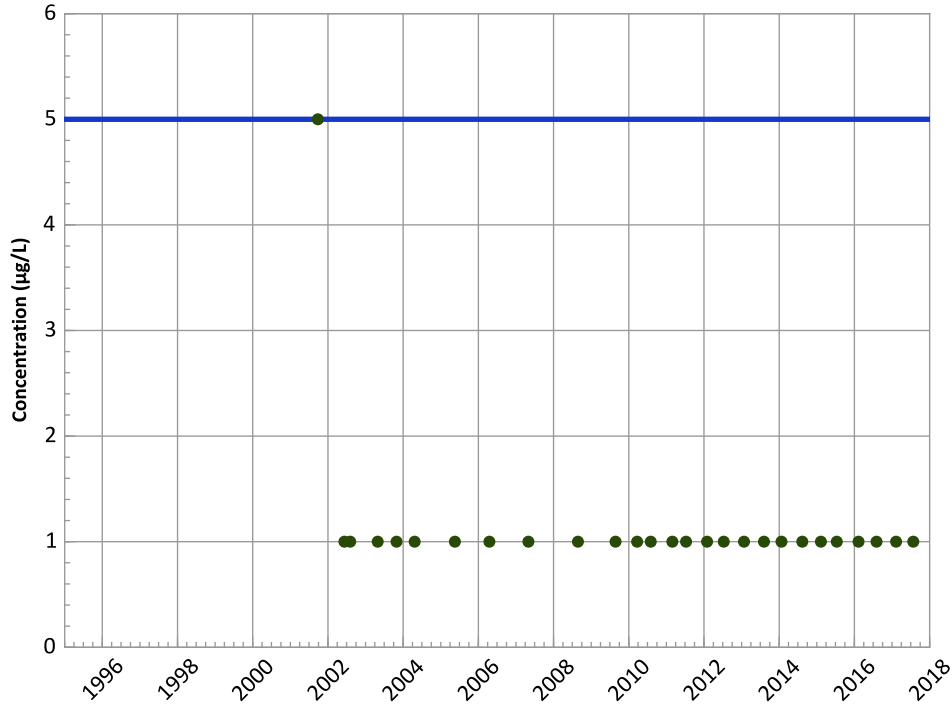
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/25/2001 to 07/26/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1072 in Ogallala Aquifer
USDOE/NNSA Pantex Plant
Tetrachloroethylene (PCE) Trend**



Concentration Trend

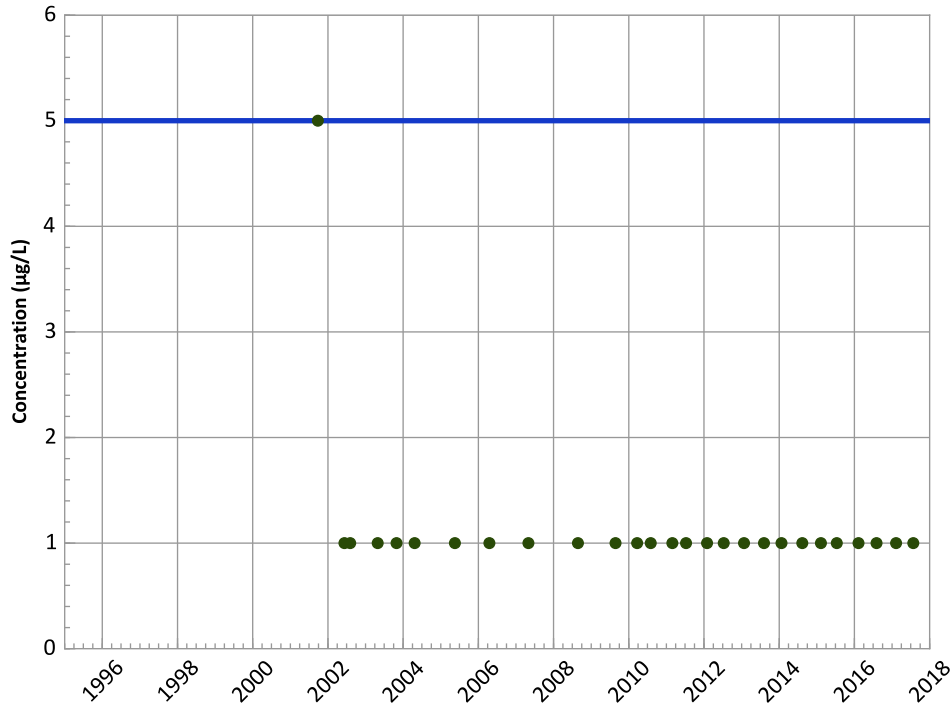
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Trichloroethene Trend



Concentration Trend

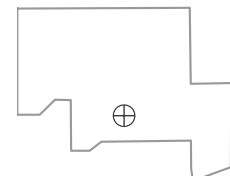
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

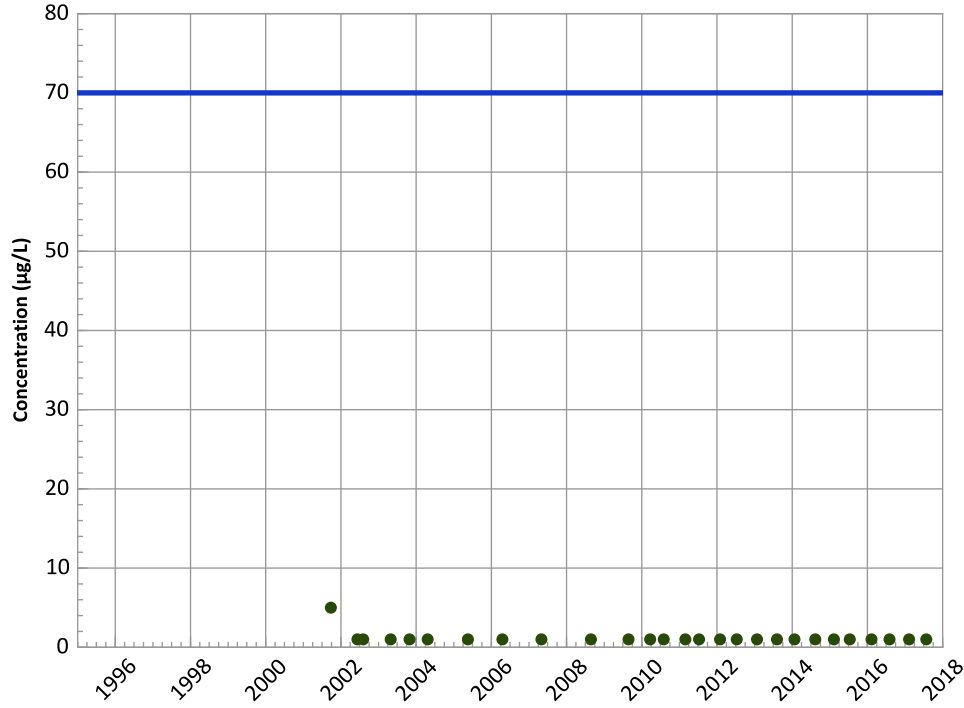


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/25/2001 to 07/26/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1072 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

cis-1,2-Dichloroethene Trend



Concentration Trend

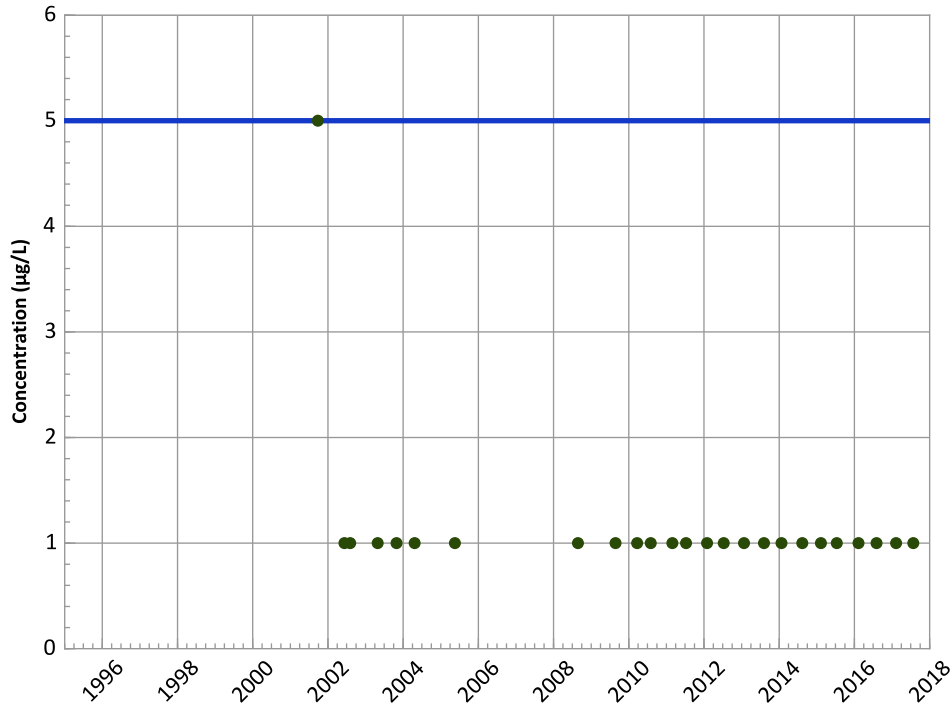
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,2-Dichloroethane Trend



Concentration Trend

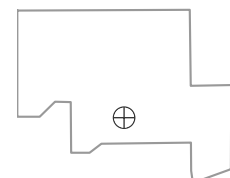
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

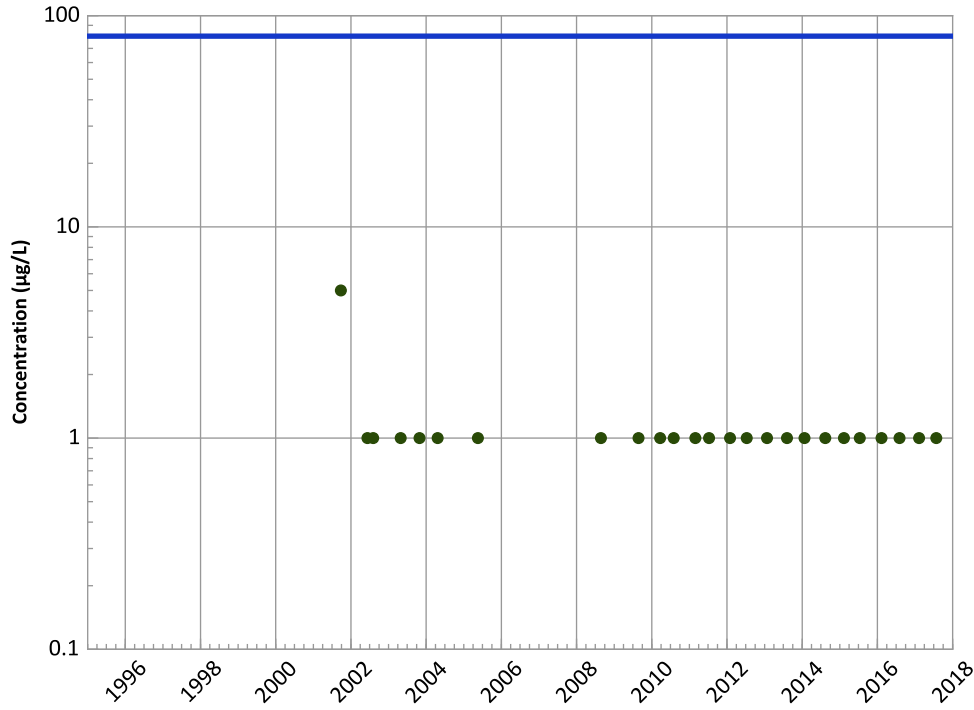
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/25/2001 to 07/26/2017
Analysis Date: 03/21/2018

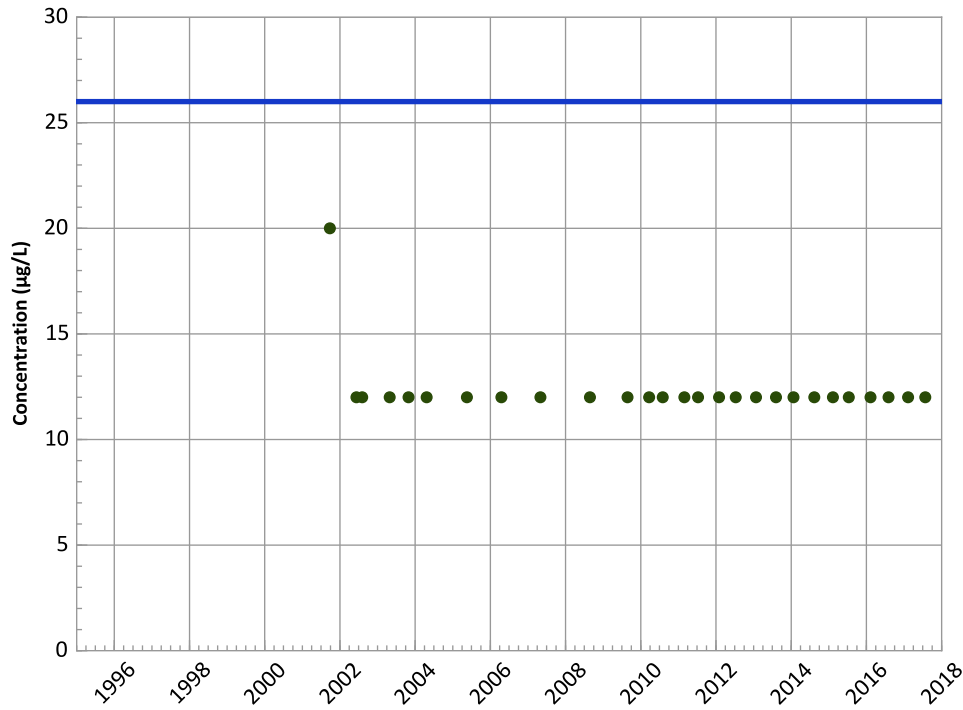
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1072 in Ogallala Aquifer
USDOE/NNSA Pantex Plant
Chloroform Trend**



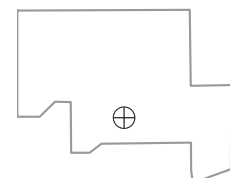
Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect
MAROS Linear Regression Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect

Perchlorate Trend



Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect
MAROS Linear Regression Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect

Well Location

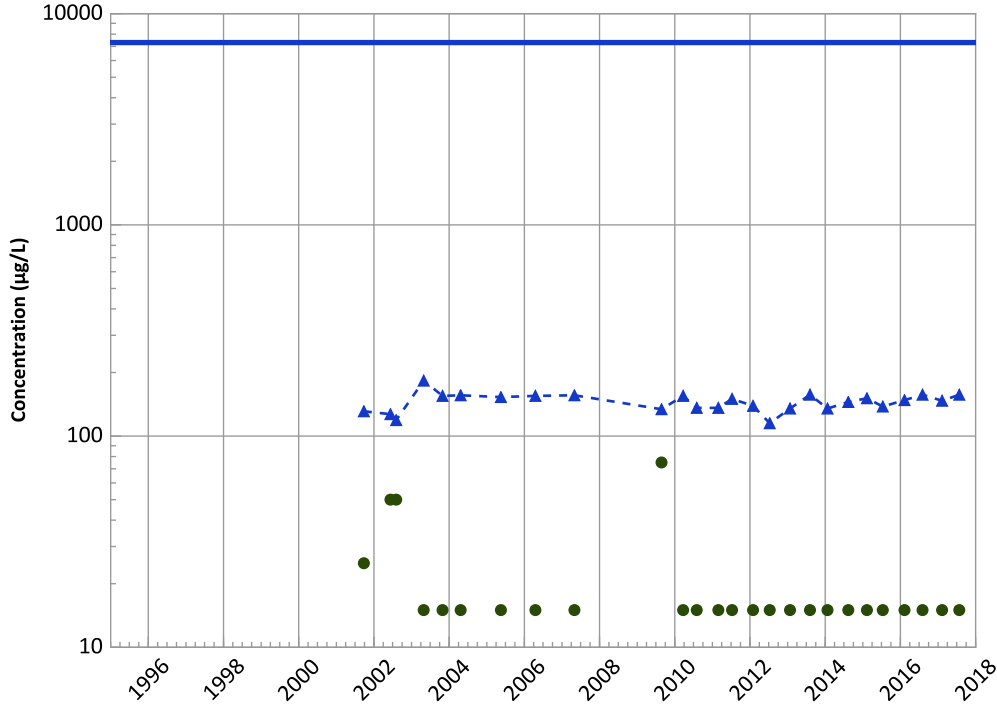


Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 09/25/2001 to 07/26/2017
 Analysis Date: 03/21/2018

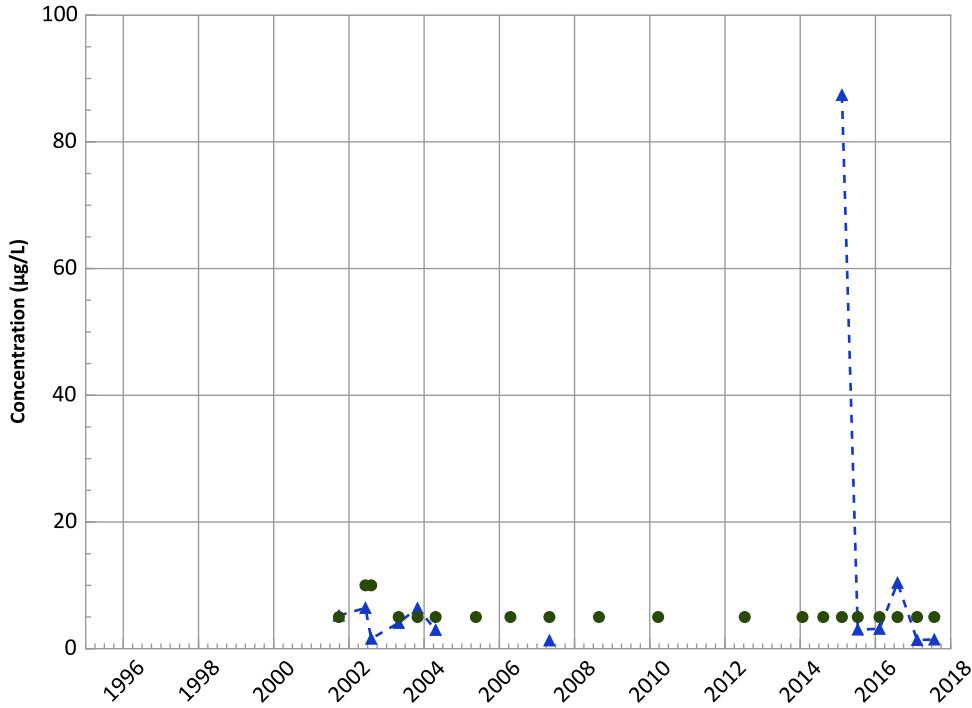
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1072 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

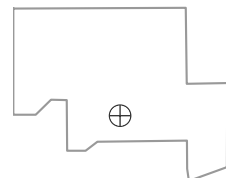
Boron Trend



Manganese Trend



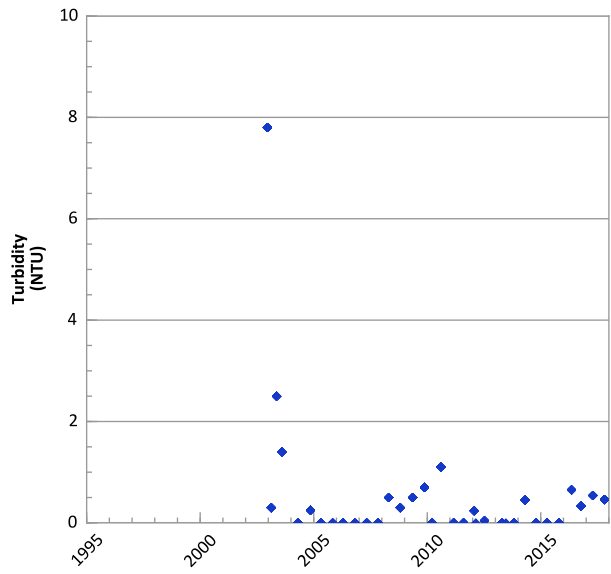
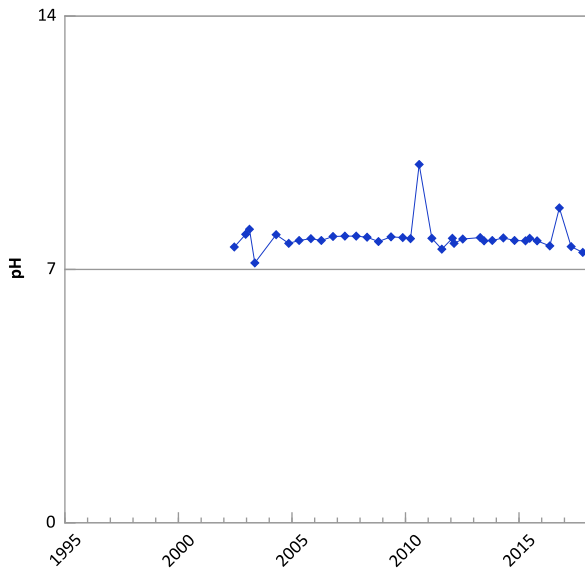
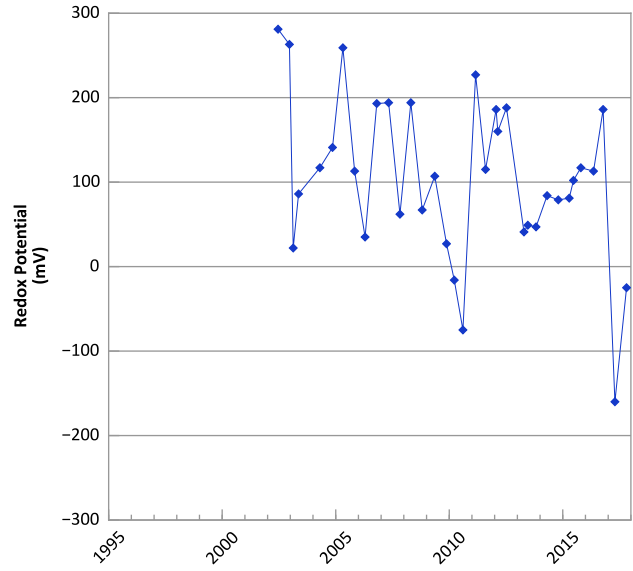
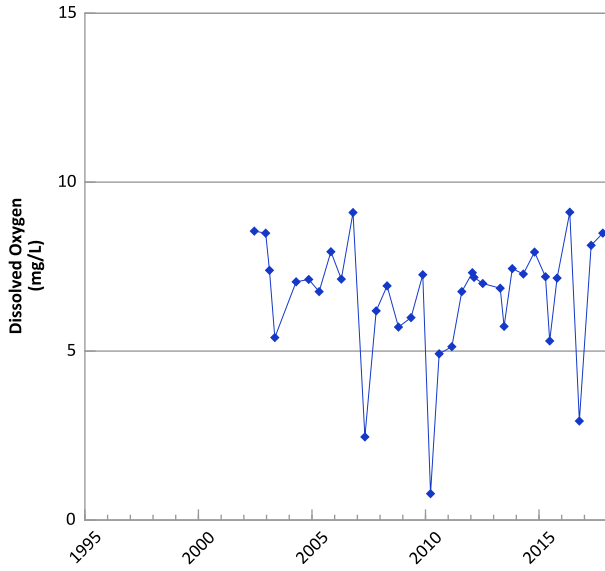
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 09/25/2001 to 07/26/2017
 Analysis Date: 03/21/2018

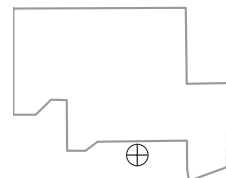
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1076 in Ogallala Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



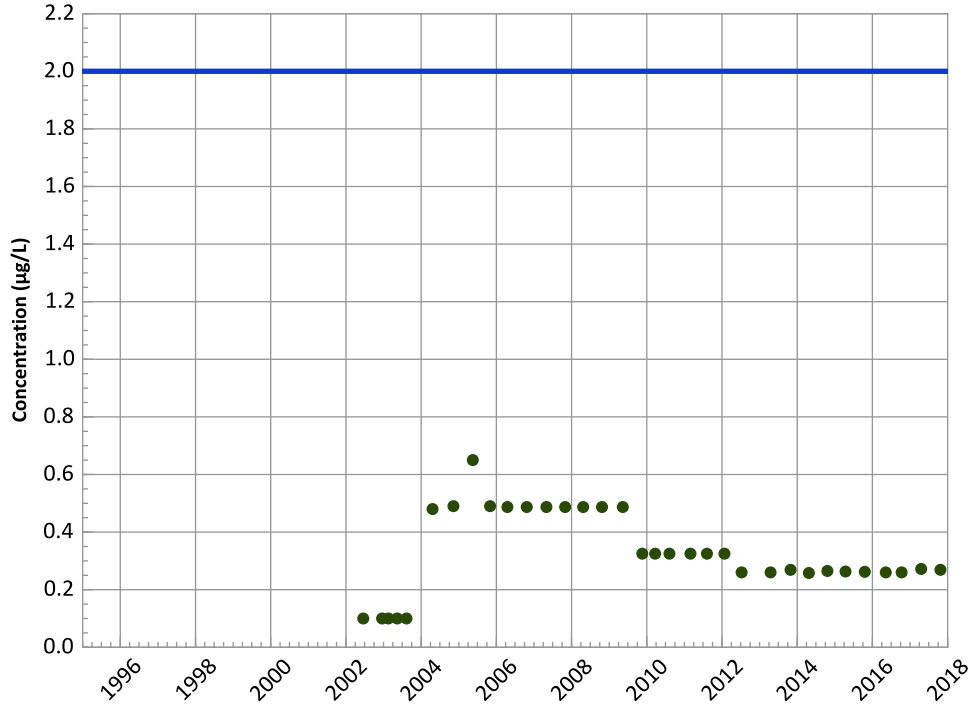
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 06/18/2002 to 10/23/2017
 Analysis Date: 03/21/2018

Well Location



PTX06-1076 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

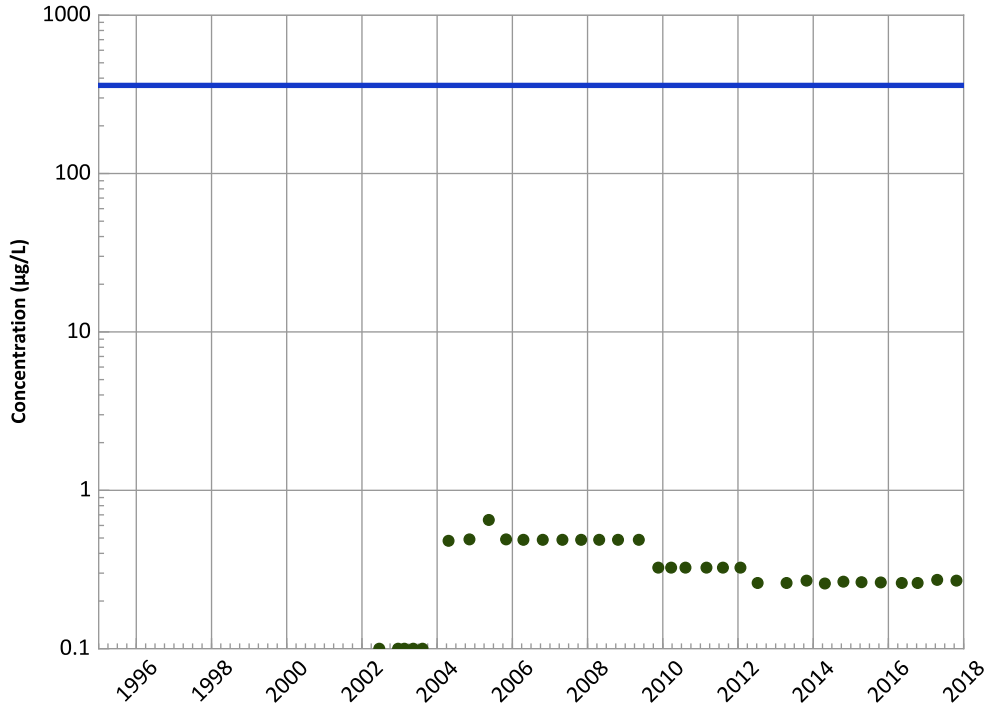
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

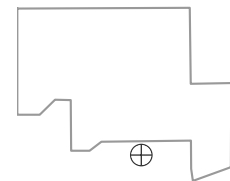
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

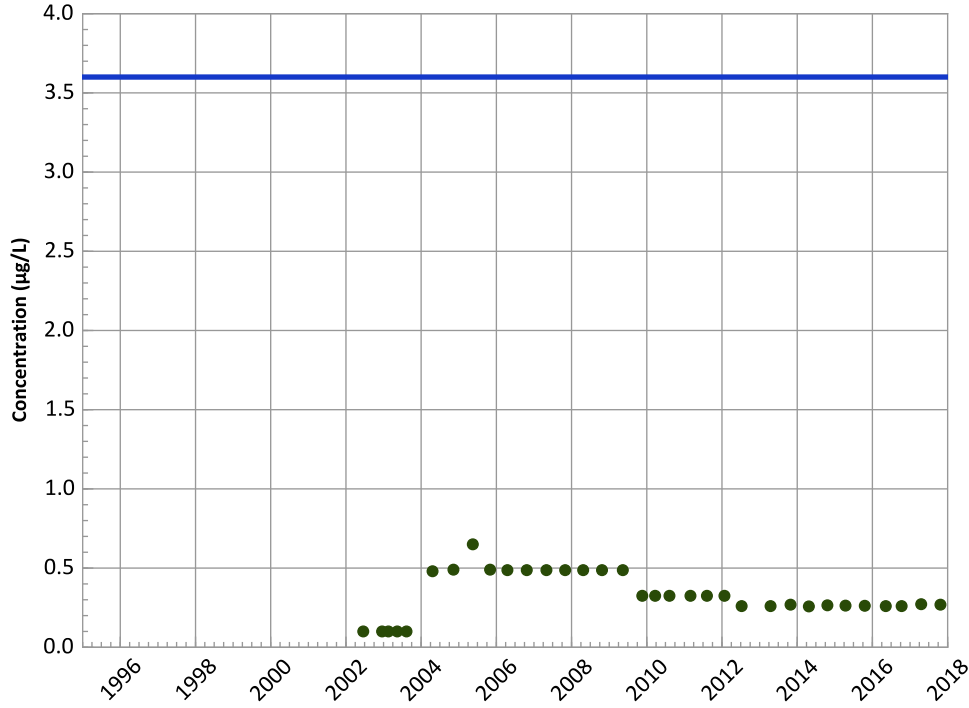


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/18/2002 to 10/23/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1076 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

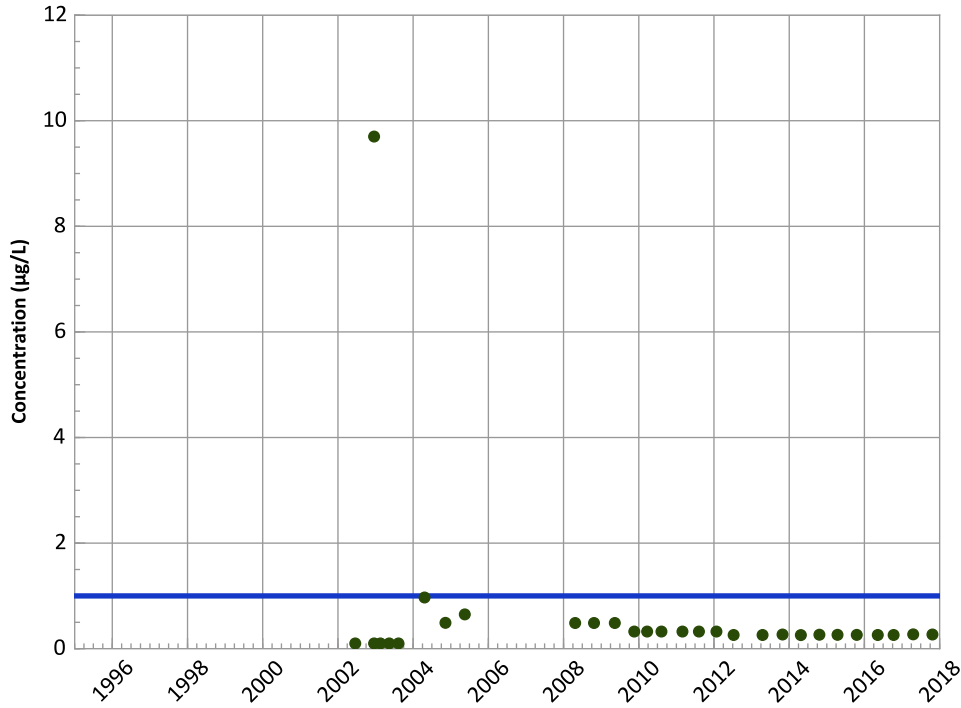
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

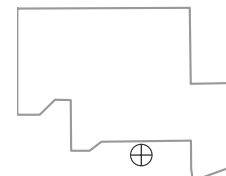
MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/18/2002 to 10/23/2017
Analysis Date: 03/21/2018

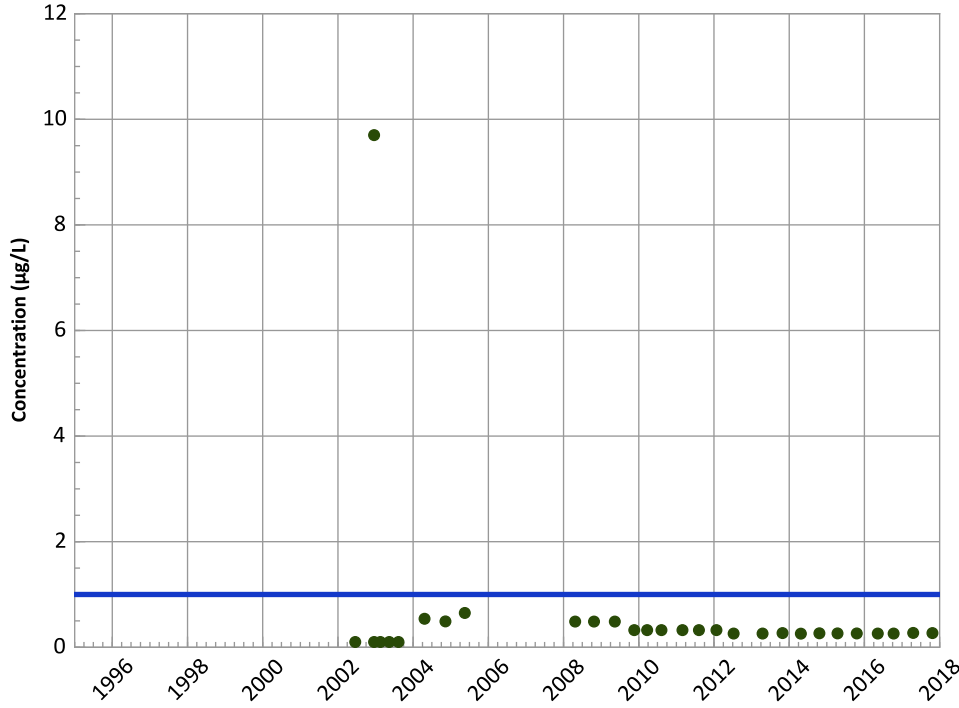
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1076 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

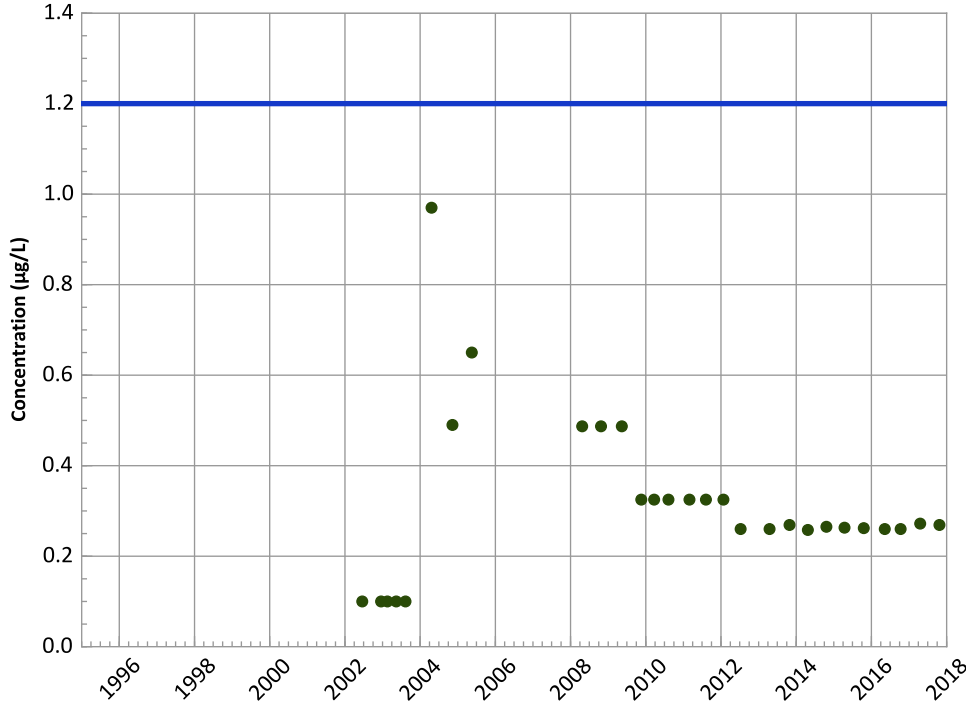
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

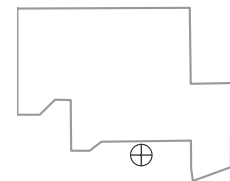
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

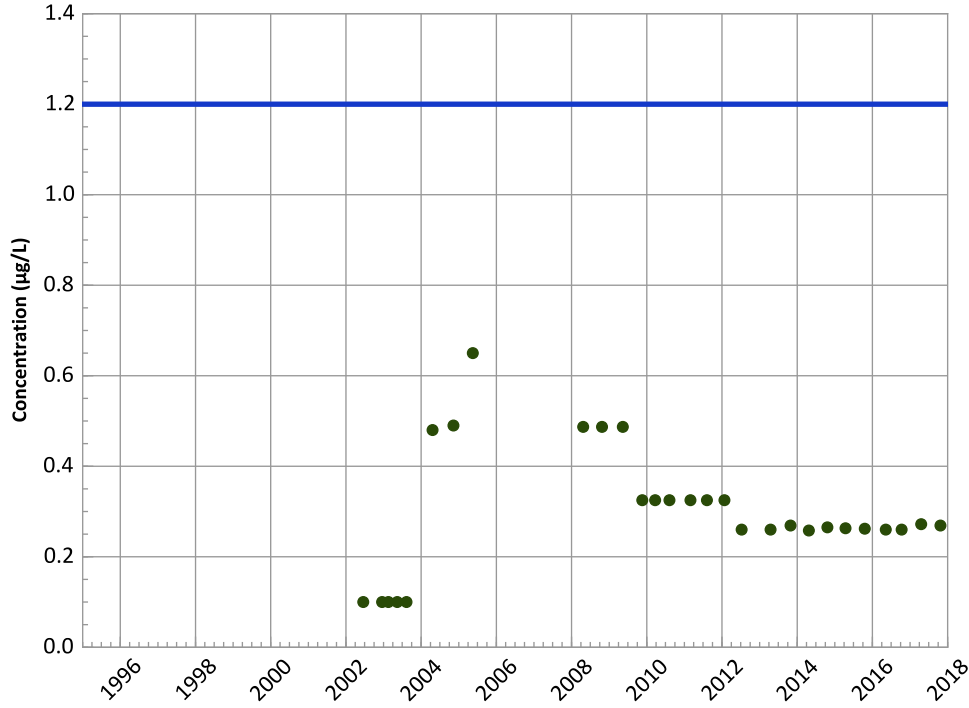


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/18/2002 to 10/23/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1076 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

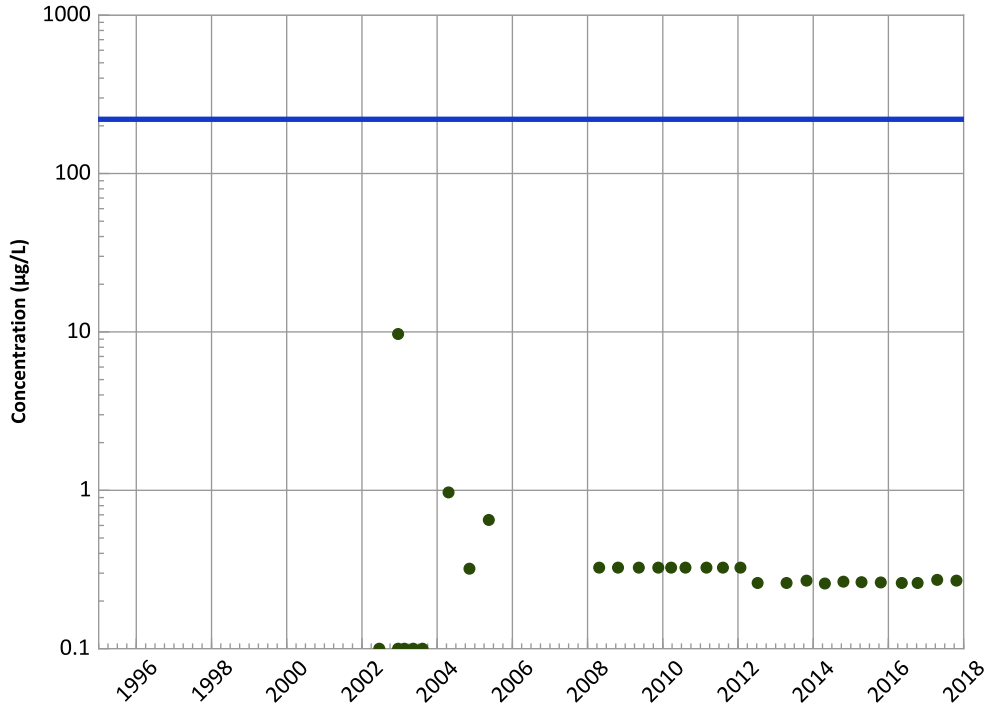
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,3,5-Trinitrobenzene Trend



Concentration Trend

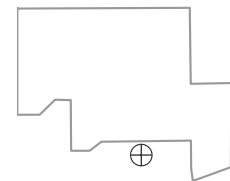
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

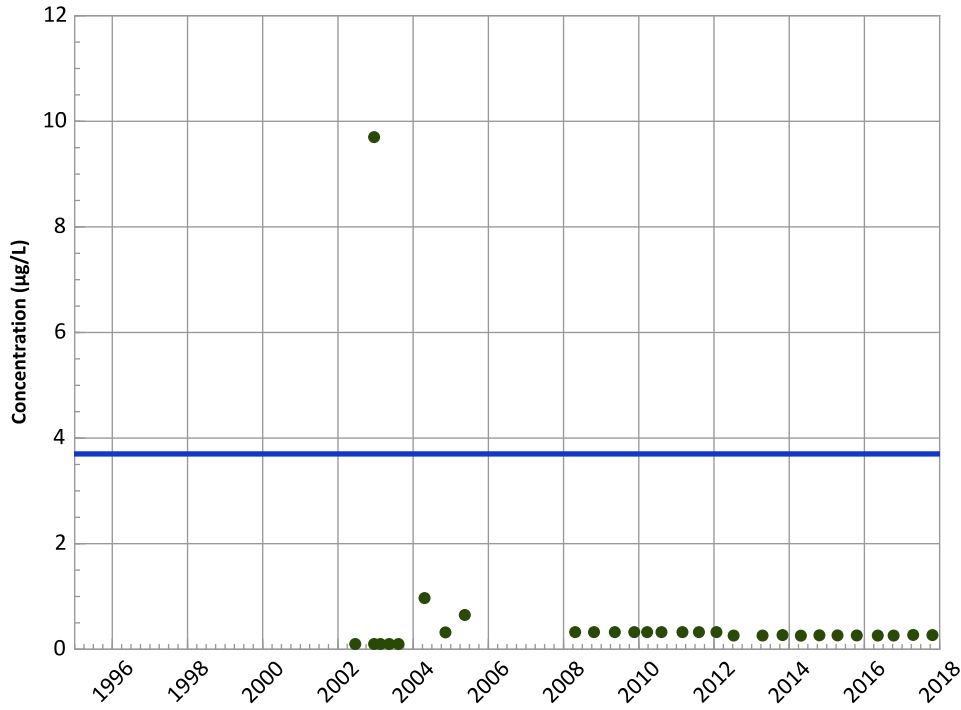


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/18/2002 to 10/23/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1076 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

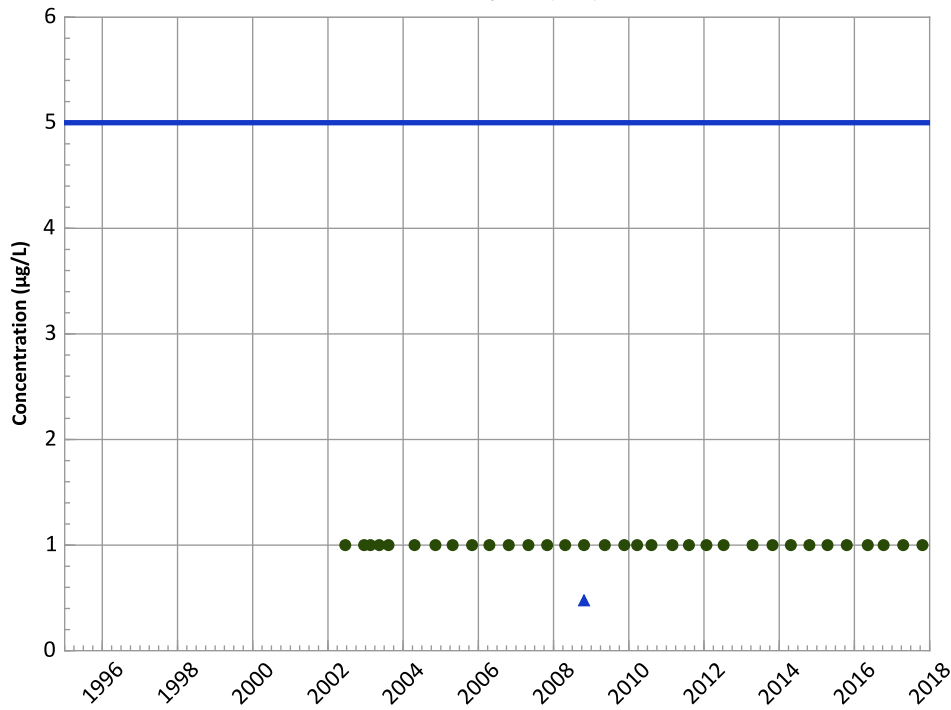
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Tetrachloroethylene (PCE) Trend



Concentration Trend

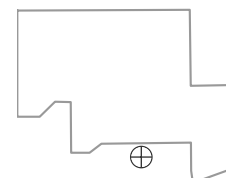
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

Well Location

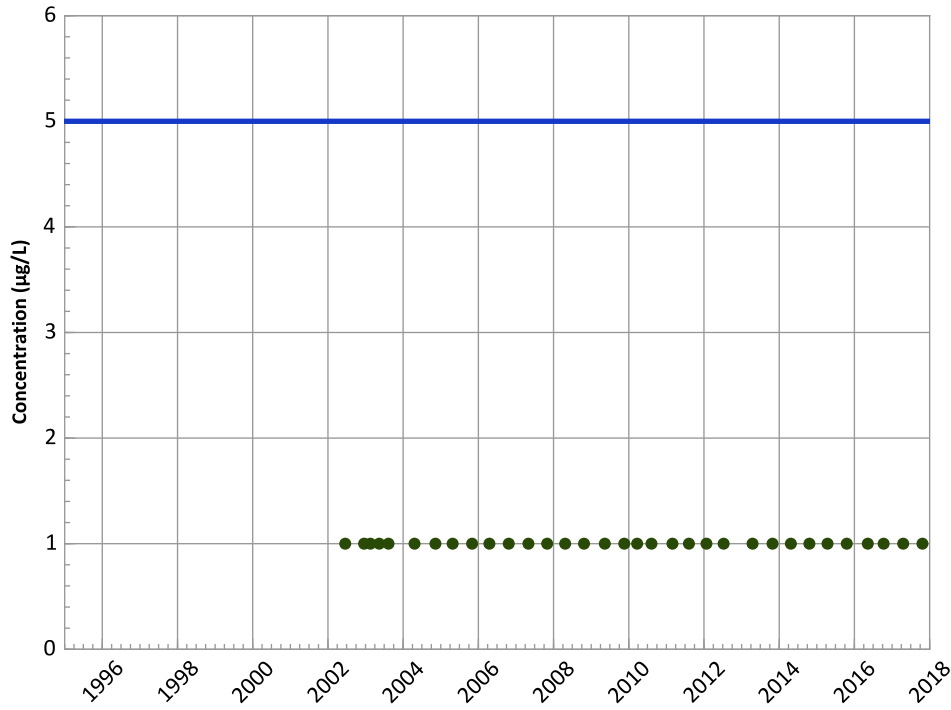


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/18/2002 to 10/23/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1076 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

Trichloroethene Trend



Concentration Trend

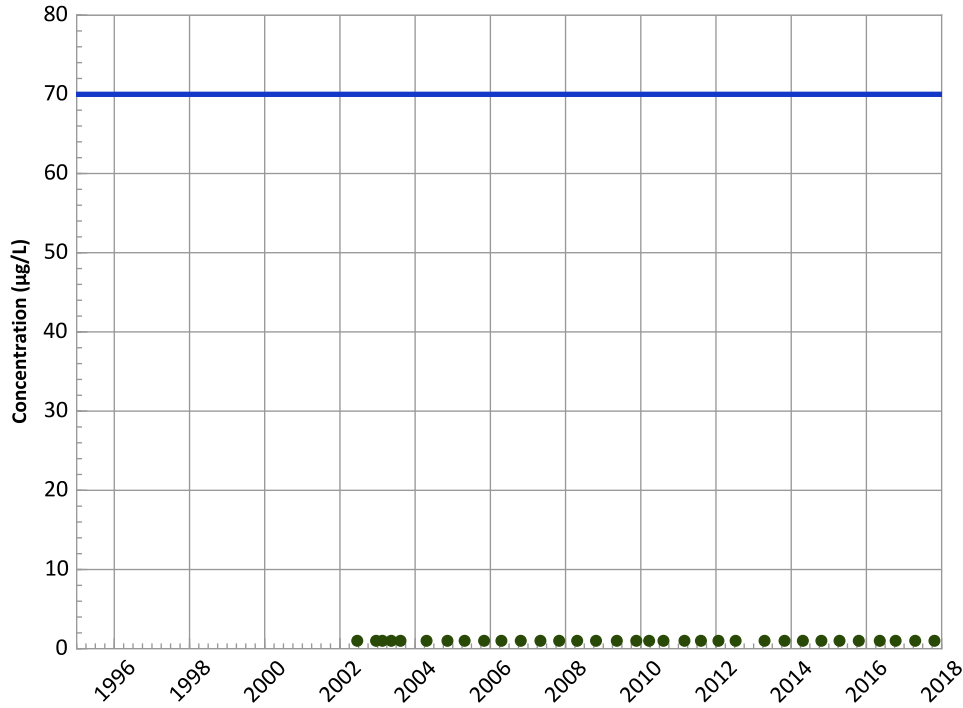
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

cis-1,2-Dichloroethene Trend



Concentration Trend

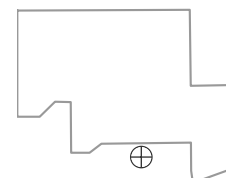
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

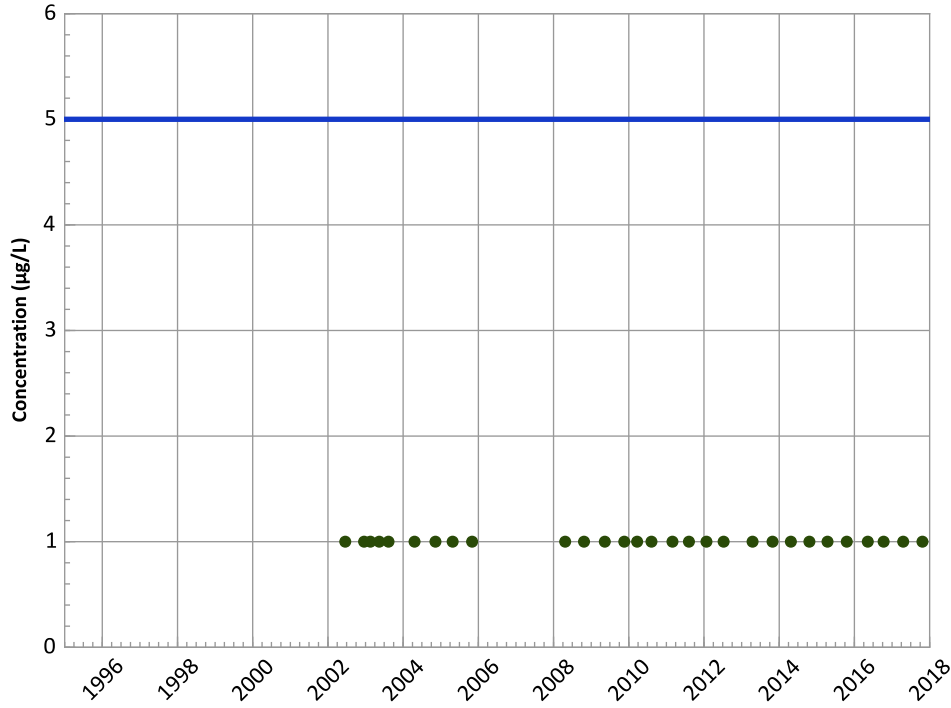
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/18/2002 to 10/23/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1076 in Ogallala Aquifer
USDOE/NNSA Pantex Plant
1,2-Dichloroethane Trend**



Concentration Trend

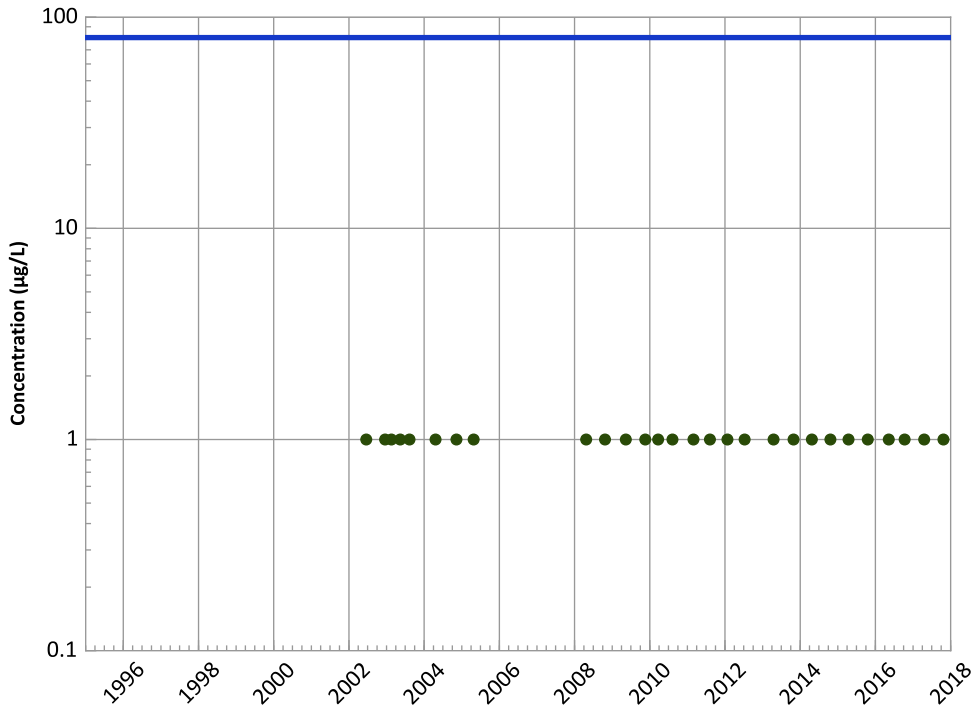
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Chloroform Trend



Concentration Trend

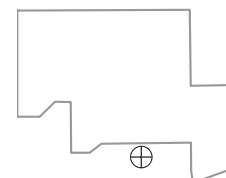
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

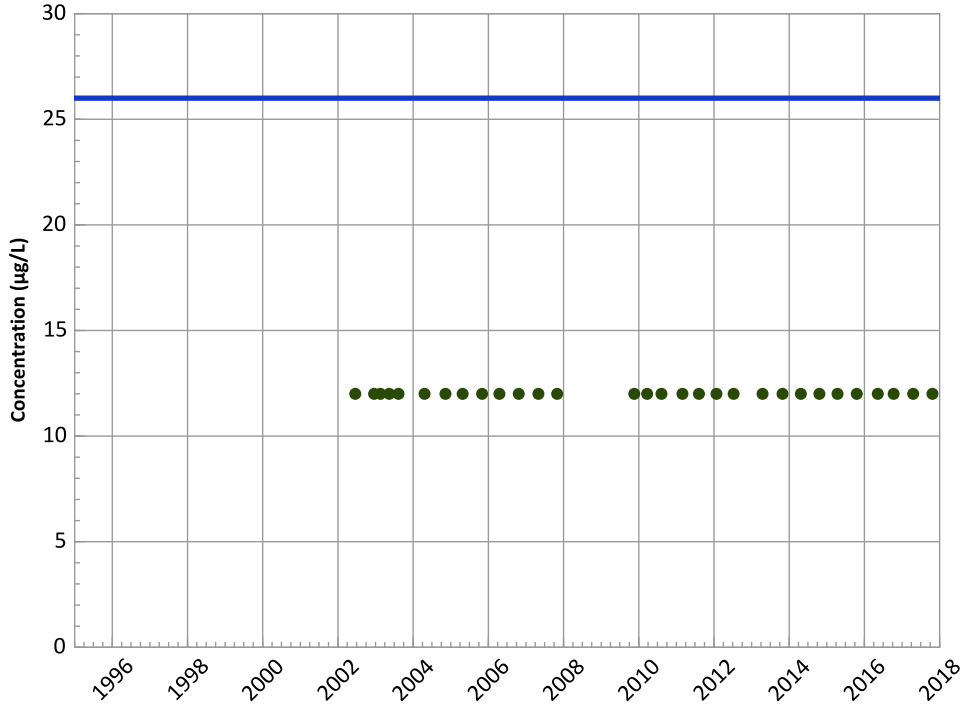


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/18/2002 to 10/23/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1076 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

Perchlorate Trend



Concentration Trend

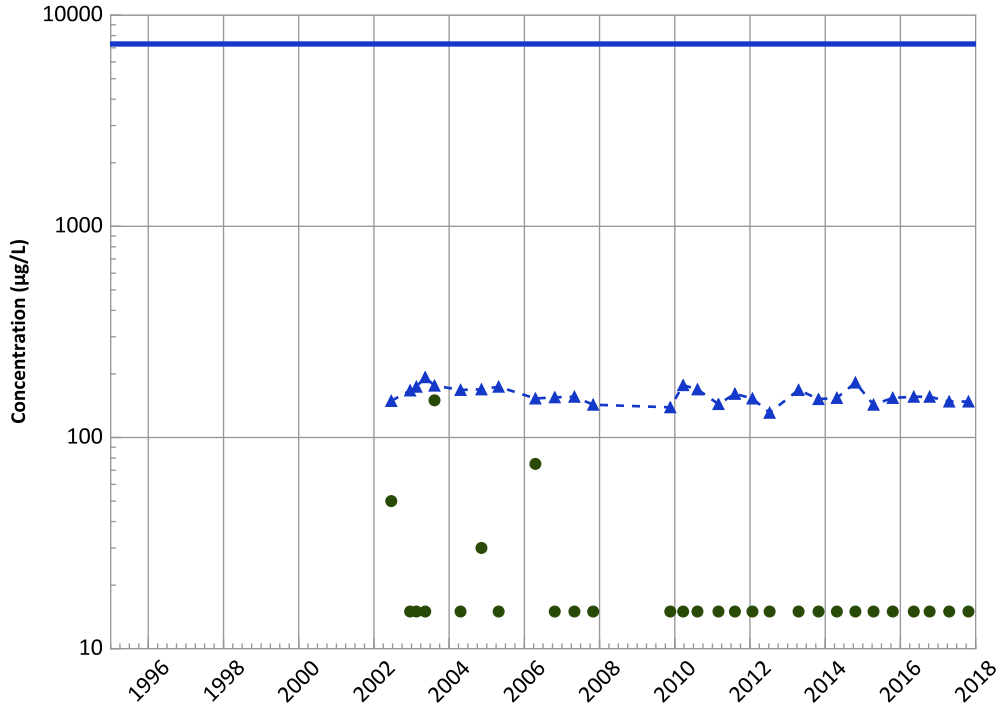
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Boron Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
No Trend
All Data
Decreasing

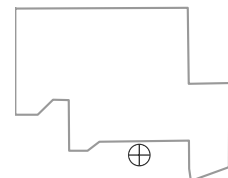
MAROS Linear Regression Method

Data ():
No Trend
All Data
Decreasing

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/18/2002 to 10/23/2017
Analysis Date: 03/21/2018

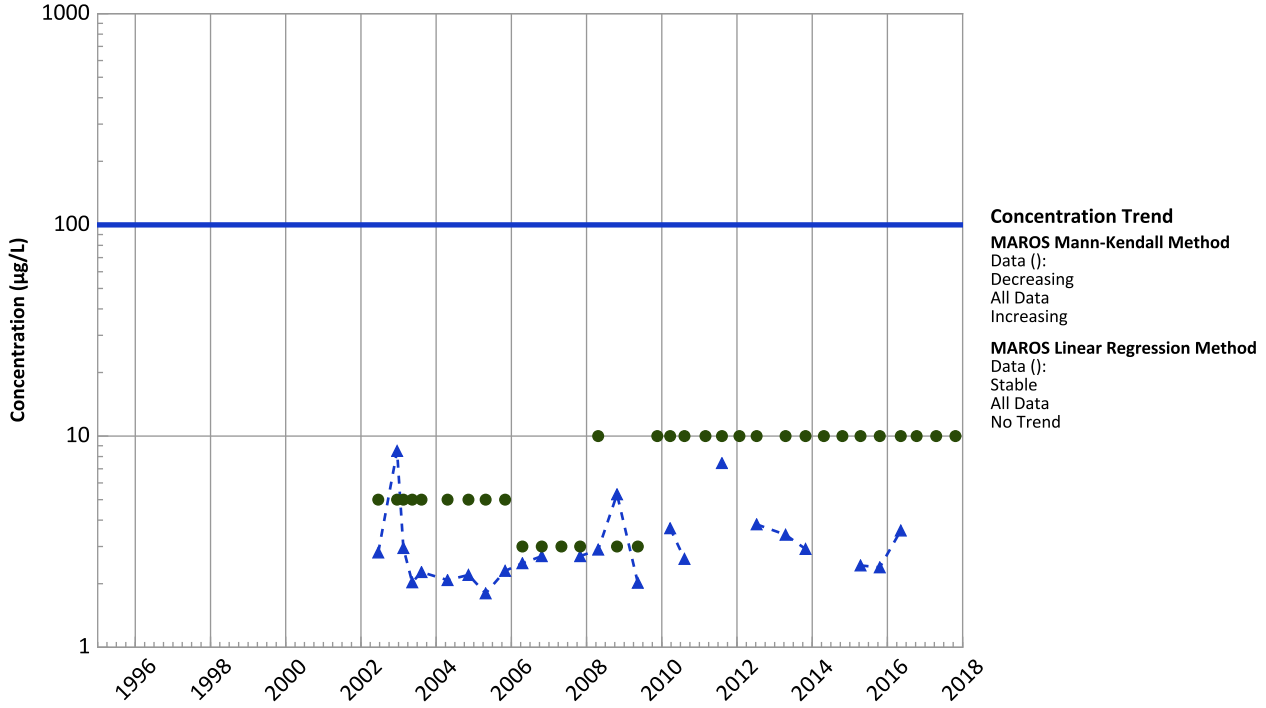
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

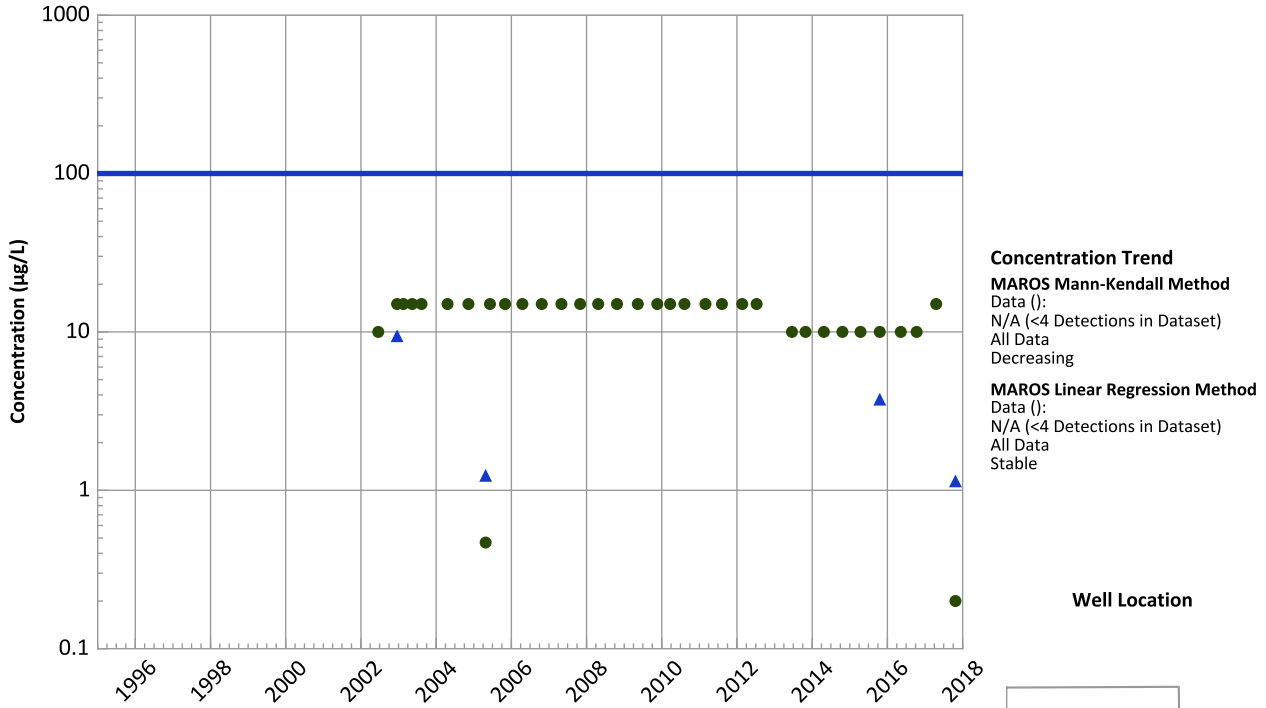


PTX06-1076 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

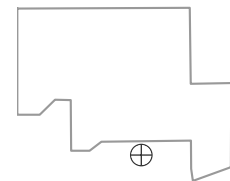
Chromium, Total Trend



Chromium, Hexavalent Trend



Well Location

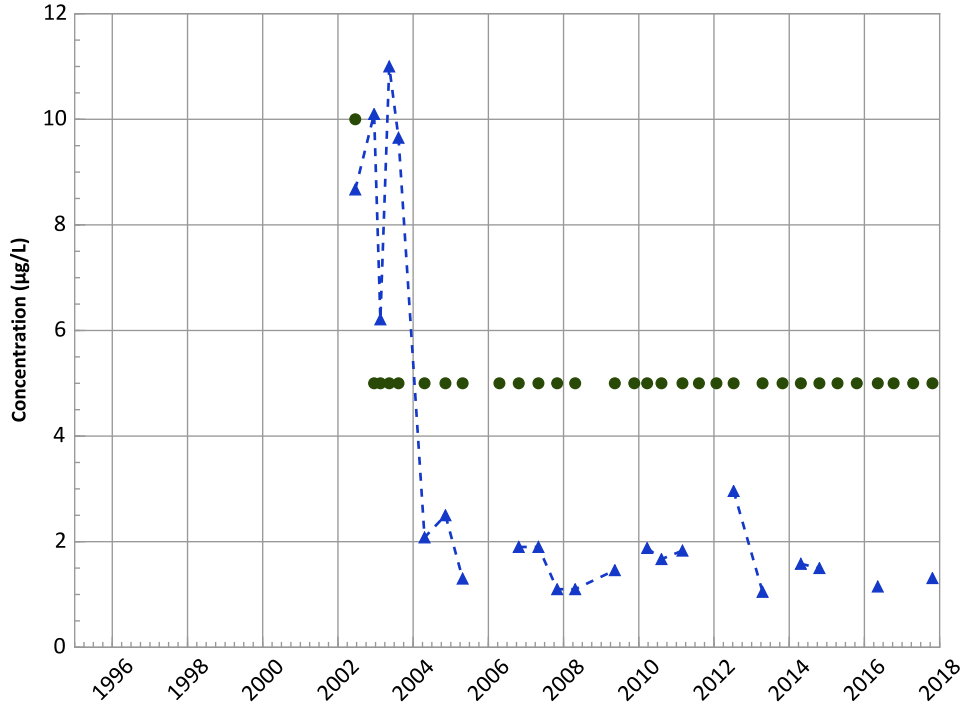


Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 06/18/2002 to 10/23/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1076 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

Manganese Trend



Concentration Trend

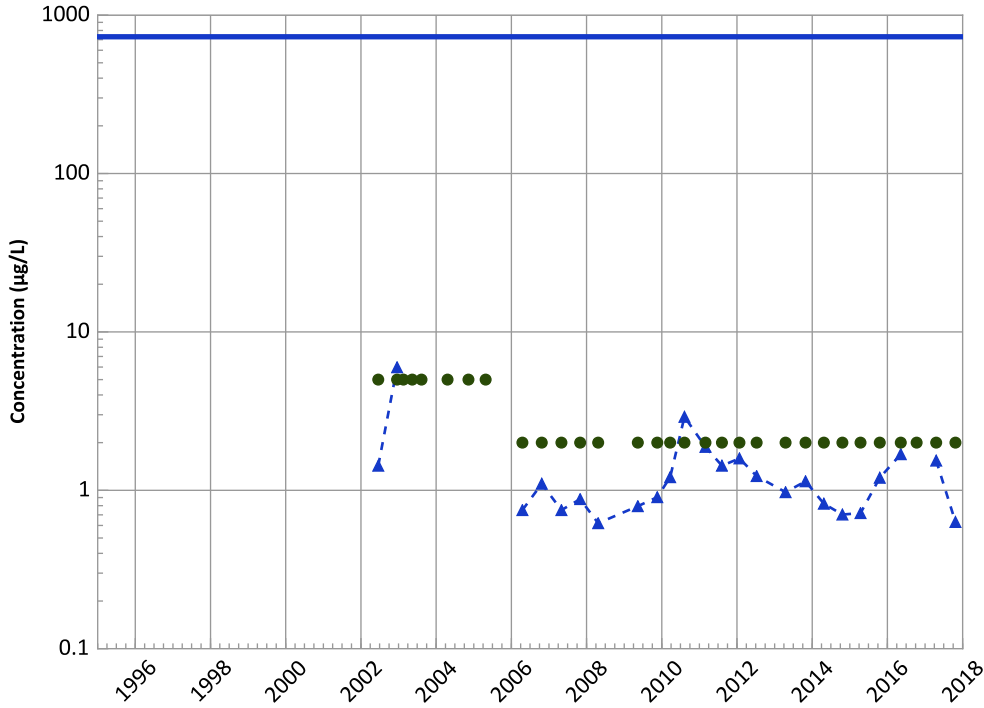
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Stable
All Data
Decreasing

Nickel Trend



Concentration Trend

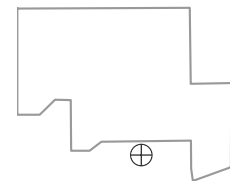
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Stable
All Data
Stable

Well Location

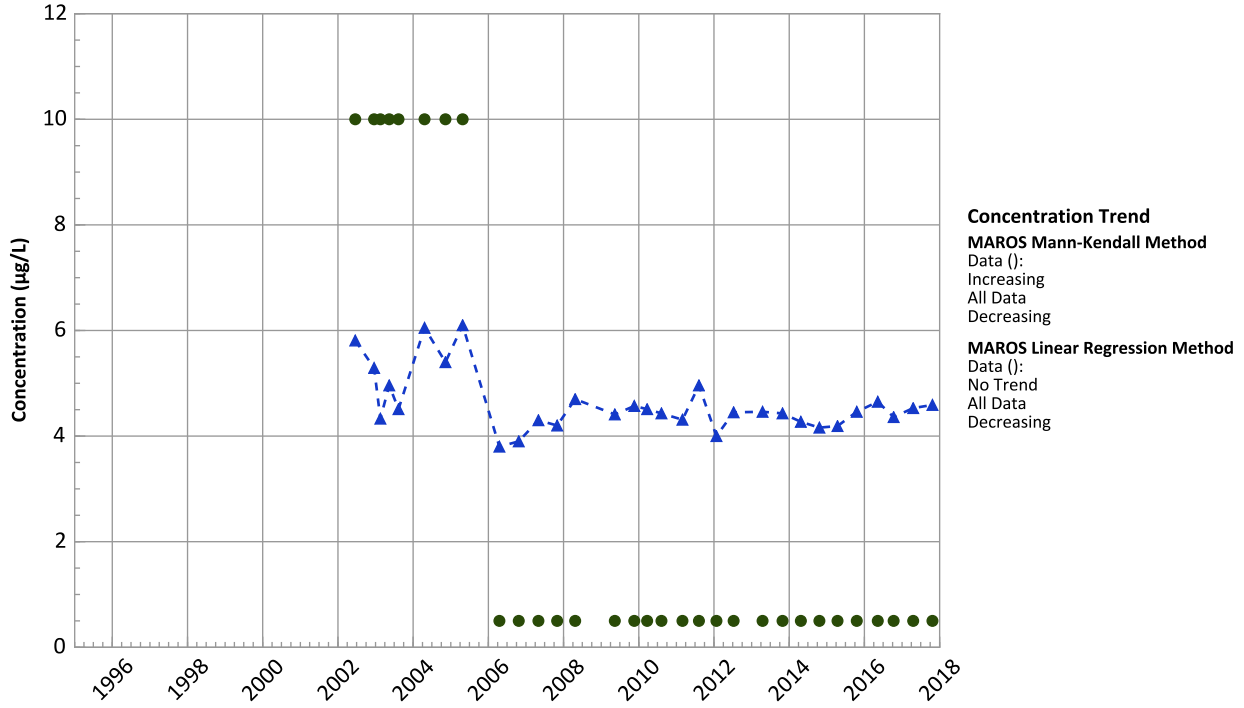


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/18/2002 to 10/23/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1076 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

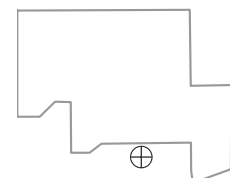
Molybdenum Trend



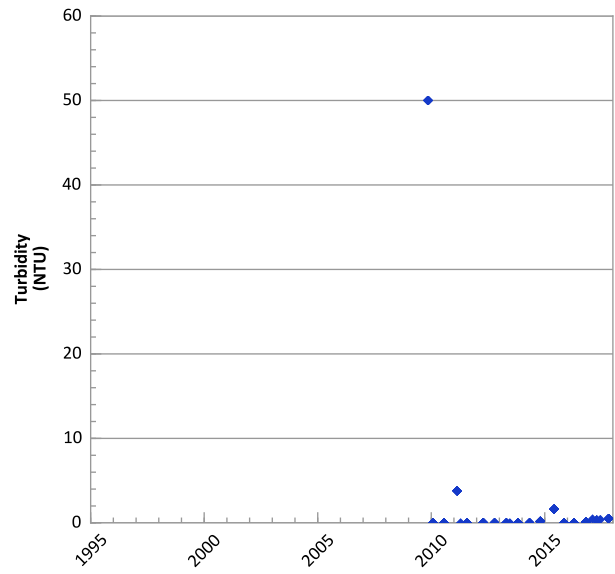
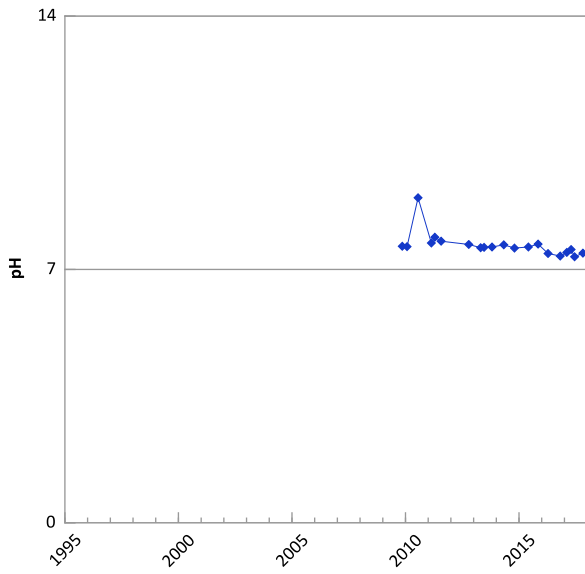
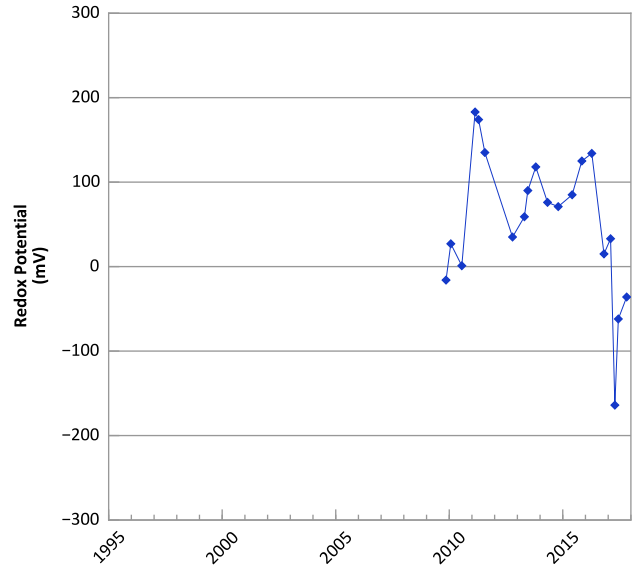
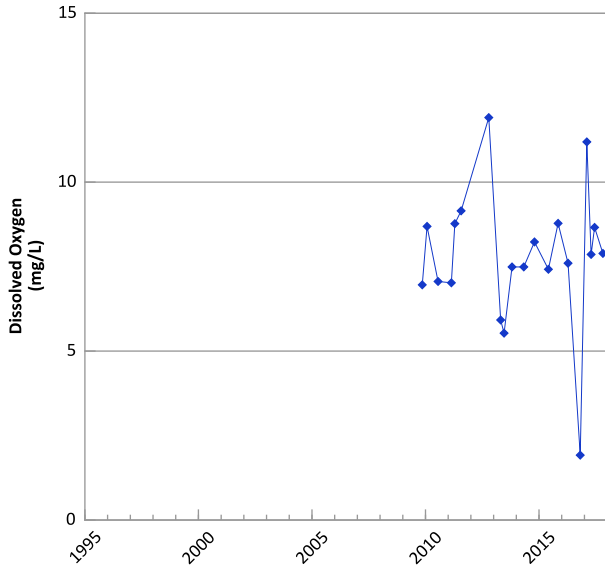
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 06/18/2002 to 10/23/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

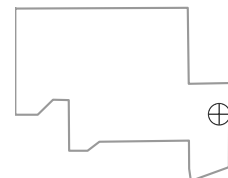


**PTX06-1137A in Ogallala Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



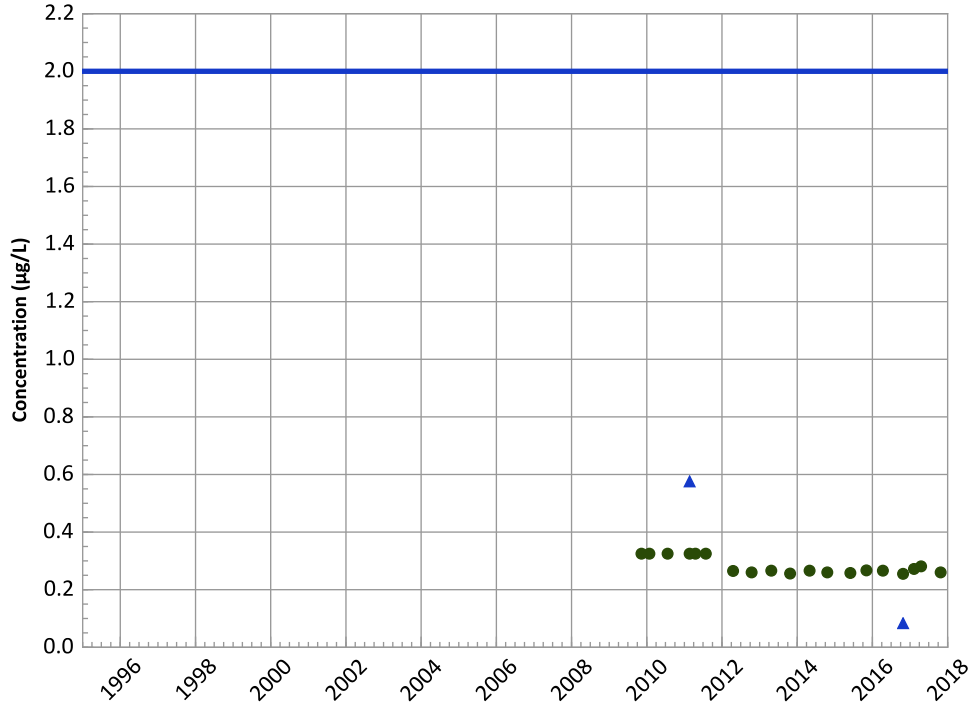
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 11/10/2009 to 10/25/2017
 Analysis Date: 03/21/2018

Well Location



PTX06-1137A in Ogallala Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

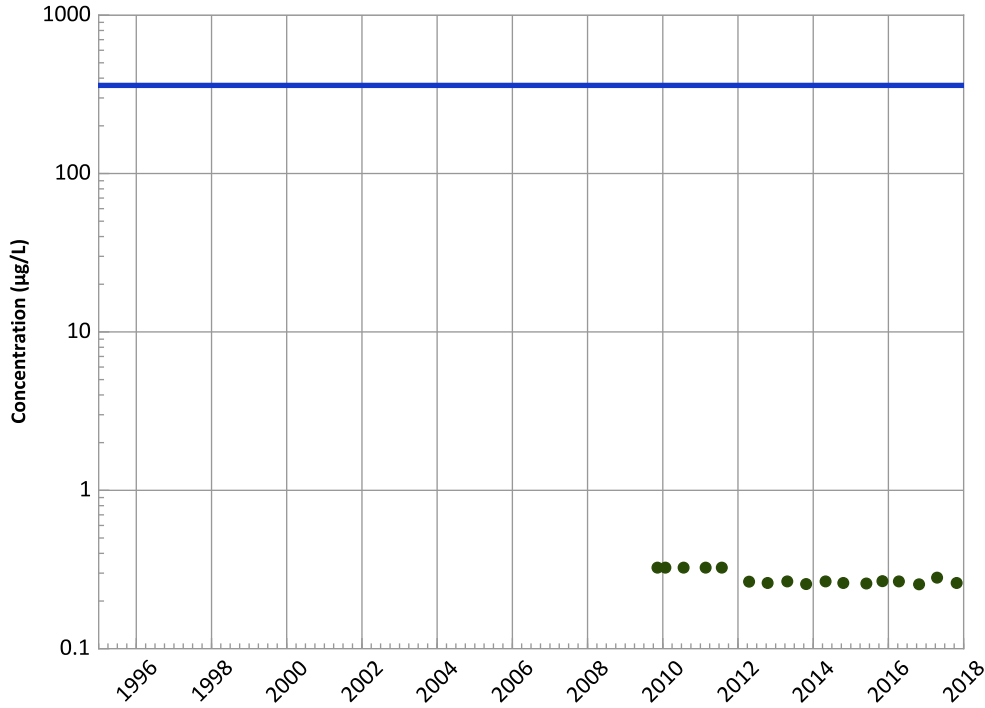
Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

All Non-Detect

All Data

All Non-Detect

All Non-Detect

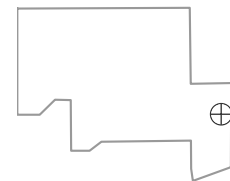
All Non-Detect

All Non-Detect

All Data

All Non-Detect

Well Location

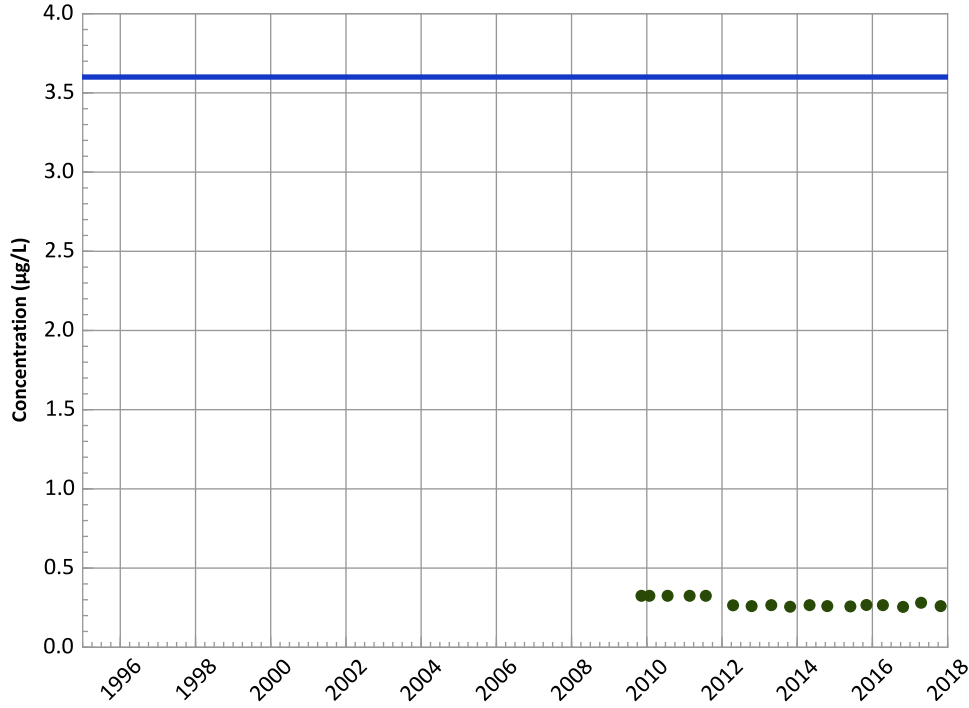


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/10/2009 to 10/25/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1137A in Ogallala Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

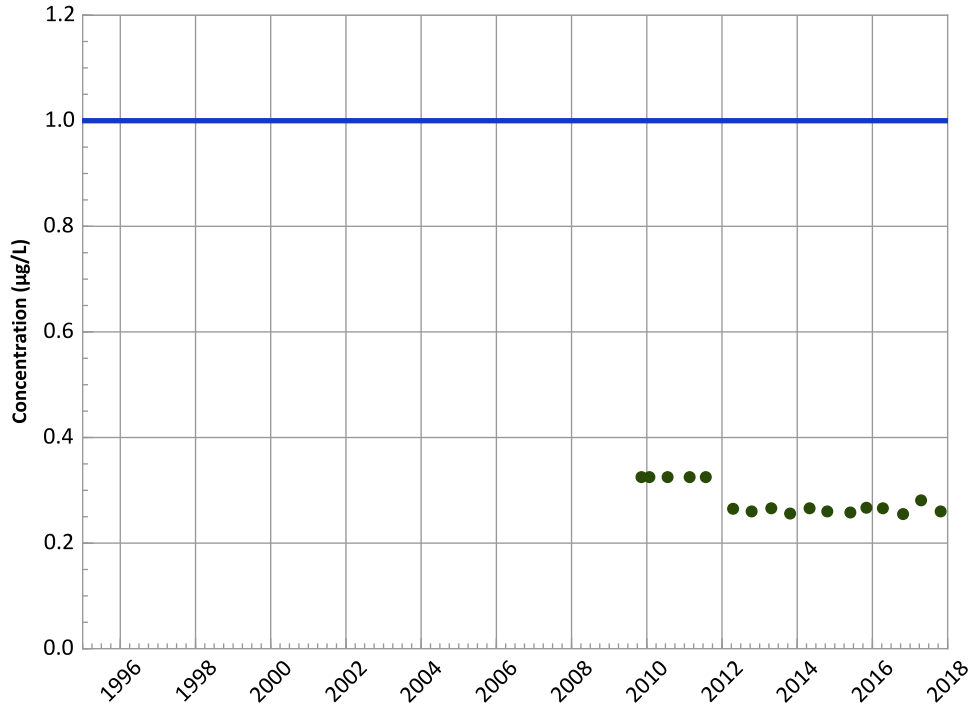
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

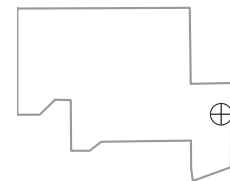
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

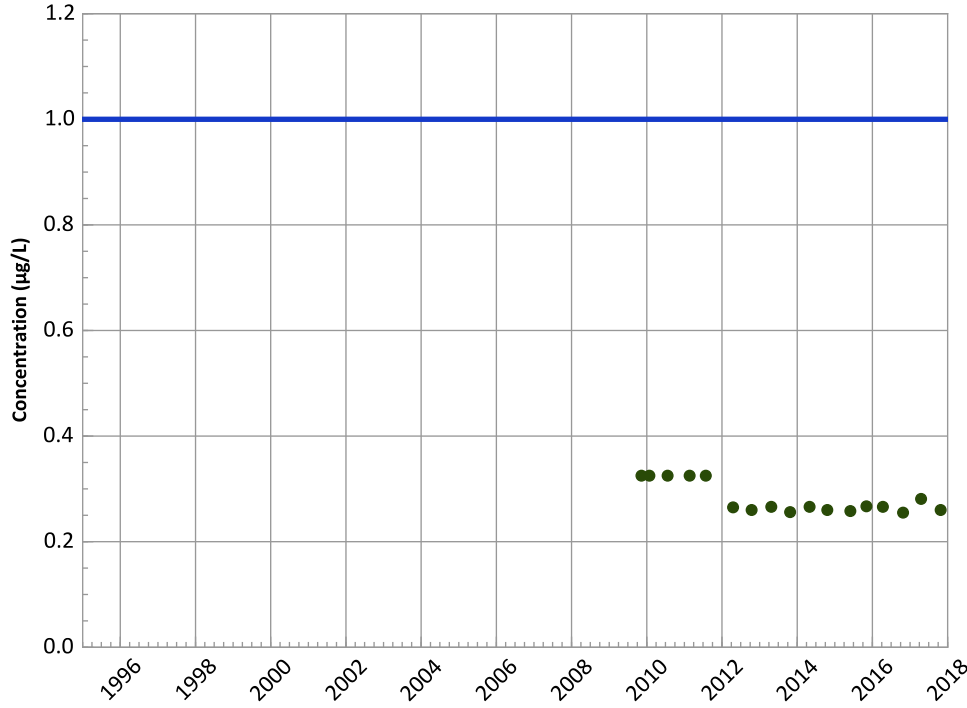


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/10/2009 to 10/25/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1137A in Ogallala Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

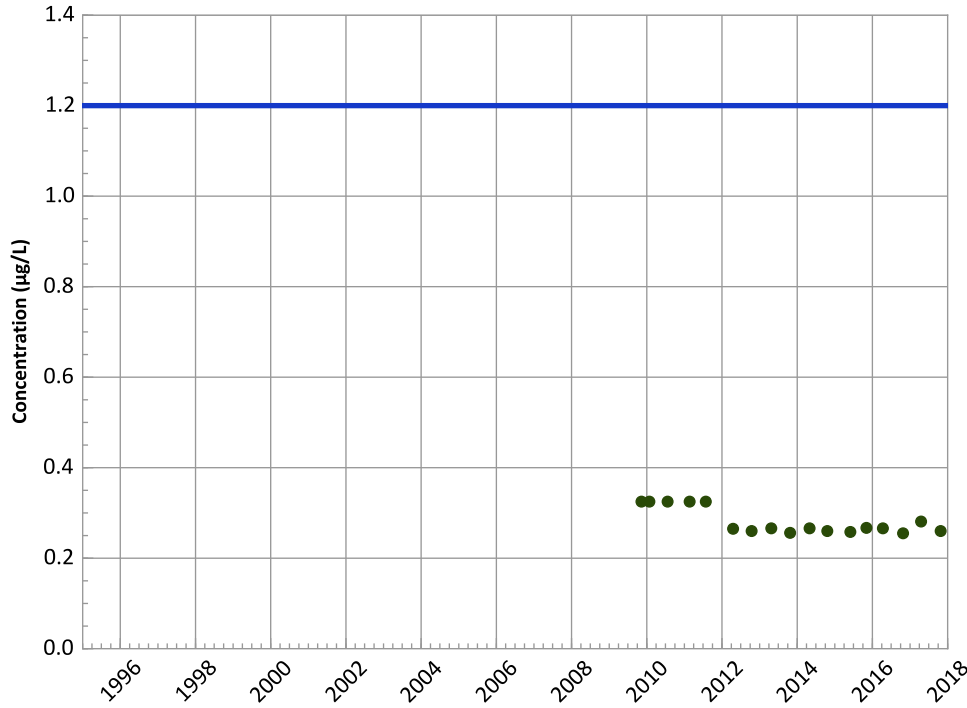
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

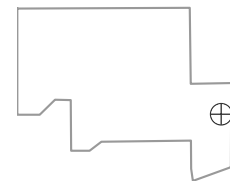
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

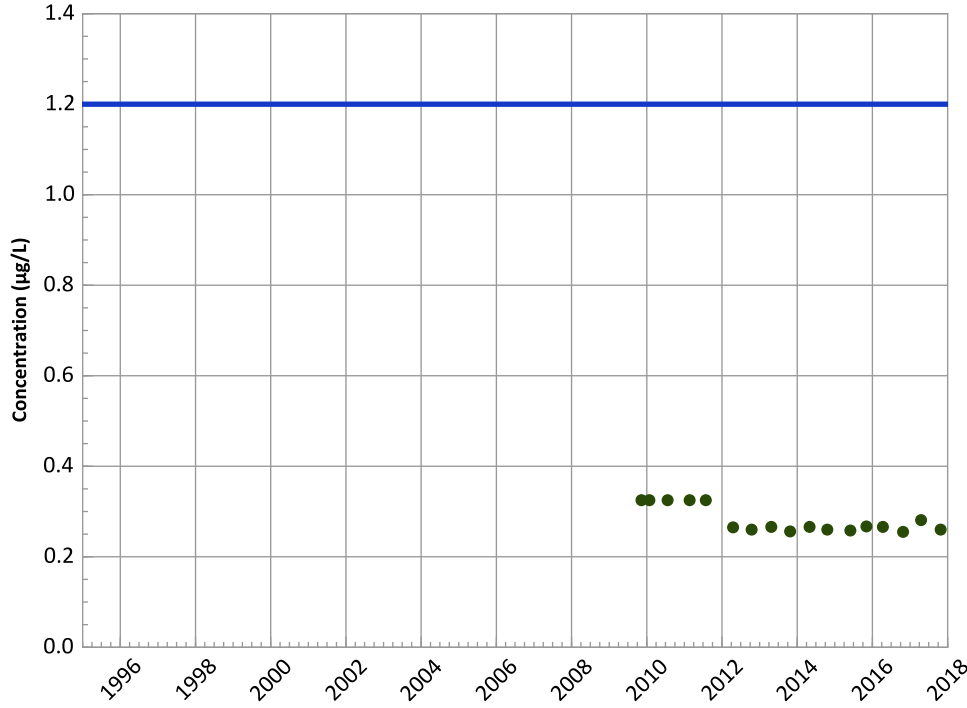


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/10/2009 to 10/25/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1137A in Ogallala Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

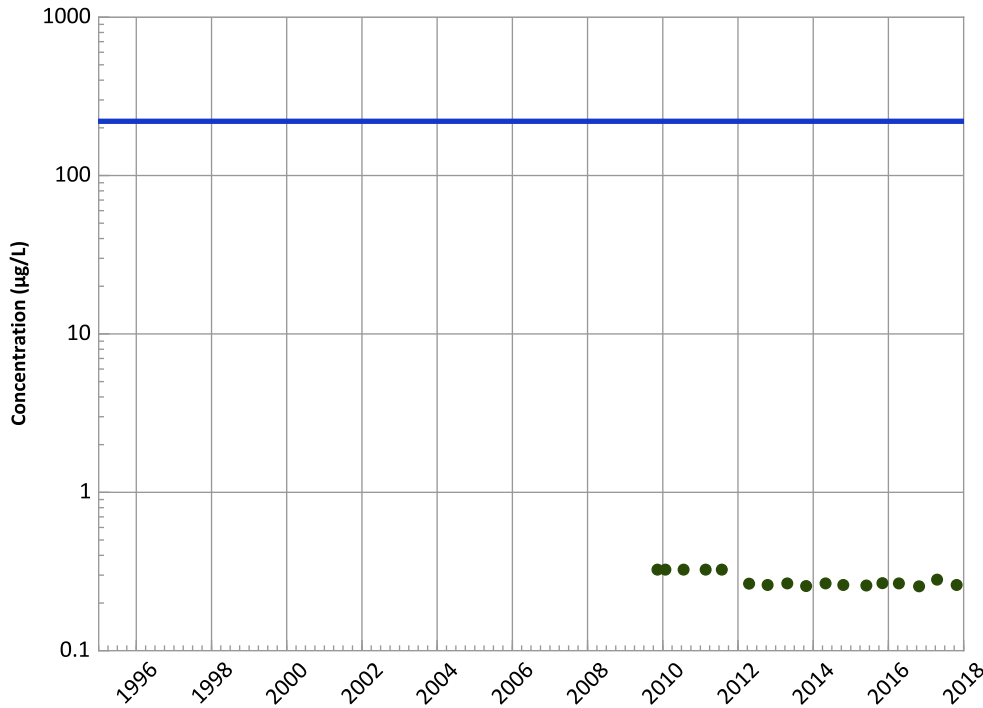
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,3,5-Trinitrobenzene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

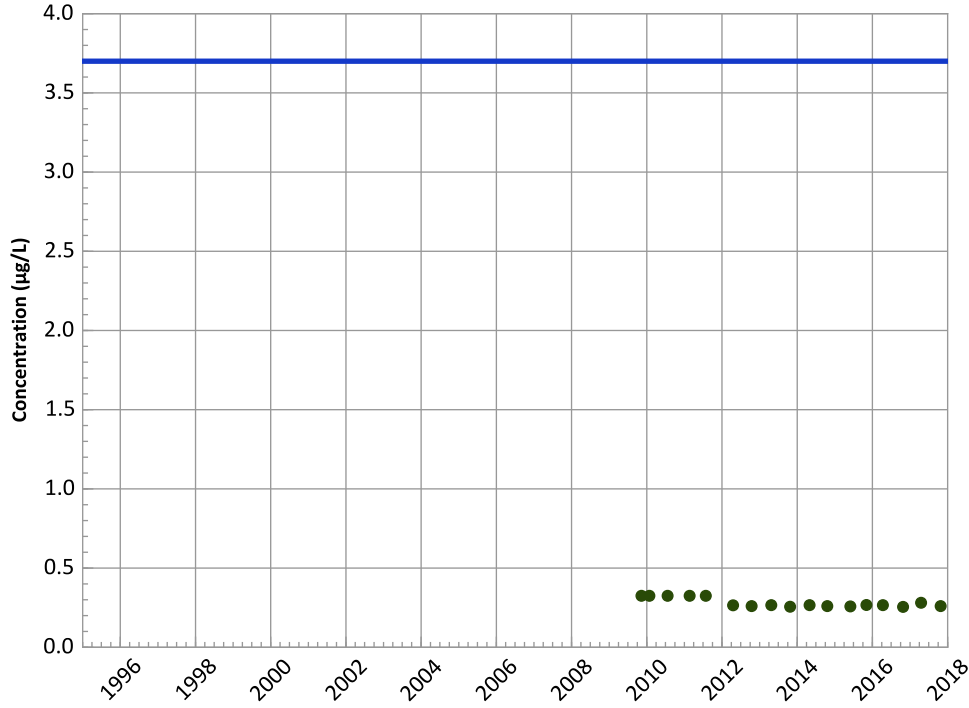


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/10/2009 to 10/25/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1137A in Ogallala Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

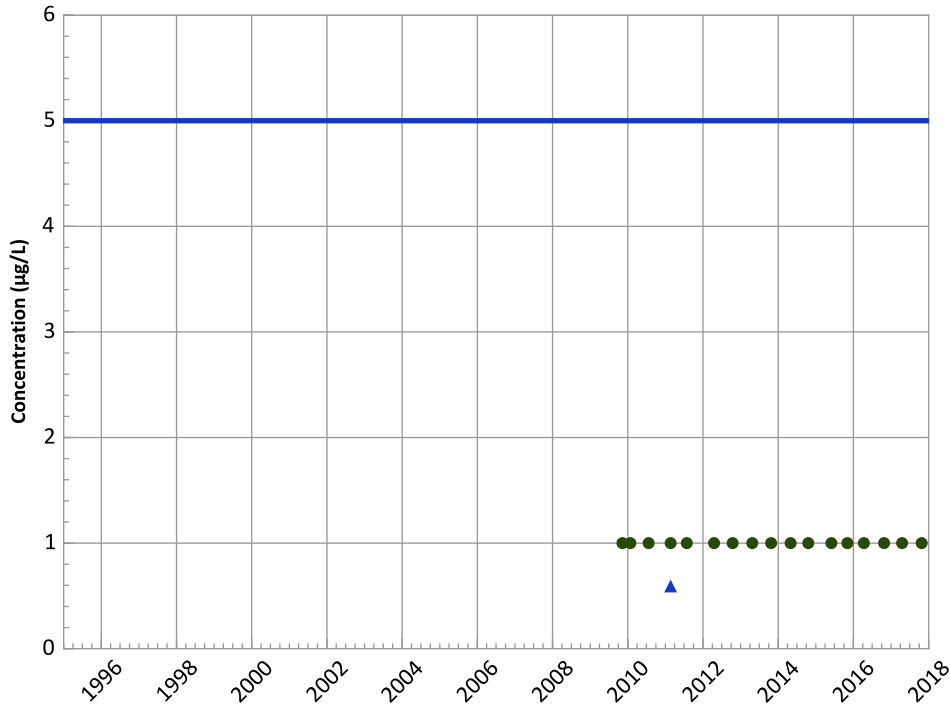
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Tetrachloroethylene (PCE) Trend



Concentration Trend

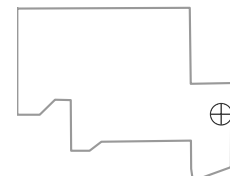
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

Well Location

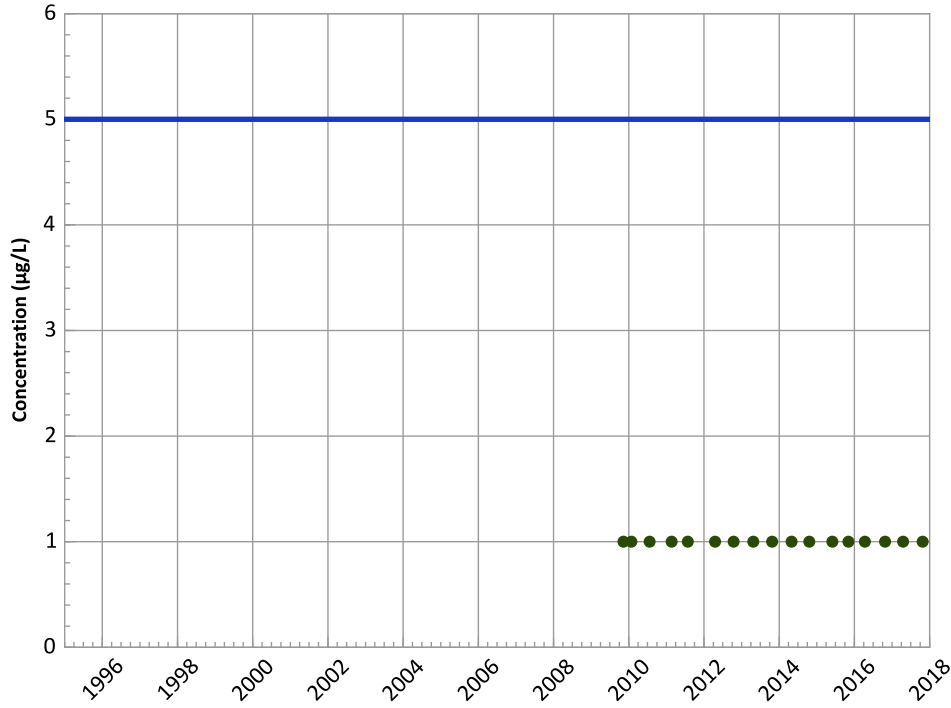


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/10/2009 to 10/25/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1137A in Ogallala Aquifer
USDOE/NNSA Pantex Plant

Trichloroethene Trend



Concentration Trend

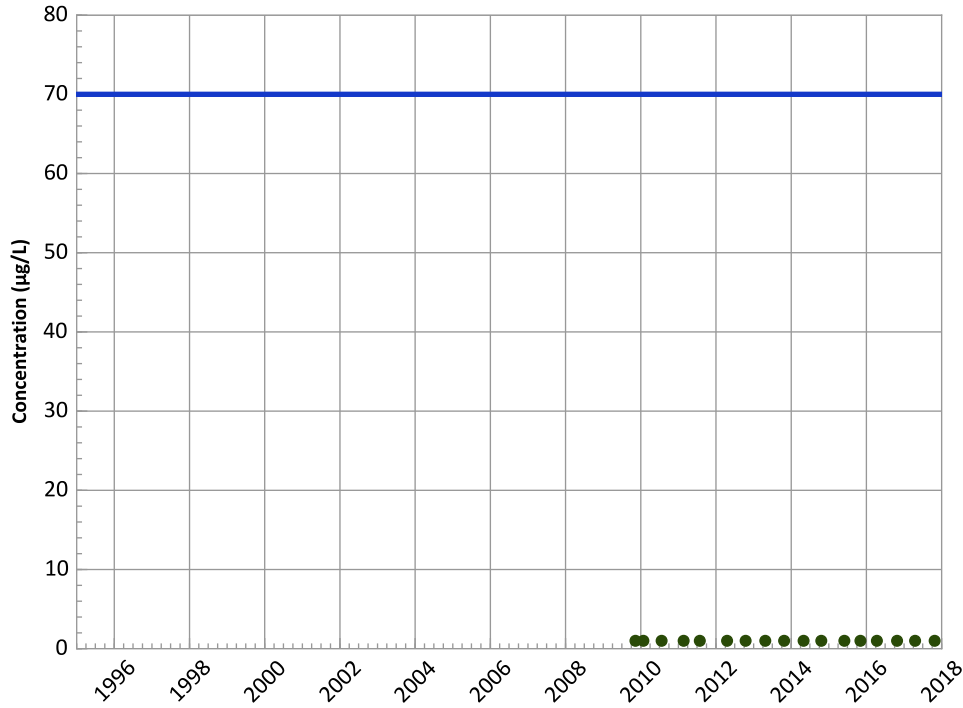
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

cis-1,2-Dichloroethene Trend



Concentration Trend

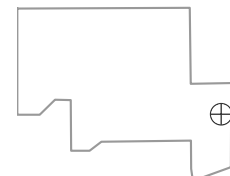
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

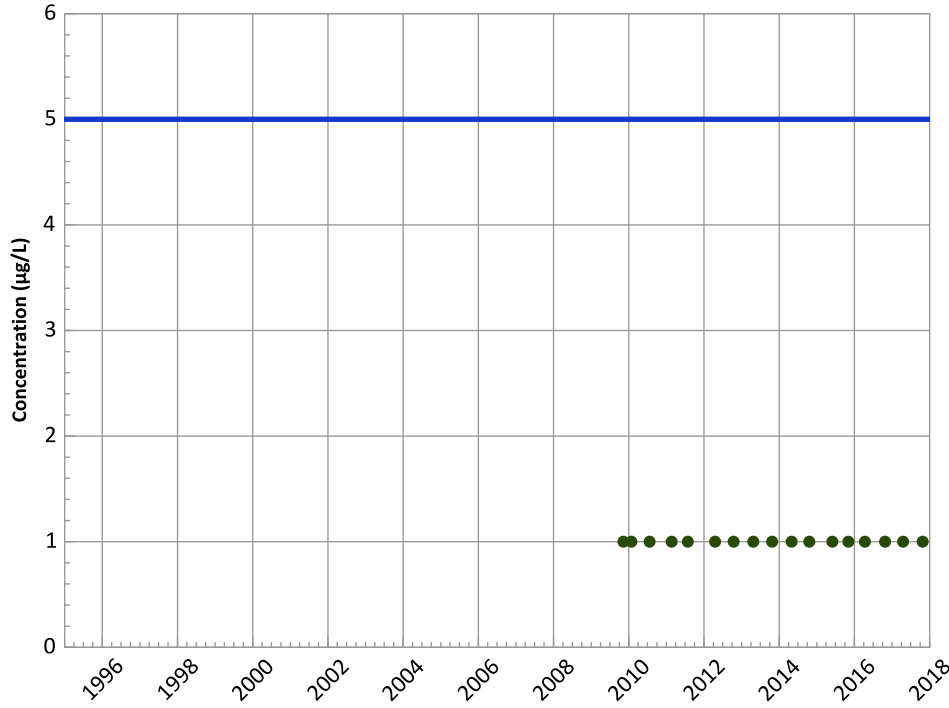


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/10/2009 to 10/25/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1137A in Ogallala Aquifer
USDOE/NNSA Pantex Plant

1,2-Dichloroethane Trend



Concentration Trend

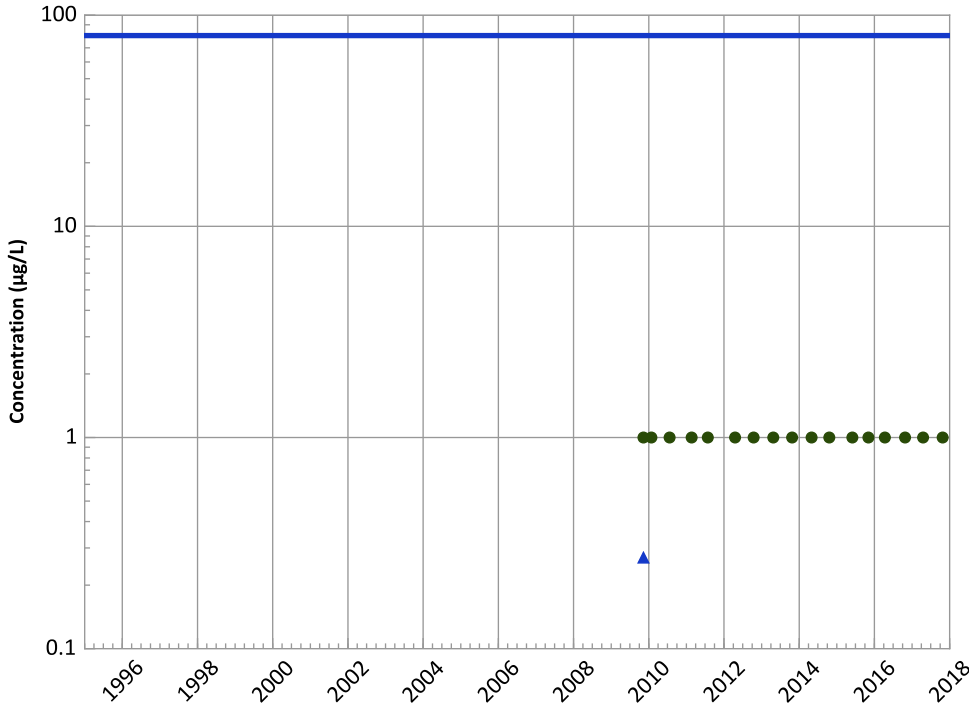
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Chloroform Trend



Concentration Trend

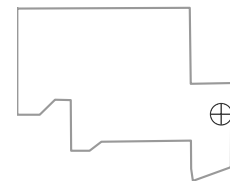
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

Well Location

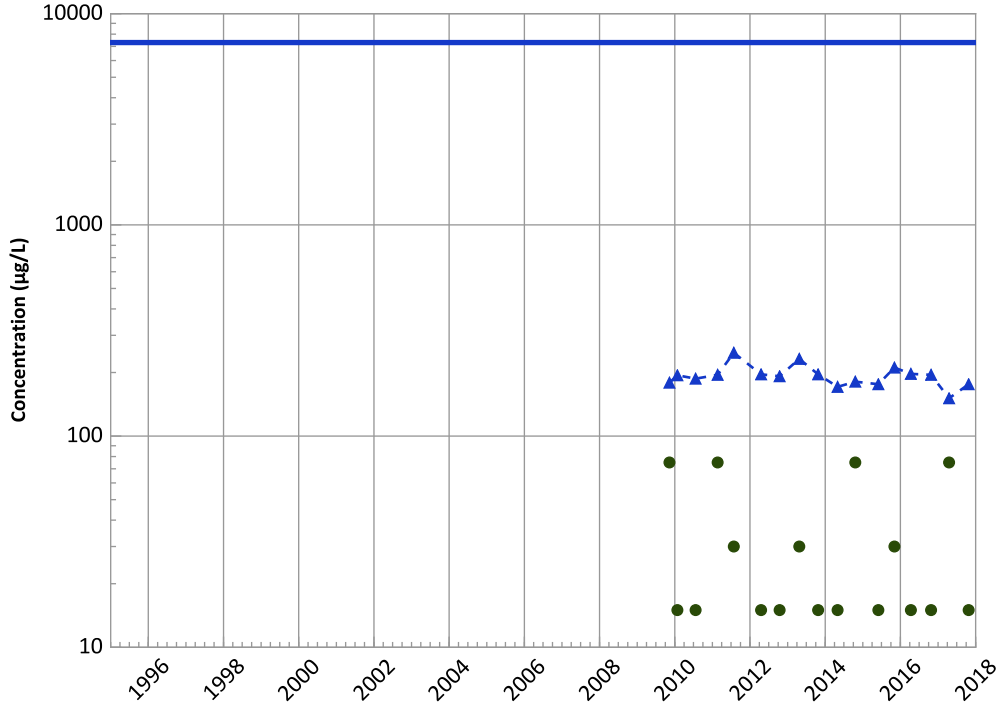


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/10/2009 to 10/25/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1137A in Ogallala Aquifer
USDOE/NNSA Pantex Plant

Boron Trend



Concentration Trend

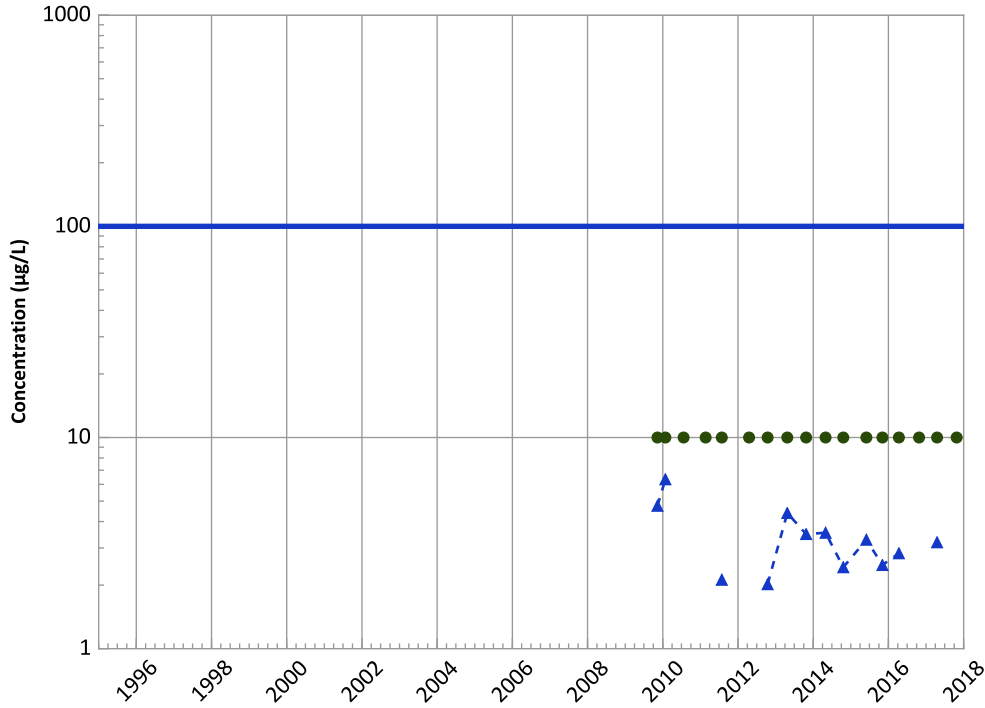
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Stable
All Data
Probably Decreasing

Chromium, Total Trend



Concentration Trend

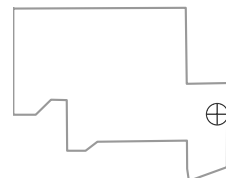
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Stable
All Data
Probably Decreasing

Well Location

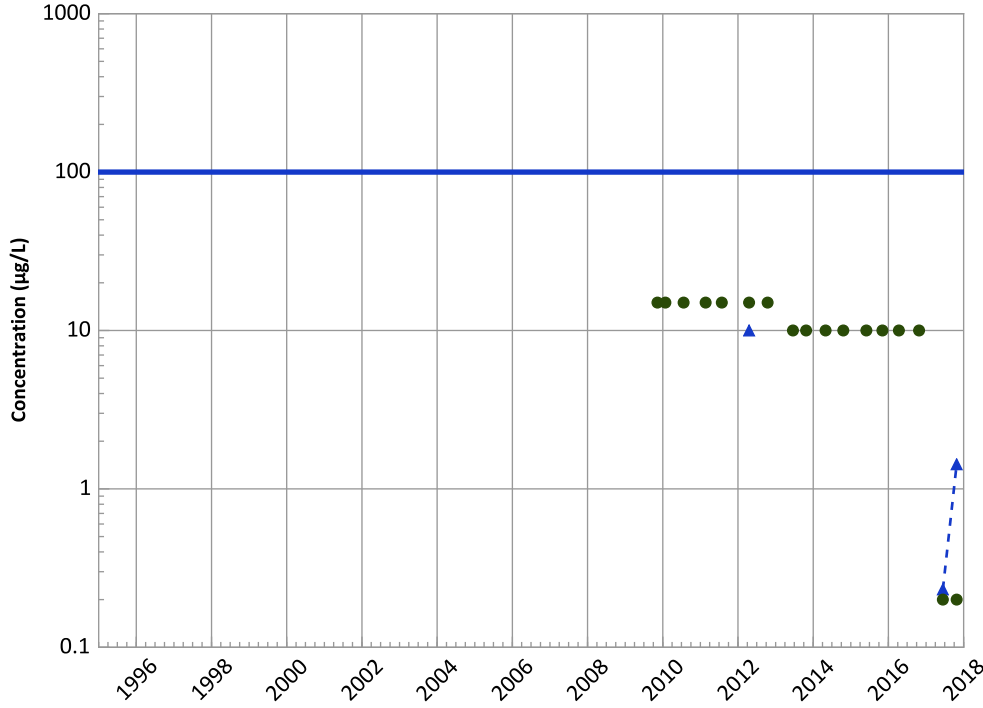


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/10/2009 to 10/25/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1137A in Ogallala Aquifer
USDOE/NNSA Pantex Plant

Chromium, Hexavalent Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

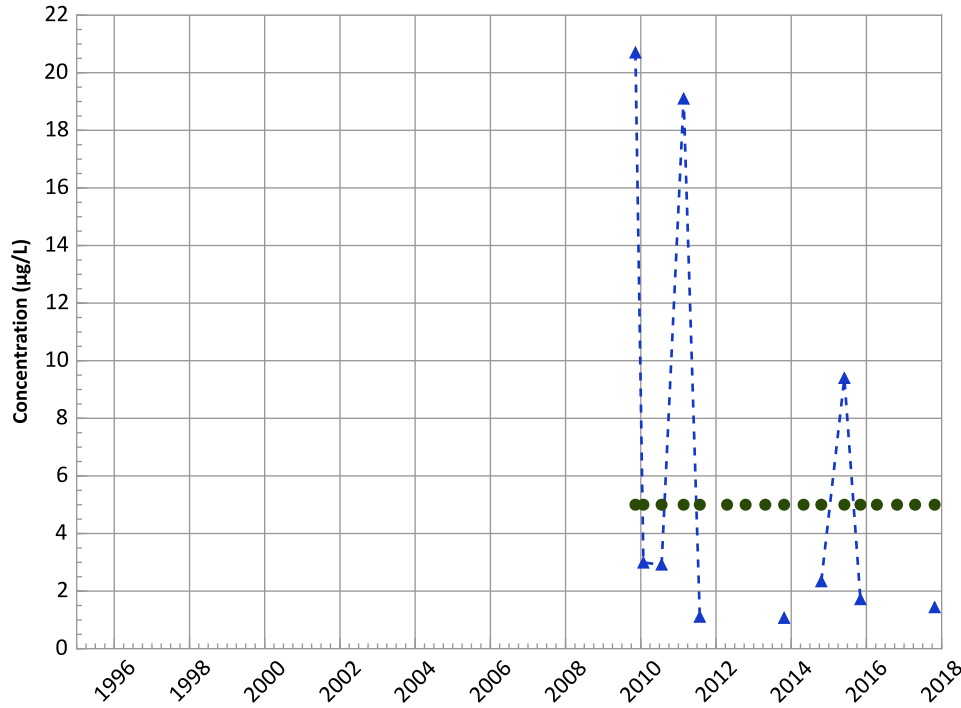
Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

Manganese Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

Decreasing

All Data

Decreasing

MAROS Linear Regression Method

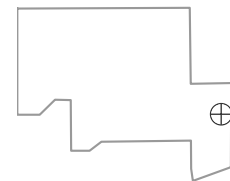
Data ():

No Trend

All Data

No Trend

Well Location

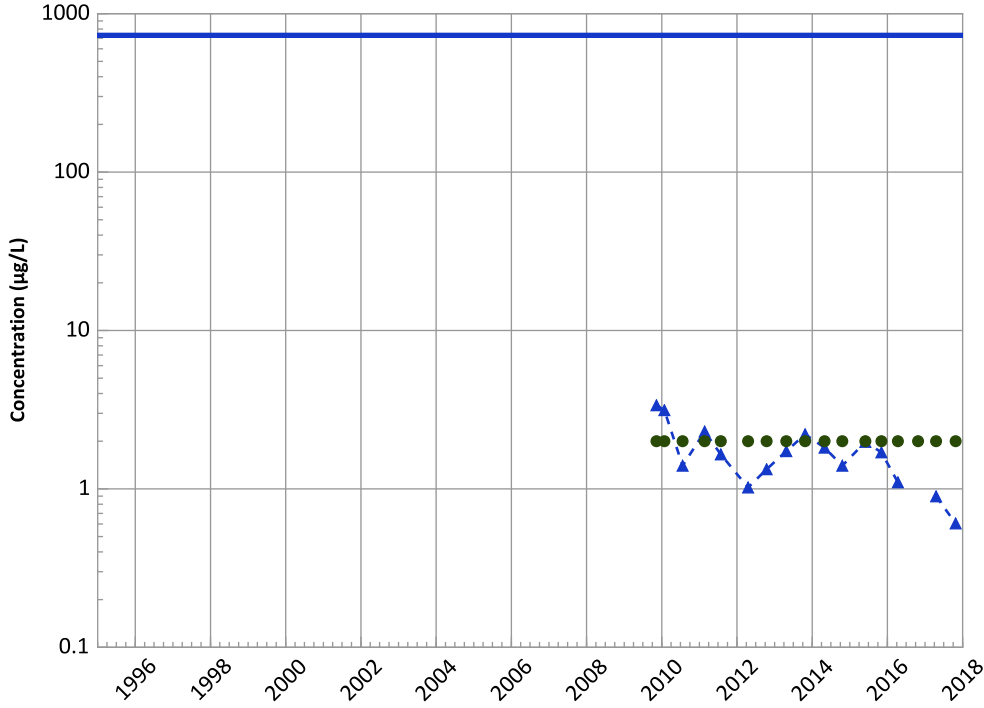


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/10/2009 to 10/25/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1137A in Ogallala Aquifer
USDOE/NNSA Pantex Plant

Nickel Trend



Concentration Trend

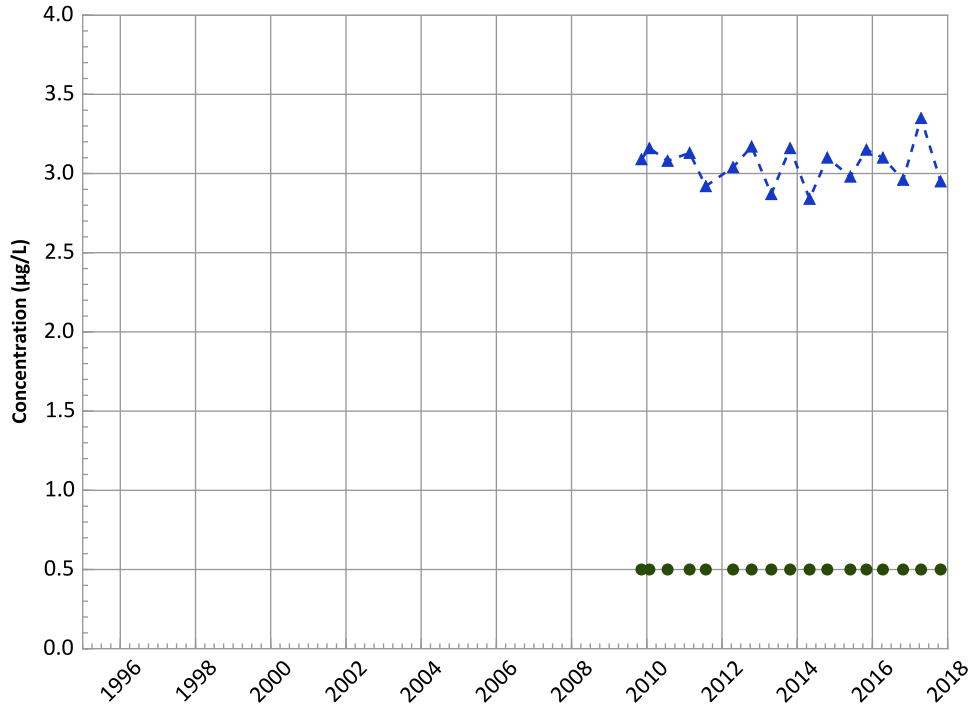
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
Decreasing

Molybdenum Trend



Concentration Trend

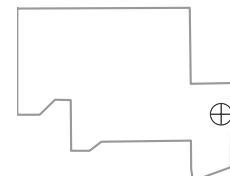
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

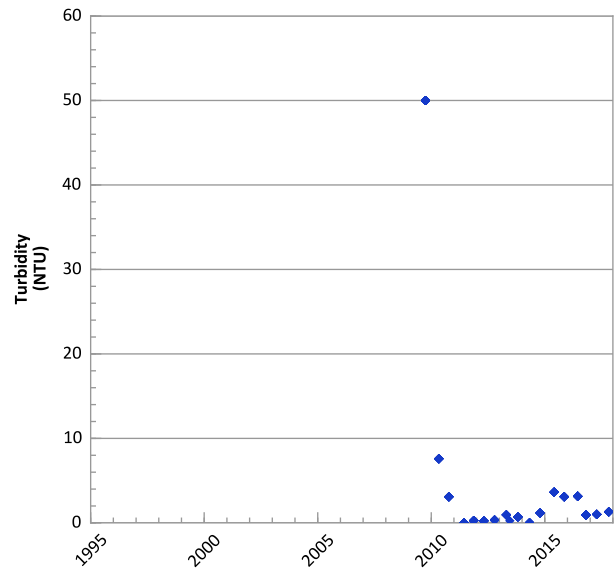
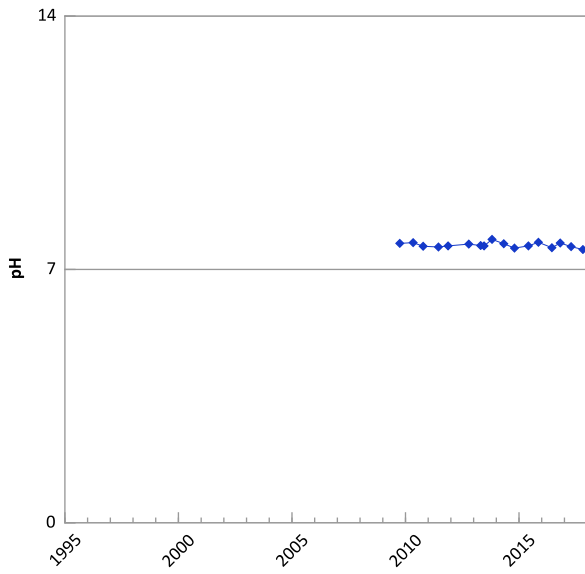
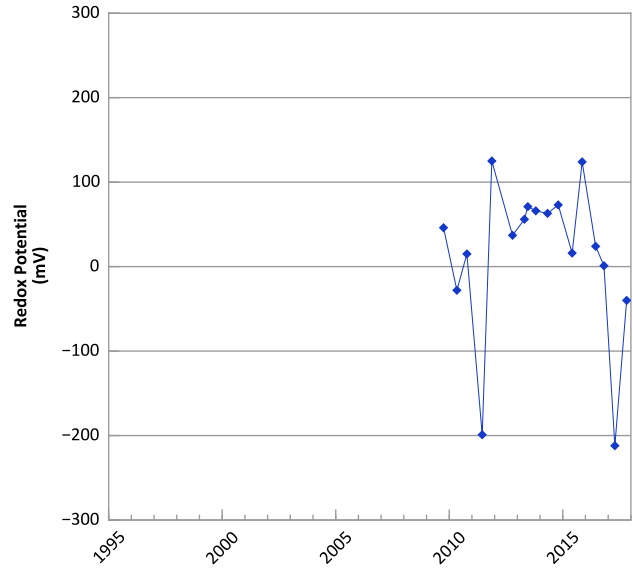
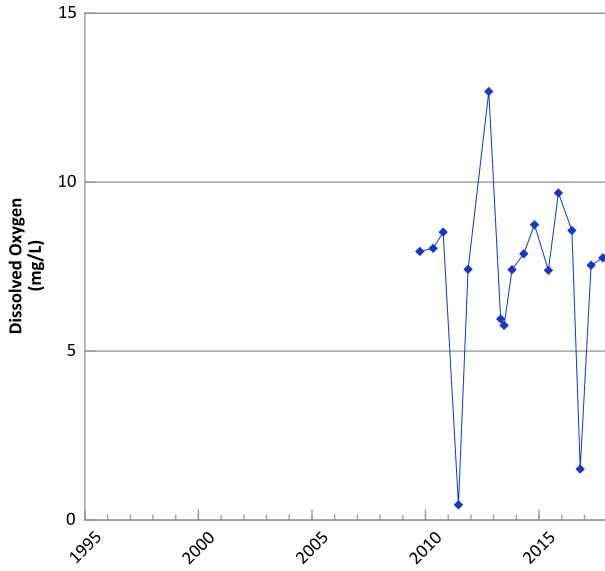
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/10/2009 to 10/25/2017
Analysis Date: 03/21/2018

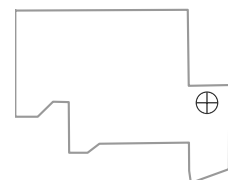
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1138 in Ogallala Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



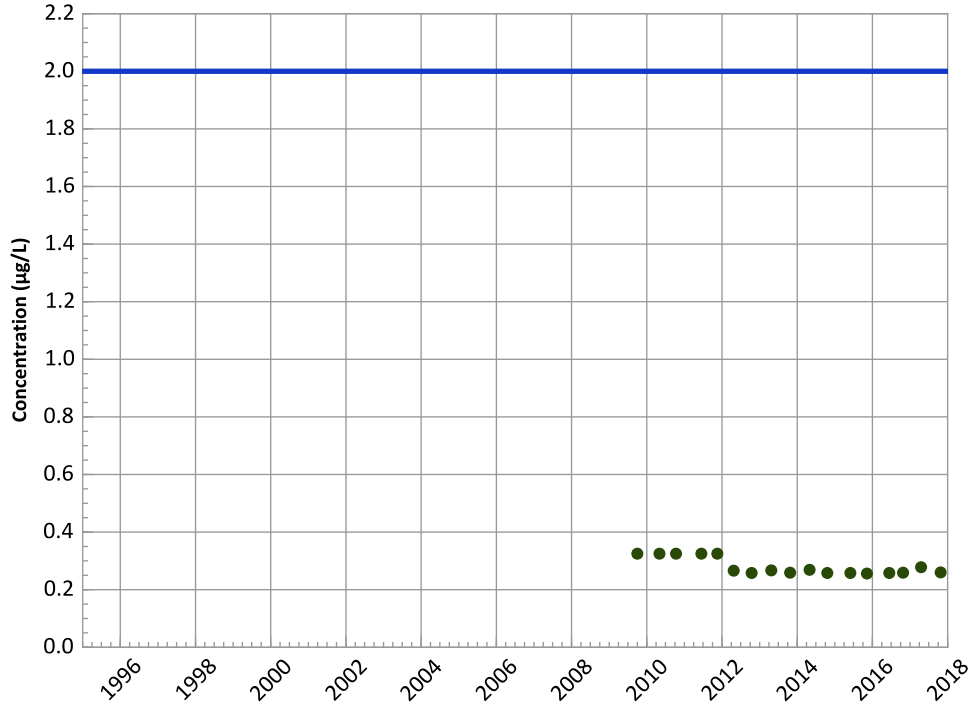
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 10/01/2009 to 10/25/2017
 Analysis Date: 03/21/2018

Well Location



PTX06-1138 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

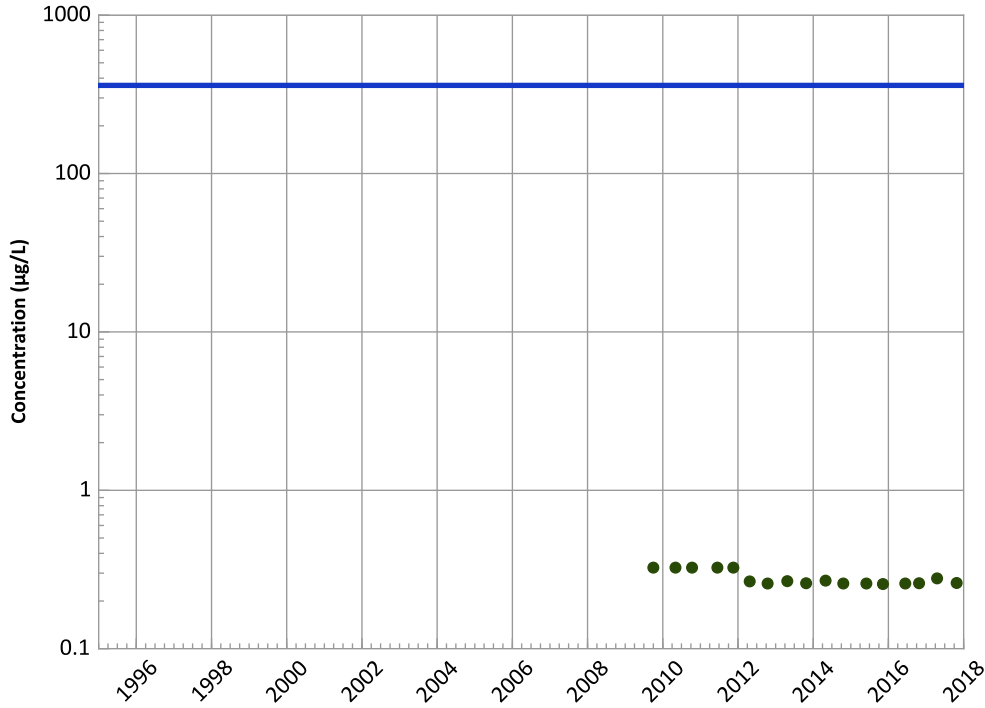
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

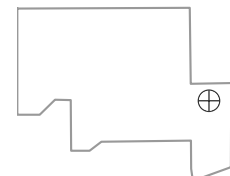
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

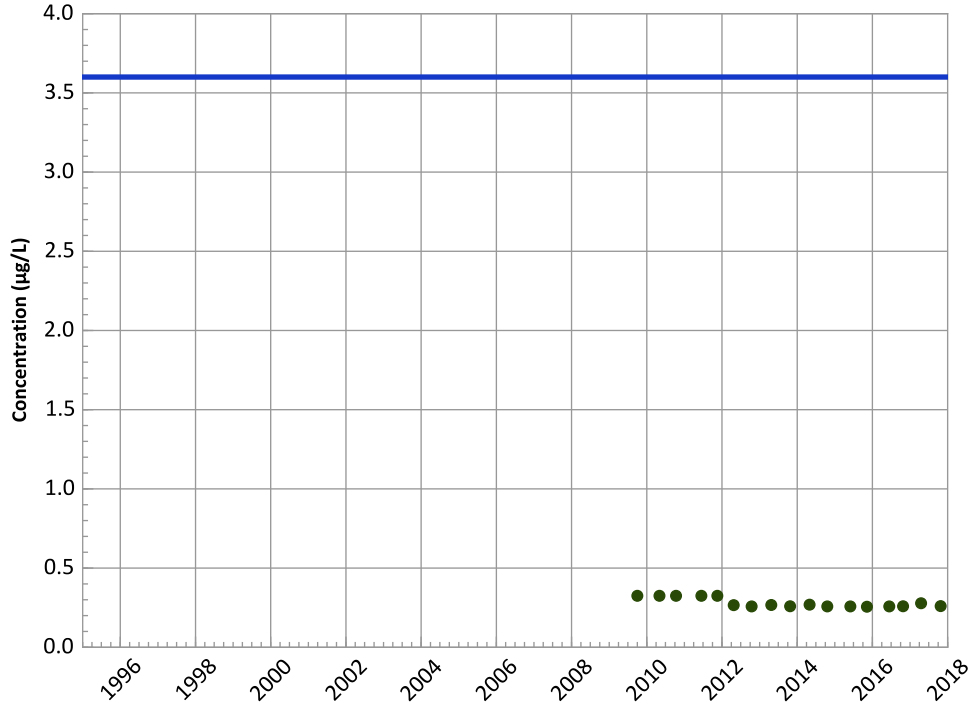


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/01/2009 to 10/25/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1138 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

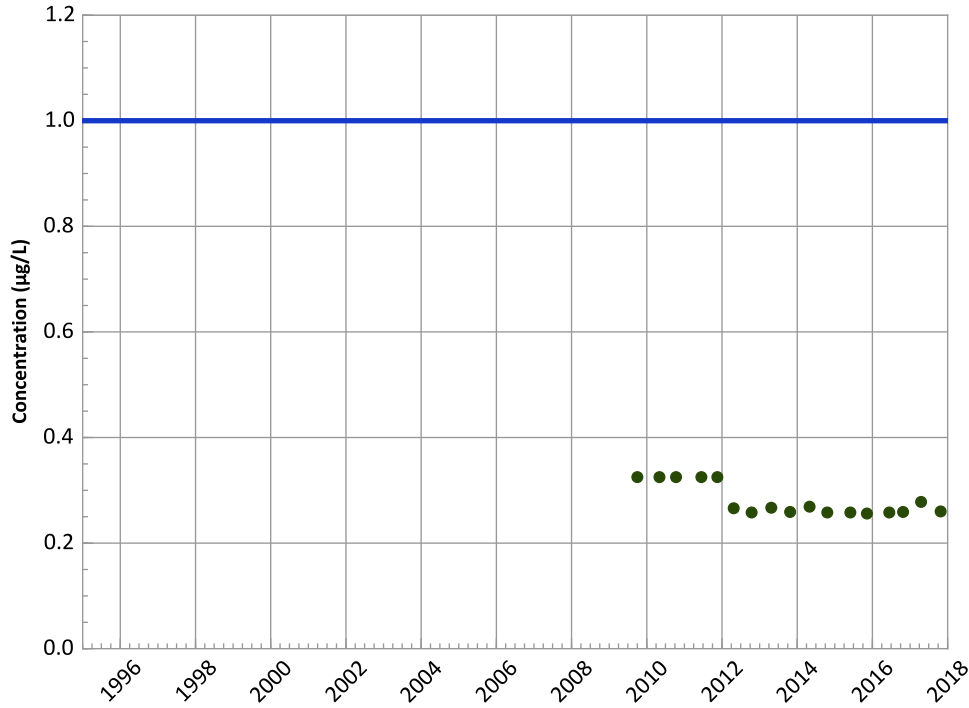
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

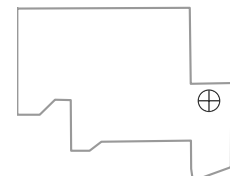
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

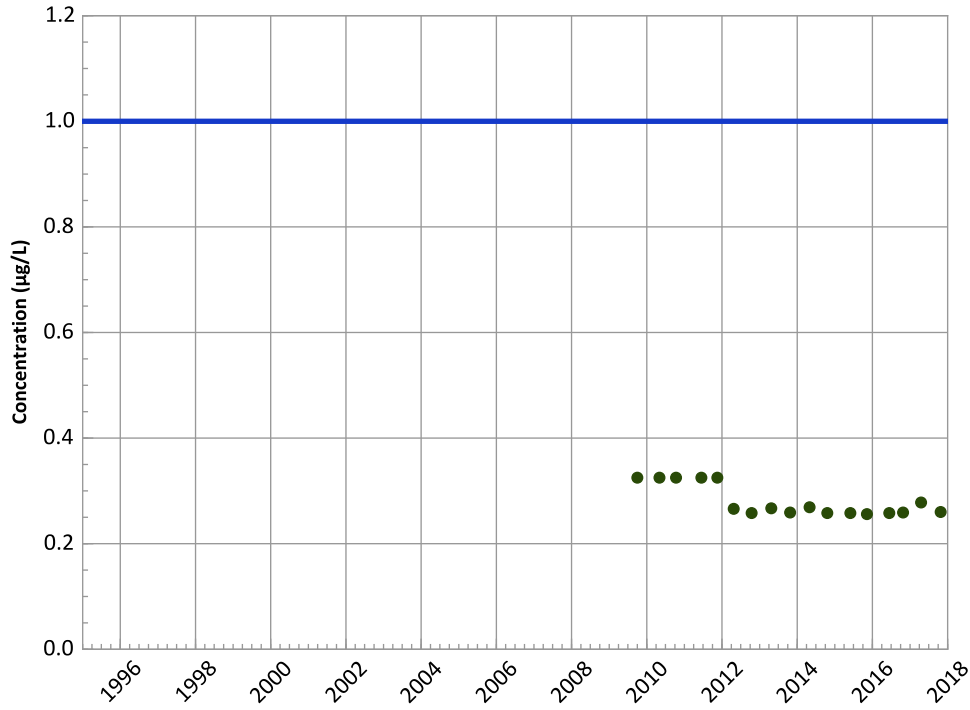


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/01/2009 to 10/25/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1138 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

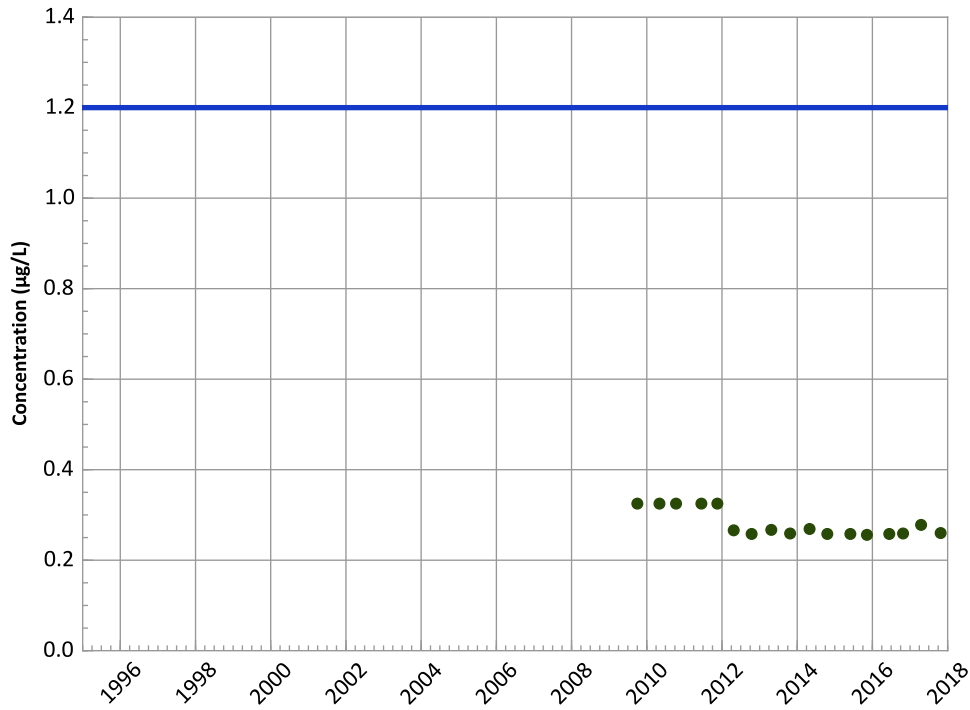
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

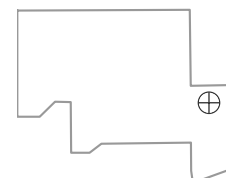
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

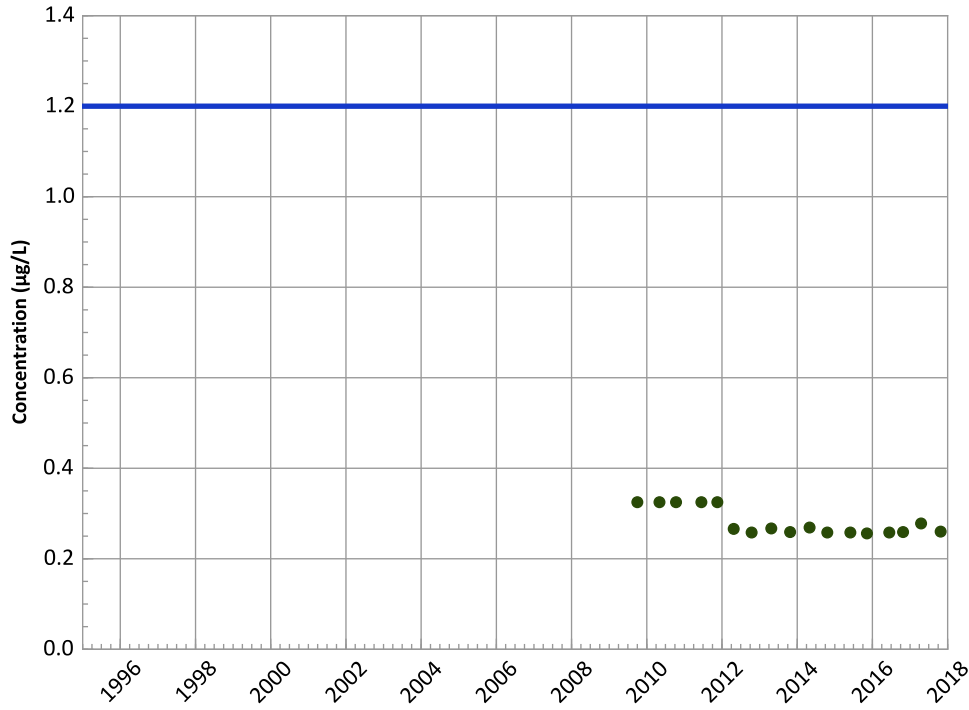


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/01/2009 to 10/25/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1138 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

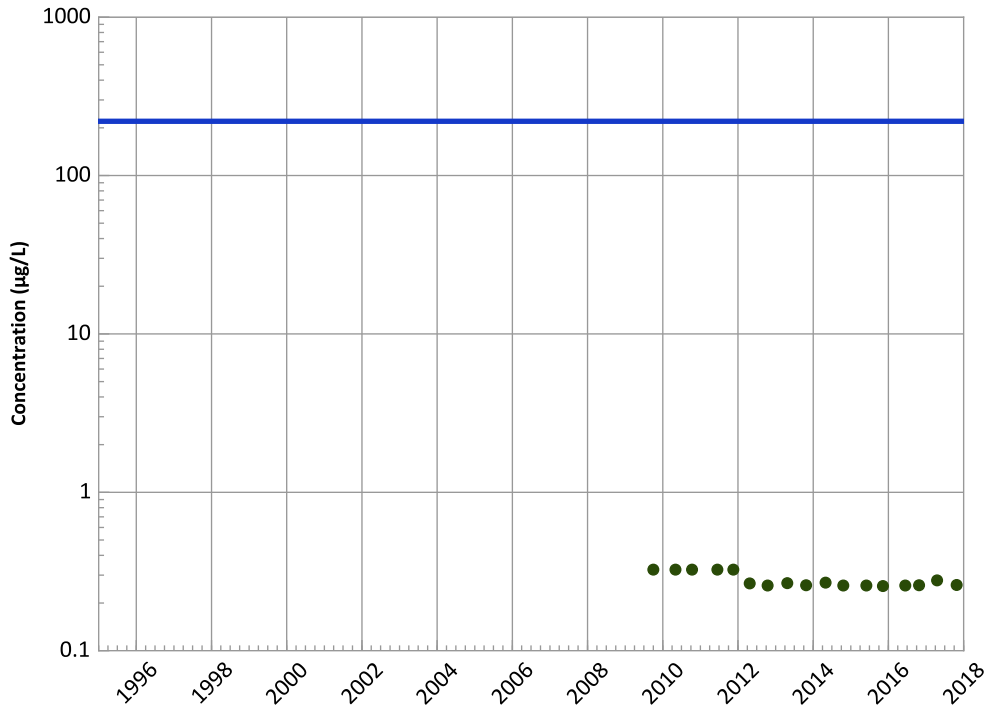
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,3,5-Trinitrobenzene Trend



Concentration Trend

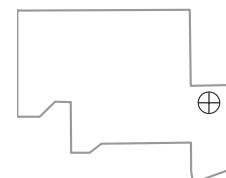
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

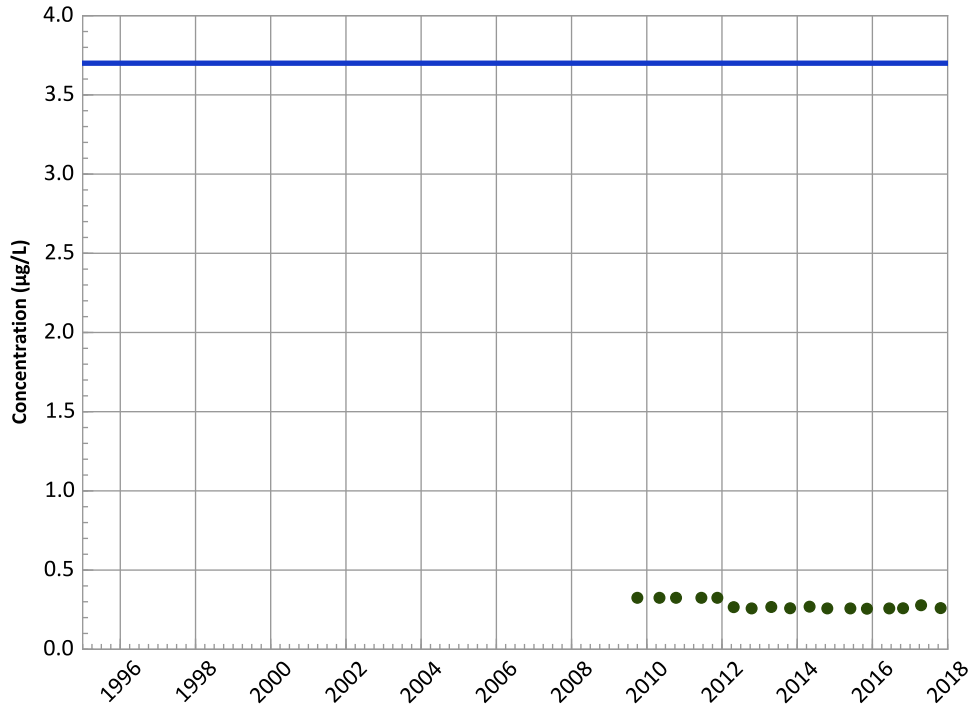


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/01/2009 to 10/25/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1138 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

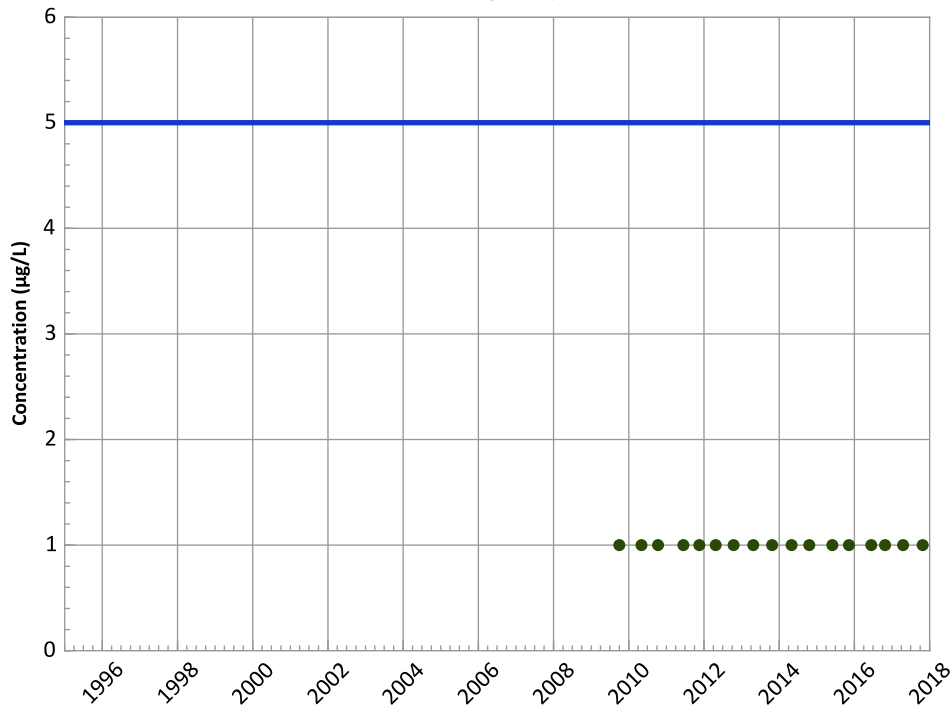
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Tetrachloroethylene (PCE) Trend



Concentration Trend

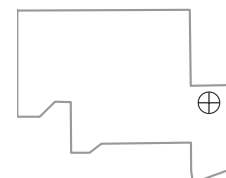
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

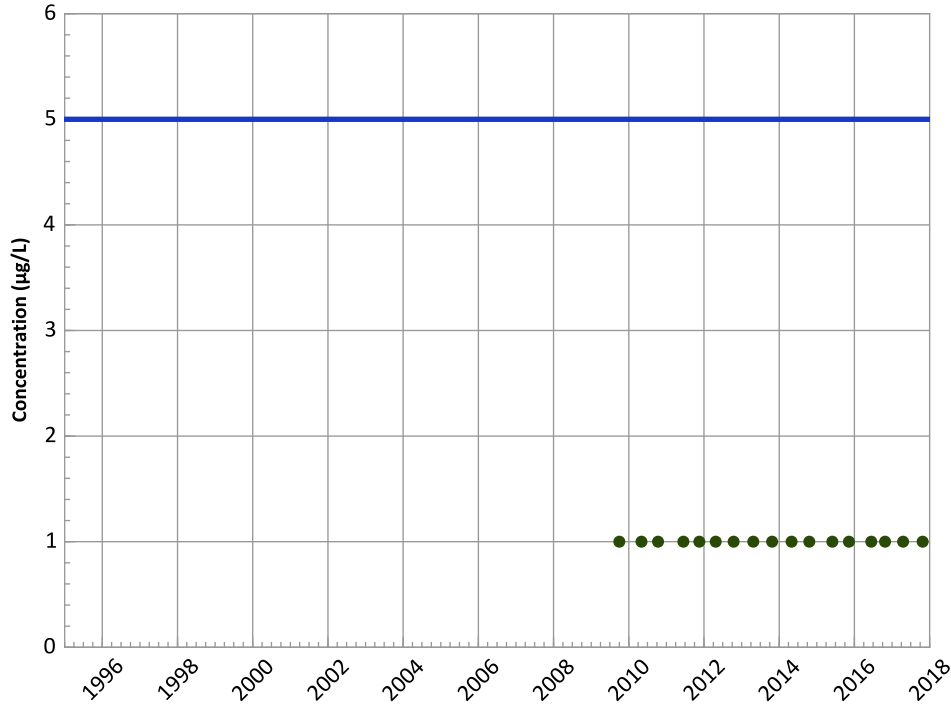


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/01/2009 to 10/25/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1138 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

Trichloroethene Trend



Concentration Trend

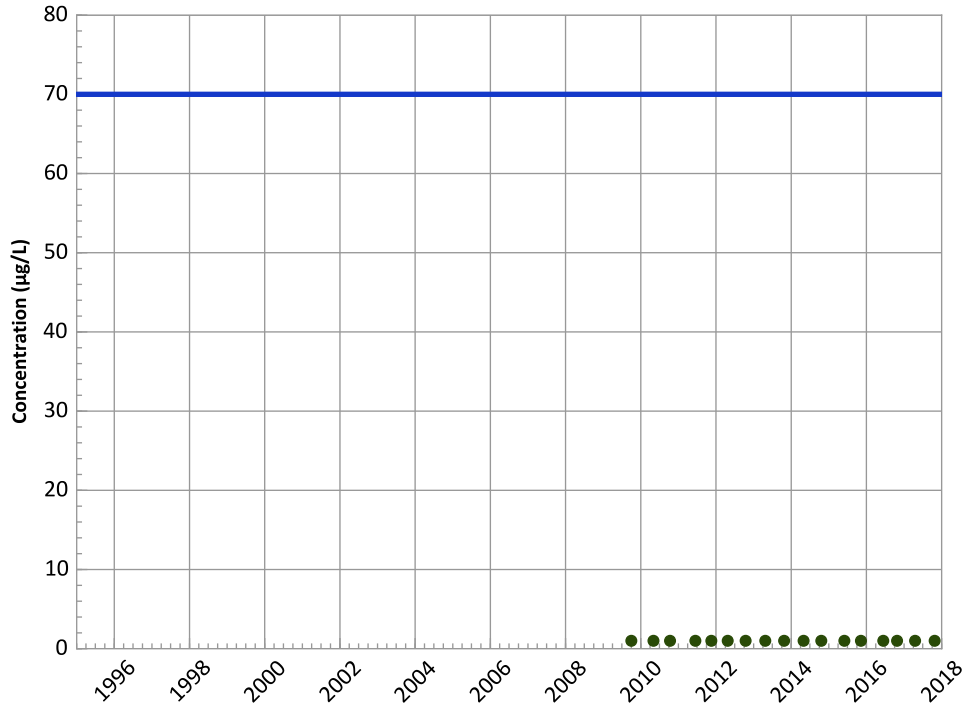
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

cis-1,2-Dichloroethene Trend



Concentration Trend

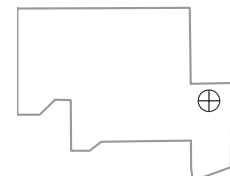
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

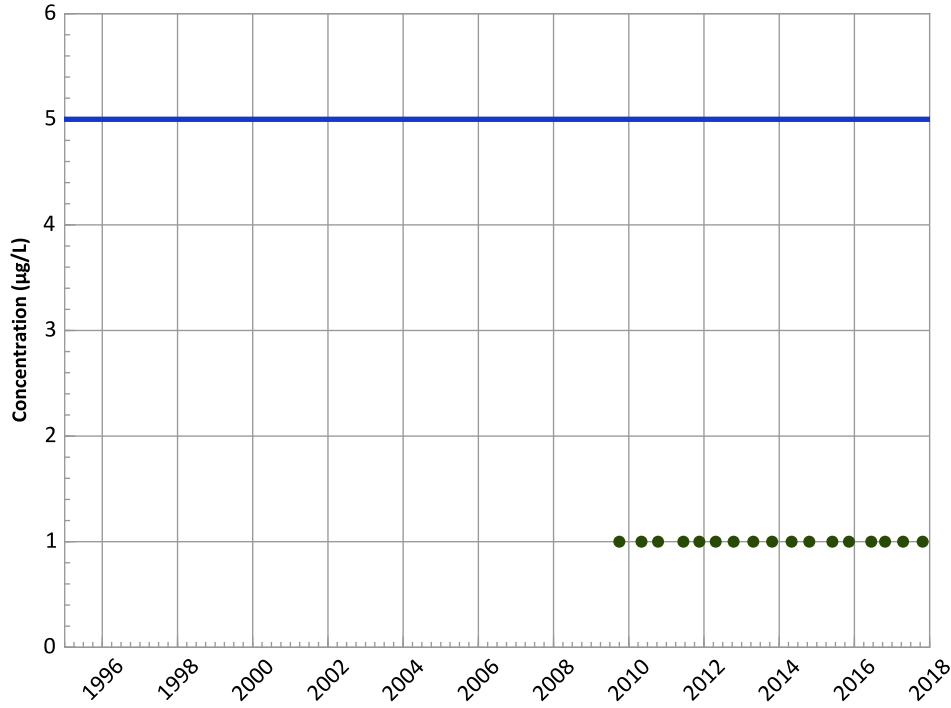
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/01/2009 to 10/25/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1138 in Ogallala Aquifer
USDOE/NNSA Pantex Plant
1,2-Dichloroethane Trend**



Concentration Trend

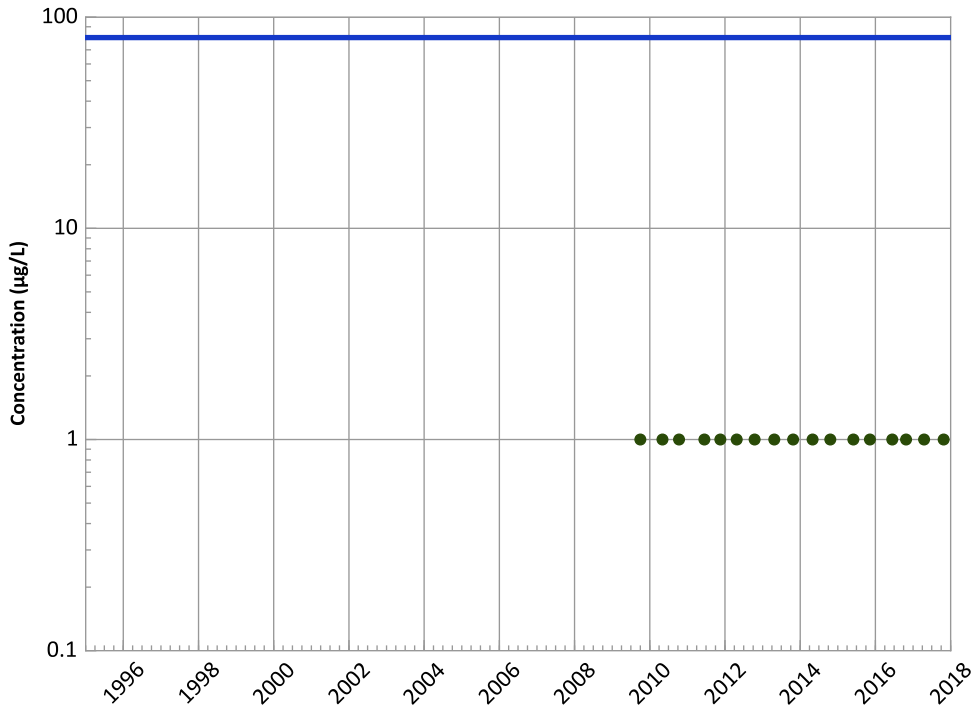
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Chloroform Trend



Concentration Trend

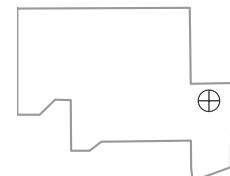
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

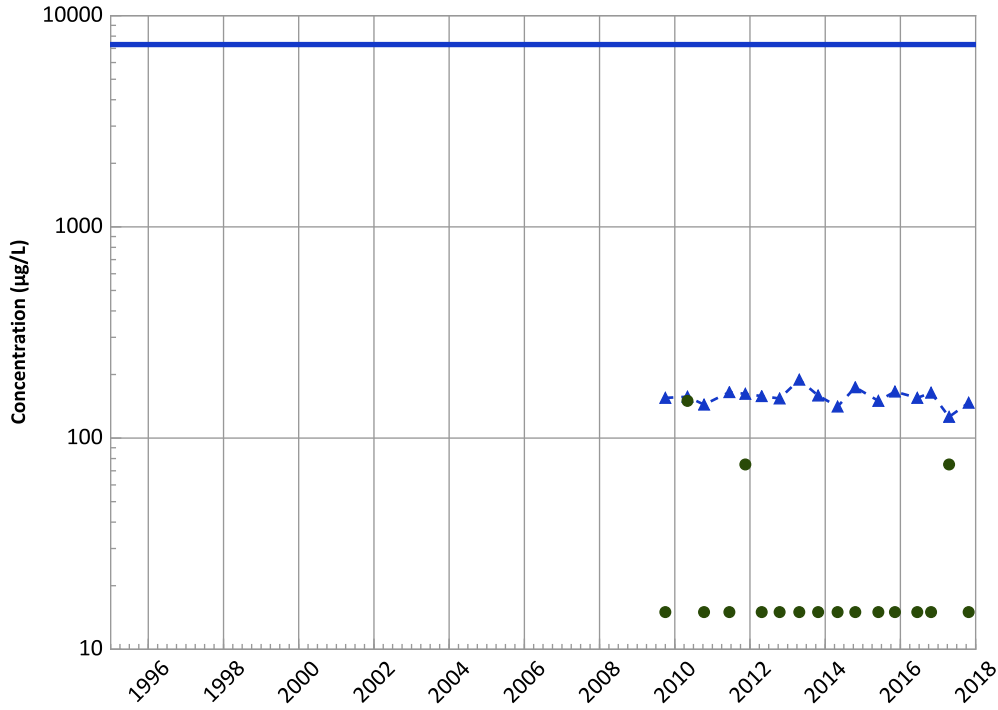


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/01/2009 to 10/25/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1138 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

Boron Trend



Concentration Trend

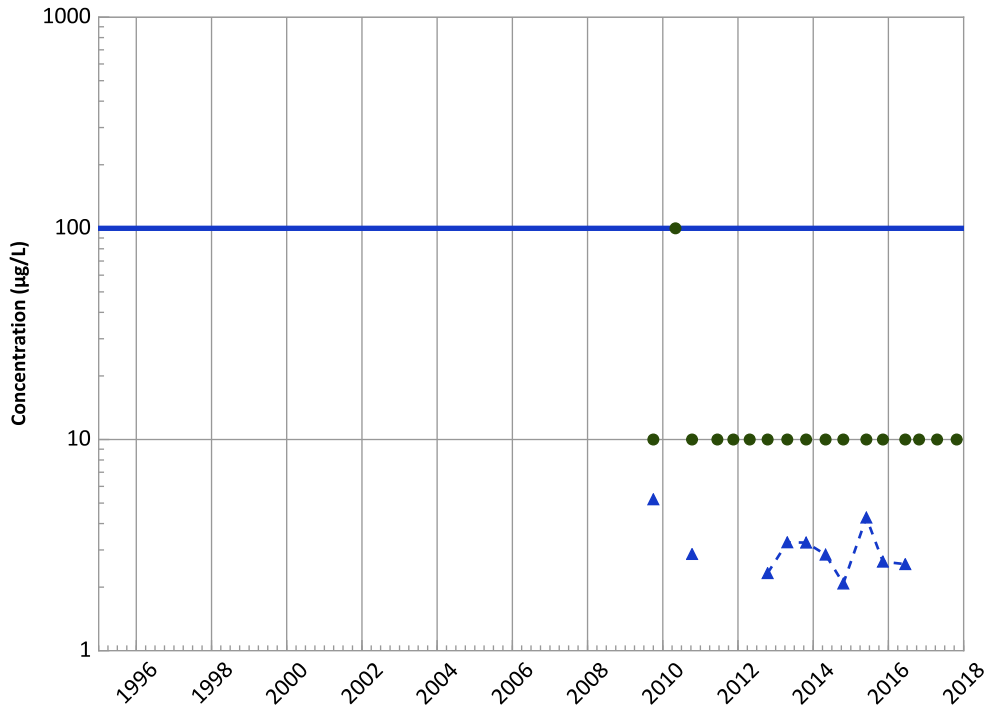
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Stable

Chromium, Total Trend



Concentration Trend

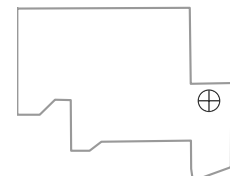
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
Probably Decreasing

Well Location

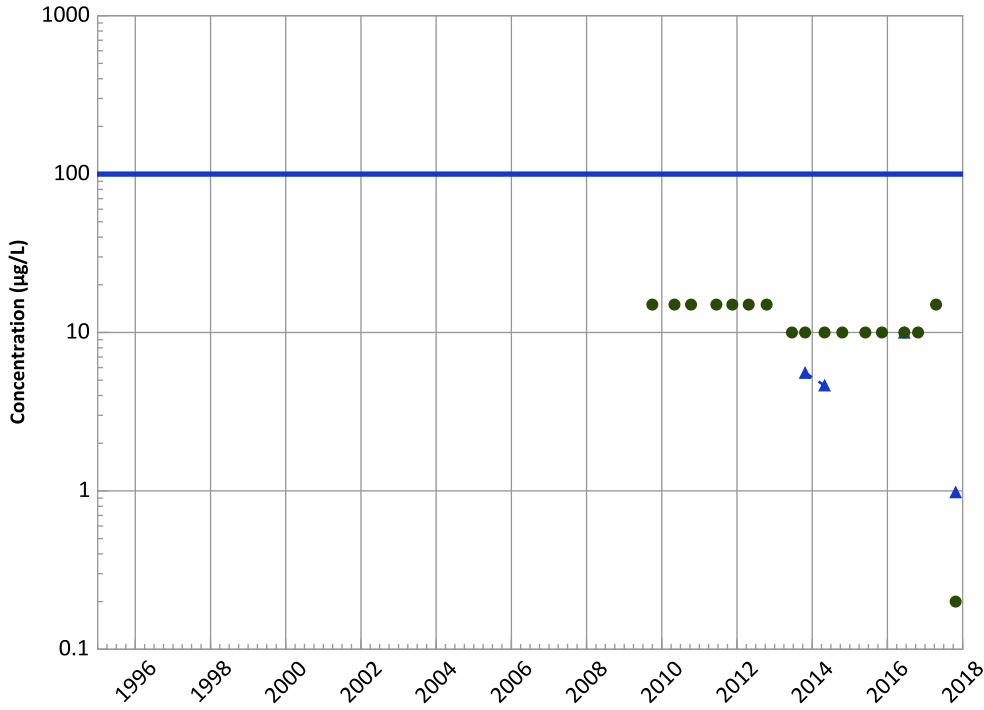


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/01/2009 to 10/25/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1138 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

Chromium, Hexavalent Trend

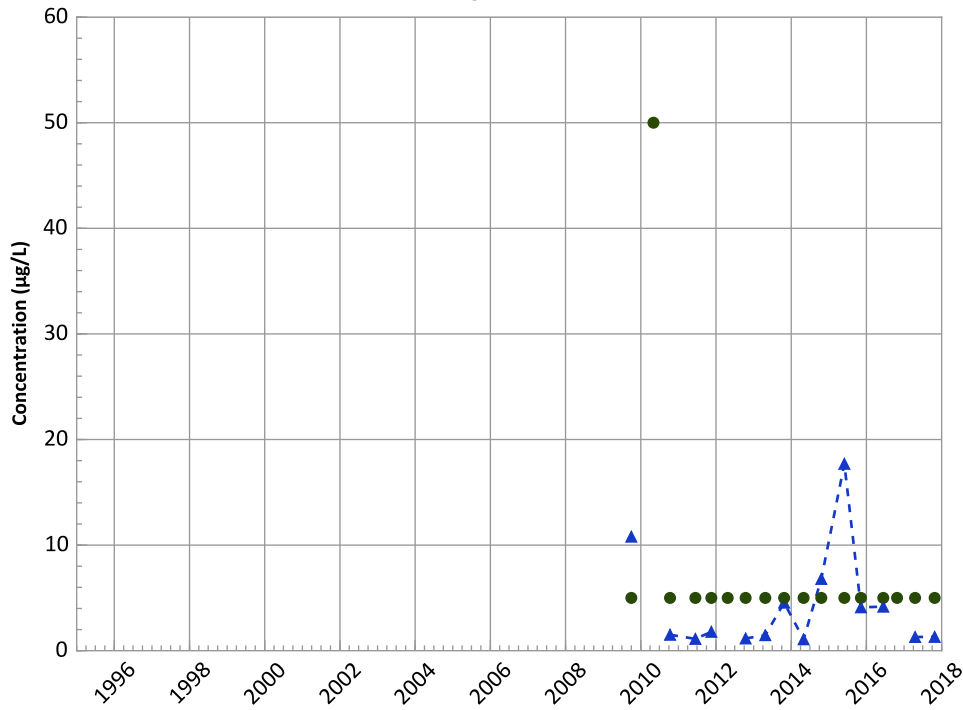


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

MAROS Linear Regression Method
Data ():
N/A (<4 Detections in Dataset)
All Data
Stable

Manganese Trend

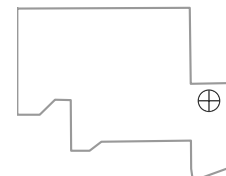


Concentration Trend

MAROS Mann-Kendall Method
Data ():
Increasing
All Data
Decreasing

MAROS Linear Regression Method
Data ():
Probably Increasing
All Data
Increasing

Well Location

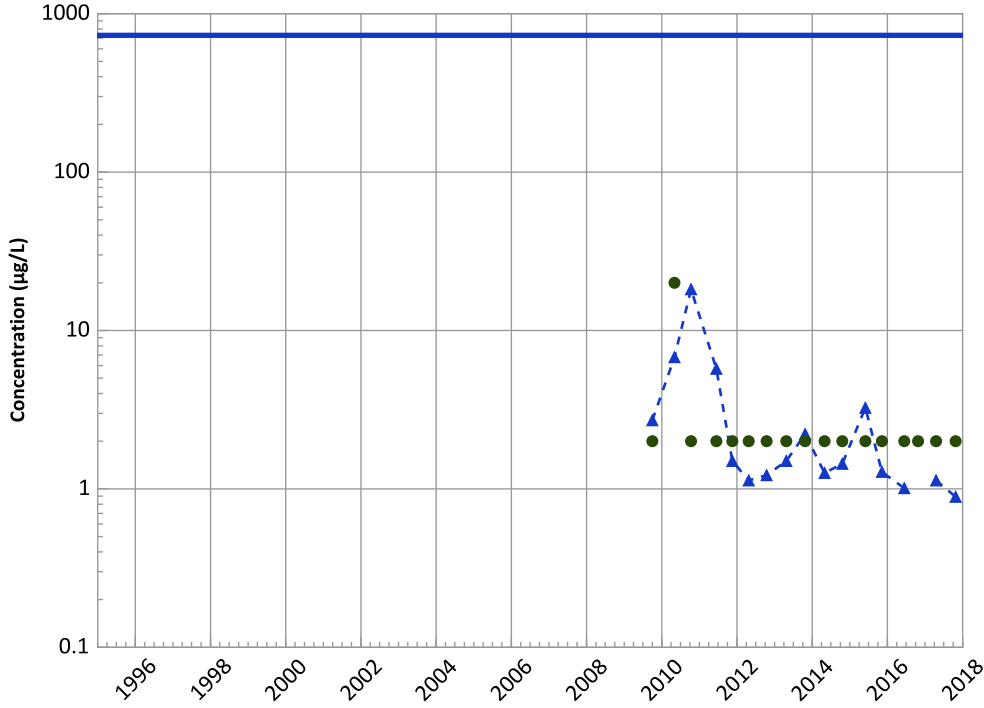


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/01/2009 to 10/25/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1138 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

Nickel Trend



Concentration Trend

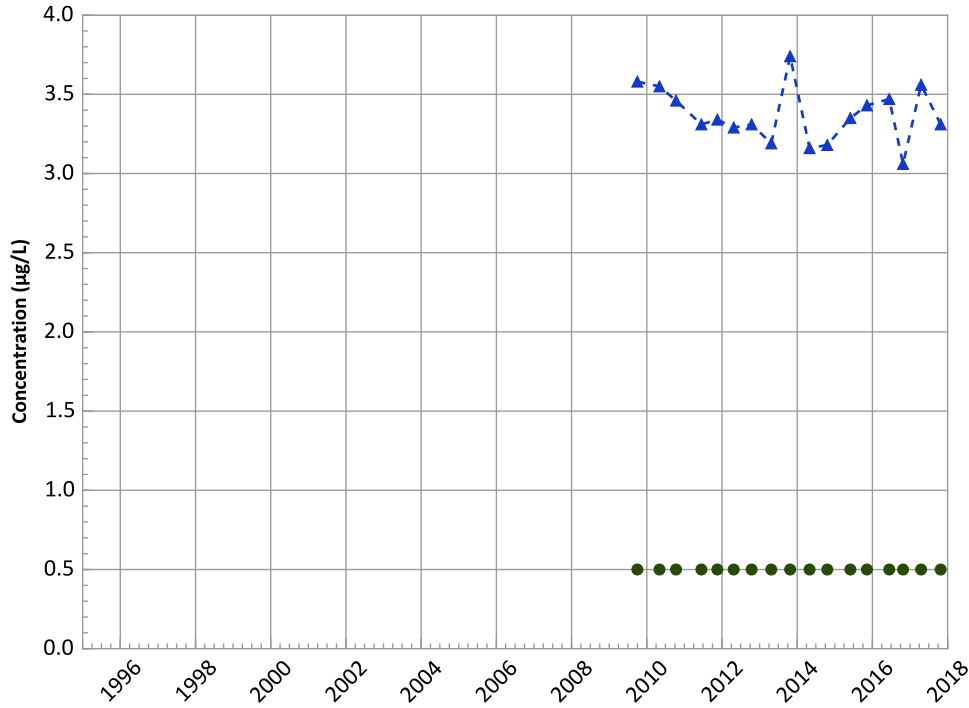
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
Decreasing

Molybdenum Trend



Concentration Trend

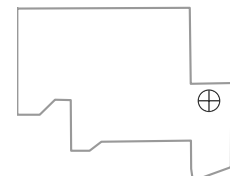
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Stable

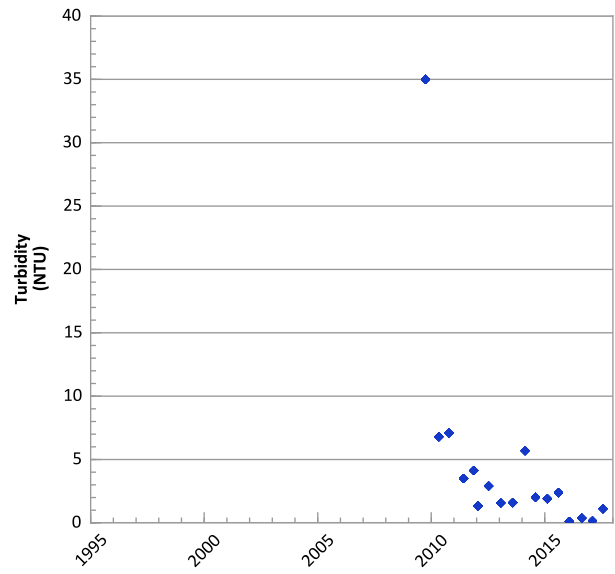
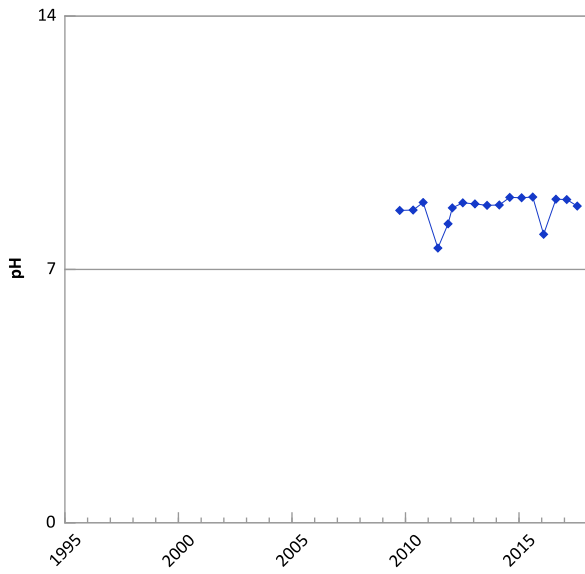
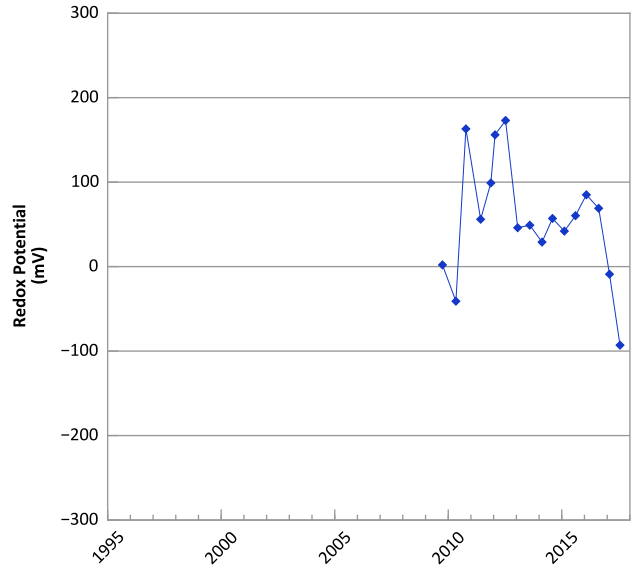
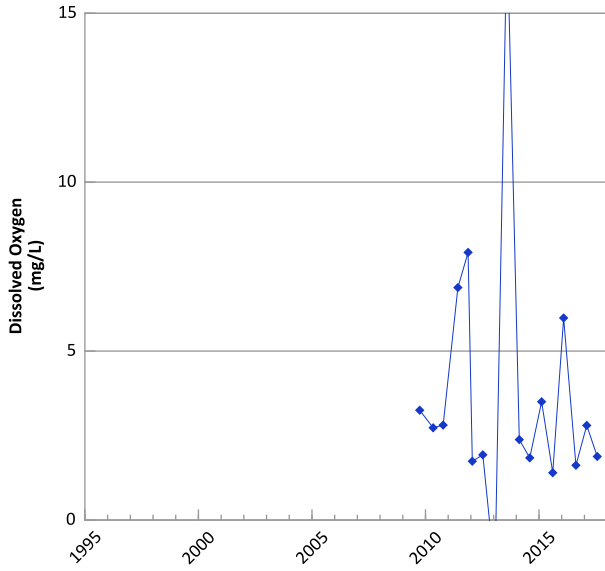
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/01/2009 to 10/25/2017
Analysis Date: 03/21/2018

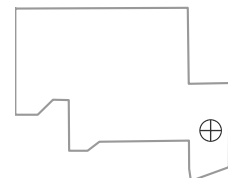
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1139 in Ogallala Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



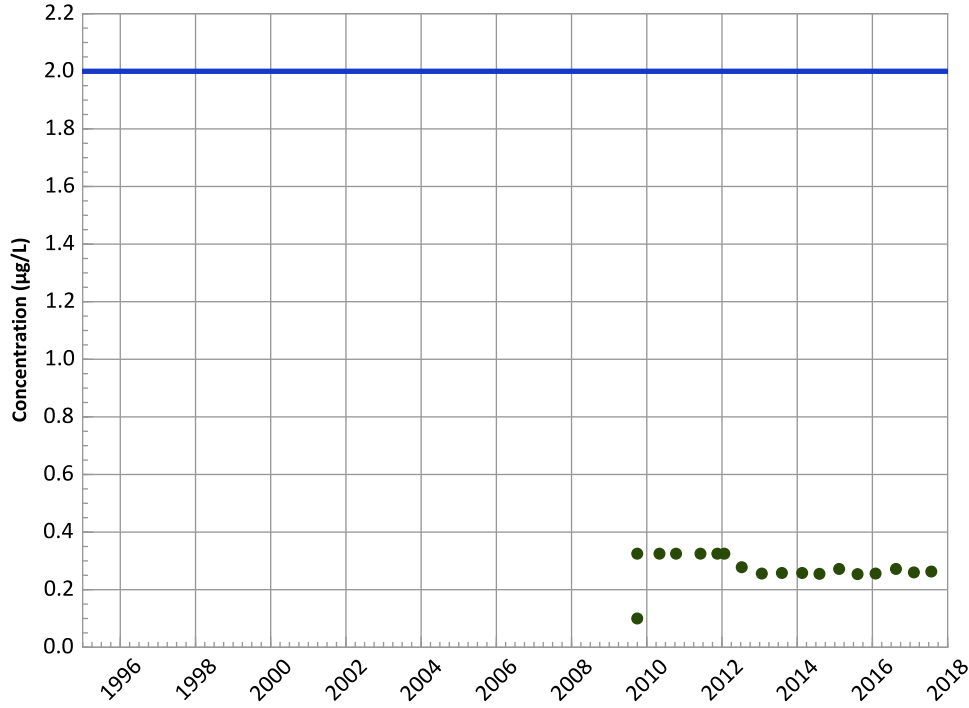
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 09/30/2009 to 07/26/2017
 Analysis Date: 03/21/2018

Well Location



PTX06-1139 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

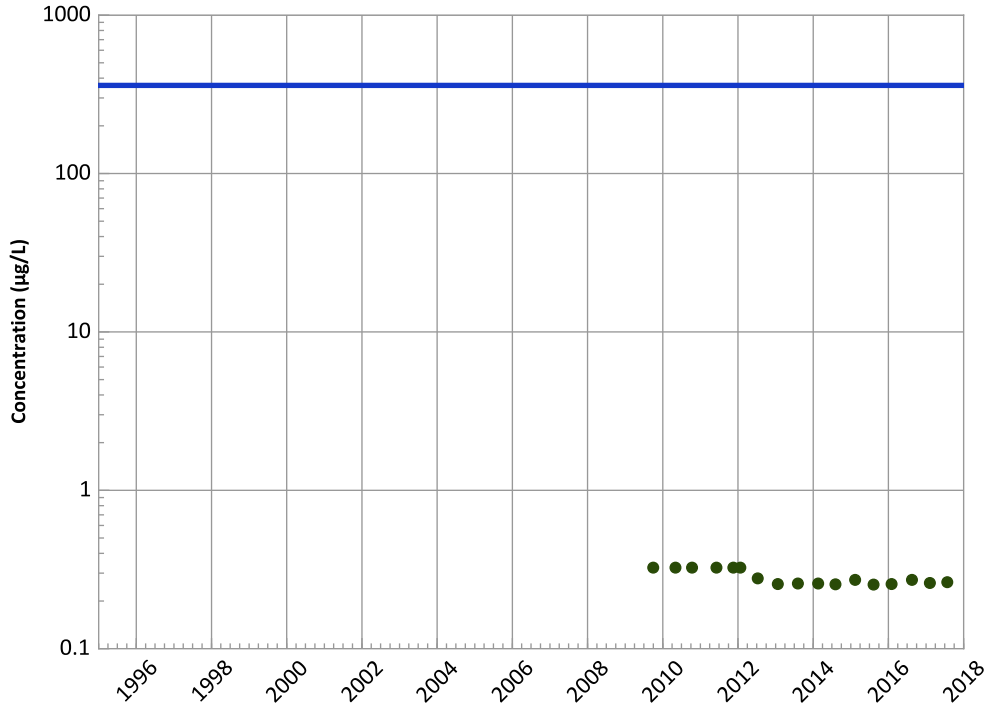
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

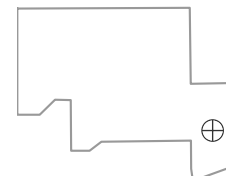
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

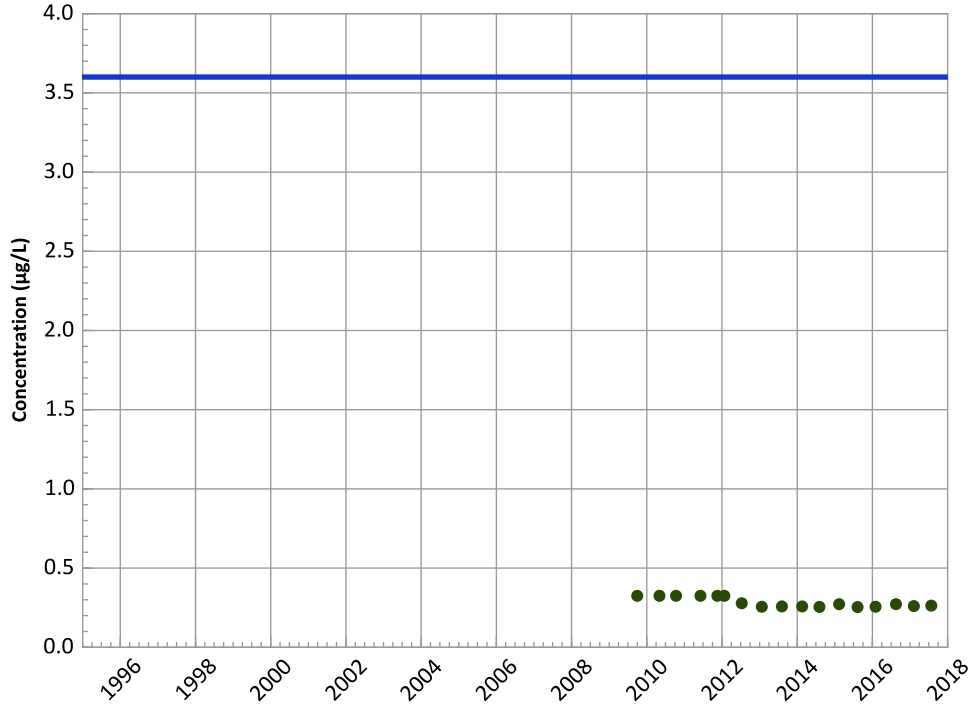


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/30/2009 to 07/26/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1139 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

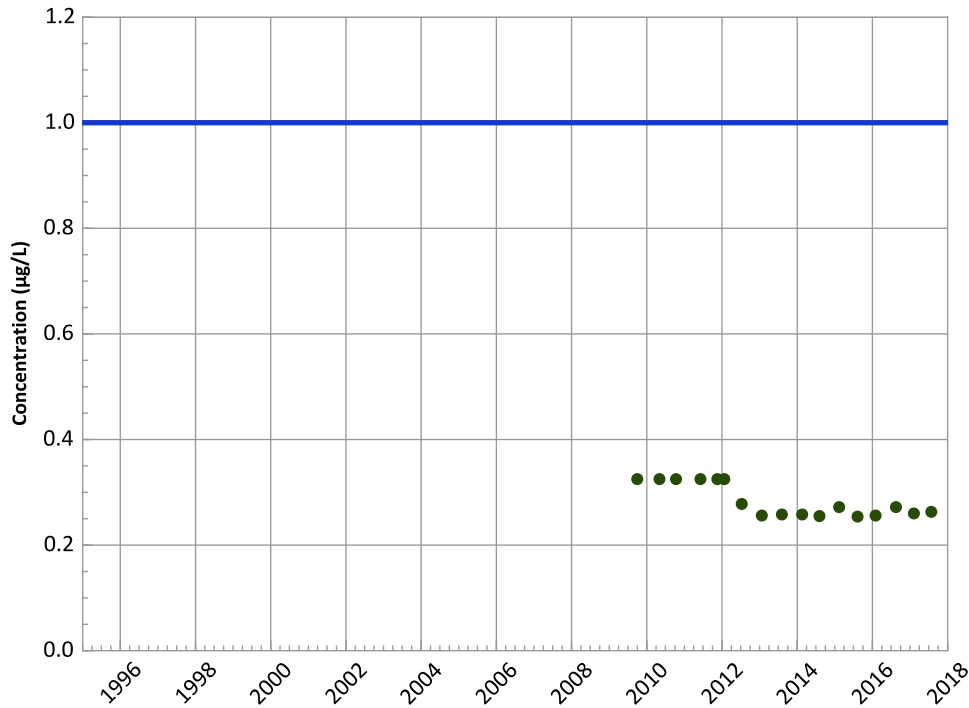
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

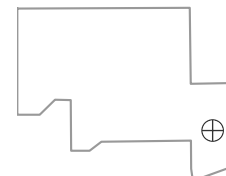
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

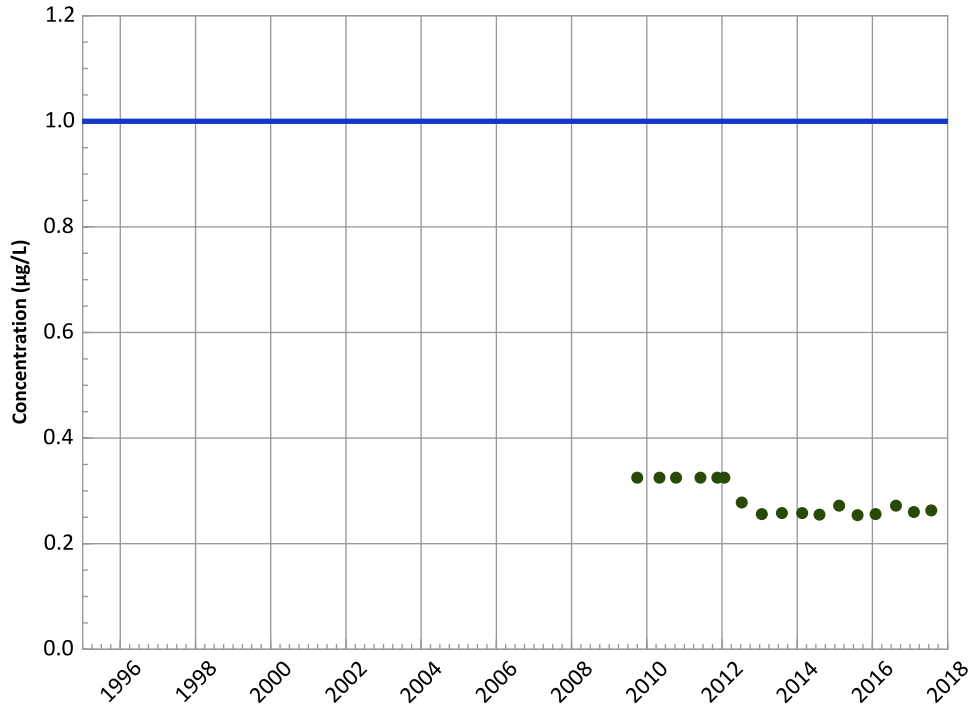


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/30/2009 to 07/26/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1139 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

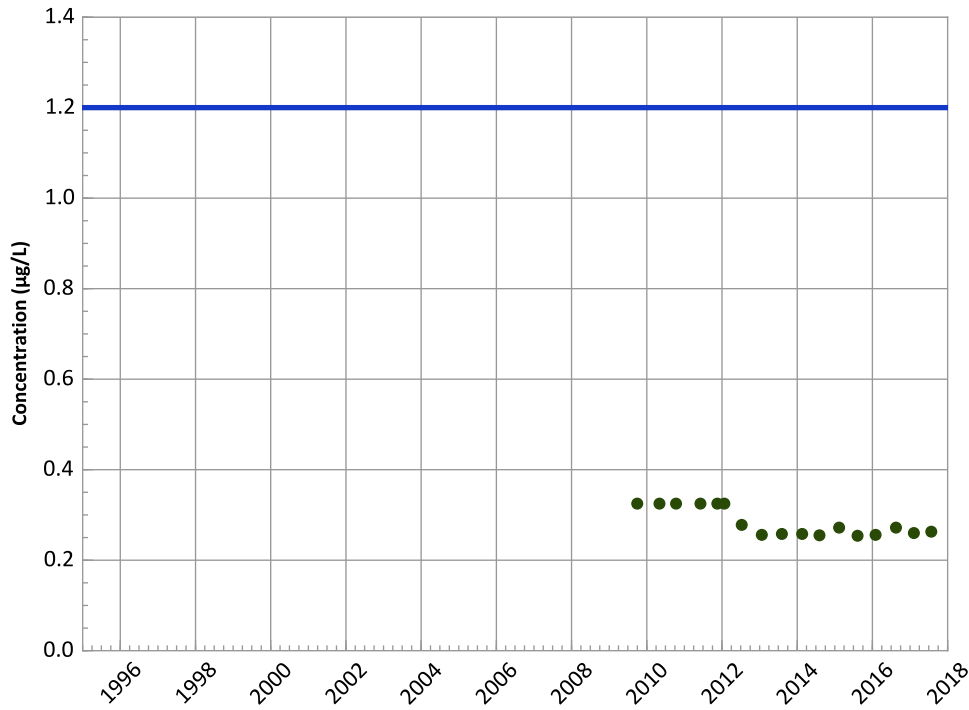
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

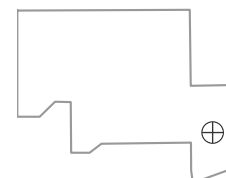
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

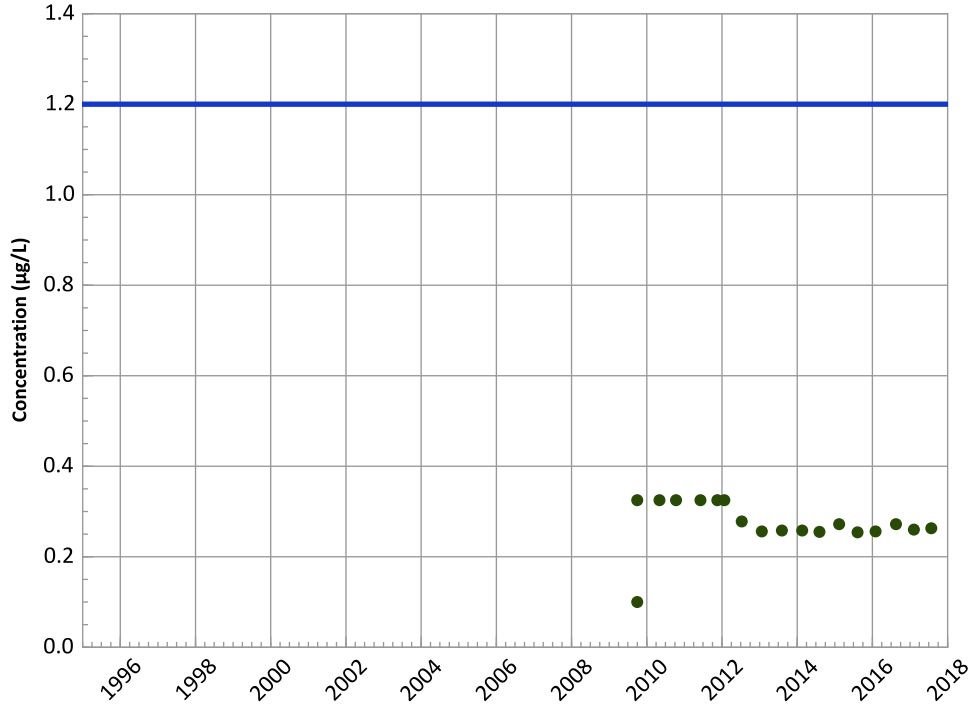


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/30/2009 to 07/26/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1139 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

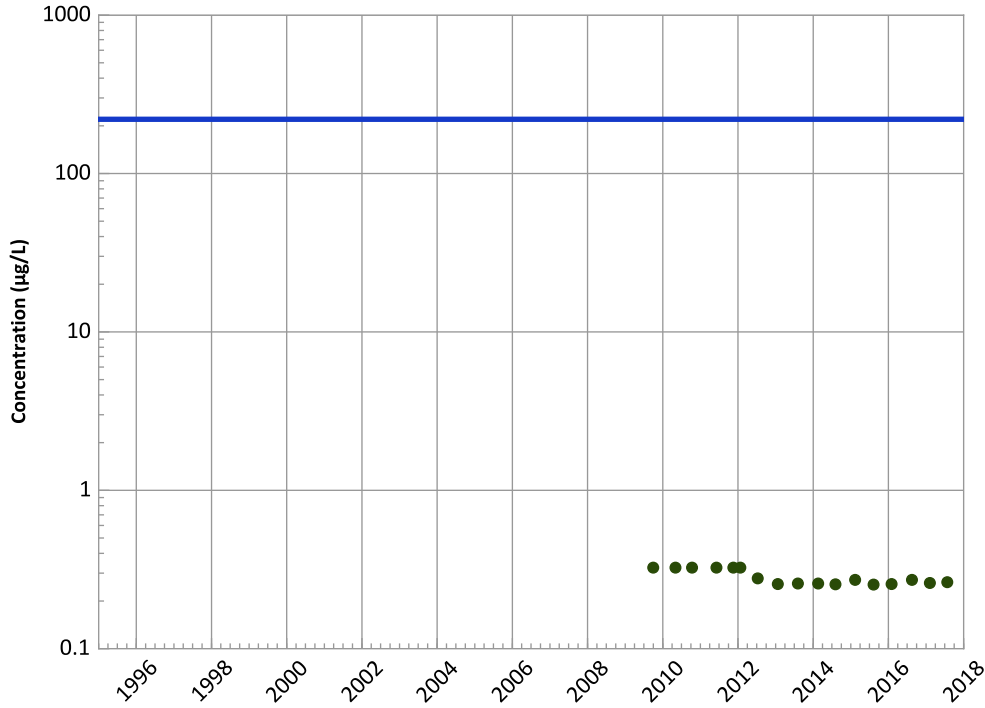
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,3,5-Trinitrobenzene Trend



Concentration Trend

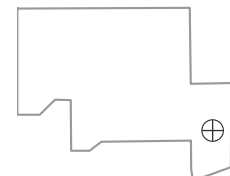
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

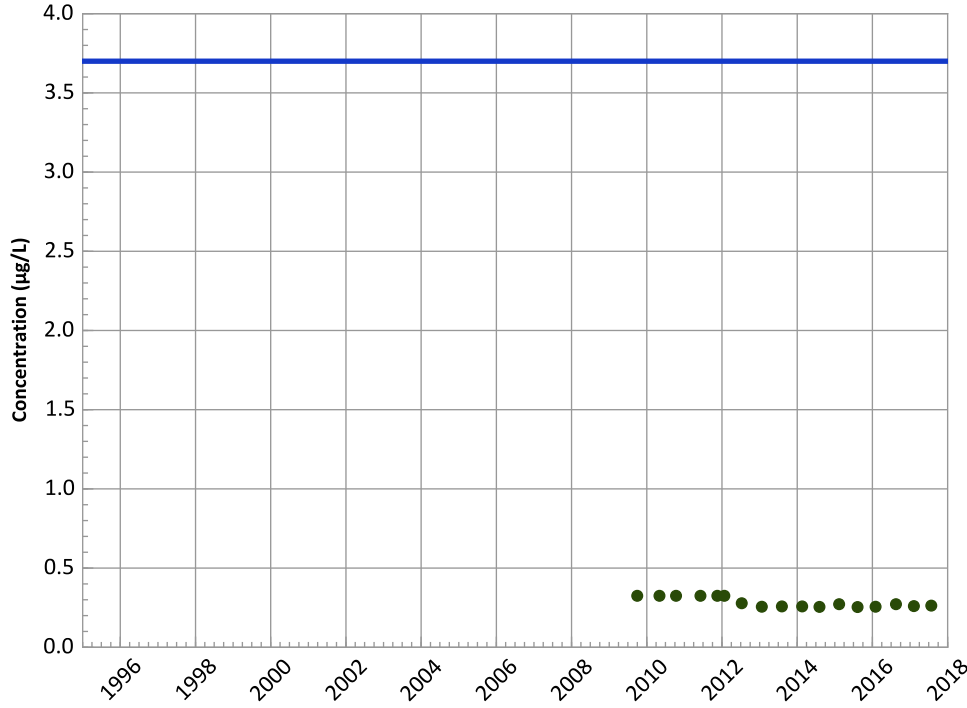


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/30/2009 to 07/26/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1139 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

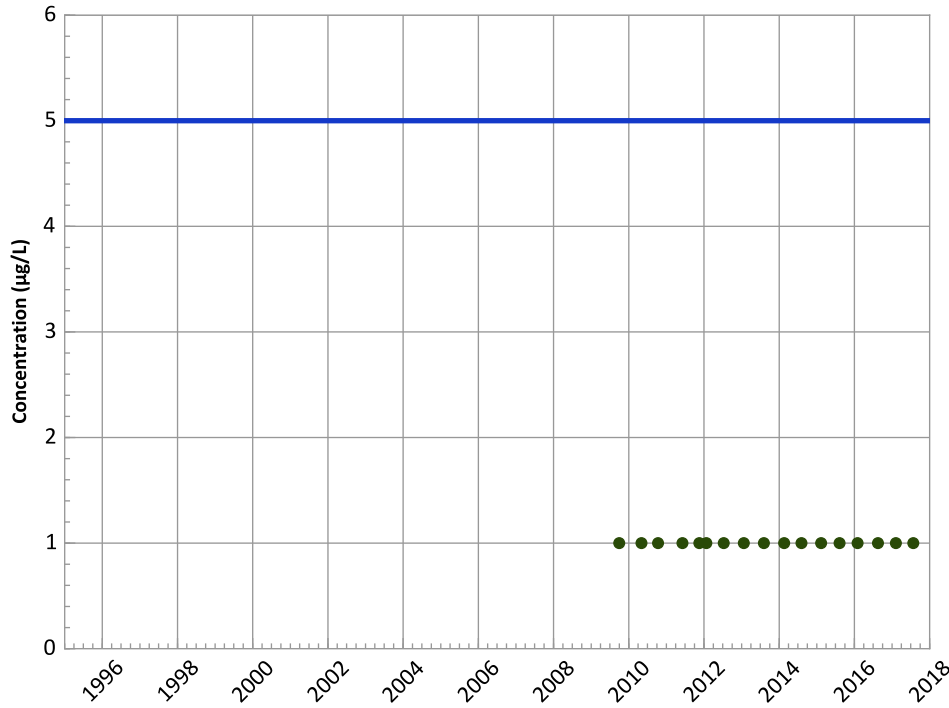
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Tetrachloroethylene (PCE) Trend



Concentration Trend

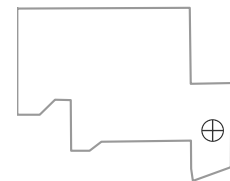
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

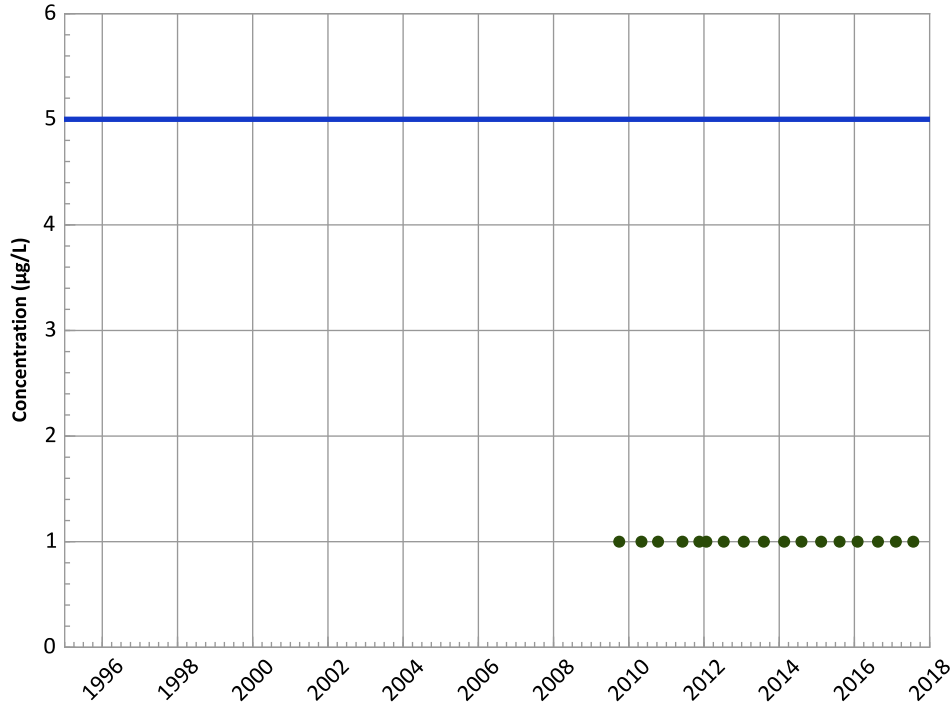


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/30/2009 to 07/26/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1139 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

Trichloroethene Trend



Concentration Trend

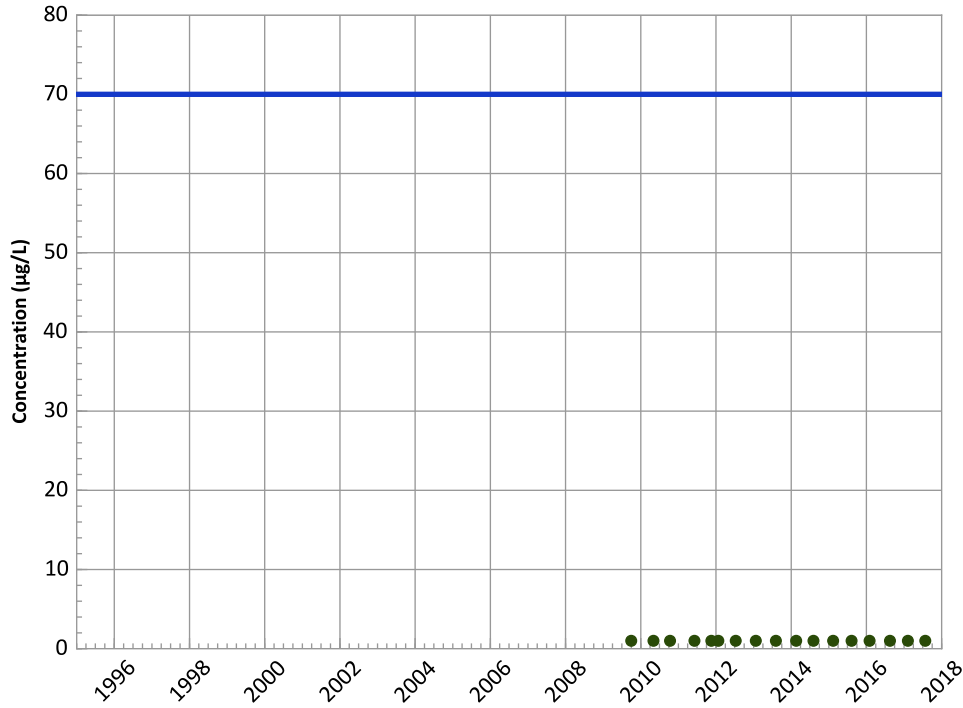
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

cis-1,2-Dichloroethene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

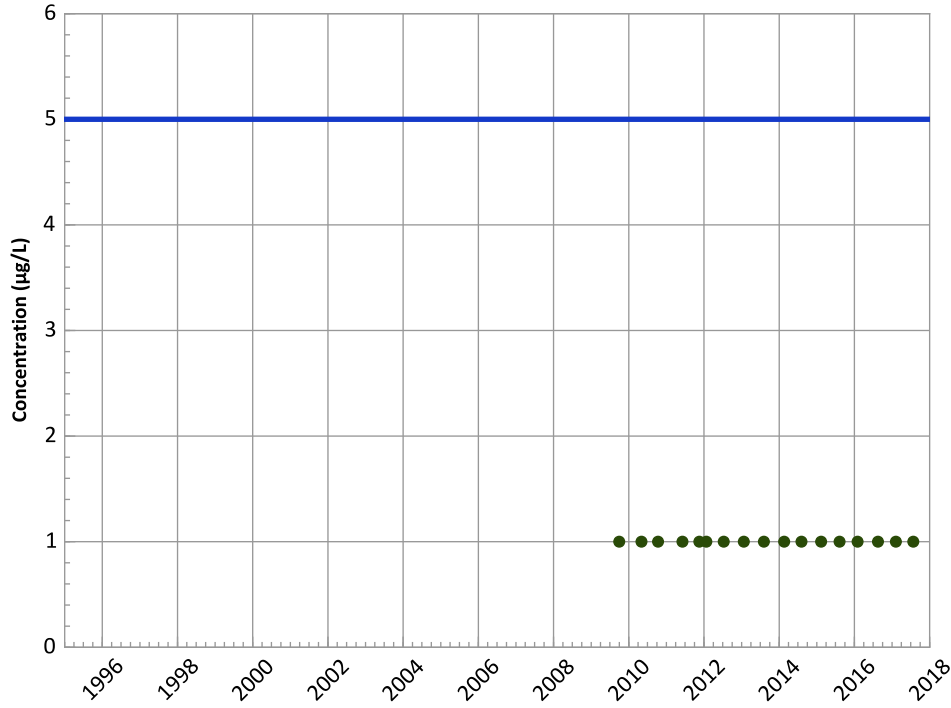
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/30/2009 to 07/26/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1139 in Ogallala Aquifer
USDOE/NNSA Pantex Plant
1,2-Dichloroethane Trend**



Concentration Trend

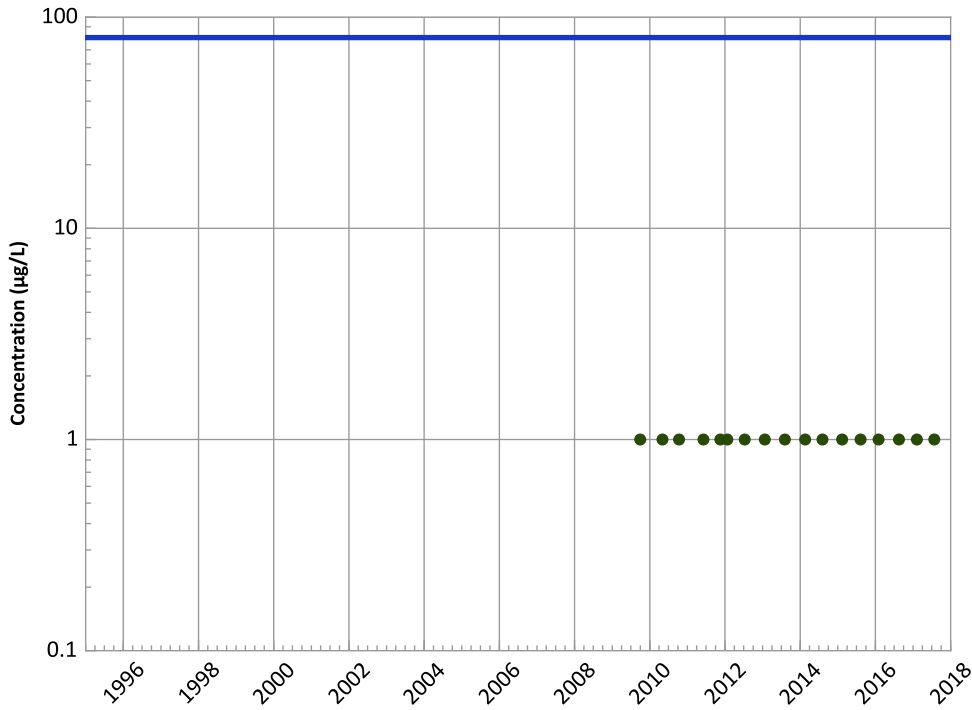
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Chloroform Trend



Concentration Trend

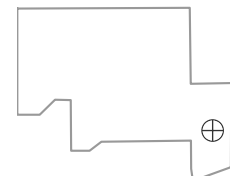
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

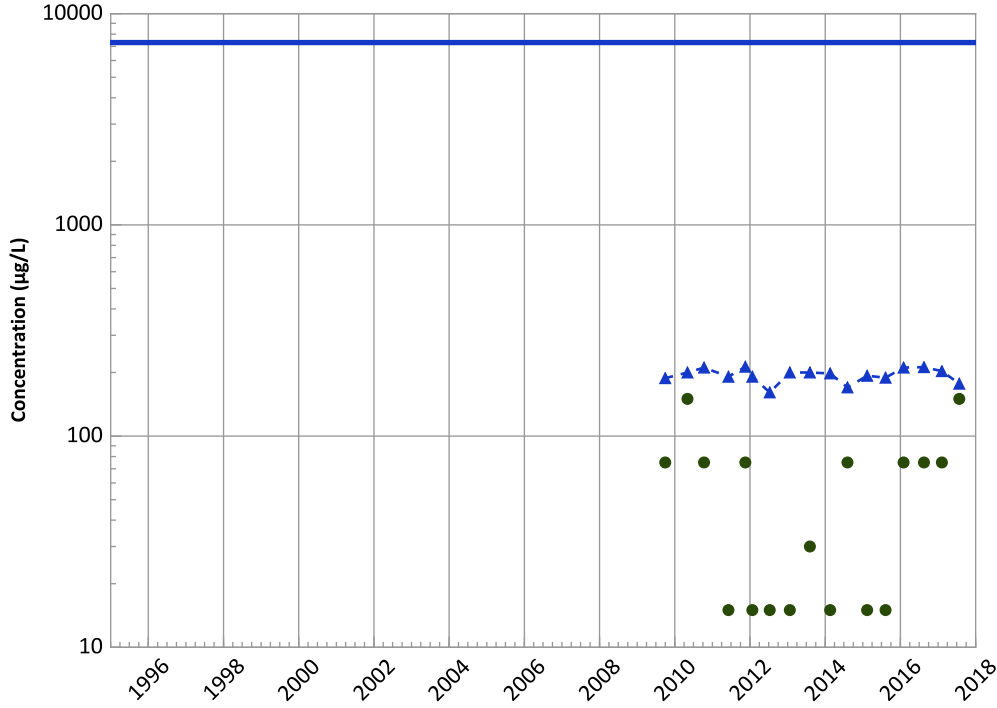


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/30/2009 to 07/26/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1139 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

Boron Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

No Trend

All Data

No Trend

MAROS Linear Regression Method

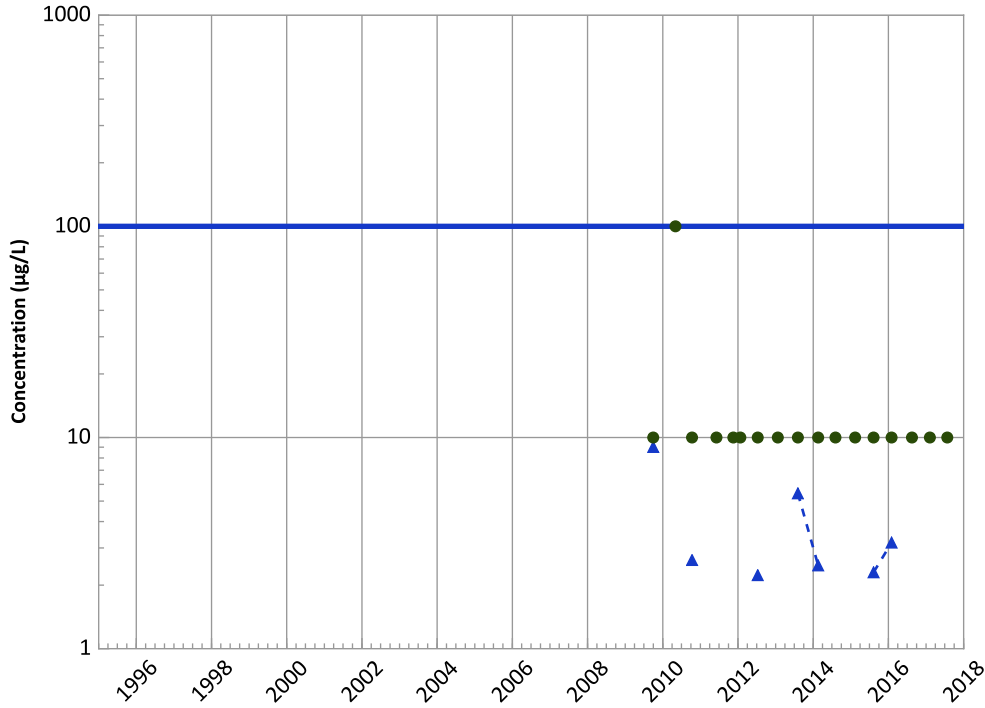
Data ():

Probably Increasing

All Data

Decreasing

Chromium, Total Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

Decreasing

All Data

Decreasing

MAROS Linear Regression Method

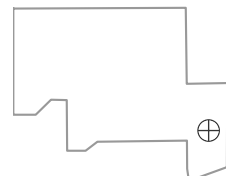
Data ():

Stable

All Data

Stable

Well Location

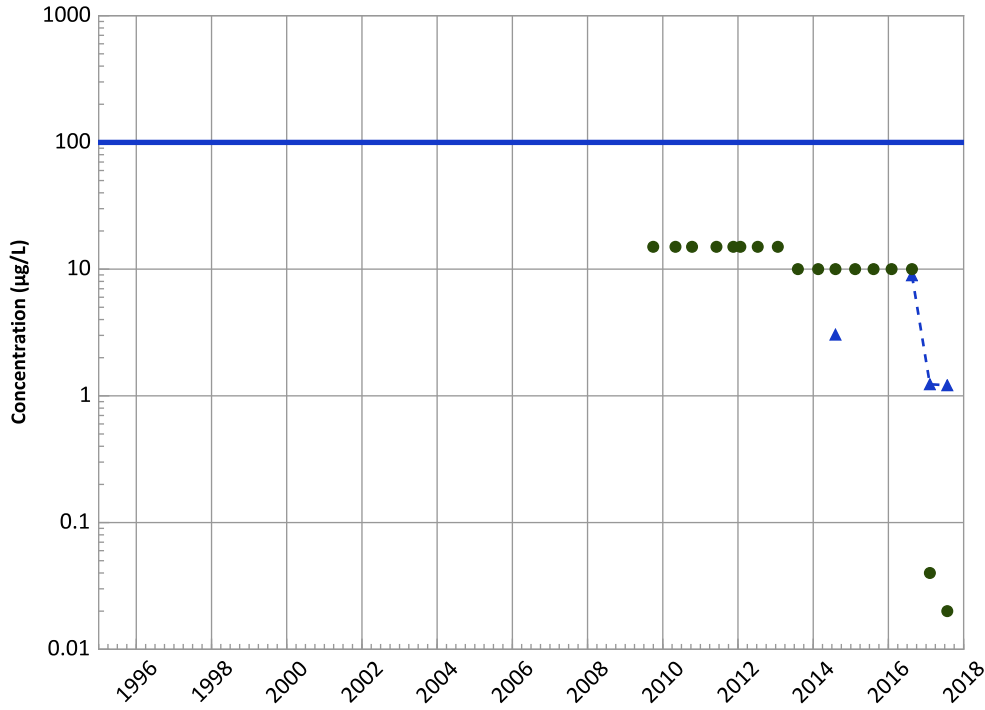


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/30/2009 to 07/26/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1139 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

Chromium, Hexavalent Trend

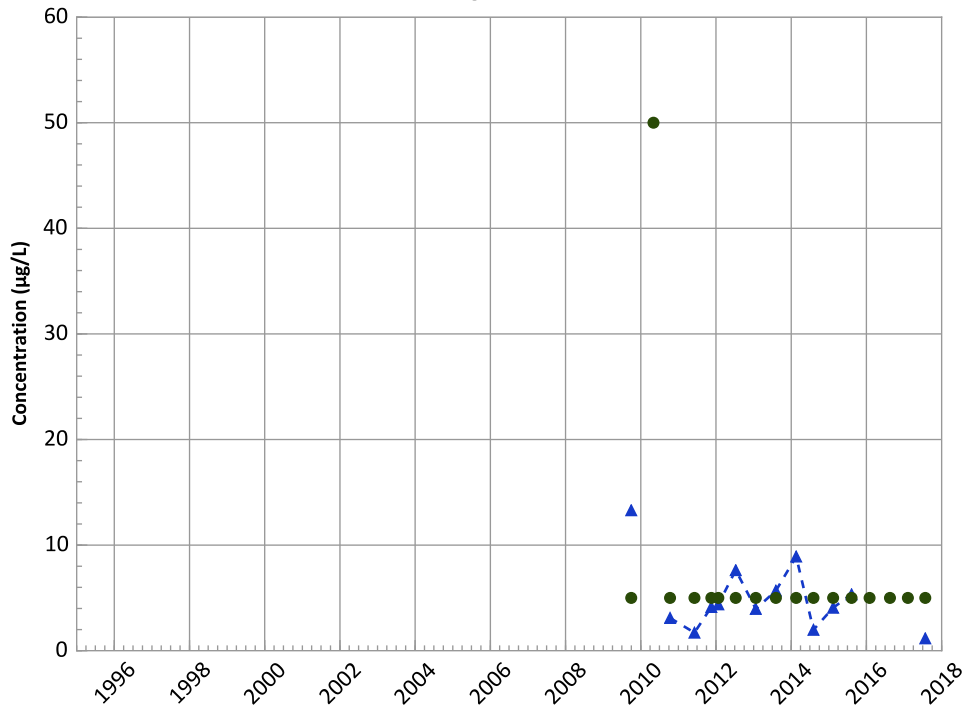


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

MAROS Linear Regression Method
Data ():
N/A (<4 Detections in Dataset)
All Data
No Trend

Manganese Trend

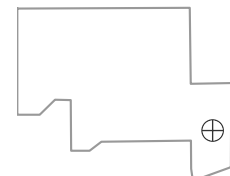


Concentration Trend

MAROS Mann-Kendall Method
Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method
Data ():
Stable
All Data
Probably Decreasing

Well Location

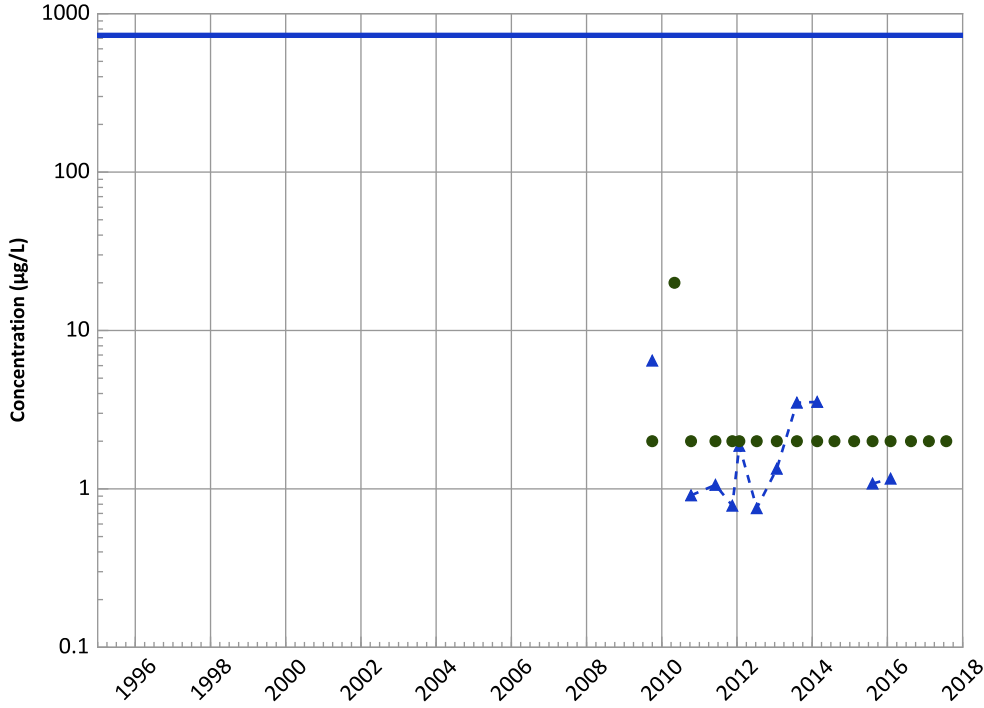


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/30/2009 to 07/26/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1139 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

Nickel Trend



Concentration Trend

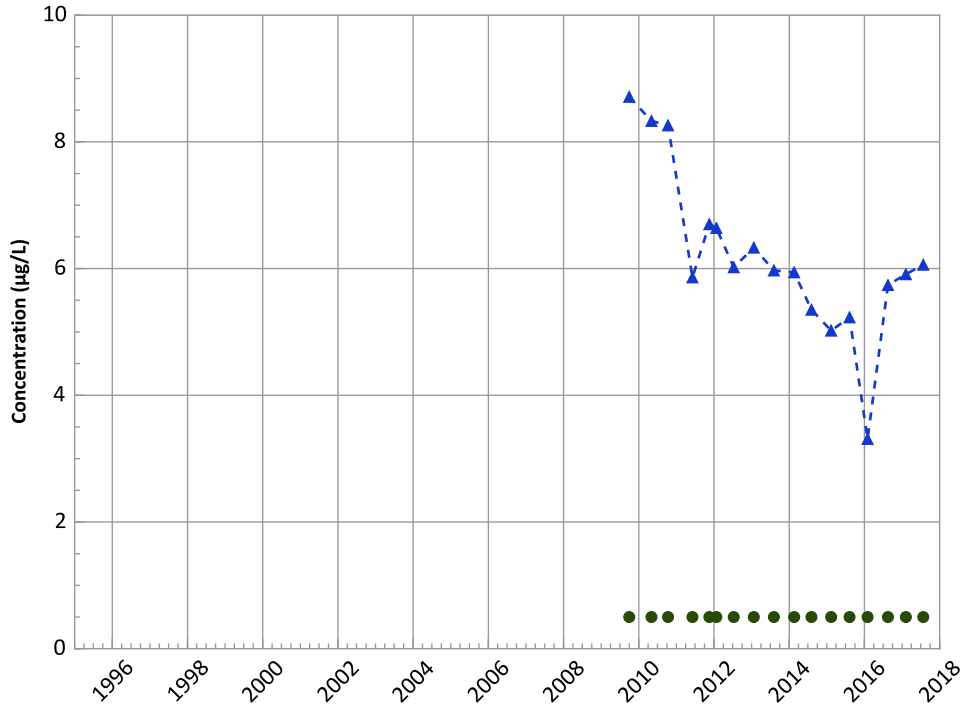
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Stable
All Data
Stable

Molybdenum Trend



Concentration Trend

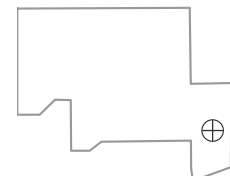
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
Decreasing

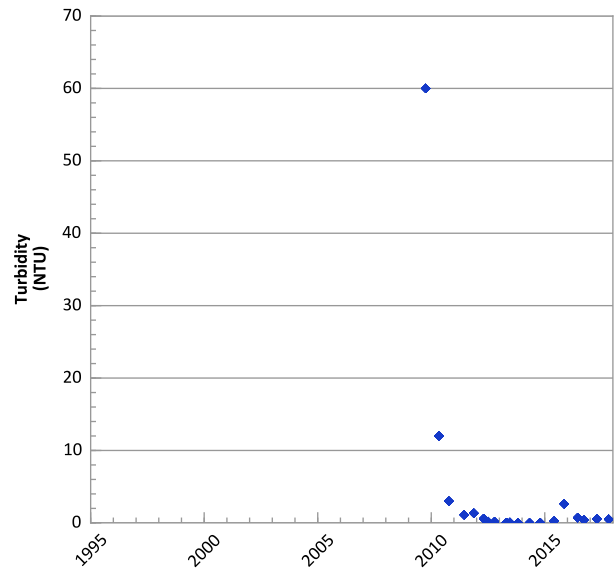
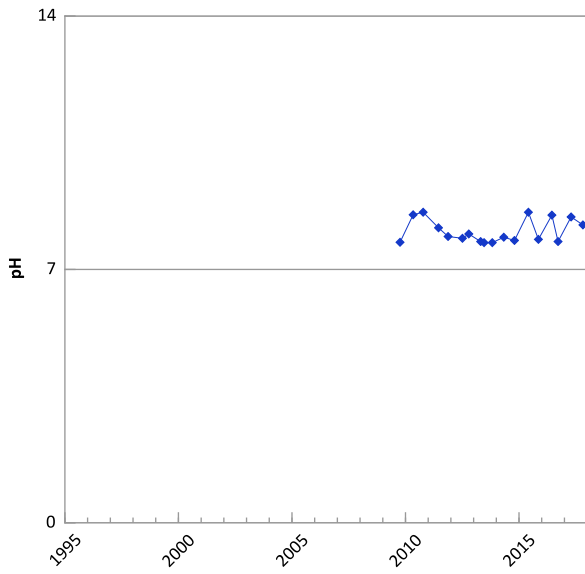
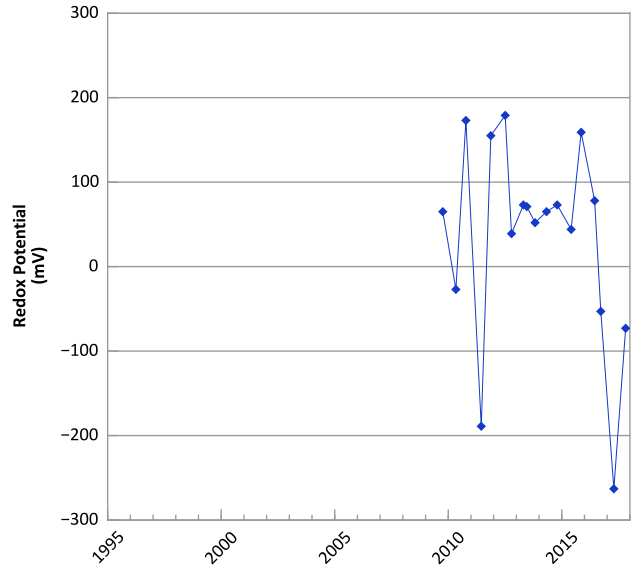
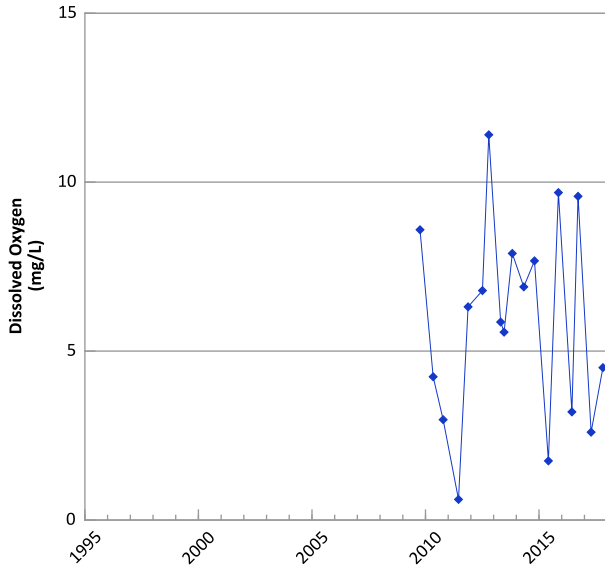
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 09/30/2009 to 07/26/2017
Analysis Date: 03/21/2018

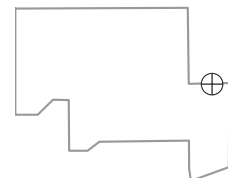
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1140 in Ogallala Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



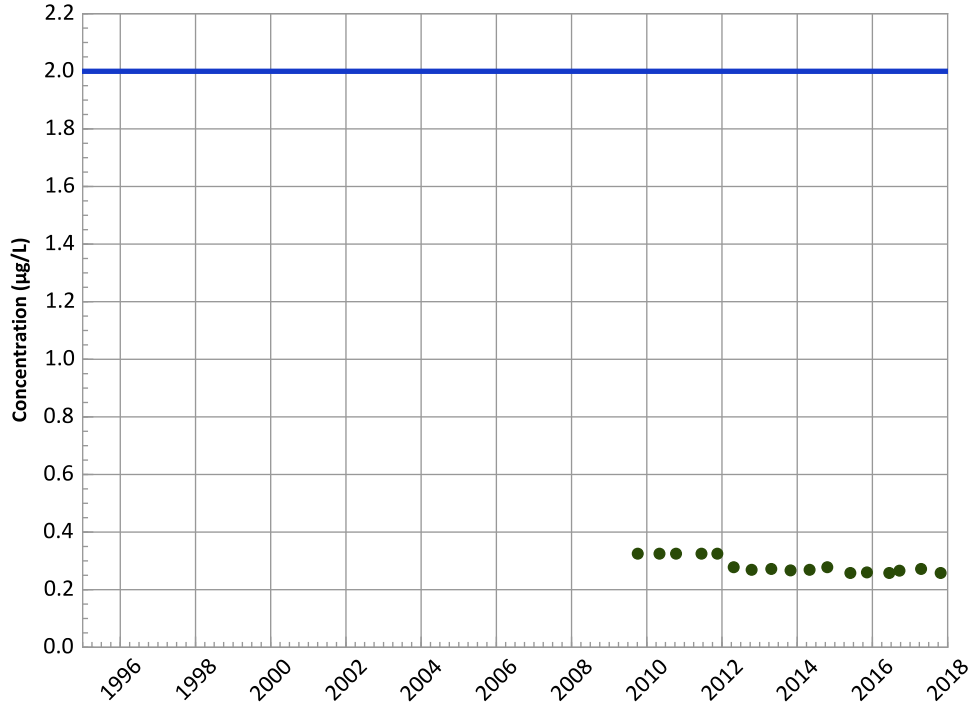
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 10/05/2009 to 10/25/2017
 Analysis Date: 03/21/2018

Well Location



PTX06-1140 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

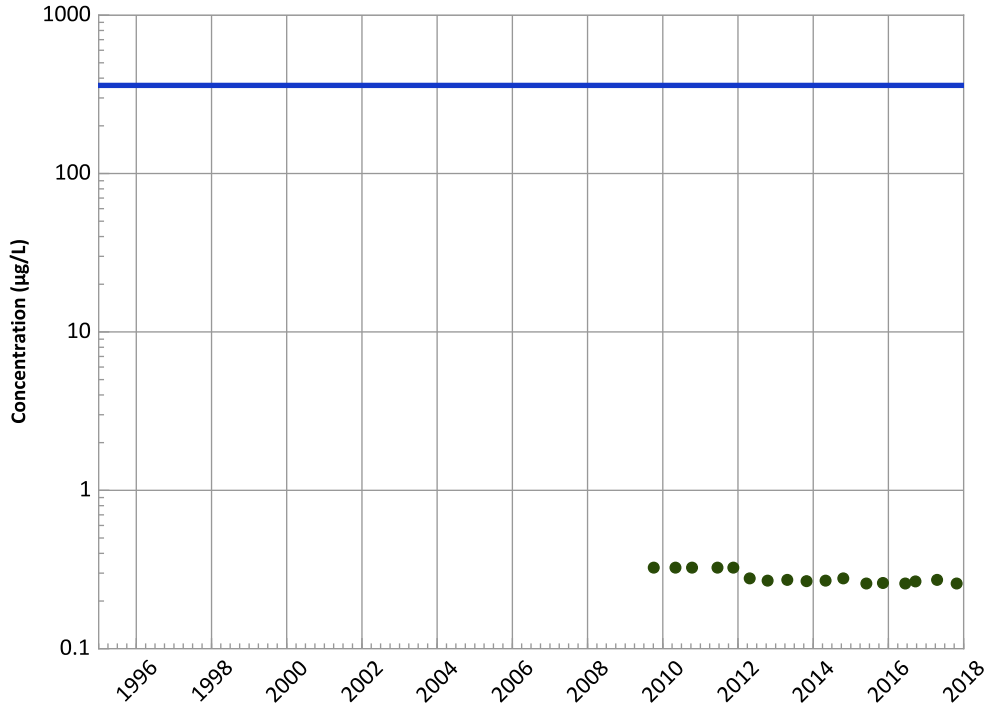
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

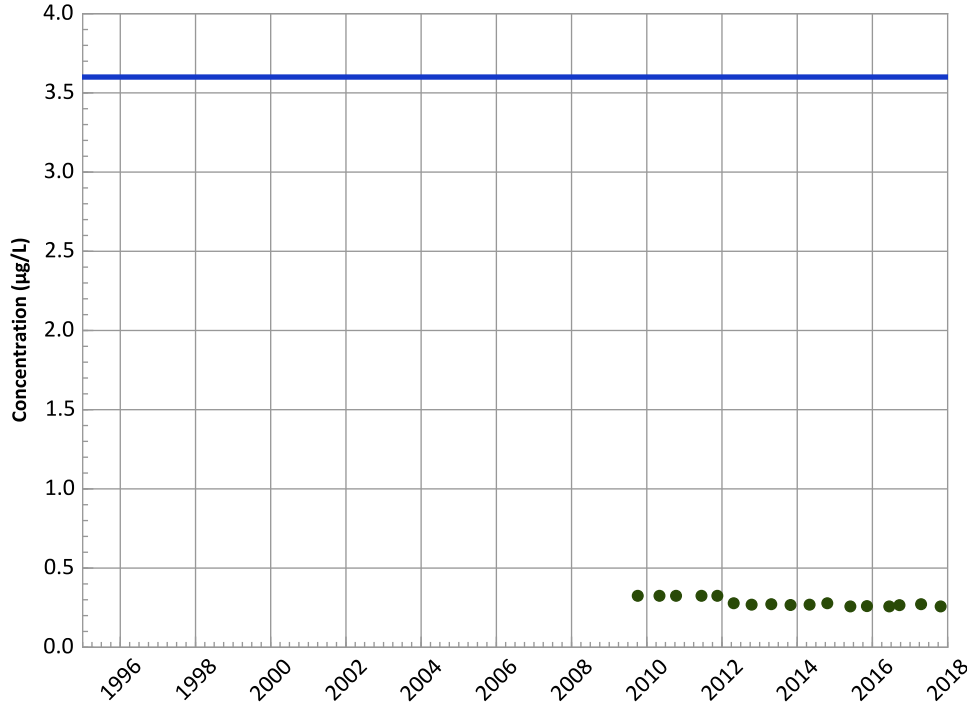


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/05/2009 to 10/25/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1140 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

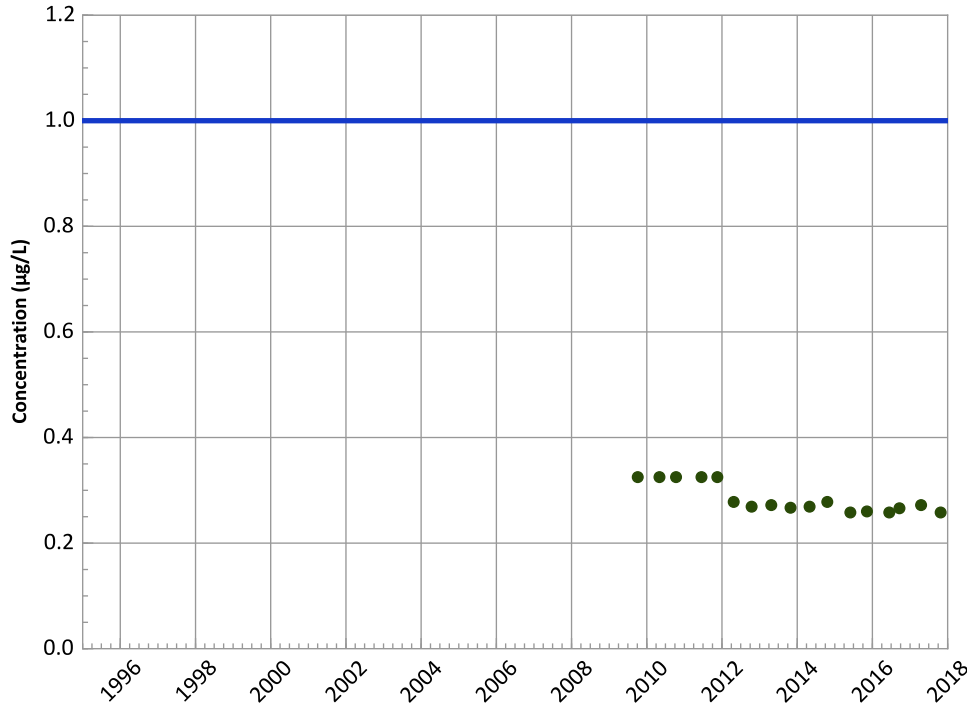
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

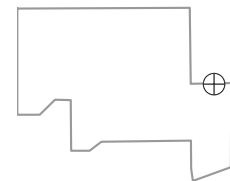
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

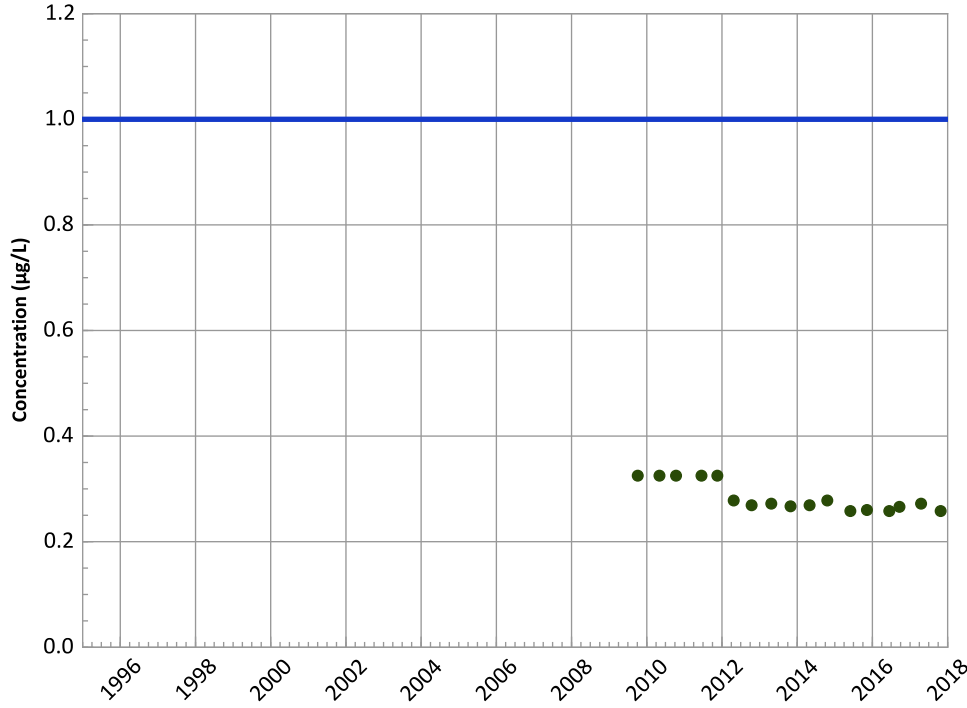


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/05/2009 to 10/25/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1140 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

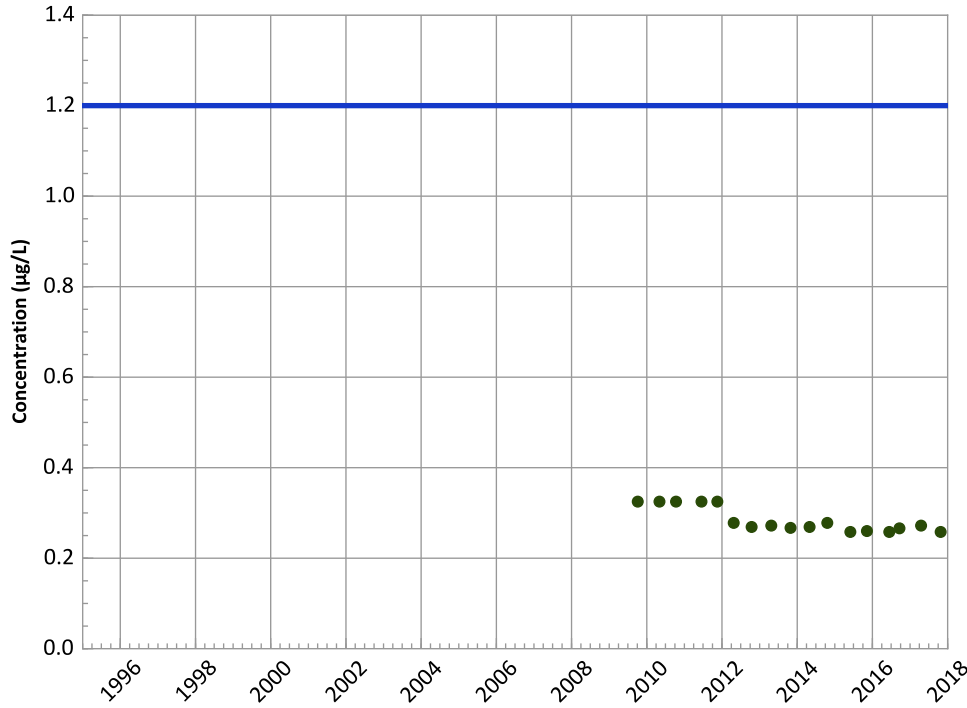
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

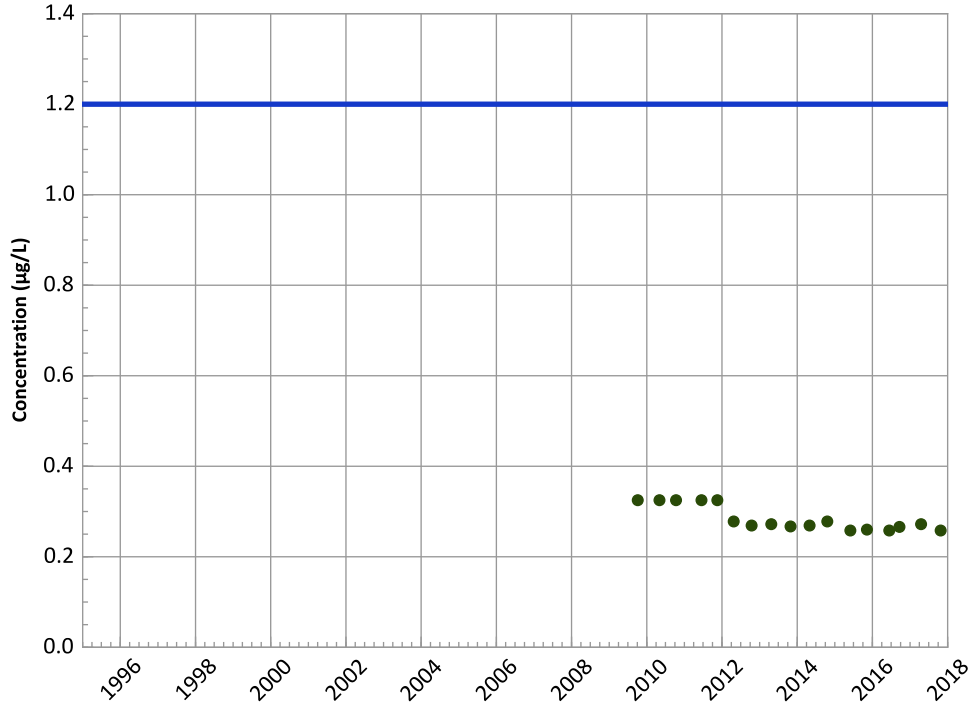


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/05/2009 to 10/25/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1140 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

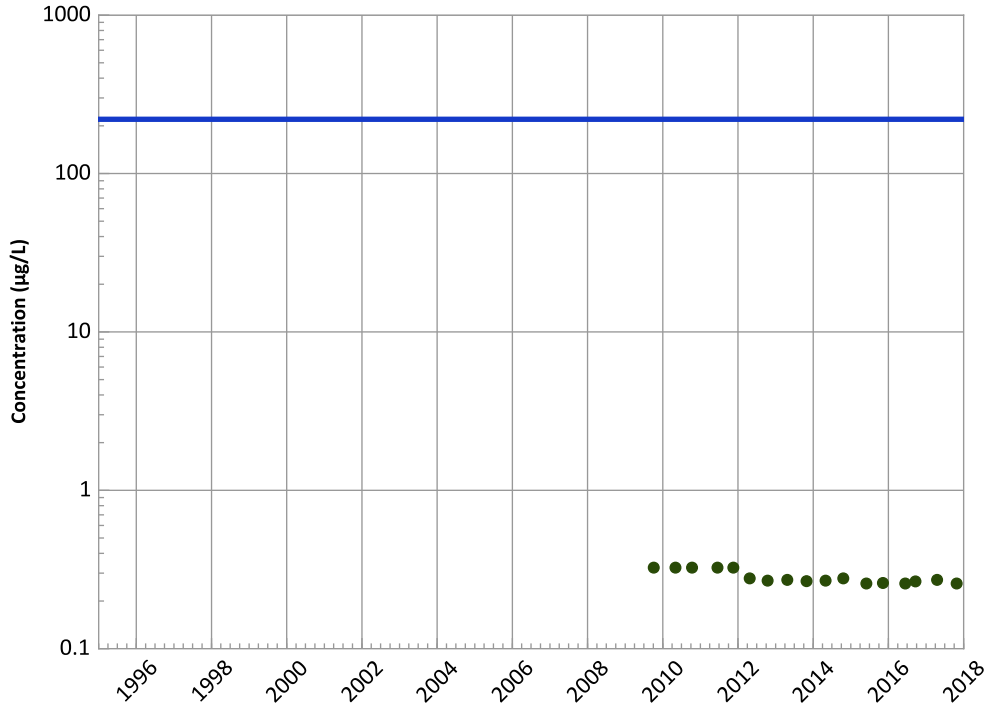
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,3,5-Trinitrobenzene Trend



Concentration Trend

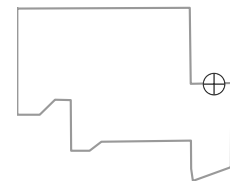
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

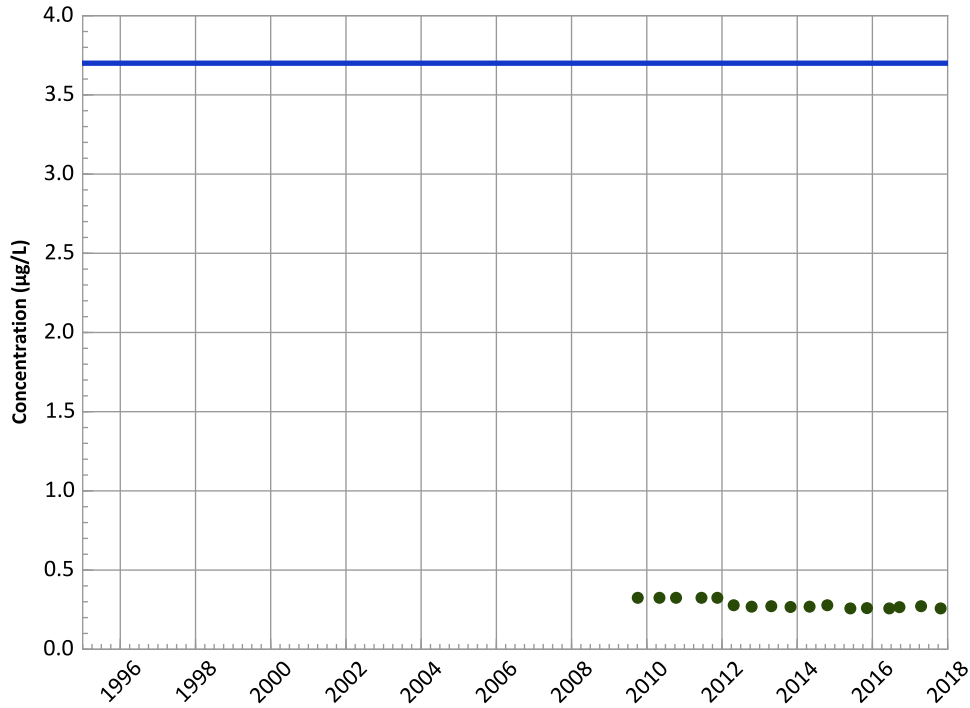


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/05/2009 to 10/25/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1140 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

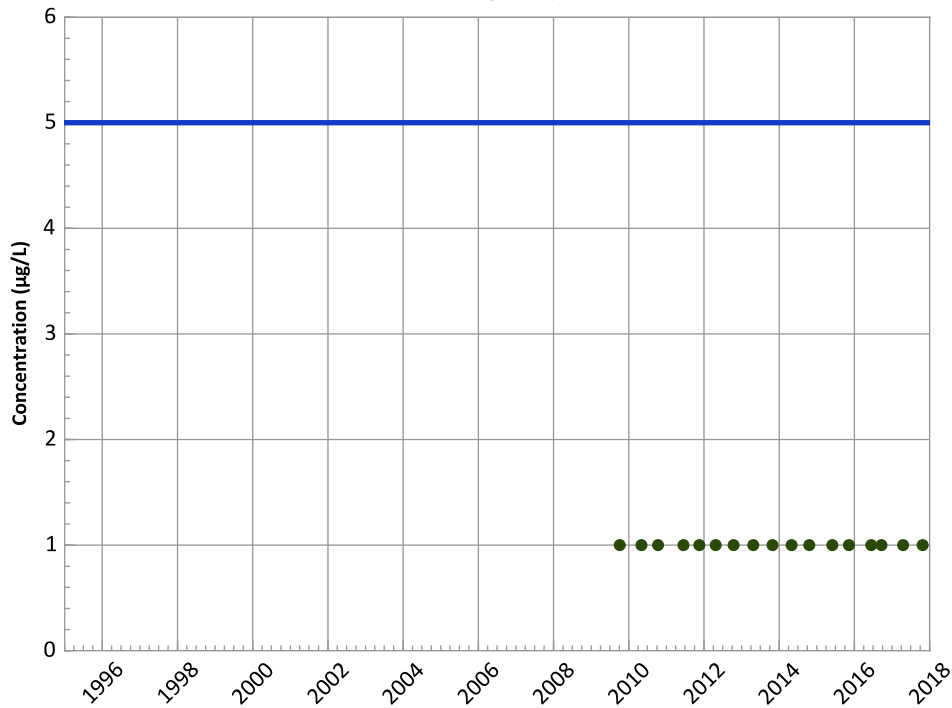
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Tetrachloroethylene (PCE) Trend



Concentration Trend

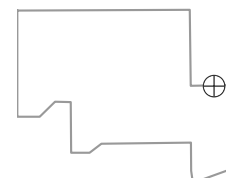
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

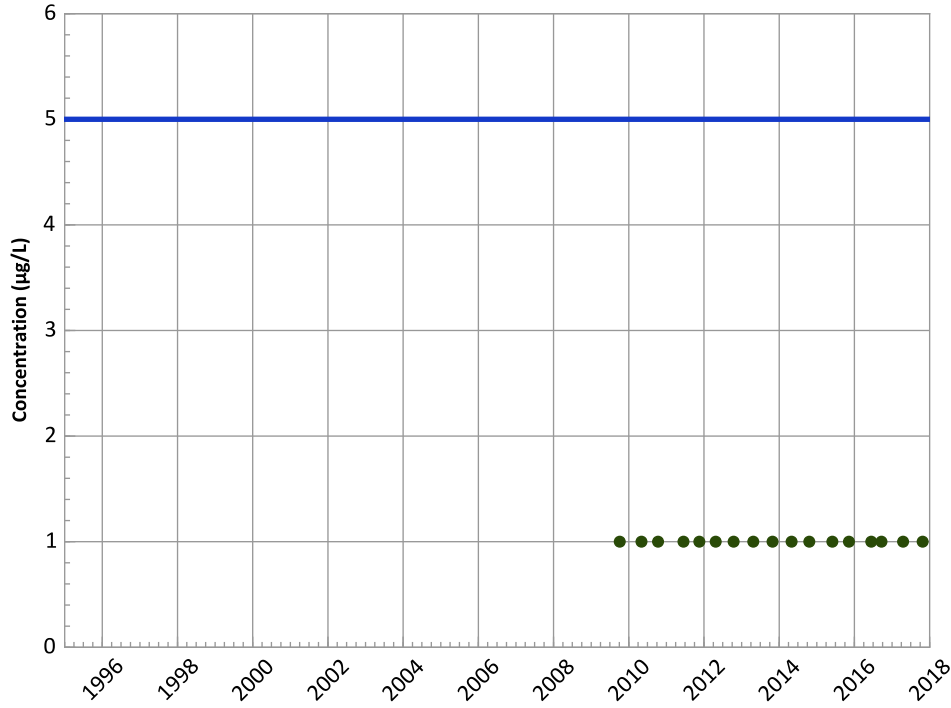


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/05/2009 to 10/25/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1140 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

Trichloroethene Trend



Concentration Trend

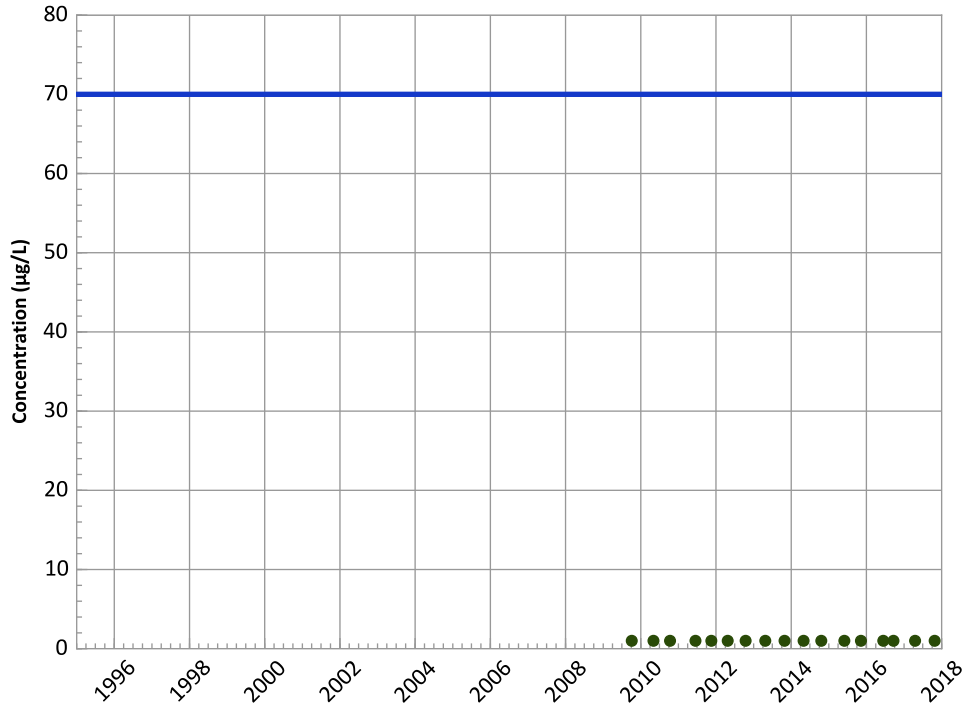
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

cis-1,2-Dichloroethene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

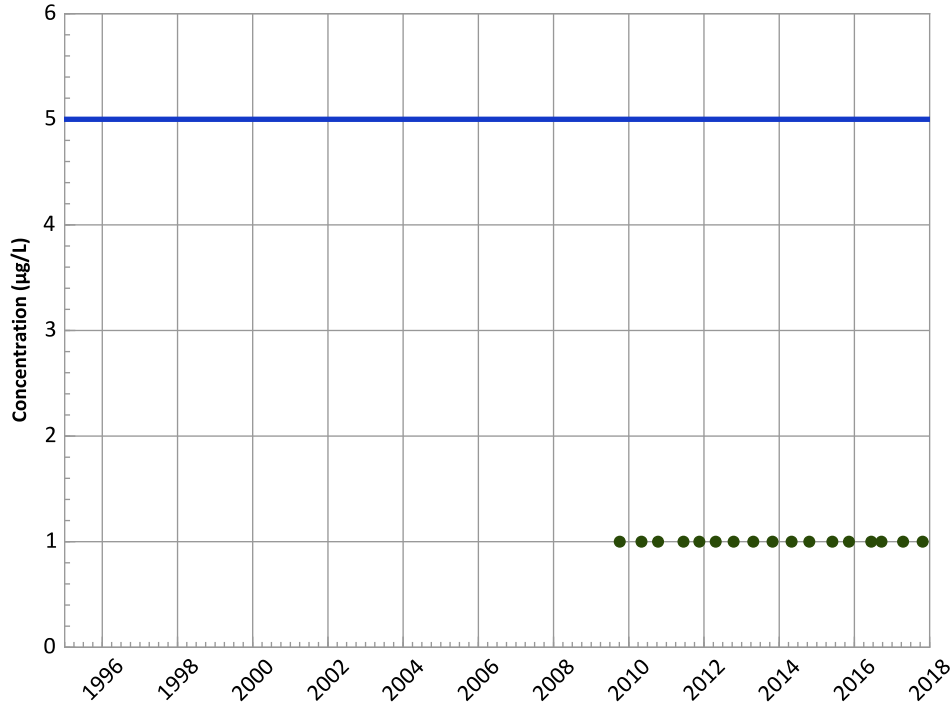
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/05/2009 to 10/25/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1140 in Ogallala Aquifer
USDOE/NNSA Pantex Plant
1,2-Dichloroethane Trend**



Concentration Trend

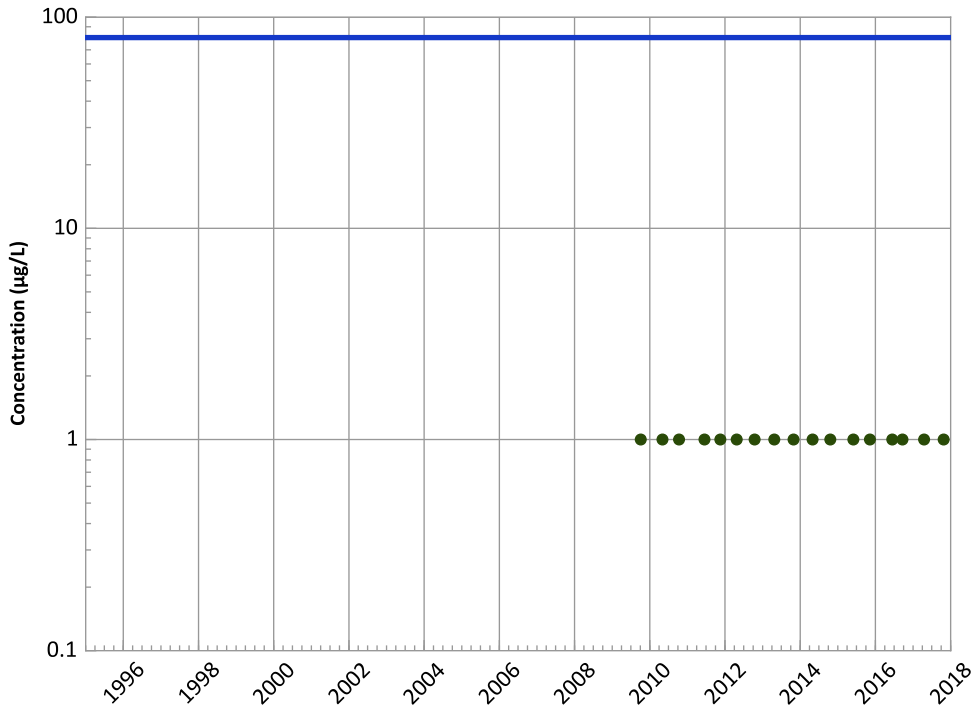
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Chloroform Trend



Concentration Trend

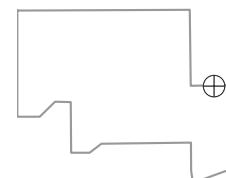
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

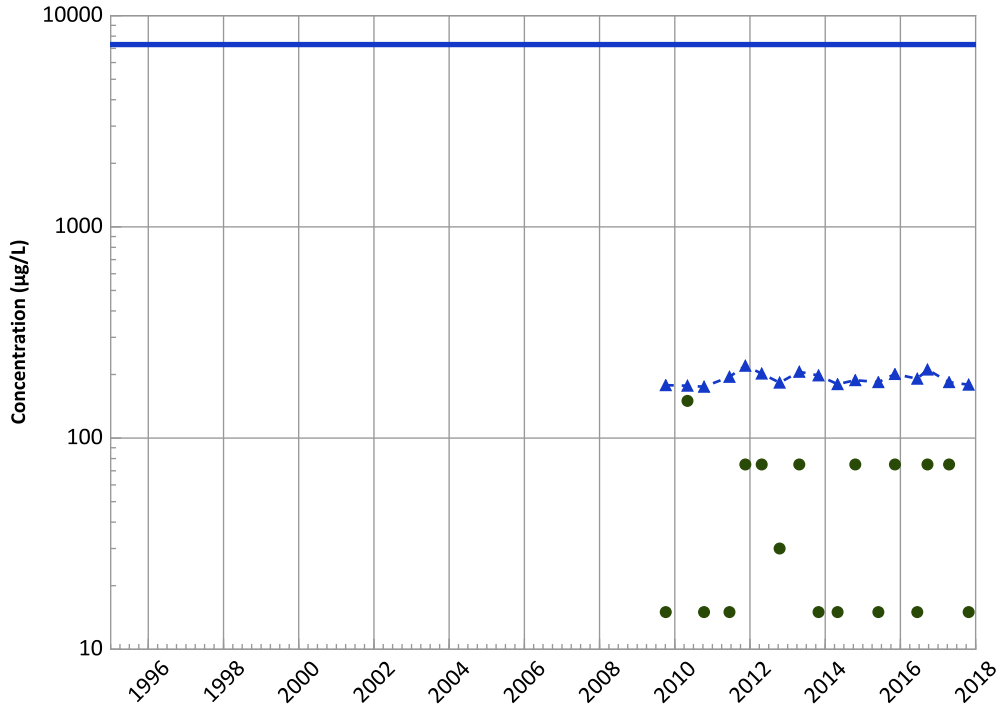


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/05/2009 to 10/25/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1140 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

Boron Trend



Concentration Trend

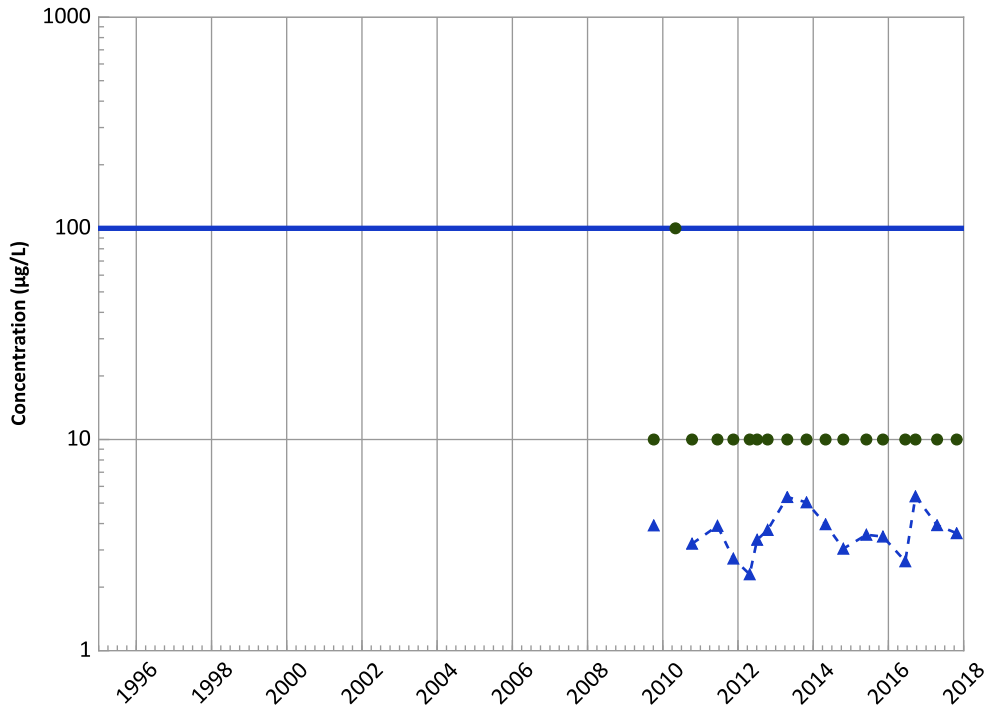
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
No Trend

MAROS Linear Regression Method

Data ():
No Trend
All Data
Increasing

Chromium, Total Trend



Concentration Trend

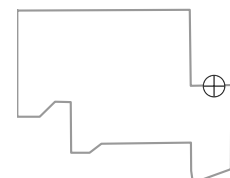
MAROS Mann-Kendall Method

Data ():
No Trend
All Data
Decreasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
No Trend

Well Location

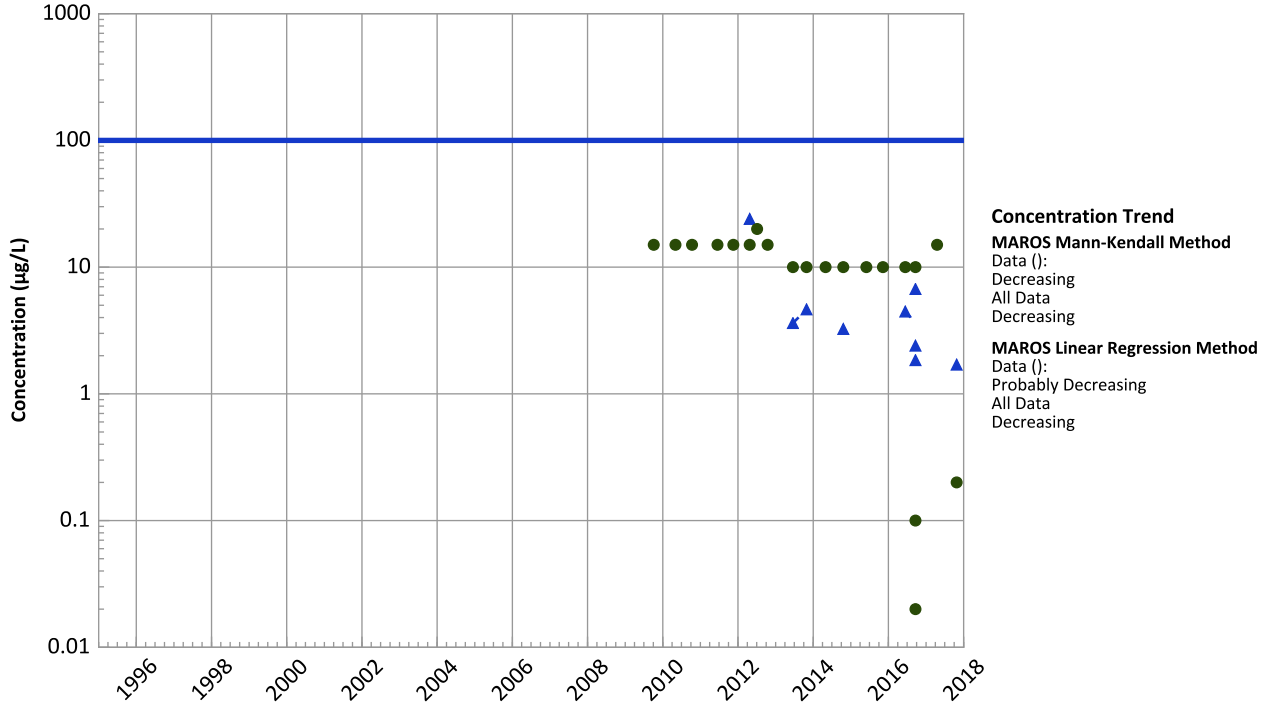


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/05/2009 to 10/25/2017
Analysis Date: 03/21/2018

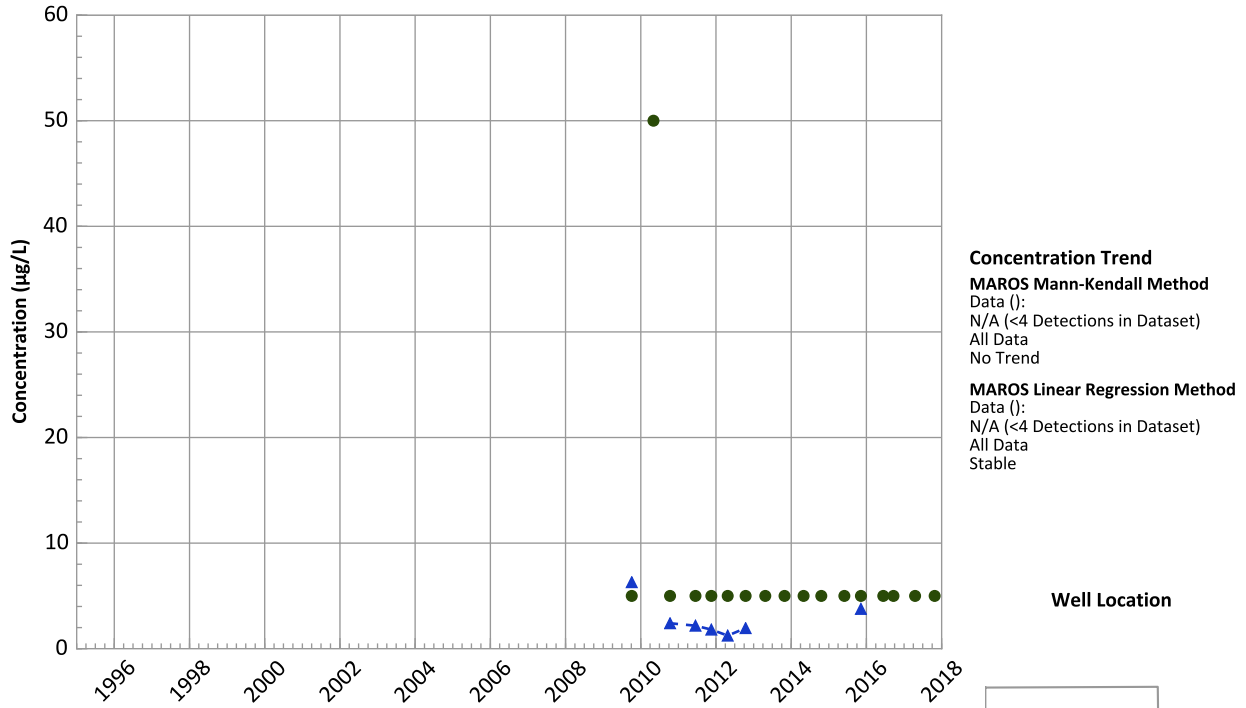
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1140 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

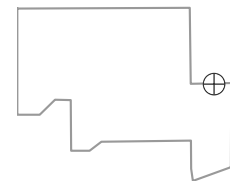
Chromium, Hexavalent Trend



Manganese Trend



Well Location

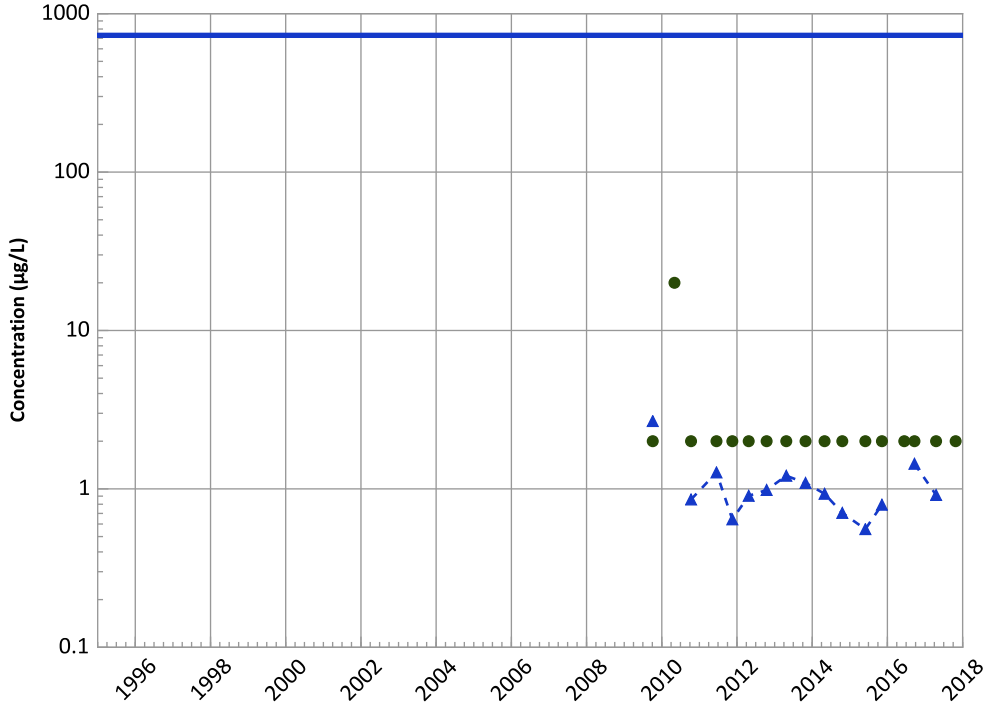


Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 10/05/2009 to 10/25/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1140 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

Nickel Trend



Concentration Trend

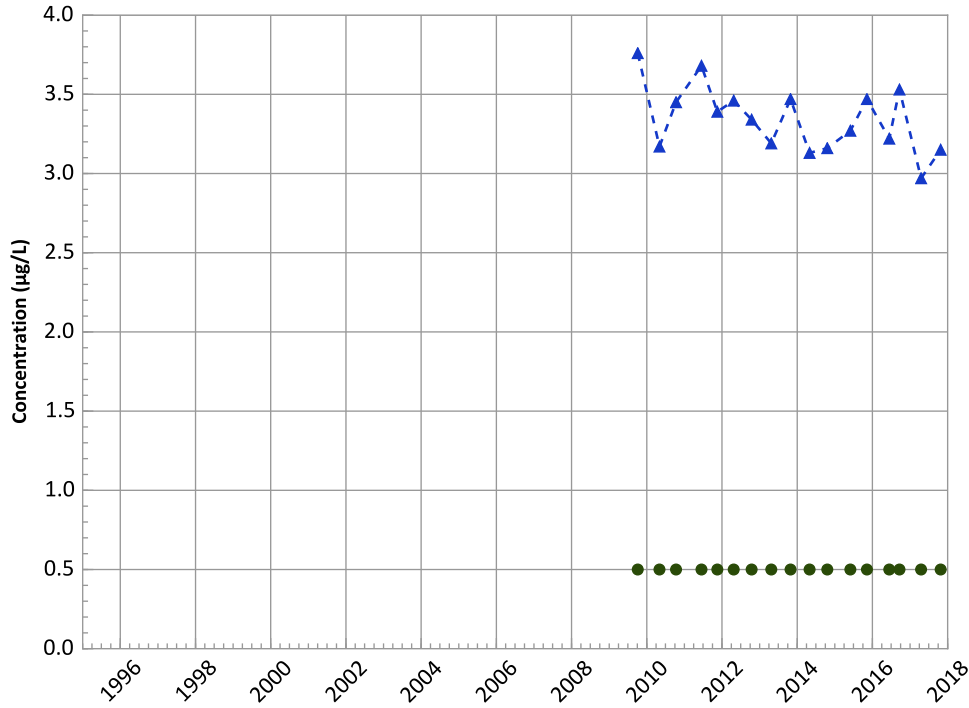
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Stable
All Data
Probably Decreasing

Molybdenum Trend



Concentration Trend

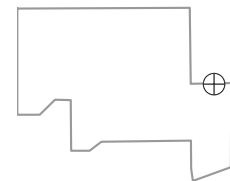
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Increasing
All Data
Decreasing

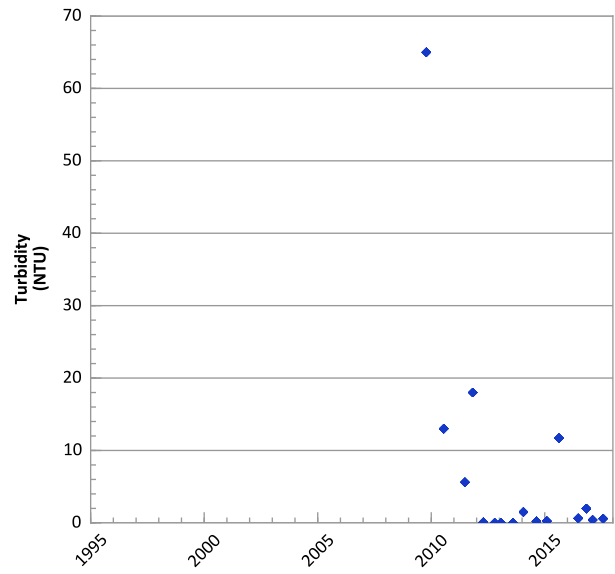
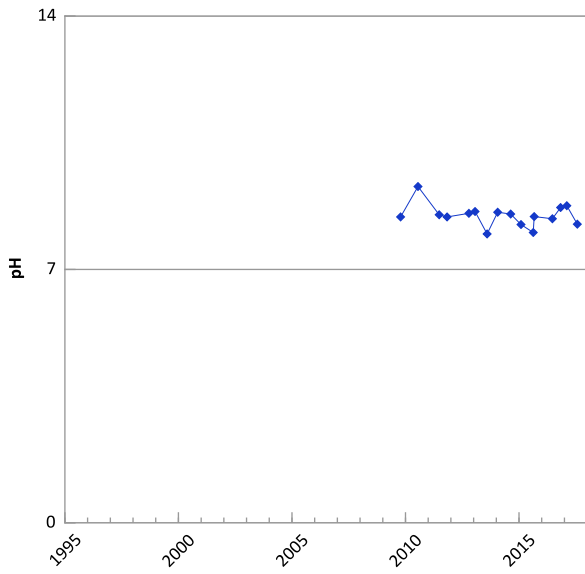
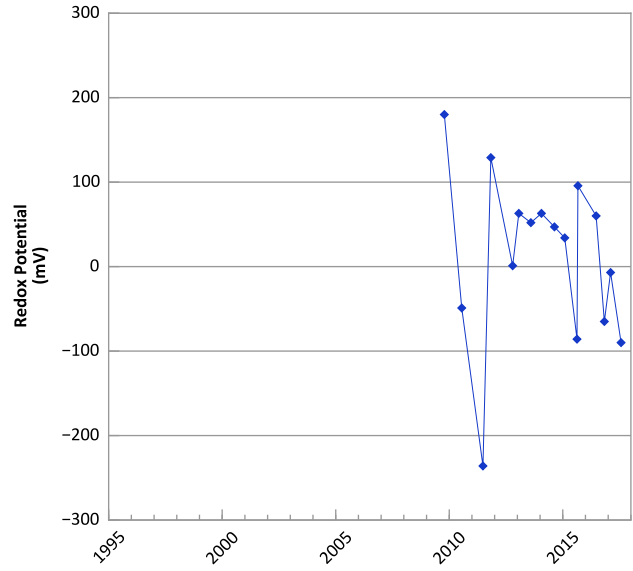
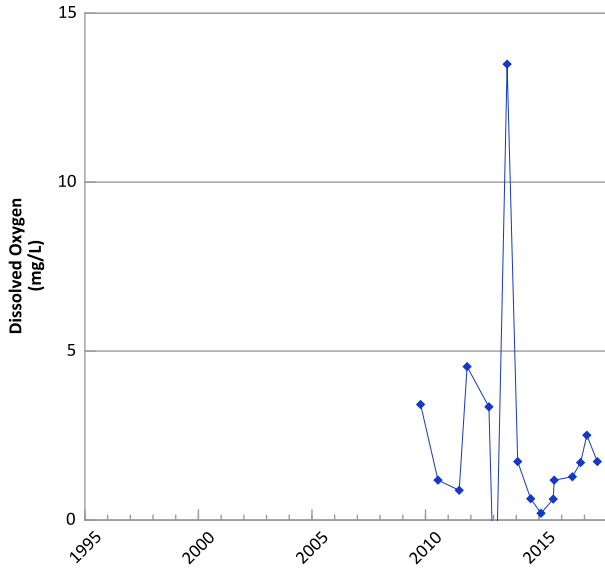
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/05/2009 to 10/25/2017
Analysis Date: 03/21/2018

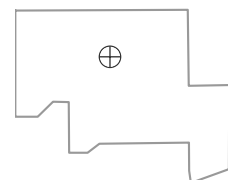
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1141 in Ogallala Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



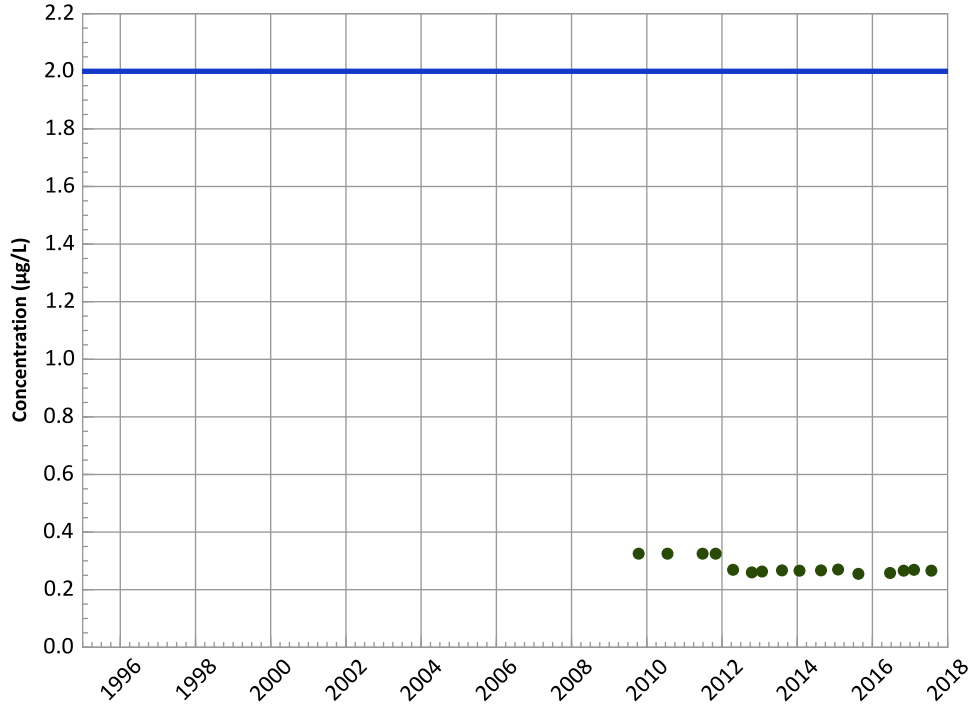
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 10/14/2009 to 07/27/2017
 Analysis Date: 03/21/2018

Well Location



PTX06-1141 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

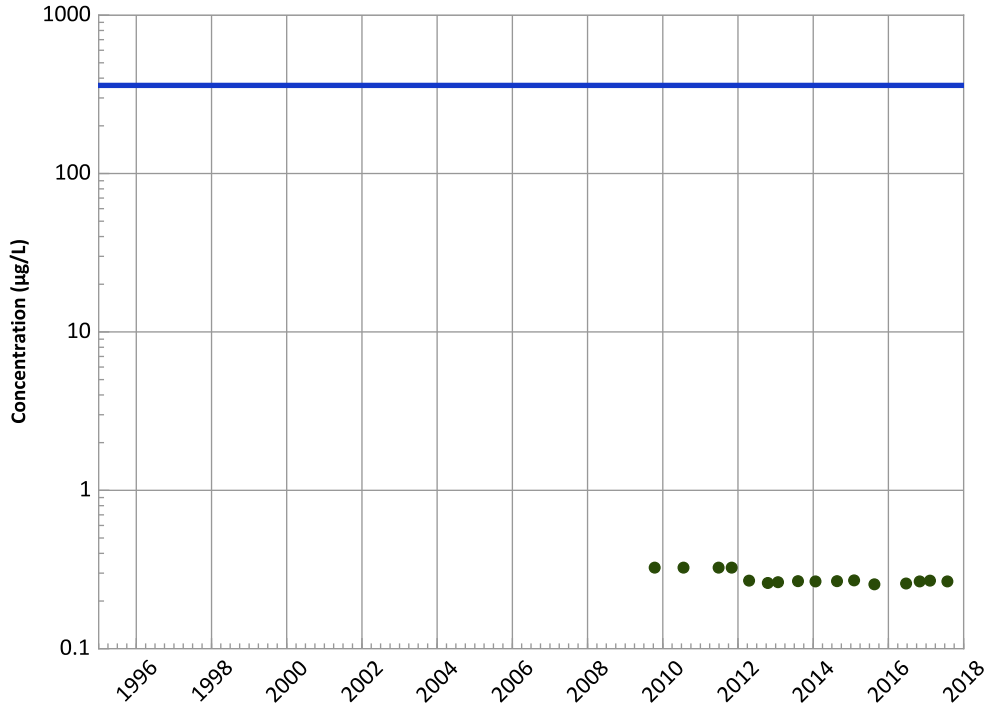
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

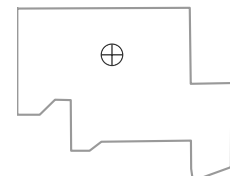
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

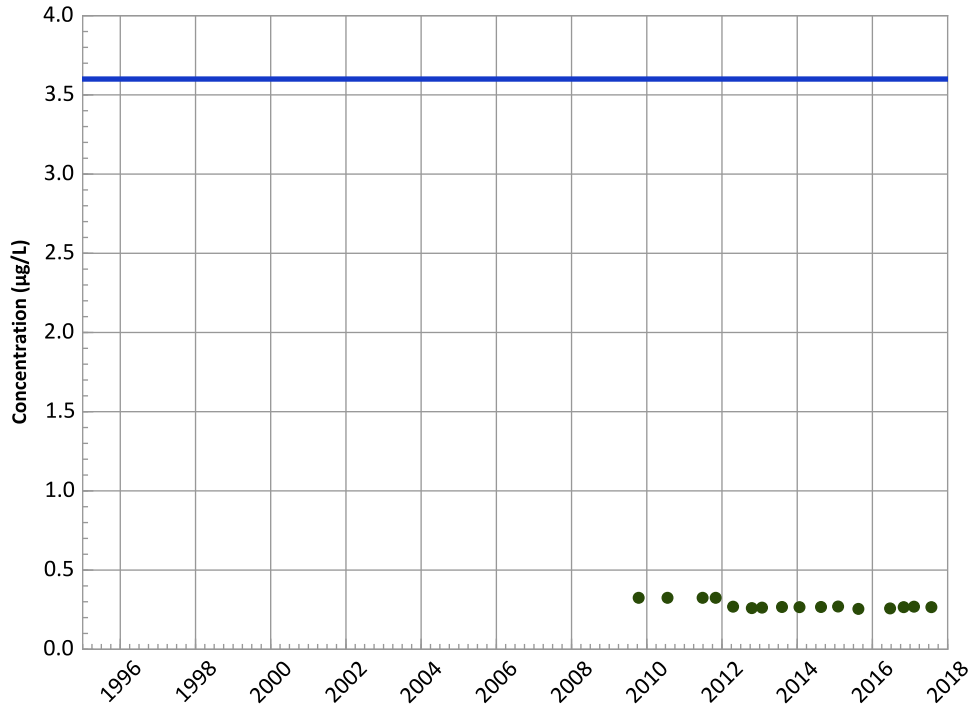


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/14/2009 to 07/27/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1141 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

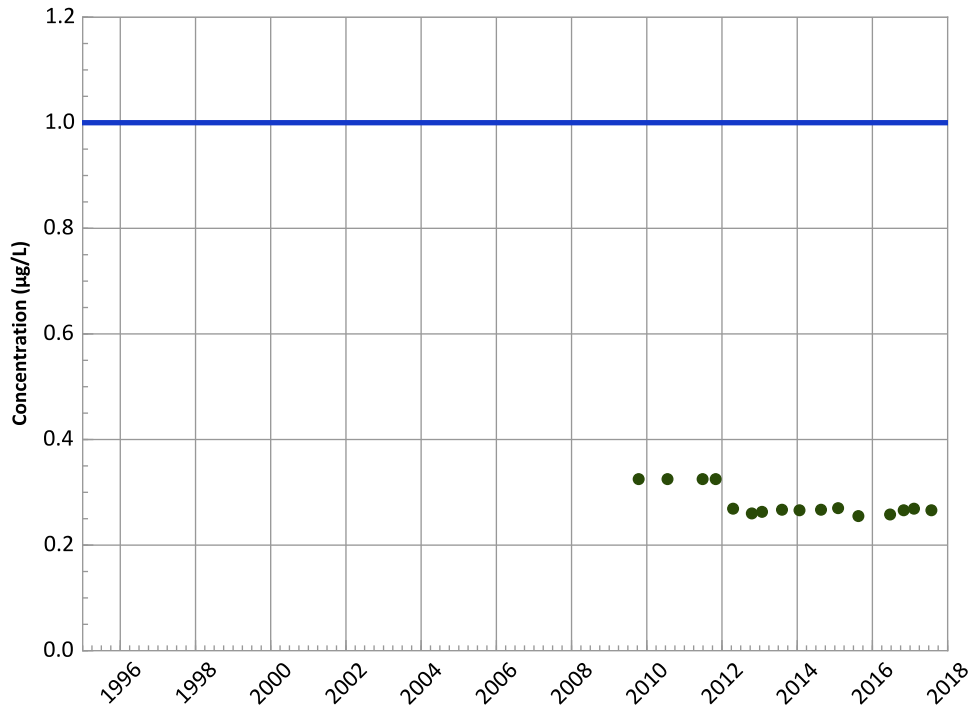
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

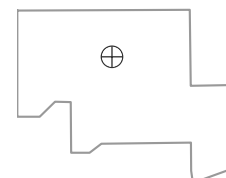
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

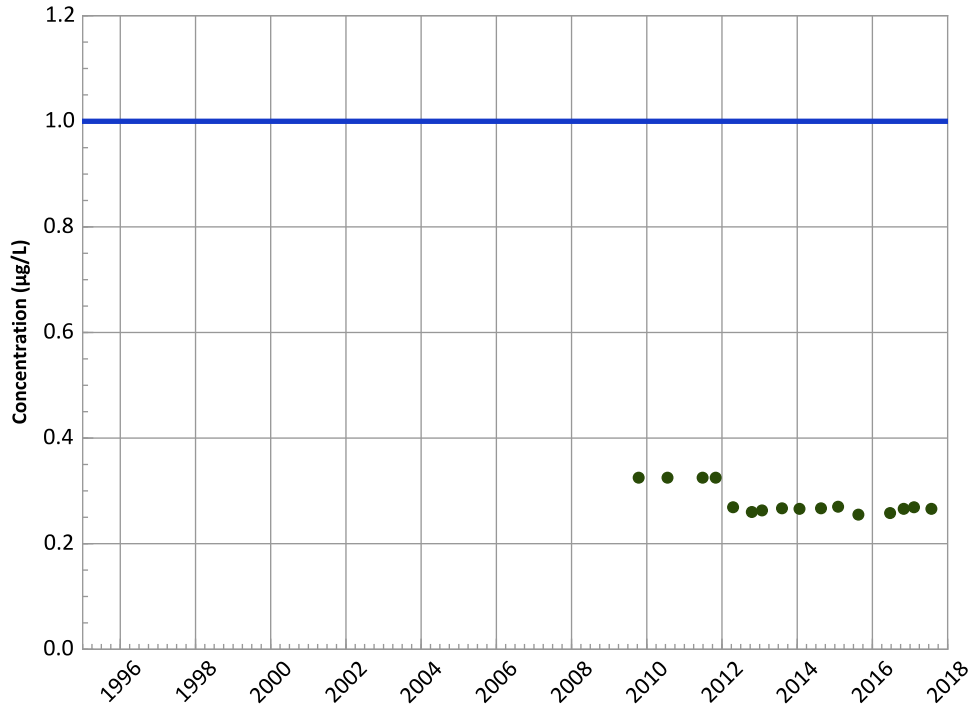


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/14/2009 to 07/27/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1141 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

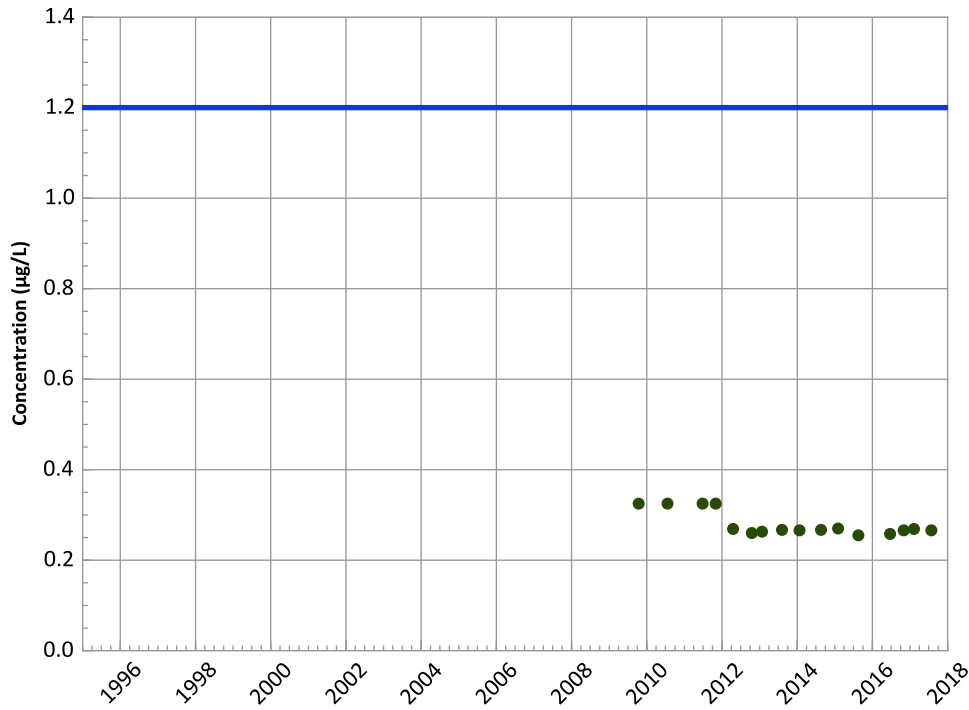
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

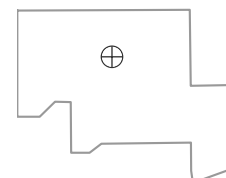
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

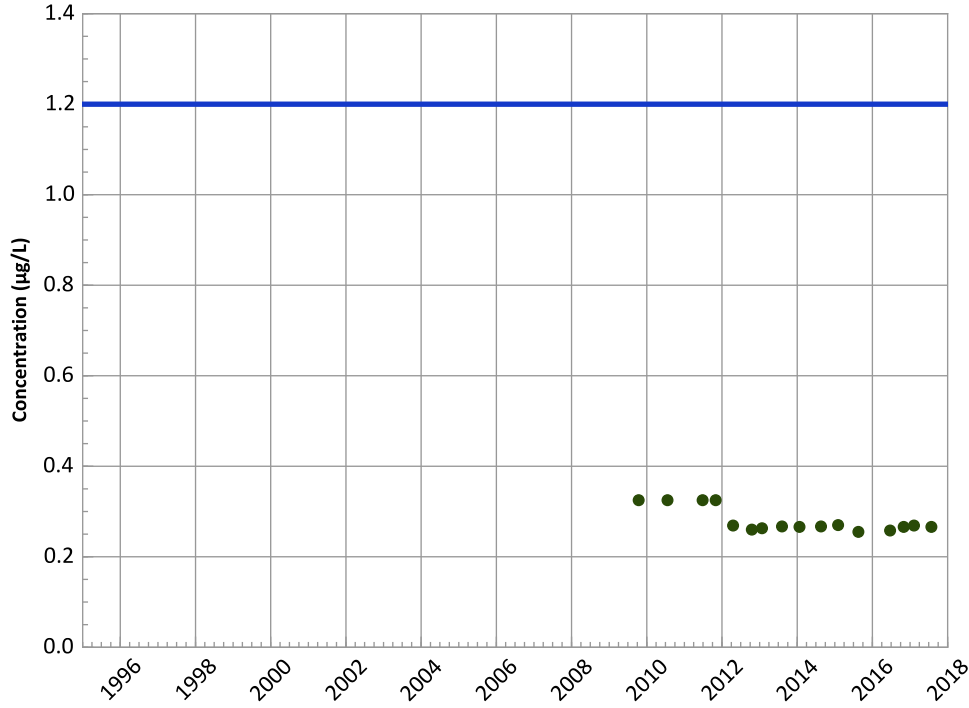


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/14/2009 to 07/27/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1141 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

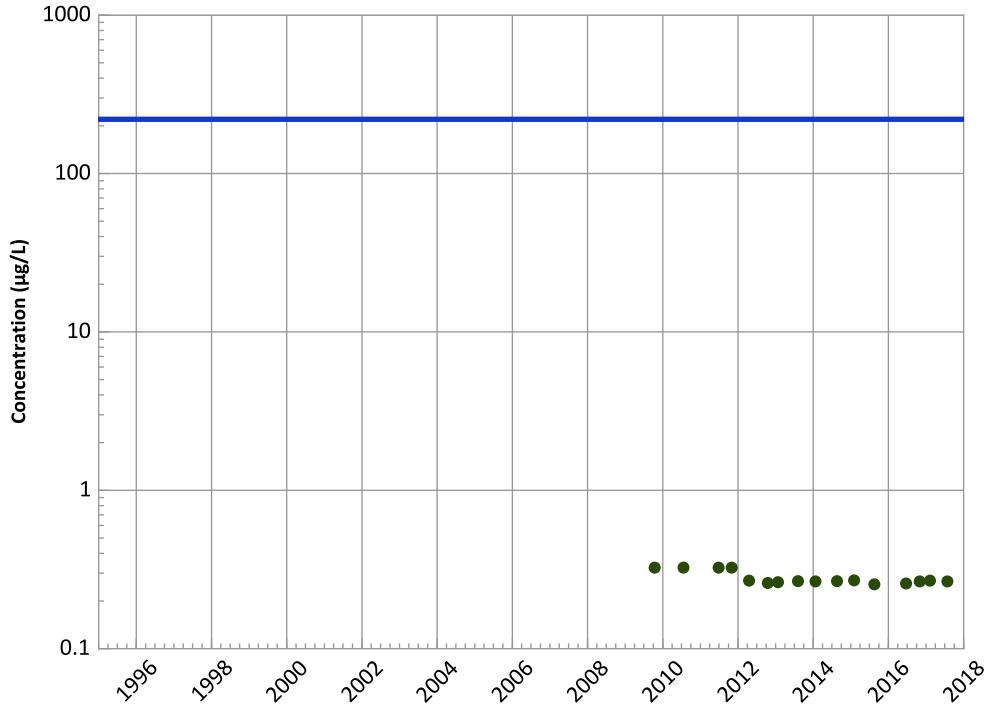
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,3,5-Trinitrobenzene Trend



Concentration Trend

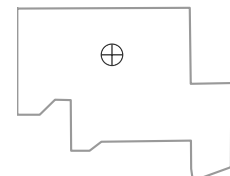
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

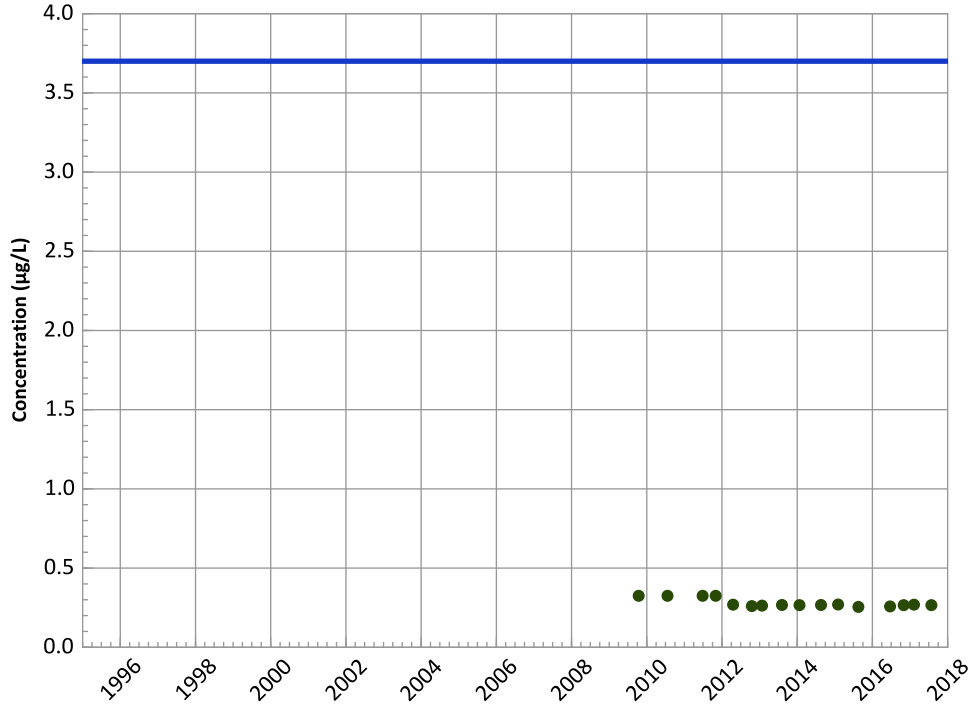


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/14/2009 to 07/27/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1141 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

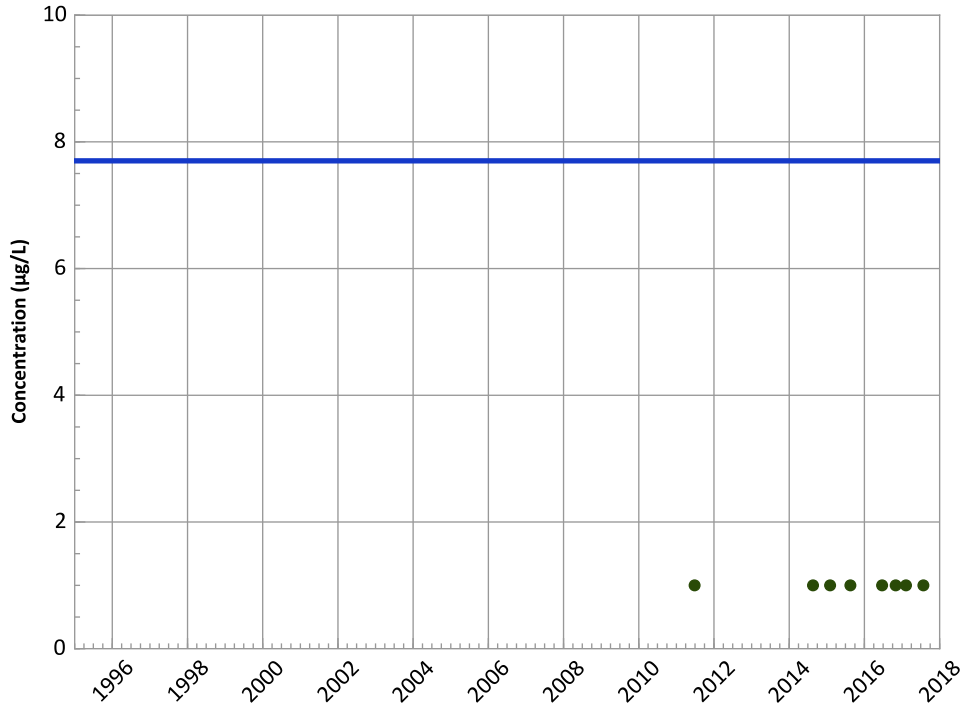
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,4-Dioxane (p-Dioxane) Trend



Concentration Trend

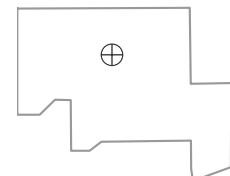
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

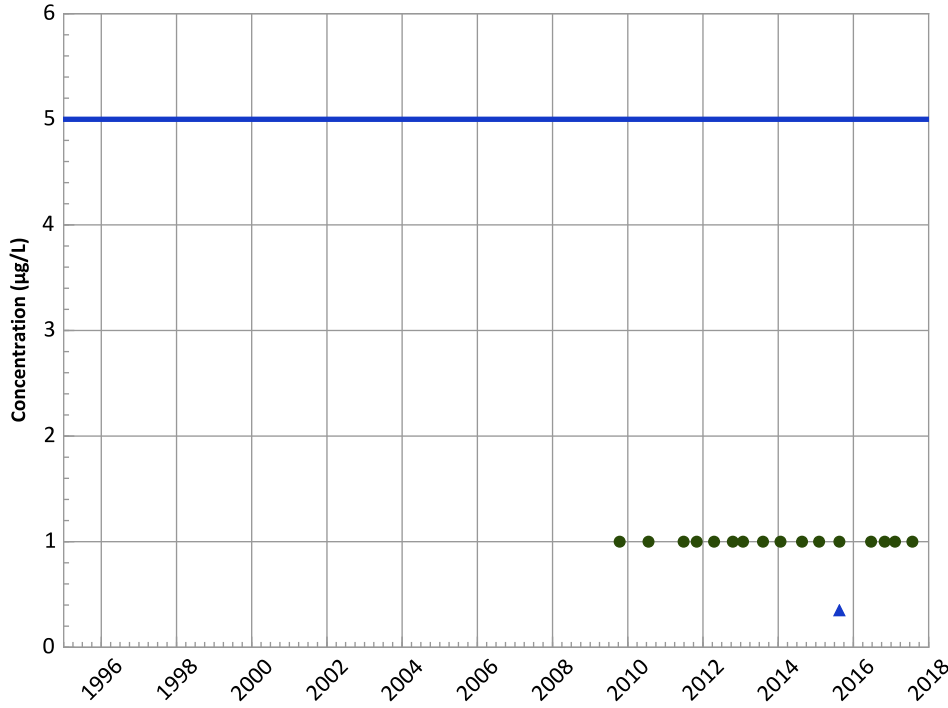
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/14/2009 to 07/27/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1141 in Ogallala Aquifer
USDOE/NNSA Pantex Plant
Tetrachloroethylene (PCE) Trend**



Concentration Trend

MAROS Mann-Kendall Method

Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

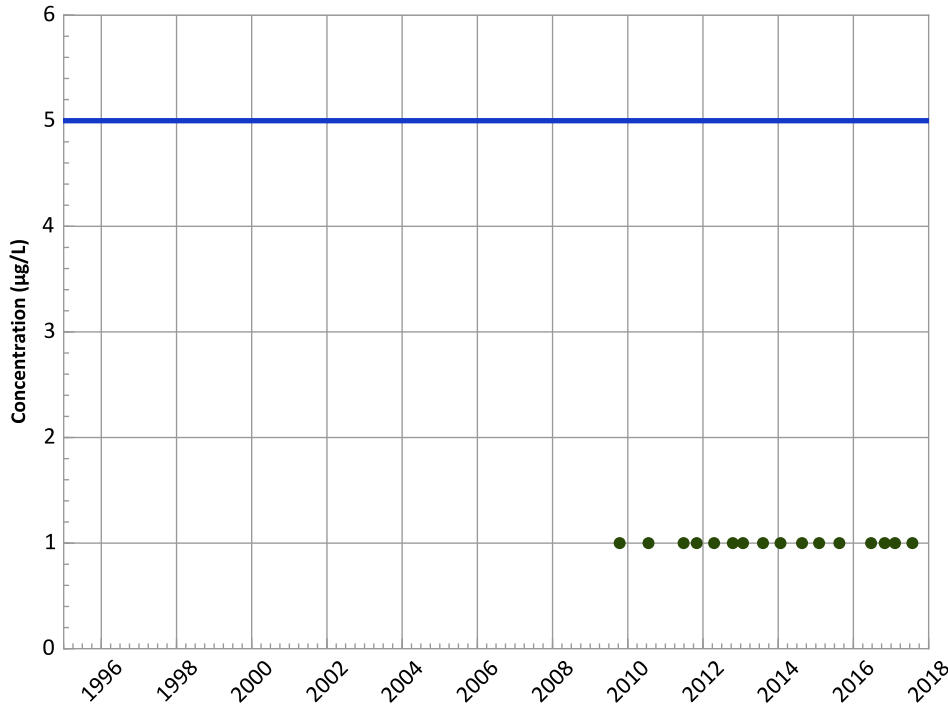
Data ():

N/A (<4 Detections in Dataset)

All Data

N/A (<4 Detections in Dataset)

Trichloroethene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():

All Non-Detect

All Data

All Non-Detect

MAROS Linear Regression Method

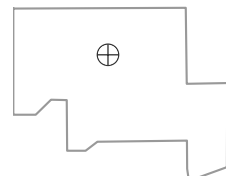
Data ():

All Non-Detect

All Data

All Non-Detect

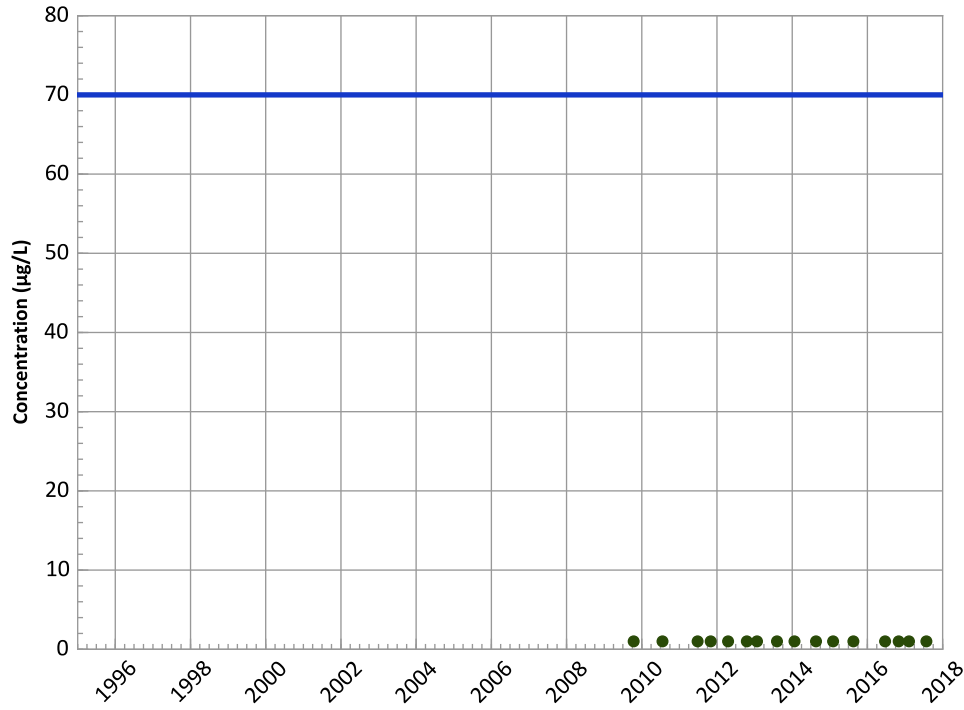
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/14/2009 to 07/27/2017
Analysis Date: 03/21/2018

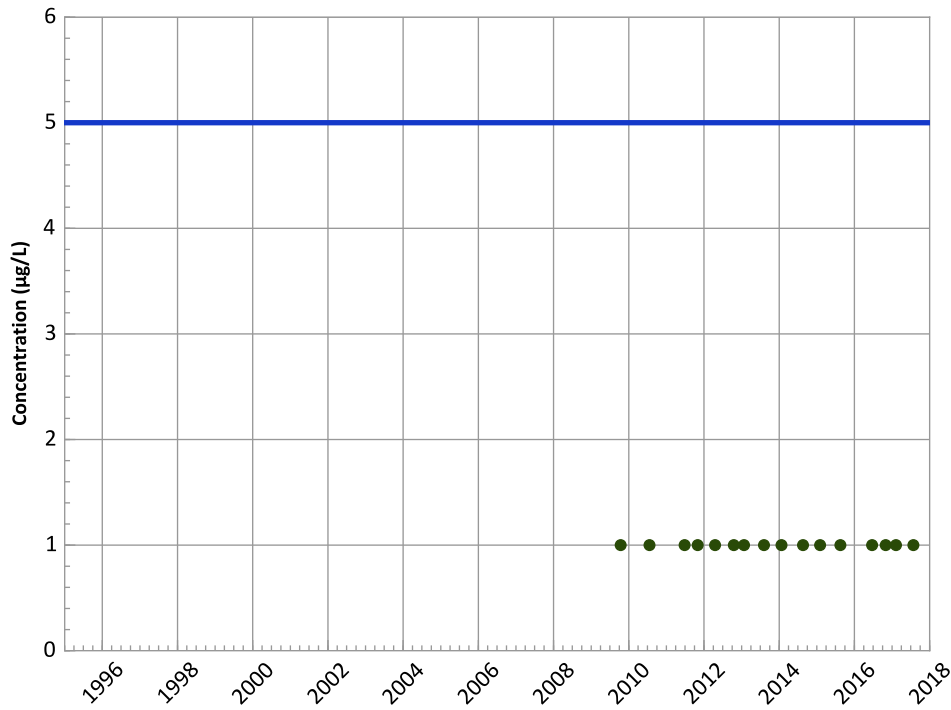
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1141 in Ogallala Aquifer
USDOE/NNSA Pantex Plant**
cis-1,2-Dichloroethene Trend



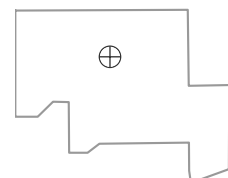
Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect
MAROS Linear Regression Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect

1,2-Dichloroethane Trend



Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect
MAROS Linear Regression Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect

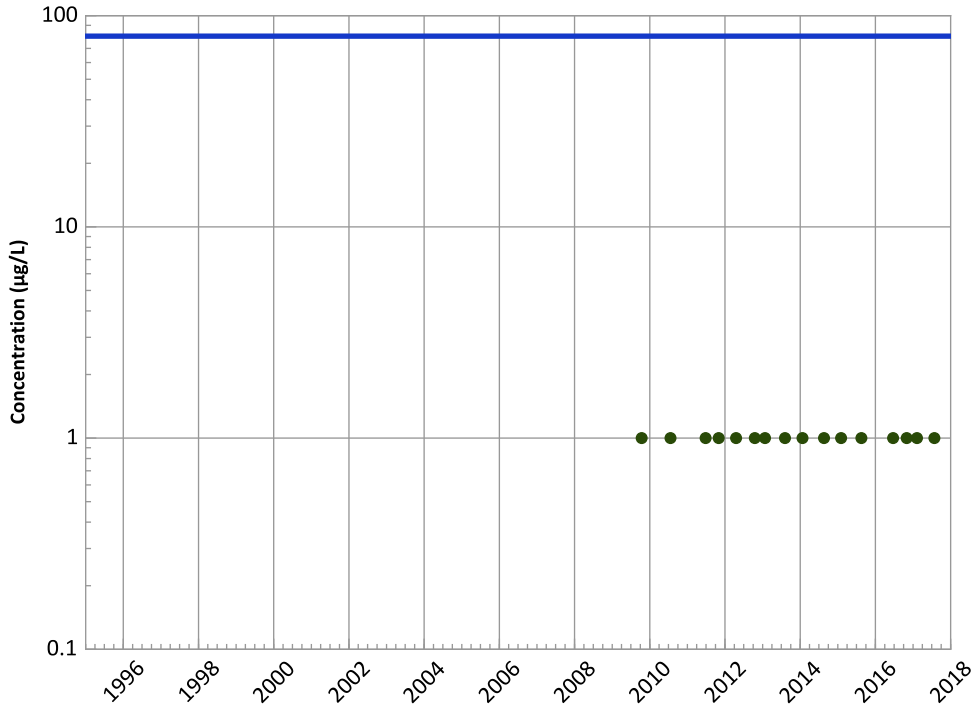
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 10/14/2009 to 07/27/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1141 in Ogallala Aquifer
USDOE/NNSA Pantex Plant
Chloroform Trend**



Concentration Trend

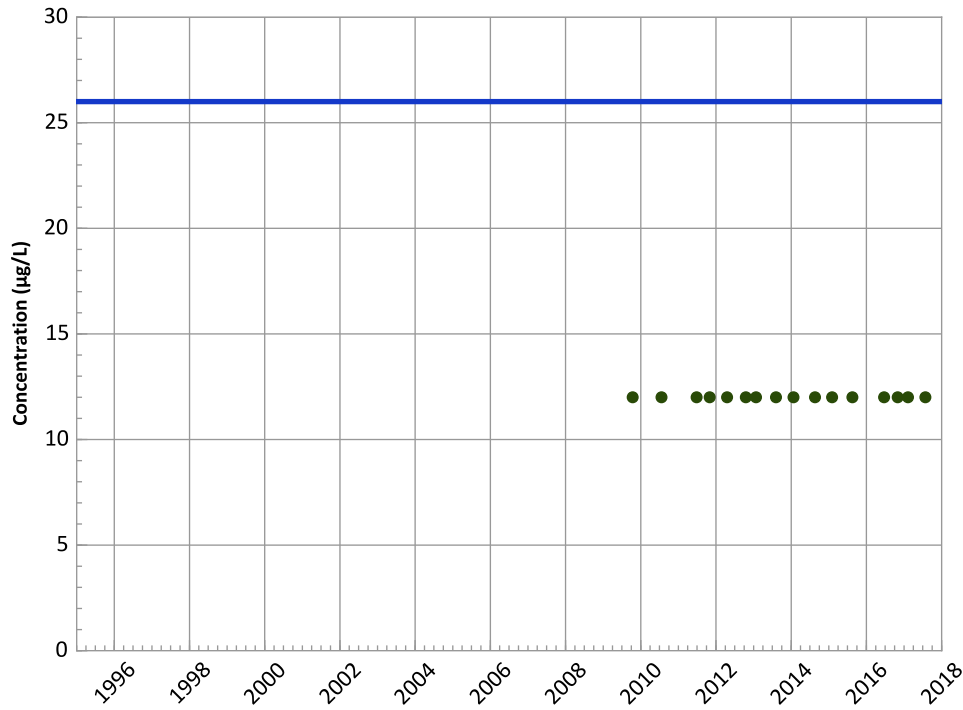
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Perchlorate Trend



Concentration Trend

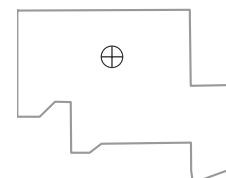
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

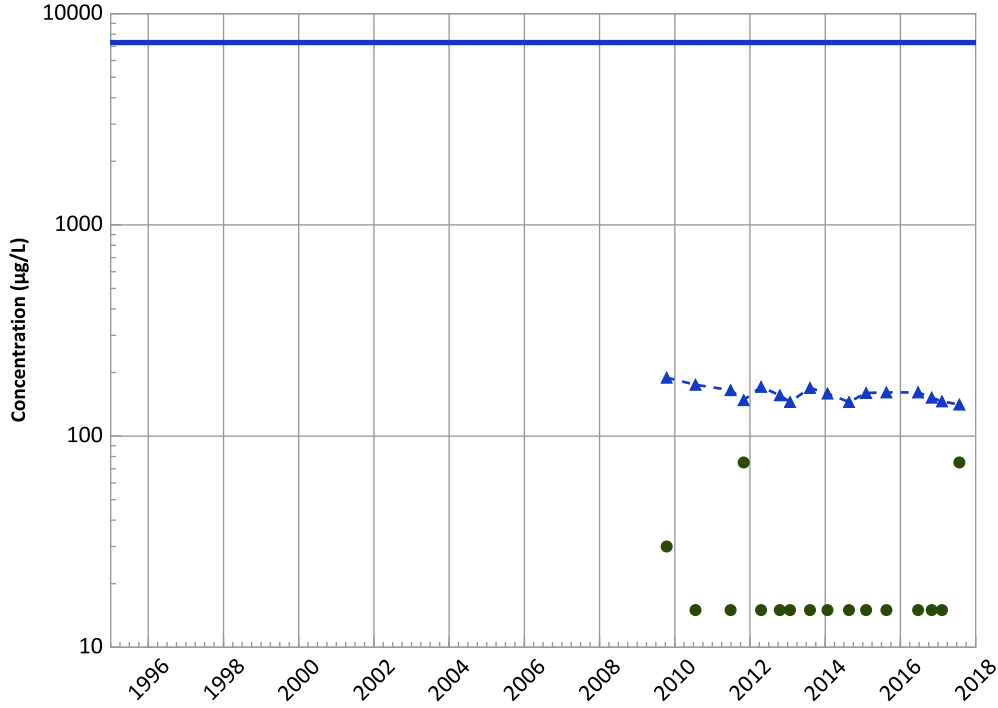


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/14/2009 to 07/27/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1141 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

Boron Trend



Concentration Trend

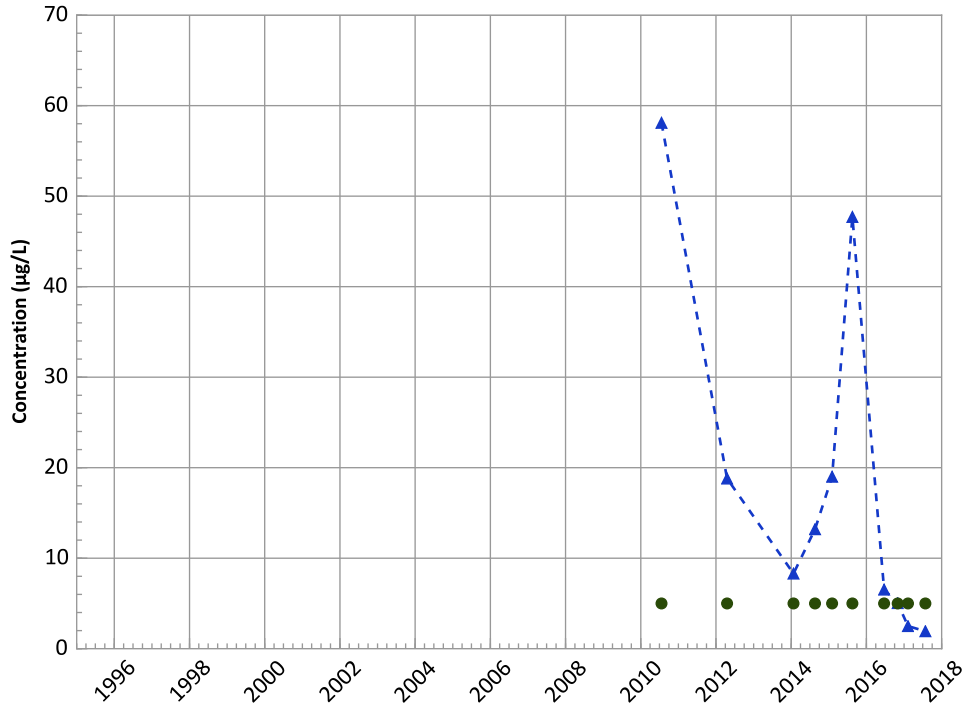
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Stable
All Data
Decreasing

Manganese Trend



Concentration Trend

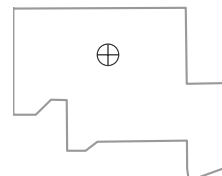
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Stable
All Data
Decreasing

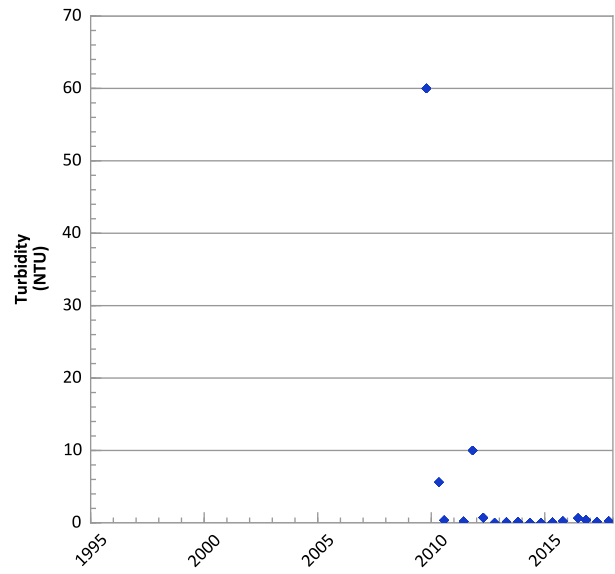
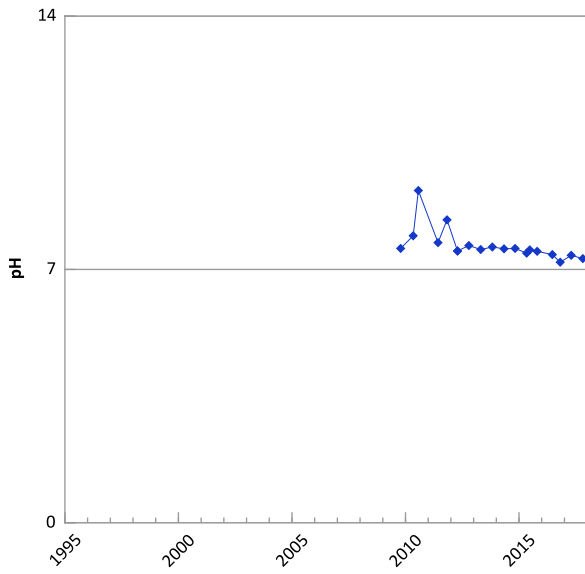
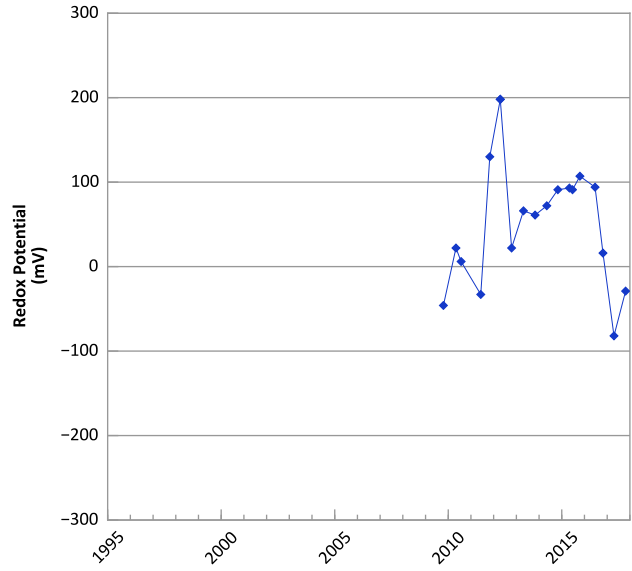
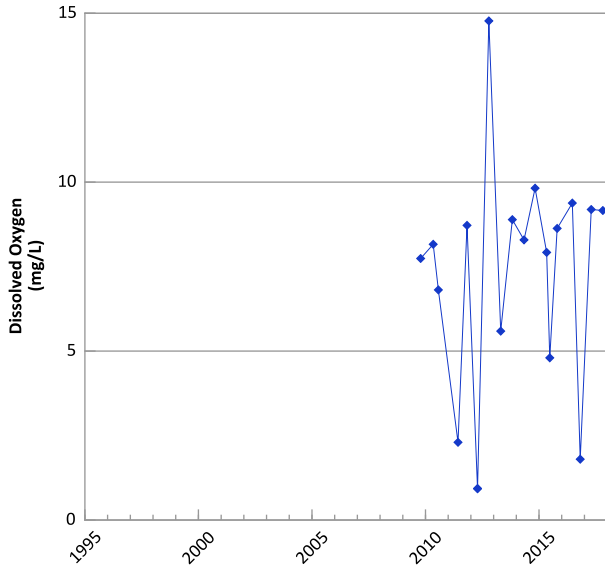
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/14/2009 to 07/27/2017
Analysis Date: 03/21/2018

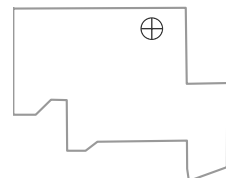
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1143 in Ogallala Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



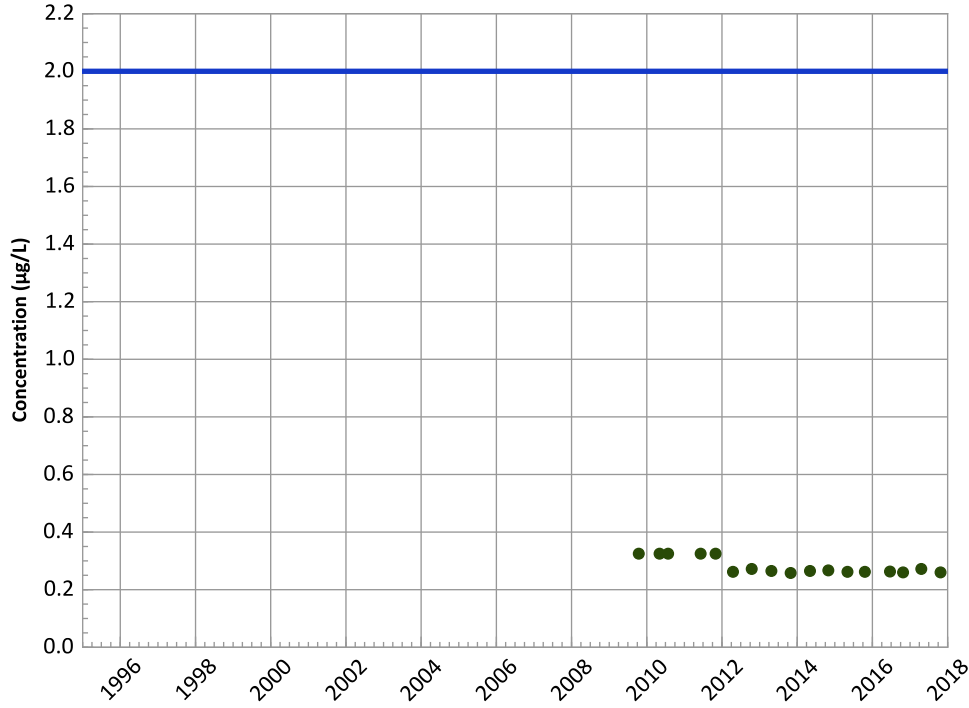
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 10/15/2009 to 10/24/2017
 Analysis Date: 03/21/2018

Well Location



PTX06-1143 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

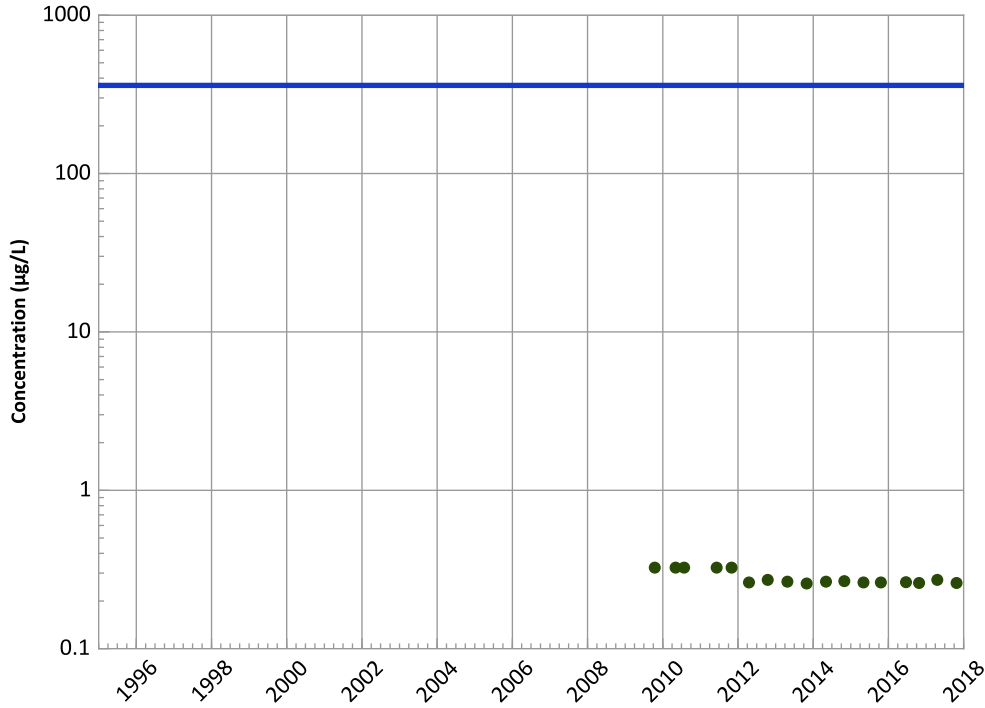
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

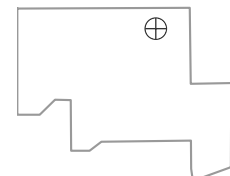
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

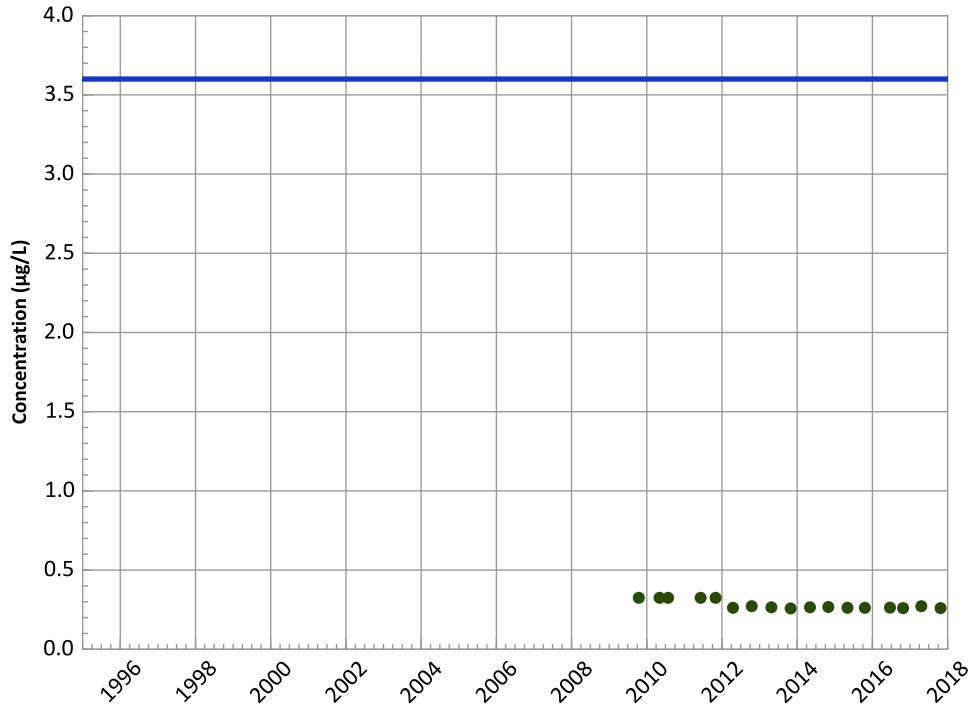


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/15/2009 to 10/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1143 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

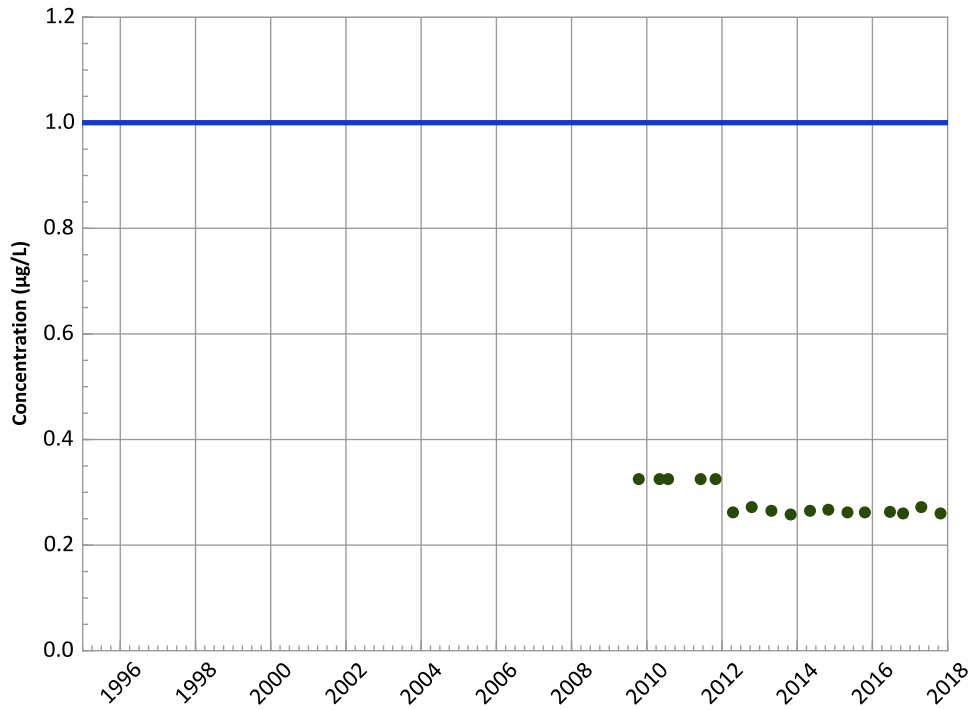
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

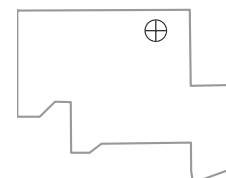
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

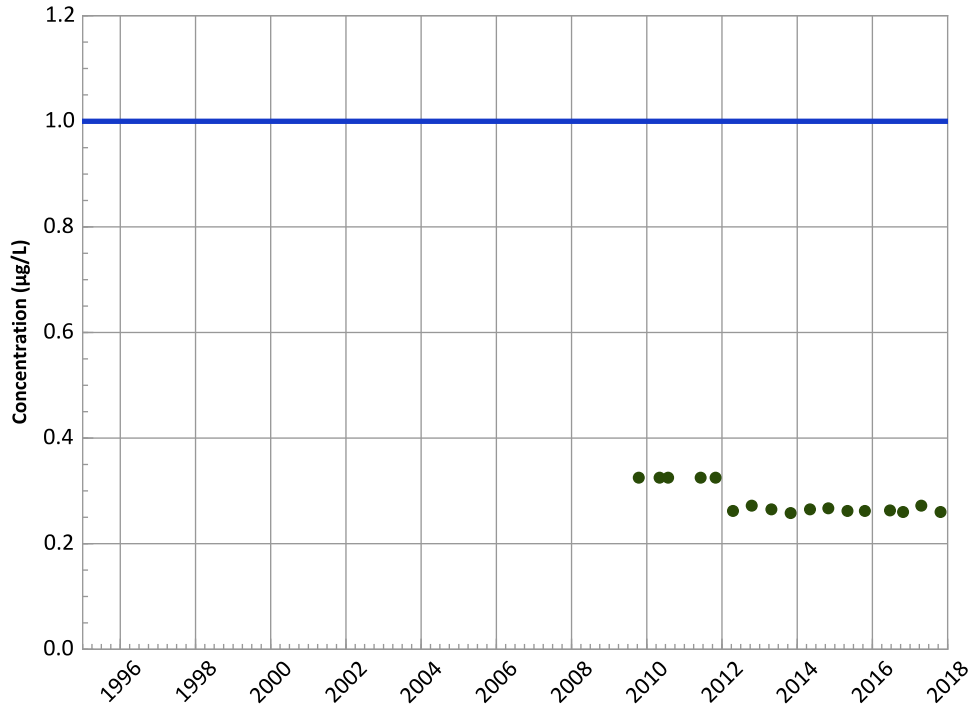


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/15/2009 to 10/24/2017
Analysis Date: 03/21/2018

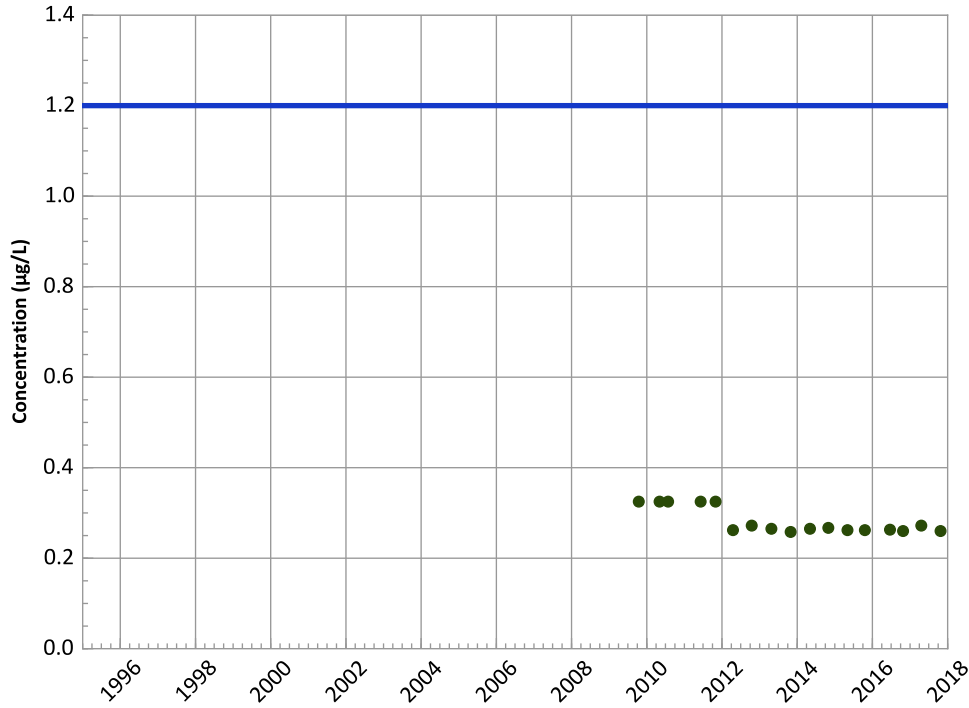
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1143 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



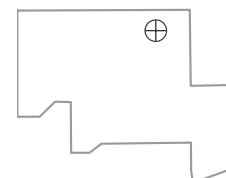
2-Amino-4,6-Dinitrotoluene Trend



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/15/2009 to 10/24/2017
Analysis Date: 03/21/2018

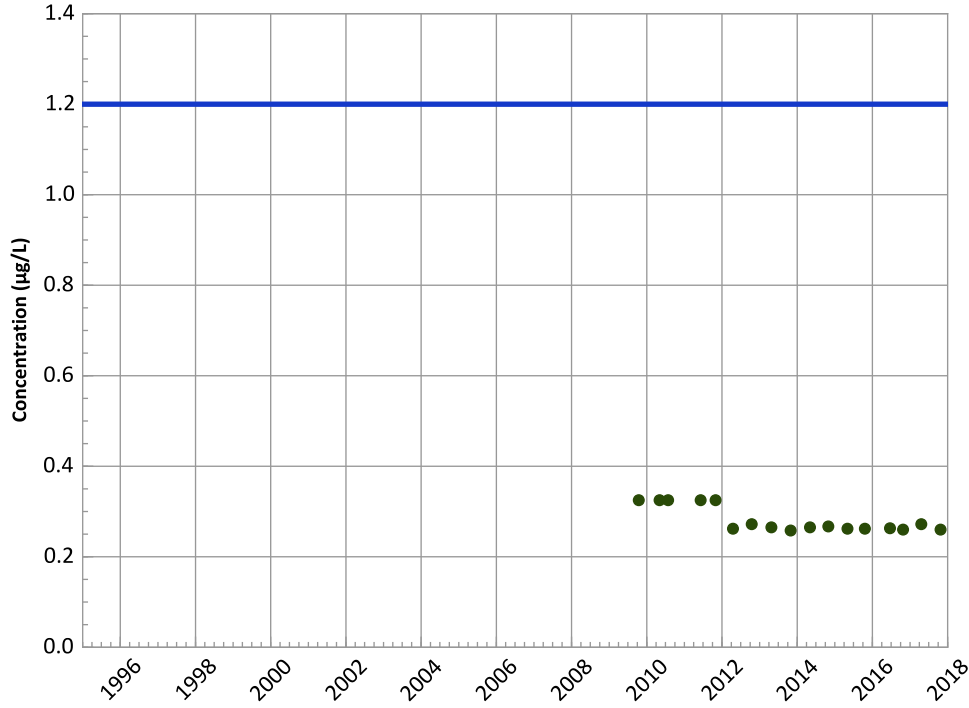
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1143 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

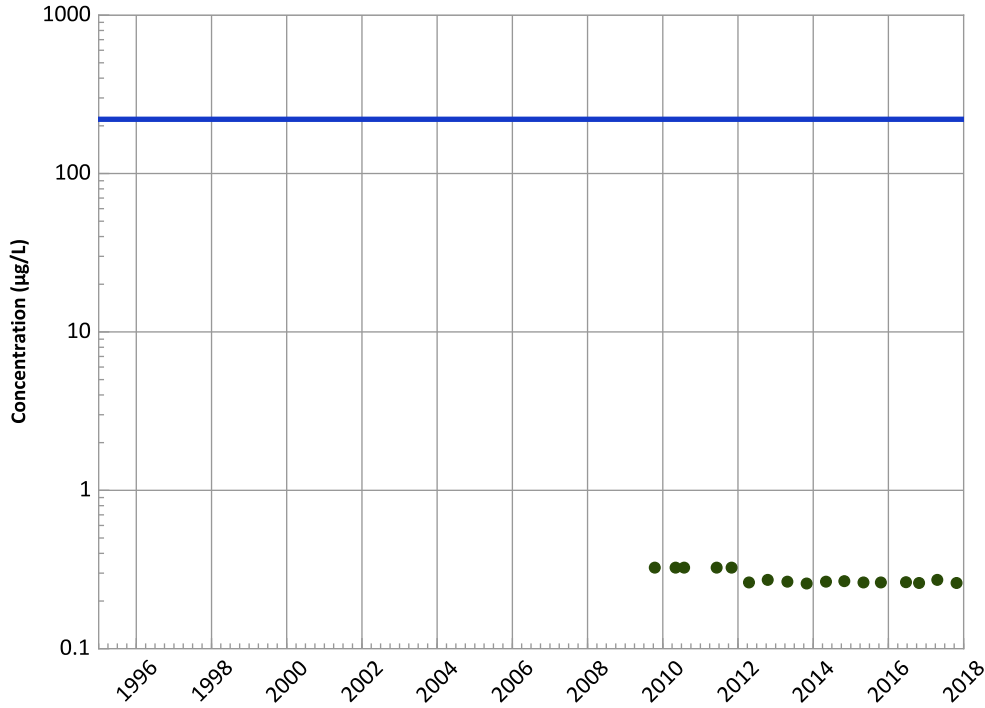
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,3,5-Trinitrobenzene Trend



Concentration Trend

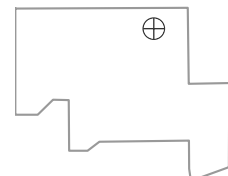
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

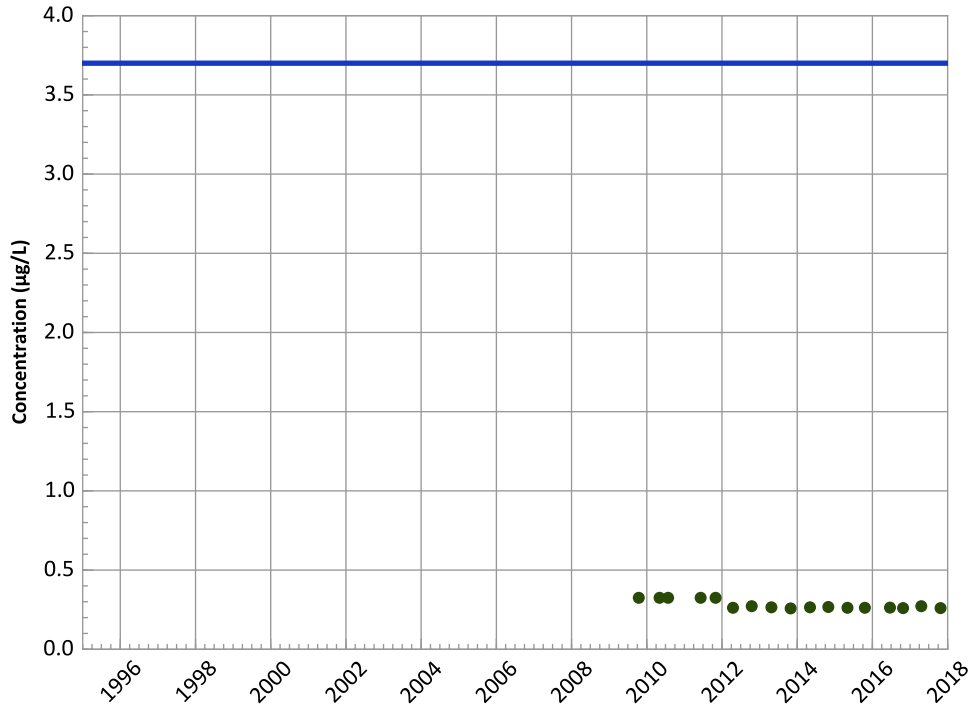


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/15/2009 to 10/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1143 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

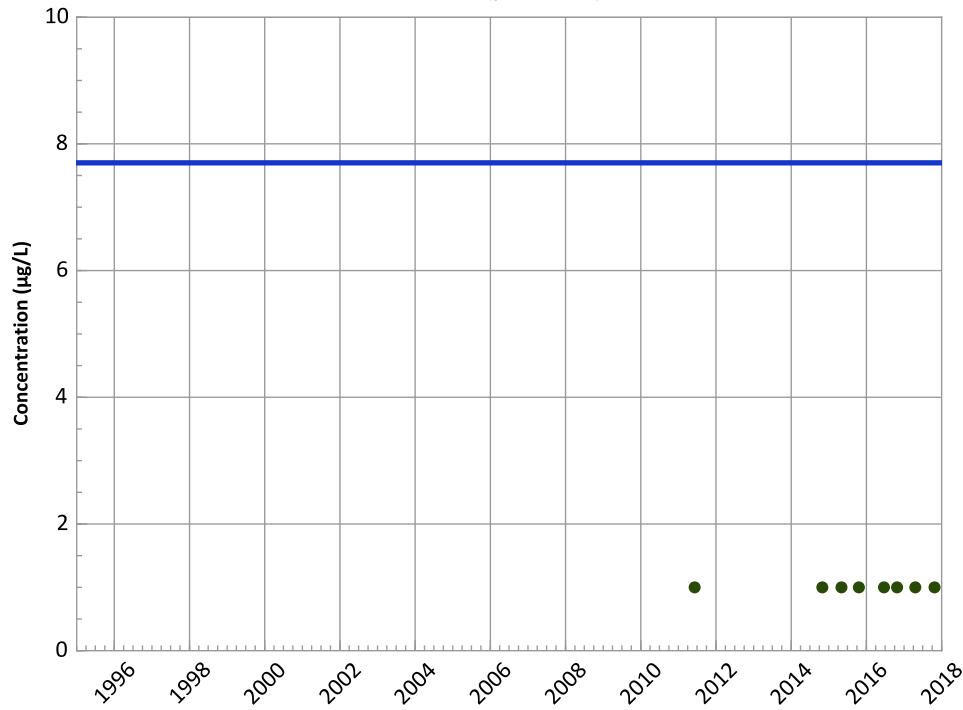
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,4-Dioxane (p-Dioxane) Trend



Concentration Trend

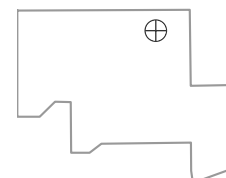
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

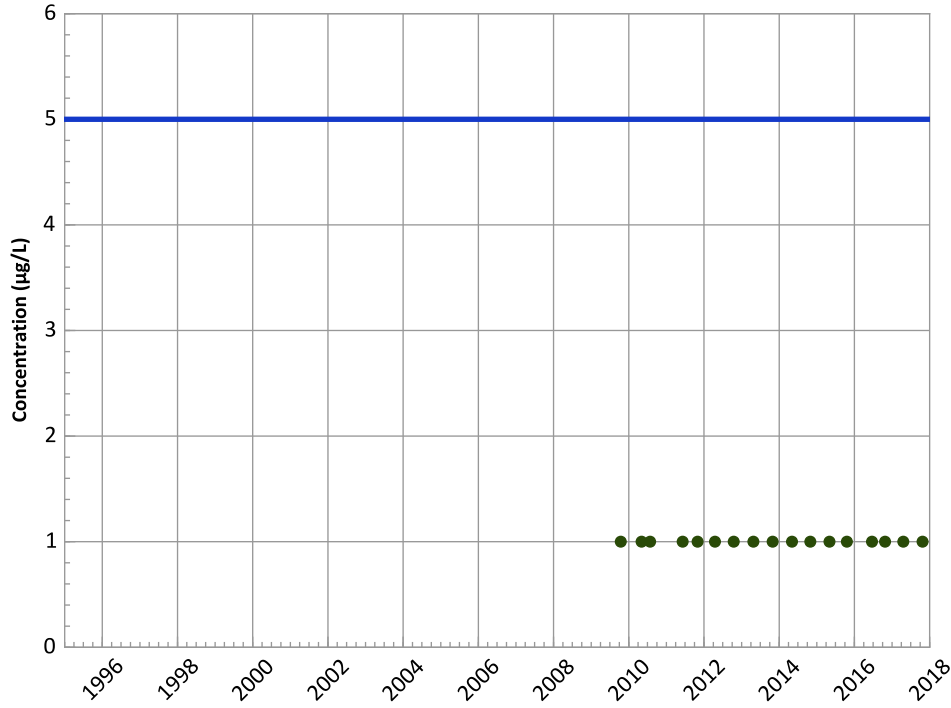
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/15/2009 to 10/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1143 in Ogallala Aquifer
USDOE/NNSA Pantex Plant
Tetrachloroethylene (PCE) Trend**



Concentration Trend

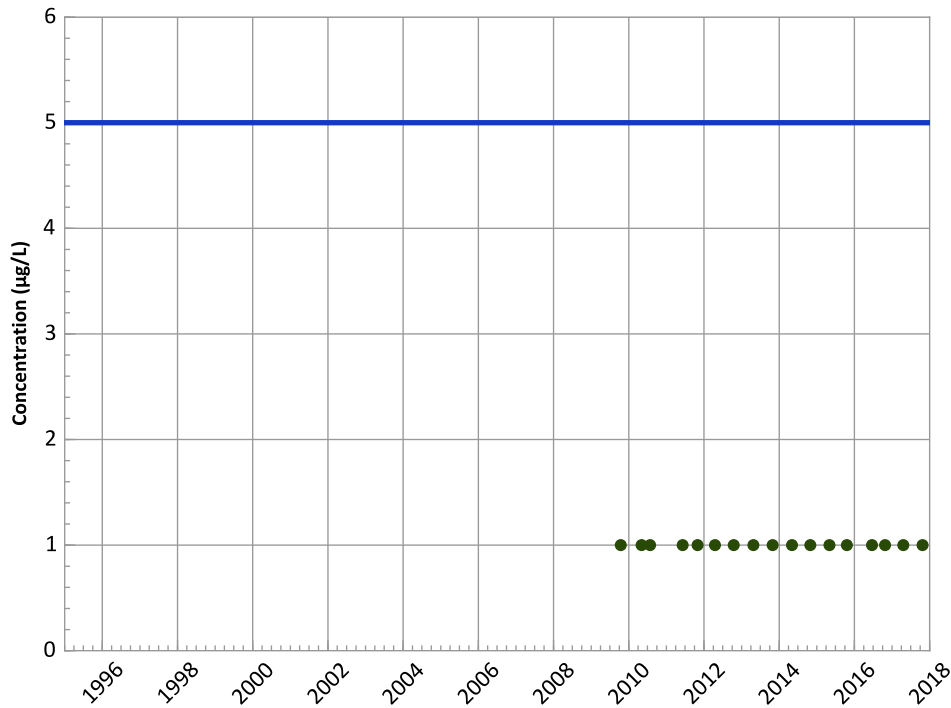
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Trichloroethene Trend



Concentration Trend

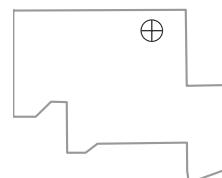
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

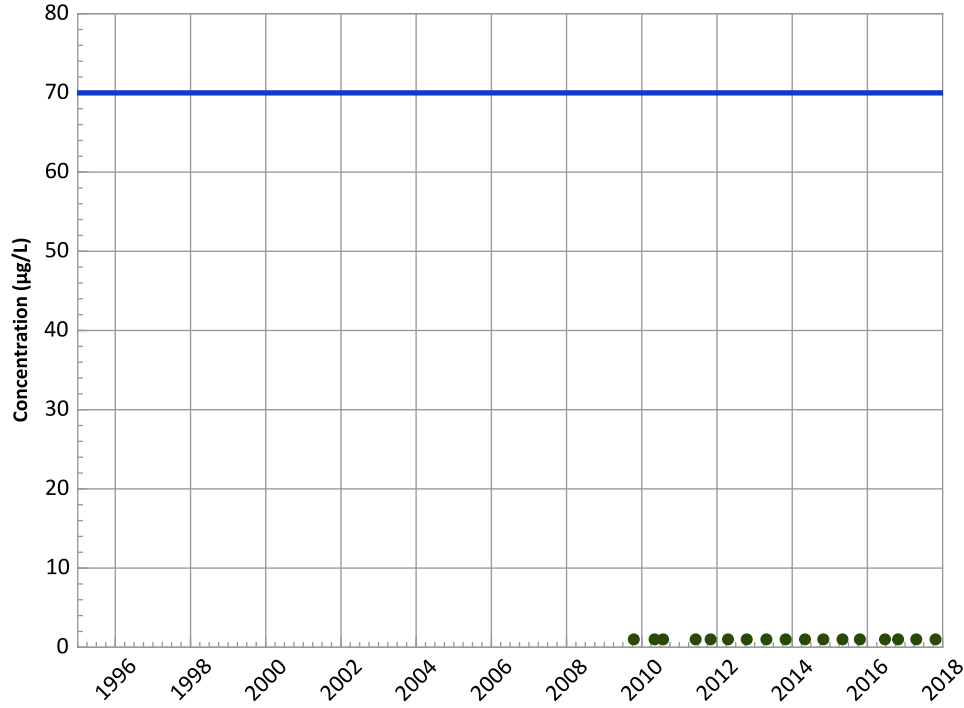


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/15/2009 to 10/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1143 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

cis-1,2-Dichloroethene Trend



Concentration Trend

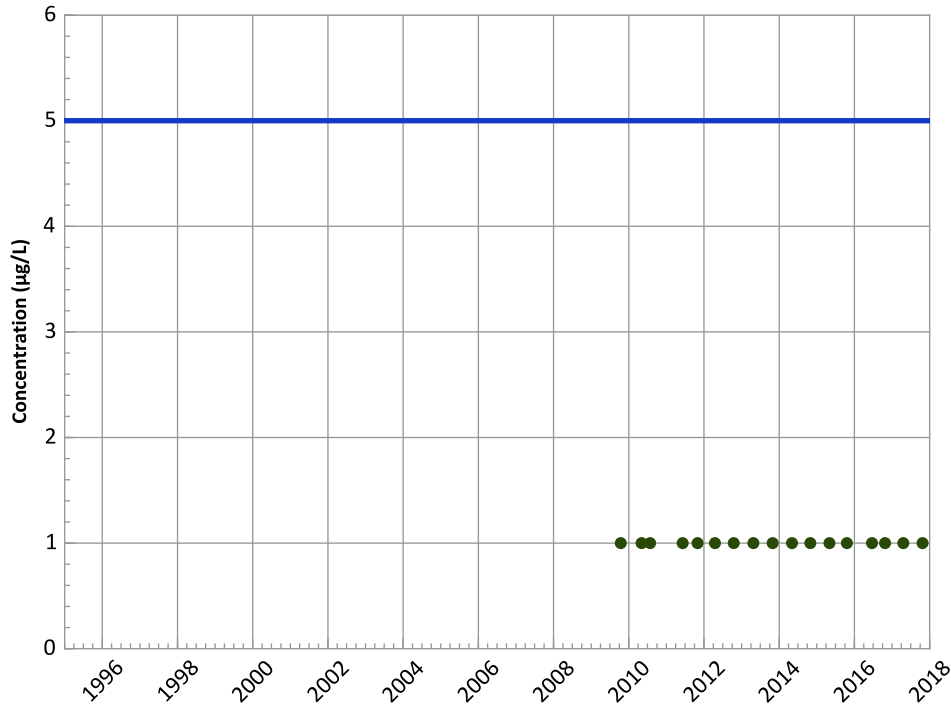
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,2-Dichloroethane Trend



Concentration Trend

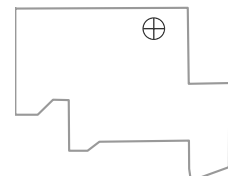
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

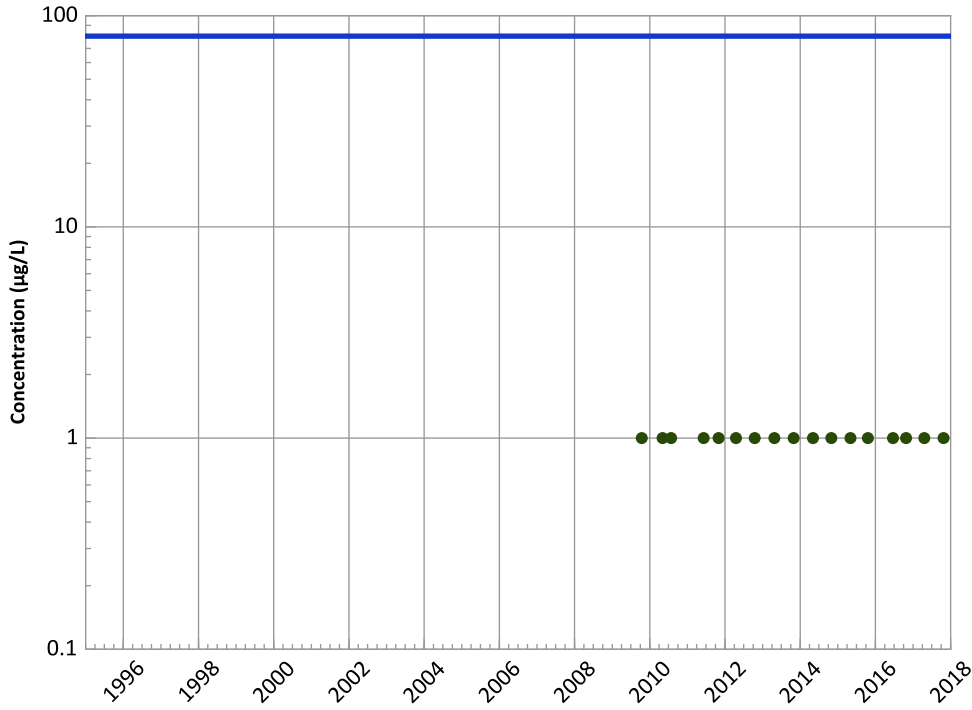
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/15/2009 to 10/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1143 in Ogallala Aquifer
 USDOE/NNSA Pantex Plant
 Chloroform Trend



Concentration Trend

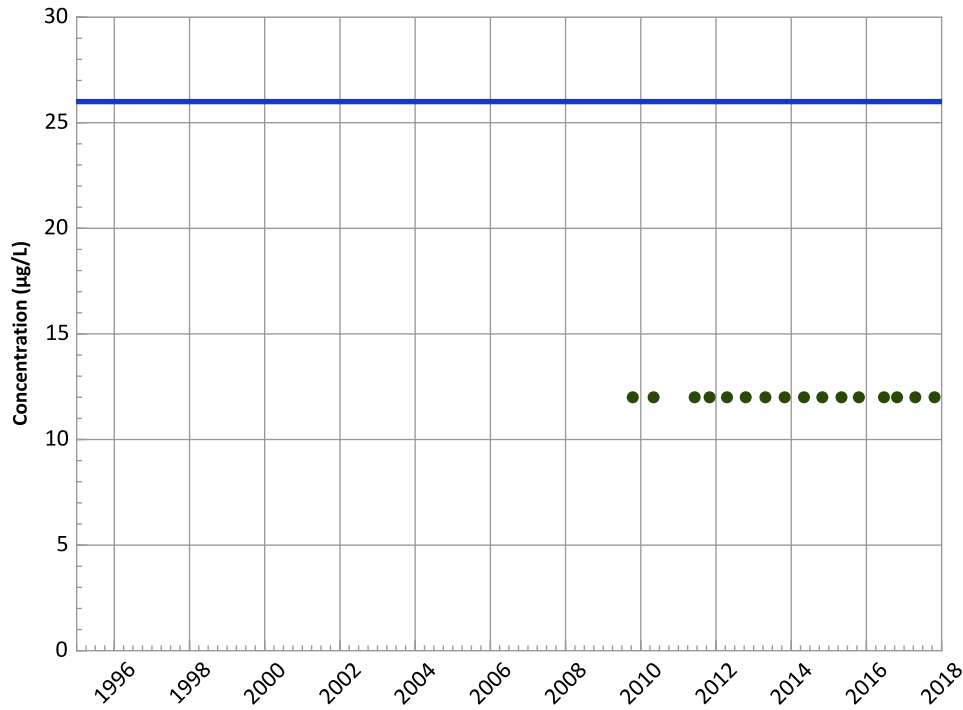
MAROS Mann-Kendall Method

Data ():
 All Non-Detect
 All Data
 All Non-Detect

MAROS Linear Regression Method

Data ():
 All Non-Detect
 All Data
 All Non-Detect

Perchlorate Trend



Concentration Trend

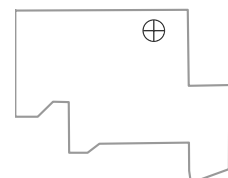
MAROS Mann-Kendall Method

Data ():
 All Non-Detect
 All Data
 All Non-Detect

MAROS Linear Regression Method

Data ():
 All Non-Detect
 All Data
 All Non-Detect

Well Location

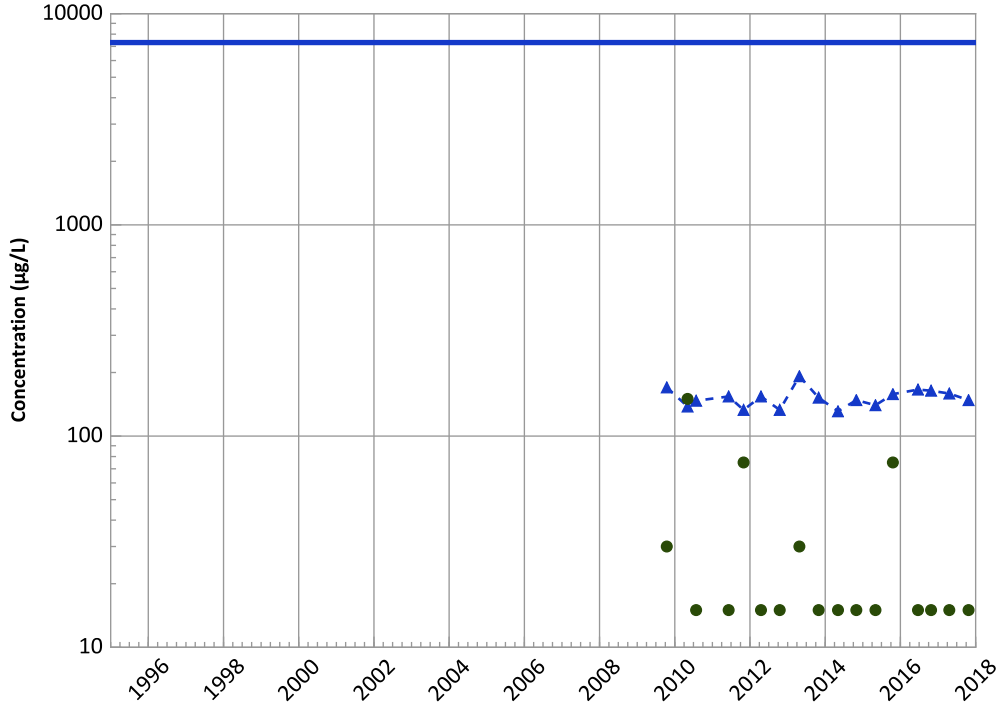


Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 10/15/2009 to 10/24/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1143 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

Boron Trend



Concentration Trend

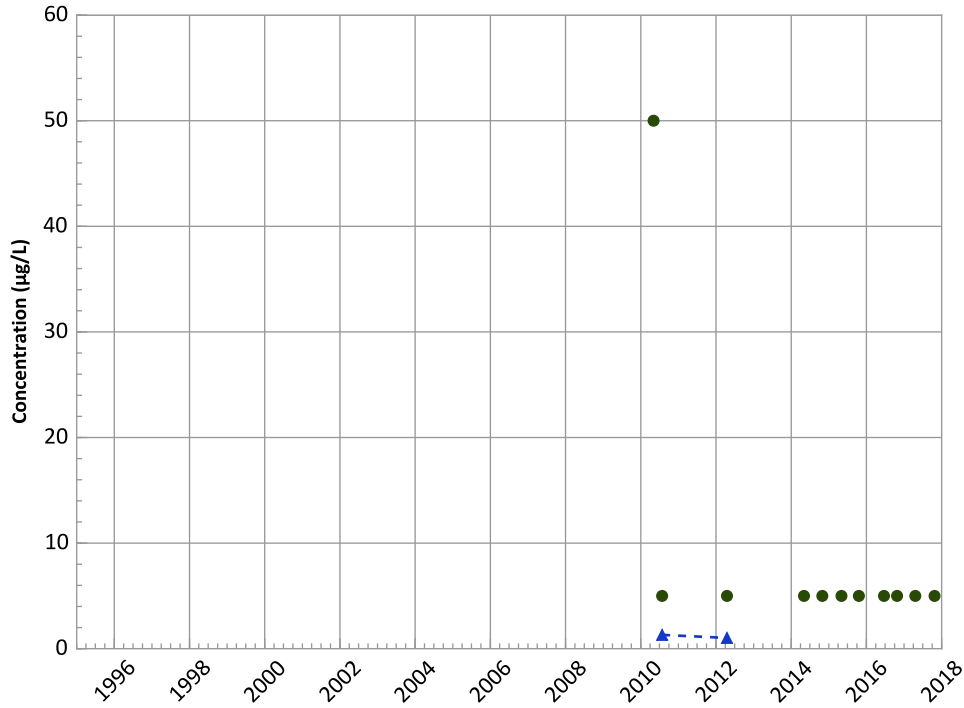
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
No Trend

MAROS Linear Regression Method

Data ():
No Trend
All Data
No Trend

Manganese Trend



Concentration Trend

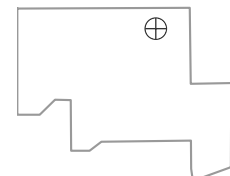
MAROS Mann-Kendall Method

Data ():
N/A (<4 Detections in Dataset)
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
N/A (<4 Detections in Dataset)
All Data
N/A (<4 Detections in Dataset)

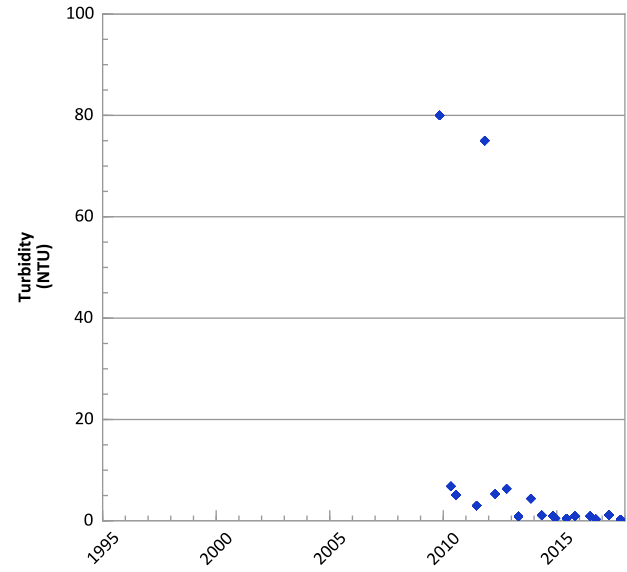
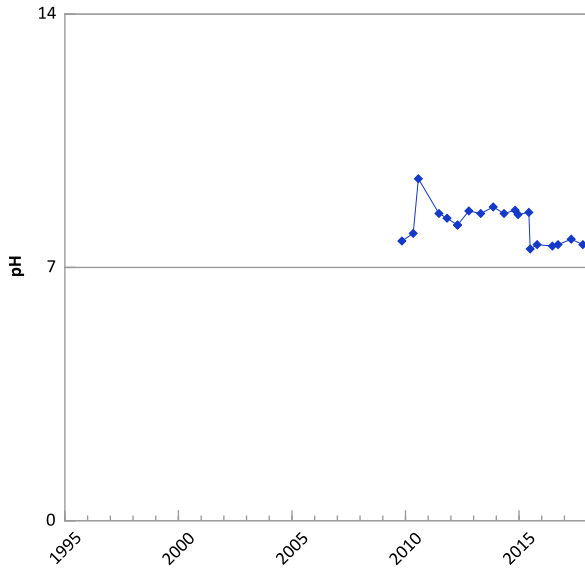
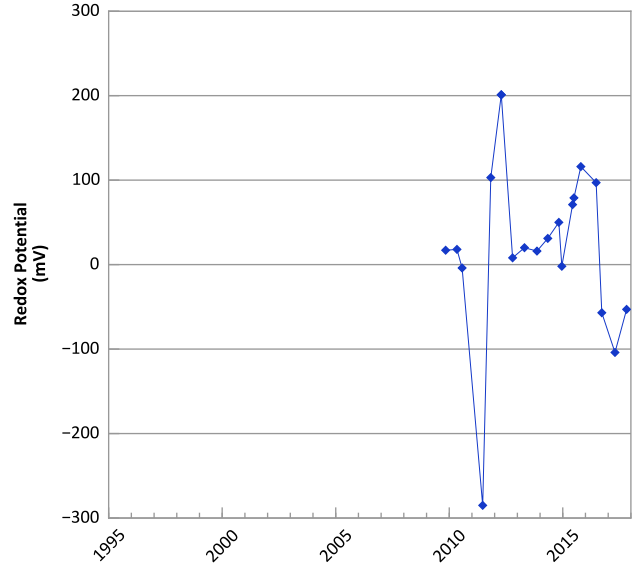
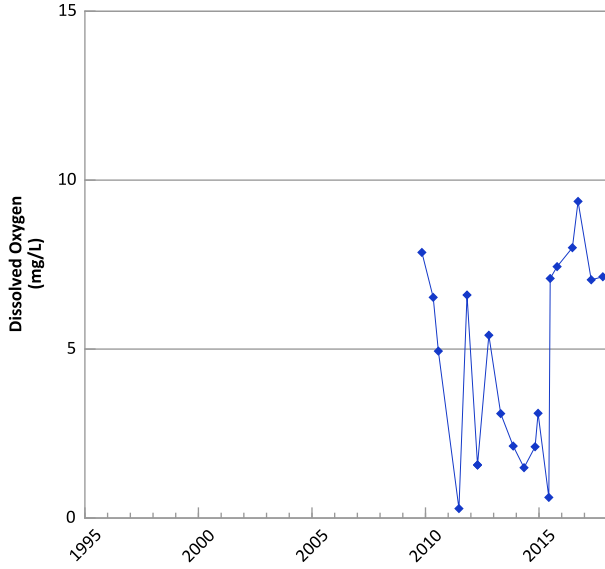
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 10/15/2009 to 10/24/2017
Analysis Date: 03/21/2018

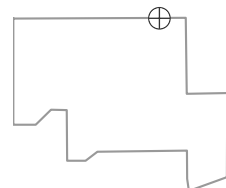
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1144 in Ogallala Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



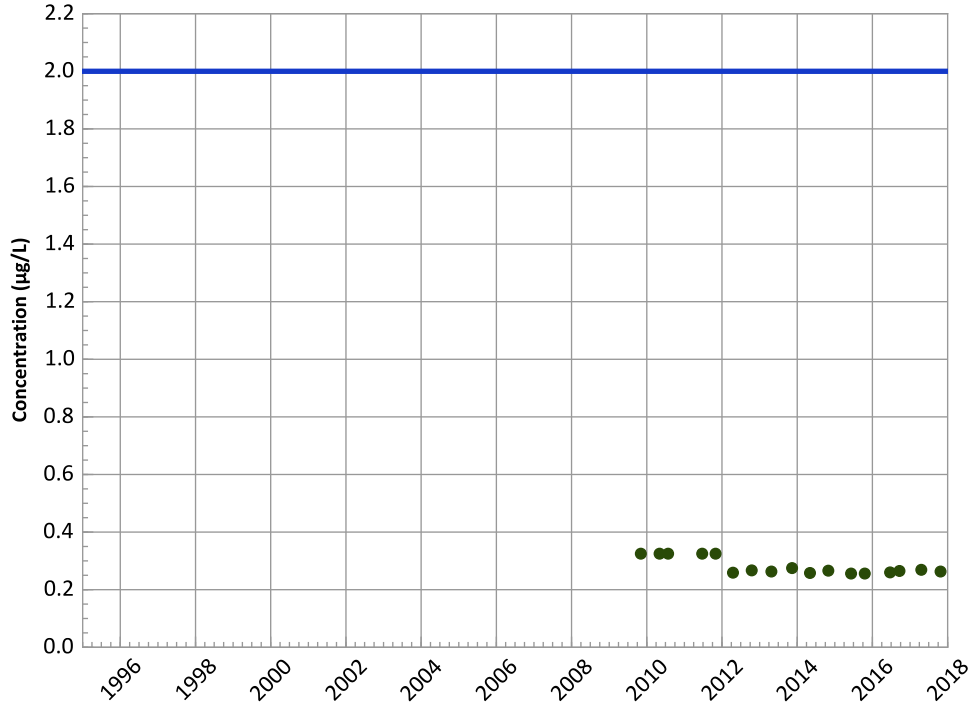
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 11/04/2009 to 10/24/2017
 Analysis Date: 03/21/2018

Well Location



PTX06-1144 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

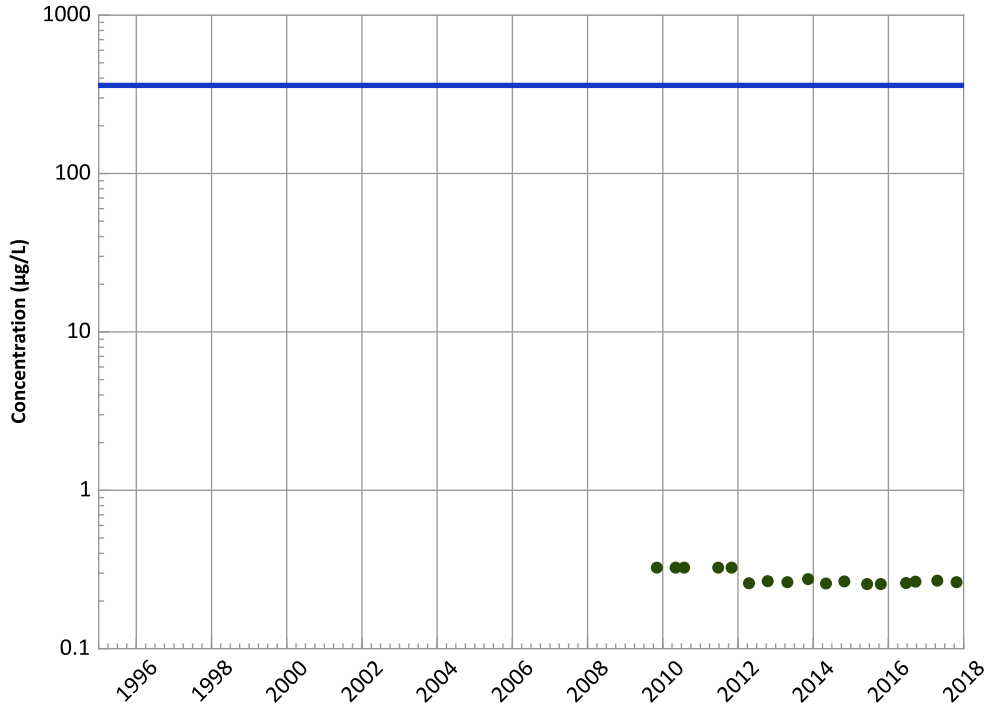
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

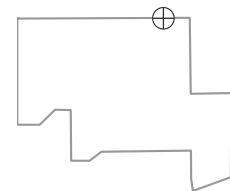
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

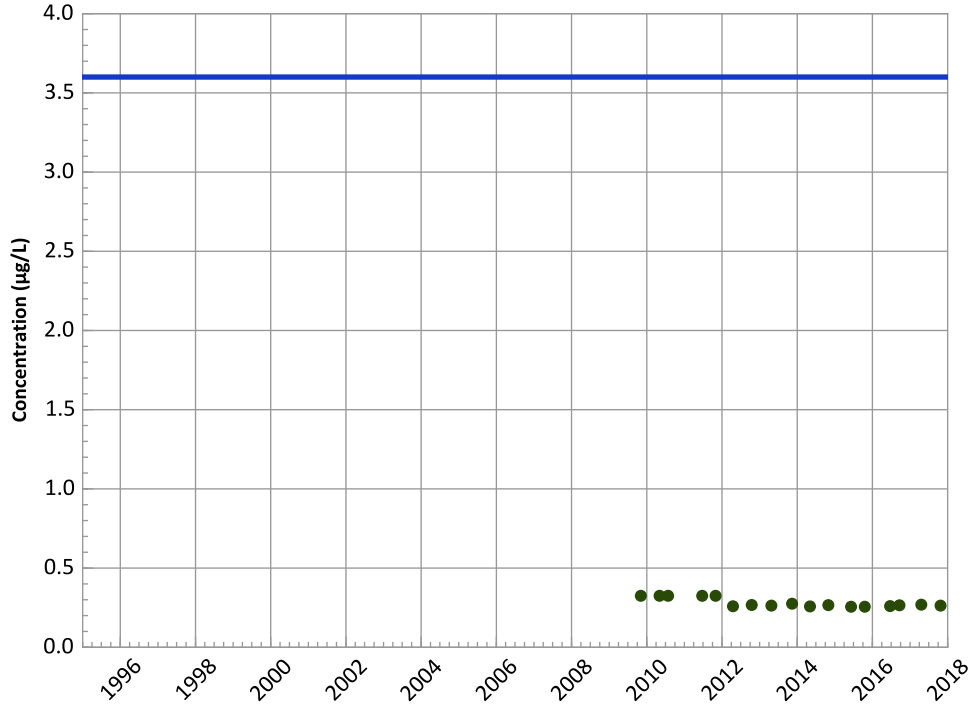


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/04/2009 to 10/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1144 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

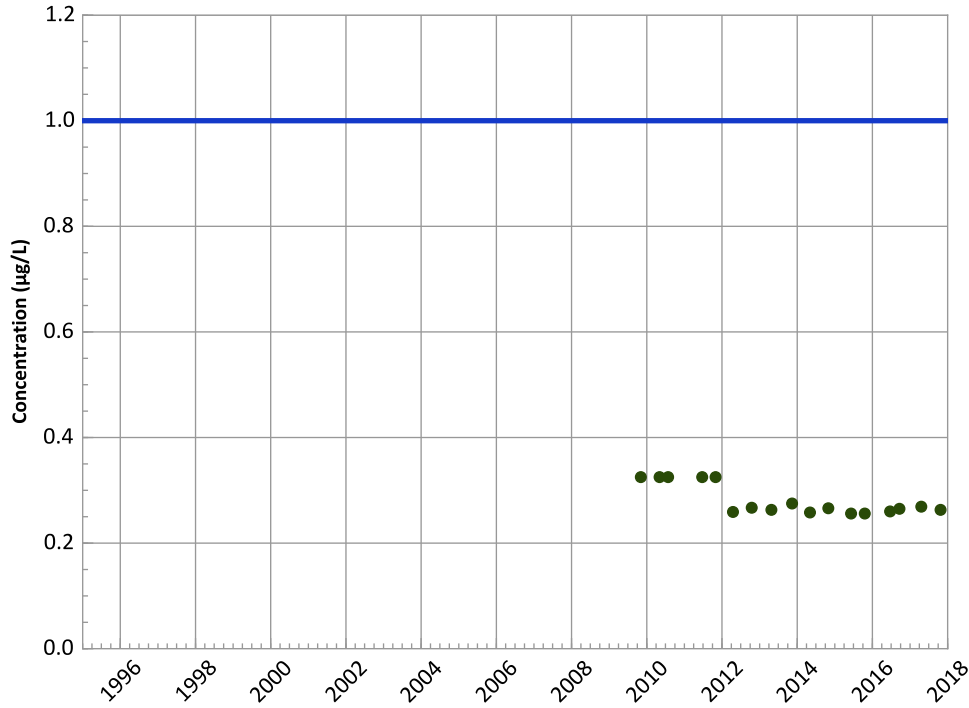
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

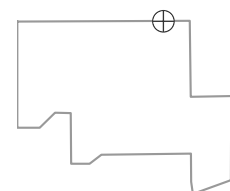
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

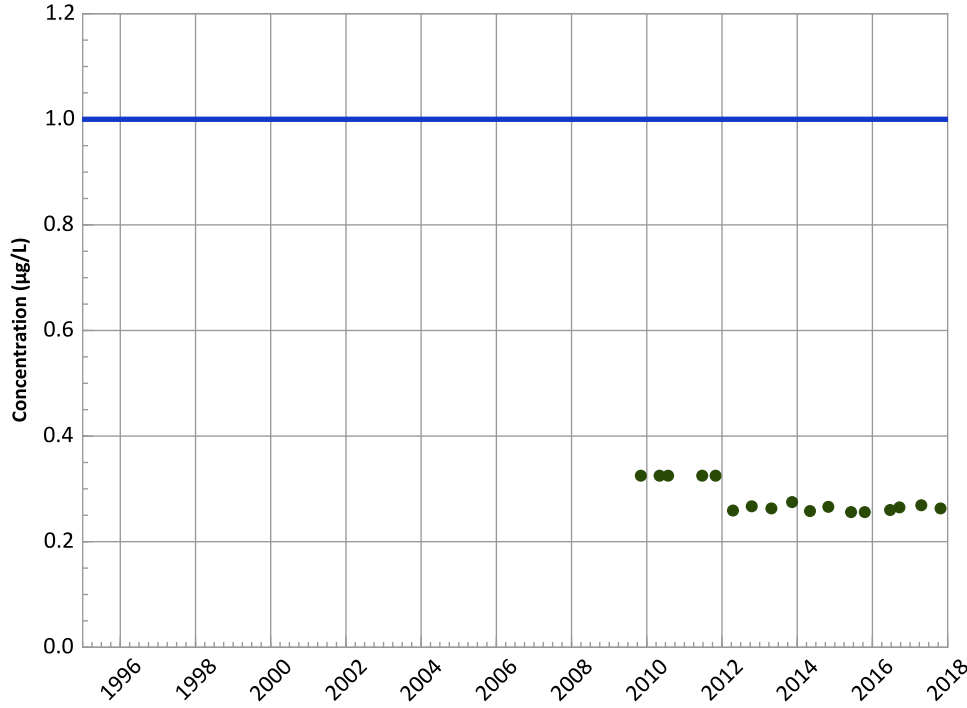


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/04/2009 to 10/24/2017
Analysis Date: 03/21/2018

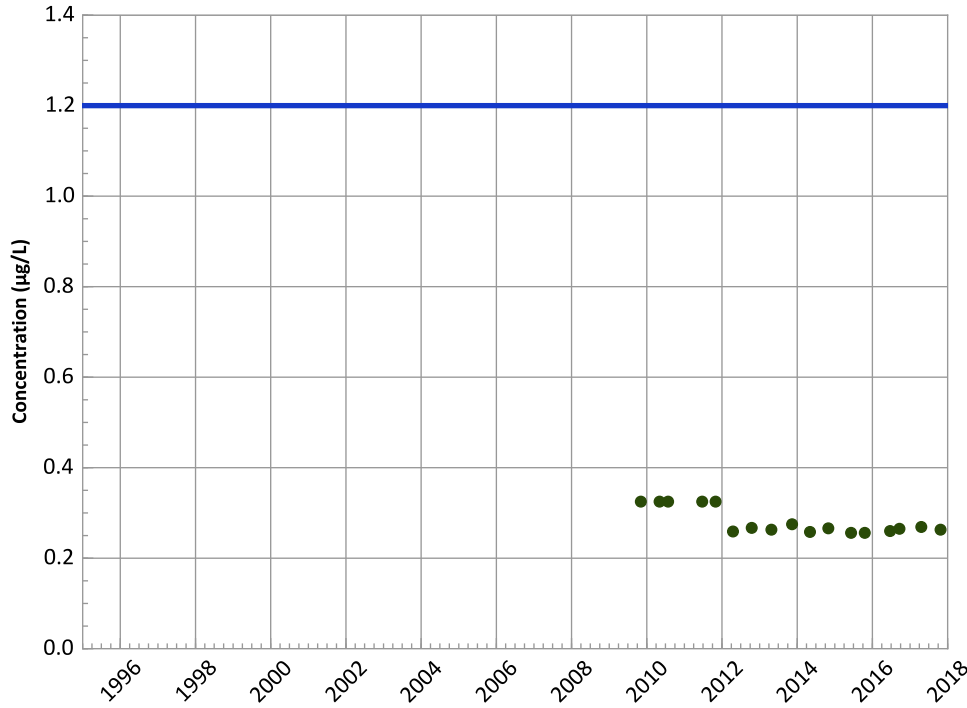
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1144 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



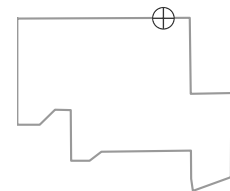
2-Amino-4,6-Dinitrotoluene Trend



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/04/2009 to 10/24/2017
Analysis Date: 03/21/2018

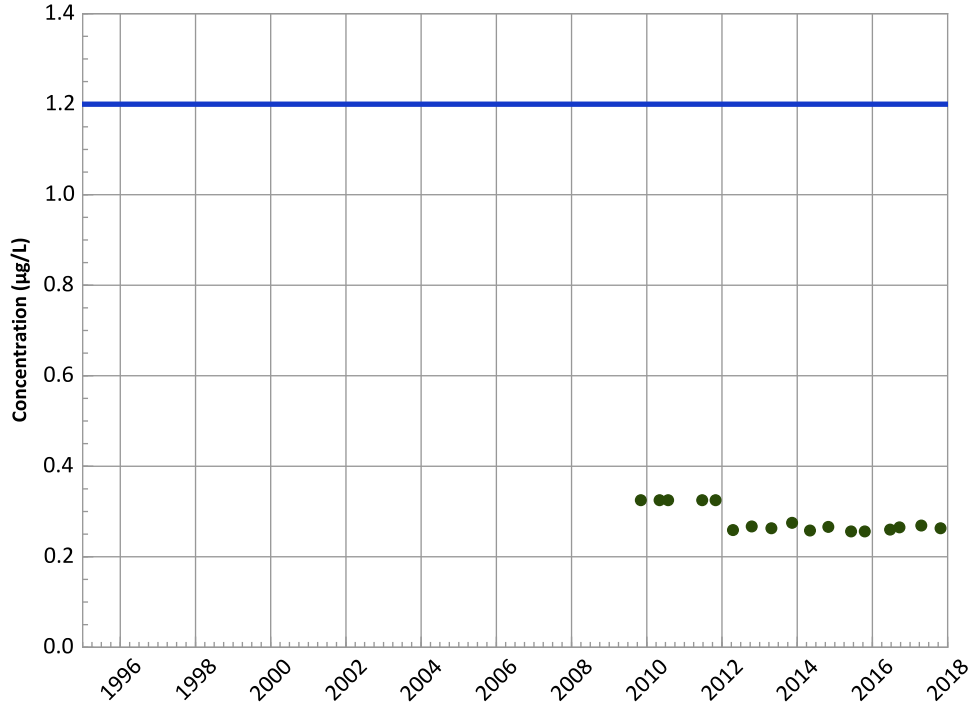
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX06-1144 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

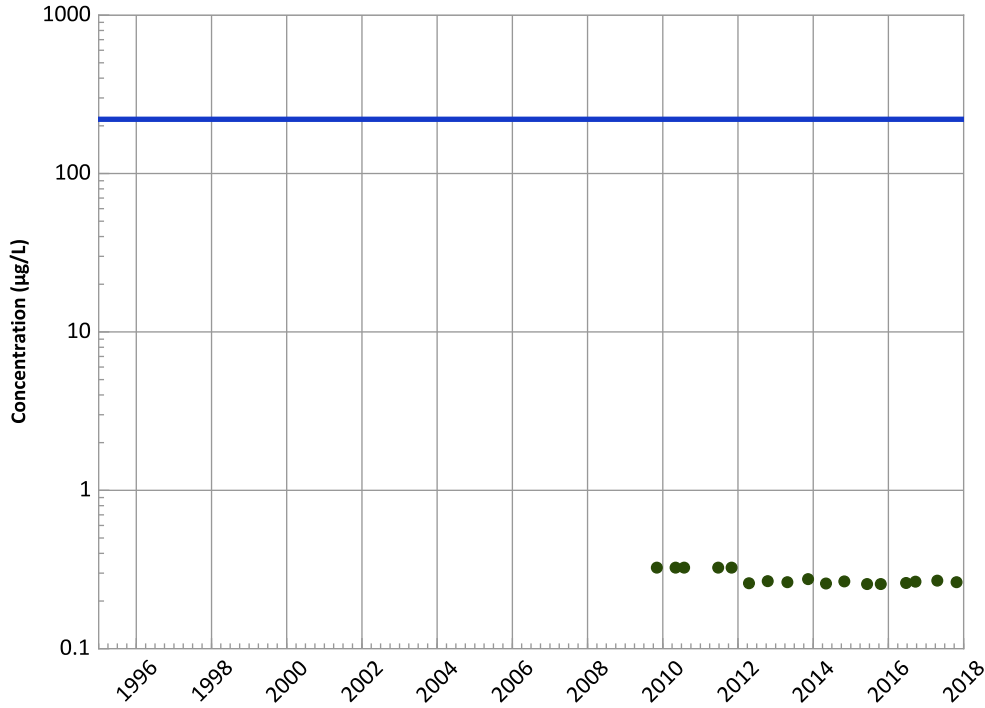
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,3,5-Trinitrobenzene Trend



Concentration Trend

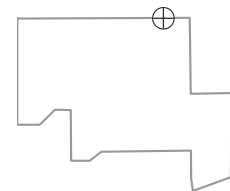
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

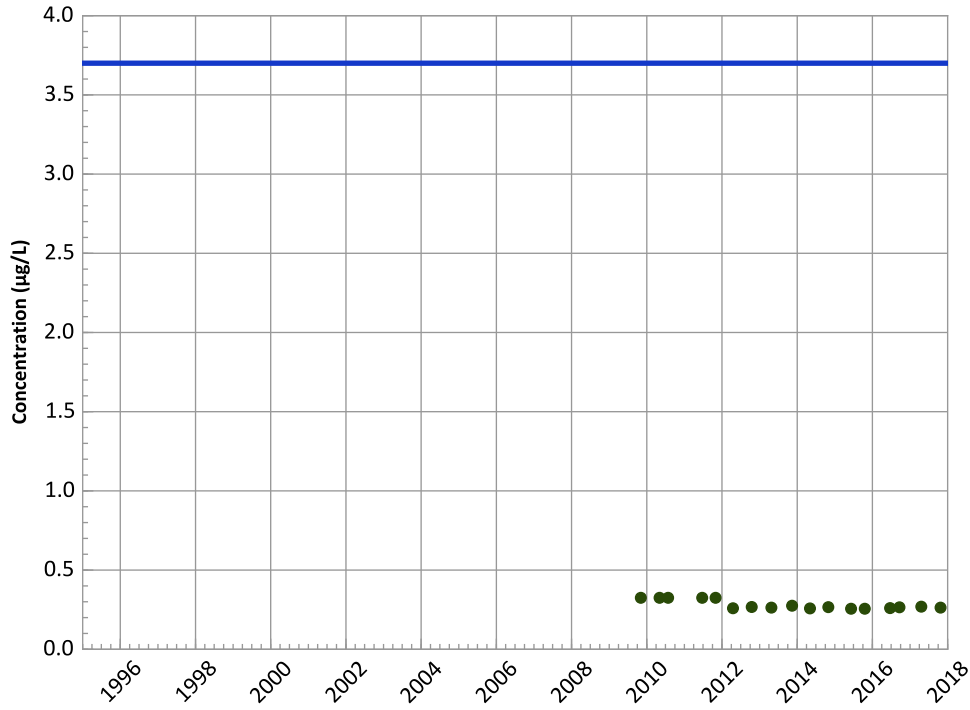


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/04/2009 to 10/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1144 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

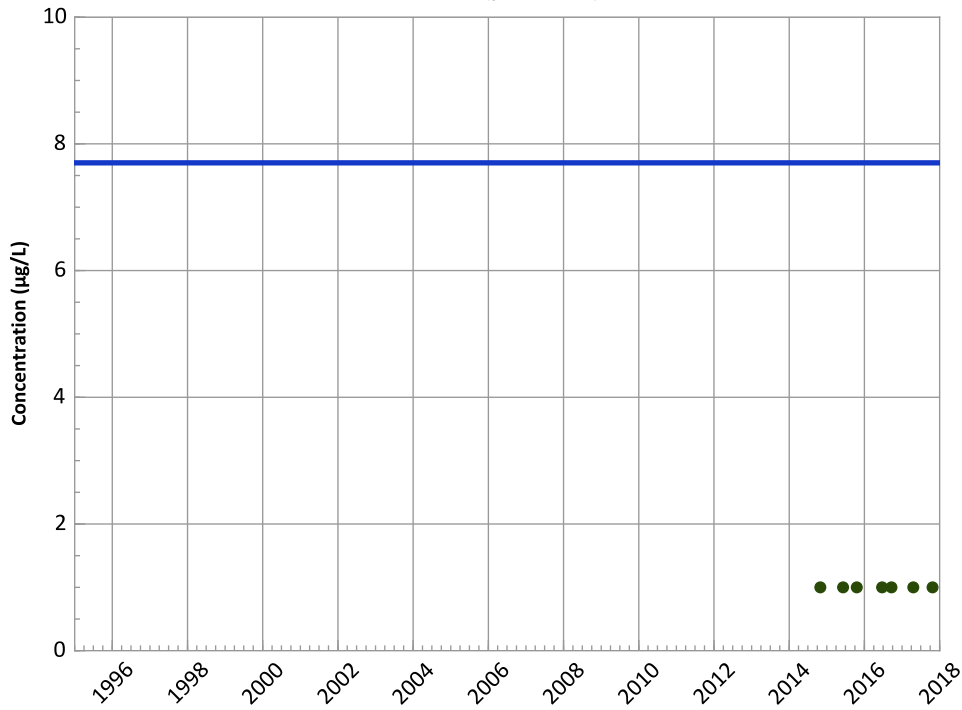
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,4-Dioxane (p-Dioxane) Trend



Concentration Trend

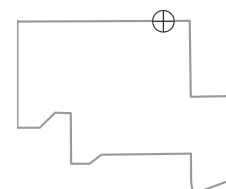
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

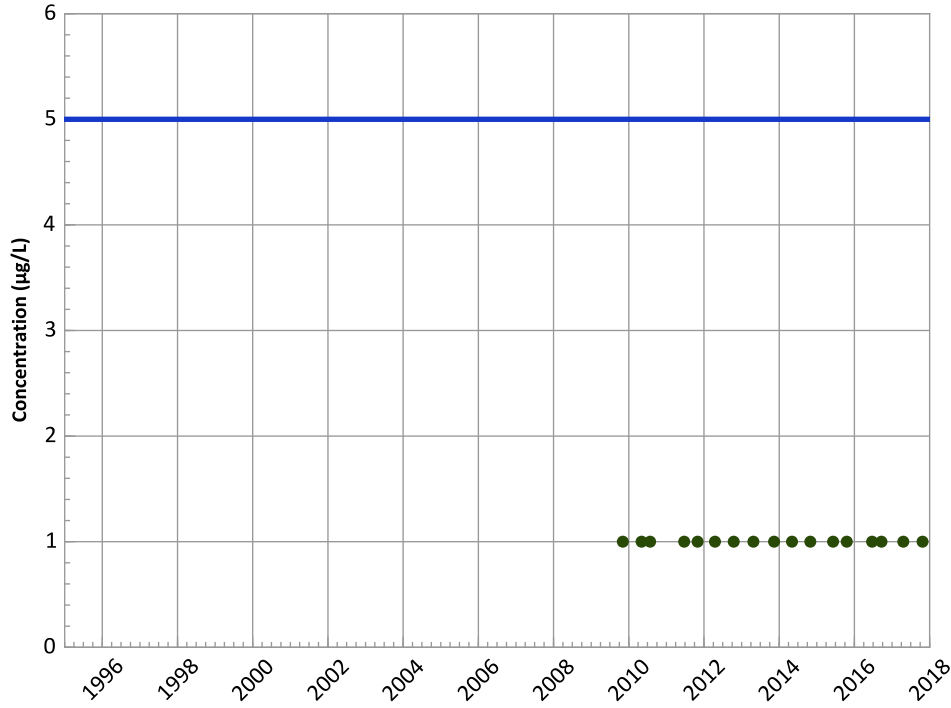
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/04/2009 to 10/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1144 in Ogallala Aquifer
USDOE/NNSA Pantex Plant
Tetrachloroethylene (PCE) Trend**



Concentration Trend

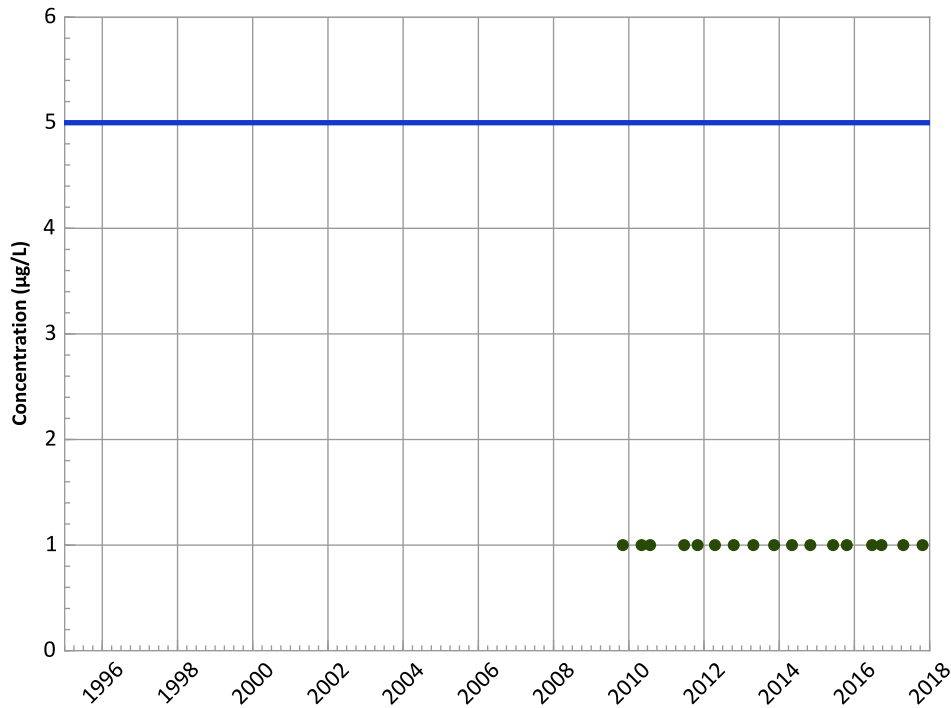
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Trichloroethene Trend



Concentration Trend

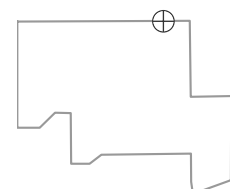
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

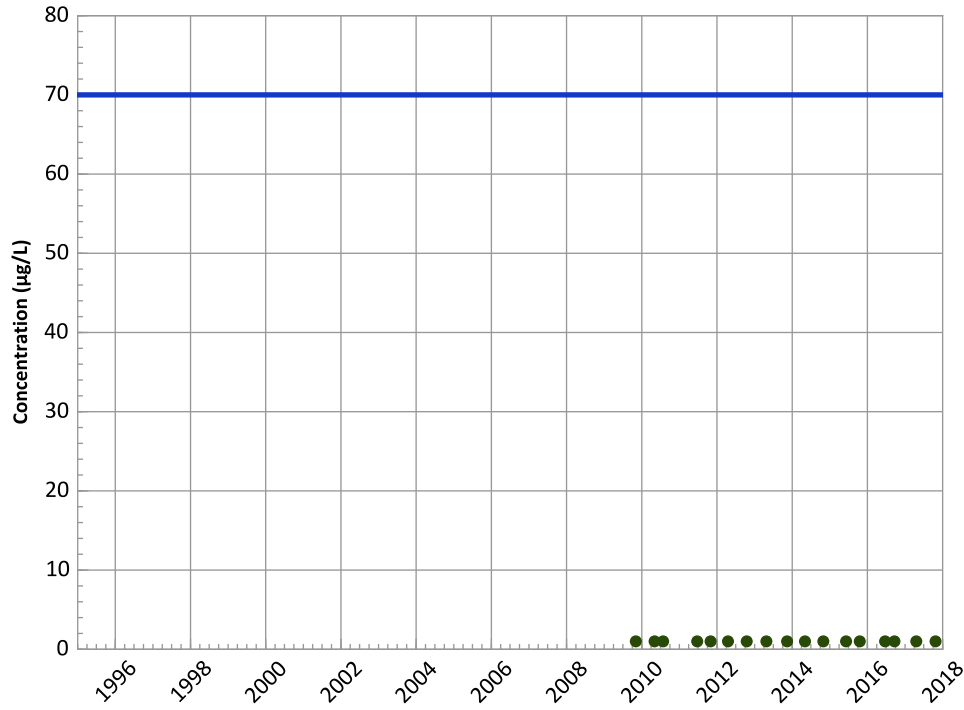


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/04/2009 to 10/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1144 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

cis-1,2-Dichloroethene Trend



Concentration Trend

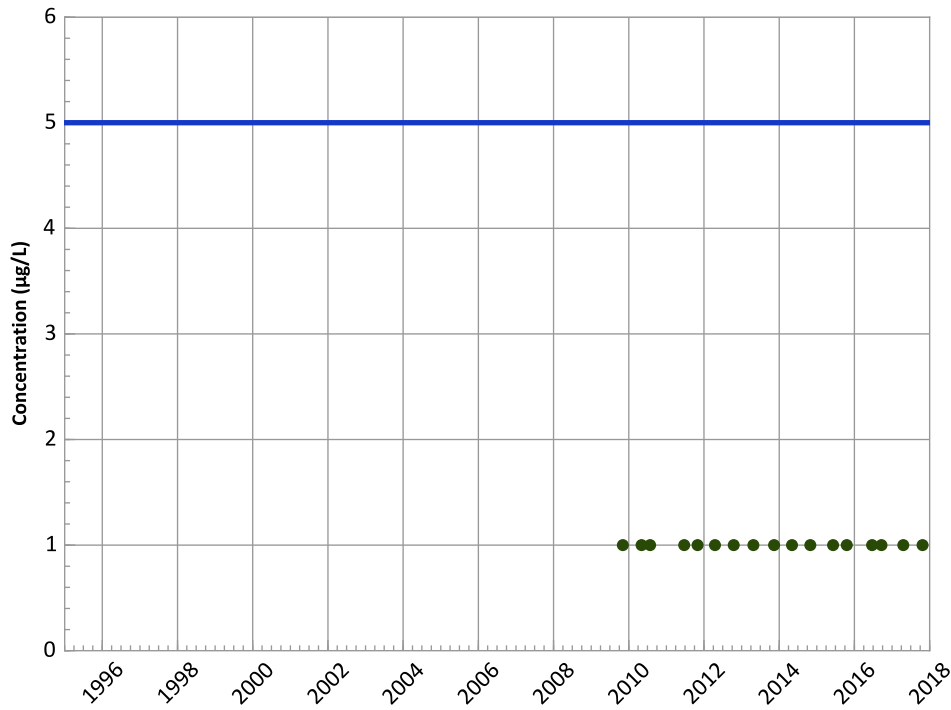
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,2-Dichloroethane Trend



Concentration Trend

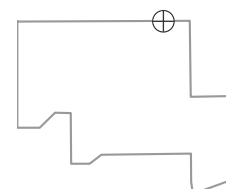
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

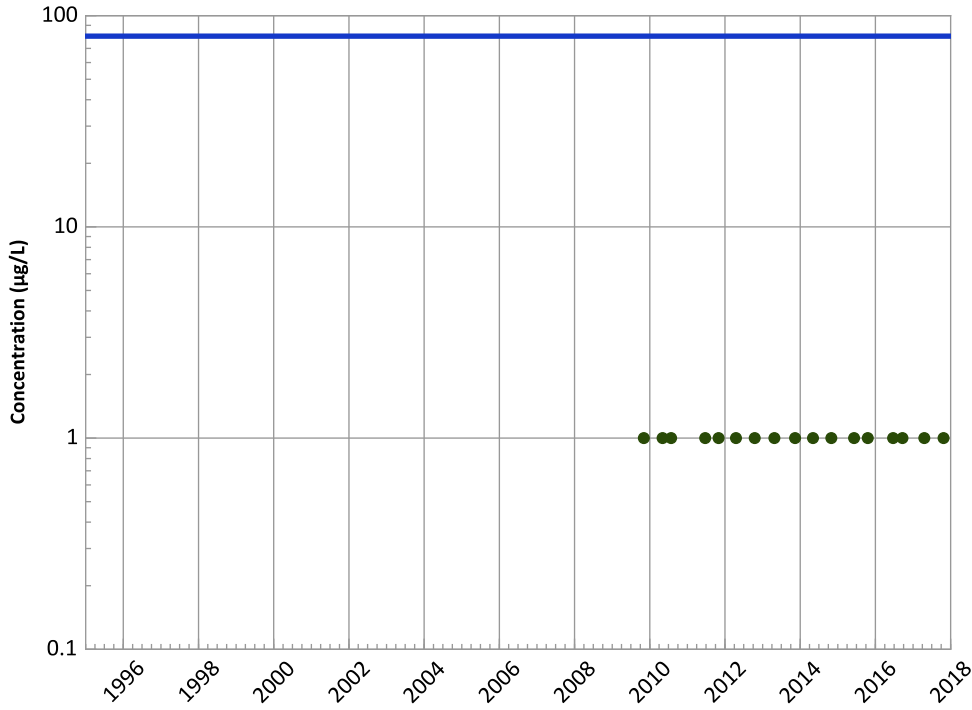
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/04/2009 to 10/24/2017
Analysis Date: 03/21/2018

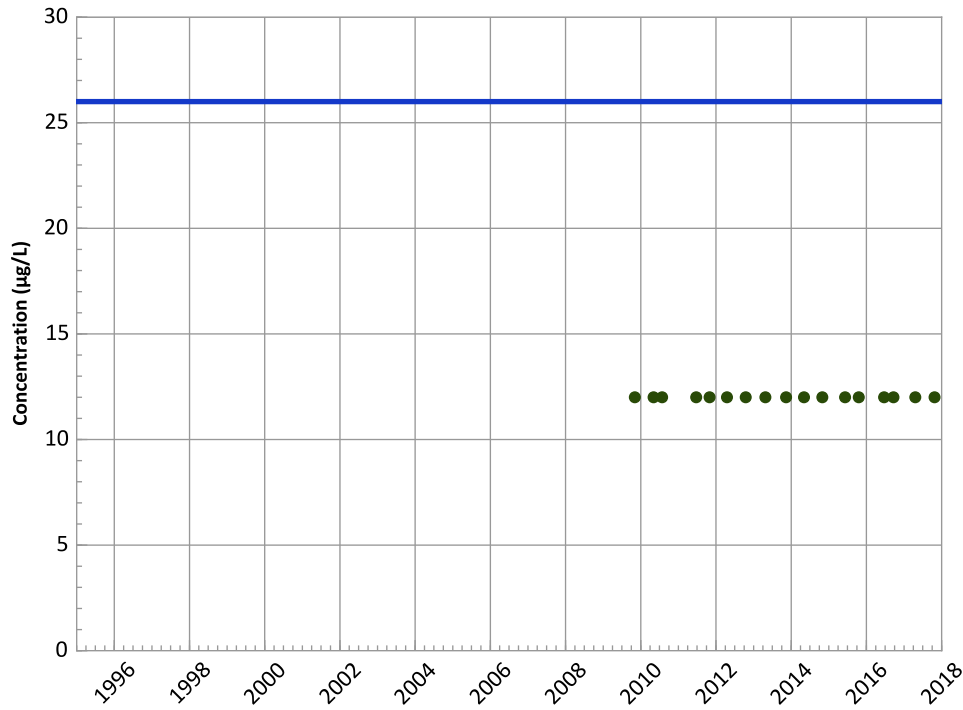
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1144 in Ogallala Aquifer
USDOE/NNSA Pantex Plant
Chloroform Trend**



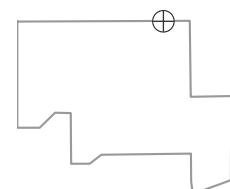
Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect
MAROS Linear Regression Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect

Perchlorate Trend



Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect
MAROS Linear Regression Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect

Well Location

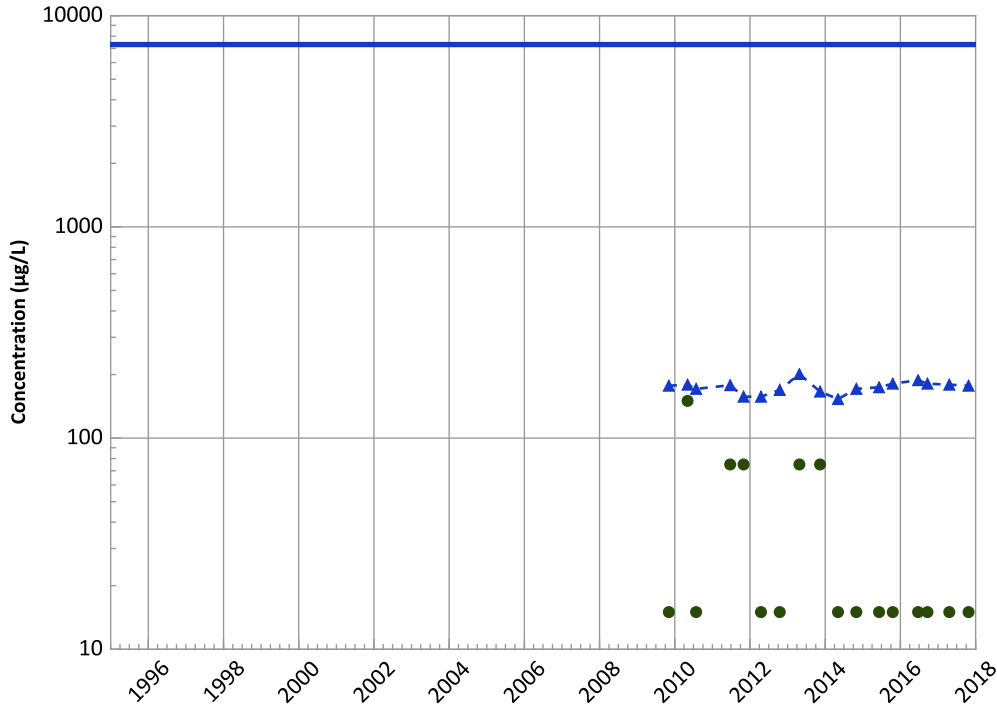


Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 11/04/2009 to 10/24/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1144 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

Boron Trend



Concentration Trend

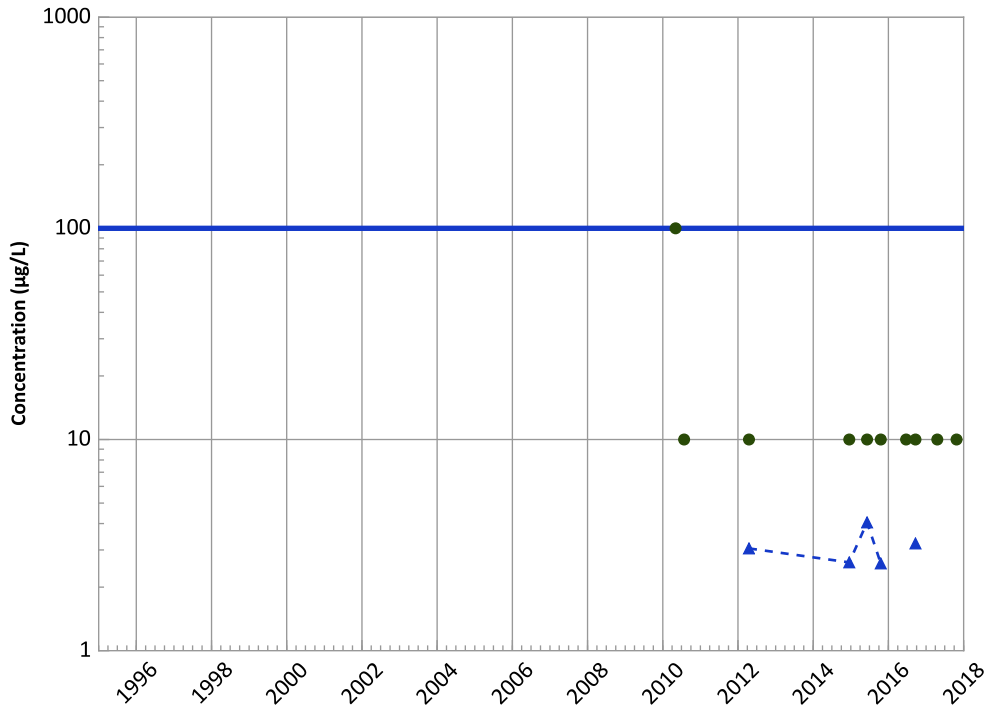
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
No Trend

MAROS Linear Regression Method

Data ():
No Trend
All Data
No Trend

Chromium, Total Trend



Concentration Trend

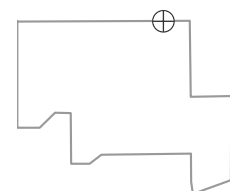
MAROS Mann-Kendall Method

Data ():
No Trend
All Data
Decreasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
No Trend

Well Location

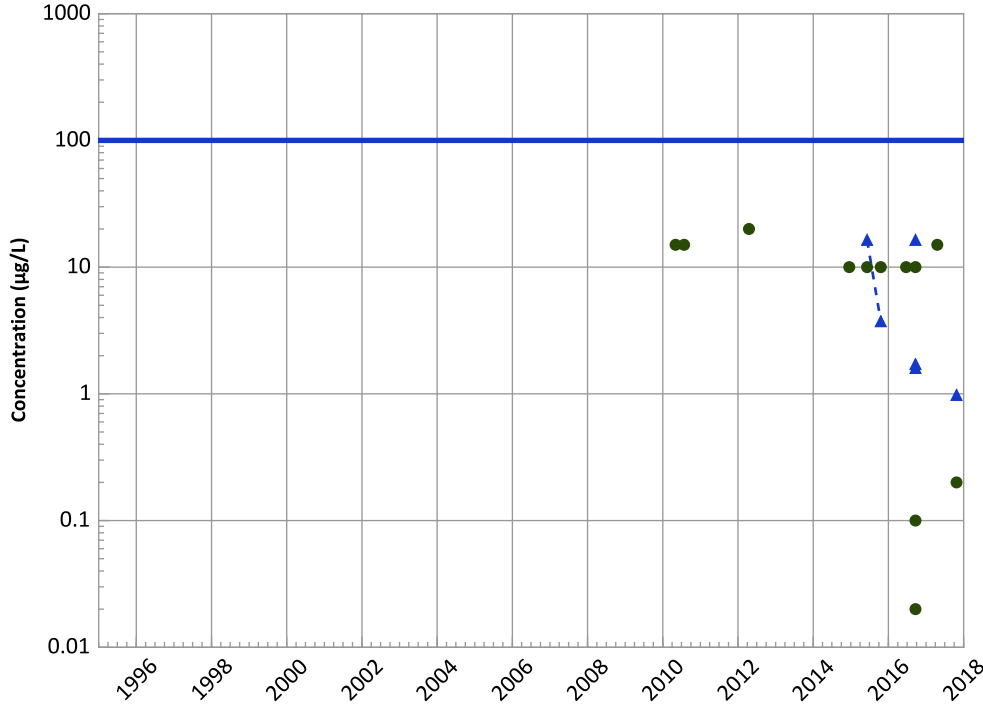


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/04/2009 to 10/24/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1144 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

Chromium, Hexavalent Trend

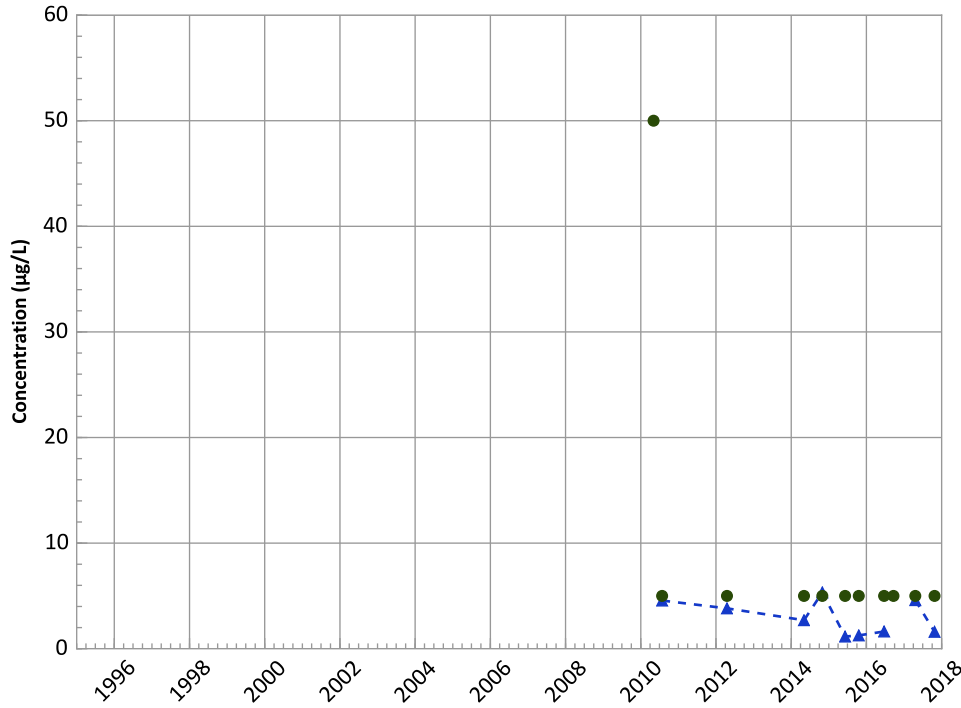


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

MAROS Linear Regression Method
Data ():
N/A (<4 Detections in Dataset)
All Data
Probably Decreasing

Manganese Trend

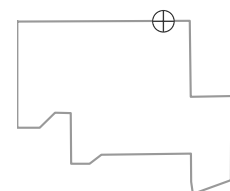


Concentration Trend

MAROS Mann-Kendall Method
Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method
Data ():
Probably Decreasing
All Data
Probably Decreasing

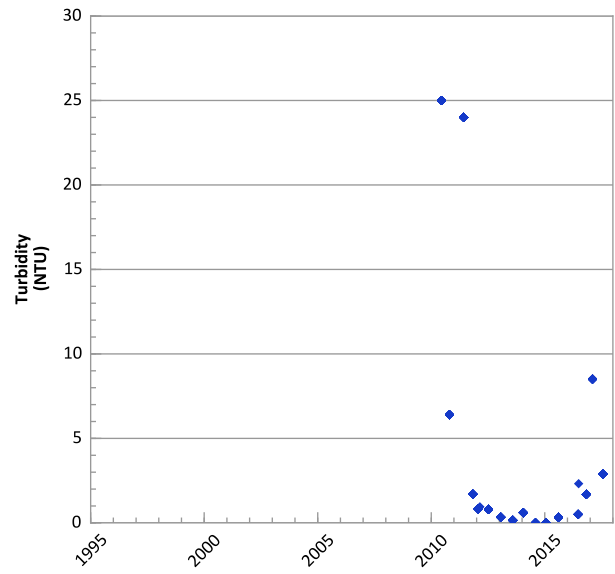
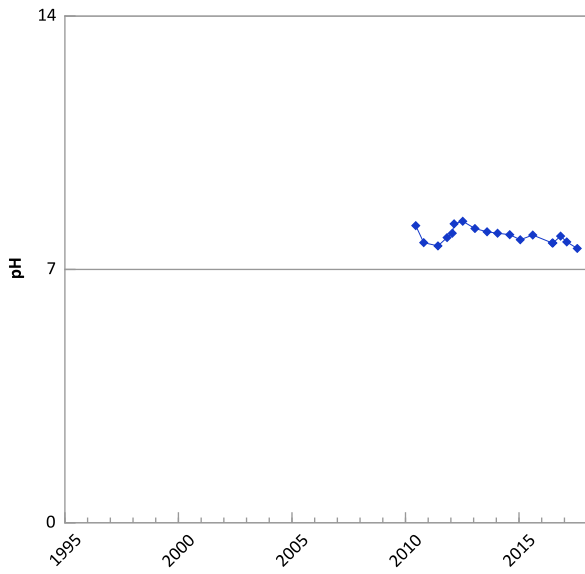
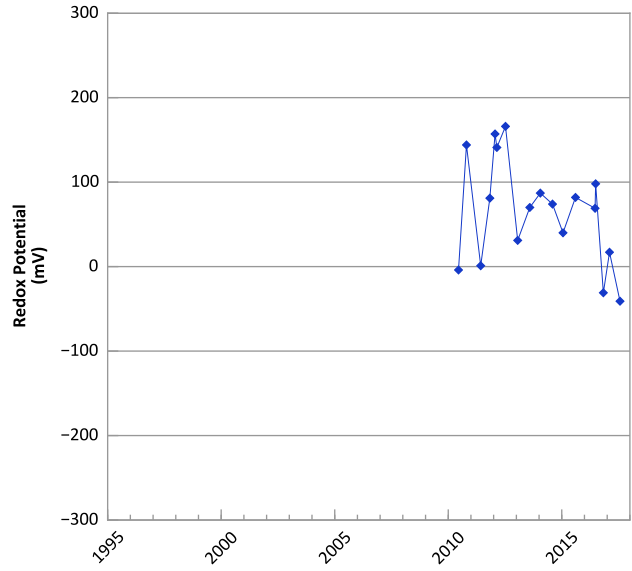
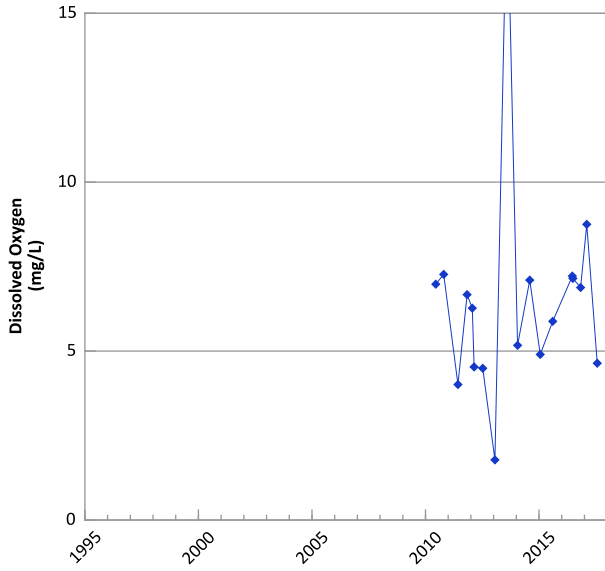
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 11/04/2009 to 10/24/2017
Analysis Date: 03/21/2018

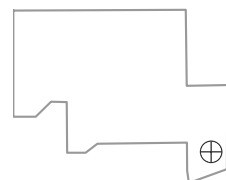
- ▲ Measured Value
- Sample Detection Limit
- Concentration Trend
- Groundwater Protection Standard

**PTX06-1157 in Ogallala Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



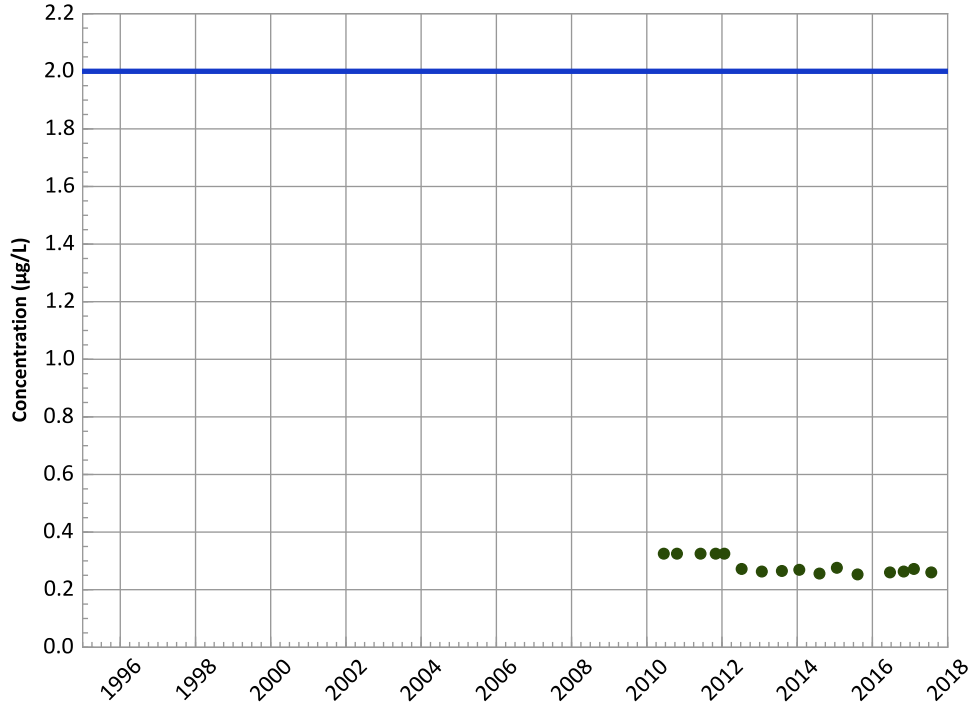
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 06/15/2010 to 07/26/2017
 Analysis Date: 03/21/2018

Well Location



PTX06-1157 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

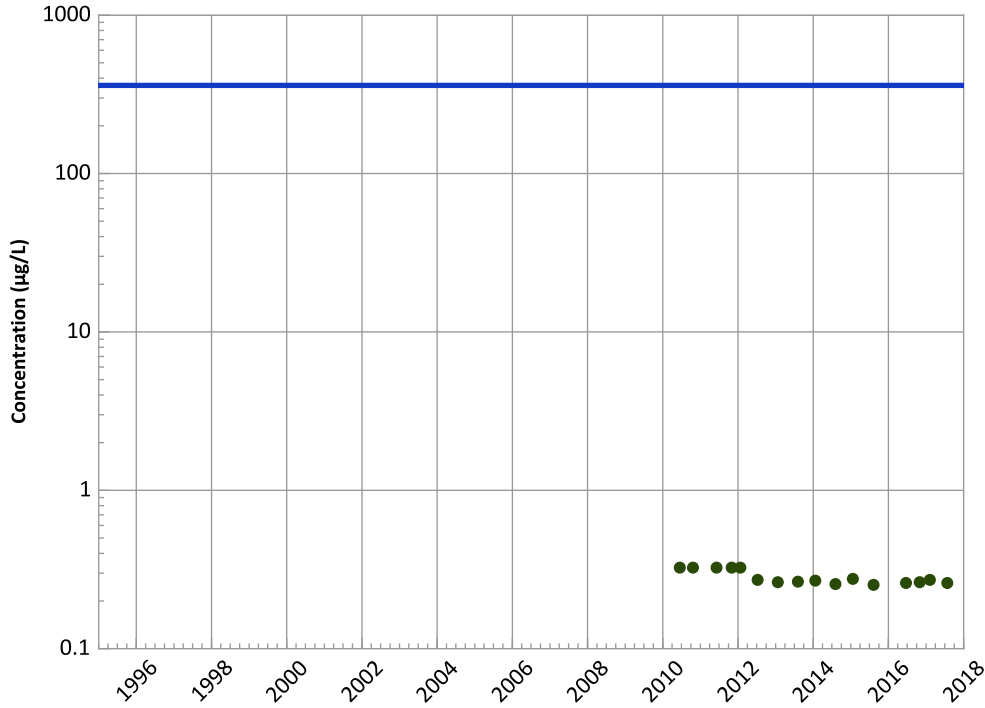
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

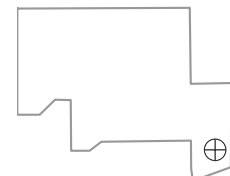
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

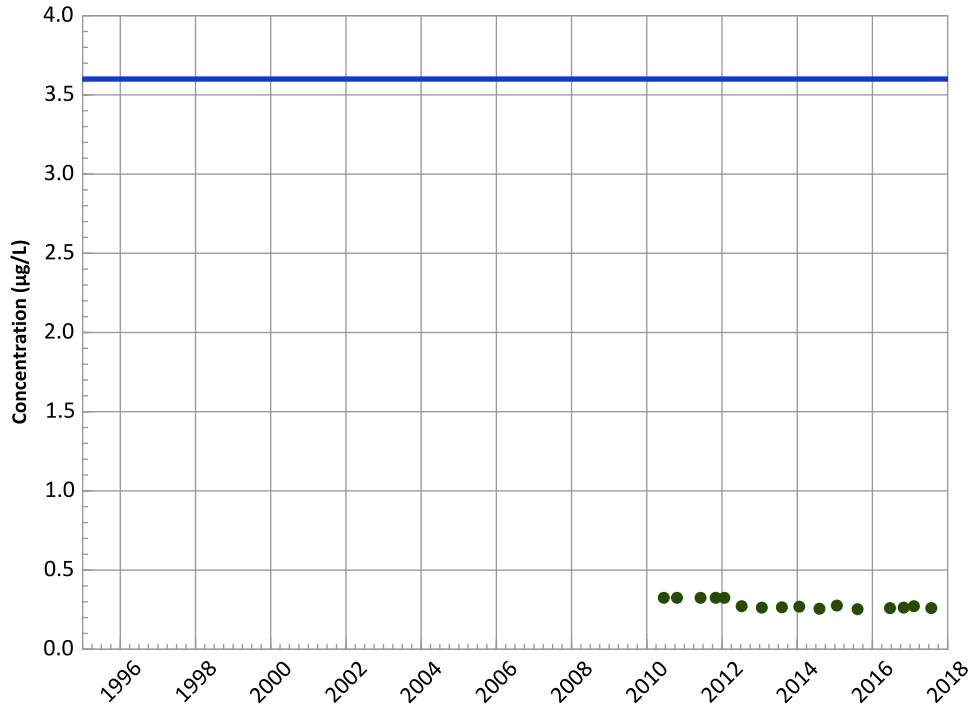


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/15/2010 to 07/26/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1157 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

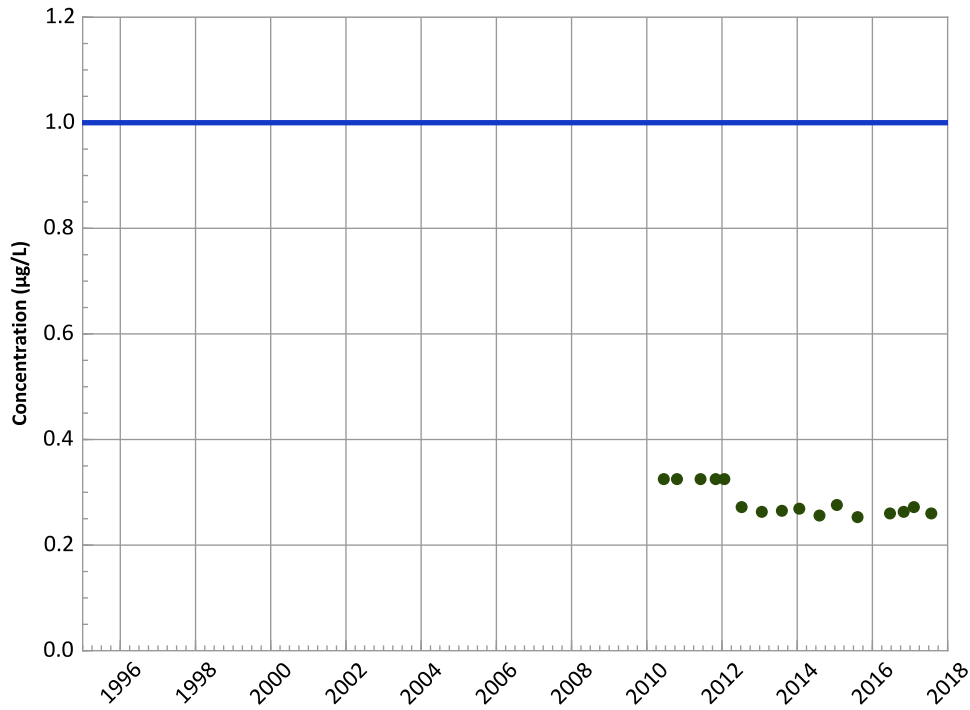
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

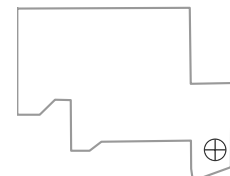
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

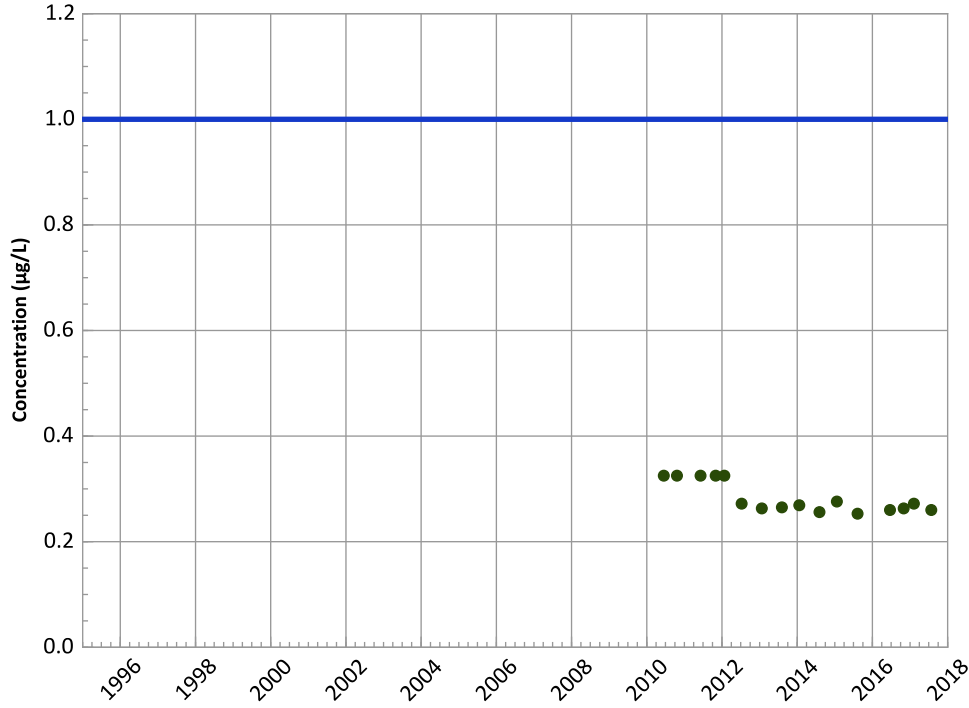


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/15/2010 to 07/26/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1157 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

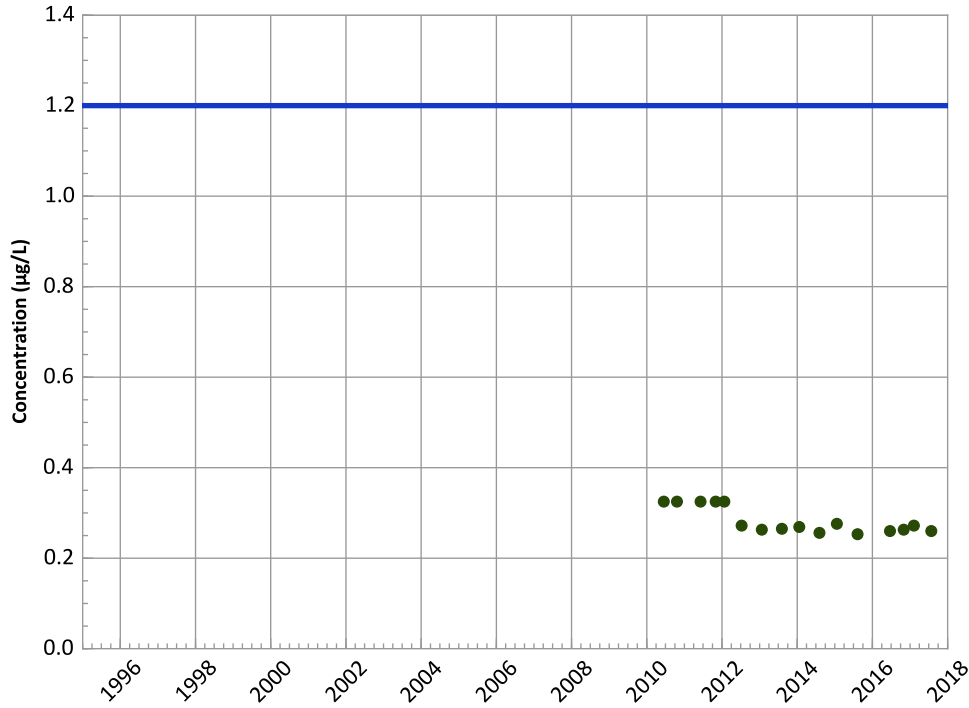
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

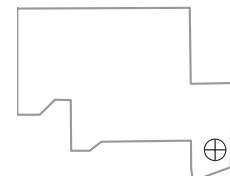
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

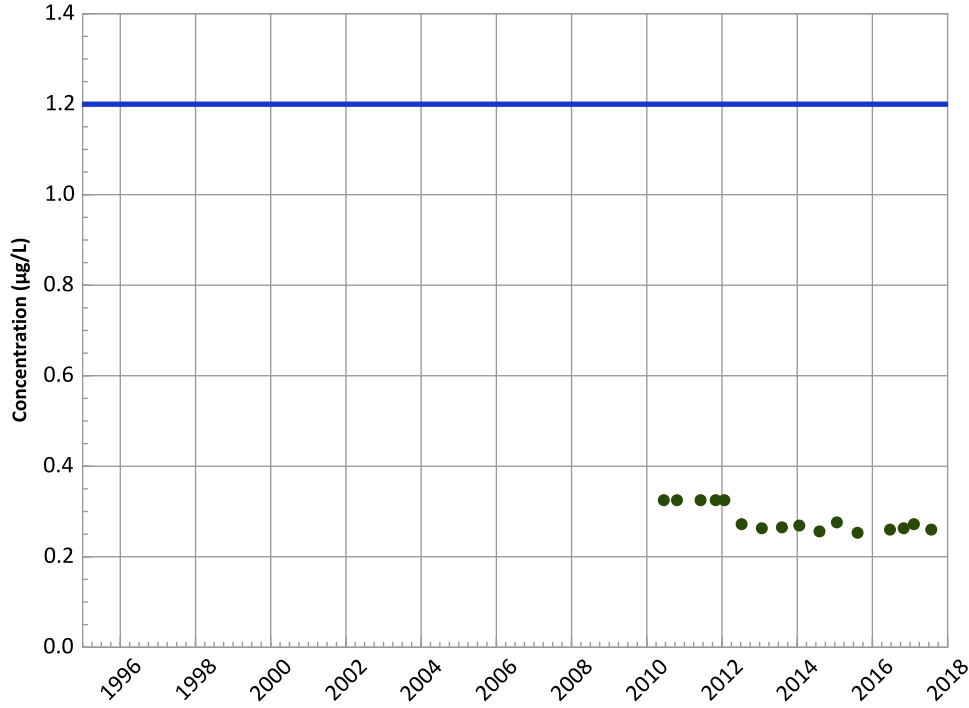


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/15/2010 to 07/26/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1157 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

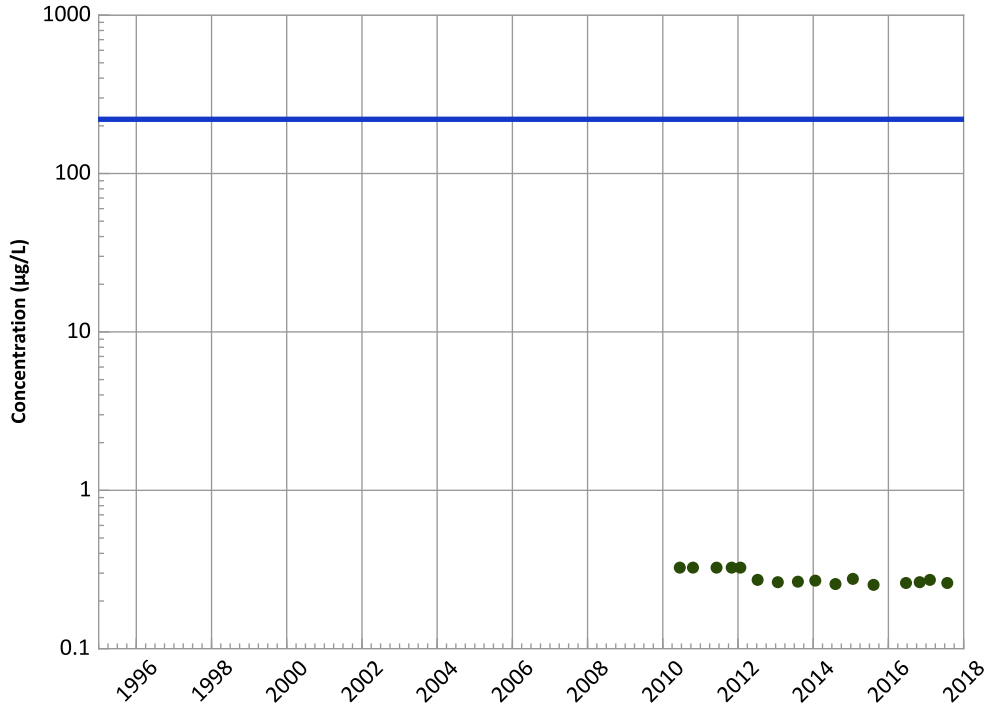
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,3,5-Trinitrobenzene Trend



Concentration Trend

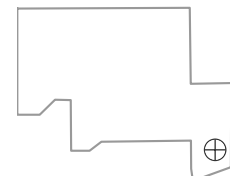
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

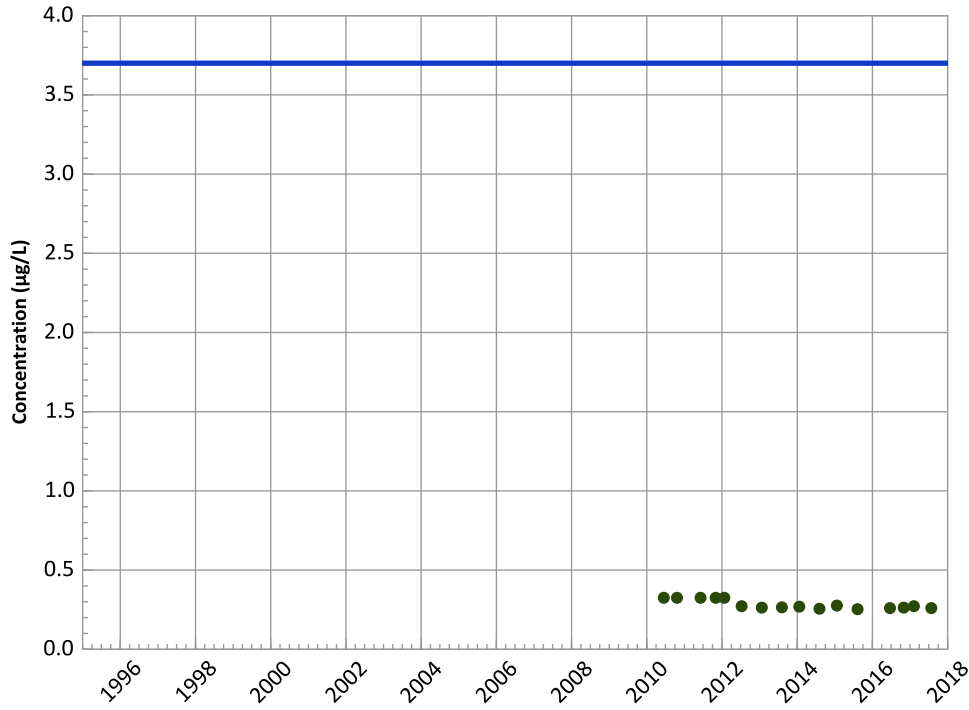


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/15/2010 to 07/26/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1157 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

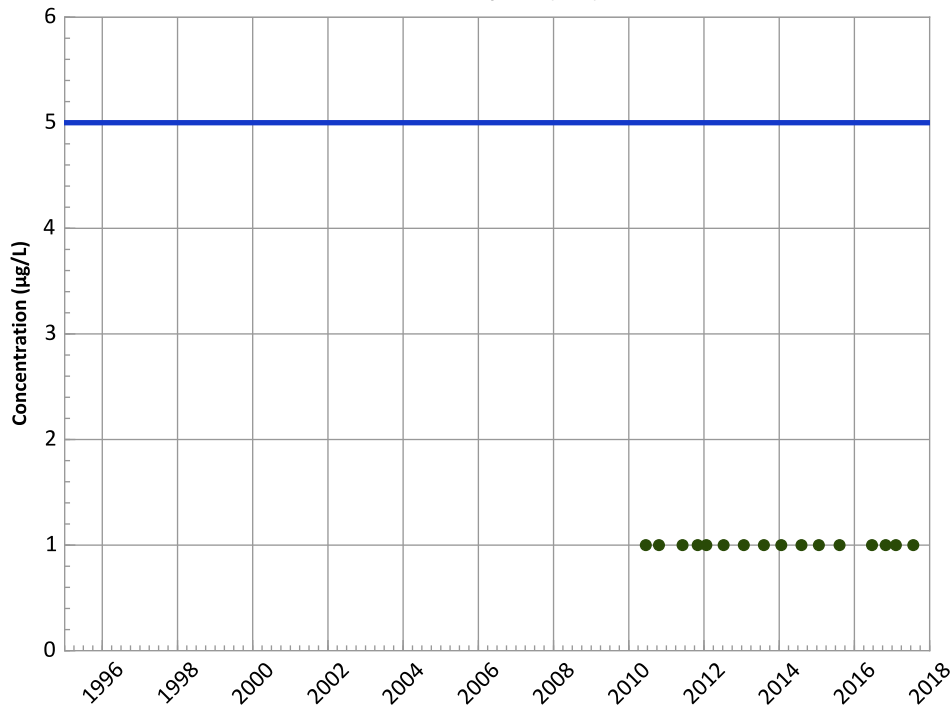
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Tetrachloroethylene (PCE) Trend



Concentration Trend

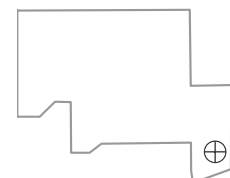
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

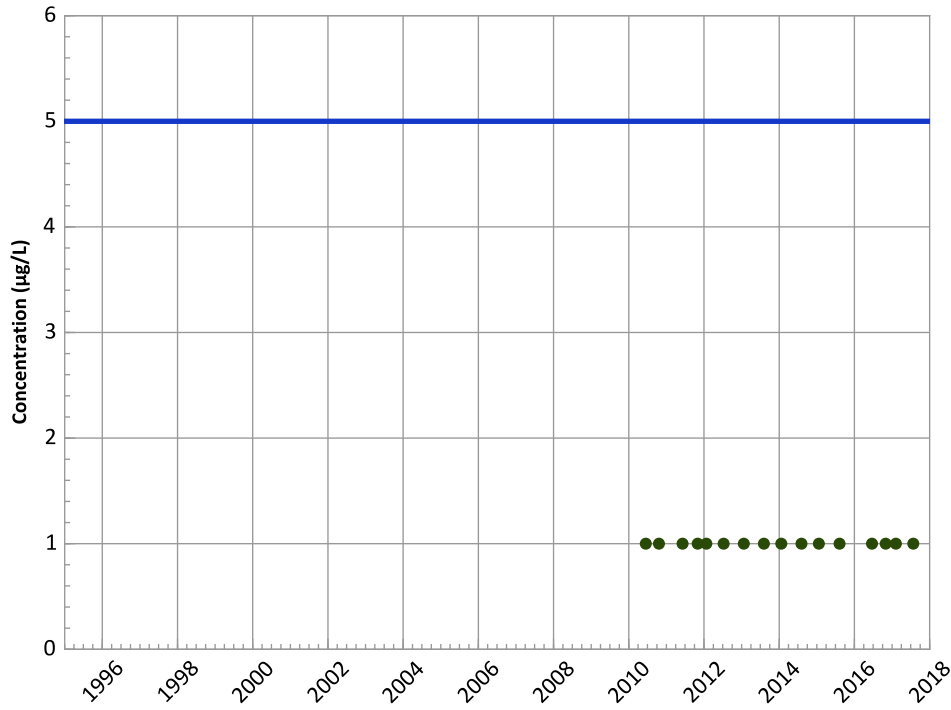


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/15/2010 to 07/26/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1157 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

Trichloroethene Trend



Concentration Trend

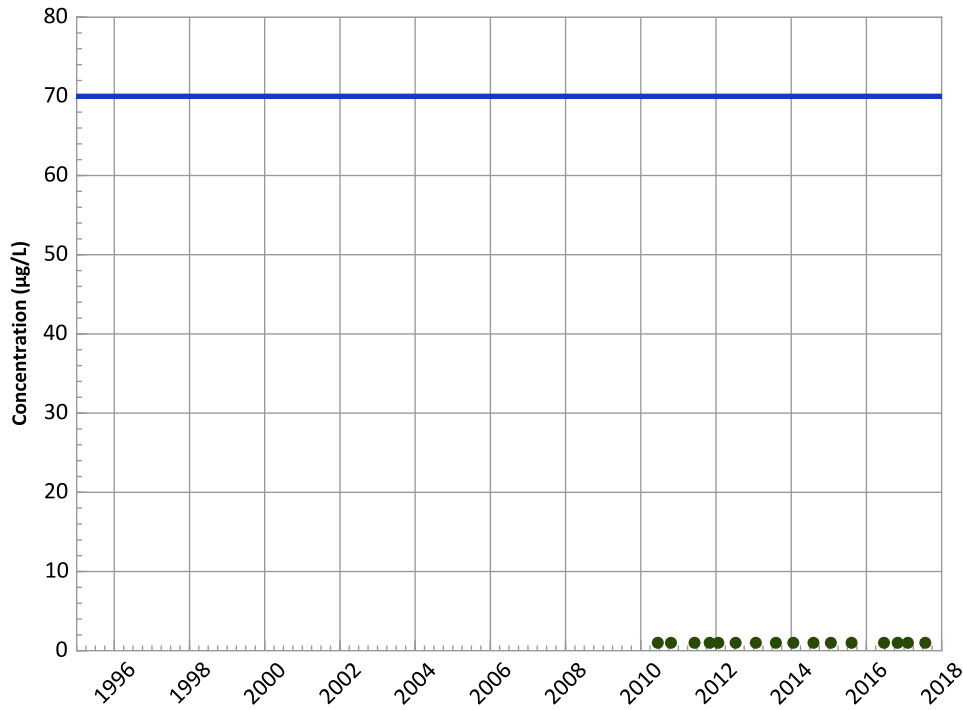
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

cis-1,2-Dichloroethene Trend



Concentration Trend

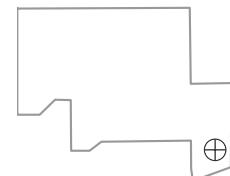
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

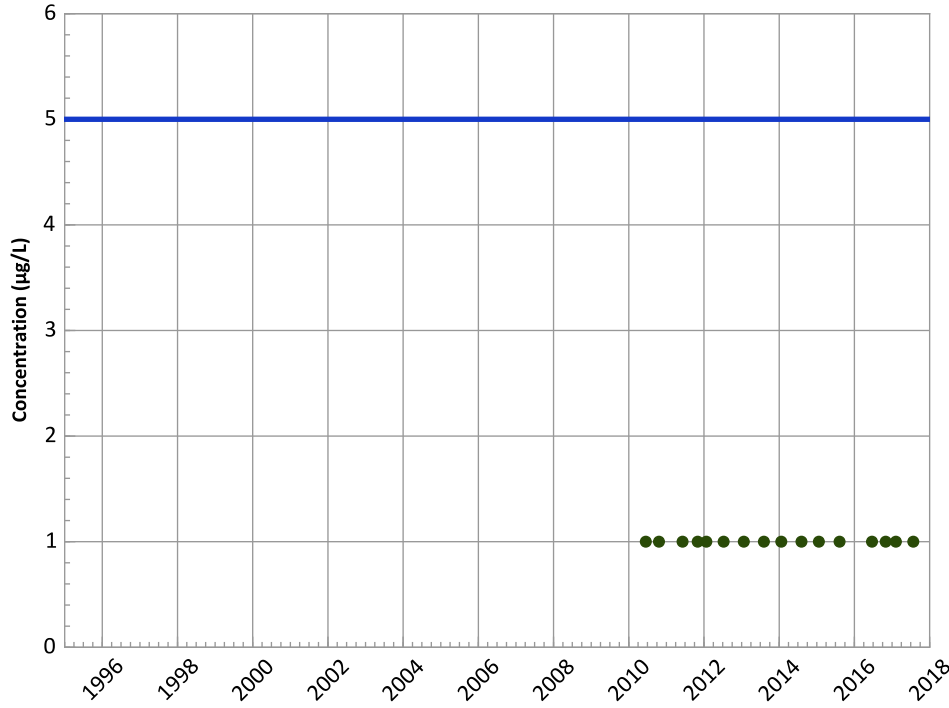
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/15/2010 to 07/26/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX06-1157 in Ogallala Aquifer
USDOE/NNSA Pantex Plant
1,2-Dichloroethane Trend**



Concentration Trend

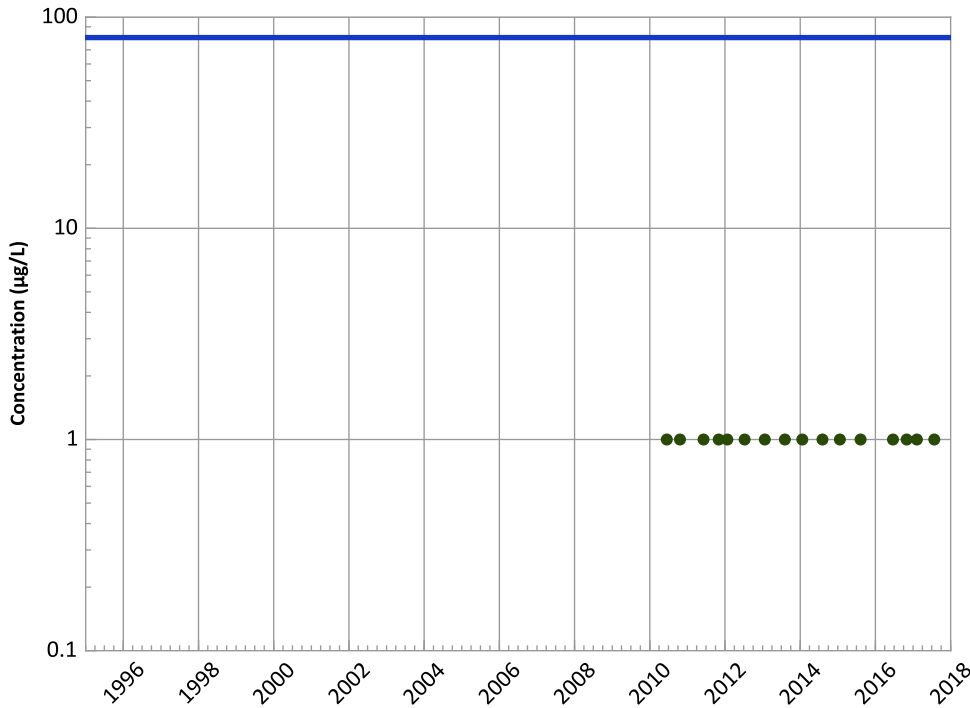
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Chloroform Trend



Concentration Trend

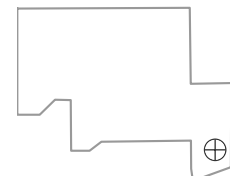
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

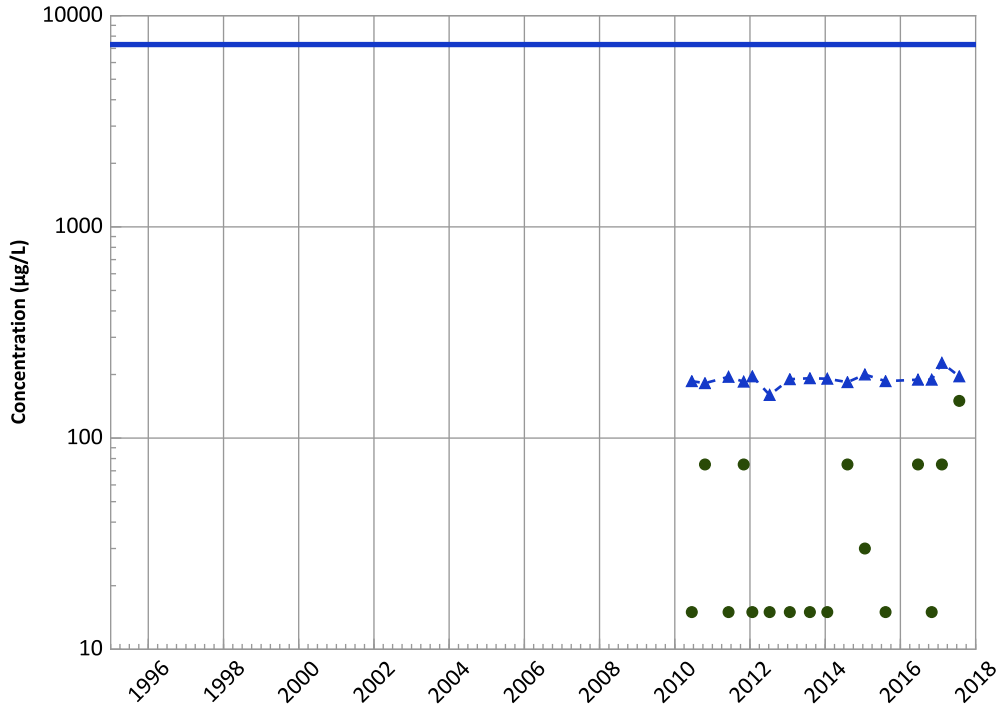


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/15/2010 to 07/26/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1157 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

Boron Trend



Concentration Trend

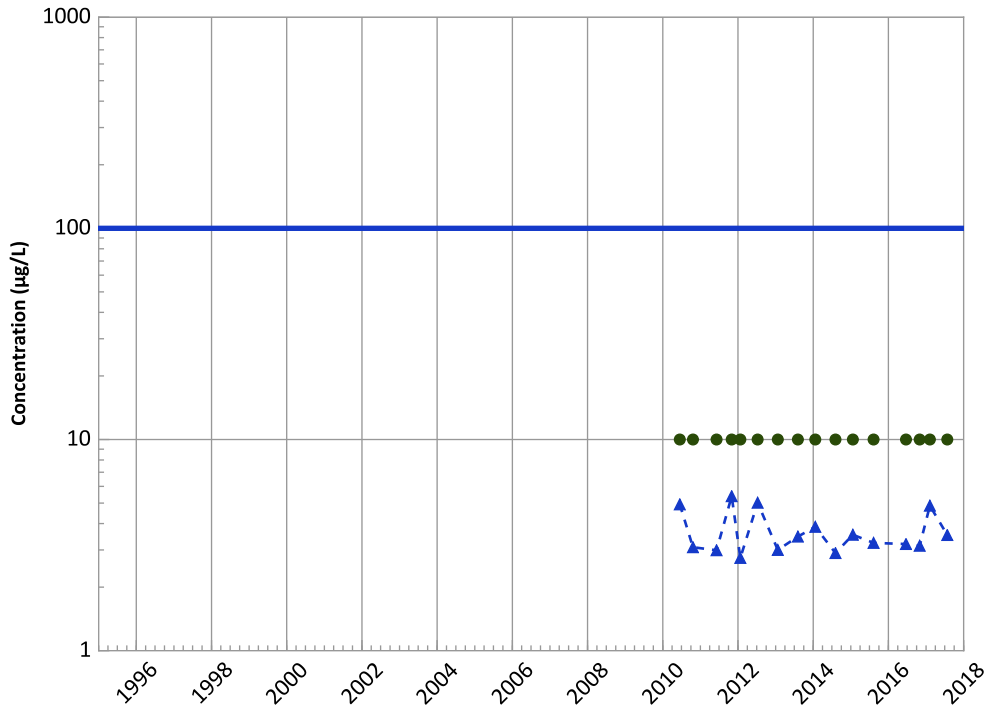
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Probably Increasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
Increasing

Chromium, Total Trend



Concentration Trend

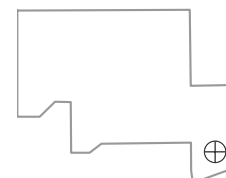
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Stable

MAROS Linear Regression Method

Data ():
Stable
All Data
Stable

Well Location

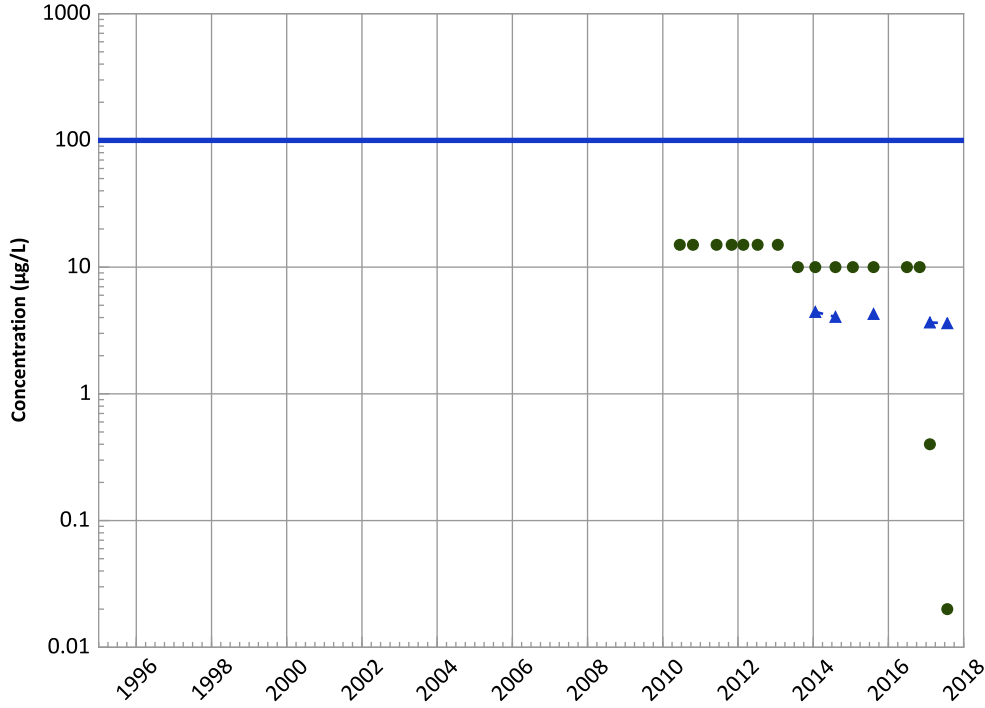


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/15/2010 to 07/26/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1157 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

Chromium, Hexavalent Trend

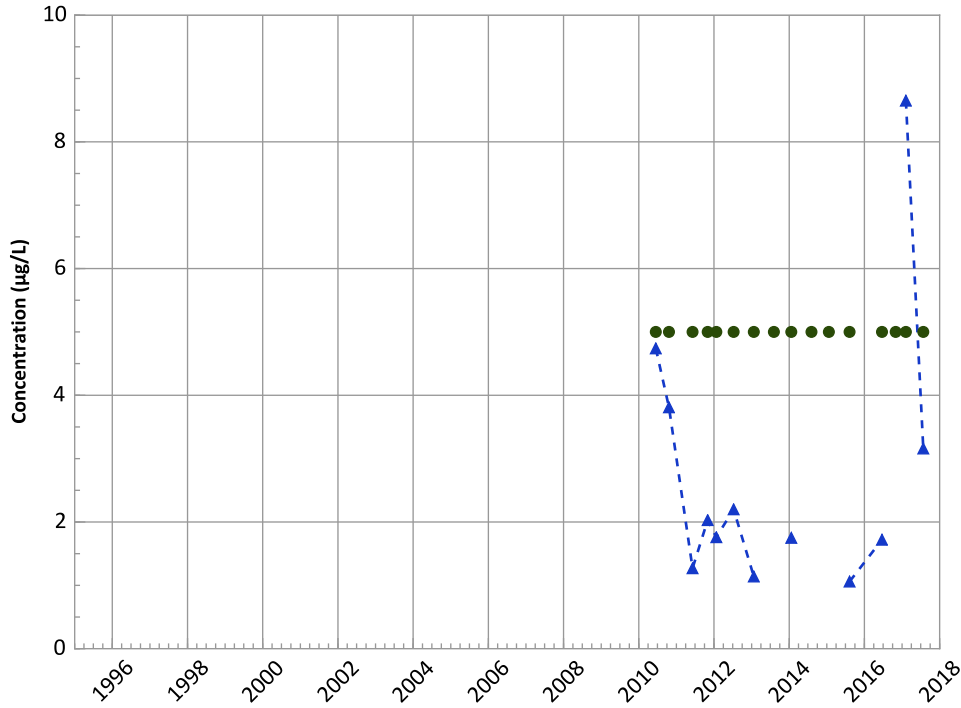


Concentration Trend

MAROS Mann-Kendall Method
Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

MAROS Linear Regression Method
Data ():
N/A (<4 Detections in Dataset)
All Data
Decreasing

Manganese Trend

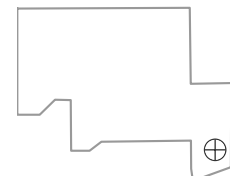


Concentration Trend

MAROS Mann-Kendall Method
Data ():
Increasing
All Data
No Trend

MAROS Linear Regression Method
Data ():
Stable
All Data
No Trend

Well Location

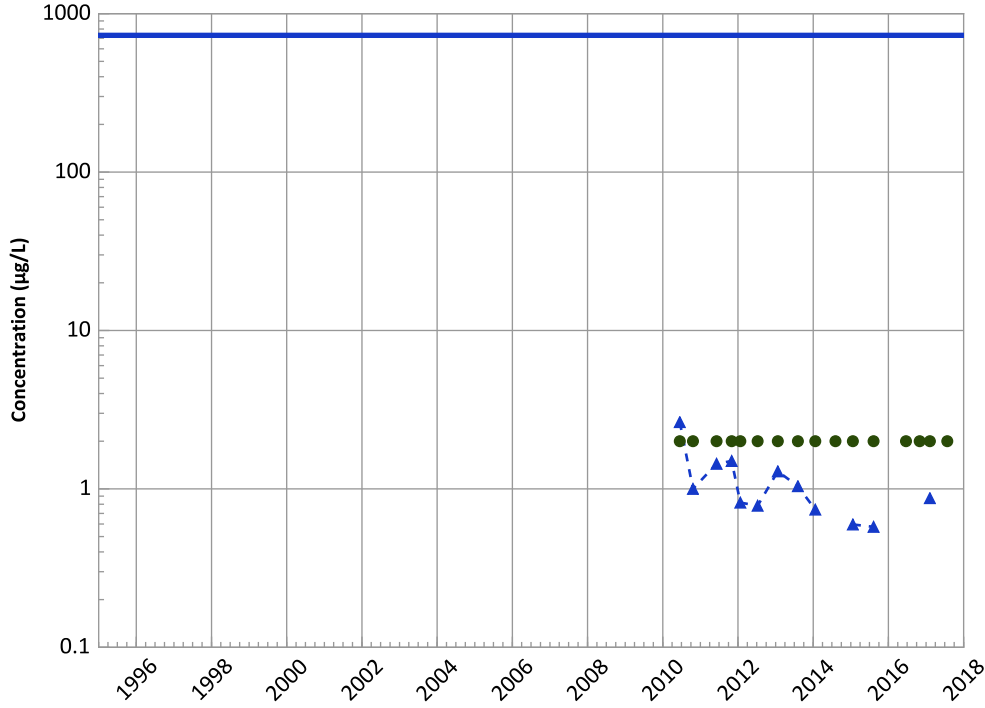


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/15/2010 to 07/26/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX06-1157 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

Nickel Trend



Concentration Trend

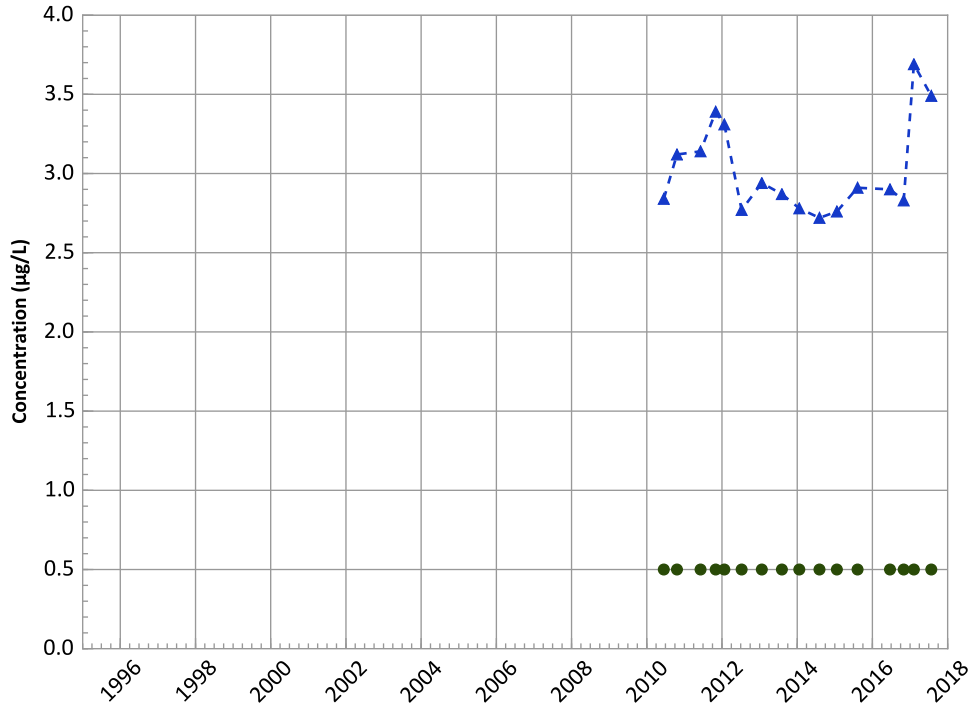
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Probably Decreasing
All Data
Decreasing

Molybdenum Trend



Concentration Trend

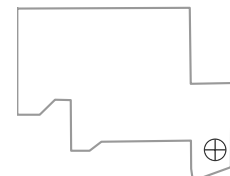
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
Stable
All Data
No Trend

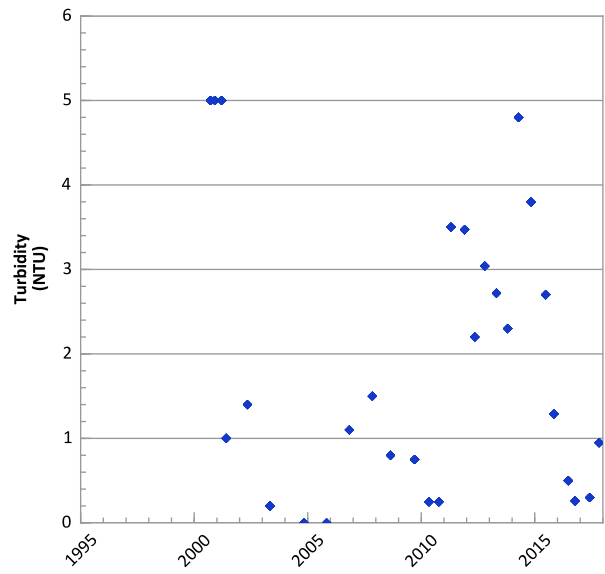
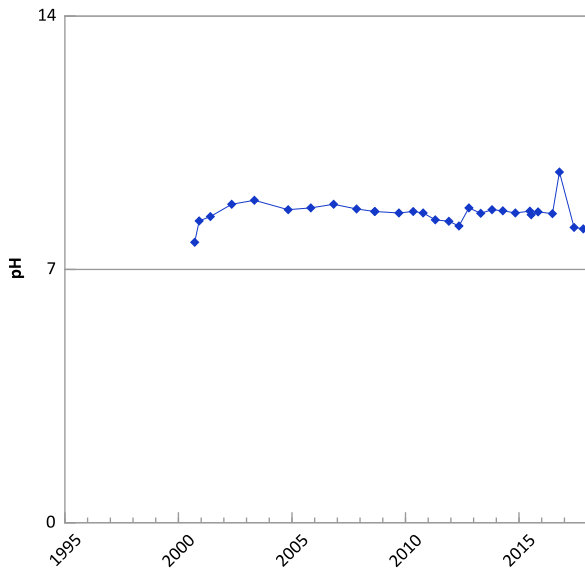
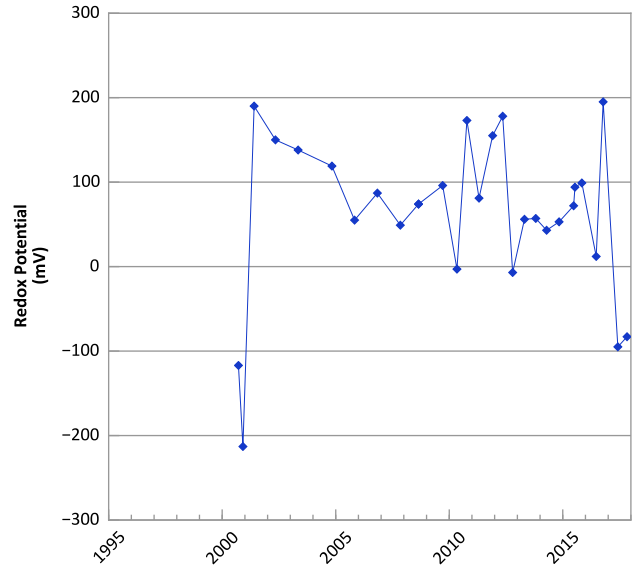
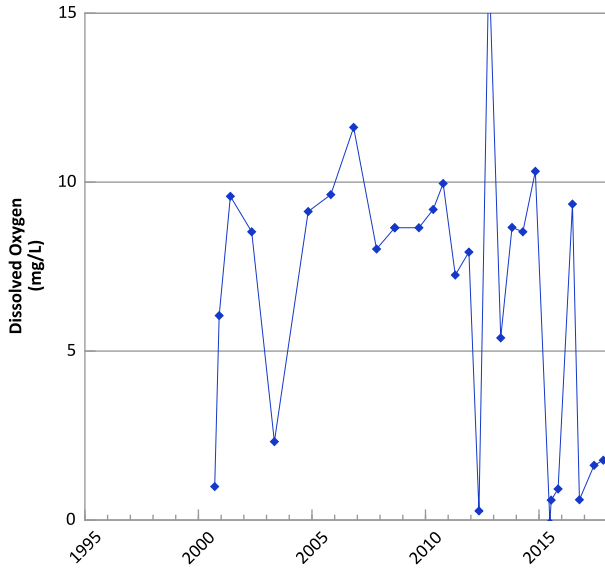
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 06/15/2010 to 07/26/2017
Analysis Date: 03/21/2018

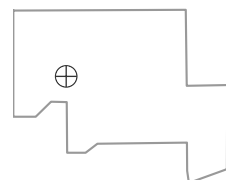
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX07-1R01 in Ogallala Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



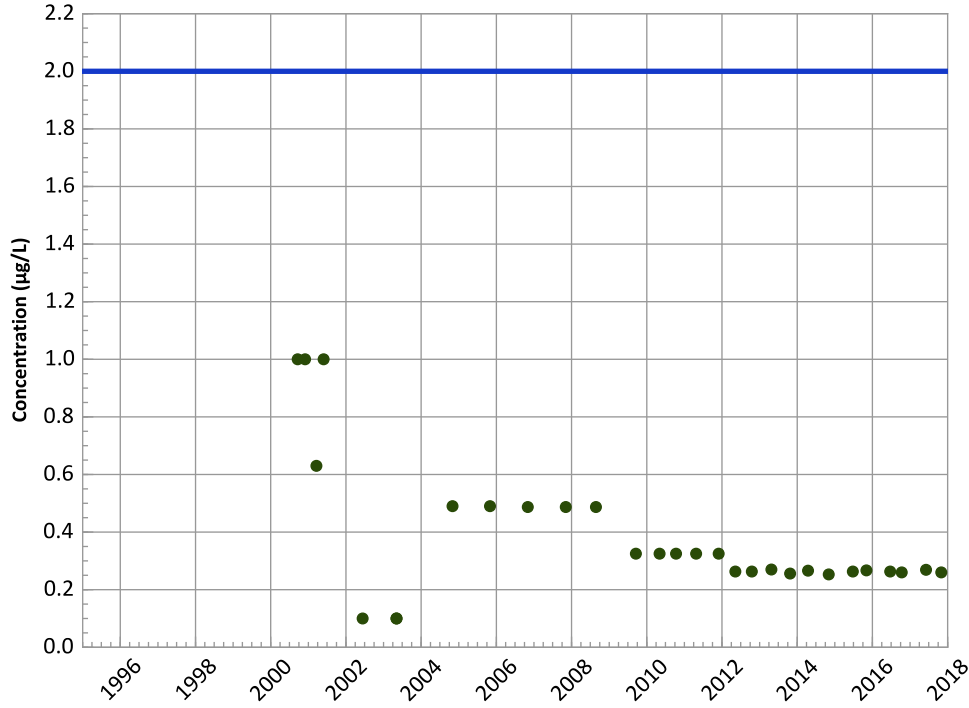
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 05/08/2000 to 10/31/2017
 Analysis Date: 03/21/2018

Well Location



PTX07-1R01 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

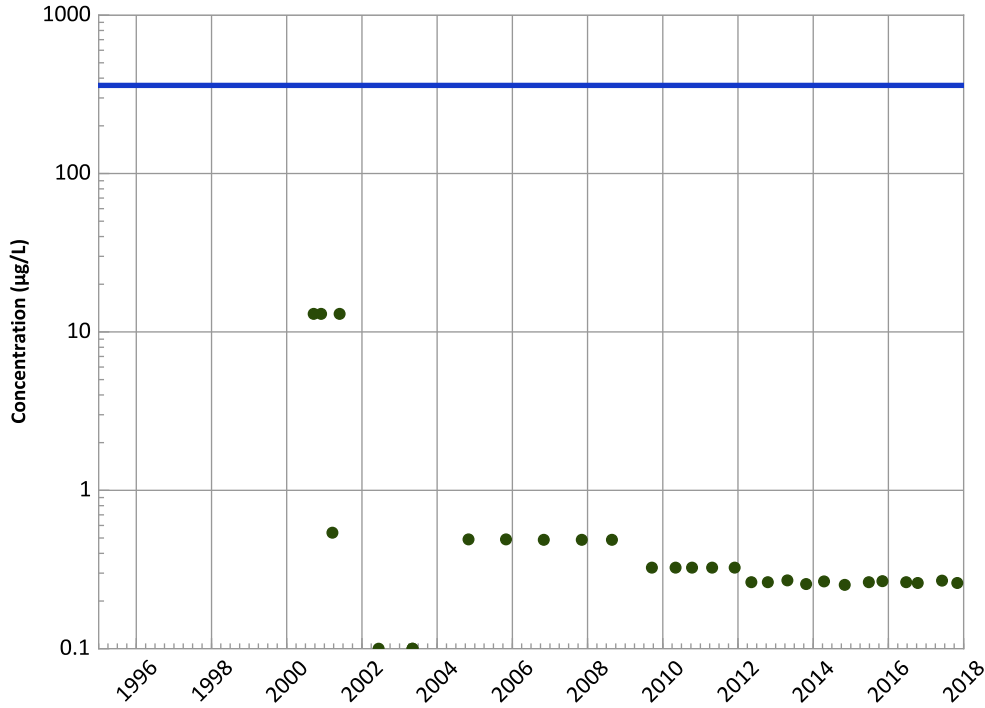
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

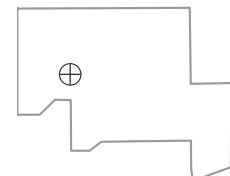
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

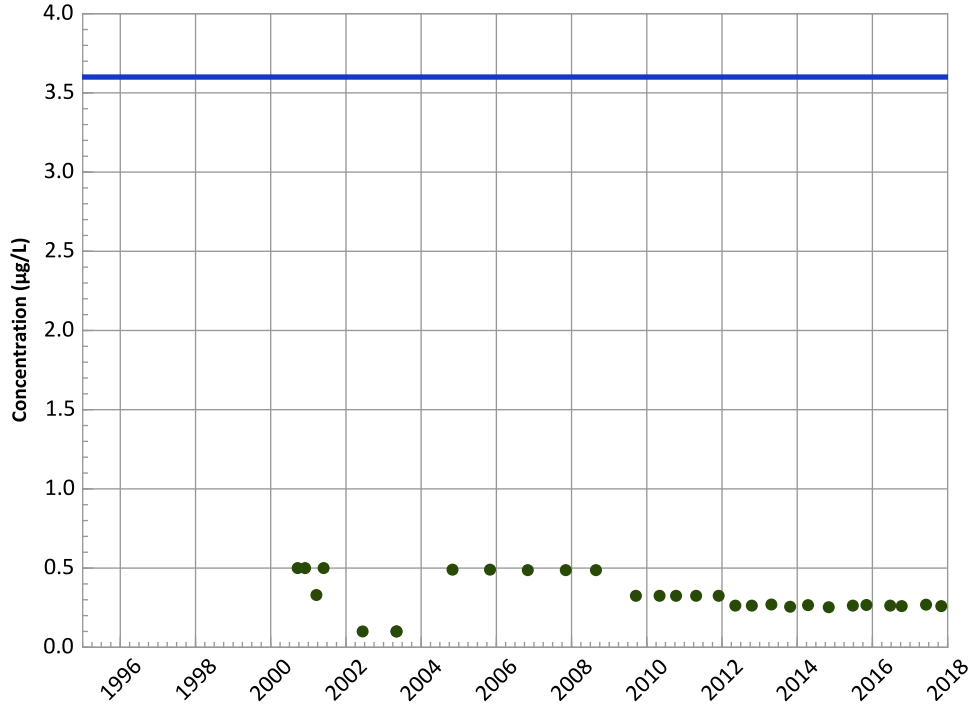


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 05/08/2000 to 10/31/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX07-1R01 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

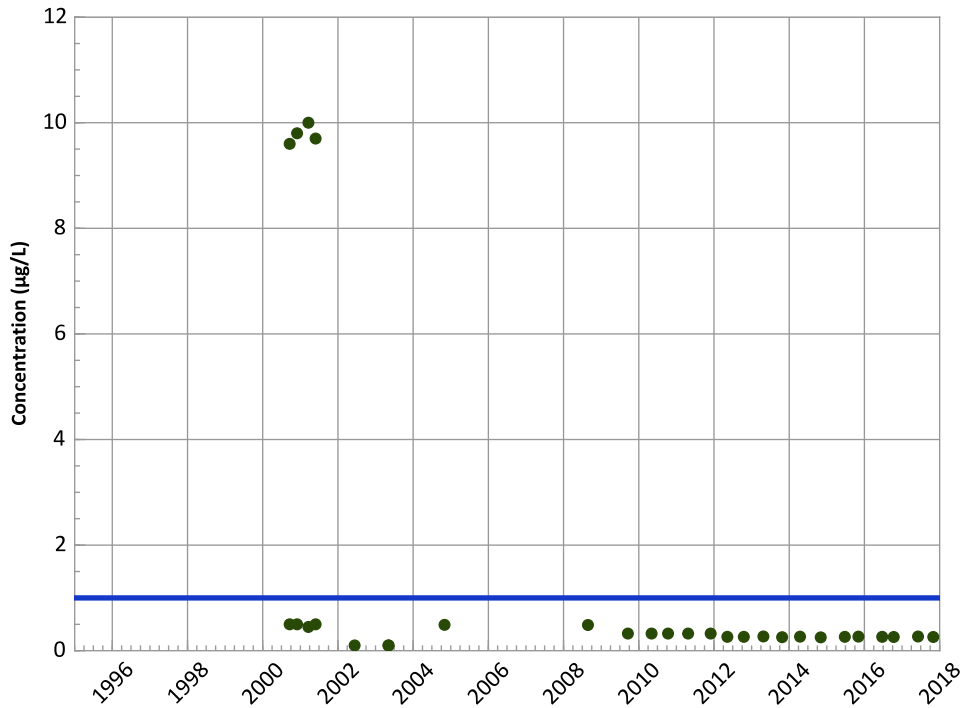
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

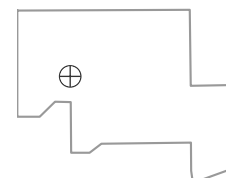
MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 05/08/2000 to 10/31/2017
Analysis Date: 03/21/2018

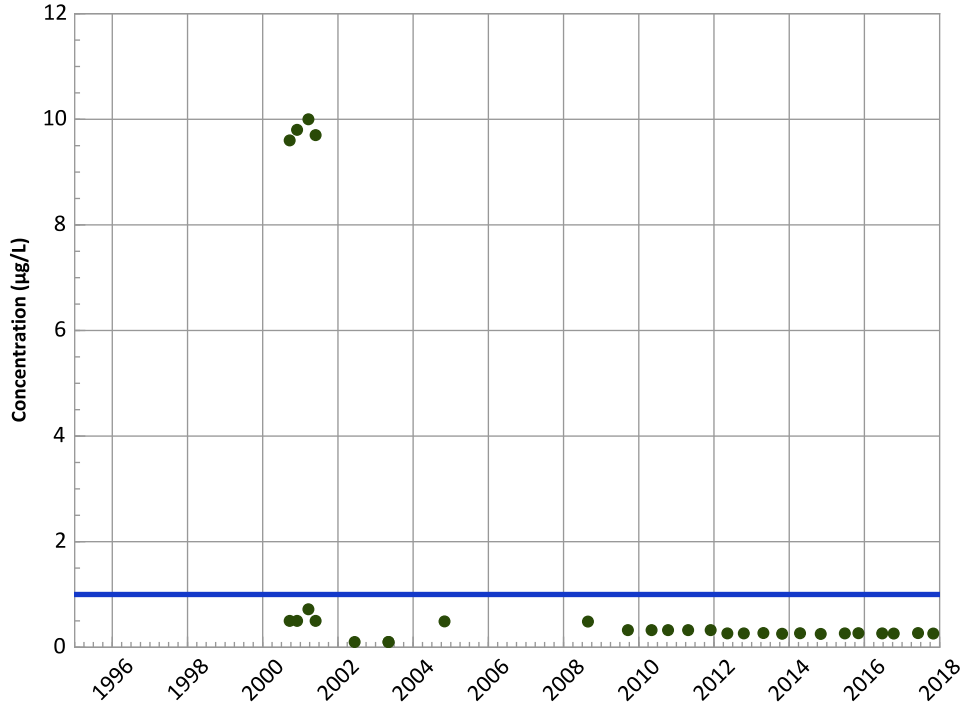
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX07-1R01 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

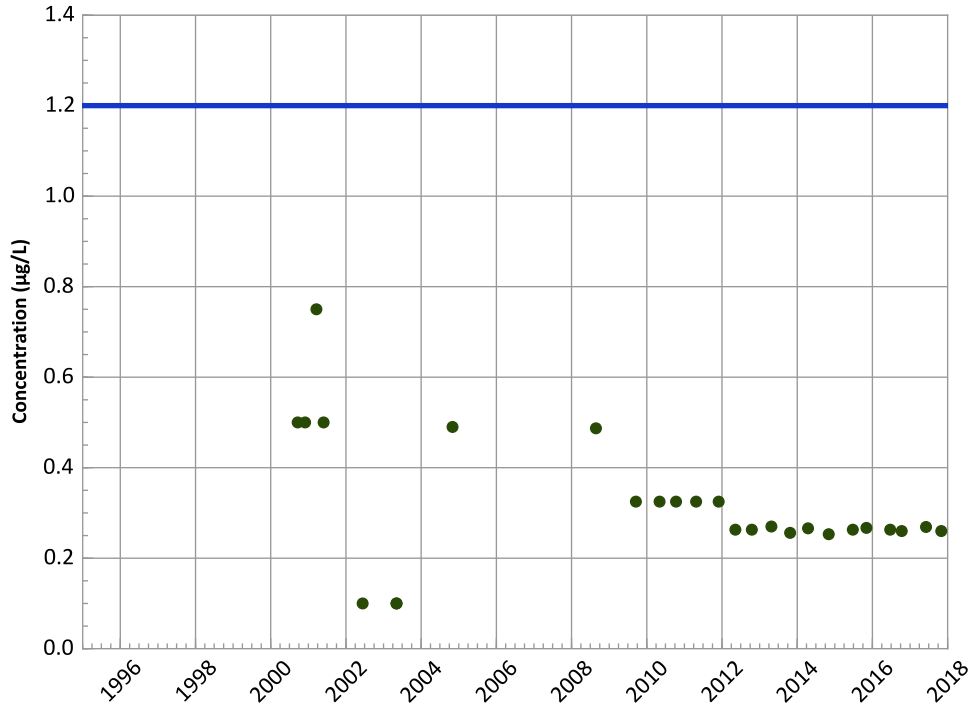
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

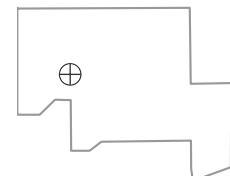
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

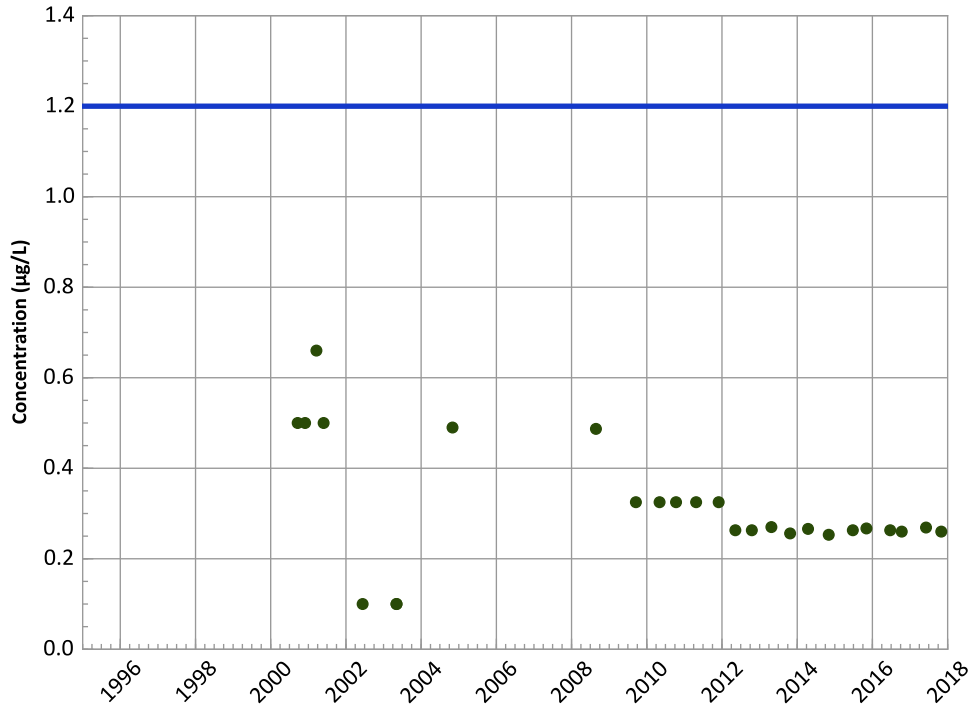


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 05/08/2000 to 10/31/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX07-1R01 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

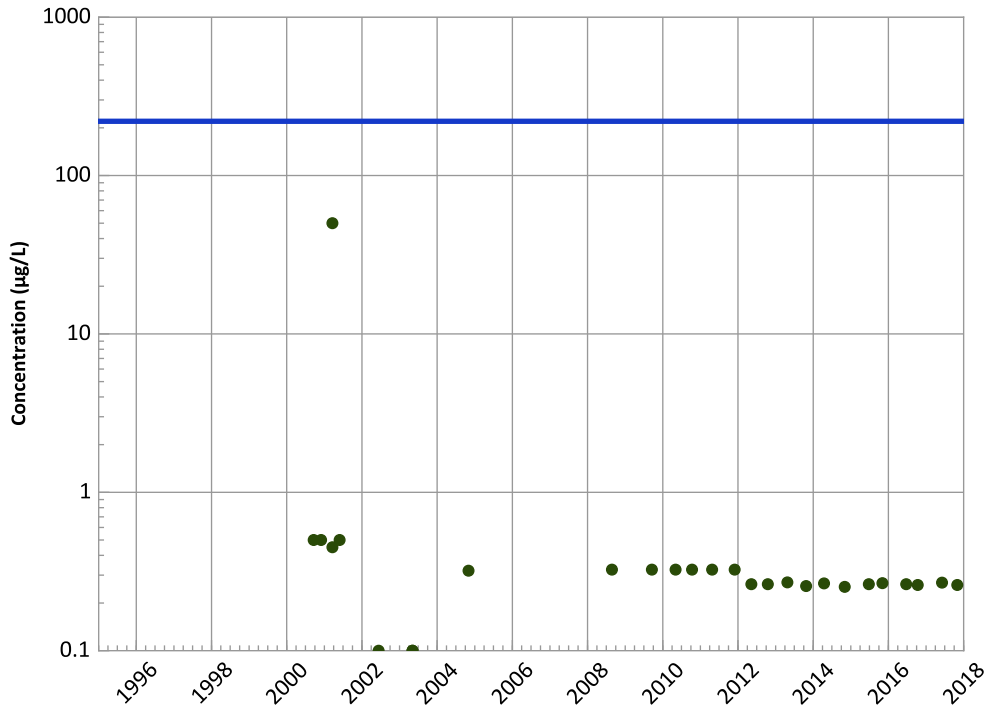
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,3,5-Trinitrobenzene Trend



Concentration Trend

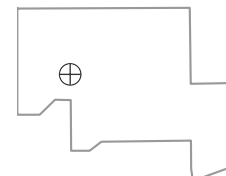
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

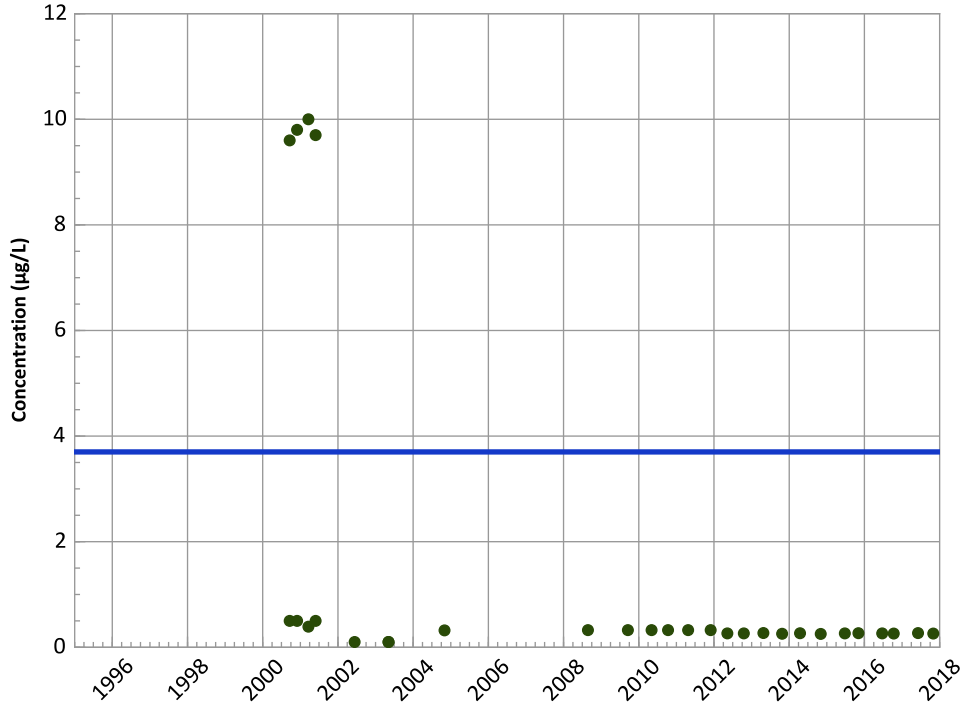


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 05/08/2000 to 10/31/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX07-1R01 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

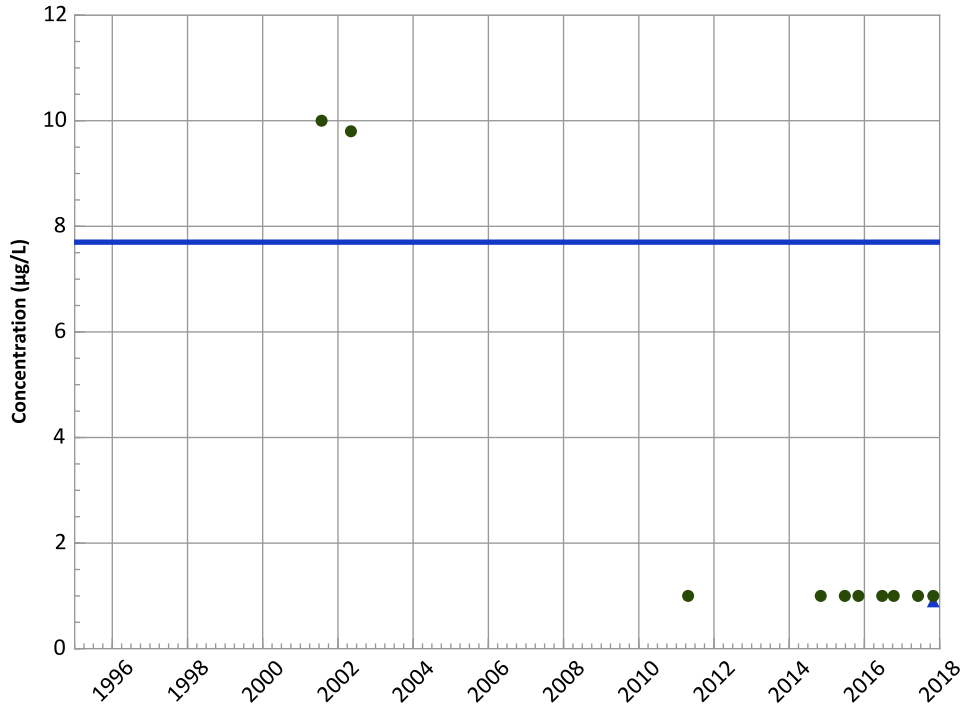
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,4-Dioxane (p-Dioxane) Trend



Concentration Trend

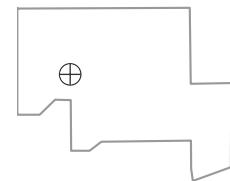
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

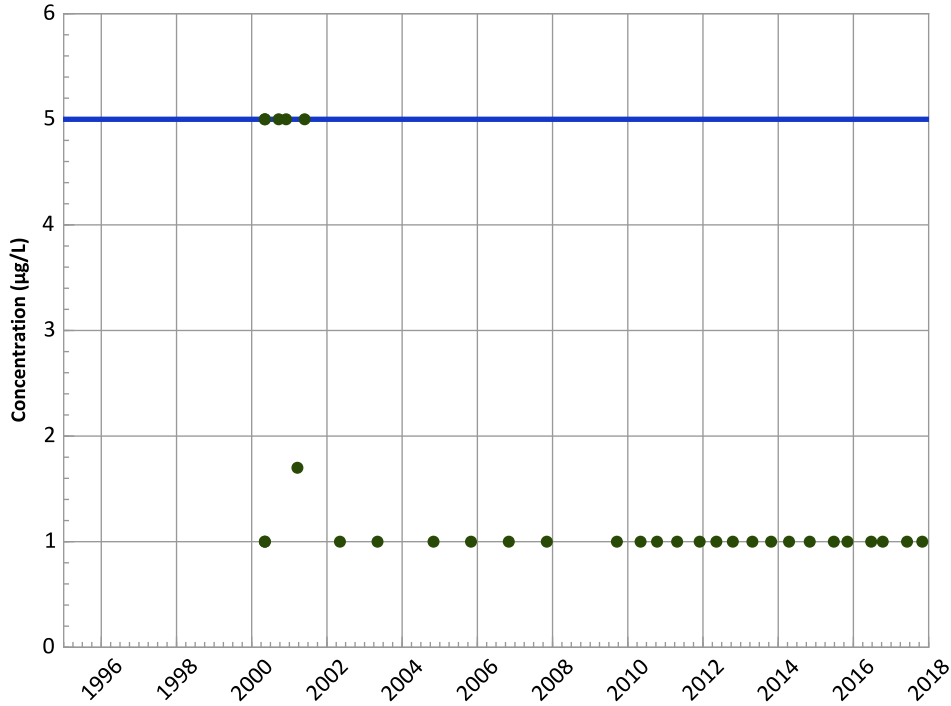
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 05/08/2000 to 10/31/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- Concentration Trend
- Groundwater Protection Standard

**PTX07-1R01 in Ogallala Aquifer
USDOE/NNSA Pantex Plant
Tetrachloroethylene (PCE) Trend**



Concentration Trend

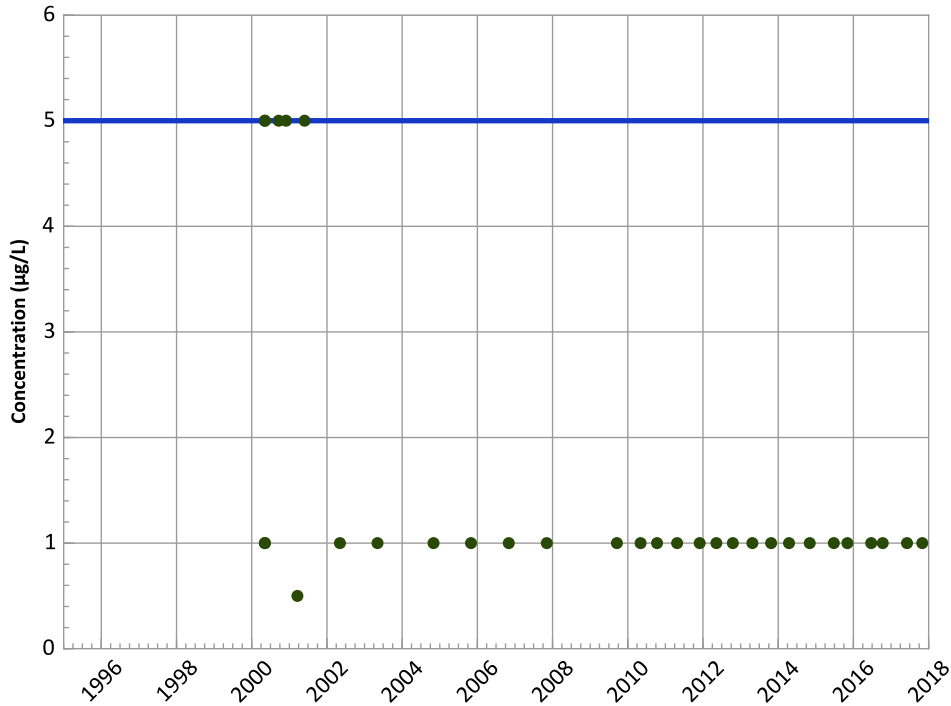
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Trichloroethene Trend



Concentration Trend

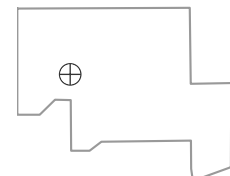
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

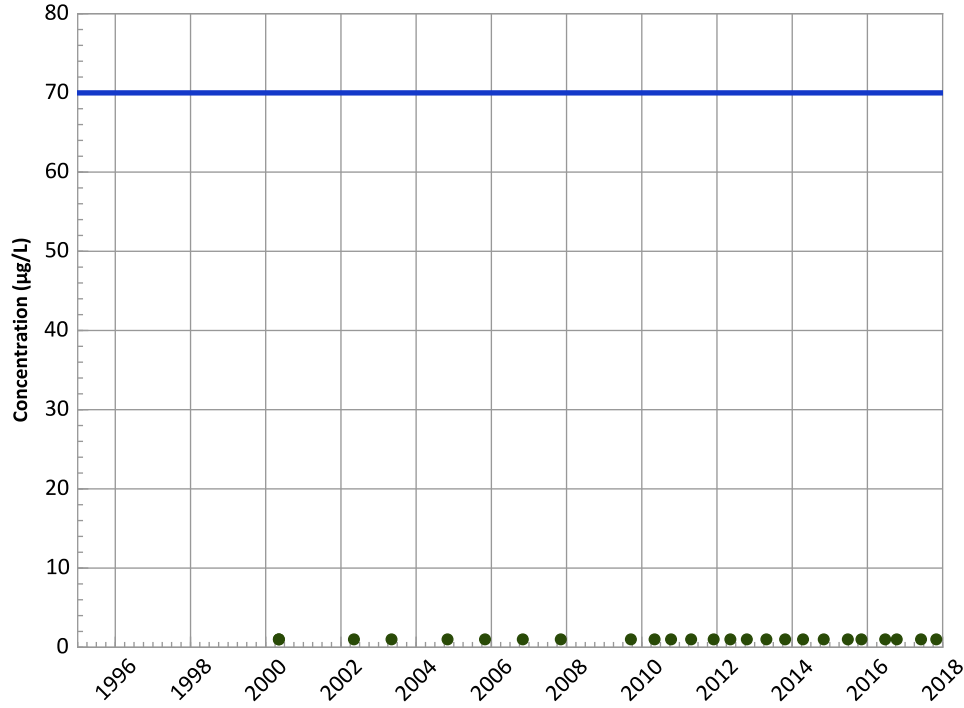
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 05/08/2000 to 10/31/2017
Analysis Date: 03/21/2018

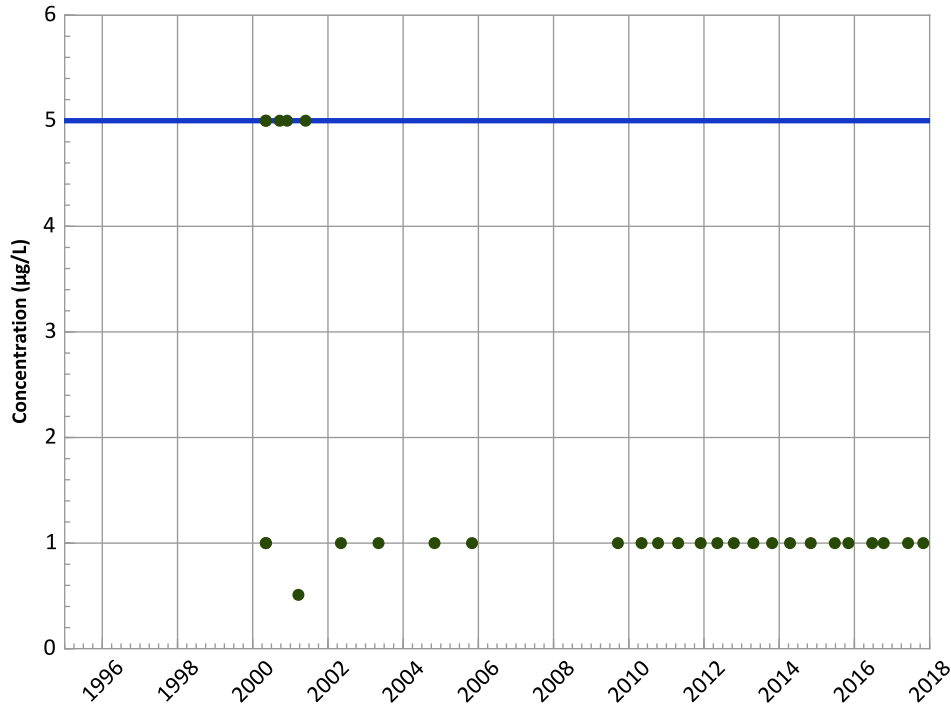
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX07-1R01 in Ogallala Aquifer
USDOE/NNSA Pantex Plant**
cis-1,2-Dichloroethene Trend



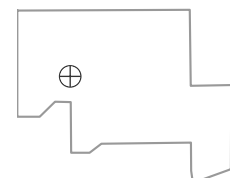
Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect
MAROS Linear Regression Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect

1,2-Dichloroethane Trend



Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect
MAROS Linear Regression Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect

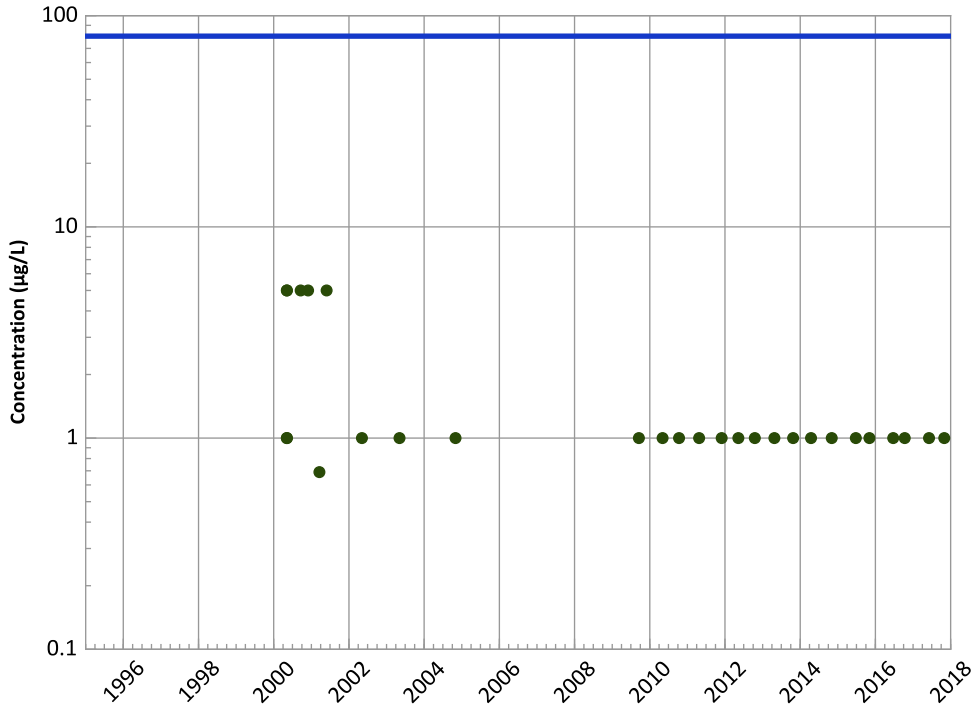
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 05/08/2000 to 10/31/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX07-1R01 in Ogallala Aquifer
USDOE/NNSA Pantex Plant
Chloroform Trend**



Concentration Trend

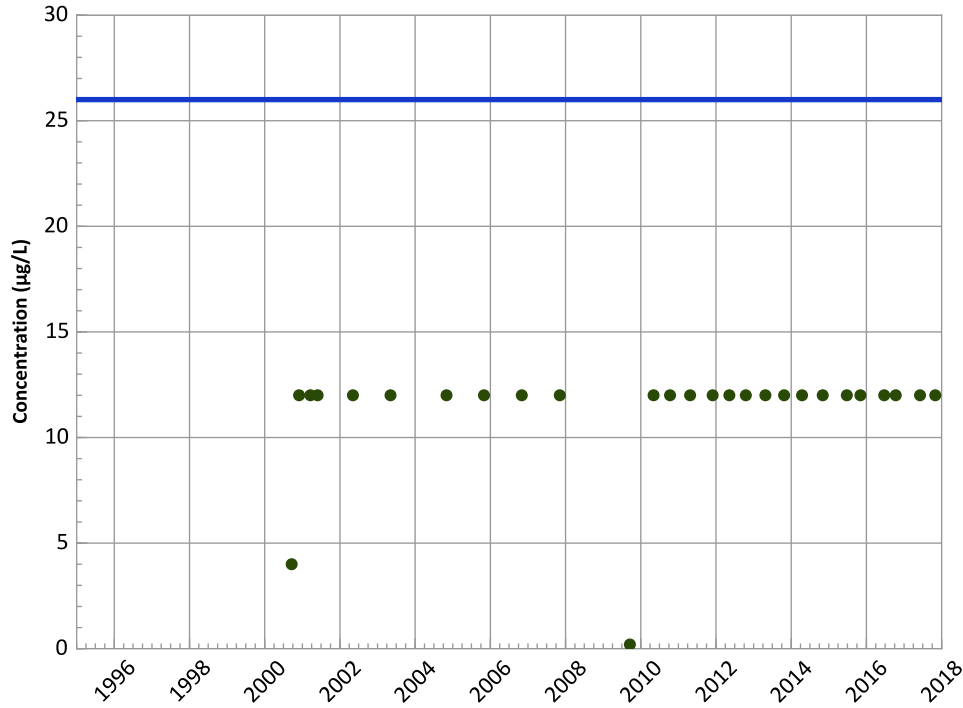
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Perchlorate Trend



Concentration Trend

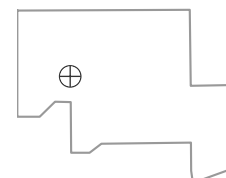
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
N/A (<4 Detections in Dataset)

Well Location

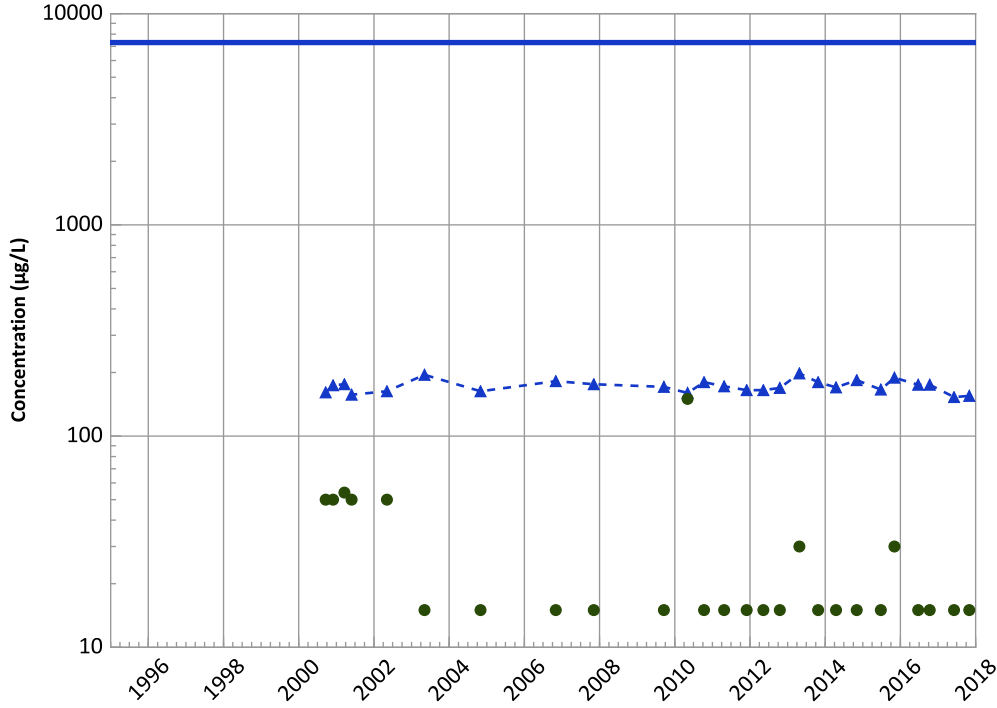


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 05/08/2000 to 10/31/2017
Analysis Date: 03/21/2018

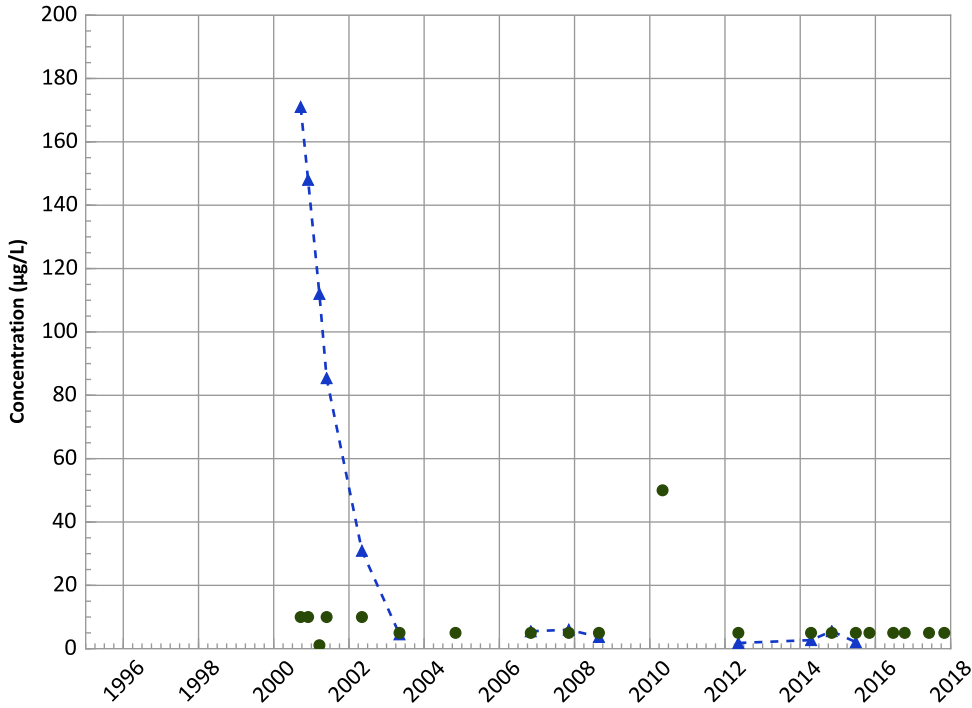
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX07-1R01 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

Boron Trend



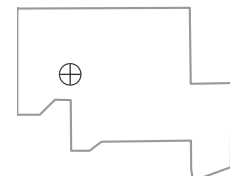
Manganese Trend



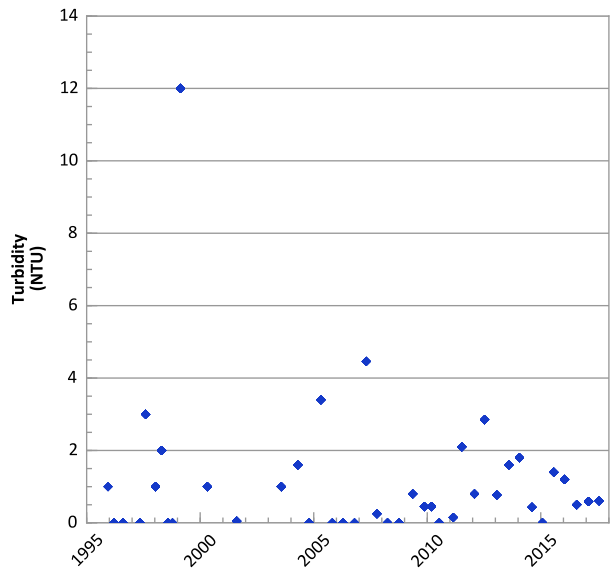
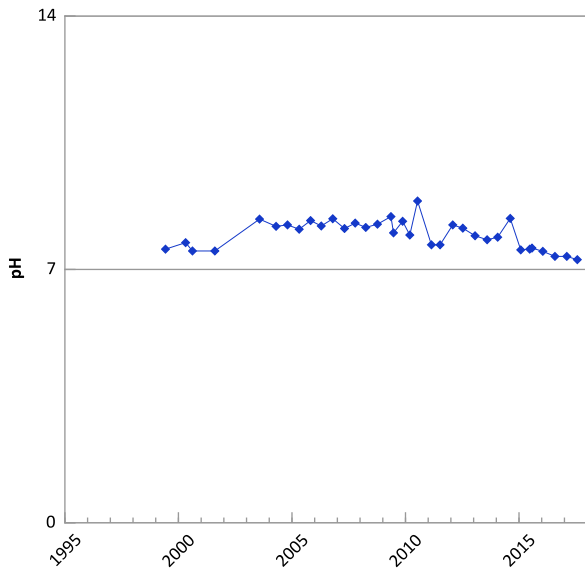
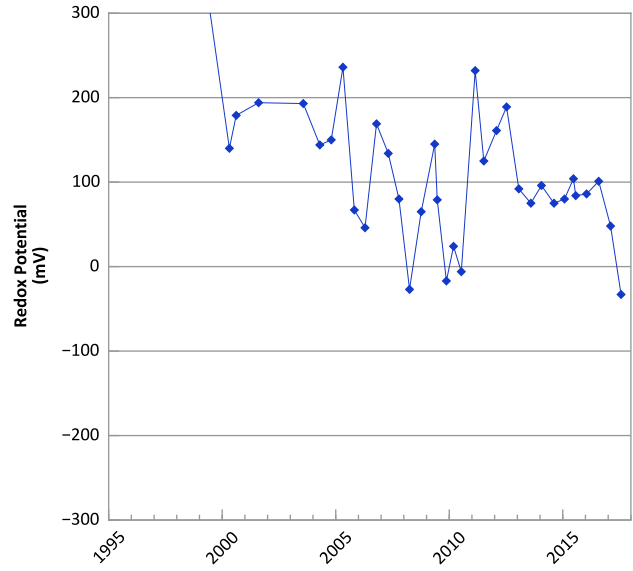
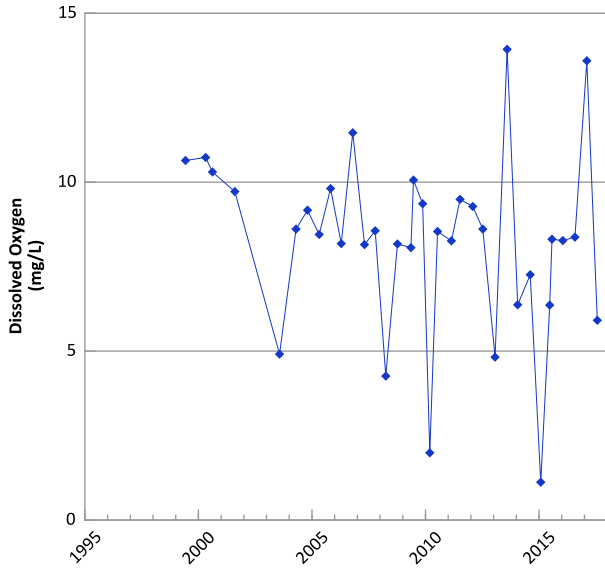
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 05/08/2000 to 10/31/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location

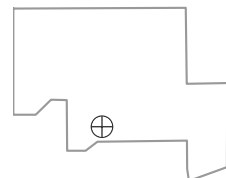


**PTX-BEG2 in Ogallala Aquifer
USDOE/NNSA Pantex Plant
Field Parameters**



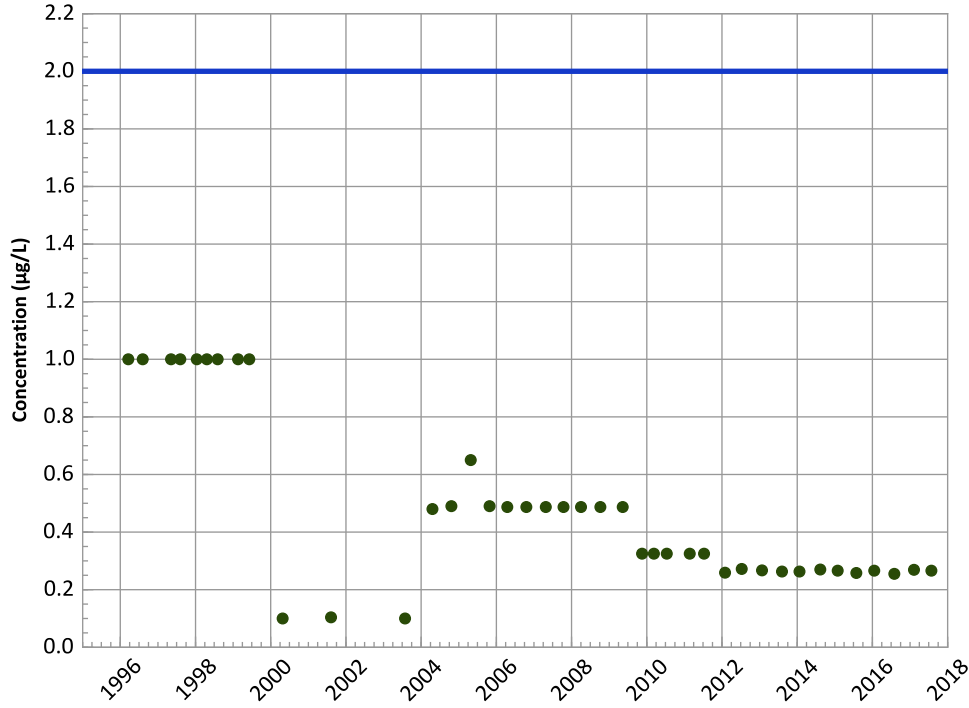
Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 12/11/1995 to 07/27/2017
 Analysis Date: 03/21/2018

Well Location



PTX-BEG2 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine) Trend



Concentration Trend

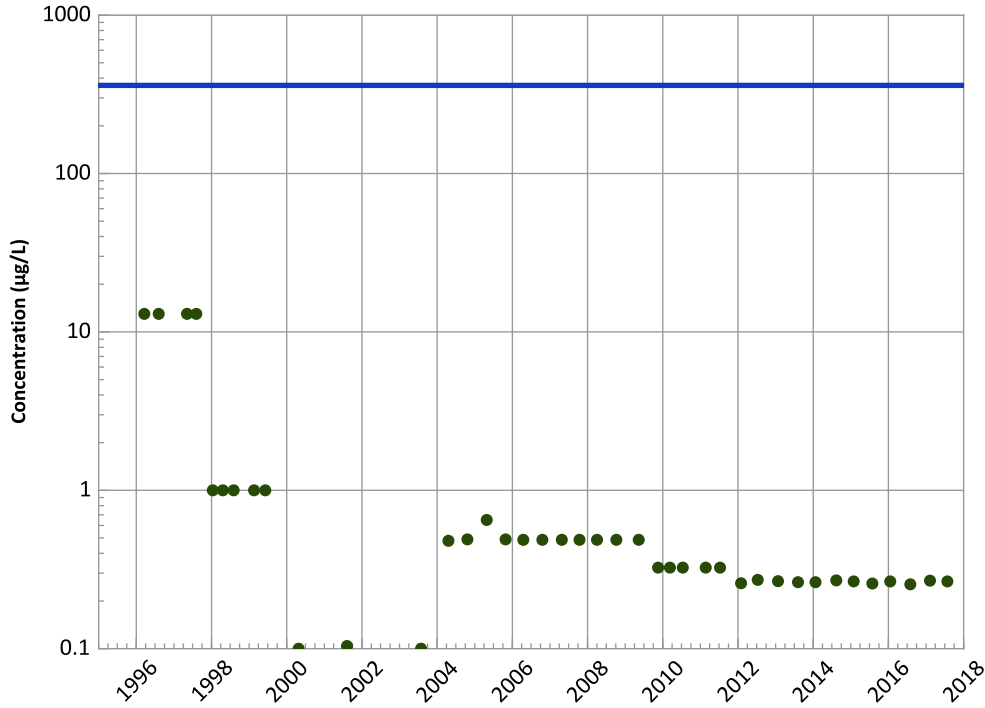
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine) Trend



Concentration Trend

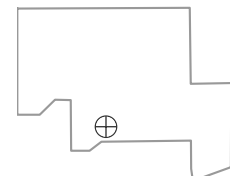
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

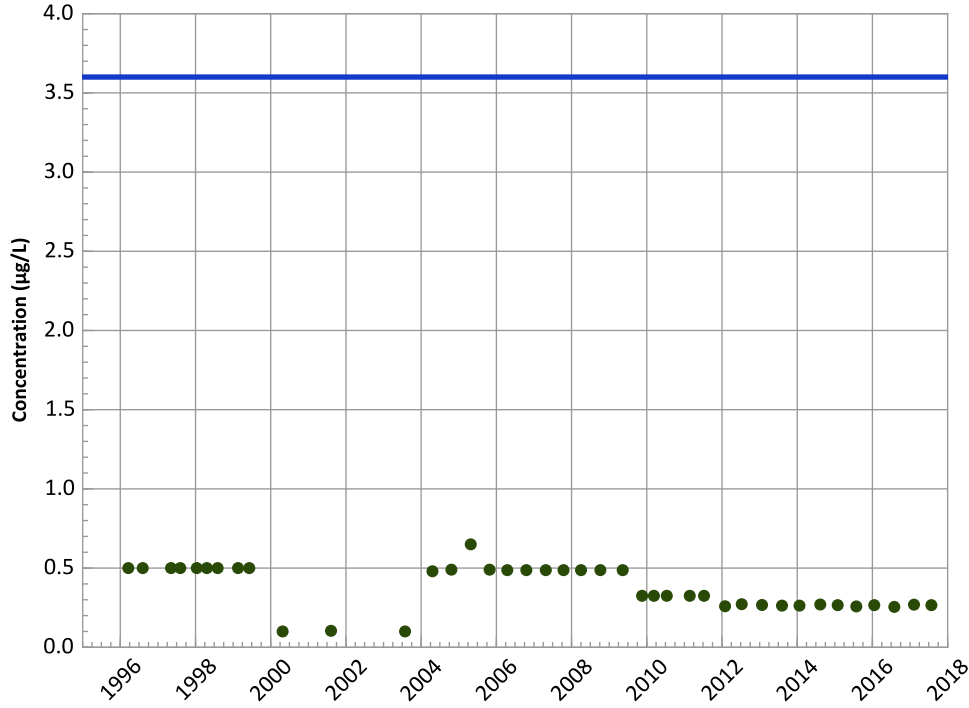


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/11/1995 to 07/27/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX-BEG2 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

TNT (2,4,6-Trinitrotoluene) Trend



Concentration Trend

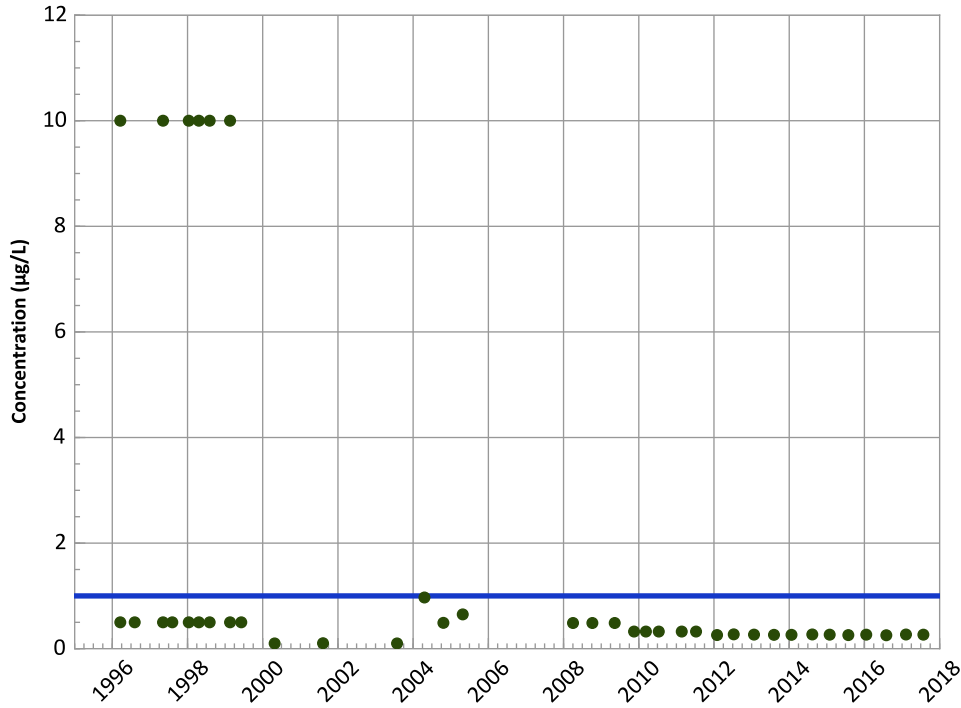
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2,4-Dinitrotoluene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

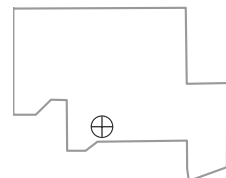
MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/11/1995 to 07/27/2017
Analysis Date: 03/21/2018

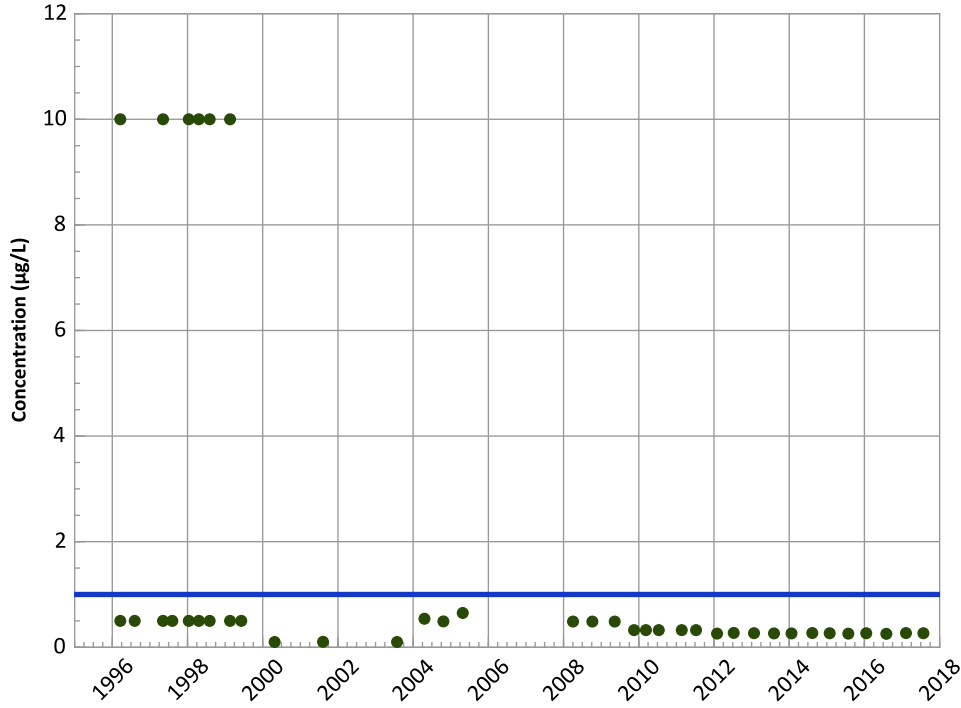
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX-BEG2 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

2,6-Dinitrotoluene Trend



Concentration Trend

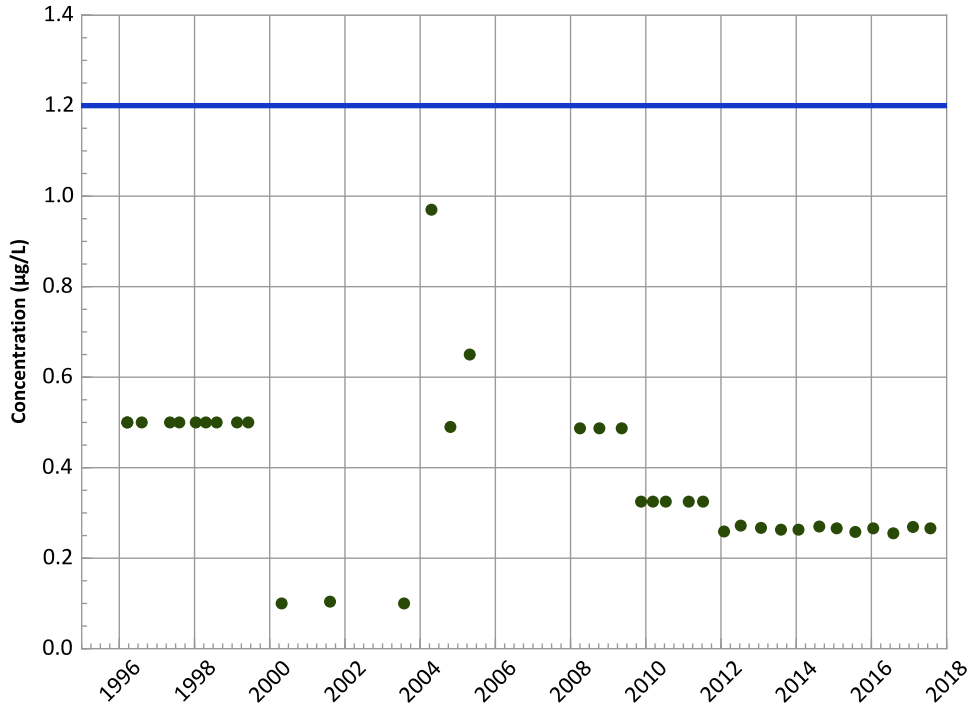
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

2-Amino-4,6-Dinitrotoluene Trend



Concentration Trend

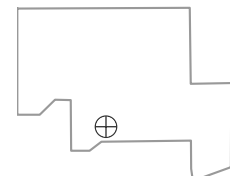
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

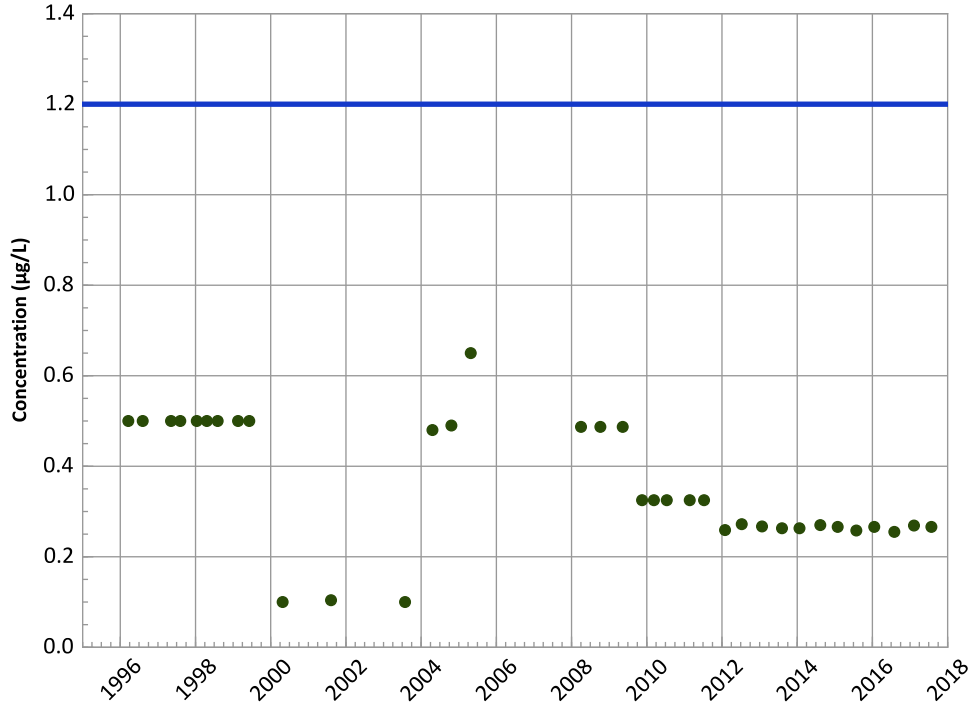


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/11/1995 to 07/27/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX-BEG2 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

4-Amino-2,6-Dinitrotoluene Trend



Concentration Trend

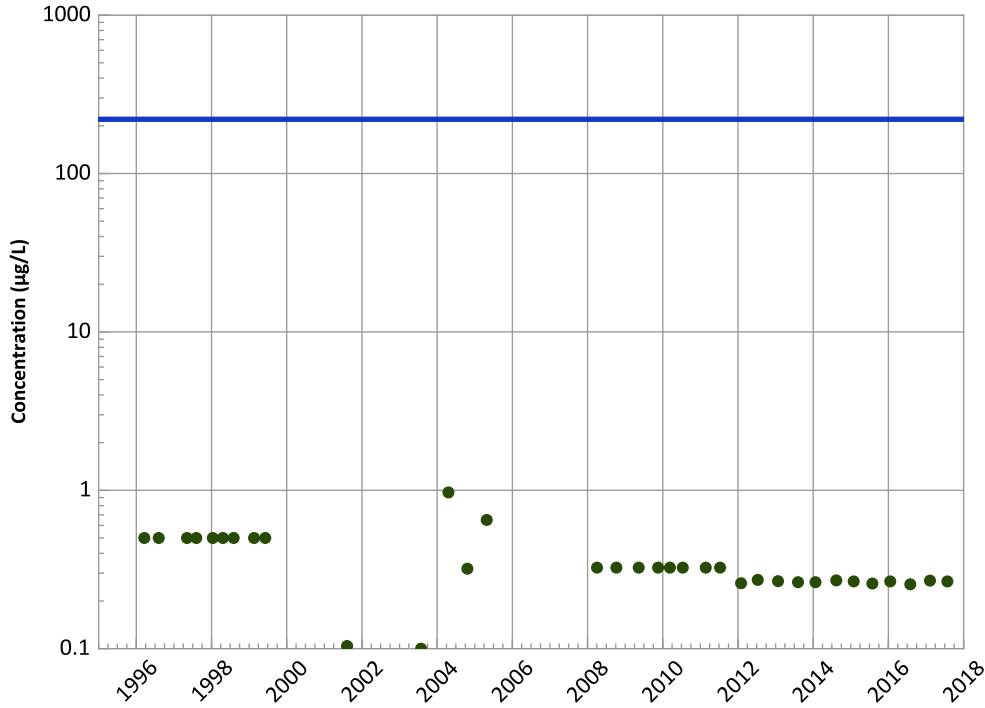
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,3,5-Trinitrobenzene Trend



Concentration Trend

MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

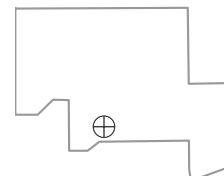
MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/11/1995 to 07/27/2017
Analysis Date: 03/21/2018

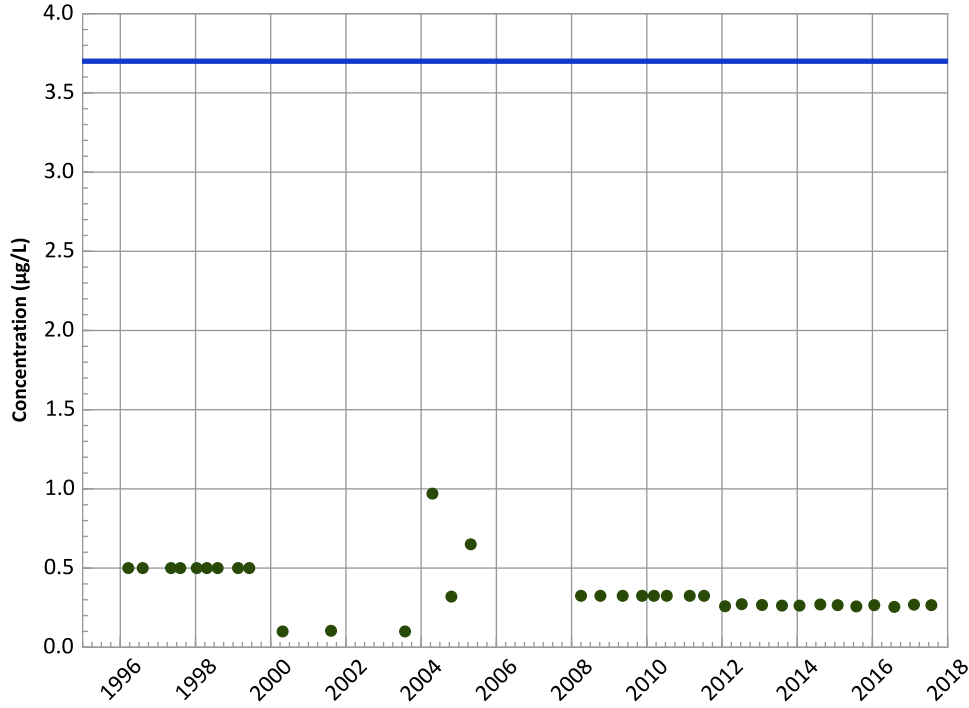
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Well Location



PTX-BEG2 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

1,3-Dinitrobenzene Trend



Concentration Trend

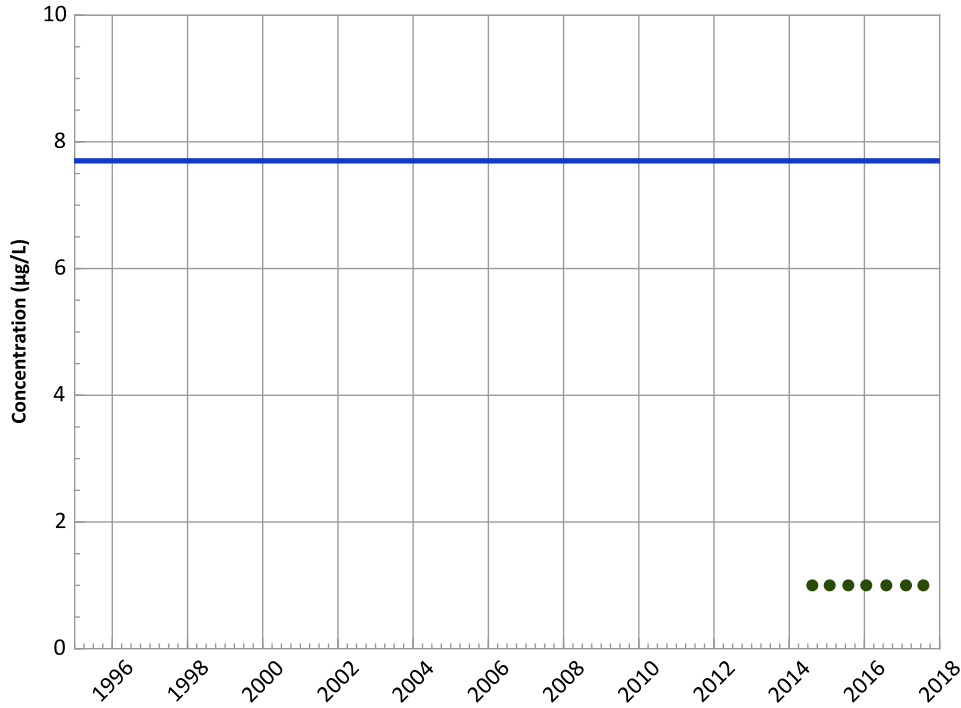
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,4-Dioxane (p-Dioxane) Trend



Concentration Trend

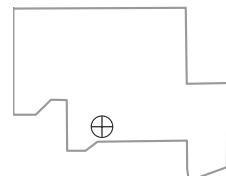
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

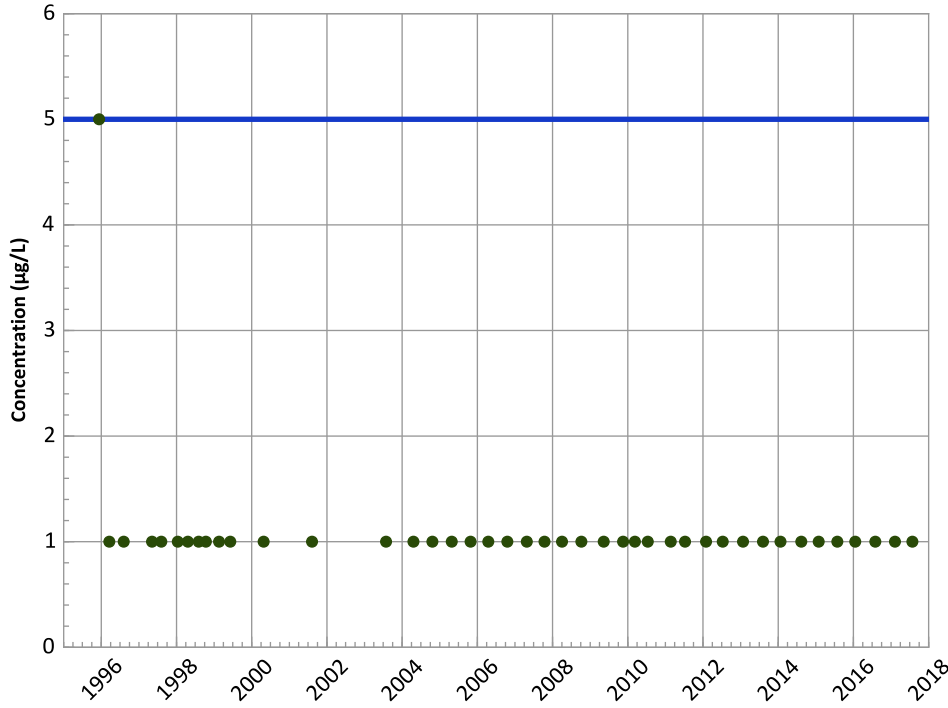
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/11/1995 to 07/27/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX-BEG2 in Ogallala Aquifer
USDOE/NNSA Pantex Plant
Tetrachloroethylene (PCE) Trend**



Concentration Trend

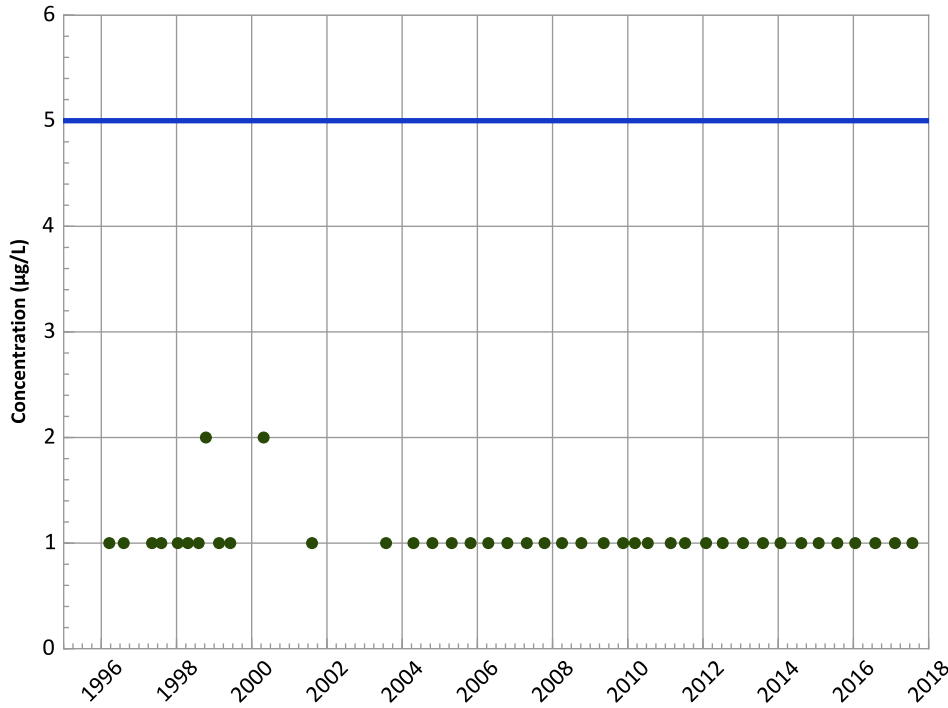
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Trichloroethene Trend



Concentration Trend

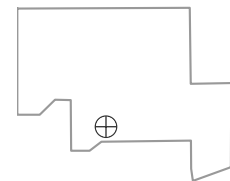
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

Well Location

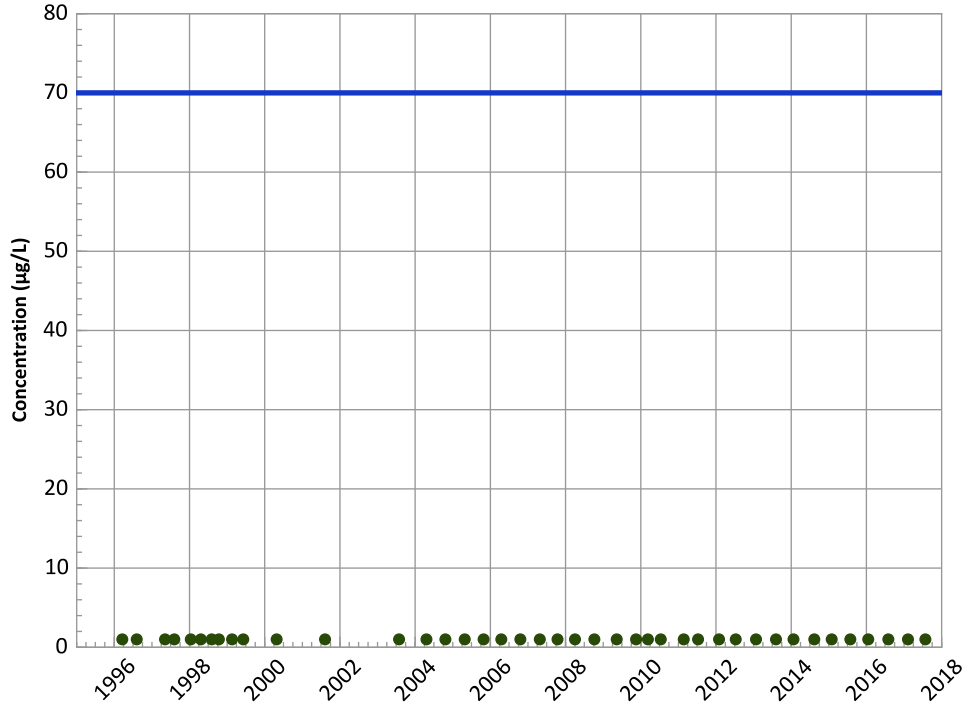


Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/11/1995 to 07/27/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX-BEG2 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

cis-1,2-Dichloroethene Trend



Concentration Trend

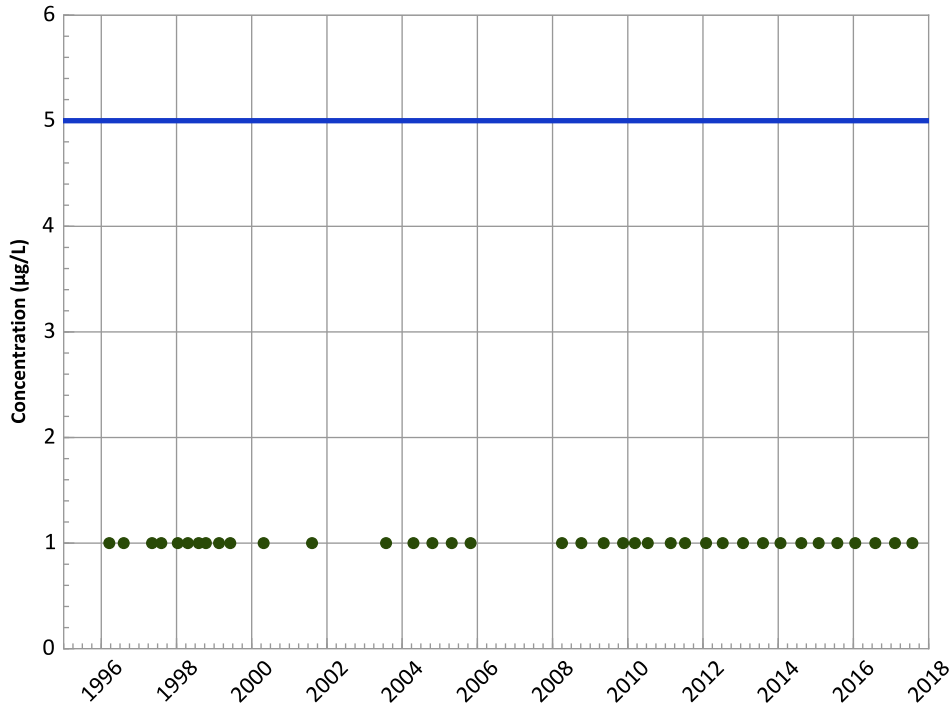
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

1,2-Dichloroethane Trend



Concentration Trend

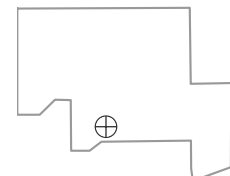
MAROS Mann-Kendall Method

Data ():
All Non-Detect
All Data
All Non-Detect

MAROS Linear Regression Method

Data ():
All Non-Detect
All Data
All Non-Detect

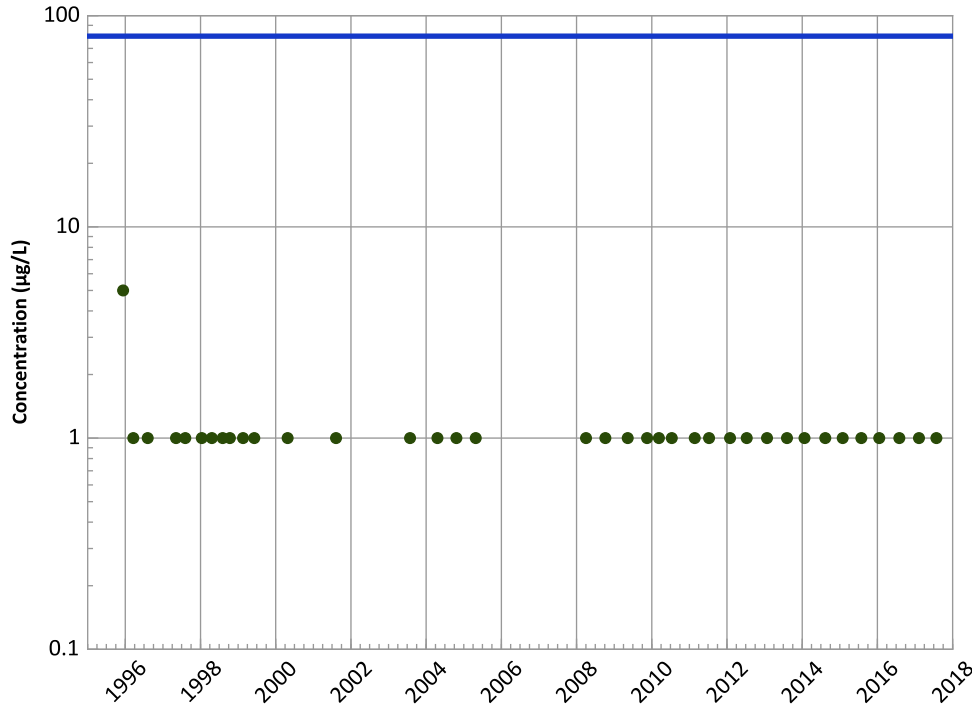
Well Location



Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/11/1995 to 07/27/2017
Analysis Date: 03/21/2018

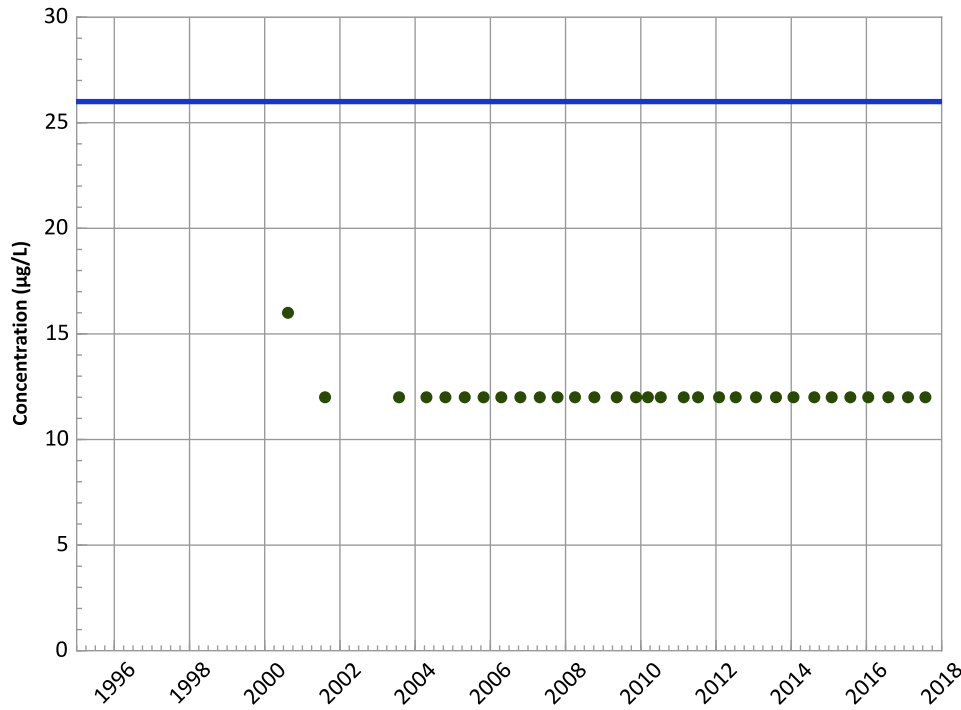
- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

**PTX-BEG2 in Ogallala Aquifer
USDOE/NNSA Pantex Plant
Chloroform Trend**



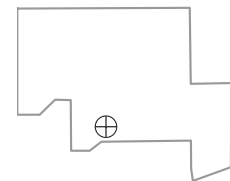
Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect
MAROS Linear Regression Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect

Perchlorate Trend



Concentration Trend
MAROS Mann-Kendall Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect
MAROS Linear Regression Method
 Data ():
 All Non-Detect
 All Data
 All Non-Detect

Well Location

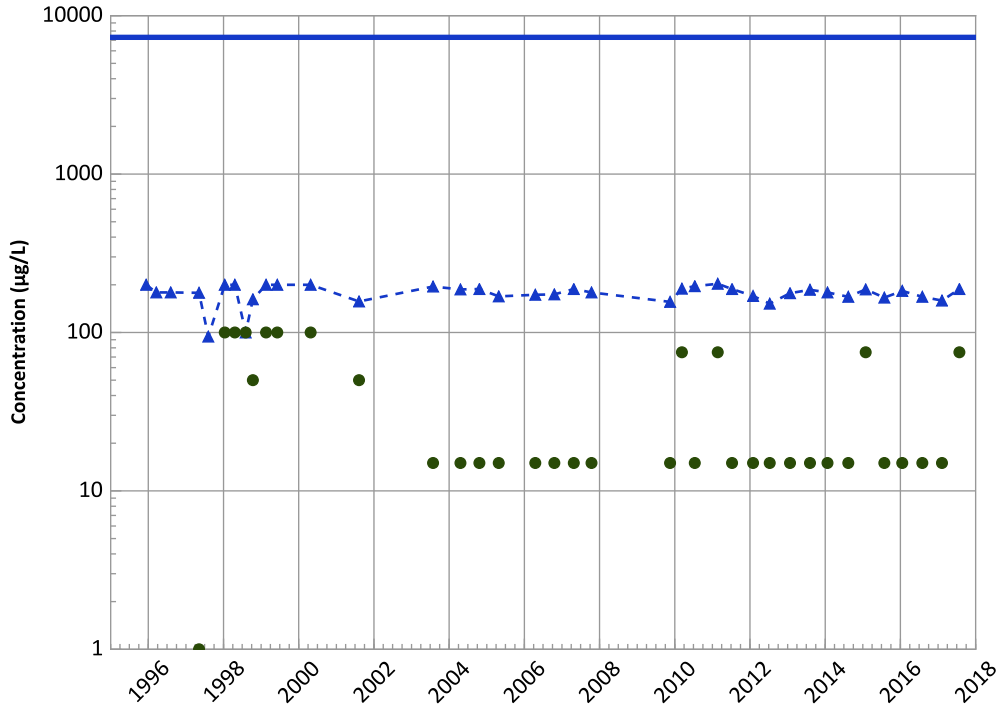


Query Date Range: 01/01/1992 to 12/31/2017
 Data Date Range: 12/11/1995 to 07/27/2017
 Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

PTX-BEG2 in Ogallala Aquifer
USDOE/NNSA Pantex Plant

Boron Trend



Concentration Trend

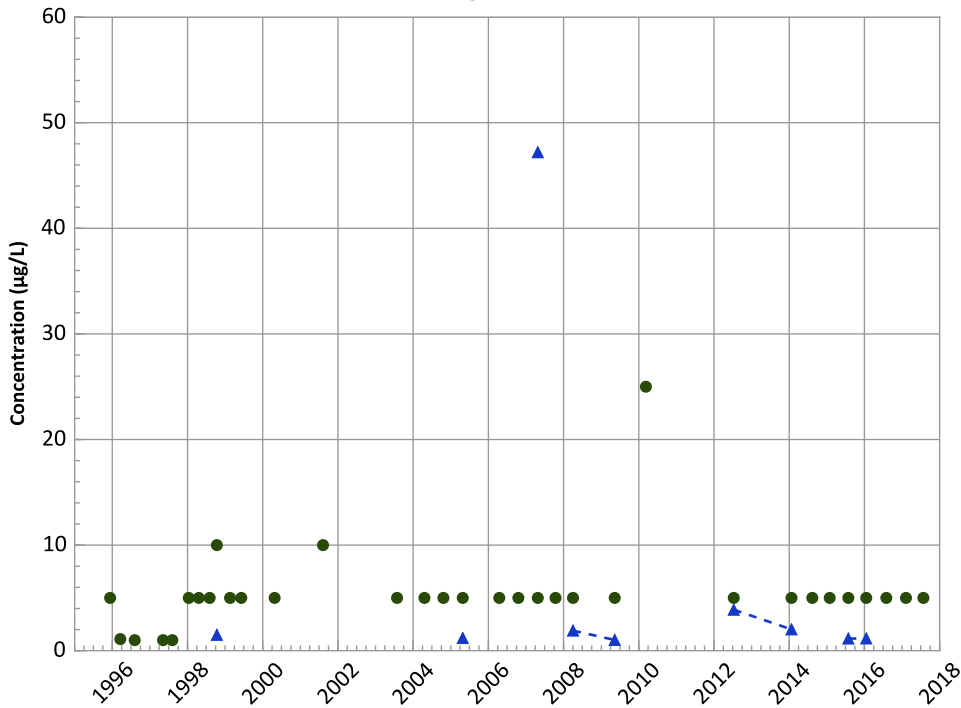
MAROS Mann-Kendall Method

Data ():
Increasing
All Data
Decreasing

MAROS Linear Regression Method

Data ():
No Trend
All Data
Increasing

Manganese Trend



Concentration Trend

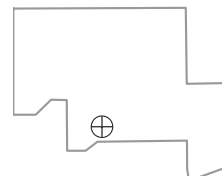
MAROS Mann-Kendall Method

Data ():
Decreasing
All Data
Increasing

MAROS Linear Regression Method

Data ():
Decreasing
All Data
No Trend

Well Location



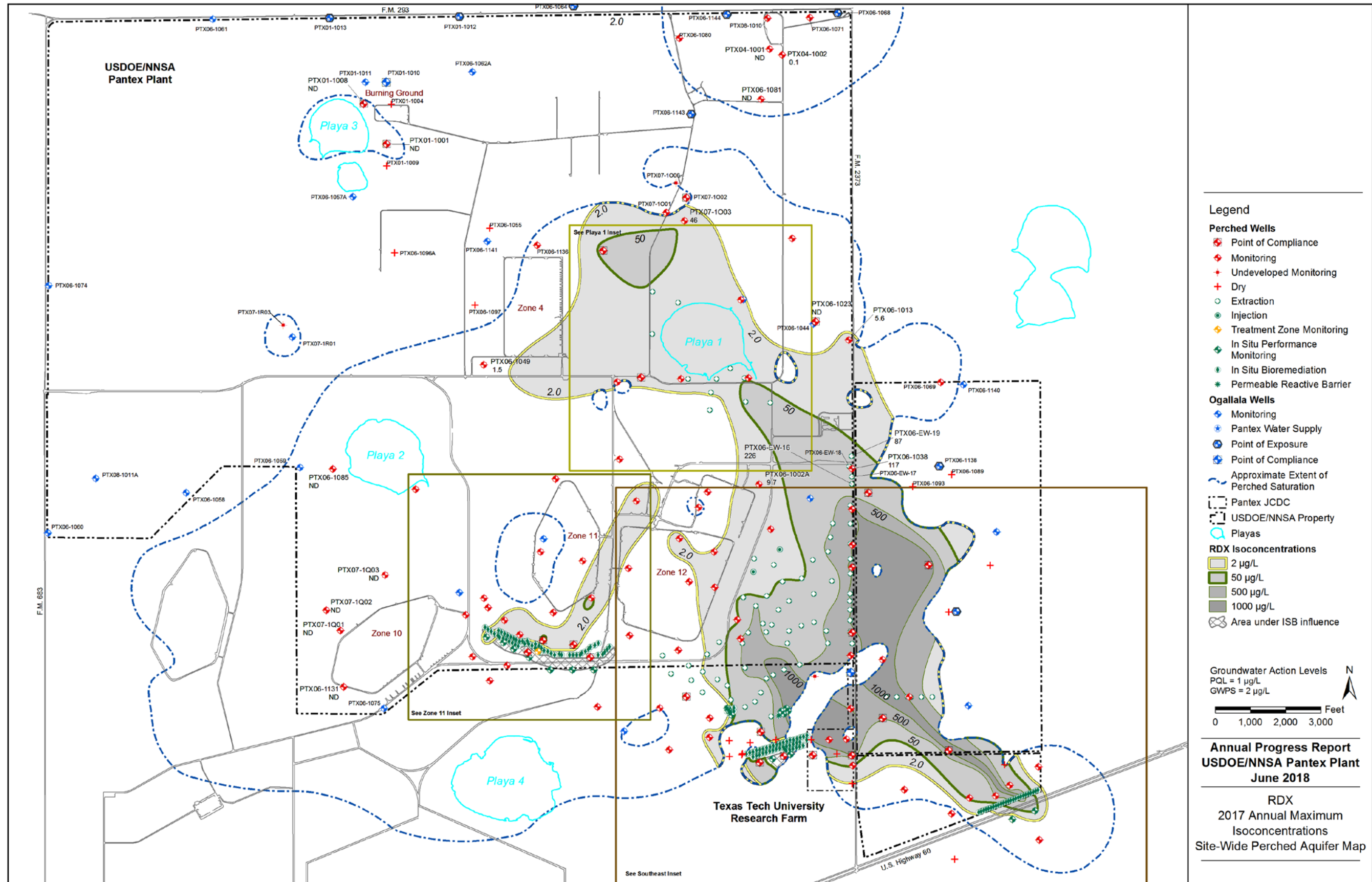
Query Date Range: 01/01/1992 to 12/31/2017
Data Date Range: 12/11/1995 to 07/27/2017
Analysis Date: 03/21/2018

- ▲ Measured Value
- Sample Detection Limit
- - - Concentration Trend
- Groundwater Protection Standard

Appendix F
Perched Aquifer Isoconcentration
Maps of Indicator Constituents



Perched Aquifer Isoconcentration Maps of Indicator Constituents



Legend

Perched Wells

- Point of Compliance
- Monitoring
- Undeveloped Monitoring
- Dry
- Extraction
- Injection
- Treatment Zone Monitoring
- In Situ Performance Monitoring
- In Situ Bioremediation
- Permeable Reactive Barrier

Ogallala Wells

- Monitoring
- Pantex Water Supply
- Point of Exposure
- Point of Compliance
- Approximate Extent of Perched Saturation
- Pantex JCDC
- USDOE/NNSA Property
- Playas

RDX Isoconcentrations

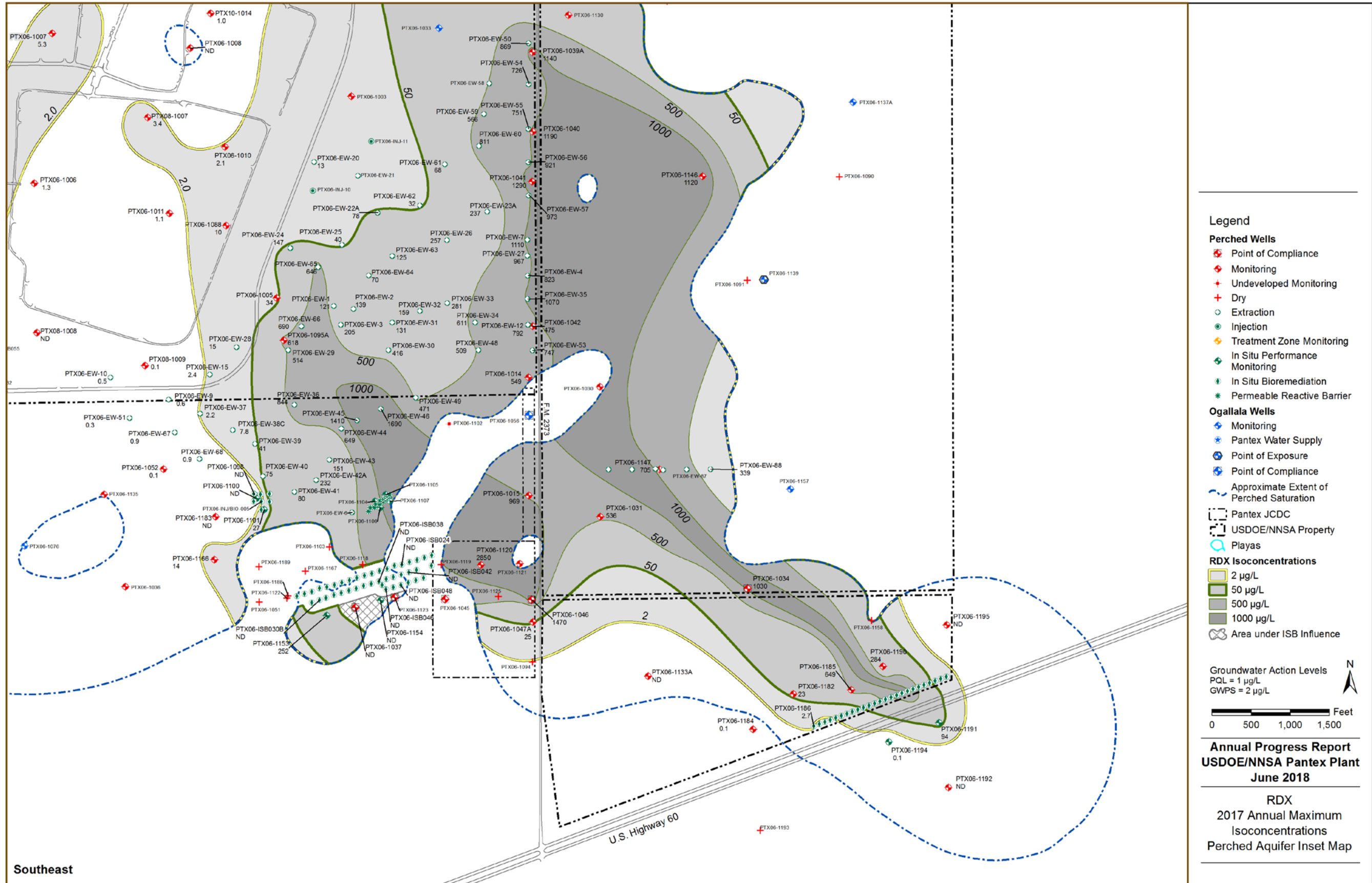
- 2 µg/L
- 50 µg/L
- 500 µg/L
- 1000 µg/L
- Area under ISB influence

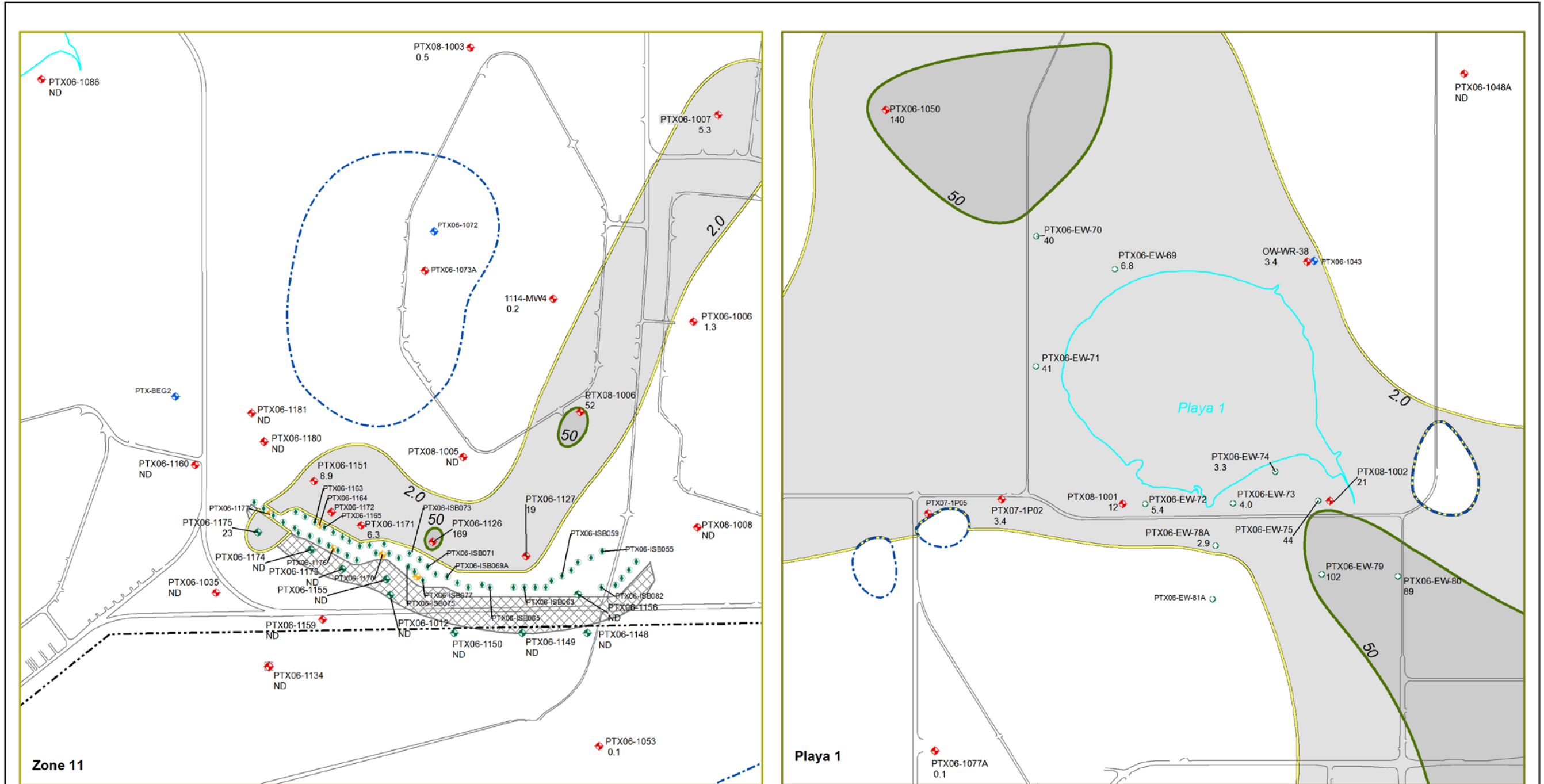
Groundwater Action Levels
PQL = 1 µg/L
GWPS = 2 µg/L

0 1,000 2,000 3,000 Feet

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RDX
2017 Annual Maximum
Isoconcentrations
Site-Wide Perched Aquifer Map





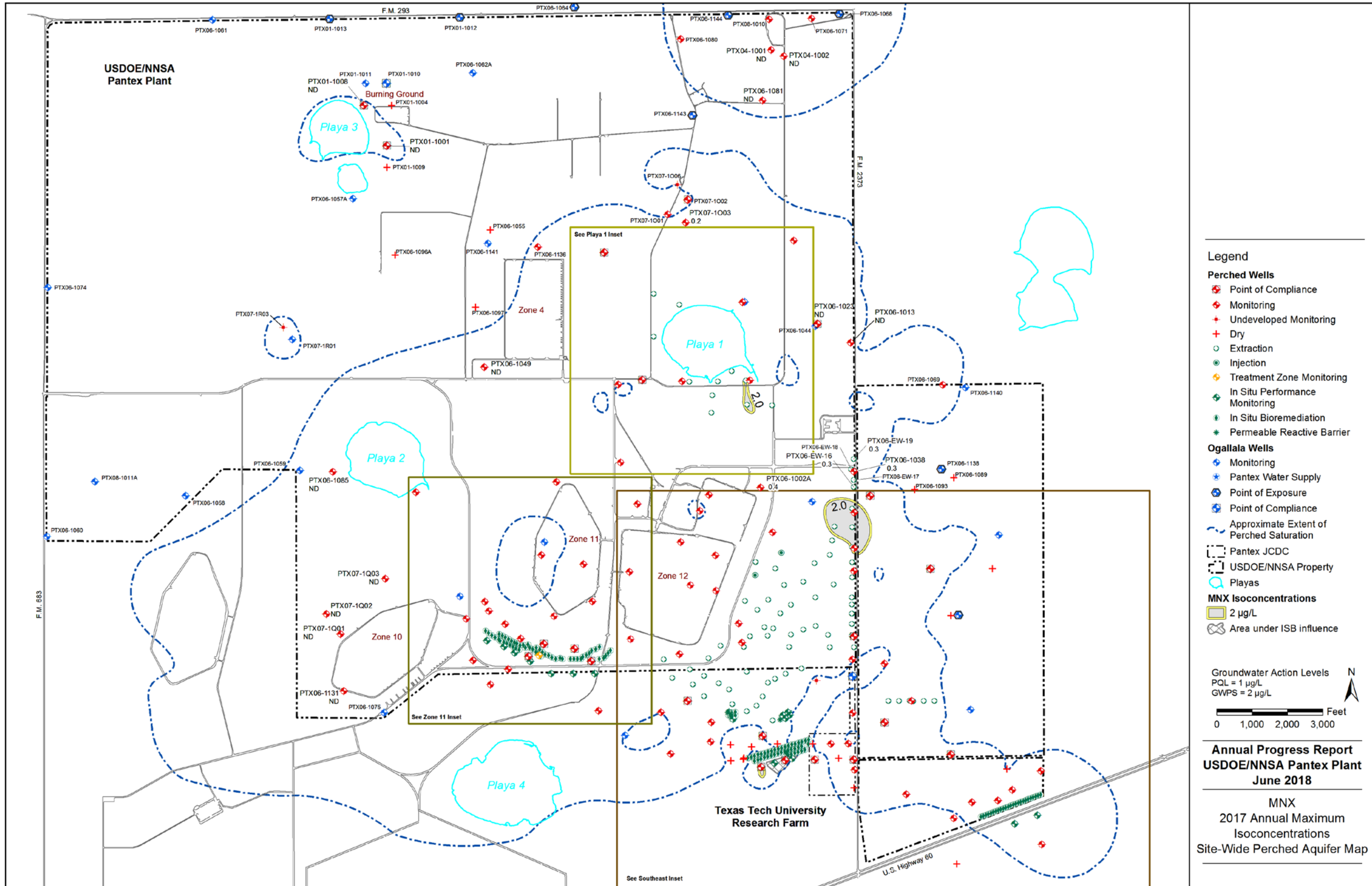
- Legend**
- | | | | |
|------------------------|--------------------------------|--|------------------------------|
| Perched Wells | Injection | Ogallala Wells | USDOE/NNSA Property |
| Point of Compliance | Treatment Zone Monitoring | Monitoring | Playas |
| Monitoring | In Situ Performance Monitoring | Pantex Water Supply | RDX Isoconcentrations |
| Undeveloped Monitoring | In Situ Bioremediation | Point of Exposure | 2 µg/L |
| Dry | Permeable Reactive Barrier | Point of Compliance | 50 µg/L |
| Extraction | | Approximate Extent of Perched Saturation | 500 µg/L |
| | | | 1000 µg/L |
| | | | Area under ISB Influence |

Groundwater Action Levels
PQL = 1 µg/L
GWPS = 2 µg/L

0 500 1,000 1,500 Feet

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**RDX
2017 Annual Maximum
Isoconcentrations
Perched Aquifer Inset Maps**



Legend

Perched Wells

- Point of Compliance
- Monitoring
- Undeveloped Monitoring
- Dry
- Extraction
- Injection
- Treatment Zone Monitoring
- In Situ Performance Monitoring
- In Situ Bioremediation
- Permeable Reactive Barrier

Ogallala Wells

- Monitoring
- Pantex Water Supply
- Point of Exposure
- Point of Compliance
- Approximate Extent of Perched Saturation

Other Features

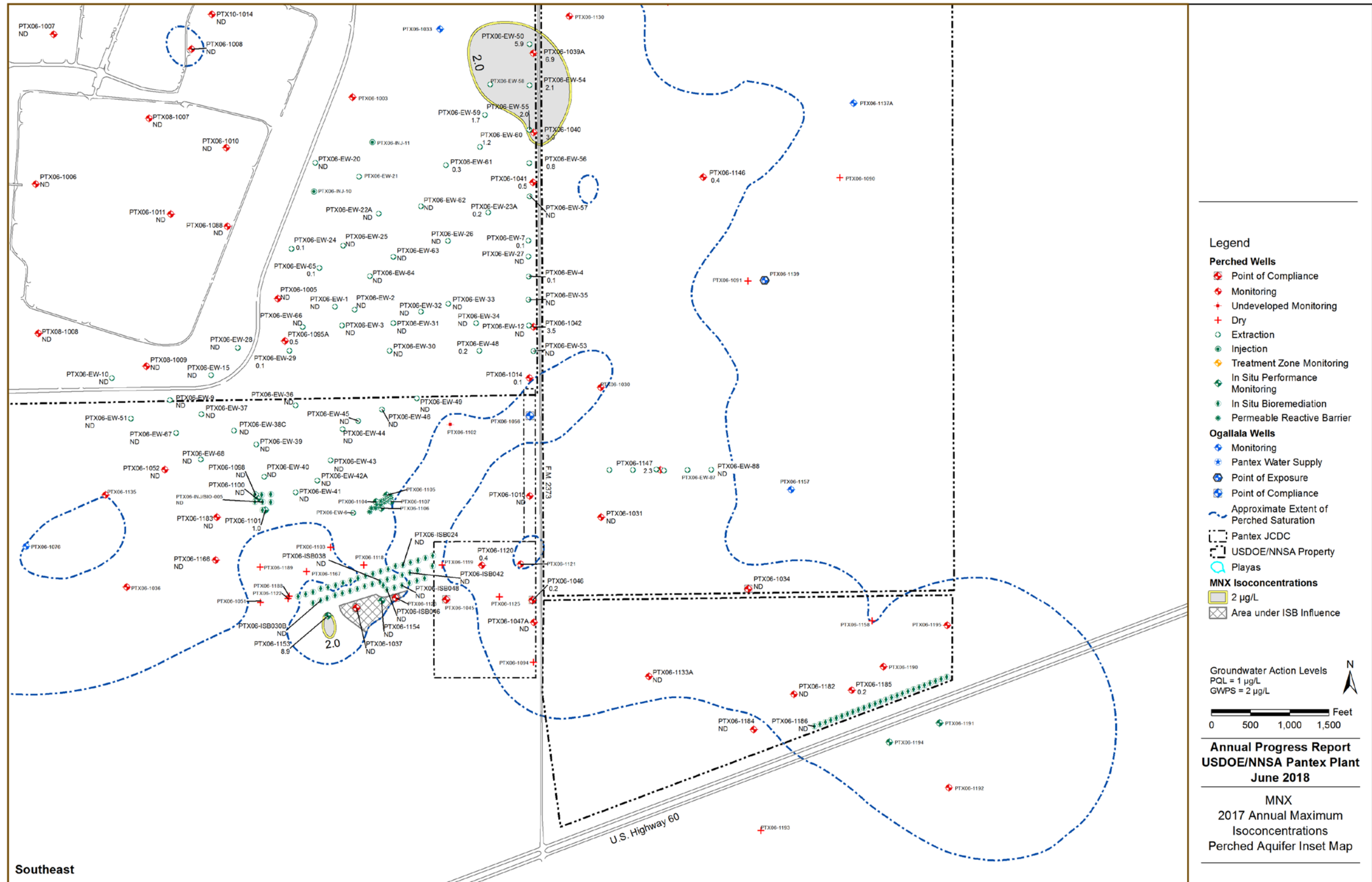
- Pantex JCDC
- USDOE/NNSA Property
- Playas
- MNX Isoconcentrations**
- 2 µg/L
- Area under ISB influence

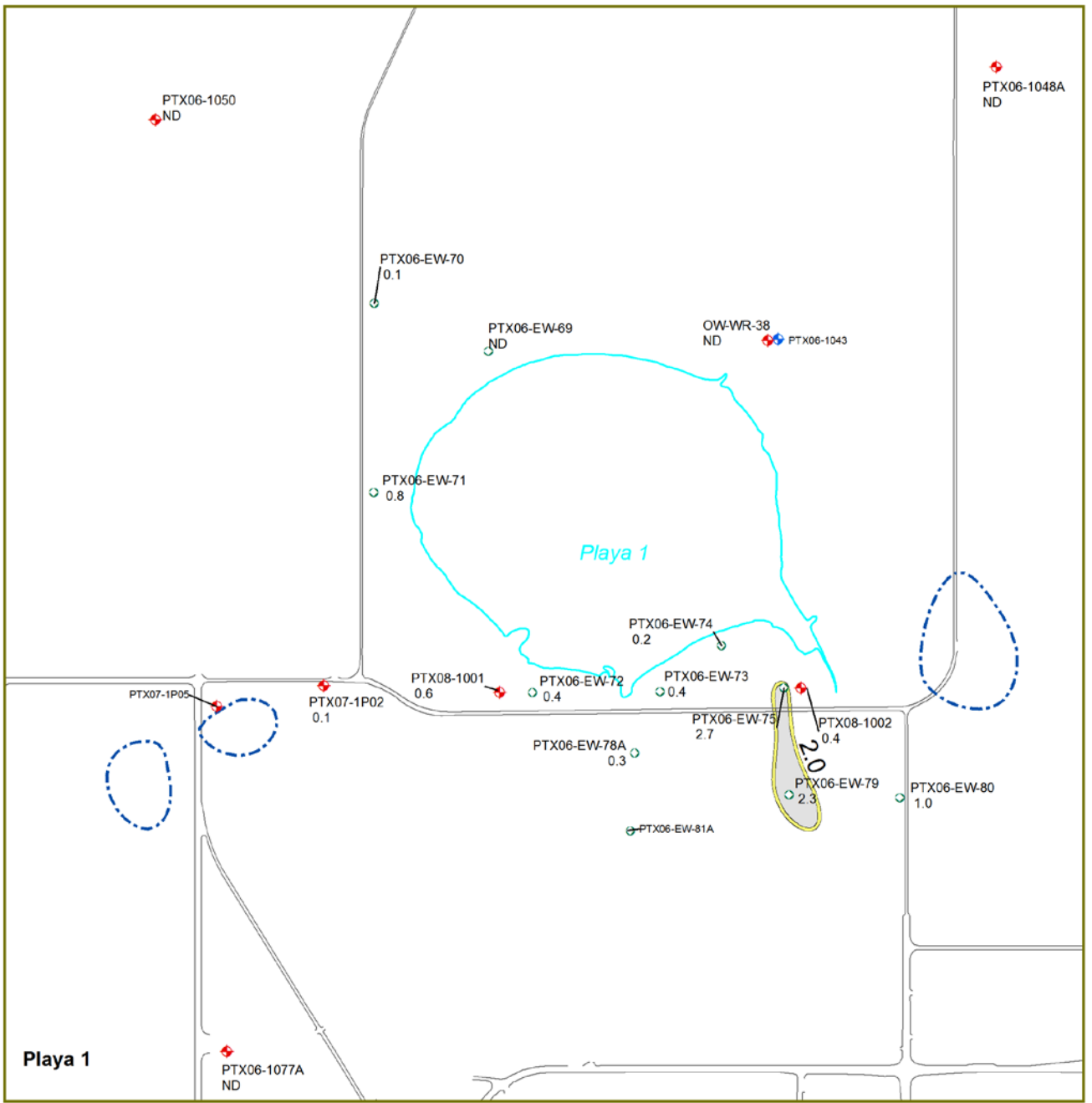
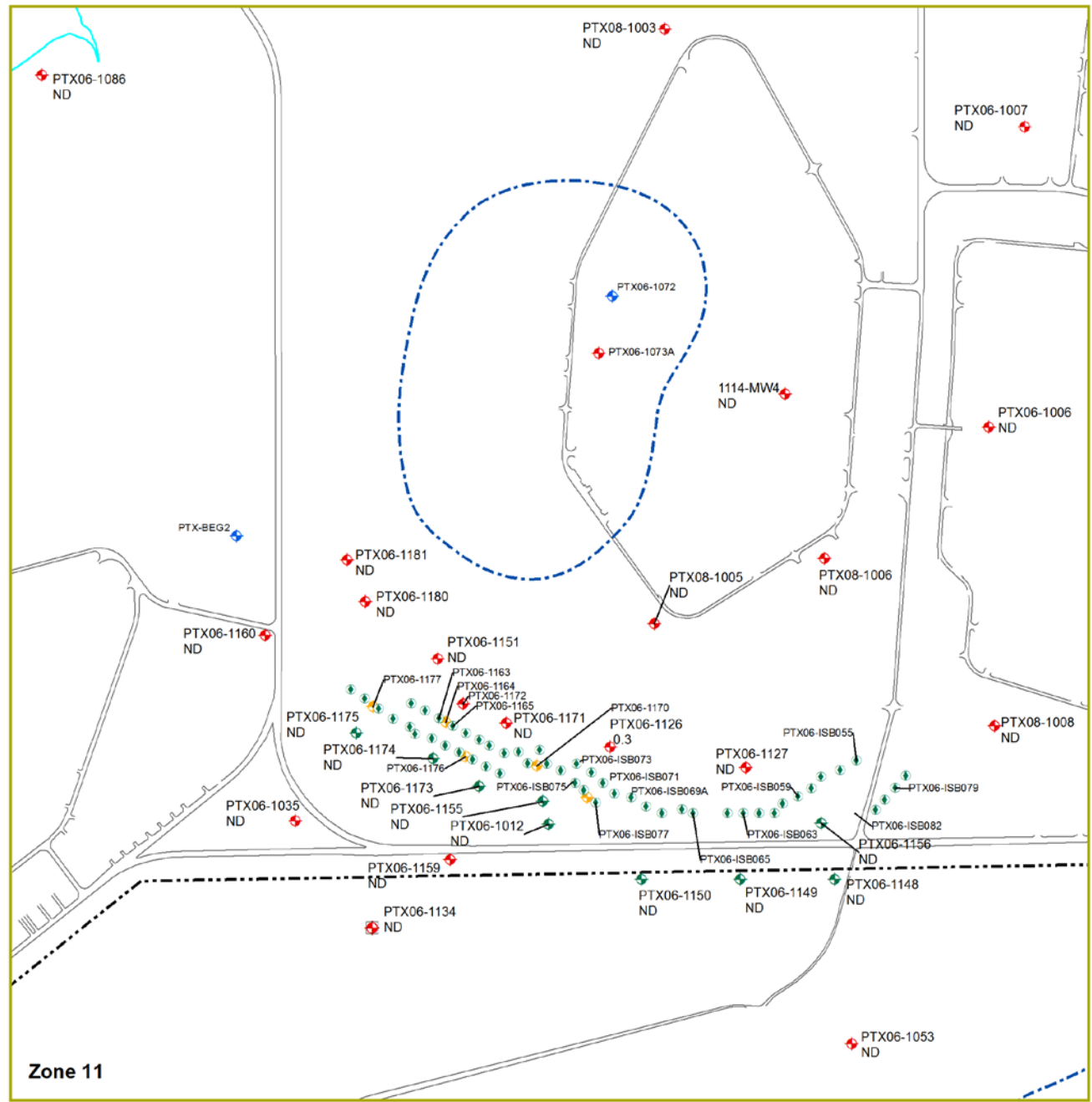
Groundwater Action Levels
 PQL = 1 µg/L
 GWPS = 2 µg/L

0 1,000 2,000 3,000 Feet

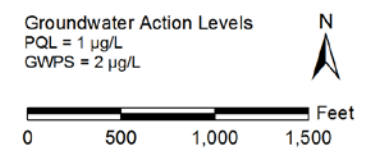
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MNX
 2017 Annual Maximum
 Isoconcentrations
 Site-Wide Perched Aquifer Map



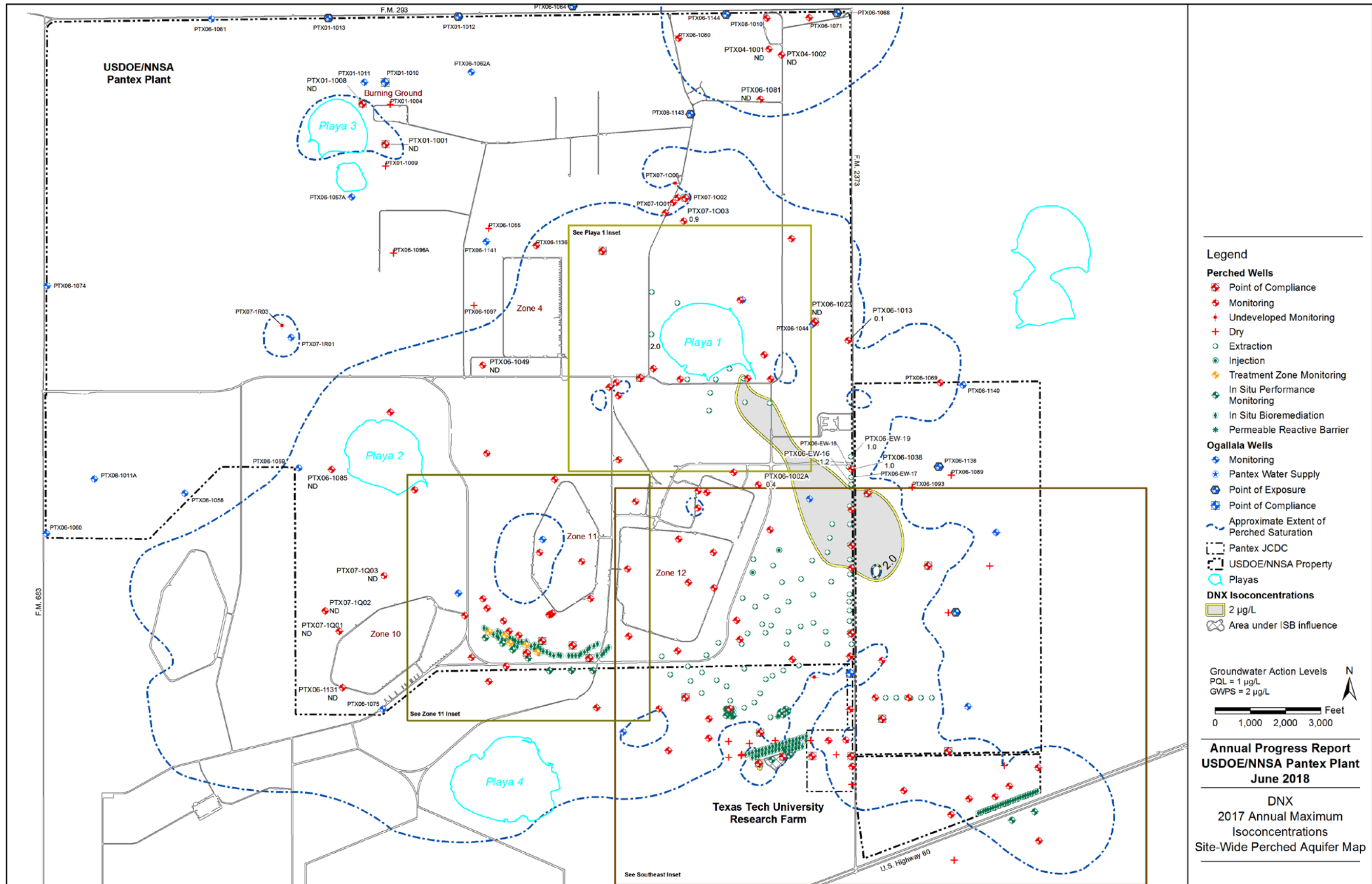


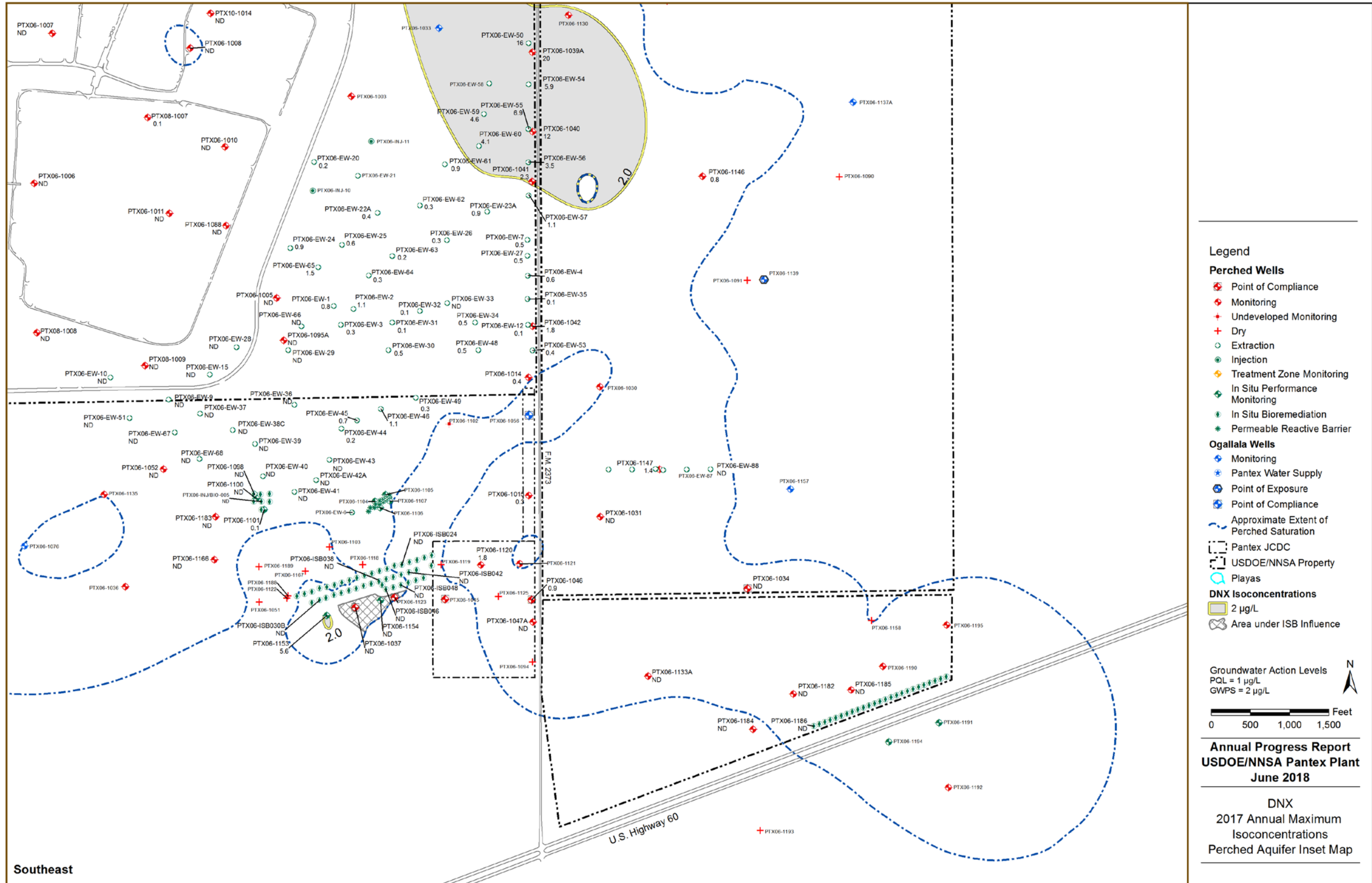
- Legend**
- | | | | |
|------------------------|--------------------------------|--|------------------------------|
| Perched Wells | Injection | Ogallala Wells | USDOE/NNSA Property |
| Point of Compliance | Treatment Zone Monitoring | Monitoring | Playas |
| Monitoring | In Situ Performance Monitoring | Pantex Water Supply | MNX Isoconcentrations |
| Undeveloped Monitoring | In Situ Bioremediation | Point of Exposure | 2 µg/L |
| Dry | Permeable Reactive Barrier | Point of Compliance | Area under ISB Influence |
| Extraction | | Approximate Extent of Perched Saturation | |



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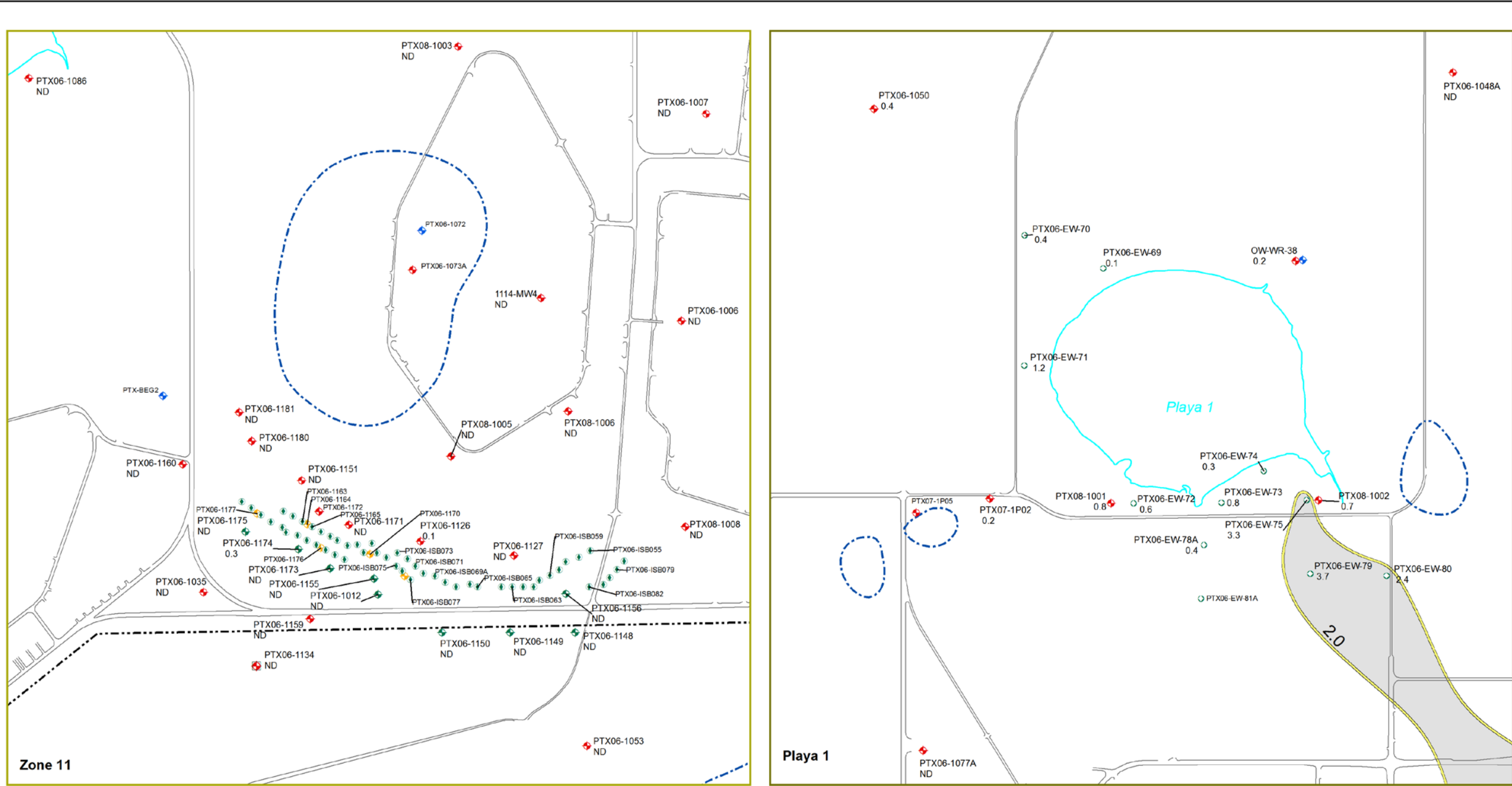
**MNX
 2017 Annual Maximum
 Isoconcentrations
 Perched Aquifer Inset Maps**





Southeast

U.S. Highway 60



Legend

Perched Wells

- Point of Compliance
- ⊕ Monitoring
- + Undeveloped Monitoring
- + Dry
- Extraction

Injection

- In Situ Performance Monitoring
- In Situ Bioremediation
- Permeable Reactive Barrier

Ogallala Wells

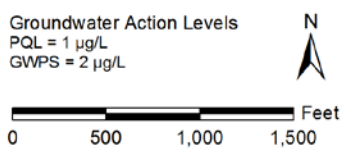
- Monitoring
- Pantex Water Supply
- Point of Exposure
- Point of Compliance
- Approximate Extent of Perched Saturation

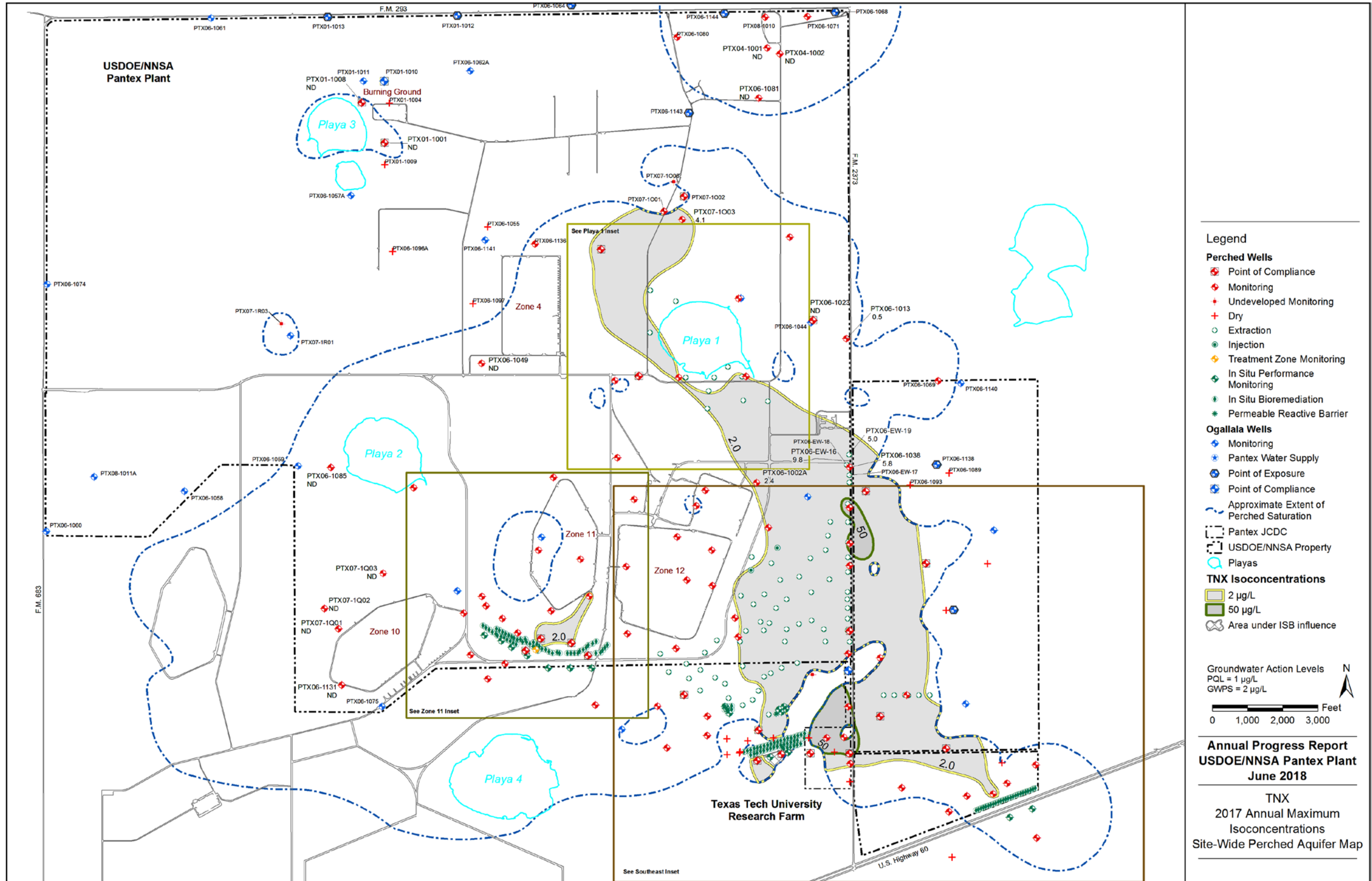
USDOE/NNSA Property

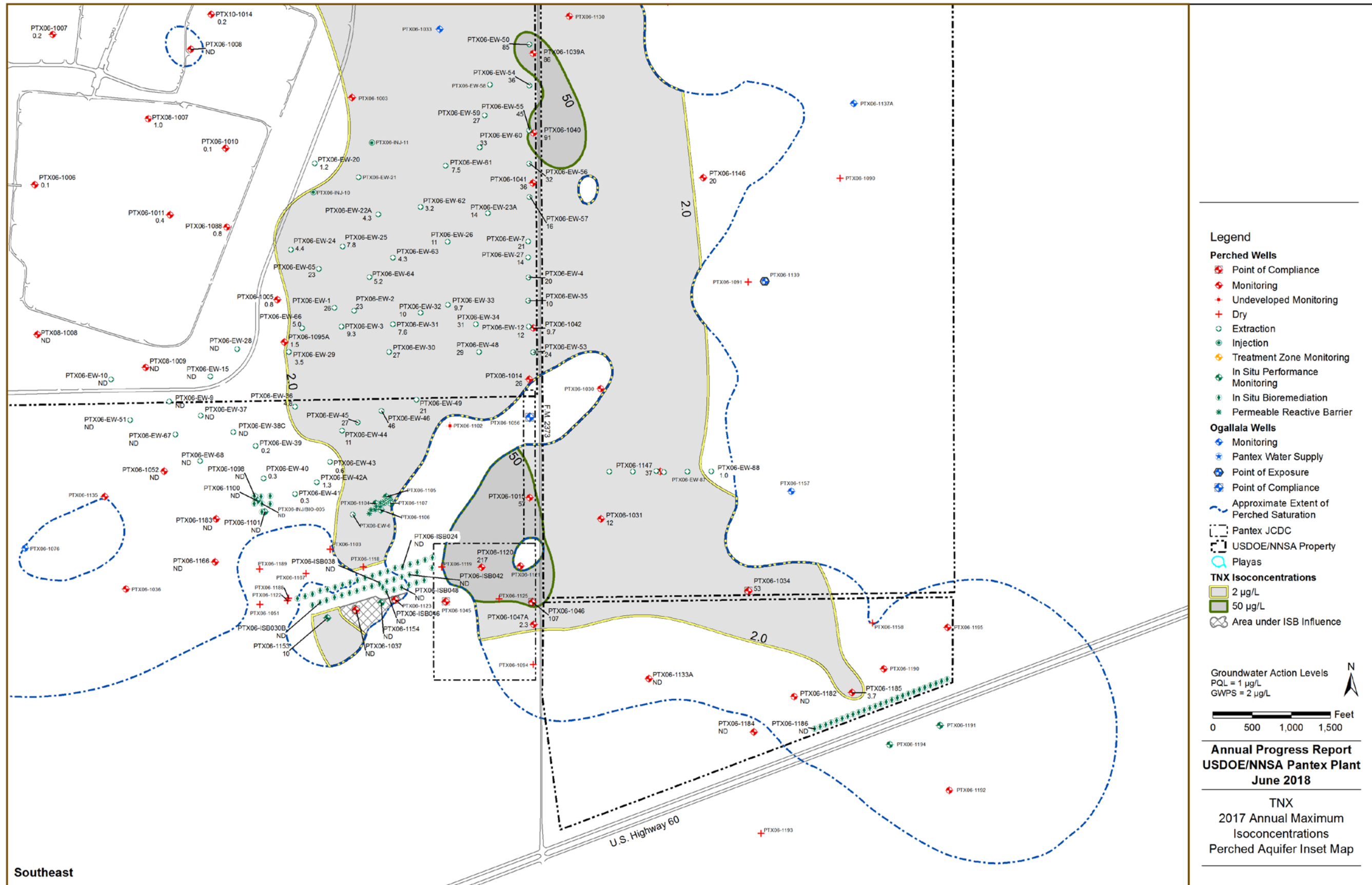
- Playas
- DNX Isoconcentrations
- 2 µg/L
- Area under ISB Influence

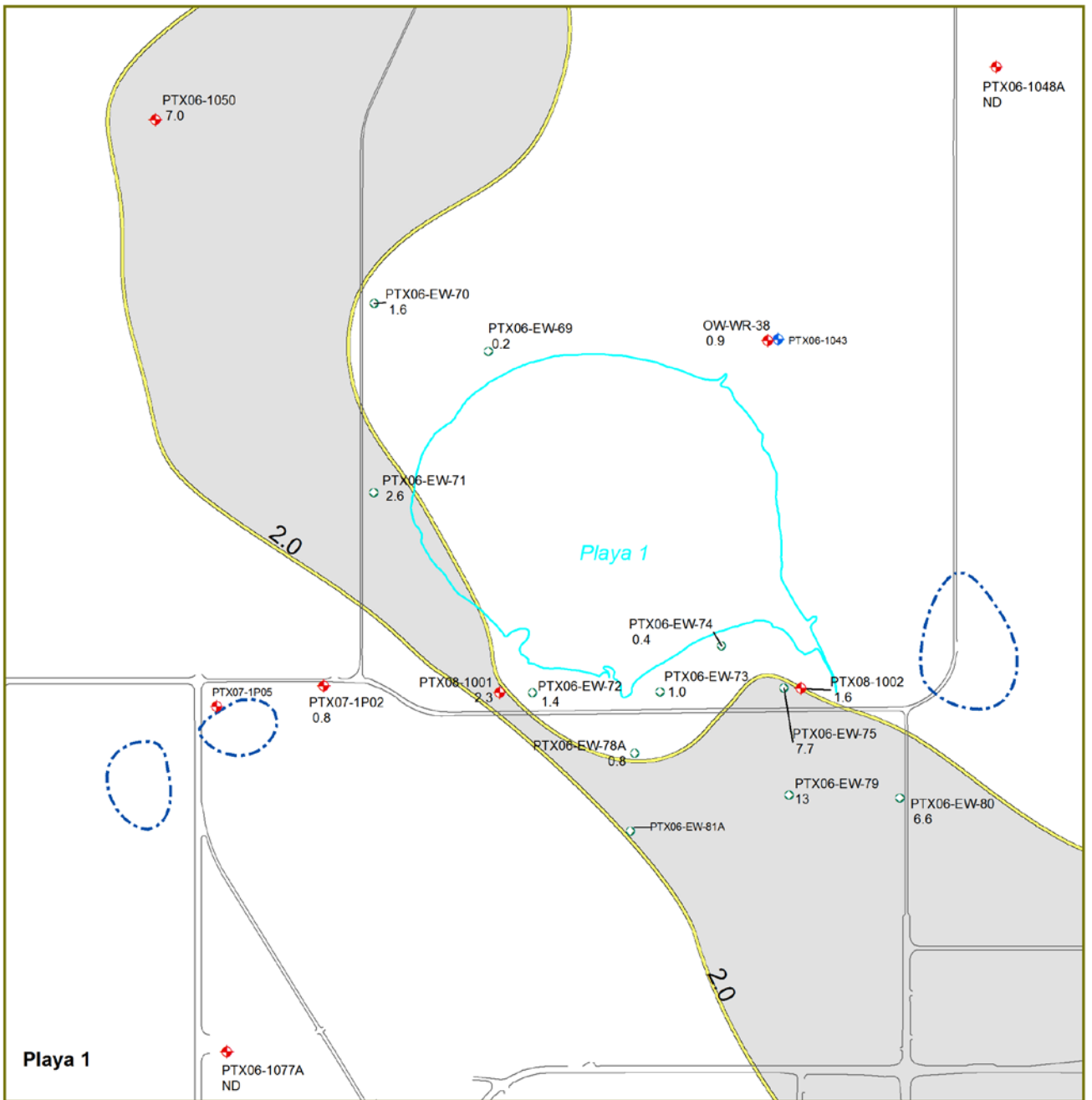
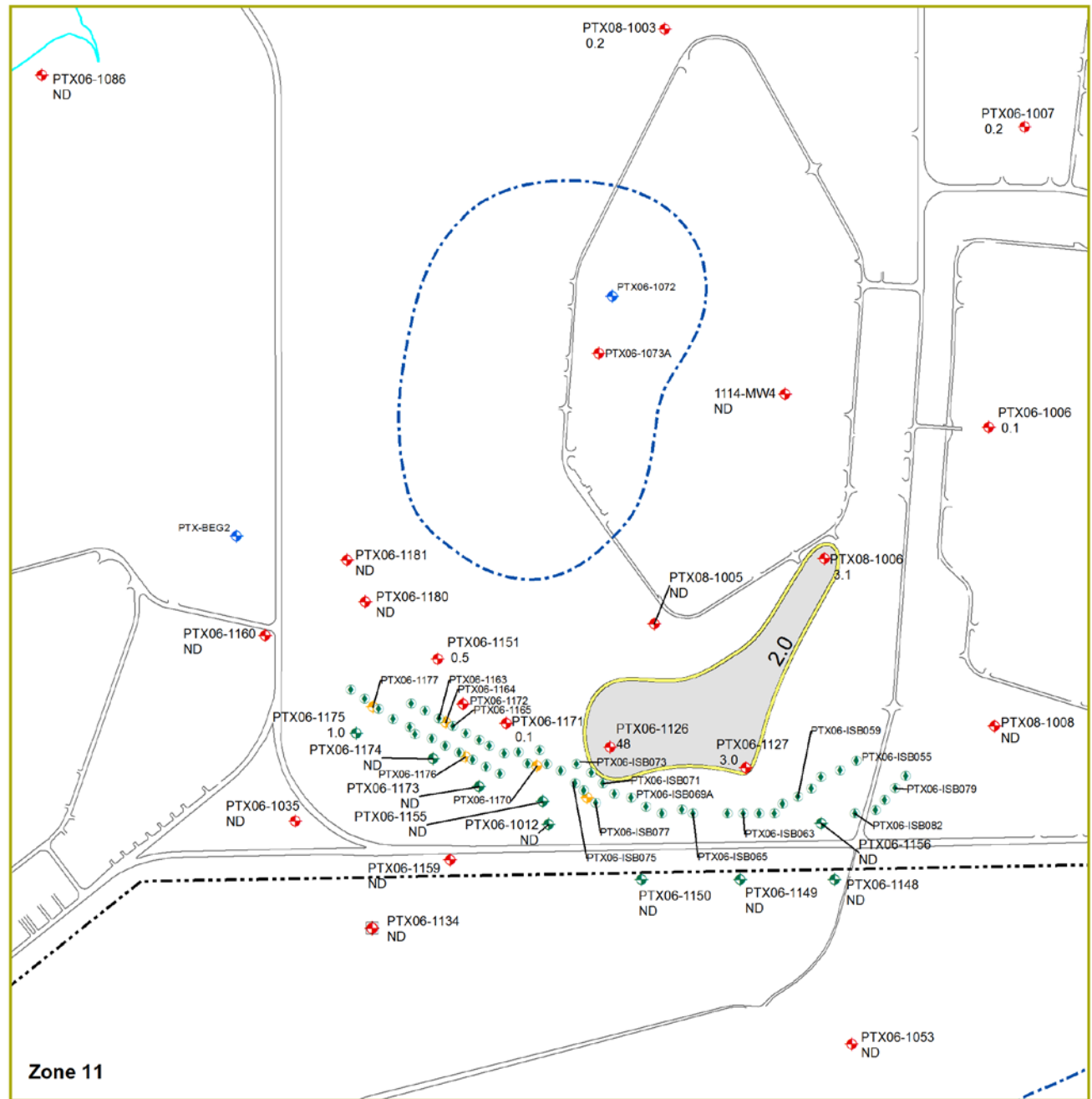
**Annual Progress Report
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**DNX
2017 Annual Maximum
Isoconcentrations
Perched Aquifer Inset Maps**



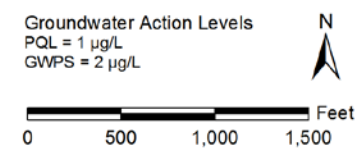






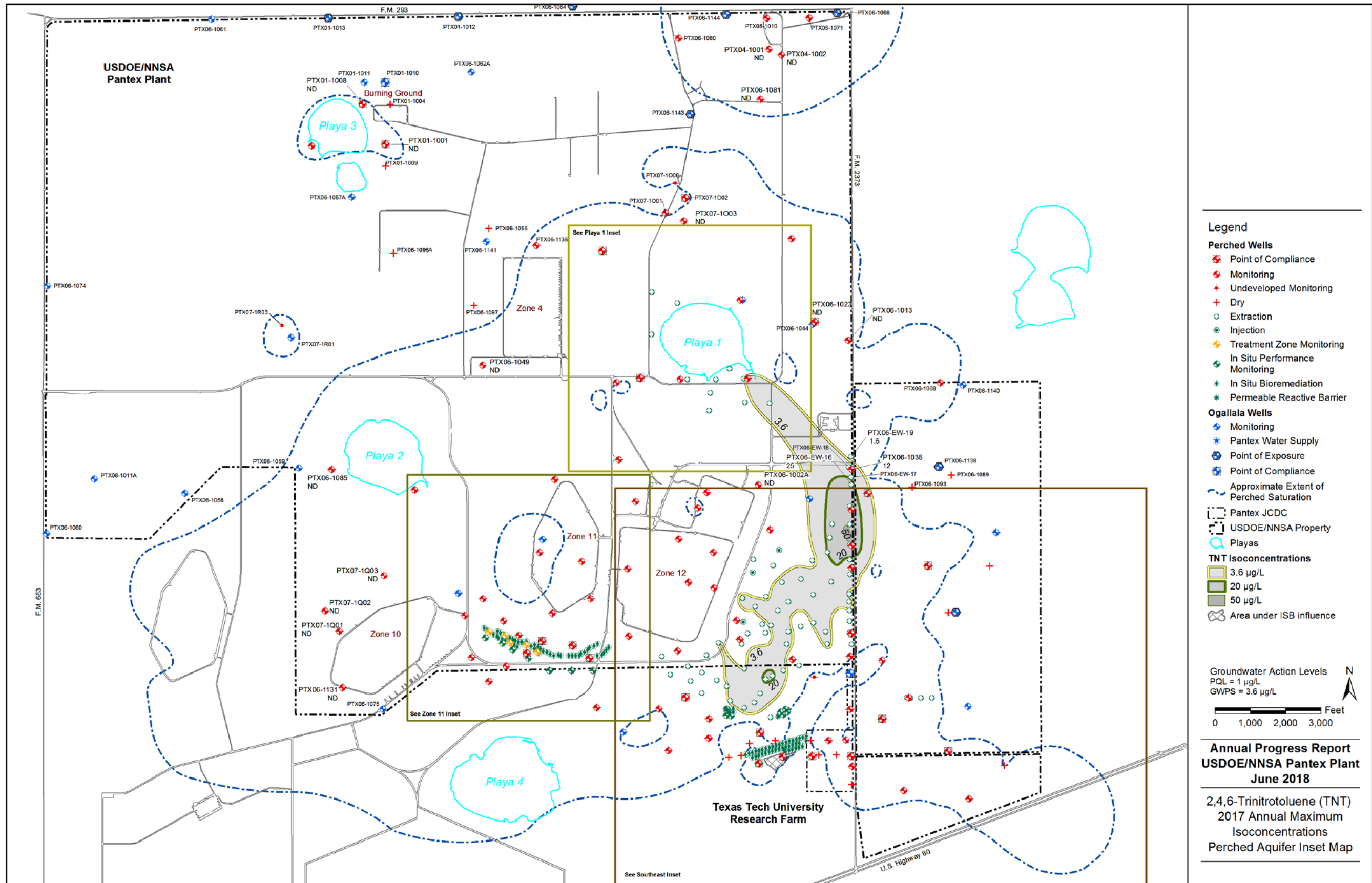
Legend

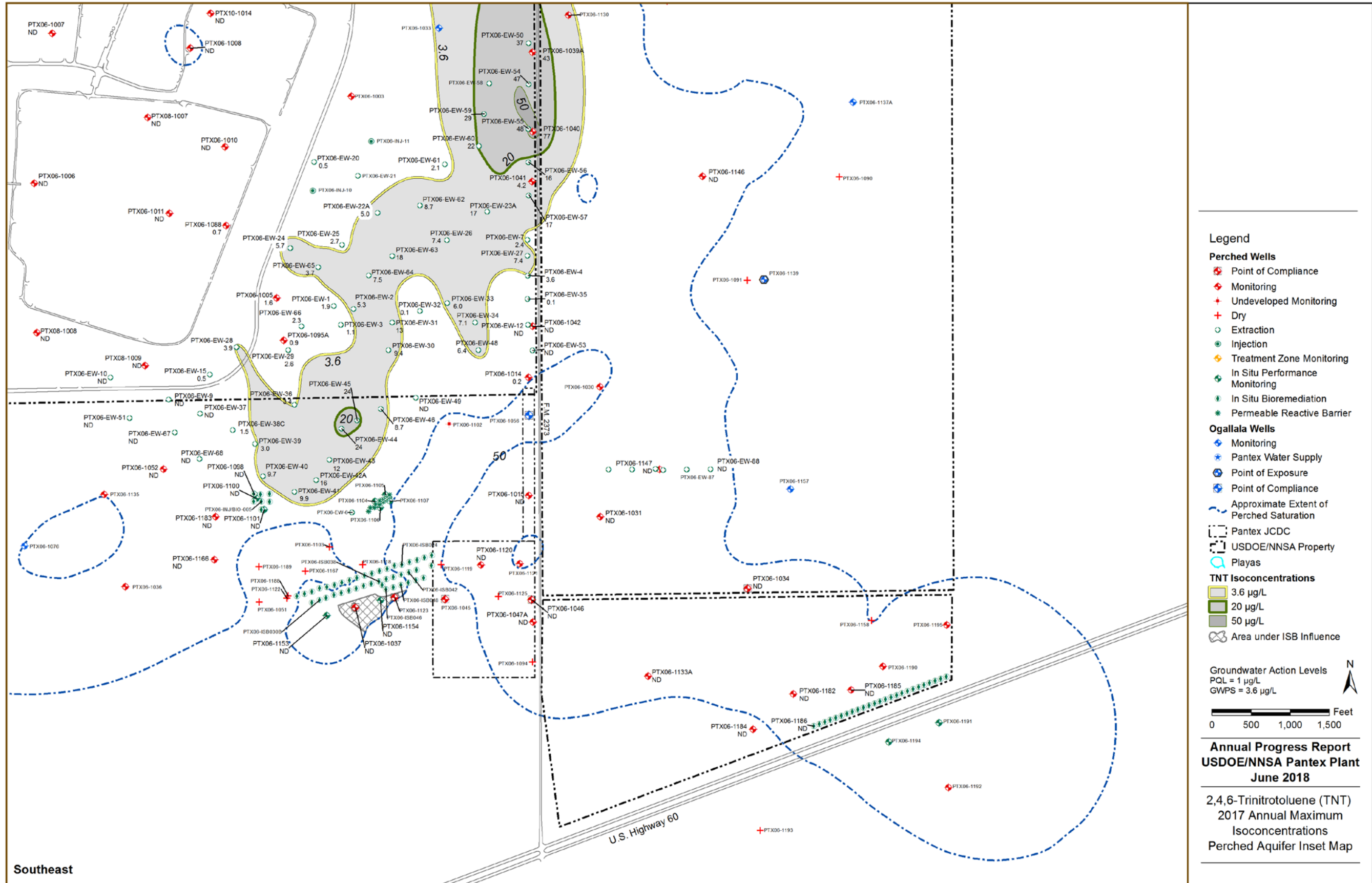
- | | | | |
|--------------------------|----------------------------------|--|------------------------------|
| Perched Wells | ● Injection | Ogallala Wells | □ USDOE/NNSA Property |
| ⊕ Point of Compliance | ⊕ Treatment Zone Monitoring | ⊕ Monitoring | ○ Playas |
| ⊕ Monitoring | ⊕ In Situ Performance Monitoring | ⊕ Pantex Water Supply | TNX Isoconcentrations |
| ⊕ Undeveloped Monitoring | ⊕ In Situ Bioremediation | ⊕ Point of Exposure | □ 2 µg/L |
| ⊕ Dry | ⊕ Permeable Reactive Barrier | ⊕ Point of Compliance | □ 50 µg/L |
| ○ Extraction | | ⊕ Approximate Extent of Perched Saturation | ⊕ Area under ISB Influence |



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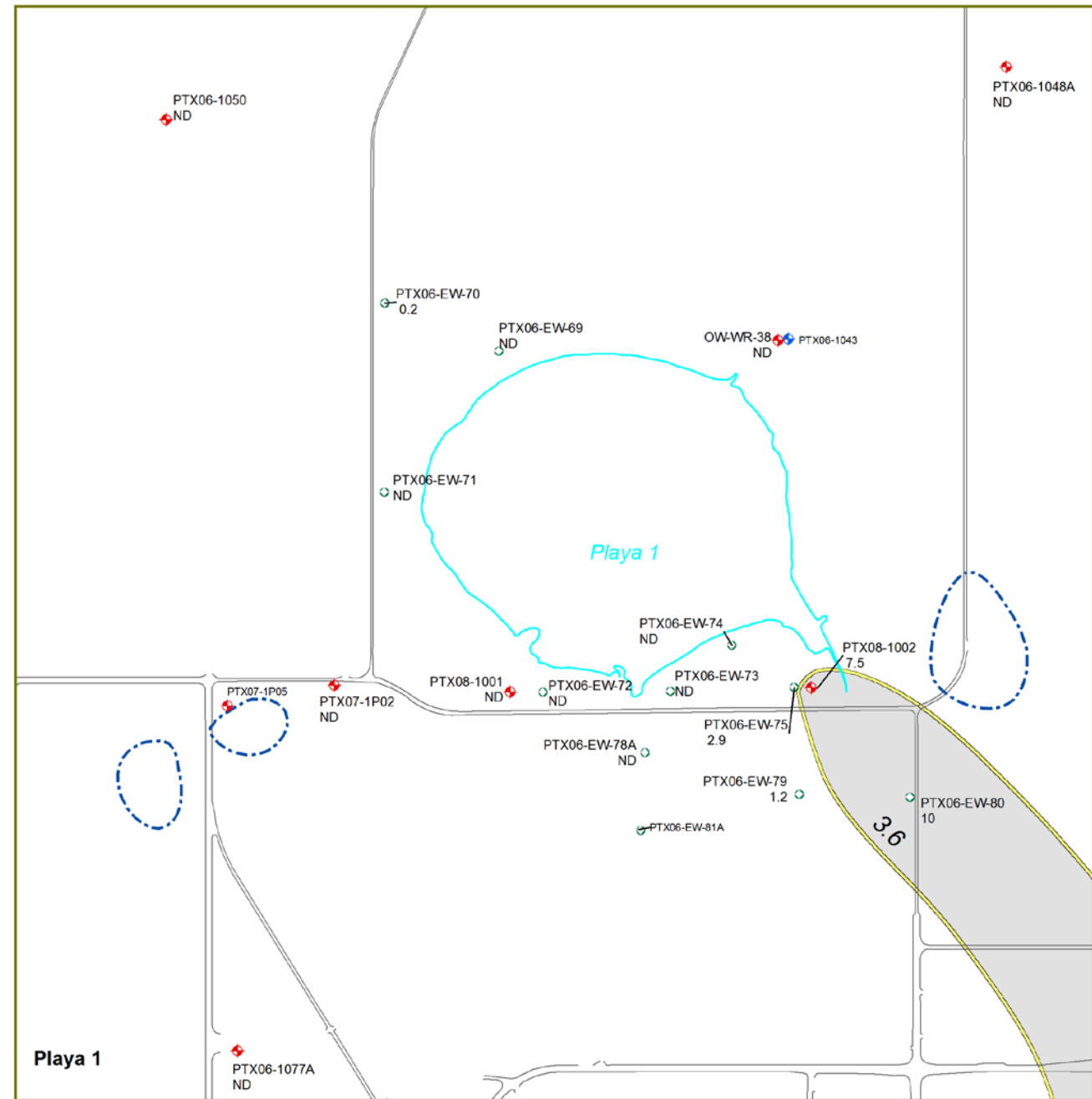
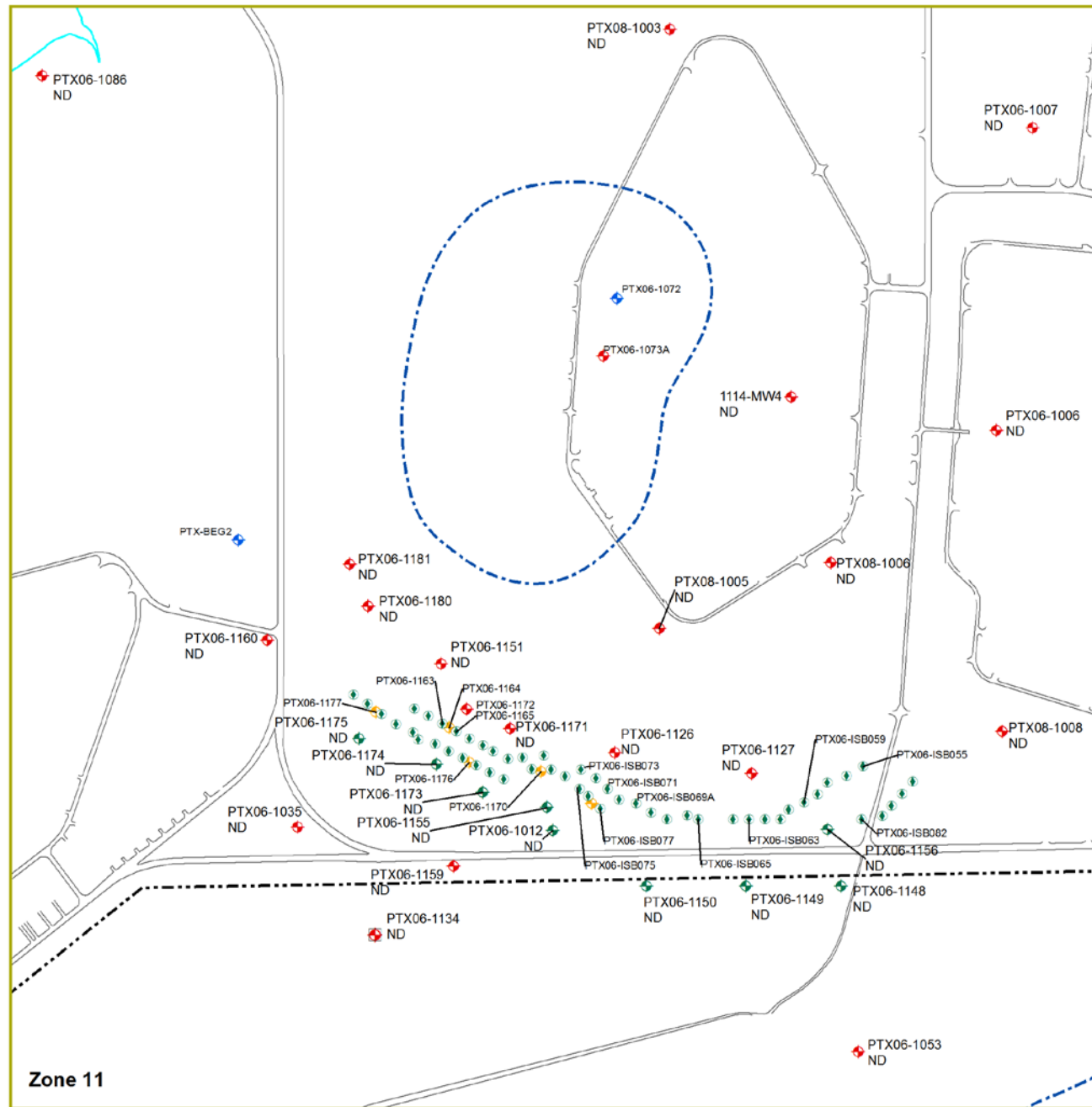
**TNX
2017 Annual Maximum
Isoconcentrations
Perched Aquifer Inset Maps**





Southeast

U.S. Highway 60



Legend

Perched Wells

- Point of Compliance
- Monitoring
- Undeveloped Monitoring
- Dry
- Extraction

Injection

- Treatment Zone Monitoring
- In Situ Performance Monitoring
- In Situ Bioremediation
- Permeable Reactive Barrier

Ogallala Wells

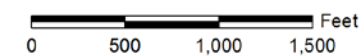
- Monitoring
- Pantex Water Supply
- Point of Exposure
- Point of Compliance
- Approximate Extent of Perched Saturation

USDOE/NNSA Property

- Playas
- 3.6 µg/L
- 20 µg/L
- 50 µg/L
- Area under ISB Influence

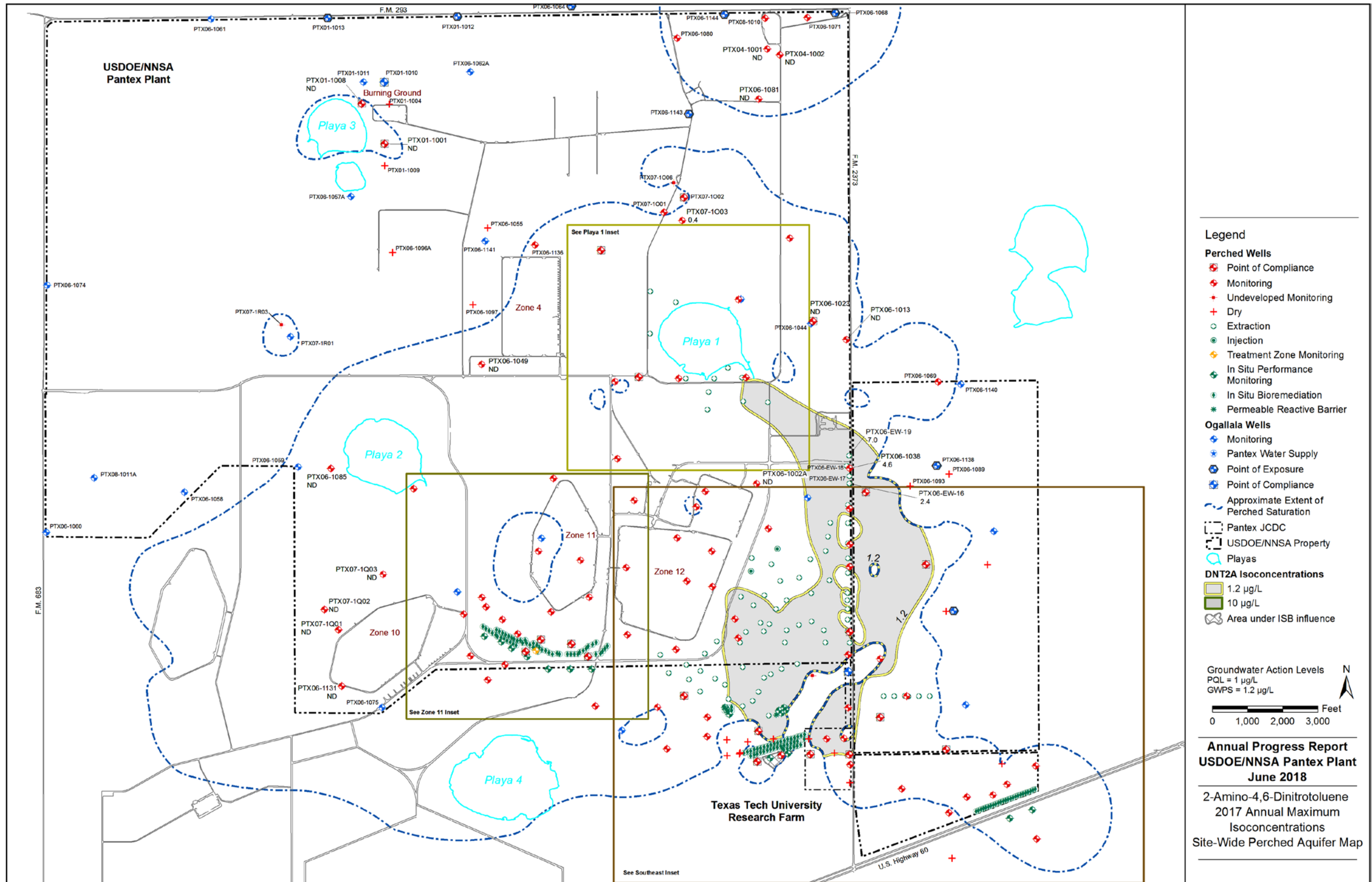
TNT Isoconcentrations

Groundwater Action Levels
PQL = 1 µg/L
GWPS = 3.6 µg/L



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2,4,6-Trinitrotoluene (TNT)
2017 Annual Maximum
Isoconcentrations
Perched Aquifer Inset Maps



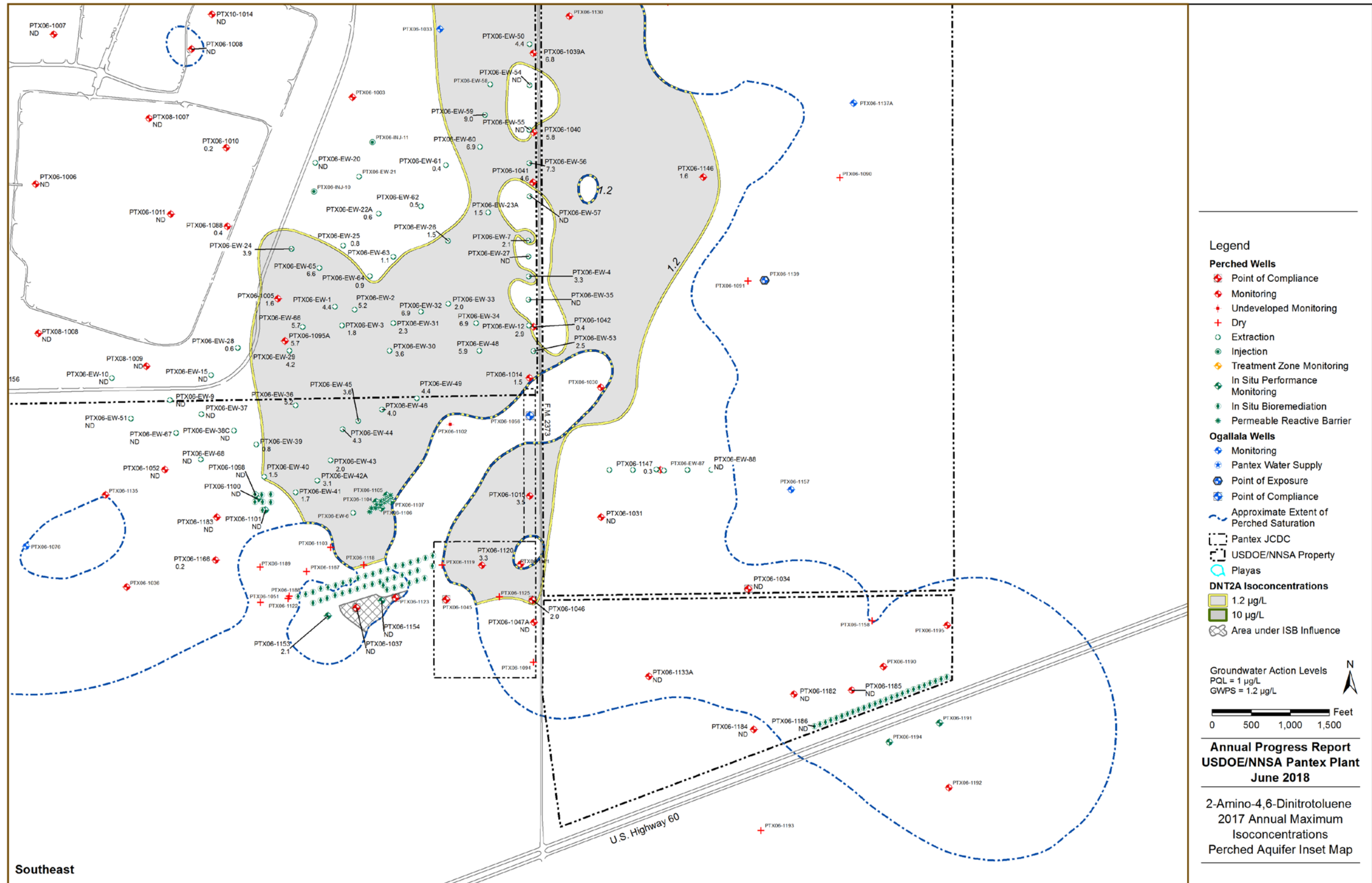
- Legend**
- Perched Wells**
- Point of Compliance
 - Monitoring
 - Undeveloped Monitoring
 - Dry
 - Extraction
 - Injection
 - Treatment Zone Monitoring
 - In Situ Performance Monitoring
 - In Situ Bioremediation
 - Permeable Reactive Barrier
- Ogallala Wells**
- Monitoring
 - Pantex Water Supply
 - Point of Exposure
 - Point of Compliance
 - Approximate Extent of Perched Saturation
- Pantex JCDC**
- Pantex JCDC
- USDOE/NNSA Property**
- USDOE/NNSA Property
- Plays**
- Plays
- DNT2A Isoconcentrations**
- 1.2 µg/L
 - 10 µg/L
- Area under ISB influence**
- Area under ISB influence

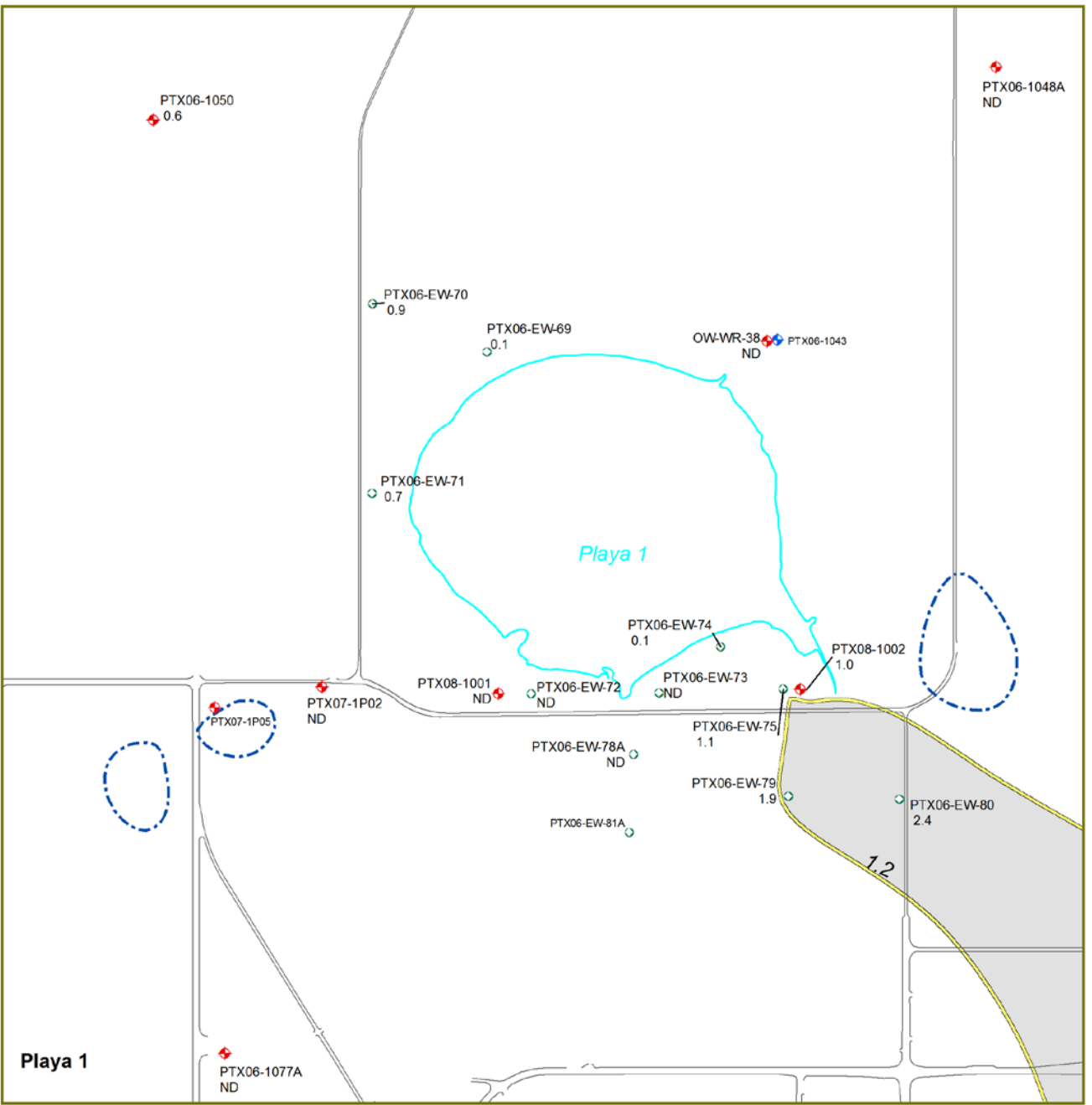
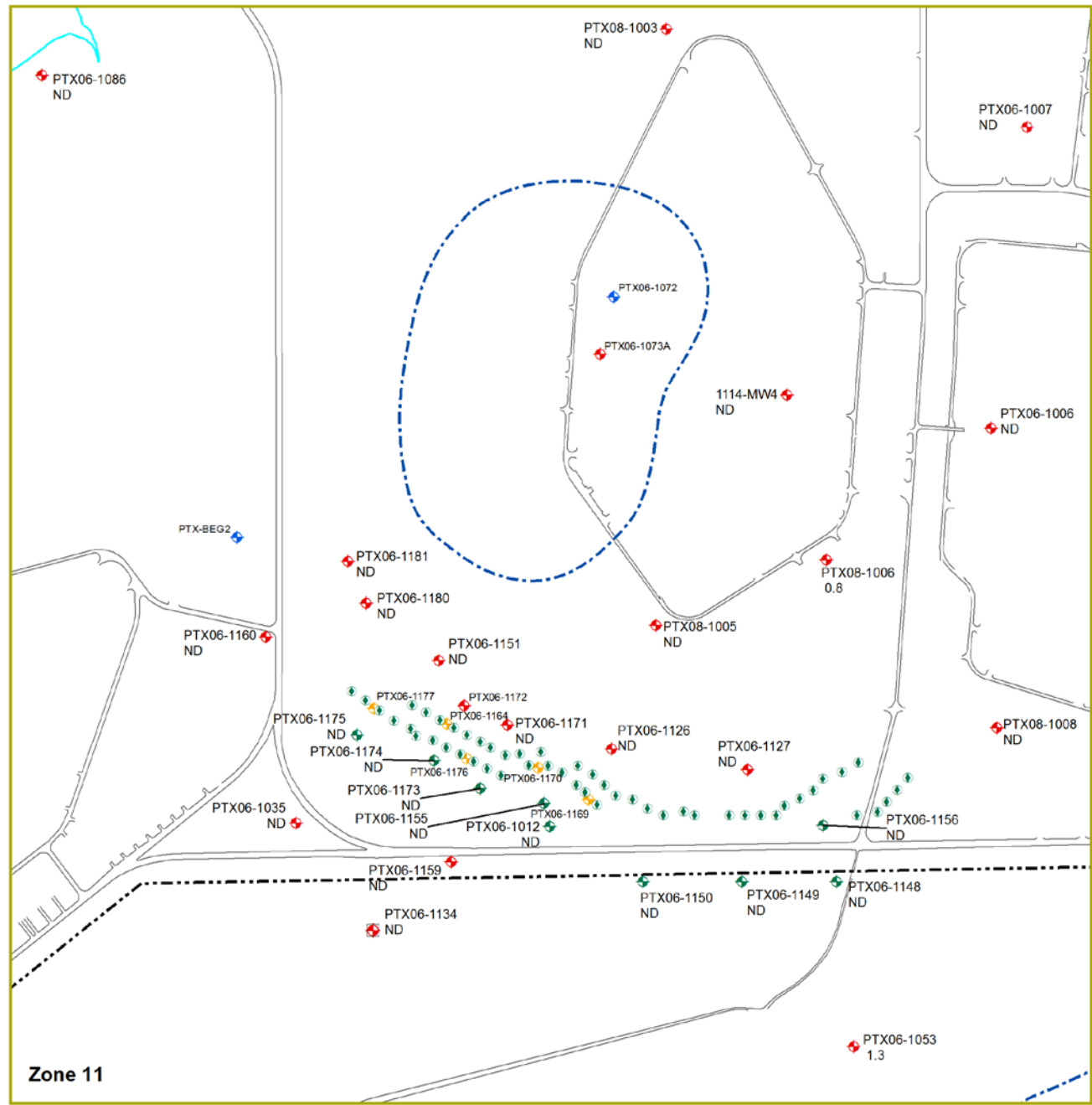
Groundwater Action Levels
 PQL = 1 µg/L
 GWPS = 1.2 µg/L

0 1,000 2,000 3,000 Feet

**Annual Progress Report
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 June 2018**

2-Amino-4,6-Dinitrotoluene
 2017 Annual Maximum
 Isoconcentrations
 Site-Wide Perched Aquifer Map





Legend

Perched Wells

- Point of Compliance
- Monitoring
- Undeveloped Monitoring
- Dry
- Extraction

Injection

- In Situ Performance Monitoring
- In Situ Bioremediation
- Permeable Reactive Barrier

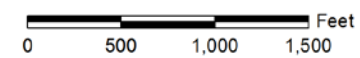
Ogallala Wells

- Monitoring
- Pantex Water Supply
- Point of Exposure
- Point of Compliance
- Approximate Extent of Perched Saturation

USDOE/NNSA Property

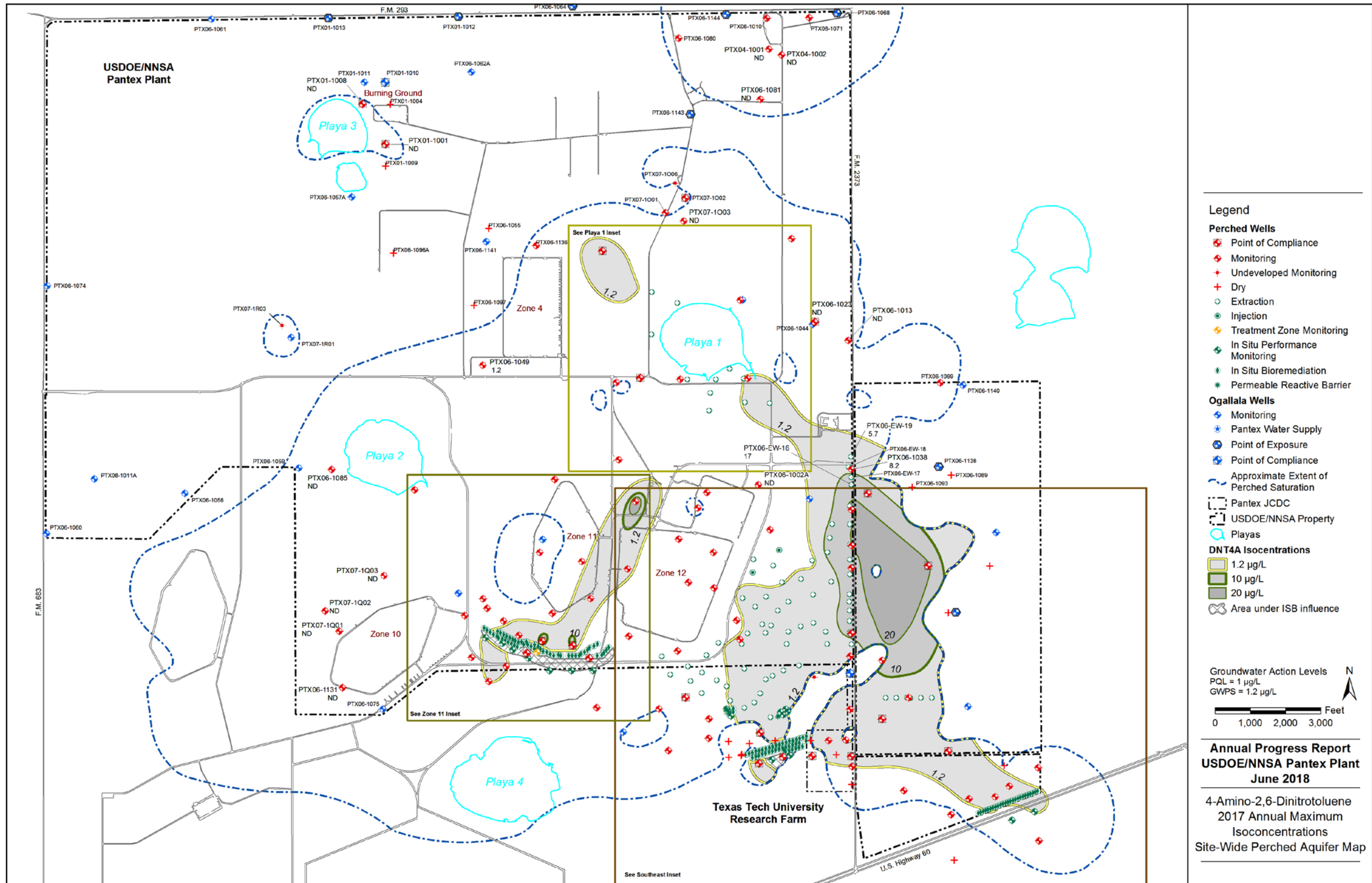
- Playas
- DNT2A Isoconcentrations 1.2 µg/L
- 10 µg/L
- Area under ISB Influence

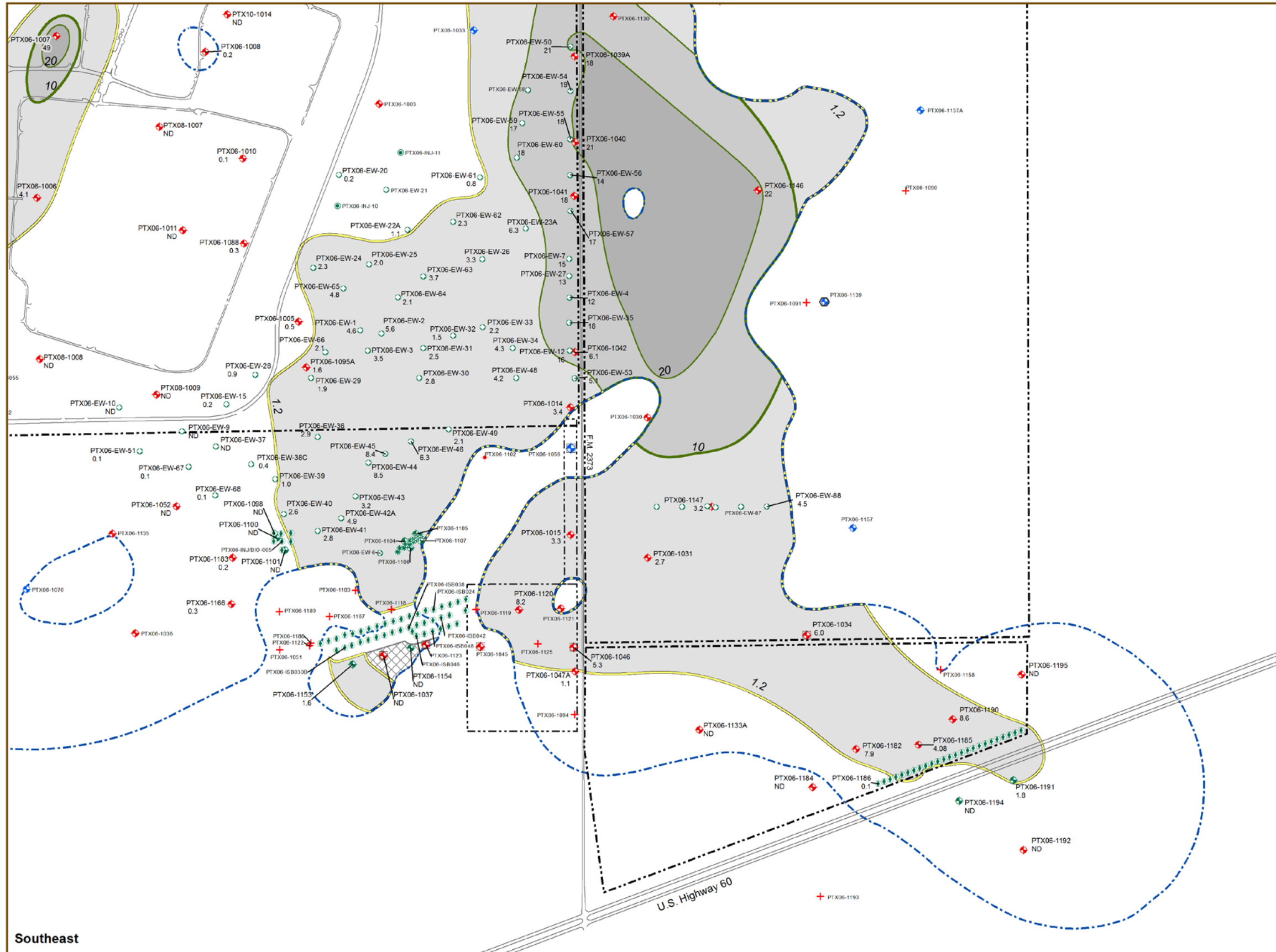
Groundwater Action Levels
 PQL = 1 µg/L
 GWPS = 1.2 µg/L



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2-Amino-4,6-Dinitrotoluene
 2017 Annual Maximum
 Isoconcentrations
 Perched Aquifer Inset Maps





Legend

- Perched Wells**
- ◆ Point of Compliance
 - ◆ Monitoring
 - ◆ Undeveloped Monitoring
 - ◆ Dry
 - Extraction
 - Injection
 - ◆ Treatment Zone Monitoring
 - ◆ In Situ Performance Monitoring
 - ◆ In Situ Bioremediation
 - ◆ Permeable Reactive Barrier

- Ogallala Wells**
- ◆ Monitoring
 - ◆ Pantex Water Supply
 - ◆ Point of Exposure
 - ◆ Point of Compliance
 - ◆ Approximate Extent of Perched Saturation
 - ◆ Pantex JCDC
 - ◆ USDOE/NNSA Property
 - ◆ Plays

- DNT4A Isoconcentrations**
- 1.2 µg/L
 - 10 µg/L
 - 20 µg/L
 - Area under ISB Influence

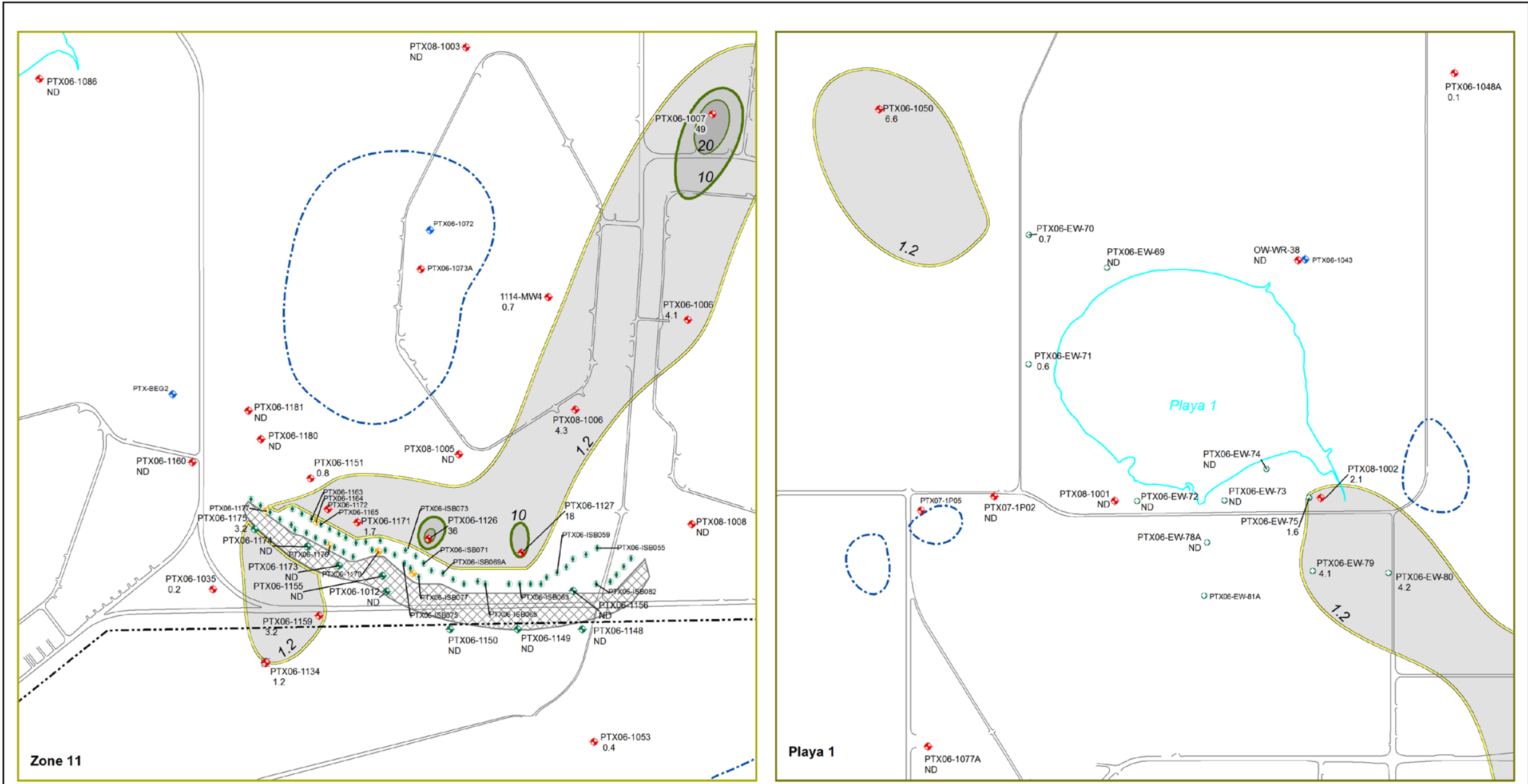
Groundwater Action Levels
 PQL = 1 µg/L
 GWPS = 1.2 µg/L

Feet
 0 500 1,000 1,500

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 June 2018**

4-Amino-2,6-Dinitrotoluene
 2017 Annual Maximum
 Isoconcentrations
 Perched Aquifer Inset Map

Southeast



Legend			
Perched Wells	Injection	Ogallala Wells	USDOE/NNSA Property
Point of Compliance	Treatment Zone Monitoring	Monitoring	USDOE/NNSA Property
Monitoring	In Situ Performance Monitoring	Pantex Water Supply	Playas
Undeveloped Monitoring	In Situ Bioremediation	Point of Exposure	DNT4A Isoconcentrations
Dry	Permeable Reactive Barrier	Point of Compliance	1.2 µg/L
Extraction		Approximate Extent of Perched Saturation	10 µg/L
			20 µg/L
			Area under ISB Influence

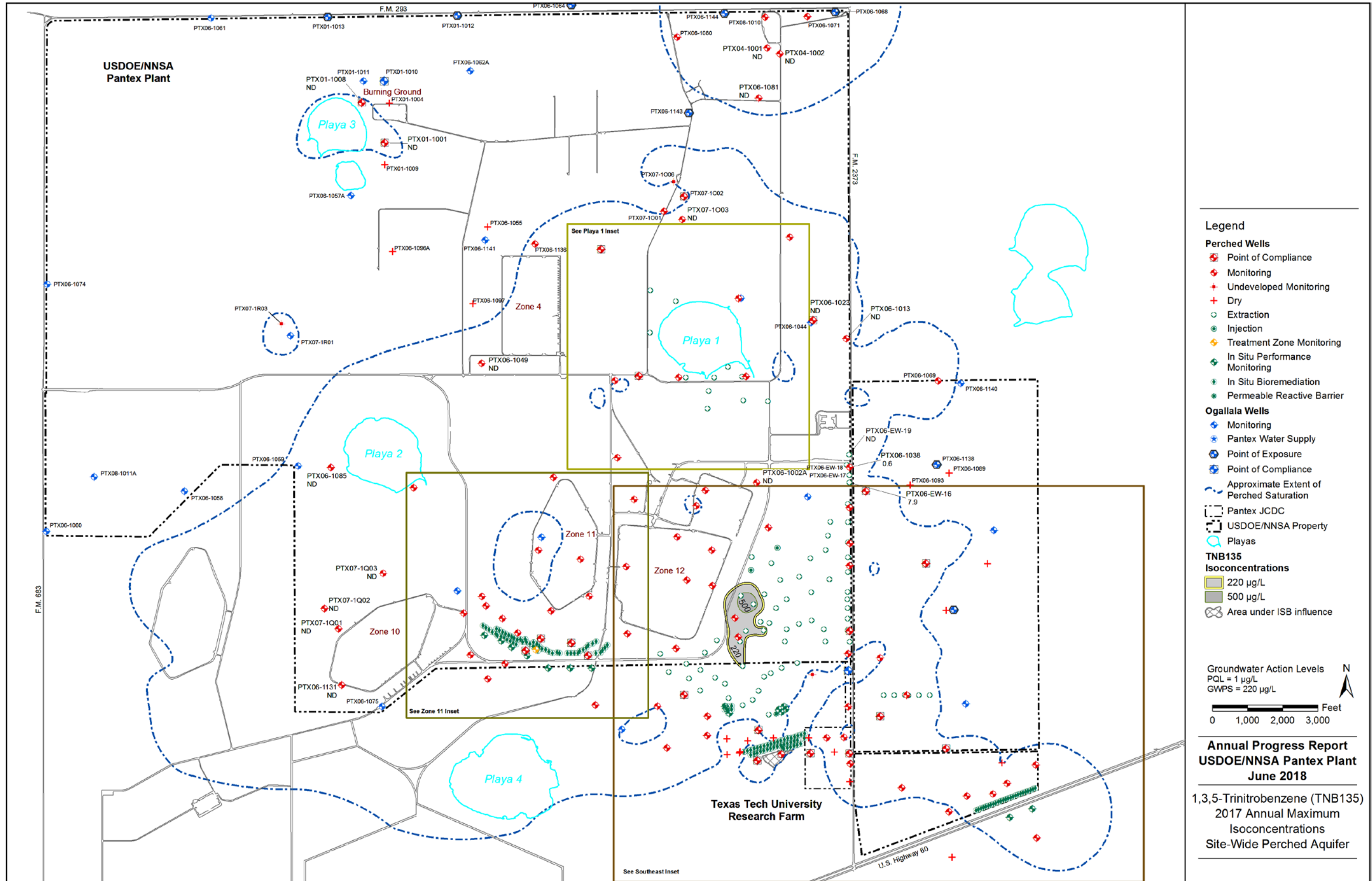
**Annual Progress Report
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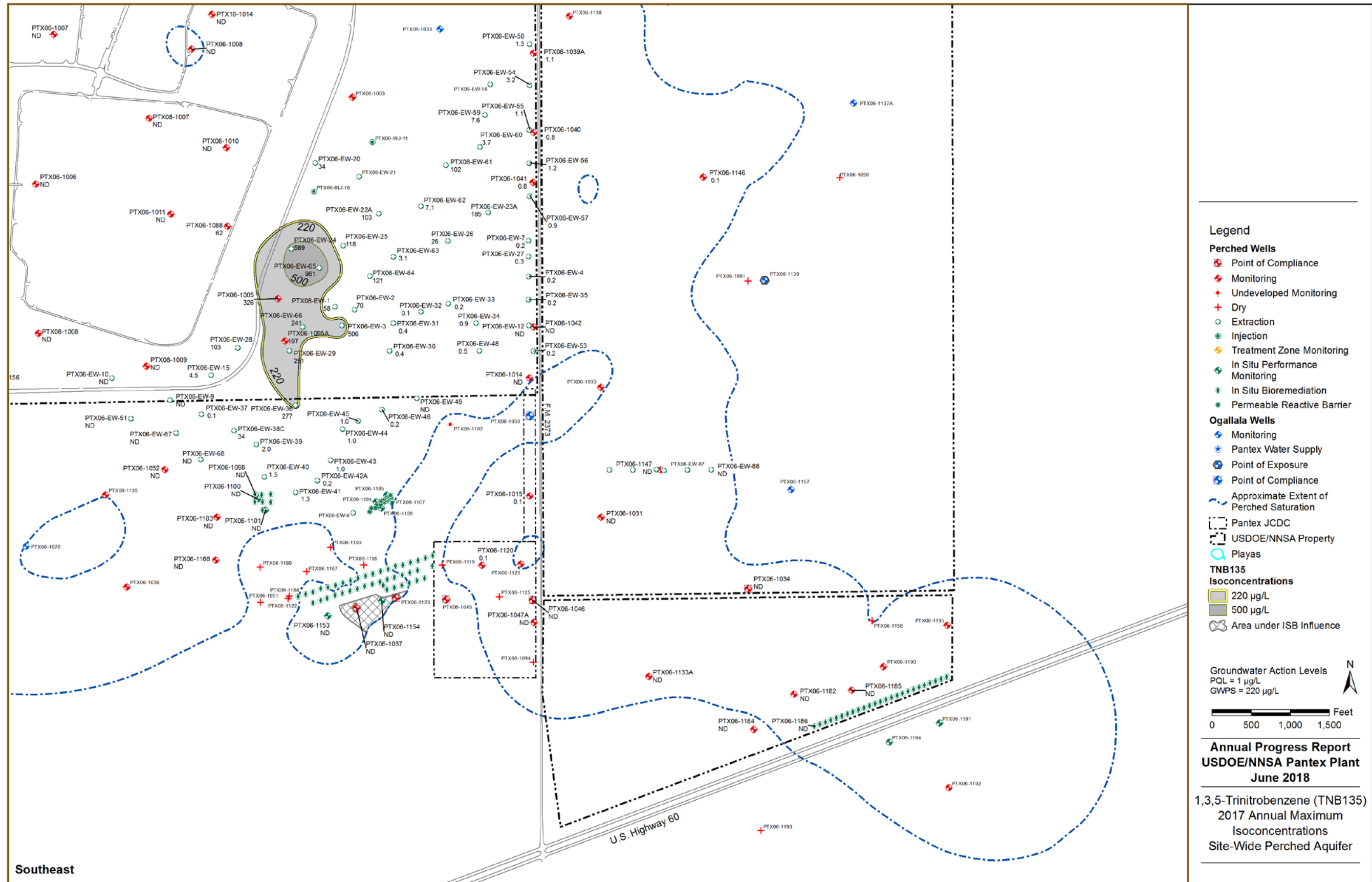
4-Amino-2,6-Dinitrotoluene
2017 Annual Maximum
Isoconcentrations
Perched Aquifer Inset Maps

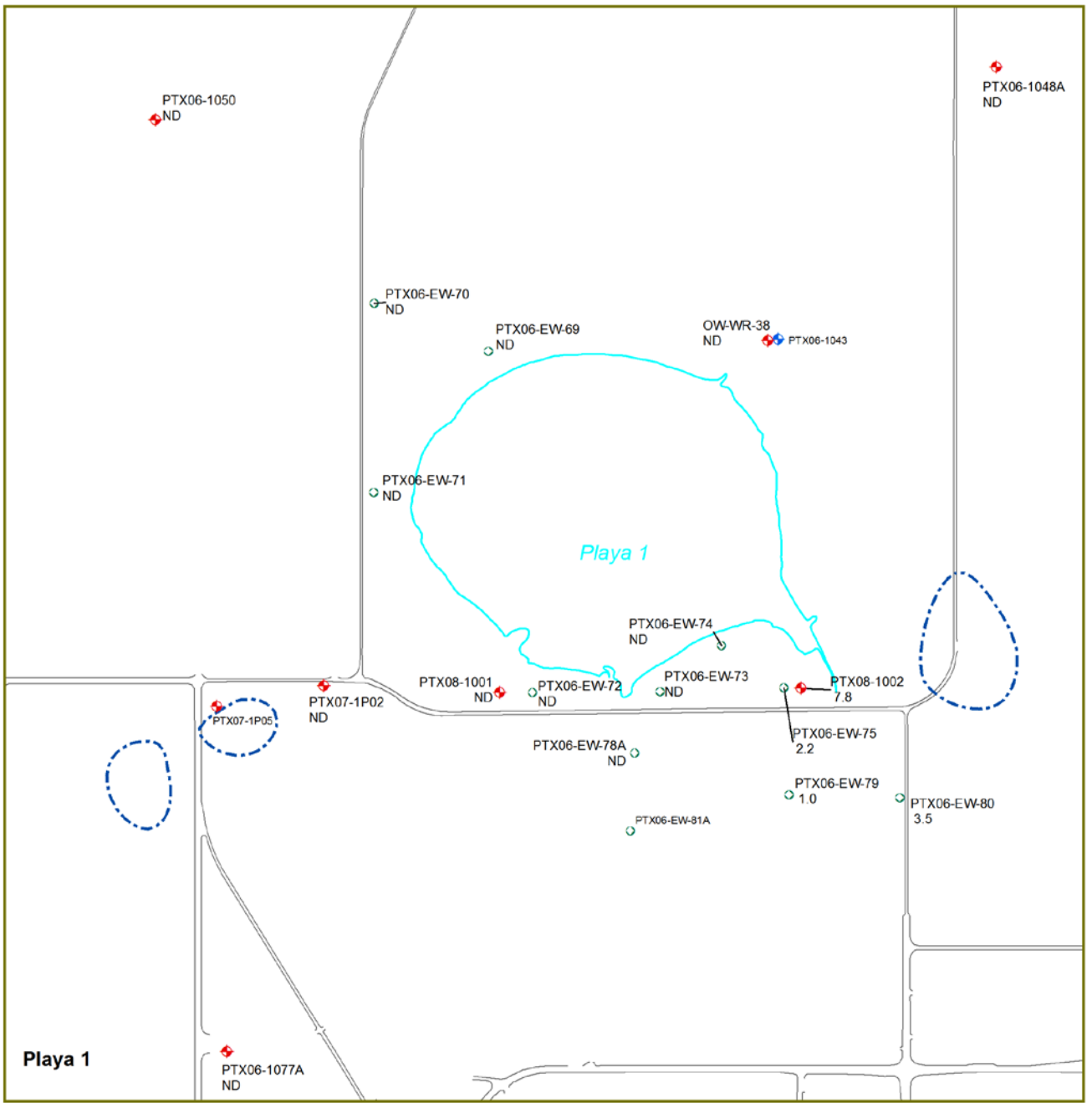
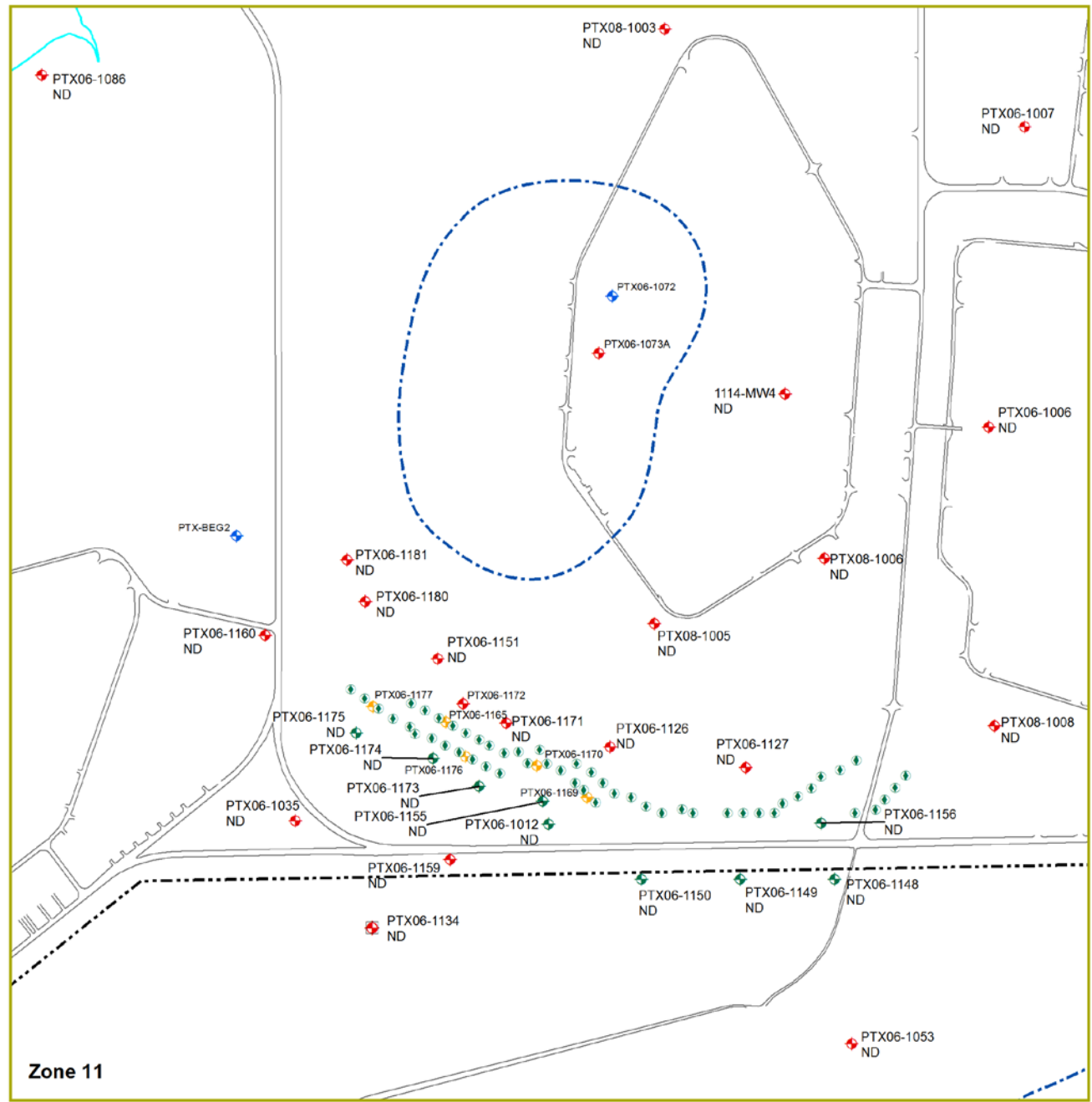
Groundwater Action Levels
PQL = 1 µg/L
GWPS = 1.2 µg/L

0 500 1,000 1,500 Feet

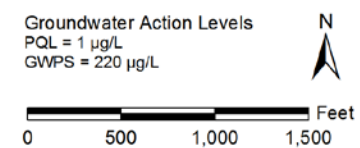
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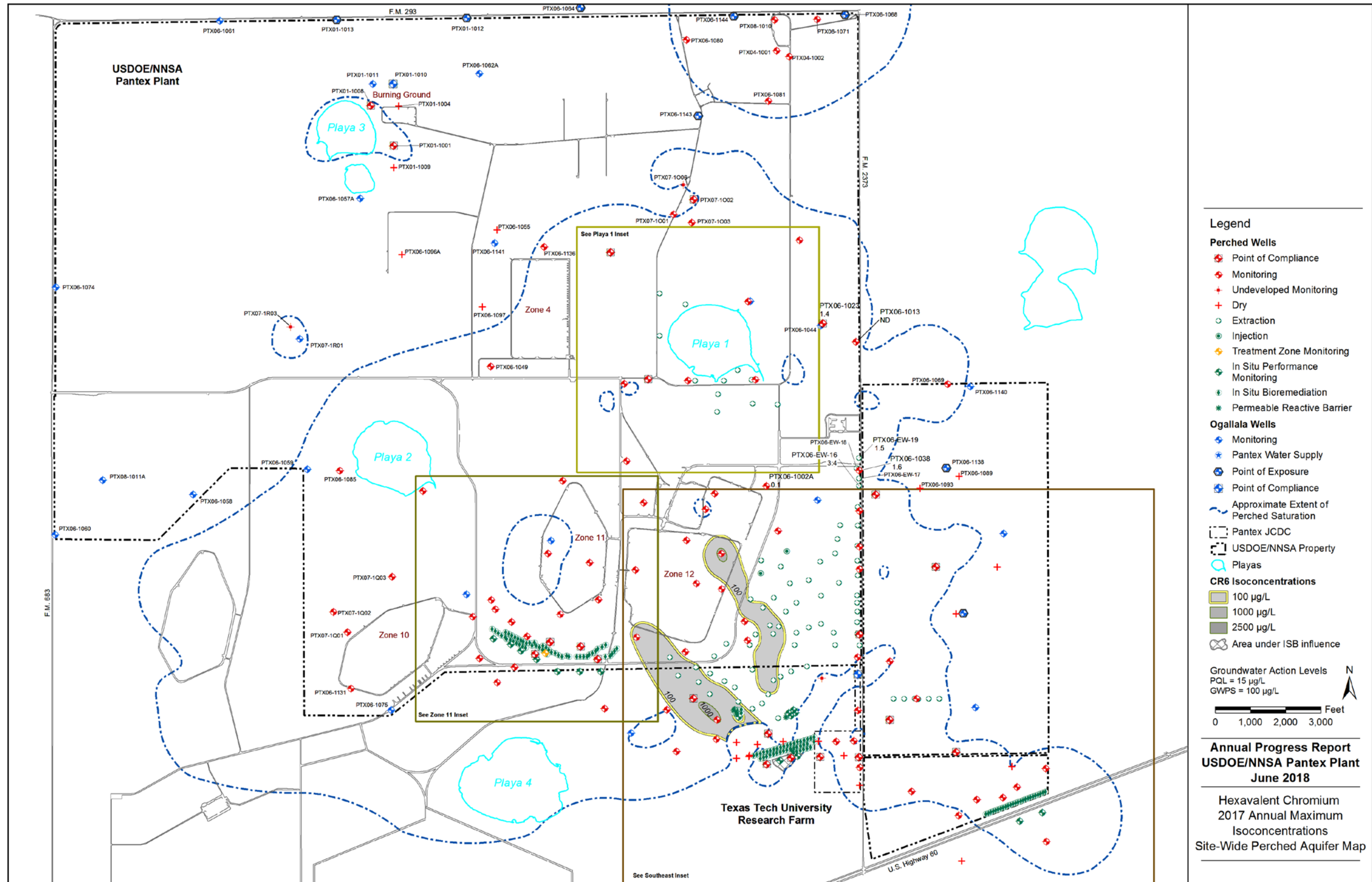


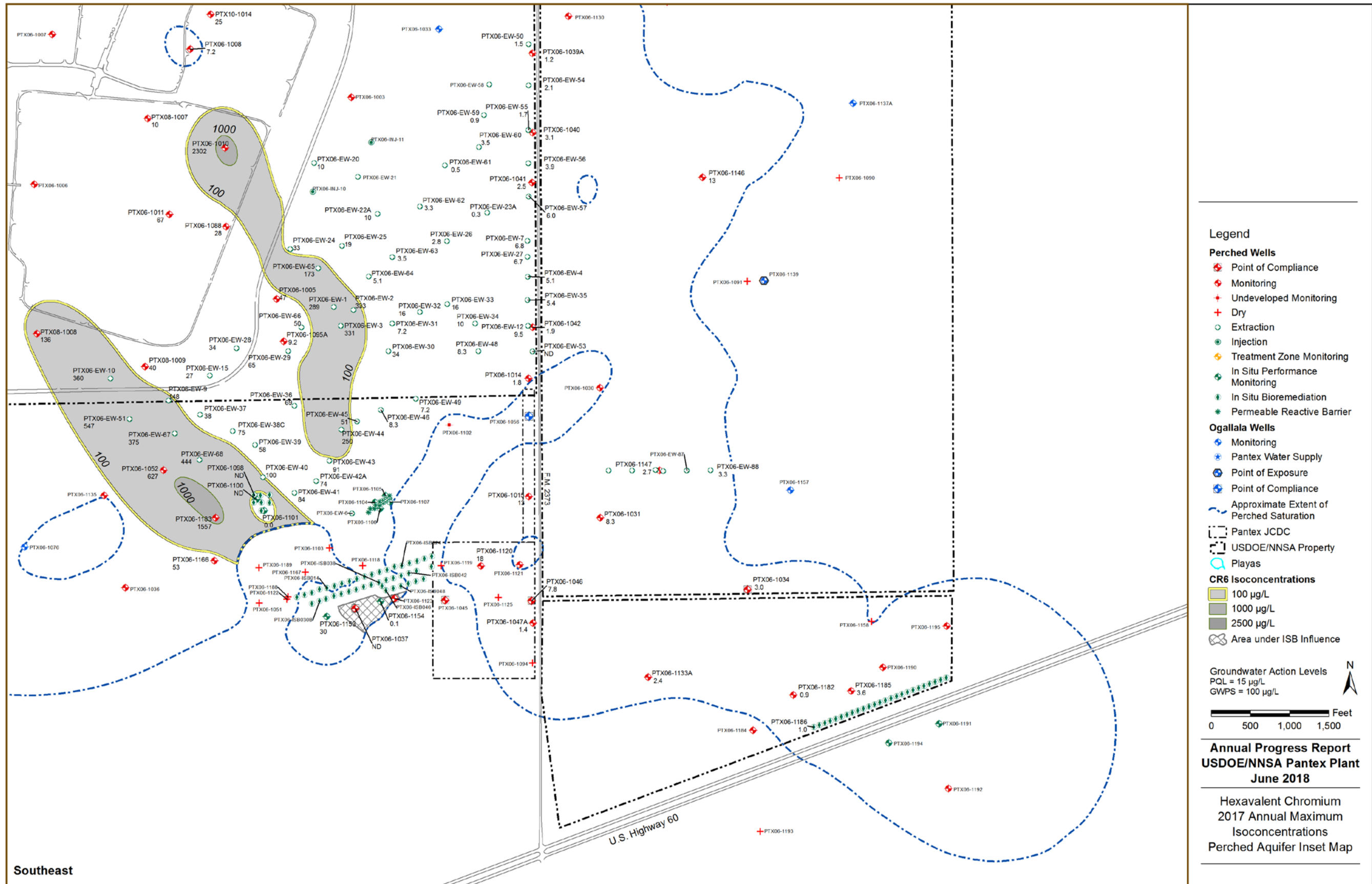
- Legend**
- | | | | |
|------------------------|--------------------------------|--|---------------------------------|
| Perched Wells | Injection | Ogallala Wells | USDOE/NNSA Property |
| Point of Compliance | Treatment Zone Monitoring | Monitoring | Playas |
| Monitoring | In Situ Performance Monitoring | Pantex Water Supply | TNB135 Isoconcentrations |
| Undeveloped Monitoring | In Situ Bioremediation | Point of Exposure | 220 µg/L |
| Dry | Permeable Reactive Barrier | Point of Compliance | 500 µg/L |
| Extraction | | Approximate Extent of Perched Saturation | Area under ISB Influence |



**Annual Progress Report
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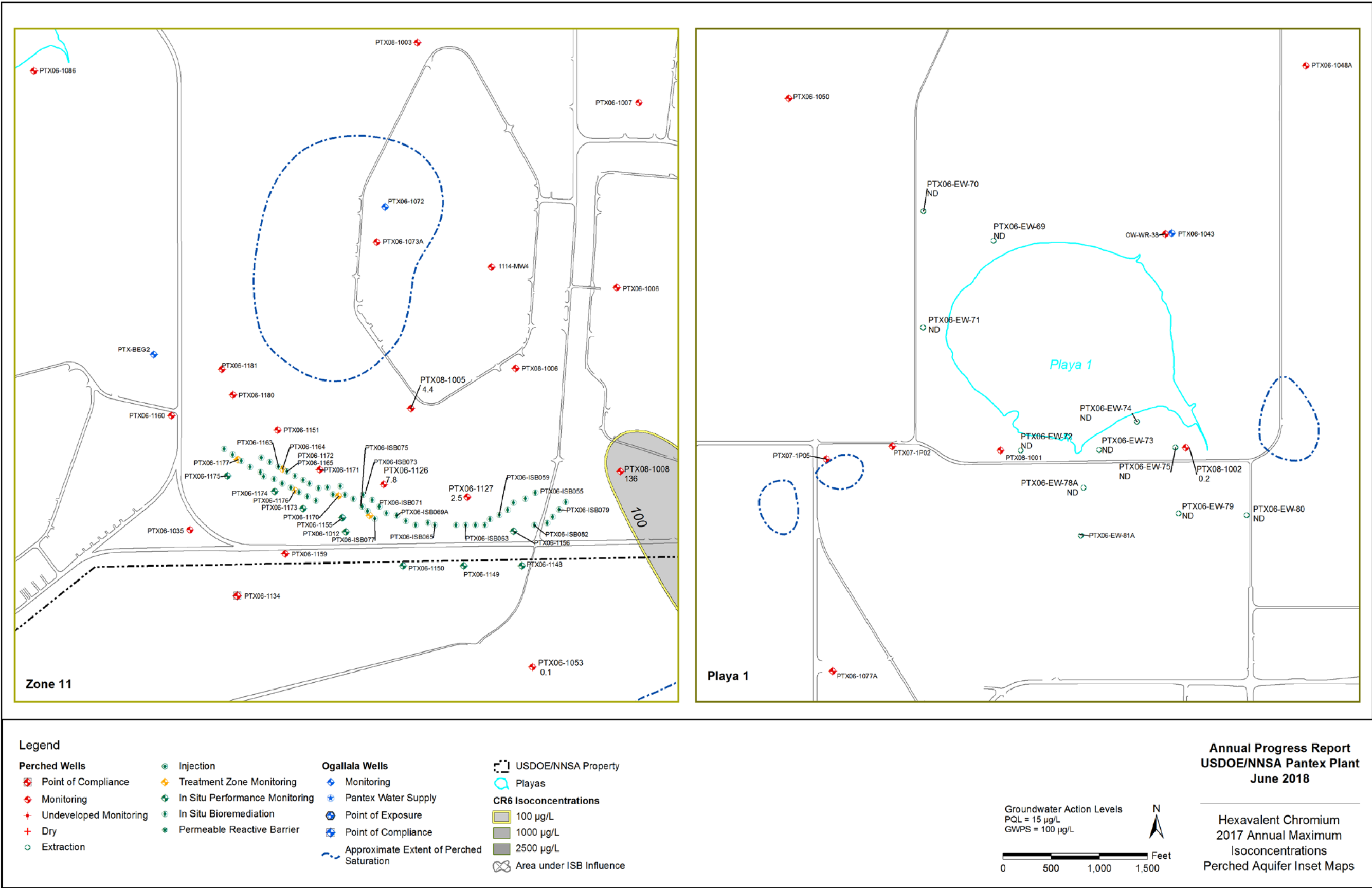
1,3,5-Trinitrobenzene (TNB135)
 2017 Annual Maximum
 Isoconcentrations
 Perched Aquifer Inset Maps

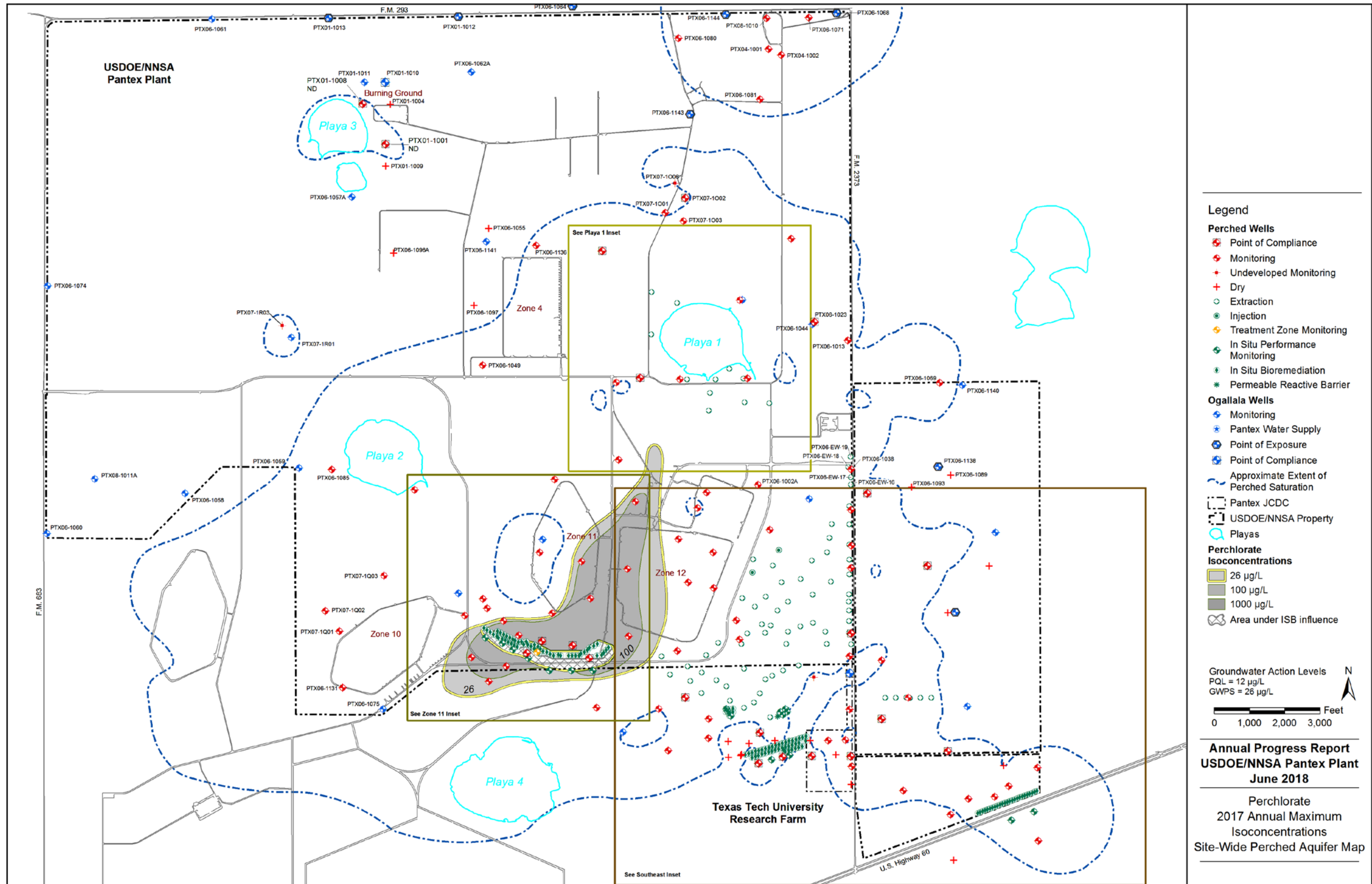




Southeast

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Legend

Perched Wells

- Point of Compliance
- Monitoring
- Undeveloped Monitoring
- Dry
- Extraction
- Injection
- Treatment Zone Monitoring
- In Situ Performance Monitoring
- In Situ Bioremediation
- Permeable Reactive Barrier

Ogallala Wells

- Monitoring
- Pantex Water Supply
- Point of Exposure
- Point of Compliance
- Approximate Extent of Perched Saturation

Other Symbols

- Pantex JCDC
- USDOE/NNSA Property
- Playas

Perchlorate Isoconcentrations

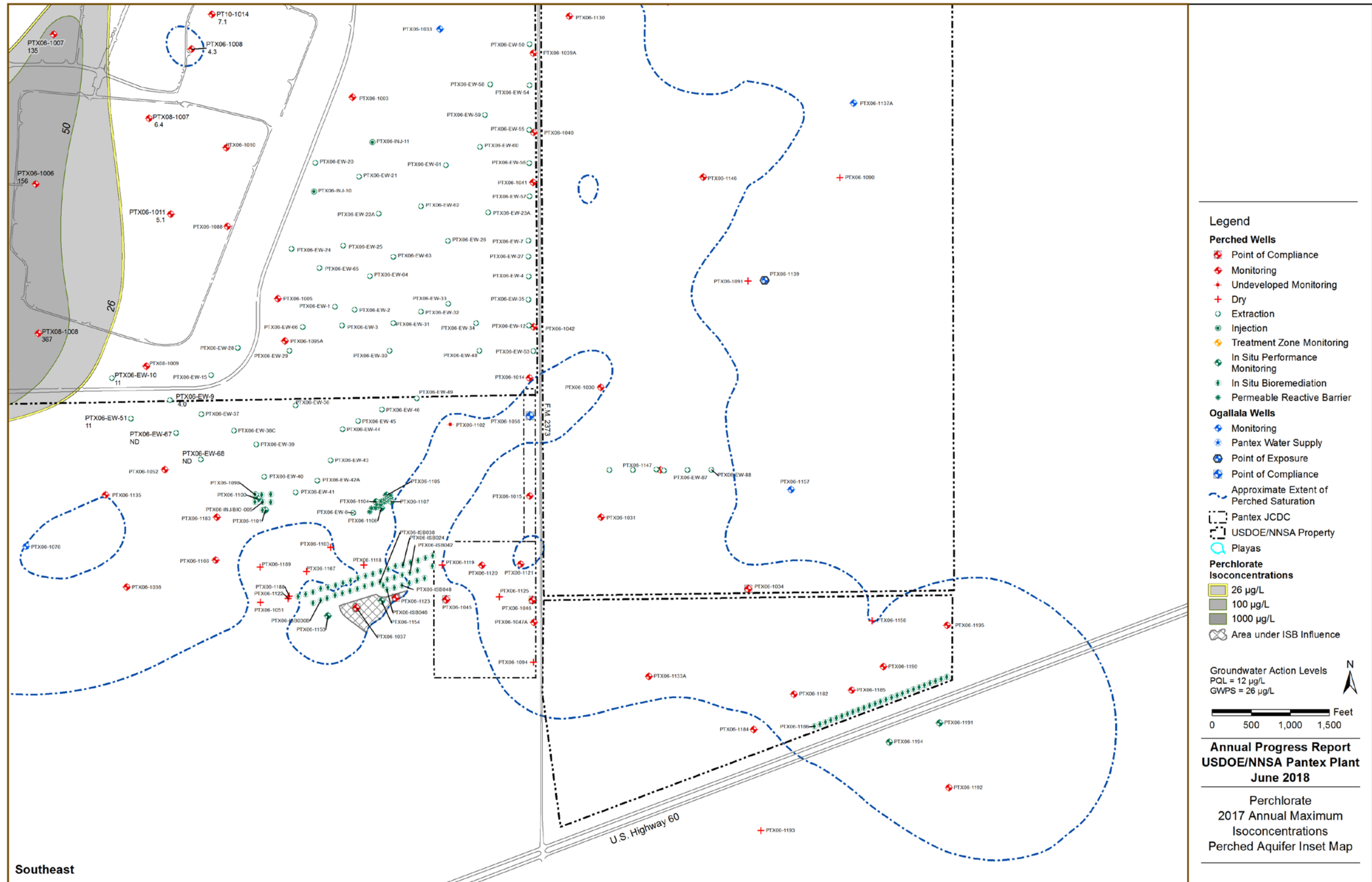
- 26 µg/L
- 100 µg/L
- 1000 µg/L
- Area under ISB influence

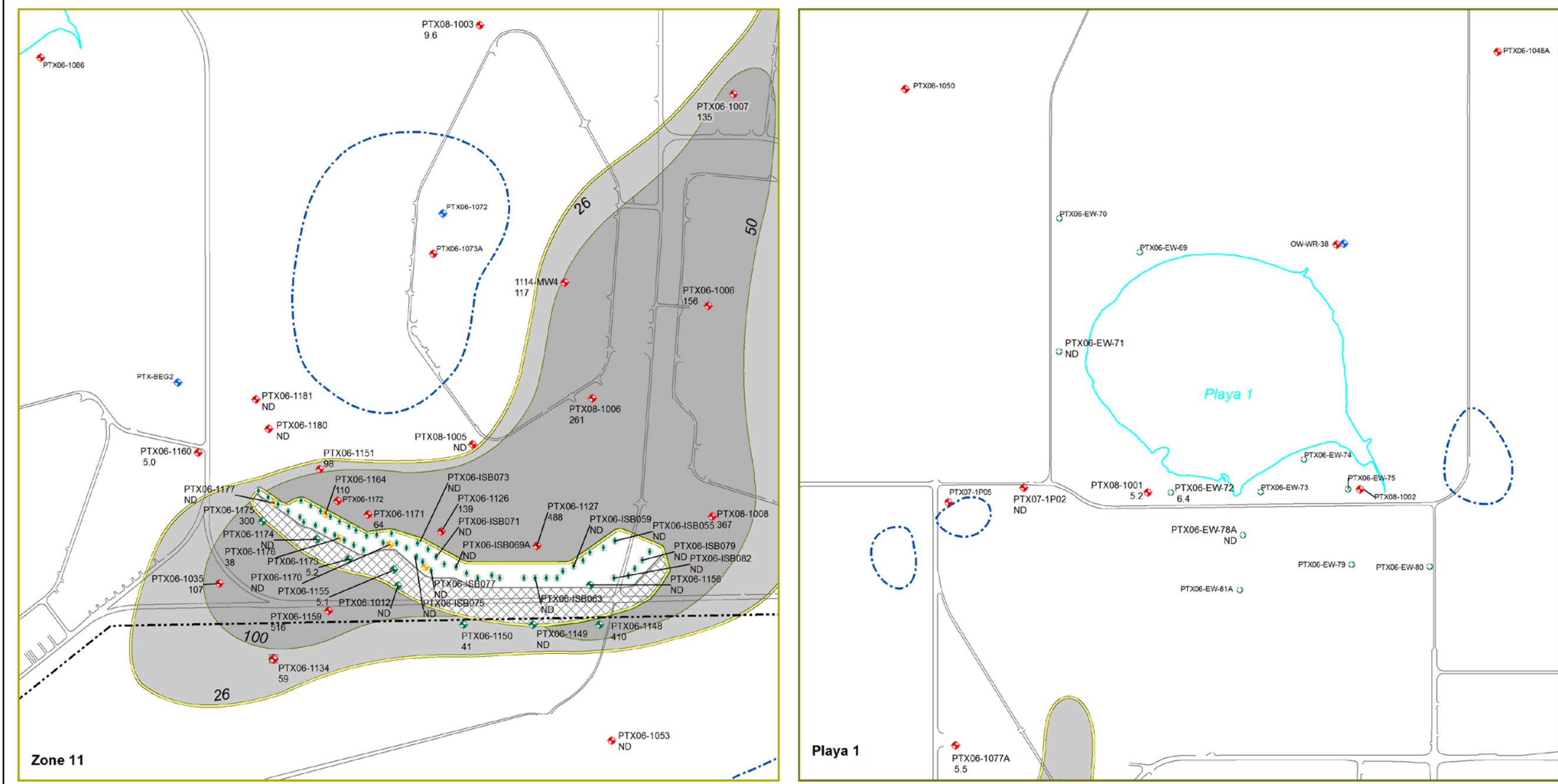
Groundwater Action Levels
 PQL = 12 µg/L
 GWPS = 26 µg/L

0 1,000 2,000 3,000 Feet

**Annual Progress Report
 USDOE/NNSA Pantex Plant
 June 2018**

Perchlorate
 2017 Annual Maximum
 Isoconcentrations
 Site-Wide Perched Aquifer Map





Legend			
Perched Wells	● Injection	Ogallala Wells	▣ USDOE/NNSA Property
● Point of Compliance	● Treatment Zone Monitoring	● Monitoring	○ Playas
● Monitoring	● In Situ Performance Monitoring	● Pantex Water Supply	Perchlorate Isoconcentrations
● Undeveloped Monitoring	● In Situ Bioremediation	● Point of Exposure	■ 26 µg/L
● Dry	● Permeable Reactive Barrier	● Point of Compliance	■ 100 µg/L
○ Extraction		● Approximate Extent of Perched Saturation	■ 1000 µg/L
			▣ Area under ISB Influence

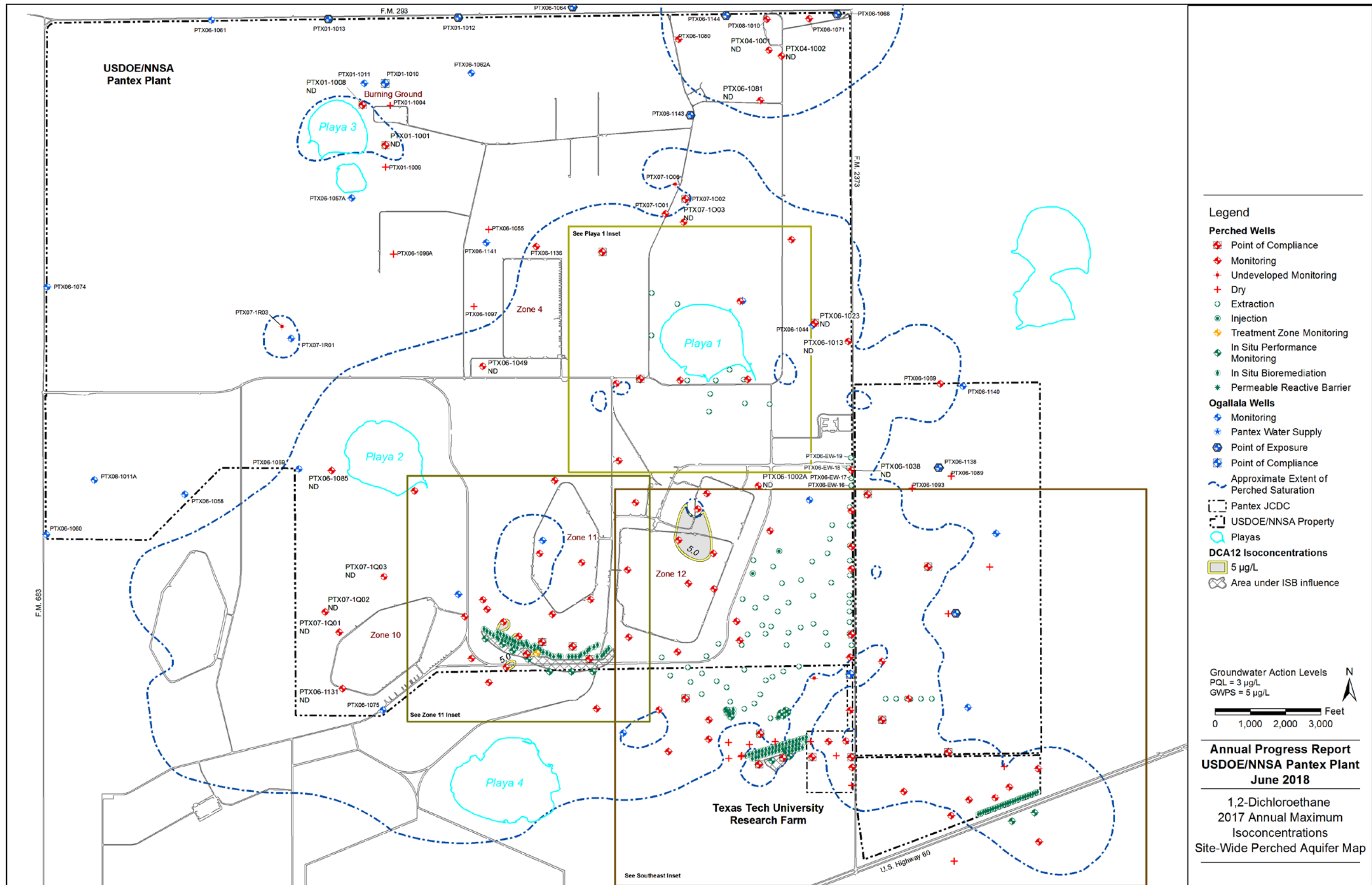
**Annual Progress Report
USDOE/NNSA Pantex Plant
June 2018**

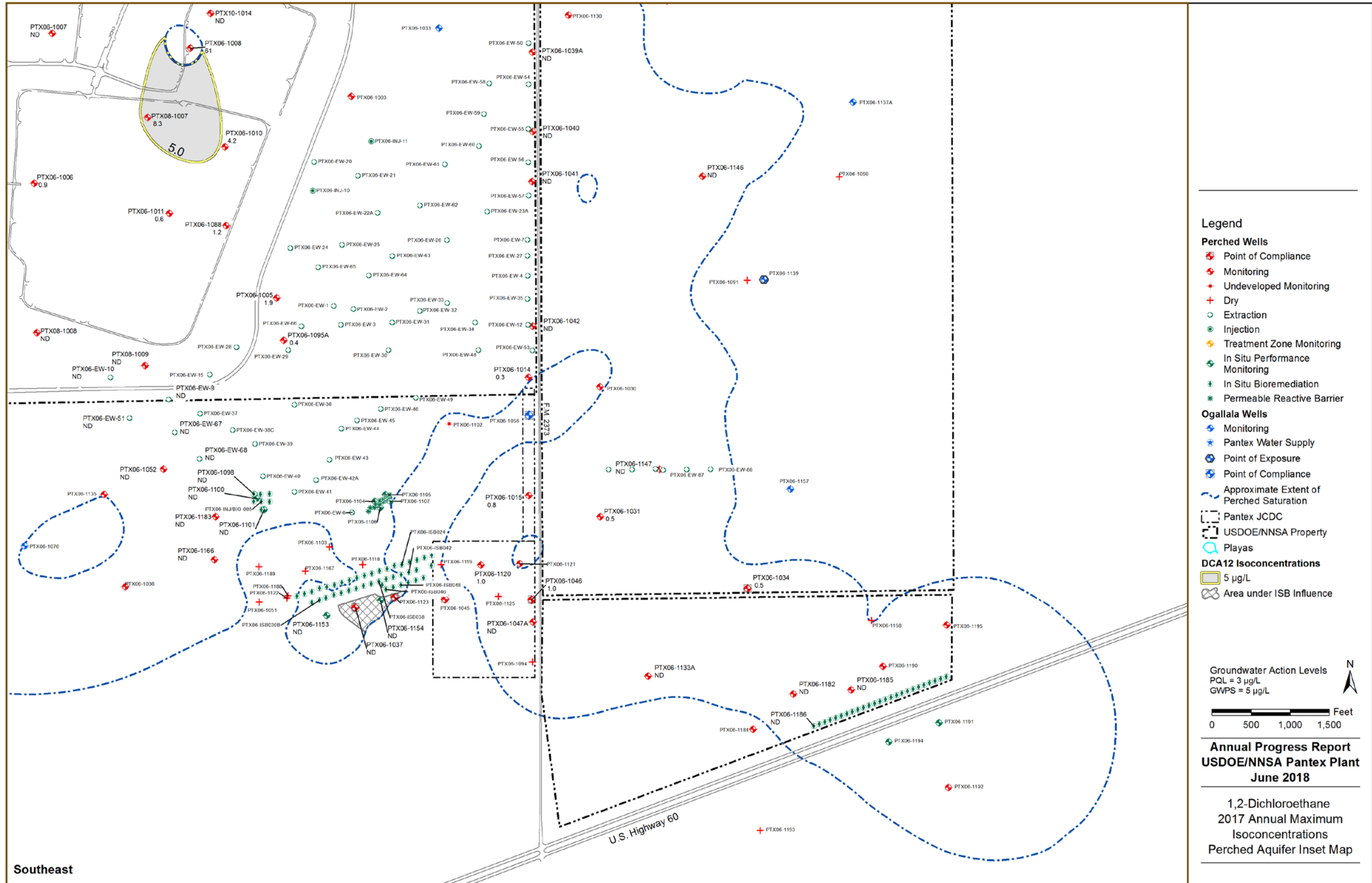
Perchlorate
2017 Annual Maximum
Isoconcentrations
Perched Aquifer Inset Maps

Groundwater Action Levels
PQL = 12 µg/L
GWPS = 26 µg/L

N

0 500 1,000 1,500 Feet





Legend

- Perched Wells**
- ◻ Point of Compliance
 - ◻ Monitoring
 - ◻ Undeveloped Monitoring
 - ◻ Dry
 - ◻ Extraction
 - ◻ Injection
 - ◻ Treatment Zone Monitoring
 - ◻ In Situ Performance Monitoring
 - ◻ In Situ Bioremediation
 - ◻ Permeable Reactive Barrier
- Ogallala Wells**
- ◻ Monitoring
 - ◻ Pantex Water Supply
 - ◻ Point of Exposure
 - ◻ Point of Compliance
 - ◻ Approximate Extent of Perched Saturation
 - ◻ Pantex JCDC
 - ◻ USDOE/NNSA Property
 - ◻ Playas
- DCA12 Isoconcentrations**
- ◻ 5 µg/L
 - ◻ Area under ISB Influence

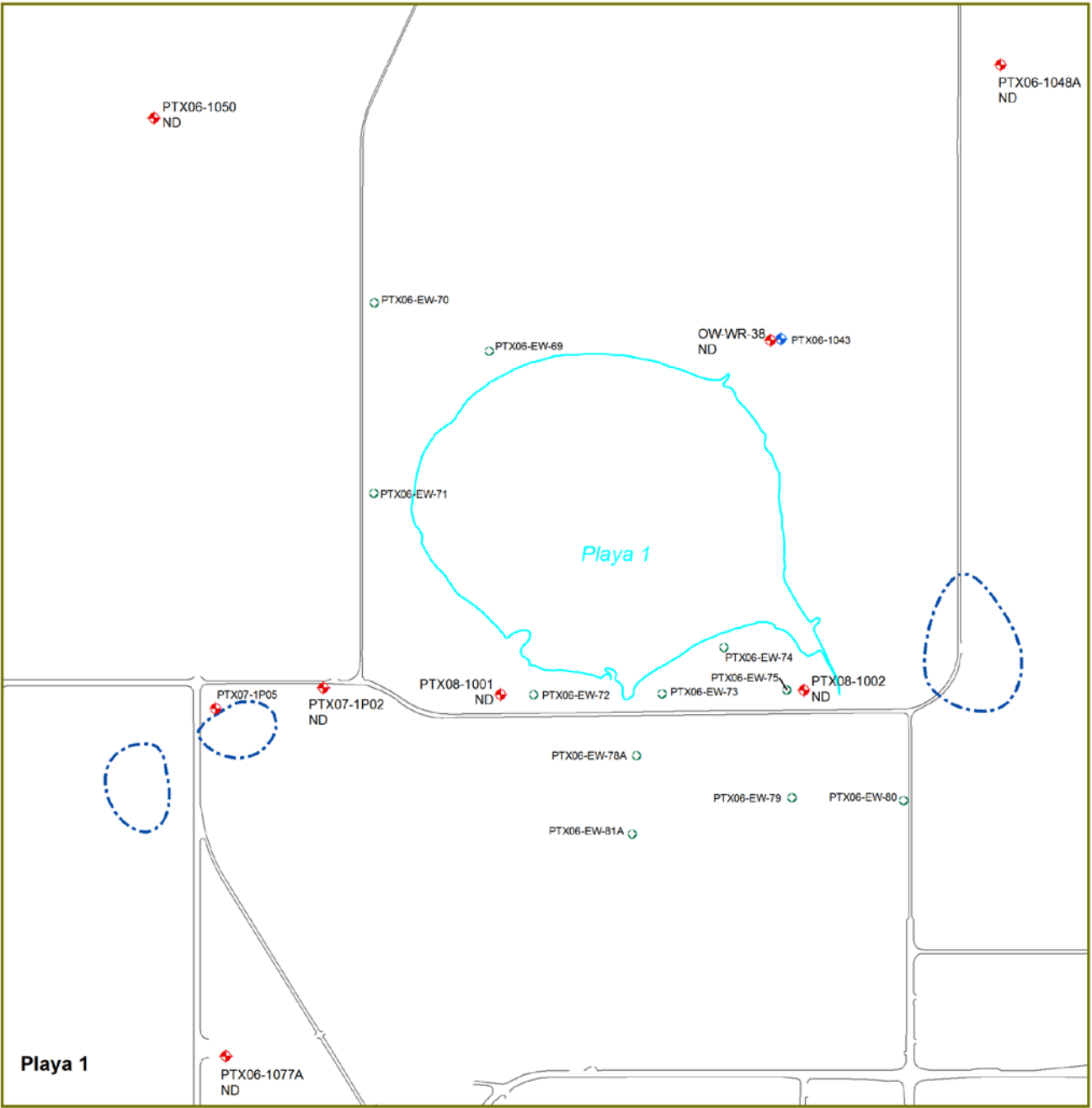
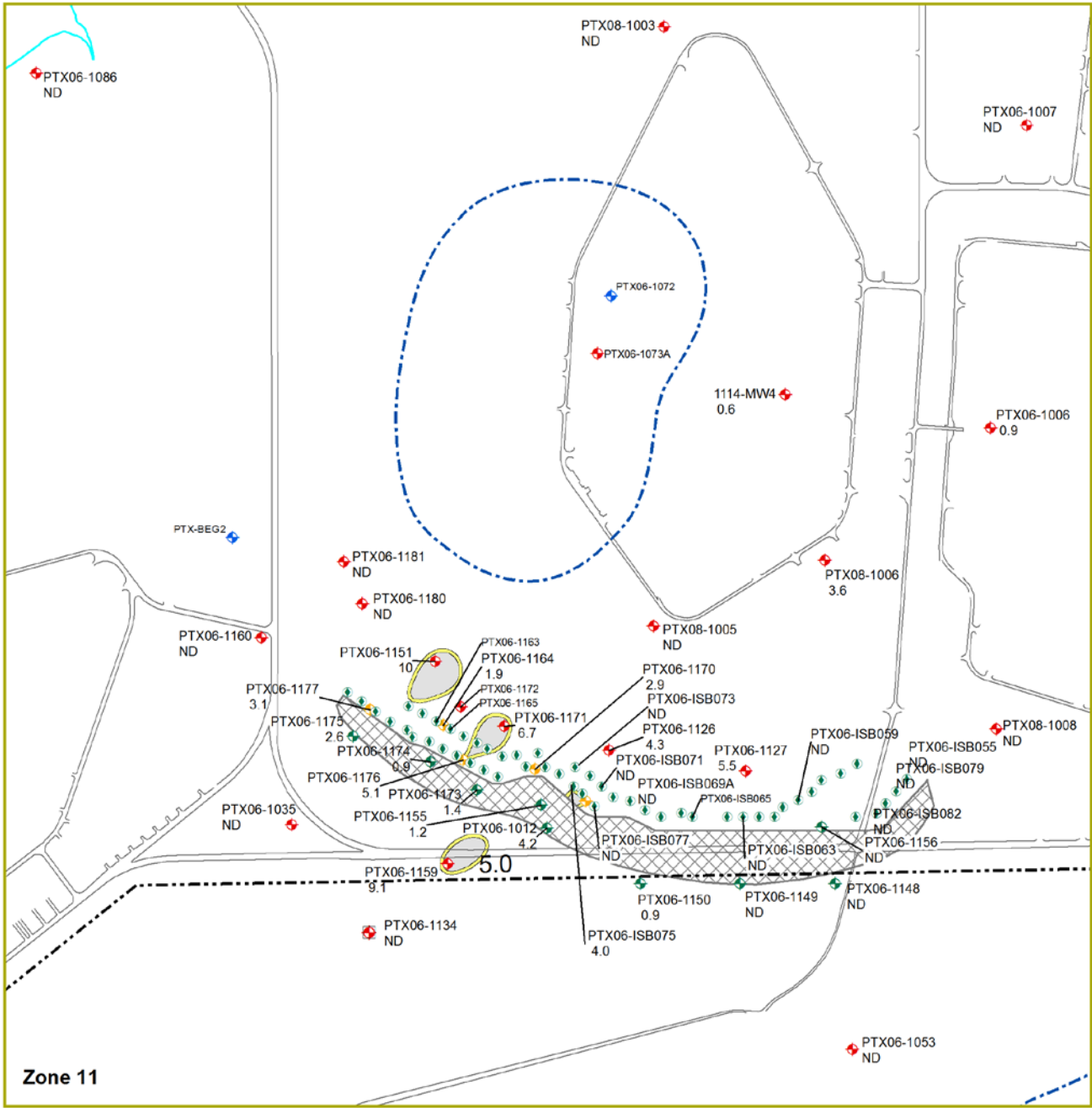
Groundwater Action Levels
 PQL = 3 µg/L
 GWPS = 5 µg/L

Feet
 0 500 1,000 1,500

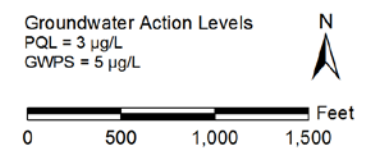
**Annual Progress Report
 USDOE/NNSA Pantex Plant
 June 2018**

1,2-Dichloroethane
 2017 Annual Maximum
 Isoconcentrations
 Perched Aquifer Inset Map

Southeast

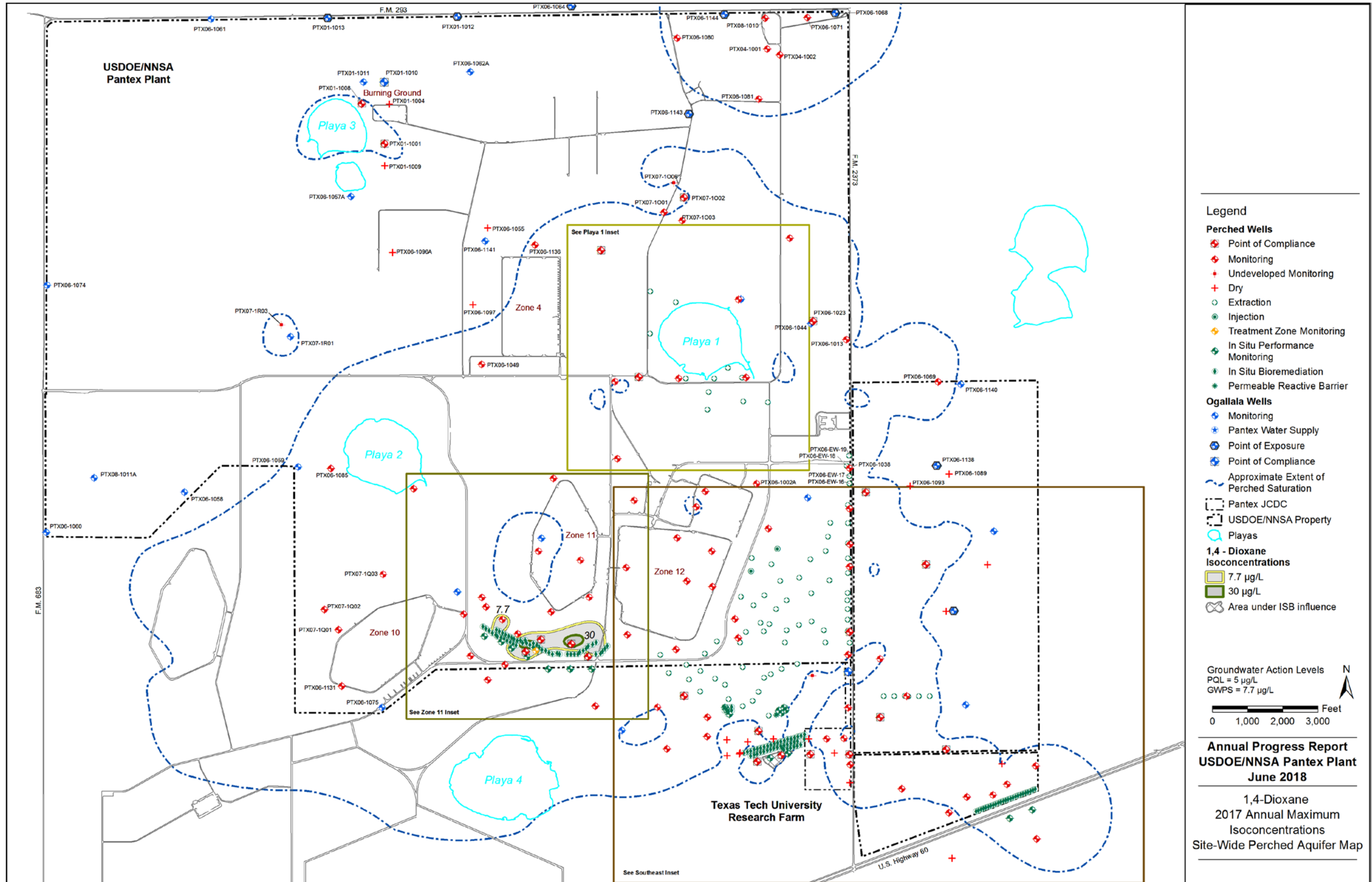


- Legend**
- Perched Wells**
 - Point of Compliance
 - Monitoring
 - Undeveloped Monitoring
 - Dry
 - Extraction
 - Injection
 - Treatment Zone Monitoring
 - In Situ Performance Monitoring
 - In Situ Bioremediation
 - Permeable Reactive Barrier
 - Ogallala Wells**
 - Monitoring
 - Pantex Water Supply
 - Point of Exposure
 - Point of Compliance
 - Approximate Extent of Perched Saturation
 - USDOE/NNSA Property
 - Playas
 - DCA12 Isoconcentrations**
 - 5 µg/L
 - Area under ISB Influence



Annual Progress Report
USDOE/NNSA Pantex Plant
June 2018

1,2-Dichloroethane
2017 Annual Maximum
Isoconcentrations
Perched Aquifer Inset Maps



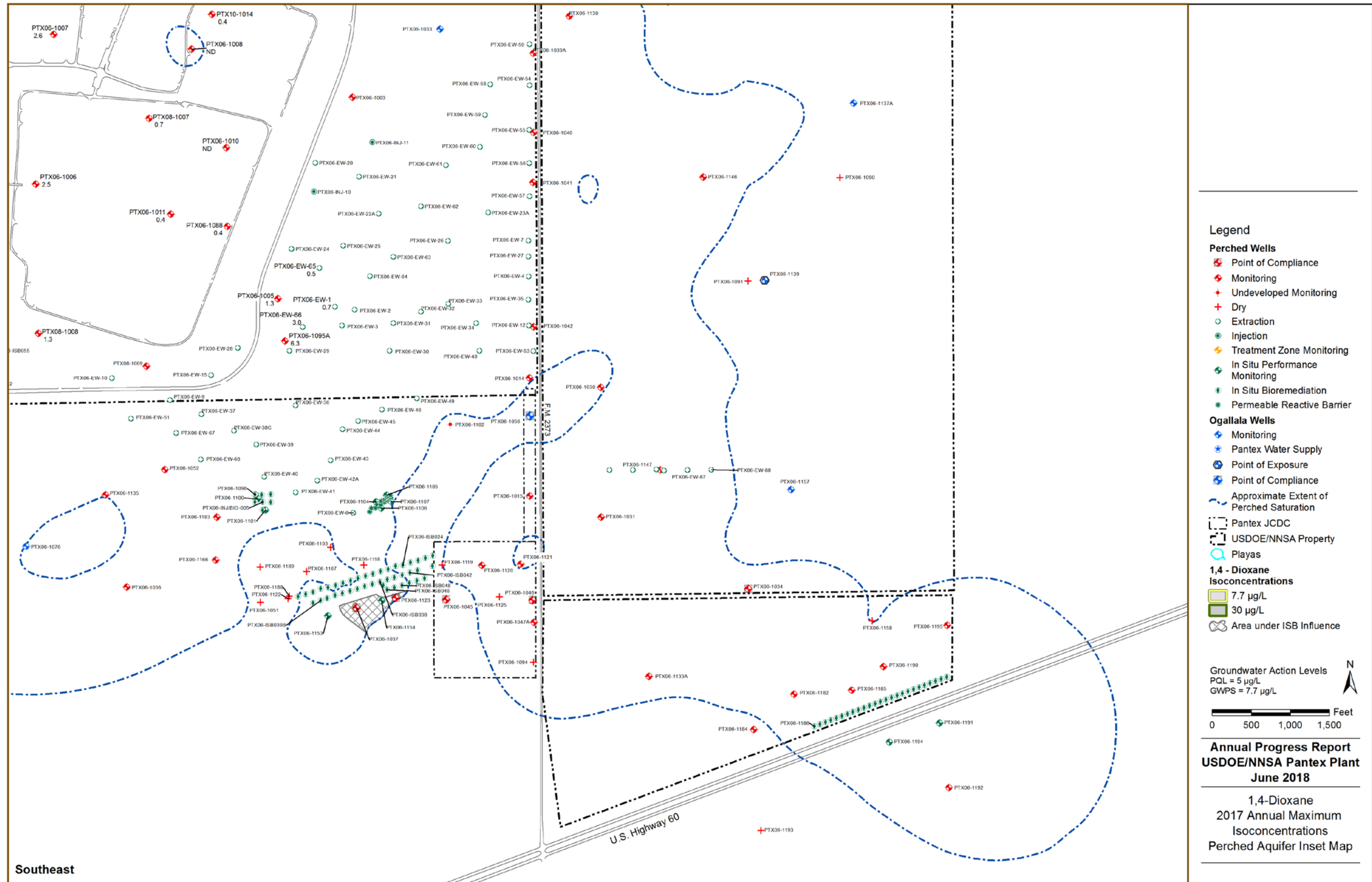
- Legend**
- Perched Wells**
- ◆ Point of Compliance
 - ◆ Monitoring
 - + Undeveloped Monitoring
 - + Dry
 - Extraction
 - Injection
 - ◆ Treatment Zone Monitoring
 - ◆ In Situ Performance Monitoring
 - ◆ In Situ Bioremediation
 - ◆ Permeable Reactive Barrier
- Ogallala Wells**
- ◆ Monitoring
 - ◆ Pantex Water Supply
 - ◆ Point of Exposure
 - ◆ Point of Compliance
 - Approximate Extent of Perched Saturation
 - - - Pantex JCDC
 - - - USDOE/NNSA Property
 - Playas
- 1,4 - Dioxane Isoconcentrations**
- 7.7 µg/L
 - 30 µg/L
 - ⊗ Area under ISB influence

Groundwater Action Levels
 PQL = 5 µg/L
 GWPS = 7.7 µg/L

0 1,000 2,000 3,000 Feet

**Annual Progress Report
 USDOE/NNSA Pantex Plant
 June 2018**

1,4-Dioxane
 2017 Annual Maximum
 Isoconcentrations
 Site-Wide Perched Aquifer Map



Legend

Perched Wells

- ⊕ Point of Compliance
- ⊕ Monitoring
- ⊕ Undeveloped Monitoring
- ⊕ Dry
- ⊕ Extraction
- ⊕ Injection
- ⊕ Treatment Zone Monitoring
- ⊕ In Situ Performance Monitoring
- ⊕ In Situ Bioremediation
- ⊕ Permeable Reactive Barrier

Ogallala Wells

- ⊕ Monitoring
- ⊕ Pantex Water Supply
- ⊕ Point of Exposure
- ⊕ Point of Compliance
- ⊕ Approximate Extent of Perched Saturation
- ⊕ Pantex JCDC
- ⊕ USDOE/NNSA Property
- ⊕ Playas

1,4 - Dioxane Isoconcentrations

- 7.7 µg/L
- 30 µg/L
- ⊕ Area under ISB Influence

Groundwater Action Levels
PQL = 5 µg/L
GWPS = 7.7 µg/L

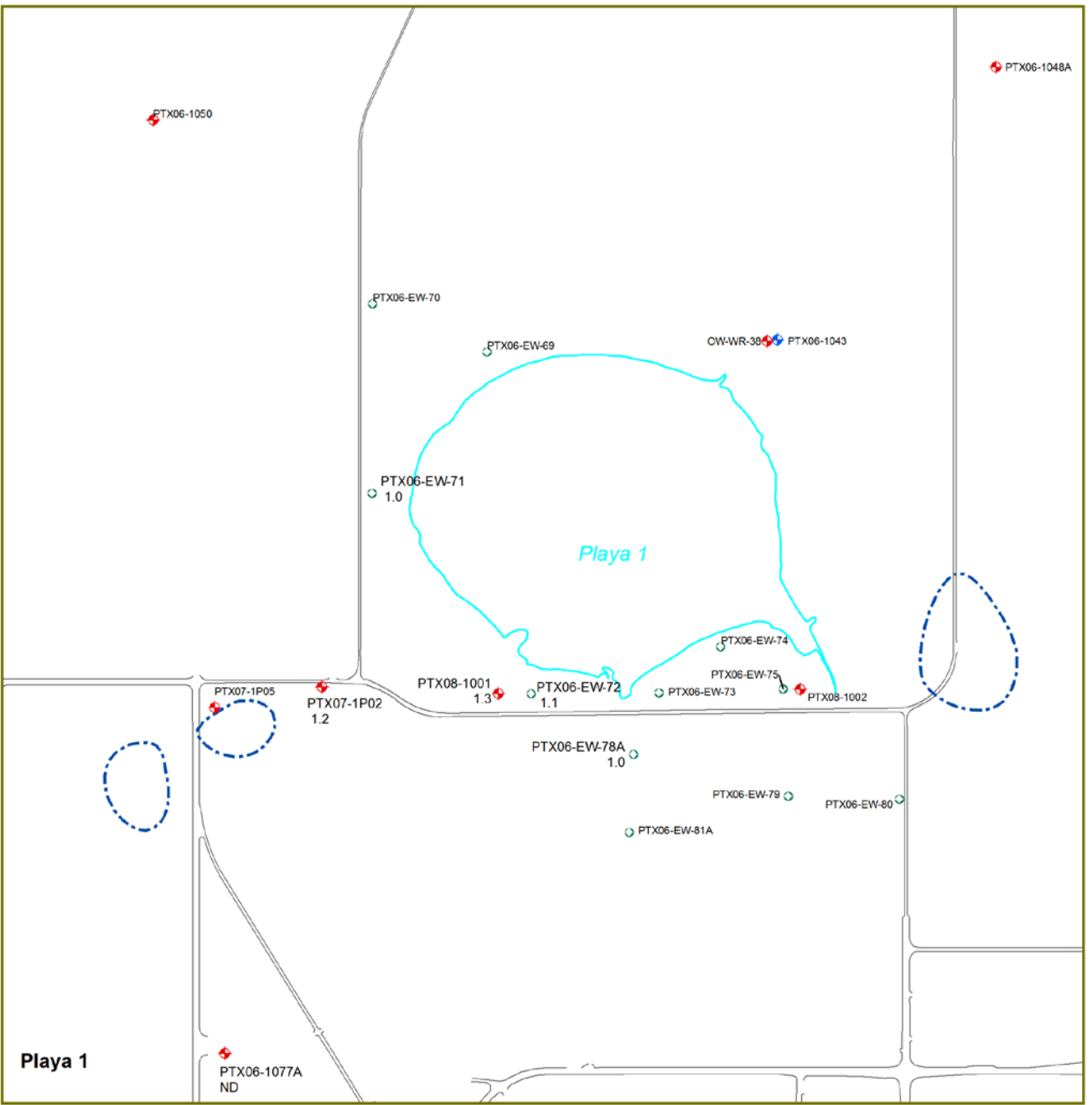
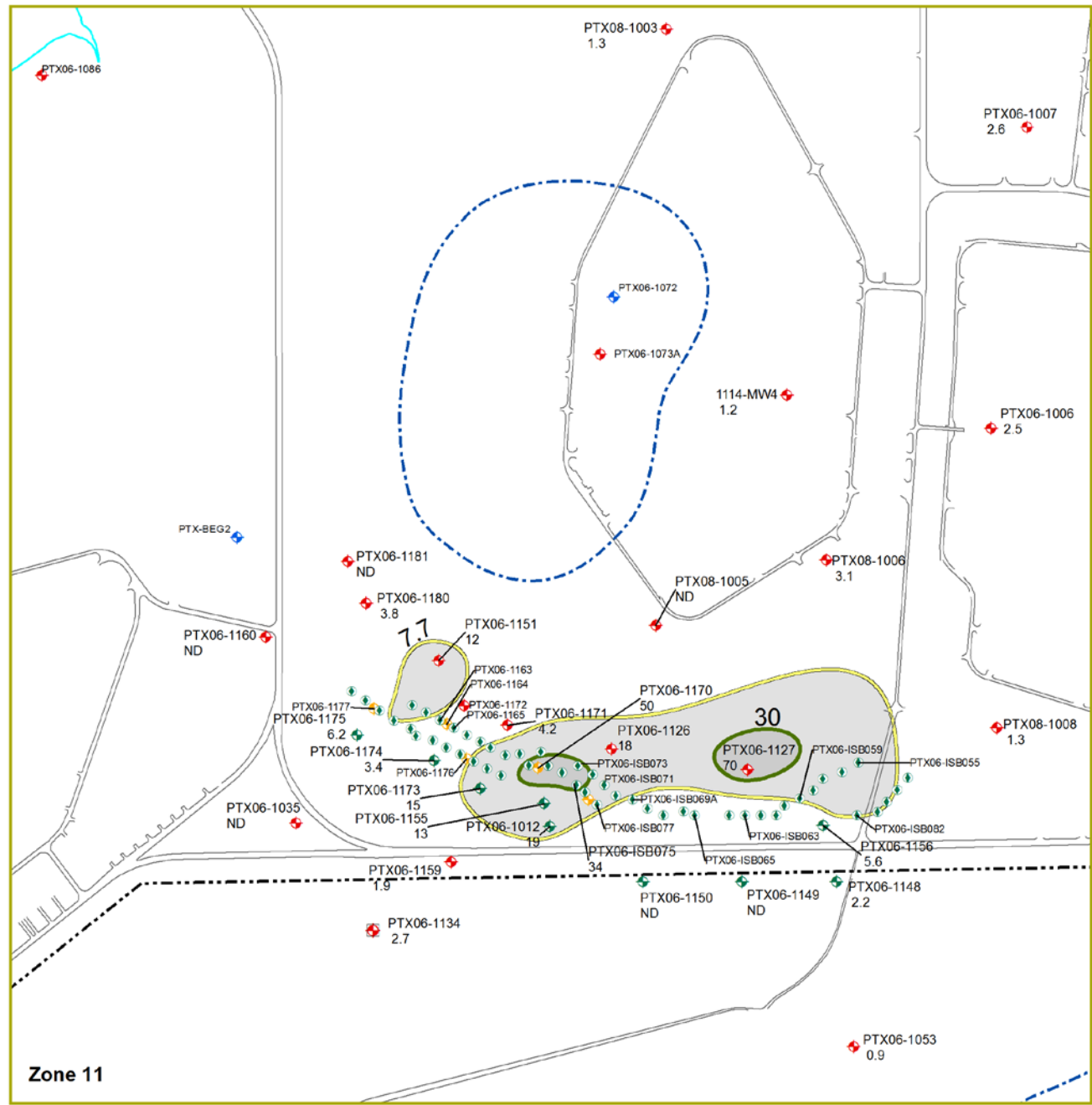
0 500 1,000 1,500 Feet

**Annual Progress Report
USDOE/NNSA Pantex Plant
June 2018**

1,4-Dioxane
2017 Annual Maximum
Isoconcentrations
Perched Aquifer Inset Map

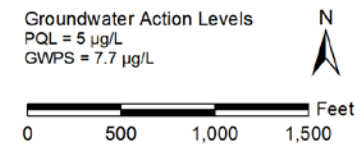
Southeast

U.S. Highway 60



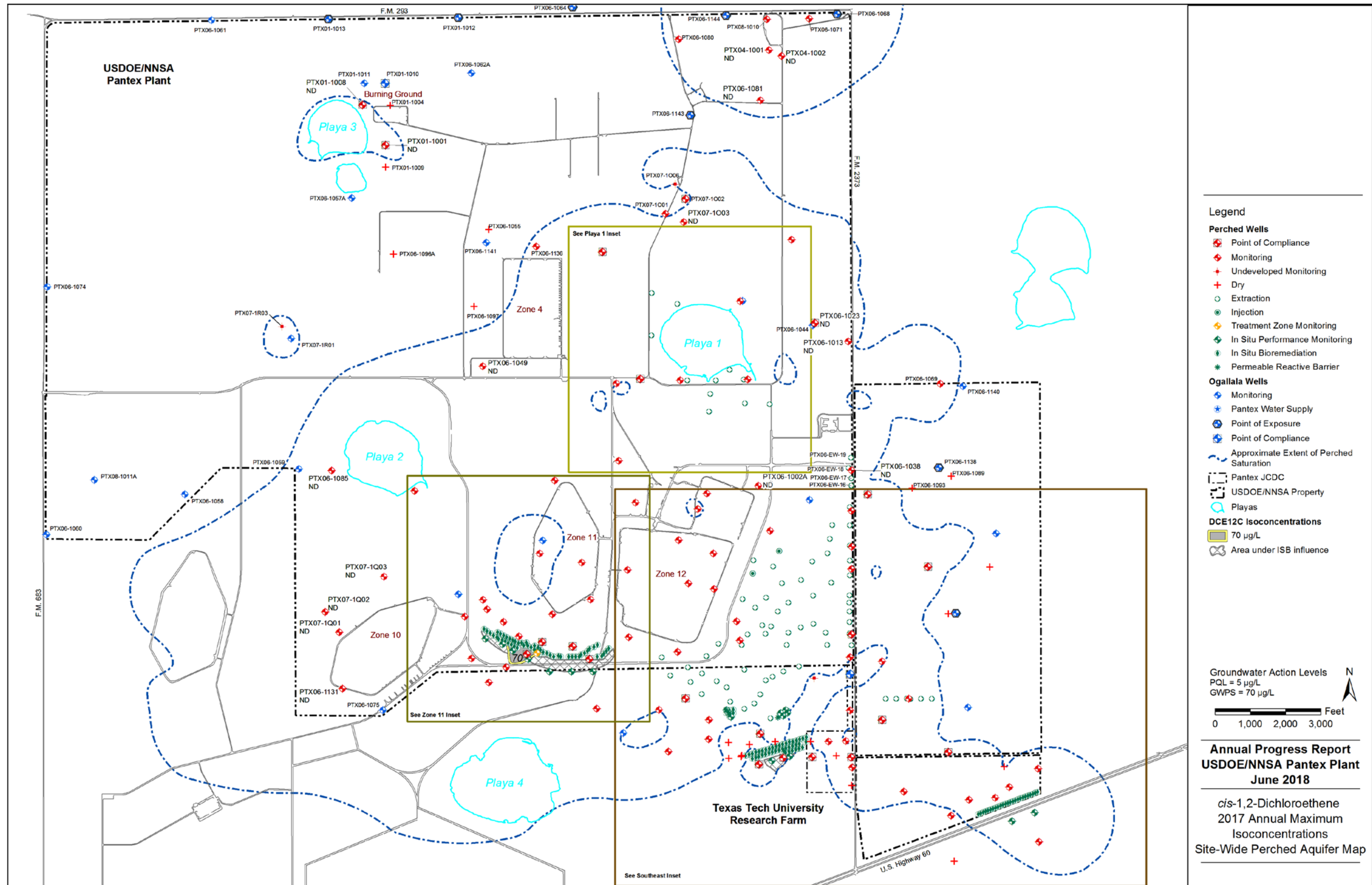
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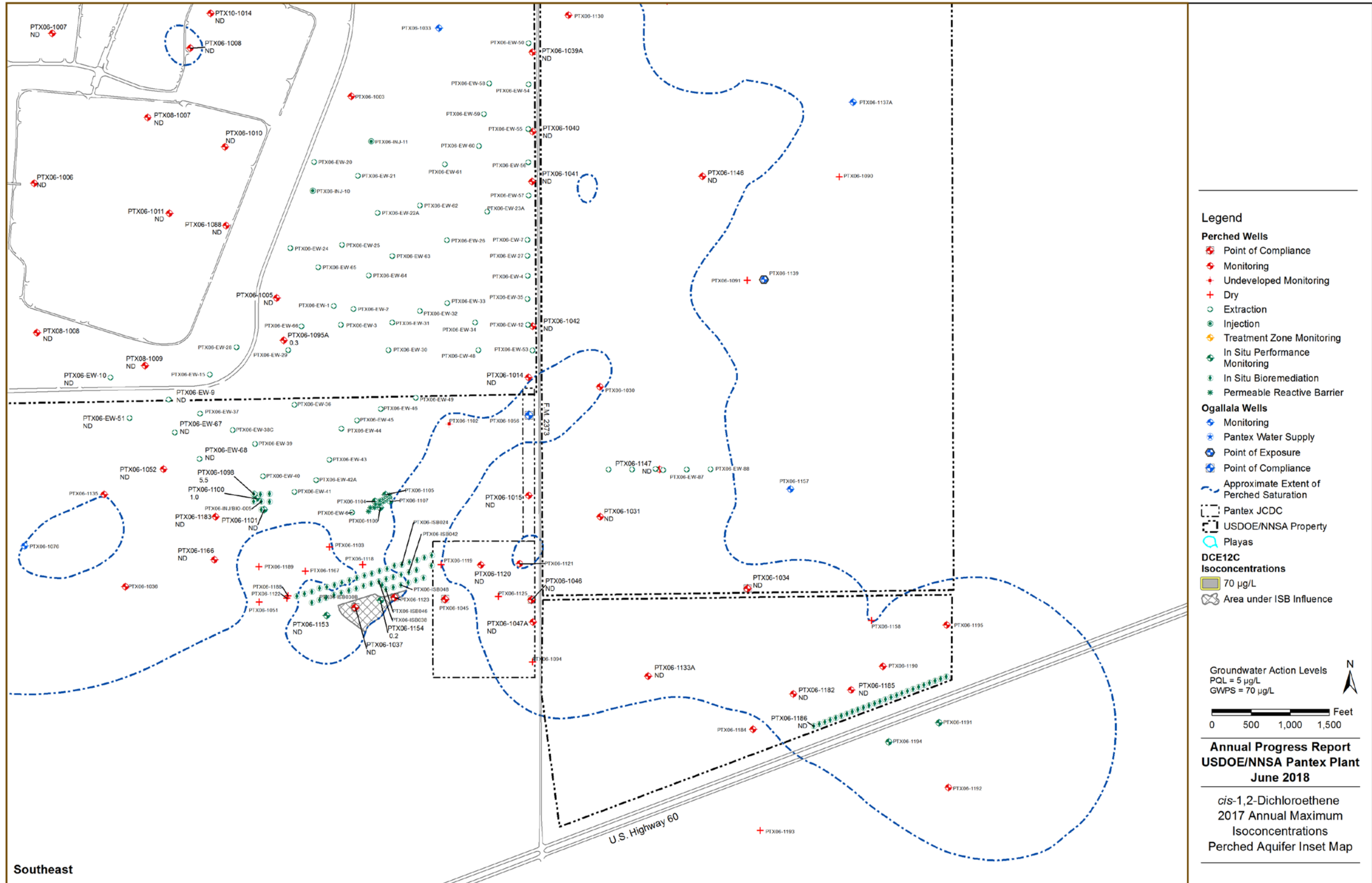
- | | | | |
|------------------------|--------------------------------|--|--|
| Perched Wells | Injection | Ogallala Wells | USDOE/NNSA Property |
| Point of Compliance | Treatment Zone Monitoring | Monitoring | Playas |
| Monitoring | In Situ Performance Monitoring | Pantex Water Supply | 1,4 - Dioxane Isoconcentrations |
| Undeveloped Monitoring | In Situ Bioremediation | Point of Exposure | 7.7 µg/L |
| Dry | Permeable Reactive Barrier | Point of Compliance | 30 µg/L |
| Extraction | | Approximate Extent of Perched Saturation | Area under ISB Influence |



Annual Progress Report
 USDOE/NNSA Pantex Plant
 June 2018

1,4-Dioxane
 2017 Annual Maximum
 Isoconcentrations
 Perched Aquifer Inset Maps





Legend

Perched Wells

- Point of Compliance
- Monitoring
- Undeveloped Monitoring
- Dry
- Extraction
- Injection
- Treatment Zone Monitoring
- In Situ Performance Monitoring
- In Situ Bioremediation
- Permeable Reactive Barrier

Ogallala Wells

- Monitoring
- Pantex Water Supply
- Point of Exposure
- Point of Compliance
- Approximate Extent of Perched Saturation
- Pantex JCDC
- USDOE/NNSA Property
- Playas

DCE12C Isoconcentrations

- 70 µg/L
- Area under ISB Influence

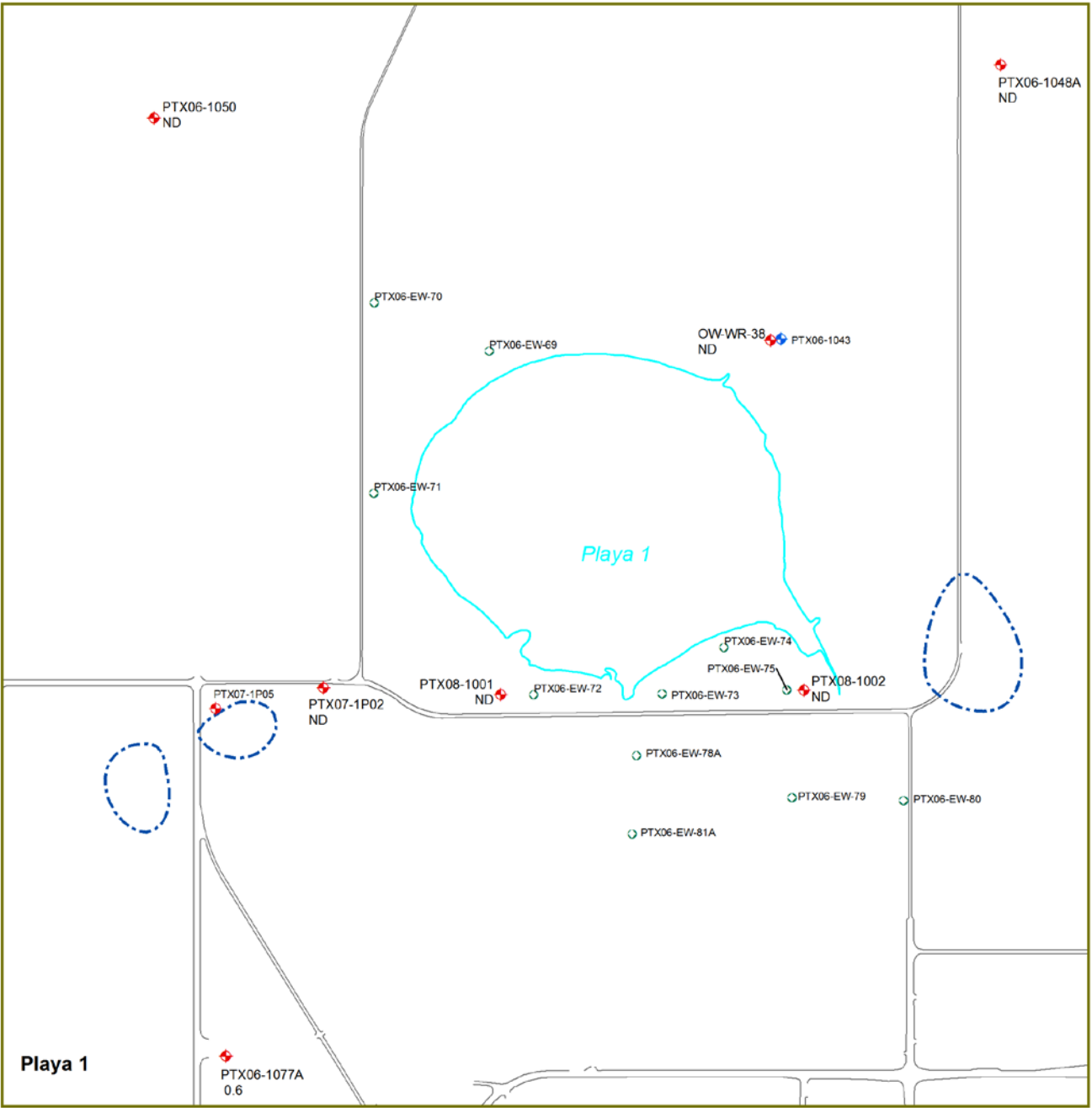
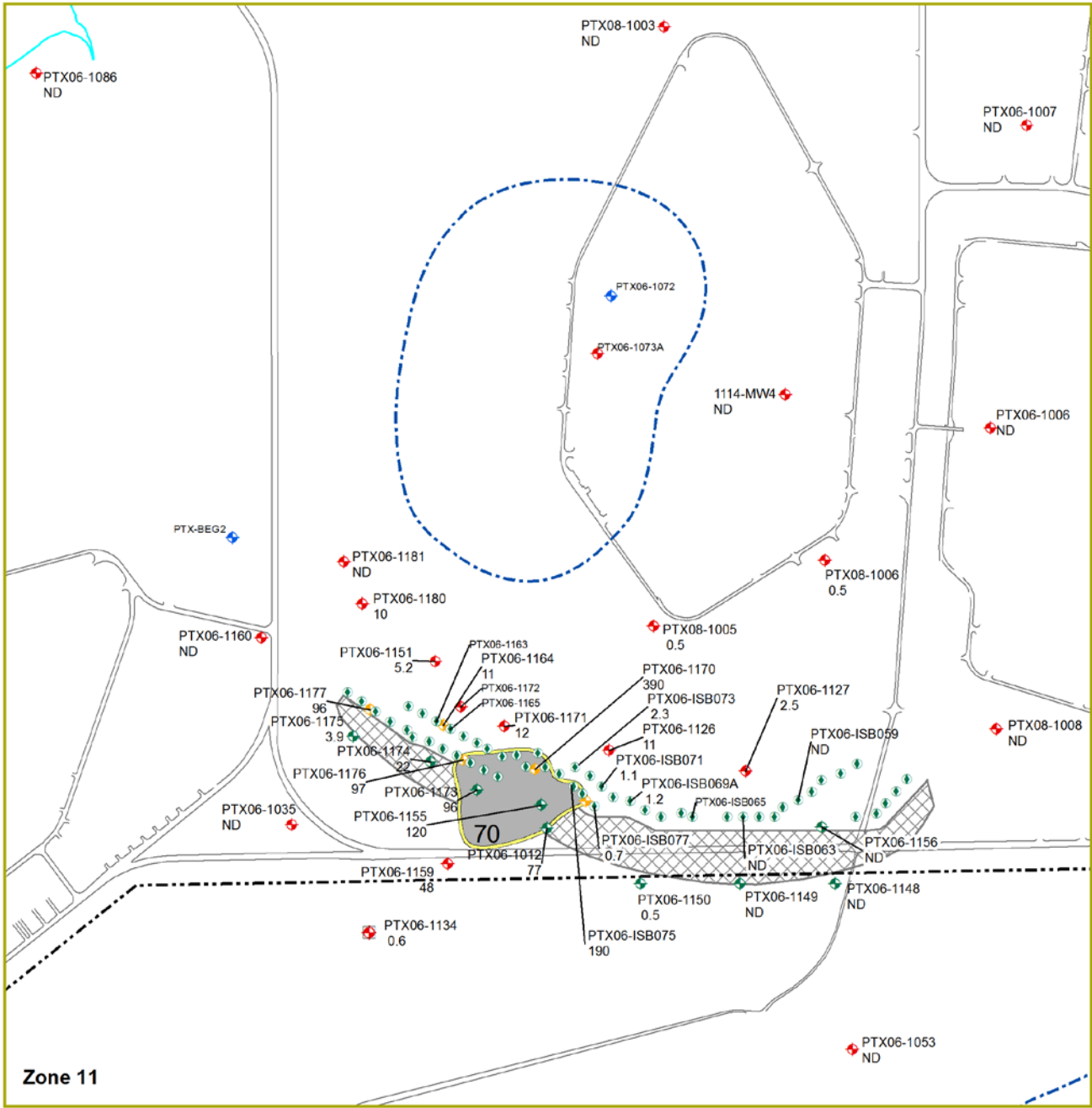
Groundwater Action Levels
 PQL = 5 µg/L
 GWPS = 70 µg/L

0 500 1,000 1,500 Feet

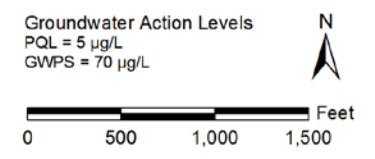
**Annual Progress Report
 USDOE/NNSA Pantex Plant
 June 2018**

cis-1,2-Dichloroethene
 2017 Annual Maximum
 Isoconcentrations
 Perched Aquifer Inset Map

Southeast

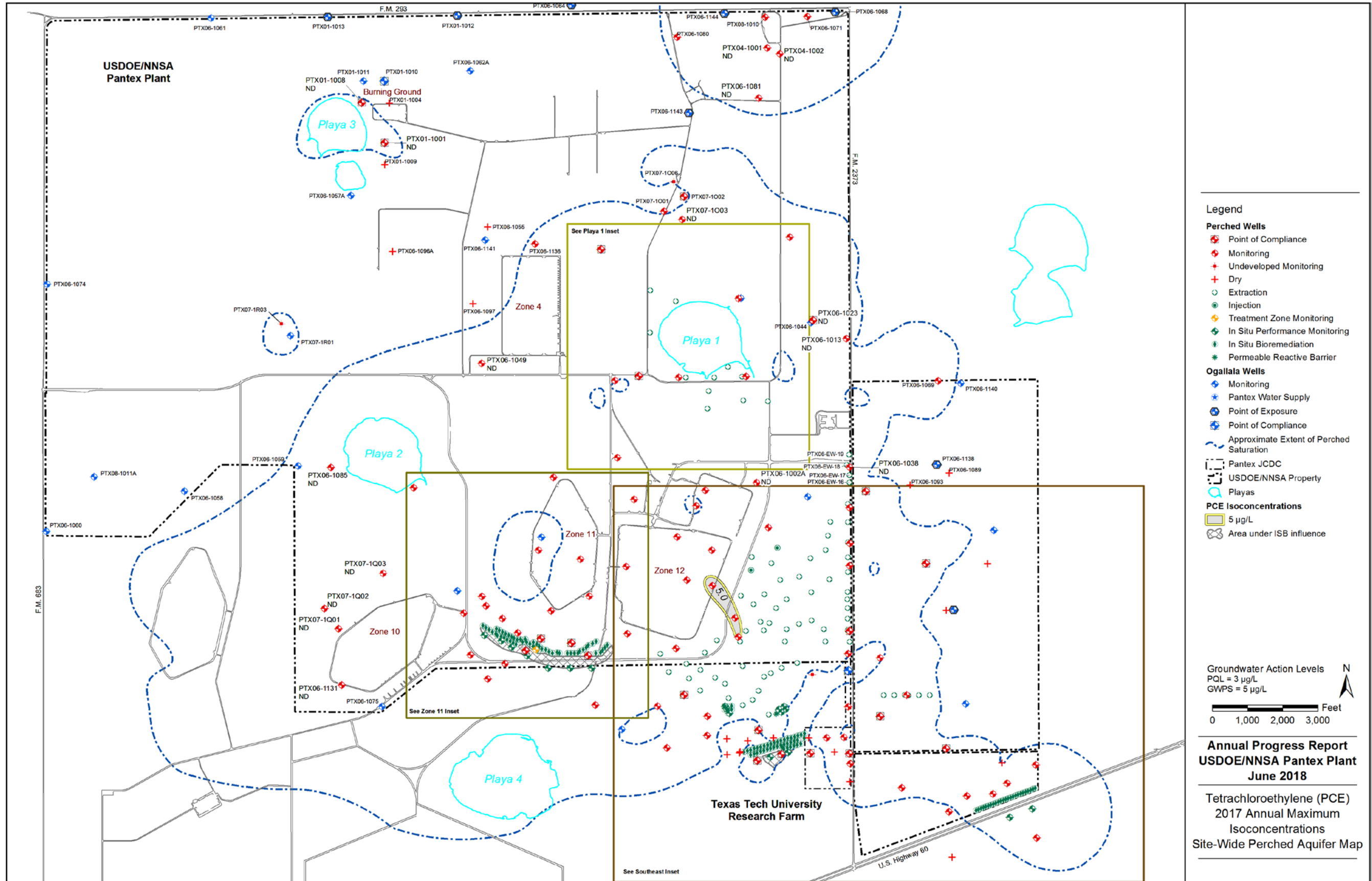


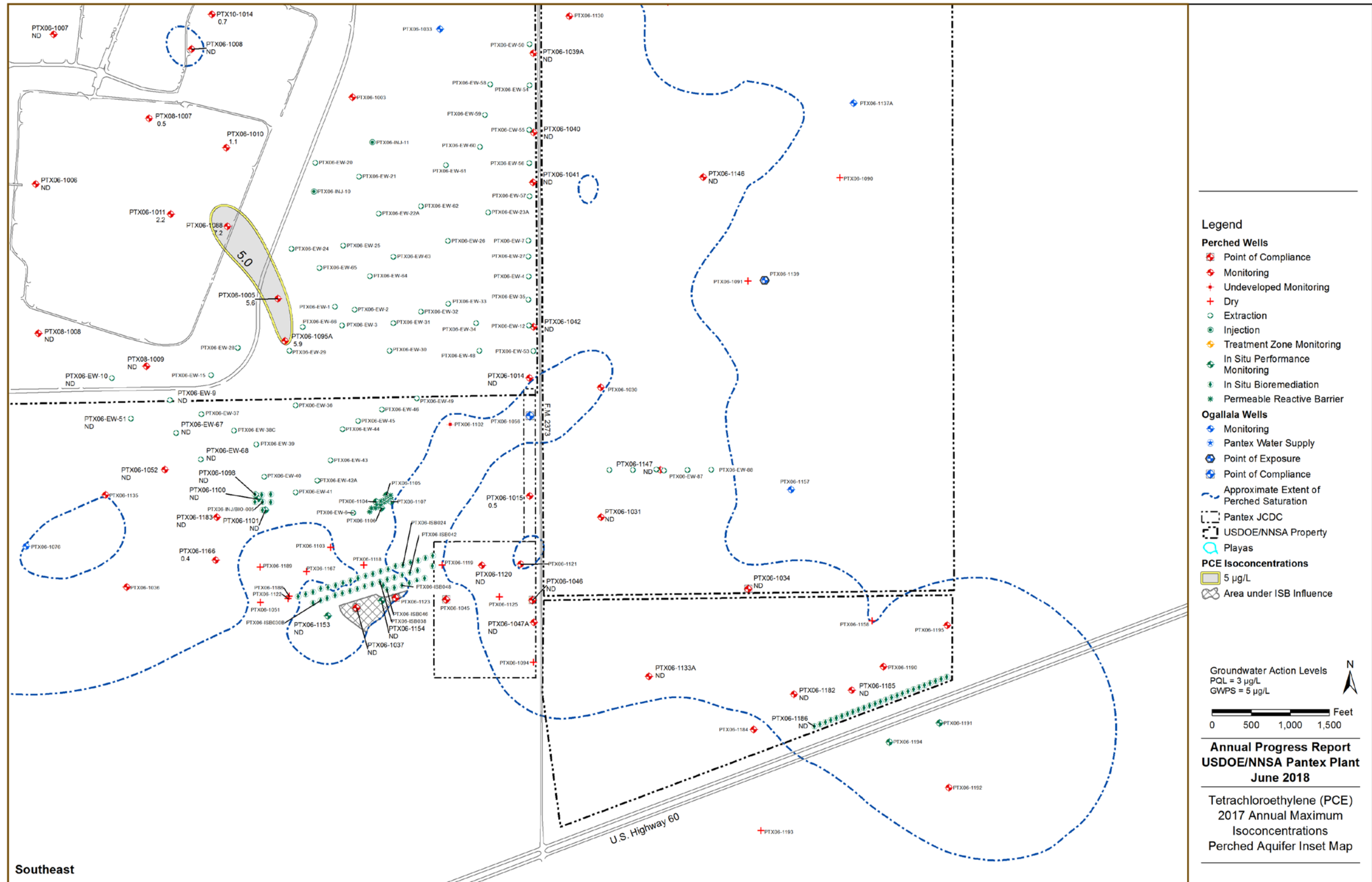
- Legend**
- | | | | |
|------------------------|--------------------------------|--|---------------------------------|
| Perched Wells | Injection | Ogallala Wells | USDOE/NNSA Property |
| Point of Compliance | Treatment Zone Monitoring | Monitoring | Playas |
| Monitoring | In Situ Performance Monitoring | Pantex Water Supply | DCE12C Isoconcentrations |
| Undeveloped Monitoring | In Situ Bioremediation | Point of Exposure | 70 µg/L |
| Dry | Permeable Reactive Barrier | Point of Compliance | Area under ISB Influence |
| Extraction | | Approximate Extent of Perched Saturation | |

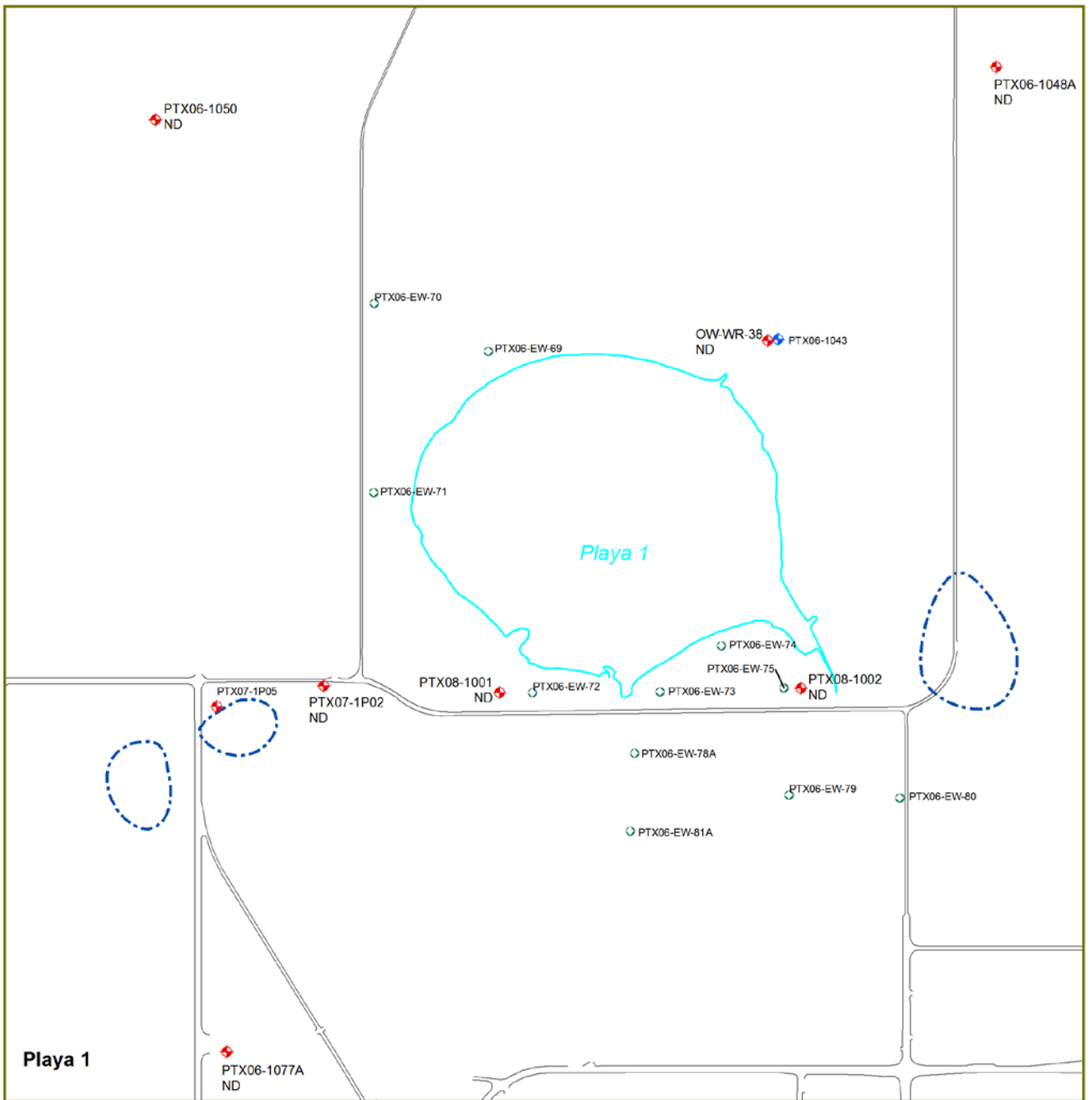
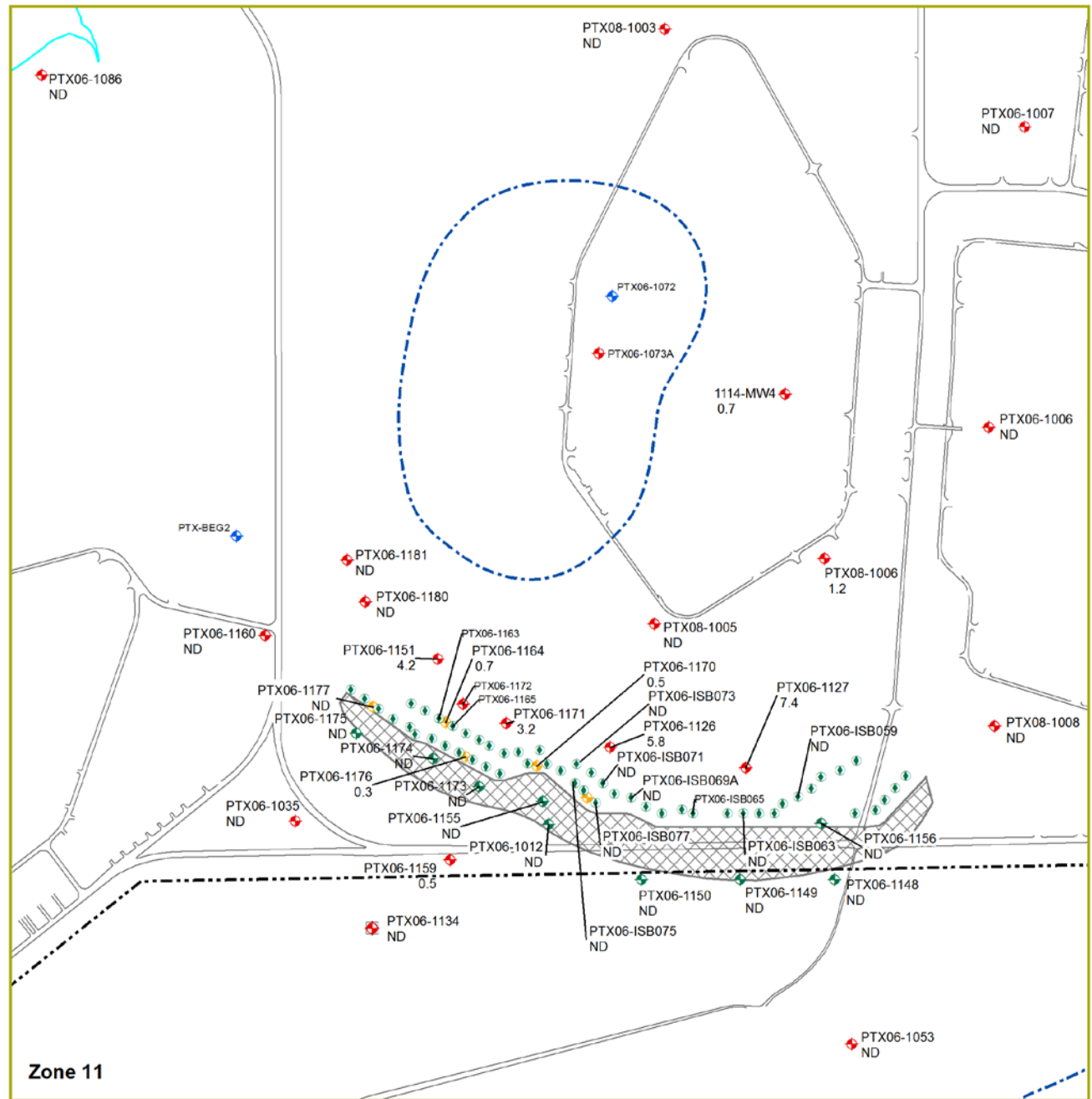


**Annual Progress Report
USDOE/NNSA Pantex Plant
June 2018**

cis-1,2-Dichloroethene
2017 Annual Maximum
Isoconcentrations
Perched Aquifer Inset Maps

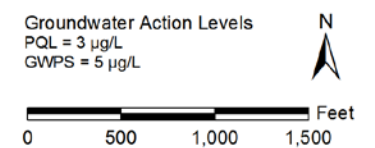






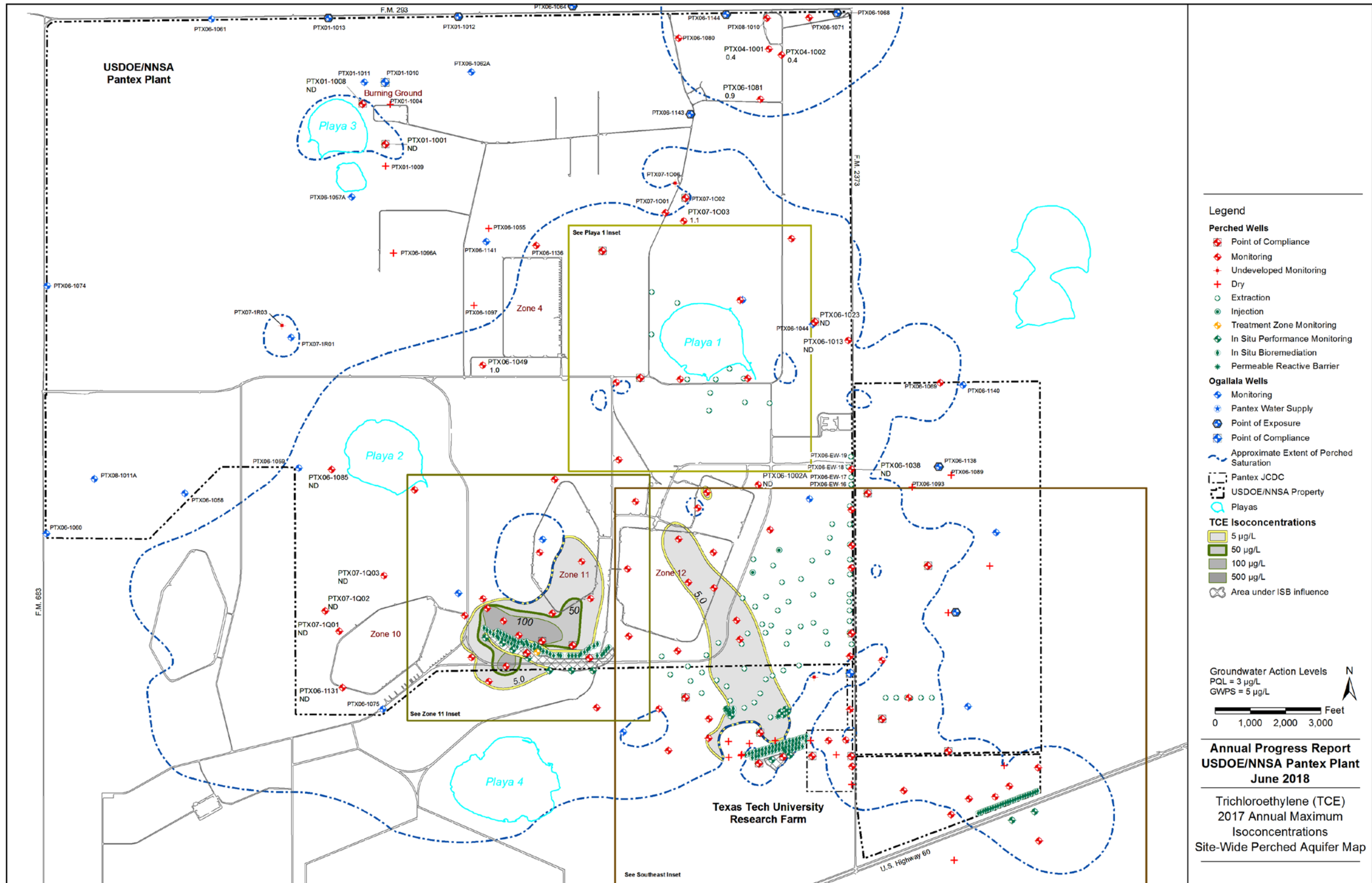
Legend

- | | | | |
|------------------------|--------------------------------|--|------------------------------|
| Perched Wells | Injection | Ogallala Wells | USDOE/NNSA Property |
| Point of Compliance | Treatment Zone Monitoring | Monitoring | Playas |
| Monitoring | In Situ Performance Monitoring | Pantex Water Supply | PCE Isoconcentrations |
| Undeveloped Monitoring | In Situ Bioremediation | Point of Exposure | 5 µg/L |
| Dry | Permeable Reactive Barrier | Point of Compliance | Area under ISB Influence |
| Extraction | | Approximate Extent of Perched Saturation | |



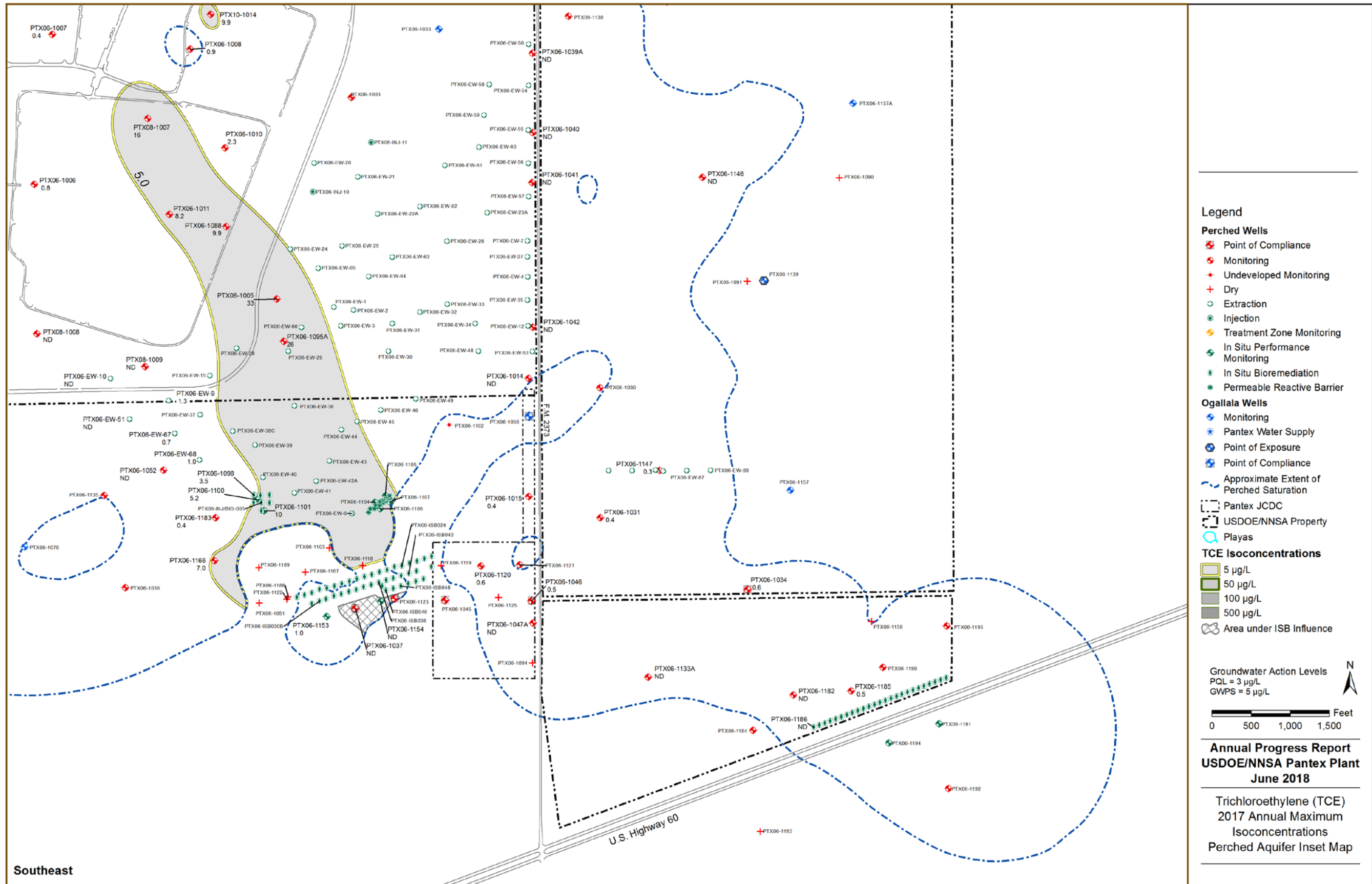
Annual Progress Report
USDOE/NNSA Pantex Plant
June 2018

Tetrachloroethylene (PCE)
2017 Annual Maximum
Isoconcentrations
Perched Aquifer Inset Maps



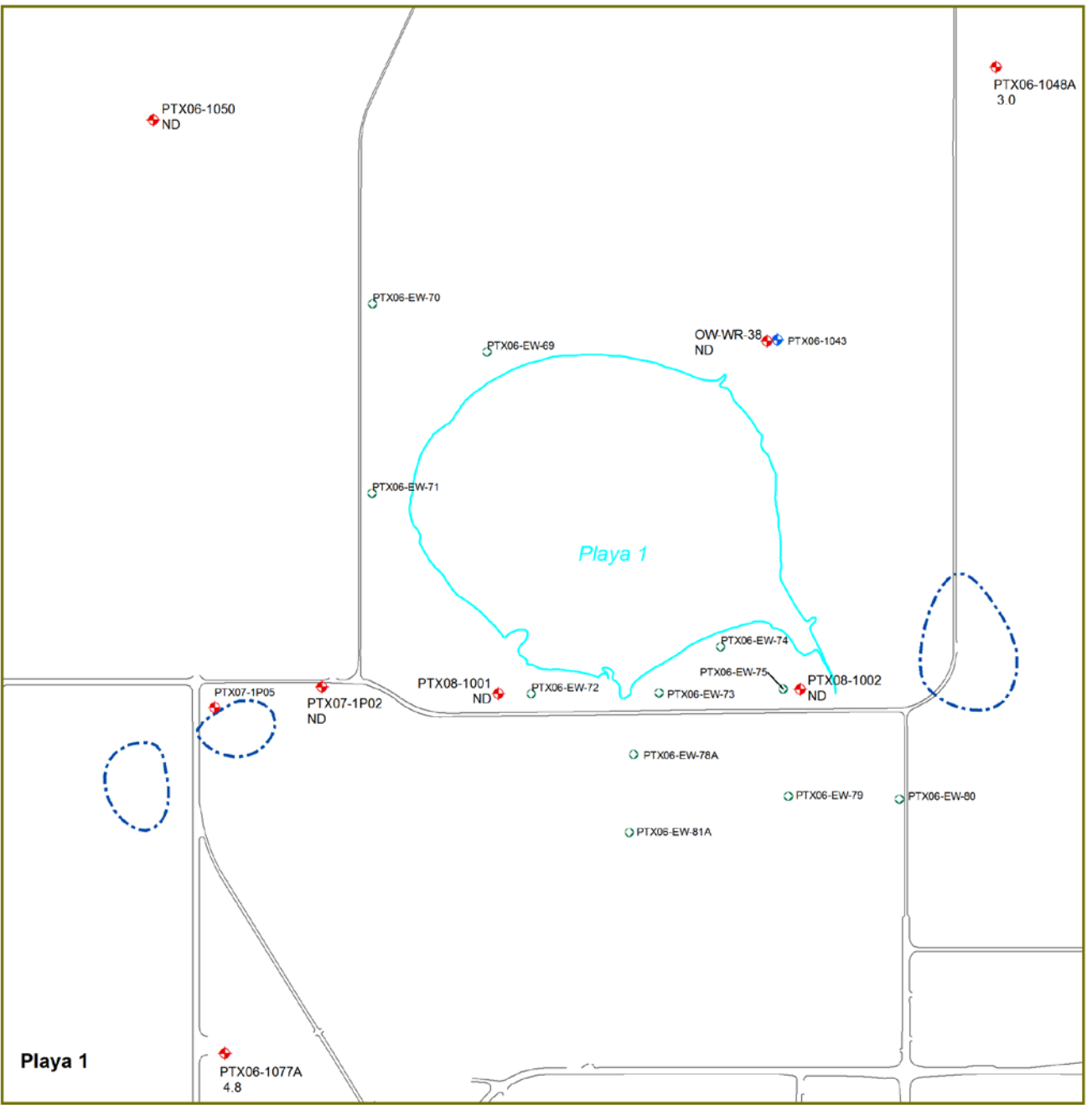
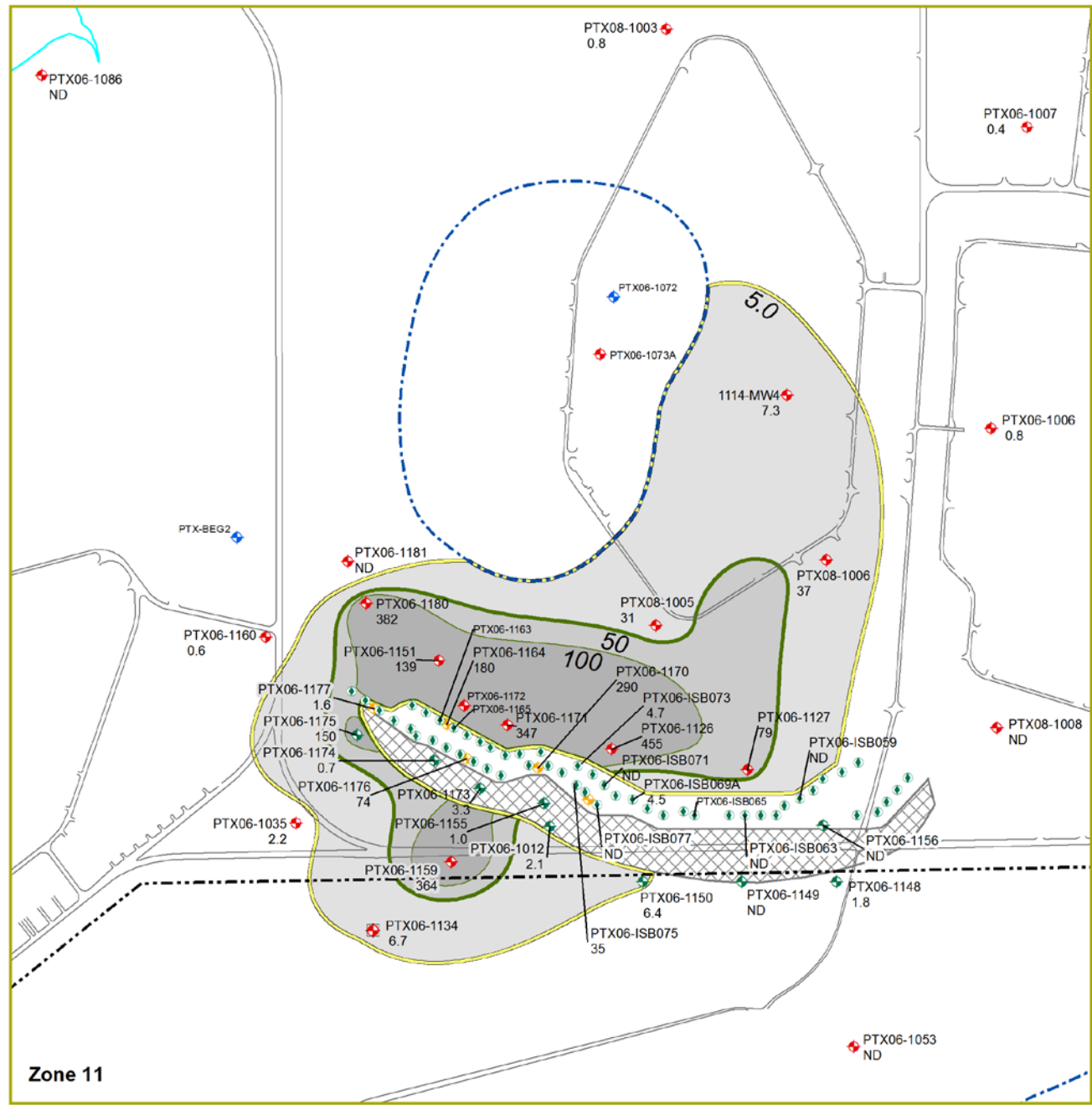
**Annual Progress Report
USDOE/NNSA Pantex Plant
June 2018**

Trichloroethylene (TCE)
2017 Annual Maximum
Isoconcentrations
Site-Wide Perched Aquifer Map



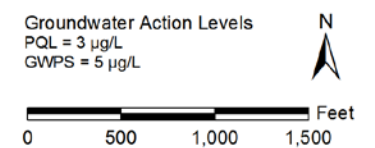
Southeast

U.S. Highway 60



Legend

- | | | | |
|------------------------|--------------------------------|--|------------------------------|
| Perched Wells | Injection | Ogallala Wells | USDOE/NNSA Property |
| Point of Compliance | Treatment Zone Monitoring | Monitoring | Playas |
| Monitoring | In Situ Performance Monitoring | Pantex Water Supply | TCE Isoconcentrations |
| Undeveloped Monitoring | In Situ Bioremediation | Point of Exposure | 5 µg/L |
| Dry | Permeable Reactive Barrier | Point of Compliance | 50 µg/L |
| Extraction | | Approximate Extent of Perched Saturation | 100 µg/L |
| | | | 500 µg/L |
| | | | Area under ISB Influence |



Annual Progress Report
USDOE/NNSA Pantex Plant
June 2018

Trichloroethylene (TCE)
2017 Annual Maximum
Isoconcentrations
Perched Aquifer Inset Maps

Appendix G
Well Certifications and
Completion Diagrams

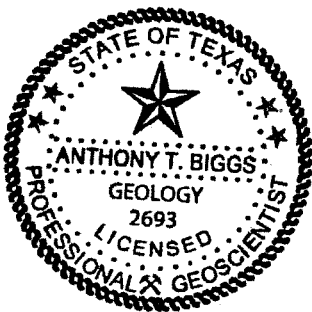
U.S. Department of Energy/National Nuclear Security Administration – Pantex Plant
Amarillo, Texas

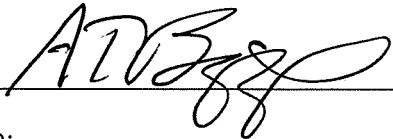
Certification of Well Construction
Industrial Solid Waste Registration No. 30459
Hazardous Waste Permit No. 50284
EPA Identification No. TX4890110527

Certification Statement:

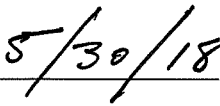
This is to certify that the construction and plugging and abandonment of the following facility components authorized or required by Texas Commission On Environmental Quality HW-50284 Provision XI Compliance Plan has been completed, and that construction and plugging and abandonment of said components has been performed in accordance with and in compliance with the design and construction specifications of Provision XI Compliance Plan Attachment C of HW-50284:

- Construction of Long-Term Monitoring Observation wells PTX06-1184, PTX06-1185, PTX06-1188, PTX06-1189, and PTX06-1190.
- Construction of ISB injection wells PTX06-ISB107, PTX06-ISB108, PTX06-ISB109, PTX06-ISB110, PTX06-ISB111, PTX06-ISB112, PTX06-ISB113, PTX06-ISB114, PTX06-ISB115, PTX06-ISB116, PTX06-ISB117, PTX06-ISB118, PTX06-ISB119, PTX06-ISB120, PTX06-ISB121, PTX06-ISB122, PTX06-ISB123, PTX06-ISB124, PTX06-ISB125, PTX06-ISB126, PTX06-ISB127, PTX06-ISB128, PTX06-ISB129, PTX06-ISB130, and PTX06-ISB131.
- Plugging and abandonment of PTX01-1002 monitoring well, PTX06-INJ-12A pump and treat injection well, and PTX06-PRB16 injection well.





Tony Biggs



Date

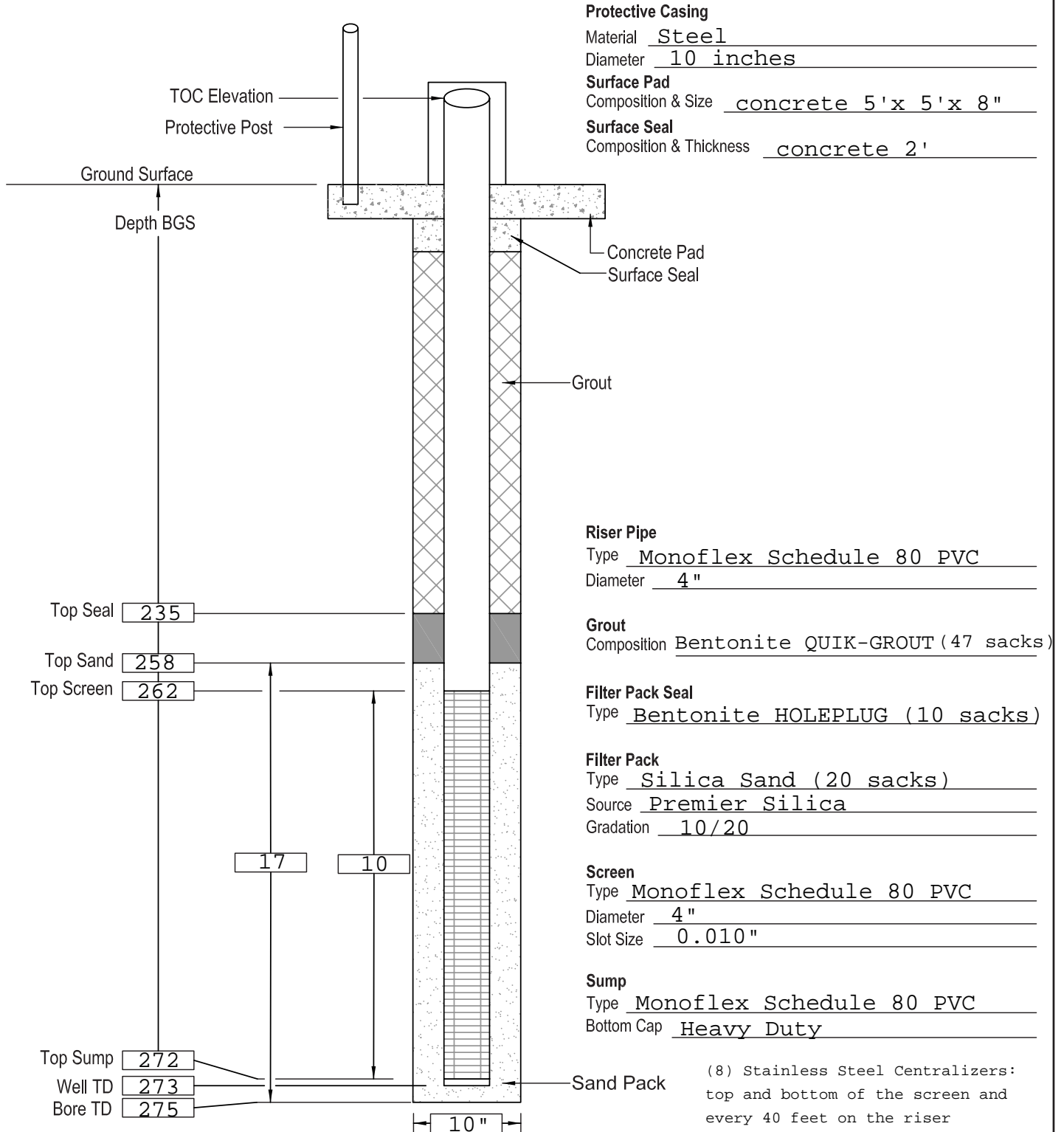
Licensed Professional Geologist No. 2693
Environmental Projects
Consolidated Nuclear Security, LLC

Well Installation Diagram

Project: BOA 70 RLS 3
 Location: Pantex
 Contractor: SN3/Cascade Drilling
 Driller: A. Lamon
 Well Coordinates: 3750638.25 N 646625.06 E
 TOC Elevation: 3516.17 ft amsl
 Surface Elevation: 3514.11 ft amsl

Well No: PTX06-1184
 Well Type: Monitoring Well
 Date Constructed: 05/04/2017
 Observed By: R. Rupp

Sheet 1 of 1



PTX06-1184

Pantex BOA 70 Release 3 East of FM-2373 & South of County Road 8 DOE Pantex Plant

SN3 Project Number: 4638-03	Client: CNS Pantex Contract #63935
Geologist: R. Rupp Texas Well Report No.: 449633	Northing: 3750638.25 Easting: 646625.06
Drilling Contractor: Cascade Drilling Lic. #59378 A. Lamon	TD Borehole: 275 ft bgs TD Well: 273.34 ft bgs
Dates Drilled: 04/26-27/17 Date Completed: 05/04/17	Depth to Water: 272.19 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: Monitoring Well, 4" Sch 80 PVC
Ground Elevation: 3514.11 ft amsl	Top of Casing Elevation: 3516.17 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	0		CL	0' - 3' LEAN CLAY, dark reddish brown (5YR 3/3), plastic, cohesive, medium stiff, moist		
	3		ML	3' - 12' SILT, light reddish brown (5YR 6/4), clayey, low plasticity, non-cohesive, medium stiff, moist		
	12		ML	12' - 20' SILT, yellowish red (5YR 5/6), clayey, non-plastic, non-cohesive, medium stiff, dry, some caliche and manganese filaments		
	20		ML	20' - 25' SILT, yellowish red (5YR 5/6), very stiff to hard, dry, with caliche nodes to 3 cm		
	25		ML	25' - 37' SILT, reddish yellow (5YR 6/6), clayey, <10% fine grain sand, stiff, dry, trace caliche to bedded caliche at 36'		
	37		ML	37' - 43' SILT, pink (5YR 8/4), medium stiff, dry		
	43		ML	43' - 62' SILT with sand, yellowish red (5YR 5/8), 25% fine grain subrounded sand, <5% caliche nodes, dry		
	62		SLT-STN	62' - 70' SILTSTONE, caliche caprock, pinkish white (5YR 8/2) to pink (5YR 8/3), stiff to 65' very hard 65' - 70', dry		
	70		ML	70' - 75' SILT with sand, light reddish brown (5YR 6/4), 15 - 25% fine grain rounded sand, dry		
	75		SLT-STN	75' - 80' SILTSTONE, caliche as above 62' - 70', very stiff, dry		
	80		SM/ML	80' - 95' SILTY SAND to SANDY SILT, light reddish brown (5YR 6/4), loose, dry		
	95		SP	95' - 135' SAND, reddish yellow (7.5YR 6/6), poorly graded,		

PTX06-1184

Pantex BOA 70 Release 3 East of FM-2373 & South of County Road 8 DOE Pantex Plant

SN3 Project Number: 4638-03	Client: CNS Pantex Contract #63935
Geologist: R. Rupp Texas Well Report No.: 449633	Northing: 3750638.25 Easting: 646625.06
Drilling Contractor: Cascade Drilling Lic. #59378 A. Lamon	TD Borehole: 275 ft bgs TD Well: 273.34 ft bgs
Dates Drilled: 04/26-27/17 Date Completed: 05/04/17	Depth to Water: 272.19 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: Monitoring Well, 4" Sch 80 PVC
Ground Elevation: 3514.11 ft amsl	Top of Casing Elevation: 3516.17 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	105					
	110					
	115					
	120		SP	@ 120' color change to light brown (7.5YR 6/4)		
	125			@ 130' continued light brown poorly graded sand, becoming medium dense with hard sandstone nodes to 2 cm, fine and very fine rounded grains		
	130					
	135					
	140		SP/ SM	135' - 145' SAND with silt, pink (7.5YR 7/4), poorly graded, very fine and fine grain sand, 10% silt, loose, dry		
	145					
	150			145' - 180' SAND, reddish yellow (7.5YR 6/6), 80% very fine grain, 20% fine grain, loose, dry, few sandstone nodes to 150'		
	155					
	160		SP			
	165					
	170					
	175					
	180					
	185		SP	180' - 190' SAND, light brown (7.5YR 6/4), poorly graded, 90% very fine grain 10% fine grain, medium dense with 25% 5 mm sandstone nodes, dry		
	190					
	195		SP	190' - 202' SAND, light yellowish brown (10YR 6/4), poorly graded, 50% very fine grain 50% fine grain, medium dense <25% 5 mm sandstone nodes, dry		

PTX06-1184

Pantex BOA 70 Release 3

East of FM-2373 & South of County Road 8

DOE Pantex Plant

SN3 Project Number: 4638-03	Client: CNS Pantex Contract #63935
Geologist: R. Rupp Texas Well Report No.: 449633	Northing: 3750638.25 Easting: 646625.06
Drilling Contractor: Cascade Drilling Lic. #59378 A. Lamon	TD Borehole: 275 ft bgs TD Well: 273.34 ft bgs
Dates Drilled: 04/26-27/17 Date Completed: 05/04/17	Depth to Water: 272.19 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: Monitoring Well, 4" Sch 80 PVC
Ground Elevation: 3514.11 ft amsl	Top of Casing Elevation: 3516.17 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	205		GP	202' - 205' GRAVEL, light yellowish brown (10YR 6/4), poorly graded gravel with sand, uniform subrounded and broken gravel, very dense, dry		
	210		SW	205' - 210' SAND, light yellowish brown (10YR 6/4), well graded, dense, dry		
	215		SW	210' - 215' SAND with >15% gravel, light yellowish brown, dense, dry		
	220		SW	215' - 225' SAND, brown (7.5YR 5/4), well graded, medium to very fine grain, trace silt, dry		
	225		GP/SW	225' - 237' GRAVEL/SAND, yellowish brown (10YR 5/6), bedded, poorly graded 2 - 3 cm rounded gravel, well graded coarse to very fine grain sand, dry		
	235		GP/SW			
	240		SW	237' - 240' SAND, light yellowish brown (10YR 6/4), well graded coarse to fine grain, trace clay, damp		
	245		SW	240' - 265' Sand, yellowish brown (10YR 5/4), well graded sand with gravel, very fine to coarse grain subrounded sand, bedded poorly graded 2 cm rounded gravel 247' - 249', medium dense sand very dense gravel, dry, probable fractures throughout indicated by circulation losses at 245' and 255' - 265', moist 260' - 265'		
	250		GP			
	255		SW			
	260		SW			
	265		SW	265' - 271' SAND, yellowish brown (10YR 5/4), well graded sand with 10% - 15% gravel, very fine to coarse grain sand and pebbly gravel to 2 cm, medium dense, moist (almost wet)		
	270		SW			
	275		SLT-STN	271' - 275' Fine Grain Zone SILT, pink (5YR 7/3 - 7/4), clayey, sandy, very fine grain sand, very stiff to hard, dry, sticky when wetted, low plasticity, cohesive Borehole Total Depth 275' bgs Split-spoon sample collected 275' - 275.5', hard, dry siltstone		
	280					
	285					
	290					
	295					

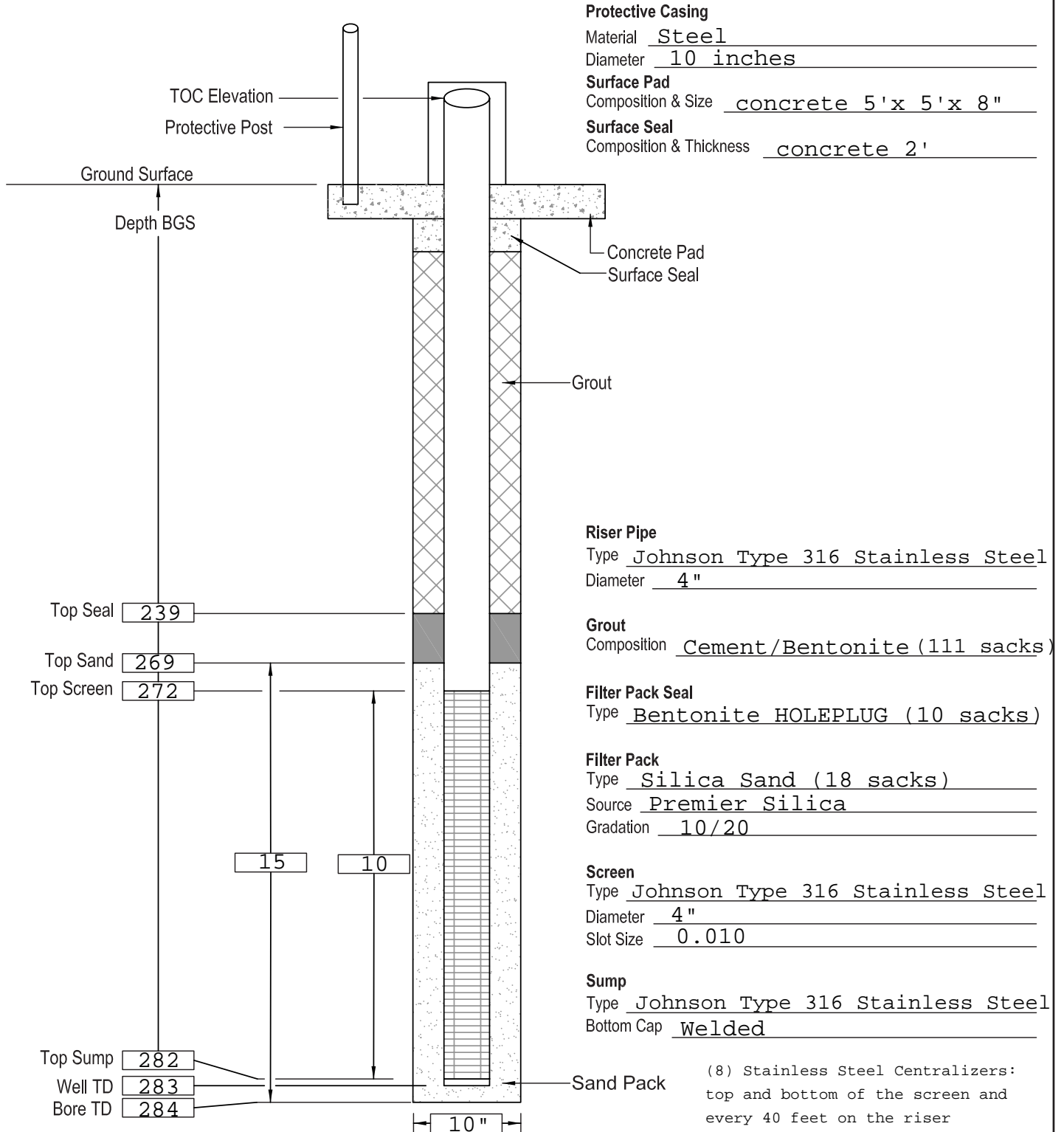
PTX06-1184
Triaxial Permeability
ASTM D5084
5.8E-07 cm/s

Well Installation Diagram

Project: BOA 70 RLS 3
 Location: Pantex
 Contractor: SN3/Cascade Drilling
 Driller: A. Lamon
 Well Coordinates: 3751139.83 N 647878.41 E
 TOC Elevation: 3517.37 ft amsl
 Surface Elevation: 3515.29 ft amsl

Well No: PTX06-1185
 Well Type: Monitoring Well
 Date Constructed: 05/06/2017
 Observed By: R. Rupp

Sheet 1 of 1



PTX06-1185

Pantex BOA 70 Release 4

East of FM-2373 and South of County Road 8

DOE Pantex Plant

SN3 Project Number: 4638-03	Client: CNS Pantex Contract #63935
Geologist: R. Rupp Texas Well Report No.:449651	Northing: 3751139.83 Easting: 647878.41
Drilling Contractor: Cascade Drilling Lic. #59378 A. Lamon	TD Borehole: 284 ft bgs TD Well: 283.52 ft bgs
Dates Drilled: 05/05-06/17 Date Completed: 05/06/17	Depth to Water: 278.07 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: Monitoring Well, 4" Type 316 Stainless Steel
Ground Elevation: 3515.29 ft amsl	Top of Casing Elevation: 3517.37 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	0		CL	0' - 3.5' LEAN CLAY, dark reddish brown (5YR 3/3), medium to high plasticity, cohesive, stiff, moist		
	3.5			3.5' - 27' clayey SILT, light reddish brown (5YR 6/4 - 5/4), some caliche, trace fine grain sand, medium stiff, dry		
	10		ML			
	15					
	20					
	25					
	30			27' - 55' sandy SILT, yellowish red (5YR 5/8), trace very fine and fine grain sand, minor bedded clay, non-plastic, non-cohesive, medium stiff, dry		
	35					
	40		ML	@ 40' increasing fine grain quartz sand (>30%) and caliche sand (mixed granular/nodular)		
	45					
	50			@ 47' - 49' >30% caliche broken into 1.5 - 2 cm chunks, white, very stiff, dry		
	55					
	60		SP	55' - 63' poorly graded SAND with silt, 10% silt, yellowish red (5YR 5/8), fine grain, subangular, loose, damp		
	65		ML/SM	63' - 70' clayey sandy SILT, yellowish red (5YR 4/6), laminated, low overall plasticity, clays are plastic and cohesive		
	70					
	75		SM/SC	70' - 87' silty clayey SAND, yellowish red (5YR 5/6), 10-20% silt, very fine and fine grain subrounded sand, loose to medium dense, dry to damp, non-plastic silt, 30% laminated clay 84' - 87'		
	80					
	85					
	90		SLT-STN	87' - 96' CAPROCK CALICHE, hard calcrete, pink (5YR 7/3), cuttings are rock flour and hard nodes to 2 cm, trace sand, dry		
	95					
			SP	96' - 120' SAND, yellowish red (5YR 5/6), very fine grain,		

PTX06-1185

Pantex BOA 70 Release 4

East of FM-2373 and South of County Road 8

DOE Pantex Plant

SN3 Project Number: 4638-03	Client: CNS Pantex Contract #63935
Geologist: R. Rupp Texas Well Report No.:449651	Northing: 3751139.83 Easting: 647878.41
Drilling Contractor: Cascade Drilling Lic. #59378 A. Lamon	TD Borehole: 284 ft bgs TD Well: 283.52 ft bgs
Dates Drilled: 05/05-06/17 Date Completed: 05/06/17	Depth to Water: 278.07 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: Monitoring Well, 4" Type 316 Stainless Steel
Ground Elevation: 3515.29 ft amsl	Top of Casing Elevation: 3517.37 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	105			poorly graded, loose, dry		
	110		SP			
	115					
	120			120' - 150' SAND, light brown (5YR 6/4), poorly graded, 50/50 very fine and subrounded fine grain, loose, dry; becoming 90% fine grain, subangular to angular, clear quartz sand with depth		
	125					
	130					
	135		SP			
	140					
	145					
	150			150' - 159' SAND, reddish brown (5YR 5/4), poorly graded, 60% very fine grain 40% fine grain, subangular to angular, loose, dry		
	155		SP			
	160			159' - 195' SAND, light brown (7.5YR 6/4) to reddish yellow (7.5YR 6/6), poorly graded, 20% very fine grain 80% fine grain, loose, dry, with some 2 mm cemented nodes		
	165					
	170					
	175		SP			
	180					
	185					
	190			195' - 198' SAND, light brown (7.5YR 6/4), poorly graded, 30% subrounded fine grain, 70% very fine grain, medium dense, dry, with 40% hard cemented sandstone nodes up to 1.0 - 1.5 cm diameter		
	195		SP			

PTX06-1185

Pantex BOA 70 Release 4

East of FM-2373 and South of County Road 8

DOE Pantex Plant

SN3 Project Number: 4638-03	Client: CNS Pantex Contract #63935
Geologist: R. Rupp Texas Well Report No.:449651	Northing: 3751139.83 Easting: 647878.41
Drilling Contractor: Cascade Drilling Lic. #59378 A. Lamon	TD Borehole: 284 ft bgs TD Well: 283.52 ft bgs
Dates Drilled: 05/05-06/17 Date Completed: 05/06/17	Depth to Water: 278.07 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: Monitoring Well, 4" Type 316 Stainless Steel
Ground Elevation: 3515.29 ft amsl	Top of Casing Elevation: 3517.37 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	205		SW	198' - 210' well graded SAND with gravel, light yellowish brown to brownish yellow (10YR 6/4 - 6/6), small rounded gravel 198' - 200', very coarse to fine grain subangular sand, pebbly 200' - 205', medium dense to dense, dry		
	210		GP	210' - 215' poorly graded GRAVEL with sand, very pale brown (10YR 7/3), small gravel, very dense, dry		
	215			conglomerate		
	220		SW	215' - 225' well graded SAND with pebbly gravel, yellowish brown (10YR 5/4), coarse, medium, and fine grain sand, medium dense, dry		
	225					
	230		SP	225' - 237' poorly grade SAND, yellowish brown (10YR 5/4), 80% very fine grain, 20% fine grain, loose to medium dense, damp		
	235					
	240		GP	237' - 240' poorly graded GRAVEL with sand, light yellowish brown (10YR 6/4), small to medium rounded gravel, 85% fine grain sand, dense, dry		
	245		SC	240' - 245' clayey SAND, yellowish brown (1oYR 5/8), 70% fine grain sand, 30% clay, low plasticity, non-cohesive, medium dense, moist		
	250		SW	245' - 255' well graded SAND, pale brown (10YR 6/3), subrounded, coarse to very fine grain, some pebbly gravel, loose, dry		
	255					
	260					
	265		SW	255' - 275' well graded SAND with gravel, yellowish brown (10YR 5/4), very coarse to fine grain, rounded to subangular sand; >15% pebbly to small rounded gravel, decreasing gravel at 270'; damp 265' - 270', moist 270' - 275'		
	270					
	275					
	280		SW	275' - 282' well graded SAND with gravel, dark yellowish brown (10YR 4/6), very coarse to fine grain subrounded sand; >15% small to medium rounded gravel from 281' - 282'; wet to saturated at 278 ft		
	285		SILT-STN	282' - 284' sandy clayey SILTSTONE, light reddish brown (5YR 6/4), <15% fine grain sand, trace pebbly caliche nodes to 5 mm, plastic when wetted, cohesive, medium stiff to stiff, dry		
	290					
	295			Borehole Total Depth 284 ft bgs Split-spoon sample collected 284' - 284.5'		

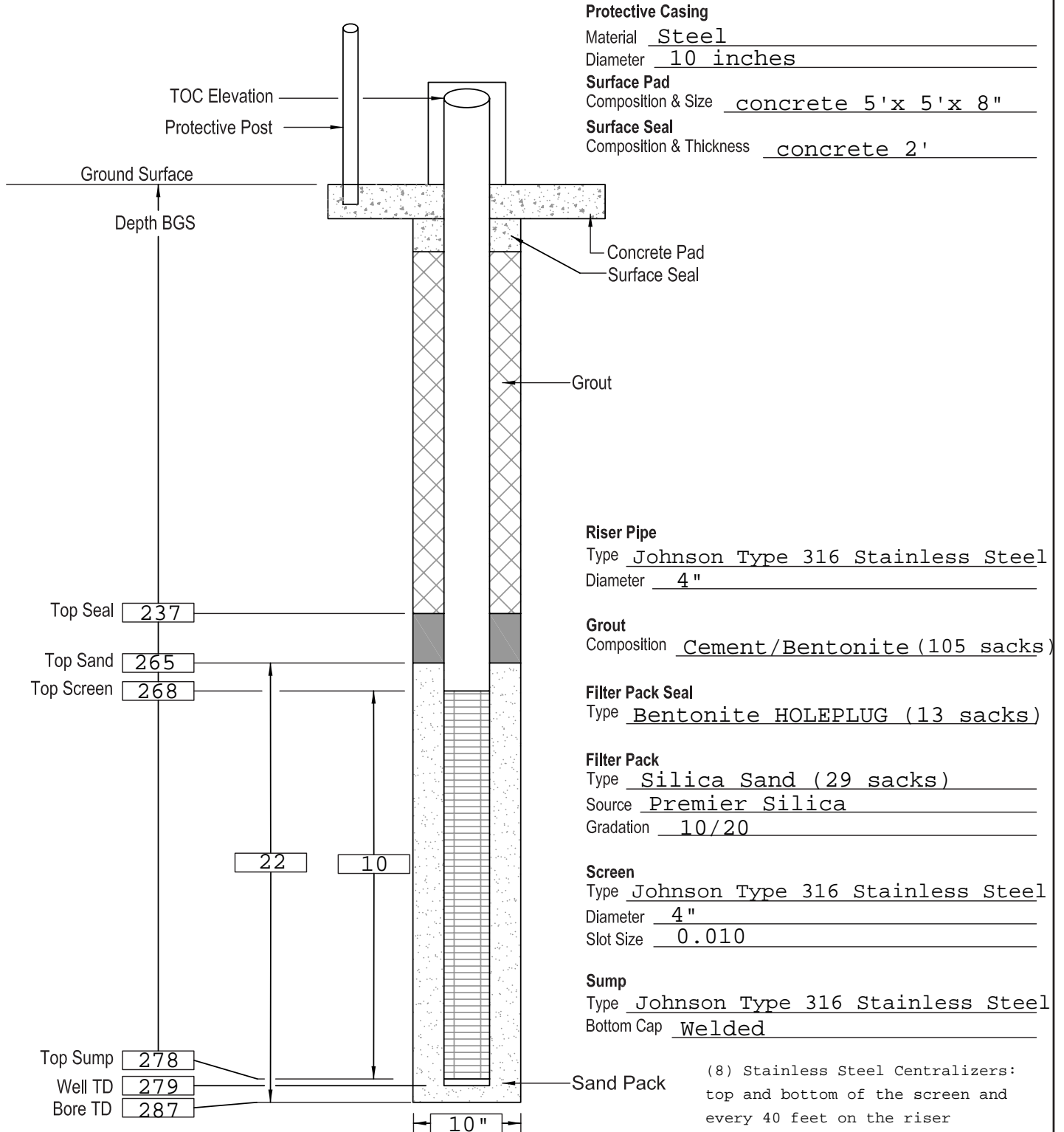
PTX06-1185
Triaxial Permeability
ASTM D5084
2.0E-08 cm/sec

Well Installation Diagram

Project: BOA 70 RLS 3
 Location: Pantex
 Contractor: SN3/Cascade Drilling
 Driller: A. Lamon
 Well Coordinates: 3752340.04 N 640691.28 E
 TOC Elevation: 3531.30 ft amsl
 Surface Elevation: 3529.17 ft amsl

Well No: PTX06-1188
 Well Type: Monitoring Well
 Date Constructed: 05/22/2017
 Observed By: R. Rupp

Sheet 1 of 1



Protective Casing
 Material Steel
 Diameter 10 inches
Surface Pad
 Composition & Size concrete 5'x 5'x 8"
Surface Seal
 Composition & Thickness concrete 2'

Riser Pipe
 Type Johnson Type 316 Stainless Steel
 Diameter 4"

Grout
 Composition Cement/Bentonite (105 sacks)

Filter Pack Seal
 Type Bentonite HOLEPLUG (13 sacks)

Filter Pack
 Type Silica Sand (29 sacks)
 Source Premier Silica
 Gradation 10/20

Screen
 Type Johnson Type 316 Stainless Steel
 Diameter 4"
 Slot Size 0.010

Sump
 Type Johnson Type 316 Stainless Steel
 Bottom Cap Welded

(8) Stainless Steel Centralizers:
 top and bottom of the screen and
 every 40 feet on the riser

PTX06-1188

Pantex BOA 70 Release 4

West End of Southeast ISB Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-03	Client: CNS Pantex Contract #63935
Geologist: R. Rupp Texas Well Report No.:450874	Northing: 3752340.04 Easting: 640691.28
Drilling Contractor: Cascade Drilling Lic. #59378 A. Lamon	TD Borehole: 287 ft bgs TD Well: 279.35 ft bgs
Dates Drilled: 5/21-22/17 Date Completed: 5/22/17	Depth to Water: No Water Encountered
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: Monitoring Well, 4" Type 316 Stainless Steel
Ground Elevation: 3529.17 ft amsl	Top of Casing Elevation: 3531.30 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	5		CL	0' - 4' Lean CLAY, dark reddish brown (5YR 3/4), medium to high plasticity, cohesive, stiff, moist		
	10		CL	4' - 27' silty Lean CLAY, yellowish red (5YR 5/6) to reddish brown (5YR 5/4), low to medium plasticity, cohesive, stiff, moist to 13' then decreasing damp to dry		
	30		ML	27' - 35' SILT, reddish brown (5YR 5/4), to light reddish brown (5YR 6/4), non-plastic, non-cohesive, stiff, dry, with some thinly bedded damp clays		
	40		ML	35' - 55' SILT, reddish yellow (5YR 6/6), non-plastic, non-cohesive, medium stiff, dry		
	55		SM	@ 53' - 54' Bedded caliche, pinkish white (5YR 8/2), hard		
	60		SLT-STN	55' - 58' silty SAND, yellowish red (5YR 5/8), >15% silt, 75% medium grain subangular sand, loose to medium dense, dry		
	65		CL	58' - 67' SILTSTONE, pink (5YR 7/4), caliche calcrete with 20% very fine grain sand, very stiff to hard, dry		
	70		SP	67' - 70' CLAY, plastic, cohesive, stiff, damp to dry		
	75		ML	70' - 75' SAND, yellowish red (5YR 5/8), 80% very fine grain 20% fine grain, subangular, loose, dry		
	80		SP	75' - 80' SILT, caliche with very fine grain sand, pink (5YR 7/4), stiff to very stiff, dry		
	85		ML	80' - 90' SAND, strong brown (7.5YR 5/8), 80% fine grain 20% very fine grain, subrounded, loose, dry		
	90		SP			
	95		ML	90' - 97' SILT, 80% caliche with 20% very fine grain sand, pink (5YR 7/4), stiff, dry		
			SP	97' - 115' SAND, light brown (7.5YR 6/4), poorly graded		

PTX06-1188

Pantex BOA 70 Release 4

West End of Southeast ISB Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-03	Client: CNS Pantex Contract #63935
Geologist: R. Rupp Texas Well Report No.:450874	Northing: 3752340.04 Easting: 640691.28
Drilling Contractor: Cascade Drilling Lic. #59378 A. Lamon	TD Borehole: 287 ft bgs TD Well: 279.35 ft bgs
Dates Drilled: 5/21-22/17 Date Completed: 5/22/17	Depth to Water: No Water Encountered
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: Monitoring Well, 4" Type 316 Stainless Steel
Ground Elevation: 3529.17 ft amsl	Top of Casing Elevation: 3531.30 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	105		SP	very fine and fine grain, rounded, loose, dry		
	115		SP	115' - 130' SAND, light brown (7.5YR 6/4), poorly graded, very fine to fine grain, subangular to rounded, loose to hard bedded sandstone, dry		
	130		SM	130' - 135' silty SAND, pink (5YR 7/4), very fine grain sand with >15% silt, non-plastic, loose, dry		
	145		SP	135' - 175' SAND, predominantly fine grain quartz sand, subrounded, loose, dry, color is variable @ 135' - 145' reddish yellow (7.5YR 6/6)		
	155		SP	@ 145' - 155' strong brown (7.5YR 5/6)		
	165		SP	@ 155' - 175' yellowish brown (10YR 5/8)		
	175		SP	175' - 197' SAND, yellowish brown (10YR 5/8), very fine grain, dense with bedded layers of hard sandstone producing nodes to 3 cm, dry		
	197		CL	197' - 203' sandy Lean CLAY, brown (7.5YR 5/4), low		

PTX06-1188

Pantex BOA 70 Release 4

West End of Southeast ISB Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-03	Client: CNS Pantex Contract #63935
Geologist: R. Rupp Texas Well Report No.:450874	Northing: 3752340.04 Easting: 640691.28
Drilling Contractor: Cascade Drilling Lic. #59378 A. Lamon	TD Borehole: 287 ft bgs TD Well: 279.35 ft bgs
Dates Drilled: 5/21-22/17 Date Completed: 5/22/17	Depth to Water: No Water Encountered
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: Monitoring Well, 4" Type 316 Stainless Steel
Ground Elevation: 3529.17 ft amsl	Top of Casing Elevation: 3531.30 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	205		CL	plasticity, non-cohesive, stiff, damp		
	210		SW	203' - 220' well graded SAND with gravel, very pale brown (10YR 7/4), subrounded to angular sand, >15% small gravel, medium dense, dry		
	220		SP	220' - 235' SAND, light yellowish brown (10YR 6/4), poorly graded, fine grain, rounded to subrounded, loose, dry		
	235		SW/GP	235' - 240' SAND/GRAVEL, brownish yellow (10YR 6/6), well graded coarse to fine grain angular sand; small generally rounded, often flattened gravel, dense, dry		
	240		SW	240' - 245' well graded SAND with gravel, very pale brown (10YR 7/3), subrounded sand, >15% small peagravel, dense, dry		
	245		SW	245' - 260' SAND, yellowish brown (10YR 5/6), well graded, <15% gravel, medium dense, damp to dry @ 247' - 250' dark brown (10YR 3/3)		
	260		SP	260' - 272' SAND, light yellowish brown (10Yr 6/4), poorly graded, mostly fine grain rounded sand with trace small gravel, damp to moist, very hard at 272'		
	272		SW	272' - 278' SAND, yellowish brown (10YR 5/4), graded, mostly coarse and medium grain sand, with peagravel at 277' - 278'		
	278		SC	278' - 287' FGZ, clayey SAND, reddish brown (5YR 5/4) to yellowish red (5YR 5/6), very fine grain sand with >15% fines, low to medium plasticity, cohesive, with <5% hard 2 mm caliche grains, damp to dry with depth		
	287			Borehole Total Depth 287 ft bgs Split-spoon sample collected 287' - 287.5' bgs		
	290					
	295					

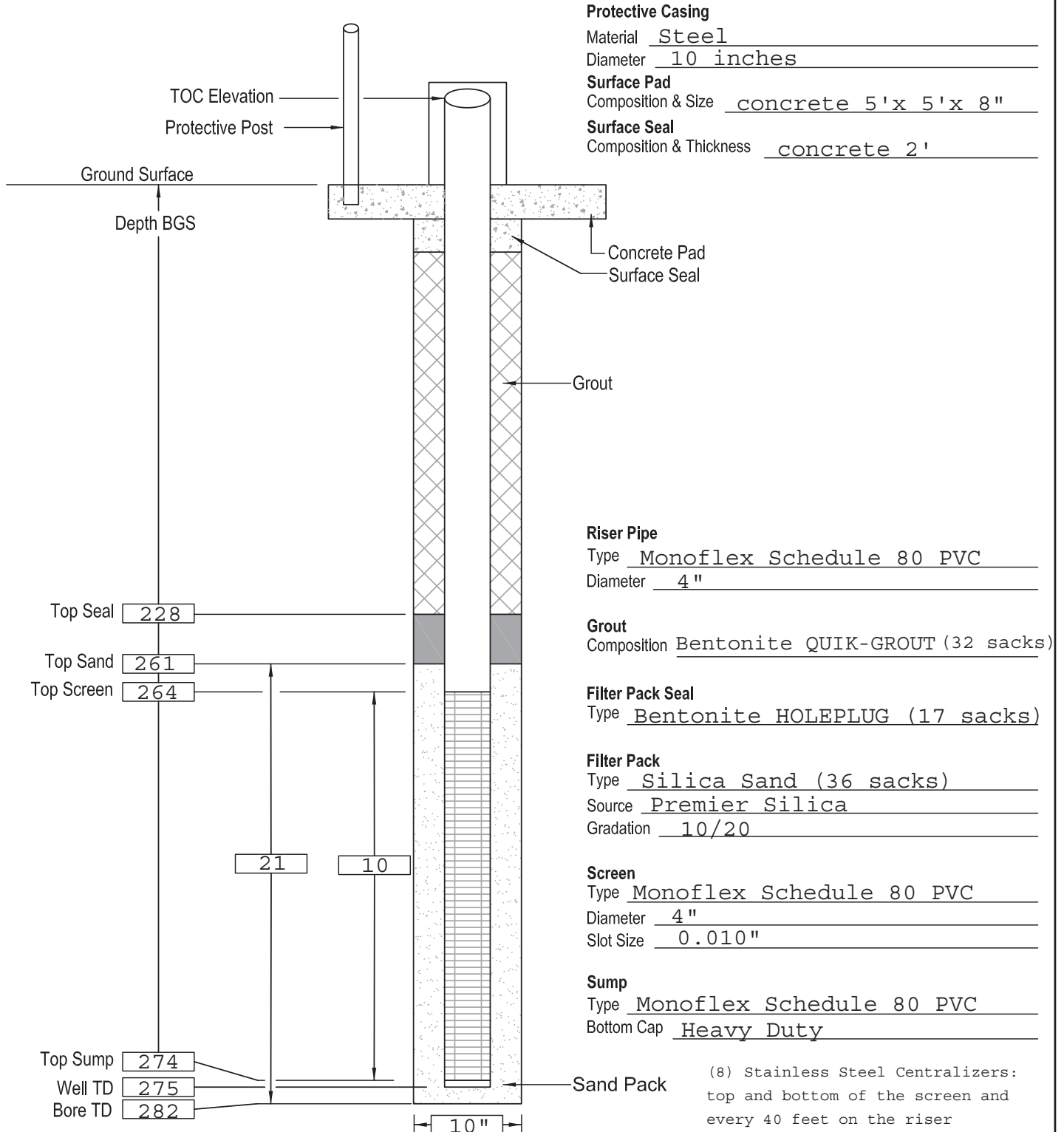
PTX06-1188
Triaxial Permeability
ASTM D5084
1.3E-05 cm/sec

Well Installation Diagram

Project: BOA 70 RLS 4
 Location: Pantex
 Contractor: SN3/Cascade Drilling
 Driller: A. Lamon
 Well Coordinates: 3752711.44 N 640322.51 E
 TOC Elevation: 3531.96 ft amsl
 Surface Elevation: 3529.87 ft amsl

Well No: PTX06-1189
 Well Type: Monitoring Well
 Date Constructed: 05/19/2017
 Observed By: J. Ford

Sheet 1 of 1



PTX06-1189

Pantex BOA 70 Release 4

Near West End of Southeast ISB Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-03	Client: CNS Pantex Contract #65553
Geologist: J. Ford Texas Well Report No.: 449679	Northing: 3752711.44 Easting: 640322.51
Drilling Contractor: Cascade Drilling Lic. #59378 A. Lamon	TD Borehole: 282 ft bgs TD Well: 275.21 ft bgs
Dates Drilled: 5/18-19/17 Date Completed: 5/19/17	Depth to Water: No Water Encountered
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: Monitoring Well, 4" Sch 80 PVC
Ground Elevation: 3529.87 ft amsl	Top of Casing Elevation: 3531.96 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number	
	0		CL	0' - 4.5' Lean CLAY, reddish brown (5YR 5/4), very stiff, moist			
	5		CL/ML	4.5' - 23' Lean CLAY to SILT with caliche stringers and fine sand, reddish brown (5YR 5/4) changing to yellowish red (5YR 5/6) at 18' with caliche nodules; very stiff, moist			
	10						
	15						
	20						
	25		ML	23' - 28' clayey sandy SILT, yellowish red (5YR 5/6), very stiff, moist; increasing caliche at 23'			
	30		ML	28' - 35' clayey SILT, yellowish red (5YR 5/6), low plasticity, very stiff, damp			
	35		ML/CL	35' - 49' SILT with clay, reddish yellow (5YR 6/6), stiff, moist to damp			
	40						
	45						
	50		ML	49' - 58' SILT with clay, yellowish red (5YR 5/6), caliche stringers, stiff to hard, damp			
	55						
	60		SLT-STN	58' - 63' SILTSTONE, caliche lenses, hard, dry			
	65		CL/ML	63' - 79' CLAY/SILT, yellowish red (5YR 5/8), stiff to hard, damp to dry			
	70						
	75						
	80		SLT-STN	79' - 86' SILTSTONE/SANDSTONE with caliche nodules, fine sand, hard/very dense, yellowish brown to pinkish white (5YR 8/2), dry			
	85		SM	86' - 102' silty SAND, light brown (7.5YR 6/4), fine to medium grain, trace coarse grain, subangular, dense, dry			
	90						
	95						

PTX06-1189

Pantex BOA 70 Release 4

Near West End of Southeast ISB Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-03	Client: CNS Pantex Contract #65553
Geologist: J. Ford Texas Well Report No.: 449679	Northing: 3752711.44 Easting: 640322.51
Drilling Contractor: Cascade Drilling Lic. #59378 A. Lamon	TD Borehole: 282 ft bgs TD Well: 275.21 ft bgs
Dates Drilled: 5/18-19/17 Date Completed: 5/19/17	Depth to Water: No Water Encountered
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: Monitoring Well, 4" Sch 80 PVC
Ground Elevation: 3529.87 ft amsl	Top of Casing Elevation: 3531.96 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	105		SM	102' - 116' SAND, light brown (7.5YR 6/4), poorly graded, fine to medium grain, subrounded to subangular, medium dense, dry		
	110		SP			
	115					
	120		SP	116' - 123' SAND, poorly graded, fine grain, loose, dry		
	125					
	130		SW	123' - 132' well graded SAND with gravel, light brown (7.5YR 6/4), fine to coarse sand, subangular to subrounded gravel up to 1", dense, dry		
	135					
	140		SM	132' - 141' silty SAND, pink (7.5YR 7/4), very fine to fine grain, trace small caliche nodules, loose, dry		
	145		SP/ SM	141' - 150' SAND to silty SAND, reddish yellow (7.5YR 6/6), fine grain with some medium grain, subangular to subrounded, small sandstone nodules, loose, damp to moist		
	150					
	155		SP	150' - 154' SAND, light brown (7.5YR 6/4), poorly graded, fine grain, subrounded to rounded, loose, dry		
	160					
	165		SP	154' - 171' SAND, yellowish brown (10YR 5/6), poorly graded, fine and medium grain, subangular to subrounded, loose, damp		
	170					
	175		SM	171' - 174' silty SAND, yellowish brown (10YR 5/6), poorly graded, fine-medium grain, loose, dry		
	180					
	185		SP/ SM	174' - 190' SAND to silty SAND, reddish yellow (7.5YR 6/8), poorly graded, fine grain, loose, dry		
	190					
	195		SP	190' - 196' SAND, brown (7.5YR 5/4), fine to very fine grain, subrounded, loose, dry		
			SM	196' - 202' silty SAND, strong brown (7.5YR 5/6), poorly		

PTX06-1189

Pantex BOA 70 Release 4

Near West End of Southeast ISB Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-03	Client: CNS Pantex Contract #65553
Geologist: J. Ford Texas Well Report No.: 449679	Northing: 3752711.44 Easting: 640322.51
Drilling Contractor: Cascade Drilling Lic. #59378 A. Lamon	TD Borehole: 282 ft bgs TD Well: 275.21 ft bgs
Dates Drilled: 5/18-19/17 Date Completed: 5/19/17	Depth to Water: No Water Encountered
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: Monitoring Well, 4" Sch 80 PVC
Ground Elevation: 3529.87 ft amsl	Top of Casing Elevation: 3531.96 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	205		SM	graded, fine grain, subrounded to subangular, dry		
	210		SP	202' - 208' SAND, fine to medium grain some coarse grain, subangular to angular, dense, dry, coarsening with depth		
	215		SW	208' - 222' well graded SAND with gravel, very pale brown (10YR 7/4), fine to coarse grain subrounded to subangular sand, gravel to 1/2", dry		
	225		SP	222' - 231' SAND, light yellowish brown (10YR 6/4), poorly graded, fine grain, subrounded to rounded, dense cemented lenses, dry		
	235		SW	231' - 238' SAND, brownish yellow (10YR 6/6), well graded, fine to coarse grain with trace pea size gravel, angular to subrounded, moist		
	245		GP	238' - 252' poorly graded GRAVEL with sand, very pale brown (10YR 7/3), angular to subrounded, flattened and oval-shaped gravel, pea size to 3/4"; sand is fine to coarse grain, very dense lenses		
	255		SW	252' - 261' well graded SAND with gravel, yellowish brown (10YR 5/6), fine to medium and coarse grain subangular to subrounded sand, gravel <1/4", dense layers, dry		
	265		SP	261' - 266' SAND, yellowish brown (10YR 5/6), fine to medium grain, very dense, dry, subrounded pebbles to 1/4"		
	270		SW	266' - 274' SAND, pale brown (10YR 6/3) to light brownish gray (10YR 6/2), fine to coarse grain, subangular to rounded, with 1/4" quartz pebbles, moist		
	275		SM	274' - 282' silty SAND, yellowish red (5YR 5/6) to light reddish brown (5YR 6/4), fine grain, trace medium grain, some caliche nodules, dense, damp to dry; increasing hard silt and caliche nodules with depth		
	285			Borehole Total Depth 282 ft bgs. Split-spoon sample collected 282' - 282.5' bgs		
	290					
	295					

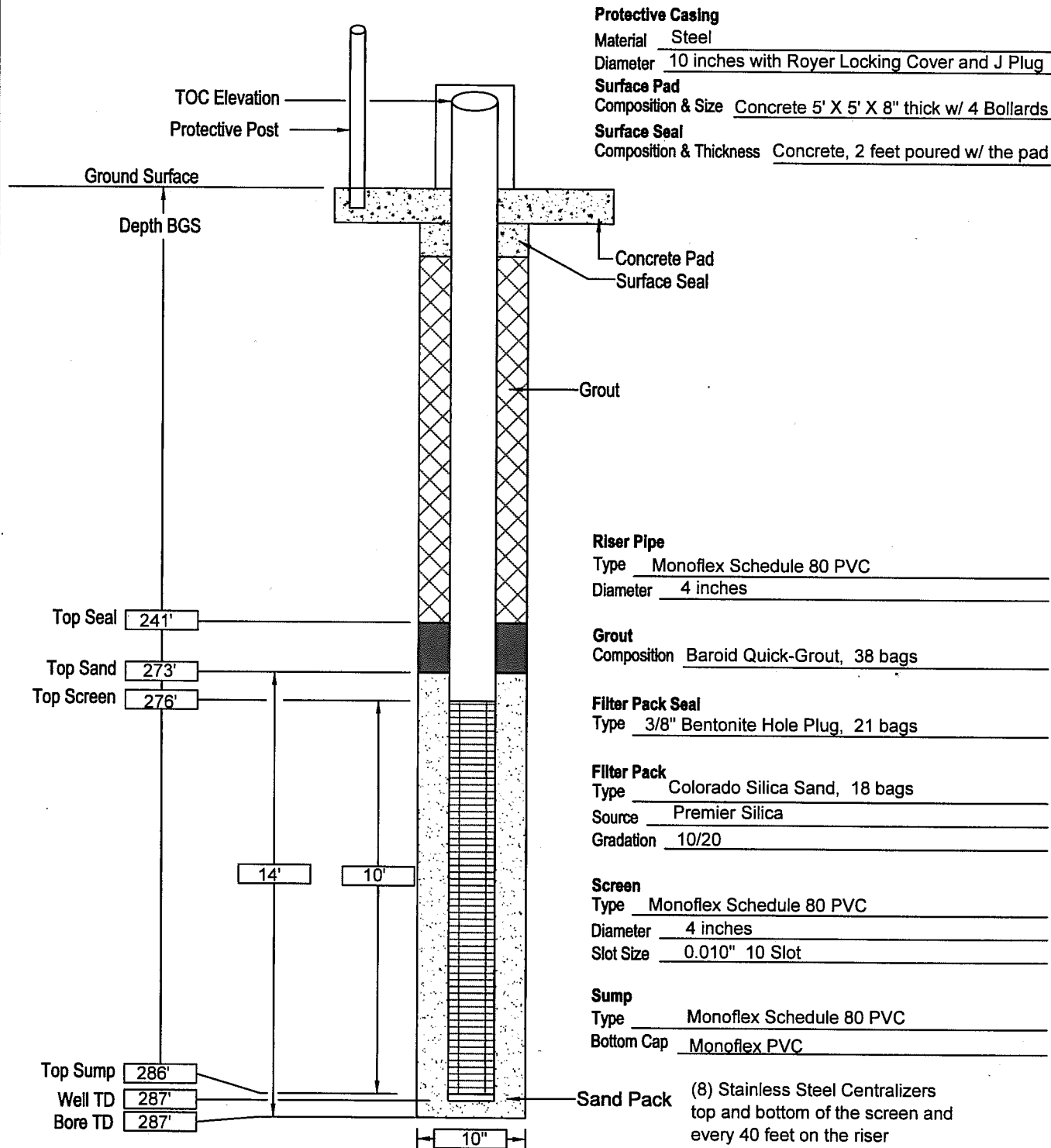
PTX06-1189
Triaxial Permeability
ASTM D5084
3.2E-07 cm/sec

Well Installation Diagram

Project: BOA 70 Release 5
 Location: Southeast ISB Extension Well Field
 Contractor: Stoller Newport News Nuclear
 Driller: Cascade
 Well Coordinates: 3751439.44 N 648281.22 E
 TOC Elevation: 3518.48 ft
 Surface Elevation: 3516.35 ft

Well No: PTX06-1190
 Well Type: Monitor
 Date Constructed: 10/20/2017
 Observed By: R Rupp

Sheet 1 of 1



PTX06-1190

Pantex BOA 70 Release 5

North of SE ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 464293	Northing: 3751439.44 Easting: 648281.22
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 287 ft bgs TD Well: 287 ft bgs
Dates Drilled: 10/19/17 Date Completed: 10/20/17	Depth to Water: 279.68 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: Monitoring Well, 4" Sch 80 PVC
Ground Elevation: 3516.35 ft amsl	Top of Casing Elevation: 3518.48 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	5		CL	0' - 5' Lean Clay, reddish brown (5YR 4/4), medium plasticity, cohesive, moist		
	10		ML	5' - 20' Silt with sand, reddish brown (5YR 5/4), 15% very fine sand with 2-mm caliche nodules, medium plastic, cohesive, damp		
	20		ML	20' - 30' Silt, light reddish brown (5YR 6/4), some caliche, low plasticity, noncohesive, dry		
	30		ML	30' - 45' Silt, yellowish red (5YR 5/6) to reddish yellow (5YR 6/6), with increasing caliche, low plasticity, noncohesive, dry, caliche granules to 1-cm		
	45		ML	45' - 63' Silt, light reddish brown (5YR 6/4) to pink (5YR 7/4), dry, noncohesive, caliche to 30-40% in alternating layers up to 2' thick, caliche nodules up to 3-cm		
	65		CL	63' - 70' Lean Clay, pink (5YR 7/3) to yellowish red (5YR 5/6) with interbedded silt, moist, low plasticity, cohesive		
	70		SP	70' - 75' Sand, yellowish red (7.5YR 6/4), fine grain, rounded, medium dense, damp		
	75		CL	75' - 85' Lean Clay with silt, reddish brown (5YR 5/4), dry		
	85		ML	85' - 100' Silt with some sand, light reddish brown to reddish brown (5YR 6/4 - 5/4), dry		

PTX06-1190

Pantex BOA 70 Release 5

North of SE ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 464293	Northing: 3751439.44 Easting: 648281.22
Drilling Contractor: Cascade Drilling Lic. #4885 W. Blutworth	TD Borehole: 287 ft bgs TD Well: 287 ft bgs
Dates Drilled: 10/19/17 Date Completed: 10/20/17	Depth to Water: 279.68 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: Monitoring Well, 4" Sch 80 PVC
Ground Elevation: 3516.35 ft amsl	Top of Casing Elevation: 3518.48 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	105			100' - 135' Sand, light brown (7.5YR 6/4), fine grain with some medium grain, loose, dry, subrounded to rounded, quartz sand, with 10% gravel 130'-135'		
	110					
	115		SP			
	120					
	125					
	130					
	135					
	140		SP	135' - 140' Sand, reddish yellow (7.5YR 6/6), fine grain to very fine grain, subrounded, loose, dry		
	145		SP	140' - 150' Sand, light brown (7.5YR 6/4), fine and very fine grain, subrounded, loose, dry		
	150					
	155			150' - 170' Sand, pink (7.5YR 7/4), very fine grain, some cemented sandstone nodules up to 2-mm, medium dense, dry		
	160		SP			
	165					
	170					
	175			170' - 190' Sand, reddish yellow (7.5YR 6/6), very fine to fine grain, subrounded to rounded, some cemented nodules, coarsening to medium grain 180' to 190'		
	180		SP			
	185					
	190					
	195		SP	190' - 195' Sand, light brown (7.5YR 6/4), very fine to fine grain, subrounded to rounded, medium dense, dry to damp		
			SP	195' - 200' Sand, strong brown (7.5YR 5/6), very fine grain, medium dense, dry to damp		

PTX06-1190

Pantex BOA 70 Release 5

North of SE ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 464293	Northing: 3751439.44 Easting: 648281.22
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 287 ft bgs TD Well: 287 ft bgs
Dates Drilled: 10/19/17 Date Completed: 10/20/17	Depth to Water: 279.68 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: Monitoring Well, 4" Sch 80 PVC
Ground Elevation: 3516.35 ft amsl	Top of Casing Elevation: 3518.48 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number		
	205		SW	200' - 225' Sand with gravel, light yellowish brown (10YR 6/4), well graded, coarse to very fine grain, subrounded to rounded with some angular, 15% pea gravel 205' to 210', subangular gravel clasts to 3-cm 220' to 225', dense, dry				
	210							
	215							
	220							
	225							
	230		SP	225' - 230' Sand, medium grain with <10% large angular and broken gravel, dense, moist				
	235		SP	230' - 235' Sand, yellowish brown (10YR 5/6), fine grain with <10% gravel, dense, moist				
	240		SC	235' - 240' Sand, fine grain with >15% clay, moist				
	245		GW	240' - 245' Gravel, grayish brown to brown (10YR 5/2 - 5/3), well graded medium gravel, with fine to coarse subrounded sand, dense, dry				
	250		SW	245' - 255' Sand with gravel, yellowish brown (10YR 5/8), fine to coarse grain, well graded sand with pea gravel, medium dense, dry				
	255		SW	255' - 275' Sand with gravel, light yellowish brown (10YR 6/4) 255' to 265', brown (10YR 5/3) 265' to 275', well graded fine to coarse grain subrounded sand, 15 - 20% pea gravel, dry to moist at 270'				
	260							
	265							
	270							
	275		SW	275' - 280' Sand, pale brown (10YR 6/3), fine to coarse grain, well graded, subrounded, moist, with 15% pea gravel				
	280		SP	280' - 286' Sand with gravel, yellowish brown (10YR 5/6), poorly graded medium grain sand with 15% rounded pea gravel, saturated at 283'				
	285		ML	286' - 287' Silt with 15 - 25% very fine sand (FGZ), reddish brown (5YR 5/4), damp to dry, with caliche granules				
	290			Borehole Total Depth 287' bgs				
	295							

PTX06-1190
Triaxial Permeability
ASTM D5084
1.0E-08 cm/sec

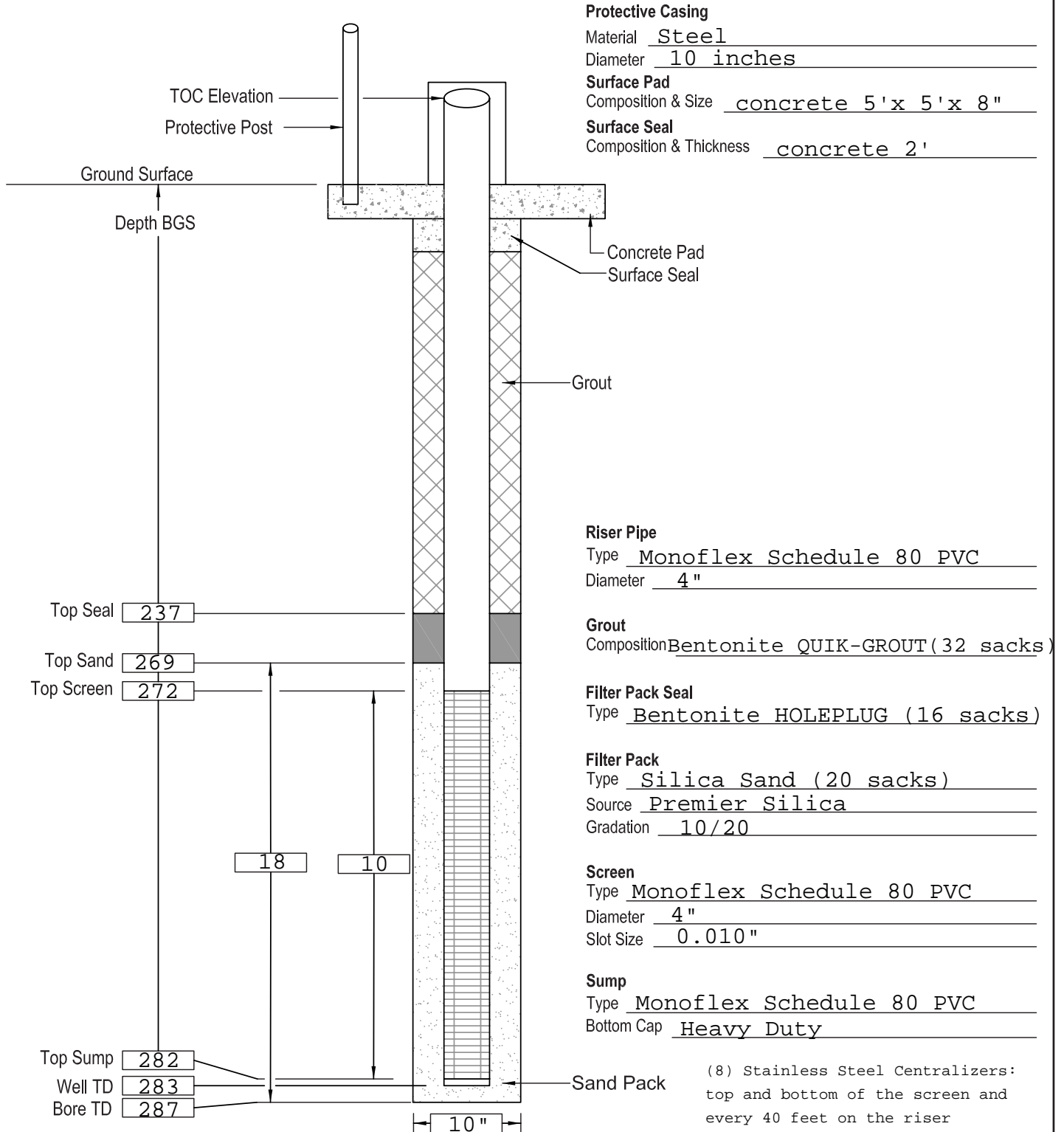
PTX06-1186 Re-Designated as PTX06-ISB107

Well Installation Diagram

Project: BOA 70 RLS 3
 Location: Pantex
 Contractor: SN3/Cascade Drilling
 Driller: A. Lamon
 Well Coordinates: 3750677.17 N 647400.94 E
 TOC Elevation: 3516.01 ft amsl
 Surface Elevation: 3513.98 ft amsl

Well No: PTX06-1186
 Well Type: Monitoring Well
 Date Constructed: 04/22/2017
 Observed By: R. Rupp

Sheet 1 of 1



Protective Casing

Material Steel
 Diameter 10 inches

Surface Pad

Composition & Size concrete 5'x 5'x 8"

Surface Seal

Composition & Thickness concrete 2'

Riser Pipe

Type Monoflex Schedule 80 PVC
 Diameter 4"

Grout

Composition Bentonite QUIK-GROUT (32 sacks)

Filter Pack Seal

Type Bentonite HOLEPLUG (16 sacks)

Filter Pack

Type Silica Sand (20 sacks)
 Source Premier Silica
 Gradation 10/20

Screen

Type Monoflex Schedule 80 PVC
 Diameter 4"
 Slot Size 0.010"

Sump

Type Monoflex Schedule 80 PVC
 Bottom Cap Heavy Duty

Sand Pack

(8) Stainless Steel Centralizers:
 top and bottom of the screen and
 every 40 feet on the riser

PTX06-1186

Pantex BOA 70 Release 3

East of FM-2373 & South of County Road 8

DOE Pantex Plant

SN3 Project Number: 4638-03	Client: CNS Pantex Contract #63935
Geologist: R. Rupp Texas Well Report No.: 449490	Northing: 3750677.17 Easting: 647400.94
Drilling Contractor: Cascade Drilling Lic. #59378 A. Lamon	TD Borehole: 287 ft bgs TD Well: 283.24 ft bgs
Dates Drilled: 04/19-20/17 Date Completed: 04/22/17	Depth to Water: 275.66 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: Monitoring Well, 4" Sch 80 PVC
Ground Elevation: 3513.98 ft amsl	Top of Casing Elevation: 3516.01 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	0		CL	0' - 4' Lean CLAY, dark reddish brown (5YR 3/3), medium plastic, cohesive, moist		
	4		ML	4' - 10' clayey SILT, light reddish brown (5YR 6/4), moderate caliche, damp		
	10		ML	10' - 25' clayey SILT, reddish brown (5YR 5/4), non-plastic, non-cohesive, caliche mottling, damp to dry with depth		
	25		ML	25' - 37' SILT, yellowish red (5YR 5/6), non-plastic, non-cohesive, some very fine grain sand and caliche stringers, dry		
	37		ML	37' - 42' SILT, light reddish brown (5YR 6/4), non-plastic, non-cohesive, strong caliche formation with nodes to 1 cm, dry		
	42		ML	42' - 70' sandy SILT, yellowish red (5YR 5/8), non-plastic, non-cohesive, about 30% fine grain sand and caliche nodes, dry		
	70		ML	70' - 82' SILT with sand, light reddish brown (5YR 6/4), non-plastic, non-cohesive, dry, 15% - 25% quartz sand and caliche nodes		
	82		CL/ML	82' - 90' Lean CLAY with SILT, reddish brown (5YR 5/4), low plasticity, non-cohesive, trace fine grain sand and manganese staining, dry		
	90		SP	90' - 92' poorly graded SAND, trace silt, yellowish red (5YR 5/6), fine grain, rounded, dry		
	92		SLT-STN	92' - 97' SILTSTONE, caliche caprock, pink (5YR 7/3), hard (rock flour cuttings), dry		
	97		ML			

PTX06-1186

Pantex BOA 70 Release 3 East of FM-2373 & South of County Road 8 DOE Pantex Plant

SN3 Project Number: 4638-03	Client: CNS Pantex Contract #63935
Geologist: R. Rupp Texas Well Report No.: 449490	Northing: 3750677.17 Easting: 647400.94
Drilling Contractor: Cascade Drilling Lic. #59378 A. Lamon	TD Borehole: 287 ft bgs TD Well: 283.24 ft bgs
Dates Drilled: 04/19-20/17 Date Completed: 04/22/17	Depth to Water: 275.66 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: Monitoring Well, 4" Sch 80 PVC
Ground Elevation: 3513.98 ft amsl	Top of Casing Elevation: 3516.01 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	105	ML		97' - 105' SILT with claiche, light reddish brown (5YR 6/4), dry		
	110			105' - 125' silty SAND, yellowish red (5YR 5/8), very fine grain sand, dry		
	115	SM				
	120					
	125			125' - 140' silty SAND, strong brown (7.5YR 5/6), poorly graded, fine and very fine grain, subangular grains, dry		
	130	SM				
	135					
	140			140' - 150' SAND, light brown (7.5YR 6/4), well graded, medium to very fine grain subangular sand, loose, dry		
	145	SP				
	150			150' - 165' silty SAND/sandy SILT, pink (7.5YR 7/4), fine grain subangular sand, loose, dry		
	155	SM/ ML				
	160					
	165			165' - 205' SAND, light brown (7.5YR 6/4), poorly graded, fine and very fine grain sand, <10% silt to 180', loose, dry		
	170					
	175					
	180			@ 180' continued fine and very fine grain sand, becoming medium dense		
	185	SP		@ 185' Hard, well cemented sandstone nodes to 2 cm, sand mostly very fine grain, color change to strong brown (7.5YR 5/6)		
	190					
	195					

PTX06-1186

Pantex BOA 70 Release 3

East of FM-2373 & South of County Road 8

DOE Pantex Plant

SN3 Project Number: 4638-03	Client: CNS Pantex Contract #63935
Geologist: R. Rupp Texas Well Report No.: 449490	Northing: 3750677.17 Easting: 647400.94
Drilling Contractor: Cascade Drilling Lic. #59378 A. Lamon	TD Borehole: 287 ft bgs TD Well: 283.24 ft bgs
Dates Drilled: 04/19-20/17 Date Completed: 04/22/17	Depth to Water: 275.66 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: Monitoring Well, 4" Sch 80 PVC
Ground Elevation: 3513.98 ft amsl	Top of Casing Elevation: 3516.01 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	205		SP			
	210			205' - 227' sandy GRAVEL/gravelly SAND, overall appearance light yellowish brown (10YR 6/4), subrounded to rounded gravel up to 3 cm diameter, well graded very fine to coarse grain rounded to subrounded sand, dense, dry		
	215		GP/ SW			
	220					
	225					
	230		SP	227' - 237' SAND, poorly graded, yellowish brown (10YR 5/8), 80% very fine grain with 2 mm sandstone nodes, medium dense, damp		
	235					
	240		GP	237' - 245' GRAVEL with sand, matrix color pale brown (10YR 6/3) with yellowish brown sand and varigated gravel, 80% poorly graded gravel up to 3 cm, subrounded to angular and flattened gravel with broken fragments, 20% sand		
	245					
	250		GP	245' - 255' clayey sandy GRAVEL, dark yellowish brown (10YR 4/4), gravel as above decreasing with depth after 250' with increasing clay, some plasticity, moist		
	255					
	260		SW	255' - 265' well graded SAND with gravel, matrix color yellowish brown (10YR 5/4), fine to very coarse grain sand, 25% - 30% gravel as above, dense, dry		
	265					
	270		SW	265' - 270' SAND, yellowish brown (10YR 5/4), well graded, fine to coarse grain, rounded/subrounded, trace gravel, moist @ 268 ft		
	275		SW/ GP	270' - 277' gravelly SAND/sandy GRAVEL, yellowish brown (10YR 5/4), SW sand and GP gravel, sugangular to rounded gravel mostly 2 cm diameter some 5 cm, moist		
	280		SW	277' - 282' well graded SAND, yellowish brown (10YR 5/6), pebbly, saturated		
	285		SLT- STN	282' - 287' SILTSTONE, brown (7.5YR 5/4) to pink (7.5YR 7/4) with depth, 45% very fine grain quartz sand and caliche sand, damp to dry		
	290			Borehole Total Depth 287 ft bgs		
	295			Split-spoon sample collected 287' - 287.5' bgs		

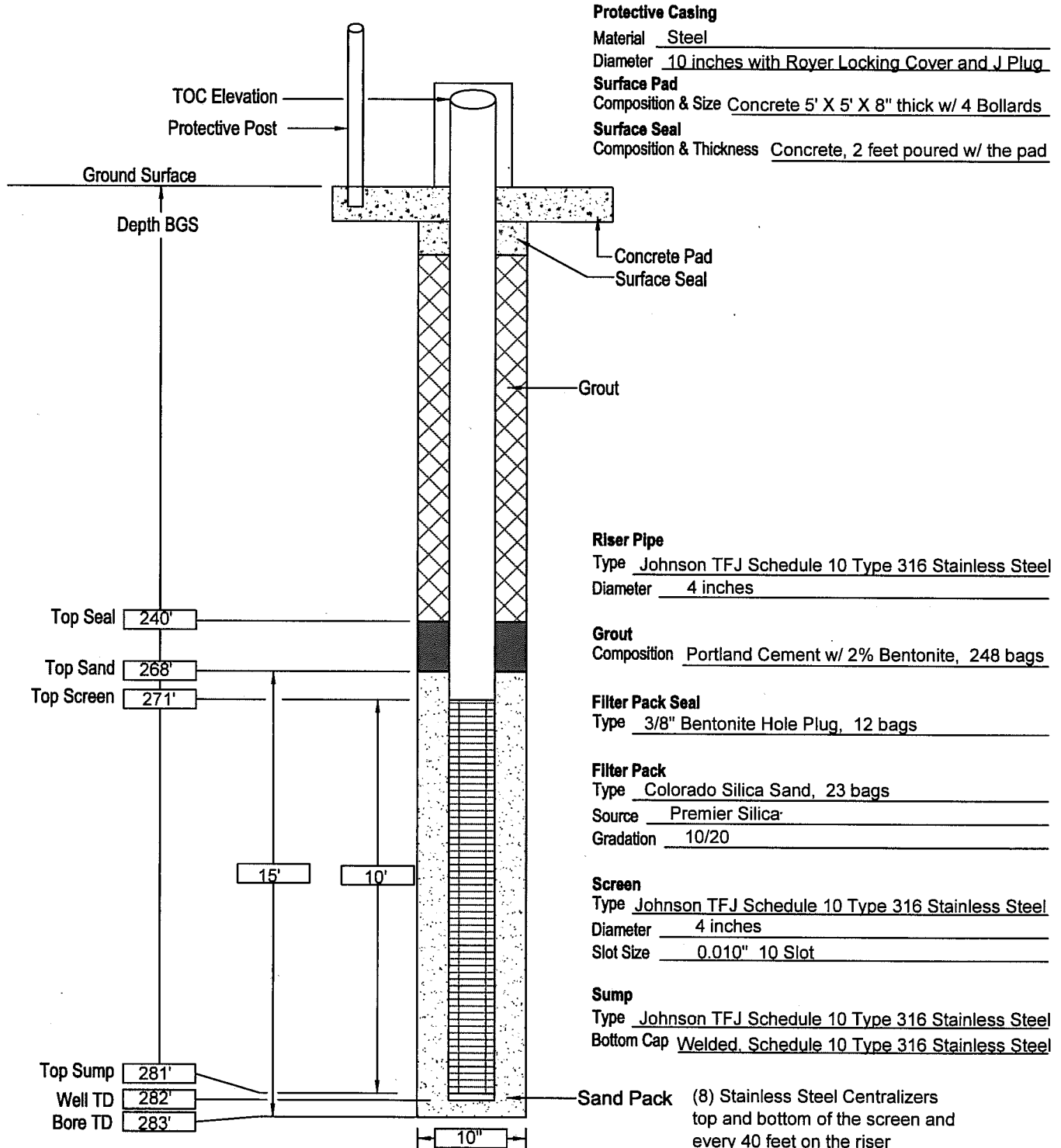
PTX06-1186
Triaxial Permeability
ASTM D5084
1.7E-06 cm/sec

Well Installation Diagram

Project: BOA 70 Release 5
 Location: Southeast ISB Extension Well Field
 Contractor: Stoller Newport News Nuclear
 Driller: Cascade
 Well Coordinates: 3750705.36 N 647471.65 E
 TOC Elevation: 3516.31 ft AMSL
 Surface Elevation: 3514.20 ft AMSL

Well No: PTX06-ISB108
 Well Type: ISB Injection
 Date Constructed: 12/12/2017 - 12/13/2017
 Observed By: J Ford

Sheet 1 of 1



PTX06-ISB108

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: J. Ford Texas Well Report No.: 467045	Northing: 3750705.36 Easting: 647471.65
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 283 ft bgs TD Well: 282 ft bgs
Dates Drilled: 12/12/17 Date Completed: 12/13/17	Depth to Water: 275.33 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.20 ft amsl	Top of Casing Elevation: 3516.31 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number	
	0		ML	0' - 4' Clayey Silt, light brown (7.5YR 6/3), hard, dry			
	5		CL	4' - 24' Silty Clay, light reddish brown (5YR 6/4), with caliche nodules and stringers, hard, damp to dry			
	10						
	15						
	20						
	25		ML	24' - 38' Clayey Silt, reddish yellow (5YR 6/6), with small (<6-mm) caliche nodules, damp			
	30						
	35						
	40		ML	38' - 44' Caliche Silt with sand, pinkish white (5YR 8/2), increasing hard caliche lenses with cuttings to 4-cm, some fine to medium sand, damp			
	45						
	50		ML	44' - 57' Silt, red (2.5YR 5/6), with fine sand & clay, hard, damp to moist			
	55						
	60		SM	57' - 83' Silty Sand with clay, reddish yellow to yellowish red (5YR 6/6 - 5/6), trace caliche nodules to 6-mm, dense, damp			
	65						
	70						
	75						
	80						
	85		ML	83' - 87' Caliche Silt, pinkish white (5YR 8/2), numerous caliche lenses, hard, dry			
	90		SM-ML	87' - 95' Silty Sand to Sandy Silt, reddish brown (5YR 5/4), dense, damp			
	95		SLT-STN	95' - 106' Caliche Caprock, pinkish white (5YR 8/2), caliche nodules to 4-cm, very dense, dry			






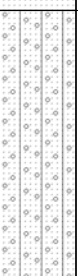

PTX06-ISB108

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: J. Ford Texas Well Report No.: 467045	Northing: 3750705.36 Easting: 647471.65
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 283 ft bgs TD Well: 282 ft bgs
Dates Drilled: 12/12/17 Date Completed: 12/13/17	Depth to Water: 275.33 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.20 ft amsl	Top of Casing Elevation: 3516.31 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	105		SLT-STN			
	110		SM	106' - 116' Silty Sand, light reddish brown (5YR 6/4), fine grain, dry to damp		
	120		SM	116' - 124' Silty Sand, reddish yellow (5YR 7/6 - 6/6), fine grain, dry to damp		
	130		SM-ML	124' - 131' Silty Sand to Sandy Silt, light reddish brown (5YR 6/4), fine to medium grain, subrounded to rounded, dense, damp		
	145		SP	131' - 159' Sand, pink to light brown (7.5YR 7/4 - 6/4), fine to medium grain, poorly graded, friable (loose) to medium dense, prevalent sandstone lenses, dry		
	170		SM	159' - 180' Silty Sand, pink (5YR 7/4), fine grain with sandstone lenses, loose to dense on lenses, damp		
	195		SP	180' - 204' Sand, pink (7.5YR 7/4), fine to medium grain, poorly graded, subrounded to rounded, loose, dry @ 190' - 200' silty sand lenses		

PTX06-ISB108

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: J. Ford Texas Well Report No.: 467045	Northing: 3750705.36 Easting: 647471.65
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 283 ft bgs TD Well: 282 ft bgs
Dates Drilled: 12/12/17 Date Completed: 12/13/17	Depth to Water: 275.33 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.20 ft amsl	Top of Casing Elevation: 3516.31 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	205		SP			
	210		SP	204' - 212' Sand, light yellowish brown (10YR 6/4), fine to medium grain, poorly graded, subrounded, with interbedded dense sandstone layers, damp		
	215			212' - 234' Sand with gravel, very pale brown (10YR 7/4), fine to medium grain with some coarse grain, flattened - rounded gravel clasts to 2.5-cm		
	220		SP			
	225					
	230					
	235					
	240		SM-ML	234' - 244' Silty Sand, light yellowish brown to brown (10YR 6/4 - 5/3), fine to medium grain, subangular to rounded, dense, damp to moist		
	245					
	250		GW	244' - 259' Sandy Gravel, light brownish gray (10YR 6/2), gravel to 4-cm, fine to coarse sand, sub-angular to sub-rounded gravel more rounded with depth, very dense, damp		
	255					
	260					
	265					
	270		SW-GW	259' - 281' Sand with Gravel to Gravel with Sand, brown (10YR 5/3), fine to coarse sand and small (6-mm) to large gravel (up to 5-cm), well graded, angular to rounded, dense, moist		
	275					
	280					
	285		ML	281' - 283' FGZ Siltstone, pink to light reddish brown (5YR 7/3 - 6/3), fine grain sand, small caliche nodules, damp to dry		
	290			Borehole Total Depth 283' bgs		
	295					

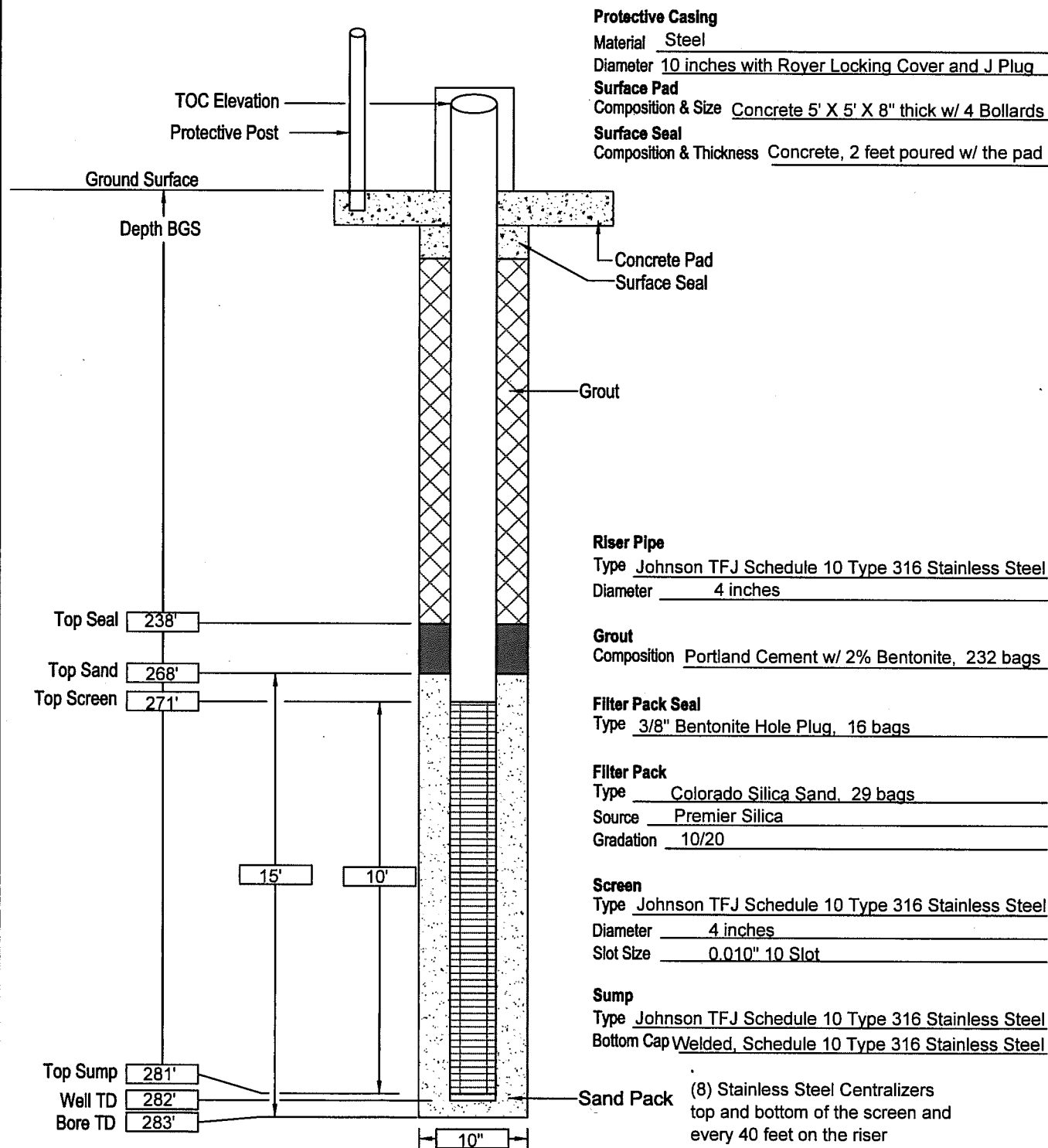
PTX06-ISB108
Triaxial Permeability
ASTM D5084
7.8E-08 cm/sec

Well Installation Diagram

Project: BOA 70 Release 5
Location: Southeast ISB Extension Well Field
Contractor: Stoller Newport News Nuclear
Driller: Cascade
Well Coordinates: 3750731.23 N 647541.96 E
TOC Elevation: 3516.25 ft AMSL
Surface Elevation: 3514.18 ft AMSL

Well No: PTX06-ISB109
Well Type: ISB Injection
Date Constructed: 12/04/2017
Observed By: R Rupp

Sheet 1 of 1



PTX06-ISB109

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 466180	Northing: 3750731.23 Easting: 647541.96
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 283 ft bgs TD Well: 282 ft bgs
Dates Drilled: 12/03/17 Date Completed: 12/04/17	Depth to Water: 275.54 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.18 ft amsl	Top of Casing Elevation: 3516.25 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	5		CL	0' - 5' Lean Clay, dark reddish brown (5YR 3/4), very stiff, moderate plasticity, cohesive, moist		
	10		CL	5' - 35' Silty Clay, reddish brown (5YR 5/4), stiff, low plasticity, trace fine sand, some caliche @ 15' - 25', dry to moist		
	15					
	20					
	25					
	30					
	35		ML	35' - 45' Sandy Silt, reddish yellow (5YR 6/6), silt with >30% very fine to fine grain sand, medium stiff, non-plastic, dry		
	40					
	45		SP	45' - 75' Sand, red (2.5YR 5/6), fine grain, poorly graded, subrounded to rounded, with <10% caliche nodules to 2.5-cm, medium dense, dry		
	50					
	55					
	60					
	65					
	70			@ 70' - 75' increasing caliche		
	75		SP	75' - 80' Sand, light reddish brown (5YR 6/4), very fine to fine grain, poorly graded, loose, dry		
	80		SP	80' - 95' Sand, reddish brown (5YR 5/4), very fine to fine grain, poorly graded, some clay @ 85' - 90', loose to medium dense, dry		
	85					
	90					
	95		SM	95' - 100' Silty Sand, pink (5YR 7/3 - 7/4), moderately cemented, loose to medium dense, sandstone nodes, dry		

PTX06-ISB109

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 466180	Northing: 3750731.23 Easting: 647541.96
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 283 ft bgs TD Well: 282 ft bgs
Dates Drilled: 12/03/17 Date Completed: 12/04/17	Depth to Water: 275.54 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.18 ft amsl	Top of Casing Elevation: 3516.25 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	105			100' - 140' Sand, reddish brown (5YR 5/4), very fine to fine grain, poorly graded, loose to medium dense, dry		
	110					
	115					
	120		SP			
	125					
	130					
	135					
	140			140' - 150' Sand, reddish yellow (5YR 6/6), predominantly very fine grain, poorly graded, loose, dry		
	145		SP			
	150			150' - 160' Sand, pink (7.5YR 7/4), very fine to fine grain, poorly graded, loose, dry		
	155		SP			
	160			160' - 170' Sand, light brown to pink (7.5YR 6/4 - 7/4), dense, cemented sandstone nodes, dry		
	165		SP			
	170			170' - 205' Sand, light brown (7.5YR 6/4), very fine to fine grain, poorly graded, medium dense to dense, dry		
	175					
	180					
	185		SP			
	190					
	195					

PTX06-ISB109

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 466180	Northing: 3750731.23 Easting: 647541.96
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 283 ft bgs TD Well: 282 ft bgs
Dates Drilled: 12/03/17 Date Completed: 12/04/17	Depth to Water: 275.54 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.18 ft amsl	Top of Casing Elevation: 3516.25 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	205		SP			
	210		SC	205' - 210' Clayey Sand, yellowish brown (7.5YR 5/6), fine grain, poorly graded, with >15% clay, plastic fines, dense, moist		
	215		SW	210' - 220' Sand, light yellowish brown (10YR 6/4), well graded quartz sand with cemented nodes, medium dense, dry		
	220		SW	220' - 225' Sand, brownish yellow (10YR 6/6), well graded cemented sand with small flattened gravel, medium dense, dry		
	225		SM	225' - 235, Silty Sand, yellowish brown (10YR 5/6), fine grain, poorly graded, some gravel, medium dense, moist		
	235		GP	235' - 245' Gravel with sand, yellowish brown (10YR 5/4), poorly graded subrounded to rounded small gravel, with >15% well graded sand, dense to very dense, dry		
	245		SW	245' - 250' Sand, white (10YR 8/2), well graded, cemented, dense, dry		
	250		SW	250' - 281' Sand with gravel, yellowish brown (10YR 5/6), well graded sand with small gravel throughout, medium dense, moist @ 265', saturated @ 277'		
	260			@ 250' - 265' 10% - 15% gravel		
	265		SW			
	270					
	275			@ 275' - 280' some clay and gravel		
	280		ML	281' - 283' FGZ Siltstone, reddish brown (5YR 5/4), with fine grain sand and caliche granules, hard, dry		
	285			Borehole Total Depth 283' bgs		
	290					
	295					

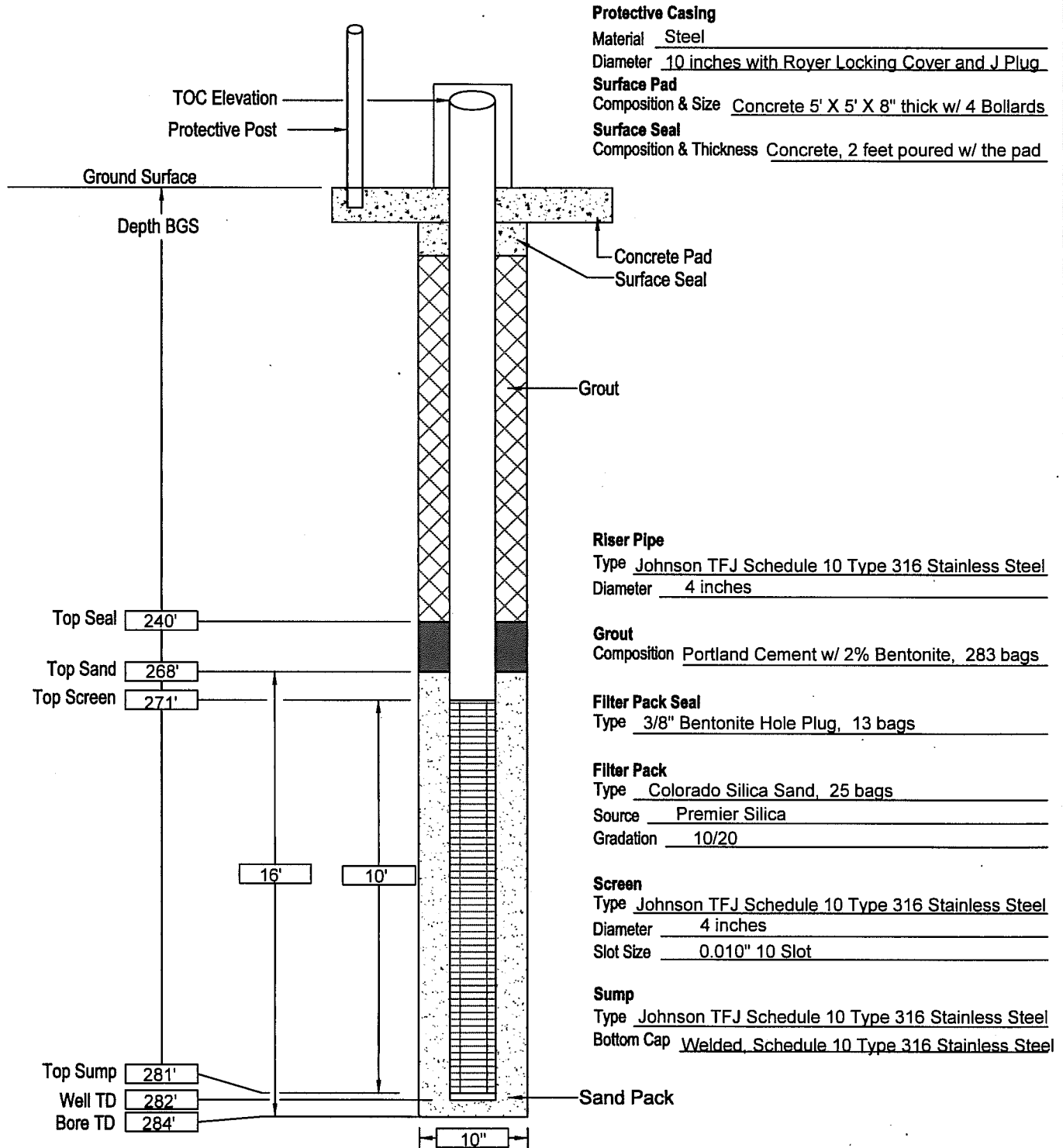
PTX06-ISB109
Triaxial Permeability
ASTM D5084
4.8E-08 cm/sec

Well Installation Diagram

Project: BOA 70 Release 5
 Location: Southeast ISB Extension Well Field
 Contractor: Stoller Newport News Nuclear
 Driller: Cascade
 Well Coordinates: 3750757.59 N 647612.02 E
 TOC Elevation: 3516.41 ft AMSL
 Surface Elevation: 3514.33 ft AMSL

Well No: PTX06-ISB110
 Well Type: ISB Injection
 Date Constructed: 12/01/2017 to 12/02/2017
 Observed By: R Rupp

Sheet 1 of 1



PTX06-ISB110

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 466189	Northing: 3750757.59 Easting: 647612.02
Drilling Contractor: Cascade Drilling Lic. #4885 W. Blutworth	TD Borehole: 284 ft bgs TD Well: 282 ft bgs
Dates Drilled: 11/30-12/01/17 Date Completed: 12/02/17	Depth to Water: 276.04 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.33 ft amsl	Top of Casing Elevation: 3516.41 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	5		CL	0' - 5' Lean Clay, dark reddish brown (5YR 3/3), stiff, moderate plasticity, cohesive, moist		
	10		ML-CL	5' - 35' Silt - Clay, yellowish red (5YR 5/6), stiff - very stiff, moderate plasticity, non-cohesive, trace fine sand and caliche, moist		
	15					
	20					
	25					
	30					
	35		ML	35' - 45' Silt, reddish yellow (5YR 6/6), stiff, non-plastic, with fine caliche granules, dry		
	40					
	45		SP	45' - 70' Sand, red (2.5YR 5/8), fine grain, poorly graded, rounded sand, with caliche granules to 1-cm, loose, dry		
	50					
	55					
	60					
	65					
	70		ML	70' - 75' Silt with sand, light reddish brown (5YR 6/4), medium stiff, with 15 - 25% fine sand, dry		
	75		CL	75' - 94' Clay, reddish brown (2.5YR 5/4), moderate plasticity, cohesive, dense, trace caliche, some fine sand, dry		
	80					
	85					
	90					
	95		ML	94' - 105' caliche Silt, pink (5YR 7/4), < 10% very fine sand, medium stiff, dry		

PTX06-ISB110

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 466189	Northing: 3750757.59 Easting: 647612.02
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 284 ft bgs TD Well: 282 ft bgs
Dates Drilled: 11/30-12/01/17 Date Completed: 12/02/17	Depth to Water: 276.04 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.33 ft amsl	Top of Casing Elevation: 3516.41 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	105		ML			
	110		SP	105' - 120' Sand, reddish brown (5YR 5/4), very fine to fine grain, poorly graded, loose, dry		
	120		SP	120' - 145' Sand, reddish yellow (7.5YR 6/6), very fine to fine grain, poorly graded, rounded, medium dense, with 2-cm to 3-cm cemented sandstone nodes, dry		
	145		SP	145' - 167' Sand, light brown (7.5YR 6/4), very fine to fine grain, poorly graded, rounded, loose to medium dense, with 3-mm to 2-cm cemented sandstone nodes		
	170		SP	167' - 180' Sand, yellow (7.5YR 7/6), very fine to fine grain, poorly graded, subrounded, loose, dry		
	180		SP	180' - 200' Sand, light brown (7.5YR 6/4), very fine grain, poorly graded, medium dense, dry, <10% sandstone nodes		

PTX06-ISB110

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 466189	Northing: 3750757.59 Easting: 647612.02
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 284 ft bgs TD Well: 282 ft bgs
Dates Drilled: 11/30-12/01/17 Date Completed: 12/02/17	Depth to Water: 276.04 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.33 ft amsl	Top of Casing Elevation: 3516.41 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number	
	205	[Dotted pattern]	SW	200' - 215' Sand with gravel, brownish yellow (10YR 6/6), well graded, subrounded, <15% small gravel, medium dense, dry			
	210						
	215	[Dotted pattern]	SW	215' - 225' Sand, very pale brown (10YR 7/4), very fine to fine grain with some medium to coarse grain, <10% small gravel 220' - 225', medium dense to dense at 220', dry			
	220						
	225	[Dotted pattern]	SP	225' - 235' Sand, light yellowish brown to brownish yellow (10YR 6/4 - 6/6), very fine to fine grain, poorly graded, rounded quartz, dense, dry			
	230						
	235	[Dotted pattern]	SW	235' - 240' Sand, light yellowish brown (10YR 6/4), very fine to medium grain, some coarse grain, <10% small sub-rounded gravel, some hard sandstone nodes to 2-cm			
	240						
	240	[Gravel pattern]	GW	240' - 245' Gravel, yellowish brown matrix (10YR 5/4), small to large, sub-angular to rounded, very dense, dry			
	245	[Dotted pattern]	SW	245' - 250' Sand, yellowish brown (10YR 5/6), very fine to medium grain, well graded, trace clay, medium dense, moist			
	250						
	255	[Dotted pattern]	SW	250' - 255' Sand, very pale brown (10YR 7/3), well graded clean quartz, medium dense, dry			
	255						
	260	[Dotted pattern]	SW	255' - 260' Sand with pea gravel, yellowish brown (10YR 5/4), well graded, dense, dry			
	260						
	265	[Dotted pattern]	SW	260' - 270' Sand, yellowish brown (10YR 5/6), well graded, medium dense, moist			
	265						
	270	[Dotted pattern]	SW	270' - 281' Sand with Gravel, dark yellowish brown (10YR 4/6), fine to very coarse grain, well graded, >15% small gravel, medium dense, saturated @ 277'			
	275						
	280	[Horizontal lines]	ML	281' - 284' FGZ Siltstone, reddish brown (5YR 5/4), >15% fine sand, very stiff to hard, with caliche nodules, cohesive, dry			
	285						
	290	Borehole Total Depth 284' bgs					
	295						

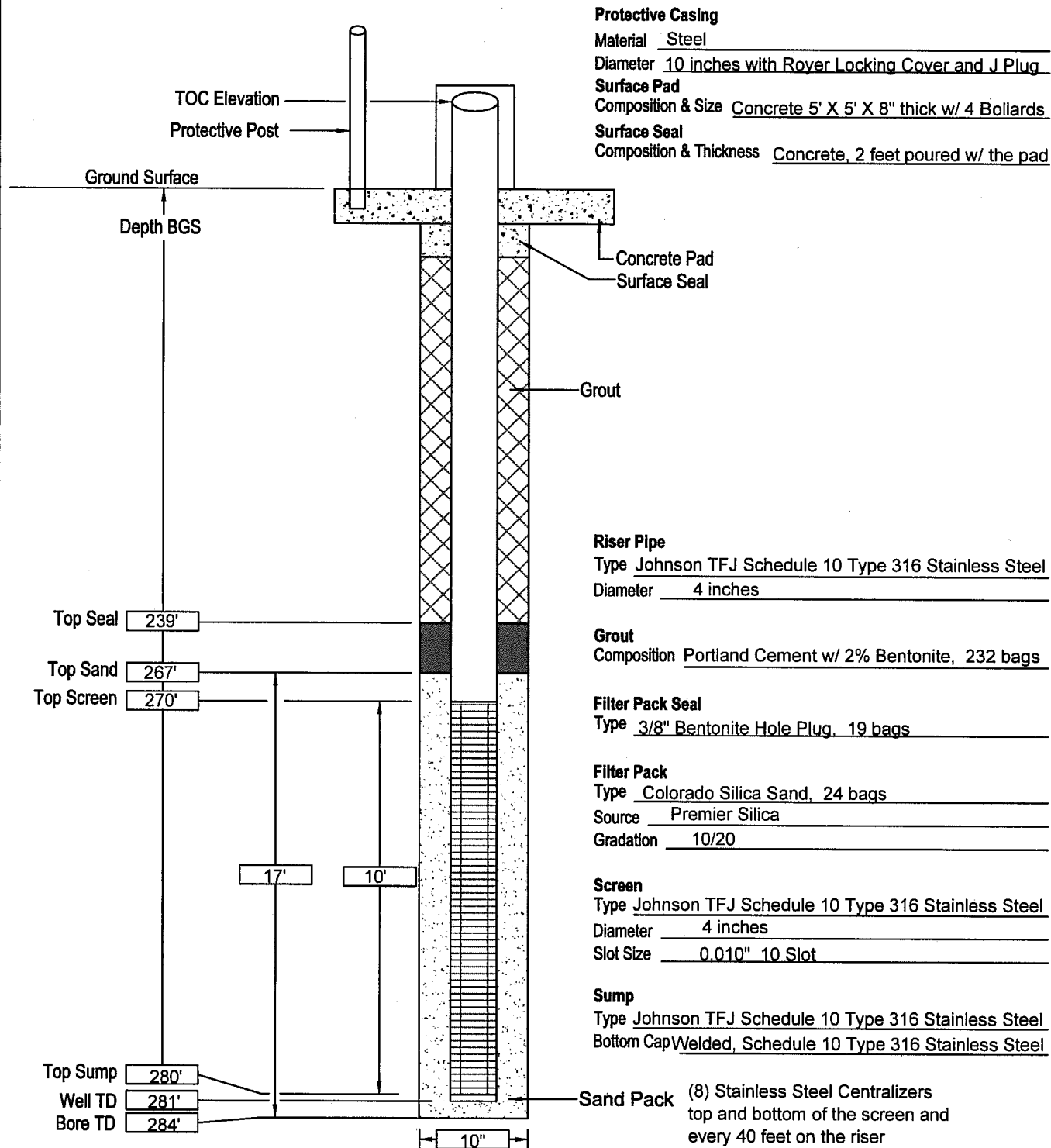
PTX06-ISB110
Triaxial Permeability
ASTM D5084
3.7E-07 cm/sec

Well Installation Diagram

Project: BOA 70 Release 5
Location: Southeast ISB Extension Well Field
Contractor: Stoller Newport News Nuclear
Driller: Cascade
Well Coordinates: 3750783.88 N 647682.57 E
TOC Elevation: 3516.75 ft AMSL
Surface Elevation: 3514.63 ft AMSL

Well No: PTX06-ISB111
Well Type: ISB Injection
Date Constructed: 12/14/2017 - 12/15/2017
Observed By: J Ford

Sheet 1 of 1



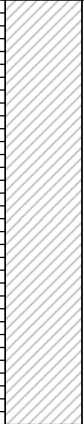
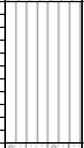
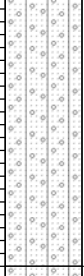
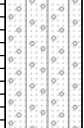
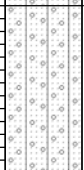

PTX06-ISB111

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: J. Ford Texas Well Report No.: 467047	Northing: 3750783.88 Easting: 647682.57
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 284 ft bgs TD Well: 281 ft bgs
Dates Drilled: 12/14/17 Date Completed: 12/15/17	Depth to Water: 276.27 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.63 ft amsl	Top of Casing Elevation: 3516.75 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number	
	0		ML	0' - 4' Clayey Silt Topsoil, brown (7.5YR 5/3), damp			
	5		CL	4' - 37' Silty Clay, light reddish brown to reddish brown (5YR 6/3 - 4/3), very stiff, caliche nodules to <6-mm, very moist to 35'			
	10						
	15						
	20						
	25						
	30						
	35						
	40		ML	37' - 48' Clayey Silt, pink (5YR 7/3), hard, damp, caliche nodules to 12-mm, local manganese oxide stringers, hard caliche lenses at 37' to 39' and 44' - 46'			
	45						
	50		SM	48' - 69' Silty Sand with clay and caliche lenses, red (2.5YR 5/6), dense, damp, pinkish white caliche with nodules to 2.5-cm @ 52' - 54'			
	55						
	60						
	65						
	70		SP-SM	69' - 80' Sand to Silty Sand, reddish yellow (5YR 6/6), fine grain, locally silty sand, some caliche nodules, becoming loose with depth, damp to moist			
	75						
	80		SM	80' - 93' Silty Sand, reddish brown (5YR 4/3 - 5/3), very fine to fine grain, poorly graded, moderately dense, caliche increases @ 90' with color change to light reddish brown (5YR 6/4), damp to moist			
	85						
	90						
	95		SLT-STN	93' - 103' Caliche Caprock, pink to pinkish white (5YR 7/3 - 8/2), very dense, dry			

PTX06-ISB111

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: J. Ford Texas Well Report No.: 467047	Northing: 3750783.88 Easting: 647682.57
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 284 ft bgs TD Well: 281 ft bgs
Dates Drilled: 12/14/17 Date Completed: 12/15/17	Depth to Water: 276.27 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.63 ft amsl	Top of Casing Elevation: 3516.75 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
		SLT-STN				
	105			103' - 131' Silty Sand, reddish yellow (5YR 6/6), very fine to fine grain, moderately dense to loose with depth, damp		
	110					
	115			SM		
	120					
	125					
	130					
	135			131' - 143' Sand with some silt, pink to reddish yellow (5YR 7/4 - 7/6), very fine to fine grain, poorly graded, loose, damp to dry		
	140		SP			
	145			143' - 158' Sand, pink to light brown (7.5YR 7/3 - 6/3), fine to medium grain, poorly graded, friable with local thin well indurated layers, dry		
	150		SP			
	155					
	160			158' - 168' Silty Sand, pink (7.5YR 7/4), very fine grain, poorly graded, friable, dry		
	165		SM			
	170			168' - 188' Sand, light brown to light yellowish brown (7.5YR 6/4 - 10YR 6/4), very fine to fine grain with some medium grain, poorly graded, mostly friable with thin well indurated sandstone beds, dry		
	175					
	180		SP			
	185					
	190			188' - 196' Silty Sand to Sand, light brown (7.5YR 6/3), very fine to fine grain, poorly graded, friable, dry		
	195		SP-SM			
				196' - 204' Silty Sand, reddish yellow (7.5YR 6/6), very fine		
			SM			

PTX06-ISB111

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: J. Ford Texas Well Report No.: 467047	Northing: 3750783.88 Easting: 647682.57
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 284 ft bgs TD Well: 281 ft bgs
Dates Drilled: 12/14/17 Date Completed: 12/15/17	Depth to Water: 276.27 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.63 ft amsl	Top of Casing Elevation: 3516.75 ft amsl

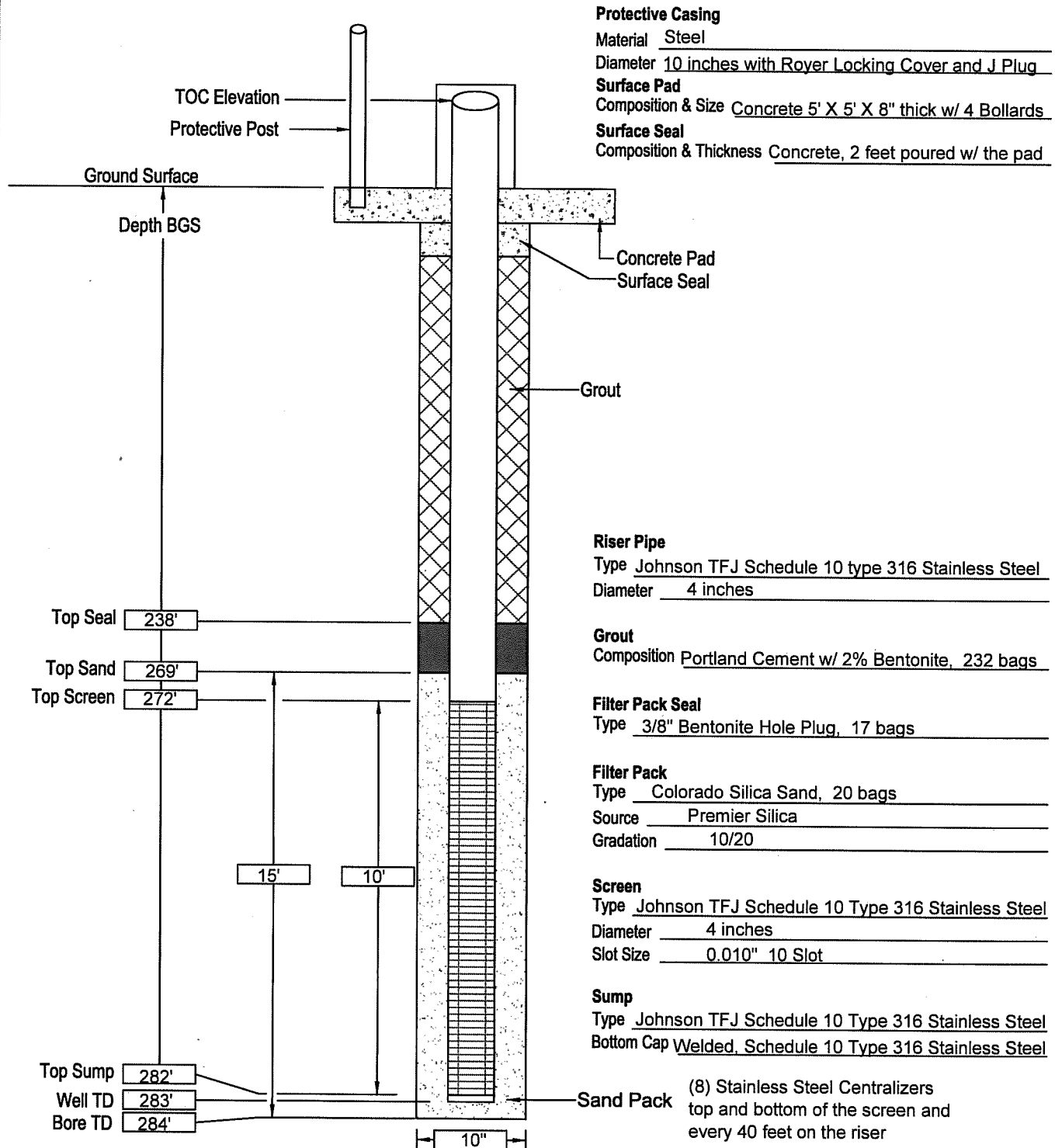
Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	205		SM	to fine grain, poorly graded, friable, damp		
	210		SP	204' - 213' Sand, very pale brown (10YR 7/3 - 7/4), fine to medium grain, poorly graded, trace coarse sand and pebbles, friable, dry		
	215		GP	213' - 227' Sandy Gravel, light brownish grey (10YR 6/2), sub-rounded to rounded gravel 2.5-cm to 4-cm with fine to coarse sand, moderately dense		
	220					
	225					
	230		SP	227' - 239' Sand, brownish yellow (10YR 6/6), fine to medium grain, poorly graded, friable, damp		
	235					
	240		GP-GW	239' - 252' Sandy Gravel, light brownish grey (10YR 6/2), pebbly gravel to 2-cm clasts increasing to 6-cm with depth, rounded, with fine to medium sand, dense, damp		
	245					
	250					
	255		SP-SW	252' - 267' Sand, very pale brown (10YR 7/3), fine to medium grain, becoming coarse grain with depth, sub-angular to sub-rounded, friable, damp		
	260					
	265					
	270		GW	267' - 280' Sandy Gravel, light brownish grey (10YR 6/2), sub-rounded to rounded pebbly gravel clasts to 2.5-cm, fine to coarse sand, well graded, moist to wet at 276'		
	275					
	280		SM	280' - 284' FGZ Silty Sand, light reddish brown (2.5YR 6/4), fine grain, with some caliche nodules to 6-mm, damp		
	285			Borehole Total Depth 284' bgs		
	290					
	295					
						PTX06-ISB111 Triaxial Permeability ASTM D5084 1.4E-07 cm/sec

Well Installation Diagram

Project: BOA 70 Release 5
 Location: Southeast ISB Extension Well Field
 Contractor: Stoller Newport News Nuclear
 Driller: Cascade
 Well Coordinates: 3750810.07 N 647753.08 E
 TOC Elevation: 3516.60 ft AMSL
 Surface Elevation: 3514.57 ft AMSL

Well No: PTX06-ISB112
 Well Type: ISB Injection
 Date Constructed: 12/12/2017
 Observed By: R Rupp

Sheet 1 of 1



PTX06-ISB112

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 467046	Northing: 3750810.07 Easting: 647753.08
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 284 ft bgs TD Well: 283 ft bgs
Dates Drilled: 12/12/17 Date Completed: 12/13/17	Depth to Water: 275.50 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.57 ft amsl	Top of Casing Elevation: 3516.60 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number	
	5		CL	0' - 5' Lean Clay, dark reddish brown (5YR 3/2), medium to high plasticity, cohesive, moist			
	10		CL	5' - 30' Lean clay, reddish brown (5YR 5/4), <15% sand and silt, medium plasticity, cohesive, moist			
	15						
	20						
	25		SM	30' - 65' Silty Sand to Sand, red (2.5YR 5/6), fine grain sub-rounded sand, with >15% non-plastic fines, medium dense, moist			
	30						
	35						
	40						
	45				@ 45' caliche nodules to 1.5-cm and decreasing silt		
	50			@ 50' mostly poorly graded fine grain sand with 2 to 5-mm caliche nodules, becoming loose			
	55		SP	65' - 75' Sand, pink to light reddish brown (5YR 7/4 - 6/4), fine grain, poorly graded, rounded, <10% fines, loose to medium dense, dry			
	60						
	65		CL	75' - 85' Lean Clay with sand, reddish brown (5YR 5/4), plastic, cohesive, stiff, dry			
	70						
	75		ML	85' - 105' Silt, pink (5YR 7/4 - 8/4), caliche silt with <10% very fine sand, stiff to hard			
	80				@ 85' - 90' caliche nodules to 2-cm		
	85						
	90						
	95						

PTX06-ISB112

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 467046	Northing: 3750810.07 Easting: 647753.08
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 284 ft bgs TD Well: 283 ft bgs
Dates Drilled: 12/12/17 Date Completed: 12/13/17	Depth to Water: 275.50 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.57 ft amsl	Top of Casing Elevation: 3516.60 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	105		ML			
	110		SM	105' - 120' Silty Sand, reddish yellow (7.5YR 6/6), very fine grain with >15% fines, loose, dry		
	115		SM			
	120		SP	120' - 130' Sand, light brown (7.5YR 6/4), poorly graded, medium dense, with hard cemented sanstone nodules, dry		
	125		SP			
	130		SP	130' - 140' Sand, pink (7.5YR 7/4), very fine to fine grain, poorly graded, loose, dry		
	135		SP			
	140		SP	140' - 155' Sand, light brown (7.5YR 6/4), very fine to fine grain, poorly graded, medium dense, dry		
	145		SP			
	150		SP			
	155		ML	155' - 160' Silt, pink (7.5YR 7/3), medium stiff, trace sand, dry		
	160		ML			
	165		SP	160' - 185' Sand, light brown (7.5YR 6/4), fine grain, poorly graded, well rounded quartz, loose, dry		
	170		SP			
	175		SP			
	180		SP			
	185		SP			
	190		SM	185' - 200' Silty Sand, light brown (7.5YR 6/4), very fine grain sand, >15% silt, medium dense, dry		
	195		SM			

PTX06-ISB112

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 467046	Northing: 3750810.07 Easting: 647753.08
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 284 ft bgs TD Well: 283 ft bgs
Dates Drilled: 12/12/17 Date Completed: 12/13/17	Depth to Water: 275.50 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.57 ft amsl	Top of Casing Elevation: 3516.60 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	205	[Pattern]		200' - 225' Sand, light yellowish brown (10YR 6/4), well graded		
	210					
	215		SW	@ 205' - 215' with medium gravel		
	220					
	225					
	230		SP	225' - 235' Sand, brown (7.5YR 5/4), fine grain, poorly graded, rounded, medium dense, dry		
	235					
	240		GW	235' - 245' Well graded Gravel with sand, brown to dark grayish brown (10YR 5/3 - 4/2), small to large rounded, oblong, and flattened gravel, with fine to coarse sand, dense, dry		
	245					
	250		SW	245' - 260' Sand, yellowish brown (10YR 5/6), graded, with small gravel 255' - 260', medium dense, moist to dry with depth		
	255					
	260		SW	260' - 270' Sand, light yellowish brown (10YR 6/4), well graded sub-rounded to rounded quartz sand, some pea gravel, dense, dry		
	265					
	270		SW	270' - 282' Sand, pale brown (10YR 6/3), fine to coarse grain well graded sand, <10% small gravel, dense, moist to saturated at 275'		
	275					
	280					
	285		ML	282' - 284' FGZ sandy Siltstone, light reddish brown (5YR 6/4), fine grain sand, hard, dry		
	290			Borehole Total Depth 284' bgs		
	295					

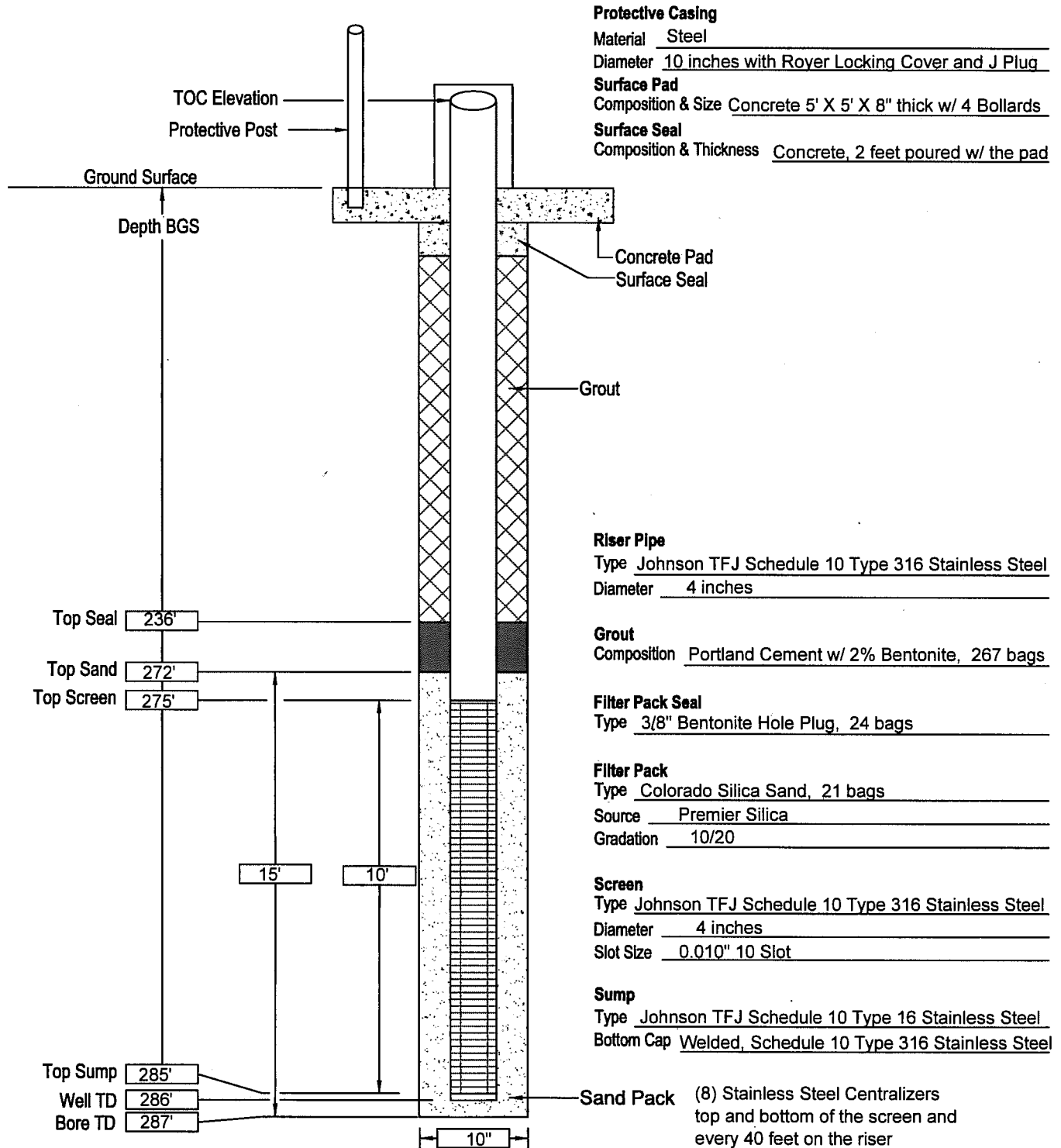
PTX06-ISB112
Triaxial Permeability
ASTM D5084
1.7E-07 cm/sec

Well Installation Diagram

Project: BOA 70 Release 5
Location: Southeast ISB Extension Well Field
Contractor: Stoller Newport News Nuclear
Driller: Cascade
Well Coordinates: 3750836.66 N 647823.09 E
TOC Elevation: 3516.68 ft AMSL
Surface Elevation: 3514.60 ft AMSL

Well No.: PTX06-ISB113
Well Type: ISB Injection
Date Constructed: 11/02/2017
Observed By: R Dickerson

Sheet 1 of 1



PTX06-ISB113

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Dickerson Texas Well Report No.: 466083	Northing: 3750836.66 Easting: 647823.09
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 287 ft bgs TD Well: 286 ft bgs
Dates Drilled: 11/01-02/17 Date Completed: 11/03/17	Depth to Water: 276.95 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.60 ft amsl	Top of Casing Elevation: 3516.68 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	5		CL	0' - 10' Silty Clay loam, pinkish gray (5YR 7/2), moderate plasticity		
	10		CL	10' - 25' Lean Clay, light reddish brown (5YR 6/4), moderate plasticity, slightly damp		
	25		CL	25' - 32' Silty Clay, yellowish red (5YR 5/6), plastic, dry		
	32		CL	32' - 45' Lean Clay, pinkish gray (5YR 7/2), poorly graded, dry		
	45		CL	45' - 50' Lean Clay, very pale brown(10YR 7/4), very minor silt, plastic, some caliche		
	50		CL	50' - 60' Lean Clay, very pale brown (10YR 7/4), weak plasticity, w/ minor silt, some caliche		
	60		CL	60' - 65' Clay, brownish yellow (10YR 6/6), weak plasticity, w/ caliche, dry		
	65		ML	65' - 80' Silt, very pale brown (10YR 8/3), w/ minor clay, slightly damp		
	80		CL	80' - 90' Silty Clay, very pale brown (10YR 7/4), plastic, w/ minor biotite, slightly damp		
	90		CL	90' - 95' Silty Clay to Clayey Silt, pinkish gray (5YR 7/2), nonplastic, slightly damp		
	95		ML	95' - 100' Silt, very pale brown (10YR 8/3), w/ minor clay, dry to slightly damp		

PTX06-ISB113

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Dickerson Texas Well Report No.: 466083	Northing: 3750836.66 Easting: 647823.09
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 287 ft bgs TD Well: 286 ft bgs
Dates Drilled: 11/01-02/17 Date Completed: 11/03/17	Depth to Water: 276.95 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.60 ft amsl	Top of Casing Elevation: 3516.68 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	105		ML	100' - 120' Clayey Silt, very pale brown (10YR 7/4), slightly damp		
	110					
	115		SP	120' - 130' Sand, pinkish grey (5YR 7/2), very fine grain, poorly graded, eolian, friable, dry		
	120					
	125		SP	130' - 155' Sand, very pale brown (10YR 8/3), very fine grain, poorly graded, silty, eolian, friable		
	130					
	135		SP			
	140					
	145		SP	155' - 160' Silty Sand, very pale brown (10YR 8/3), very fine grain, poorly graded, friable, dry		
	150					
	155		SP	160' - 190' Silty Sand, very pale brown (10YR 7/4), very fine grain, poorly graded, eolian, dry		
	160					
	165		SP			
	170					
	175		SP			
	180					
	185		ML	190' - 200' Silt, very pale brown (10YR 7/4), w/ minor clay, nonplastic, dry		
	190					
	195					

PTX06-ISB113

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Dickerson Texas Well Report No.: 466083	Northing: 3750836.66 Easting: 647823.09
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 287 ft bgs TD Well: 286 ft bgs
Dates Drilled: 11/01-02/17 Date Completed: 11/03/17	Depth to Water: 276.95 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.60 ft amsl	Top of Casing Elevation: 3516.68 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	205		SP	200' - 215' Sand, very pale brown (10YR 8/3), very fine grain, poorly graded, w/ very minor pea gravel in thin beds, dry		
	210					
	215		SW	215' - 220' Gravelly Sand, very pale brown (10YR 8/3), fine to coarse grain, w/ some fine gravel, well graded, dry		
	220		SW	220' - 225' Gravelly Sand, very pale brown (10YR 8/3), fine to coarse grain, w/ some gravel, well graded, dry		
	225		SW	225' - 230' Gravelly Sand, very pale brown (10YR 7/4), fine to medium grain, well graded, slightly damp		
	230		SW	230' - 235' Gravelly Sand, brownish yellow (10YR 6/6), fine to medium sand w/ some fine to medium gravel, well graded, damp		
	235		GW	235' - 243' Sandy Gravel, very pale brown (10YR 8/3), fine to coarse gravel w/ fine to coarse sand, well graded, dry		
	240					
	245		SW	243' - 247' Sand, light brownish gray (10YR 6/2), fine to very coarse grain, well graded, dry		
	250		SP	247' - 255' Sand, very pale brown (10YR 7/4), fine grain, poorly graded, w/ distinctive thin beds of clay, dry		
	255		SW	255' - 260' Gravelly Sand, brownish yellow (10YR 6/6), very fine to medium grain, w/ interbedded gravel, well graded, dry		
	260			260' - 280' Sand, brownish yellow (10YR 6/6), fine grain, poorly graded, w/ very minor interbedded lean clay, damp, w/ dampness increasing downward		
	265					
	270		SP			
	275					
	280		SP	280' - 285' Clayey Sand, brownish yellow (10YR 6/6), fine grain, poorly graded, wet		
	285		ML	285' - 287' FGZ Silt, very pale brown (10YR 7/4), firm		
	290			Borehole Total Depth 287' bgs		
	295					

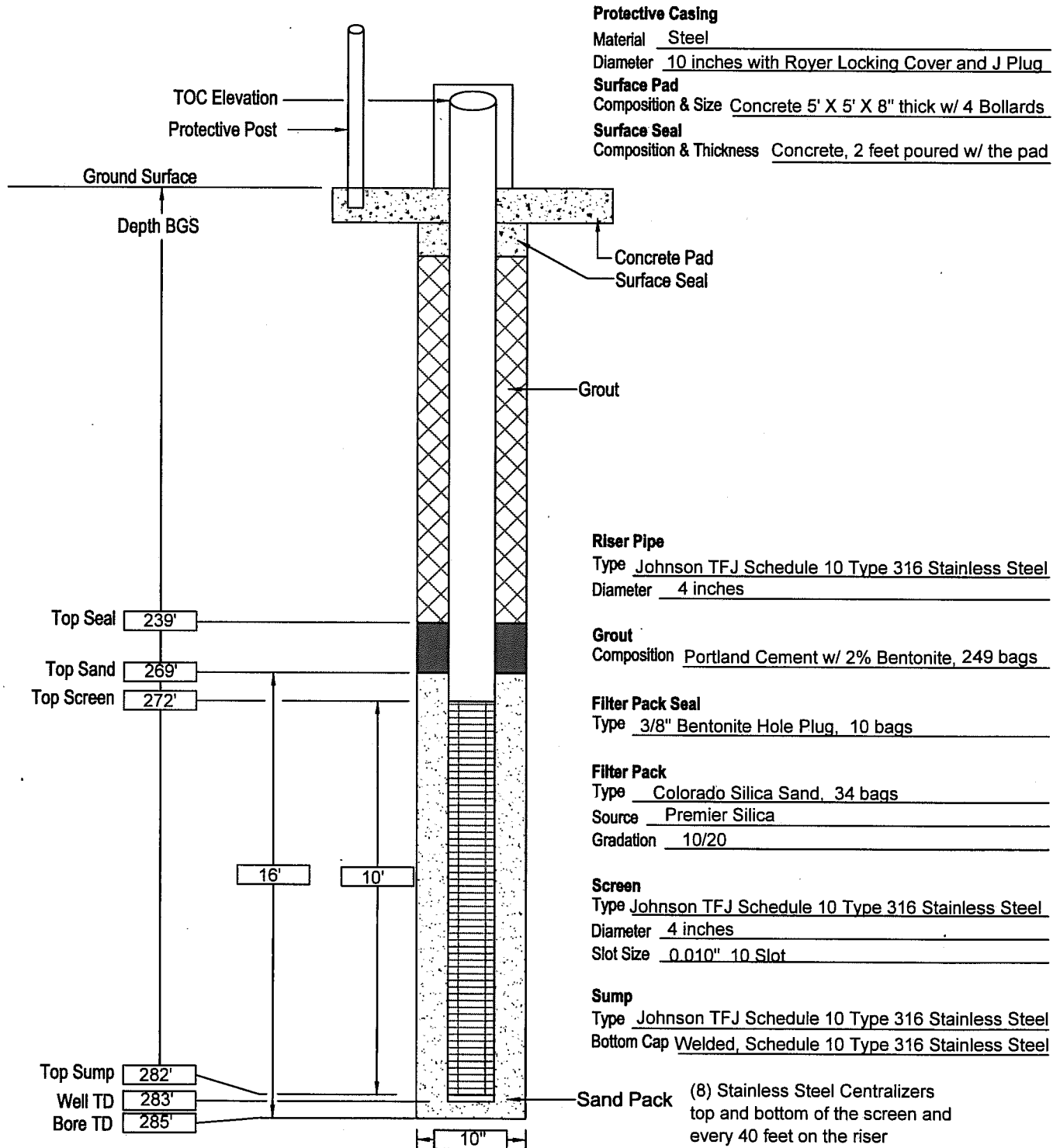
PTX06-ISB113
Triaxial Permeability
ASTM D5084
8.0E-07 cm/sec

Well Installation Diagram

Project: BOA 70 Release 5
 Location: Southeast ISB Extension Well Field
 Contractor: Stoller Newport News Nuclear
 Driller: Cascade
 Well Coordinates: 3750862.53 N 647894.07 E
 TOC Elevation: 3516.72 ft AMSL
 Surface Elevation: 3514.70 ft AMSL

Well No: PTX06-ISB 114
 Well Type: ISB Injection
 Date Constructed: 11/06/2017 to 11/07/2017
 Observed By: R Rupp

Sheet 1 of 1



PTX06-ISB114

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 466085	Northing: 3750862.53 Easting: 647894.07
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 285 ft bgs TD Well: 283 ft bgs
Dates Drilled: 11/06/17 Date Completed: 11/07/17	Depth to Water: 277.21 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.70 ft amsl	Top of Casing Elevation: 3516.72 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	0		CL	0' - 3' Clay, reddish brown (5YR 4/4), stiff, high plasticity, cohesive, moist		
	3		ML	3' - 15' Silt, reddish brown (5YR 5/4), stiff, low plasticity, trace fine sand, moist to 10'		
	15		CL	15' - 30' Silty clay, reddish brown (5YR 5/4), stiff, low plasticity, minor caliche, dry		
	25			@ 25' - 30' increasing silt		
	30		ML	30' - 40' Sandy Silt, reddish yellow (5YR 6/6), stiff, non-plastic, non-cohesive, +25% very fine sand, dry		
	40		ML	40' - 50' Silt with caliche, reddish yellow (5YR 6/6), stiff, dry		
	50		ML	50' - 65' Silt, light reddish brown (5YR 6/4), some very fine sand, stiff, dry		
	65		SM-ML	65' - 75' Silty Sand to Sandy Silt, pink (5YR 7/3), very fine grain sand with caliche silt, stiff to medium dense, dry		
	75		SP	75' - 77' Sand, pinkish gray (5YR 7/2), very fine to fine grain rounded quartz sand, cemented nodes, medium dense, dry		
	77		SP	77' - 80' Sand, light reddish brown (5YR 6/4), very fine grain, loose, dry		
	80		SC	80' - 90' Clayey Sand, yellowish red (5YR 5/6), fine grain, rounded, medium dense, dry		
	90		ML	90' - 97' Caliche Caprock, pinkish white (5YR 8/2) to pink (5YR 7/3 - 7/4), trace very fine sand, hard, dry, well developed 90' - 93'		
	97		SM	97' - 105' Silty Sand, light reddish brown (5YR 6/4), very		

PTX06-ISB114

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 466085	Northing: 3750862.53 Easting: 647894.07
Drilling Contractor: Cascade Drilling Lic. #4885 W. Blutworth	TD Borehole: 285 ft bgs TD Well: 283 ft bgs
Dates Drilled: 11/06/17 Date Completed: 11/07/17	Depth to Water: 277.21 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.70 ft amsl	Top of Casing Elevation: 3516.72 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	105		SM	fine to fine grain, poorly graded, loose to medium dense, dry		
	110			105' - 130' Sand, light reddish brown (5YR 6/3) to reddish yellow (7.5YR 6/6), very fine grain, poorly graded, loose, dry		
	115		SP			
	120					
	125					
	130			130' - 150' Sand, light brown (7.5YR 6/4), 90% fine grain, poorly graded, sub-rounded, loose, dry		
	135					
	140		SP			
	145					
	150		SP	150' - 155' Sand, strong brown (7.5YR 5/6), very fine to fine grain, poorly graded, loose, dry		
	155			155' - 165' Sand, light brown (5YR 6/4), 95% fine grain sub-rounded quartz sand, poorly graded, medium dense, some cemented nodules		
	160		SP			
	165			165' - 190' Sand, reddish yellow (7.5YR 6/6), fine grain, poorly graded, sub-rounded, loose, dry		
	170					
	175		SP			
	180					
	185					
	190			190' - 200' Sand, light brown to reddish yellow (7.5YR 6/4 - 6/6), very fine to fine grain, poorly graded, sub-rounded, dense sandstone, well cemented nodules, moist		
	195		SP			

PTX06-ISB114

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 466085	Northing: 3750862.53 Easting: 647894.07
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 285 ft bgs TD Well: 283 ft bgs
Dates Drilled: 11/06/17 Date Completed: 11/07/17	Depth to Water: 277.21 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.70 ft amsl	Top of Casing Elevation: 3516.72 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	205		SW	200' - 207' Sand, very pale brown to light yellowish brown (10YR 7/4 - 6/4), very fine to coarse grain, well graded, loose, dry		
	210		SW	207' - 225' Sand with Gravel, light yellowish brown to brownish yellow (10YR 6/4 - 6/6), fine to coarse grain with >15% small gravel, well graded, dense, dry		
	225		SP	225' - 235' Sand, yellowish brown (10YR 5/6), fine grain, poorly graded, rounded, medium dense, moist		
	240		GW	235' - 250' Gravel with Sand, grayish brown to yellowish brown (10YR 5/2 - 5/4), well graded sub-rounded and flattened small to large gravel, well graded rounded sand, very dense, dry		
	255		SW	250' - 265' Sand, yellowish brown (10YR 5/6), well graded, rounded quartz sand, <10% rounded small gravel, medium dense to dense, moist		
	270		SW	265' - 270' Sand with Gravel, dark yellowish brown (10YR 4/6), well graded sand with pea gravel, dense to very dense, moist		
	275		SP	270' - 282' Sand, yellowish brown (10YR 5/4), fine to medium grain, poorly graded, sub-rounded, with small gravel @ 275' - 282', saturated @ 278'		
	285		ML	282' - 285' FGZ Siltstone, light reddish brown (5YR 6/4), sandy with 2-mm caliche nodules, hard, dry		
	285			Borehole Total Depth 285' bgs		
	290					
	295					

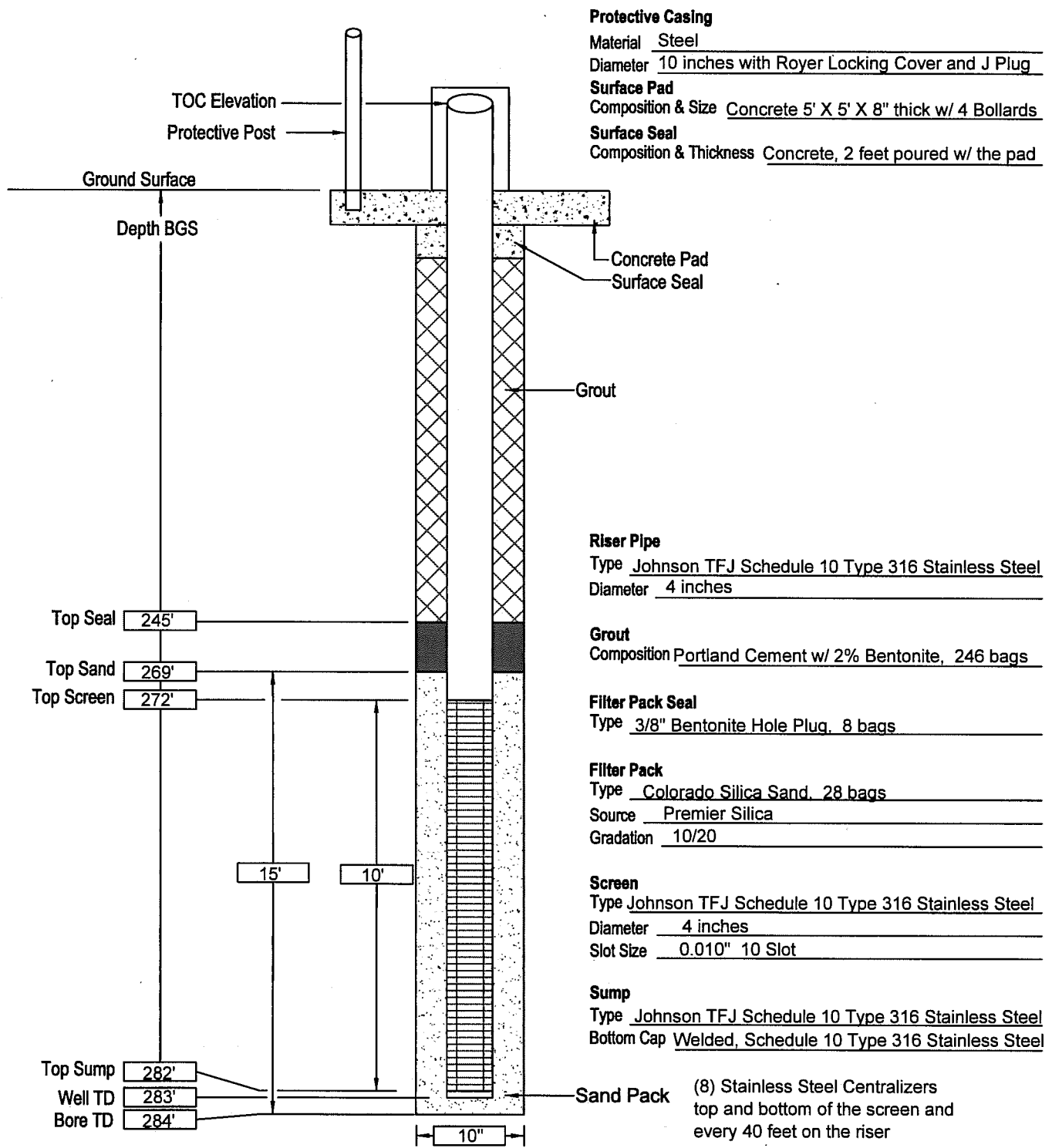
PTX06-ISB114
Triaxial Permeability
ASTM D5084
6.6E-08 cm/sec

Well Installation Diagram

Project: BOA 70 Release 5
Location: Southeast ISB Extension Well Field
Contractor: Stoller Newport News Nuclear
Driller: Cascade
Well Coordinates: 3750888.51 N 647964.07 E
TOC Elevation: 3516.79 ft AMSL
Surface Elevation: 3514.84 ft AMSL

Well No.: PTX06-ISB115
Well Type: ISB Injection
Date Constructed: 11/03/17
Observed By: R Rupp

Sheet 1 of 1



PTX06-ISB115

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 466079	Northing: 3750888.51 Easting: 647964.07
Drilling Contractor: Cascade Drilling Lic. #4885 W. Blutworth	TD Borehole: 284 ft bgs TD Well: 283 ft bgs
Dates Drilled: 11/01-02/17 Date Completed: 11/03/17	Depth to Water: 277.46 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.84 ft amsl	Top of Casing Elevation: 3516.79 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	0		CL	0' - 3' Lean Clay, dark reddish brown (5YR 3/2), plastic, cohesive, trace very fine sand, stiff, moist		
	3		ML	3' - 22' Silt, reddish brown to yellowish red (5YR 5/4 - 5/6), low plasticity, some clay, minor caliche, some manganese staining, trace sand, stiff, moist		
	22		CL	22' - 35' Clay, reddish yellow (5YR 6/6), medium plasticity, cohesive, stiff, moist		
	35		ML	35' - 47' Silt with Sand, reddish yellow (5YR 6/6), non-plastic, > 30% fine sand, stiff, dry		
	47		SM	47' - 65' Silty Sand, yellowish red (5YR 5/6) to red (2.5YR 5/8), >15% fines @ 50' - 55' significant 2-cm caliche fragments, color more pink		
	60		SP	@ 60' - 65' mostly very fine to fine sand, sub-rounded to rounded grains, trace silt, moist 65' - 77' Sand, pinkish gray (5YR 7/2), fine grain rounded quartz sand, loose, dry		
	77		SP-SM	77' - 90' Sand, reddish yellow (5YR 6/6), fine grain, rounded, loose, dry, becoming silty at 87'		
	90		ML	90' - 105' Caliche Silt, pink (5YR 7/4), silt with 15% fine sand, hard caliche nodules to 3-cm, possible caprock interval		

PTX06-ISB115

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 466079	Northing: 3750888.51 Easting: 647964.07
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 284 ft bgs TD Well: 283 ft bgs
Dates Drilled: 11/01-02/17 Date Completed: 11/03/17	Depth to Water: 277.46 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.84 ft amsl	Top of Casing Elevation: 3516.79 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	105		ML			
	110		SM	105' - 135' Silty Sand, reddish yellow (5YR 6/6), fine grain sub-angular sand, >15% silt, medium dense, dry		
	120		SM			
	135		SP	135' - 150' Sand, light brown (7.5YR 6/4), fine to medium grain, sub-rounded to rounded, medium dense, dry, intervals of very dense well cemented sandstone with nodules to 2-cm		
	150		SP-SM	150' - 160' Sand, light brown (7.5YR 6/4), very fine to fine grain, medium dense, dry, with pinkish white (7.5YR 8/2) caliche nodules to 2-cm at 160'		
	160		SP	160' - 185' Sand, reddish yellow (7.5YR 6/4), very fine to fine grain, poorly graded, sub-rounded to rounded, medium dense, dry @ 165' - 170' some silt		
	185		SP	185' - 200' Sand, light brown (7.5YR 6/4), very fine grain, poorly graded, medium dense, dry		

PTX06-ISB115

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 466079	Northing: 3750888.51 Easting: 647964.07
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 284 ft bgs TD Well: 283 ft bgs
Dates Drilled: 11/01-02/17 Date Completed: 11/03/17	Depth to Water: 277.46 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.84 ft amsl	Top of Casing Elevation: 3516.79 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	205		SW	200' - 205' Sand, pink (7.5YR 7/4), very fine to medium grain, well graded, medium dense, dry		
	210		SW	205' - 220' Sand with Gravel, well graded fine to very coarse grain, sub-rounded quartz sand, >15% sub-angular and broken gravel to 2-cm, some flattened clasts to 4-cm, very dense, dry		
	220		SW-SP	220' - 230' Sand, brownish yellow (10YR 6/6), well graded to poorly graded at 230', medium dense, dry		
	230		SP	230' - 240' Sand, yellowish brown (10YR 5/6), fine grain, medium dense, dry		
	240		SW	240' - 260' Sand with Gravel, dark grayish brown (10YR 4/2), well graded, fine to very coarse grain, sub-angular to angular sand		
	255		GP	10% to 15% sub-rounded gravel to 3-cm at 257' - 260', very dense, dry		
	260		SW	260' - 282' Sand, yellowish brown (10YR 5/4), well graded fine to very coarse grain, medium dense to dense, with <10% small gravel and some clay at 281', moist at 270', saturated at 277'		
	280		ML	282' - 284' FGZ Siltstone, reddish brown (5YR 5/4), fine grain sandy siltstone with 2-mm caliche nodules, non-plastic, non-cohesive, moist to dry with depth		
	284			Borehole Total Depth 284' bgs		

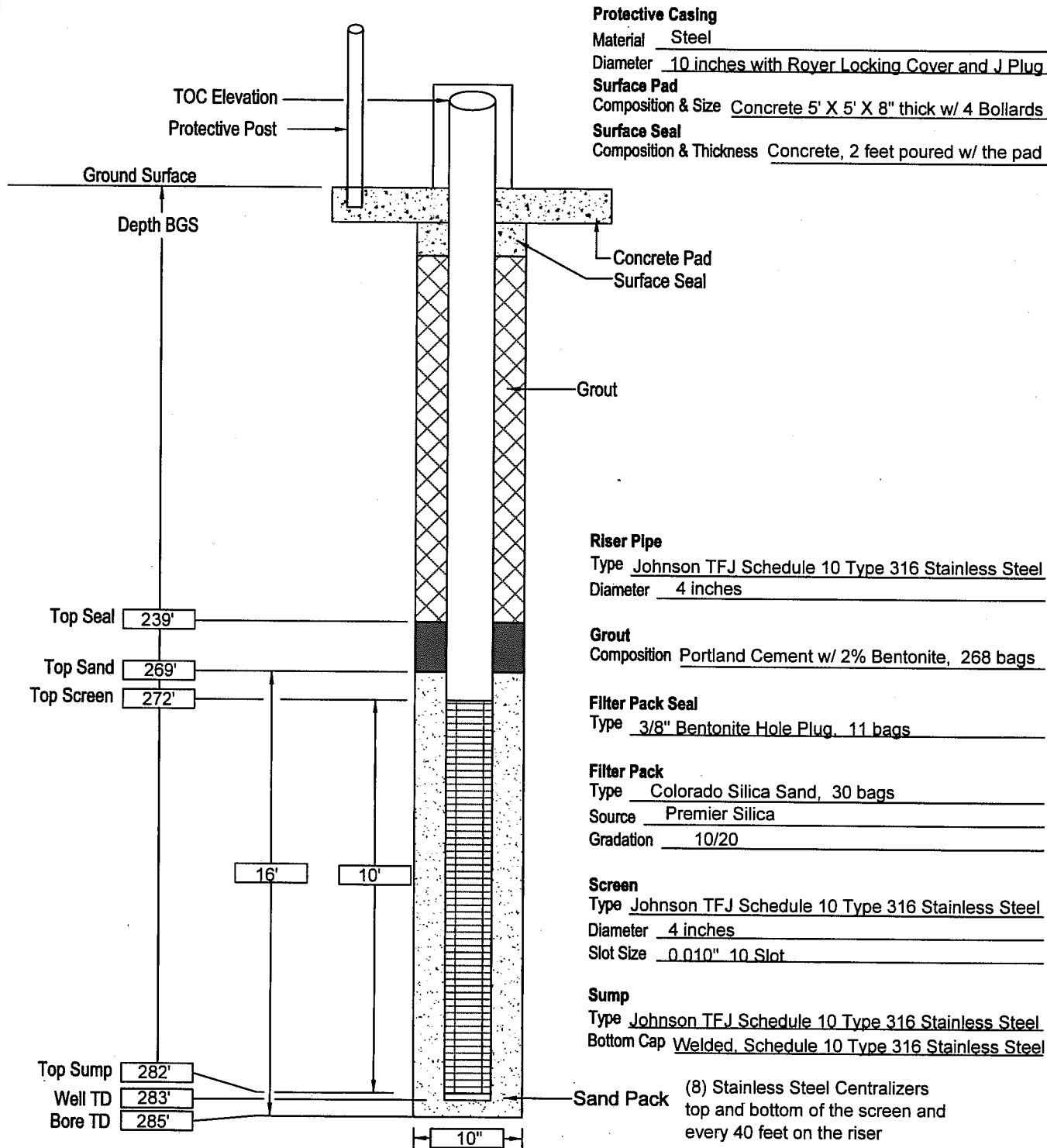
PTX06-ISB115
Triaxial Permeability
ASTM D5084
3.6E-07 cm/sec

Well Installation Diagram

Project: BOA 70 Release 5
 Location: Southeast ISB Extension Well Field
 Contractor: Stoller Newport News Nuclear
 Driller: Cascade
 Well Coordinates: 3750914.87 N 648034.69 E
 TOC Elevation: 3516.79 ft AMSL
 Surface Elevation: 3514.80 ft AMSL

Well No: PTX06-ISB116
 Well Type: ISB Injection
 Date Constructed: 11/05/2017
 Observed By: R Rupp

Sheet 1 of 1



PTX06-ISB116

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 466086	Northing: 3750914.87 Easting: 648034.69
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 285 ft bgs TD Well: 283 ft bgs
Dates Drilled: 11/04/17 Date Completed: 11/05/17	Depth to Water: 277.87 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.80 ft amsl	Top of Casing Elevation: 3516.79 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	0		CL	0' - 3' Lean Clay, dark reddish brown (5YR 3/4), plastic, cohesive, stiff, moist		
	3		CL-ML	3' - 35' Lean Clay and Silt, reddish brown to yellowish red (5YR 5/4 - 5/6), interbedded manganese stained clay and silt, decreasing plasticity with depth, stiff, moist to dry		
	35		ML	35' - 37' Silt, reddish yellow (5YR 6/4), non-plastic, non-cohesive, stiff, dry		
	37		ML	37' - 45' Silt, pinkish white to pink (5YR 8/2 - 7/4), caliche silt, hard with cuttings to 3-cm, dry		
	45		SM-SC	45' - 60' Silty Sand with clay, reddish yellow (5YR 6/6), fine grain sub-rounded sand, medium dense, dry, with thin intervals of caliche silt and clayey sand		
	60		SP	60' - 70' Sand, yellowish red (5YR 5/8), fine grain, poorly graded, medium dense, moist		
	70		SM-ML	70' - 80' Silty Sand, pink (5YR 7/3), fine grain sand and caliche silt, medium dense, dry, very hard well developed caliche fragments indicate possible caprock interval		
	80		SP	80' - 85' Sand, yellowish red (5YR 5/8), fine grain, poorly graded, medium dense, dry		
	85		SC	85' - 90' Clayey Sand, light reddish brown (5YR 6/4), fine to medium grain, poorly graded, sub-rounded, dense, dry		
	90		SM	90' - 100' Silty Sand, pink (7.5YR 7/4), very fine grain, well cemented with caliche, dense to very dense, dry		

PTX06-ISB116

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 466086	Northing: 3750914.87 Easting: 648034.69
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 285 ft bgs TD Well: 283 ft bgs
Dates Drilled: 11/04/17 Date Completed: 11/05/17	Depth to Water: 277.87 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.80 ft amsl	Top of Casing Elevation: 3516.79 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	105			100' - 135' Sand, light brown (7.5YR 6/4), very fine grain, poorly graded, loose to medium dense, dry		
	110					
	115					
	120		SP			
	125			@ 125' becoming fine grain with occasional cemented nodules		
	130					
	135					
	140			135' - 157' Sand, pink to light brown (7.5YR 7/4 - 6/4), fine grain, poorly graded, sub-rounded quartz sand, loose, dry		
	145					
	150		SP			
	155					
	160			157' - 170' Sand, light brown (7.5YR 6/4), very fine to fine grain cemented sandstone with abundant nodules to 2-cm, poorly graded, dense, dry,		
	165		SP			
	170					
	175			170' - 185' Sand, brownish yellow (10YR 6/6), fine to medium grain, poorly graded, sub-rounded, loose, dry		
	180		SP			
	185					
	190			185' - 205' Sand, brownish yellow to yellowish brown (10YR 6/6 - 5/6), very fine to fine grain, poorly graded, very dense with well cemented sub-rounded cuttings to 5-cm, dry		
	195		SP			

PTX06-ISB116

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 466086	Northing: 3750914.87 Easting: 648034.69
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 285 ft bgs TD Well: 283 ft bgs
Dates Drilled: 11/04/17 Date Completed: 11/05/17	Depth to Water: 277.87 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.80 ft amsl	Top of Casing Elevation: 3516.79 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	205		SP			
	210		SW	205' -220' Sand with Gravel, very pale brown to light yellowish brown (10YR 7/4 - 6/4), very fine to very coarse grain sub-rounded sand, gravel is predominantly pea gravel with some small gravel, very dense, dry		
	220		SP	220' - 235' Sand, yellowish brown (10YR 5/8), fine grain, poorly graded, rounded, medium dense, moist		
	235		GW	235' - 245' Gravel with sand, light yellowish brown (10YR 6/4), small to large sub-rounded gravel with >15% sand, very dense, dry		
	245		SW	245' - 250' Sand, very pale brown (10YR 7/3), fine to coarse grain, well graded, sub-angular to angular quartz sand, loose		
	250		SW	250' - 255' Sand with Gravel, yellowish brown to dark yellowish brown (10YR 5/4 - 4/4), well graded rounded sand with some iron stain, >15% small gravel		
	255		GW	255' - 260' Gravel with Sand, yellowish brown (10YR 5/6), well graded gravel and sand, dense, damp		
	260		SW	260' - 275' Sand, pale brown (10YR 6/3), fine to coarse grain, well graded, sub-rounded to rounded, medium dense to dense, moist		
	275		SW	275' - 282' Sand with Gravel, yellowish brown (10YR 5/6), well graded sand, >15% rounded & flattened small gravel, loose to medium dense, saturated at 277'		
	282		ML	282' - 285' FGZ Siltstone, light reddish brown (5YR 6/4), silt with very fine grain sand, trace rounded caliche nodules to 5-mm, hard, dry		
	285			Borehole Total Depth 285' bgs		
	290					
	295					

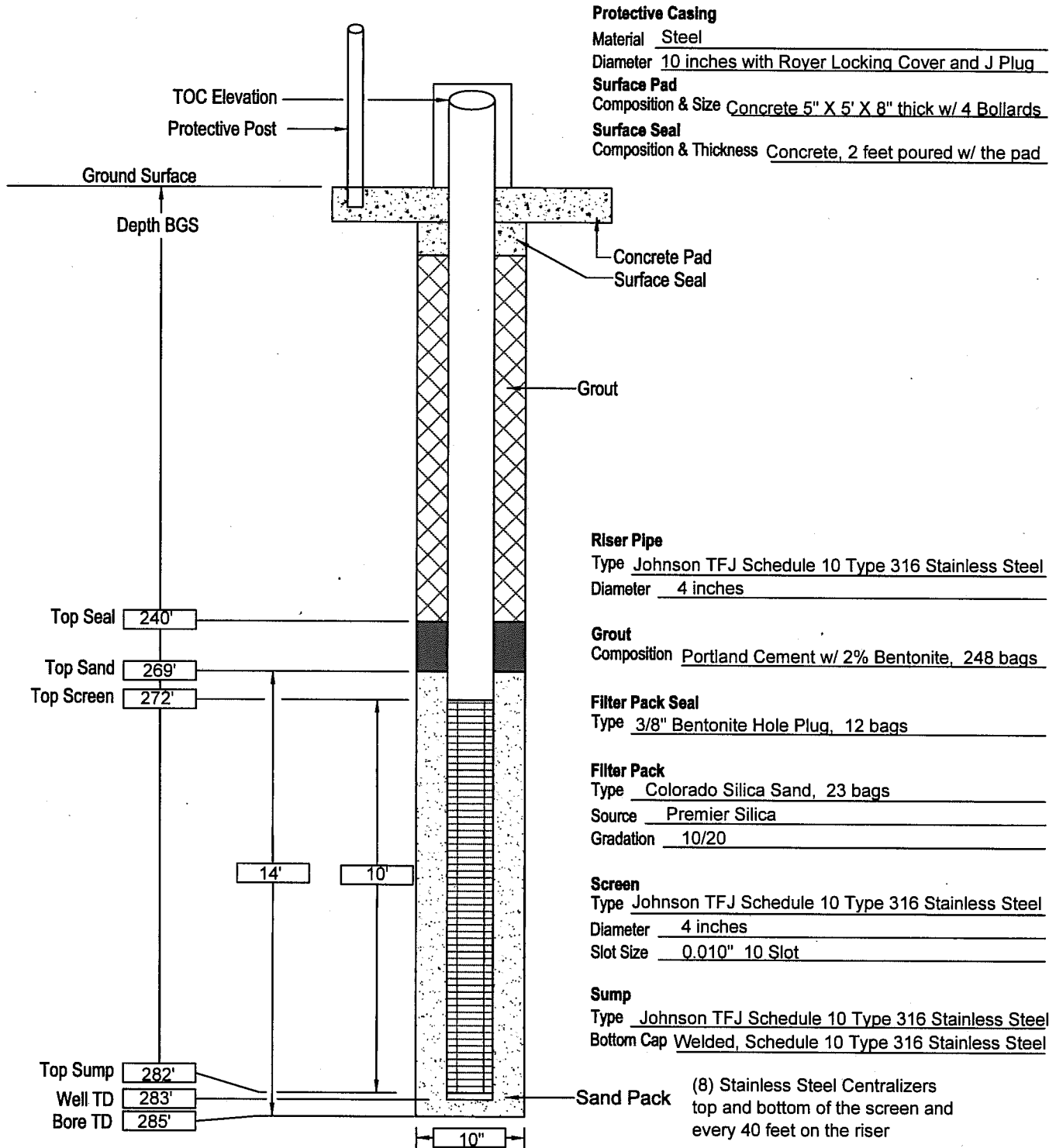
PTX06-ISB116
 Triaxial Permeability
 ASTM D5084
 7.3E-07 cm/sec

Well Installation Diagram

Project: BOA 70 Release 5
Location: Southeast ISB Extension Well Field
Contractor: Stoller Newport News Nuclear
Driller: Cascade
Well Coordinates: 3750940.93 N 648105.30 E
TOC Elevation: 3516.78 ft AMSL
Surface Elevation: 3514.84 ft AMSL

Well No: PTX06-ISB117
Well Type: ISB Injection
Date Constructed: 11/13/2017 to 11/14/2017
Observed By: J Ford

Sheet 1 of 1



PTX06-ISB117

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: J. Ford Texas Well Report No.: 466197	Northing: 3750940.93 Easting: 648105.30
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 285 ft bgs TD Well: 283 ft bgs
Dates Drilled: 11/13/17 Date Completed: 11/14/17	Depth to Water: 279.30 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.84 ft bgs	Top of Casing Elevation: 3516.78 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	0		CL	0' - 4' Topsoil, silty clay loam, damp to moist		
	5		CL-ML	4' - 18' Silty Clay to Clayey Silt, reddish brown (5YR 5/4), very stiff, damp, with caliche streaks		
	10					
	15		ML	18' - 38' Clayey Silt, yellowish red to reddish brown (5YR 5/6 - 5/4), stiff to very stiff, damp		
	20					
	25					
	30		CL	38' - 54' Silty Clay, yellowish red to reddish yellow (5YR 5/6 - 6/6), very stiff, damp to dry, trace sand, some caliche nodules		
	35					
	40					
	45		CL	54' - 66' Silty Clay with some sand, yellowish red (5YR 5/8), with caliche nodules to 12-mm, stiff, damp		
	50					
	55					
	60		SM	66' - 76' Silty Sand with some clay, light reddish brown (5YR 6/4), fine to medium grain with some coarse grain, medium dense, moist		
	65					
	70		SM	76' - 80' Sand with caliche, pink (5YR 7/4), hard, dry		
	75					
	80		SM	80' - 93' Silty Sand, light reddish brown (5YR 6/4), fine to medium grain with some coarse grain, medium dense, dry		
	85					
	90		SLT-STN	93' - 97' Caliche Caprock, pinkish white (5YR 8/2), very hard, dry		
	95					
			SM			

PTX06-ISB117

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: J. Ford Texas Well Report No.: 466197	Northing: 3750940.93 Easting: 648105.30
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 285 ft bgs TD Well: 283 ft bgs
Dates Drilled: 11/13/17 Date Completed: 11/14/17	Depth to Water: 279.30 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.84 ft bgs	Top of Casing Elevation: 3516.78 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number	
	105	[Lithology Pattern]	SM	97' - 125' Silty Sand, light brown (7.5YR 6/3), fine to medium grain, poorly graded, damp to dry			
	110						
	115						
	120						
	125	[Lithology Pattern]	SP	125' - 152' Sand, very pale brown (10YR 7/4), fine to medium grain, poorly graded, sub-rounded to rounded, loose, dry			
	130						
	135						
	140						
	145						
	150						
	155	[Lithology Pattern]	SP	152' - 161' Sand, pink (7.5YR 7/3), very fine to fine grain, poorly graded, sub-rounded, loose, dry			
	160						
	165	[Lithology Pattern]	SP-SM	161' - 176' Silty Sand, light brown (7.5YR 6/4), fine to medium grain, poorly graded, subrounded, damp			
	170						
	175						
	180	[Lithology Pattern]	SM	176' - 184' Silty Sand, light brown (7.5YR 6/3), very fine to fine grain, poorly graded, trace of gravel to 6-mm, damp			
	185						
	190	[Lithology Pattern]	SP	184' - 195' Sand, brown (7.5YR 6/4), fine to medium grain, sub-rounded to rounded, poorly graded, some silt, loose, dry			
	195						
		[Lithology Pattern]	SP	195' - 203' Sand, very pale brown (10YR 7/4), fine to medium grain, trace coarse grain, poorly graded, loose, damp			

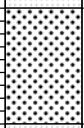
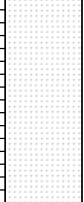
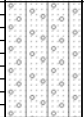





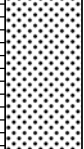

PTX06-ISB117

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: J. Ford Texas Well Report No.: 466197	Northing: 3750940.93 Easting: 648105.30
Drilling Contractor: Cascade Drilling Lic. #4885 W. Blutworth	TD Borehole: 285 ft bgs TD Well: 283 ft bgs
Dates Drilled: 11/13/17 Date Completed: 11/14/17	Depth to Water: 279.30 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.84 ft bgs	Top of Casing Elevation: 3516.78 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	205		SW	203' - 212' Sand with Gravel, very pale brown (10YR 7/3), fine to coarse grain rounded sand, gravel to 3-cm, very dense		
	215		SP	212' - 228' Sand, very pale brown (10YR 7/4), fine to medium grain, some coarse grain, trace gravel, very dense, dry		
	230		SP-SM	228' - 237' Sand to Silty Sand, brown (10YR 5/3), fine to medium grain, sub-rounded, loose, damp		
	240		SP	237' - 243' Sand with Gravel, very pale brown (10YR 7/3), fine to medium grain sub-rounded poorly graded sand with gravel to 2-cm, very dense, dry		
	245		GW	243' - 248' Gravel with Sand, flat and rounded gravel to 4-cm with fine to coarse sand, well graded, dense		
	250		GP	248' - 257' Gravel, poorly graded large gravel to 7-cm		
	260		SW	257' - 262' Sand with Gravel, grayish brown (10YR 5/2), fine to coarse grain, sub-angular to sub-rounded, well graded, dense, dry		
	265		SP	262' - 266' Sand, brown (10YR 5/3), fine to medium grain, with some gravel		
	270		SW	266' - 281.5' Sand with Gravel, light yellowish brown to grayish brown (10YR 6/4 - 5/2), fine to coarse grain sub-rounded sand, gravel to 2.5-cm increasing with depth, moist to wet with depth		
	285		SM-ML	281.5' - 284.7' FGZ, Silty Sand to Sandy Siltstone, light brown (7.5YR 6/4) to light reddish brown (5YR 6/4), fine grain sub-rounded to rounded sand, very dense, caliche nodules, moist, drier with depth		
	285			Borehole Total Depth 285' bgs		

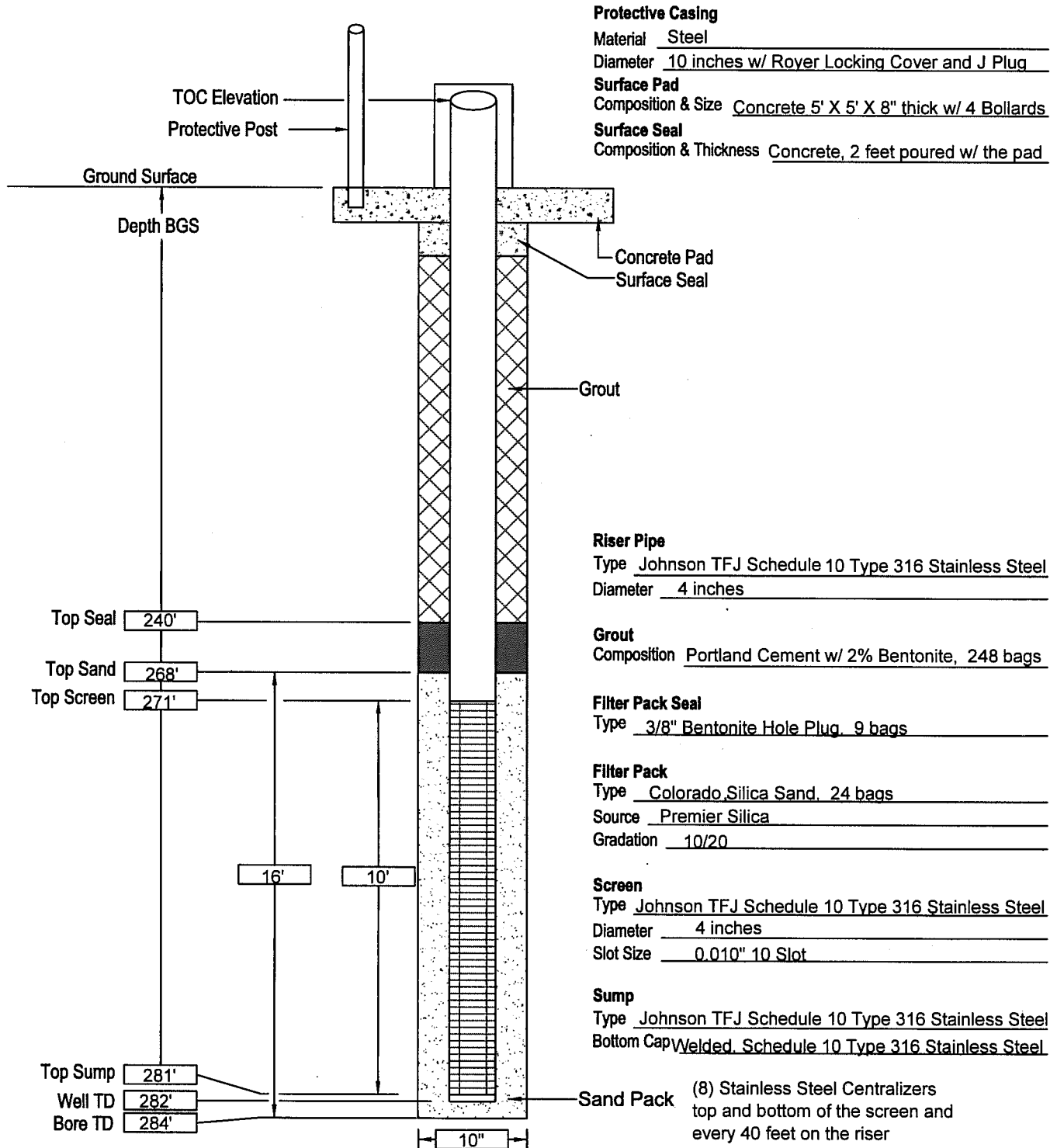
PTX06-ISB117
Triaxial Permeability
ASTM D5084
2.1E-07 cm/sec

Well Installation Diagram

Project: BOA 70 Release 5
 Location: Southeast ISB Extension Well Field
 Contractor: Stoller Newport News Nuclear
 Driller: Cascade
 Well Coordinates: 3750967.12 N 648175.64 E
 TOC Elevation: 3516.81 ft AMSL
 Surface Elevation: 3514.86 ft AMSL

Well No: PTX06-ISB118
 Well Type: ISB Injection
 Date Constructed: 11/15/2017
 Observed By: J Ford

Sheet 1 of 1



PTX06-ISB118

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: J. Ford Texas Well Report No.: 466199	Northing: 3750967.12 Easting: 648175.64
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 284 ft bgs TD Well: 282 ft bgs
Dates Drilled: 11/14/17 Date Completed: 11/15/17	Depth to Water: 278.35 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.86 ft amsl	Top of Casing Elevation: 3516.81 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	0		ML	0' - 4' Clayey Silt, hard, damp to dry		
	5		CL-ML	4' - 18' Silty Clay to Clayey Silt, reddish gray (5YR 5/2), very stiff, damp		
	10					
	15		ML	18' - 37' Clayey Silt, light reddish brown (5YR 6/4) to yellowish red (5YR 5/6) to reddish brown (5YR 5/4) with depth, trace caliche nodules and MnO2 stringers, stiff to hard, damp to dry @ 28' to 34' prevalent pink (5YR 7/4) caliche		
	20					
	25					
	30					
	35		CL	37' - 49' Silty Clay, pink (5YR 7/4), very stiff, caliche nodules to 6-mm, very stiff, damp to dry		
	40					
	45		CL	49' - 57' Silty Clay, reddish yellow (5YR 6/6), trace sand, very stiff, dry		
	50					
	55		ML	57' - 64' Clayey Silt, yellowish red (5YR 5/6), with very fine sand and small caliche nodules, very stiff, damp		
	60					
	65		SM	64' - 74' Silty Sand, pink (5YR 7/4), very fine to fine grain sand, caliche nodules to 12-mm, dense, dry		
	70					
	75		ML	74' - 77' Caliche with sand, pinkish white (5YR 8/2), hard, dry		
	80		SM	77' - 86' Silty Sand with clay, light reddish brown (5YR 6/4), dense, dry		
	85					
	90		SM	86' - 110' Silty sand, pink (5YR 7/4), caliche nodules to 6-mm thin caprock at 93' to 94', dense, dry		
	95					

PTX06-ISB118

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: J. Ford Texas Well Report No.: 466199	Northing: 3750967.12 Easting: 648175.64
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 284 ft bgs TD Well: 282 ft bgs
Dates Drilled: 11/14/17 Date Completed: 11/15/17	Depth to Water: 278.35 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.86 ft amsl	Top of Casing Elevation: 3516.81 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	105		SM			
	110		SM	110' - 124' Silty Sand, light brown (7.5YR 6/4), very fine to fine grain, medium dense, dry		
	115		SM			
	120		SM			
	125		SP	124' - 153' Sand, very pale brown (10YR 7/4), fine grain, some medium grain, poorly graded, sub-rounded to rounded, loose, dry		
	130		SP			
	135		SP			
	140		SP			
	145		SP			
	150		SP			
	155		SM	153' - 158' Silty Sand, light brown (7.5YR 6/4), fine grain, poorly graded, loose, dry		
	160		SP	158' - 178' Sand, very pale brown (10YR 7/3), fine to medium grain, some silt, poorly graded, sub-rounded to rounded, loose, dry		
	165		SP-SM			
	170		SP-SM			
	175		SP-SM			
	180		SM	178' - 193' Silty Sand, pink (7.5YR 7/3), very fine to fine grain, trace medium grain, sub-rounded, loose, dry, with some light brown (7.5YR 6/3) lenses		
	185		SM			
	190		SM			
	195		SP	193' - 198' Sand, very pale brown (10YR 7/3), fine to medium grain, sub-rounded to well rounded, very dense sandstone layers, dry		
	200		SP	198' - 206' Sand, fine to medium grain, trace coarse grain, some sandstone lenses and gravel to 6-mm, loose, dry		

PTX06-ISB118

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: J. Ford Texas Well Report No.: 466199	Northing: 3750967.12 Easting: 648175.64
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 284 ft bgs TD Well: 282 ft bgs
Dates Drilled: 11/14/17 Date Completed: 11/15/17	Depth to Water: 278.35 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.86 ft amsl	Top of Casing Elevation: 3516.81 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	210		SW	206' - 218' Gravelly sand, very pale brown to light gray (10YR 7/3 - 7/2), fine to coarse grain, well graded, sub-rounded to rounded, dense, dry		
	215					
	220		SP	218' - 231' Sand, very pale brown (10YR 7/4), fine grain, rounded, loose, dry		
	225					
	230					
	235		SM	231' - 239' Silty Sand, brown to yellowish brown (7.5YR 5/4 - 10YR 5/4), fine to medium grain, sub-rounded, loose to medium dense		
	240		SW-GP	239' - 260' Sandy Gravel to Gravelly Sand, grayish brown (10YR 5/2), angular gravel to 12-mm, well graded, fine to coarse, sub-angular to rounded sand, very dense, dry		
	245					
	250		GW	@ 250' gravel becomes well graded as size increases and color changes to light gray (10YR 7/2)		
	255					
	260		SW	260' - 281' Sand, light yellowish brown to pale brown (10YR 6/4 - 6/3), fine to coarse grain, sub-angular to sub-rounded, well graded, dense, moist at 270', saturated at 278'		
	265					
	270					
	275					
	280		SM-ML	281' - 284' FGZ, Silty Sand to Sandy Siltstone, light reddish brown (2.5YR 6/4 to 5YR 6/3), damp, drier with depth		
	285			Borehole Total Depth 284' bgs		
	290					
	295					
	300					
	305					
	310					

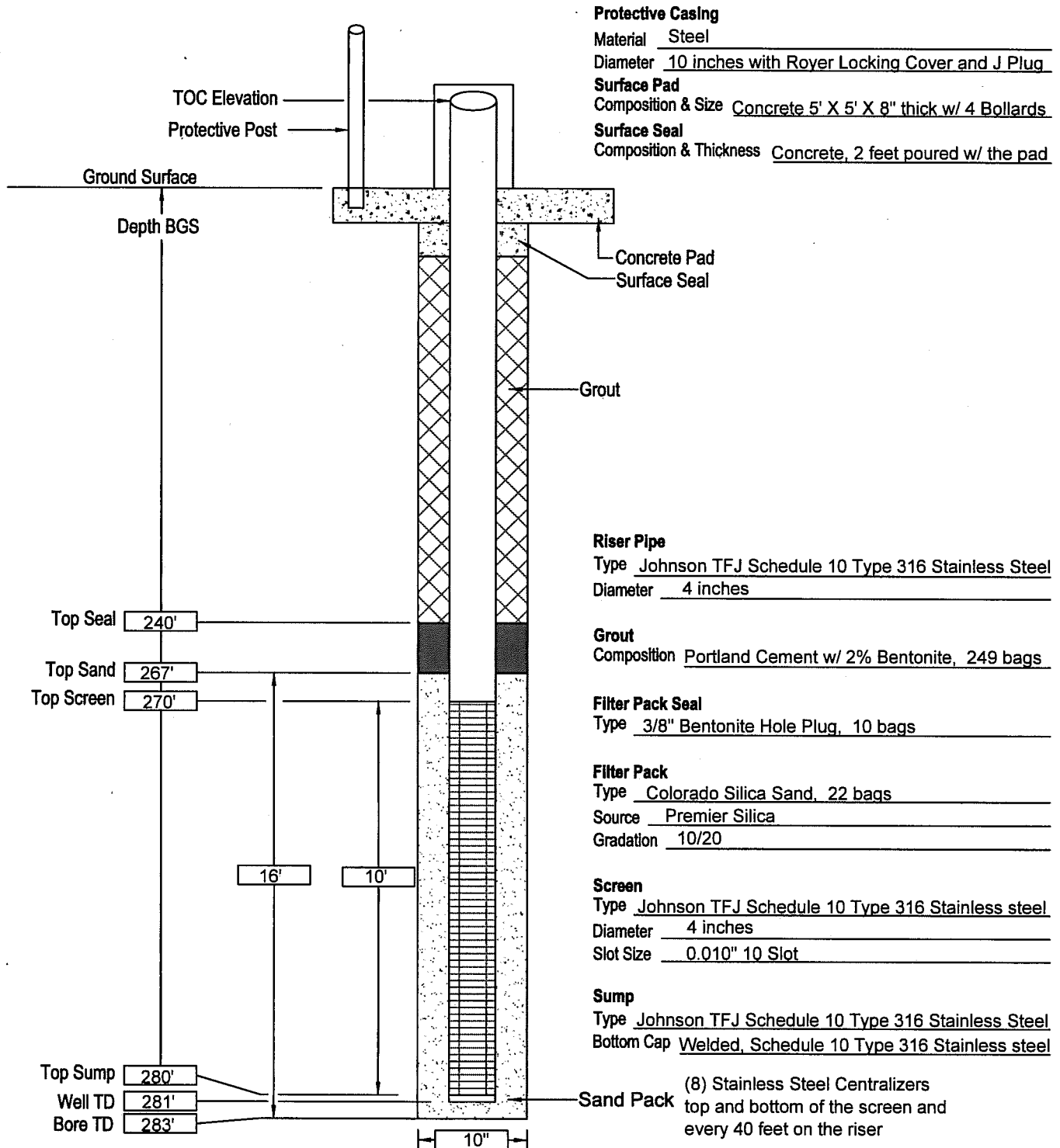
PTX06-ISB118
Triaxial Permeability
ASTM D5084
6.1E-07 cm/sec

Well Installation Diagram

Project: BOA 70 Release 5
Location: Southeast ISB Extension Well Field
Contractor: Stoller Newport News Nuclear
Driller: Cascade
Well Coordinates: 3750993.50 N 648245.97 E
TOC Elevation: 3516.75 ft AMSL
Surface Elevation: 3514.83 ft AMSL

Well No: PTX06-ISB119
Well Type: ISB Injection
Date Constructed: 11/17/2017
Observed By: J Ford

Sheet 1 of 1



PTX06-ISB119

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: J. Ford Texas Well Report No.: 466181	Northing: 3750993.50 Easting: 648245.97
Drilling Contractor: Cascade Drilling Lic. #4885 W. Blutworth	TD Borehole: 283 ft bgs TD Well: 281 ft bgs
Dates Drilled: 11/16/17 Date Completed: 11/17/17	Depth to Water: 278.13 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.83 ft amsl	Top of Casing Elevation: 3516.75 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number	
	0		ML	0' - 4' Clayey Silt, brown (7.5YR 5/3), hard, dry to damp			
	5		CL-ML	4' - 19' Silty Clay to Clayey Silt, light reddish brown (5YR 6/3), very stiff, damp			
	10						
	15		ML	19' - 38' Clayey Silt, yellowish red to light reddish brown (5YR 5/6 - 6/4), caliche nodules to 6-mm, some MnO2 veinlets, stiff to very hard, damp to dry			
	20						
	25				@ 35' - 38' numerous caliche lenses, +6-mm size nodules in the cuttings		
	30		CL	38' - 58' Silty Clay, pink to pinkish gray (5YR 7/3 - 7/2), very stiff, with caliche, dry			
	35				@ 47' - 48' color change to light reddish brown (2.5YR 6/4) - (5YR 6/3)		
	40				@ 52' - 58' trace fine sand and color change back to pink (5YR 7/4)		
	45						
	50		ML	58' - 72' Clayey Silt with Sand, yellowish red (5YR 5/6), very fine grain sand, hard, damp			
	55						
	60		ML	72' - 76' Caliche with sand, pinkish white (5YR 8/2), hard, dry			
	65		SM	76' - 87' Silty Sand with clay, light reddish brown (5YR 6/4), caliche nodules to 6-mm, dense, dry			
	70						
	75		ML	87' - 98' Caliche, pinkish white (5YR 8/2) to pink (5YR 7/4), caliche nodules to 2-cm, interbedded silty sands, hard, dry			
	80		SM				
	85						
	90		ML				
	95		SM				

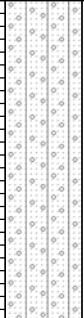
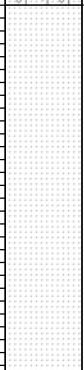
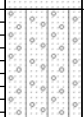
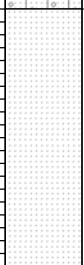
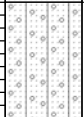

PTX06-ISB119

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: J. Ford Texas Well Report No.: 466181	Northing: 3750993.50 Easting: 648245.97
Drilling Contractor: Cascade Drilling Lic. #4885 W. Blutworth	TD Borehole: 283 ft bgs TD Well: 281 ft bgs
Dates Drilled: 11/16/17 Date Completed: 11/17/17	Depth to Water: 278.13 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.83 ft amsl	Top of Casing Elevation: 3516.75 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number		
	105		SM	98' - 125' Silty Sand, light reddish brown (5YR 6/4), very fine to fine grain, sub-rounded to rounded, dense, dry				
	110							
	115							
	120							
	125		SP	125' - 154' Sand, pink to light brown (7.5YR 7/4 - 6/4), fine to medium grain, sub-angular to rounded, loose to dense on sandstone lenses, some silt				
	130							
	135							
	140							
	145							
	150							
	155		SM	154' - 163' Silty Sand, very fine to fine grain, sub-rounded to rounded, some thin sandstone lenses, damp to dry				
	160							
	165		SP	163' - 183' Sand, very pale brown (10YR 7/3), fine to medium grain, poorly graded, sub-rounded, loose, dry				
	170							
	175							
	180							
	185		SM	183' - 192' Silty Sand, light brown (7.5YR 6/3), very fine to fine grain, trace medium grain, sub-angular to sub-rounded, loose, dry				
	190							
	195		SP	192' - 198' Sand, very pale brown (10YR 7/4), very fine to fine grain, poorly graded, loose to medium dense on numerous sandstone lenses, dry to damp				

PTX06-ISB119

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: J. Ford Texas Well Report No.: 466181	Northing: 3750993.50 Easting: 648245.97
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 283 ft bgs TD Well: 281 ft bgs
Dates Drilled: 11/16/17 Date Completed: 11/17/17	Depth to Water: 278.13 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.83 ft amsl	Top of Casing Elevation: 3516.75 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	205		SM	198' - 205' Silty Sand, pink (7.5YR 7/3), very fine to fine grain, medium dense, dry		
	210			205' - 234' Sand to Gravelly Sand, very pale brown to pale brown with depth (10YR 8/3 - 7/3 - 6/3), well graded fine to coarse grain sub-rounded to rounded sand, some sandstone lenses, flattened gravel clasts to 2-cm, dry		
	215					
	220		SW			
	235		SM	234' - 240' Silty Sand, brown (7.5YR 5/3), very fine to fine grain, poorly graded, some sandstone nodules (lenses), damp		
	240		GW	240' - 248' Sandy Gravel, sub-angular to rounded and flattened gravel to 3-cm, fine to coarse sand, well graded, dense, dry		
	250			248' - 280 Sand with Gravel, light gray to light brownish gray (10YR 7/2 - 6/2), well graded, fine to coarse grain, sub-angular to well rounded sand, some flattened thin gravel to 12-mm, very dense, dry		
	255					
	260		SW			
	265			@ 264' - 268' some poorly graded sand layers, very pale brown (10YR 7/3), continued pebbles and trace gravel		
	270			@ 268' - 280' gravelly sand, fine to coarse grain, sub-angular to subrounded gravel to 2-cm, moist below 274'		
	275					
	280		SM	280' - 283' FGZ Silty Sand to Sandstone, light reddish brown (5YR 6/3), fine grain sub-rounded sand, very dense, damp to dry with depth		
	285			Borehole Total Depth 383' bgs		
	290					
	295					

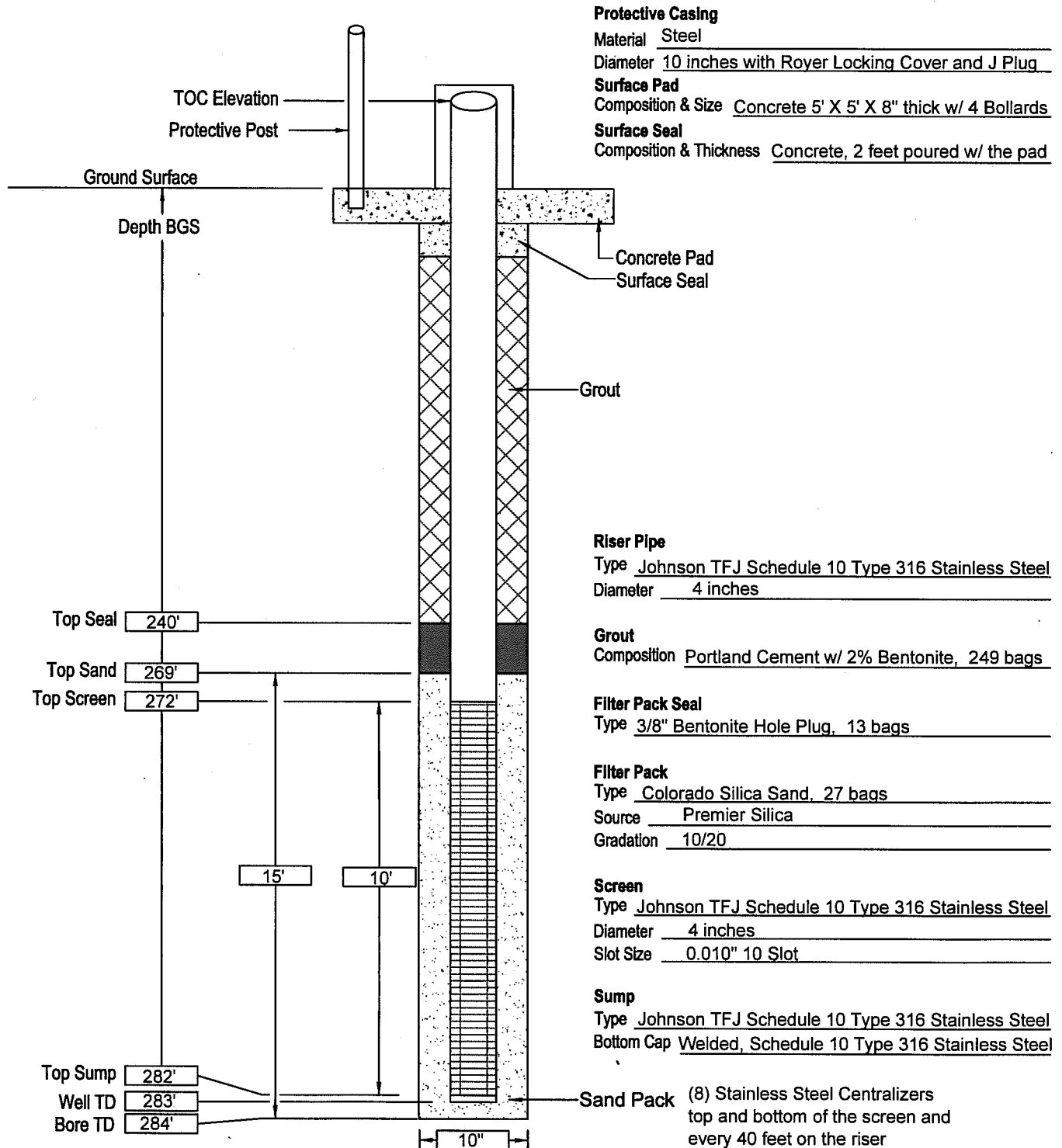
PTX06-ISB119
Triaxial Permeability
ASTM D5084
6.1E-07 cm/sec

Well Installation Diagram

Project: BOA 70 Release 5
 Location: Southeast ISB Extension Well Field
 Contractor: Stoller Newport News Nuclear
 Driller: Cascade
 Well Coordinates: 3751019.54 N 648316.24 E
 TOC Elevation: 3516.95 ft AMSL
 Surface Elevation: 3514.94 ft AMSL

Well No: PTX06-ISB120
 Well Type: ISB Injection
 Date Constructed: 11/29/2017 to 11/30/2017
 Observed By: R Rupp

Sheet 1 of 1



PTX06-ISB120

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 466192	Northing: 3751019.54 Easting: 648316.24
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 284 ft bgs TD Well: 283 ft bgs
Dates Drilled: 11/28-29/17 Date Completed: 11/30/17	Depth to Water: 279.22 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.94 ft amsl	Top of Casing Elevation: 3516.95 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	5		CL	0' - 5' Sandy Clay Loam, dark reddish brown (5YR 3/4), plastic, cohesive, very stiff, moist		
	10		CL	5' - 25' Silty Clay, yellowish red (5YR 5/6), trace very fine grain sand, low plasticity, cohesive, stiff, moist to dry		
	25		ML	25' - 35' Silt, yellowish red (5YR 5/6), trace very fine grain sand, non-plastic, medium stiff, dry		
	35		ML	35' - 45' Silt, pink (5YR 8/4), some caliche fragments to 2-cm, medium stiff, dry		
	45		SP	45' - 65' Sand, red (2.5YR 4/8), trace silt, fine grain, poorly graded, loose to medium dense, dry @ 45' - 50' <5% 1-cm caliche granules, lesser amounts to 65'		
	65		SM	65' - 75' Silty Sand, yellowish red (5YR 5/6), very fine grain, some silt, loose, dry		
	75		ML	75' - 80' Silt with clay, reddish brown (5YR 5/4), low plasticity, non-cohesive, hard, dry		
	80		SP	80' - 90' Sand, yellowish red (5YR 5/8), very fine to fine grain, poorly graded, sub-rounded, medium dense, dry		
	90		ML	90' - 100' Caliche Silt, pink (5YR 8/3 - 7/3), < 10% very fine sand, stiff, dry		

PTX06-ISB120

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 466192	Northing: 3751019.54 Easting: 648316.24
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 284 ft bgs TD Well: 283 ft bgs
Dates Drilled: 11/28-29/17 Date Completed: 11/30/17	Depth to Water: 279.22 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.94 ft amsl	Top of Casing Elevation: 3516.95 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	105			100' - 135' Sand, light reddish brown (5YR 6/4), very fine to fine grain, poorly graded, loose, dry		
	110					
	115					
	120		SP			
	125					
	130					
	135					
	140		SP	135' - 150' Sand, pink (7.5YR 7/4), very fine to fine grain, poorly graded, sub-rounded to rounded, loose, dry		
	145					
	150		SP	150' - 157' Sand, reddish yellow (7.5YR 6/6), very fine to fine grain, poorly graded, sub-rounded to rounded, loose, dry		
	155					
	160		SP	157' - 170' Sand, light brown (7.5YR 6/4), very fine to fine grain, poorly graded, loose, dry		
	165					
	170		SP	170' - 190' Sand, brownish yellow (10YR 6/6), fine grain, poorly graded, rounded, loose, dry		
	175					
	180					
	185					
	190		SP-SM	190' - 195' Sand with Silt, reddish yellow (7.5YR 6/6), 10% silt, non-plastic, poorly graded sand, medium dense, dry		
	195		SW	195' - 220' Sand with Gravel, light yellowish brown (10YR 6/4), well graded sand becoming coarser with depth, >15%		

PTX06-ISB120

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 466192	Northing: 3751019.54 Easting: 648316.24
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 284 ft bgs TD Well: 283 ft bgs
Dates Drilled: 11/28-29/17 Date Completed: 11/30/17	Depth to Water: 279.22 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.94 ft amsl	Top of Casing Elevation: 3516.95 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	205			sub-rounded small gravel, dense to very dense, dry		
	210		SW			
	215					
	220		SM	220' - 225' Silty Sand, strong brown (7.5YR 4/6), fine grain sand, >15% non-plastic fines, medium dense, dry		
	225		SP	225' - 230' Sand, light yellowish brown (10YR 6/4), very fine to fine grain, poorly graded, some cemented sandstone nodules, medium dense, dry		
	230		SP	230' - 235' Sand, brown (7.5YR 5/4), very fine to fine grain, poorly graded, trace silt, loose, dry		
	235		SW	235' - 240' Sand with Gravel, light yellowish brown (10YR 6/4), well graded sand, >15% small rounded gravel, medium dense, dry		
	240		GP	240' - 245' Gravel with Sand, light yellowish brown (10YR 6/4), poorly graded small rounded gravel, >15% sand, very dense, dry		
	245		SW	245' - 257' Sand, yellowish brown (10YR 5/6), well graded fine to coarse grain sand, <10% small rounded gravel, medium dense, damp to moist		
	250					
	255					
	260					
	265					
	270		SW			
	275			@ 277' occasional small rounded and flattened gravel		
	280					
	285		ML	282' - 284' FGZ Siltstone, light reddish brown (5YR 6/4), with fine grain sand and caliche nodes, hard, dry		
	290			Borehole Total Depth 284' bgs		
	295					

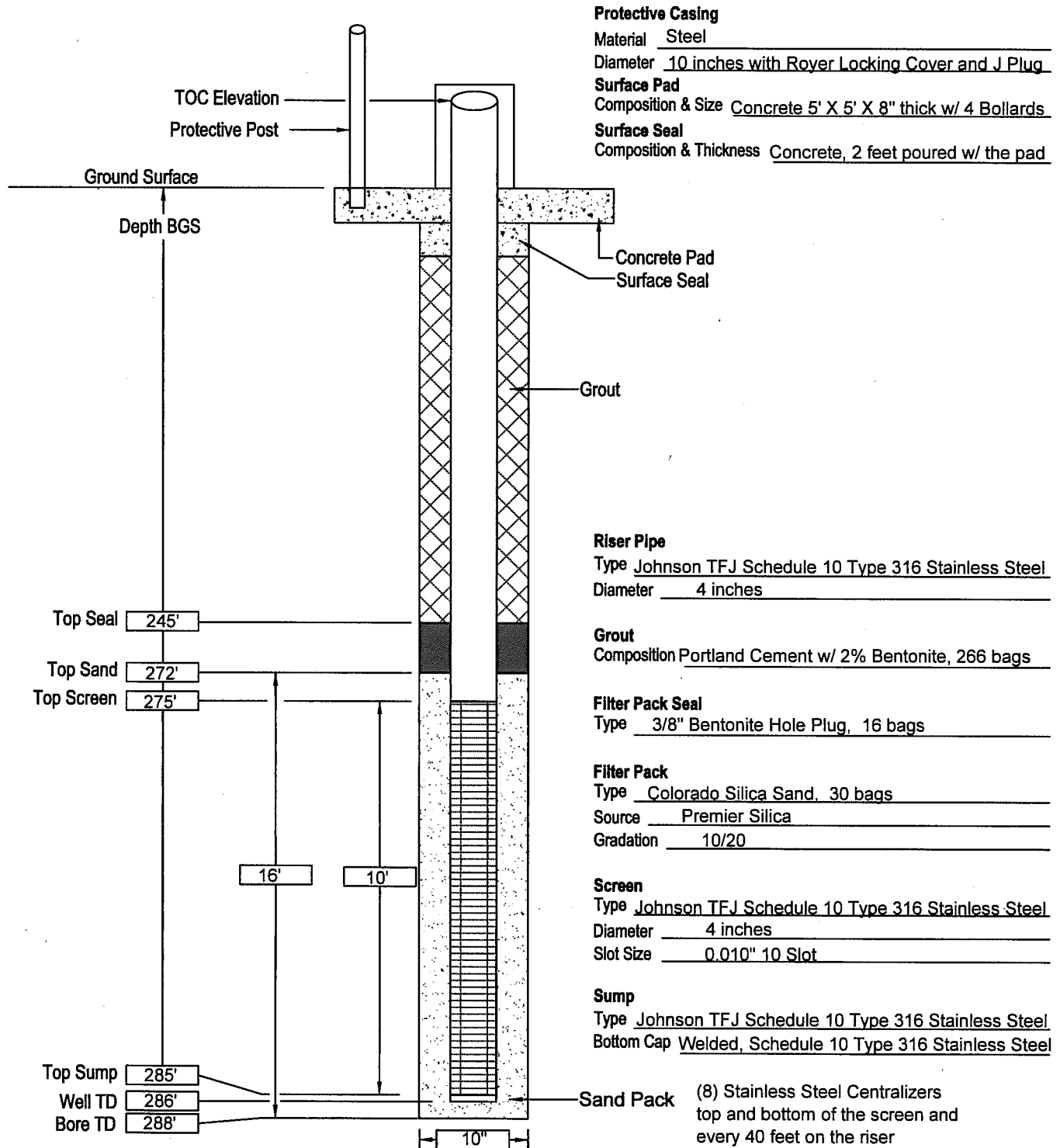
PTX06-ISB120
Triaxial Permeability
ASTM D5084
1.6E-07 cm/sec

Well Installation Diagram

Project: BOA 70 Release 5
 Location: Southeast ISB Extension Well Field
 Contractor: Stoller Newport News Nuclear
 Driller: Cascade
 Well Coordinates: 3751045.71 N 648386.52 E
 TOC Elevation: 3517.26 ft AMSL
 Surface Elevation: 3515.20 ft AMSL

Well No: PTX06-ISB121
 Well Type: ISB Injection
 Date Constructed: 11/08/2017
 Observed By: R Dickerson

Sheet 1 of 1



PTX06-ISB121

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Dickerson Texas Well Report No.: 466087	Northing: 3751045.71 Easting: 648386.52
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 288 ft bgs TD Well: 286 ft bgs
Dates Drilled: 11/07/17 Date Completed: 11/08/17	Depth to Water: 278.90 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3515.20 ft amsl	Top of Casing Elevation: 3517.26 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	5	CL	CL	0' - 5' Silty Clay Loam, weak red (10R 4/2), lean clay, moderate plasticity, damp		
	10	CL	CL	5' - 10' Silty Clay, light red (10R 6/6), low plasticity, w/ minor sand, dry		
	15	CL	CL	10' - 15' Silty Clay, light red (10R 6/6), low plasticity, some sand, dry		
	20	CL	CL	15' - 20' Silty Clay, red (10R 4/6), low to moderate plasticity, dry		
	25	CL	CL	20' - 35' Silty clay to clayey silt, light red (10R 6/6), nonplastic, dry		
	35	ML	ML	35' -40' Sandy, Clayey Silt, pink (5YR 8/4), nonplastic, w/ very fine sand, well indurated, hard, dry		
	40	ML	ML	40' - 50' Clayey Silt, light red (10R 6/6), nonplastic, dry		
	50	CL	CL	50' - 55' Sandy Clay, light red (10R 6/6), w/ some silt & very fine sand, nonplastic, dry		
	55	ML	ML	55' - 70' Clayey Silt, light red (10R 6/6), w/ some caliche nodules, dry		
	65	ML	ML	70' - 80' Silt, light red (10R 6/6), w/ some clay and interbedded caliche layers, dry		
	80	CL	CL	80' - 85' Clay, weak red (10R 5/4), nonplastic, w/ minor black Mn oxide coatings, dry		
	85	ML	ML	85' - 100' Silt, pale red (10R 7/4), w/ minor clay, w/ well indurated layers, minor caliche nodules		
	90					
	95					


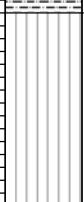
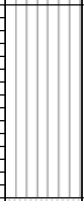
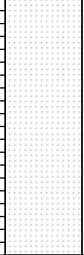

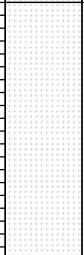
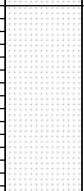

PTX06-ISB121

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Dickerson Texas Well Report No.: 466087	Northing: 3751045.71 Easting: 648386.52
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 288 ft bgs TD Well: 286 ft bgs
Dates Drilled: 11/07/17 Date Completed: 11/08/17	Depth to Water: 278.90 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3515.20 ft amsl	Top of Casing Elevation: 3517.26 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	105		SLT-STN	100' - 105' Caliche Calcrete, pale red (10R 7/2), hard, dry		
	110		ML	105' - 120' Silt, pale red (10R 7/4), eolian, friable, dry		
	125		ML	120' - 135' Silt, pale red (10R 7/4), friable, w/ thin layers of well indurated siltstone, dry		
	140		SP	135' - 155, Sand, very pale brown (10YR 7/4), very fine grain, w/ silt, poorly graded, very friable, w/ minor thin well indurated layers		
	155		SP	155' - 160' Sand, light yellowish brown (10YR 6/4), very fine grain, poorly sorted, friable, slightly damp		
	165		SP	160' - 180' Sand, light grey (10YR 7/2), very fine grain, poorly graded, eolian, friable, dry		
	180		SP	180' - 195' Sand, very pale brown (10YR 7/4), very fine grain, poorly graded, eolian, mostly friable but w/ minor thin well indurated layers, dry		
	195		SP	195' - 210' Sand, very pale brown (10YR 7/4), very fine grain, poorly graded, subangular to subrounded, mostly		

PTX06-ISB121

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Dickerson Texas Well Report No.: 466087	Northing: 3751045.71 Easting: 648386.52
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 288 ft bgs TD Well: 286 ft bgs
Dates Drilled: 11/07/17 Date Completed: 11/08/17	Depth to Water: 278.90 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3515.20 ft amsl	Top of Casing Elevation: 3517.26 ft amsl

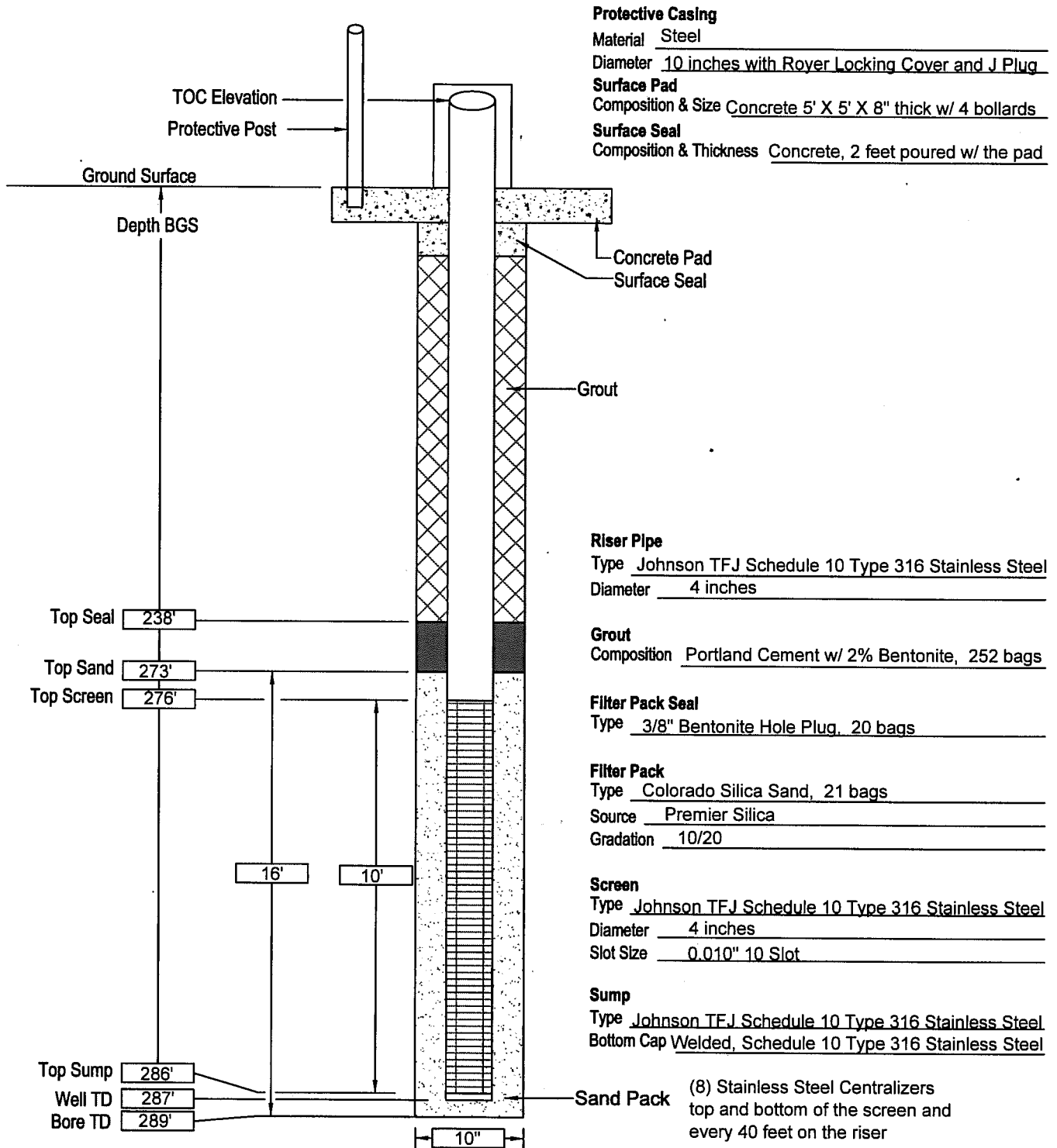
Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	205		SP	quartz sand, friable but w/ minor stringers of silty clay, slightly damp		
	210		SW	210' - 215' Gravelly sand, very pale brown (10YR 8/2), fine to coarse grain w/ rounded gravel up to 2cm, well graded, dry		
	215		GW	215' - 233' Gravel, very pale brown (10YR 8/2), fine to coarse gravel, rounded, well graded, w/ interbedded fine to very coarse sand, dry		
	220		GW			
	225		GW			
	230		GW			
	235		GW	233' - 240' Gravel, very pale brown (10YR 8/2), fine to coarse gravel and fine to coarse sand, well graded, damp		
	240		GW	240' - 245' Gravel, light brownish grey (10YR 6/2), fine to medium gravel with fine to very coarse sand, well graded, dry		
	245		SW	245' - 255' Sand, light grey (10YR 7/2), fine to very coarse grain, well graded, dry		
	250		SW			
	255		GW	255' - 260' Gravel, reddish grey (5YR 5/2), fine to medium gravel w/ fine to very coarse sand, well graded, w/ minor interbedded lean clay layers, damp		
	260		SW	260' - 270' Gravelly Sand, very pale brown (10YR 7/4), fine to medium grain w/ some interbedded pea gravel, moderately graded, damp		
	265		SW			
	270		SW	270' - 275' Sand, very pale brown (10YR 7/4), fine to medium grain, w/ some coarse grain, well graded, damp		
	275		SW	275' - 280' Gravelly Sand, very pale brown (10YR 7/4), fine to medium grain w/ some coarse grain, some interbedded pea gravel, well graded, damp to 278' & wet below		
	280		GW	280' - 285' Sandy Gravel, pinkish grey (5YR 7/2), fine to coarse gravel w/ some fine to coarse sand, well graded, wet		
	285		ML	285' - 288' FGZ Silt, very pale brown (10YR 7/4), very stiff		
	290			Borehole Total Depth 288' bgs		
	295					
						PTX06-ISB121 Triaxial Permeability ASTM D5084 2.5E-07 cm/sec

Well Installation Diagram

Project: BOA 70 Release 5
 Location: Southeast ISB Extension Well Field
 Contractor: Stoller Newport News Nuclear
 Driller: Cascade
 Well Coordinates: 3751072.09 N 648457.75 E
 TOC Elevation: 3517.21 ft AMSL
 Surface Elevation: 3515.12 ft AMSL

Well No: PTX06-ISB122
 Well Type: ISB Injection
 Date Constructed: 11/06/2017
 Observed By: R Dickerson

Sheet 1 of 1



PTX06-ISB122

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Dickerson Texas Well Report No.: 466081	Northing: 3751072.09 Easting: 648457.75
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 289 ft bgs TD Well: 287 ft bgs
Dates Drilled: 11/05/17 Date Completed: 11/06/17	Depth to Water: 279.62 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3515.12 ft amsl	Top of Casing Elevation: 3517.21 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	5		CL/ML	0' - 5' Sandy Silty Clay Loam, pale red (10R 7/4), damp		
	10		CL	5' - 15' Clay, pale red (10R 7/4), low plasticity, slightly damp		
	15		CL	15' - 20' Clay, pale red (10R 7/2), lean, moderate plasticity, slightly damp		
	20		ML	20' - 25' Clayey Silt, pinkish white (10R 8/2), dry		
	25		CL	25' - 30' Clay, light red (10R 6/6), lean, low plasticity, dry		
	30		CL	30' - 35' Clay, light red (10R 6/6), lean, low plasticity, w/ minor silt, dry		
	35		ML	35' - 40' Silt, pale red (10R 7/4), w/ caliche nodules, dry		
	40		ML	40' - 55' Clayey Silt, light red (10R 6/6), w/ caliche nodules, dry		
	45		ML			
	50		ML			
	55		ML	55' -60' Clayey Silt, light red (10R 6/6), no caliche		
	60		SM	60' - 70' Silt, pale red (10R 7/4), w/ very minor clay, dry		
	65		SM			
	70		ML	70' - 75' Sand, pale red (10R 7/4), fine grain w/some coarse grain, moderately graded, some caliche nodules, dry		
	75		ML	75' - 80' Silt, pale red (10R 7/4), dry		
	80		CL	80' - 90' Clay, weak red (10R 5/4), nonplastic, very silty, dry		
	85		CL			
	90		SLT-STN	90' - 100' Caliche Calcrete, pinkish white (10R 8/2), w/ minor lean clay, dry		
	95		SLT-STN			

PTX06-ISB122

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Dickerson Texas Well Report No.: 466081	Northing: 3751072.09 Easting: 648457.75
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 289 ft bgs TD Well: 287 ft bgs
Dates Drilled: 11/05/17 Date Completed: 11/06/17	Depth to Water: 279.62 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3515.12 ft amsl	Top of Casing Elevation: 3517.21 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	105		ML	100' - 115' Silt, pale red (10R 7/4), eolian, w/ minor thin stringers of clay, dry		
	115			115' - 150' Sand, very pale brown (10YR 7/4), very fine grain, w/ some silt, eolian, poorly graded, friable, dry		
	130		SP			
	150		SP	150' - 160' Sand, very pale brown (10YR 8/2), very fine grain, poorly graded, eolian, friable, dry		
	160			160' - 200' Sand, very pale brown (10YR 7/4), very fine grain, poorly graded, eolian, subrounded, 90% quartz, 10% rock fragments, friable, dry		
	175		SP			
	180					
	185					
	190					
	195					

PTX06-ISB122

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Dickerson Texas Well Report No.: 466081	Northing: 3751072.09 Easting: 648457.75
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 289 ft bgs TD Well: 287 ft bgs
Dates Drilled: 11/05/17 Date Completed: 11/06/17	Depth to Water: 279.62 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3515.12 ft amsl	Top of Casing Elevation: 3517.21 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	205		SP	200' - 210' Sand, very pale brown (10YR 7/4), fine grain, poorly graded, eolian, friable, but w/ stringers of silty clay that are moderately indurated, dry		
	210		SP	210' - 220' Gravelly Sand, very pale brown (10YR 7/4), very fine grain, poorly graded, w/ interbedded gravel beds w/ rounded clasts to 2 cm, dry		
	215		SP			
	220		SP	220' - 235' Sand, very pale brown (10YR 7/4), very fine grain, poorly graded, friable but w/ stringers of well cemented sandstone, dry		
	225		SP			
	230		SP			
	235		SP	235' - 240' Sand, very pale brown (10YR 7/4), very fine grain, poorly graded, friable, damp		
	240		GW	240' - 248' Gravel, light brownish grey (10YR 6/2), fine to coarse, well rounded, well graded, dry		
	245		SW	248' - 253' Sand, light brownish grey (10YR 6/2), very fine to coarse grain, well graded, w/ minor thin beds of pea gravel, dry		
	250		SW	253' - 258' Gravelly Sand, very pale brown (10YR 8/2), very fine to very coarse grain, with pea gravel, well graded, dry		
	255		GW	258' - 262' Clayey Gravel, very pale brown (10YR 7/4), fine to coarse, well graded, cemented w/ clay, damp		
	260		SW	262' - 272' Sand, very pale brown (10YR 7/4), fine to very coarse grain, well graded, slightly damp to damp		
	265		SW			
	270		GW	272' - 286' Sandy Gravel, very pale brown (10YR 7/4), fine to medium gravel w/ fine to coarse sand, well graded, wet		
	275		GW			
	280		ML	286' - 289' FGZ Clayey Silt, very pale brown (10YR 7/4), stiff		
	285					
	290			Borehole Total Depth 289' bgs		
	295					

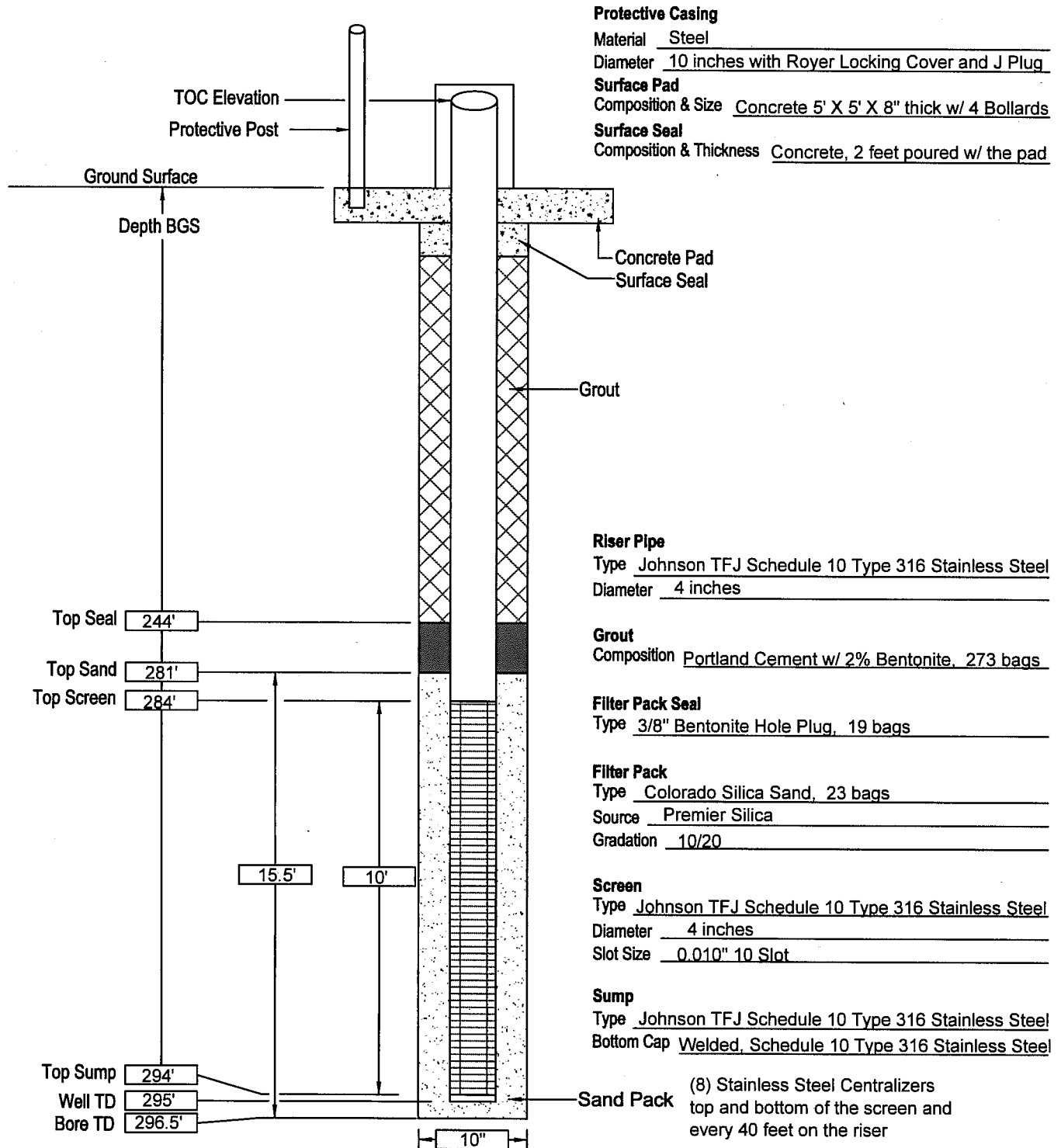
PTX06-ISB122
Triaxial Permeability
ASTM D5084
2.8E-07 cm/sec

Well Installation Diagram

Project: BOA 70 Release 5
Location: Southeast ISB Extension Well Field
Contractor: Stoller Newport News Nuclear
Driller: Cascade
Well Coordinates: 3751098.16 N 648527.50 E
TOC Elevation: 3517.30 ft AMSL
Surface Elevation: 3515.06 ft AMSL

Well No: PTX06-ISB123
Well Type: ISB Injection
Date Constructed: 11/4/2017
Observed By: R Dickerson

Sheet 1 of 1



PTX06-ISB123

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Dickerson Texas Well Report No.: 466088	Northing: 3751098.16 Easting: 648527.50
Drilling Contractor: Cascade Drilling Lic.#4885 W. Bludworth	TD Borehole: 296.5 ft bgs TD Well: 295 ft bgs
Dates Drilled: 11/03-04/17 Date Completed: 11/04/17	Depth to Water: 279.55 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3515.06 ft amsl	Top of Casing Elevation: 3517.30 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	0		CH	0' - 5' Fat Clay Loam, very pale brown (10YR 7/4), high plasticity		
	5			5' - 25' Clay, light red (10R 6/6), lean, moderate plasticity		
	10					
	15		CL			
	20					
	25					
	30		CL	25' - 33' Silty Clay, light red (10R 6/6), low plasticity, w/ caliche		
	35		ML	33' - 36' Clayey Silt, pale red (10R 7/4), nonplastic, dry		
	40		ML	36' - 41' Caliche Silt, pink (10R 8/4), hard, dry		
	45					
	50		SM	41' - 50' Silty Sand, pale red (10R 7/4), fine grain, w/ silt and minor clay, poorly graded, dry		
	55		CL	50' - 55' Silty Clay, pale red (10R 7/4), nonplastic, dry		
	60		CL	55' - 65' Silty Clay, pale red (10R 7/4), nonplastic, w/ very small caliche nodules, dry		
	65					
	70		ML	65' - 80' Silt, pale red (10R 7/4), w/ minor silt and some small caliche nodules		
	75					
	80					
	85		CL	80' - 94' Clay, pale red (10R 7/4), nonplastic, dry		
	90					
	95					
	100		SLT-STN	94' - 105' Caliche Calcrete, pinkish white (10R 8/2), hard		

PTX06-ISB123

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Dickerson Texas Well Report No.: 466088	Northing: 3751098.16 Easting: 648527.50
Drilling Contractor: Cascade Drilling Lic.#4885 W. Bludworth	TD Borehole: 296.5 ft bgs TD Well: 295 ft bgs
Dates Drilled: 11/03-04/17 Date Completed: 11/04/17	Depth to Water: 279.55 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3515.06 ft amsl	Top of Casing Elevation: 3517.30 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	110		ML	105' - 110' Silt, pale red (10R 7/4), with caliche, dry		
	115		ML	110' - 120' Silt, pale red (10R 7/4), w/ no caliche		
	125		SM	120' - 140' Silty Sand, pale red (10R 7/4), very fine grain, eolian		
	140		SP	140' - 155' Sand, very pale brown (10YR 8/2), very fine grain, silty, poorly graded		
	155		SP	155' - 160' Sand, very pale brown (10YR 7/4), very fine grain, silty, w/ minor clay, poorly graded, slightly damp		
	160		SP	160' - 170' Sand, very pale brown (10YR 7/4), very fine grain, silty, eolian, no clay, dry		
	170		SP	170' - 180' Sand, very pale brown (10YR 7/4), poorly graded, eolian, dry		
	180		SP	180' - 200' Sand, very pale brown (10YR 7/4), very fine grain, silty, poorly graded, eolian, damp		
	200		SM	200' - 220' Gravelly Sand, very pale brown (10YR 8/2), fine grain, silty, with interbedded gravel, rounded, moderately graded, dry		

PTX06-ISB123

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Dickerson Texas Well Report No.: 466088	Northing: 3751098.16 Easting: 648527.50
Drilling Contractor: Cascade Drilling Lic.#4885 W. Bludworth	TD Borehole: 296.5 ft bgs TD Well: 295 ft bgs
Dates Drilled: 11/03-04/17 Date Completed: 11/04/17	Depth to Water: 279.55 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3515.06 ft amsl	Top of Casing Elevation: 3517.30 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	215		SM			
	220		SP	220' - 225' Silty Sand, very pale brown (10YR 8/2), fine to medium grain, poorly graded, well indurated, hard		
	225		SP	225' - 240' Sand, very pale brown (10YR 7/4), very fine grain, poorly graded		
	230		SP			
	235		SP			
	240		SW	240' - 262' Gravelly Sand, very pale brown (10YR 7/4), fine grain, w/ some gravel (% gravel increases downward), well graded		
	245		SW			
	250		SW			
	255		SW			
	260		SW			
	265		SW	262' - 265' Sand, very pale brown to brownish yellow (10YR 7/4 to 6/6), fine to coarse grain, well graded, damp		
	270		SW	265' - 270' Gravelly Sand, very pale brown (10YR 7/4), fine sand, silty, clayey, with some gravel, well graded		
	275		SW	270' - 283' Gravelly Sand, very pale brown (10YR 7/4), fine to coarse sand w/ some gravel, well graded, damp		
	280		SW			
	285		SW	283' - 288' Sand, very pale brown (10YR 7/4), fine to coarse grain, w/ some interbedded hard clay layers and some interbedded gravel layers, well graded, damp		
	290		GW	288' - 291' Gravel, very pale brown (10YR 7/4), sandy, well graded, wet		
	295		CL	291' - 294' Sandy Clay, very pale brown (10YR7/4), wet		
	300		ML	294' - 296.5' FGZ Clayey Siltstone, very pale brown (10YR 7/4), nonplastic, firm, dry		
	305			Borehole Total Depth 296.5' bgs		
	310					

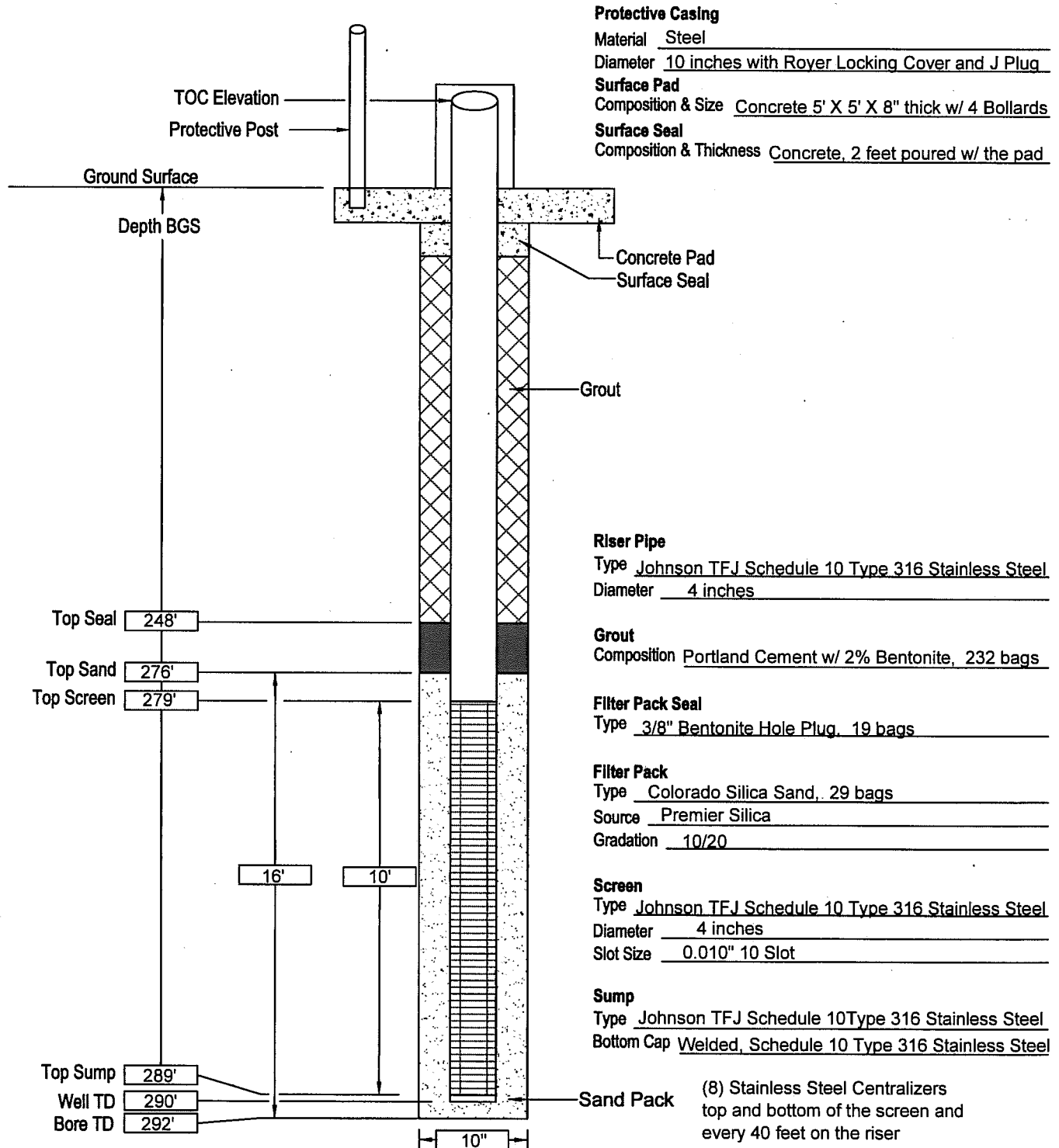
PTX06-ISB123
Triaxial Permeability
ASTM D5084
1.9E-06 cm/sec

Well Installation Diagram

Project: BOA 70 Release 5
Location: Southeast ISB Extension Well Field
Contractor: Stoller Newport News Nuclear
Driller: Cascade
Well Coordinates: 3751124.55 N 648597.96 E
TOC Elevation: 3517.11 ft AMSL
Surface Elevation: 3515.02 ft AMSL

Well No: PTX06-ISB124
Well Type: ISB Injection
Date Constructed: 12/03/2017
Observed By: R Dickerson

Sheet 1 of 1



PTX06-ISB124

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Dickerson Texas Well Report No.: 466190	Northing: 3751124.55 Easting: 648597.96
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 292 ft bgs TD Well: 290 ft bgs
Dates Drilled: 12/02/17 Date Completed: 12/03/17	Depth to Water: 279.55 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3515.02 ft amsl	Top of Casing Elevation: 3517.11 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	5		CL	0' - 5' Sandy Silty Clay Loam, weak red (10R 4/2), moderate plasticity		
	10		CL	5' - 10' Lean Clay, red (10R 4/6), moderate plasticity, w/ minor silt and fine sand		
	15		CL	10' - 15' Silty Clay, weak red (10R 5/4), moderate plasticity		
	20		ML	15' - 25' Clayey Silt, weak red (10R 5/4), low plasticity		
	25		CL	25' - 30' Silty Clay, weak red (10R 5/4), nonplastic, w/ minor caliche nodules <1 cm, dry		
	30		ML	30' - 40' Clayey Silt, light red (10R 6/6), w/ caliche nodules increasing downward, dry		
	35		ML			
	40		ML	40' - 45' Silt, light red (10R 6/6), some caliche nodules < 2 cm, dry		
	45		ML	45' - 50' Silt, red (10R 4/6), fewer caliche nodules		
	50		ML	50' - 60' Silt, light red (10R 6/6), caliche nodules up to 2 cm increasing down to maximum @ 55'		
	55		ML			
	60		SP	60' - 70' Sand, red (10R 4/6), very fine grain, very poorly graded, friable, w/some caliche nodules to 2 cm, dry		
	65		SP			
	70		SP	70' - 75' Sand, pale red (10R 7/4), very fine grain, poorly graded, friable, w/ minor caliche		
	75		SM	75' - 80' Sand, light red (10R 6/6), very fine grain, silty, poorly graded, friable (loose), w/ minor caliche		
	80		ML	80' - 90' Clayey Silt, red (10R 4/6), well indurated w/ clay cement, no caliche, dry		
	85		ML			
	90		ML	90' - 95' Sandy Silt, pale red (10R 7/4), silt w/ very fine sand and clay cement, weakly indurated, w/ caliche		
	95		SP	95' - 100' Sand, pale red (10R 7/4), very fine grain, w/ silt, friable w/ minor well indurated layers w/ caliche cement, dry		










PTX06-ISB124

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Dickerson Texas Well Report No.: 466190	Northing: 3751124.55 Easting: 648597.96
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 292 ft bgs TD Well: 290 ft bgs
Dates Drilled: 12/02/17 Date Completed: 12/03/17	Depth to Water: 279.55 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3515.02 ft amsl	Top of Casing Elevation: 3517.11 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number	
	105		SLT-STN	100' - 105' Caliche Calcrete, pinkish white (10R 8/2), hard			
	110		SP	105' - 110' Silty Sand, pale red (10R 7/4), very fine grain, poorly graded, friable, w/ caliche, dry			
	115		SP	110' - 115' Sand, pale red (10R 7/4), w/ some silt, eolian, poorly graded, friable, no caliche, dry			
	120		SP	115' - 120' Sand, pale red (10R 7/4), very fine grain, poorly graded, eolian, friable, dry			
	125		SP	120' - 145' Sand, pale red (10R 7/4), very fine grain, poorly graded, eolian, subrounded, mostly quartz, mostly friable w/ some thin well indurated layers			
	130						
	135						
	140		SP	145' - 160' Sand, pale red (10R 7/4), very fine grain, poorly graded, eolian as above, all friable, dry			
	145						
	150						
	155		SP	160' - 175' Sand, pale red (10R 7/4), very fine sand w/ some silt, poorly graded, friable, dry			
	160						
	165						
	170		SP	175' - 218' Sand, very pale brown (10YR 7/4), very fine grain, very poorly graded, eolian, friable, dry			
	175						
	180						
	185		SP				
	190						
	195						

PTX06-ISB124

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Dickerson Texas Well Report No.: 466190	Northing: 3751124.55 Easting: 648597.96
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 292 ft bgs TD Well: 290 ft bgs
Dates Drilled: 12/02/17 Date Completed: 12/03/17	Depth to Water: 279.55 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3515.02 ft amsl	Top of Casing Elevation: 3517.11 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	205					
	210		SP			
	215					
	220		GW	218' - 222' Sandy Gravel, very pale brown (10YR 8/2), coarse well-rounded gravel with some fine sand, well graded, (quartz pebble conglomerate), dry		
	225		SP	222' - 226' Sand, very pale brown (10YR 7/4), very fine grain, poorly graded, friable, slightly damp		
	230		SW	226' - 235' Gravelly Sand, very pale brown (10YR 7/4), very fine sand w/ interbedded coarse, well rounded gravel, well graded, slightly damp		
	235					
	240		SP	235' - 240' Sand, yellowish brown (10YR 5/4), very fine grain, poorly graded, slightly damp		
	245		GW	240' - 245' Sandy Gravel, light brownish grey (10YR 6/2), fine grain, well rounded quartz pebble gravel w/ fine to medium sand, well graded,		
	250		GW	245' - 250' Gravel, light brownish-grey (10YR 6/2), well graded, w/ well rounded clasts to 2 cm, dry		
	255		SW	250' - 255' Gravelly Sand, very pale brown (10YR 8/2), fine to medium subrounded sand w/ some rounded gravel, well graded, dry		
	260		SW	255' - 260' Sand, very pale brown (10YR 7/4), fine to medium grain, w/ minor gravel, well graded, slightly damp		
	265		SW	260' - 265' Gravelly Sand, very pale brown (10YR 7/4), fine to coarse subrounded sand w/ subrounded to rounded quartz pebble gravel, well graded, damp		
	270		SW	265' - 270' Sand, very pale brown (10YR 7/4), fine to very coarse grain, well graded, slightly damp		
	275		GP	270' - 274' Gravel, poorly graded pea gravel, dry		
	280		SR	274' - 278' Sand, brownish yellow (10YR 6/6), fine to medium grain, poorly graded, damp		
	285		SW	278' - 289' Gravelly Sand, light brownish grey (10YR 6/2), fine to medium sand w/ some fine to coarse gravel, subrounded to rounded, quartz pebble, w/ very minor mudstone clasts, wet		
	290		ML	289' - 292' FGZ Siltstone, very pale brown (10YR 7/4), firm		
	295			Borehole Total Depth 292' bgs		

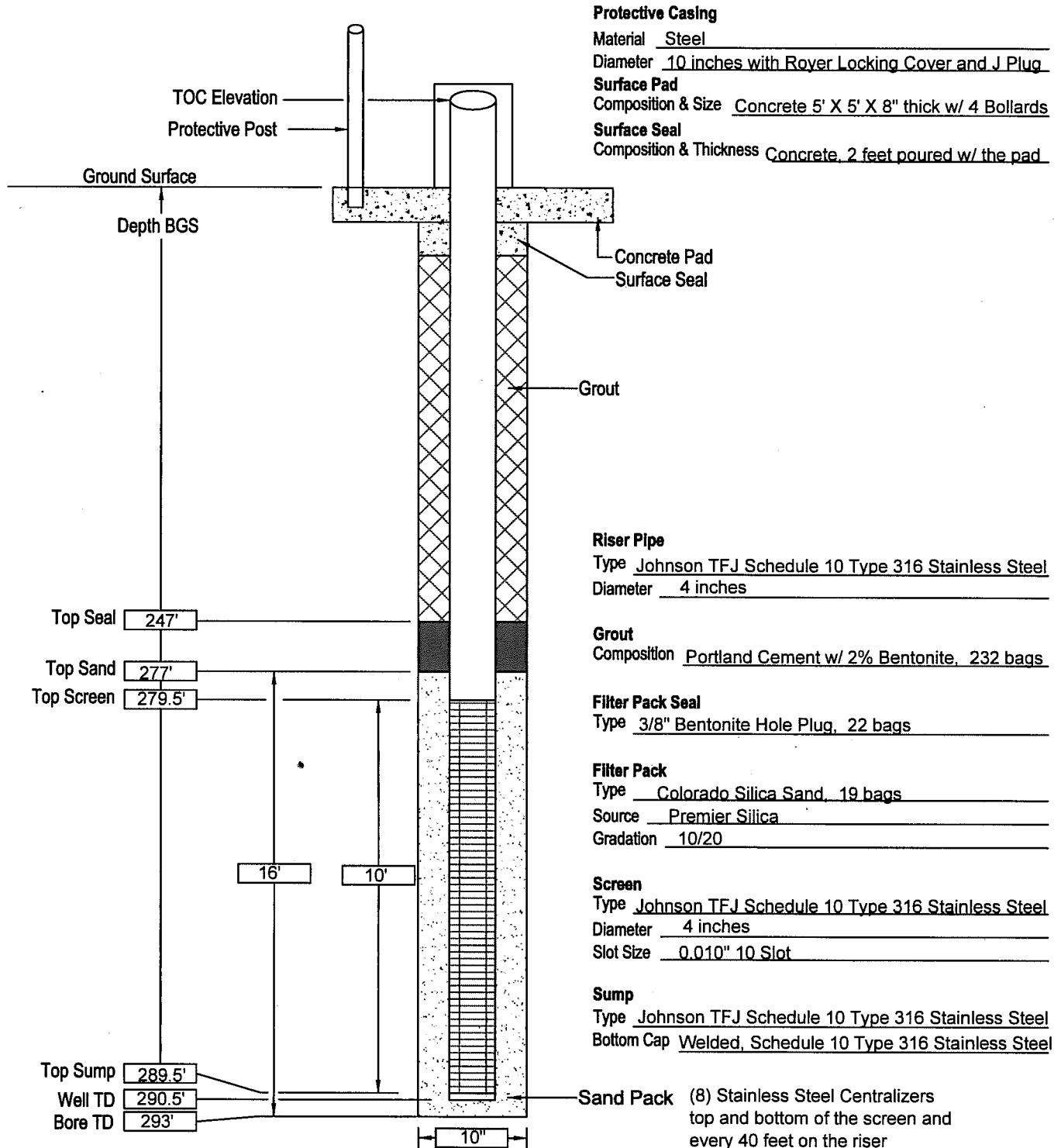
PTX06-ISB124
Triaxial Permeability
ASTM D5084
1.4E-07 cm/sec

Well Installation Diagram

Project: BOA 70 Release 5
 Location: Southeast ISB Extension Well Field
 Contractor: Stoller Newport News Nuclear
 Driller: Cascade
 Well Coordinates: 3751150.76 N 648668.62 E
 TOC Elevation: 3517.15 ft AMSL
 Surface Elevation: 3515.16 ft AMSL

Well No: PTX06-ISB125
 Well Type: ISB Injection
 Date Constructed: 12/01/2017
 Observed By: R Dickerson

Sheet 1 of 1



PTX06-ISB125

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Dickerson Texas Well Report No.: 466193	Northing: 3751150.76 Easting: 648668.62
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 293 ft bgs TD Well: 290.5 ft bgs
Dates Drilled: 11/30/17 Date Completed: 12/01/17	Depth to Water: 280.31 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3515.16 ft amsl	Top of Casing Elevation: 3517.15 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	5		CL	0' - 5' Silty Clay Loam, pale red (10R 6/2), moderate plasticity		
	10		CL	5' - 20' Silty Clay, pale red (10R 6/2), moderate plasticity, very minor caliche from 5' to 10'		
	20		CL	20' - 25' Lean Clay, pale red (10R 6/2), w/ minor silt, moderate plasticity		
	25		ML	25' - 30' Clayey Silt, light red (10R 6/6), dry		
	30		ML	30' - 35' Silt, pale red (10R 7/4), interbedded w/ silty clay, dry		
	35		ML	35' - 40' Silt, pale red (10R 7/4), loose, dry, w/ caliche nodules up to 3 cm		
	40		ML	40' - 45' Silt, pinkish white (10R 8/2), w/ minor clay and significant caliche nodules up to 3 cm		
	45		ML	45' - 50' Silt, light red (10R 6/6), w/ interbedded silty clay, dry		
	50		ML	50' - 55' Silt, light red (10R 6/6), w/ minor interbedded silty clay and caliche nodules up to 2 cm		
	55		ML	55' - 60' Silt, pale red (10R 7/4), loose, w/ caliche < 2 cm, dry		
	60		SP	60' - 70' Sand, weak red (10R 5/4), very fine grain, w/ some silt, poorly graded, loose, w/ minor caliche nodules to 4 cm, slightly damp		
	70		ML	70' - 75' Clayey Silt with sand, weak red (10R 5/4), some fine sand, dry		
	75		SP	75' - 80' Sand, weak red (10R 5/4), very fine grain, loose, dry		
	80		CL	80' - 90' Silty Clay, weak red (10R 5/4), w/ minor very fine sand, poor plasticity, dry		
	90		SP	90' - 95' Sand, light red (10R 6/6), very fine grain, poorly graded, loose, dry, w/ minor caliche		
	95		SLT-STN	95' - 100' Caliche Calcrete, pinkish white (10R 8/2), hard		

PTX06-ISB125

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Dickerson Texas Well Report No.: 466193	Northing: 3751150.76 Easting: 648668.62
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 293 ft bgs TD Well: 290.5 ft bgs
Dates Drilled: 11/30/17 Date Completed: 12/01/17	Depth to Water: 280.31 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3515.16 ft amsl	Top of Casing Elevation: 3517.15 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	105		SP	100' - 105' Sand, pale red (10R 7/4), very fine grain (eolian), poorly graded, loose, dry		
	110		SP	105' - 120' Sand, light reddish brown (5YR 6/4), very fine grain, silty, poorly graded, loose, dry		
	120		SP	120' - 125' Sand, light reddish brown (5 YR 6/4), poorly graded, eolian, loose, dry		
	125		SP	125' - 130' Sand, very pale brown (10YR 8/2), very fine grain, poorly graded, eolian, loose, dry		
	130			130' - 190' Sand, light grey (10YR 7/2), very fine grain, poorly graded, eolian, very friable (loose), subrounded, predominantly quartz grains, dry		
	135					
	140					
	145					
	150					
	155					
	160		SP			
	165					
	170					
	175					
	180					
	185					
	190					
	195		SP	190' - 200' Sand, light grey (10YR 7/2), very fine grain, poorly graded, friable but with some interbedded well indurated layers, dry		

PTX06-ISB125

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Dickerson Texas Well Report No.: 466193	Northing: 3751150.76 Easting: 648668.62
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 293 ft bgs TD Well: 290.5 ft bgs
Dates Drilled: 11/30/17 Date Completed: 12/01/17	Depth to Water: 280.31 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3515.16 ft amsl	Top of Casing Elevation: 3517.15 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	205		SP	200' - 207' Sand, very pale brown (10YR 7/4), very fine grain, poorly graded, friable & loose, dry		
	210		GM	207' - 215' Sandy Gravel, very pale brown (10YR 7/4), fine (pea) gravel, with fine sand, moderately graded, gravel clasts are subrounded to rounded chert		
	215		SW	215' - 220' Gravelly Sand, very pale brown (10YR 7/4), fine sand w/ interbedded fine to medium gravel, well graded, dry		
	220		SW	220' - 225' Sand, very pale brown (10YR 8/2), fine to coarse sand with interbedded fine to medium gravel, rounded, well graded, dry		
	225		SP	225' - 228' Sand, very pale brown (10YR 7/4), fine grain, poorly graded, friable & loose, dry		
	230		SP	228' - 235' Sand, very pale brown (10YR 7/4), very fine grain, poorly graded, friable but with some well indurated layers, slightly damp		
	235		SP	235' - 240' Sand, very pale brown (10YR 7/4), very fine grain, poorly graded, friable		
	240		GW	240' - 250' Gravel, reddish grey (5YR 5/2), fine to coarse, well graded, subrounded to rounded, dry		
	245		SW	250' - 255' Gravelly Sand, reddish grey (5YR 5/2), fine to very coarse grain, w/ interbedded pea gravel, well graded, dry		
	250		GW	255' - 260' Sandy Gravel, light brownish grey (10YR 6/2), fine to coarse, with some fine to coarse sand, well graded, dry		
	255		GW	260' - 270' Sandy Gravel, light brownish grey (10YR 6/2), fine to coarse gravel beds interbedded w/ fine to coarse sand beds, well graded, slightly damp		
	260		GW	270' - 280' Sandy Gravel, light yellowish brown (10YR 6/4), fine to coarse sand interbedded w/ fine to coarse gravel, well graded, damp		
	265		SW	280' - 285' Sand, light yellowish brown (10YR 6/4), fine to medium sand with some coarse sand and minor pea gravel, well graded, damp		
	270		SW	285' - 288' Sand, fine to medium grain, moderately graded, wet		
	275		GM	288' - 290' Gravel, fine grain, moderately graded, wet		
	280		ML	290' - 293' FGZ Siltstone, very pale brown (10YR 7/4)		
	285			Borehole Total Depth 293' bgs		
	290					
	295					

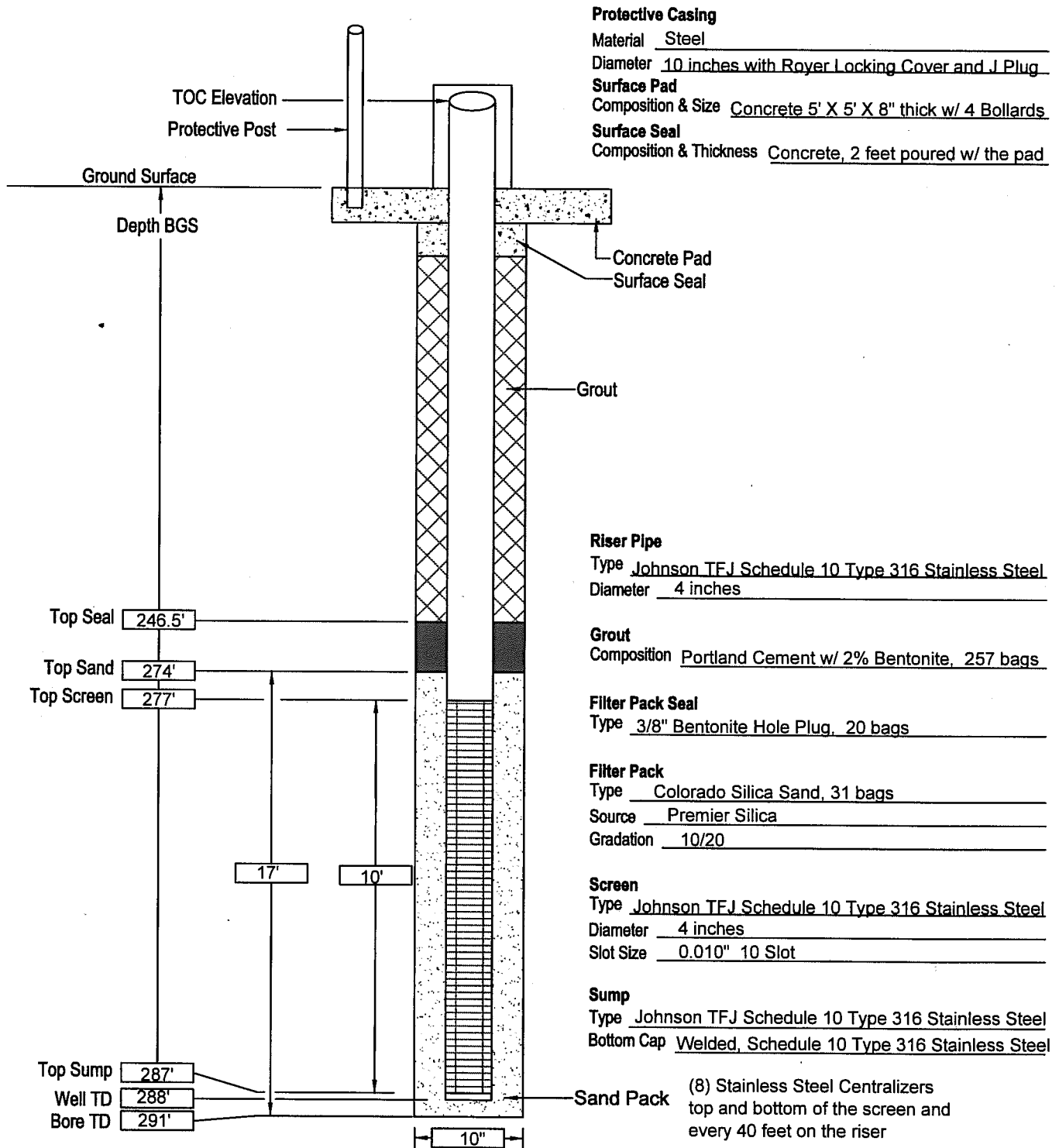
PTX06-ISB125
Triaxial Permeability
ASTM D5084
4.3E-07 cm/sec

Well Installation Diagram

Project: BOA 70 Release 5
 Location: Southeast ISB Extension Well field
 Contractor: Stoller Newport News Nuclear
 Driller: Cascade
 Well Coordinates: 3751176.87 N 648738.78 E
 TOC Elevation: 3517.09 ft AMSL
 Surface Elevation: 3515.03 ft AMSL

Well No: PTX06-ISB126
 Well Type: ISB Injection
 Date Constructed: 11/16/2017
 Observed By: R Dickerson

Sheet 1 of 1



PTX06-ISB126

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Dickerson Texas Well Report No.: 466195	Northing: 3751176.87 Easting: 648738.78
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 291 ft bgs TD Well: 288 ft bgs
Dates Drilled: 11/16/17 Date Completed: 11/16/17	Depth to Water: 279.85 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3515.03 ft amsl	Top of Casing Elevation: 3517.09 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	0		CL	0' - 3' Sandy Clay Loam, yellowish brown (10YR 5/4), moderate plasticity, damp		
	3		CL	3' - 10' Silty Sandy Clay, red (10R 4/6), low plasticity, slightly damp		
	10		ML	10' - 15' Clayey Silt, light red (10R 6/6), dry, w/ caliche nodules < 2mm		
	15		CL	15' - 20' Silty Clay, weak red (10R 5/4), low plasticity		
	20		CH	20' - 25' Fat Clay, light red (10R 6/6), high plasticity, slightly damp		
	25		ML	25' - 30' Clayey Silt, pale red (10R 7/4), low plasticity, slightly damp		
	30		ML	30' - 38' Silt, pale red (10R 7/4), dry, w/ caliche nodules <5mm		
	35		ML	38' - 40' Caliche dominant, mostly nodules		
	40		ML	40' - 45' Silt, pinkish white (10R 8/2), dry, with abundant caliche nodules up to 5mm		
	45		SP	45' - 55' Sand, light red (10R 6/6), very fine grain, poorly graded, dry, w/ some caliche nodules		
	50		ML	55' - 60' Silt, light red (10R 6/6), dry		
	55		SP	60' - 73' Sand, light red (10R 6/6), w/ minor silt, poorly graded, dry		
	60		CL	73' - 80' Lean Clay, light to pale red (10R 6/6 tp 7/4), silty, moderate plasticity		
	75		CL	80' - 95' Lean Clay, weak red (10R 5/4), moderate plasticity, dry, with caliche nodules concentrated from 80' to 85'		
	80		CL	95' - 100' Lean Clay, weak red (10R 5/4), w/ minor sandy clay, dry		

PTX06-ISB126

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Dickerson Texas Well Report No.: 466195	Northing: 3751176.87 Easting: 648738.78
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 291 ft bgs TD Well: 288 ft bgs
Dates Drilled: 11/16/17 Date Completed: 11/16/17	Depth to Water: 279.85 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3515.03 ft amsl	Top of Casing Elevation: 3517.09 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	105		SP	100' - 115' Sand, pale red (10R 7/4), very fine grain, very poorly graded (eolian), friable w/ minor layers of well indurate sandstone		
	115		CL	115' - 120' Silty Clay, weak red (10R 5/4), low plasticity, dry		
	120			120' - 160' Sand, very pale brown (10YR 7/4), very fine grain (eolian), very poorly graded, friable, dry		
	125					
	130					
	135					
	140		SP			
	145					
	150					
	155					
	160		SP	160' - 164' Sand, very pale brown (10YR 7/4), very fine grain sand with <u>minor interbedded clay</u> , low plasticity, dry		
	165			164' - 180' Sand, very pale brown (10YR 7/4), very fine grain, poorly graded, w/ thin bed of clayey sand at 178', dry		
	170		SP			
	175					
	180			180' - 210' Sand, very pale brown (10YR 7/4), very fine grain, poorly graded, dry		
	185					
	190		SP			
	195					










PTX06-ISB126

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Dickerson Texas Well Report No.: 466195	Northing: 3751176.87 Easting: 648738.78
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 291 ft bgs TD Well: 288 ft bgs
Dates Drilled: 11/16/17 Date Completed: 11/16/17	Depth to Water: 279.85 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3515.03 ft amsl	Top of Casing Elevation: 3517.09 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	205		SP			
	210		GP	210' - 212' Gravel, medium grain, moderately graded, well rounded, dry		
	215		SP	212' - 218' Sand, very pale brown (10YR 7/4), very fine grain, poorly graded, dry		
	220		GW	218' - 223' Gravel, very pale brown (10YR 7/4), medium to coarse grain, well graded, rounded, dry		
	225		GW	223' - 230' Sandy Gravel, very pale brown (10YR 7/4), medium to coarse gravel beds interbedded w/ very fine sand		
	230					
	235		SP	230' - 240' Sand, very pale brown (10YR 7/4), very fine grain, poorly graded, damp from 230 to 235, dry from 235 to 240		
	240		SP/SM	240' - 245' Sand, weak red (10R 5/4), very fine to medium grain, w/ minor clay & minor fine to medium gravel, damp		
	245		GP	245' - 250' Gravel, light brownish grey (10YR 6/2), fine to medium grain, moderately graded, dry		
	250					
	255		SP	250' - 260' Sand, very pale brown (10YR 7/4), fine grain, poorly graded, dry		
	260		SP	260' - 265' Gravelly Sand, very pale brown (10YR 7/4), fine sand w/ minor gravel, moderately graded, damp		
	265		SW	265' - 270' Gravelly Sand, very pale brown (10YR 7/4), fine to coarse sand w/ interbedded fine to coarse gravel, well graded, damp		
	270		SW	270' - 275' Gravelly Sand, very pale brown (10YR 7/4), fine to coarse sand with some interbedded pea gravel, well graded, damp		
	275		SW	275' - 287' Gravelly Sand, very pale brown (10YR 7/4), fine sand w/ interbedded fine to medium gravel, well graded, wet		
	280					
	285					
	290		ML	287' - 291' FGZ Siltstone, very pale brown (10YR 7/4), poorly graded, indurated		
	295			Borehole Total Depth 291' bgs		

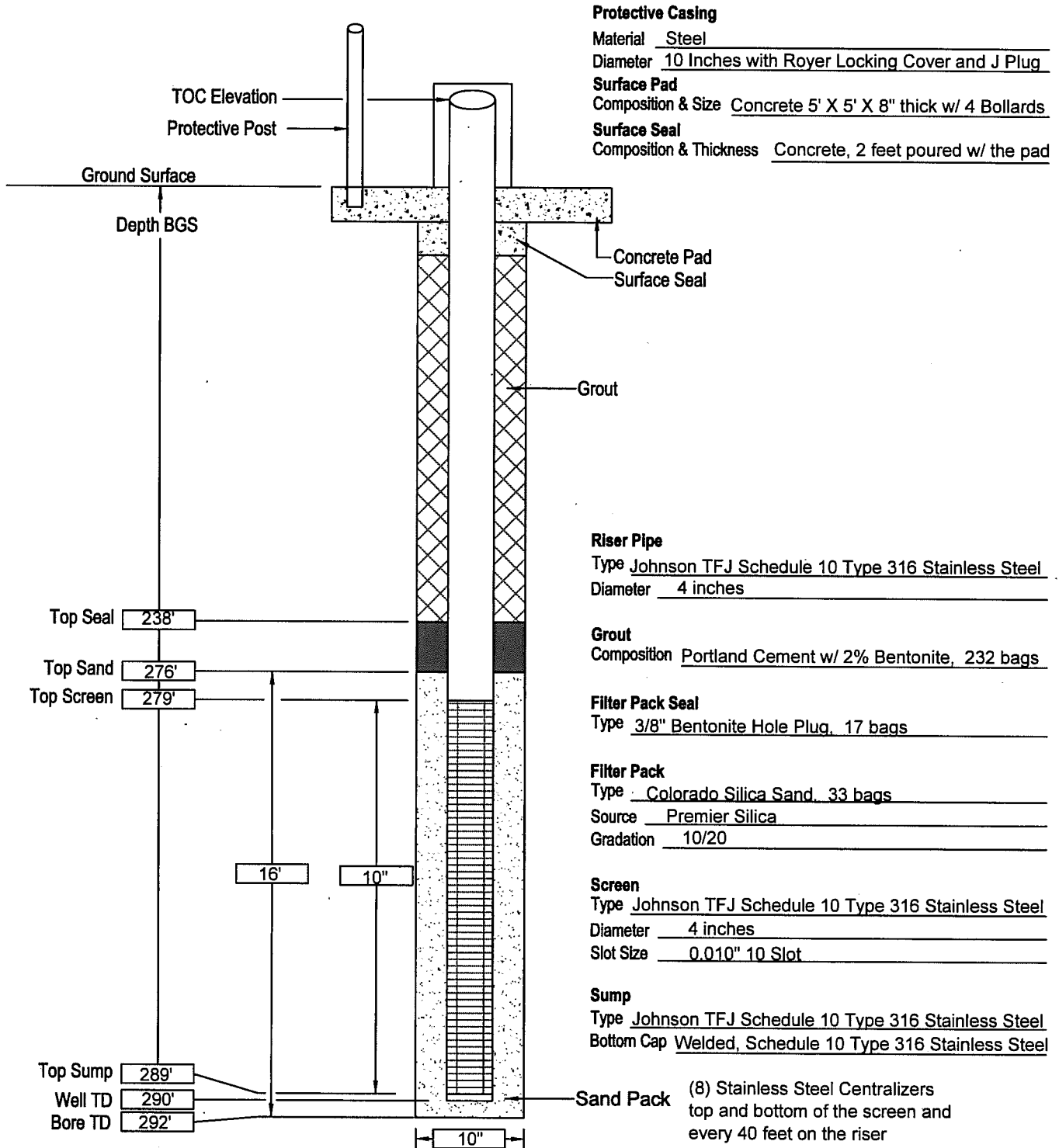
PTX06-ISB126
Triaxial Permeability
ASTM D5084
2.0E-07 cm/sec

Well Installation Diagram

Project: BOA 70 Release 5
 Location: Southeast ISB Extension Well Field
 Contractor: Stoller Newport News Nuclear
 Driller: Cascade
 Well Coordinates: 3751203.15 N 648809.07 E
 TOC Elevation: 3517.14 ft AMSL
 Surface Elevation: 3515.09 ft AMSL

Well No: PTX06-ISB127
 Well Type: ISB Injection
 Date Constructed: 11/29/2017
 Observed By: R Dickerson

Sheet 1 of 1



PTX06-ISB127

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 466194	Northing: 3751203.15 Easting: 648809.07
Drilling Contractor: Cascade Drilling Lic. #4885 W. Blutworth	TD Borehole: 292 ft bgs TD Well: 290 ft bgs
Dates Drilled: 11/28/17 Date Completed: 11/29/17	Depth to Water: 280.35 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3515.09 ft amsl	Top of Casing Elevation: 3517.14 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	5		CL	0' - 5' Lean Clay, dark reddish brown (5YR 3/2), plastic, cohesive, stiff, moist		
	10		CL	5' - 20' Clay with Silt, yellowish red (5YR 5/6), trace sand, low plasticity, with caliche and manganese @ 15' to 20', stiff, moist		
	20		ML	20' - 25' Silt, yellowish red (5YR 5/8), trace clay, <10% sand, non-plastic, medium stiff, dry		
	25		ML	25' - 35' Silt, light reddish brown (5YR 6/4), soft, dry		
	35		SM	35' - 50' Silty Sand, red (2.5YR 5/8), fine grain, poorly graded, with angular caliche fragments to 3-cm, medium dense, dry		
	50		SM	50' - 55' Silty Sand, light reddish brown (5YR 6/4), with >15% caliche nodules and fragments, medium dense, dry		
	55		SP	55' - 70' Sand, yellowish red (5YR 5/8), fine grain, poorly graded, sub-rounded to rounded, loose to medium dense, dry		
	70		SC	70' - 80' Sand with Clay, reddish brown (5YR 5/4), fine grain sand, >15% plastic fines, medium dense, dry		
	80		CL	80' - 90' Lean Clay, reddish brown (5YR 5/4), trace sand, plastic, cohesive, dense, moist		
	90		SP-SC	90' - 95' Sand, yellowish red (5YR 5/6), poorly graded, 10% plastic fines, sub-rounded to rounded, medium dense, dry		
	95		SP	95' - 100' Sand, reddish yellow (5YR 6/8), fine grain, poorly graded, rounded, loose, dry		

PTX06-ISB127

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 466194	Northing: 3751203.15 Easting: 648809.07
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 292 ft bgs TD Well: 290 ft bgs
Dates Drilled: 11/28/17 Date Completed: 11/29/17	Depth to Water: 280.35 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3515.09 ft amsl	Top of Casing Elevation: 3517.14 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	105	SM		100' - 105' Silty Sand, pink (5YR 7/3), caliche fragments to 3-cm, medium dense, dry		
	110	SM		105' - 120' Silty Sand, yellowish red (5YR 5/8), fine grain sand, >15% non-plastic silt, some cemented sandstone nodes 105' to 110', loose, dry		
	120	SP		120' - 145' Sand, reddish yellow (7.5YR 6/6), fine grain, poorly graded, trace silt, loose, dry		
	145	SP		145' - 165' Sand, light brown (7.5YR 6/4), fine grain, poorly graded, loose, dry		
	155	SP		@ 150' - 160' well cemented very fine grain sandstone, medium dense		
	165	SP		165' - 210' Sand, reddish yellow (7.5YR 6/6), very fine to fine grain, poorly graded, sub-rounded to rounded, loose, with 1-cm to 2-cm cemented nodes at 165' - 170' and 185' - 200', dry		

PTX06-ISB127

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 466194	Northing: 3751203.15 Easting: 648809.07
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 292 ft bgs TD Well: 290 ft bgs
Dates Drilled: 11/28/17 Date Completed: 11/29/17	Depth to Water: 280.35 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3515.09 ft amsl	Top of Casing Elevation: 3517.14 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	205		SP			
	210			210' - 235' Sand with Gravel, light yellowish brown (10YR 6/4), well graded, >15% small flattened and angular (broken) gravel 210' - 230', medium dense, dry		
	215					
	220		SW			
	225					
	230					
	235		SP	235' - 240' Sand, yellowish brown (10YR 5/6), fine grain, poorly graded, loose, dry		
	240			240' - 260' Sand with Gravel, yellowish brown (10YR 5/8), fine to coarse grain, well graded, subrounded sand, >15% small gravel, some large gravel 240' - 245', dense, moist		
	245					
	250		SW			
	255					
	260			260' - 265' Gravel, very pale brown matrix (10YR 7/3), poorly graded small sub-rounded gravel, <15% sand, dense, dry		
	265			265' - 280' Sand with Gravel, very pale brown (10YR 7/3), well graded fine to very coarse grain subangular sand, <15% small gravel, medium dense, dry @ 270' color change to yellowish brown (10YR 5/6) as moisture increases		
	270		SW			
	275					
	280			280' - 289' Sand with Gravel, yellowish brown (10YR 5/6), well graded sand, >15% small to large rounded gravel, dense, saturated		
	285		SW			
	290		ML	289' - 292' FGZ Siltstone, light reddish brown (5YR 6/4), sandy with caliche nodules, hard, dry		
	295			Borehole Total Depth 292' bgs		

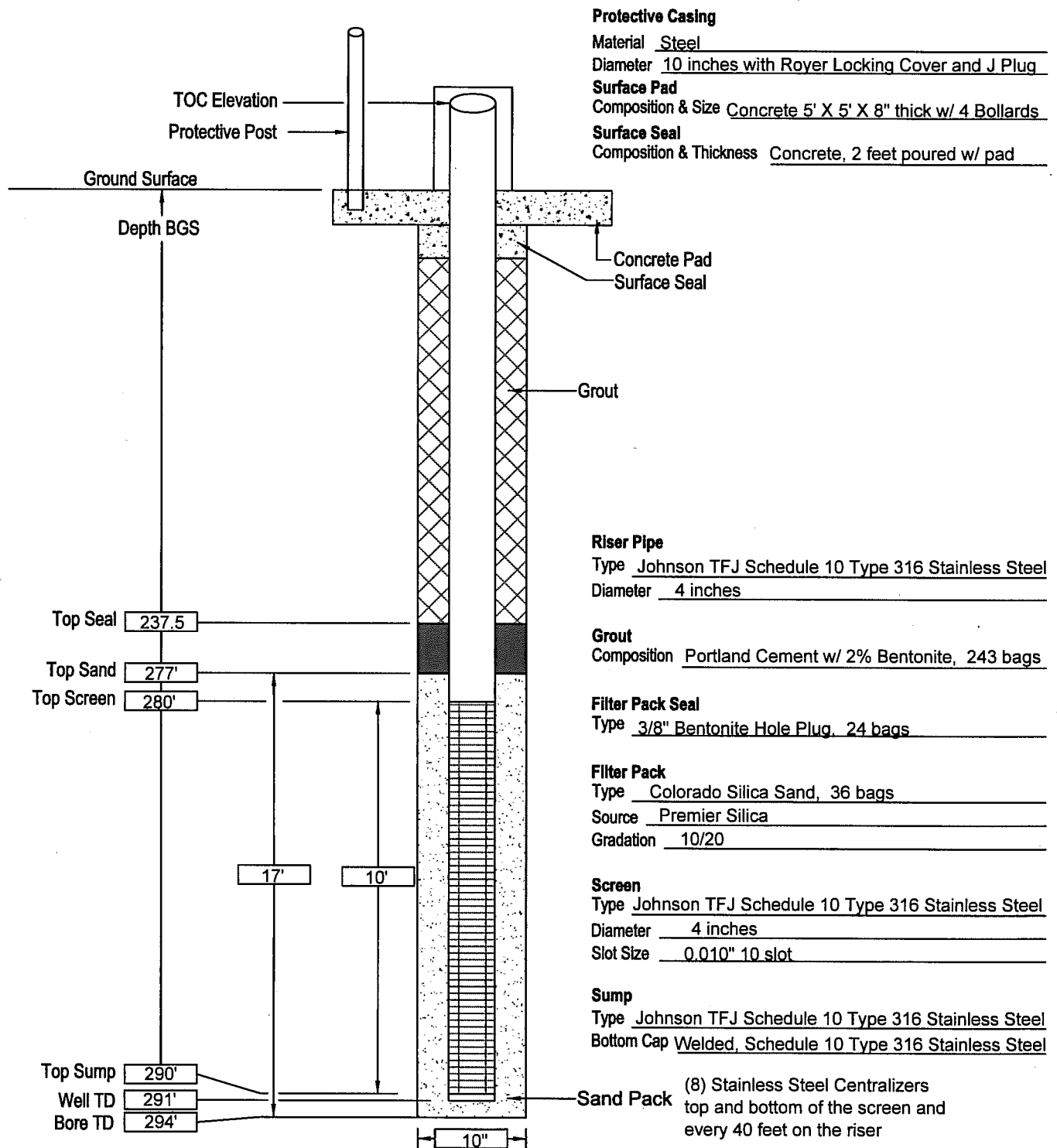
PTX06-ISB127
 Triaxial Permeability
 ASTM D5084
 6.3E-08 cm/sec

Well Installation Diagram

Project: BOA 70 Release 5
 Location: Southeast ISB Extension Well Field
 Contractor: Stoller Newport News Nuclear
 Driller: Cascade
 Well Coordinates: 3751229.17 N 648879.71 E
 TOC Elevation: 3517.11 ft AMSL
 Surface Elevation: 3515.08 ft AMSL

Well No: PTX06-ISB128
 Well Type: ISB Injection
 Date Constructed: 10/22/2017 to 10/24/2017
 Observed By: R Rupp

Sheet 1 of 1



PTX06-ISB128

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 466089	Northing: 3751229.17 Easting: 648879.71
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 294 ft bgs TD Well: 291 ft bgs
Dates Drilled: 10/22/17 Date Completed: 10/24/17	Depth to Water: 280.45 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3515.08 ft amsl	Top of Casing Elevation: 3517.11 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	5		CL	0' - 5' Lean Clay, dark reddish brown (5YR 3/3), plastic, cohesive, stiff, moist to wet		
	10		ML	5' - 30' Silt, yellowish red (5YR 5/6), <10% very fine sand and round caliche nodules to 2-mm, low plasticity, cohesive, medium stiff, moist		
	30			30' - 36' Silt, yellowish red (5YR 5/8), low plasticity, non-cohesive, trace very fine sand, medium stiff, moist		
	40			36' - 45' Caliche Silt with Sand, pink (5YR 7/3 - 8/3) to light reddish brown (5YR 6/4), hard caliche fragments from 36' to 40', sandy silt 40' to 45'		
	45		SM	45' - 65' Silty Sand, yellowish red (5YR 5/8), >15% silt, medium dense, damp		
	65			65' - 75' Sand, reddish yellow (5YR 6/6), very fine to fine grain, poorly graded, sub-rounded, loose, moist		
	75		SM-ML	75' - 95' Sand and Silt, reddish brown (5YR 5/3), 50/50 fine grain sand and silt, medium dense, moist		
	95			95' - 100' Silty Sand, light reddish brown (5YR 6/4), very fine to fine grain silty sand, loose, dry		

PTX06-ISB128

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 466089	Northing: 3751229.17 Easting: 648879.71
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 294 ft bgs TD Well: 291 ft bgs
Dates Drilled: 10/22/17 Date Completed: 10/24/17	Depth to Water: 280.45 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3515.08 ft amsl	Top of Casing Elevation: 3517.11 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	105		ML	100' - 105' Silt with Sand, light reddish brown (5YR 6/4), soft, dry		
	110		SM	105' - 120' Silty Sand, reddish brown (5YR 5/3), fine grain sand, >15% silt, medium dense, dry		
	120		SP	120' - 145' Sand, reddish yellow (7.5YR 6/6), very fine to fine grain, sub-rounded, loose, dry		
	145		SP	145' - 185' Sand, light brown (7.5YR 6/4), very fine to fine grain sand, trace silt, loose, dry		
	185		SP	185' - 200' Sand, brown (7.5YR 5/4), fine grain, sub-rounded, loose, dry		

PTX06-ISB128

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 466089	Northing: 3751229.17 Easting: 648879.71
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 294 ft bgs TD Well: 291 ft bgs
Dates Drilled: 10/22/17 Date Completed: 10/24/17	Depth to Water: 280.45 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3515.08 ft amsl	Top of Casing Elevation: 3517.11 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	205		SP	200' - 215' Sand, brown (7.5YR 5/4), mostly fine grain, some medium grain sand, trace silt, loose to medium dense, moist		
	215		SP	215' - 235' Sand, very pale brown (10YR 7/4), medium grain, poorly graded, sub-angular to sub-rounded, loose to medium dense, moist to 220' with <5% rounded sandstone nodules		
	235		SP	235' - 250' Sand, yellowish brown (10YR 5/6), fine to medium grain, poorly graded, sub-rounded, medium dense, moist		
	250		GP	250' - 263' Gravel with Sand, pale brown (10YR 6/3), poorly graded pea gravel with fine to very coarse rounded sand, hard		
	263		SW	263' - 270' Sand with Gravel, pale brown to light yellowish brown (10YR 6/3 - 6/4), fine to very coarse grain, well graded sand, with 15% pea gravel		
	270		GW	270' - 275' Gravel with Sand, pale brown (10YR 6/3), small to large rounded gravel with well graded sand, hard, dry		
	275		SW	Sand, light yellowish brown (10YR 6/4), fine to very coarse grain, well graded, sub-rounded, medium dense, moist at 277', saturated by 285'		
	290		ML	290' - 294' FGZ Siltstone, pink to light reddish brown (5YR 7/3 - 6/3), fine sand and caliche granules, hard, dry		
	295			Borehole Total Depth 294' bgs		

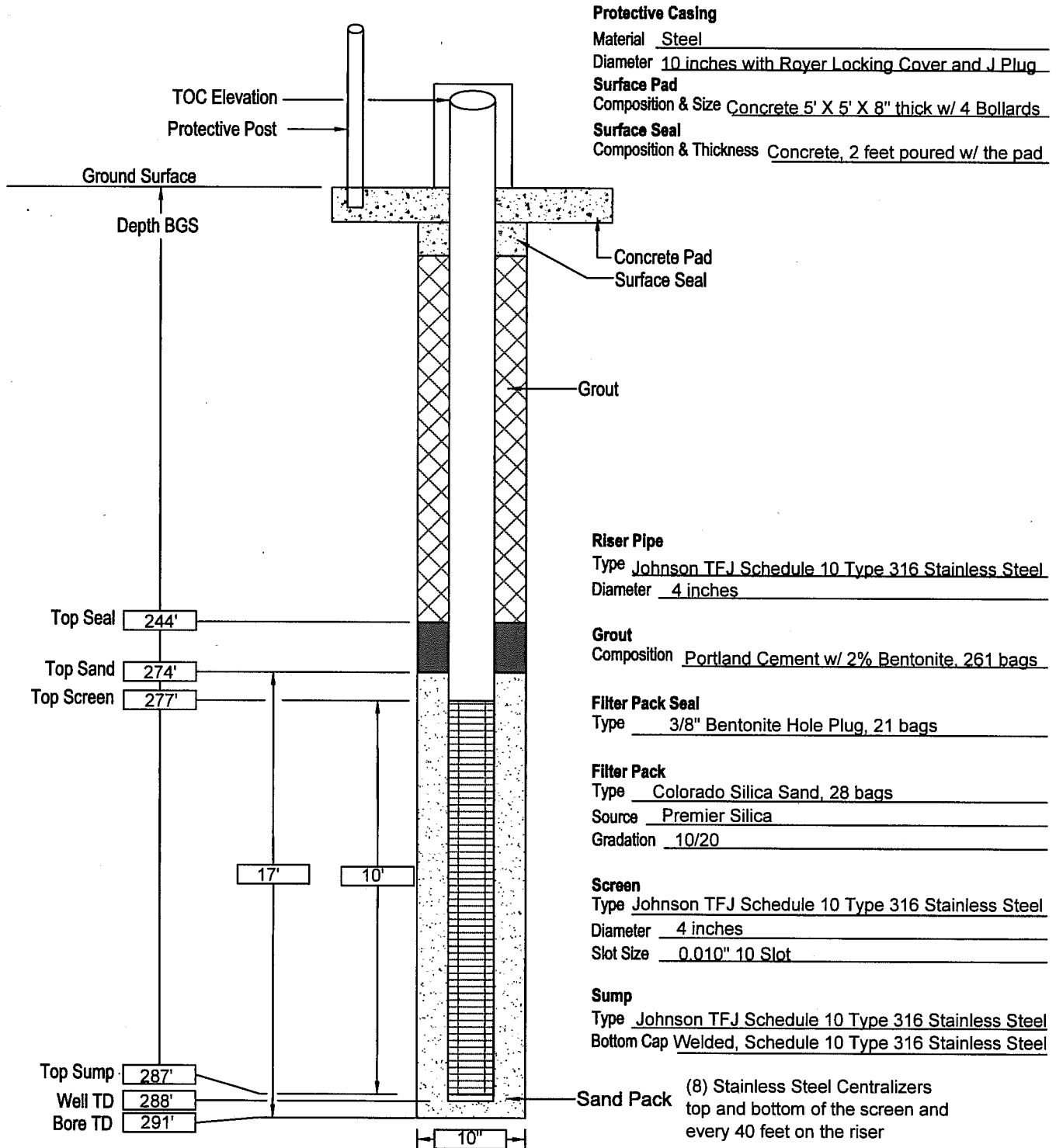
PTX06-ISB128
Triaxial Permeability
ASTM D5084
1.8E-07 cm/sec

Well Installation Diagram

Project: BOA 70 Release 5
 Location: Southeast ISB Extension Well Field
 Contractor: Stoller Newport News Nuclear
 Driller: Cascade
 Well Coordinates: 3751255.41 N 648950.08 E
 TOC Elevation: 3517.13 ft AMSL
 Surface Elevation: 3515.12 ft AMSL

Well No: PTX06-ISB129
 Well Type: ISB Injection
 Date Constructed: 11/15/2017
 Observed By: R Dickerson

Sheet 1 of 1



PTX06-ISB129

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Dickerson Texas Well Report No.: 466191	Northing: 3751255.41 Easting: 648950.08
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 291 ft bgs TD Well: 288 ft bgs
Dates Drilled: 11/14/17 Date Completed: 11/15/17	Depth to Water: 278.35 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3515.12 ft amsl	Top of Casing Elevation: 3517.13 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	0		CL	0' - 3' Silty Clay Loam, weak red (10R 4/2), high plasticity, damp		
	3		CL	3' - 10' Lean Clay, weak red (10R 4/2), high plasticity		
	10		ML	10' - 20' Clayey Silt, weak red (10R 5/4), w/ very minor very fine sand, nonplastic, dry		
	20		CL	20' - 35' Silty Clay, light red (10R 6/6), low plasticity, dry, some very small caliche nodules <2mm		
	35		ML	35' - 40' Clayey & Sandy Silt, light red (10R 6/6), w/ very fine grain sand, dry, some well indurated lenses, w/ some caliche		
	40		ML	40' - 50' Sandy Silt, red (10R 4/6), w/ very fine grain sand, dry		
	50		ML	50' - 60' Sandy Silt, red (10R 4/6), w/ very fine grain sand, interbedded with layers of calcrete, pinkish white (10R 8/2)		
	60		SP	60' - 65' Sand, light red (10YR 6/6), very fine grain, with minor silt and clay, poorly graded		
	65		SM	65' - 70' Sandy Silt, pale red (10R 7/4), silt w/ very fine grain sand, dry		
	70		CL	70' - 75' Silty Clay, weak red (10R 5/4), dry		
	75		ML	75' - 80' Silt, weak red (10R 5/4), dry		
	80		CL	80' - 90' Lean Clay, weak red (10R 5/4), low plasticity		
	90		SP	90' - 100' Sand, very pale brown (10YR 7/4), very fine grain, w/ minor silt and clay, dry		

PTX06-ISB129

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Dickerson Texas Well Report No.: 466191	Northing: 3751255.41 Easting: 648950.08
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 291 ft bgs TD Well: 288 ft bgs
Dates Drilled: 11/14/17 Date Completed: 11/15/17	Depth to Water: 278.35 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3515.12 ft amsl	Top of Casing Elevation: 3517.13 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	105		SP	100' - 110' Sand, pale red (10R 7/4), very fine grain, very well indurated and hard, w/ minor friable layers		
	110		SP	110' - 115' Sand, pale red (10R 7/4), very fine grain (eolian), very poorly graded, friable		
	115		ML	115' - 120', Silt, pale red (10R 7/4), eolian, friable to well indurated, dry		
	120			120' - 140' Sand, very pale brown (10YR 7/4), very fine grain, very poorly graded (eolian), dry		
	125					
	130		SP			
	135					
	140			140' - 170' Sand, very pale brown (10YR 7/4 to 8/2), very fine grain, very poorly graded, eolian, dry		
	145					
	150					
	155		SP			
	160					
	165					
	170			170' - 205' Sand, very pale brown (10YR 7/4 to 8/2), very fine grain, very poorly graded, mostly very friable but with some interbedded well indurated zones, dry		
	175					
	180					
	185		SP			
	190					
	195					

PTX06-ISB129

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Dickerson Texas Well Report No.: 466191	Northing: 3751255.41 Easting: 648950.08
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 291 ft bgs TD Well: 288 ft bgs
Dates Drilled: 11/14/17 Date Completed: 11/15/17	Depth to Water: 278.35 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3515.12 ft amsl	Top of Casing Elevation: 3517.13 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	205		SP			
	210		GW	205' - 210' Sandy Gravel, light grey (10YR 7/2), fine to medium gravel with fine to coarse sand, well graded, dry		
	215		SP	210' - 215' Sand, very pale brown (10YR 7/4), fine to medium grain, poorly graded, dry		
	220		SW	215' - 220' Gravelly Sand, very pale brown (10YR 7/4), fine to medium sand with small gravel, well graded, dry		
	225		SP	220' - 225' Sand, very pale brown (10YR 7/4), fine grain, poorly graded, mostly friable with a few hard layers, dry		
	230		SW	225' - 230' Gravelly Sand, very pale brown (10YR 7/4), fine to medium grain sand & fine gravel, moderately graded, dry		
	235		SP	230' - 240' Sand, very pale brown (10YR 7/4), fine grain, poorly graded, mostly friable but with minor well indurated layers, slightly damp		
	240		SC	240' - 245' Sand with Clay, brownish yellow (10YR 6/6), fine to coarse graded sand, some interbedded clay, damp		
	245		GW	245' - 250' Sandy Gravel, very pale brown (10YR 7/4), fine to coarse gravel w/ fine to coarse sand, well graded, dry		
	250		SP	250' - 258' Sand, very pale brown (10YR 7/4), fine to medium grain, poorly graded, dry		
	255		SP			
	260		GW	258' - 262' Gravel, very pale brown (10YR 7/4), well graded gravel with very coarse sand, dry		
	265		SW	262' - 268' Sand, very pale brown (10YR 7/4), well graded sand, some interbedded lean clay and pea gravel, dry		
	270		GP	268' - 271' Pea Gravel, moderately graded, dry		
	275		SW	271' - 275' Sand, very pale brown (10YR 7/4), well graded, some gravel, dry		
	280		GW	275' - 280' Gravel, very pale brown (10YR 7/4), well graded gravel and sand, minor clay, slightly damp		
	285		SW	280' - 287' Gravelly Sand, light brownish grey (10YR 6/2), interbedded sand and gravel, well graded, wet		
	290		ML	287' - 291' FGZ Siltstone, very pale brown (10YR 7/4), silt		
	295			Borehole Total Depth 291' bgs		

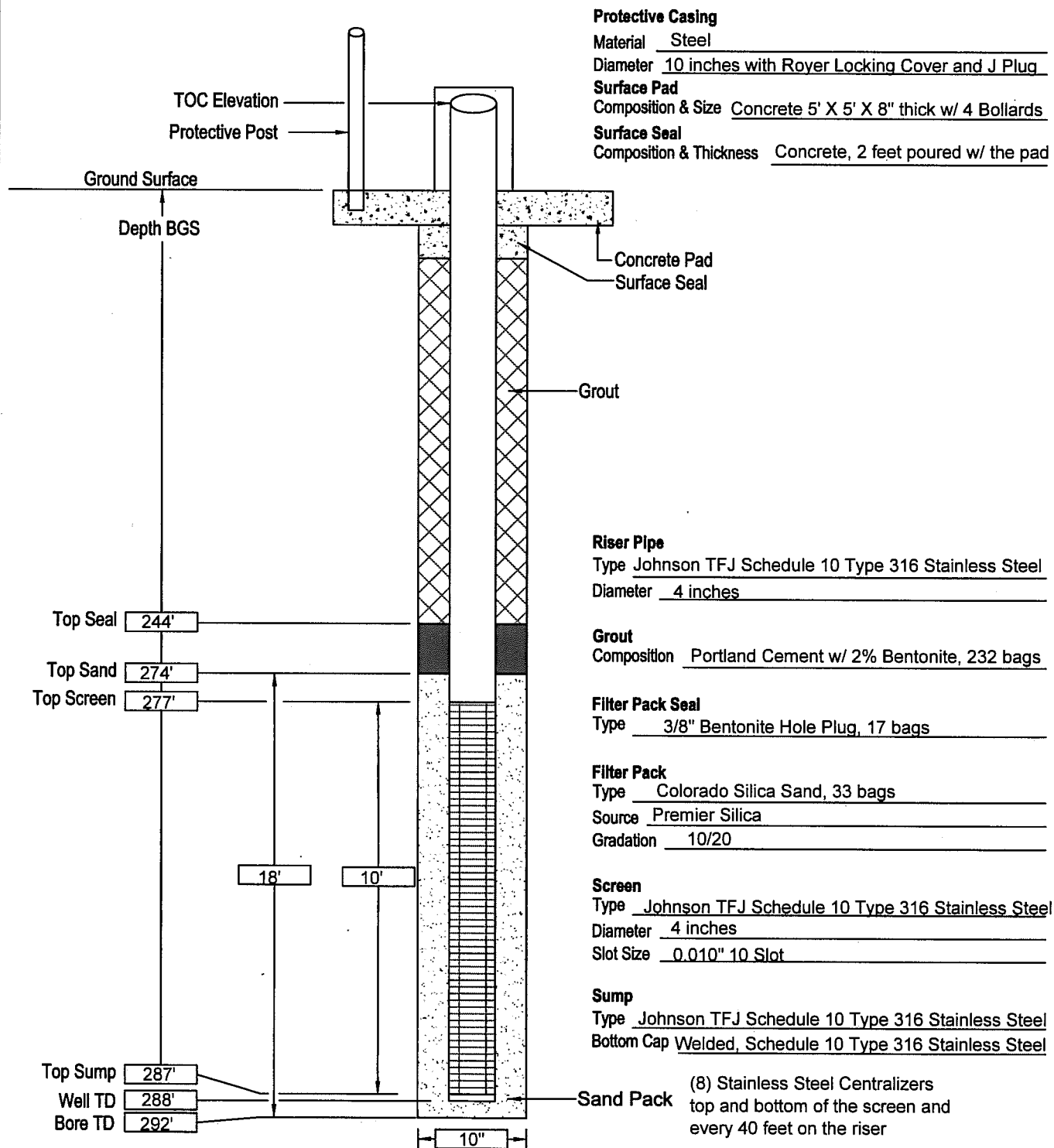
PTX06-ISB129
Triaxial Permeability
ASTM D5084
3.0E-07 cm/sec

Well Installation Diagram

Project: BOA 70 Release 5
 Location: Southeast ISB Extension Well Field
 Contractor: Stoller Newport News Nuclear
 Driller: Cascade
 Well Coordinates: 3751282.05 N 649020.47 E
 TOC Elevation: 3517.28 ft AMSL
 Surface Elevation: 3515.23 ft AMSL

Well No: PTX06-ISB130
 Well Type: ISB Injection
 Date Constructed: 11/13/2017
 Observed By: R Dickerson

Sheet 1 of 1



PTX06-ISB130

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Dickerson Texas Well Report No.: 466196	Northing: 3751282.05 Easting: 649020.47
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 292 ft bgs TD Well: 288 ft bgs
Dates Drilled: 11/13/17 Date Completed: 11/13/17	Depth to Water: 280.50 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3515.23 ft amsl	Top of Casing Elevation: 3517.28 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	5		CL	0' - 3' Silty Clay Loam, weak red (10R 4/2), lean clay, moderate plasticity		
	10		CL	3' - 10' Silty Lean Clay, weak red (10R 4/2), low plasticity		
	15		CL	10' - 20' Silty Lean Clay, pale red (10R 7/4), low plasticity		
	20		CL	20' - 40' Silty Lean Clay to Clayey Silt, pale to light red (10R 7/4 to 6/6), low plasticity		
	30		CL			
	35		CL			
	40		ML	40' - 45', Caliche Silt, pinkish white (10R 8/2), hard, dry		
	45		CL	45' - 60' Silty Clay to Clayey Silt, pale to light red (10R 7/4 to 6/6), low plasticity, dry, with some caliche nodules		
	50		CL			
	55		CL			
	60		ML	60' - 70' Silt w/ minor clay, pale to light red (10R 7/4 to 6/6), slightly damp		
	65		ML			
	70		CL	70' - 75' Silty, Sandy Clay, light red (10R 6/6), dry		
	75		CL			
	75		ML	75' - 80' Clayey Silt, light red (10R 6/6), nonplastic, dry,		
	80		ML			
	80		CL	80' - 100' Clay and Silty Clay, pale red (10R 7/4), dry, minor caliche nodules, minor manganese oxide staining		
	85		CL			
	90		CL			
	95		CL			

PTX06-ISB130

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Dickerson Texas Well Report No.: 466196	Northing: 3751282.05 Easting: 649020.47
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 292 ft bgs TD Well: 288 ft bgs
Dates Drilled: 11/13/17 Date Completed: 11/13/17	Depth to Water: 280.50 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3515.23 ft amsl	Top of Casing Elevation: 3517.28 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	105		ML	100' - 120' Silt, pale red (10R 7/4), eolian, dry, mostly friable (loose), but w/ local interbedded well-cemented zones		
	110					
	115					
	120					
	125		SP	120' - 150' Sand, very pale brown (10YR 7/4), very fine grain (eolian), very poorly graded, dry, friable (loose) with minor well cemented layers		
	130					
	135					
	140					
	145					
	150		SP	150' - 160' Sand, pinkish white, (10R 8/2), very fine grain (eolian), very poorly graded, dry, friable		
	155					
	160					
	165		SP	160' - 205' Sand, very pale brown (10YR 7/4), very fine grain, very poorly graded, dry		
	170					
	175					
	180					
	185					
	190					
	195					






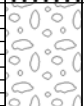

PTX06-ISB130

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Dickerson Texas Well Report No.: 466196	Northing: 3751282.05 Easting: 649020.47
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 292 ft bgs TD Well: 288 ft bgs
Dates Drilled: 11/13/17 Date Completed: 11/13/17	Depth to Water: 280.50 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3515.23 ft amsl	Top of Casing Elevation: 3517.28 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	205		SP			
	210		GW	205' - 220' Gravel, very pale brown (10YR 7/4), fine to coarse grain, well graded, dry, w/ minor interbedded fine sand		
	220		SP	220' -240' Sand, very pale brown (10YR 7/4), fine grain (eolian), poorly graded		
	240		SC	240' - 245' Clayey Sand, very pale brown (10YR 7/4), fine grain, w/ interbedded fine to coarse gravel, well graded		
	250		SW	245' - 255' Sand, very pale brown (10YR 7/4), fine to coarse grain, w/ minor interbedded fine to coarse gravel, well graded		
	260		GW	255' - 260' Gravel, very pale brown (10YR 8/2), fine to coarse, w/ some interbedded sand, well graded, dry		
	265		SW	260' - 265' Sand, very pale brown (10YR 7/4), fine to coarse grain, well graded, damp		
	275		GW	265' - 288' Sandy Gravel, very pale brown (10YR 7/4), fine to coarse gravel with interbedded fine to coarse sand, well graded, damp		
	290		ML	287' - 292' FGZ, Siltstone, very pale brown (10YR 7/4), hard		
	295			Borehole Total Depth 292' bgs		

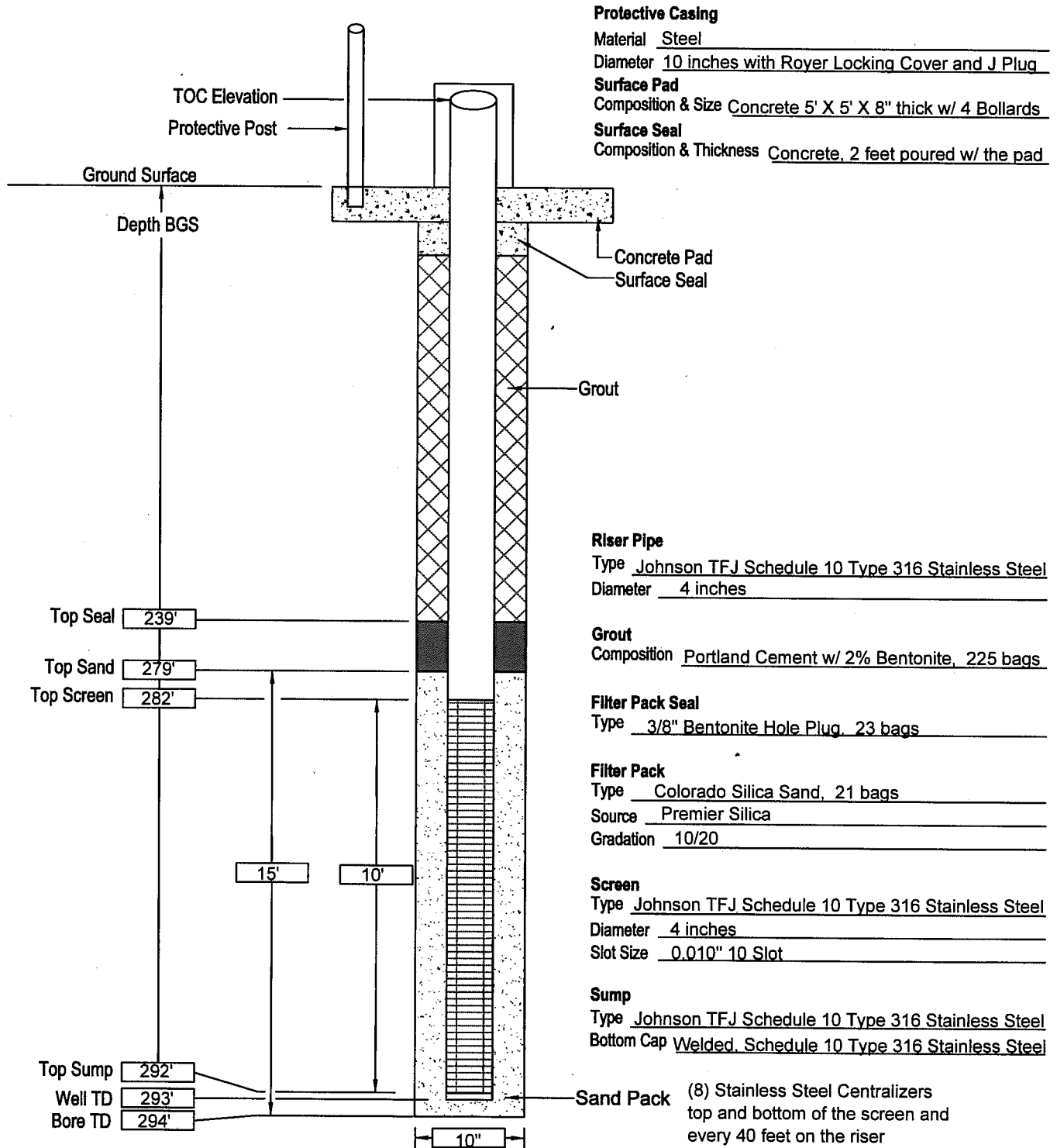
PTX06-ISB130
 Triaxial Permeability
 ASTM D5084
 1.0E-07 cm/sec

Well Installation Diagram

Project: BOA 70 Release 5
 Location: Southeast ISB Extension Well Field
 Contractor: Stoller Newport News Nuclear
 Driller: Cascade
 Well Coordinates: 3751308.18 N 649090.64 E
 TOC Elevation: 3517.20 ft AMSL
 Surface Elevation: 3515.20 ft AMSL

Well No: PTX06-ISB131
 Well Type: ISB Injection
 Date Constructed: 10/26/2017 to 11/01/2017
 Observed By: R Rupp

Sheet 1 of 1



PTX06-ISB131

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 466090	Northing: 3751308.18 Easting: 649090.64
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 294 ft bgs TD Well: 293 ft bgs
Dates Drilled: 10/25/17 Date Completed: 11/01/17	Depth to Water: 280.50 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3515.20 ft amsl	Top of Casing Elevation: 3517.20 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	0			0' - 5' Silty Clay Loam, dark reddish brown (5YR 3/3), plastic, cohesive, stiff to very stiff, moist		
	5			5' - 37' Silt with Clay and Caliche, reddish brown (5YR 5/4) to pink (5YR 7/4), <10% fine grain sand, medium dense, dry		
	10					
	15					
	20		ML	@ 15' - 30' 40% caliche, with broken fragments to 1-cm		
	25					
	30					
	35					
	40		ML	37' - 42' Caliche Silt, pink (5YR 8/3) to white (5YR 8/1), hard angular caliche cuttings to 4-cm, dry		
	45			42' - 55' Silty Sand, reddish yellow (5YR 6/8), fine grain rounded sand, >15% silt, medium dense, dry		
	50		SM			
	55			55' - 72' Sand, reddish yellow (5YR 6/8), fine grain, poorly graded, 10% silt, medium dense, dry		
	60			@ 60' some caliche fragments to 2-cm		
	65		SP			
	70					
	75			72' - 85' Sand, yellowish red (5YR 5/8), fine grain, poorly graded, <5% silt, medium dense, dry		
	80		SP	@ 80' some caliche		
	85					
	90		CL	85' - 95' Lean Clay, reddish brown (5YR 5/4), plastic, cohesive, very stiff, moist		
	95					
			SM	95' - 110' Silty Sand, reddish yellow (7.5YR 6/6), >15% caliche silt, medium dense, dry		

PTX06-ISB131

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 466090	Northing: 3751308.18 Easting: 649090.64
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 294 ft bgs TD Well: 293 ft bgs
Dates Drilled: 10/25/17 Date Completed: 11/01/17	Depth to Water: 280.50 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3515.20 ft amsl	Top of Casing Elevation: 3517.20 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	105		SM			
	110			110' - 125' Sand, reddish yellow (7.5YR 7/6), very fine to fine grain, poorly graded, sub-rounded, loose, dry		
	115		SP			
	120					
	125			125' - 155' Sand, reddish yellow (7.5YR 6/6), very fine to fine grain, poorly graded, sub-rounded to rounded, loose, dry		
	130					
	135					
	140		SP			
	145					
	150					
	155			155' - 165' Sand, light brown (7.5YR 6/4), very fine to fine grain, poorly graded, very dense sandstone with rounded nodes to 2-cm		
	160		SP			
	165			165' - 180' Sand, reddish yellow (7.5YR 6/6), very fine to fine grain, poorly graded, loose, dry		
	170		SP			
	175					
	180		SP	180' - 185' Sand, reddish yellow (7.5YR 6/6), fine grain, poorly graded, sub-rounded, loose, dry		
	185			185' - 215' Sand, lght brown to reddish yellow (7.5YR 6/4 - 6/6), fine grain, poorly graded, loose, dry		
	190					
	195		SP			
	200					

PTX06-ISB131

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 466090	Northing: 3751308.18 Easting: 649090.64
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 294 ft bgs TD Well: 293 ft bgs
Dates Drilled: 10/25/17 Date Completed: 11/01/17	Depth to Water: 280.50 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3515.20 ft amsl	Top of Casing Elevation: 3517.20 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	205		SP			
	210					
	215					
	220		SP	215' - 225' Sand, light brown (7.5YR 6/3), fine grain (some medium grain), sub-rounded to sub-angular, with small gravel and dense cemented sandstone nodules		
	225					
	230		SP	225' - 235' Sand, light yellowish brown (10YR 6/4), fine to medium grain rounded quartz sand, poorly graded, medium dense, dry		
	235					
	240		SP	235' - 245' Sand, yellowish brown (10YR 5/6), poorly graded quartz sand, medium dense		
	245					
	250		SW	245' - 250' Gravelly Sand, light yellowish brown (10YR 6/4), well graded sand, <15% large gravel, dense, dry		
	255		GP	250' - 255' Sandy Gravel, yellowish brown (10YR 5/4), small pea gravel with sand, poorly graded, very dense, dry		
	260		SW	255' - 260' Sand with Gravel, pale brown to light yellowish brown (10YR 6/3 - 6/4), fine to very coarse grain sub-angular sand, 15 - 20% small gravel, dense		
	265		GP	260' - 265' Gravel with Sand, yellowish brown (10YR 5/6), small to medium rounded and flattened gravel, very dense, dry		
	270					
	275					
	280		SW	265' - 292' Sand with Gravel, yellowish brown (10YR 5/4 - 5/8), well graded sand with 15% gravel, dense, moist @ 277', saturated at 283'		
	285					
	290					
	295		ML	292' - 294' FGZ Sandy Siltstone, light reddish brown (5YR 6/4), fine grain sand and round 1 to 3-mm caliche nodes, stiff to hard and dry with depth		
	300			Borehole Total Depth 294' bgs		

PTX06-ISB131
Triaxial Permeability
ASTM D5084
3.6E-07 cm/sec

STATE OF TEXAS PLUGGING REPORT for Tracking #168512

Owner: U.S. Department of Energy	Owner Well #: PTX01-1002
Address: PO box 30030 Amarillo, TX 79068	Grid #: 06-44-1
Well Location: Pantex Plant Panhandle TX, TX 79068 West of 2373 North of 60	Latitude: 35° 20' 34.2" N
	Longitude: 101° 35' 34.3" W
Well County: Carson	Elevation: 3540
Well Type: Monitor	

Drilling Information

Company: Lane Western	Date Drilled: 3/17/1994
Driller: No Data	License Number: 3143

	Diameter (in.)	Top Depth (ft.)	Bottom Depth (ft.)
Borehole:	9	9	279.7

Plugging Information

Date Plugged: **5/24/2017** Plugger: **Arnold Lamon**

Plug Method: **Tremmie pipe cement from bottom to top**

Casing Left in Well:

Plug(s) Placed in Well:

Dia (in.)	Top (ft.)	Bottom (ft.)
4	-2	279

Top (ft.)	Bottom (ft.)	Description (number of sacks & material)
0	275	Cement 28 Bags/Sacks

Certification Data: The driller certified that the driller plugged this well (or the well was plugged under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the reports(s) being returned for completion and resubmittal.

Company Information: **Cascade Environmental**
7773 W. Seldon Ln
Peoria, TX 85345

Driller Name: **Arnold Lamon** License Number: **59378**

Comments: **casing was cut 2' below ground surface and filled with cement**

STATE OF TEXAS PLUGGING REPORT for Tracking #168511

Owner: U.S. Department of Energy	Owner Well #: PTX06-inj12a
Address: PO box 30030 Amarillo, TX 79068	Grid #: 06-44-5
Well Location: Pantex Plant Panhandle TX, TX 79068	Latitude: 35° 18' 21" N
west of 2373 north of 60	Longitude: 101° 33' 06.4" W
Well County: Carson	Elevation: 3540
Well Type: Injection	

Drilling Information

Company: WDC exploration and wells	Date Drilled: 1/16/2008
Driller: William B. Bludworth	License Number: 4885

	Diameter (in.)	Top Depth (ft.)	Bottom Depth (ft.)
Borehole:	12	12	12

Plugging Information

Date Plugged: **5/24/2017** Plugger: **Arnold Lamon**

Plug Method: **Tremmie pipe cement from bottom to top**

Casing Left in Well:

Plug(s) Placed in Well:

Dia (in.)	Top (ft.)	Bottom (ft.)
6	-2	296

Top (ft.)	Bottom (ft.)	Description (number of sacks & material)
0	268	Cement 43 Bags/Sacks

Certification Data: The driller certified that the driller plugged this well (or the well was plugged under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the reports(s) being returned for completion and resubmittal.

Company Information: **Cascade Environmental**
7773 W. Seldon Ln
Peoria, TX 85345

Driller Name: **Arnold Lamon** License Number: **59378**

Comments: **cut 6" SS casing 2' below ground surface with a 2' cement cap**

STATE OF TEXAS PLUGGING REPORT for Tracking #173867

Owner:	U.S. Dept. of Energy	Owner Well #:	PTX06-PRB16
Address:	P.O. Box 30020 Amarillo, TX 79120	Grid #:	06-44-5
Well Location:	U.S. Hwy 60 and FM 2373 Panhandle, TX 79068	Latitude:	35° 17' 56" N
Well County:	Carson	Longitude:	101° 32' 51" W
		Elevation:	3534

Well Type: **PRB Injection**

Drilling Information

Company: WDC Exploration and Wells	Date Drilled: 8/30/2006
Driller: George F Sheehan	License Number: 1399

Well Report Tracking #91955

	Diameter (in.)	Top Depth (ft.)	Bottom Depth (ft.)
Borehole:	12	0	310

Plugging Information

Date Plugged: **12/14/2017** Plugger: **William B. Bludworth**

Plug Method: **Tremmie pipe cement from bottom to top**

Casing Left in Well:

Dia (in.)	Top (ft.)	Bottom (ft.)
4	17	278.5

Plug(s) Placed in Well:

Top (ft.)	Bottom (ft.)	Description (number of sacks & material)
0	2	Backfill/ Topsoil 1 Yards
2	278.5	Cement 64 Bags/Sacks

Certification Data: The driller certified that the driller plugged this well (or the well was plugged under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the reports(s) being returned for completion and resubmittal.

Appendix H
Implementation and Maintenance
Reports for Remedial Actions

List of Reports

SWMU 2 and 5/5 – Ditch Liner Replacement Zone 12. Pantex Plant, Amarillo, Texas. April 2017.

Closure Turf Installation at Landfill 2 (SWMU 68c) Closeout Report. March 2017.

Implementation Report Perched Aquifer Investigation Southeast of Pantex Plant September 2017 – February 2018. March 2018.



SWMU 2 & DITCH 5/5 – DITCH LINER REPLACEMENT

ZONE 12

PANTEX PLANT, AMARILLO, TEXAS

CONSOLIDATED NUCLEAR SECURITY

PURCHASE ORDER NO. 61032

April 13, 2017

Project #: 18A-017-001

SUBMITTED BY: Trihydro Corporation

712 S. Milam Street, Amarillo, TX 79106

ENGINEERING SOLUTIONS. ADVANCING BUSINESS.

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- C. DAILY TRIAL WELD TRACKING LOG
- D. DAILY FIELD LOG
- E. DAILY TAILGATE SAFETY BRIEFINGS

List of Acronyms

AHA	Activity Hazard Analysis
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CLI	Colorado Lining International
CP	Compliance Plan
CSPE	Chlorosulfonate Polyethylene
CW	Chill Water
CWMP	Contractor Waste Management Plan
DOE	Department of Energy
DW	Domestic Water
EPDM	Ethylene Propylene Diene Monomer
FA	Fire Alarm
FM	Farm to Market
HASP	Health and Safety Plan
HPFL	High Pressure Fire Loop
LOTO	Lock Out Tag Out
PPI	Pounds per Inch
PSTR	Project Subcontract Technical Representative
S	Sewage
SOW	Statement of Work
SSO	Site Safety Officer
SWMU	Solid Waste Management Unit
TTU	Texas Tech University
WP	Work Plan

1.0 INTRODUCTION

This report documents the methods and results of Solid Waste Management Unit (SWMU) 2 & 5/5 Ditch (ditch) liner replacement activities performed from December 2016 to March 2017. These activities were performed on behalf of Consolidated Nuclear Security, LLC (Pantex) by Trihydro Corporation (Trihydro) under Purchase Order #61032. Portions of the work were subcontracted to other specialty contractors including:

- Talon LPE (Talon) for sediment removal and excavation activities.
- Colorado Lining Inc. (CLI) for placement of new liner.
- Duke for electrical communication wire replacement.
- Davis Geomatics for surveying.

1.1 SITE HISTORY AND LOCATION

The Pantex Plant is located in the Texas Panhandle in Carson County, approximately 17 miles (27 kilometers) northeast of Amarillo. The facility encompasses approximately 10,600 acres of land owned by the Department of Energy (DOE). Industrial operations are conducted on approximately 2,500 acres, most of which is within Zones 11 and 12. The portion of the facility operated by the DOE is used for office buildings, warehouses, laboratories, and testing and production facilities. Approximately 5,800 acres of land to the south of the Plant are part of the former Pantex Ordinance Plant and owned by Texas Tech University (TTU). The Plant is bordered on the east by Texas Farm-to-Market Road (FM) 2373, on the west by FM 683, and on the north by FM 293. The southern Pantex Plant Boundary is located approximately 1 mile (1.6 kilometers) north of U.S. Highway 60.

1.2 PROJECT DESCRIPTION AND EXISTING CONDITIONS

The purpose of this project was to enhance the existing SWMU 2 & 5/5 Ditch liner, by placing a new liner over the existing liner and anchor system. The new liner material is a 45-millimeter Chlorosulfonate Polyethylene (CSPE), commonly referred to as Hypalon, was selected to meet the original objective of the corrective action which is to prevent surface water from migrating through the ditch to maintain compliance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Record of Decision and the Compliance Plan (CP-50284). The ditch which received the replacement liner is approximately 850 feet long and up to 30 feet wide and is located within a secured area of the Plant in Zone 12 South.

The existing liner was in in fair condition, however several areas appeared to be affected by degradation of the liner potentially due to the exposure to sunlight. The connection points for attachment of the liner to culverts and concrete

headwall structures were in good condition, however the liner was not physically attached to the backs of the concrete headwall structures. There was some erosion of soils along the back of the headwall structures which may have been at least partially attributed to the liner not being attached. It was also noted that there were several bolts that were loose that anchored the existing liner to the concrete structures. This may have been a point of future failure of the liner at these locations.

The existing anchor trench appeared to be appropriately backfilled and provided positive drainage of the area to the ditch. It was noted that the existing anchor trench was constructed one foot deep by two feet wide.

There are four roads crossing the ditch, these roads were marginally covered with asphalt or gravel. The remainder of the area immediately adjacent to the ditch was either vegetated or covered in gravel where adjacent to site access roads.

1.3 PROJECT SCOPE

The project was completed in accordance with the Statement of Work (SOW) provided by Pantex, titled SWMU 2 & 5/5 Ditch Liner Replacement and Maintenance, dated January 19, 2016. The SOW detailed the material to be used to reline the ditch in addition to the removal of sediment from the ditch, installation of an anchor trench to secure the new liner and the installation of an anchor system. The design was provided by others and referenced in documents provided by Pantex, these consisted of; Zone 12 Interim Corrective Measures Final Implementation Report for Solid Waste Management Units 2 and 5/5, September 2004 and Final Repair and Maintenance Report SWMU 2 & 5/5 Ditch Liner Repair and Cleanout, September 2011.

2.0 PROJECT ACTIVITIES

The project activities included, but were not limited to:

- Pre-field work activities, including mobilization, pre-construction meetings, and preparing permits.
- Clearing water, sediment, and other debris from existing ditch liner.
- Anchor trench excavation and potholing utilities.
- Installing a new 45-millimeter Hypalon CSPE liner and flat-plate earth anchors developed by Platipus Earth Anchoring Systems, commonly referred to as Platipus anchors.
- Backfilling of the anchor trench and general site grading.
- Survey of new anchor points, edge of liner, and utilities.
- Reporting and project closeout.

2.1 PROJECT SCHEDULE

The project was awarded on November 14, 2016. Project activities were completed between December 14, 2016 and April 12, 2017. Work elements for the installation of the liner and other construction related activities were completed during the following timelines:

- Planning documents – November 15, 2016 to December 13, 2016.
- Sediment removal – December 15, 2016 to January 10, 2017
- Excavation of anchor trench – January 9, 2017 to February 22, 2017
- Pot Holing of utilities – January 11, 2017 to February 21, 2017
- Installation of liner – February 1, 2017 to March 2, 2017.
- Survey of As-Built conditions – March 9, 2017.
- Final report – March 10, 2017 to April 12, 2017.

2.2 PLANNING DOCUMENTS

After the project was awarded, planning documents were written including a Work Plan (WP), a Health and Safety Plan (HASP), an Activity Hazard Analysis (AHA), Contractor Waste Management Plan (CWMP) and a Traffic Control Plan. A WP was written as a guiding document for the activities completed on site. The HASP presented the

potential hazards on site as well as a reference in case of incident. The AHA was developed to discuss specific activities on site along with required tools and equipment, the potential hazards, and the controls in place to mitigate the hazard. The CWMP provided procedures for identifying and directing waste streams developed over the course of the project.

A traffic control plan was drafted and approved prior to the commencement of work. The plan included direction to keep roads clear during and after working hours, keep excavated areas barricaded with ropes, provide lighted barricades for excavation areas within four feet of improved roads, and specify construction access areas.

2.3 MOBILIZATION

Prior to the commencement of work, mobilization activities were completed involving moving excavation equipment, liner material, vehicles, and personnel on site. In addition, a pre-construction meeting was conducted to review the HASP, fire safety, security, and overall project strategy. The AHA was also reviewed discussing specific hazards for each activity performed on site.

2.4 PERMITS

Several permits were issued and updated to reflect the changes in equipment and work during the course of the project.

An excavation permit was issued and amended several times to include the use of varying equipment, instruction for excavation near utilities, and excavation boundaries. Utilities were identified and marked prior to excavation activities. These utilities were located in the field based on existing drawings, direct trace, and visually between termination points. Trihydro and the Pantex Project Subcontract Technical Representative (PSTR) conducted a site walk down and discussed utility excavation constraints including Lock Out/Tag Out (LOTO) and mechanical excavation limits. In addition, Trihydro and the Pantex PSTR discussed Platipus anchor locations prior to penetrating the existing liner and ground surface.

A lift permit was written and approved by the Pantex PSTR and the Pantex Safety department. The permit called for a “below the tines” lift with a telehandler. The telehandler would then deploy the liner unrolling the material off a center core in a spindle-type action. The lift plan was never enacted however, as the proximity of objects within the SWMU area prevented the proposed deployment action. The telehandler was used to move the panel rolls to a convenient location where it was unrolled by hand.

A hot work permit was required by the Pantex Fire Department to weld the 45-millimeter Hypalon panels, patches, and seams. Two 20 pound fire extinguishers were readily available during welding activities. A dedicated fire watch provided by CLI observed welding operations. The Pantex Fire Department was called prior to welding activities and at the completion of welding, following the 30-minute fire watch period. The Demtech Protech VM20 wedge welder and the Leister Hot Air Tool were operated at approximately 800 degrees Fahrenheit and used to weld the material into an airtight seam. The Hot Work Permit was amended in order to use an abrasive cutting wheel. The wheel was used to cut loose bolts from concrete headwalls. New holes were drilled and stainless steel bolts were installed in order to properly seal the liner to the headwall.

A LOTO was obtained at the request of the utility owner to allow excavation, anchor installation, and backfill of the anchor trench in the vicinity of High Pressure Fire Loop (HPFL) 1 and HPFL 2. These utilities were locked out in accordance to the Pantex procedures and was required due to utility owner concerns of this brittle ductile iron utilities. Trihydro and Talon personnel attended the Pantex LOTO training prior to initiation of the lockout.

2.5 SEDIMENT REMOVAL

The SWMU 2 & 5/5 Ditch was cleared of sediment and debris prior to relining activities. The majority of the material appeared to be material that had been windblown and had settled in the trench. Typically there was approximately 4 inches of water, sediment, and vegetation that was removed using a Ditch Witch brand hydrovac or manual methods. Areas near inlets and outlets and in the eastern-most section of the ditch had much more material ranging from six inches to 24 inches deep.

2.6 ANCHOR TRENCH

An anchor trench approximately 1 ft wide by 2 ft deep was excavated on nearly all sides of each section of the ditch. The anchor trench was used to secure the liner around the outer edge of the ditch. The majority of anchor trench was excavated using the mini-excavator. Excavated material was staged to the outside of the trench and used for backfill once the liner was in place. A hydroexcavator was used in areas near utilities and in areas that could not be accessed by the mini-excavator. Spoils from the hydroexcavator were spread within the limits of the SWMU, in the southwest area of the project site.

2.7 POTHOLING

Existing utilities intersected throughout the work area including chill water supply and return (CW), domestic water supply (DW), HPFL, fire alarm communication cable (FA), and sewer lines (S). In order to ensure the anchor trench

excavation and liner anchor penetrations would not encounter plant utilities, small areas were potholed to expose the utility to identify depth and orientation. Pothole locations and depths of utilities are shown in **Figure 1**.

Utilities were first located by the Pantex utility locate personnel. Methods of utility locating varied depending on the type of utility. Locating methods included direct trace, visual from known termination points, and/or by referencing previous drawings. Each located utility was marked within the permitted excavation boundary. A hydroexcavator was used to remove overburden above each utility that crossed or intersected the excavation of the new anchor trench. The size of the pothole varied depending on depth of the utility and accuracy of the locating methods. The depth and orientation of each utility was recorded by the field supervisor.

2.8 RELINING

Prior to mobilization, CLI prefabricated liner panels based upon historical drawings of the 5/5 Ditch. Raw product was delivered to CLI on a single, 5-foot wide roll. The 16 prefabricated panels used at the SWMU 2 & 5/5 Ditch were derived from this roll, designated 46438. The roll was then cut to length to fit specific sections of the ditch, and welded together to accommodate the width of the ditch. The prefabrication welding was completed using a wedge welder. This wedge welder was used at approximately the same speed and temperature to weld panels together in the field.

Relining the ditch involved several activities such as; surface preparation, deploying the new liner, seal penetrations, and anchoring the liner. The liner was field seamed and patched using a Leister Hot Air Tool and a Demtech Pro-tech VM20 wedge welder. Prior to welding, Klean Strip Xylol, a xylene based cleaner was used to remove dust and prepare the material. Patches were sealed using Burke CSPE High Solids Potable Grade welding solution heated with the Leister Hot Air Tool. Completed seams and patches were tested with an air lance. This procedure is further described in Section 3.3 of this report.

2.8.1 SURFACE PREPARATION

Final preparations were taken to prepare the surface prior to deployment of the new liner. Any debris or water that entered the ditch between the time it was originally cleaned and when the liner was installed was removed.

An area on the south side of the S-shaped trench adjacent to the access road was identified that contained angular gravel. This area was approximately 2 feet wide and 400 feet long. This gravel layer was on average 6 inches thick. Because the new liner is required to be placed on a substrate that is virtually free of rocks that are not larger than one inch in diameter and due to the angularity of this material this area was overlain with a fine grained soil, free of debris,

that was removed from the ditch and then covered with eight ounce geotextile fabric to provide an acceptable substrate.

2.8.2 PANEL DEPLOYMENT

As stated in Section 1.2, the new liner consists of 45-millimeter Hypalon CSPE material. Some sections of the ditch were lined by a single prefabricated panel which did not require any field welds to complete. The liner was initially unrolled along the anchor trench, then unfolded across the width of the ditch. The liner material was then adjusted in place to fit the contours of the ditch. Sand bags were used to secure the liner in place until the anchor trench could be backfilled.

2.8.1 PENETRATIONS

There were several penetrations into the ditch that needed to be incorporated and fit to the liner including; culvert pipes, headwalls structures, and a building foundation. To integrate a culvert and seal into the liner system, a hole was cut to expose the culvert, then a skirt was constructed and fit tight to the culvert. The skirt was then fitted flush to the liner and welded into place. The liner was sealed to the culvert using a strip of butyl formulated by General Sealant which was tightened to create a watertight seal using a Band-It $\frac{3}{4}$ inch stainless steel metal band. Sikaflex A-1 industrial sealant was used to seal the small excess liner outside the band to the culvert.

The liner was physically attached to concrete structures including the headwalls and the 12-83 building foundation to seal the liner to the concrete structure. Similar to culvert pipe connections, butyl was used to create the seal between the concrete and the liner. A strip of ethylene propylene diene monomer (EPDM) rubber gasket was placed over the liner followed by a flat, stainless steel bar. The bar was then tightened down by stainless steel bolts that were anchored in the concrete structure, pressing the butyl creating a watertight seal. Industrial sealant was again used to seal the excess liner to the concrete. While some bolts were used from the existing liner installation, some were cut off and replaced.

2.8.2 ANCHOR SYSTEM

Platipus anchors were installed within the ditch to prevent the liner from lifting during high winds, similar to the previous anchor design. A Platipus anchor consists of a flat metal anchor attached in the middle to a wire, allowing the anchor to be driven approximately 2 feet vertically into the ground and pivot to be set horizontally once installation is complete. The wire is connected to a plastic plate that is tightened flush to the surface of the liner as the anchor is pulled up and set. The anchor is then able to hold the plastic plate, securing the liner to the surface. Excess

wire is then removed from above the plastic plate and a patch is welded to cover and seal the anchor to a water tight finish.

A total of 163 anchors were placed near existing anchors at approximately 5-foot intervals. Locations of the anchors were chosen by the field supervisor to avoid striking utilities. A list of anchor locations is shown in **Table 1**. Anchors were typically located in the bottom of the ditch, however in the eastern-most section, two anchors were installed higher on the side wall to alleviate stress on material held up by bolts along the 12-83 building foundation. In the eastern-most portion of the S-shaped section, there were 10 anchors that were not installed due to the suspect presence of multiple utilities in the area that could not be accurately located. Additional discussion, pertaining to the lack of anchors in the S-shaped is provided in **Section 6.2**.

2.9 ANCHOR TRENCH BACKFILLING

Backfilling was required to secure the liner within the anchor trench. To the extent possible, the trench was returned to the existing grade taking in consideration compaction and surface grading so the area drains into the ditch properly. The majority of backfilling and compaction was completed using a skid steer, however some portions were completed by hand due to the inaccessibility of heavy equipment in these areas. Backfill material was provided by the anchor trench excavation spoils stockpiled on the outside of the trench, soil cleaned from the ditch, and dried material that was removed using the hydroexcavator. Material not used in backfilling was thinly spread within the SWMU.

2.10 SITE SURVEY

A site survey was completed by Davis Geomatics, LLC at the conclusion of the project. The contents of the survey included the edge of the liner, utility locations, and Platipus anchor locations. The results of the survey are shown in **Figure 1** and anchor locations are listed in **Table 1** in both North Texas NAD 83 and latitude/longitude conventions.

3.0 QUALITY ASSURANCE

Quality assurance guidance as described in the project work plan was followed over the course of the project to ensure that material was installed within specifications. This consisted of the following;

- Inspection Points
- Hold Points
- Collection and recording of field data to verify that the liner installation met specified scope.

3.1 INSPECTION AND HOLD POINTS

Three inspection points, discussed in the field with the PSTR, included the following;

1. Initial site conditions inspection: Trihydro and Pantex will walk the site to establish site boundaries and discuss limits of construction at the Ditch. PSTR and Trihydro walked the site and discussed building proximity issues, site access and traffic patterns and reviewed the utilities as marked.
2. Pre-liner installation inspection: Trihydro and Pantex will inspect the cleaned Ditch surface and the anchor ditch prior to installation of the Hypalon liner to verify the surface is free of obstructions that may affect the installation. This inspection point was conducted at the conclusion of the sediment removal phase and also after precipitation events.
3. Final inspection: Trihydro and Pantex will perform a final inspection upon completion of the Liner, including inspection of the backfilled anchor trench. The final inspection was completed prior to demobilization of subcontractors and at the conclusion of the field work.

Five hold points were established for the project. Hold points were verified by the PSTR and approved verbally. These hold points were resolved as follows;

1. Prior to excavating Trihydro and Pantex will walk down the site to verify locations of utilities and concurrence that site has been sufficiently marked out. This was completed upon issuance of the excavation penetration permit and at any point where the location of the utility was other than anticipated from the marked location.
2. Pantex concurrence that welds are tested and repaired if deficiencies are found. Pantex will inspect welds in the field and review inspection reports from Trihydro field staff. Panel welds were clearly marked on the liner in the field and logged into the seam testing data forms.
3. Inspection of anchor spacing and placement in new Hypalon lined trench. The Trihydro supervisor would mark the proposed locations of the anchor and review with the PSTR prior to installing the anchor.
4. Prior to demobilizing earth moving equipment Trihydro and Pantex will inspect site to determine if areas of the site require any grading. The PSTR inspected the site to determine if grading was sufficient prior to demobilization of the earth work contractor.
5. Prior to demobilizing liner contractor Trihydro and Pantex will walk liner and inspect connections to verify liner is acceptable. After the liner was installed and anchored, the PSTR inspected the newly installed liner to ensure the liner was free of punctures, welds were visually intact, and to ensure liner and anchors were installed to specifications. Finally, the site was inspected upon project completion to confirm backfilling was acceptable prior to demobilization of equipment.

3.2 PANEL DEPLOYMENT TRACKING LOG

To line the SWMU 2 & 5/5 Ditch, 16 panels were delivered to the site. As previously mentioned these panels were specifically sized at CLI's shop, accordion folded, and rerolled for transportation and deployment at Pantex. The panels were deployed to specific sections of the ditch per a pre-prepared panel layout schedule. As panels were deployed and welded together, a tracking log was kept to record the placement and dimension of the panels installed. Each panel originated from the same roll of material, designated as roll number 46438 by CLI. A record of the Daily Panel Deployment is shown in **Appendix A**. (Note: Panels were typically rectangular in shape with the exception of panel J1A which was triangular.)

The two western-most sections of the ditch received single panels, A1 and B1 respectively, and therefore did not require any field seam welds. Similarly, the eastern-most section, receiving panel F1 did not require field welds to join multiple panels, however this panel was cut and repaired to fit the section more properly, resulting in weld F1-F1A. Panels were deployed, fitted to the anchor trench, and inlets and outlets incorporated. Panel F1 was cut and seam welded using the wedge welder in order to fit the panel to the shape of that ditch section.

The T-shaped ditch received four sections of material, G1 and E1 which covered the east-west portion, and H1 and H1A which lined the north-south portion.

The section of ditch that is shaped like an S received the following segments from west to east, C1, C1A, I1, I1A, J1, J1A, J1B, D1, and D1A. Multiple sections were necessary to fit curves and short perpendicular sections associated with the S shaped ditch.

3.3 SEAM TESTING

An air lance was used to test all liner welds, whether they were prefabricated in the shop or completed on site. An air lance was set at 60 pound per square inch (PSI), blowing air along seams after the welding was completed at penetrations, patches, and seams of the Hypalon panels. All welds were visually inspected, and a record of the panel testing was generated and is presented in **Appendix B**.

3.4 SHEAR AND PEEL TEST

A Demtech Pro-tech VM20 wedge welder was used to weld Hypalon panels together in the field. On days welding was performed, a fusion test weld was performed at the start of the day. A test segment of material was fusion welded and tested by performing a shear and peel test. The shear and peel values were recorded in pound per inch (ppi) units. The wedge temperature remained constant throughout the project at 800 degrees Fahrenheit, the peel values ranged from 47 to 53 ppi. The shear values ranged from 221 to 237 ppi. Fusion weld temperature and wedge speed, was obtained from the digital readout on the welder, as well as shear and peel results, from material samples are shown in **Appendix C**.

3.5 PROJECT LOG AND TAILGATE MEETING

A daily log was kept that recorded site activities. This daily log has been copied and is attached as **Appendix D**. Pantex form PX-4785, the Contractor Daily Log was submitted on a daily basis throughout the field portion of the project. In addition, a daily tailgate safety briefing was completed each day and is incorporated as **Appendix E** of this report.

4.0 WASTE MANAGEMENT

Working in the SWMU area, precautions were taken to keep potential chemically-impacted material from leaving the site. While no visually contaminated soils were encountered, protective clothing including Tyvek suits and shoe coverings were worn and disposed either to the Pantex landfill, or cleaned before removing from the site. If muddy conditions existed on site, vehicles and equipment were cleaned using a power washer prior to leaving the site.

Waste streams were generated during the relining process in the form of a small amount of Tyvek suits and shoe coverings and scrap Hypalon CSPE material. Tyvek was gathered in a plastic bag and taken to the landfill. Later, this material was cleaned before removing from the site. Hypalon CSPE waste material amounted to approximately six cubic yards. The scrap material was taken to the Pantex landfill for disposal.

5.0 LESSONS LEARNED

This section presents lessons learned associated with various aspects of relining work including those related to chain trencher use, an incident during the excavation of FA-1, and working near HPFL utilities. Each is discussed in the sections that follow.

5.1 CHAIN TRENCHER USE

Previous anchor trench excavation at Landfill 1 was performed with a chain trencher. This same equipment was anticipated to be used for this application. Once excavation commenced it was evident that the slight slope towards the ditch caused the spoils to pile up on the downhill side of the trench, opposite from where excavated material need to be stockpiled. The excavated material was intended to be stockpiled along the outside of the trench in order to install the Hypalon liner on a smooth surface and allow the stockpiled material to be used for backfill of the trench once complete. The chain trencher was taken out of service and the mini-excavator was used to complete the anchor trench.

5.2 EXCAVATION NEAR FIRE ALARM UTILITY STRIKE

On February 6, 2017, Trihydro and our Subcontractor (Talon) were cleaning out a 2 foot deep by 1 foot wide anchor trench around the eastern most segment of the SWMU 2 & 5/5 Ditch. An obstruction was encountered in the anchor trench by the mini excavator that was utilized for cleanout. The crew stopped work and investigated with a hand shovel. It was determined that the obstruction was a PVC conduit (containing multiple wires) and a trace wire. A severed trace wire and damaged conduit were immediately apparent; however, the multiple wires within the conduit did not appear to have suffered damage. An unknown but small (less than five gallons) of water was released from the conduit when it was struck and broken by the excavator. The PSTR was notified. The PSTR, Plant Utility and Maintenance personnel, Electrical Safety, and Plant Utility Locators visited the site and inspected the line to determine the type of utility and extent of damage. It was determined that the lines were a Fire Alarm utility associated with the High Pressure Fire Loop. It was also determined that the wires inside the damaged polyvinyl chloride conduit were intact and undamaged. The Utility Locators verified that the utility line was a known line that had been identified, flagged, and marked prior to the start of liner replacement activities.

The Trihydro project health and safety manger, Mr. Tony Kupilik was mobilized to the site on February 6th to conduct an investigation regarding this incident and to follow through on the incident and accident-reporting requirements as outlined in the HASP.

Corrective action was taken to avoid future excavation incidents. The corrective action, identified through the investigation, prescribed that the Trihydro Site Safety Officer (SSO) implement the following controls moving forward; prior to performing excavation the SSO will walk-down the work area with Pantex personnel and subcontractors. Utilities noted during these walk-downs, along with the controls associated with the utility, will be referenced in the Excavation/Penetration permit. If there are questions regarding the location of utilities, the SSO will notify the PSTR and request that the utilities be remarked. Work in the vicinity of the utility area that is to be remarked will be paused until remarking is completed. The same procedures will be followed for instances where an existing trench is reentered with mechanical excavating equipment.

After the investigation, the information was reviewed regarding the unintentional contact of the utility, avoidance of this utility was entirely within Trihydro's ability to control. Had potholing controls been implemented to determine the location of the utility prior to excavating, the intent of the permit to stay greater than two feet from the utility with mechanical excavation would have been completed. The investigation had determined that although the painted markings were obscured, enough information was available such as; pin flags and the site sketch that the SSO could have determined that excavation was too close to this line.

6.0 CONCLUSIONS AND RECOMMENDATIONS

6.1 VISUAL OBSERVATIONS

At the conclusion of the project, the site was inspected with Trihydro and Pantex personnel and was approved as complete. The liner was visually free of holes, breaks in welds, and installed in accordance to specifications. The anchor trench was backfilled appropriately, appearing to secure the liner in place. Anchors were installed per specifications and in locations specified by Trihydro and approved by the Pantex PSTR.

6.2 RECOMMENDATIONS

In the eastern-most section of the S-shaped section, 10 Platipus anchors were not installed due to the number of utilities in the vicinity. The exact location and orientation of HPFL 1 and HPFL 2 could not be accurately determined as they could not be located on the south side of the ditch, after potholing a large area near the utility location marking. As the locations of these utilities were unknown, it was decided by Trihydro and Pantex personnel that anchors would not be placed within this area. Specifications for Platipus anchor installation require five foot spacing along the flow line of the ditch to prevent uplift forces caused by wind to lift the liner. The anchors are designed to secure the liner in winds up to 80 miles per hour (calculated as producing 67 pounds per square foot of uplift), S.M Stoller Corporation, 2011 Final Repair and Maintenance Report. There are several factors associated with this section of the ditch that increase the points of connection of the liner which justified the reduction of anchors. The ditch in this location is geometrically non-linear resulting in more anchor trench per linear foot of liner. There are also two culvert penetrations in the area that directly connect to the liner, holding the liner in those places. There is also a low point, near the eastern-most outfall that collects a large amount of sediment and water which would act as ballast to counteract uplift.

While damage is not expected, it is recommended that inspection of the liner seams in this area of the trench be incorporated into the normal maintenance inspection schedule to determine if stresses are observed along the seams or liner in this area.

TABLE

TABLE 1. ANCHOR POINT LOCATIONS

Anchor Point	Lat/Long		NAD83 State Plane, Texas North	
	Northing	Easting	Y (US FT)	X (US FT)
1	35.30904459	-101.5543013	3757283.3	639966.2
2	35.30904985	-101.5543098	3757285.2	639963.6
3	35.30905507	-101.5543255	3757287.1	639958.9
4	35.30906617	-101.5543168	3757291.2	639961.5
5	35.30906056	-101.5542922	3757289.1	639968.9
6	35.3088538	-101.5549389	3757214.0	639775.9
7	35.30886578	-101.554932	3757218.3	639778.0
8	35.30887814	-101.5549241	3757222.8	639780.3
9	35.30889123	-101.5549147	3757227.6	639783.1
10	35.30890299	-101.5549061	3757231.9	639785.7
11	35.30891608	-101.554901	3757236.6	639787.2
12	35.3089295	-101.5548941	3757241.5	639789.3
13	35.30894203	-101.5548889	3757246.1	639790.8
14	35.30895463	-101.5548822	3757250.6	639792.8
15	35.30896736	-101.5548763	3757255.3	639794.6
16	35.30897987	-101.5548703	3757259.8	639796.4
17	35.30899288	-101.5548657	3757264.6	639797.8
18	35.30900582	-101.5548598	3757269.3	639799.5
19	35.30901816	-101.5548533	3757273.8	639801.5
20	35.30903114	-101.5548488	3757278.5	639802.8
21	35.30904413	-101.5548434	3757283.2	639804.4
22	35.3090565	-101.554837	3757287.7	639806.3
23	35.30906985	-101.5548329	3757292.6	639807.6
24	35.3090834	-101.5548285	3757297.5	639808.9
25	35.30909727	-101.5548231	3757302.6	639810.5
26	35.30911074	-101.5548192	3757307.5	639811.7
27	35.30911459	-101.554805	3757308.9	639815.9
28	35.30914742	-101.5547834	3757320.8	639822.3
29	35.30916273	-101.5547993	3757326.4	639817.6
30	35.30917331	-101.5547896	3757330.2	639820.5
31	35.30917282	-101.5547732	3757330.0	639825.4
32	35.30916846	-101.5547564	3757328.5	639830.4
33	35.30916551	-101.554746	3757327.4	639833.5
34	35.30916222	-101.554726	3757326.2	639839.5
35	35.30915715	-101.5547108	3757324.3	639844.0
36	35.30915266	-101.554695	3757322.7	639848.7
37	35.30915746	-101.5546817	3757324.4	639852.7

TABLE 1. ANCHOR POINT LOCATIONS

Anchor Point	Lat/Long		NAD83 State Plane, Texas North	
	Northing	Easting	Y (US FT)	X (US FT)
38	35.30915734	-101.554664	3757324.4	639858.0
39	35.30912817	-101.5546509	3757313.8	639861.9
40	35.30912746	-101.5546327	3757313.5	639867.3
41	35.3091329	-101.5546162	3757315.5	639872.2
42	35.30912897	-101.5546009	3757314.1	639876.8
43	35.30912476	-101.5545858	3757312.5	639881.3
44	35.30911944	-101.5545702	3757310.6	639886.0
45	35.3091146	-101.554555	3757308.8	639890.5
46	35.30911067	-101.5545391	3757307.4	639895.2
47	35.30910639	-101.5545249	3757305.8	639899.5
48	35.30910205	-101.5545096	3757304.2	639904.0
49	35.30909776	-101.5544925	3757302.7	639909.1
50	35.30909477	-101.5544848	3757301.6	639911.4
51	35.30909378	-101.5544702	3757301.2	639915.8
52	35.30917866	-101.5548055	3757332.2	639815.8
53	35.30918665	-101.55482	3757335.1	639811.4
54	35.30919208	-101.5548335	3757337.1	639807.4
55	35.30919738	-101.554849	3757339.0	639802.8
56	35.30920105	-101.5548649	3757340.3	639798.1
57	35.30920495	-101.5548794	3757341.8	639793.7
58	35.30920929	-101.5548954	3757343.3	639788.9
59	35.30921423	-101.5549113	3757345.1	639784.2
60	35.30921803	-101.5549264	3757346.5	639779.7
61	35.30922371	-101.5549417	3757348.6	639775.1
62	35.30922786	-101.5549542	3757350.1	639771.4
63	35.30923163	-101.5549688	3757351.5	639767.0
64	35.30923627	-101.5549849	3757353.2	639762.3
65	35.30924133	-101.5550004	3757355.0	639757.6
66	35.30924456	-101.5550131	3757356.2	639753.8
67	35.30924976	-101.555025	3757358.1	639750.3
68	35.30925218	-101.555035	3757359.0	639747.3
69	35.30925508	-101.5550432	3757360.0	639744.9
70	35.30925599	-101.5550532	3757360.4	639741.9
71	35.30929595	-101.5552791	3757374.9	639674.5
72	35.30929182	-101.5552978	3757373.4	639668.9
73	35.30929598	-101.5553174	3757375.0	639663.1
74	35.30928973	-101.5553316	3757372.7	639658.8
75	35.30928512	-101.5553454	3757371.0	639654.7
76	35.30928174	-101.5553657	3757369.8	639648.6

TABLE 1. ANCHOR POINT LOCATIONS

Anchor Point	Lat/Long		NAD83 State Plane, Texas North	
	Northing	Easting	Y (US FT)	X (US FT)
77	35.3092824	-101.555382	3757370.0	639643.8
78	35.30928199	-101.5553993	3757369.9	639638.6
79	35.30928432	-101.5554389	3757370.7	639626.8
80	35.30929645	-101.5554526	3757375.2	639622.7
81	35.30928777	-101.555469	3757372.0	639617.8
82	35.30930241	-101.5554946	3757377.3	639610.2
83	35.30931004	-101.5555035	3757380.1	639607.5
84	35.3093232	-101.5555127	3757384.9	639604.8
85	35.30933053	-101.5555029	3757387.6	639607.7
86	35.30935925	-101.5555416	3757398.0	639596.2
87	35.30936534	-101.5555271	3757400.2	639600.5
88	35.30937481	-101.5555311	3757403.7	639599.3
89	35.30938935	-101.55553	3757409.0	639599.7
90	35.30940336	-101.5555329	3757414.1	639598.8
91	35.30941603	-101.5555378	3757418.7	639597.3
92	35.30942934	-101.5555423	3757423.5	639596.0
93	35.30944228	-101.5555473	3757428.2	639594.5
94	35.30945583	-101.555552	3757433.2	639593.1
95	35.30946642	-101.5555627	3757437.0	639589.9
96	35.30947793	-101.5555715	3757441.2	639587.3
97	35.3094886	-101.5555831	3757445.1	639583.8
98	35.30949777	-101.5555938	3757448.5	639580.6
99	35.30950713	-101.555606	3757451.9	639577.0
100	35.30951628	-101.555617	3757455.2	639573.7
101	35.30952684	-101.5556297	3757459.0	639569.9
102	35.30953841	-101.5556553	3757463.3	639562.3
103	35.30955524	-101.5556625	3757469.4	639560.2
104	35.30955659	-101.5557098	3757469.9	639546.1
105	35.30956096	-101.5557178	3757471.5	639543.7
106	35.30956648	-101.5557335	3757473.5	639539.0
107	35.30957155	-101.555749	3757475.3	639534.4
108	35.30957698	-101.5557643	3757477.3	639529.8
109	35.30958175	-101.55578	3757479.0	639525.1
110	35.30958691	-101.5557954	3757480.9	639520.5
111	35.30959287	-101.5558112	3757483.1	639515.8
112	35.30959817	-101.5558258	3757485.0	639511.4
113	35.30960407	-101.5558415	3757487.2	639506.8
114	35.30960839	-101.5558569	3757488.8	639502.2
115	35.30959584	-101.555876	3757484.2	639496.5

TABLE 1. ANCHOR POINT LOCATIONS

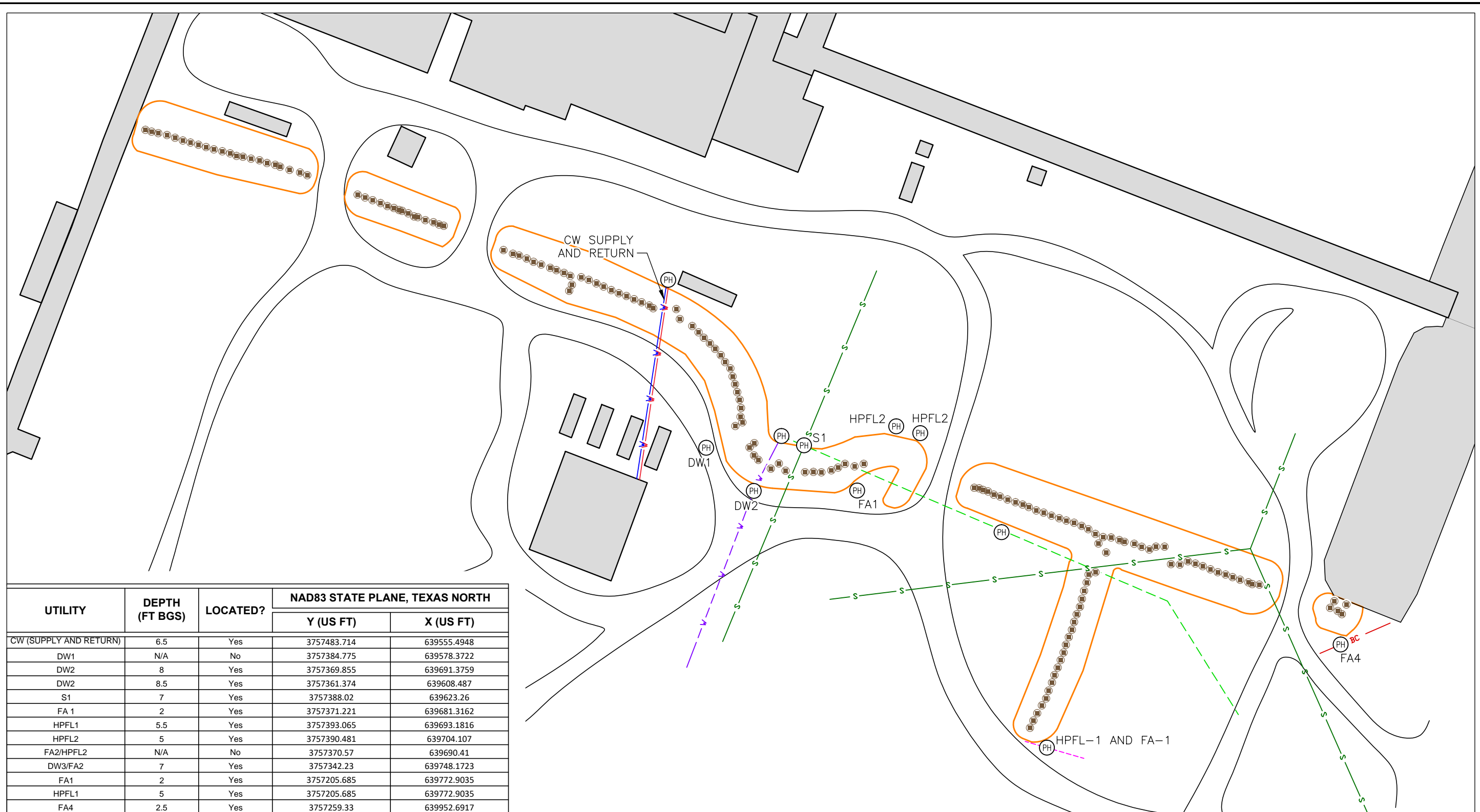
Anchor Point	Lat/Long		NAD83 State Plane, Texas North	
	Northing	Easting	Y (US FT)	X (US FT)
116	35.30958568	-101.5558814	3757480.5	639494.9
117	35.30961069	-101.5558793	3757489.6	639495.5
118	35.30961572	-101.5558922	3757491.4	639491.6
119	35.30962016	-101.5559077	3757493.0	639487.0
120	35.30962422	-101.5559203	3757494.5	639483.3
121	35.30962953	-101.5559389	3757496.5	639477.7
122	35.30963411	-101.5559544	3757498.1	639473.1
123	35.30963961	-101.5559684	3757500.1	639468.9
124	35.30964472	-101.5559839	3757502.0	639464.3
125	35.30964761	-101.5559967	3757503.1	639460.5
126	35.30965384	-101.5560159	3757505.3	639454.7
127	35.30969448	-101.5561379	3757520.1	639418.3
128	35.30969671	-101.5561477	3757521.0	639415.4
129	35.30970043	-101.5561592	3757522.3	639412.0
130	35.30970404	-101.5561758	3757523.6	639407.0
131	35.30970905	-101.556191	3757525.5	639402.5
132	35.30971009	-101.5561986	3757525.8	639400.2
133	35.30971536	-101.5562107	3757527.8	639396.6
134	35.30971939	-101.5562233	3757529.2	639392.9
135	35.30972095	-101.5562294	3757529.8	639391.0
136	35.30972421	-101.55624	3757531.0	639387.9
137	35.30972752	-101.5562532	3757532.2	639384.0
138	35.30973253	-101.5562674	3757534.0	639379.7
139	35.30973734	-101.5562835	3757535.8	639374.9
140	35.3097419	-101.5562987	3757537.4	639370.4
141	35.30974659	-101.5563142	3757539.1	639365.8
142	35.30977921	-101.556417	3757551.0	639335.1
143	35.30978364	-101.5564319	3757552.6	639330.6
144	35.30978813	-101.5564534	3757554.3	639324.2
145	35.30979337	-101.5564725	3757556.2	639318.5
146	35.30979658	-101.5564827	3757557.4	639315.5
147	35.30979958	-101.5564993	3757558.5	639310.5
148	35.30980401	-101.5565148	3757560.1	639305.9
149	35.3098068	-101.5565321	3757561.1	639300.8
150	35.30981003	-101.5565486	3757562.3	639295.8
151	35.30981147	-101.5565618	3757562.8	639291.9
152	35.30981577	-101.5565748	3757564.4	639288.0
153	35.30981916	-101.5565909	3757565.6	639283.2
154	35.30982241	-101.5566081	3757566.8	639278.1

TABLE 1. ANCHOR POINT LOCATIONS

Anchor Point	Lat/Long		NAD83 State Plane, Texas North	
	Northing	Easting	Y (US FT)	X (US FT)
155	35.30982614	-101.5566239	3757568.1	639273.4
156	35.30983009	-101.5566397	3757569.6	639268.7
157	35.30983388	-101.5566559	3757571.0	639263.8
158	35.30983727	-101.5566715	3757572.2	639259.2
159	35.30984184	-101.5566874	3757573.9	639254.5
160	35.30984624	-101.5567039	3757575.5	639249.5
161	35.30984957	-101.5567218	3757576.7	639244.2
162	35.30985204	-101.5567354	3757577.6	639240.1
163	35.30985501	-101.5567481	3757578.7	639236.3

FIGURE

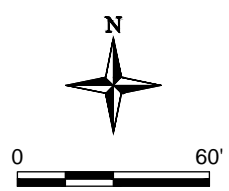
\\TRIHYRO.COM\CLIENTS\GOV\FED\DOE\BWPANTEX\CADD\DITCHLINER\REPLACEMENT\08A-DITCHLINER-201703



UTILITY	DEPTH (FT BGS)	LOCATED?	NAD83 STATE PLANE, TEXAS NORTH	
			Y (US FT)	X (US FT)
CW (SUPPLY AND RETURN)	6.5	Yes	3757483.714	639555.4948
DW1	N/A	No	3757384.775	639578.3722
DW2	8	Yes	3757369.855	639691.3759
DW2	8.5	Yes	3757361.374	639608.487
S1	7	Yes	3757388.02	639623.26
FA 1	2	Yes	3757371.221	639681.3162
HPFL1	5.5	Yes	3757393.065	639693.1816
HPFL2	5	Yes	3757390.481	639704.107
FA2/HPFL2	N/A	No	3757370.57	639690.41
DW3/FA2	7	Yes	3757342.23	639748.1723
FA1	2	Yes	3757205.685	639772.9035
HPFL1	5	Yes	3757205.685	639772.9035
FA4	2.5	Yes	3757259.33	639952.6917

EXPLANATION

- ANCHOR
- CW1 WATER LINE
- CW2 WATER LINE
- DW1 WATER LINE
- DW2 WATER LINE
- DW3 AND FA2 COMBINED WATER LINE
- S1 SEWER LINE
- HPFL-1 AND FA-1 COMBINED TRENCH
- FA-1 FIRE ALARM COMMUNICATION LINE
- LINER
- ROAD EDGE
- BUILDING OR OTHER STRUCTURE
- POTHOLE



1252 Commerce Drive
Laramie, Wyoming 82070
www.trihydro.com
(P) 307745.7474 (F) 307745.7729

FIGURE 1

DITCH LINER REPLACEMENT MAP

**CONSOLIDATED NUCLEAR SECURITY, LLC
PANTEX PLANT, AMARILLO, TEXAS**

Drawn By: REP Checked By: CR Scale: 1" = 60' Date: 4/13/17 File: 08A-DITCHLINER-201703

APPENDIX A

DAILY PANEL DEPLOYMENT TRACKING LOG



DAILY PANEL DEPLOYMENT TRACKING LOG

Project: Pantex Ditch Lining

Project No: 18A-017-001

Client: Pantex

Installer: Colorado Lining

Liner Material: Hypalon

CQA Monitor:

Date:

Panel No.	Roll No.	Date Placed	CQA Monitor	Length (ft)	Width (ft)
A1	46438	2/1/17	CR	130	53.88
B1	46438	2/1/17	CR	95	41
E1	46438	2/7/17	CR	110	53.88
G1	46438	2/7/17	CR	107	58.76
H1	46438	2/7/17	CR	107	58.76
H1A	46438	2/16/17	CR	38	12
C1	46438	2/21/17	CR	135	53.88
I1	46438	2/21/17	CR	36	53.88
I1A	46438	2/21/17	CR	30	53.88
J1	46438	2/21/17	CR	50	53.88
J1A	46438	2/21/17	CR	15	7
J1B	46438	2/21/17	CR	56	53.88
D1	46438	2/23/17	CR	39.24	40
D1A	46438	2/23/17	CR	39.24	25
C1A	46438	2/23/17	CR	24	24
F1	46438	2/27/17	CR	39.24	45

APPENDIX B

DAILY NON-DESTRUCTIVE SEAM TESTING (AIR TEST)

APPENDIX C

DAILY TRIAL WELD TRACKING LOG

APPENDIX D

DAILY FIELD LOG

IF FOUND RETURN
TO:

COLIN RADANT OR
TRIHYDRO GUEST

12 WESTERN PLAZA DC.
AMARILLO, TEXAS
79109

TOC

1-4 TABLE OF CONTENTS

5-17 DECEMBER DAILY
ACTIVITIES

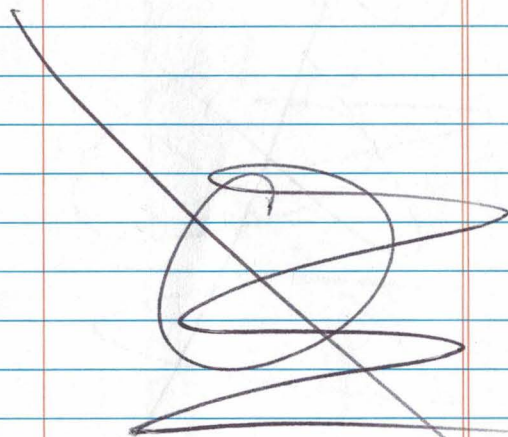
18- JANUARY DAILY
ACTIVITIES

TOC

PANTEX DITCH LINER

12/14/16

- 900 PRE-MEETING
- SECURITY
- SAFETY
- MONROE, BROWN (ENV. PROS.)
- GRAVELING, RADANT (TRIP/DIG)
- INDUSTRIAL SAFETY
- FIRE
- 1130 PRE-COM COMPLETE.
- 1300 SITE WALK DOWN
- 1500 OFF SITE.
- 1630 OFF PANTEX



PANTEX D.L.

12/15/16

800 ON SITE.
1100 BEGIN WORK (INTRA-UNIT
COMPLETE.
CONTINUE REMOVAL
OF SEDIMENT. (SHOVELS
& SKID.)
1500 OFF SITE. ~130 FT
CLEANED.
1630 OFF PANTEX SITE.

PANTEX D.L.

12/16/16

800 ON SITE CONTINUE
DITCH CLEANING.
1030 PERSONNEL SAFETY
CONDITIONS FOR
HIGH WIND.
1115 OFF SITE DUE
TO FORECASTED HIGH
WIND UNTIL 1800.
1200 OFF PANTEX SITE.

PANTEX D.L.

12/79/16

800 ON SITE (LDT)
PANTEX NO-SHOW
DUE TO EQUIPMENT
PROBLEMS

1230 OFF SITE.

PANTEX DR, 12/20/16

830 ON SITE. CONTINUE
DITCH CLEANING
~~150~~ CR (EASTERN-
MOST N-S DITCH.)
USE OF VAC TRUCK
IN LOW, REED AREAS.

1430 SUCTION PROBLEMS
ON VAC TRAILER
DUMP ~~AND~~ CR.

1500 OFF SITE. 160 FT
CLEANED. 340 FT TOTAL.

1630 OFF SITE

PAWTEX D.L

12/21/16

800 ON SITE. CONTINUE
SHOVEL & VAC TRUCK.
SHOVEL CONT NORTH
VAC TRUCK WORKING
ON 1 INLET ANT
"T" AREA.

1500 STOP WORK.
APPROX 210 FT
CLEANED W 550 FT
TOTAL

1630 OFF SITE.

PANTEX D/L

12/22/16

800 ON SITE. CONT.
DITCH CLEANING
& HYDRO - VAR.

1230 PFD ON SITE FOR
FUEL FILL

1515 OFF SITE

1615 OFF PANTEX

1/3/17 Pentax
Ditch labor

0730 Meet at lay down
yard. Call Matt to
do Ex permit
walk down

0750 In line at Security

0830-0900 Safety meeting
with back to work
stand down
Gary Phillips on site

Temperature is dropping
in the 20's with 15mph
breeze.

9:06 Radio check w/ Matt Moore

11:40 Dump tank and refill
water tank.

1209 Lunch

Shoveled about 50' of
trench in large section
Vined about 30' near
culvert on large section
Safety topic power under
safety.

1245 Restart work

1330 Belt on Power washer
went out

1530 Dump tank + Decum

1500 Start clean up
Lenny skid + trailer
on site

Talk to Matt re Ex Permit

1545 Heading to work

1/4/16¹⁷ PANTEX D.L.

745 BADGE NEW WORKER
(JOSH DYE, TALON)

930 MET AT LAYDOWN
YARD.

1050 ON SITE. FIRE RESPONSE
AT 12-21. ROADS CLEAR

1100 START WORK. CONT.
SHOVELING AT FURTHEST
EAST CULVERT +
POWER WASH IN
MIDDLE POSITION

1300 CLEANED WESTERN-
MOST STRAIGHT SECTION.

1530 CLEANED VAC-TRAILER

1545 OFF SITE

1615 OFF PANTEX SITE.

20

1/5/16¹⁷ PANTEX D.L.

800 ON SITE.

875 SAFETY BRIEFING
BROUGHT OUT
CHAIN TRENCHER

1030 M.M. ON SITE
WITH EXCAV. PERMIT.
NEEDED CHANGES
FOR CHAIN TRENCHER.
SURVEYED SITE.

Standby -

1515 Called MM to get
status of ex permit
Still waiting on sigs.
Decided to pick up
and leave site.

OK to leave SKID, trencher
trailer

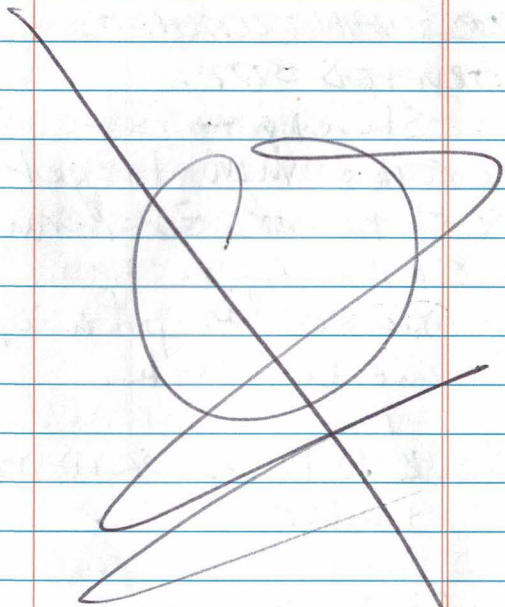
Starting to snow.

1530 @ Gate

21

1/6/17 PANTEX D.C.

NO WORK
DUE TO
SNOW.



22

1/9/17 PANTEX D.C.

800 ON SITE. CONTINUE
CLEANING EASTERN-
MOST SECTION.

-BEGAN TRENCHING
WESTERN-MOST SECTION,
SOUTH SIDE, FROM
WEST TO EAST.

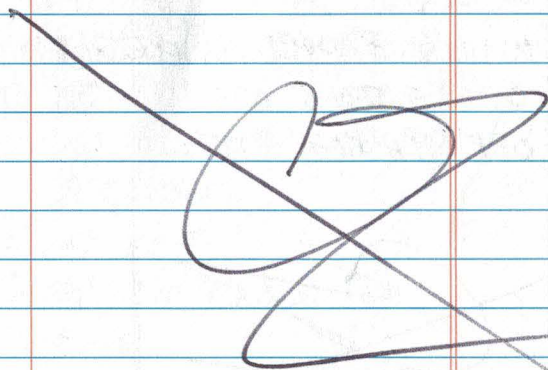
1300 MM ON SITE. EXCAV.
PERMIT APPROVED

1540 STRIKE AT ABANDONED
UTILITY CONDUIT.

MM ON SITE FOR PICTURES,

1640 OFF SITE.

1710 OFF PANTEX SITE.



23

1/10/17 PANTEX D.L.

800 ON SITE
830 UTILITY PERSONNEL
ON SITE. CONFIRM
ABANDONED.
900 CLEANED 2-WESTERN-
MOST DITCHES. REMOVED ROCK
945 GAINED PERMISSION TO
CONTINUE EXCAVATION
AFTER 1/11/17 UTILITY
STRIKE. BEGAN
TRENCHING N-SIDE
OF WESTERN-MOST DITCH
& 2ND WESTERN-MOST DITCH
1430 UTILITY STRIKE, SMALL
WIRES.
1450 WIRES PROVED UNENERGIZED.
1520 OFF SITE
1600 OFF PANTEX SITE.

24

1/11/17 PANTEX D.L.

830 ON SITE. CONTINUE
TRENCHING SOUTH
SIDE OF SECOND-MOST
WESTERN SECTION.
8 HYDROVAC SEWER
LINER NEAR MANHOLE,
NE OF "T" SECTION
1130 ATTEMPT CHAIN
TRENCHER, DOES NOT
WORK DUE TO ALING
OF DIRT NEAR DITCH
INSTEAD OF AWAY
1300 HYDRO EXCAVATE C.W.
ON NORTH SIDE OF "S"
SECTION, MINI-EXC
NE. "T" SECTION
1500 BEGIN HYDRO EXCAV
DW 2 ON N SIDE OF "S"
SECTION
1700 OFF SITE
1745 OFF PANTEX SITE.

25

7/12/17

830 ON SITE. CONT. TRENCHING
ON NORTH SIDE OF "T"
AND DW2.

1360 REFUEL EXC. AND
HYDROVAC. REPAIR
HYDROVAC PRESSURE PUMP.

1400 CONT. HYDROVAC. DW-2

1500 MM DELIVERED
BARRICADES AND
VIEWED ALL TRENCHES

1630 BARRICADES IN PLACE-
OFF SITE.

1700 OFF PANTEX SITE.

1/13/17 PANTEX D.C.

900 ON SITE. CONT
TRENCHING NORTH SIDE
OF "S" SECTION HEADING
EAST

1010 STOPPED TRENCHING
70' FROM UNDISCOVERED
DWZ WATER LINE.
ATTEMPT TO DEICE
HYDROVAC.

1200 HYDROVAC PARTS
FROZEN. OFF SITE.

1-17-17 Pantox DL

PT Cloudy

800 onsite, PAB, Lutzete 53°F
badge Jeremy.

Continue trenching the South
Side of the "5" ditch
approx 180 Ft.

1000 Hydro excavated the chilled
water lens on the South
side of the "5" ditch
The lens was @ 6.5'

1030 First Attempt to locate DW-1 ^{to the 5" ditch}

1300 completed trench by the
first ditch to the west.

1600 Washed off the Tires of
all the trucks at trailers

1700 leave for 12.

Jeremy 1-17-17

1-19-17 Pentix DL

Sunny

800 onsite, POB ~~bulgato~~ 55°F

830 Place center tape back up

900 work on prebor trench
@ western most ditch
Approx 30 ft.

Pot hole @ the "T" Ditch.
@ DW-3.

930 Utility came out and still
could not locate the water line.
Dug in the middle of the "T" Ditch
Matt came out and will talk
to the water line owner to see
if we can get an exemption
to dig above the water line.

1100 @ The western most ditch
the excavator located an
abandoned clay pipe with
a concrete plug in it.

→

1-19-17 Pater Ditch Line

1200 Southern water line ^{DW-3} was
mislocated approx 7' from
actual location

1425 Located the East West
water and Comm Lines ^{DW-3}
to the south ^{east} of the "T"
ditch \approx 7' Bgs.

1430 While digging the Anchor
Trench by 12R24 Ramp
we located a abandoned
concrete pipe. I called
matt to notify of its
presence. The pipe was
approx 12" in diameter
and 3' from the ramp
buddy and 1' from the
concrete liner.

1600 Located water and Comm ^{DW-3}
at the south west side
of the "T" ditch 7' Bgs

34

1-19-17 Pater Ditch Line

1630 Continued cleaning up on
the Anchor trench @ the
Dash 1 and 2 Ditches.

1710 Completed about 85' of
trench and had wall cleanup.

1730 Decon Equipment tires
1815 off site

Jan

1-19-17

35

1-20-17 Pantex Ditch Line

- 800 onsite, Pod tank job ^{Sunny} 40°F
SPO wasn't @ station 3
had to wait for new SPO.
- 830 through Security and onsite
- 1100 Personal Safety for
~~lightning~~ wind
- 1130 Secured site perimeter
- 1135 Completed head wall work
on east head wall on Dash "2"
Potholed to 12' @ the west "5" ditch ^{DW}
- 1140 Parked equipment on the
gravel area north of the
chillers, SW point of the "5" Ditch
Could not locate the waterline.
- 1200 Flattened out dirt on the
site.
Recon'd vehicle wheels
and equipment.
- 1245 off site
- 36 *James J.*

1-23-17 Pantex Ditch Line

- 800 onsite, Pod tank job ^{Sunny} 55°F
windy
- 900 Completed head wall on the west
side of the "5" Ditch
- 1000 Located the Domestic water line
to the south of the "5" Ditch DW-2
the depth is @ 8.5'
- 1230 Personal Safety for high winds
in effect @ 12:30 pm Gary Phillips
said we can continue work
and monitor the windy conditions
and to stop work if the winds
feel that its unsafe to work,
- 1235 Located the Dom water line DW₂
to the north of the "5" ditch
Approx 8' ft deep.
- 1420 Found an abandoned 1" PVC line
near the Buffalo Box on the
west side of the trench.

37

1-23-17 Pabry Ditch Lining

~~1430 Located the Dam water
North of the "5" Ditch
≈ 6.5 Bgs. JT~~

1445 Completed digging the
whole western Ancho trench
@ the "T" Ditch. Approx
250'

1447 Decont and inspected all
trucks and equipment
before leaving site.

1530 offsite

Jean P

1-23-17

1-24-17 Pantux Ditch Lining

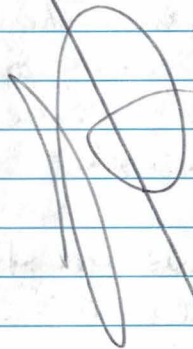
800 Onsite, pod, tankette

810 Arrived to Zone 12 to pick up
our SPO. We were told that
there is not an available SPO
for us today, I called Matt
and Megan. They checked
with Security personnel and
confirmed SPO access the rest
of the week.

1130 NO coverage for today
offsite.

Jean P

~~1-23-17~~



40

Partex Ditch Co. 1-25-17

Sunny

- 800 onsite, Langate, Pad. 30°F
- 845 In zone of fix all hammers and trench protection
- 900 Continued get today to locate DW-3, cont. and digging anchor trench to the east of the "4" ditch
- 1000 Located DW-3 and com line @ 6.75' BGS.
- 1045 Received permission from Matt to cut the old liner above DW-2 to help locate DW-1
we cut a 3' x 3ft hole in the liner above DW-2 will locate DW-2 then attempt to locate where DW-1 Tree's off heading west.
- 1200 Located DW-2 Again under the liner,

41

Panther Ditch Lining 1-25-17

- 1230 Lunch
- 1330 installed rope
and^{ed} around any open trenches
and secured the barriers
with tie posts.
- 1335 Continue to try and locate
DW-1.
- 1545 Completed the Anchor trench @ ^{ditch} "T".
- 1600 Matt came out to the
site and we showed
him the 9ft deep trenches
that we hydro excavated
to attempt to locate DW-1.
We hydro excavated down to
DW-2 then 9ft wide
by 9 feet deep to the
west of the located DW-2.
Could not find DW-1.
Matt said we will abandon
the search for DW-1.
- 1610 moved the hydro excavator
to the head wall @ ditch Ditch 1.

42

Panther Ditch Lining 1-25-17

- 1612 Moved the excavator to the
North of the Ditch "S"
to excavate that anchor trench
^{east and south}
- 1615 Completed 275 Ft of Anchor trench
"T". Excavated up to T of
the High pressure fire line.
- 1700 Completed the westhead wall
cleanup and Anchor trench
hydro excavated. We stayed
on top of the existing liner
as to not undermine the
Building/Ramp 12R24.
- 1715 Completed 73 Ft of the
north anchor trench
@ Ditch "S"
- 1720 measured all the ditches
Anchor trench to anchor
trench to compare panel
lay outs.

43

Pantex ditch lining 1-25-17

1730 Sprayed down the
hydro excavator
and wheels etc

1830 off site

Jan

1-25-17

44

Pantex ditch lining 1-26-17

800 onto, POD, haulguts ^{Sunny} 17°F

900 Start and complete lead wall
Clean up @ the west end of
Dash ditch.

move to the east lead wall
in Dash ditch. water is
frozen in the bottom of
the ditches mineral fluids
removed.

1000 Complete east wall clean up
move to the west head wall @ Dash Dash
ditch

1045 Complete west head wall @ Dash Dash.
move to east lead wall

1130 Complete east lead wall move
to west head wall @ S Ditch.

1230 Complete west lead wall @ S Ditch

45

Pantex DL 1-26-17

1315 Continue digging anchor trench
@ South side of S Ditch

1500 Complete work @ Dash 1
Ditch head walls cleaned
water removed and anchor
trench dug.

1600 Complete work @ Dash 2
ditch. Head walls cleaned
water removed and anchor
trench dug.

1700 Completed Approx 180' of
anchor trench on the east
and west sides of Ditch "5".
Removed about 1/4 of the standing
water in the Ditch "5".

1710 Second and inspected all vehicles

1745 offsite

46

Janey D 1-26-17

Pantrex DL 1-27-17

Sunny

16°F

800 onsite, pod, tank, etc.

830 onsite @ 2-12. Continue digging
anchor trench @ Ditch "5" to the
South.

Hydro excavator waterline frozen
Ran water through to thaw.

930 Start hydro excavate of
part of the western side of
"T" Ditch. The ozone injection
wells were to close to the
old ~~line~~ ^{liner} to get the mixer
in there.

1030 Complete hydro excavation of
ozone well area anchor trench.

1032 Move to "5" ditch to continue
removal of rocks and rocks.

1130 Completed anchor trench on the
South side of Ditch "5", moved
to dig Ditch "Dot" anchor trench 4'

Partey DL

1-27-17

1530 Complete water removal
@ Ditch "S" ad "T"
Begin water removal @
Ditch "Dot".

1535 Place barriers around
the trench @ Ditch "Dot"

1600 Completed anchor trench
ad water removal @
Ditch "Dot".

1615 Set up all barriers
around the trench ad
Anchored to posts.

1630 Decon truck ad
hydro excavator
Removed ~~to~~ 5000 gallons
of ~~water~~ water from
Ditch S, T ad Dot today.

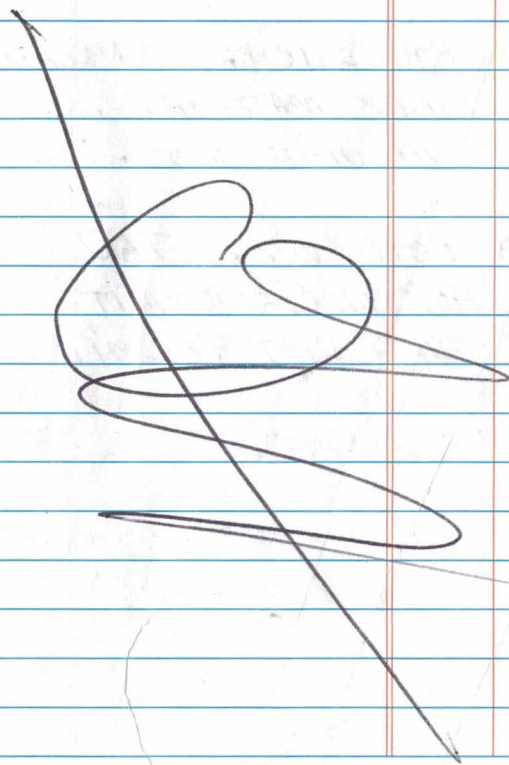
1730 off site
48

Jeremy J

1/30/17

NO WORK

NO LOTO



17, 8, 11, 7

1/31/16

730-900 BADGING AT CLI

930 DELIVERY OF
BULL.

1030 LAY DOWN YARD
MEET.

1130 AT DITCH. UNLOAD
LINER MATERIAL,
EVALUATE SITE - FILL BAGS

1230 LOT/EVAL, SIGN
HOT WORK PERMIT
EVAL LIFT PERMIT

1500 OFF SITE.

DASH-1 ANCHOR MAD

FROM WEST STRUCTURE

6'3", 9'11", 15'0", 20'0"
24'11", 29'11", 34'11", 39'11"
44'8", 49'8", 54'9", 59'9"
64'2", 68'1", 73'1", 78'1"
83'2", 88'3", 91'9", 95'10"
103'6", 107'5"

22 TOTAL

DASH-2

6'2", 10'10", 15'7"
20'7", 25'5", 29'6"
32'11", 34'8", 38'8"
43'0", 45'0", 49'11"
55'1", 60'1"

44 TOTAL

PANTEX D.L.

2/1/17

730 LEFT LDY.
810 ON SITE.
830 DEPLOY LINER IN
WESTERN-MOST SECTION. (DASH 1)
1000 DRILL NEW HOLES IN
DASH 1 WESTERN HEADWALL
1115 DEPLOY LINER IN DASH 2
1230 OFF SITE. NO (2-20CB)
FIRE EXTINGUISHER ON
SITE TO COMPLETE
HOT WORK
1400 OFF SITE.

52

PANTEX D.L.

2-2-17

730 LEFT LDY
805 ON SITE.
815 FIRE DEPT. NOTIFIED
OF HOT WORK. BEGIN
WORK ON HEADWALL
HARDWARE.
900 LOTO COMPLETED FOR
HPFL LINE (EASTERN).
WESTERN LINE CONFIRMED
ABANDONED.
1430 NOTIFIED OF NO-GUARD
SUPPORT T-W-Th (2/7, 2/8, 2/9).
1500 DG. OFF SITE VIA SHUTTLE.
1615 OFF PANTEX SITE.
1650 OFF SITE.

53

PANTEX D.L.

2/3/17

T-SECTION ANCHOR POINTS

730 EDY
800 ON SITE - CONT
815 ~~BEGN~~ WORK ON
HEAD WALL HARDWARE.

830 M. RAMIREZ ON
SITE.

900 BARRIER CHECK.

930 STOP WORK (PAUSE WORK).
S/T/F - TOOLS IN POCKETS
IN/OUT OF DITCH.

1130 MARK ANCHORS IN DASH 4.

1300 CLEANED "T" SECTION. PLAN
TO HYDROEXC. HPFL IN "T"
SECTION MONDAY.

1515-1530 IAN ON SITE.

~~1045 OFF SITE CR~~

~~1430 OFF TRAIL CR~~

1530 SURVEY ANCHORS IN
"T" SECTION.

1630 OFF SITE.

1700 OFF PANTEX SITE.

FROM FURTHEST OUTFALL POINT
OUT OF CULVERT.

0'7", 3'2", 7'4", 10'5"

14'4", 18'5", 23'6",

28'6", 33'4", 37'2",

42'2", 47'0", 52'0"

57'0", 61'6", 66'5", 71'4"

75'11", 80'9" (2' RIGHT OFFSET)

85'10" (2' RIGHT OFFSET)

90'7", 95'9", 98'7", 113'10"

119'0", 114'0", 118'4" (2' L OFFSET)

123'7" (3' L OFFSET), 139'9"

144'11", 149'5", 154'5", 159'6"

164'5", 168'11", 174'1"

179'1", 181'7", 185" 41

FROM SOUTH OUTFALL

4'5", 9'3", 14'3", 19'7", 24'4"

29'6", 34'7", 39'5", 44'7"

49'7", 54'6", 59'7", 64'7"

69'5", 74'5", 79'5", 84'2"

89'3", 94'4", 99'7", 104'6"

107'3" (4' R OFFSET), 120'0" (4' ROS)

124'5" 24

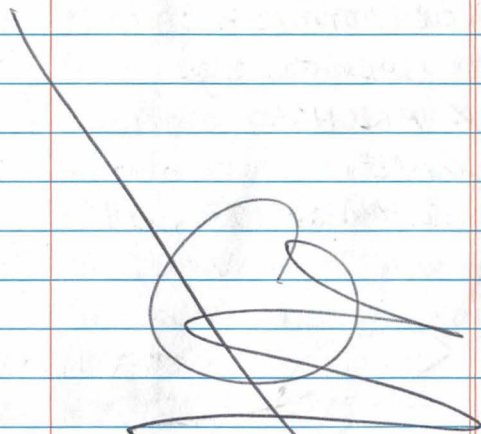
55

2/6/17

730 AT SECURITY
845 LATE SPO. INTO CA.
935 ON SITE.
1035 Talon to Amosillo for
Hydro hoses.
1130 * UTILITY STRIKE AT
SOUTHEAST CORNER OF
EASTERN-MOST (DOT)
SECTION. MARKED FIRE
ALARM LINE. WIRES INTACT
EXCEPT FOR ONE. APPEARS TO
BE TRACE WIRE. TALON USING
MINI-EXCAVATOR TO LEVEL
DIRT ABOVE EASTERN
HEADWALL TO PREVIOUSLY
DUG TRENCH. THEN PICKED
UP DIRT IN TRENCH FROM
NORTH TO SOUTH.
1210 MM ON SITE.
1230 J. SHULTZ ON SITE. UTILITIES
ON SITE. VARIFIED TRACE
WIRE ONLY.

54

1300 OFF SITE. TO MEDICAL
FOR OPERATOR & SPOTTER
DRUG TEST.
1330 AT BLOOD & ALCOHOL TEST MED
FACILITY
1430 LEAVE MED FACILITY
1530 OFF SITE.



57

2/7/17

800 ON SITE. CONTINUE
HEADWALL HARDWARE WORK.
845 KUPILIK & SCHEME
ON SITE. SITE INVESTIGATION
1030 BEGIN RELINING IN "T"
SECTION.
1215 KUPILIK OFF SITE.
1400 SEEMS TESTED. SEE
QA FOR DETAILS.
1515 SAND BACKFILL,
MARK ANCHORS.
1630 OFF SITE.
1730 OFF PLANT SITE.

58

2/8/17

800 ON SITE. CLI BEGAN
BOOTS ON CULVERTS ON
WEST OF "T" SECTION
AND VERTICAL CORRUGATED BOX
ON SW SIDE OF "T" SECTION.
850 TALON UNLOAD SKID AND
BACKFILL NORTH EDGE OF
"T" SECTION; AND SE "T" SECTION
1300 BACKFILL WEST AREA (DASH-1)
BOOT (NOT SEALED) SOUTH
CULVERT OUTFALL
1400 BLOWN TIRE ON SKID
STEER. LOADED ON TRAILER,
FINISH WITH EXCAVATOR.
(ALLOWED PER M. MONROE).
1500 OFF SITE.
1530 OFF PANTOX SITE.

59

2/9/17

810 ON SITE. ESPARZA
& PEREZ OFF SITE.
(ESTARZA FAILED ARGUS).

CLI TO BEGIN BOOTS
ON EASTERN "T" SECTION
& WESTERN "DOT" SECTION

915 PEREZ & ESPARZA ON SITE.
CONTINUE BACKFILL WESTERN
SECTION W/ TRACKED SKID STEER.
CLI CONTINUE BOOTS

1300 MM ON SITE TO
REVIEW CORRECTIVE
ACTION. CLI BEGIN
ANCHORS IN "T"
SECTION.

1600 OFF SITE.

600

"DOT" ANCHORS

EASTERN
FROM WESTERN HEADWALL
5'8", 9'0", 14'0" 3

5" FROM WESTERN HEADWALL
4'11", 8'4", 11'7", 15'8", 19'5", 20'3"
26'5", 30'1", 33'1", 36'11"
38'2" (6' R + 11' R OS),
40'4", 44'10", 48'8", 51'11"
55'5", 59'2", 62'11", 66'7"
69'11", 73'5", 75'7", 84'5"
88'2", 94'9", 98'2", 101'7"
104'11", 108'2", 112'2", 115'7"
119'2", 122'7", 126'4", 129'7"
133'4", 136'7", 140'4", 143'6"
147'1", 150'4", 153'11", 157'4"
160'9", 162'6", 169'3", 172'5"
173'9", 180'4", 183'10", 187'0"
190'15", 193'10", 194'1"
201'11" (4' R OS), 205'10" (4.5' R OS)
207'10", 209'3", 216'7", 219'6"
223'1", 227'2", 229'0", 230'2"
FROM S. OUTFALL (SEE LEG NEAR HAZEL
1'8", 5'1", 10'11"

67

61

2/10/17

800 ON SITE.
815 SITE WALKDOWN W/ M.M.
830 BEGIN PATCHES AND
PLATYPUS ANCHORS IN
"T" SECTION. TRACON
BACKFILL AND HYDRO-EX
SOUTH "T" SECTION. FOUND
~~HAIL~~ 1 (5 FT DGS) AND
FAI (2 FT DGS) BACKFILL
DASH 1.
1300 PLATYPUS ANCHORS AND
PATCHES IN DASH 2.
1400 ANCHORS + PATCHES IN
DASH 2.
1530 OFF SITE. RED
FLAG WARNING
1630 OFF ANTEX SITE.

62

2/13/17

800 ON SITE.
850 ~~TRACON~~ EXCAVATOR
LOADED.
930 OFF SITE DUE TO RAIN.

2/14/17

NO WORK DUE
TO SNOW/RAIN.

2/15/17

900 ON SITE TO REMOVE
TRAILER
930 OFF SITE

63

2/16/17

- 830 TALON/THC ON SITE.
CLEAN S. SIDE OF
T SECTION.
- 930 REMOVE WATER FROM
'DOT' SECTION.
- 1130 CLI ON SITE. EXTEND
WELD LINER, WELD
BOOT TO EXTENSION.
TALON BEGINS HYDROEX
HPFL LINE ON SOUTH
SIDE OF "S" SECTION.
- 1400 IAN ON SITE.
- 1430 DISCOVERED FA WIRES
ON WEST SIDE.
- 1630 OFF SITE.

64

2/17/17

- 800 ON SITE.
- 830 REMOVE WATER FROM
WEST "S" SECTION. WALK DOWN
- 930 BEGIN EXCAVATION
OF HPFL/FA LINES
ON NORTH SIDE OF "S"
SECTION. BEGIN
LINING WESTERN
"S" SECTION, HEADWALL
& WESTERN BOOT/CULVERT.
- 1330 EASTERN HPFL LINE
FOUND. 2' TRENCH
COMPLETE.
- 1430 WESTERN HPFL FOUND.
BEGIN BACKFILLING
REMAINING "T" SECTION
- 1630 OFF SITE.
- 1715 OFF PANTEX SITE.

45

2/20/17

730 AT GATE.
800 TOLD NO SPO SUPPORT
1045 CONTACT MADE W/
PANTEK THAT SPO SUPPORT
AVAILABLE, HOWEVER
WIND WAS ~30 MPH.
NO WORK.

66

2/21/17

730 AT GATE.
800 SPO SUPPORT
830 ON SITE. CONT. LINING
"S" SECTION. CONT. TRENCH
SOUTH SIDE OF "S" SECTION.
CONTINUE "S" TRENCH,
APPROX 2/3 LINED.
1430 TRENCH COMPLETE. EAST
FA NOT FOUND.
1530 DITCH BAGGED OFF.
OFF SITE.
1715 OFF PANTEX SITE.

67

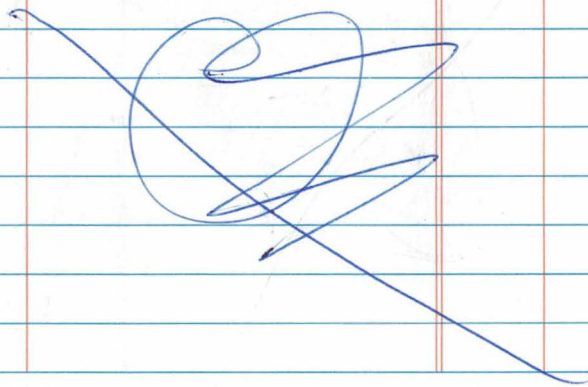
2/22/17

EMERGENCY RESPONSE
DRILLS UNTIL 900
PREVENTED ACCESS TO
SITE.

1145 ON SITE. CLEAN
REMAINING "S" SECTION
ANCHOR "S" TRENCH.

1430 TALON OFF SITE.
SKID OUT OF FUEL.
BEGIN FORMING BOOT
APPROX. 1/2 WAY ON
"S" DITCH ON SOUTH
SIDE.

1715 OFF SITE.

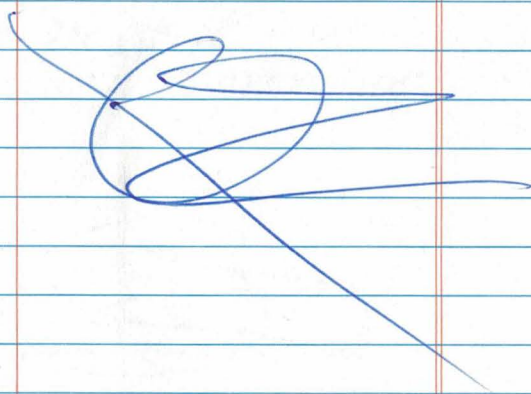


68

2/23/17

800 ON SITE. BEGIN
BACKFILL OF "S"
SECTION. RELINING
REMAINDER OF "S"
SECTION.

1100 OFF SITE DUE
TO RED FLAG
WARNING. 2 PANELS
IN, NOT WELDED,
AND SAND BAGGED
IN PLACE. "S" DITCH
~ 1/2 FILLED. BUT NOT
CLEAN/FINISHED.



69

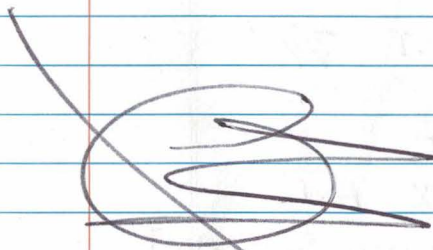
2/23/17 WEEKLY MEETING
1500 - 1700

~~800~~ DITCH LINER
UPDATE. DISCUSSED
AT LENGTH ABOUT
ANCHORS IN EASTERN
PORTION OF "S" DITCH,
INABILITY TO LOCATE
FA-1 AND HPFL LINES
ON SOUTH SIDES OF
DITCH. WILL ATTEMPT
TO LOCATE ON 2/24/17,
TO DECIDE ON ANCHOR
LOCATIONS.

70

2/24/17

800 ON SITE. CL1 & THC
ONLY. BEGIN CONSTRUCTION
OF BOOTS ON CULVERTS
(EASTERN-MOST; AND
SOUTHEAST CULVERTS).
1230 BEGIN ANCHORS. 5
ONLY APPROACHING
IDW LINE. MM +
TB ON SITE TO
AUTHORIZE NO ANCHORS
NEAR HPFL + FA LINES.
1415 PICK UP SERAP LINE
+ STOCKPILE NEAR
DASH-2.
1530 OFF SITE
1615 OFF PANTEX SITE.



71

CLI MATERIALS LIST

LINER

- 45 MIL CSPE

CLEANER

- KLEAN STRIP

X YLOL XYLENE

GLUE

- BURKE INDUSTRIES

BURKE CSPE

HIGH SOLIDS POTABLE

GRADE WELDING SOLUTION

LEISTER

LEISTER HOT AIR TOOL

BANDS

- BAND IT 3/4"

SEALANT

SIKAREX A-1

INDUSTRIAL SEALANT

72

WELDER

DEMTECH PRO-TECH

BIMZO

BUTLE

GENERAL SEALANTS

RUBBER

EPDM GASKET

73

2/27/17

800 ON SITE. WORK
ON HARDWARE
IN EASTERN DOT
AREA.

815 ALERTED BY SFO THAT
CLEARANCE FOR AREA
EXPIRED. ALERTED
MM.

915 CLEARED FOR WORK.

1030 INSTALLED LINER IN
DOT SECTION

1200 RED FLAG WARNING.

1300 OFF SITE.

1345 OFF FANTEX SITE.

74

2/28/17

615 CALLED OPS. EXPLAINED
RED FLAG WARNING
FOR 2/28/17 DAY SHIFT.
NO WORK. LULL
OFF SITE.

75

3/1/17

800 ON SITE.
BACKFILL "S" SECTION.
CLEAN/BACKFILL SITE.
CONTINUE WORK AT
"DOT" SECTION.

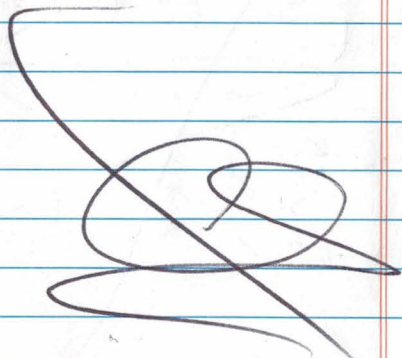
1300 TALON OFF SITE.

1400 NIMYES ON SITE
FOR WALK DOWN.

APPROVED LINER IN
COMPLETED SECTIONS.

1430 OFF SITE.

1515 OFF PANTEX SITE.



76

HOLD POINT #3 SIGN OFF
THE PANTEX

DASH A LINER
HEADWALLS
ANCHORS
CULVERTS

DASH B LINER
HEADWALLS
ANCHORS
CULVERTS

"S" LINER
HEADWALLS
ANCHORS
CULVERTS

"T" LINER
HEADWALLS
ANCHORS
CULVERTS

"DOT" LINER
HEADWALLS
ANCHORS
CULVERTS

PANTEX

platt 17944

3-1-17

THE

CPN 33876

77

3/2/17

800 ON SITE.
930 "DOT" COMPLETE.
SCRAP LINER PICKED
UP.
1030 RAIN ON SITE. "DOT"
APPROVED. WALK DOWN
FAI. CLEAR OF DEBRIS
1100 BEGIN HYDRO EXCAVATION
1330 ~~HX~~ STOP WORK. CLEAN
HYDROVAL. 1/2 COMPLETE
1400 OFF SITE.

78

3/3/17

930 ON SITE. HYDROVAL FA-1.
1045 1 TALON BACKFILL,
1 HYDROVAL BEGIN.
1130 END BACKFILL
1430 FINISH HYDROVAL,
CLEAN EQUIPMENT
1500 OFF SITE.
1545 OFF PAVED SITE

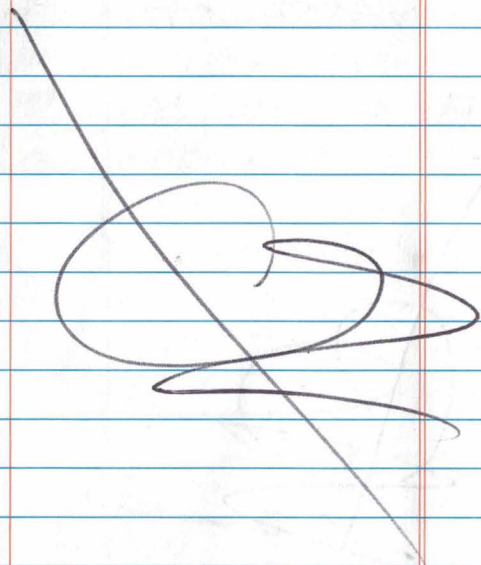
79

3/6/17

~~830~~ ON SITE. EXCHANGE
TRACK MOUNTED
SKID STEER FOR
WHEEL MOUNTED.

915 OFF SITE.

1000 OFF PANTEX SITE.



80

3/7/17

~~845~~ ON SITE. FOUND
1 1/4" CONDUIT
DURING INITIAL WALK
DOWN.

960 DUKE OFF SITE. REMOVE
WATER FROM "T" SECTION.

1330 DUKE ON SITE.

PIV - 12SP93, PW 12P83+1,

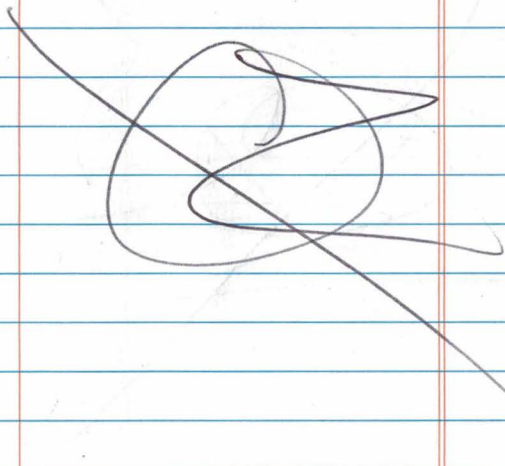
PIV 12SP92, PIV SP 91,

PIV SP90 JUMPED

FOR REPAIR.

1530 OFF SITE.

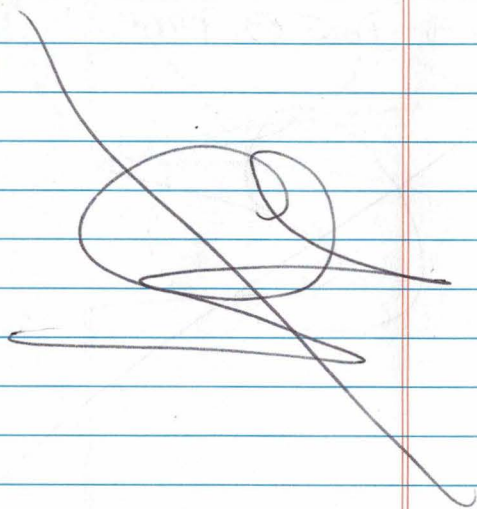
1615 OFF PANTEX PROP.



81

3/8/17

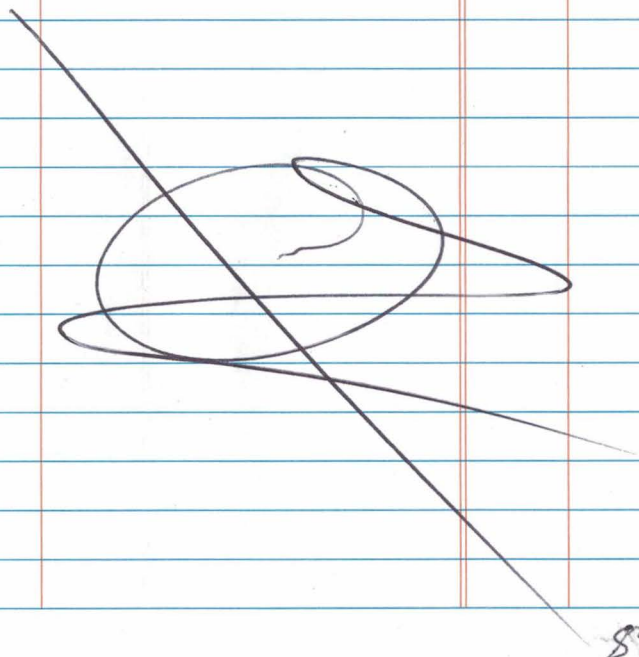
820 ON SITE.
845-915 NO WORK DUE
TO 1283 PERMISSIONS.
1000 DUKE OFF SITE FOR
EQUIPMENT. (1) PIV
ALARMING DUE TO
BROKEN RESISTOR.
1230 ON SITE (DUKE).
REPAIRS MADE
1330 OFF SITE.
1415 OFF TANTEK SITE.



82

3/9/17

750 ON SITE. SET UP
BASE STATIONS
NEAR 13TH & WASHINGTON.
030 TO SECURITY TO VERIFY
GPS DEVICE-
910 ON SITE.
1100 DAVIS OFF SITE.
1400 BACKFILL COMPLETE.
OFF SITE.



83

APPENDIX E

DAILY TAILGATE SAFETY BRIEFINGS

SITE SAFETY BRIEFING



Date: 12/14/16

Time: 1300

Project Name: ISB O&M Client: CNS Pantex Project Number: 18A-017-001

Site Location: Pantex Plant, Amarillo TX

General Type of Work: SITE WALK

Tasks to be completed / plan of the day: SITE WALK

Safety Issues

- Protective Clothing/Equipment:**
- Safety Glasses
 - Hard Hat
 - Gloves: _____
 - Ear Plugs
 - Protective Footwear
 - Respirator
 - Cartridges/Filters: _____
 - Face Shield
 - High Visibility Vest
 - FRCs
 - Other: _____
 - Fall Protection
 - Personal Flotation Device
 - Tyvek®
 - Other: _____

Associated Chemical Hazards and Controls: SUMU

Associated Physical Hazards and Controls: S/L/F'S, TRAFFIC

HAZCOM Overview (include MSDSs and where they are located): Completed

AHAs Overview (include AHAs and where they are located): Completed

- Associated Hazards:**
- Lockout/Tagout
 - Overhead Power Lines
 - Hot Works
 - Tornado
 - Earthquake
 - Permit-Required Confined Space
 - Machine Guarding
 - Buried Utilities
 - Asbestos
 - Heat Stress
 - Cold Stress
 - High Pressure/Temperature Processes
 - Falling Hazards
 - Water Hazards
 - High Noise (Acoustical)
 - Excavation
 - Traffic

Biological: SNAKES, SPIDERS, INSECTS

Other: _____

Special Equipment/Techniques: _____

Permits Required: General Confined Spaces Hot Works Other: _____

Procedures Discussed: Stop Work Authority Right-to-Refuse Unsafe Work One Call Bump/Self-Checks

Emergency Action Plan

Emergency Contact: OC / Fire Department Number: (806)-477-5000 / -3333

Nearest Phone: Field team personnel cell phones or Bldg. 12-103 Cell coverage verified

Hospital Name: Northwest Texas Hospital (806)-354-1000 Route verified

Evacuation Routes: Z11SISB: Pershing Dr. to main (east) gate.

Muster Points: Primary: Injection trailer. Alternate: Building 12-103 Cafeteria

Special Topics (incidents, actions taken, etc.): Access Control.

Attendance

Meeting Conducted By: Don Graveling 55344 SSO (YES/NO) Yes

Attendees:

Printed Name and Badge Number	Signature and p.m. Refresher Initials
<u>GABE PEREZ 59771</u>	<u>[Signature]</u>
<u>Bryan Huntington 39650</u>	<u>[Signature]</u>
<u>Steven Esparen 39651</u>	<u>[Signature]</u>
<u>COLIN RADANT 33876</u>	<u>[Signature]</u>

DAILY TAILGATE SAFETY MEETING



NOTE: A new tailgate meeting must be conducted if conditions, location, or personnel change.

Date: 12/13/16 Time: 1100 a.m. p.m. Location: PANTEX (city, state)
 Project Name: PANTEX DITCH LINES Client: PANTEX
 Current Objective/Description: CLEAN DITCH

Commitment to Safety

- I will protect myself for me, my family, Trihydro, clients, and contractors by watching for and mitigating risky behaviors, exercising stop-work authority to prevent incidents and injuries and by complying with Trihydro and client policies, procedures, and JSAs/JLAs
- I understand that safety is my personal responsibility and that working safely is a key component in providing quality work.
- I will set an example for my fellow employees, contractors, clients, and family by working safely.
- I will drive defensively and "Safely for My Family," abiding by Trihydro and client policies and applicable laws and regulations.
- I will "slow down" appropriately to work at a pace that will allow me and others to complete each task efficiently and safely.
- I will hold myself accountable for my safety and the safety of those around me. I will think about the safety of me, my coworkers, contractors, and our clients before I conduct each task.



* Stop Work Authority (SWA) – "Everyone has the authority and obligation to immediately stop all unsafe work."

Identify High-Hazard Work:

- | | | | |
|---|---|---|---|
| <input type="checkbox"/> Hot Work | <input type="checkbox"/> Elevated/overhead work | <input type="checkbox"/> Boat / over-water operations | <input type="checkbox"/> Work involving equipment within 15' of active overhead electrical line or pole supporting an electric line |
| <input type="checkbox"/> LOTO | <input type="checkbox"/> Excavations - any | <input type="checkbox"/> Demolition, removal of pipelines and buried structures | |
| <input type="checkbox"/> Confined Space Entry | <input type="checkbox"/> Drilling - any | | |

Associated and Identified Hazards:

- | | | | |
|--|---|---|---|
| <input type="checkbox"/> Abrasions, cuts, scrapes | <input type="checkbox"/> Earthquake | <input type="checkbox"/> High-pressure processes | <input type="checkbox"/> Pinch points |
| <input type="checkbox"/> Allergies (self & co-workers) | <input type="checkbox"/> Electrical | <input type="checkbox"/> High-temperature processes | <input type="checkbox"/> Power tools |
| <input type="checkbox"/> Asbestos | <input type="checkbox"/> Equipment failure | <input type="checkbox"/> High wind | <input type="checkbox"/> Pulled into |
| <input type="checkbox"/> Biological | <input type="checkbox"/> Ergonomic | <input type="checkbox"/> Laceration | <input type="checkbox"/> Radiation/X-ray |
| <input type="checkbox"/> Buried utilities | <input type="checkbox"/> Excavations in area? | <input type="checkbox"/> Lightning | <input type="checkbox"/> Security |
| <input type="checkbox"/> Burn hazards | <input type="checkbox"/> Falling | <input type="checkbox"/> Loud noise | <input type="checkbox"/> Severe weather |
| <input type="checkbox"/> Chemical exposure | <input type="checkbox"/> Fire/explosion | <input type="checkbox"/> Machine guarding | <input type="checkbox"/> Scaffolds |
| <input checked="" type="checkbox"/> Cold stress | <input type="checkbox"/> H ₂ S | <input type="checkbox"/> Motor vehicle crash | <input type="checkbox"/> Slips, trips, falls |
| <input type="checkbox"/> Compressed gases | <input checked="" type="checkbox"/> Hand injury | <input type="checkbox"/> No locking/fixed blades | <input type="checkbox"/> Subsurface utilities |
| <input type="checkbox"/> Crane or lifting equipment | <input type="checkbox"/> Heat stress | <input type="checkbox"/> Overexertion | <input checked="" type="checkbox"/> Traffic |
| <input type="checkbox"/> Drilling in area? | <input type="checkbox"/> Heavy equipment | <input type="checkbox"/> Overhead utilities | <input type="checkbox"/> Water |
| | | <input type="checkbox"/> Pedestrian | <input type="checkbox"/> Other: _____ |

See it! Identify Current Objective Hazards:

Assess Trihydro's 3 Most Serious Risks

- | | |
|--|---|
| | <input checked="" type="checkbox"/> Traffic/Heavy Equipment |
| | <input type="checkbox"/> Hazardous Atmosphere |
| | <input type="checkbox"/> Utility Contact |

Assess Trihydro's 5 Most Frequent Risks

- | | |
|--|---|
| | <input checked="" type="checkbox"/> Hand Injuries |
| | <input checked="" type="checkbox"/> Lifting |
| | <input type="checkbox"/> Biological Hazards |
| | <input type="checkbox"/> Chemical Exposure |
| | <input checked="" type="checkbox"/> Slips, trips, falls |

Other Hazards

- | | |
|--|---|
| | <input checked="" type="checkbox"/> Weather |
| | <input type="checkbox"/> Working at Heights |

Personal Protective Equipment (PPE):

- | | | | |
|--|--|--|--|
| <input checked="" type="checkbox"/> Hard hat | <input type="checkbox"/> Arm sleeves | <input type="checkbox"/> Dust mask | Other special equipment:
<input type="checkbox"/> _____
<input type="checkbox"/> _____
<input type="checkbox"/> _____
<input type="checkbox"/> _____
<input type="checkbox"/> _____
<input type="checkbox"/> _____ |
| <input checked="" type="checkbox"/> Safety glasses | <input type="checkbox"/> High visibility vest | <input type="checkbox"/> Respirator
Cartridges/filters:
<input type="checkbox"/> VOC/H ₂ S escape | |
| <input type="checkbox"/> Safety toed boots | <input type="checkbox"/> Rain gear | <input type="checkbox"/> H ₂ S monitor
<input type="checkbox"/> Bump test | |
| <input type="checkbox"/> Ear plugs (as needed) | <input type="checkbox"/> Rubber boots | <input type="checkbox"/> FRCs/Nomex | |
| <input type="checkbox"/> Face shield | <input type="checkbox"/> SCBA | <input type="checkbox"/> Tyvek® | |
| <input type="checkbox"/> Fall protection | <input type="checkbox"/> Snake chaps | <input type="checkbox"/> Insect repellent | |
| <input checked="" type="checkbox"/> Gloves (as needed) | <input type="checkbox"/> Sunscreen (as needed) | <input type="checkbox"/> _____ | |
| | | <input type="checkbox"/> _____ | |
| | | <input type="checkbox"/> _____ | |
| | | <input type="checkbox"/> _____ | |
- *Do not apply DEET to FRCs*

Before Beginning Work:

- | | |
|--|--|
| <input type="checkbox"/> Sign in and out of process unit <input type="checkbox"/> N/A | <input type="checkbox"/> Review the JSA and "dirty up" if necessary |
| <input checked="" type="checkbox"/> HASP reviewed & acknowledged | <input type="checkbox"/> Weather forecast: <input type="checkbox"/> Hot <input checked="" type="checkbox"/> Cold <input type="checkbox"/> Inclement
Wind Direction: _____ |
| <input type="checkbox"/> Locate the nearest evacuation point and a secondary location | <input checked="" type="checkbox"/> Employee(s) are wearing proper PPE |
| <input checked="" type="checkbox"/> Identify the nearest fire extinguisher, eyewash station, first aid kit, and Material Safety Data Sheets (MSDS) | <input type="checkbox"/> Perform a "self check" on each personal H ₂ S monitor |
| <input checked="" type="checkbox"/> Identify CPR/AED/first aid certified employees | <input checked="" type="checkbox"/> Perform a Work-Site Self Assessment (WSSA) |
| <input type="checkbox"/> If lone worker, implement lone worker procedures <input type="checkbox"/> N/A | <input type="checkbox"/> Review the dashboard emergency flyer for the specific site; place in a visible location inside vehicle |
| <input type="checkbox"/> Identify SSE, visitor(s), or guest(s) <input type="checkbox"/> N/A | <input checked="" type="checkbox"/> Barricade work zone (as needed) |
| <input type="checkbox"/> Determine and acquire necessary permits <input type="checkbox"/> N/A
Permit required: _____ | <input type="checkbox"/> Review WorkCare Injury Accident Program card |
| | <input type="checkbox"/> PPE Action Levels (PID: 10ppm) |

Safe Vehicle Use:

- | | | |
|--|--|--|
| <input checked="" type="checkbox"/> Pre-inspection complete | <input type="checkbox"/> Mileage sheet filled out | <input type="checkbox"/> GOAL sticker in window |
| <input checked="" type="checkbox"/> Seat belt | <input type="checkbox"/> No cell phones used while driving | <input type="checkbox"/> Spotter used (if available) |
| <input checked="" type="checkbox"/> Follow all speed and traffic rules | <input type="checkbox"/> Parked in a safe location | <input type="checkbox"/> First move forward, backed in |
| <input checked="" type="checkbox"/> Emergency brake used | <input type="checkbox"/> Orange cone used | <input type="checkbox"/> Load secured in vehicle |
| <input type="checkbox"/> Keys left in vehicle | <input type="checkbox"/> Chock tires (if needed) | <input type="checkbox"/> 3D-Driving (every 2 years) |
| <input type="checkbox"/> Trailer Safety Inspection form | <input type="checkbox"/> Other: _____ | <input type="checkbox"/> Other: _____ |

Site-Specific Comments: TAKE TIME TO LEARN PROCESS. COMMUNICATE!

Positive Reinforcement (R+): _____

Signatures:

Meeting Conducted By: CR 33876 (designated project on-site safety responder) Company: TTC

Printed Name	Signature	Company	Attended Mid-Day Safety Focus	Is this worker new on-site?
1. Dan Grande Idig		55344	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
2. RAZE Raza		59771	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
3. B H Attaway		39650	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
4. S. Garcia Espinoza		39451	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
5.			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
6.			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
7.			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
8.			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No

SITE SAFETY BRIEFING



Date: 12/16/16

Time: 800

Project Name: ISB O&M DITCH LINER Client: CNS Pantex Project Number: 18A-017-001

Site Location: Pantex Plant, Amarillo TX

General Type of Work: CLEAN DITCH

Tasks to be completed / plan of the day: _____

Safety Issues

- Protective Clothing/Equipment:**
- Safety Glasses
 - Hard Hat
 - Gloves: _____
 - Ear Plugs
 - Protective Footwear
 - Respirator
 - Cartridges/Filters: _____
 - Face Shield
 - High Visibility Vest
 - FRCs
 - Other: _____
 - Fall Protection
 - Personal Flotation Device
 - Tyvek®
 - Other: _____

Associated Chemical Hazards and Controls: HE

Associated Physical Hazards and Controls: S/H/F'S, STRUCK BY, PINCH POINTS

HAZCOM Overview (include MSDSs and where they are located): Completed

AHAs Overview (include AHAs and where they are located): Completed

- Associated Hazards:**
- Lockout/Tagout
 - Overhead Power Lines
 - Hot Works
 - Tornado
 - Earthquake
 - Permit-Required Confined Space
 - Machine Guarding
 - Buried Utilities
 - Asbestos
 - Heat Stress
 - Cold Stress
 - High Pressure/Temperature Processes
 - Falling Hazards
 - Water Hazards
 - High Noise (Acoustical)
 - Excavation
 - Traffic

Biological: SNAKES, SPIDERS, INSECTS

Other: _____

SITE SAFETY BRIEFING



Date: 12/19/16

Time: 9:00

Project Name: ISB O&M DITCH LINER Client: CNS Pantex

Project Number: 18A-017-001

Site Location: Pantex Plant, Amarillo TX

General Type of Work: CLEAN/VAC DITCH

Tasks to be completed / plan of the day: '' ''

Safety Issues

- Protective Clothing/Equipment:**
- Safety Glasses
 - Hard Hat
 - Gloves: _____
 - Ear Plugs
 - Protective Footwear
 - Respirator
 - Cartridges/Filters: _____
 - Face Shield
 - High Visibility Vest
 - FRCs
 - Other: _____
 - Fall Protection
 - Personal Flotation Device
 - Tyvek®
 - Other: _____

Associated Chemical Hazards and Controls: HE

Associated Physical Hazards and Controls: S/T/F'S, STRUCK-BY, PINCH POINTS

HAZCOM Overview (include MSDSs and where they are located): Completed

AHAs Overview (include AHAs and where they are located): Completed

- Associated Hazards:**
- Lockout/Tagout
 - Overhead Power Lines
 - Hot Works
 - Tornado
 - Earthquake
 - Permit-Required Confined Space
 - Machine Guarding
 - Buried Utilities
 - Asbestos
 - Heat Stress
 - Cold Stress
 - High Pressure/Temperature Processes
 - Falling Hazards
 - Water Hazards
 - High Noise (Acoustical)
 - Excavation
 - Traffic

Biological: SNAKES, SPIDERS, INSECTS

Other: _____

SITE SAFETY BRIEFING



Date: 12/20/16

Time: 800

Project Name: ISB O&M DITCH LINER Client: CNS Pantex Project Number: 18A-017-001

Site Location: Pantex Plant, Amarillo TX

General Type of Work: CLEAN DITCH

Tasks to be completed / plan of the day: cc cl

Safety Issues

- Protective Clothing/Equipment:**
- Safety Glasses
 - Hard Hat
 - Gloves: _____
 - Ear Plugs
 - Protective Footwear
 - Respirator
 - Cartridges/Filters: _____
 - Face Shield
 - High Visibility Vest
 - FRCs
 - Other: WATER RESIST. SUITES
 - Fall Protection
 - Personal Flotation Device
 - Tyvek®
 - Other: FACE MASK

Associated Chemical Hazards and Controls: HE

Associated Physical Hazards and Controls: S/T/F'S, PINCH POINTS, STRUCK BY

HAZCOM Overview (include MSDSs and where they are located): Completed

AHAs Overview (include AHAs and where they are located): Completed

- Associated Hazards:**
- Lockout/Tagout
 - Overhead Power Lines
 - Hot Works
 - Tornado
 - Earthquake
 - Permit-Required Confined Space
 - Machine Guarding
 - Buried Utilities
 - Asbestos
 - Heat Stress
 - Cold Stress
 - High Pressure/Temperature Processes
 - Falling Hazards
 - Water Hazards
 - High Noise (Acoustical)
 - Excavation
 - Traffic

Biological: SNAILS, SPIDERS, INSECTS

Other: _____

SITE SAFETY BRIEFING



Date: 12/21/14

Time: 800

Project Name: ISB O&M Client: CNS Pantex Project Number: 18A-017-001

Site Location: Pantex Plant, Amarillo TX

General Type of Work: CLEAN UP

Tasks to be completed / plan of the day: _____

Safety Issues

- Protective Clothing/Equipment:**
- Safety Glasses
 - Hard Hat
 - Gloves: _____
 - Ear Plugs
 - Protective Footwear
 - Respirator
 - Cartridges/Filters: _____
 - Face Shield
 - High Visibility Vest
 - FRCs
 - Other: _____
 - Fall Protection
 - Personal Flotation Device
 - Tyvek®
 - Other: _____

Associated Chemical Hazards and Controls: HE

Associated Physical Hazards and Controls: SHARP'S, PINCH POINTS, STRUCK BY

HAZCOM Overview (include MSDSs and where they are located): Completed

AHAs Overview (include AHAs and where they are located): Completed

- Associated Hazards:**
- Lockout/Tagout
 - Overhead Power Lines
 - Hot Works
 - Tornado
 - Earthquake
 - Biological:
 - Other:
 - Permit-Required Confined Space
 - Machine Guarding
 - Buried Utilities
 - Asbestos
 - Heat Stress
 - Cold Stress
 - High Pressure/Temperature Processes
 - Falling Hazards
 - Water Hazards
 - High Noise (Acoustical)
 - Excavation
 - Traffic

SNAKES, SPIDERS, INSECTS

SITE SAFETY BRIEFING



Date: 12/22/16

Time: 800

Project Name: ISB O&M Client: CNS Pantex Project Number: 18A-017-001

Site Location: Pantex Plant, Amarillo TX

General Type of Work: CLEAN DITCH

Tasks to be completed / plan of the day: CLEAN DITCH

Safety Issues

- Protective Clothing/Equipment:**
- Safety Glasses
 - Hard Hat
 - Gloves: _____
 - Ear Plugs
 - Protective Footwear
 - Respirator
 - Cartridges/Filters: _____
 - Face Shield
 - High Visibility Vest
 - FRCs
 - Other: _____
 - Fall Protection
 - Personal Flotation Device
 - Tyvek®
 - Other: _____

Associated Chemical Hazards and Controls: HE

Associated Physical Hazards and Controls: SLIT'S, PINCH POINTS, STRUCK BY

HAZCOM Overview (include MSDSs and where they are located): Completed

AHAs Overview (include AHAs and where they are located): Completed

- Associated Hazards:**
- Lockout/Tagout
 - Overhead Power Lines
 - Hot Works
 - Tornado
 - Earthquake
 - Permit-Required Confined Space
 - Machine Guarding
 - Buried Utilities
 - Asbestos
 - Heat Stress
 - Cold Stress
 - High Pressure/Temperature Processes
 - Falling Hazards
 - Water Hazards
 - High Noise (Acoustical)
 - Excavation
 - Traffic

Biological: SNAKES, SPIDERS, INSECTS

Other: _____

SITE SAFETY BRIEFING



Date: 1/3/17

Time: 0830

Project Name: ISB O&M Client: CNS Pantex Project Number: 18A-017-001

Site Location: Pantex Plant, Amarillo TX

General Type of Work: Sediment Removal

Tasks to be completed / plan of the day: Vac truck work and Manual Shovel. Lg

Safety Issues

- Protective Clothing/Equipment:**
- Safety Glasses
 - Hard Hat
 - Gloves: _____
 - Ear Plugs
 - Protective Footwear
 - Respirator
 - Cartridges/Filters: _____
 - Face Shield
 - High Visibility Vest
 - FRCs
 - Other: _____
 - Fall Protection
 - Personal Flotation Device
 - Tyvek®
 - Other: _____

Associated Chemical Hazards and Controls: None

Associated Physical Hazards and Controls: Slip trip fall, cold, slippery sides

HAZCOM Overview (include MSDSs and where they are located): Completed

AHAs Overview (include AHAs and where they are located): Completed

- Associated Hazards:**
- Lockout/Tagout
 - Overhead Power Lines
 - Hot Works
 - Tornado
 - Earthquake
 - Biological:
 - Other:
 - Permit-Required Confined Space
 - Machine Guarding
 - Buried Utilities
 - Asbestos
 - Heat Stress
 - Cold Stress
 - High Pressure/Temperature Processes
 - Falling Hazards
 - Water Hazards slippery
 - High Noise (Acoustical)
 - Excavation
 - Traffic

Special Equipment/Techniques: Vermeer Hydro ex, skid steer

Permits Required: General Confined Spaces Hot Works Other: _____

Procedures Discussed: Stop Work Authority Right-to-Refuse Unsafe Work One Call Bump/Self-Checks

Emergency Action Plan

Emergency Contact: OC / Fire Department Number: (806)-477-5000 / -3333

Nearest Phone: Field team personnel cell phones or Bldg. 12-103 Cell coverage verified

Hospital Name: Northwest Texas Hospital (806)-354-1000 Route verified

Evacuation Routes: Z11SISB: Pershing Dr. to main (east) gate.

Muster Points: Primary: Injection trailer. Alternate: Building 12-103 Cafeteria

Special Topics (incidents, actions taken, etc.): Return to work after break.

Attendance

Meeting Conducted By: Gravelly SSO (YES/NO) Yes

Attendees:

Printed Name and Badge Number	Signature and p.m. Refresher Initials
<u>Dan Gravelly 55344</u>	<u>[Signature]</u>
<u>STEVEN ESPINOZA 39651</u>	<u>[Signature]</u>
<u>BRYAN HUNTER 39650</u>	<u>[Signature]</u>
<u>GABRIEL PEREZ 59771</u>	<u>[Signature]</u>

SITE SAFETY BRIEFING



Date: 1/4/17

Time: 8:56

Project Name: Ditch Liner

Client: CNS Pantex

Project Number: 18A-017-001

Site Location: Pantex Plant, Amarillo TX

General Type of Work: Ditch Cleaning

Tasks to be completed /
plan of the day: Hydro vac and shoveling
Pumping water

Safety Issues

- Protective Clothing/Equipment:**
- Safety Glasses
 - Hard Hat
 - Gloves: _____
 - Ear Plugs
 - Protective Footwear
 - Respirator
 - Cartridges/Filters: _____
 - Face Shield
 - High Visibility Vest
 - FRCs
 - Other: _____
 - Fall Protection
 - Personal Flotation Device
 - Tyvek®
 - Other: _____

Associated Chemical Hazards and Controls: None

Associated Physical Hazards and Controls: Cold, slip trip fall, high pressure

HAZCOM Overview (include MSDSs and where they are located): Completed

AHAs Overview (include AHAs and where they are located): Completed

- Associated Hazards:**
- Lockout/Tagout
 - Overhead Power Lines
 - Hot Works
 - Tornado
 - Earthquake
 - Biological:
 - Other:
 - Permit-Required Confined Space
 - Machine Guarding
 - Buried Utilities
 - Asbestos
 - Heat Stress
 - Cold Stress
 - High Pressure/Temperature Processes
 - Falling Hazards
 - Water Hazards
 - High Noise (Acoustical)
 - Excavation
 - Traffic

Special Equipment/Techniques: Hydro Vac, Skid, Pump.

Permits Required: General Confined Spaces Hot Works Other: _____

Procedures Discussed: Stop Work Authority Right-to-Refuse Unsafe Work One Call Bump/Self-Checks

Emergency Action Plan

Emergency Contact: OC / Fire Department Number: (806)-477-5000 / -3333

Nearest Phone: Field team personnel cell phones or Bldg. 12-103 Cell coverage verified

Hospital Name: Northwest Texas Hospital (806)-354-1000 Route verified

Evacuation Routes: Z11SISB: Pershing Dr. to main (east) gate.

Muster Points: Primary: Injection trailer. Alternate: Building 12-103 Cafeteria

Special Topics (incidents, actions taken, etc.): New Personnel Use Buddy System.

Attendance

Meeting Conducted By: _____ SSO (YES/NO) ()

Attendees:

Printed Name and Badge Number	Signature and p.m. Refresher Initials
Dan Gravelly 55344	
Josh Dye 39687	
Bryan Hunt 58650	
Gabe Perez 59771	
Steven Esparza 39651	

SITE SAFETY BRIEFING



Date: 1/5/18

Time: 800

Project Name: Ditch Liner Client: CNS Pantex Project Number: 18A-017-001

Site Location: Pantex Plant, Amarillo TX

General Type of Work: TRENCHING

Tasks to be completed / plan of the day: TRENCHING

Safety Issues

- Protective Clothing/Equipment:**
- Safety Glasses
 - Hard Hat
 - Gloves: _____
 - Ear Plugs
 - Protective Footwear
 - Respirator
 - Cartridges/Filters: _____
 - Face Shield
 - High Visibility Vest
 - FRCs
 - Other: _____
 - Fall Protection
 - Personal Flotation Device
 - Tyvek®
 - Other: _____

Associated Chemical Hazards and Controls: HE

Associated Physical Hazards and Controls: S/T/F's, PINCH POINTS
STRUCK-BY

HAZCOM Overview (include MSDSs and where they are located): Completed

AHAs Overview (include AHAs and where they are located): Completed

- Associated Hazards:**
- Lockout/Tagout
 - Overhead Power Lines
 - Hot Works
 - Tornado
 - Earthquake
 - Biological: BIA
 - Other: _____
 - Permit-Required Confined Space
 - Machine Guarding
 - Buried Utilities
 - Asbestos
 - Heat Stress
 - Cold Stress
 - High Pressure/Temperature Processes
 - Falling Hazards
 - Water Hazards
 - High Noise (Acoustical)
 - Excavation
 - Traffic

Special Equipment/Techniques: _____

Permits Required: General Confined Spaces Hot Works Other: _____

Procedures Discussed: Stop Work Authority Right-to-Refuse Unsafe Work One Call Bump/Self-Checks

Emergency Action Plan

Emergency Contact: OC / Fire Department Number: (806)-477-5000 / -3333

Nearest Phone: Field team personnel cell phones or Bldg. 12-103 Cell coverage verified

Hospital Name: Northwest Texas Hospital (806)-354-1000 Route verified

Evacuation Routes: Z11SISB: Pershing Dr. to main (east) gate.

Muster Points: Primary: Injection trailer. Alternate: Building 12-103 Cafeteria

Special Topics (incidents, actions taken, etc.): COLD STRESS.

Meeting Conducted By: COLIN HANNEY ^{Attendance} CR 33876 SSO (YES/NO) (YES)

Attendees:

Printed Name and Badge Number	Signature and p.m. Refresher Initials
Josh Dye 39687	
Don Gravelly 55374	
Bryan Hu 39650	
Steven Espinoza 39651	
GABE PER 59771	

SITE SAFETY BRIEFING



Date: 1/9/14

Time: 800

Project Name: Ditch Liner Client: CNS Pantex Project Number: 18A-017-001

Site Location: Pantex Plant, Amarillo TX

General Type of Work: CLEAN/TRENCH

Tasks to be completed / plan of the day: _____

Safety Issues

- Protective Clothing/Equipment:**
- Safety Glasses
 - Hard Hat
 - Gloves: _____
 - Ear Plugs
 - Protective Footwear
 - Respirator
 - Cartridges/Filters: _____
 - Face Shield
 - High Visibility Vest
 - FRCs
 - Other: _____
 - Fall Protection
 - Personal Flotation Device
 - Tyvek®
 - Other: _____

Associated Chemical Hazards and Controls: HE

Associated Physical Hazards and Controls: S/H/F'S, JNCH POINTS, STRUCK-BY

HAZCOM Overview (include MSDSs and where they are located): Completed

AHAs Overview (include AHAs and where they are located): Completed

- Associated Hazards:**
- Permit-Required Confined Space
 - High Pressure/Temperature Processes
 - Lockout/Tagout
 - Machine Guarding
 - Falling Hazards
 - Overhead Power Lines
 - Buried Utilities
 - Water Hazards
 - Hot Works
 - Asbestos
 - High Noise (Acoustical)
 - Tornado
 - Heat Stress
 - Excavation
 - Earthquake
 - Cold Stress
 - Traffic

Biological: SNAKES, SPIDERS, INSECTS

Other: _____

Special Equipment/Techniques: _____

Permits Required: General Confined Spaces Hot Works Other: _____

Procedures Discussed: Stop Work Authority Right-to-Refuse Unsafe Work One Call Bump/Self-Checks

Emergency Action Plan

Emergency Contact: OC / Fire Department Number: (806)-477-5000 / -3333

Nearest Phone: Field team personnel cell phones or Bldg. 12-103 Cell coverage verified

Hospital Name: Northwest Texas Hospital (806)-354-1000 Route verified

Evacuation Routes: Z11SISB: Pershing Dr. to main (east) gate.

Muster Points: Primary: Injection trailer. Alternate: Building 12-103 Cafeteria

Special Topics (incidents, actions taken, etc.): EXCAVATOR SAFETY

Meeting Conducted By: COLIN RADAKY Attendance [Signature] 33876 SSO (YES/NO) [Signature]

Attendees:

Printed Name and Badge Number	Signature and p.m. Refresher Initials
Bryan Huntington 39650	[Signature]
Steven Esparza 39651	[Signature]
Gabe Perez 59771	[Signature]
Josh Dye 39687	[Signature]
Matt Moore 17944	[Signature]

SITE SAFETY BRIEFING



Date: 1/10/17

Time: _____

Project Name: Ditch Lining

Client: CNS Pantex

Project Number: 18A-017-001

Site Location: Pantex Plant, Amarillo TX

General Type of Work: DITCH CLEANING / TRENCHING

Tasks to be completed / plan of the day: _____

Safety Issues

- Protective Clothing/Equipment:**
- Safety Glasses
 - Hard Hat
 - Gloves: _____
 - Ear Plugs
 - Protective Footwear
 - Respirator
 - Cartridges/Filters: _____
 - Face Shield
 - High Visibility Vest
 - FRCs
 - Other: _____
 - Fall Protection
 - Personal Flotation Device
 - Tyvek®
 - Other: _____

Associated Chemical Hazards and Controls: HE

Associated Physical Hazards and Controls: PINCH POINTS, SLIPS, STRUCK-BY

HAZCOM Overview (include MSDSs and where they are located): Completed

AHAs Overview (include AHAs and where they are located): Completed

- Associated Hazards:**
- Lockout/Tagout
 - Overhead Power Lines
 - Hot Works
 - Tornado
 - Earthquake
 - Permit-Required Confined Space
 - Machine Guarding
 - Buried Utilities
 - Asbestos
 - Heat Stress
 - Cold Stress
 - High Pressure/Temperature Processes
 - Falling Hazards
 - Water Hazards
 - High Noise (Acoustical)
 - Excavation
 - Traffic

Biological: SNAKES, SPIDERS, INSECTS

Other: _____

Special Equipment/Techniques: _____

Permits Required: General Confined Spaces Hot Works Other: _____

Procedures Discussed: Stop Work Authority Right-to-Refuse Unsafe Work One Call Bump/Self-Checks

Emergency Action Plan

Emergency Contact: OC / Fire Department Number: (806)-477-5000 / -3333

Nearest Phone: Field team personnel cell phones or Bldg. 12-103 Cell coverage verified

Hospital Name: Northwest Texas Hospital (806)-354-1000 Route verified

Evacuation Routes: Z11SISB: Pershing Dr. to main (east) gate.

Muster Points: Primary: Injection trailer. Alternate: Building 12-103 Cafeteria

Special Topics (incidents, actions taken, etc.): UNEXPECTED UTILITY FAILURE PROCEDURES

Meeting Conducted By: Colin Radant ^{Attendance} Col R 33876 SSO (YES)

Attendees:

Printed Name and Badge Number	Signature and p.m. Refresher Initials
GABRIEL PEREZ 59771	
BRYAN HUDIGER 39650	
STEVEN ESPARZA 39651	
JOSH DYE 39687	
MATT MORRIS 17944	

SITE SAFETY BRIEFING



Date: 1/11/17

Time: _____

Project Name: Ditch Liner

Client: CNS Pantex

Project Number: 18A-017-001

Site Location: Pantex Plant, Amarillo TX

General Type of Work: TRENCHING, POT HOLING

Tasks to be completed / plan of the day: _____

Safety Issues

- Protective Clothing/Equipment:**
- Safety Glasses
 - Hard Hat
 - Gloves: _____
 - Ear Plugs
 - Protective Footwear
 - Respirator
 - Cartridges/Filters: _____
 - Face Shield
 - High Visibility Vest
 - FRCs
 - Other: _____
 - Fall Protection
 - Personal Flotation Device
 - Tyvek®
 - Other: _____

Associated Chemical Hazards and Controls: _____

Associated Physical Hazards and Controls: _____

HAZCOM Overview (include MSDSs and where they are located): Completed

AHAs Overview (include AHAs and where they are located): Completed

- Associated Hazards:**
- Lockout/Tagout
 - Overhead Power Lines
 - Hot Works
 - Tornado
 - Earthquake
 - Permit-Required Confined Space
 - Machine Guarding
 - Buried Utilities
 - Asbestos
 - Heat Stress
 - Cold Stress
 - High Pressure/Temperature Processes
 - Falling Hazards
 - Water Hazards
 - High Noise (Acoustical)
 - Excavation
 - Traffic

Biological: SNAKES, SPIDERS, INSECTS

Other: _____

Special Equipment/Techniques: _____

Permits Required: General Confined Spaces Hot Works Other: _____

Procedures Discussed: Stop Work Authority Right-to-Refuse Unsafe Work One Call Bump/Self-Checks

Emergency Action Plan

Emergency Contact: OC / Fire Department Number: (806)-477-5000 / -3333

Nearest Phone: Field team personnel cell phones or Bldg. 12-103 Cell coverage verified

Hospital Name: Northwest Texas Hospital (806)-354-1000 Route verified

Evacuation Routes: Z11SISB: Pershing Dr. to main (east) gate.

Muster Points: Primary: Injection trailer. Alternate: Building 12-103 Cafeteria

Special Topics (incidents, actions taken, etc.): POTHOLING PRECAUTIONS

Meeting Conducted By: COLIN RADANT ^{Attendance} [Signature] 33876 SSO (YES/NO)

Attendees:

Printed Name and Badge Number	Signature and p.m. Refresher Initials
<u>Gabe Perez 59771</u>	<u>[Signature]</u>
<u>Brya Hurtig 39650</u>	<u>[Signature]</u>
<u>Steven Espinoza 39651</u>	<u>[Signature]</u>
<u>Joshua Dye 39687</u>	<u>[Signature]</u>

SITE SAFETY BRIEFING



Date: 1/12/17

Time: 800

Project Name: Ditch Liner Client: CNS Pantex Project Number: 18A-017-001

Site Location: Pantex Plant, Amarillo TX

General Type of Work: TRENCHING/POTHOLING

Tasks to be completed / plan of the day: c c c c i .

Safety Issues

- Protective Clothing/Equipment:**
- | | | | |
|--|--|---|--|
| <input checked="" type="checkbox"/> Safety Glasses | <input checked="" type="checkbox"/> Hard Hat | <input checked="" type="checkbox"/> Gloves: _____ | |
| <input type="checkbox"/> Ear Plugs | <input checked="" type="checkbox"/> Protective Footwear | <input type="checkbox"/> Respirator | <input type="checkbox"/> Cartridges/Filters: _____ |
| <input type="checkbox"/> Face Shield | <input checked="" type="checkbox"/> High Visibility Vest | <input type="checkbox"/> FRCs | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Fall Protection | <input type="checkbox"/> Personal Flotation Device | <input type="checkbox"/> Tyvek® | <input type="checkbox"/> Other: _____ |

Associated Chemical Hazards and Controls: HE

Associated Physical Hazards and Controls: S/T/F'S, PINCH POINTS, STRUCK-BY

HAZCOM Overview (include MSDSs and where they are located): Completed

AHAs Overview (include AHAs and where they are located): Completed

- Associated Hazards:**
- | | | |
|---|---|--|
| <input type="checkbox"/> Lockout/Tagout | <input type="checkbox"/> Permit-Required Confined Space | <input type="checkbox"/> High Pressure/Temperature Processes |
| <input type="checkbox"/> Overhead Power Lines | <input type="checkbox"/> Machine Guarding | <input type="checkbox"/> Falling Hazards |
| <input type="checkbox"/> Hot Works | <input type="checkbox"/> Buried Utilities | <input type="checkbox"/> Water Hazards |
| <input type="checkbox"/> Tornado | <input type="checkbox"/> Asbestos | <input type="checkbox"/> High Noise (Acoustical) |
| <input type="checkbox"/> Earthquake | <input type="checkbox"/> Heat Stress | <input type="checkbox"/> Excavation |
| <input type="checkbox"/> Biological: | <input checked="" type="checkbox"/> Cold Stress | <input checked="" type="checkbox"/> Traffic |

Biological: SNAKES, SPIDERS, INSECTS

Other: _____

Special Equipment/Techniques: _____

Permits Required: General Confined Spaces Hot Works Other: _____

Procedures Discussed: Stop Work Authority Right-to-Refuse Unsafe Work One Call Bump/Self-Checks

Emergency Action Plan

Emergency Contact: OC / Fire Department Number: (806)-477-5000 / -3333

Nearest Phone: Field team personnel cell phones or Bldg. 12-103 Cell coverage verified

Hospital Name: Northwest Texas Hospital (806)-354-1000 Route verified

Evacuation Routes: Z11SISB: Pershing Dr. to main (east) gate.

Muster Points: Primary: Injection trailer. Alternate: Building 12-103 Cafeteria

Special Topics (incidents, actions taken, etc.): STOP WORK AUTHORITY

Meeting Conducted By: Colin Radabaugh ^{Attendance} 33876 CM SSO (YES) [Signature]

Attendees:

Printed Name and Badge Number	Signature and p.m. Refresher Initials
<u>GABRIEL PEREZ 59771</u>	<u>[Signature]</u>
<u>STEVEN ESPARZA 39651</u>	<u>[Signature]</u>
<u>BRAY HUNTER 39630</u>	<u>[Signature]</u>
<u>JOSHUA DYE 39687</u>	<u>[Signature]</u>

SITE SAFETY BRIEFING



Date: 1/13/17

Time: 900

Project Name: Ditch Liner

Client: CNS Pantex

Project Number: 18A-017-001

Site Location: Pantex Plant, Amarillo TX

General Type of Work: TRENCHING / HYDROVAC

Tasks to be completed / plan of the day: - - - -

Safety Issues

- Protective Clothing/Equipment:**
- Safety Glasses
 - Hard Hat
 - Gloves: _____
 - Ear Plugs
 - Protective Footwear
 - Respirator
 - Cartridges/Filters: _____
 - Face Shield
 - High Visibility Vest
 - FRCs
 - Other: _____
 - Fall Protection
 - Personal Flotation Device
 - Tyvek®
 - Other: _____

Associated Chemical Hazards and Controls: HE

Associated Physical Hazards and Controls: S/H/F's, PINCH POINTS, STEER -BY

HAZCOM Overview (include MSDSs and where they are located): Completed

AHAs Overview (include AHAs and where they are located): Completed

- Associated Hazards:**
- Permit-Required Confined Space
 - High Pressure/Temperature Processes
 - Lockout/Tagout
 - Machine Guarding
 - Falling Hazards
 - Overhead Power Lines
 - Buried Utilities
 - Water Hazards
 - Hot Works
 - Asbestos
 - High Noise (Acoustical)
 - Tornado
 - Heat Stress
 - Excavation
 - Earthquake
 - Cold Stress
 - Traffic

Biological: SNAKES, SPIDERS, INSECTS

Other: _____

Special Equipment/Techniques: _____

Permits Required: General Confined Spaces Hot Works Other: _____

Procedures Discussed: Stop Work Authority Right-to-Refuse Unsafe Work One Call Bump/Self-Checks

Emergency Action Plan

Emergency Contact: OC / Fire Department Number: (806)-477-5000 / -3333

Nearest Phone: Field team personnel cell phones or Bldg. 12-103 Cell coverage verified

Hospital Name: Northwest Texas Hospital (806)-354-1000 Route verified

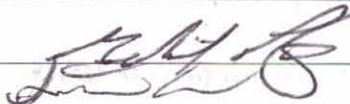
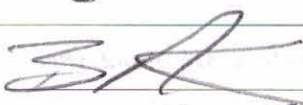


Evacuation Routes: Z11SISB: Pershing Dr. to main (east) gate.

Muster Points: Primary: Injection trailer. Alternate: Building 12-103 Cafeteria

Special Topics (incidents, actions taken, etc.): COMMUNICATIONS TESTS
w/ REPLACEMENT/SUBSTITUTE RSTR

Meeting Conducted By: Colin Radant ^{Attendance} WLR 33876 SSO (YES)

Attendees:

Printed Name and Badge Number	Signature and p.m. Refresher Initials
GABRIEL PEREZ 4 59771	
STEVEN ESPARZA 39651	
BRYAN HUNTINGTON 39650	
DOSH DYE 39687	

SITE SAFETY BRIEFING



Date: 1/17/17

Time: 800

Project Name: Ditch Liner Client: CNS Pantex Project Number: 18A-017-001

Site Location: Pantex Plant, Amarillo TX

General Type of Work: TRENCH / HYDROVAC

Tasks to be completed / plan of the day: (checkmarks)

Safety Issues

- Protective Clothing/Equipment:**
- Safety Glasses
 - Hard Hat
 - Gloves: _____
 - Ear Plugs
 - Protective Footwear
 - Respirator
 - Cartridges/Filters: _____
 - Face Shield
 - High Visibility Vest
 - FRCs
 - Other: _____
 - Fall Protection
 - Personal Flotation Device
 - Tyvek®
 - Other: _____

Associated Chemical Hazards and Controls: HE

Associated Physical Hazards and Controls: SP/FS TRENCH PANTS, BRICKS

HAZCOM Overview (include MSDSs and where they are located): Completed

AHAs Overview (include AHAs and where they are located): Completed

- Associated Hazards:**
- Lockout/Tagout
 - Overhead Power Lines
 - Hot Works
 - Tornado
 - Earthquake
 - Permit-Required Confined Space
 - Machine Guarding
 - Buried Utilities
 - Asbestos
 - Heat Stress
 - Cold Stress
 - High Pressure/Temperature Processes
 - Falling Hazards
 - Water Hazards
 - High Noise (Acoustical)
 - Excavation
 - Traffic

Biological: SNAKES, SPIDERS, BEES

Other: _____

Special Equipment/Techniques: _____

Permits Required: General Confined Spaces Hot Works Other: _____

Procedures Discussed: Stop Work Authority Right-to-Refuse Unsafe Work One Call Bump/Self-Checks

Emergency Action Plan

Emergency Contact: OC / Fire Department Number: (806)-477-5000 / -3333

Nearest Phone: Field team personnel cell phones or Bldg. 12-103 Cell coverage verified

Hospital Name: Northwest Texas Hospital (806)-354-1000 Route verified

Evacuation Routes: Z11SISB: Pershing Dr. to main (east) gate.

Muster Points: Primary: Injection trailer. Alternate: Building 12-103 Cafeteria

Special Topics (incidents, actions taken, etc.):

MUDDY CONDITIONS

Meeting Conducted By:

Colin Bryant Attendance 5876

SSO (YES)

Attendees:

Printed Name and Badge Number	Signature and p.m. Refresher Initials
Jeremy Simons 64143	
Steven Espinoza 39651	
GABE PEREZ 59771	
Josh Dye 39687	
BRYAN HUNTER 39650	

SITE SAFETY BRIEFING



Date: 1-19-17

Time: 830

Project Name: Ditch Liner Client: CNS Pantex Project Number: 18A-017-001

Site Location: Pantex Plant, Amarillo TX

General Type of Work: Anchor trending

Tasks to be completed / plan of the day: _____

Safety Issues

- Protective Clothing/Equipment:**
- Safety Glasses
 - Hard Hat
 - Gloves: _____
 - Ear Plugs
 - Protective Footwear
 - Respirator
 - Cartridges/Filters: _____
 - Face Shield
 - High Visibility Vest
 - FRCs
 - Other: _____
 - Fall Protection
 - Personal Flotation Device
 - Tyvek®
 - Other: _____

Associated Chemical Hazards and Controls: AE

Associated Physical Hazards and Controls: Slips trips, Stumbling, muddy conditions

HAZCOM Overview (include MSDSs and where they are located): Completed

AHAs Overview (include AHAs and where they are located): Completed

- Associated Hazards:**
- Lockout/Tagout
 - Overhead Power Lines
 - Hot Works
 - Tornado
 - Earthquake
 - Biological: _____
 - Other: _____
 - Permit-Required Confined Space
 - Machine Guarding
 - Buried Utilities
 - Asbestos
 - Heat Stress
 - Cold Stress
 - High Pressure/Temperature Processes
 - Falling Hazards
 - Water Hazards
 - High Noise (Acoustical)
 - Excavation
 - Traffic

Special Equipment/Techniques: _____

Permits Required: General Confined Spaces Hot Works Other: _____

Procedures Discussed: Stop Work Authority Right-to-Refuse Unsafe Work One Call Bump/Self-Checks

Emergency Action Plan

Emergency Contact: OC / Fire Department Number: (806)-477-5000 / -3333

Nearest Phone: Field team personnel cell phones or Bldg. 12-103 Cell coverage verified

Hospital Name: Northwest Texas Hospital (806)-354-1000 Route verified

Evacuation Routes: Z11SISB: Pershing Dr. to main (east) gate.

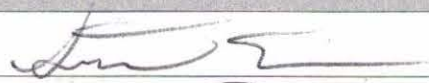




Muster Points: Primary: Injection trailer. Alternate: Building 12-103 Cafeteria

Special Topics (incidents, actions taken, etc.): muddy conditions

Attendance

Meeting Conducted By: Jeremy Simon 64143 SSO (YES)

Attendees:

Printed Name and Badge Number	Signature and p.m. Refresher Initials
STEVEN ESPANZA 39651	
BRYAN HUNTING 39650	
GABE PEREZ 59771	
JOSH DYE 39687	
MATT MONROE 17944	

SITE SAFETY BRIEFING



Date: 1-20-17

Time: 8:00

Project Name: Ditch Liner Client: CNS Pantex Project Number: 18A-017-001

Site Location: Pantex Plant, Amarillo TX

General Type of Work: Install trenching and post holes

Tasks to be completed / plan of the day: _____

Safety Issues

- Protective Clothing/Equipment:**
- | | | |
|--|--|--|
| <input checked="" type="checkbox"/> Safety Glasses | <input checked="" type="checkbox"/> Hard Hat | <input checked="" type="checkbox"/> Gloves: _____ |
| <input type="checkbox"/> Ear Plugs | <input checked="" type="checkbox"/> Protective Footwear | <input type="checkbox"/> Cartridges/Filters: _____ |
| <input type="checkbox"/> Face Shield | <input checked="" type="checkbox"/> High Visibility Vest | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Fall Protection | <input type="checkbox"/> Personal Flotation Device | <input type="checkbox"/> Other: _____ |
| | <input type="checkbox"/> FRCs | |
| | <input type="checkbox"/> Tyvek® | |

Associated Chemical Hazards and Controls: HE

Associated Physical Hazards and Controls: Slips trips, high winds, body contact
ultra

HAZCOM Overview (include MSDSs and where they are located): Completed

AHAs Overview (include AHAs and where they are located): Completed

- Associated Hazards:**
- | | | |
|---|---|--|
| <input type="checkbox"/> Lockout/Tagout | <input type="checkbox"/> Permit-Required Confined Space | <input type="checkbox"/> High Pressure/Temperature Processes |
| <input type="checkbox"/> Overhead Power Lines | <input type="checkbox"/> Machine Guarding | <input type="checkbox"/> Falling Hazards |
| <input type="checkbox"/> Hot Works | <input checked="" type="checkbox"/> Buried Utilities | <input type="checkbox"/> Water Hazards |
| <input type="checkbox"/> Tornado | <input type="checkbox"/> Asbestos | <input type="checkbox"/> High Noise (Acoustical) |
| <input type="checkbox"/> Earthquake | <input checked="" type="checkbox"/> Heat Stress | <input checked="" type="checkbox"/> Excavation |
| <input type="checkbox"/> Biological: | <input checked="" type="checkbox"/> Cold Stress | <input checked="" type="checkbox"/> Traffic |
| <input type="checkbox"/> Other: | | |

Special Equipment/Techniques: _____

Permits Required: General Confined Spaces Hot Works Other: _____

Procedures Discussed: Stop Work Authority Right-to-Refuse Unsafe Work One Call Bump/Self-Checks

Emergency Action Plan

Emergency Contact: OC / Fire Department Number: (806)-477-5000 / -3333

Nearest Phone: Field team personnel cell phones or Bldg. 12-103 Cell coverage verified

Hospital Name: Northwest Texas Hospital (806)-354-1000 Route verified

Evacuation Routes: Z11SISB: Pershing Dr. to main (east) gate.

Muster Points: Primary: Injection trailer. Alternate: Building 12-103 Cafeteria

Special Topics (incidents, actions taken, etc.): High wind warnings today

Attendance

Meeting Conducted By: Jeremy Simons 64193 SSO (YES)

Attendees:

Printed Name and Badge Number	Signature and p.m. Refresher Initials
<u>GABG Perez 59771</u>	<u>[Signature]</u>
<u>Josh Dye 39687</u>	<u>[Signature]</u>
<u>Bryan HuAcu 39650</u>	<u>[Signature]</u>
<u>Steven Esparzu 39651</u>	<u>[Signature]</u>

SITE SAFETY BRIEFING



Date: 1-23-17

Time: 8:00

Project Name: Ditch Liner

Client: CNS Pantex

Project Number: 18A-017-001

Site Location: Pantex Plant, Amarillo TX

General Type of Work: Utility works, pipe trench

Tasks to be completed / plan of the day: _____

Safety Issues

- Protective Clothing/Equipment:**
- | | | |
|--|--|--|
| <input checked="" type="checkbox"/> Safety Glasses | <input checked="" type="checkbox"/> Hard Hat | <input checked="" type="checkbox"/> Gloves: _____ |
| <input type="checkbox"/> Ear Plugs | <input checked="" type="checkbox"/> Protective Footwear | <input type="checkbox"/> Respirator |
| <input type="checkbox"/> Face Shield | <input checked="" type="checkbox"/> High Visibility Vest | <input type="checkbox"/> Cartridges/Filters: _____ |
| <input type="checkbox"/> Fall Protection | <input type="checkbox"/> Personal Flotation Device | <input type="checkbox"/> Other: _____ |
| | <input type="checkbox"/> Tyvek® | <input type="checkbox"/> Other: _____ |

Associated Chemical Hazards and Controls: NE

Associated Physical Hazards and Controls: Slips/trips, back injuries,

HAZCOM Overview (include MSDSs and where they are located): Completed

AHAs Overview (include AHAs and where they are located): Completed

- Associated Hazards:**
- | | | |
|---|---|---|
| <input type="checkbox"/> Lockout/Tagout | <input type="checkbox"/> Permit-Required Confined Space | <input checked="" type="checkbox"/> High Pressure/Temperature Processes |
| <input type="checkbox"/> Overhead Power Lines | <input type="checkbox"/> Machine Guarding | <input checked="" type="checkbox"/> Falling Hazards |
| <input type="checkbox"/> Hot Works | <input checked="" type="checkbox"/> Buried Utilities | <input checked="" type="checkbox"/> Water Hazards |
| <input type="checkbox"/> Tornado | <input type="checkbox"/> Asbestos | <input type="checkbox"/> High Noise (Acoustical) |
| <input type="checkbox"/> Earthquake | <input checked="" type="checkbox"/> Heat Stress | <input checked="" type="checkbox"/> Excavation |
| | <input checked="" type="checkbox"/> Cold Stress | <input checked="" type="checkbox"/> Traffic |
| <input type="checkbox"/> Biological: _____ | | |
| <input type="checkbox"/> Other: _____ | | |

Special Equipment/Techniques: _____

Permits Required: General Confined Spaces Hot Works Other: _____

Procedures Discussed: Stop Work Authority Right-to-Refuse Unsafe Work One Call Bump/Self-Checks

Emergency Action Plan

Emergency Contact: OC / Fire Department Number: (806)-477-5000 / -3333

Nearest Phone: Field team personnel cell phones or Bldg. 12-103 Cell coverage verified

Hospital Name: Northwest Texas Hospital (806)-354-1000 Route verified

Evacuation Routes: Z11SISB: Pershing Dr. to main (east) gate.

Muster Points: Primary: Injection trailer. Alternate: Building 12-103 Cafeteria

Special Topics (incidents, actions taken, etc.): Dr. vrn assists around trucks

Attendance

Meeting Conducted By: Jeremy Simons 64143 SSO (YES) [Signature]

Attendees:

Printed Name and Badge Number	Signature and p.m. Refresher Initials
<u>Josh Dye 39687</u>	<u>[Signature]</u>
<u>Steven Espark 39651</u>	<u>[Signature]</u>
<u>GAGE [Signature] 55771</u>	<u>[Signature]</u>
<u>Bryan Hunt. 39650</u>	<u>[Signature]</u>

SITE SAFETY BRIEFING



Date: 1-25-17

Time: 8:00

Project Name: Ditch Lining Client: CNS Pantex Project Number: 18A-017-001

Site Location: Pantex Plant, Amarillo TX

General Type of Work: trenching and pot holeing

Tasks to be completed / plan of the day: _____

Safety Issues

Protective Clothing/Equipment: Safety Glasses Hard Hat Gloves: _____

Ear Plugs Protective Footwear Respirator Cartridges/Filters: _____

Face Shield High Visibility Vest FRCs Other: _____

Fall Protection Personal Flotation Device Tyvek® Other: _____

Associated Chemical Hazards and Controls: None

Associated Physical Hazards and Controls: Slips trips, high winds

HAZCOM Overview (include MSDSs and where they are located): Completed

AHAs Overview (include AHAs and where they are located): Completed

Associated Hazards: Permit-Required Confined Space High Pressure/Temperature Processes

Lockout/Tagout Machine Guarding Falling Hazards

Overhead Power Lines Buried Utilities Water Hazards

Hot Works Asbestos High Noise (Acoustical)

Tornado Heat Stress Excavation

Earthquake Cold Stress Traffic

Biological: _____

Other: _____

Special Equipment/Techniques: _____

Permits Required: General Confined Spaces Hot Works Other: _____

Procedures Discussed: Stop Work Authority Right-to-Refuse Unsafe Work One Call Bump/Self-Checks

Emergency Action Plan

Emergency Contact: OC / Fire Department Number: (806)-477-5000 / -3333

Nearest Phone: Field team personnel cell phones or Bldg. 12-103 Cell coverage verified

Hospital Name: Northwest Texas Hospital (806)-354-1000 Route verified

Evacuation Routes: Z11SISB: Pershing Dr. to main (east) gate.




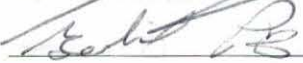
Muster Points: Primary: Injection trailer. Alternate: Building 12-103 Cafeteria

Special Topics (incidents, actions taken, etc.): Spotter use

Attendance

Meeting Conducted By: Jeremy Spino 64143 SSO (YES) 

Attendees:

Printed Name and Badge Number	Signature and p.m. Refresher Initials
<u>Steven Esparza 39651</u>	
<u>B. Hunt. g/ka 39650</u>	
<u>Josh Dye 39687</u>	
<u>GABRIEL PEREZ 59771</u>	

5715

SITE SAFETY BRIEFING



Date: 1-26-17

Time: 830

Project Name: Ditch Lining Client: CNS Pantex Project Number: 18A-017-001

Site Location: Pantex Plant, Amarillo TX

General Type of Work: Anchor trench excavation and leadwell prep

Tasks to be completed / plan of the day: _____

Safety Issues

- Protective Clothing/Equipment:**
- Safety Glasses
 - Hard Hat
 - Gloves: _____
 - Ear Plugs
 - Protective Footwear
 - Respirator
 - Cartridges/Filters: _____
 - Face Shield
 - High Visibility Vest
 - FRCs
 - Other: _____
 - Fall Protection
 - Personal Flotation Device
 - Tyvek®
 - Other: _____

Associated Chemical Hazards and Controls: HE

Associated Physical Hazards and Controls: Slippery Lining, Slips trip falls

HAZCOM Overview (include MSDSs and where they are located): Completed

AHAs Overview (include AHAs and where they are located): Completed

- Associated Hazards:**
- Lockout/Tagout
 - Overhead Power Lines
 - Hot Works
 - Tornado
 - Earthquake
 - Biological:
 - Other:
 - Permit-Required Confined Space
 - Machine Guarding
 - Buried Utilities
 - Asbestos
 - Heat Stress
 - Cold Stress
 - High Pressure/Temperature Processes
 - Falling Hazards
 - Water Hazards
 - High Noise (Acoustical)
 - Excavation
 - Traffic

Special Equipment/Techniques: _____

Permits Required: General Confined Spaces Hot Works Other: _____

Procedures Discussed: Stop Work Authority Right-to-Refuse Unsafe Work One Call Bump/Self-Checks

Emergency Action Plan

Emergency Contact: OC / Fire Department Number: (806)-477-5000 / -3333

Nearest Phone: Field team personnel cell phones or Bldg. 12-103 Cell coverage verified

Hospital Name: Northwest Texas Hospital (806)-354-1000 Route verified

Evacuation Routes: Z11SISB: Pershing Dr. to main (east) gate.

Muster Points: Primary: Injection trailer. Alternate: Building 12-103 Cafeteria

Special Topics (incidents, actions taken, etc.): work near open excavations

Attendance

Meeting Conducted By: Jeremy D 64143 SSO (YES)

Attendees:

Printed Name and Badge Number	Signature and p.m. Refresher Initials
<u>Josh Dye 39687</u>	<u>[Signature]</u>
<u>Stacey 39651</u>	<u>[Signature]</u>
<u>Bryan Hunt 39650</u>	<u>[Signature]</u>
<u>CAROL JERZ 59771</u>	<u>[Signature]</u>

SITE SAFETY BRIEFING



Date: 1-27-17

Time: 800

Project Name: Ditch Liner

Client: CNS Pantex

Project Number: 18A-017-001

Site Location: Pantex Plant, Amarillo TX

General Type of Work: Ditch lining - anaerobic trenching

Tasks to be completed / plan of the day: _____

Safety Issues

- Protective Clothing/Equipment:**
- Safety Glasses
 - Hard Hat
 - Gloves: _____
 - Ear Plugs
 - Protective Footwear
 - Respirator
 - Cartridges/Filters: _____
 - Face Shield
 - High Visibility Vest
 - FRCs
 - Other: _____
 - Fall Protection
 - Personal Flotation Device
 - Tyvek®
 - Other: _____

Associated Chemical Hazards and Controls: NS

Associated Physical Hazards and Controls: Cold stress, SCT, F

HAZCOM Overview (include MSDSs and where they are located): Completed

AHAs Overview (include AHAs and where they are located): Completed

- Associated Hazards:**
- Lockout/Tagout
 - Overhead Power Lines
 - Hot Works
 - Tornado
 - Earthquake
 - Biological: _____
 - Other: _____
 - Permit-Required Confined Space
 - Machine Guarding
 - Buried Utilities
 - Asbestos
 - Heat Stress
 - Cold Stress
 - High Pressure/Temperature Processes
 - Falling Hazards
 - Water Hazards
 - High Noise (Acoustical)
 - Excavation
 - Traffic

Special Equipment/Techniques: _____

Permits Required: General Confined Spaces Hot Works Other: _____

Procedures Discussed: Stop Work Authority Right-to-Refuse Unsafe Work One Call Bump/Self-Checks

Emergency Action Plan

Emergency Contact: OC / Fire Department Number: (806)-477-5000 / -3333

Nearest Phone: Field team personnel cell phones or Bldg. 12-103 Cell coverage verified

Hospital Name: Northwest Texas Hospital (806)-354-1000 Route verified

Evacuation Routes: Z11SISB: Pershing Dr. to main (east) gate.

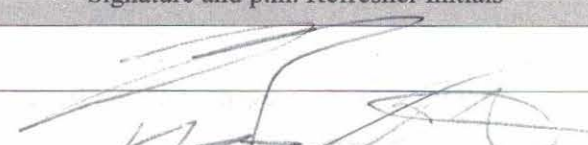
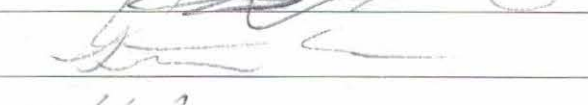


Muster Points: Primary: Injection trailer. Alternate: Building 12-103 Cafeteria

Special Topics (incidents, actions taken, etc.): Slippery liner, frozen soils, wetting

Attendance

Meeting Conducted By: Jeremy Simons 64143 SSO (YES)

Attendees:

Printed Name and Badge Number	Signature and p.m. Refresher Initials
<u>Joshua Dye 39687</u>	
<u>Bryan Hunt 39650</u>	
<u>Steven Espinoza 39651</u>	
<u>Colin Lee 4771</u>	<u>Colin Lee</u>
<u>John Monroe 17944</u>	

SITE SAFETY BRIEFING



Date: 1/30/17

Time: 800

Project Name: Ditch Liner

Client: CNS Pantex

Project Number: 18A-017-001

Site Location: Pantex Plant, Amarillo TX

General Type of Work: CLI INTRO, UNLOAD

Tasks to be completed / plan of the day: _____

Safety Issues

- Protective Clothing/Equipment:**
- Safety Glasses
 - Hard Hat
 - Gloves: _____
 - Ear Plugs
 - Protective Footwear
 - Respirator
 - Cartridges/Filters: _____
 - Face Shield
 - High Visibility Vest
 - FRCs
 - Other: _____
 - Fall Protection
 - Personal Flotation Device
 - Tyvek®
 - Other: _____

Associated Chemical Hazards and Controls: HE

Associated Physical Hazards and Controls: S/T/F'S, STRUCK-BY, PINCH POINTS

HAZCOM Overview (include MSDSs and where they are located): Completed

AHAs Overview (include AHAs and where they are located): Completed

- Associated Hazards:**
- Lockout/Tagout
 - Overhead Power Lines
 - Hot Works
 - Tornado
 - Earthquake
 - Permit-Required Confined Space
 - Machine Guarding
 - Buried Utilities
 - Asbestos
 - Heat Stress
 - Cold Stress
 - High Pressure/Temperature Processes
 - Falling Hazards
 - Water Hazards
 - High Noise (Acoustical)
 - Excavation
 - Traffic

Biological: SNAKES, SPIDERS, INSECTS

Other: _____

Special Equipment/Techniques: _____

Permits Required: General Confined Spaces Hot Works Other: _____

Procedures Discussed: Stop Work Authority Right-to-Refuse Unsafe Work One Call Bump/Self-Checks

Emergency Action Plan

Emergency Contact: OC / Fire Department Number: (806)-477-5000 / -3333

Nearest Phone: Field team personnel cell phones or Bldg. 12-103 Cell coverage verified

Hospital Name: Northwest Texas Hospital (806)-354-1000 Route verified

Evacuation Routes: Z11SISB: Pershing Dr. to main (east) gate.

Muster Points: Primary: Injection trailer. Alternate: Building 12-103 Cafeteria

Special Topics (incidents, actions taken, etc.): CU HASP REVIEW

Attendance

Meeting Conducted By: CAVIN KADANT 35876 [Signature] SSO (YBS)

Attendees:

Printed Name and Badge Number	Signature and p.m. Refresher Initials
Dan Gravelley 55344	[Signature]
Devin Bentley 39739	[Signature]
Randy Casarone 39784	[Signature]
Joe Flores 39999	[Signature]
Keenan Smell 39742	[Signature]
Thay Som 39800	[Signature]

SITE SAFETY BRIEFING



Date: 2/1/17

Time: 11:00

Project Name: Ditch Liner

Client: CNS Pantex

Project Number: 18A-017-001

Site Location: Pantex Plant, Amarillo TX

General Type of Work: DITCH LINING

Tasks to be completed / plan of the day: '

Safety Issues

- Protective Clothing/Equipment:**
- Safety Glasses
 - Hard Hat
 - Gloves: _____
 - Ear Plugs
 - Protective Footwear
 - Respirator
 - Cartridges/Filters: _____
 - Face Shield
 - High Visibility Vest
 - FRCs
 - Other: _____
 - Fall Protection
 - Personal Flotation Device
 - Tyvek®
 - Other: _____

Associated Chemical Hazards and Controls: HE

Associated Physical Hazards and Controls: SHARP'S, PINCH POINTS, STRUCK-BY

HAZCOM Overview (include MSDSs and where they are located): Completed

AHAs Overview (include AHAs and where they are located): Completed

- Associated Hazards:**
- Lockout/Tagout
 - Overhead Power Lines
 - Hot Works
 - Tornado
 - Earthquake
 - Biological: SNAKES, SPIDERS, INSECTS
 - Other: _____
 - Permit-Required Confined Space
 - Machine Guarding
 - Buried Utilities
 - Asbestos
 - Heat Stress
 - Cold Stress
 - High Pressure/Temperature Processes
 - Falling Hazards
 - Water Hazards
 - High Noise (Acoustical)
 - Excavation
 - Traffic

Special Equipment/Techniques: _____

Permits Required: General Confined Spaces Hot Works Other: _____

Procedures Discussed: Stop Work Authority Right-to-Refuse Unsafe Work One Call Bump/Self-Checks

Emergency Action Plan

Emergency Contact: OC / Fire Department Number: (806)-477-5000 / -3333

Nearest Phone: Field team personnel cell phones or Bldg. 12-103 Cell coverage verified

Hospital Name: Northwest Texas Hospital (806)-354-1000 Route verified

Evacuation Routes: Z11SISB: Pershing Dr. to main (east) gate.

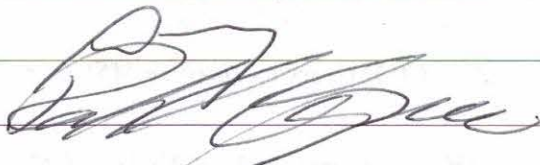





Muster Points: Primary: Injection trailer. Alternate: Building 12-103 Cafeteria

Special Topics (incidents, actions taken, etc.): LDY SAFETY

Attendance

Meeting Conducted By: COUN RADANT CM 55876 SSO (YES)

Attendees:

Printed Name and Badge Number	Signature and p.m. Refresher Initials
Don Grave Iding 55344	
Randy Casarez 39748	
Devon Bentley 27948	
Jose Flores 39799	
Keenan Snell 39742	
Andy son 39800	

SITE SAFETY BRIEFING



Date: 2/2/17

Time: 800

Project Name: Ditch Liner Client: CNS Pantex Project Number: 18A-017-001

Site Location: Pantex Plant, Amarillo TX

General Type of Work: DITCH LINING / ANCHORS

Tasks to be completed / plan of the day: " " " "

Safety Issues

- Protective Clothing/Equipment:**
- Safety Glasses
 - Hard Hat
 - Gloves: _____
 - Ear Plugs
 - Protective Footwear
 - Respirator
 - Cartridges/Filters: _____
 - Face Shield
 - High Visibility Vest
 - FRCs
 - Other: _____
 - Fall Protection
 - Personal Flotation Device
 - Tyvek®
 - Other: _____

Associated Chemical Hazards and Controls: HE

Associated Physical Hazards and Controls: S/T/F'S, PINCH POINTS, STRUCK-BY

HAZCOM Overview (include MSDSs and where they are located): Completed

AHAs Overview (include AHAs and where they are located): Completed

- Associated Hazards:**
- Permit-Required Confined Space
 - High Pressure/Temperature Processes
 - Lockout/Tagout
 - Machine Guarding
 - Falling Hazards
 - Overhead Power Lines
 - Buried Utilities
 - Water Hazards
 - Hot Works
 - Asbestos
 - High Noise (Acoustical)
 - Tornado
 - Heat Stress
 - Excavation
 - Earthquake
 - Cold Stress
 - Traffic
 - Biological: SNAKES, SPIDERS, INSECTS
 - Other: _____

Special Equipment/Techniques: _____

Permits Required: General Confined Spaces Hot Works Other: _____

Procedures Discussed: Stop Work Authority Right-to-Refuse Unsafe Work One Call Bump/Self-Checks

Emergency Action Plan

Emergency Contact: OC / Fire Department Number: (806)-477-5000 / -3333

Nearest Phone: Field team personnel cell phones or Bldg. 12-103 Cell coverage verified

Hospital Name: Northwest Texas Hospital (806)-354-1000 Route verified

Evacuation Routes: Z11SISB: Pershing Dr. to main (east) gate.

Muster Points: Primary: Injection trailer. Alternate: Building 12-103 Cafeteria

Special Topics (incidents, actions taken, etc.): PROCEDURE/PRECAUTIONS
REGARDING PLATYPUS ANCHORS.

Attendance

Meeting Conducted By: COLIN ROBERT CAR 33876 SSO (YES)

Attendees:

Printed Name and Badge Number	Signature and p.m. Refresher Initials
Keenan Snell 39742	<i>Keenan Snell</i>
Dann Bentley 39739	<i>Dann Bentley</i>
Dan Gravely 55344	<i>Dan Gravely</i>
Randy Crowl 39748	<i>Randy Crowl</i>
Jose Flores 39799	<i>Jose Flores</i>
Crack, Serrin 39800	<i>Crack, Serrin</i>

SITE SAFETY BRIEFING



Date: 2/3/17

Time: 800

Project Name: Ditch Liner Client: CNS Pantex Project Number: 18A-017-001

Site Location: Pantex Plant, Amarillo TX

General Type of Work: HEADWALL HW / ANCHORS

Tasks to be completed / plan of the day: " " / " "

Safety Issues

- Protective Clothing/Equipment:**
- Safety Glasses
 - Hard Hat
 - Gloves: _____
 - Ear Plugs
 - Protective Footwear
 - Respirator
 - Cartridges/Filters: _____
 - Face Shield
 - High Visibility Vest
 - FRCs
 - Other: _____
 - Fall Protection
 - Personal Flotation Device
 - Tyvek®
 - Other: _____

Associated Chemical Hazards and Controls: HE

Associated Physical Hazards and Controls: S/T/Fs, PINEH BANTS, STRUCK BY

HAZCOM Overview (include MSDSs and where they are located): Completed

AHAs Overview (include AHAs and where they are located): Completed

- Associated Hazards:**
- Lockout/Tagout
 - Overhead Power Lines
 - Hot Works
 - Tornado
 - Earthquake
 - Permit-Required Confined Space
 - Machine Guarding
 - Buried Utilities
 - Asbestos
 - Heat Stress
 - Cold Stress
 - High Pressure/Temperature Processes
 - Falling Hazards
 - Water Hazards
 - High Noise (Acoustical)
 - Excavation
 - Traffic

Biological: SNAKES, SPIDERS, INSECTS

Other: _____

Special Equipment/Techniques: _____

Permits Required: General Confined Spaces Hot Works Other: _____

Procedures Discussed: Stop Work Authority Right-to-Refuse Unsafe Work One Call Bump/Self-Checks

Emergency Action Plan

Emergency Contact: OC / Fire Department Number: (806)-477-5000 / -3333

Nearest Phone: Field team personnel cell phones or Bldg. 12-103 Cell coverage verified

Hospital Name: Northwest Texas Hospital (806)-354-1000 Route verified

Evacuation Routes: Z11SISB: Pershing Dr. to main (east) gate.

Muster Points: Primary: Injection trailer. Alternate: Building 12-103 Cafeteria

Special Topics (incidents, actions taken, etc.): GOAL

Meeting Conducted By: COLIN RADANT Attendance Cell 33876 SSO (YES)

Attendees:

Printed Name and Badge Number	Signature and p.m. Refresher Initials
<u>Harley Smith 39855</u>	<u>[Signature]</u>
<u>Jose Flores 39799</u>	<u>[Signature]</u>
<u>Keegan Snell 39742</u>	<u>[Signature]</u>
<u>Landy Cosgrove 39748</u>	<u>[Signature]</u>
<u>Devin Bentley 39739</u>	<u>[Signature]</u>
<u>Maria Ramirez 33648</u>	<u>[Signature]</u>
<u>IAN HUNTER 15218</u>	<u>[Signature]</u>

SITE SAFETY BRIEFING



Date: 2/6/17

Time: 800

Project Name: Ditch Liner

Client: CNS Pantex

Project Number: 18A-017-001

Site Location: Pantex Plant, Amarillo TX

General Type of Work: HYDRO EX, TRENCH, HW HARDWARE ANCHORS

Tasks to be completed / plan of the day: _____

Safety Issues

- Protective Clothing/Equipment:**
- | | | |
|--|--|--|
| <input checked="" type="checkbox"/> Safety Glasses | <input checked="" type="checkbox"/> Hard Hat | <input checked="" type="checkbox"/> Gloves: _____ |
| <input type="checkbox"/> Ear Plugs | <input checked="" type="checkbox"/> Protective Footwear | <input type="checkbox"/> Cartridges/Filters: _____ |
| <input type="checkbox"/> Face Shield | <input checked="" type="checkbox"/> High Visibility Vest | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Fall Protection | <input type="checkbox"/> Personal Flotation Device | <input type="checkbox"/> Other: _____ |
| | <input type="checkbox"/> FRCs | |
| | <input type="checkbox"/> Tyvek® | |

Associated Chemical Hazards and Controls: HE

Associated Physical Hazards and Controls: S/T/F'S, PUNCH POINTS, STRUCK BY

HAZCOM Overview (include MSDSs and where they are located): Completed

AHAs Overview (include AHAs and where they are located): Completed

- Associated Hazards:**
- | | | |
|---|---|---|
| <input checked="" type="checkbox"/> Lockout/Tagout | <input type="checkbox"/> Permit-Required Confined Space | <input checked="" type="checkbox"/> High Pressure/Temperature Processes |
| <input type="checkbox"/> Overhead Power Lines | <input type="checkbox"/> Machine Guarding | <input type="checkbox"/> Falling Hazards |
| <input type="checkbox"/> Hot Works | <input type="checkbox"/> Buried Utilities | <input type="checkbox"/> Water Hazards |
| <input type="checkbox"/> Tornado | <input type="checkbox"/> Asbestos | <input type="checkbox"/> High Noise (Acoustical) |
| <input type="checkbox"/> Earthquake | <input type="checkbox"/> Heat Stress | <input type="checkbox"/> Excavation |
| <input checked="" type="checkbox"/> Biological: <u>SNAKES, SPIDERS, INSECTS</u> | <input checked="" type="checkbox"/> Cold Stress | <input checked="" type="checkbox"/> Traffic |
| <input type="checkbox"/> Other: _____ | | |

Special Equipment/Techniques: _____

Permits Required: General Confined Spaces Hot Works Other: _____

Procedures Discussed: Stop Work Authority Right-to-Refuse Unsafe Work One Call Bump/Self-Checks

Emergency Action Plan

Emergency Contact: OC / Fire Department Number: (806)-477-5000 / -3333

Nearest Phone: Field team personnel cell phones or Bldg. 12-103 Cell coverage verified

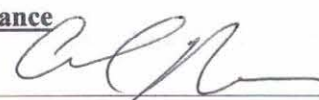
Hospital Name: Northwest Texas Hospital (806)-354-1000 Route verified

Evacuation Routes: Z11SISB: Pershing Dr. to main (east) gate.

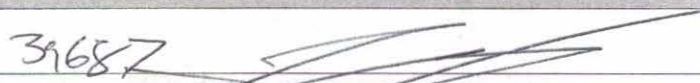

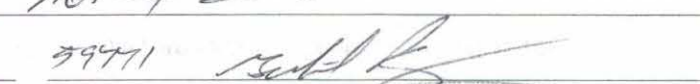
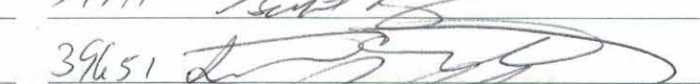



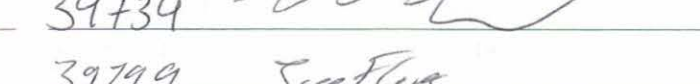
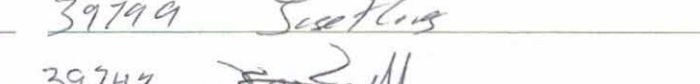
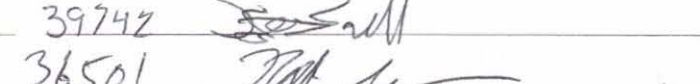
Muster Points: Primary: Injection trailer. Alternate: Building 12-103 Cafeteria

Special Topics (incidents, actions taken, etc.): MANY PEOPLE/VEHICLES ON SITE.
BE AWARE OF SURROUNDINGS, SLOW DRIVING, COMMUNICATE.

Attendance

Meeting Conducted By: COLIN RADANT  33876 SSQ (YES)

Attendees:

Printed Name and Badge Number	Signature and p.m. Refresher Initials
<u>Joy L. Dye</u> 39687	
<u>B. Hutchings</u> 39657	
<u>Gabe Perez</u> 39771	
<u>Stevie Estanz</u> 39651	
<u>Randal Cosgrove</u> 39718	
<u>Andy Sum</u> 39800	
<u>Devin Bentley</u> 39739	
<u>Jose Flores</u> 39799	<u>Jose Flores</u>
<u>Keenan Snell</u> 39742	
<u>Brandt Schick</u> 36501	
<u>Matt Monroe</u> 17944	

SITE SAFETY BRIEFING



Date: 2/7/16

Time: 800

Project Name: Ditch Liner Client: CNS Pantex Project Number: 18A-017-001

Site Location: Pantex Plant, Amarillo TX

General Type of Work: LINING

Tasks to be completed / plan of the day: _____

Safety Issues

- Protective Clothing/Equipment:**
- Safety Glasses
 - Hard Hat
 - Gloves: _____
 - Ear Plugs
 - Protective Footwear
 - Respirator
 - Cartridges/Filters: _____
 - Face Shield
 - High Visibility Vest
 - FRCs
 - Other: _____
 - Fall Protection
 - Personal Flotation Device
 - Tyvek®
 - Other: _____

Associated Chemical Hazards and Controls: HE

Associated Physical Hazards and Controls: S/T/F'S, STRUCK - BY
PINCH POINTS

HAZCOM Overview (include MSDSs and where they are located): Completed

AHAs Overview (include AHAs and where they are located): Completed

- Associated Hazards:**
- Permit-Required Confined Space
 - High Pressure/Temperature Processes
 - Lockout/Tagout
 - Machine Guarding
 - Overhead Power Lines
 - Buried Utilities
 - Falling Hazards
 - Hot Works
 - Asbestos
 - Water Hazards
 - Tornado
 - Heat Stress
 - High Noise (Acoustical)
 - Earthquake
 - Cold Stress
 - Excavation
 - Biological: SNAKES, SPIDERS, INSECTS
 - Traffic
 - Other: _____

Special Equipment/Techniques: _____

Permits Required: General Confined Spaces Hot Works Other: _____

Procedures Discussed: Stop Work Authority Right-to-Refuse Unsafe Work One Call Bump/Self-Checks

Emergency Action Plan

Emergency Contact: OC / Fire Department Number: (806)-477-5000 / -3333

Nearest Phone: Field team personnel cell phones or Bldg. 12-103 Cell coverage verified

Hospital Name: Northwest Texas Hospital (806)-354-1000 Route verified

Evacuation Routes: Z11SISB: Pershing Dr. to main (east) gate.

Muster Points: Primary: Injection trailer. Alternate: Building 12-103 Cafeteria

Special Topics (incidents, actions taken, etc.): REVIEW OF 2/6/17 INCIDENT,
HOW IT APPLIES TO CLI WORK

Attendance

Meeting Conducted By: Cain ADANT SS76 SSO

Attendees:

Printed Name and Badge Number	Signature and p.m. Refresher Initials
DSIBurnley 39739	<i>[Signature]</i>
Keenan Snell 39742	<i>[Signature]</i>
Alamy Sum 3984	<i>[Signature]</i>
Randal Cosgrove 39748	<i>[Signature]</i>
Jose Flores 39799	<i>[Signature]</i>
TONY KUPILIK 19484	<i>[Signature]</i>

SITE SAFETY BRIEFING



Date: 2/8/17

Time: 800

Project Name: Ditch Liner Client: CNS Pantex Project Number: 18A-017-001

Site Location: Pantex Plant, Amarillo TX

General Type of Work: BACKFILL, PIPE BOOTS, HYDRO EXC.

Tasks to be completed / plan of the day: _____

Safety Issues

- Protective Clothing/Equipment:**
- Safety Glasses
 - Hard Hat
 - Gloves: _____
 - Ear Plugs
 - Protective Footwear
 - Respirator
 - Cartridges/Filters: _____
 - Face Shield
 - High Visibility Vest
 - FRCs
 - Other: _____
 - Fall Protection
 - Personal Flotation Device
 - Tyvek®
 - Other: _____

Associated Chemical Hazards and Controls: HE

Associated Physical Hazards and Controls: STIFFS, STURDY, FINCH POINTS

HAZCOM Overview (include MSDSs and where they are located): Completed

AHAs Overview (include AHAs and where they are located): Completed

- Associated Hazards:**
- Lockout/Tagout
 - Overhead Power Lines
 - Hot Works
 - Tornado
 - Earthquake
 - Biological: SNAKES, SPIDERS, INSECTS
 - Other: _____
 - Permit-Required Confined Space
 - Machine Guarding
 - Buried Utilities
 - Asbestos
 - Heat Stress
 - Cold Stress
 - High Pressure/Temperature Processes
 - Falling Hazards
 - Water Hazards
 - High Noise (Acoustical)
 - Excavation
 - Traffic

Special Equipment/Techniques: _____

Permits Required: General Confined Spaces Hot Works Other: _____

Procedures Discussed: Stop Work Authority Right-to-Refuse Unsafe Work One Call Bump/Self-Checks

Emergency Action Plan

Emergency Contact: OC / Fire Department Number: (806)-477-5000 / -3333

Nearest Phone: Field team personnel cell phones or Bldg. 12-103 Cell coverage verified

Hospital Name: Northwest Texas Hospital (806)-354-1000 Route verified

Evacuation Routes: Z11SISB: Pershing Dr. to main (east) gate.

Muster Points: Primary: Injection trailer. Alternate: Building 12-103 Cafeteria

Special Topics (incidents, actions taken, etc.): PARKING DEFENSIVELY

Attendance

Meeting Conducted By: CORIN LABANT 33876 SSO (YES/NO) (YES)

Attendees:

Printed Name and Badge Number	Signature and p.m. Refresher Initials
Brandt Schulte 36501	<i>[Signature]</i>
CH36 PEREZ 59771	<i>[Signature]</i>
B Huntington 39650	<i>[Signature]</i>
Stewart Espinoza 39651	<i>[Signature]</i>
Josh Dye 39687	<i>[Signature]</i>
Jose Flores 39749	<i>[Signature]</i>
Andy Smith 39800	<i>[Signature]</i>
Heenan Snell 39742	<i>[Signature]</i>
Devin Bentley 39764	<i>[Signature]</i>
Randy Cosgrove 39798	<i>[Signature]</i>

SITE SAFETY BRIEFING



Date: 2/9/17

Time: 800

Project Name: Ditch Liner Client: CNS Pantex Project Number: 18A-017-001

Site Location: Pantex Plant, Amarillo TX

General Type of Work: HYDRO EX, RE LINE

Tasks to be completed / plan of the day: ccc e 'c 'c 'c

Safety Issues

- Protective Clothing/Equipment:**
- Safety Glasses
 - Hard Hat
 - Gloves: _____
 - Ear Plugs
 - Protective Footwear
 - Respirator
 - Cartridges/Filters: _____
 - Face Shield
 - High Visibility Vest
 - FRCs
 - Other: _____
 - Fall Protection
 - Personal Flotation Device
 - Tyvek®
 - Other: _____

Associated Chemical Hazards and Controls: HC

Associated Physical Hazards and Controls: S/H/F's, PINCH POINTS, STRUCK BY

HAZCOM Overview (include MSDSs and where they are located): Completed

AHAs Overview (include AHAs and where they are located): Completed

- Associated Hazards:**
- Permit-Required Confined Space
 - High Pressure/Temperature Processes
 - Lockout/Tagout
 - Machine Guarding
 - Falling Hazards
 - Overhead Power Lines
 - Buried Utilities
 - Water Hazards
 - Hot Works
 - Asbestos
 - High Noise (Acoustical)
 - Tornado
 - Heat Stress
 - Excavation
 - Earthquake
 - Cold Stress
 - Traffic
 - Biological: SNAKES, SPIDERS, INSECTS
 - Other: _____

Special Equipment/Techniques: _____

Permits Required: General Confined Spaces Hot Works Other: _____

Procedures Discussed: Stop Work Authority Right-to-Refuse Unsafe Work One Call Bump/Self-Checks

Emergency Action Plan

Emergency Contact: OC / Fire Department Number: (806)-477-5000 / -3333

Nearest Phone: Field team personnel cell phones or Bldg. 12-103 Cell coverage verified

Hospital Name: Northwest Texas Hospital (806)-354-1000 Route verified

Evacuation Routes: Z11SISB: Pershing Dr. to main (east) gate.

Muster Points: Primary: Injection trailer. Alternate: Building 12-103 Cafeteria

Special Topics (incidents, actions taken, etc.): SLIPS, TRIPS, FALLS

Attendance

Meeting Conducted By: COLIN ADAM CLN 33876 SSO (YES/NO) ()

Attendees:

Printed Name and Badge Number	Signature and p.m. Refresher Initials
Brandt Schiche 36501	<i>[Signature]</i>
Dewin Bentley 39739	<i>[Signature]</i>
Keenan Snel 39742	<i>[Signature]</i>
Jose Flores 39799	<i>[Signature]</i>
Josh Dye 39687	<i>[Signature]</i>
Bryan Hunt 39650	<i>[Signature]</i>
Arcilio 39801	<i>[Signature]</i>
Kendal Casanova 39748	<i>[Signature]</i>
Paul Ray 59771	GABRIEL PEREZ
Steven Espana 39651	<i>[Signature]</i>
Greg Miller 08008	<i>[Signature]</i>
Matt Jones 17944	<i>[Signature]</i>

SITE SAFETY BRIEFING



Date: 2/10/17

Time: 800

Project Name: Ditch Liner

Client: CNS Pantex

Project Number: 18A-017-001

Site Location: Pantex Plant, Amarillo TX

General Type of Work: HYDRO-EXE, PLATYPUS ANCHORS

Tasks to be completed / plan of the day: _____

Safety Issues

- Protective Clothing/Equipment:**
- Safety Glasses
 - Hard Hat
 - Gloves: _____
 - Ear Plugs
 - Protective Footwear
 - Respirator
 - Cartridges/Filters: _____
 - Face Shield
 - High Visibility Vest
 - FRCs
 - Other: _____
 - Fall Protection
 - Personal Flotation Device
 - Tyvek®
 - Other: _____

Associated Chemical Hazards and Controls: A/E

Associated Physical Hazards and Controls: S/T/F'S, STRUCK-BY, PINEH POINTS

HAZCOM Overview (include MSDSs and where they are located): Completed

AHAs Overview (include AHAs and where they are located): Completed

- Associated Hazards:**
- Lockout/Tagout
 - Overhead Power Lines
 - Hot Works
 - Tornado
 - Earthquake
 - Biological: SNAKES, SPIDERS, INSECTS
 - Other: _____
 - Permit-Required Confined Space
 - Machine Guarding
 - Buried Utilities
 - Asbestos
 - Heat Stress
 - Cold Stress
 - High Pressure/Temperature Processes
 - Falling Hazards
 - Water Hazards
 - High Noise (Acoustical)
 - Excavation
 - Traffic

Special Equipment/Techniques: _____

Permits Required: General Confined Spaces Hot Works Other: _____

Procedures Discussed: Stop Work Authority Right-to-Refuse Unsafe Work One Call Bump/Self-Checks

Emergency Action Plan

Emergency Contact: OC / Fire Department Number: (806)-477-5000 / -3333

Nearest Phone: Field team personnel cell phones or Bldg. 12-103 Cell coverage verified

Hospital Name: Northwest Texas Hospital (806)-354-1000 Route verified

Evacuation Routes: Z11SISB: Pershing Dr. to main (east) gate.

Muster Points: Primary: Injection trailer. Alternate: Building 12-103 Cafeteria

Special Topics (incidents, actions taken, etc.): HYDRO EXC HAZARDS,

EVERYONE KNOW UTILITIES, WATCH & STOP IF WE DON'T KNOW

Attendance

Meeting Conducted By: COUNCILLANT Cell 33876 SSO (YES/NO) (NO)

Attendees:

Printed Name and Badge Number	Signature and p.m. Refresher Initials
Brandt Schiche 36501	<i>[Signature]</i>
Matt Monroe 17949	<i>[Signature]</i>
Steven Esparr 39651	<i>[Signature]</i>
Jose Fleier 39799	<i>[Signature]</i>
Dawn Bentley 39739	<i>[Signature]</i>
Keenan Snell 39742	<i>[Signature]</i>
Randall Cosgrove 39748	<i>[Signature]</i>
Andy S.M 39800	<i>[Signature]</i>
3444 Hal. 39650	<i>[Signature]</i>
GAGE PEREZ 59771	<i>[Signature]</i>
Josh Dye 39687	<i>[Signature]</i>

SITE SAFETY BRIEFING



Date: 2/13/17

Time: 800

Project Name: Ditch Liner Client: CNS Pantex Project Number: 18A-017-001

Site Location: Pantex Plant, Amarillo TX

General Type of Work: EQUIP PICK-UP

Tasks to be completed / plan of the day: _____

Safety Issues

- Protective Clothing/Equipment:**
- Safety Glasses
 - Hard Hat
 - Gloves: _____
 - Ear Plugs
 - Protective Footwear
 - Respirator
 - Cartridges/Filters: _____
 - Face Shield
 - High Visibility Vest
 - FRCs
 - Other: _____
 - Fall Protection
 - Personal Flotation Device
 - Tyvek®
 - Other: _____

Associated Chemical Hazards and Controls: HE

Associated Physical Hazards and Controls: S/T/Fs, STRUCK-BY, PINCH POINTS

HAZCOM Overview (include MSDSs and where they are located): Completed

AHAs Overview (include AHAs and where they are located): Completed

- Associated Hazards:**
- Lockout/Tagout
 - Overhead Power Lines
 - Hot Works
 - Tornado
 - Earthquake
 - Permit-Required Confined Space
 - Machine Guarding
 - Buried Utilities
 - Asbestos
 - Heat Stress
 - Cold Stress
 - High Pressure/Temperature Processes
 - Falling Hazards
 - Water Hazards
 - High Noise (Acoustical)
 - Excavation
 - Traffic

Biological: SNAKES, SPIDERS, INSECTS

Other: _____

Special Equipment/Techniques: _____

Permits Required: General Confined Spaces Hot Works Other: _____

Procedures Discussed: Stop Work Authority Right-to-Refuse Unsafe Work One Call Bump/Self-Checks

Emergency Action Plan

Emergency Contact: OC / Fire Department Number: (806)-477-5000 / -3333

Nearest Phone: Field team personnel cell phones or Bldg. 12-103 Cell coverage verified

Hospital Name: Northwest Texas Hospital (806)-354-1000 Route verified

Evacuation Routes: Z11SISB: Pershing Dr. to main (east) gate.

Muster Points: Primary: Injection trailer. Alternate: Building 12-103 Cafeteria

Special Topics (incidents, actions taken, etc.): EQUIP LOADING SLIPS

Attendance

Meeting Conducted By: COVIN RADAN Cell 3876 SSO (YES/NO)

Attendees:

Printed Name and Badge Number	Signature and p.m. Refresher Initials
Brandt Schiche 36501	<i>[Signature]</i>
Steven Esparr 38651	<i>[Signature]</i>
Gabe Perez 39771	<i>[Signature]</i>
B. Hutzler 39650	<i>[Signature]</i>

SITE SAFETY BRIEFING



Date: 2/15/17

Time: 800

Project Name: Ditch Liner Client: CNS Pantex Project Number: 18A-017-001

Site Location: Pantex Plant, Amarillo TX

General Type of Work: REMOVE TRAILER

Tasks to be completed / plan of the day:

Safety Issues

- Protective Clothing/Equipment:**
- Safety Glasses
 - Hard Hat
 - Gloves: _____
 - Ear Plugs
 - Protective Footwear
 - Respirator
 - Cartridges/Filters: _____
 - Face Shield
 - High Visibility Vest
 - FRCs
 - Other: _____
 - Fall Protection
 - Personal Flotation Device
 - Tyvek®
 - Other: _____

Associated Chemical Hazards and Controls: A/E

Associated Physical Hazards and Controls: S/T/F'S, STRUCK BY, PINCH POINTS

HAZCOM Overview (include MSDSs and where they are located): Completed

AHAs Overview (include AHAs and where they are located): Completed

- Associated Hazards:**
- Lockout/Tagout
 - Overhead Power Lines
 - Hot Works
 - Tornado
 - Earthquake
 - Permit-Required Confined Space
 - Machine Guarding
 - Buried Utilities
 - Asbestos
 - Heat Stress
 - Cold Stress
 - High Pressure/Temperature Processes
 - Falling Hazards
 - Water Hazards
 - High Noise (Acoustical)
 - Excavation
 - Traffic

Biological: SNAKES, SPIDERS, INSECTS

Other: _____

SITE SAFETY BRIEFING



Date: 2/16/17

Time: 800

Project Name: Ditch Liner Client: CNS Pantex Project Number: 18A-017-001

Site Location: Pantex Plant, Amarillo TX

General Type of Work: DITCH CLEAN/RELINE

Tasks to be completed / plan of the day: _____

Safety Issues

- Protective Clothing/Equipment:**
- Safety Glasses
 - Hard Hat
 - Gloves: _____
 - Ear Plugs
 - Protective Footwear
 - Respirator
 - Cartridges/Filters: _____
 - Face Shield
 - High Visibility Vest
 - FRCs
 - Other: _____
 - Fall Protection
 - Personal Flotation Device
 - Tyvek®
 - Other: _____

Associated Chemical Hazards and Controls: HE

Associated Physical Hazards and Controls: SLIT/F'S, PINCH POINTS, STRUCK-BY

HAZCOM Overview (include MSDSs and where they are located): Completed

AHAs Overview (include AHAs and where they are located): Completed

- Associated Hazards:**
- Lockout/Tagout
 - Overhead Power Lines
 - Hot Works
 - Tornado
 - Earthquake
 - Permit-Required Confined Space
 - Machine Guarding
 - Buried Utilities
 - Asbestos
 - Heat Stress
 - Cold Stress
 - High Pressure/Temperature Processes
 - Falling Hazards
 - Water Hazards
 - High Noise (Acoustical)
 - Excavation
 - Traffic

Biological: SNAKES, SPIDERS, INSECTS

Other: _____

Special Equipment/Techniques: _____

Permits Required: General Confined Spaces Hot Works Other: _____

Procedures Discussed: Stop Work Authority Right-to-Refuse Unsafe Work One Call Bump/Self-Checks

Emergency Action Plan

Emergency Contact: OC / Fire Department Number: (806)-477-5000 / -3333

Nearest Phone: Field team personnel cell phones or Bldg. 12-103 Cell coverage verified

Hospital Name: Northwest Texas Hospital (806)-354-1000 Route verified

Evacuation Routes: Z11SISB: Pershing Dr. to main (east) gate.

Muster Points: Primary: Injection trailer. Alternate: Building 12-103 Cafeteria

Special Topics (incidents, actions taken, etc.): STH / SWMU HAZARDS

Attendance

Meeting Conducted By: Colin Radant 33876 SSO (YES/NO) _____

Attendees:

Printed Name and Badge Number	Signature and p.m. Refresher Initials
Brandt Schide 36501	<i>[Signature]</i>
GABG Perez 59771	<i>[Signature]</i>
Josh Dye 39687	<i>[Signature]</i>
Matt Monroe 17944 ^{TE10m} Review 17944	<i>[Signature]</i>
Devon Bentley 39739	<i>[Signature]</i>
Keenan Snell 39742	<i>[Signature]</i>
Jose Flores 39799	<i>[Signature]</i>
Randy Casarone 39798	<i>[Signature]</i>
Andy Smith 39800	<i>[Signature]</i>

SITE SAFETY BRIEFING



Date: 2/17/17

Time: 800

Project Name: Ditch Lining Client: CNS Pantex Project Number: 18A-017-001

Site Location: Pantex Plant, Amarillo TX

General Type of Work: LINING DITCH / HYDRO VAC TRENCH

Tasks to be completed / plan of the day: _____

Safety Issues

- Protective Clothing/Equipment:**
- Safety Glasses
 - Hard Hat
 - Gloves: _____
 - Ear Plugs
 - Protective Footwear
 - Respirator
 - Cartridges/Filters: _____
 - Face Shield
 - High Visibility Vest
 - FRCs
 - Other: _____
 - Fall Protection
 - Personal Flotation Device
 - Tyvek®
 - Other: _____

Associated Chemical Hazards and Controls: HE

Associated Physical Hazards and Controls: STAIRS, PINCH POINTS, STEEL-BY

HAZCOM Overview (include MSDSs and where they are located): Completed

AHAs Overview (include AHAs and where they are located): Completed

- Associated Hazards:**
- Lockout/Tagout
 - Overhead Power Lines
 - Hot Works
 - Tornado
 - Earthquake
 - Biological: SNAKES, SPIDERS, INSECTS
 - Other: _____
 - Permit-Required Confined Space
 - Machine Guarding
 - Buried Utilities
 - Asbestos
 - Heat Stress
 - Cold Stress
 - High Pressure/Temperature Processes
 - Falling Hazards
 - Water Hazards
 - High Noise (Acoustical)
 - Excavation
 - Traffic

Special Equipment/Techniques: _____

Permits Required: General Confined Spaces Hot Works Other: _____

Procedures Discussed: Stop Work Authority Right-to-Refuse Unsafe Work One Call Bump/Self-Checks

Emergency Action Plan

Emergency Contact: OC / Fire Department Number: (806)-477-5000 / -3333

Nearest Phone: Field team personnel cell phones or Bldg. 12-103 Cell coverage verified

Hospital Name: Northwest Texas Hospital (806)-354-1000 Route verified

Evacuation Routes: Z11SISB: Pershing Dr. to main (east) gate.

Muster Points: Primary: Injection trailer. Alternate: Building 12-103 Cafeteria

Special Topics (incidents, actions taken, etc.): CONTRACENCY. KEEP A SAFE PACE.

Attendance

Meeting Conducted By: COLIN RADANT CLN 33876 SSO (YES/NO) (YES)

Attendees:

Printed Name and Badge Number	Signature and p.m. Refresher Initials
Brandt Schiche 38501	<i>[Signature]</i>
GABE PEREZ 55771	<i>[Signature]</i>
Jose Flores 39799	<i>[Signature]</i>
Keenan Snell 39742	<i>[Signature]</i>
Davin Bentley 39739	<i>[Signature]</i>
Andy Sun 39866	<i>[Signature]</i>
Josh Dye 39687	<i>[Signature]</i>
Randy Coscare 39748	<i>[Signature]</i>
MARC RAMIREZ 33648	<i>[Signature]</i>

SITE SAFETY BRIEFING



Date: 2/20/17 2/21/17

Time: 800

Project Name: Ditch Liner Client: CNS Pantex Project Number: 18A-017-001

Site Location: Pantex Plant, Amarillo TX

General Type of Work: LINER REPLACE, TRENCHING

Tasks to be completed / plan of the day: '' ''

Safety Issues

- Protective Clothing/Equipment:**
- Safety Glasses
 - Hard Hat
 - Gloves: _____
 - Ear Plugs
 - Protective Footwear
 - Respirator
 - Cartridges/Filters: _____
 - Face Shield
 - High Visibility Vest
 - FRCs
 - Other: _____
 - Fall Protection
 - Personal Flotation Device
 - Tyvek®
 - Other: _____

Associated Chemical Hazards and Controls: HE

Associated Physical Hazards and Controls: S/T/F'S, PINCH POINTS, STRUCK-BY

HAZCOM Overview (include MSDSs and where they are located): Completed

AHAs Overview (include AHAs and where they are located): Completed

- Associated Hazards:**
- Permit-Required Confined Space
 - High Pressure/Temperature Processes
 - Lockout/Tagout
 - Machine Guarding
 - Falling Hazards
 - Overhead Power Lines
 - Buried Utilities
 - Water Hazards
 - Hot Works
 - Asbestos
 - High Noise (Acoustical)
 - Tornado
 - Heat Stress
 - Excavation
 - Earthquake
 - Cold Stress
 - Traffic

Biological: SNAILS, SPIDERS, INSECTS.

Other: _____

Special Equipment/Techniques: _____

Permits Required: General Confined Spaces Hot Works Other: _____

Procedures Discussed: Stop Work Authority Right-to-Refuse Unsafe Work One Call Bump/Self-Checks

Emergency Action Plan

Emergency Contact: OC / Fire Department Number: (806)-477-5000 / -3333

Nearest Phone: Field team personnel cell phones or Bldg. 12-103 Cell coverage verified

Hospital Name: Northwest Texas Hospital (806)-354-1000 Route verified

Evacuation Routes: Z11SISB: Pershing Dr. to main (east) gate.

Muster Points: Primary: Injection trailer. Alternate: Building 12-103 Cafeteria




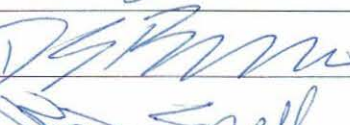




Special Topics (incidents, actions taken, etc.): COMMUNICATE w/ HEAVY MACHINERY / OPERATORS.

Attendance

Meeting Conducted By: Colin Radant  SSO (YES/NO) YES

Attendees:

Printed Name and Badge Number	Signature and p.m. Refresher Initials
-------------------------------	---------------------------------------

Josh Dye 39687	
Bryan Huntley 39650	
Randy Cosgrove 39748	
Andre Sam 39800	
Devon Bentley 39739	
Keenan Snell 39742	
Jose Flores 39749	
Don Gravelly 55314	
Ex Per Review for Matt Monroe Anchors 17214	

2/20
no 2/21

SITE SAFETY BRIEFING



Date: 2/22/17

Time: 1200

Project Name: Ditch Liner Client: CNS Pantex Project Number: 18A-017-001

Site Location: Pantex Plant, Amarillo TX

General Type of Work: ANCHORS, RE-LINE, HYDRO FA

Tasks to be completed / plan of the day: _____

Safety Issues

- Protective Clothing/Equipment:**
- Safety Glasses
 - Hard Hat
 - Gloves: _____
 - Ear Plugs
 - Protective Footwear
 - Respirator
 - Cartridges/Filters: _____
 - Face Shield
 - High Visibility Vest
 - FRCs
 - Other: _____
 - Fall Protection
 - Personal Flotation Device
 - Tyvek®
 - Other: _____

Associated Chemical Hazards and Controls: HE

Associated Physical Hazards and Controls: S/T/F'S, STRUCK-BY, PINCH POINTS

HAZCOM Overview (include MSDSs and where they are located): Completed

AHAs Overview (include AHAs and where they are located): Completed

- Associated Hazards:**
- Lockout/Tagout
 - Permit-Required Confined Space
 - High Pressure/Temperature Processes
 - Overhead Power Lines
 - Machine Guarding
 - Falling Hazards
 - Hot Works
 - Buried Utilities
 - Water Hazards
 - Tornado
 - Asbestos
 - High Noise (Acoustical)
 - Earthquake
 - Heat Stress
 - Excavation
 - Cold Stress
 - Traffic

Biological: SNAKES, SPIDERS, INSECTS

Other: _____

Special Equipment/Techniques: _____

Permits Required: General Confined Spaces Hot Works Other: _____

Procedures Discussed: Stop Work Authority Right-to-Refuse Unsafe Work One Call Bump/Self-Checks

Emergency Action Plan

Emergency Contact: OC / Fire Department Number: (806)-477-5000 / -3333

Nearest Phone: Field team personnel cell phones or Bldg. 12-103 Cell coverage verified

Hospital Name: Northwest Texas Hospital (806)-354-1000 Route verified

Evacuation Routes: Z11SISB: Pershing Dr. to main (east) gate.

Muster Points: Primary: Injection trailer. Alternate: Building 12-103 Cafeteria

Special Topics (incidents, actions taken, etc.): WASPS.

Attendance

Meeting Conducted By: Colin Radant 33876 SSO (YES/NO) YES

Attendees:

Printed Name and Badge Number	Signature and p.m. Refresher Initials
<u>Andy Sun 39800</u>	<u>[Signature]</u>
<u>Randy Cosgrove 39718</u>	<u>[Signature]</u>
<u>Devlin Bentley 39939</u>	<u>[Signature]</u>
<u>Keenan Snell 39742</u>	<u>[Signature]</u>
<u>Jose Flores 39799</u>	<u>[Signature]</u>
<u>Josh Dye 39687</u>	<u>[Signature]</u>

SITE SAFETY BRIEFING



Date: 2/23/17

Time: 8:00

Project Name: Ditch Liner Client: CNS Pantex Project Number: 18A-017-001

Site Location: Pantex Plant, Amarillo TX

General Type of Work: RELINE, BACKFILL

Tasks to be completed / plan of the day: _____

Safety Issues

- Protective Clothing/Equipment:**
- Safety Glasses
 - Hard Hat
 - Gloves: _____
 - Ear Plugs
 - Protective Footwear
 - Respirator
 - Cartridges/Filters: _____
 - Face Shield
 - High Visibility Vest
 - FRCs
 - Other: _____
 - Fall Protection
 - Personal Flotation Device
 - Tyvek®
 - Other: _____

Associated Chemical Hazards and Controls: HE

Associated Physical Hazards and Controls: SLT/F'S, PINN POINTS, STRUCK-BY

HAZCOM Overview (include MSDSs and where they are located): Completed

AHAs Overview (include AHAs and where they are located): Completed

- Associated Hazards:**
- Lockout/Tagout
 - Overhead Power Lines
 - Hot Works
 - Tornado
 - Earthquake
 - Biological: SNAKES, SPIDERS
 - Other: _____
 - Permit-Required Confined Space
 - Machine Guarding
 - Buried Utilities
 - Asbestos
 - Heat Stress
 - Cold Stress
 - High Pressure/Temperature Processes
 - Falling Hazards
 - Water Hazards
 - High Noise (Acoustical)
 - Excavation
 - Traffic

Special Equipment/Techniques: _____

Permits Required: General Confined Spaces Hot Works Other: _____

Procedures Discussed: Stop Work Authority Right-to-Refuse Unsafe Work One Call Bump/Self-Checks

Emergency Action Plan

Emergency Contact: OC / Fire Department Number: (806)-477-5000 / -3333

Nearest Phone: Field team personnel cell phones or Bldg. 12-103 Cell coverage verified

Hospital Name: Northwest Texas Hospital (806)-354-1000 Route verified

Evacuation Routes: Z11SISB: Pershing Dr. to main (east) gate.

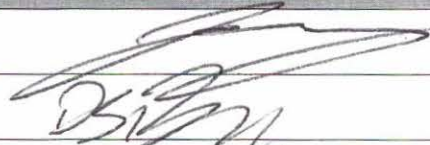
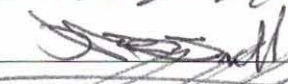

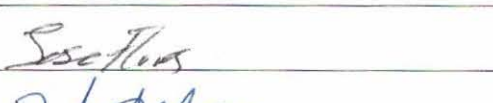



Muster Points: Primary: Injection trailer. Alternate: Building 12-103 Cafeteria

Special Topics (incidents, actions taken, etc.): HIGH WIND PROCEDURES.

Attendance

Meeting Conducted By: COIN RADANT Cell 33876 SSO YES NO

Attendees:

Printed Name and Badge Number	Signature and p.m. Refresher Initials
Josh Dye 39687	
Deum Bentley 39739	
Ikegnan Snell 39742	
Randy Cosgrove 39748	
Andy Sam 39800	
Jose Flores 39749	
Matt Monroe ^{Platypus} ^{with} ^{keoban} ⁱⁿ ^{SI} ^{trench} 17944	

SITE SAFETY BRIEFING



Date: 2/24/17

Time: 800

Project Name: Ditch Liner Client: CNS Pantex Project Number: 18A-017-001

Site Location: Pantex Plant, Amarillo TX

General Type of Work: RECINE

Tasks to be completed / plan of the day: _____

Safety Issues

- Protective Clothing/Equipment:**
- Safety Glasses
 - Hard Hat
 - Gloves: _____
 - Ear Plugs
 - Protective Footwear
 - Respirator
 - Cartridges/Filters: _____
 - Face Shield
 - High Visibility Vest
 - FRCs
 - Other: _____
 - Fall Protection
 - Personal Flotation Device
 - Tyvek®
 - Other: _____

Associated Chemical Hazards and Controls: HE

Associated Physical Hazards and Controls: S/T/K'S, FINCH POINTS, STRUCK-BY

HAZCOM Overview (include MSDSs and where they are located): Completed

AHAs Overview (include AHAs and where they are located): Completed

- Associated Hazards:**
- Lockout/Tagout
 - Overhead Power Lines
 - Hot Works
 - Tornado
 - Earthquake
 - Biological: SNAKES, SPIDERS, INSECTS.
 - Other: _____
 - Permit-Required Confined Space
 - Machine Guarding
 - Buried Utilities
 - Asbestos
 - Heat Stress
 - Cold Stress
 - High Pressure/Temperature Processes
 - Falling Hazards
 - Water Hazards
 - High Noise (Acoustical)
 - Excavation
 - Traffic

Special Equipment/Techniques: _____

Permits Required: General Confined Spaces Hot Works Other: _____

Procedures Discussed: Stop Work Authority Right-to-Refuse Unsafe Work One Call Bump/Self-Checks

Emergency Action Plan

Emergency Contact: OC / Fire Department Number: (806)-477-5000 / -3333

Nearest Phone: Field team personnel cell phones or Bldg. 12-103 Cell coverage verified

Hospital Name: Northwest Texas Hospital (806)-354-1000 Route verified

Evacuation Routes: Z11SISB: Pershing Dr. to main (east) gate.

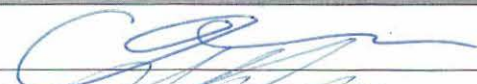



Muster Points: Primary: Injection trailer. Alternate: Building 12-103 Cafeteria

Special Topics (incidents, actions taken, etc.): LADDER SAFETY

Attendance

Meeting Conducted By: Colin Radant Cell - 33876 SSO (YES/NO) (NO)

Attendees:

Printed Name and Badge Number	Signature and p.m. Refresher Initials
Andy Smith 39800	
Randy Cosgrove 39748	
Devin Bentley 39739	
Keenan Snell 39742	
Jose Flores 39794	Jose Flores
Matt Moran 1944	Matt Moran

SITE SAFETY BRIEFING



Date: 2/27/17

Time: 800

Project Name: Ditch Liner Client: CNS Pantex Project Number: 18A-017-001

Site Location: Pantex Plant, Amarillo TX

General Type of Work: DITCH RECINE

Tasks to be completed / plan of the day: _____

Safety Issues

- Protective Clothing/Equipment:**
- Safety Glasses
 - Hard Hat
 - Gloves: _____
 - Ear Plugs
 - Protective Footwear
 - Respirator
 - Cartridges/Filters: _____
 - Face Shield
 - High Visibility Vest
 - FRCs
 - Other: _____
 - Fall Protection
 - Personal Flotation Device
 - Tyvek®
 - Other: _____

Associated Chemical Hazards and Controls: HE

Associated Physical Hazards and Controls: S/T/F's, PINCH POINTS, STRUCK-BY

HAZCOM Overview (include MSDSs and where they are located): Completed

AHAs Overview (include AHAs and where they are located): Completed

- Associated Hazards:**
- Lockout/Tagout
 - Machine Guarding
 - High Pressure/Temperature Processes
 - Overhead Power Lines
 - Buried Utilities
 - Falling Hazards
 - Hot Works
 - Asbestos
 - Water Hazards
 - Tornado
 - Heat Stress
 - High Noise (Acoustical)
 - Earthquake
 - Cold Stress
 - Excavation
 - Biological: SNAKES, SPIDERS, INSECTS
 - Traffic
 - Other: _____

Special Equipment/Techniques: _____

Permits Required: General Confined Spaces Hot Works Other: _____

Procedures Discussed: Stop Work Authority Right-to-Refuse Unsafe Work One Call Bump/Self-Checks

Emergency Action Plan

Emergency Contact: OC / Fire Department Number: (806)-477-5000 / -3333

Nearest Phone: Field team personnel cell phones or Bldg. 12-103 Cell coverage verified

Hospital Name: Northwest Texas Hospital (806)-354-1000 Route verified

Evacuation Routes: Z11SISB: Pershing Dr. to main (east) gate.

Muster Points: Primary: Injection trailer. Alternate: Building 12-103 Cafeteria

Special Topics (incidents, actions taken, etc.): EASTERN "DOT" SPECIFIC HAZARDS - Access, ladder use, close working proximity

Attendance

Meeting Conducted By: COLIN RADANT 35876 SSO (YES/NO)

Attendees:

Printed Name and Badge Number	Signature and p.m. Refresher Initials
<u>Jose Flores 39749</u>	<u>Jose Flores</u>
<u>Keenan Snell 39742</u>	<u>Keenan Snell</u>
<u>Drew Bentley 39739</u>	<u>Drew Bentley</u>
<u>Andy Sam 39800</u>	<u>Andy Sam</u>
<u>Randy Cosgrove 39748</u>	<u>Randy Cosgrove</u>
<u>Eric Sandika 37334</u>	<u>Eric Sandika</u>
<u>Matt Manne 17944</u>	<u>Matt Manne</u>

SITE SAFETY BRIEFING



Date: 3/1/17

Time: 800

Project Name: Ditch Liner Client: CNS Pantex Project Number: 18A-017-001

Site Location: Pantex Plant, Amarillo TX

General Type of Work: RECINE, BACKFILL

Tasks to be completed / plan of the day: _____

Safety Issues

- Protective Clothing/Equipment:**
- Safety Glasses
 - Hard Hat
 - Gloves: _____
 - Ear Plugs
 - Protective Footwear
 - Respirator
 - Cartridges/Filters: _____
 - Face Shield
 - High Visibility Vest
 - FRCs
 - Other: _____
 - Fall Protection
 - Personal Flotation Device
 - Tyvek®
 - Other: _____

Associated Chemical Hazards and Controls: HE, S/T/F'S, STRUCK BY
PINCH POINTS

Associated Physical Hazards and Controls: _____

HAZCOM Overview (include MSDSs and where they are located): Completed

AHAs Overview (include AHAs and where they are located): Completed

- Associated Hazards:**
- Lockout/Tagout
 - Overhead Power Lines
 - Hot Works
 - Tornado
 - Earthquake
 - Biological:
 - Other:
 - Permit-Required Confined Space
 - Machine Guarding
 - Buried Utilities
 - Asbestos
 - Heat Stress
 - Cold Stress
 - High Pressure/Temperature Processes
 - Falling Hazards
 - Water Hazards
 - High Noise (Acoustical)
 - Excavation
 - Traffic

SNAKES, SPIDERS, INSECTS

Special Equipment/Techniques: _____

Permits Required: General Confined Spaces Hot Works Other: _____

Procedures Discussed: Stop Work Authority Right-to-Refuse Unsafe Work One Call Bump/Self-Checks

Emergency Action Plan

Emergency Contact: OC / Fire Department Number: (806)-477-5000 / -3333

Nearest Phone: Field team personnel cell phones or Bldg. 12-103 Cell coverage verified

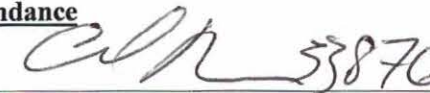
Hospital Name: Northwest Texas Hospital (806)-354-1000 Route verified

Evacuation Routes: Z11SISB: Pershing Dr. to main (east) gate.


Muster Points: Primary: Injection trailer. Alternate: Building 12-103 Cafeteria

Special Topics (incidents, actions taken, etc.): DO NOT RUSH TASKS TO REACH DEADLINE GOAL

Attendance

Meeting Conducted By: Colin Radant  33876 SSO (YES/NO) (YES)

Attendees:

Printed Name and Badge Number	Signature and p.m. Refresher Initials
Colin Radant 33	
Aholy Sam 38900	
Kandy Casgrove 39748	
Jose Flores 39749	
Keenan Snell 39742	
Devin Bentley 39738	
Joshua Dye 39687	

SITE SAFETY BRIEFING



Date: 3/2/17

Time: 800

Project Name: Ditch Liner

Client: CNS Pantex

Project Number: 18A-017-001

Site Location: Pantex Plant, Amarillo TX

General Type of Work: DEMOS, HYDROVAC

Tasks to be completed / plan of the day: _____

Safety Issues

- Protective Clothing/Equipment:**
- Safety Glasses
 - Hard Hat
 - Gloves: _____
 - Ear Plugs
 - Protective Footwear
 - Respirator
 - Cartridges/Filters: _____
 - Face Shield
 - High Visibility Vest
 - FRCs
 - Other: _____
 - Fall Protection
 - Personal Flotation Device
 - Tyvek®
 - Other: _____

Associated Chemical Hazards and Controls: HE

Associated Physical Hazards and Controls: SLIP'S, PINCH POINTS, STRUCK BY

HAZCOM Overview (include MSDSs and where they are located): Completed

AHAs Overview (include AHAs and where they are located): Completed

- Associated Hazards:**
- Lockout/Tagout
 - Overhead Power Lines
 - Hot Works
 - Tornado
 - Earthquake
 - Permit-Required Confined Space
 - Machine Guarding
 - Buried Utilities
 - Asbestos
 - Heat Stress
 - Cold Stress
 - High Pressure/Temperature Processes
 - Falling Hazards
 - Water Hazards
 - High Noise (Acoustical)
 - Excavation
 - Traffic

Biological: SNAILS, SPIDERS, INSECTS

Other: _____

Special Equipment/Techniques: _____

Permits Required: General Confined Spaces Hot Works Other: _____

Procedures Discussed: Stop Work Authority Right-to-Refuse Unsafe Work One Call Bump/Self-Checks

Emergency Action Plan

Emergency Contact: OC / Fire Department Number: (806)-477-5000 / -3333

Nearest Phone: Field team personnel cell phones or Bldg. 12-103 Cell coverage verified

Hospital Name: Northwest Texas Hospital (806)-354-1000 Route verified

Evacuation Routes: Z11SISB: Pershing Dr. to main (east) gate.

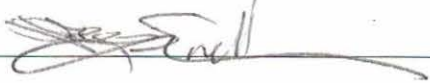




Muster Points: Primary: Injection trailer. Alternate: Building 12-103 Cafeteria

Special Topics (incidents, actions taken, etc.): LIFT HAZARDS

Attendance

Meeting Conducted By: Colin RADANT Cell 33876 SSO (YES/NO) (YES)

Attendees:

Printed Name and Badge Number	Signature and p.m. Refresher Initials
Keenan Snell 39742	
Analy Sim 39800	
Jose Flores 39749	
Devin Bentley 39739	
Randy Casanova 39748	
Josh Dyer 39687	

SITE SAFETY BRIEFING



Date: 3/3/17

Time: 800

Project Name: Ditch Liner Client: CNS Pantex Project Number: 18A-017-001

Site Location: Pantex Plant, Amarillo TX

General Type of Work: EARTHWORK

Tasks to be completed / plan of the day: _____

Safety Issues

- Protective Clothing/Equipment:**
- Safety Glasses
 - Hard Hat
 - Gloves: _____
 - Ear Plugs
 - Protective Footwear
 - Respirator
 - Cartridges/Filters: _____
 - Face Shield
 - High Visibility Vest
 - FRCs
 - Other: _____
 - Fall Protection
 - Personal Flotation Device
 - Tyvek®
 - Other: _____

Associated Chemical Hazards and Controls: AE

Associated Physical Hazards and Controls: SNIPES, STUCK-BY, PINCH POINTS

HAZCOM Overview (include MSDSs and where they are located): Completed

AHAs Overview (include AHAs and where they are located): Completed

- Associated Hazards:**
- Lockout/Tagout
 - Overhead Power Lines
 - Hot Works
 - Tornado
 - Earthquake
 - Biological:
 - Other:
 - Permit-Required Confined Space
 - Machine Guarding
 - Buried Utilities
 - Asbestos
 - Heat Stress
 - Cold Stress
 - High Pressure/Temperature Processes
 - Falling Hazards
 - Water Hazards
 - High Noise (Acoustical)
 - Excavation
 - Traffic

SNAKES, SPIDERS, INSECTS

SITE SAFETY BRIEFING



Date: 3/6/17

Time: 800

Project Name: Ditch Liner Client: CNS Pantex Project Number: 18A-017-001

Site Location: Pantex Plant, Amarillo TX

General Type of Work: REMOVE/EXCHANGE SKID

Tasks to be completed / plan of the day: _____

Safety Issues

- Protective Clothing/Equipment:**
- Safety Glasses
 - Hard Hat
 - Gloves: _____
 - Ear Plugs
 - Protective Footwear
 - Respirator
 - Cartridges/Filters: _____
 - Face Shield
 - High Visibility Vest
 - FRCs
 - Other: _____
 - Fall Protection
 - Personal Flotation Device
 - Tyvek®
 - Other: _____

Associated Chemical Hazards and Controls: _____

Associated Physical Hazards and Controls: PINCH POINTS, STRUCK-B

HAZCOM Overview (include MSDSs and where they are located): Completed

AHAs Overview (include AHAs and where they are located): Completed

- Associated Hazards:**
- Permit-Required Confined Space
 - High Pressure/Temperature Processes
 - Lockout/Tagout
 - Machine Guarding
 - Falling Hazards
 - Overhead Power Lines
 - Buried Utilities
 - Water Hazards
 - Hot Works
 - Asbestos
 - High Noise (Acoustical)
 - Tornado
 - Heat Stress
 - Excavation
 - Earthquake
 - Cold Stress
 - Traffic
 - Biological: _____
 - Other: _____

SITE SAFETY BRIEFING



Date: 3/7/14

Time: 800

Project Name: Ditch Liner Client: CNS Pantex Project Number: 18A-017-001

Site Location: Pantex Plant, Amarillo TX

General Type of Work: FA LINE REPAIR

Tasks to be completed / plan of the day: _____

Safety Issues

- Protective Clothing/Equipment:**
- Safety Glasses
 - Hard Hat
 - Gloves: _____
 - Ear Plugs
 - Protective Footwear
 - Respirator
 - Cartridges/Filters: _____
 - Face Shield
 - High Visibility Vest
 - FRCs
 - Other: _____
 - Fall Protection
 - Personal Flotation Device
 - Tyvek®
 - Other: _____

Associated Chemical Hazards and Controls: HE

Associated Physical Hazards and Controls: SIT/F3, STRUCK-BY

HAZCOM Overview (include MSDSs and where they are located): Completed

AHAs Overview (include AHAs and where they are located): Completed

- Associated Hazards:**
- Lockout/Tagout
 - Machine Guarding
 - High Pressure/Temperature Processes
 - Overhead Power Lines
 - Buried Utilities
 - Falling Hazards
 - Hot Works
 - Asbestos
 - Water Hazards
 - Tornado
 - Heat Stress
 - High Noise (Acoustical)
 - Earthquake
 - Cold Stress
 - Excavation
 - Traffic

Biological: SNAKES, SPIDERS, INSECTS

Other: _____

SITE SAFETY BRIEFING



Date: 3/8/17

Time: _____

Project Name: Ditch Liner Client: CNS Pantex Project Number: 18A-017-001

Site Location: Pantex Plant, Amarillo TX

General Type of Work: FAI REPLACE

Tasks to be completed / plan of the day: _____

Safety Issues

- Protective Clothing/Equipment:**
- | | | |
|--|--|--|
| <input checked="" type="checkbox"/> Safety Glasses | <input checked="" type="checkbox"/> Hard Hat | <input checked="" type="checkbox"/> Gloves: _____ |
| <input type="checkbox"/> Ear Plugs | <input checked="" type="checkbox"/> Protective Footwear | <input type="checkbox"/> Respirator |
| <input type="checkbox"/> Face Shield | <input checked="" type="checkbox"/> High Visibility Vest | <input type="checkbox"/> Cartridges/Filters: _____ |
| <input type="checkbox"/> Fall Protection | <input type="checkbox"/> Personal Flotation Device | <input type="checkbox"/> Other: _____ |
| | <input type="checkbox"/> Tyvek® | <input type="checkbox"/> Other: _____ |

Associated Chemical Hazards and Controls: HE

Associated Physical Hazards and Controls: STAFFS, PINCH POINTS, STRUCK-BK

HAZCOM Overview (include MSDSs and where they are located): Completed

AHAs Overview (include AHAs and where they are located): Completed

- Associated Hazards:**
- | | | |
|---|---|--|
| <input type="checkbox"/> Lockout/Tagout | <input type="checkbox"/> Permit-Required Confined Space | <input type="checkbox"/> High Pressure/Temperature Processes |
| <input type="checkbox"/> Overhead Power Lines | <input type="checkbox"/> Machine Guarding | <input type="checkbox"/> Falling Hazards |
| <input type="checkbox"/> Hot Works | <input type="checkbox"/> Buried Utilities | <input type="checkbox"/> Water Hazards |
| <input type="checkbox"/> Tornado | <input type="checkbox"/> Asbestos | <input type="checkbox"/> High Noise (Acoustical) |
| <input type="checkbox"/> Earthquake | <input type="checkbox"/> Heat Stress | <input checked="" type="checkbox"/> Excavation |
| <input checked="" type="checkbox"/> Biological: | <input type="checkbox"/> Cold Stress | <input checked="" type="checkbox"/> Traffic |

Biological: SNAKES, SPIDERS, INSECTS

Other: _____

SITE SAFETY BRIEFING



Date: 3/9/14

Time: 908

Project Name: Ditch Liner Client: CNS Pantex Project Number: 18A-017-001

Site Location: Pantex Plant, Amarillo TX

General Type of Work: SURVEY, BACKFILL

Tasks to be completed / plan of the day: " " " "

Safety Issues

- Protective Clothing/Equipment:**
- Safety Glasses
 - Hard Hat
 - Gloves: _____
 - Ear Plugs
 - Protective Footwear
 - Respirator
 - Cartridges/Filters: _____
 - Face Shield
 - High Visibility Vest
 - FRCs
 - Other: _____
 - Fall Protection
 - Personal Flotation Device
 - Tyvek®
 - Other: _____

Associated Chemical Hazards and Controls: HE

Associated Physical Hazards and Controls: S/T/F's, STRUCK-BY, PINCH
JOINTS

HAZCOM Overview (include MSDSs and where they are located): Completed

AHAs Overview (include AHAs and where they are located): Completed

- Associated Hazards:**
- Lockout/Tagout
 - Overhead Power Lines
 - Hot Works
 - Tornado
 - Earthquake
 - Permit-Required Confined Space
 - Machine Guarding
 - Buried Utilities
 - Asbestos
 - Heat Stress
 - Cold Stress
 - High Pressure/Temperature Processes
 - Falling Hazards
 - Water Hazards
 - High Noise (Acoustical)
 - Excavation
 - Traffic

Biological: SNAKES, SPIDERS, INSECTS

Other: _____



**CLOSURE TURF INSTALLATION AT LANDFILL 2 (SWMU 68C)
CLOSURE REPORT**

**CNS PANTEX PURCHASE ORDER NO. 61223'
PANTEX PANT, AMARILLO TEXAS**

**MARCH 27, 2017
PROJECT # 163176**

SUBMITTED BY: EROSION CONTROL APPLICATIONS, INC (ECA)

901 E. ORANGETHORPE AVE. ANAHEIM, CA 92081

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- D. DAILY TRIAL WELD LOG FORMS
- E. DAILY NON-DESTRUCTIVE SEAM TESTING FORMS
- F. DESTRUCTIVE WELD TEST LOG
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- I. SAND LEVEL QA/QC SKETCH
- J. PROJECT PHOTOS

List of Acronyms

AHA	Activity Hazard Analysis
Closure turf	Closure Turf™
Pantex	CNS Pantex, LLC
LLDPE	Linear Low density polyethylene
PE	Polyethylene
PM	Project Manager
PO	Purchase Order
PPI	Pounds per inch
PSTR	Project Subcontract Technical Representative
QA	Quality Assurance
QAPP	Quality Assurance Project Plan
QC	Quality Control
QCO	Quality Control Officer
QCT	Quality Control Technician
SWMU	Solid Waste Management Unit
RFP	Request for Proposal
SSO	Site Safety Officer
SWPPP	Storm Water Pollution Prevention Plan
Talon	Talon LPE
ECA	Erosion Control Applications
WP	Work Plan
WOD	Waste Operations Department

1.0 INTRODUCTION

Erosion Control Applications, Inc. (ECA) performed this work in response to Pantex Request for Proposal (RFP) No. 1053, for the Closure Turf™ (closure turf) installation at Landfill 2, also known as Solid Waste Management Unit (SWMU) 68C under purchase Order (PO) 61223. The purpose of this work was to install a synthetic cover material at Landfill 2 to prevent wind and water erosion of the existing landfill cap. The existing landfill cap consists of 2 to 4 feet of clean borrow material. This report addresses the closure turf installation, largely consisting of preparation work and installation work that was performed from February 27, 2017 to March 20, 2017.

This report covers the following completed activities and a brief description of each:

1. Mobilization and Site Access.
2. Clearing, Grubbing and Subgrade Preparation.
3. Anchor Trench Excavation.
4. Installation of the closure turf system.
5. Site Cleanup and Demobilization.

The team that assisted EC Applications in completing the scope of this project included:

- Talon LPE (Talon) – Site grubbing and backfill of low areas, anchor trench excavation and backfill.

Key personnel responsible for this work included:

- Scott Harker, Project Manager
- Ruben Brito, Project Coordinator
- Alfonso Juarez, ECA Site Superintendent
- Melquiadez Lopez, Quality Control Technician



2.0 PRECONSTRUCTION SURVEY

Prior to mobilization to the site, ECA and the Pantex Subcontract Technical Representative (PSTR) walked the site and marked the limits of the existing landfill. The limit of the landfill was determined based on visual observation of topographic changes. The toe of the slope was flagged with pin flags. The area was then measured and calculated to be 40,770 square feet not including anchor trench quantities.

3.0 MOBILIZATION AND SITE ACCESS

Mobilization included the physical mobilization to the site, as well as the associated coordination effort to initiate field activities. ECA and Talon performed thorough inspections of the project equipment that was mobilized to the site to verify that it was clean and in safe working condition.

3.1 SECURITY REQUIREMENTS

Site access required for deliveries, visitors, and subcontractors was coordinated through the PSTR, Mr. Matthew Monroe. The PSTR arranged for badges, guards, and site access for all ECA, subcontractor personnel. Contractor and subcontractor personnel were required to obtain access to the facility through a construction badge or a visitor's badge prior to entry onto the site.

3.2 ACCESS TO WORK AREAS

Daily requirements for work included the following notification protocols:

- ECA SSO:
 - Notified the Pantex PSTR, Matthew Monroe or alternative designee that work has begun for the day.
 - Notified the Pantex PSTR, Matthew Monroe or alternative designee that work has ended for the day.
 - Requests for non-standard work shifts (weekends, late nights, or plant holidays) were communicated to the PSTR by the previous Wednesday.
- Work at the site was not allowed without the presence of the ECA's SSO.

3.3 WORK PERMITS

Several work permits were necessary for construction and were issued by the appropriate Pantex department



and added as appendices to the ECA Work Plan (WP). These work permits included:

- An Activity Hazard Analysis (AHA)/Safe Work Permit (PX-4798) was prepared by ECA and approved by the Pantex Safety Department.
- An Excavation Permit (PX-2872A) was obtained by the PSTR for the landfill surface and buffer area surrounding the landfill. The Excavation Permit acknowledges that utility locates have been completed by Pantex. The ECA Site Safety Officer (SSO) walked down the locations described in the permit with the PSTR prior to excavation or other ground penetration activities.
- A hot work permit (PX-5394) was obtained for the fusion welding, extrusion welding and leistering of the geomembrane liner and closure turf.
- A lift permit (PX-4782) was obtained for the hoisting of geomembrane liner and closure turf rolls below the lifting forks of the telescoping forklift used for the deployment of the various liner materials.

Before permit related tasks were initiated the appropriate permit was reviewed by the field crew with the ECA's SSO.

3.5 EQUIPMENT INSPECTIONS

Each day that a piece of heavy equipment (i.e. back hoe, track hoe, telescoping forklift) or light vehicular equipment (i.e. skid steer, sand spreader) was used, a separate heavy or light equipment inspection form was completed by the SSO and the designated equipment operator for each unit used. Copies of these completed forms were kept at the project site for review by the PSTR periodically throughout the duration of this project.

4.0 SUMMARY OF WORK PERFORMED

This section presents a description of the work ECA and associated subcontractor performed to complete the installation of the closure turf at Landfill 2.

4.1 PROGRAM/PROJECT MANAGEMENT

ECA performed the following program and project activities under this task throughout the project:

- Daily update meetings via site visits with the PSTR
- Monthly accrual reports
- Monthly man-hour reports
- Subcontractor procurement and management



4.2 PREPARATION OF PLANNING DOCUMENTS

The following planning documents were prepared for this work:

- Work Plan that includes a section on Quality Assurance/Quality Control (QA/QC)
- Contractor Waste Management Plan
- Health and Safety Plan

4.3 VEGETATION REMOVAL AND SITE PREPARATION

ECA utilized and oversaw the services of Talon, a local Amarillo contractor, for vegetation removal and other site preparation earthwork. The following vegetation removal and site preparation tasks were performed:

- Removed (grubbed) approximately 3 inches of vegetation (grub) from the existing surface of Landfill 2 while minimizing disturbance of the soil layer of the existing cover system.
- At the direction of Pantex Waste Operations Department (WOD) personnel, grubbed materials were hauled to the active onsite Pantex landfill. This material was placed onto an existing landfill cap to act as fill material to be utilized by the Pantex WOD. 12 Truckloads approximately 20yds each, were hauled to the landfill. Totaling 240 yds of soil.
- Low areas of the landfill were identified once the vegetative layer was removed. 6 Truckloads, 120 yds, of borrow material were imported to fill low spots and raise the north west corner to create positive drainage away from landfill cap.
- The imported fill material was compacted and leveled over the final cover system surface by multiple passes of a smooth drum vibratory roller.

4.4 ANCHOR TRENCH

A two-foot wide by two-feet deep perimeter anchor trench was excavated using a mini excavator. The excavation spoils were placed on the outside of the trench.

4.5 SUBGRADE ACCEPTANCE

After the anchor trench was completely excavated, the landfill was inspected to determine if vegetation was removed and the surface was properly graded to provide positive drainage and there were no rocks or debris present. ECA's SSO, Pantex PSTR and Pantex PS (Project Specialist) visually inspected the final surface and found it to be smooth, free of irregularities, protrusions, organics, rocks, and other debris and acceptable for closure turf system installation.



4.6 CLOSURE TURF SYSTEM INSTALLATION

4.6.1 OVERVIEW

ECA provided construction quality assurance oversight and documentation for the installation of the closure turf system. Deployment of the closure turf system began on March 13, 2017 and was completed on March 20, 2017.

The Closure Turf™ system installed at Landfill 2 consists of:

- 50 Mil Linear Low- Density Polyethylene (LLDPE) grip-net geomembrane liner (geomembrane) installed directly over the prepared subgrade surface.
- Duraturf installed over the top of the geomembrane liner.
- 0.5-inch thick sand ballast layer placed and spread evenly over the closure turf.

4.6.2 DELIVERY, INSPECTION AND STORAGE

The liner materials were delivered in rolls on March 10, 2017. Liner and turf rolls were inspected for damage then stockpiled along the end of the project site. ECA verified that all rolls that were delivered matched the approved manufacturers roll certifications. Bill of landings are provided in **Appendix A**.

4.6.3 GEOMEMBRANE QUALITY CONTROL CERTIFICAITONS

ECA verified that all rolls that were delivered matched the approved manufacturers roll certification sheets provided in **Appendix B**.

4.6.4 LINER SYSTEM PANEL LAYOUT

Initially the panel layout was designed to be oriented in an east-west direction. ECA's quality control technician sketched and recorded the as-built geomembrane panel layout on Daily Liner Deployment forms provided in **Appendix C**. Figure 2 shows the as-built conditions of the final geomembrane panel layout.

4.6.5 GEOMEMBRANE DEPLOYMENT

The geomembrane rolls were deployed using a spreader bar securely anchored to a telescoping forklift. The forklift would lift and position the rolls over the end of the desired deployment location, once deployed ECA workers would use liner clamps to line up the smooth edges along the length of the geomembrane in preparation of the fusion welding machine. Areas where full width panels were not needed the panels were



cut to fit the intended area using a retractable hooked razor. Once in place the ECA's quality control officer (QCO) would spray paint the roll number and panel number onto the panel. Panels that fell along the anchor trench were draped into the trench and trimmed as necessary. ECA's SSO visually observed this process and recorded on the Daily Panel Deployment these forms are provided in **Appendix C** respectively.

4.6.5 GEOMEMBRANE SEAMING

4.6.6.1 TRIAL WELDS

Prior to performing either type of welding on the in place panels, a trial weld was completed for each machine. The trial welds were completed at the start of shift and after lunch on a daily basis. These trial weld samples were then provided to the ECA's QCO for field stress testing. The QCO would cut six-one inch wide coupons from each of the trial weld samples and test for both peel and shear strength using a field tensiometer as defined below:

- **Peel Test Method** – The QCO placed a coupon in the tensiometer and used it to try to peel the weld apart from both sides. Upon failure, the peel strength was recorded in pounds per inch (ppi). This test was performed on both fusion and extrusion welds.
- **Shear Test Method** – The QCO placed a coupon in the tensiometer and used it to try to pull the seam apart end to end. Upon failure, the shear strength was recorded in ppi. This test was only performed on fusion welds.
- In either case, the goal is to have the liner material fail on either side of the weld leaving the weld intact.
- A test is considered a failure if the test damages the seam or if the liner material on either side of the seam fails under the specified minimum strengths listed below:
 - Shear Strength – 75 ppi.
 - Peel Strength – 63 ppi for Fusion Welds, 57 ppi for Extrusion Welds

ECA observed each of these tests and recorded the results on a Daily Trial Weld Tracking Log form provided in **Appendix D**. ECA's welding technicians were not allowed to perform any welding on in-place liner materials until the trial welds passed field testing.

4.6.6.2 FUSION WELDING AND TESTING

The seams along the sides of the panels were welded using an automated fusion welding machine. ECA's welding technician would clean off the geomembrane surface with a brush ahead of the welding machine to minimize the potential of dust and debris compromising the integrity of the weld. The technician would also go ahead of the welding machine and trim the liner as needed and aid the machine over bumps and wrinkles. The machines were calibrated for 50 mil LLDPE and fused the panels together at 700 degrees Fahrenheit at a



speed between 10 to 13 feet per minute. This temperature and speed was set to ensure a strong weld without burning through the liner material.

The quality control plan required two types of testing to ensure the strength and integrity of each fusion weld seam, these tests are described below:

- **Non-Destructive Air Testing** – Fusion welding machines create two fusion welds approximately one-inch apart leaving a small pocket in between. An ECA quality control technician (QCT) would test these pockets using compressed air. The QCT would seal off each end of the seam and pressurize the pocket to 30 psi. A successfully welded seam would not drop more than 2 psi over a five-minute period. If the seam held the required pressure, the QCT would unseal the end of the seam opposite of the pressure gauge to determine if there was a blockage in the seam indicating whether the entire seam was being tested. If a blockage was detected, the blockage would be located and the test would be redone on both sides of the blockage. If the air test itself failed the QCT would use soapy water to determine the location of the air leak, repair it, and restart the test. ECA observed and recorded the results of all air testing on a Daily Non-Destructive Seam Testing form provided in **Appendix E**.

Destructive Testing – Per the project specifications, a destructive sample must be taken every 500 cumulative linear feet of seam per fusion welding machine. ECA's worker would cut the destruct sample and provide it to ECA's SSO for testing. The tensiometer was used to field-test the destructive samples at the site. Testing of the destructive samples was identical to the methods used for trial weld testing described in Section 4.6.6.1 of this document. ECA's SSO observed and recorded the testing of each sample and all samples exceeded specification. The results of the testing were recorded on the Destructive Weld Test Log, provided in **Appendix F** respectively.

4.6.6.3 EXTRUSION WELDING AND TESTING

End to end panel seams, or butt seams, and patching were performed using a manual extrusion-welding machine. ECA's welding technician would prepare the seam by grinding off the geomembrane's grip spikes on both panels, clearing debris from the geomembrane surface with a brush, temporarily bonding the surfaces together with a leister gun, then complete the seam by welding the two panel surfaces together with an extrusion machine. The extrusion machines were calibrated for 50 mil LLDPE and the panels were welded together at approximately 500 degrees Fahrenheit.

The quality control plan required two types of testing to ensure the strength and integrity of each extrusion weld seam, these tests are described below:



- **Non-Destructive Vacuum Testing** – Extrusion welding machines use a string of polyethylene (PE) material which is fed through the machine’s barrel, superheated, melted, and a bead of melted PE was spread over the panel overlapped by the technician. This bead fuses to both panels, instantly cools, and hardens creating an extrusion seam. However, this bead has the potential for pinhole leaks. An ECA QCT tested each of these seams using a vacuum test. This test was performed by the QCT by applying soap water along the seam and then placing a 2 foot by 1 foot vacuum box over a section of the seam and applying a vacuum to the seam for 10 seconds per section. If a leak is present in the seam the QCT will observe bubbles generating around the leak. Leaks found by the QCT would be marked, sealed with an additional extrusion bead and retested. ECA observed and recorded the results of all butt seam vacuum testing on a Daily Liner Repair Log (provided in **Appendix G**)
- **Destructive Testing** – The project specifications did not call for any destructive samples of panel seams welded using extrusion welding methods.

4.6.6.4 REPAIRS

Upon completing the seaming of the in-place panels, ECA’s crew began repairs. In addition to routine repairs inherent to liner installation, ECA’s SSO scanned and marked the geomembrane surface for damage incurred during construction. There were three different types of repairs as defined below:

- Patch - Repairs of minor damage and destructive sample locations
- Cap - Repair of failed fusion seams identified through air testing

Liner damage too large to be sealed with an extrusion bead were performed by grinding down the liner surface and grip spikes, placing a scrap piece of liner material over the damaged area, leistering the patch into place, and extrusion welding the patch to the panel. Once the patch was completed, the repair was vacuum tested as described in the previous section. ECA’s QCO observed and recorded the location and results of all repairs and vacuum tests on the Daily Liner Repair Log, provided in **Appendix G**.

4.6.7 GEOMEMBRANE INSPECTION

Prior to the deployment of the closure turf material, a hold point was established, to review the geomembrane installation. The visual inspection of the installed geomembrane and review of the preweld test report data, seaming log, destructive sample report data, panel placement and as-built was held between ECA’s SSO and Pantex PS (Project Specialist) Eric Sandifer. Upon the review and approval by Pantex PS, ECA began the



installation of the closure turf over the Geomembrane Drain Liner.

4.6.8 CLOSURE TURF DEPLOYMENT

The closure turf rolls were also deployed using a spreader bar securely anchored to a telescoping forklift similar to the geomembrane deployment. The sides of the stacked panels were held up, aligned, and the seam sewn. The seam was sewn by a hand held manual sewing machine, which applied a single nylon thread stitch along the length of the seam. Once the seam was completed the upside-down panel was flipped over and pulled tight. The underside of end-to-end panels were sewn together, folded down, and capped with a scrap of closure turf material. The cap was secured in place with a leister gun.

The closure turf did not require any construction quality assurance documentation, however, a closure turf manufacturer's representatives was present during installation of the closure turf to verify the installation procedures.

4.6.9 ANCHOR TRENCH BACKFILL, COMPACTION

Anchor trench backfill and compaction was completed in compliance with the applicable material and placement specifications.

4.6.10 SAND BALLAST LAYER

According to the specifications set forth by the closure turf manufacturer's installation guidelines, the sand aggregate must consist of highly permeable sand with a well graded or poorly graded sand (SW or SP) curve specification. The sand material that was installed was tested by a local geophysical laboratory and approved by the geophysical engineer. Laboratory sieve analysis results are provided in **Appendix H**.

Sand was delivered to the site from a local company, Texas Sand & Gravel, using 27 yard end dump trucks. 4 loads of sand was delivered to the site equaling approximately 106 tons. The sand was stockpiled at the east end of the project site.

4.6.10.1 SAND DISTRIBUTION AND THICKNESS VERIFICATION

ECA utilized a mete-R-matic 4 top dresser, the sand was loaded into a spreader with a skidsteer. The spreader then drove over the closure turf applying the sand ballast. Once the sand was distributed using the mete-R-matic 4 top dresser, a Power Broom attached to a small lightweight tractor was used to manually spread the sand into the fibers of the turf material creating an even 0.5 inch thick ballast layer.

ECA's SSO used a caliper to perform verification of the sand thickness. The sand was verified at an average thickness of 0.5 inch to 0.75 inch. The thickness was checked at a rate of approximately 20 points



per acre. Locations that were found to be less than the nominal thicknesses were marked and revisited by the sand placement crew to place and broom additional sand into place. ECA's SSO inspector re-inspected these areas and approved them after placement was completed

5.0 SITE CLEANUP AND DEMOBILIZATION

Site cleanup and demobilization was completed immediately after all construction activities were completed. Hand tools were used to remove soil and debris from project equipment before removed from the site. Generated waste were collected, containerized, and disposed in accordance with local, state, and federal regulations, and the approved Waste Management Plan for the project. Approximatley 3,200 square feet of 50 Mil LLDPE Super Grip Net, 2,700 square feet of closure turf and 2,300 square feet of 6 Mil plastic sheeting were disposed of in a dumpster provided by Pantex WOD. A log was completed for all items placed into dumpster and provided to the PSTR to submit to Pantex WOD.

Areas disturbed during landfill capping operations were seeded with a plant approved seed mixture. Seed was broadcast distributed and surface graded to place the seed with in the top inch of soil material.

A final site walk-through was conducted with the PSTR to verify that site cleanup and demobilization activities met expectations.

6.0 PHOTO DOCUMENTATION

Security protocols at the B&W Pantex Facility prohibited ECA or any of the contractors from using personal cameras while onsite. However, the Pantex PSTR was authorized to take photo documentation of the project and provided ECA with photos approved for release after the completion of the project. Photos of key project tasks have been assembled and are provided in Appendix J.






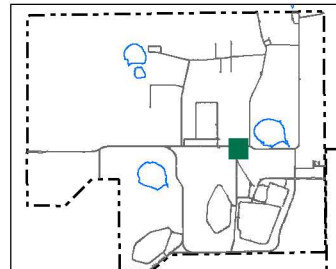
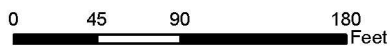
LIST OF FIGURES



Landfill Cover Overview




-  Landfill Cover
- Surface Elevation (feet)**
- Contours**
-  Primary
-  Secondary





 Landfill Cover
Topographic Contours
 5 ft
 1 ft

0 50 100
 Feet

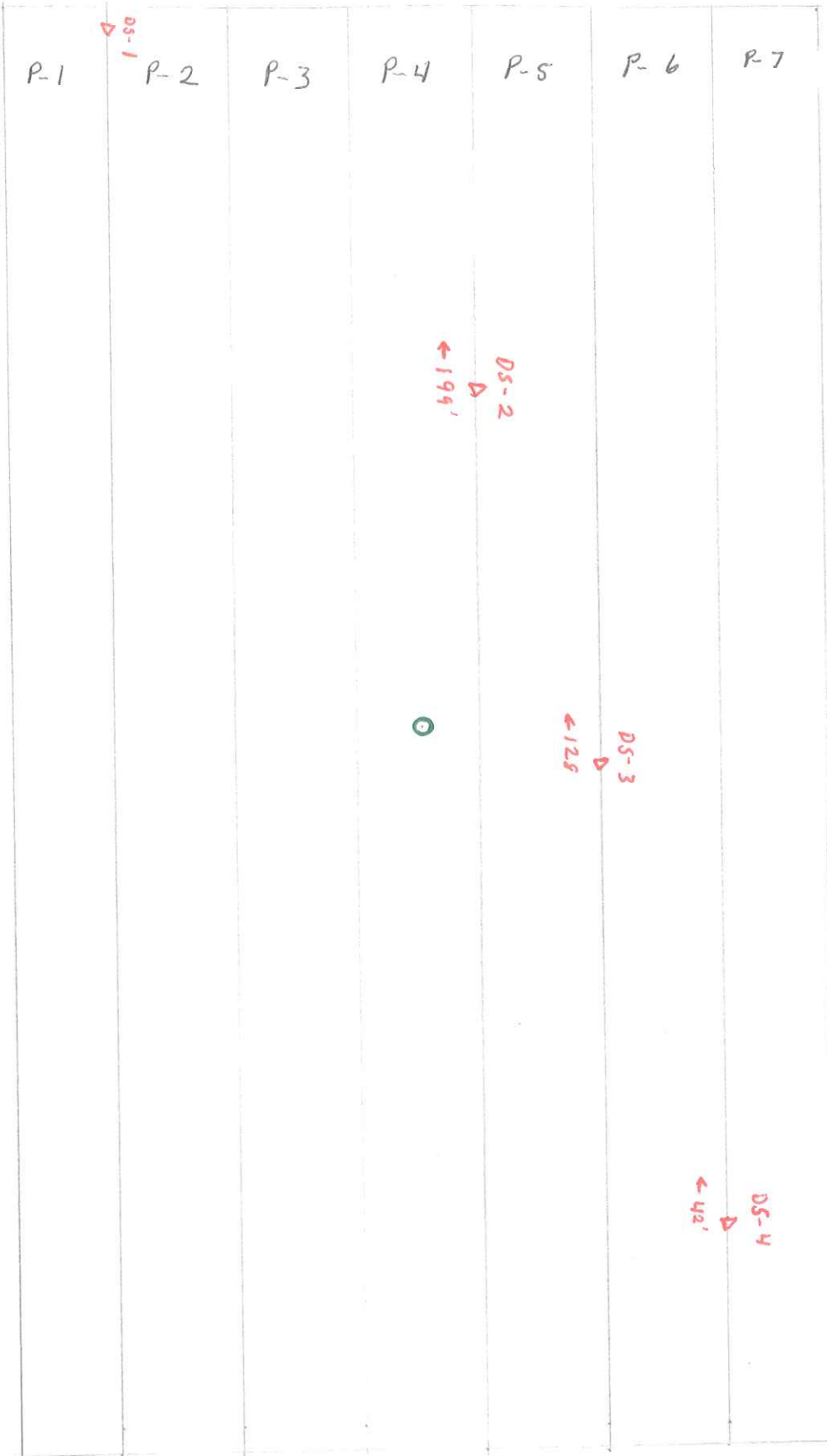




Geomembrane Panel Layout

W

AS BUILT





Seed Mix Label

Bamert Seed Company Inc.

1897 C 1018 Muleshoe, TX 79347

(800) 262-9892

Permit # TX00905

PRIORITARY PROCESSING Pantex-Amarillo Grass Blend

Sales # SO-61464

Description	Pure Seed	Germ	Dormant	Hard Seed	Origin
Buffalograss, "Texoka" Primed KNO3 (Bouteloua dactyloides)	49.00%	95.00%	2.00%	0.00%	TX
Parula Blue (Bouteloua gracilis)	26.74%	97.00%	0.00%	0.00%	TX
Green Sprangletop, "Van Horn" (Leptochloa lubia)	0.00%	96.00%	0.00%	0.00%	TX
Perennial Ryegrass Annual, "Gulf" (Lolium multiflorum)	16.11%	90.00%	0.00%	0.00%	OR
					Weed Seed: 0.07%
					Other Crop Seed: 0.43%
Purity: 91.85%					Inert Matter: 7.65%

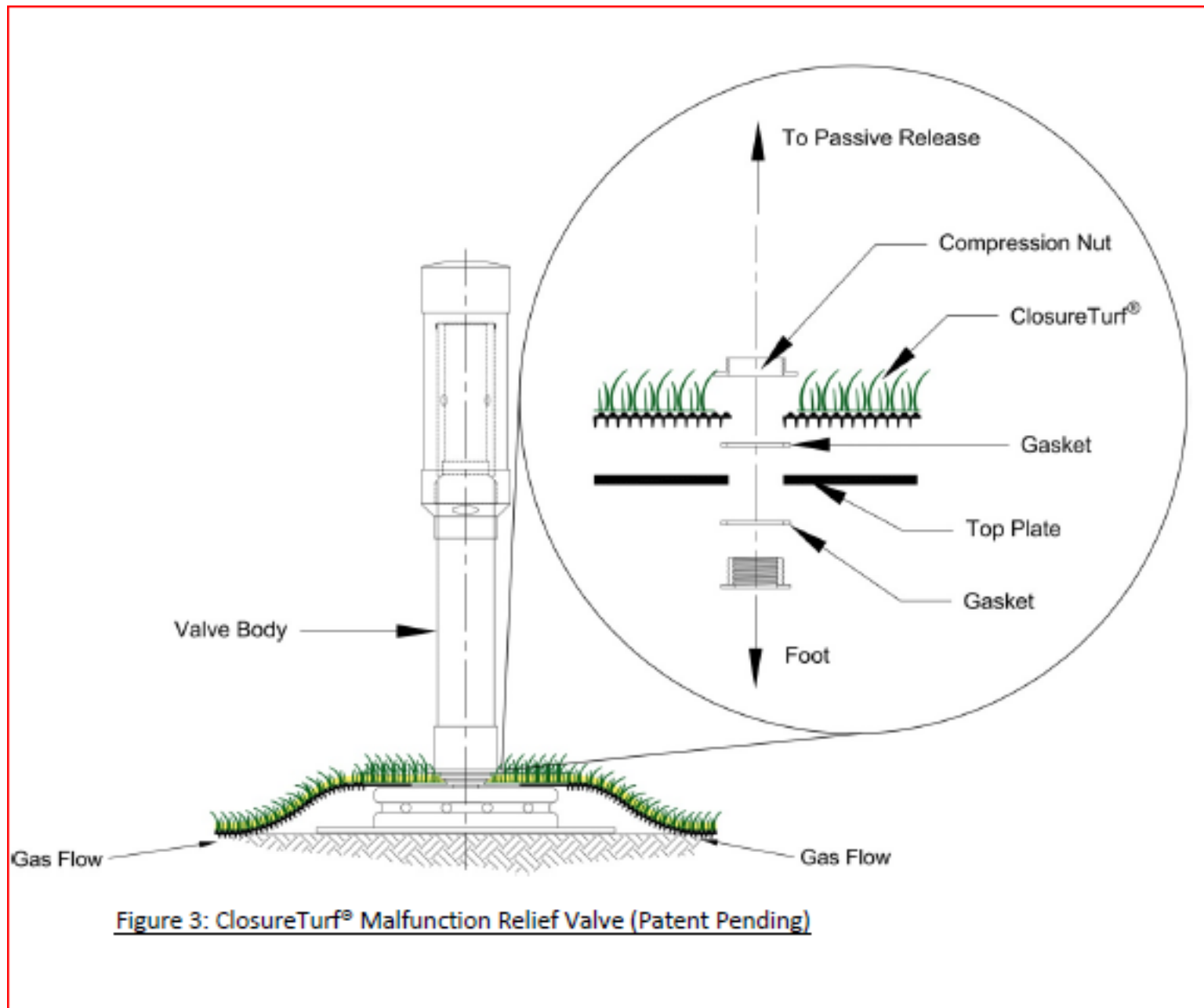
Weeds: None

Test Date: 12/2016

Net Wt: 5.8 lbs



Gas Relief Valve Diagram





LIST OF APPENDICES



Delivery Manifests

THIS MEMORANDUM

is an acknowledgment that a Bill of Lading has been issued and is not the Original Bill of Lading, nor a copy or duplicate, covering the property named herein, and is intended solely for filing or record.

B/L NO.

016215

NAME OF CARRIER

BEST WAY FRT

TQL

CARRIER'S NO.

DATE

3/7/2017

RECEIVED, subject to the classifications and lawfully filed tariffs in effect on the date of issue of this Bill of Lading, the property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service to be performed hereunder, shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Uniform Freight Classifications in effect on the date hereof, if this is a rail or a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment. Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

FROM:
SHIPPER
(ORIGIN)



AGRU/AMERICA, INC.
2000 East Newlands Drive
Fernley, NV 89408
(775)835-8282

EMERGENCY RESPONSE PHONE NO.

TO:

CONSIGNEE

PANTEX AMARILLO
EC APPLICATIONS
INTERSECTION HWY 60 & FM 2373
AMARILLO, TX 79120 USA
SCOTT HARKER 775-224-2741

STREET

DESTINATION

ZIP

DELIVERING CARRIER

ROUTE

VEHICLE NUMBER

NO. PACKAGES	+ HM	KIND OF PACKAGE, DESCRIPTION OF ARTICLES SPECIAL MARKS AND EXCEPTIONS	*WEIGHT (SUBJECT TO CORR.)	CLASS OR RATE	✓	CHARGES (FOR CARRIER USE ONLY)																								
48,301		LL SUPERGRIP 50MIL GM17																												
44		WELD ROD MFG BLACK LDPE 5MM																												
16		STRAPS FOR LINERS																												
		<table border="0"> <thead> <tr> <th>Item Key</th> <th>Lot Number</th> <th>Quantity</th> </tr> </thead> <tbody> <tr> <td>FG-LDSGRP050BBBEG</td> <td>F15A475008 ✓</td> <td>6,900</td> </tr> <tr> <td>FG-LDSGRP050BBBEG</td> <td>F15A475009 ✓</td> <td>6,900</td> </tr> <tr> <td>FG-LDSGRP050BBBEG</td> <td>F15A475010 ✓</td> <td>6,900</td> </tr> <tr> <td>FG-LDSGRP050BBBEG</td> <td>F15A475011 ✓</td> <td>6,900</td> </tr> <tr> <td>FG-LDSGRP050BBBEG</td> <td>F15A475012 ✓</td> <td>6,900</td> </tr> <tr> <td>FG-LDSGRP050BBBEG</td> <td>F15A475013 ✓</td> <td>6,900</td> </tr> <tr> <td>FG-LDSGRP050BBBEG</td> <td>F15A475014 ✓</td> <td>6,900</td> </tr> </tbody> </table>	Item Key	Lot Number	Quantity	FG-LDSGRP050BBBEG	F15A475008 ✓	6,900	FG-LDSGRP050BBBEG	F15A475009 ✓	6,900	FG-LDSGRP050BBBEG	F15A475010 ✓	6,900	FG-LDSGRP050BBBEG	F15A475011 ✓	6,900	FG-LDSGRP050BBBEG	F15A475012 ✓	6,900	FG-LDSGRP050BBBEG	F15A475013 ✓	6,900	FG-LDSGRP050BBBEG	F15A475014 ✓	6,900				
Item Key	Lot Number	Quantity																												
FG-LDSGRP050BBBEG	F15A475008 ✓	6,900																												
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FG-LDSGRP050BBBEG	F15A475013 ✓	6,900																												
FG-LDSGRP050BBBEG	F15A475014 ✓	6,900																												
		Total Weight: 16,275 Total Packages: 48,361 <i>TRAILS + 2 SPOOLS + 16 STRAPS</i> Order No.: 35442 Order Date: 01/17/17 Request Date: 02/06/17 Location: NV P.O. No.: 15413																												

REMIT C.O.D. TO:



AGRU/AMERICA, INC.
2000 East Newlands Drive
Fernley, NV 89408
(775)835-8282

C.O.D. Amt \$

C.O.D. FEE

Prepaid
 Collect \$

*If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading shall state whether it is "carrier's or shipper's weight".

NOTE: Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.
The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding

Subject to Section 7 of conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement:
The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

TOTAL CHARGES \$

Freight charges are PREPAID unless marked collect. Check box if charges are Collect.

† Shipper's imprint in lieu of stamp; not a part of bill of lading approved by the Interstate Commerce Commission.

\$ per

(Signature of Consignor)

This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation.



16-275

Shipping Release Form

Date: 3-7-17 BOL#: 16215 Document #: 35442 Customer: Watershed Destination: Amarillo, TX

Roll #	External Visual OK?	Straps OK?	Core OK?	Weld Rod OK?	Comments
1	/	/	/		50 LL SG
2	/	/	/		
3	/	/	/	✓	25700'S 5mm
4	/	/	/		LL Weld Rod
5	/	/	/		Lot# CGE 810300
6	/	/	/		
7	/	/	/		
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

External Visual check: Clean roll; Damage (Hole, Tears); Telescoping; Liner Defects (Voids, Bug marks, etc.); Legible marking on roll

Strap Check: 6 foot spacing; Check for wear, cuts

Core Check: Ceck for cracks, defects

Weld Rod Check (if necessary): Secure Load, Lot# on BOL, check type

Comments: Note comments for ANY&ALL "No" entries on form

CHECK OFF ON ALL FIELDS - INSPECTOR VERIFIES ALL COMMENTS

Digital photo taken of shipment?


YES

NO

Inspector: *[Signature]*

Loader: *[Signature]*

SHIP FROM
 Name: Shaw Industries - RINGGOLD DC NORTH
 Address: 952 INDUSTRIAL BLVD
 City/State/Zip: RINGGOLD GA 30736-2842
 SID#: _____ FOB:

Bill of Lading Number: 404859

 42007658940674048598

SHIP TO
 Name: EC APPLICATIONS Location#: _____
 Address: 0 INTERSECTION HWY 60 & FM 2373
 City/State/Zip: AMARILLO TX 79120 0209458
 PHONE#: 770-777-0386 FOB:

Carrier Name : TRIDENT TRANS.
Trailer Number : 010LIVE
Seal Number(s): 9633724

SCAC: TRYI

THIRD PARTY FREIGHT CHARGES BILL TO:
 Name: _____
 Address: _____
 City/State/Zip: _____
 SPECIAL INSTRUCTIONS: **CASS X3008245**
 EC APPLICATIONS

Pro Number: _____

Freight Charge Terms:
 Prepaid Collect _____ 3rd Party _____
 (Check box) Master Bill of Lading with attached underlying Bills of Lading

CUSTOMER ORDER INFORMATION

PALLET/ROLL	ORDER NBR	RELEASE	SIZE	SQY/SQF	STYLE	COLOR	ASSIGN #/DYELOT	#PKGS	WGT (lbs)
AA17AJF PO: 15413	682744 2	299233A	15' 0" X 200' 0"	333.33	MA282	00301	293051-06	1	566
			GROUND COVER UN OLIVE G					70680-2	100
			INV SKU	MA282	00301				
AA17AMJ PO: 15413	682744 3	299233A	15' 0" X 288' 0"	480.00	MA282	00301	293291-01	1	812
			GROUND COVER UN OLIVE G					70680-2	100
			INV SKU	MA282	00301				
AA17C32 PO: 15413	682744 4	299233A	15' 0" X 278' 0"	463.33	MA282	00301	305731-02	1	784
			GROUND COVER UN OLIVE G					70680-2	100
			INV SKU	MA282	00301				
AA17CAW PO: 15413	682744 5	299233A	15' 0" X 300' 0"	500.00	MA282	00301	305741-01	1	845
			GROUND COVER UN OLIVE G					70680-2	100
			INV SKU	MA282	00301				
AA17CAX PO: 15413	682744 6	299233A	15' 0" X 300' 0"	500.00	MA282	00301	305741-02	1	845
			GROUND COVER UN OLIVE G					70680-2	100
			INV SKU	MA282	00301				
AA17CAY PO: 15413	682744 7	299233A	15' 0" X 300' 0"	500.00	MA282	00301	305741-03	1	845
			GROUND COVER UN OLIVE G					70680-2	100
			INV SKU	MA282	00301				
AA17CAZ PO: 15413	682744 8	299233A	15' 0" X 300' 0"	500.00	MA282	00301	305741-04	1	845
			GROUND COVER UN OLIVE G					70680-2	100
			INV SKU	MA282	00301				
AA17X43 PO: 15413	682744 9	299233A	15' 0" X 288' 0"	480.00	MA282	00301	C60221-13	1	812
			GROUND COVER UN OLIVE G					70680-2	100
			INV SKU	MA282	00301				
AA1821Y PO: 15413	682744 11	299233A	15' 0" X 300' 0"	500.00	MA282	00301	G48541-29	1	845
			GROUND COVER UN OLIVE G					70680-2	100
			INV SKU	MA282	00301				
AA182V1 PO: 15413	682744 12	299233A	15' 0" X 302' 0"	503.33	MA282	00301	G48571-13	1	851
			GROUND COVER UN OLIVE G					70680-2	100
			INV SKU	MA282	00301				
AA182VG PO: 15413	682744 13	299233A	15' 0" X 300' 0"	500.00	MA282	00301	G48571-15	1	845
			GROUND COVER UN OLIVE G					70680-2	100
			INV SKU	MA282	00301				
AA183KD PO: 15413	682744 14	299233A	15' 0" X 300' 0"	500.00	MA282	00301	J44881-01	1	845
			GROUND COVER UN OLIVE G					70680-2	100
			INV SKU	MA282	00301				
GRAND TOTAL				5,760.00				12	9,740

SHIP FROM
 Name: Shaw Industries - RINGGOLD DC NORTH
 Address: 952 INDUSTRIAL BLVD
 City/State/Zip: RINGGOLD GA 30736-2842
 SID#: _____ FOB:

Bill of Lading Number: 404859

 42007658940674048598

SHIP TO
 Name: EC APPLICATIONS Location#: _____
 Address: 0 INTERSECTION HWY 60 & FM 2373
 City/State/Zip: AMARILLO TX 79120 0209458
 PHONE#: 770-777-0386 FOB:

Carrier Name : TRIDENT TRANS.
Trailer Number : 010LIVE
Seal Number(s): 9633724

THIRD PARTY FREIGHT CHARGES BILL TO:
 Name: _____
 Address: _____
 City/State/Zip: _____
 SPECIAL INSTRUCTIONS: **CASS X3008245**
 EC APPLICATIONS

SCAC: TRYI
Pro Number: _____

Freight Charge Terms:
 Prepaid X Collect _____ 3rd Party _____
 (Check box) Master Bill of Lading with attached underlying Bills of Lading

CARRIER INFORMATION

Handling Unit				Package		WEIGHT (lbs)	H.M (X)	COMMODITY DESCRIPTION <small>Commodities requiring special or additional attention in handling or stowing must be so marked and packaged as to ensure safe transportation with ordinary care. See Section 2(e) of NMFC item 360</small>
QTY.	TYPE	QTY.	TYPE	RECEIVING STAMP SPACE				
12	Roll(s)			9,740		NMFC# and Class are Listed on Each Line		
0	EA			0				
12		0		9,740		GRAND TOTAL		

Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property as follows:
 *The agreed or declared value of the property is specifically stated by the shipper to be not exceeding _____ per _____

COD AMOUNT: \$ 0.00
Fee Terms:
 Collect Customer check acceptable Prepaid

NOTE: Liability Limitation for loss or damage in this shipment may be applicable. See 49 U.S.C. 14706(1)(A) and (B)

RECEIVED, subject to individually determined rates contracts that have been agreed upon in writing between the carrier and shipper, if applicable, otherwise to the rates, classifications and rules that have been established by the carrier and are available the shipper, on request, and to all applicable state and federal regulations.

The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges
 _____ : Customer signature

SHIPPER SIGNATURE / DATE This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the DOT Total SQY/SQF: 5,760.00 Total Sq. yards	Trailer Loaded: <input checked="" type="checkbox"/> By Shipper <input type="checkbox"/> By Driver	Freight Counted: <input checked="" type="checkbox"/> By Shipper <input type="checkbox"/> By Driver/pallets said to contain <input type="checkbox"/> By Driver/	CARRIER SIGNATURE / PICKUP DATE Carrier acknowledges receipt of packages and required placards. Carrier certifies emergency response information was made available and/or carrier has the DOT emergency response guidebook or equivalent documentation in the vehicle. CPSC Certificate of Conformity can be found @ http://www.shawfloors.com/CertificatesofConformity
	Please refer to your packing slip for detailed product information		

Texas Sand & Gravel Co., Inc.

PO Box 3099

Amarillo TX, 79116

Ticket #: 2050470

Date: 3/10/2017 7:45 AM

Phone: (806) 373-4275

Fax: (806) 379-7928

Customer: WATERSHED_GEO
WATERSHED GEO
11400 ATLANTIS PLACE SUITE 200
ALPHARETTA GA, 30022

PO #: 15413
PANTEX PLANT
Tons: 24.850
Loads: 1

TXSG 97 - 2014 MAC / Driver: DONALD MADDOX

LACRITIA - LBOSS
KRITSER PIT

Material	Location Address	Quantity	Price	Misc \$	Tax \$	Line Total \$
Concrete Sand		24.85 tn				

Weight Information

Material	Gross	Tare	Net	Time IN	Time OUT
Concrete Sand	80900.00	31200.00	49700.00	7:44 AM	7:44 AM

Remarks: Thanks

Recieved By:

Texas Sand & Gravel Co., Inc.

PO Box 3099

Amarillo TX, 79116

Ticket #: 2050476

Date: 3/10/2017 8:30 AM

Phone: (806) 373-4275

Fax: (806) 379-7928

Customer: WATERSHED_GEO
WATERSHED GEO
11400 ATLANTIS PLACE SUITE 200
ALPHARETTA GA, 30022

PO #: 15413
PANTEX PLANT
Tons: 51.550
Loads: 2

TXSG 101 - 2007 FREIGHTLINER / Driver:

~~PANDAI SANDERS~~
LACRITIA - LBOSS
KRITSER PIT

Material	Location Address	Quantity	Price	Misc \$	Tax \$	Line Total \$
Concrete Sand		26.7 tn				

Weight Information

Material	Gross	Tare	Net	Time IN	Time OUT
Concrete Sand	83800.00	30400.00	53400.00	8:29 AM	8:30 AM

Remarks: Thanks

Recieved By:

Texas Sand & Gravel Co., Inc.

PO Box 3099

Amarillo TX, 79116

Customer: WATERSHED_GEO
WATERSHED GEO
11400 ATLANTIS PLACE SUITE 200
ALPHARETTA GA, 30022

Ticket #: 2050478

Date: 3/10/2017 9:04 AM

Phone: (806) 373-4275

Fax: (806) 379-7928

PO #: 15413
PANTEX PLANT
Tons: 77.750
Loads: 3

TXSG106 - WHITE_TRUCK / Driver: JERRY

RANCH
LACRITIA - LBOSS
KRITSER PIT

Material	Location Address	Quantity	Price	Misc \$	Tax \$	Line Total \$
Concrete Sand		26.2 tn				

Weight Information

Material	Gross	Tare	Net	Time IN	Time OUT
Concrete Sand	82700.00	30300.00	52400.00	9:04 AM	9:04 AM

Remarks: Thanks

Recieved By:

Texas Sand & Gravel Co., Inc.

PO Box 3099

Amarillo TX, 79116

Customer: WATERSHED_GEO
WATERSHED GEO
11400 ATLANTIS PLACE SUITE 200
ALPHARETTA GA, 30022

Ticket #: 2050494

Date: 3/10/2017 12:45 PM

Phone: (806) 373-4275

Fax: (806) 379-7928

PO #: 15413
PANTEX PLANT
Tons: 103.750
Loads: 4

TXSG106 - WHITE_TRUCK / Driver: JERRY

RANCH
LACRITIA - LBOSS
KRITSER PIT

Material	Location Address	Quantity	Price	Misc \$	Tax \$	Line Total \$
Concrete Sand		26 tn				

Weight Information

Material	Gross	Tare	Net	Time IN	Time OUT
Concrete Sand	82300.00	30300.00	52000.00	12:37 PM	12:45 PM

Remarks: Thanks

Recieved By:



Manufacturer's Roll Certifications



Cust: Watershed Geosynthetics
 PO#: 15413 Plantex Amarillo
 Dest: Amarillo, TX

Doc#: 35442

8 rolls 50LL supergrip (300)		

roll #	width	English		area	check weld rod qty (if ordered)	wgt	resin lot #
		length	ft.				
	ft.	ft.	ft.	ft ² .		lbs.	

no third party testing

F15A475008	23	300	6,900	50LL supergrip	8tot 1	2322	CFJ810550
F15A475009	23	300	6,900	50LL supergrip	8tot 2	2322	CFJ810550
F15A475010	23	300	6,900	50LL supergrip	8tot 3	2324	CFJ810550
F15A475011	23	300	6,900	50LL supergrip	8tot 4	2332	CFJ810550
F15A475012	23	300	6,900	50LL supergrip	8tot 5	2324	CFJ810550
F15A475013	23	300	6,900	50LL supergrip	8tot 6	2324	CFJ810550
F15A475014	23	300	6,900	50LL supergrip	8tot 7	2324	CFJ810550
F15A475015	23	300	6,900	50LL supergrip	8tot 8	2310	CFJ810550

55,200

18582




quality certificate

ROLL # F15A475008		LOT # CFJ810550		LINER TYPE		50 LL SUPERGRIP	
		METRIC	ENGLISH			METRIC	ENGLISH
Thickness Measurement	MIN	1.17 mm	46 mil	Thickness	1.27 mm	50 mil	
ASTM D5994 (Modified)	MAX	1.38 mm	54 mil	Length	91.441 m	300 feet	
	AVE	1.28 mm	50 mil	Width	7.01 m	23 feet	
OIT(Standard) ASTM D 3895						206 minutes	
Asperity ASTM D7466		Average		Top (Drain)		3.61 mm	142 mil
				Bottom (Grip)		4.52 mm	178 mil
Specific Gravity ASTM D792		Average Density		g/cc		.933	
MFI ASTM D1238 COND. E		Melt Flow Index 190C/2160 g - g/10 min				.33	
Grade 7104							
Carbon Black Content ASTM D4218		Range		%		2.3	
Carbon Black Dispersion ASTM D5596		Category		10 in Category 1			
Tensile Strength ASTM D6693 (2 inches / minute)		Average Strength @ Break		MD	26 N/mm	150 ppi	3009 psi
				TD	27 N/mm	153 ppi	3050 psi
Tensile Elongation ASTM D6693 (2 inches / minute)		Average Elongation @Break		MD		%	342
Lo = 1.3" Yield				TD		%	449
Lo = 2.0" Break							
Tear Resistance ASTM D1004 (Modified)		Average Tear Resistance		MD	222.4 N	50 lbs	
				TD	231.3 N	52 lbs	
Puncture Resistance ASTM D4833 (Modified)		Average Peak Load		542.7 N		122 lbs	

Customer: Watershed Geosynthetics
 PO: 15413 Plantex Amarillo
 Destination: Amarillo, TX

Production Date: **11/20/2015** OA#: **35442**

Signature: 
Maria Coffey
 Quality Control Department



quality certificate

ROLL # F15A475009		LOT # CFJ810550		LINER TYPE		50 LL SUPERGRIP	
Thickness Measurement ASTM D5994 (Modified)		METRIC	ENGLISH	Thickness		METRIC	ENGLISH
MIN	1.19 mm	47 mil	Length		1.27 mm	50 mil	
MAX	1.37 mm	54 mil	Width		91.441 m	300 feet	
AVE	1.28 mm	50 mil			7.01 m	23 feet	
OIT(Standard) ASTM D 3895						206 minutes	
Asperity ASTM D7466		Average		Top (Drain)		3.61 mm	142 mil
				Bottom (Grip)		4.57 mm	180 mil
Specific Gravity ASTM D792		Average Density		g/cc		.933	
MFI ASTM D1238 COND. E		Melt Flow Index 190C/2160 g - g/10 min				.33	
Grade 7104							
Carbon Black Content ASTM D4218		Range		%		2.3	
Carbon Black Dispersion ASTM D5596		Category				10 in Category 1	
Tensile Strength ASTM D6693 (2 inches / minute)		Average Strength @ Break		MD	26 N/mm	150 ppi	3009 psi
				TD	27 N/mm	153 ppi	3050 psi
Tensile Elongation ASTM D6693 (2 inches / minute)		Average Elongation @Break		MD		%	342
Lo = 1.3" Yield				TD		%	449
Lo = 2.0" Break							
Tear Resistance ASTM D1004 (Modified)		Average Tear Resistance		MD	222.4 N	50 lbs	
				TD	231.3 N	52 lbs	
Puncture Resistance ASTM D4833 (Modified)		Average Peak Load				542.7 N	122 lbs

Customer: Watershed Geosynthetics
 PO: 15413 Plantex Amarillo
 Destination: Amarillo, TX

Production Date: **11/20/2015** OA#: **35442**

Signature: 
Maria Coffey
 Quality Control Department



quality certificate

ROLL # F15A475010		LOT # CFJ810550		LINER TYPE		50 LL SUPERGRIP		
Thickness Measurement		METRIC	ENGLISH	Thickness		METRIC	ENGLISH	
ASTM D5994 (Modified)	MIN	1.17 mm	46 mil	Length		1.27 mm	50 mil	
	MAX	1.40 mm	55 mil	Width		91.441 m	300 feet	
	AVE	1.27 mm	50 mil			7.01 m	23 feet	
OIT(Standard) ASTM D 3895							206 minutes	
Asperity		Average	Top (Drain)			3.66 mm	144 mil	
ASTM D7466			Bottom (Grip)			4.50 mm	177 mil	
Specific Gravity		Average Density				g/cc	.933	
ASTM D792								
MFI ASTM D1238 COND. E		Melt Flow Index 190C/2160 g - g/10 min						.33
Grade	7104							
Carbon Black Content ASTM D4218		Range				%	2.3	
Carbon Black Dispersion ASTM D5596		Category	10 in Category 1					
Tensile Strength		Average Strength @ Break		MD	26 N/mm	150 ppi	3009 psi	
ASTM D6693 (2 inches / minute)				TD	27 N/mm	153 ppi	3050 psi	
Tensile Elongation		Average Elongation @Break		MD		%	342	
ASTM D6693 (2 inches / minute)				TD		%	449	
Lo = 1.3" Yield								
Lo = 2.0" Break								
Tear Resistance		Average Tear Resistance		MD		222.4 N	50 lbs	
ASTM D1004 (Modified)				TD		231.3 N	52 lbs	
Puncture Resistance		Average Peak Load				542.7 N	122 lbs	
ASTM D4833 (Modified)								

Customer: Watershed Geosynthetics
 PO: 15413 Plantex Amarillo
 Destination: Amarillo, TX

Production Date: **11/20/2015** OA#: **35442**

Signature: 
Maria Coffey
 Quality Control Department



quality certificate

ROLL # F15A475011		LOT # CFJ810550		LINER TYPE		50 LL SUPERGRIP	
		METRIC	ENGLISH			METRIC	ENGLISH
Thickness Measurement	MIN	1.15 mm	45 mil	Thickness	1.27 mm	50 mil	
ASTM D5994 (Modified)	MAX	1.40 mm	55 mil	Length	91.441 m	300 feet	
	AVE	1.27 mm	50 mil	Width	7.01 m	23 feet	
OIT(Standard) ASTM D 3895						206 minutes	
Asperity		Average		Top (Drain)		3.51 mm	138 mil
ASTM D7466				Bottom (Grip)		4.50 mm	177 mil
Specific Gravity		Average Density		g/cc		.933	
ASTM D792							
MFI ASTM D1238 COND. E		Melt Flow Index 190C/2160 g - g/10 min				.33	
Grade	7104						
Carbon Black Content ASTM D4218	Range				%		2.3
Carbon Black Dispersion ASTM D5596	Category					10 in Category 1	
Tensile Strength		Average Strength @ Break		MD	26 N/mm	150 ppi	3009 psi
ASTM D6693 (2 inches / minute)				TD	27 N/mm	153 ppi	3050 psi
Tensile Elongation		Average Elongation @Break		MD		%	342
ASTM D6693 (2 inches / minute)				TD		%	449
Lo = 1.3" Yield							
Lo = 2.0" Break							
Tear Resistance		Average Tear Resistance		MD	222.4 N	50 lbs	
ASTM D1004 (Modified)				TD	231.3 N	52 lbs	
Puncture Resistance		Average Peak Load				542.7 N	122 lbs
ASTM D4833 (Modified)							

Customer: Watershed Geosynthetics
 PO: 15413 Plantex Amarillo
 Destination: Amarillo, TX

Production Date: **11/20/2015** OA#: **35442**

Signature: 
Maria Coffey
 Quality Control Department



quality certificate

ROLL # F15A475012		LOT # CFJ810550		LINER TYPE		50 LL SUPERGRIP	
Thickness Measurement ASTM D5994 (Modified)		METRIC	ENGLISH	Thickness		METRIC	ENGLISH
MIN	1.20 mm	47 mil	Length		1.27 mm	50 mil	
MAX	1.44 mm	57 mil	Width		91.441 m	300 feet	
AVE	1.31 mm	52 mil	OIT(Standard) ASTM D 3895		7.01 m	23 feet	206 minutes
Asperity ASTM D7466		Average	Top (Drain)			3.58 mm	141 mil
			Bottom (Grip)			4.57 mm	180 mil
Specific Gravity ASTM D792		Average Density		g/cc		.933	
MFI ASTM D1238 COND. E		Melt Flow Index 190C/2160 g - g/10 min				.33	
Grade 7104							
Carbon Black Content ASTM D4218		Range		%		2.3	
Carbon Black Dispersion ASTM D5596		Category				10 in Category 1	
Tensile Strength ASTM D6693 (2 inches / minute)		Average Strength @ Break		MD	26 N/mm	150 ppi	3009 psi
				TD	27 N/mm	153 ppi	3050 psi
Tensile Elongation ASTM D6693 (2 inches / minute)		Average Elongation @Break		MD		%	342
Lo = 1.3" Yield				TD		%	449
Lo = 2.0" Break							
Tear Resistance ASTM D1004 (Modified)		Average Tear Resistance		MD	222.4 N	50 lbs	
				TD	231.3 N	52 lbs	
Puncture Resistance ASTM D4833 (Modified)		Average Peak Load		542.7 N		122 lbs	

Customer: Watershed Geosynthetics
 PO: 15413 Plantex Amarillo
 Destination: Amarillo, TX

Production Date: **11/20/2015** OA#: **35442**

Signature: 
Maria Coffey
 Quality Control Department



quality certificate

ROLL # F15A475013		LOT # CFJ810550		LINER TYPE		50 LL SUPERGRIP	
		METRIC	ENGLISH			METRIC	ENGLISH
Thickness Measurement	MIN	1.18 mm	46 mil	Thickness	1.27 mm	50 mil	
ASTM D5994 (Modified)	MAX	1.41 mm	56 mil	Length	91.441 m	300 feet	
	AVE	1.28 mm	50 mil	Width	7.01 m	23 feet	
OIT(Standard) ASTM D 3895						206 minutes	
Asperity		Average		Top (Drain)		3.58 mm	141 mil
ASTM D7466				Bottom (Grip)		4.47 mm	176 mil
Specific Gravity		Average Density		g/cc		.934	
ASTM D792							
MFI ASTM D1238 COND. E		Melt Flow Index 190C/2160 g - g/10 min				.33	
Grade	7104						
Carbon Black Content ASTM D4218	Range				%		2.3
Carbon Black Dispersion ASTM D5596	Category		10 in Category 1				
Tensile Strength		Average Strength @ Break		MD	27 N/mm	155 ppi	3101 psi
ASTM D6693 (2 inches / minute)				TD	27 N/mm	156 ppi	3117 psi
Tensile Elongation		Average Elongation @Break		MD		%	335
ASTM D6693 (2 inches / minute)				TD		%	474
Lo = 1.3" Yield							
Lo = 2.0" Break							
Tear Resistance		Average Tear Resistance		MD	195.7 N	44 lbs	
ASTM D1004 (Modified)				TD	218.0 N	49 lbs	
Puncture Resistance		Average Peak Load				511.5 N	115 lbs
ASTM D4833 (Modified)							

Customer: Watershed Geosynthetics
 PO: 15413 Plantex Amarillo
 Destination: Amarillo, TX

Production Date: **11/20/2015** OA#: **35442**

Signature: 
Maria Coffey
 Quality Control Department



quality certificate

ROLL # F15A475014		LOT # CFJ810550		LINER TYPE		50 LL SUPERGRIP	
		METRIC	ENGLISH			METRIC	ENGLISH
Thickness Measurement	MIN	1.15 mm	45 mil	Thickness	1.27 mm	50 mil	
ASTM D5994 (Modified)	MAX	1.40 mm	55 mil	Length	91.441 m	300 feet	
	AVE	1.28 mm	50 mil	Width	7.01 m	23 feet	
OIT(Standard) ASTM D 3895						206 minutes	
Asperity		Average		Top (Drain)		3.58 mm	141 mil
ASTM D7466				Bottom (Grip)		4.50 mm	177 mil
Specific Gravity		Average Density		g/cc		.934	
ASTM D792							
MFI ASTM D1238 COND. E		Melt Flow Index 190C/2160 g - g/10 min				.33	
Grade	7104						
Carbon Black Content ASTM D4218	Range				%		2.3
Carbon Black Dispersion ASTM D5596	Category					10 in Category 1	
Tensile Strength		Average Strength @ Break		MD	27 N/mm	155 ppi	3101 psi
ASTM D6693 (2 inches / minute)				TD	27 N/mm	156 ppi	3117 psi
Tensile Elongation		Average Elongation @Break		MD		%	335
ASTM D6693 (2 inches / minute)				TD		%	474
Lo = 1.3" Yield							
Lo = 2.0" Break							
Tear Resistance		Average Tear Resistance		MD	195.7 N	44 lbs	
ASTM D1004 (Modified)				TD	218.0 N	49 lbs	
Puncture Resistance		Average Peak Load				511.5 N	115 lbs
ASTM D4833 (Modified)							

Customer: Watershed Geosynthetics
 PO: 15413 Plantex Amarillo
 Destination: Amarillo, TX

Production Date: **11/20/2015** OA#: **35442**

Signature: 
Maria Coffey
 Quality Control Department



quality certificate

ROLL # F15A475015		LOT # CFJ810550		LINER TYPE		50 LL SUPERGRIP	
		METRIC	ENGLISH			METRIC	ENGLISH
Thickness Measurement	MIN	1.23 mm	48 mil	Thickness	1.27 mm	50 mil	
ASTM D5994 (Modified)	MAX	1.38 mm	54 mil	Length	91.441 m	300 feet	
	AVE	1.27 mm	50 mil	Width	7.01 m	23 feet	
OIT(Standard) ASTM D 3895						206 minutes	
Asperity	Average	Top (Drain)			3.61 mm	142 mil	
ASTM D7466		Bottom (Grip)			4.47 mm	176 mil	
Specific Gravity	Average Density				g/cc	.934	
ASTM D792							
MFI ASTM D1238 COND. E		Melt Flow Index 190C/2160 g - g/10 min					.33
Grade	7104						
Carbon Black Content ASTM D4218	Range					%	2.3
Carbon Black Dispersion ASTM D5596	Category	10 in Category 1					
Tensile Strength	Average Strength @ Break	MD	27 N/mm	155 ppi	3101 psi		
ASTM D6693 (2 inches / minute)		TD	27 N/mm	156 ppi	3117 psi		
Tensile Elongation	Average Elongation @Break	MD		%	335		
ASTM D6693 (2 inches / minute)		TD		%	474		
Lo = 1.3" Yield							
Lo = 2.0" Break							
Tear Resistance	Average Tear Resistance	MD		195.7 N	44 lbs		
ASTM D1004 (Modified)		TD		218.0 N	49 lbs		
Puncture Resistance	Average Peak Load			511.5 N	115 lbs		
ASTM D4833 (Modified)							

Customer: Watershed Geosynthetics
 PO: 15413 Plantex Amarillo
 Destination: Amarillo, TX

Production Date: **11/20/2015** OA#: **35442**

Signature: 
Maria Coffey
 Quality Control Department

Certificate of Analysis

Shipped To: AGRU AMERICA INC:FERNLEY
2000 EAST NEWLANDS
FERNLEY NV 89408
USA

Recipient: PALMER
Fax:

Delivery # 89123556
PO #: 009764
Weight: 188050 LB
Ship Date: 09/10/2015
Package: BULK
Mode: Hopper Car
Car #: MBKX170052
Seal No: 38117

Product: PE 7104 BULK

Lot Number: CFJ810550

Property	Test Method	Value	Unit
Melt Index	ASTM D1238	0.33	g/10mi
HLMI	ASTM D1238	14.15	g/10mi
Pellet Count	ST-905	32	pel/g
Production date		20150909	
Density	D1505 or D4883	0.919	g/cm3

The data set forth herein have been carefully compiled by Chevron Phillips Chemical Company LP (CPChem).
However, there is no warranty of any kind, either expressed or implied, applicable to its use, and the user assumes all risk and liability in connection therewith.



KEVIN AYRES
QUALITY ASSURANCE SUPERINTENDENT

For CoA questions contact Customer Service Representative at +1-832-813-4806



Yingying Lu, Ph.D., Geomembrane Technical Service & Applications Development
 Highways 60 & 123, Bartlesville Research and Technology Center, Room 149 PTC
 Bartlesville, OK 74003
 ■ 918-977-6894 ■ luyy@cpchem.com ■ Fax: 918-977-7599 ■ www.cpchem.com

June 17, 2015

Grant Palmer
Agru America
500 Garrison Road
Georgetown, SC 29440

Dear Grant:

This letter is to report the final results of oven-aging and UV-aging tests (according to GRI-GM13 and GRI-GM17) on Agru America black sheet samples that you provided to us recently. These tests were performed by CPChem's Materials Evaluation Laboratory in Bartlesville, OK. The tests were completed June 2015.

The GRI-GM13 (HDPE) and GRI-GM17 (LLDPE) durability tests were done according to the following procedures.

Test	Exposure	Method
HP-OIT	150 °C, 500 psi oxygen	D5885
Oven Aging	90 days, 85 °C	D5721
UV Aging	1600 UV hrs (Conditions were 20 hours UVA-340 at 75 °C followed by 4 hrs dark with condensation at 60 °C. Irradiance was 0.72 W/m ² at 340 nm.)	D7238

Oven-Aging Results

Sample	Initial HP-OIT (min)	HP-OIT Value after Oven Aging 90 Days (min)	% HP-OIT Retained after Oven Aging 90 Days	GRI-GM13 and GRI-GM17% Retained Requirement (Oven Aging 90 Days)
60 mil HDPE Roll # G14F514045 from Marlex® K307 Polyethylene Lot # H71-4-1337	1066	883	83	80
40 mil LLDPE Roll # G14C243027 from Marlex® 7104 Polyethylene Lot # CEC810320	512	422	82	60

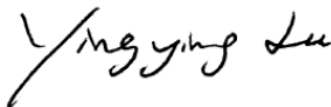
UV-Aging Results

Sample	Initial HP-OIT (min)	HP-OIT Value after UV Aging (min)	% HP-OIT Retained	GRI-GM13 and GRI-GM17 % Retained Requirement
60 mil HDPE Roll # G14F514045 from Marlex® K307 Polyethylene Lot # H71-4-1337	1066	930	87	50
40 mil LLDPE Roll # G14C243027 from Marlex® 7104 Polyethylene Lot # CEC810320	512	351	69	35

According to these test results, the durability requirements are met.

If you have any questions, please call me at 918-977-6894.

Sincerely,



Yingying Lu, Ph. D.

Polyethylene Technical Service and Applications Development

*Any technical advice, recommendations, results, or analysis ("Information") contained herein, including, without limitation, Information as it may relate to the selection of a specific product ("Product") for your use and application, is given **without warranty or guarantee** and is accepted at your sole risk. It is imperative that you test the Information (and Product, if applicable) to determine to your own satisfaction whether the Information (and Product, if applicable) are suitable for your intended use and application. **You expressly assume, and release Chevron Phillips Chemical Company, from all risk and liability, whether based in contract, tort or otherwise, in connection with the use of, or results obtained from, such Information (and Product, if applicable).***



GEOMEMBRANE TEST RESULTS

TRI Client: Agru America

Material: Agru 50 mil Supergrip Net LLDPE Geomembrane
 Resin Type: CP Chem Marlex 7104 LLDPE Resin Lot #: CXF 810180 Roll #: 111552-09
 TRI Log #: E2339-09-09

PARAMETER	TEST REPLICATE NUMBER					MEAN	STD. DEV.
	1	2	3	4	5		
2% Secant Modulus (ASTM D 5323, modulus at 2% strain)							
MD- Thickness (mil)	67	62	57	68	67	64	5
MD 2% Secant Modulus (ppi)	2368	1911	1449	3077	2915	2344	680
TD- Thickness (mil)	66	64	60	63	60	63	3
TD 2% Secant Modulus (ppi)	3€17	3€28	2J15	2J31	GJ10	2960	597
MD Machine Direction	TD Transverse Direction						

The testing is based upon accepted industry practice as well as the test method listed. Test results reported herein do not apply to samples other than those tested. TRI neither accepts responsibility for nor makes claim as to the final use and purpose of the material. TRI observes and maintains client confidentiality. TRI limits reproduction of this report, except in full, without prior approval of TRI.



GEOMEMBRANE TEST RESULTS

TRI Client: Agru America
Project: Agru MQC (GM17)

Material: AGRU 50 mil Super Grip LLDPE Geomembrane (CP Chem 7104 LLDPE)
Roll #: 116512.10 Lot # CYJ810280
TRI Log #: E2341-38-05

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	PROJ. SPEC.	
	1	2	3	4	5	6	7	8	9	10				
Multi-axial Tensile (ASTM D 5617)														
Test Method A: Centerpoint Deflection Versus Pressure														
Thickness (mils)	58	62	59									60	2	
Maximum Stress (psi)	1745	1577	1704									1675	88	
% Elongation @ Rupture (%)	79.3	82.5	81.9									81.2	1.7	30 min
Failure Description	TDT N-EF	TDT N-EF	TDT N-EF											
MDT	A tear in the machine direction.													
TDT	A tear in the transverse direction.													
H	Circular or elliptical hole in the specimen.													
H-CAT	Circular or elliptical hole in an area where the material has significantly necked down or thinned. The large thinned area resembles a pupil of a cat eye.													
N-EF	No edge failure													
MD Machine Direction	TD Transverse Direction			NA Not Available										

The testing is based upon accepted industry practice as well as the test method listed. Test results reported herein do not apply to samples other than those tested. TRI neither accepts responsibility for nor makes claim as to the final use and purpose of the material. TRI observes and maintains client confidentiality. TRI limits reproduction of this report, except in full, without prior approval of TRI.

Certificate of Analysis

Customer: EC Applications

Purchase Order: 15413

Bill of Lading:

Manufacturer's Name: Shaw Industries

Destination: Amarillo TX

Product Component: Duraturf



Name: Dan Wright

Director of
Quality, Specialty

Title: Markets

Signature: *Dan Wright*

Date: 1/18/17

#	Roll #	Production Date	Color	Roll Width (ft)	Roll Length (ft)	Tufting Gauge (in)	Pile Height (in)	CBR Puncture	Wide-Width Tensile Test (lb/ft), (MD/XD)	Total Product Weight (oz/sy)	Yarn Tensile Strength (lbs)
								ASTM D-6241	ASTM D-4595	ASTM D-5261	ASTM D-2256
1	AA1718Z	9/26/2012	Olive Green	15	246	1/2	46/32	905	1721/1408	27.06	18
2	AA17AJF	1/14/2013	Olive Green	15	200	1/2	46/32	1021	2184/1797	27.04	21.5
3	AA17AMJ	1/15/2013	Olive Green	15	288	1/2	46/32	1035	2184/1797	27.04	21.5
4	AA17C32	1/22/2013	Olive Green	15	278	1/2	46/32	1008	2064/1784	26.79	18.6
5	AA17CAW	1/23/2013	Olive Green	15	300	1/2	46/32	1073	1991/1706	26.7	21.7
6	AA17CAX	1/23/2013	Olive Green	15	300	1/2	46/32	1073	1991/1706	26.7	21.7
7	AA17CAY	1/23/2013	Olive Green	15	300	1/2	46/32	1073	1991/1706	26.7	21.7
8	AA17CAZ	1/23/2013	Olive Green	15	300	1/2	46/32	1073	1991/1706	26.7	21.7
9	AA17X43	6/3/2013	Olive Green	15	288	1/2	46/32	970	1836/1707	26.7	21.4
10	AA17X7P	6/6/2013	Olive Green	15	201	1/2	46/32	950	1836/1707	26.7	21.4
11	AA1821Y	7/8/2013	Olive Green	15	300	1/2	46/32	933	1740/1685	26.7	19.1
12	AA182V1	7/15/2013	Olive Green	15	302	1/2	46/32	936	1772/1566	26.67	19.7
13	AA182VG	7/15/2013	Olive Green	15	300	1/2	46/32	936	1772/1566	26.67	19.7
14	AA183KD	7/25/2013	Olive Green	15	300	1/2	46/32	936	1772/1566	26.67	19.7



Daily Panel Deployment Forms

EApplications
Daily Panel Placement

Deployment Date 3-13-17

Project Name: Pantex Landfill 2 Closure Job Numl 163176 Supt: Alfonso Juarez

Material: - Pond - Cell - Pad - Other: -

Panel #	Roll #	Panel #	Roll #	Panel #	Roll #																														
1	5010	2	5011	3	5009																														
Initial SF <u>6,348</u> Lineal Feet Trench		Initial SF <u>6,348</u> Lineal Feet Trench		Initial SF <u>6,348</u> Lineal Feet Trench																															
Final SF <u>5,130</u> <u>308</u>		Final SF <u>6,075</u> <u>45</u>		Final SF <u>6,075</u> <u>45</u>																															
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Daily Trial Weld Forms

ECApplications Preweld Test Report

Project Name: Pantex Landfill 2 Closure
 Material Type: 50 Mil LLDPE Drain Liner
 Job Description: _____
 Reported By: Melquiades Lopez
 Other: _____

Job # 163176
 Primary
 Secondary

Superintendent: Alfonso Juarez
 Pond
 Cell
 Pad
 Peel Test Extrusion Minimum 57 PPI
 Peel Test Fusion Minimum 63 PPI
 Shear Test Minimum 75 PPI

Liner Types S = Smooth T = Textured SG = Super Grip

Weld Date Liner Type	Time		Operator Name/ ID	Mach No.	Mach Speed	Mach Temp	Preheat Temp	Ambient Temp		Coupon 1		Coupon 2		Coupon 3		Coupon 4		Coupon 5		Test Results
	AM	PM								A	B	A	B	A	B	A	B	A	B	
3-13-17 S TO S	1:25	P.M	J. Ramirez	92	13	700			Peel	86	90	74	85	67	80	71	71	68	73	PASS
									Shear	101		88		99		87		97		
3-13-17 S TO S	4:30	P.M	L. Lucas	509		520	520		Peel	113		101		109		97		118		PASS
									Shear	148		133		142		128		147		
3-14-17 S TO S	9:00	A.M	L. Lucas	509		520	520		Peel	135		122		138		123		140		PASS
									Shear	158		143		162		148		155		
3-14-17 S TO S	2:15	P.M	L. Lucas	95	10	700			Peel	83	82	73	69	86	86	79	78	84	70	PASS
									Shear	90		85		97		89		88		
3-15-17 S TO S	9:40	A.M	J. Ramirez	509		450	520		Peel	145		115		139		113		128		PASS
									Shear	176		186		181		178		174		
TO	:								Peel	:		:		:		:		:		
TO	:								Shear	:		:		:		:		:		
TO	:								Peel	:		:		:		:		:		
TO	:								Shear	:		:		:		:		:		
TO	:								Peel	:		:		:		:		:		
TO	:								Shear	:		:		:		:		:		
TO	:								Peel	:		:		:		:		:		
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TO	:								Peel	:		:		:		:		:		
TO	:								Shear	:		:		:		:		:		
TO	:								Peel	:		:		:		:		:		
TO	:								Shear	:		:		:		:		:		



Daily Non-Destructive Seam Testing Forms



Destructive Weld Test Log



Daily Liner Repair Log

EApplications Repair Report

Project Name Pantex Landfill 2 Closure
 Material Type: 50 Mil LLDPE Drain Liner
 Job Description: _____
 Reported by: Melquiades López
 Other: _____

Job #: 163176

Primary	<input checked="" type="checkbox"/>
Secondary	<input type="checkbox"/>

Pond	<input type="checkbox"/>
Cell	<input checked="" type="checkbox"/>
Pad	<input type="checkbox"/>

Superintendent: Alfonso Juarez

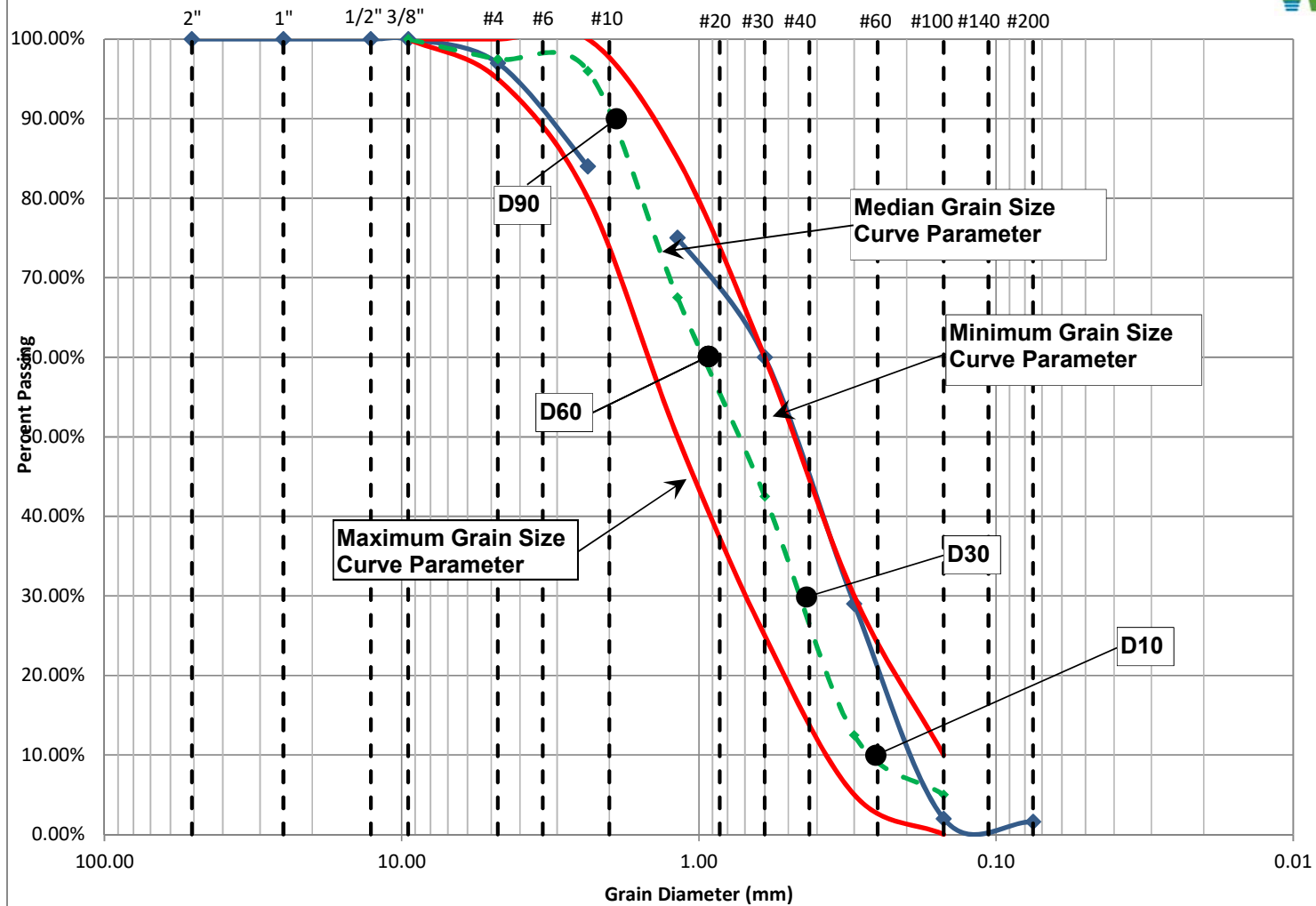
Damage Codes					SF Patch Material	Test Type	Abbrev.	Repair Types
CR --Crease	FS --Failed Seam	MatD --Material Defect	LL --Lost Lap	CF --Custom Fit				
DS --Destruct Sample	WR --Wrinkle	WS --Welder Restart	MD --Mechanical Damage	PB --Pipe Boot				
Sj --Subgrade Irregularity	AV --Airvent	RW --Roller Wrinkle	DO --Damage By Others	BO --Burn Out				
SJ --Seam Joint	AO --Add On	CS --Concrete Structure		AT --Air Test				

Repair Number	Damage Code	Seam Number	Panel Number	Location	Repair Type	Patch (Feet)	Bead (Inches)	Date Welded	Operator Name	Machine Number	Test Type	Test Results	Date Complete
1	DS#1	1/2		W. A.T.	P	2 x 18		3-13-17	L. Lucas	509	VAC.	Pass	3-14-17
2	L.L	2/3		V. A.T.	C	2 x 22		3-15-17	J. Ramirez	509	VAC.	Pass	3-15-17
3	BO	3/4		E. A.T.	P	2 x 4		3-14-17	L. Lucas	509	VAC.	Pass	3-15-17
4	BO	4/5		E. A.T.	P	2 x 15		3-15-17	J. Ramirez	509	VAC.	Pass	3-15-17
5	BO	4/5		E. 70' W	P	2 x 5		3-15-17	J. Ramirez	509	VAC.	Pass	3-15-17
6	BO	4/5		E. 124' W	P	2 x 6		3-15-17	J. Ramirez	509	VAC.	Pass	3-15-17
7	BO	4/5		E. 142' W	P	2 x 7		3-15-17	J. Ramirez	509	VAC.	Pass	3-15-17
8	BO	4/5		E. 163' W	P	2 x 2		3-15-17	J. Ramirez	509	VAC.	Pass	3-15-17
9	BO	4/5		E. 172' W	P	2 x 6		3-15-17	J. Ramirez	509	VAC.	Pass	3-15-17
10	DS#2	4/5		E. 199' W	P	2 x 7		3-15-17	J. Ramirez	509	VAC.	Pass	3-15-17
11	BO	4/5		E. 220' W	P	2 x 7		3-15-17	J. Ramirez	509	VAC.	Pass	3-15-17
12	BO	4/5		E. 241' W	P	2 x 5		3-15-17	J. Ramirez	509	VAC.	Pass	3-15-17
13	BO	4/5		W. A.T.	P	2 x 11		3-15-17	J. Ramirez	509	VAC.	Pass	3-15-17
14	L.L	5/6		W. A.T.	C	2 x 22		3-15-17	J. Ramirez	509	VAC.	Pass	3-15-17
15	BO	6/7		W. A.T.	P	2 x 3		3-15-17	J. Ramirez	509	VAC.	Pass	3-15-17
16	DS#3	5/6		E. 129' W	P	2 x 6		3-15-17	J. Ramirez	509	VAC.	Pass	3-15-17
17	BO	5/6		E. A.T.	P	2 x 7		3-15-17	J. Ramirez	509	VAC.	Pass	3-15-17
18	DS#4	6/7		E. 42' W	P	2 x 6		3-15-17	J. Ramirez	509	VAC.	Pass	3-15-17
						x							
						x							



Laboratory Sieve Analysis for Sand Ballast Material

ClosureTurf™ Grain Size Curve Parameters



- ◆ New Gradation Points
- ◆ Median Grain Size Parameter

**Pantex
Sand Curve
with ASTM
C-33 as a
parameter**



AMARILLO
 215 South Fannin
 Amarillo, Tx 79106
 Telephone 806.677.0600
 Facsimile 855.581.8081

SIEVE ANALYSIS

	<i>ENVIRONMENTAL</i>	<i>GEOTECHNICAL</i>	<i>WATER RESOURCES</i>	<i>MATERIALS TESTING</i>
Client Name:	Texas Sand & Gravel Co. Inc.			Report Number: 1015-0004-00004 / Version: 1
Project Name:	Lab Testing 2015			Report Date: 03.05.2015
Project No.:	1015-0004			Sampled: 03.05.2015 / Camargo, Steve
Location:	Amarillo, TX			
I. D. No.:	8911			

TEST RESULTS

Material: Fine Aggregate for Concrete

<u>Sieve</u>	<u>% Passing</u>	<u>Required</u>
3/8 in	100	100
No. 4	97	95-100
No. 8	84	80-100
No. 16	75	50-85
No. 30	60	25-60
No. 50	29	5-30
No. 100	2	0-10
No. 200	1.6	0-3

Test Method (As Applicable): ASTM C-33

Orig: Texas Sand & Gravel Co. Inc. Attn: Mr. Billy Pike (1-ec)

TBPE Firm Registration No. F-3179, Expires 01/31/2016

Shane Nance P.E.

 Shane E. Nance, P. E., Senior Engineer/Western Region

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REPORT CREATED BY ElmTree SYSTEM
 www.apexgeo.com



Sand Level QA/QC Sketch

W

SAND DEPTH

3/20/17

SUR

P-1	P-2	P-3	P-4	P-5	P-6	P-7
.61		.57	.61	.61		.60
.52		.61	.69	.56		.57
			0			
.55		.60	.54	.65		.51
.67		.71	.67	.63		.63



Project Photos



UNCLASSIFIED

This document has been reviewed and confirmed to be UNCLASSIFIED.
Name: Tonya Jarrett
Date: 02/28/2017

Landfill Grubbing / Vegetation Removal



UNCLASSIFIED

Landfill Grubbed / Vegetation Removed

UNCLASSIFIED



This document has been reviewed by a Parasoft team.
The UNCLASSIFIED has been determined by the UNCLASSIFIED
Department of Defense (DDO) and the Department of
Energy (DOE) and is not to be released to the public.
Name: [REDACTED] Date: [REDACTED]

UNCLASSIFIED

Geomembrane Installed



This document has been reviewed by a Pantex Plant
DOE/EM/ERO and has been determined to be UNCLASSIFIED
except where indicated otherwise. This document is
available for public release. For more information,
Name: Roy McWhitt (22-1152) Date: 02/14/2025

Geomembrane in Anchor Trench



UNCLASSIFIED

Closure Turf Installed



UNCLASSIFIED

Gas Relief Valve



UNCLASSIFIED

Anchor Trench Backfilled

Prepared for:
Consolidated Nuclear Security, LLC
U.S. Department of Energy Pantex Plant
Amarillo, Texas

**Implementation Report
Perched Aquifer Investigation
Southeast of Pantex Plant
September 2017 – February 2018
(CNS Contract #67841,
BOA 70 – Release 5)**

March 21, 2018



Stoller Newport News Nuclear
A Subsidiary of Huntington Ingalls Industries

Prepared by:
Stoller Newport News Nuclear
105 Technology Drive, Suite 190
Broomfield, Colorado 80021

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Appendix C	Groundwater Level Data
Appendix D	Hydraulic Conductivity (Permeability) Data
Appendix E	Geophysical Logs
Appendix F	Survey Data
Appendix G	Well Development Records

List of Acronyms and Abbreviations

amsl	above mean sea level
ARCH	air rotary casing hammer
ASTM	American Society for Testing and Materials
bgs	below ground surface
BOA	Basic Ordering Agreement
CNS	Consolidated Nuclear Security, LLC
DOE	U.S. Department of Energy
FGZ	fine-grained zone
FM	Farm-to-Market
ft	foot, feet
GEFCO	George E Failing Company
ISB	In-situ bioremediation
NAD	North American Datum
NNSA	National Nuclear Security Administration
PSTR	Pantex Subcontract Technical Representative
PVC	polyvinyl chloride
SN3	Stoller Newport News Nuclear, Inc.
TOC	top of casing
TTU	Texas Tech University
USCS	Unified Soil Classification System

1.0 Introduction and Site Background

This implementation report addresses the installation of six perched aquifer groundwater monitoring wells (PTX06-1190 through PTX06-1195); installation of 24 perched aquifer in-situ bioremediation (ISB) injection wells (PTX06-ISB108 through –ISB131); and abandonment of one perched aquifer injection well (PTX06-PRB16). This work was performed from late-September 2018 to mid-February 2018, at the U.S. Department of Energy/National Nuclear Security Administration (DOE/NNSA) Pantex Plant near Amarillo, Texas, under Release 5 of Well Drilling Basic Ordering Agreement (BOA) 70, Contract 67841.

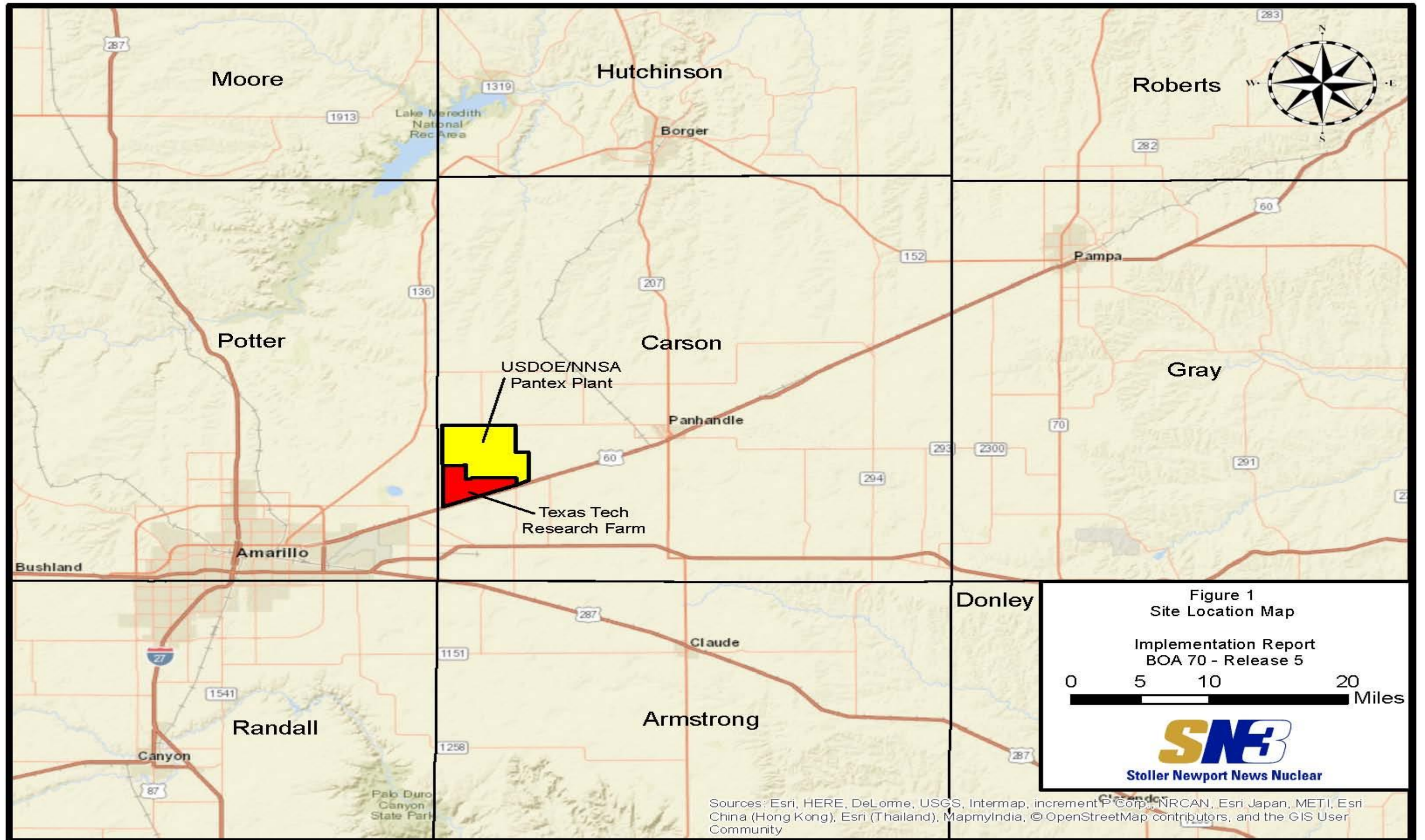
Pantex Plant is a DOE/NNSA owned and contractor-operated facility managed by Consolidated Nuclear Security, LLC (CNS). Pantex Plant was constructed by the U.S. Army for production of conventional ordnance during World War II. Pantex Plant was deactivated after the war and the property reverted to the War Assets Administration. Texas Technological College purchased the installation in 1949. The Army Ordnance Corps reclaimed the site in 1951 for use by the Atomic Energy Commission as a nuclear weapons facility. Today the Plant assembles and maintains nuclear weapons, dismantles retired weapons, and tests explosives to support DOE/NNSA initiatives.

Pantex Plant's location, shown on Figure 1, is in Carson County, approximately 17 miles northeast of Amarillo, Texas. The Plant is bounded on the north by Farm-to-Market Road (FM) 293, on the east by FM 2373, on the west by FM 683, and on the south by the Texas Tech University (TTU) Research Farm with U.S. Highway 60 farther south. The Pantex site encompasses 10,177 acres owned by DOE/NNSA for Plant operations along with 5,856 acres leased from TTU as a safety and security buffer and 1,526 acres east of FM 2373, which were purchased in 2008 for environmental restoration purposes. Industrial operations occur in the central portion of the Plant, encompassing approximately 2,000 acres of the DOE/NNSA property. The project area is specific to the designated Release 5 wells, as shown on Figures 2 and 3.

The general purpose for all Pantex Plant wells is to support the Pantex Long Term Stewardship program. Details for these newly installed wells and the well abandonment are provided herein. This report includes documentation of the well locations, drilling and completion details, borehole geologic and geophysical logs, well development, well abandonment, well pad completion, and surveying.

2.0 Project Purpose and Scope

The perched aquifer lies beneath most of the eastern portion of Pantex Plant and was created by, and until the early 2000s periodically recharged by, directed runoff and wastewater from Pantex operations. Historically, much of this water was discharged to Playa 1 via surface flow through unlined ditches. Perched groundwater is formed when surface water in the playas migrates down to the fine-grained zone (FGZ). It then flows outward in a radial manner away from the playa lakes and is quickly influenced by the regional south-to-southeast gradient. As a result of past Plant activities, the perched aquifer contains contamination and is larger in area than it would be from natural recharge alone. Factors in place that now mitigate recharge of the perched aquifer include: (1) routing all Pantex wastewater discharges since 1999 into the Plant sewer system, (2) using treated water from the wastewater treatment facility and water from the Plant's two groundwater extraction and treatment systems for beneficial reuse through a drip irrigation system, (3) lining contaminated soil ditches to prevent surface water infiltration, and (4) controlling storm water runoff.





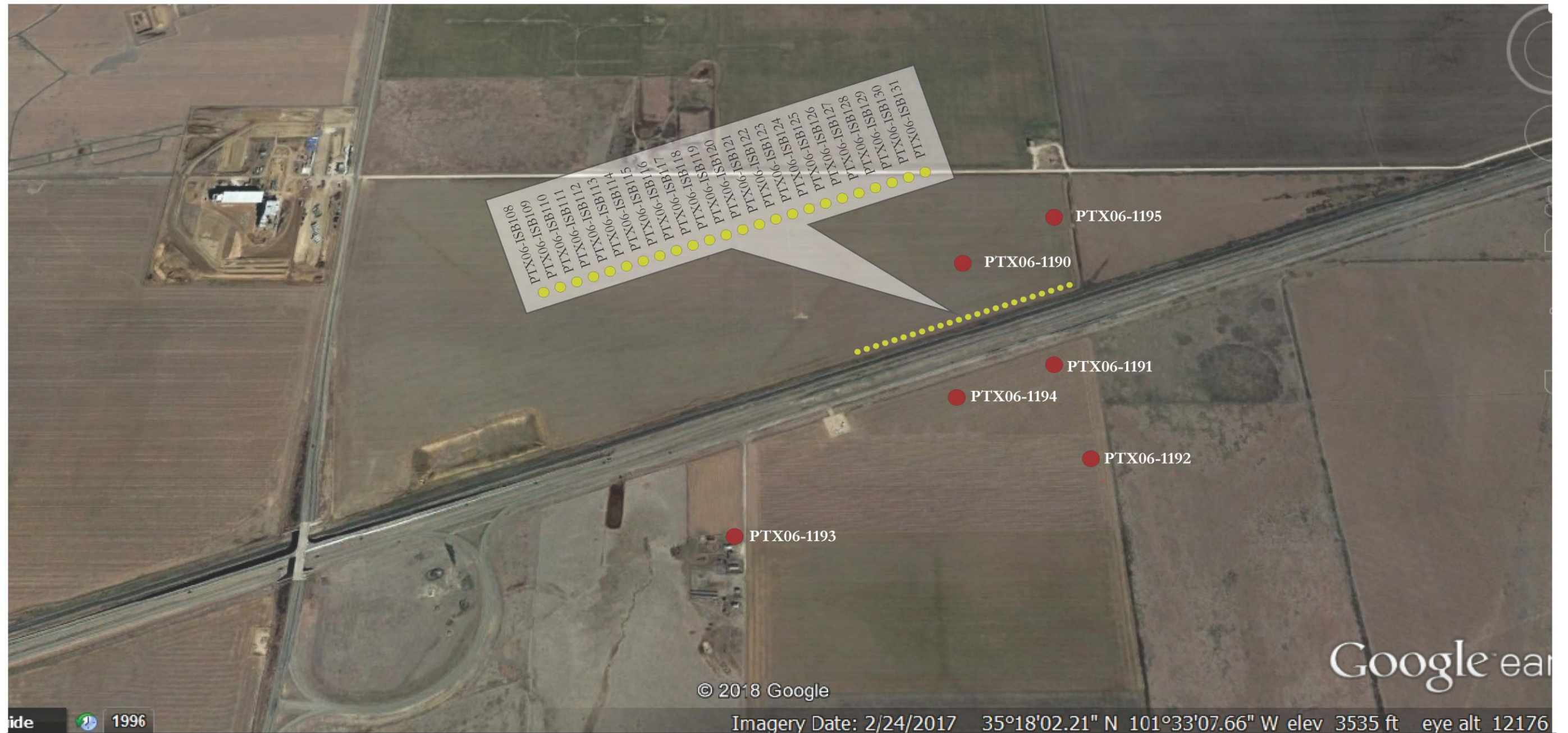
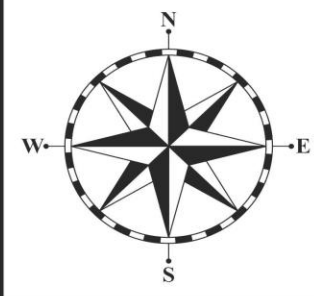


Figure 3
SE ISB Extension Wellfield Location Map
Implementation Report - BOA 70 - Release 5



Legend

- Perched Aquifer Injection Well
- Perched Aquifer Monitoring Well

The purpose of the perched aquifer wells reported herein is to support continued hydrogeologic evaluation, aquifer characterization, and in-situ remediation southeast of the Plant. Of particular interest is the extent of contaminated perched water east of FM 2373, south of County Road 8 and also south of Highway 60. This report provides data associated with the 24 new ISB wells along with 6 perched aquifer monitoring wells.

The scope of BOA 70 Release 5 is defined in the *Statement of Work for Pantex Plant Environmental Groundwater Well Activities* (June 2015) and the *2017 Well Drilling Statement of Work* (June, 2017). These include the planning, installation, and reporting requirements for the Release 5 activities. Well installation and completion activities followed the *Pantex Well Design and Construction Specifications* and are detailed in the following sections.

3.0 Well Locations

The well locations authorized for construction under Release 5 are shown on Figure 3. The location and elevation survey data for these wells are presented in Table 1.

Table 1
Well Locations Data Summary

Well Number	Top of Casing Elevation (ft amsl)	Surface Elevation (Brass Marker) (ft amsl)	Casing Stick-up (ft)	Northing	Easting
PTX06-1190	3518.48	3516.35	2.13	3751439.44	648281.22
PTX06-1191	3515.08	3513.02	2.06	3750720.88	648996.85
PTX06-1192	3512.32	3510.23	2.09	3749893.14	649119.32
PTX06-1193	3510.37	3508.28	2.09	3749346.75	646719.13
PTX06-1194	3514.75	3512.68	2.07	3750477.77	648355.41
PTX06-1195	3518.88	3516.83	2.05	3751968.74	649096.79
PTX06-ISB108	3516.31	3514.20	2.11	3750705.36	647471.65
PTX06-ISB109	3516.25	3514.18	2.07	3750731.23	647541.96
PTX06-ISB110	3516.41	3514.33	2.08	3750757.59	647612.02
PTX06-ISB111	3516.75	3514.63	2.12	3750783.88	647682.57
PTX06-ISB112	3516.60	3514.57	2.03	3750810.07	647753.08
PTX06-ISB113	3516.68	3514.60	2.08	3750836.66	647823.09
PTX06-ISB114	3516.72	3514.70	2.02	3750862.53	647894.07
PTX06-ISB115	3516.79	3514.84	1.95	3750888.51	647964.07
PTX06-ISB116	3516.79	3514.80	1.99	3750914.87	648034.69
PTX06-ISB117	3516.78	3514.84	1.94	3750940.93	648105.30
PTX06-ISB118	3516.81	3514.86	1.95	3750967.12	648175.64
PTX06-ISB119	3516.75	3514.83	1.92	3750993.50	648245.97
PTX06-ISB120	3516.95	3514.94	2.01	3751019.54	648316.24
PTX06-ISB121	3517.26	3515.20	2.06	3751045.71	648386.52
PTX06-ISB122	3517.21	3515.12	2.09	3751072.09	648457.75
PTX06-ISB123	3517.30	3515.06	2.24	3751098.16	648527.50
PTX06-ISB124	3517.11	3515.02	2.09	3751124.55	648597.96
PTX06-ISB125	3517.15	3515.16	1.99	3751150.76	648668.62
PTX06-ISB126	3517.09	3515.03	2.06	3751176.87	648738.78
PTX06-ISB127	3517.14	3515.09	2.05	3751203.15	648809.07
PTX06-ISB128	3517.11	3515.08	2.03	3751229.17	648879.71
PTX06-ISB129	3517.13	3515.12	2.01	3751255.41	648950.08
PTX06-ISB130	3517.28	3515.23	2.05	3751282.05	649020.47
PTX06-ISB131	3517.20	3515.20	2.00	3751308.18	649090.64
*PTX06-PRB16	N/A	NA	N/A	3753630.49	641986.85

*Plugged and Abandoned NA – not applicable

4.0 Project Schedule

CNS issued Purchase Order 67841 for BOA 70 Release 5 to Stoller Newport News Nuclear (SN3) on August 24, 2017. Amendment 1 to Purchase Order 67841, which documented project changes, was issued on January 23, 2018. SN3 provided the requisite planning documents (Activity Hazard Analysis, Waste Plan, etc.) on August 28, 2017. SN3 provided a proposed schedule to CNS dated September 6, 2017 estimating project fieldwork would be completed by January 31, 2018.

Mobilization for Release 5 began Sunday, September 24, 2017 and was completed on Monday, September 25th. Equipment and materials were delivered, a pre-construction meeting was held, work permits were issued, and project-specific training was conducted. Due to heavy rain that commenced on the 25th, SN3 and Cascade Drilling (Cascade) postponed field activities until the following week. Heavy rain continued the following week and while alternate entry routes were selected for vehicle passage into the agricultural field south of County Road 8, the area was not passable. Following another week of rain, and limited attempts of entry for the vehicles, the CNS Contracting Specialist authorized the use of a bulldozer to assist with vehicle movement. That authorization was provided on October 17th and a dozer was delivered to the site on October 18, 2017. Following a day of equipment mobilization, fieldwork began on October 19th.

Drilling, well installation, abandonment and well development activities were concluded by February 1, 2018. Well pads for the final monitoring wells were constructed by February 9, 2018. After decontaminating the drill rig and equipment, managing construction wastes, and cleaning the decon pad laydown area, preparations for demobilization were completed. All equipment, vehicles, trailers, and materials were moved off the plant site to Cockrell Yard. Cascade loaded commercial transports with equipment and materials February 13th. Final demobilization of the drilling crew occurred later that day after touch up painting was completed for the protective posts at the various wells installed.

Additional tasks completed included:

- Wells were surveyed for location and elevation by Davis Geomatics at several stages throughout the project, with the last survey being conducted on February 12, 2018.
- Cascade also developed the ISB and monitoring wells in stages beginning November 28, 2017 and concluding on January 31, 2018.
- Geophysical logging (deviation) was performed by COLOG for the 6 monitoring wells and 25% of the ISB wells. The logging was conducted on December 19, 2017 and February 6, 2018.
- Final wellhead inspections were made by CNS and SN3 for the 24 ISB wells (plus PTX06-1190) on December 20, 2017 and the remaining 5 perched monitoring wells on February 13, 2018.

5.0 Site Geology and Hydrogeology

The primary geologic units in the vicinity of Pantex Plant are the Quaternary Blackwater Draw Formation, the Neogene Ogallala Formation, the Triassic Dockum Group (Trujillo and Tecovas Formations), and the Permian “Redbeds” (Quartermaster Formation). Pantex overlies a structural subsidence basin that deepens from south to north with a corresponding thickening in basin sediments with depth. Each geologic unit is discussed in the following paragraphs.

The Quaternary Blackwater Draw Formation is the parent material for Pantex Plant soils and comprises the near-surface geologic unit. The thickness of the Blackwater Draw Formation at Pantex ranges from approximately 60 to 95 feet. Two distinct sediment types are present in the Blackwater Draw Formation. There is an upper grouping of interbedded silty clays and clayey silts. These are designated CL and ML respectively in the Unified Soil Classification System (USCS). The second, lower grouping is mainly interbedded silty sands and clayey sands (designated SM and SC respectively). Numerous well-developed buried soil horizons are present throughout the formation, and sand content typically increases with depth. Abundant root casts, open tubules, and caliche layers occur throughout the upper silty/clayey portion, many of which contain manganese stains, clay coatings, and calcium carbonate filaments. Silty sands and caliche typically comprise the lowermost part of the unit. The Blackwater Draw Formation overlies the Ogallala Formation.

The top of the Neogene Ogallala Formation is marked by the “caliche caprock.” The caprock is typically very hard, and the well-indurated portion can be more than 5 feet thick. The upper sediments of the Ogallala Formation consist of poorly cemented silty sands (SM), sandy silts (ML), sands (SP, SW), and dense gravels (GM, GP, GW). Much of the upper Ogallala Formation is uniform, clean, poorly graded quartz sand of eolian origin, transitioning into fluvial sands and gravels with depth. A lithologic sequence with relatively low permeability known as the FGZ separates the upper and lower Ogallala Formation. The depth to the top of the FGZ ranges from about 180 feet to 312 feet below ground surface (bgs) in the vicinity of Pantex Plant. The FGZ is comprised of clay, silt, and silty sand/sandy silt. These depths and the sediment composition of the FGZ, as determined with borehole data, have been shown to vary from well to well location over Pantex Plant and vicinity properties. Coarser sediments directly beneath the FGZ are part of the lower Ogallala Formation.

The lower Ogallala Formation sediments consist of silty eolian sands overlying fluvial sands and gravels with interbedded silts and clays. The base of the formation ranges from about 350 feet beneath portions of adjacent TTU property, to about 500 feet beneath the northern boundary of Pantex.

The Triassic Dockum Group sediments (Trujillo Formation and underlying Tecovas Formation) consist of sandstone, conglomerate, mudstone, siltstone, and shale with basal depths of approximately 900 feet at the northern Plant boundary. The Trujillo Formation consists of sandstone and conglomerate interbedded with red-brown to gray shales. The top of the Tecovas Formation is locally marked by dark red to red-brown shale and sandstone. This sequence overlies variegated sandy shales of white, yellow, maroon, and brown interbedded with soft sandstone and directly contacts the eroded surface of the Permian Quartermaster Formation.

The contact with the Permian Quartermaster Formation, commonly referred to as the Permian Redbeds, is distinctly identifiable during drilling by a color change in the shale and clay to red (Munsell color 2.5YR 4/6) and a significantly slower penetration rate compared to the bottom of the overlying Tecovas Formation.

Aquifers typically encountered during drilling operations at Pantex Plant include the perched aquifer and the High Plains Aquifer. New wells installed during BOA 70 Release 5 fully penetrate the Blackwater Draw Formation and terminate in the upper portion of the Ogallala Formation. Only the perched aquifer was penetrated by the BOA 70 Release 5 drilling activities.

The perched aquifer, a discontinuous water body, is usually present at depths of approximately 240 to 300 feet bgs near Pantex Plant but is locally controlled by the elevation of the FGZ. The perched aquifer potentiometric surface spreads outward in a radial manner beneath playa lakes and is then influenced by overall elevation differences on the top of the FGZ, generally resulting in a north to south gradient. The perched aquifer ranges in thickness from less than a foot to over 60 feet in the vicinity of the Plant and is situated above the High Plains Aquifer.

The High Plains Aquifer is the principal aquifer in the Pantex area. The aquifer generally exists under unconfined conditions in the Texas Panhandle. The potentiometric surface of the aquifer indicates regional groundwater flow to the southeast. Due to pumping in the City of Amarillo water wellfield north of the Plant, this gradient is locally altered causing a north-northeast gradient. The saturated thickness of the High Plains aquifer varies from about 200 feet on the southern Plant boundary to nearly 400 feet near the northern Plant boundary. This variation is due to increased thicknesses of Ogallala Formation and Dockum Group sediments from south to north corresponding to the depth of the subsidence basin.

6.0 Groundwater Well Installation and Abandonment

The following sections describe the groundwater well designs, drilling, completion, abandonment, and lithologic characteristics of the sediments encountered during drilling activities.

6.1 Well Design, Drilling, and Completion

BOA 70 Release 5 perched aquifer wells were constructed per *Water Well Drillers and Pump Installer Administrative Rules*, Texas Administrative Code, Chapter 76, as well as Pantex-specific requirements. Well installation and abandonment procedures followed “Attachment C” to Compliance Plan HWP 50284: *Well Design, Construction, Installation, Certification, and Abandonment Procedures*; the *Statement of Work for Pantex Plant Environmental Groundwater Well Activities* (June 2015); and Pantex’s Master Specifications. Drilling, well installations and abandonments were conducted under the guidance of both a water well driller and geologist licensed in the State of Texas. The table of well construction details, lithologic logs, and well construction diagrams are included in Appendix A, and the State of Texas well reports are included in Appendix B. Details of the drilling method and individual well components are discussed below.

Drilling was performed using George E Failing Company (GEFCO) Speed Star 50K and 30K drilling rigs. Two drill rigs were used in November and December 2017 to help get the project schedule on track due to the rain delays in August and September. A modified air rotary casing hammer (ARCH) drilling method was used that included an under-reamer bit producing boreholes 10-inches in diameter. ARCH drilling consists of driving a steel casing down the borehole directly behind the advancing drill bit. The drive casing provides borehole stability during drilling and is extracted during well construction. Compressed air is pumped down through the drill pipe to the bit. The air and drill cuttings return to surface through the annulus between the drive casing and the drill pipe. At the surface the air and cuttings are separated as they are discharged through a hose into a cyclone. Saturated cuttings from the perched aquifer were contained and transferred into a sludge box for disposal by CNS. The boreholes were terminated in the upper portion of the FGZ at depths of 272 to 296 feet bgs. A split-spoon sample was collected from the bottom of each borehole to verify FGZ identification and provide material for laboratory permeability analysis. Groundwater monitoring and ISB injection wells were installed following FGZ verification.

The groundwater monitoring wells were constructed with 4-inch Schedule 80 PVC casings, screens, and sumps. The ISB injection wells were constructed with 4-inch, Type 316 stainless steel casings, screens and sumps. The screen slot size in all wells is 0.010 inches. Screen and sump lengths are 10 feet and 1 foot, respectively in most wells. In three of the monitoring wells saturated thickness was anticipated to be greater than 10 feet and screen lengths of 15 feet (PTX06-1191 and PTX06-1195) and 20 feet (well PTX06-1192) were used. Sufficient casing was initially installed in each well to allow a few feet of stick-up above the ground surface. The casings were cut to final height (about 10 inches below the top of the protective casing) during wellhead completion. Stainless steel centralizers were used to align the wells in the center of the boreholes during construction. They were placed at the top and bottom of the screens and every 40 feet on the casings. Silica sand with a 10/20 gradation was used for the filter pack. Sand was placed in the borehole annulus from total depth to 3 feet above the top of each screen. A hydrated bentonite seal (Baroid 3/8” Holeplug) was set at the top of the filter pack in each well. The remaining annulus was filled with grout to within 2 feet of the ground surface. Bentonite grout was used for the monitoring wells and cement

grout with 2% bentonite was used for the injection wells. Completion material volumes are reported on the well construction diagrams (Appendix A) and the State of Texas well reports (Appendix B).

The surface completions consist of concrete surface seals and well pads installed above the grout. Surface seals are 2 feet thick and well pads measure 5 feet by 5 feet by 8 inches thick. Each pad has four pipe bollards near the corners and a steel protective casing 10 inches in diameter centered over the well. The protective casings and bollards stand 3 feet above the top of the concrete pads. They are painted to match existing perched aquifer wellheads at Pantex Plant. The protective casings are capped with aluminum locking covers. SN3 retained security locks on the wells until they were relinquished to CNS. Table 2 provides a summary of well completion data.

Table 2
Well Completion Data Summary

Well Number	Borehole Total Depth (ft bgs)	Depth to FGZ (ft bgs)	Well Total Depth (ft bgs)	Top of Sump (ft bgs)	Screen From/To (ft bgs)	Casing From/To (ft bgs)	Surface Elevation (Brass Marker) (ft amsl)
PTX06-1190	287	286	287	286	276-286	+2.13-276	3516.35
PTX06-1191	295	291	292	291	276-291	+2.06-276	3513.02
PTX06-1192	296	292	293	292	272-292	+2.09-272	3510.23
PTX06-1193	272	267	268	267	257-267	+2.09-257	3508.28
PTX06-1194	282	278	279	278	268-278	+2.07-268	3512.68
PTX06-1195	292	289	290	289	274-289	+2.05-274	3516.83
PTX06-ISB108	283	281	282	281	271-281	+2.11-271	3514.20
PTX06-ISB109	283	281	282	281	271-281	+2.07-271	3514.18
PTX06-ISB110	284	281	282	281	271-281	+2.08-271	3514.33
PTX06-ISB111	284	280	281	280	270-280	+2.12-270	3514.63
PTX06-ISB112	284	282	283	282	272-282	+2.03-272	3514.57
PTX06-ISB113	287	285	286	285	275-285	+2.08-275	3514.60
PTX06-ISB114	285	282	283	282	272-282	+2.02-272	3514.70
PTX06-ISB115	284	282	283	282	272-282	+1.95-272	3514.84
PTX06-ISB116	285	282	283	282	272-282	+1.99-272	3514.80
PTX06-ISB117	285	281.5	283	282	272-282	+1.94-272	3514.84
PTX06-ISB118	284	281	282	281	271-281	+1.95-271	3514.86
PTX06-ISB119	283	280	281	280	270-280	+1.92-270	3514.83
PTX06-ISB120	284	282	283	282	272-282	+2.01-272	3514.94
PTX06-ISB121	288	285	286	285	275-285	+2.06-275	3515.20
PTX06-ISB122	289	286	287	286	276-286	+2.09-276	3515.12
PTX06-ISB123	296.5	294	295	294	284-294	+2.24-284	3515.06
PTX06-ISB124	292	289	290	289	279-289	+2.09-279	3515.02
PTX06-ISB125	293	290	290.5	289.5	279.5-289.5	+1.99-279.5	3515.16
PTX06-ISB126	291	287	288	287	277-287	+2.06-277	3515.03
PTX06-ISB127	292	289	290	289	279-289	+2.05-279	3515.09
PTX06-ISB128	294	290	291	290	280-290	+2.03-280	3515.08
PTX06-ISB129	291	287	288	287	277-287	+2.01-277	3515.12
PTX06-ISB130	291	287	288	287	277-287	+2.05-277	3515.23
PTX06-ISB131	294	292	293	292	282-292	+2.00-282	3515.20

Table 3 summarizes FGZ, water elevation, and saturated thickness information. Following well installation, initial groundwater level measurements were made in each well using a Solinst water level meter. Initial water level and saturated thickness data as reported in the daily construction reports are shown in the table. Groundwater level measurements were also made in each well during and following well development. A complete table of groundwater level measurements recorded by SN3 is provided in Appendix C.

Table 3
Initial Water Depth and Saturated Thickness Data

Well Number	Surface Elevation (Brass Marker) (ft amsl)	Depth to FGZ (ft bgs)	FGZ Elevation (ft amsl)	Initial Depth to Water from TOC (ft)	Initial Casing Stick-up (ft)	Initial Depth to Water (ft bgs)	Initial Static Water Elevation (ft amsl)	Initial Saturated Thickness (ft)
PTX06-1190	3516.35	286	3230.35	284.38	4.70	279.68	3236.67	6.32
PTX06-1191	3513.02	291	3222.02	284.47	5.30	279.17	3233.85	11.83
PTX06-1192	3510.23	292	3218.23	283.33	4.30	279.03	3231.20	12.97
PTX06-1193	3508.28	267	3241.28	DRY	4.50	DRY	N/A	DRY
PTX06-1194	3512.68	278	3234.68	280.56	3.60	276.96	3235.72	1.04
PTX06-1195	3516.83	289	3227.83	286.37	4.40	281.97	3234.86	7.03
PTX06-ISB108	3514.20	281	3233.20	280.63	5.30	275.33	3238.87	5.67
PTX06-ISB109	3514.18	281	3233.18	280.84	5.30	275.54	3238.64	5.46
PTX06-ISB110	3514.33	281	3233.33	281.34	5.30	276.04	3238.29	4.96
PTX06-ISB111	3514.63	280	3234.63	282.47	6.20	276.27	3238.36	3.73
PTX06-ISB112	3514.57	282	3232.57	280.70	4.20	276.50	3238.07	5.50
PTX06-ISB113	3514.60	285	3229.60	277.60	0.65	276.95	3237.65	8.05
PTX06-ISB114	3514.70	282	3232.70	281.41	4.20	277.21	3237.49	4.79
PTX06-ISB115	3514.84	282	3232.84	281.66	4.20	277.46	3237.38	4.54
PTX06-ISB116	3514.80	282	3232.80	282.17	4.30	277.87	3236.93	4.13
PTX06-ISB117	3514.84	281.5	3233.34	283.30	4.00	279.30	3235.54	2.20
PTX06-ISB118	3514.86	281	3233.86	283.65	5.30	278.35	3236.51	2.65
PTX06-ISB119	3514.83	280	3234.83	284.38	6.25	278.13	3236.70	1.87
PTX06-ISB120	3514.94	282	3232.94	283.47	4.25	279.22	3235.72	2.78
PTX06-ISB121	3515.20	285	3230.20	279.90	1.00	278.90	3236.30	6.10
PTX06-ISB122	3515.12	286	3229.12	284.62	5.00	279.62	3235.50	6.38
PTX06-ISB123	3515.06	294	3221.06	280.45	0.90	279.55	3235.51	14.45
PTX06-ISB124	3515.02	289	3226.02	281.00	1.45	279.55	3235.47	9.45
PTX06-ISB125	3515.16	290	3225.16	280.81	0.50	280.31	3234.85	9.69
PTX06-ISB126	3515.03	287	3228.03	283.00	3.15	279.85	3235.18	7.15
PTX06-ISB127	3515.09	289	3226.09	286.35	6.00	280.35	3234.74	8.65
PTX06-ISB128	3515.08	290	3225.08	285.45	5.00	280.45	3234.63	9.55
PTX06-ISB129	3515.12	287	3228.12	283.48	3.13	280.35	3234.77	6.65
PTX06-ISB130	3515.23	287	3228.23	284.80	4.30	280.50	3234.73	6.50
PTX06-ISB131	3515.20	292	3223.20	284.20	3.70	280.50	3234.70	11.50

NA – Not Applicable

6.2 Borehole Lithology

The sediments encountered in the boreholes match the types described in Section 5 for the Blackwater Draw and upper Ogallala Formations. The depths to the top of the FGZ are shown in Tables 2 and 3. The lithology of the drill cuttings were described and classified by the SN3 geologists according to the USCS. The geologists used Munsell Soil Color Charts to make color determinations and recorded all data on field logging forms. Complete lithologic descriptions of sediments encountered are provided in Appendix A.

6.3 Well Abandonment

Abandonment of a former permeable reactive barrier injection well (PTX06-PRB16) was performed under the direction and supervision of Cascade's Texas licensed driller. The well was plugged and abandoned in accordance with Texas Drillers Regulations on December 14, 2017. The well was located on Texas Tech University property on the southwest corner of the Range 3 berm. A copy of the State of Texas Plugging Report is included in Appendix B.

Prior to plugging the CNS PSTR conducted an excavation permit walk-down on abandonment of well PTX06-PRB16. The bollards and well pad were pulled and 20 ft of 4-inch Schedule 80 PVC was removed from the top of the well. The rig was set over the well, tremie pipe was run to total depth, and the well was plugged and abandoned with 288 gallons of Portland cement (1.5 times the calculated volume). The excavation was backfilled with clean topsoil and reseeded with the Pantex approved seed mixture. Demolition debris was cleaned up and transported to the on-site landfill for recycling.

7.0 Sediment Sampling

Grab samples were collected from the drill cuttings while the boreholes were advanced to identify sediment types and their respective depth intervals. A split-spoon drive sample was collected from the bottom of each borehole for confirmation and lithologic identification of the FGZ. The split-spoon samples had 100% recovery of competent FGZ material and were retained for laboratory permeability analysis.

The FGZ split-spoon samples were hand delivered to the Advanced Terra Testing laboratory in Lakewood, Colorado and analyzed for triaxial permeability by ASTM D5084 Method D. This test method covers laboratory measurement of the hydraulic conductivity of water-saturated porous materials with a flexible wall permeameter at temperatures between 15° and 30°C (59° and 86°F). Hydraulic conductivity is referred to as the coefficient of permeability (k). Complete permeability test reports are provided in Appendix D.

The purpose of permeability testing is to determine the hydraulic conductivity (permeability) of the FGZ at the well locations. Collectively, with data from other borings, this information identifies the hydrologic characteristics of the FGZ in the surrounding areas. This information can also be used to assist modeling efforts on the rate of groundwater movement throughout an area. Table 4 shows the FGZ sample depth interval and the calculated permeability at the well locations.

Table 4
FGZ Hydraulic Conductivity

Well Number	Depth Interval (ft bgs)	USCS Classification	Permeability (K) (cm/sec)
PTX06-1190	287	ML	1.0E-08
PTX06-1191	295	SM	2.4E-06
PTX06-1192	296	SM	9.0E-06
PTX06-1193	272	SM	4.6E-05
PTX06-1194	282	ML	6.1E-07
PTX06-1195	292	ML	2.3E-07
PTX06-ISB108	283	ML	7.8E-08
PTX06-ISB109	283	ML	4.8E-08
PTX06-ISB110	284	ML	3.7E-07
PTX06-ISB111	284	SM	1.4E-07
PTX06-ISB112	284	ML	1.7E-07
PTX06-ISB113	287.2	ML	8.0E-07
PTX06-ISB114	285	ML	6.6E-08
PTX06-ISB115	284	ML	3.6E-07
PTX06-ISB116	285	ML	7.3E-07
PTX06-ISB117	285.25	SM-ML	2.1E-07
PTX06-ISB118	284.5	SM-ML	6.1E-07
PTX06-ISB119	283.8	SM	6.1E-07
PTX06-ISB120	284	ML	1.6E-07
PTX06-ISB121	288	ML	2.5E-07
PTX06-ISB122	289	ML	2.8E-07
PTX06-ISB123	296.5	ML	1.9E-06
PTX06-ISB124	292	ML	1.4E-07
PTX06-ISB125	293	ML	4.3E-07
PTX06-ISB126	291.1	ML	2.0E-07
PTX06-ISB127	292	ML	6.3E-08
PTX06-ISB128	294	ML	1.8E-07
PTX06-ISB129	291.2	ML	3.0E-07
PTX06-ISB130	292	ML	1.0E-07
PTX06-ISB131	294	ML	3.6E-07

The test results indicate that the hydraulic conductivities are within the range of previous laboratory test results for similar FGZ sediments beneath and adjacent to Pantex Plant.

8.0 Geophysical Logging

One monitoring well and six (25%) of the ISB wells were surveyed for deviation on December 19, 2017. On February 6, 2018 five newly installed monitoring wells were surveyed for deviation. The logs were run and recorded by a geophysical engineer from COLOG. Copies of the logs and deviation summary tables are included in Appendix E. The surveys include both inclination and azimuth of the wells, recorded on five-foot intervals. Dog-leg severity, a measure of the amount of change in the inclination and/or azimuth of a borehole or well, is accurately measured. The detailed deviation surveys document the actual attitude

of the wells. They verify the wells are within 2 degrees of true vertical for each 20 feet of depth and over the entire well depths and that dog-leg severity is acceptably low.

9.0 Surveying

The well locations and elevations were surveyed by Davis Geomatics on four separate dates – November 30, December 13, and December 20, 2017 and finally on February 13, 2018. Survey data were collected in Texas State Plane, North Grid, North American Datum (NAD) 1986 for horizontal control. For vertical control Northern Geodetic Vertical Datum 1988 was used. The northing, easting, and elevation for the well pad brass markers are presented in Table 1. Copies of the survey results stamped and signed by the registered professional land surveyor are provided in Appendix F. Survey data in electronic format (Microsoft Excel Spreadsheet, Microsoft Office version 2003 or earlier, Comma Separated Value) for entry into the Pantex Geographical Information Systems database was previously provided to the PSTR.

10.0 Well Development

All but one of the newly installed wells contain water. PTX06-1193 which is located south of Highway 60 and east of FM 2373 on Vance property was the only dry well. Because that well was dry no attempt to develop it was made. The following paragraph describes the planned development method.

Initially each well was bailed to remove sand and silt laden water. Next, each well was swabbed and brushed over the length of the screened interval. The swab (surge block) forces water to move forcefully in and out of the screen openings. The force of water movement causes formation material to break up and be pulled into the well. The brush is intended to remove formation material clinging to the screen openings. After swabbing and brushing, each well would be bailed a second time. Following the second bailing the subject well would be pumped. The pump would be landed at the bottom of the well, placing the pump intake within the screen interval about one-half foot above the top of the sump. Water volume and recharge rates would determine pumping rates required to prevent dewatering during development. The actual well development method varied with the amount of formation water present.

Two well locations (PTX06-ISB119 and PTX06-1194) were problematic due to slow recharge combined with an aquifer saturated thickness of less than two feet. Therefore, pumping could not be initiated as drawdown to pump intake occurred almost immediately. Swabbing and brushing was essentially confined to the lowermost screen and sump sections with limited effect on the entire screen interval. Consequently, these wells were developed solely by bailing. All other well locations had sufficient saturated thickness and recharged fast enough to allow the full development cycle to be performed.

Monitoring well PTX06-1192 with about 13 feet of saturated thickness was slow to recharge during development. SN3 requested development personnel to revisit the well four days later and spent extra time swabbing the screened interval before initiating pumping. The resultant effect was minimal as the sustained pumping rate only averaged 0.3 gallons-per-minute during both development events.

Four ISB injection wells (PTX06-ISB111, -ISB119, -ISB125, and -ISB130) were also revisited for additional development due to issues identified during video inspection of the wells.

Development water purge volumes vary from well to well. Factors such as the saturated thickness of the aquifer, well screen slot size, filter pack gradation, lithologic characteristics of the formation, and well recharge rate all have an influence on development time and purge volumes. Well development was considered complete when the discharge water was clear and temperature and pH were relatively stable. A summary of the well development purge volumes for each well is presented in Table 5 and Appendix G contains the well development records.

Table 5
Well Development Summary

Well Number	Initial Saturated Thickness (ft)	Casing Volume (Gallons)	Gallons Bailed	Gallons Pumped	Total Gallons Purged
PTX06-1190	6.32	4.58	6	84	90
PTX06-1191	11.83	8.60	20	220	240
* PTX06-1192	12.97	9.01	18	107	125
PTX06-1193	DRY	N/A	N/A	N/A	N/A
PTX06-1194	1.04	1.17	50	0	50
PTX06-1195	7.03	5.44	15	185	200
PTX06-ISB108	5.67	4.60	12	138	150
PTX06-ISB109	5.46	4.60	10	190	200
PTX06-ISB110	4.96	4.04	10	105	115
* PTX06-ISB111	3.73	2.86	20	250	270
PTX06-ISB112	5.50	4.39	10	105	115
PTX06-ISB113	8.05	6.51	10	80	90
PTX06-ISB114	4.79	4.06	10	100	110
PTX06-ISB115	4.54	3.80	15	125	140
PTX06-ISB116	4.13	3.97	10	50	60
PTX06-ISB117	2.20	2.70	8	67	75
PTX06-ISB118	2.65	2.50	8	37	45
* PTX06-ISB119	1.87	0.37	35	0	35
PTX06-ISB120	2.78	2.80	10	120	130
PTX06-ISB121	6.10	4.90	10	140	150
PTX06-ISB122	6.38	5.32	15	165	180
PTX06-ISB123	14.45	10.43	3	137	140
PTX06-ISB124	9.45	6.83	18	162	180
* PTX06-ISB125	9.69	6.84	20	450	470
PTX06-ISB126	7.15	5.26	4	196	200
PTX06-ISB127	8.65	6.75	15	135	150
PTX06-ISB128	9.55	7.48	8	192	200
PTX06-ISB129	6.65	5.17	4	86	90
* PTX06-ISB130	6.50	5.05	14	306	320
PTX06-ISB131	11.50	2.64	4	136	140

* Two well development events – purge volumes combined

11.0 Waste Management

All wastes generated during performance of BOA 70 Release 5 activities were managed in accordance with the requirements set forth in Pantex Master Specifications – Division 1, Section 1600 – Environmental Protection, and SN3’s Waste Management Plan. Wastes generated during drilling operations were deposited into Pantex-supplied waste containers as they were generated and relinquished to CNS Waste Operations personnel. Recyclable materials such as the uncontaminated intact well pad (PTX06-PRB16) and wooden pallets were delivered to the Pantex Construction Debris landfill for disposition. Non-hazardous scrap metal was taken to the Waste Operations yard in Zone 10. Cardboard was placed into designated recycling dumpster. Paper and plastic bags formerly containing silica sand, Portland cement, and bentonite grout were disposed of as sanitary waste.

12.0 Special Conditions/Problems Encountered

Work was conducted safely and within the requirements of applicable Pantex specifications and protocol. Normal day-to-day drilling operations occurred and drill rig mechanical repairs were immediately addressed as they occurred, resulting in minimal rig downtime. Initial delays to project startup were related to inclement weather and saturated ground conditions prohibiting rig and support vehicle access. Inclusion of a second rig allowed complete installation of the Southeast ISB Extension wellfield before the holiday break. January startup was delayed by offsite access issues and final project completion occurred on February 13, 2018.

Video inspections of the wells were made by CNS Sampling and Analysis personnel. Those inspections revealed wells PTX06-ISB111, -ISB119, -ISB125, and -ISB130 required additional development efforts. Development personnel revisited each location during the January drilling event and corrected identified deficiencies to the satisfaction of CNS Pantex.

13.0 Conclusion

BOA 70 Release 5 was completed in a timely manner within budget and schedule expectations. The wells were installed according to Pantex guidance, construction specifications were followed, no personnel injuries were sustained, and no safety, security, or quality incidents occurred.

The drilling locations and wellheads were inspected and found compliant with turnover criteria. Video inspections of the wells verified they were free of grout infiltration and no defects in well materials or installations are readily apparent.

Appendix A

Table of Well Construction Details, Lithologic Logs, and Well Completion Diagrams

Pantex Well Drilling BOA 70 Release 5 Wells

Well	Hole diameter (in)	Well diameter (in)	Total borehole depth (ft) from ground surface	Constructed well depth (ft) from ground surface	Well location available (Y/N)	Intended Use of Well (monitoring, ISB injection, P&T extraction, piezometer, production, or other pilot study well type)	Drilling & lithologic logs available (Y/N)	Drill method	Date drilled	Casing I.D.(in)	Casing type/materials	How joined	Stick-up length	Top of casing (+0.01 MSL)	Ground surface elevation (+0.01 MSL)	Capped/lockable	Surface pad size(ft)	Detailed drawing of well available (include dimensions) Y/N	Depth to surface seal(ft) relative to ground surface	Surface seal design & construction available (Y/N)	Well development procedure available (Y/N)
PTX06-1190	10.00	4.50	287'	287'	Yes	Monitoring	Yes	ARCH	10/19/2017	3.786	Monoflex Schedule 80 PVC	Threaded Flush Joint	2.13 ft	3518.48	3516.35	J Plug and Royer Cover	5' X 5' X 8"	Yes	0' - 2'	Yes	Yes
PTX06-1191	10.00	4.50	295'	292'	Yes	Monitoring	Yes	ARCH	1/21/2018	3.786	Monoflex Schedule 80 PVC	Threaded Flush Joint	2.06 ft	3515.08	3513.02	J Plug and Royer Cover	5' X 5' X 8"	Yes	0' - 2'	Yes	Yes
PTX06-1192	10.00	4.50	296'	293'	Yes	Monitoring	Yes	ARCH	1/18/2018	3.786	Monoflex Schedule 80 PVC	Threaded Flush Joint	2.09 ft	2512.32	3510.23	J Plug and Royer Cover	5' X 5' X 8"	Yes	0' - 2'	Yes	Yes
PTX06-1193	10.00	4.50	272'	268'	Yes	Monitoring	Yes	ARCH	1/24/2018	3.786	Monoflex Schedule 80 PVC	Threaded Flush Joint	2.09 ft	3510.37	3508.28	J Plug and Royer Cover	5' X 5' X 8"	Yes	0' - 2'	Yes	Yes
PTX06-1194	10.00	4.50	282'	279'	Yes	Monitoring	Yes	ARCH	1/27/2018	3.786	Monoflex Schedule 80 PVC	Threaded Flush Joint	2.07 ft	3514.75	3512.68	J Plug and Royer Cover	5' X 5' X 8"	Yes	0' - 2'	Yes	Yes
PTX06-1195	10.00	4.50	292'	290'	Yes	Monitoring	Yes	ARCH	1/29/2018	3.786	Monoflex Schedule 80 PVC	Threaded Flush Joint	2.05 ft	3518.88	3516.83	J Plug and Royer Cover	5' X 5' X 8"	Yes	0' - 2'	Yes	Yes
PTX06-ISB108	10.00	4.50	283'	282'	Yes	ISB Injection	Yes	ARCH	12/12/2017	4.260	Johnson Sch 10 Type 316 SS	Threaded Flush Joint	2.11 ft	3516.31	3514.20	J Plug and Royer Cover	5' X 5' X 8"	Yes	0' - 2'	Yes	Yes
PTX06-ISB109	10.00	4.50	283'	282'	Yes	ISB Injection	Yes	ARCH	12/3/2017	4.260	Johnson Sch 10 Type 316 SS	Threaded Flush Joint	2.07 ft	3516.25	3514.18	J Plug and Royer Cover	5' X 5' X 8"	Yes	0' - 2'	Yes	Yes
PTX06-ISB110	10.00	4.50	284'	282'	Yes	ISB Injection	Yes	ARCH	12/1/2017	4.260	Johnson Sch 10 Type 316 SS	Threaded Flush Joint	2.08 ft	3516.41	3514.33	J Plug and Royer Cover	5' X 5' X 8"	Yes	0' - 2'	Yes	Yes
PTX06-ISB111	10.00	4.50	284'	281'	Yes	ISB Injection	Yes	ARCH	12/14/2017	4.260	Johnson Sch 10 Type 316 SS	Threaded Flush Joint	2.12 ft	3516.75	3514.63	J Plug and Royer Cover	5' X 5' X 8"	Yes	0' - 2'	Yes	Yes
PTX06-ISB112	10.00	4.50	284'	283'	Yes	ISB Injection	Yes	ARCH	12/12/2017	4.260	Johnson Sch 10 Type 316 SS	Threaded Flush Joint	2.03 ft	3516.60	3514.57	J Plug and Royer Cover	5' X 5' X 8"	Yes	0' - 2'	Yes	Yes
PTX06-ISB113	10.00	4.50	287'	286'	Yes	ISB Injection	Yes	ARCH	11/2/2017	4.260	Johnson Sch 10 Type 316 SS	Threaded Flush Joint	2.08 ft	3516.68	3514.60	J Plug and Royer Cover	5' X 5' X 8"	Yes	0' - 2'	Yes	Yes
PTX06-ISB114	10.00	4.50	285'	283'	Yes	ISB Injection	Yes	ARCH	11/6/2017	4.260	Johnson Sch 10 Type 316 SS	Threaded Flush Joint	2.02 ft	3516.72	3514.70	J Plug and Royer Cover	5' X 5' X 8"	Yes	0' - 2'	Yes	Yes
PTX06-ISB115	10.00	4.50	284'	283'	Yes	ISB Injection	Yes	ARCH	11/2/2017	4.260	Johnson Sch 10 Type 316 SS	Threaded Flush Joint	1.95 ft	3516.79	3514.84	J Plug and Royer Cover	5' X 5' X 8"	Yes	0' - 2'	Yes	Yes
PTX06-ISB116	10.00	4.50	285'	283'	Yes	ISB Injection	Yes	ARCH	11/4/2017	4.260	Johnson Sch 10 Type 316 SS	Threaded Flush Joint	1.99 ft	3516.79	3514.80	J Plug and Royer Cover	5' X 5' X 8"	Yes	0' - 2'	Yes	Yes
PTX06-ISB117	10.00	4.50	285'	283'	Yes	ISB Injection	Yes	ARCH	11/13/2017	4.260	Johnson Sch 10 Type 316 SS	Threaded Flush Joint	1.94 ft	3516.78	3514.84	J Plug and Royer Cover	5' X 5' X 8"	Yes	0' - 2'	Yes	Yes
PTX06-ISB118	10.00	4.50	284'	282'	Yes	ISB Injection	Yes	ARCH	11/15/2017	4.260	Johnson Sch 10 Type 316 SS	Threaded Flush Joint	1.95 ft	3516.81	3514.86	J Plug and Royer Cover	5' X 5' X 8"	Yes	0' - 2'	Yes	Yes
PTX06-ISB119	10.00	4.50	283'	281'	Yes	ISB Injection	Yes	ARCH	11/16/2017	4.260	Johnson Sch 10 Type 316 SS	Threaded Flush Joint	1.92 ft	3516.75	3514.83	J Plug and Royer Cover	5' X 5' X 8"	Yes	0' - 2'	Yes	Yes
PTX06-ISB120	10.00	4.50	284'	283'	Yes	ISB Injection	Yes	ARCH	11/29/2018	4.260	Johnson Sch 10 Type 316 SS	Threaded Flush Joint	2.01 ft	3516.95	3514.94	J Plug and Royer Cover	5' X 5' X 8"	Yes	0' - 2'	Yes	Yes
PTX06-ISB121	10.00	4.50	288'	286'	Yes	ISB Injection	Yes	ARCH	11/7/2017	4.260	Johnson Sch 10 Type 316 SS	Threaded Flush Joint	2.06 ft	3517.26	3515.20	J Plug and Royer Cover	5' X 5' X 8"	Yes	0' - 2'	Yes	Yes
PTX06-ISB122	10.00	4.50	289'	287'	Yes	ISB Injection	Yes	ARCH	11/5/2017	4.260	Johnson Sch 10 Type 316 SS	Threaded Flush Joint	2.09 ft	3517.21	3515.12	J Plug and Royer Cover	5' X 5' X 8"	Yes	0' - 2'	Yes	Yes
PTX06-ISB123	10.00	4.50	296.5'	295'	Yes	ISB Injection	Yes	ARCH	11/4/2017	4.260	Johnson Sch 10 Type 316 SS	Threaded Flush Joint	2.24 ft	3517.30	3515.06	J Plug and Royer Cover	5' X 5' X 8"	Yes	0' - 2'	Yes	Yes
PTX06-ISB124	10.00	4.50	292'	290'	Yes	ISB Injection	Yes	ARCH	12/2/2017	4.260	Johnson Sch 10 Type 316 SS	Threaded Flush Joint	2.09 ft	3517.11	3515.02	J Plug and Royer Cover	5' X 5' X 8"	Yes	0' - 2'	Yes	Yes
PTX06-ISB125	10.00	4.50	293'	290.5'	Yes	ISB Injection	Yes	ARCH	11/30/2017	4.260	Johnson Sch 10 Type 316 SS	Threaded Flush Joint	1.99 ft	3517.15	3515.16	J Plug and Royer Cover	5' X 5' X 8"	Yes	0' - 2'	Yes	Yes
PTX06-ISB126	10.00	4.50	291'	288'	Yes	ISB Injection	Yes	ARCH	11/15/2017	4.260	Johnson Sch 10 Type 316 SS	Threaded Flush Joint	2.06 ft	3517.09	3515.03	J Plug and Royer Cover	5' X 5' X 8"	Yes	0' - 2'	Yes	Yes
PTX06-ISB127	10.00	4.50	292'	290'	Yes	ISB Injection	Yes	ARCH	11/28/2017	4.260	Johnson Sch 10 Type 316 SS	Threaded Flush Joint	2.05 ft	3517.14	3515.09	J Plug and Royer Cover	5' X 5' X 8"	Yes	0' - 2'	Yes	Yes
PTX06-ISB128	10.00	4.50	294'	291'	Yes	ISB Injection	Yes	ARCH	10/22/2017	4.260	Johnson Sch 10 Type 316 SS	Threaded Flush Joint	2.03 ft	3517.11	3515.08	J Plug and Royer Cover	5' X 5' X 8"	Yes	0' - 2'	Yes	Yes
PTX06-ISB129	10.00	4.50	291'	288'	Yes	ISB Injection	Yes	ARCH	11/14/2017	4.260	Johnson Sch 10 Type 316 SS	Threaded Flush Joint	2.01 ft	3517.13	3515.12	J Plug and Royer Cover	5' X 5' X 8"	Yes	0' - 2'	Yes	Yes
PTX06-ISB130	10.00	4.50	291'	288'	Yes	ISB Injection	Yes	ARCH	11/13/2017	4.260	Johnson Sch 10 Type 316 SS	Threaded Flush Joint	2.05 ft	3517.28	3515.23	J Plug and Royer Cover	5' X 5' X 8"	Yes	0' - 2'	Yes	Yes
PTX06-ISB131	10.00	4.50	294'	293'	Yes	ISB Injection	Yes	ARCH	10/25/2017	4.260	Johnson Sch 10 Type 316 SS	Threaded Flush Joint	2.00 ft	3517.20	3515.20	J Plug and Royer Cover	5' X 5' X 8"	Yes	0' - 2'	Yes	Yes

Pantex Well Drilling BOA 70 Release 5 Wells

Well	Annulus fill	Depth to annulus seal(ft) relative to ground surface	Depth to gravel pack(ft) relative to ground surface	Depth to 1 st saturated zone relative to ground surface	Depth to and Length of gravel pack(ft)	Size-gravel pack	Filter pack volume (how many bags, buckets, etc.)	Filter pack placement method	Depth to top of screen(ft) relative to ground surface	Sealant materials	Sealant volume (how many bags, buckets, etc.)	Sealant placement method	Screen slot size/length(in)	Screen type	Screen length(ft)	Blank length(ft) and depths relative to ground surface	Dev. method	Well coordinates (lat & long)	Well coordinates (northing and easting)
PTX06-1190	Bentonite Grout	2' - 241'	273'	279.68'	273' - 287' (14')	10/20	18 bags	Tremie	276'	Bentonite Chips 3/8" Holeplug	21 bags	Tremie	0.010"	Monoflex Schedule 80 PVC	10'	Riser +2.13' - 276' Sump 286' - 287'	Swab, Bail, and Pump	35°17'34.81" lat -101°31'35.25" long	3751439.44 north 648281.22 east
PTX06-1191	Bentonite Grout	2' - 245'	273'	279.17'	273' - 295' (22')	10/20	27 bags	Tremie	276'	Bentonite Chips 3/8" Holeplug	16 bags	Tremie	0.010"	Monoflex Schedule 80 PVC	15'	Riser +2.06' - 276' Sump 291' - 292'	Swab, Bail, and Pump	35°17'27.71" lat -101°31'26.62" long	3750720.88 north 648996.85 east
PTX06-1192	Bentonite Grout	2' - 240'	269'	279.03'	269' - 296' (27')	10/20	34 bags	Tremie	272'	Bentonite Chips 3/8" Holeplug	22 bags	Tremie	0.010"	Monoflex Schedule 80 PVC	20'	Riser +2.09' - 272' Sump 292' - 293'	Swab, Bail, and Pump	35°17'19.52" lat -101°31'25.14" long	3749893.14 north 649119.32 east
PTX06-1193	Bentonite Grout	2' - 230'	254'	Dry	254' - 272' (18')	12/20	22 bags	Tremie	257'	Bentonite Chips 3/8" Holeplug	17 bags	Tremie	0.010"	Monoflex Schedule 80 PVC	10'	Riser +2.09' - 257' Sump 267' - 268'	Dry - No Development	35°17'14.11" lat -101°31'54.09" long	3749346.75 north 646719.13 east
PTX06-1194	Bentonite Grout	2' - 238'	265'	276.96'	265' - 282' (17')	12/20	32 bags	Tremie	268'	Bentonite Chips 3/8" Holeplug	13 bags	Tremie	0.010"	Monoflex Schedule 80 PVC	10'	Riser +2.07' - 268' Sump 278' - 279'	Swab and Bail	35°17'25.30" lat -101°31'34.35" long	3750477.77 north 648355.41 east
PTX06-1195	Bentonite Grout	2' - 240'	271'	281.97'	271' - 292' (19')	12/20	36 bags	Tremie	274'	Bentonite Chips 3/8" Holeplug	17 bags	Tremie	0.010"	Monoflex Schedule 80 PVC	15'	Riser +2.05' - 274' Sump 289' - 290'	Swab, Bail, and Pump	35°17'40.05" lat -101°31'25.42" long	3751968.74 north 649096.79 east
PTX06-1SB108	Cement Grout 2% Bentonite	2' - 240'	268'	275.33'	268' - 283' (15')	10/20	23 bags	Tremie	271'	Bentonite Chips 3/8" Holeplug	12 bags	Tremie	0.010"	Johnson Sch 10 Type 316 SS	10'	Riser +2.11' - 271' Sump 281' - 282'	Swab, Bail, and Pump	35°17'27.55" lat -101°31'45.02" long	3750705.36 north 647471.65 east
PTX06-1SB109	Cement Grout 2% Bentonite	2' - 238'	268'	275.54'	268' - 283' (15')	10/20	29 bags	Tremie	271'	Bentonite Chips 3/8" Holeplug	16 bags	Tremie	0.010"	Johnson Sch 10 Type 316 SS	10'	Riser +2.07' - 271' Sump 281' - 282'	Swab, Bail, and Pump	35°17'27.80" lat -101°31'44.17" long	3750731.23 north 647541.96 east
PTX06-1SB110	Cement Grout 2% Bentonite	2' - 240'	268'	276.04'	268' - 284' (16')	10/20	25 bags	Tremie	271'	Bentonite Chips 3/8" Holeplug	13 bags	Tremie	0.010"	Johnson Sch 10 Type 316 SS	10'	Riser +2.08' - 271' Sump 281' - 282'	Swab, Bail, and Pump	35°17'28.06" lat -101°31'43.32" long	3750757.59 north 647612.02 east
PTX06-1SB111	Cement Grout 2% Bentonite	2' - 239'	267'	276.00'	267' - 284' (17')	10/20	24 bags	Tremie	270'	Bentonite Chips 3/8" Holeplug	19 bags	Tremie	0.010"	Johnson Sch 10 Type 316 SS	10'	Riser +2.12' - 270' Sump 280' - 281'	Swab, Bail, and Pump	35°17'28.32" lat -101°31'42.47" long	3750783.88 north 647682.57 east
PTX06-1SB112	Cement Grout 2% Bentonite	2' - 238'	269'	275.50'	269' - 284' (15')	10/20	20 bags	Tremie	272'	Bentonite Chips 3/8" Holeplug	17 bags	Tremie	0.010"	Johnson Sch 10 Type 316 SS	10'	Riser +2.03' - 272' Sump 282' - 283'	Swab, Bail, and Pump	35°17'28.58" lat -101°31'41.62" long	3750810.07 north 647753.08 east
PTX06-1SB113	Cement Grout 2% Bentonite	2' - 236'	272'	276.95'	272' - 287' (15')	10/20	21 bags	Tremie	275'	Bentonite Chips 3/8" Holeplug	24 bags	Tremie	0.010"	Johnson Sch 10 Type 316 SS	10'	Riser +2.08' - 275' Sump 285' - 286'	Swab, Bail, and Pump	35°17'28.85" lat -101°31'40.78" long	3750836.66 north 647823.09 east
PTX06-1SB114	Cement Grout 2% Bentonite	2' - 239'	269'	277.21'	269' - 285' (16')	10/20	34 bags	Tremie	272'	Bentonite Chips 3/8" Holeplug	10 bags	Tremie	0.010"	Johnson Sch 10 Type 316 SS	10'	Riser +2.02' - 272' Sump 282' - 283'	Swab, Bail, and Pump	35°17'29.10" lat -101°31'39.92" long	3750862.53 north 647894.07 east
PTX06-1SB115	Cement Grout 2% Bentonite	2' - 245'	269'	277.46'	269' - 284' (15')	10/20	28 bags	Tremie	272'	Bentonite Chips 3/8" Holeplug	8 bags	Tremie	0.010"	Johnson Sch 10 Type 316 SS	10'	Riser +1.95' - 272' Sump 282' - 283'	Swab, Bail, and Pump	35°17'29.36" lat -101°31'39.08" long	3750888.51 north 647964.07 east
PTX06-1SB116	Cement Grout 2% Bentonite	2' - 239'	269'	277.87'	269' - 285' (16')	10/20	30 bags	Tremie	272'	Bentonite Chips 3/8" Holeplug	11 bags	Tremie	0.010"	Johnson Sch 10 Type 316 SS	10'	Riser +1.99' - 272' Sump 282' - 283'	Swab, Bail, and Pump	35°17'29.62" lat -101°31'38.22" long	3750914.87 north 648034.69 east
PTX06-1SB117	Cement Grout 2% Bentonite	2' - 240'	269'	279.30'	269' - 285' (16')	10/20	23 bags	Tremie	272'	Bentonite Chips 3/8" Holeplug	12 bags	Tremie	0.010"	Johnson Sch 10 Type 316 SS	10'	Riser +1.94' - 272' Sump 282' - 283'	Swab, Bail, and Pump	35°17'29.88" lat -101°31'37.37" long	3750940.93 north 648105.30 east
PTX06-1SB118	Cement Grout 2% Bentonite	2' - 240'	269'	278.35'	269' - 284' (15')	10/20	24 bags	Tremie	271'	Bentonite Chips 3/8" Holeplug	9 bags	Tremie	0.010"	Johnson Sch 10 Type 316 SS	10'	Riser +1.95' - 271' Sump 281' - 282'	Swab, Bail, and Pump	35°17'30.14" lat -101°31'36.52" long	3750967.12 north 648175.64 east
PTX06-1SB119	Cement Grout 2% Bentonite	2' - 240'	267'	278.13'	267' - 283' (16')	10/20	22 bags	Tremie	270'	Bentonite Chips 3/8" Holeplug	10 bags	Tremie	0.010"	Johnson Sch 10 Type 316 SS	10'	Riser +1.92' - 270' Sump 280' - 281'	Swab and Bail	35°17'30.40" lat -101°31'35.68" long	3750993.50 north 648245.97 east
PTX06-1SB120	Cement Grout 2% Bentonite	2' - 240'	269'	279.22'	269' - 284' (15')	10/20	27 bags	Tremie	272'	Bentonite Chips 3/8" Holeplug	13 bags	Tremie	0.010"	Johnson Sch 10 Type 316 SS	10'	Riser +2.01' - 272' Sump 282' - 283'	Swab, Bail, and Pump	35°17'30.66" lat -101°31'34.83" long	3751019.54 north 648316.24 east
PTX06-1SB121	Cement Grout 2% Bentonite	2' - 245'	272'	278.90'	272' - 288' (16')	10/20	30 bags	Tremie	275'	Bentonite Chips 3/8" Holeplug	16 bags	Tremie	0.010"	Johnson Sch 10 Type 316 SS	10'	Riser +2.06' - 275' Sump 285' - 286'	Swab, Bail, and Pump	35°17'30.92" lat -101°31'33.98" long	3751045.71 north 648386.52 east
PTX06-1SB122	Cement Grout 2% Bentonite	2' - 238'	273'	279.62'	273' - 289' (16')	10/20	21 bags	Tremie	276'	Bentonite Chips 3/8" Holeplug	20 bags	Tremie	0.010"	Johnson Sch 10 Type 316 SS	10'	Riser +2.09' - 276' Sump 286' - 287'	Swab, Bail, and Pump	35°17'31.18" lat -101°31'33.12" long	3751072.09 north 648457.75 east
PTX06-1SB123	Cement Grout 2% Bentonite	2' - 244'	281'	279.55'	281' - 296.5' (15.5')	10/20	23 bags	Tremie	284'	Bentonite Chips 3/8" Holeplug	19 bags	Tremie	0.010"	Johnson Sch 10 Type 316 SS	10'	Riser +2.24' - 284' Sump 294' - 295'	Swab, Bail, and Pump	35°17'31.44" lat -101°31'32.28" long	3751098.16 north 648527.50 east
PTX06-1SB124	Cement Grout 2% Bentonite	2' - 248'	276'	279.55'	276' - 292' (16')	10/20	29 bags	Tremie	279'	Bentonite Chips 3/8" Holeplug	19 bags	Tremie	0.010"	Johnson Sch 10 Type 316 SS	10'	Riser +2.09' - 279' Sump 289' - 290'	Swab, Bail, and Pump	35°17'31.70" lat -101°31'31.43" long	3751124.55 north 648597.96 east
PTX06-1SB125	Cement Grout 2% Bentonite	2' - 247'	277'	280.31'	277' - 293' (16')	10/20	19 bgs	Tremie	279.5'	Bentonite Chips 3/8" Holeplug	22 bags	Tremie	0.010"	Johnson Sch 10 Type 316 SS	10'	Riser +1.99' - 279.5' Sump 289.5' - 290.5'	Swab, Bail, and Pump	35°17'31.96" lat -101°31'30.58" long	3751150.76 north 648668.62 east
PTX06-1SB126	Cement Grout 2% Bentonite	2' - 246.5'	274'	278.85'	274' - 291' (17')	10/20	31 bags	Tremie	277'	Bentonite Chips 3/8" Holeplug	20 bags	Tremie	0.010"	Johnson Sch 10 Type 316 SS	10'	Riser +2.06' - 277' Sump 287' - 288'	Swab, Bail, and Pump	35°17'32.21" lat -101°31'29.73" long	3751176.87 north 648738.78 east
PTX06-1SB127	Cement Grout 2% Bentonite	2' - 238'	276'	280.35'	276' - 292' (16')	10/20	33 bags	Tremie	279'	Bentonite Chips 3/8" Holeplug	17 bags	Tremie	0.010"	Johnson Sch 10 Type 316 SS	10'	Riser +2.05' - 279' Sump 289' - 290'	Swab, Bail, and Pump	35°17'32.47" lat -101°31'28.88" long	3751203.15 north 648809.07 east
PTX06-1SB128	Cement Grout 2% Bentonite	2' - 237.5'	277'	280.45'	277' - 294' (17')	10/20	36 bags	Tremie	280'	Bentonite Chips 3/8" Holeplug	24 bags	Tremie	0.010"	Johnson Sch 10 Type 316 SS	10'	Riser +2.03' - 280' Sump 290' - 291'	Swab, Bail, and Pump	35°17'32.73" lat -101°31'28.03" long	3751229.17 north 648879.71 east
PTX06-1SB129	Cement Grout 2% Bentonite	2' - 244'	274'	278.35'	274' - 291' (17')	10/20	28 bags	Tremie	277'	Bentonite Chips 3/8" Holeplug	21 bags	Tremie	0.010"	Johnson Sch 10 Type 316 SS	10'	Riser +2.01' - 277' Sump 287' - 288'	Swab, Bail, and Pump	35°17'32.99" lat -101°31'27.18" long	3751255.41 north 648950.08 east
PTX06-1SB130	Cement Grout 2% Bentonite	2' - 244'	274'	280.50'	274' - 291' (17')	10/20	28 bags	Tremie	277'	Bentonite Chips 3/8" Holeplug	21 bags	Tremie	0.010"	Johnson Sch 10 Type 316 SS	10'	Riser +2.05' - 277' Sump 287' - 288'	Swab, Bail, and Pump	35°17'33.26" lat -101°31'26.33" long	3751282.05 north 649020.47 east
PTX06-1SB131	Cement Grout 2% Bentonite	2' - 239'	279'	280.50'	279' - 294' (15')	10/20	21 bags	Tremie	282'	Bentonite Chips 3/8" Holeplug	23 bags	Tremie	0.010"	Johnson Sch 10 Type 316 SS	10'	Riser +2.00' - 282' Sump 292' - 293'	Swab, Bail, and Pump	35°17'33.51" lat -101°31'25.49" long	3751308.18 north 649090.64 east

PTX06-ISB131

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 466090	Northing: 3751308.18 Easting: 649090.64
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 294 ft bgs TD Well: 293 ft bgs
Dates Drilled: 10/25/17 Date Completed: 11/01/17	Depth to Water: 280.50 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3515.20 ft amsl	Top of Casing Elevation: 3517.20 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	0			0' - 5' Silty Clay Loam, dark reddish brown (5YR 3/3), plastic, cohesive, stiff to very stiff, moist		
	5			5' - 37' Silt with Clay and Caliche, reddish brown (5YR 5/4) to pink (5YR 7/4), <10% fine grain sand, medium dense, dry		
	10					
	15					
	20		ML	@ 15' - 30' 40% caliche, with broken fragments to 1-cm		
	25					
	30					
	35					
	40		ML	37' - 42' Caliche Silt, pink (5YR 8/3) to white (5YR 8/1), hard angular caliche cuttings to 4-cm, dry		
	45			42' - 55' Silty Sand, reddish yellow (5YR 6/8), fine grain rounded sand, >15% silt, medium dense, dry		
	50		SM			
	55			55' - 72' Sand, reddish yellow (5YR 6/8), fine grain, poorly graded, 10% silt, medium dense, dry		
	60			@ 60' some caliche fragments to 2-cm		
	65		SP			
	70					
	75			72' - 85' Sand, yellowish red (5YR 5/8), fine grain, poorly graded, <5% silt, medium dense, dry		
	80		SP	@ 80' some caliche		
	85					
	90		CL	85' - 95' Lean Clay, reddish brown (5YR 5/4), plastic, cohesive, very stiff, moist		
	95					
			SM	95' - 110' Silty Sand, reddish yellow (7.5YR 6/6), >15% caliche silt, medium dense, dry		

PTX06-ISB131

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 466090	Northing: 3751308.18 Easting: 649090.64
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 294 ft bgs TD Well: 293 ft bgs
Dates Drilled: 10/25/17 Date Completed: 11/01/17	Depth to Water: 280.50 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3515.20 ft amsl	Top of Casing Elevation: 3517.20 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	105		SM			
	110			110' - 125' Sand, reddish yellow (7.5YR 7/6), very fine to fine grain, poorly graded, sub-rounded, loose, dry		
	115		SP			
	120					
	125			125' - 155' Sand, reddish yellow (7.5YR 6/6), very fine to fine grain, poorly graded, sub-rounded to rounded, loose, dry		
	130					
	135					
	140		SP			
	145					
	150					
	155			155' - 165' Sand, light brown (7.5YR 6/4), very fine to fine grain, poorly graded, very dense sandstone with rounded nodes to 2-cm		
	160		SP			
	165			165' - 180' Sand, reddish yellow (7.5YR 6/6), very fine to fine grain, poorly graded, loose, dry		
	170		SP			
	175					
	180		SP	180' - 185' Sand, reddish yellow (7.5YR 6/6), fine grain, poorly graded, sub-rounded, loose, dry		
	185			185' - 215' Sand, lght brown to reddish yellow (7.5YR 6/4 - 6/6), fine grain, poorly graded, loose, dry		
	190					
	195		SP			
	200					

PTX06-ISB131

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 466090	Northing: 3751308.18 Easting: 649090.64
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 294 ft bgs TD Well: 293 ft bgs
Dates Drilled: 10/25/17 Date Completed: 11/01/17	Depth to Water: 280.50 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3515.20 ft amsl	Top of Casing Elevation: 3517.20 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	205		SP			
	210					
	215					
	220		SP	215' - 225' Sand, light brown (7.5YR 6/3), fine grain (some medium grain), sub-rounded to sub-angular, with small gravel and dense cemented sandstone nodules		
	225					
	230		SP	225' - 235' Sand, light yellowish brown (10YR 6/4), fine to medium grain rounded quartz sand, poorly graded, medium dense, dry		
	235					
	240		SP	235' - 245' Sand, yellowish brown (10YR 5/6), poorly graded quartz sand, medium dense		
	245					
	250		SW	245' - 250' Gravelly Sand, light yellowish brown (10YR 6/4), well graded sand, <15% large gravel, dense, dry		
	255		GP	250' - 255' Sandy Gravel, yellowish brown (10YR 5/4), small pea gravel with sand, poorly graded, very dense, dry		
	260		SW	255' - 260' Sand with Gravel, pale brown to light yellowish brown (10YR 6/3 - 6/4), fine to very coarse grain sub-angular sand, 15 - 20% small gravel, dense		
	265		GP	260' - 265' Gravel with Sand, yellowish brown (10YR 5/6), small to medium rounded and flattened gravel, very dense, dry		
	270					
	275					
	280		SW	265' - 292' Sand with Gravel, yellowish brown (10YR 5/4 - 5/8), well graded sand with 15% gravel, dense, moist @ 277', saturated at 283'		
	285					
	290					
	295		ML	292' - 294' FGZ Sandy Siltstone, light reddish brown (5YR 6/4), fine grain sand and round 1 to 3-mm caliche nodes, stiff to hard and dry with depth		
	300			Borehole Total Depth 294' bgs		

PTX06-ISB131
Triaxial Permeability
ASTM D5084
3.6E-07 cm/sec

PTX06-ISB130

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Dickerson Texas Well Report No.: 466196	Northing: 3751282.05 Easting: 649020.47
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 292 ft bgs TD Well: 288 ft bgs
Dates Drilled: 11/13/17 Date Completed: 11/13/17	Depth to Water: 280.50 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3515.23 ft amsl	Top of Casing Elevation: 3517.28 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	5		CL	0' - 3' Silty Clay Loam, weak red (10R 4/2), lean clay, moderate plasticity		
	10		CL	3' - 10' Silty Lean Clay, weak red (10R 4/2), low plasticity		
	15		CL	10' - 20' Silty Lean Clay, pale red (10R 7/4), low plasticity		
	20		CL	20' - 40' Silty Lean Clay to Clayey Silt, pale to light red (10R 7/4 to 6/6), low plasticity		
	30		CL			
	35		CL			
	40		ML	40' - 45', Caliche Silt, pinkish white (10R 8/2), hard, dry		
	45		CL	45' - 60' Silty Clay to Clayey Silt, pale to light red (10R 7/4 to 6/6), low plasticity, dry, with some caliche nodules		
	50		CL			
	55		CL			
	60		ML	60' - 70' Silt w/ minor clay, pale to light red (10R 7/4 to 6/6), slightly damp		
	65		ML			
	70		CL	70' - 75' Silty, Sandy Clay, light red (10R 6/6), dry		
	75		CL			
	75		ML	75' - 80' Clayey Silt, light red (10R 6/6), nonplastic, dry,		
	80		ML			
	80		CL	80' - 100' Clay and Silty Clay, pale red (10R 7/4), dry, minor caliche nodules, minor manganese oxide staining		
	85		CL			
	90		CL			
	95		CL			

PTX06-ISB130

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Dickerson Texas Well Report No.: 466196	Northing: 3751282.05 Easting: 649020.47
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 292 ft bgs TD Well: 288 ft bgs
Dates Drilled: 11/13/17 Date Completed: 11/13/17	Depth to Water: 280.50 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3515.23 ft amsl	Top of Casing Elevation: 3517.28 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number	
	105	[Lithology Pattern]	ML	100' - 120' Silt, pale red (10R 7/4), eolian, dry, mostly friable (loose), but w/ local interbedded well-cemented zones			
	110						
	115						
	120						
	125	[Lithology Pattern]	SP	120' - 150' Sand, very pale brown (10YR 7/4), very fine grain (eolian), very poorly graded, dry, friable (loose) with minor well cemented layers			
	130						
	135						
	140						
	145						
	150	[Lithology Pattern]	SP	150' - 160' Sand, pinkish white, (10R 8/2), very fine grain (eolian), very poorly graded, dry, friable			
	155						
	160						
	165						
	170	[Lithology Pattern]	SP	160' - 205' Sand, very pale brown (10YR 7/4), very fine grain, very poorly graded, dry			
	175						
	180						
	185						
	190						
	195						

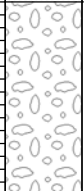
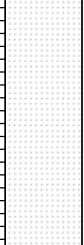

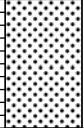


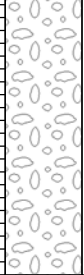
PTX06-ISB130

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Dickerson Texas Well Report No.: 466196	Northing: 3751282.05 Easting: 649020.47
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 292 ft bgs TD Well: 288 ft bgs
Dates Drilled: 11/13/17 Date Completed: 11/13/17	Depth to Water: 280.50 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3515.23 ft amsl	Top of Casing Elevation: 3517.28 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number	
	205		SP				
	210		GW	205' - 220' Gravel, very pale brown (10YR 7/4), fine to coarse grain, well graded, dry, w/ minor interbedded fine sand			
	215						
	220						
	225		SP	220' -240' Sand, very pale brown (10YR 7/4), fine grain (eolian), poorly graded			
	230						
	235						
	240		SC	240' - 245' Clayey Sand, very pale brown (10YR 7/4), fine grain, w/ interbedded fine to coarse gravel, well graded			
	245						
	250		SW	245' - 255' Sand, very pale brown (10YR 7/4), fine to coarse grain, w/ minor interbedded fine to coarse gravel, well graded			
	255						
	260		GW	255' - 260' Gravel, very pale brown (10YR 8/2), fine to coarse, w/ some interbedded sand, well graded, dry			
	265						
	270		SW	260' - 265' Sand, very pale brown (10YR 7/4), fine to coarse grain, well graded, damp			
	275						
	280		GW	265' - 288' Sandy Gravel, very pale brown (10YR 7/4), fine to coarse gravel with interbedded fine to coarse sand, well graded, damp			
	285						
	290						
	295		ML	287' - 292' FGZ, Siltstone, very pale brown (10YR 7/4), hard			
				Borehole Total Depth 292' bgs			

PTX06-ISB130
Triaxial Permeability
ASTM D5084
1.0E-07 cm/sec

PTX06-ISB129

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Dickerson Texas Well Report No.: 466191	Northing: 3751255.41 Easting: 648950.08
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 291 ft bgs TD Well: 288 ft bgs
Dates Drilled: 11/14/17 Date Completed: 11/15/17	Depth to Water: 278.35 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3515.12 ft amsl	Top of Casing Elevation: 3517.13 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	0		CL	0' - 3' Silty Clay Loam, weak red (10R 4/2), high plasticity, damp		
	3		CL	3' - 10' Lean Clay, weak red (10R 4/2), high plasticity		
	10		ML	10' - 20' Clayey Silt, weak red (10R 5/4), w/ very minor very fine sand, nonplastic, dry		
	20		CL	20' - 35' Silty Clay, light red (10R 6/6), low plasticity, dry, some very small caliche nodules <2mm		
	35		ML	35' - 40' Clayey & Sandy Silt, light red (10R 6/6), w/ very fine grain sand, dry, some well indurated lenses, w/ some caliche		
	40		ML	40' - 50' Sandy Silt, red (10R 4/6), w/ very fine grain sand, dry		
	50		ML	50' - 60' Sandy Silt, red (10R 4/6), w/ very fine grain sand, interbedded with layers of calcrete, pinkish white (10R 8/2)		
	60		SP	60' - 65' Sand, light red (10YR 6/6), very fine grain, with minor silt and clay, poorly graded		
	65		SM	65' - 70' Sandy Silt, pale red (10R 7/4), silt w/ very fine grain sand, dry		
	70		CL	70' - 75' Silty Clay, weak red (10R 5/4), dry		
	75		ML	75' - 80' Silt, weak red (10R 5/4), dry		
	80		CL	80' - 90' Lean Clay, weak red (10R 5/4), low plasticity		
	90		SP	90' - 100' Sand, very pale brown (10YR 7/4), very fine grain, w/ minor silt and clay, dry		

PTX06-ISB129

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Dickerson Texas Well Report No.: 466191	Northing: 3751255.41 Easting: 648950.08
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 291 ft bgs TD Well: 288 ft bgs
Dates Drilled: 11/14/17 Date Completed: 11/15/17	Depth to Water: 278.35 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3515.12 ft amsl	Top of Casing Elevation: 3517.13 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	105		SP	100' - 110' Sand, pale red (10R 7/4), very fine grain, very well indurated and hard, w/ minor friable layers		
	110		SP	110' - 115' Sand, pale red (10R 7/4), very fine grain (eolian), very poorly graded, friable		
	115		ML	115' - 120', Silt, pale red (10R 7/4), eolian, friable to well indurated, dry		
	120			120' - 140' Sand, very pale brown (10YR 7/4), very fine grain, very poorly graded (eolian), dry		
	125					
	130		SP			
	135					
	140			140' - 170' Sand, very pale brown (10YR 7/4 to 8/2), very fine grain, very poorly graded, eolian, dry		
	145					
	150					
	155		SP			
	160					
	165					
	170			170' - 205' Sand, very pale brown (10YR 7/4 to 8/2), very fine grain, very poorly graded, mostly very friable but with some interbedded well indurated zones, dry		
	175					
	180					
	185		SP			
	190					
	195					

PTX06-ISB129

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Dickerson Texas Well Report No.: 466191	Northing: 3751255.41 Easting: 648950.08
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 291 ft bgs TD Well: 288 ft bgs
Dates Drilled: 11/14/17 Date Completed: 11/15/17	Depth to Water: 278.35 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3515.12 ft amsl	Top of Casing Elevation: 3517.13 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	205		SP			
	210		GW	205' - 210' Sandy Gravel, light grey (10YR 7/2), fine to medium gravel with fine to coarse sand, well graded, dry		
	215		SP	210' - 215' Sand, very pale brown (10YR 7/4), fine to medium grain, poorly graded, dry		
	220		SW	215' - 220' Gravelly Sand, very pale brown (10YR 7/4), fine to medium sand with small gravel, well graded, dry		
	225		SP	220' - 225' Sand, very pale brown (10YR 7/4), fine grain, poorly graded, mostly friable with a few hard layers, dry		
	230		SW	225' - 230' Gravelly Sand, very pale brown (10YR 7/4), fine to medium grain sand & fine gravel, moderately graded, dry		
	235		SP	230' - 240' Sand, very pale brown (10YR 7/4), fine grain, poorly graded, mostly friable but with minor well indurated layers, slightly damp		
	240		SC	240' - 245' Sand with Clay, brownish yellow (10YR 6/6), fine to coarse graded sand, some interbedded clay, damp		
	245		GW	245' - 250' Sandy Gravel, very pale brown (10YR 7/4), fine to coarse gravel w/ fine to coarse sand, well graded, dry		
	250		SP	250' - 258' Sand, very pale brown (10YR 7/4), fine to medium grain, poorly graded, dry		
	255					
	260		GW	258' - 262' Gravel, very pale brown (10YR 7/4), well graded gravel with very coarse sand, dry		
	265		SW	262' - 268' Sand, very pale brown (10YR 7/4), well graded sand, some interbedded lean clay and pea gravel, dry		
	270		GP	268' - 271' Pea Gravel, moderately graded, dry		
	275		SW	271' - 275' Sand, very pale brown (10YR 7/4), well graded, some gravel, dry		
	280		GW	275' - 280' Gravel, very pale brown (10YR 7/4), well graded gravel and sand, minor clay, slightly damp		
	285		SW	280' - 287' Gravelly Sand, light brownish grey (10YR 6/2), interbedded sand and gravel, well graded, wet		
	290		ML	287' - 291' FGZ Siltstone, very pale brown (10YR 7/4), silt		
	295			Borehole Total Depth 291' bgs		

PTX06-ISB129
Triaxial Permeability
ASTM D5084
3.0E-07 cm/sec

PTX06-ISB128

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 466089	Northing: 3751229.17 Easting: 648879.71
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 294 ft bgs TD Well: 291 ft bgs
Dates Drilled: 10/22/17 Date Completed: 10/24/17	Depth to Water: 280.45 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3515.08 ft amsl	Top of Casing Elevation: 3517.11 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	5		CL	0' - 5' Lean Clay, dark reddish brown (5YR 3/3), plastic, cohesive, stiff, moist to wet		
	10		ML	5' - 30' Silt, yellowish red (5YR 5/6), <10% very fine sand and round caliche nodules to 2-mm, low plasticity, cohesive, medium stiff, moist		
	30			30' - 36' Silt, yellowish red (5YR 5/8), low plasticity, non-cohesive, trace very fine sand, medium stiff, moist		
	40			36' - 45' Caliche Silt with Sand, pink (5YR 7/3 - 8/3) to light reddish brown (5YR 6/4), hard caliche fragments from 36' to 40', sandy silt 40' to 45'		
	45		SM	45' - 65' Silty Sand, yellowish red (5YR 5/8), >15% silt, medium dense, damp		
	65			65' - 75' Sand, reddish yellow (5YR 6/6), very fine to fine grain, poorly graded, sub-rounded, loose, moist		
	75		SM-ML	75' - 95' Sand and Silt, reddish brown (5YR 5/3), 50/50 fine grain sand and silt, medium dense, moist		
	95			95' - 100' Silty Sand, light reddish brown (5YR 6/4), very fine to fine grain silty sand, loose, dry		

PTX06-ISB128

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 466089	Northing: 3751229.17 Easting: 648879.71
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 294 ft bgs TD Well: 291 ft bgs
Dates Drilled: 10/22/17 Date Completed: 10/24/17	Depth to Water: 280.45 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3515.08 ft amsl	Top of Casing Elevation: 3517.11 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	105		ML	100' - 105' Silt with Sand, light reddish brown (5YR 6/4), soft, dry		
	110		SM	105' - 120' Silty Sand, reddish brown (5YR 5/3), fine grain sand, >15% silt, medium dense, dry		
	120		SP	120' - 145' Sand, reddish yellow (7.5YR 6/6), very fine to fine grain, sub-rounded, loose, dry		
	145		SP	145' - 185' Sand, light brown (7.5YR 6/4), very fine to fine grain sand, trace silt, loose, dry		
	185		SP	185' - 200' Sand, brown (7.5YR 5/4), fine grain, sub-rounded, loose, dry		

PTX06-ISB128

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 466089	Northing: 3751229.17 Easting: 648879.71
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 294 ft bgs TD Well: 291 ft bgs
Dates Drilled: 10/22/17 Date Completed: 10/24/17	Depth to Water: 280.45 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3515.08 ft amsl	Top of Casing Elevation: 3517.11 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	205		SP	200' - 215' Sand, brown (7.5YR 5/4), mostly fine grain, some medium grain sand, trace silt, loose to medium dense, moist		
	215		SP	215' - 235' Sand, very pale brown (10YR 7/4), medium grain, poorly graded, sub-angular to sub-rounded, loose to medium dense, moist to 220' with <5% rounded sandstone nodules		
	235		SP	235' - 250' Sand, yellowish brown (10YR 5/6), fine to medium grain, poorly graded, sub-rounded, medium dense, moist		
	250		GP	250' - 263' Gravel with Sand, pale brown (10YR 6/3), poorly graded pea gravel with fine to very coarse rounded sand, hard		
	263		SW	263' - 270' Sand with Gravel, pale brown to light yellowish brown (10YR 6/3 - 6/4), fine to very coarse grain, well graded sand, with 15% pea gravel		
	270		GW	270' - 275' Gravel with Sand, pale brown (10YR 6/3), small to large rounded gravel with well graded sand, hard, dry		
	275		SW	Sand, light yellowish brown (10YR 6/4), fine to very coarse grain, well graded, sub-rounded, medium dense, moist at 277', saturated by 285'		
	290		ML	290' - 294' FGZ Siltstone, pink to light reddish brown (5YR 7/3 - 6/3), fine sand and caliche granules, hard, dry		
	295			Borehole Total Depth 294' bgs		

PTX06-ISB128
Triaxial Permeability
ASTM D5084
1.8E-07 cm/sec

PTX06-ISB127

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 466194	Northing: 3751203.15 Easting: 648809.07
Drilling Contractor: Cascade Drilling Lic. #4885 W. Blutworth	TD Borehole: 292 ft bgs TD Well: 290 ft bgs
Dates Drilled: 11/28/17 Date Completed: 11/29/17	Depth to Water: 280.35 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3515.09 ft amsl	Top of Casing Elevation: 3517.14 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	5		CL	0' - 5' Lean Clay, dark reddish brown (5YR 3/2), plastic, cohesive, stiff, moist		
	10		CL	5' - 20' Clay with Silt, yellowish red (5YR 5/6), trace sand, low plasticity, with caliche and manganese @ 15' to 20', stiff, moist		
	20		ML	20' - 25' Silt, yellowish red (5YR 5/8), trace clay, <10% sand, non-plastic, medium stiff, dry		
	25		ML	25' - 35' Silt, light reddish brown (5YR 6/4), soft, dry		
	35		SM	35' - 50' Silty Sand, red (2.5YR 5/8), fine grain, poorly graded, with angular caliche fragments to 3-cm, medium dense, dry		
	50		SM	50' - 55' Silty Sand, light reddish brown (5YR 6/4), with >15% caliche nodules and fragments, medium dense, dry		
	55		SP	55' - 70' Sand, yellowish red (5YR 5/8), fine grain, poorly graded, sub-rounded to rounded, loose to medium dense, dry		
	70		SC	70' - 80' Sand with Clay, reddish brown (5YR 5/4), fine grain sand, >15% plastic fines, medium dense, dry		
	80		CL	80' - 90' Lean Clay, reddish brown (5YR 5/4), trace sand, plastic, cohesive, dense, moist		
	90		SP-SC	90' - 95' Sand, yellowish red (5YR 5/6), poorly graded, 10% plastic fines, sub-rounded to rounded, medium dense, dry		
	95		SP	95' - 100' Sand, reddish yellow (5YR 6/8), fine grain, poorly graded, rounded, loose, dry		

PTX06-ISB127

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 466194	Northing: 3751203.15 Easting: 648809.07
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 292 ft bgs TD Well: 290 ft bgs
Dates Drilled: 11/28/17 Date Completed: 11/29/17	Depth to Water: 280.35 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3515.09 ft amsl	Top of Casing Elevation: 3517.14 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	105	SM		100' - 105' Silty Sand, pink (5YR 7/3), caliche fragments to 3-cm, medium dense, dry		
	110	SM		105' - 120' Silty Sand, yellowish red (5YR 5/8), fine grain sand, >15% non-plastic silt, some cemented sandstone nodes 105' to 110', loose, dry		
	120	SP		120' - 145' Sand, reddish yellow (7.5YR 6/6), fine grain, poorly graded, trace silt, loose, dry		
	145	SP		145' - 165' Sand, light brown (7.5YR 6/4), fine grain, poorly graded, loose, dry		
	155	SP		@ 150' - 160' well cemented very fine grain sandstone, medium dense		
	165	SP		165' - 210' Sand, reddish yellow (7.5YR 6/6), very fine to fine grain, poorly graded, sub-rounded to rounded, loose, with 1-cm to 2-cm cemented nodes at 165' - 170' and 185' - 200', dry		

PTX06-ISB127

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 466194	Northing: 3751203.15 Easting: 648809.07
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 292 ft bgs TD Well: 290 ft bgs
Dates Drilled: 11/28/17 Date Completed: 11/29/17	Depth to Water: 280.35 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3515.09 ft amsl	Top of Casing Elevation: 3517.14 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	205		SP			
	210			210' - 235' Sand with Gravel, light yellowish brown (10YR 6/4), well graded, >15% small flattened and angular (broken) gravel 210' - 230', medium dense, dry		
	215					
	220		SW			
	225					
	230					
	235		SP	235' - 240' Sand, yellowish brown (10YR 5/6), fine grain, poorly graded, loose, dry		
	240			240' - 260' Sand with Gravel, yellowish brown (10YR 5/8), fine to coarse grain, well graded, subrounded sand, >15% small gravel, some large gravel 240' - 245', dense, moist		
	245		SW			
	250					
	255					
	260		GP	260' - 265' Gravel, very pale brown matrix (10YR 7/3), poorly graded small sub-rounded gravel, <15% sand, dense, dry		
	265			265' - 280' Sand with Gravel, very pale brown (10YR 7/3), well graded fine to very coarse grain subangular sand, <15% small gravel, medium dense, dry @ 270' color change to yellowish brown (10YR 5/6) as moisture increases		
	270		SW			
	275					
	280		SW	280' - 289' Sand with Gravel, yellowish brown (10YR 5/6), well graded sand, >15% small to large rounded gravel, dense, saturated		
	285					
	290		ML	289' - 292' FGZ Siltstone, light reddish brown (5YR 6/4), sandy with caliche nodules, hard, dry		
	295			Borehole Total Depth 292' bgs		

PTX06-ISB127
Triaxial Permeability
ASTM D5084
6.3E-08 cm/sec

PTX06-ISB126

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Dickerson Texas Well Report No.: 466195	Northing: 3751176.87 Easting: 648738.78
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 291 ft bgs TD Well: 288 ft bgs
Dates Drilled: 11/16/17 Date Completed: 11/16/17	Depth to Water: 279.85 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3515.03 ft amsl	Top of Casing Elevation: 3517.09 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	0		CL	0' - 3' Sandy Clay Loam, yellowish brown (10YR 5/4), moderate plasticity, damp		
	3		CL	3' - 10' Silty Sandy Clay, red (10R 4/6), low plasticity, slightly damp		
	10		ML	10' - 15' Clayey Silt, light red (10R 6/6), dry, w/ caliche nodules < 2mm		
	15		CL	15' - 20' Silty Clay, weak red (10R 5/4), low plasticity		
	20		CH	20' - 25' Fat Clay, light red (10R 6/6), high plasticity, slightly damp		
	25		ML	25' - 30' Clayey Silt, pale red (10R 7/4), low plasticity, slightly damp		
	30		ML	30' - 38' Silt, pale red (10R 7/4), dry, w/ caliche nodules <5mm		
	35		ML	38' - 40' Caliche dominant, mostly nodules		
	40		ML	40' - 45' Silt, pinkish white (10R 8/2), dry, with abundant caliche nodules up to 5mm		
	45		SP	45' - 55' Sand, light red (10R 6/6), very fine grain, poorly graded, dry, w/ some caliche nodules		
	50		SP			
	55		ML	55' - 60' Silt, light red (10R 6/6), dry		
	60		SP	60' - 73' Sand, light red (10R 6/6), w/ minor silt, poorly graded, dry		
	65		SP			
	70		SP			
	75		CL	73' - 80' Lean Clay, light to pale red (10R 6/6 tp 7/4), silty, moderate plasticity		
	80		CL	80' - 95' Lean Clay, weak red (10R 5/4), moderate plasticity, dry, with caliche nodules concentrated from 80' to 85'		
	85		CL			
	90		CL			
	95		CL	95' - 100' Lean Clay, weak red (10R 5/4), w/ minor sandy clay, dry		

PTX06-ISB126

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Dickerson Texas Well Report No.: 466195	Northing: 3751176.87 Easting: 648738.78
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 291 ft bgs TD Well: 288 ft bgs
Dates Drilled: 11/16/17 Date Completed: 11/16/17	Depth to Water: 279.85 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3515.03 ft amsl	Top of Casing Elevation: 3517.09 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	105		SP	100' - 115' Sand, pale red (10R 7/4), very fine grain, very poorly graded (eolian), friable w/ minor layers of well indurate sandstone		
	115		CL	115' - 120' Silty Clay, weak red (10R 5/4), low plasticity, dry		
	120			120' - 160' Sand, very pale brown (10YR 7/4), very fine grain (eolian), very poorly graded, friable, dry		
	125					
	130					
	135					
	140		SP			
	145					
	150					
	155					
	160		SP	160' - 164' Sand, very pale brown (10YR 7/4), very fine grain sand with <u>minor interbedded clay</u> , low plasticity, dry		
	165			164' - 180' Sand, very pale brown (10YR 7/4), very fine grain, poorly graded, w/ thin bed of clayey sand at 178', dry		
	170		SP			
	175					
	180			180' - 210' Sand, very pale brown (10YR 7/4), very fine grain, poorly graded, dry		
	185					
	190		SP			
	195					










PTX06-ISB126

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Dickerson Texas Well Report No.: 466195	Northing: 3751176.87 Easting: 648738.78
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 291 ft bgs TD Well: 288 ft bgs
Dates Drilled: 11/16/17 Date Completed: 11/16/17	Depth to Water: 279.85 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3515.03 ft amsl	Top of Casing Elevation: 3517.09 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	205		SP			
	210		GP	210' - 212' Gravel, medium grain, moderately graded, well rounded, dry		
	215		SP	212' - 218' Sand, very pale brown (10YR 7/4), very fine grain, poorly graded, dry		
	220		GW	218' - 223' Gravel, very pale brown (10YR 7/4), medium to coarse grain, well graded, rounded, dry		
	225		GW	223' - 230' Sandy Gravel, very pale brown (10YR 7/4), medium to coarse gravel beds interbedded w/ very fine sand		
	230					
	235		SP	230' - 240' Sand, very pale brown (10YR 7/4), very fine grain, poorly graded, damp from 230 to 235, dry from 235 to 240		
	240		SP/SM	240' - 245' Sand, weak red (10R 5/4), very fine to medium grain, w/ minor clay & minor fine to medium gravel, damp		
	245		GP	245' - 250' Gravel, light brownish grey (10YR 6/2), fine to medium grain, moderately graded, dry		
	250					
	255		SP	250' - 260' Sand, very pale brown (10YR 7/4), fine grain, poorly graded, dry		
	260		SP	260' - 265' Gravelly Sand, very pale brown (10YR 7/4), fine sand w/ minor gravel, moderately graded, damp		
	265		SW	265' - 270' Gravelly Sand, very pale brown (10YR 7/4), fine to coarse sand w/ interbedded fine to coarse gravel, well graded, damp		
	270		SW	270' - 275' Gravelly Sand, very pale brown (10YR 7/4), fine to coarse sand with some interbedded pea gravel, well graded, damp		
	275		SW	275' - 287' Gravelly Sand, very pale brown (10YR 7/4), fine sand w/ interbedded fine to medium gravel, well graded, wet		
	280					
	285					
	290		ML	287' - 291' FGZ Siltstone, very pale brown (10YR 7/4), poorly graded, indurated		
	295			Borehole Total Depth 291' bgs		

PTX06-ISB126
Triaxial Permeability
ASTM D5084
2.0E-07 cm/sec

PTX06-ISB125

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Dickerson Texas Well Report No.: 466193	Northing: 3751150.76 Easting: 648668.62
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 293 ft bgs TD Well: 290.5 ft bgs
Dates Drilled: 11/30/17 Date Completed: 12/01/17	Depth to Water: 280.31 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3515.16 ft amsl	Top of Casing Elevation: 3517.15 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	5		CL	0' - 5' Silty Clay Loam, pale red (10R 6/2), moderate plasticity		
	10		CL	5' - 20' Silty Clay, pale red (10R 6/2), moderate plasticity, very minor caliche from 5' to 10'		
	20		CL	20' - 25' Lean Clay, pale red (10R 6/2), w/ minor silt, moderate plasticity		
	25		ML	25' - 30' Clayey Silt, light red (10R 6/6), dry		
	30		ML	30' - 35' Silt, pale red (10R 7/4), interbedded w/ silty clay, dry		
	35		ML	35' - 40' Silt, pale red (10R 7/4), loose, dry, w/ caliche nodules up to 3 cm		
	40		ML	40' - 45' Silt, pinkish white (10R 8/2), w/ minor clay and significant caliche nodules up to 3 cm		
	45		ML	45' - 50' Silt, light red (10R 6/6), w/ interbedded silty clay, dry		
	50		ML	50' - 55' Silt, light red (10R 6/6), w/ minor interbedded silty clay and caliche nodules up to 2 cm		
	55		ML	55' - 60' Silt, pale red (10R 7/4), loose, w/ caliche < 2 cm, dry		
	60		SP	60' - 70' Sand, weak red (10R 5/4), very fine grain, w/ some silt, poorly graded, loose, w/ minor caliche nodules to 4 cm, slightly damp		
	70		ML	70' - 75' Clayey Silt with sand, weak red (10R 5/4), some fine sand, dry		
	75		SP	75' - 80' Sand, weak red (10R 5/4), very fine grain, loose, dry		
	80		CL	80' - 90' Silty Clay, weak red (10R 5/4), w/ minor very fine sand, poor plasticity, dry		
	90		SP	90' - 95' Sand, light red (10R 6/6), very fine grain, poorly graded, loose, dry, w/ minor caliche		
	95		SLT-STN	95' - 100' Caliche Calcrete, pinkish white (10R 8/2), hard		

PTX06-ISB125

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Dickerson Texas Well Report No.: 466193	Northing: 3751150.76 Easting: 648668.62
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 293 ft bgs TD Well: 290.5 ft bgs
Dates Drilled: 11/30/17 Date Completed: 12/01/17	Depth to Water: 280.31 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3515.16 ft amsl	Top of Casing Elevation: 3517.15 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	105		SP	100' - 105' Sand, pale red (10R 7/4), very fine grain (eolian), poorly graded, loose, dry		
	110		SP	105' - 120' Sand, light reddish brown (5YR 6/4), very fine grain, silty, poorly graded, loose, dry		
	120		SP	120' - 125' Sand, light reddish brown (5 YR 6/4), poorly graded, eolian, loose, dry		
	125		SP	125' - 130' Sand, very pale brown (10YR 8/2), very fine grain, poorly graded, eolian, loose, dry		
	130			130' - 190' Sand, light grey (10YR 7/2), very fine grain, poorly graded, eolian, very friable (loose), subrounded, predominantly quartz grains, dry		
	135					
	140					
	145					
	150					
	155					
	160		SP			
	165					
	170					
	175					
	180					
	185					
	190					
	195		SP	190' - 200' Sand, light grey (10YR 7/2), very fine grain, poorly graded, friable but with some interbedded well indurated layers, dry		

PTX06-ISB125

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Dickerson Texas Well Report No.: 466193	Northing: 3751150.76 Easting: 648668.62
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 293 ft bgs TD Well: 290.5 ft bgs
Dates Drilled: 11/30/17 Date Completed: 12/01/17	Depth to Water: 280.31 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3515.16 ft amsl	Top of Casing Elevation: 3517.15 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	205		SP	200' - 207' Sand, very pale brown (10YR 7/4), very fine grain, poorly graded, friable & loose, dry		
	210		GM	207' - 215' Sandy Gravel, very pale brown (10YR 7/4), fine (pea) gravel, with fine sand, moderately graded, gravel clasts are subrounded to rounded chert		
	215		SW	215' - 220' Gravelly Sand, very pale brown (10YR 7/4), fine sand w/ interbedded fine to medium gravel, well graded, dry		
	220		SW	220' - 225' Sand, very pale brown (10YR 8/2), fine to coarse sand with interbedded fine to medium gravel, rounded, well graded, dry		
	225		SP	225' - 228' Sand, very pale brown (10YR 7/4), fine grain, poorly graded, friable & loose, dry		
	230		SP	228' - 235' Sand, very pale brown (10YR 7/4), very fine grain, poorly graded, friable but with some well indurated layers, slightly damp		
	235		SP	235' - 240' Sand, very pale brown (10YR 7/4), very fine grain, poorly graded, friable		
	240		GW	240' - 250' Gravel, reddish grey (5YR 5/2), fine to coarse, well graded, subrounded to rounded, dry		
	245		SW	250' - 255' Gravelly Sand, reddish grey (5YR 5/2), fine to very coarse grain, w/ interbedded pea gravel, well graded, dry		
	250		GW	255' - 260' Sandy Gravel, light brownish grey (10YR 6/2), fine to coarse, with some fine to coarse sand, well graded, dry		
	255		GW	260' - 270' Sandy Gravel, light brownish grey (10YR 6/2), fine to coarse gravel beds interbedded w/ fine to coarse sand beds, well graded, slightly damp		
	260		GW	270' - 280' Sandy Gravel, light yellowish brown (10YR 6/4), fine to coarse sand interbedded w/ fine to coarse gravel, well graded, damp		
	265		SW	280' - 285' Sand, light yellowish brown (10YR 6/4), fine to medium sand with some coarse sand and minor pea gravel, well graded, damp		
	270		SW	285' - 288' Sand, fine to medium grain, moderately graded, wet		
	275		GM	288' - 290' Gravel, fine grain, moderately graded, wet		
	280		ML	290' - 293' FGZ Siltstone, very pale brown (10YR 7/4)		
	285			Borehole Total Depth 293' bgs		
	290					
	295					

PTX06-ISB125
Triaxial Permeability
ASTM D5084
4.3E-07 cm/sec

PTX06-ISB124

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Dickerson Texas Well Report No.: 466190	Northing: 3751124.55 Easting: 648597.96
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 292 ft bgs TD Well: 290 ft bgs
Dates Drilled: 12/02/17 Date Completed: 12/03/17	Depth to Water: 279.55 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3515.02 ft amsl	Top of Casing Elevation: 3517.11 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	5		CL	0' - 5' Sandy Silty Clay Loam, weak red (10R 4/2), moderate plasticity		
	10		CL	5' - 10' Lean Clay, red (10R 4/6), moderate plasticity, w/ minor silt and fine sand		
	15		CL	10' - 15' Silty Clay, weak red (10R 5/4), moderate plasticity		
	20		ML	15' - 25' Clayey Silt, weak red (10R 5/4), low plasticity		
	25		CL	25' - 30' Silty Clay, weak red (10R 5/4), nonplastic, w/ minor caliche nodules <1 cm, dry		
	30		ML	30' - 40' Clayey Silt, light red (10R 6/6), w/ caliche nodules increasing downward, dry		
	35		ML	40' - 45' Silt, light red (10R 6/6), some caliche nodules < 2 cm, dry		
	40		ML	45' - 50' Silt, red (10R 4/6), fewer caliche nodules		
	45		ML	50' - 60' Silt, light red (10R 6/6), caliche nodules up to 2 cm increasing down to maximum @ 55'		
	50		SP	60' - 70' Sand, red (10R 4/6), very fine grain, very poorly graded, friable, w/some caliche nodules to 2 cm, dry		
	55		SP	70' - 75' Sand, pale red (10R 7/4), very fine grain, poorly graded, friable, w/ minor caliche		
	60		SM	75' - 80' Sand, light red (10R 6/6), very fine grain, silty, poorly graded, friable (loose), w/ minor caliche		
	65		ML	80' - 90' Clayey Silt, red (10R 4/6), well indurated w/ clay cement, no caliche, dry		
	70		ML	90' - 95' Sandy Silt, pale red (10R 7/4), silt w/ very fine sand and clay cement, weakly indurated, w/ caliche		
	75		SP	95' - 100' Sand, pale red (10R 7/4), very fine grain, w/ silt, friable w/ minor well indurated layers w/ caliche cement, dry		




















PTX06-ISB124

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Dickerson Texas Well Report No.: 466190	Northing: 3751124.55 Easting: 648597.96
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 292 ft bgs TD Well: 290 ft bgs
Dates Drilled: 12/02/17 Date Completed: 12/03/17	Depth to Water: 279.55 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3515.02 ft amsl	Top of Casing Elevation: 3517.11 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	105		SLT-STN	100' - 105' Caliche Calcrete, pinkish white (10R 8/2), hard		
	110		SP	105' - 110' Silty Sand, pale red (10R 7/4), very fine grain, poorly graded, friable, w/ caliche, dry		
	115		SP	110' - 115' Sand, pale red (10R 7/4), w/ some silt, eolian, poorly graded, friable, no caliche, dry		
	120		SP	115' - 120' Sand, pale red (10R 7/4), very fine grain, poorly graded, eolian, friable, dry		
	125		SP	120' - 145' Sand, pale red (10R 7/4), very fine grain, poorly graded, eolian, subrounded, mostly quartz, mostly friable w/ some thin well indurated layers		
	130		SP			
	135		SP			
	140		SP			
	145		SP	145' - 160' Sand, pale red (10R 7/4), very fine grain, poorly graded, eolian as above, all friable, dry		
	150		SP			
	155		SP			
	160		SP	160' - 175' Sand, pale red (10R 7/4), very fine sand w/ some silt, poorly graded, friable, dry		
	165		SP			
	170		SP			
	175		SP	175' - 218' Sand, very pale brown (10YR 7/4), very fine grain, very poorly graded, eolian, friable, dry		
	180		SP			
	185		SP			
	190		SP			
	195		SP			

PTX06-ISB124

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Dickerson Texas Well Report No.: 466190	Northing: 3751124.55 Easting: 648597.96
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 292 ft bgs TD Well: 290 ft bgs
Dates Drilled: 12/02/17 Date Completed: 12/03/17	Depth to Water: 279.55 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3515.02 ft amsl	Top of Casing Elevation: 3517.11 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	205					
	210		SP			
	215					
	220		GW	218' - 222' Sandy Gravel, very pale brown (10YR 8/2), coarse well-rounded gravel with some fine sand, well graded, (quartz pebble conglomerate), dry		
	225		SP	222' - 226' Sand, very pale brown (10YR 7/4), very fine grain, poorly graded, friable, slightly damp		
	230		SW	226' - 235' Gravelly Sand, very pale brown (10YR 7/4), very fine sand w/ interbedded coarse, well rounded gravel, well graded, slightly damp		
	235					
	240		SP	235' - 240' Sand, yellowish brown (10YR 5/4), very fine grain, poorly graded, slightly damp		
	245		GW	240' - 245' Sandy Gravel, light brownish grey (10YR 6/2), fine grain, well rounded quartz pebble gravel w/ fine to medium sand, well graded,		
	250		GW	245' - 250' Gravel, light brownish-grey (10YR 6/2), well graded, w/ well rounded clasts to 2 cm, dry		
	255		SW	250' - 255' Gravelly Sand, very pale brown (10YR 8/2), fine to medium subrounded sand w/ some rounded gravel, well graded, dry		
	260		SW	255' - 260' Sand, very pale brown (10YR 7/4), fine to medium grain, w/ minor gravel, well graded, slightly damp		
	265		SW	260' - 265' Gravelly Sand, very pale brown (10YR 7/4), fine to coarse subrounded sand w/ subrounded to rounded quartz pebble gravel, well graded, damp		
	270		SW	265' - 270' Sand, very pale brown (10YR 7/4), fine to very coarse grain, well graded, slightly damp		
	275		GP	270' - 274' Gravel, poorly graded pea gravel, dry		
	280		SR	274' - 278' Sand, brownish yellow (10YR 6/6), fine to medium grain, poorly graded, damp		
	285		SW	278' - 289' Gravelly Sand, light brownish grey (10YR 6/2), fine to medium sand w/ some fine to coarse gravel, subrounded to rounded, quartz pebble, w/ very minor mudstone clasts, wet		
	290		ML	289' - 292' FGZ Siltstone, very pale brown (10YR 7/4), firm		
	295			Borehole Total Depth 292' bgs		

PTX06-ISB124
Triaxial Permeability
ASTM D5084
1.4E-07 cm/sec

PTX06-ISB123

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Dickerson Texas Well Report No.: 466088	Northing: 3751098.16 Easting: 648527.50
Drilling Contractor: Cascade Drilling Lic.#4885 W. Bludworth	TD Borehole: 296.5 ft bgs TD Well: 295 ft bgs
Dates Drilled: 11/03-04/17 Date Completed: 11/04/17	Depth to Water: 279.55 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3515.06 ft amsl	Top of Casing Elevation: 3517.30 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	5		CH	0' - 5' Fat Clay Loam, very pale brown (10YR 7/4), high plasticity		
	10			5' - 25' Clay, light red (10R 6/6), lean, moderate plasticity		
	15		CL			
	20					
	25					
	30		CL	25' - 33' Silty Clay, light red (10R 6/6), low plasticity, w/ caliche		
	35		ML	33' - 36' Clayey Silt, pale red (10R 7/4), nonplastic, dry		
	40		ML	36' - 41' Caliche Silt, pink (10R 8/4), hard, dry		
	45		SM	41' - 50' Silty Sand, pale red (10R 7/4), fine grain, w/ silt and minor clay, poorly graded, dry		
	50		CL	50' - 55' Silty Clay, pale red (10R 7/4), nonplastic, dry		
	55					
	60		CL	55' - 65' Silty Clay, pale red (10R 7/4), nonplastic, w/ very small caliche nodules, dry		
	65					
	70		ML	65' - 80' Silt, pale red (10R 7/4), w/ minor silt and some small caliche nodules		
	75					
	80					
	85		CL	80' - 94' Clay, pale red (10R 7/4), nonplastic, dry		
	90					
	95					
	100		SLT-STN	94' - 105' Caliche Calcrete, pinkish white (10R 8/2), hard		

PTX06-ISB123

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Dickerson Texas Well Report No.: 466088	Northing: 3751098.16 Easting: 648527.50
Drilling Contractor: Cascade Drilling Lic.#4885 W. Bludworth	TD Borehole: 296.5 ft bgs TD Well: 295 ft bgs
Dates Drilled: 11/03-04/17 Date Completed: 11/04/17	Depth to Water: 279.55 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3515.06 ft amsl	Top of Casing Elevation: 3517.30 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	110		ML	105' - 110' Silt, pale red (10R 7/4), with caliche, dry		
	115		ML	110' - 120' Silt, pale red (10R 7/4), w/ no caliche		
	125		SM	120' - 140' Silty Sand, pale red (10R 7/4), very fine grain, eolian		
	145		SP	140' - 155' Sand, very pale brown (10YR 8/2), very fine grain, silty, poorly graded		
	160		SP	155' - 160' Sand, very pale brown (10YR 7/4), very fine grain, silty, w/ minor clay, poorly graded, slightly damp		
	165		SP	160' - 170' Sand, very pale brown (10YR 7/4), very fine grain, silty, eolian, no clay, dry		
	175		SP	170' - 180' Sand, very pale brown (10YR 7/4), poorly graded, eolian, dry		
	185		SP	180' - 200' Sand, very pale brown (10YR 7/4), very fine grain, silty, poorly graded, eolian, damp		
	205		SM	200' - 220' Gravelly Sand, very pale brown (10YR 8/2), fine grain, silty, with interbedded gravel, rounded, moderately graded, dry		

PTX06-ISB123

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Dickerson Texas Well Report No.: 466088	Northing: 3751098.16 Easting: 648527.50
Drilling Contractor: Cascade Drilling Lic.#4885 W. Bludworth	TD Borehole: 296.5 ft bgs TD Well: 295 ft bgs
Dates Drilled: 11/03-04/17 Date Completed: 11/04/17	Depth to Water: 279.55 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3515.06 ft amsl	Top of Casing Elevation: 3517.30 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	215		SM			
	220		SP	220' - 225' Silty Sand, very pale brown (10YR 8/2), fine to medium grain, poorly graded, well indurated, hard		
	225		SP	225' - 240' Sand, very pale brown (10YR 7/4), very fine grain, poorly graded		
	230		SP			
	235		SP			
	240		SW	240' - 262' Gravelly Sand, very pale brown (10YR 7/4), fine grain, w/ some gravel (% gravel increases downward), well graded		
	245		SW			
	250		SW			
	255		SW			
	260		SW			
	265		SW	262' - 265' Sand, very pale brown to brownish yellow (10YR 7/4 to 6/6), fine to coarse grain, well graded, damp		
	270		SW	265' - 270' Gravelly Sand, very pale brown (10YR 7/4), fine sand, silty, clayey, with some gravel, well graded		
	275		SW	270' - 283' Gravelly Sand, very pale brown (10YR 7/4), fine to coarse sand w/ some gravel, well graded, damp		
	280		SW			
	285		SW	283' - 288' Sand, very pale brown (10YR 7/4), fine to coarse grain, w/ some interbedded hard clay layers and some interbedded gravel layers, well graded, damp		
	290		GW	288' - 291' Gravel, very pale brown (10YR 7/4), sandy, well graded, wet		
	295		CL	291' - 294' Sandy Clay, very pale brown (10YR7/4), wet		
	300		ML	294' - 296.5' FGZ Clayey Siltstone, very pale brown (10YR 7/4), nonplastic, firm, dry		
	305			Borehole Total Depth 296.5' bgs		
	310					

PTX06-ISB123
Triaxial Permeability
ASTM D5084
1.9E-06 cm/sec

PTX06-ISB122

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Dickerson Texas Well Report No.: 466081	Northing: 3751072.09 Easting: 648457.75
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 289 ft bgs TD Well: 287 ft bgs
Dates Drilled: 11/05/17 Date Completed: 11/06/17	Depth to Water: 279.62 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3515.12 ft amsl	Top of Casing Elevation: 3517.21 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	0			0' - 5' Sandy Silty Clay Loam, pale red (10R 7/4), damp		
	5		CL/ML	5' - 15' Clay, pale red (10R 7/4), low plasticity, slightly damp		
	10		CL			
	15		CL	15' - 20' Clay, pale red (10R 7/2), lean, moderate plasticity, slightly damp		
	20		ML	20' - 25' Clayey Silt, pinkish white (10R 8/2), dry		
	25		CL	25' - 30' Clay, light red (10R 6/6), lean, low plasticity, dry		
	30		CL	30' - 35' Clay, light red (10R 6/6), lean, low plasticity, w/ minor silt, dry		
	35		ML	35' - 40' Silt, pale red (10R 7/4), w/ caliche nodules, dry		
	40		ML	40' - 55' Clayey Silt, light red (10R 6/6), w/ caliche nodules, dry		
	45		ML			
	50		ML			
	55		ML	55' -60' Clayey Silt, light red (10R 6/6), no caliche		
	60		SM	60' - 70' Silt, pale red (10R 7/4), w/ very minor clay, dry		
	65		SM			
	70		ML	70' - 75' Sand, pale red (10R 7/4), fine grain w/some coarse grain, moderately graded, some caliche nodules, dry		
	75		ML	75' - 80' Silt, pale red (10R 7/4), dry		
	80		CL	80' - 90' Clay, weak red (10R 5/4), nonplastic, very silty, dry		
	85		CL			
	90		SLT-STN	90' - 100' Caliche Calcrete, pinkish white (10R 8/2), w/ minor lean clay, dry		
	95		SLT-STN			

PTX06-ISB122

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Dickerson Texas Well Report No.: 466081	Northing: 3751072.09 Easting: 648457.75
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 289 ft bgs TD Well: 287 ft bgs
Dates Drilled: 11/05/17 Date Completed: 11/06/17	Depth to Water: 279.62 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3515.12 ft amsl	Top of Casing Elevation: 3517.21 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	105		ML	100' - 115' Silt, pale red (10R 7/4), eolian, w/ minor thin stringers of clay, dry		
	115		SP	115' - 150' Sand, very pale brown (10YR 7/4), very fine grain, w/ some silt, eolian, poorly graded, friable, dry		
	150		SP	150' - 160' Sand, very pale brown (10YR 8/2), very fine grain, poorly graded, eolian, friable, dry		
	160		SP	160' - 200' Sand, very pale brown (10YR 7/4), very fine grain, poorly graded, eolian, subrounded, 90% quartz, 10% rock fragments, friable, dry		

PTX06-ISB122

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Dickerson Texas Well Report No.: 466081	Northing: 3751072.09 Easting: 648457.75
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 289 ft bgs TD Well: 287 ft bgs
Dates Drilled: 11/05/17 Date Completed: 11/06/17	Depth to Water: 279.62 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3515.12 ft amsl	Top of Casing Elevation: 3517.21 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	205		SP	200' - 210' Sand, very pale brown (10YR 7/4), fine grain, poorly graded, eolian, friable, but w/ stringers of silty clay that are moderately indurated, dry		
	210		SP	210' - 220' Gravelly Sand, very pale brown (10YR 7/4), very fine grain, poorly graded, w/ interbedded gravel beds w/ rounded clasts to 2 cm, dry		
	215		SP			
	220		SP	220' - 235' Sand, very pale brown (10YR 7/4), very fine grain, poorly graded, friable but w/ stringers of well cemented sandstone, dry		
	225		SP			
	230		SP			
	235		SP	235' - 240' Sand, very pale brown (10YR 7/4), very fine grain, poorly graded, friable, damp		
	240		GW	240' - 248' Gravel, light brownish grey (10YR 6/2), fine to coarse, well rounded, well graded, dry		
	245		SW	248' - 253' Sand, light brownish grey (10YR 6/2), very fine to coarse grain, well graded, w/ minor thin beds of pea gravel, dry		
	250		SW	253' - 258' Gravelly Sand, very pale brown (10YR 8/2), very fine to very coarse grain, with pea gravel, well graded, dry		
	255		GW	258' - 262' Clayey Gravel, very pale brown (10YR 7/4), fine to coarse, well graded, cemented w/ clay, damp		
	260		SW	262' - 272' Sand, very pale brown (10YR 7/4), fine to very coarse grain, well graded, slightly damp to damp		
	265		SW			
	270		GW	272' - 286' Sandy Gravel, very pale brown (10YR 7/4), fine to medium gravel w/ fine to coarse sand, well graded, wet		
	275		GW			
	280		ML	286' - 289' FGZ Clayey Silt, very pale brown (10YR 7/4), stiff		
	285					
	290			Borehole Total Depth 289' bgs		
	295					

PTX06-ISB122
Triaxial Permeability
ASTM D5084
2.8E-07 cm/sec

PTX06-ISB121

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Dickerson Texas Well Report No.: 466087	Northing: 3751045.71 Easting: 648386.52
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 288 ft bgs TD Well: 286 ft bgs
Dates Drilled: 11/07/17 Date Completed: 11/08/17	Depth to Water: 278.90 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3515.20 ft amsl	Top of Casing Elevation: 3517.26 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	5	CL	CL	0' - 5' Silty Clay Loam, weak red (10R 4/2), lean clay, moderate plasticity, damp		
	10	CL	CL	5' - 10' Silty Clay, light red (10R 6/6), low plasticity, w/ minor sand, dry		
	15	CL	CL	10' - 15' Silty Clay, light red (10R 6/6), low plasticity, some sand, dry		
	20	CL	CL	15' - 20' Silty Clay, red (10R 4/6), low to moderate plasticity, dry		
	25	CL	CL	20' - 35' Silty clay to clayey silt, light red (10R 6/6), nonplastic, dry		
	35	ML	ML	35' -40' Sandy, Clayey Silt, pink (5YR 8/4), nonplastic, w/ very fine sand, well indurated, hard, dry		
	40	ML	ML	40' - 50' Clayey Silt, light red (10R 6/6), nonplastic, dry		
	50	CL	CL	50' - 55' Sandy Clay, light red (10R 6/6), w/ some silt & very fine sand, nonplastic, dry		
	55	ML	ML	55' - 70' Clayey Silt, light red (10R 6/6), w/ some caliche nodules, dry		
	70	ML	ML	70' - 80' Silt, light red (10R 6/6), w/ some clay and interbedded caliche layers, dry		
	80	CL	CL	80' - 85' Clay, weak red (10R 5/4), nonplastic, w/ minor black Mn oxide coatings, dry		
	85	ML	ML	85' - 100' Silt, pale red (10R 7/4), w/ minor clay, w/ well indurated layers, minor caliche nodules		
	90					
	95					


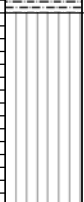
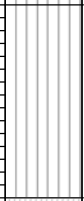
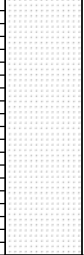

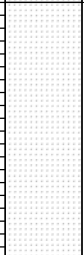
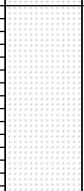

PTX06-ISB121

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Dickerson Texas Well Report No.: 466087	Northing: 3751045.71 Easting: 648386.52
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 288 ft bgs TD Well: 286 ft bgs
Dates Drilled: 11/07/17 Date Completed: 11/08/17	Depth to Water: 278.90 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3515.20 ft amsl	Top of Casing Elevation: 3517.26 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	105		SLT-STN	100' - 105' Caliche Calcrete, pale red (10R 7/2), hard, dry		
	110		ML	105' - 120' Silt, pale red (10R 7/4), eolian, friable, dry		
	125		ML	120' - 135' Silt, pale red (10R 7/4), friable, w/ thin layers of well indurated siltstone, dry		
	140		SP	135' - 155, Sand, very pale brown (10YR 7/4), very fine grain, w/ silt, poorly graded, very friable, w/ minor thin well indurated layers		
	155		SP	155' - 160' Sand, light yellowish brown (10YR 6/4), very fine grain, poorly sorted, friable, slightly damp		
	165		SP	160' - 180' Sand, light grey (10YR 7/2), very fine grain, poorly graded, eolian, friable, dry		
	180		SP	180' - 195' Sand, very pale brown (10YR 7/4), very fine grain, poorly graded, eolian, mostly friable but w/ minor thin well indurated layers, dry		
	195		SP	195' - 210' Sand, very pale brown (10YR 7/4), very fine grain, poorly graded, subangular to subrounded, mostly		

PTX06-ISB121

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Dickerson Texas Well Report No.: 466087	Northing: 3751045.71 Easting: 648386.52
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 288 ft bgs TD Well: 286 ft bgs
Dates Drilled: 11/07/17 Date Completed: 11/08/17	Depth to Water: 278.90 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3515.20 ft amsl	Top of Casing Elevation: 3517.26 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	205		SP	quartz sand, friable but w/ minor stringers of silty clay, slightly damp		
	210		SW	210' - 215' Gravelly sand, very pale brown (10YR 8/2), fine to coarse grain w/ rounded gravel up to 2cm, well graded, dry		
	215		GW	215' - 233' Gravel, very pale brown (10YR 8/2), fine to coarse gravel, rounded, well graded, w/ interbedded fine to very coarse sand, dry		
	220		GW			
	225		GW			
	230		GW			
	235		GW	233' - 240' Gravel, very pale brown (10YR 8/2), fine to coarse gravel and fine to coarse sand, well graded, damp		
	240		GW	240' - 245' Gravel, light brownish grey (10YR 6/2), fine to medium gravel with fine to very coarse sand, well graded, dry		
	245		SW	245' - 255' Sand, light grey (10YR 7/2), fine to very coarse grain, well graded, dry		
	250		SW			
	255		GW	255' - 260' Gravel, reddish grey (5YR 5/2), fine to medium gravel w/ fine to very coarse sand, well graded, w/ minor interbedded lean clay layers, damp		
	260		SW	260' - 270' Gravelly Sand, very pale brown (10YR 7/4), fine to medium grain w/ some interbedded pea gravel, moderately graded, damp		
	265		SW			
	270		SW	270' - 275' Sand, very pale brown (10YR 7/4), fine to medium grain, w/ some coarse grain, well graded, damp		
	275		SW	275' - 280' Gravelly Sand, very pale brown (10YR 7/4), fine to medium grain w/ some coarse grain, some interbedded pea gravel, well graded, damp to 278' & wet below		
	280		GW			
	285		ML	280' - 285' Sandy Gravel, pinkish grey (5YR 7/2), fine to coarse gravel w/ some fine to coarse sand, well graded, wet		
	285		ML	285' - 288' FGZ Silt, very pale brown (10YR 7/4), very stiff		
	290			Borehole Total Depth 288' bgs		
	295					
						PTX06-ISB121 Triaxial Permeability ASTM D5084 2.5E-07 cm/sec

PTX06-ISB120

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 466192	Northing: 3751019.54 Easting: 648316.24
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 284 ft bgs TD Well: 283 ft bgs
Dates Drilled: 11/28-29/17 Date Completed: 11/30/17	Depth to Water: 279.22 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.94 ft amsl	Top of Casing Elevation: 3516.95 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	5		CL	0' - 5' Sandy Clay Loam, dark reddish brown (5YR 3/4), plastic, cohesive, very stiff, moist		
	10		CL	5' - 25' Silty Clay, yellowish red (5YR 5/6), trace very fine grain sand, low plasticity, cohesive, stiff, moist to dry		
	25		ML	25' - 35' Silt, yellowish red (5YR 5/6), trace very fine grain sand, non-plastic, medium stiff, dry		
	35		ML	35' - 45' Silt, pink (5YR 8/4), some caliche fragments to 2-cm, medium stiff, dry		
	45		SP	45' - 65' Sand, red (2.5YR 4/8), trace silt, fine grain, poorly graded, loose to medium dense, dry @ 45' - 50' <5% 1-cm caliche granules, lesser amounts to 65'		
	65		SM	65' - 75' Silty Sand, yellowish red (5YR 5/6), very fine grain, some silt, loose, dry		
	75		ML	75' - 80' Silt with clay, reddish brown (5YR 5/4), low plasticity, non-cohesive, hard, dry		
	80		SP	80' - 90' Sand, yellowish red (5YR 5/8), very fine to fine grain, poorly graded, sub-rounded, medium dense, dry		
	90		ML	90' - 100' Caliche Silt, pink (5YR 8/3 - 7/3), < 10% very fine sand, stiff, dry		

PTX06-ISB120

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 466192	Northing: 3751019.54 Easting: 648316.24
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 284 ft bgs TD Well: 283 ft bgs
Dates Drilled: 11/28-29/17 Date Completed: 11/30/17	Depth to Water: 279.22 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.94 ft amsl	Top of Casing Elevation: 3516.95 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number	
	105		SP	100' - 135' Sand, light reddish brown (5YR 6/4), very fine to fine grain, poorly graded, loose, dry			
	110						
	115						
	120						
	125						
	130						
	135		SP	135' - 150' Sand, pink (7.5YR 7/4), very fine to fine grain, poorly graded, sub-rounded to rounded, loose, dry			
	140						
	145						
	150		SP	150' - 157' Sand, reddish yellow (7.5YR 6/6), very fine to fine grain, poorly graded, sub-rounded to rounded, loose, dry			
	155						
	160		SP	157' - 170' Sand, light brown (7.5YR 6/4), very fine to fine grain, poorly graded, loose, dry			
	165						
	170		SP	170' - 190' Sand, brownish yellow (10YR 6/6), fine grain, poorly graded, rounded, loose, dry			
	175						
	180						
	185						
	190		SP-SM	190' - 195' Sand with Silt, reddish yellow (7.5YR 6/6), 10% silt, non-plastic, poorly graded sand, medium dense, dry			
	195	SW		195' - 220' Sand with Gravel, light yellowish brown (10YR 6/4), well graded sand becoming coarser with depth, >15%			

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Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 466192	Northing: 3751019.54 Easting: 648316.24
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 284 ft bgs TD Well: 283 ft bgs
Dates Drilled: 11/28-29/17 Date Completed: 11/30/17	Depth to Water: 279.22 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.94 ft amsl	Top of Casing Elevation: 3516.95 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	205			sub-rounded small gravel, dense to very dense, dry		
	210		SW			
	215					
	220		SM	220' - 225' Silty Sand, strong brown (7.5YR 4/6), fine grain sand, >15% non-plastic fines, medium dense, dry		
	225		SP	225' - 230' Sand, light yellowish brown (10YR 6/4), very fine to fine grain, poorly graded, some cemented sandstone nodules, medium dense, dry		
	230		SP	230' - 235' Sand, brown (7.5YR 5/4), very fine to fine grain, poorly graded, trace silt, loose, dry		
	235		SW	235' - 240' Sand with Gravel, light yellowish brown (10YR 6/4), well graded sand, >15% small rounded gravel, medium dense, dry		
	240		GP	240' - 245' Gravel with Sand, light yellowish brown (10YR 6/4), poorly graded small rounded gravel, >15% sand, very dense, dry		
	245		SW	245' - 257' Sand, yellowish brown (10YR 5/6), well graded fine to coarse grain sand, <10% small rounded gravel, medium dense, damp to moist		
	250					
	255					
	260					
	265					
	270		SW			
	275			@ 277' occasional small rounded and flattened gravel		
	280					
	285		ML	282' - 284' FGZ Siltstone, light reddish brown (5YR 6/4), with fine grain sand and caliche nodes, hard, dry		
	290			Borehole Total Depth 284' bgs		
	295					

PTX06-ISB120
Triaxial Permeability
ASTM D5084
1.6E-07 cm/sec

PTX06-ISB119

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: J. Ford Texas Well Report No.: 466181	Northing: 3750993.50 Easting: 648245.97
Drilling Contractor: Cascade Drilling Lic. #4885 W. Blutworth	TD Borehole: 283 ft bgs TD Well: 281 ft bgs
Dates Drilled: 11/16/17 Date Completed: 11/17/17	Depth to Water: 278.13 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.83 ft amsl	Top of Casing Elevation: 3516.75 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number	
	0		ML	0' - 4' Clayey Silt, brown (7.5YR 5/3), hard, dry to damp			
	5		CL-ML	4' - 19' Silty Clay to Clayey Silt, light reddish brown (5YR 6/3), very stiff, damp			
	10						
	15		ML	19' - 38' Clayey Silt, yellowish red to light reddish brown (5YR 5/6 - 6/4), caliche nodules to 6-mm, some MnO2 veinlets, stiff to very hard, damp to dry			
	20						
	25				@ 35' - 38' numerous caliche lenses, +6-mm size nodules in the cuttings		
	30		CL	38' - 58' Silty Clay, pink to pinkish gray (5YR 7/3 - 7/2), very stiff, with caliche, dry			
	35				@ 47' - 48' color change to light reddish brown (2.5YR 6/4) - (5YR 6/3)		
	40				@ 52' - 58' trace fine sand and color change back to pink (5YR 7/4)		
	45						
	50		ML	58' - 72' Clayey Silt with Sand, yellowish red (5YR 5/6), very fine grain sand, hard, damp			
	55						
	60		ML	72' - 76' Caliche with sand, pinkish white (5YR 8/2), hard, dry			
	65		SM	76' - 87' Silty Sand with clay, light reddish brown (5YR 6/4), caliche nodules to 6-mm, dense, dry			
	70						
	75		ML	87' - 98' Caliche, pinkish white (5YR 8/2) to pink (5YR 7/4), caliche nodules to 2-cm, interbedded silty sands, hard, dry			
	80		SM				
	85						
	90		ML				
	95		SM				

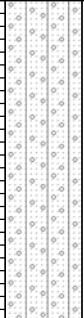
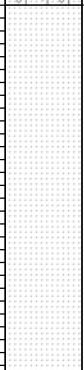
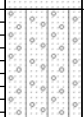
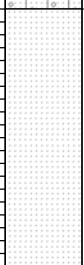
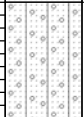

PTX06-ISB119

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: J. Ford Texas Well Report No.: 466181	Northing: 3750993.50 Easting: 648245.97
Drilling Contractor: Cascade Drilling Lic. #4885 W. Blutworth	TD Borehole: 283 ft bgs TD Well: 281 ft bgs
Dates Drilled: 11/16/17 Date Completed: 11/17/17	Depth to Water: 278.13 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.83 ft amsl	Top of Casing Elevation: 3516.75 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number			
	105		SM	98' - 125' Silty Sand, light reddish brown (5YR 6/4), very fine to fine grain, sub-rounded to rounded, dense, dry					
	110								
	115								
	120								
	125		SP	125' - 154' Sand, pink to light brown (7.5YR 7/4 - 6/4), fine to medium grain, sub-angular to rounded, loose to dense on sandstone lenses, some silt					
	130								
	135								
	140								
	145								
	150								
	155		SM	154' - 163' Silty Sand, very fine to fine grain, sub-rounded to rounded, some thin sandstone lenses, damp to dry					
	160								
	165		SP	163' - 183' Sand, very pale brown (10YR 7/3), fine to medium grain, poorly graded, sub-rounded, loose, dry					
	170								
	175								
	180								
	185		SM	183' - 192' Silty Sand, light brown (7.5YR 6/3), very fine to fine grain, trace medium grain, sub-angular to sub-rounded, loose, dry					
	190								
	195		SP	192' - 198' Sand, very pale brown (10YR 7/4), very fine to fine grain, poorly graded, loose to medium dense on numerous sandstone lenses, dry to damp					

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Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: J. Ford Texas Well Report No.: 466181	Northing: 3750993.50 Easting: 648245.97
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 283 ft bgs TD Well: 281 ft bgs
Dates Drilled: 11/16/17 Date Completed: 11/17/17	Depth to Water: 278.13 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.83 ft amsl	Top of Casing Elevation: 3516.75 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number	
	205		SM	198' - 205' Silty Sand, pink (7.5YR 7/3), very fine to fine grain, medium dense, dry			
	210			205' - 234' Sand to Gravelly Sand, very pale brown to pale brown with depth (10YR 8/3 - 7/3 - 6/3), well graded fine to coarse grain sub-rounded to rounded sand, some sandstone lenses, flattened gravel clasts to 2-cm, dry			
	215						
	220		SW				
	235		SM	234' - 240' Silty Sand, brown (7.5YR 5/3), very fine to fine grain, poorly graded, some sandstone nodules (lenses), damp			
	240		GW	240' - 248' Sandy Gravel, sub-angular to rounded and flattened gravel to 3-cm, fine to coarse sand, well graded, dense, dry			
	250			248' - 280 Sand with Gravel, light gray to light brownish gray (10YR 7/2 - 6/2), well graded, fine to coarse grain, sub-angular to well rounded sand, some flattened thin gravel to 12-mm, very dense, dry			
	265		SW		@ 264' - 268' some poorly graded sand layers, very pale brown (10YR 7/3), continued pebbles and trace gravel		
	270				@ 268' - 280' gravelly sand, fine to coarse grain, sub-angular to subrounded gravel to 2-cm, moist below 274'		
	280		SM	280' - 283' FGZ Silty Sand to Sandstone, light reddish brown (5YR 6/3), fine grain sub-rounded sand, very dense, damp to dry with depth			
				Borehole Total Depth 383' bgs			

PTX06-ISB119
 Triaxial Permeability
 ASTM D5084
 6.1E-07 cm/sec

PTX06-ISB118

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: J. Ford Texas Well Report No.: 466199	Northing: 3750967.12 Easting: 648175.64
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 284 ft bgs TD Well: 282 ft bgs
Dates Drilled: 11/14/17 Date Completed: 11/15/17	Depth to Water: 278.35 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.86 ft amsl	Top of Casing Elevation: 3516.81 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number	
	0		ML	0' - 4' Clayey Silt, hard, damp to dry			
	5		CL-ML	4' - 18' Silty Clay to Clayey Silt, reddish gray (5YR 5/2), very stiff, damp			
	10						
	15		ML	18' - 37' Clayey Silt, light reddish brown (5YR 6/4) to yellowish red (5YR 5/6) to reddish brown (5YR 5/4) with depth, trace caliche nodules and MnO2 stringers, stiff to hard, damp to dry @ 28' to 34' prevalent pink (5YR 7/4) caliche			
	20						
	25						
	30						
	35		CL	37' - 49' Silty Clay, pink (5YR 7/4), very stiff, caliche nodules to 6-mm, very stiff, damp to dry			
	40						
	45		CL	49' - 57' Silty Clay, reddish yellow (5YR 6/6), trace sand, very stiff, dry			
	50						
	55		ML	57' - 64' Clayey Silt, yellowish red (5YR 5/6), with very fine sand and small caliche nodules, very stiff, damp			
	60						
	65		SM	64' - 74' Silty Sand, pink (5YR 7/4), very fine to fine grain sand, caliche nodules to 12-mm, dense, dry			
	70						
	75		ML	74' - 77' Caliche with sand, pinkish white (5YR 8/2), hard, dry			
	80		SM	77' - 86' Silty Sand with clay, light reddish brown (5YR 6/4), dense, dry			
	85						
	90		SM	86' - 110' Silty sand, pink (5YR 7/4), caliche nodules to 6-mm thin caprock at 93' to 94', dense, dry			
	95						

PTX06-ISB118

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: J. Ford Texas Well Report No.: 466199	Northing: 3750967.12 Easting: 648175.64
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 284 ft bgs TD Well: 282 ft bgs
Dates Drilled: 11/14/17 Date Completed: 11/15/17	Depth to Water: 278.35 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.86 ft amsl	Top of Casing Elevation: 3516.81 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	105		SM			
	110		SM	110' - 124' Silty Sand, light brown (7.5YR 6/4), very fine to fine grain, medium dense, dry		
	115		SM			
	120		SM			
	125			124' - 153' Sand, very pale brown (10YR 7/4), fine grain, some medium grain, poorly graded, sub-rounded to rounded, loose, dry		
	130					
	135					
	140		SP			
	145					
	150					
	155		SM	153' - 158' Silty Sand, light brown (7.5YR 6/4), fine grain, poorly graded, loose, dry		
	160			158' - 178' Sand, very pale brown (10YR 7/3), fine to medium grain, some silt, poorly graded, sub-rounded to rounded, loose, dry		
	165					
	170		SP-SM			
	175					
	180			178' - 193' Silty Sand, pink (7.5YR 7/3), very fine to fine grain, trace medium grain, sub-rounded, loose, dry, with some light brown (7.5YR 6/3) lenses		
	185		SM			
	190					
	195		SP	193' - 198' Sand, very pale brown (10YR 7/3), fine to medium grain, sub-rounded to well rounded, very dense sandstone layers, dry		
	200		SP	198' - 206' Sand, fine to medium grain, trace coarse grain, some sandstone lenses and gravel to 6-mm, loose, dry		

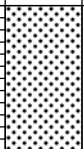
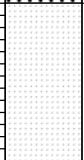

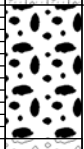
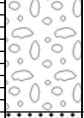
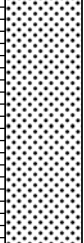

PTX06-ISB118

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: J. Ford Texas Well Report No.: 466199	Northing: 3750967.12 Easting: 648175.64
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 284 ft bgs TD Well: 282 ft bgs
Dates Drilled: 11/14/17 Date Completed: 11/15/17	Depth to Water: 278.35 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.86 ft amsl	Top of Casing Elevation: 3516.81 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	210		SW	206' - 218' Gravelly sand, very pale brown to light gray (10YR 7/3 - 7/2), fine to coarse grain, well graded, sub-rounded to rounded, dense, dry		
	215					
	220		SP	218' - 231' Sand, very pale brown (10YR 7/4), fine grain, rounded, loose, dry		
	225					
	230					
	235		SM	231' - 239' Silty Sand, brown to yellowish brown (7.5YR 5/4 - 10YR 5/4), fine to medium grain, sub-rounded, loose to medium dense		
	240		SW-GP	239' - 260' Sandy Gravel to Gravelly Sand, grayish brown (10YR 5/2), angular gravel to 12-mm, well graded, fine to coarse, sub-angular to rounded sand, very dense, dry		
	245					
	250		GW	@ 250' gravel becomes well graded as size increases and color changes to light gray (10YR 7/2)		
	255					
	260		SW	260' - 281' Sand, light yellowish brown to pale brown (10YR 6/4 - 6/3), fine to coarse grain, sub-angular to sub-rounded, well graded, dense, moist at 270', saturated at 278'		
	265					
	270					
	275					
	280		SM-ML	281' - 284' FGZ, Silty Sand to Sandy Siltstone, light reddish brown (2.5YR 6/4 to 5YR 6/3), damp, drier with depth		
	285			Borehole Total Depth 284' bgs		
	290					
	295					
	300					
	305					
	310					

PTX06-ISB118
Triaxial Permeability
ASTM D5084
6.1E-07 cm/sec

PTX06-ISB117

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: J. Ford Texas Well Report No.: 466197	Northing: 3750940.93 Easting: 648105.30
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 285 ft bgs TD Well: 283 ft bgs
Dates Drilled: 11/13/17 Date Completed: 11/14/17	Depth to Water: 279.30 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.84 ft bgs	Top of Casing Elevation: 3516.78 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	0		CL	0' - 4' Topsoil, silty clay loam, damp to moist		
	5		CL-ML	4' - 18' Silty Clay to Clayey Silt, reddish brown (5YR 5/4), very stiff, damp, with caliche streaks		
	10					
	15		ML	18' - 38' Clayey Silt, yellowish red to reddish brown (5YR 5/6 - 5/4), stiff to very stiff, damp		
	20					
	25					
	30		CL	38' - 54' Silty Clay, yellowish red to reddish yellow (5YR 5/6 - 6/6), very stiff, damp to dry, trace sand, some caliche nodules		
	35					
	40					
	45		CL	54' - 66' Silty Clay with some sand, yellowish red (5YR 5/8), with caliche nodules to 12-mm, stiff, damp		
	50					
	55					
	60		SM	66' - 76' Silty Sand with some clay, light reddish brown (5YR 6/4), fine to medium grain with some coarse grain, medium dense, moist		
	65					
	70		SM	76' - 80' Sand with caliche, pink (5YR 7/4), hard, dry		
	75					
	80		SM	80' - 93' Silty Sand, light reddish brown (5YR 6/4), fine to medium grain with some coarse grain, medium dense, dry		
	85					
	90		SLT-STN	93' - 97' Caliche Caprock, pinkish white (5YR 8/2), very hard, dry		
	95					
			SM			

PTX06-ISB117

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: J. Ford Texas Well Report No.: 466197	Northing: 3750940.93 Easting: 648105.30
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 285 ft bgs TD Well: 283 ft bgs
Dates Drilled: 11/13/17 Date Completed: 11/14/17	Depth to Water: 279.30 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.84 ft bgs	Top of Casing Elevation: 3516.78 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number	
	105	[Lithology Pattern]	SM	97' - 125' Silty Sand, light brown (7.5YR 6/3), fine to medium grain, poorly graded, damp to dry			
	110						
	115						
	120						
	125						
	130	[Lithology Pattern]	SP	125' - 152' Sand, very pale brown (10YR 7/4), fine to medium grain, poorly graded, sub-rounded to rounded, loose, dry			
	135						
	140						
	145						
	150						
	155			152' - 161' Sand, pink (7.5YR 7/3), very fine to fine grain, poorly graded, sub-rounded, loose, dry			
	160						
	165	[Lithology Pattern]	SP-SM	161' - 176' Silty Sand, light brown (7.5YR 6/4), fine to medium grain, poorly graded, subrounded, damp			
	170						
	175						
	180			176' - 184' Silty Sand, light brown (7.5YR 6/3), very fine to fine grain, poorly graded, trace of gravel to 6-mm, damp			
	185	[Lithology Pattern]	SP	184' - 195' Sand, brown (7.5YR 6/4), fine to medium grain, sub-rounded to rounded, poorly graded, some silt, loose, dry			
	190						
	195			195' - 203' Sand, very pale brown (10YR 7/4), fine to medium grain, trace coarse grain, poorly graded, loose, damp			

PTX06-ISB117

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: J. Ford Texas Well Report No.: 466197	Northing: 3750940.93 Easting: 648105.30
Drilling Contractor: Cascade Drilling Lic. #4885 W. Blutworth	TD Borehole: 285 ft bgs TD Well: 283 ft bgs
Dates Drilled: 11/13/17 Date Completed: 11/14/17	Depth to Water: 279.30 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.84 ft bgs	Top of Casing Elevation: 3516.78 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	205		SP	203' - 212' Sand with Gravel, very pale brown (10YR 7/3), fine to coarse grain rounded sand, gravel to 3-cm, very dense		
	210		SW			
	215		SP	212' - 228' Sand, very pale brown (10YR 7/4), fine to medium grain, some coarse grain, trace gravel, very dense, dry		
	220		SP			
	225		SP			
	230		SP-SM	228' - 237' Sand to Silty Sand, brown (10YR 5/3), fine to medium grain, sub-rounded, loose, damp		
	235		SM			
	240		SP	237' - 243' Sand with Gravel, very pale brown (10YR 7/3), fine to medium grain sub-rounded poorly graded sand with gravel to 2-cm, very dense, dry		
	245		GW	243' - 248' Gravel with Sand, flat and rounded gravel to 4-cm with fine to coarse sand, well graded, dense		
	250		GP	248' - 257' Gravel, poorly graded large gravel to 7-cm		
	255		GP			
	260		SW	257' - 262' Sand with Gravel, grayish brown (10YR 5/2), fine to coarse grain, sub-angular to sub-rounded, well graded, dense, dry		
	265		SP	262' - 266' Sand, brown (10YR 5/3), fine to medium grain, with some gravel		
	270		SW	266' - 281.5' Sand with Gravel, light yellowish brown to grayish brown (10YR 6/4 - 5/2), fine to coarse grain sub-rounded sand, gravel to 2.5-cm increasing with depth, moist to wet with depth		
	275		SW			
	280		SW			
	285		SM-ML	281.5' - 284.7' FGZ, Silty Sand to Sandy Siltstone, light brown (7.5YR 6/4) to light reddish brown (5YR 6/4), fine grain sub-rounded to rounded sand, very dense, caliche nodules, moist, drier with depth		
	290			Borehole Total Depth 285' bgs		
	295					

PTX06-ISB117
Triaxial Permeability
ASTM D5084
2.1E-07 cm/sec

PTX06-ISB116

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 466086	Northing: 3750914.87 Easting: 648034.69
Drilling Contractor: Cascade Drilling Lic. #4885 W. Blutworth	TD Borehole: 285 ft bgs TD Well: 283 ft bgs
Dates Drilled: 11/04/17 Date Completed: 11/05/17	Depth to Water: 277.87 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.80 ft amsl	Top of Casing Elevation: 3516.79 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	0		CL	0' - 3' Lean Clay, dark reddish brown (5YR 3/4), plastic, cohesive, stiff, moist		
	3		CL-ML	3' - 35' Lean Clay and Silt, reddish brown to yellowish red (5YR 5/4 - 5/6), interbedded manganese stained clay and silt, decreasing plasticity with depth, stiff, moist to dry		
	5					
	10					
	15					
	20		CL-ML			
	25					
	30					
	35		ML	35' - 37' Silt, reddish yellow (5YR 6/4), non-plastic, non-cohesive, stiff, dry		
	40		ML	37' - 45' Silt, pinkish white to pink (5YR 8/2 - 7/4), caliche silt, hard with cuttings to 3-cm, dry		
	45		SM-SC	45' - 60' Silty Sand with clay, reddish yellow (5YR 6/6), fine grain sub-rounded sand, medium dense, dry, with thin intervals of caliche silt and clayey sand		
	50					
	55					
	60		SP	60' - 70' Sand, yellowish red (5YR 5/8), fine grain, poorly graded, medium dense, moist		
	65					
	70		SM-ML	70' - 80' Silty Sand, pink (5YR 7/3), fine grain sand and caliche silt, medium dense, dry, very hard well developed caliche fragments indicate possible caprock interval		
	75					
	80		SP	80' - 85' Sand, yellowish red (5YR 5/8), fine grain, poorly graded, medium dense, dry		
	85		SC	85' - 90' Clayey Sand, light reddish brown (5YR 6/4), fine to medium grain, poorly graded, sub-rounded, dense, dry		
	90		SM	90' - 100' Silty Sand, pink (7.5YR 7/4), very fine grain, well cemented with caliche, dense to very dense, dry		
	95					

PTX06-ISB116

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 466086	Northing: 3750914.87 Easting: 648034.69
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 285 ft bgs TD Well: 283 ft bgs
Dates Drilled: 11/04/17 Date Completed: 11/05/17	Depth to Water: 277.87 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.80 ft amsl	Top of Casing Elevation: 3516.79 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	105			100' - 135' Sand, light brown (7.5YR 6/4), very fine grain, poorly graded, loose to medium dense, dry		
	110					
	115					
	120		SP			
	125			@ 125' becoming fine grain with occasional cemented nodules		
	130					
	135					
	140			135' - 157' Sand, pink to light brown (7.5YR 7/4 - 6/4), fine grain, poorly graded, sub-rounded quartz sand, loose, dry		
	145		SP			
	150					
	155					
	160		SP	157' - 170' Sand, light brown (7.5YR 6/4), very fine to fine grain cemented sandstone with abundant nodules to 2-cm, poorly graded, dense, dry,		
	165					
	170					
	175		SP	170' - 185' Sand, brownish yellow (10YR 6/6), fine to medium grain, poorly graded, sub-rounded, loose, dry		
	180					
	185					
	190		SP	185' - 205' Sand, brownish yellow to yellowish brown (10YR 6/6 - 5/6), very fine to fine grain, poorly graded, very dense with well cemented sub-rounded cuttings to 5-cm, dry		
	195					

PTX06-ISB116

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 466086	Northing: 3750914.87 Easting: 648034.69
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 285 ft bgs TD Well: 283 ft bgs
Dates Drilled: 11/04/17 Date Completed: 11/05/17	Depth to Water: 277.87 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.80 ft amsl	Top of Casing Elevation: 3516.79 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	205		SP			
	210		SW	205' -220' Sand with Gravel, very pale brown to light yellowish brown (10YR 7/4 - 6/4), very fine to very coarse grain sub-rounded sand, gravel is predominantly pea gravel with some small gravel, very dense, dry		
	220		SP	220' - 235' Sand, yellowish brown (10YR 5/8), fine grain, poorly graded, rounded, medium dense, moist		
	235		GW	235' - 245' Gravel with sand, light yellowish brown (10YR 6/4), small to large sub-rounded gravel with >15% sand, very dense, dry		
	245		SW	245' - 250' Sand, very pale brown (10YR 7/3), fine to coarse grain, well graded, sub-angular to angular quartz sand, loose		
	250		SW	250' - 255' Sand with Gravel, yellowish brown to dark yellowish brown (10YR 5/4 - 4/4), well graded rounded sand with some iron stain, >15% small gravel		
	255		GW	255' - 260' Gravel with Sand, yellowish brown (10YR 5/6), well graded gravel and sand, dense, damp		
	260		SW	260' - 275' Sand, pale brown (10YR 6/3), fine to coarse grain, well graded, sub-rounded to rounded, medium dense to dense, moist		
	275		SW	275' - 282' Sand with Gravel, yellowish brown (10YR 5/6), well graded sand, >15% rounded & flattened small gravel, loose to medium dense, saturated at 277'		
	282		ML	282' - 285' FGZ Siltstone, light reddish brown (5YR 6/4), silt with very fine grain sand, trace rounded caliche nodules to 5-mm, hard, dry		
	285			Borehole Total Depth 285' bgs		
	290					
	295					

PTX06-ISB116
Triaxial Permeability
ASTM D5084
7.3E-07 cm/sec

PTX06-ISB115

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 466079	Northing: 3750888.51 Easting: 647964.07
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 284 ft bgs TD Well: 283 ft bgs
Dates Drilled: 11/01-02/17 Date Completed: 11/03/17	Depth to Water: 277.46 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.84 ft amsl	Top of Casing Elevation: 3516.79 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	0		CL	0' - 3' Lean Clay, dark reddish brown (5YR 3/2), plastic, cohesive, trace very fine sand, stiff, moist		
	3		ML	3' - 22' Silt, reddish brown to yellowish red (5YR 5/4 - 5/6), low plasticity, some clay, minor caliche, some manganese staining, trace sand, stiff, moist		
	22		CL	22' - 35' Clay, reddish yellow (5YR 6/6), medium plasticity, cohesive, stiff, moist		
	35		ML	35' - 47' Silt with Sand, reddish yellow (5YR 6/6), non-plastic, > 30% fine sand, stiff, dry		
	47		SM	47' - 65' Silty Sand, yellowish red (5YR 5/6) to red (2.5YR 5/8), >15% fines @ 50' - 55' significant 2-cm caliche fragments, color more pink		
	60		SP	@ 60' - 65' mostly very fine to fine sand, sub-rounded to rounded grains, trace silt, moist 65' - 77' Sand, pinkish gray (5YR 7/2), fine grain rounded quartz sand, loose, dry		
	77		SP-SM	77' - 90' Sand, reddish yellow (5YR 6/6), fine grain, rounded, loose, dry, becoming silty at 87'		
	90		ML	90' - 105' Caliche Silt, pink (5YR 7/4), silt with 15% fine sand, hard caliche nodules to 3-cm, possible caprock interval		

PTX06-ISB115

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 466079	Northing: 3750888.51 Easting: 647964.07
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 284 ft bgs TD Well: 283 ft bgs
Dates Drilled: 11/01-02/17 Date Completed: 11/03/17	Depth to Water: 277.46 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.84 ft amsl	Top of Casing Elevation: 3516.79 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	105	ML				
	110			105' - 135' Silty Sand, reddish yellow (5YR 6/6), fine grain sub-angular sand, >15% silt, medium dense, dry		
	115					
	120		SM			
	125					
	130					
	135					
	140		SP	135' - 150' Sand, light brown (7.5YR 6/4), fine to medium grain, sub-rounded to rounded, medium dense, dry, intervals of very dense well cemented sandstone with nodules to 2-cm		
	145					
	150					
	155		SP-SM	150' - 160' Sand, light brown (7.5YR 6/4), very fine to fine grain, medium dense, dry, with pinkish white (7.5YR 8/2) caliche nodules to 2-cm at 160'		
	160					
	165					
	170		SP	160' - 185' Sand, reddish yellow (7.5YR 6/4), very fine to fine grain, poorly graded, sub-rounded to rounded, medium dense, dry @ 165' - 170' some silt		
	175					
	180					
	185					
	190					
	195		SP	185' - 200' Sand, light brown (7.5YR 6/4), very fine grain, poorly graded, medium dense, dry		

PTX06-ISB115

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 466079	Northing: 3750888.51 Easting: 647964.07
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 284 ft bgs TD Well: 283 ft bgs
Dates Drilled: 11/01-02/17 Date Completed: 11/03/17	Depth to Water: 277.46 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.84 ft amsl	Top of Casing Elevation: 3516.79 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	205		SW	200' - 205' Sand, pink (7.5YR 7/4), very fine to medium grain, well graded, medium dense, dry		
	210		SW	205' - 220' Sand with Gravel, well graded fine to very coarse grain, sub-rounded quartz sand, >15% sub-angular and broken gravel to 2-cm, some flattened clasts to 4-cm, very dense, dry		
	220		SW-SP	220' - 230' Sand, brownish yellow (10YR 6/6), well graded to poorly graded at 230', medium dense, dry		
	230		SP	230' - 240' Sand, yellowish brown (10YR 5/6), fine grain, medium dense, dry		
	240		SW	240' - 260' Sand with Gravel, dark grayish brown (10YR 4/2), well graded, fine to very coarse grain, sub-angular to angular sand		
	255		GP	10% to 15% sub-rounded gravel to 3-cm at 257' - 260', very dense, dry		
	260		SW	260' - 282' Sand, yellowish brown (10YR 5/4), well graded fine to very coarse grain, medium dense to dense, with <10% small gravel and some clay at 281', moist at 270', saturated at 277'		
	280		ML	282' - 284' FGZ Siltstone, reddish brown (5YR 5/4), fine grain sandy siltstone with 2-mm caliche nodules, non-plastic, non-cohesive, moist to dry with depth		
	284			Borehole Total Depth 284' bgs		

PTX06-ISB115
 Triaxial Permeability
 ASTM D5084
 3.6E-07 cm/sec

PTX06-ISB114

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 466085	Northing: 3750862.53 Easting: 647894.07
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 285 ft bgs TD Well: 283 ft bgs
Dates Drilled: 11/06/17 Date Completed: 11/07/17	Depth to Water: 277.21 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.70 ft amsl	Top of Casing Elevation: 3516.72 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	0		CL	0' - 3' Clay, reddish brown (5YR 4/4), stiff, high plasticity, cohesive, moist		
	3		ML	3' - 15' Silt, reddish brown (5YR 5/4), stiff, low plasticity, trace fine sand, moist to 10'		
	15		CL	15' - 30' Silty clay, reddish brown (5YR 5/4), stiff, low plasticity, minor caliche, dry		
	25			@ 25' - 30' increasing silt		
	30		ML	30' - 40' Sandy Silt, reddish yellow (5YR 6/6), stiff, non-plastic, non-cohesive, +25% very fine sand, dry		
	40		ML	40' - 50' Silt with caliche, reddish yellow (5YR 6/6), stiff, dry		
	50		ML	50' - 65' Silt, light reddish brown (5YR 6/4), some very fine sand, stiff, dry		
	65		SM-ML	65' - 75' Silty Sand to Sandy Silt, pink (5YR 7/3), very fine grain sand with caliche silt, stiff to medium dense, dry		
	75		SP	75' - 77' Sand, pinkish gray (5YR 7/2), very fine to fine grain rounded quartz sand, cemented nodes, medium dense, dry		
	77		SP	77' - 80' Sand, light reddish brown (5YR 6/4), very fine grain, loose, dry		
	80		SC	80' - 90' Clayey Sand, yellowish red (5YR 5/6), fine grain, rounded, medium dense, dry		
	90		ML	90' - 97' Caliche Caprock, pinkish white (5YR 8/2) to pink (5YR 7/3 - 7/4), trace very fine sand, hard, dry, well developed 90' - 93'		
	97		SM	97' - 105' Silty Sand, light reddish brown (5YR 6/4), very		

PTX06-ISB114

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 466085	Northing: 3750862.53 Easting: 647894.07
Drilling Contractor: Cascade Drilling Lic. #4885 W. Blutworth	TD Borehole: 285 ft bgs TD Well: 283 ft bgs
Dates Drilled: 11/06/17 Date Completed: 11/07/17	Depth to Water: 277.21 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.70 ft amsl	Top of Casing Elevation: 3516.72 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	105		SM	fine to fine grain, poorly graded, loose to medium dense, dry		
	110		SP	105' - 130' Sand, light reddish brown (5YR 6/3) to reddish yellow (7.5YR 6/6), very fine grain, poorly graded, loose, dry		
	130		SP	130' - 150' Sand, light brown (7.5YR 6/4), 90% fine grain, poorly graded, sub-rounded, loose, dry		
	150		SP	150' - 155' Sand, strong brown (7.5YR 5/6), very fine to fine grain, poorly graded, loose, dry		
	160		SP	155' - 165' Sand, light brown (5YR 6/4), 95% fine grain sub-rounded quartz sand, poorly graded, medium dense, some cemented nodules		
	170		SP	165' - 190' Sand, reddish yellow (7.5YR 6/6), fine grain, poorly graded, sub-rounded, loose, dry		
	190		SP	190' - 200' Sand, light brown to reddish yellow (7.5YR 6/4 - 6/6), very fine to fine grain, poorly graded, sub-rounded, dense sandstone, well cemented nodules, moist		

PTX06-ISB114

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 466085	Northing: 3750862.53 Easting: 647894.07
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 285 ft bgs TD Well: 283 ft bgs
Dates Drilled: 11/06/17 Date Completed: 11/07/17	Depth to Water: 277.21 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.70 ft amsl	Top of Casing Elevation: 3516.72 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	205		SW	200' - 207' Sand, very pale brown to light yellowish brown (10YR 7/4 - 6/4), very fine to coarse grain, well graded, loose, dry		
	210		SW	207' - 225' Sand with Gravel, light yellowish brown to brownish yellow (10YR 6/4 - 6/6), fine to coarse grain with >15% small gravel, well graded, dense, dry		
	225		SP	225' - 235' Sand, yellowish brown (10YR 5/6), fine grain, poorly graded, rounded, medium dense, moist		
	240		GW	235' - 250' Gravel with Sand, grayish brown to yellowish brown (10YR 5/2 - 5/4), well graded sub-rounded and flattened small to large gravel, well graded rounded sand, very dense, dry		
	255		SW	250' - 265' Sand, yellowish brown (10YR 5/6), well graded, rounded quartz sand, <10% rounded small gravel, medium dense to dense, moist		
	270		SW	265' - 270' Sand with Gravel, dark yellowish brown (10YR 4/6), well graded sand with pea gravel, dense to very dense, moist		
	275		SP	270' - 282' Sand, yellowish brown (10YR 5/4), fine to medium grain, poorly graded, sub-rounded, with small gravel @ 275' - 282', saturated @ 278'		
	285		ML	282' - 285' FGZ Siltstone, light reddish brown (5YR 6/4), sandy with 2-mm caliche nodules, hard, dry		
	285			Borehole Total Depth 285' bgs		
	290					
	295					

PTX06-ISB114
Triaxial Permeability
ASTM D5084
6.6E-08 cm/sec

PTX06-ISB113

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Dickerson Texas Well Report No.: 466083	Northing: 3750836.66 Easting: 647823.09
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 287 ft bgs TD Well: 286 ft bgs
Dates Drilled: 11/01-02/17 Date Completed: 11/03/17	Depth to Water: 276.95 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.60 ft amsl	Top of Casing Elevation: 3516.68 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	5		CL	0' - 10' Silty Clay loam, pinkish gray (5YR 7/2), moderate plasticity		
	10		CL	10' - 25' Lean Clay, light reddish brown (5YR 6/4), moderate plasticity, slightly damp		
	25		CL	25' - 32' Silty Clay, yellowish red (5YR 5/6), plastic, dry		
	32		CL	32' - 45' Lean Clay, pinkish gray (5YR 7/2), poorly graded, dry		
	45		CL	45' - 50' Lean Clay, very pale brown(10YR 7/4), very minor silt, plastic, some caliche		
	50		CL	50' - 60' Lean Clay, very pale brown (10YR 7/4), weak plasticity, w/ minor silt, some caliche		
	60		CL	60' - 65' Clay, brownish yellow (10YR 6/6), weak plasticity, w/ caliche, dry		
	65		ML	65' - 80' Silt, very pale brown (10YR 8/3), w/ minor clay, slightly damp		
	80		CL	80' - 90' Silty Clay, very pale brown (10YR 7/4), plastic, w/ minor biotite, slightly damp		
	90		CL	90' - 95' Silty Clay to Clayey Silt, pinkish gray (5YR 7/2), nonplastic, slightly damp		
	95		ML	95' - 100' Silt, very pale brown (10YR 8/3), w/ minor clay, dry to slightly damp		

PTX06-ISB113

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Dickerson Texas Well Report No.: 466083	Northing: 3750836.66 Easting: 647823.09
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 287 ft bgs TD Well: 286 ft bgs
Dates Drilled: 11/01-02/17 Date Completed: 11/03/17	Depth to Water: 276.95 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.60 ft amsl	Top of Casing Elevation: 3516.68 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	105		ML	100' - 120' Clayey Silt, very pale brown (10YR 7/4), slightly damp		
	110					
	115		SP	120' - 130' Sand, pinkish grey (5YR 7/2), very fine grain, poorly graded, eolian, friable, dry		
	120					
	125		SP	130' - 155' Sand, very pale brown (10YR 8/3), very fine grain, poorly graded, silty, eolian, friable		
	130					
	135					
	140		SP	155' - 160' Silty Sand, very pale brown (10YR 8/3), very fine grain, poorly graded, friable, dry		
	145					
	150		SP	160' - 190' Silty Sand, very pale brown (10YR 7/4), very fine grain, poorly graded, eolian, dry		
	155					
	160					
	165		ML	190' - 200' Silt, very pale brown (10YR 7/4), w/ minor clay, nonplastic, dry		
	170					
	175					
	180					
	185		ML			
	190					
	195		ML			

PTX06-ISB113

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Dickerson Texas Well Report No.: 466083	Northing: 3750836.66 Easting: 647823.09
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 287 ft bgs TD Well: 286 ft bgs
Dates Drilled: 11/01-02/17 Date Completed: 11/03/17	Depth to Water: 276.95 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.60 ft amsl	Top of Casing Elevation: 3516.68 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	205		SP	200' - 215' Sand, very pale brown (10YR 8/3), very fine grain, poorly graded, w/ very minor pea gravel in thin beds, dry		
	210					
	215		SW	215' - 220' Gravelly Sand, very pale brown (10YR 8/3), fine to coarse grain, w/ some fine gravel, well graded, dry		
	220		SW	220' - 225' Gravelly Sand, very pale brown (10YR 8/3), fine to coarse grain, w/ some gravel, well graded, dry		
	225		SW	225' - 230' Gravelly Sand, very pale brown (10YR 7/4), fine to medium grain, well graded, slightly damp		
	230		SW	230' - 235' Gravelly Sand, brownish yellow (10YR 6/6), fine to medium sand w/ some fine to medium gravel, well graded, damp		
	235		GW	235' - 243' Sandy Gravel, very pale brown (10YR 8/3), fine to coarse gravel w/ fine to coarse sand, well graded, dry		
	240					
	245		SW	243' - 247' Sand, light brownish gray (10YR 6/2), fine to very coarse grain, well graded, dry		
	250		SP	247' - 255' Sand, very pale brown (10YR 7/4), fine grain, poorly graded, w/ distinctive thin beds of clay, dry		
	255		SW	255' - 260' Gravelly Sand, brownish yellow (10YR 6/6), very fine to medium grain, w/ interbedded gravel, well graded, dry		
	260			260' - 280' Sand, brownish yellow (10YR 6/6), fine grain, poorly graded, w/ very minor interbedded lean clay, damp, w/ dampness increasing downward		
	265					
	270		SP			
	275					
	280		SP	280' - 285' Clayey Sand, brownish yellow (10YR 6/6), fine grain, poorly graded, wet		
	285		ML	285' - 287' FGZ Silt, very pale brown (10YR 7/4), firm		
	290			Borehole Total Depth 287' bgs		
	295					

PTX06-ISB113
Triaxial Permeability
ASTM D5084
8.0E-07 cm/sec

PTX06-ISB112

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 467046	Northing: 3750810.07 Easting: 647753.08
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 284 ft bgs TD Well: 283 ft bgs
Dates Drilled: 12/12/17 Date Completed: 12/13/17	Depth to Water: 275.50 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.57 ft amsl	Top of Casing Elevation: 3516.60 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number	
	5		CL	0' - 5' Lean Clay, dark reddish brown (5YR 3/2), medium to high plasticity, cohesive, moist			
	10		CL	5' - 30' Lean clay, reddish brown (5YR 5/4), <15% sand and silt, medium plasticity, cohesive, moist			
	15						
	20						
	25						
	30		SM	30' - 65' Silty Sand to Sand, red (2.5YR 5/6), fine grain sub-rounded sand, with >15% non-plastic fines, medium dense, moist			
	35						
	40						
	45				@ 45' caliche nodules to 1.5-cm and decreasing silt		
	50				@ 50' mostly poorly graded fine grain sand with 2 to 5-mm caliche nodules, becoming loose		
	55						
	60						
	65		SP	65' - 75' Sand, pink to light reddish brown (5YR 7/4 - 6/4), fine grain, poorly graded, rounded, <10% fines, loose to medium dense, dry			
	70						
	75		CL	75' - 85' Lean Clay with sand, reddish brown (5YR 5/4), plastic, cohesive, stiff, dry			
	80						
	85		ML	85' - 105' Silt, pink (5YR 7/4 - 8/4), caliche silt with <10% very fine sand, stiff to hard			
	90				@ 85' - 90' caliche nodules to 2-cm		
	95						

PTX06-ISB112

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 467046	Northing: 3750810.07 Easting: 647753.08
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 284 ft bgs TD Well: 283 ft bgs
Dates Drilled: 12/12/17 Date Completed: 12/13/17	Depth to Water: 275.50 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.57 ft amsl	Top of Casing Elevation: 3516.60 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	105		ML			
	110		SM	105' - 120' Silty Sand, reddish yellow (7.5YR 6/6), very fine grain with >15% fines, loose, dry		
	115					
	120		SP	120' - 130' Sand, light brown (7.5YR 6/4), poorly graded, medium dense, with hard cemented sanstone nodules, dry		
	125					
	130		SP	130' - 140' Sand, pink (7.5YR 7/4), very fine to fine grain, poorly graded, loose, dry		
	135					
	140		SP	140' - 155' Sand, light brown (7.5YR 6/4), very fine to fine grain, poorly graded, medium dense, dry		
	145					
	150					
	155		ML	155' - 160' Silt, pink (7.5YR 7/3), medium stiff, trace sand, dry		
	160					
	165		SP	160' - 185' Sand, light brown (7.5YR 6/4), fine grain, poorly graded, well rounded quartz, loose, dry		
	170					
	175					
	180					
	185		SM	185' - 200' Silty Sand, light brown (7.5YR 6/4), very fine grain sand, >15% silt, medium dense, dry		
	190					
	195					

PTX06-ISB112

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 467046	Northing: 3750810.07 Easting: 647753.08
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 284 ft bgs TD Well: 283 ft bgs
Dates Drilled: 12/12/17 Date Completed: 12/13/17	Depth to Water: 275.50 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.57 ft amsl	Top of Casing Elevation: 3516.60 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	205	[Dotted pattern]	SW	200' - 225' Sand, light yellowish brown (10YR 6/4), well graded		
	215			@ 205' - 215' with medium gravel		
	230	[Dotted pattern]	SP	225' - 235' Sand, brown (7.5YR 5/4), fine grain, poorly graded, rounded, medium dense, dry		
	240	[Gravel pattern]	GW	235' - 245' Well graded Gravel with sand, brown to dark grayish brown (10YR 5/3 - 4/2), small to large rounded, oblong, and flattened gravel, with fine to coarse sand, dense, dry		
	250	[Dotted pattern]	SW	245' - 260' Sand, yellowish brown (10YR 5/6), graded, with small gravel 255' - 260', medium dense, moist to dry with depth		
	265	[Dotted pattern]	SW	260' -270' Sand, light yellowish brown (10YR 6/4), well graded sub-rounded to rounded quartz sand, some pea gravel, dense, dry		
	275	[Dotted pattern]	SW	270' -282' Sand, pale brown (10YR 6/3), fine to coarse grain well graded sand, <10% small gravel, dense, moist to saturated at 275'		
	285	[Horizontal lines]	ML	282' - 284' FGZ sandy Siltstone, light reddish brown (5YR 6/4), fine grain sand, hard, dry		
	285			Borehole Total Depth 284' bgs		

PTX06-ISB112
Triaxial Permeability
ASTM D5084
1.7E-07 cm/sec

PTX06-ISB111

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: J. Ford Texas Well Report No.: 467047	Northing: 3750783.88 Easting: 647682.57
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 284 ft bgs TD Well: 281 ft bgs
Dates Drilled: 12/14/17 Date Completed: 12/15/17	Depth to Water: 276.27 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.63 ft amsl	Top of Casing Elevation: 3516.75 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	0		ML	0' - 4' Clayey Silt Topsoil, brown (7.5YR 5/3), damp		
	5	CL		4' - 37' Silty Clay, light reddish brown to reddish brown (5YR 6/3 - 4/3), very stiff, caliche nodules to <6-mm, very moist to 35'		
	10					
	15					
	20					
	25					
	30					
	35					
	40		ML	37' - 48' Clayey Silt, pink (5YR 7/3), hard, damp, caliche nodules to 12-mm, local manganese oxide stringers, hard caliche lenses at 37' to 39' and 44' - 46'		
	45					
	50		SM	48' - 69' Silty Sand with clay and caliche lenses, red (2.5YR 5/6), dense, damp, pinkish white caliche with nodules to 2.5-cm @ 52' - 54'		
	55					
	60					
	65					
	70		SP-SM	69' - 80' Sand to Silty Sand, reddish yellow (5YR 6/6), fine grain, locally silty sand, some caliche nodules, becoming loose with depth, damp to moist		
	75					
	80		SM	80' - 93' Silty Sand, reddish brown (5YR 4/3 - 5/3), very fine to fine grain, poorly graded, moderately dense, caliche increases @ 90' with color change to light reddish brown (5YR 6/4), damp to moist		
	85					
	90					
	95		SLT-STN	93' - 103' Caliche Caprock, pink to pinkish white (5YR 7/3 - 8/2), very dense, dry		

PTX06-ISB111

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: J. Ford Texas Well Report No.: 467047	Northing: 3750783.88 Easting: 647682.57
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 284 ft bgs TD Well: 281 ft bgs
Dates Drilled: 12/14/17 Date Completed: 12/15/17	Depth to Water: 276.27 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.63 ft amsl	Top of Casing Elevation: 3516.75 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
		SLT-STN				
	105	[Lithology Pattern]		103' - 131' Silty Sand, reddish yellow (5YR 6/6), very fine to fine grain, moderately dense to loose with depth, damp		
	110					
	115		SM			
	120					
	125					
	130					
	135		SP	131' - 143' Sand with some silt, pink to reddish yellow (5YR 7/4 - 7/6), very fine to fine grain, poorly graded, loose, damp to dry		
	140					
	145		SP	143' - 158' Sand, pink to light brown (7.5YR 7/3 - 6/3), fine to medium grain, poorly graded, friable with local thin well indurated layers, dry		
	150					
	155					
	160		SM	158' - 168' Silty Sand, pink (7.5YR 7/4), very fine grain, poorly graded, friable, dry		
	165					
	170		SP	168' - 188' Sand, light brown to light yellowish brown (7.5YR 6/4 - 10YR 6/4), very fine to fine grain with some medium grain, poorly graded, mostly friable with thin well indurated sandstone beds, dry		
	175					
	180					
	185					
	190		SP-SM	188' - 196' Silty Sand to Sand, light brown (7.5YR 6/3), very fine to fine grain, poorly graded, friable, dry		
	195		SM	196' - 204' Silty Sand, reddish yellow (7.5YR 6/6), very fine		

PTX06-ISB111

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: J. Ford Texas Well Report No.: 467047	Northing: 3750783.88 Easting: 647682.57
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 284 ft bgs TD Well: 281 ft bgs
Dates Drilled: 12/14/17 Date Completed: 12/15/17	Depth to Water: 276.27 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.63 ft amsl	Top of Casing Elevation: 3516.75 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	205		SM	to fine grain, poorly graded, friable, damp		
	210		SP	204' - 213' Sand, very pale brown (10YR 7/3 - 7/4), fine to medium grain, poorly graded, trace coarse sand and pebbles, friable, dry		
	215		GP	213' - 227' Sandy Gravel, light brownish grey (10YR 6/2), sub-rounded to rounded gravel 2.5-cm to 4-cm with fine to coarse sand, moderately dense		
	225		SP	227' - 239' Sand, brownish yellow (10YR 6/6), fine to medium grain, poorly graded, friable, damp		
	235		SP			
	240		GP-GW	239' - 252' Sandy Gravel, light brownish grey (10YR 6/2), pebbly gravel to 2-cm clasts increasing to 6-cm with depth, rounded, with fine to medium sand, dense, damp		
	245		GP-GW			
	250		SP-SW	252' - 267' Sand, very pale brown (10YR 7/3), fine to medium grain, becoming coarse grain with depth, sub-angular to sub-rounded, friable, damp		
	255		SP-SW			
	260		SP-SW			
	265		SP-SW			
	270		GW	267' - 280' Sandy Gravel, light brownish grey (10YR 6/2), sub-rounded to rounded pebbly gravel clasts to 2.5-cm, fine to coarse sand, well graded, moist to wet at 276'		
	275		GW			
	280		SM	280' - 284' FGZ Silty Sand, light reddish brown (2.5YR 6/4), fine grain, with some caliche nodules to 6-mm, damp		
	285			Borehole Total Depth 284' bgs		
	290					
	295					
						PTX06-ISB111 Triaxial Permeability ASTM D5084 1.4E-07 cm/sec

PTX06-ISB110

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 466189	Northing: 3750757.59 Easting: 647612.02
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 284 ft bgs TD Well: 282 ft bgs
Dates Drilled: 11/30-12/01/17 Date Completed: 12/02/17	Depth to Water: 276.04 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.33 ft amsl	Top of Casing Elevation: 3516.41 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	5		CL	0' - 5' Lean Clay, dark reddish brown (5YR 3/3), stiff, moderate plasticity, cohesive, moist		
	10		ML-CL	5' - 35' Silt - Clay, yellowish red (5YR 5/6), stiff - very stiff, moderate plasticity, non-cohesive, trace fine sand and caliche, moist		
	15					
	20					
	25					
	30					
	35		ML	35' - 45' Silt, reddish yellow (5YR 6/6), stiff, non-plastic, with fine caliche granules, dry		
	40					
	45		SP	45' - 70' Sand, red (2.5YR 5/8), fine grain, poorly graded, rounded sand, with caliche granules to 1-cm, loose, dry		
	50					
	55					
	60					
	65					
	70		ML	70' - 75' Silt with sand, light reddish brown (5YR 6/4), medium stiff, with 15 - 25% fine sand, dry		
	75		CL	75' - 94' Clay, reddish brown (2.5YR 5/4), moderate plasticity, cohesive, dense, trace caliche, some fine sand, dry		
	80					
	85					
	90					
	95		ML	94' - 105' caliche Silt, pink (5YR 7/4), < 10% very fine sand, medium stiff, dry		

PTX06-ISB110

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 466189	Northing: 3750757.59 Easting: 647612.02
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 284 ft bgs TD Well: 282 ft bgs
Dates Drilled: 11/30-12/01/17 Date Completed: 12/02/17	Depth to Water: 276.04 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.33 ft amsl	Top of Casing Elevation: 3516.41 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	105		ML			
	110		SP	105' - 120' Sand, reddish brown (5YR 5/4), very fine to fine grain, poorly graded, loose, dry		
	120		SP	120' - 145' Sand, reddish yellow (7.5YR 6/6), very fine to fine grain, poorly graded, rounded, medium dense, with 2-cm to 3-cm cemented sandstone nodes, dry		
	145		SP	145' - 167' Sand, light brown (7.5YR 6/4), very fine to fine grain, poorly graded, rounded, loose to medium dense, with 3-mm to 2-cm cemented sandstone nodes		
	170		SP	167' - 180' Sand, yellow (7.5YR 7/6), very fine to fine grain, poorly graded, subrounded, loose, dry		
	180		SP	180' - 200' Sand, light brown (7.5YR 6/4), very fine grain, poorly graded, medium dense, dry, <10% sandstone nodes		

PTX06-ISB110

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 466189	Northing: 3750757.59 Easting: 647612.02
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 284 ft bgs TD Well: 282 ft bgs
Dates Drilled: 11/30-12/01/17 Date Completed: 12/02/17	Depth to Water: 276.04 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.33 ft amsl	Top of Casing Elevation: 3516.41 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	205	[Dotted pattern]	SW	200' - 215' Sand with gravel, brownish yellow (10YR 6/6), well graded, subrounded, <15% small gravel, medium dense, dry		
	210					
	215	[Dotted pattern]	SW	215' - 225' Sand, very pale brown (10YR 7/4), very fine to fine grain with some medium to coarse grain, <10% small gravel 220' - 225', medium dense to dense at 220', dry		
	220					
	225	[Dotted pattern]	SP	225' - 235' Sand, light yellowish brown to brownish yellow (10YR 6/4 - 6/6), very fine to fine grain, poorly graded, rounded quartz, dense, dry		
	230					
	235	[Dotted pattern]	SW	235' - 240' Sand, light yellowish brown (10YR 6/4), very fine to medium grain, some coarse grain, <10% small sub-rounded gravel, some hard sandstone nodes to 2-cm		
	240					
	240	[Gravel pattern]	GW	240' - 245' Gravel, yellowish brown matrix (10YR 5/4), small to large, sub-angular to rounded, very dense, dry		
	245	[Dotted pattern]	SW	245' - 250' Sand, yellowish brown (10YR 5/6), very fine to medium grain, well graded, trace clay, medium dense, moist		
	250					
	250	[Dotted pattern]	SW	250' - 255' Sand, very pale brown (10YR 7/3), well graded clean quartz, medium dense, dry		
	255					
	255	[Dotted pattern]	SW	255' - 260' Sand with pea gravel, yellowish brown (10YR 5/4), well graded, dense, dry		
	260					
	260	[Dotted pattern]	SW	260' - 270' Sand, yellowish brown (10YR 5/6), well graded, medium dense, moist		
	265					
	270	[Dotted pattern]	SW	270' - 281' Sand with Gravel, dark yellowish brown (10YR 4/6), fine to very coarse grain, well graded, >15% small gravel, medium dense, saturated @ 277'		
	275					
	280	[Horizontal lines]	ML	281' - 284' FGZ Siltstone, reddish brown (5YR 5/4), >15% fine sand, very stiff to hard, with caliche nodules, cohesive, dry		
	285					
	290			Borehole Total Depth 284' bgs		
	295					

PTX06-ISB110
Triaxial Permeability
ASTM D5084
3.7E-07 cm/sec

PTX06-ISB109

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 466180	Northing: 3750731.23 Easting: 647541.96
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 283 ft bgs TD Well: 282 ft bgs
Dates Drilled: 12/03/17 Date Completed: 12/04/17	Depth to Water: 275.54 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.18 ft amsl	Top of Casing Elevation: 3516.25 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	5		CL	0' - 5' Lean Clay, dark reddish brown (5YR 3/4), very stiff, moderate plasticity, cohesive, moist		
	10		CL	5' - 35' Silty Clay, reddish brown (5YR 5/4), stiff, low plasticity, trace fine sand, some caliche @ 15' - 25', dry to moist		
	35		ML	35' - 45' Sandy Silt, reddish yellow (5YR 6/6), silt with >30% very fine to fine grain sand, medium stiff, non-plastic, dry		
	45		SP	45' - 75' Sand, red (2.5YR 5/6), fine grain, poorly graded, subrounded to rounded, with <10% caliche nodules to 2.5-cm, medium dense, dry		
	70			@ 70' - 75' increasing caliche		
	75		SP	75' - 80' Sand, light reddish brown (5YR 6/4), very fine to fine grain, poorly graded, loose, dry		
	80		SP	80' - 95' Sand, reddish brown (5YR 5/4), very fine to fine grain, poorly graded, some clay @ 85' - 90', loose to medium dense, dry		
	95		SM	95' - 100' Silty Sand, pink (5YR 7/3 - 7/4), moderately cemented, loose to medium dense, sandstone nodes, dry		

PTX06-ISB109

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 466180	Northing: 3750731.23 Easting: 647541.96
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 283 ft bgs TD Well: 282 ft bgs
Dates Drilled: 12/03/17 Date Completed: 12/04/17	Depth to Water: 275.54 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.18 ft amsl	Top of Casing Elevation: 3516.25 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	105			100' - 140' Sand, reddish brown (5YR 5/4), very fine to fine grain, poorly graded, loose to medium dense, dry		
	110					
	115					
	120		SP			
	125					
	130					
	135					
	140			140' - 150' Sand, reddish yellow (5YR 6/6), predominantly very fine grain, poorly graded, loose, dry		
	145		SP			
	150			150' - 160' Sand, pink (7.5YR 7/4), very fine to fine grain, poorly graded, loose, dry		
	155		SP			
	160			160' - 170' Sand, light brown to pink (7.5YR 6/4 - 7/4), dense, cemented sandstone nodes, dry		
	165		SP			
	170			170' - 205' Sand, light brown (7.5YR 6/4), very fine to fine grain, poorly graded, medium dense to dense, dry		
	175					
	180					
	185		SP			
	190					
	195					

PTX06-ISB109

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 466180	Northing: 3750731.23 Easting: 647541.96
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 283 ft bgs TD Well: 282 ft bgs
Dates Drilled: 12/03/17 Date Completed: 12/04/17	Depth to Water: 275.54 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.18 ft amsl	Top of Casing Elevation: 3516.25 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	205		SP			
	210		SC	205' - 210' Clayey Sand, yellowish brown (7.5YR 5/6), fine grain, poorly graded, with >15% clay, plastic fines, dense, moist		
	215		SW	210' - 220' Sand, light yellowish brown (10YR 6/4), well graded quartz sand with cemented nodes, medium dense, dry		
	220		SW	220' - 225' Sand, brownish yellow (10YR 6/6), well graded cemented sand with small flattened gravel, medium dense, dry		
	225		SM	225' - 235, Silty Sand, yellowish brown (10YR 5/6), fine grain, poorly graded, some gravel, medium dense, moist		
	235		GP	235' - 245' Gravel with sand, yellowish brown (10YR 5/4), poorly graded subrounded to rounded small gravel, with >15% well graded sand, dense to very dense, dry		
	240		SW	245' - 250' Sand, white (10YR 8/2), well graded, cemented, dense, dry		
	245		SW	250' - 281' Sand with gravel, yellowish brown (10YR 5/6), well graded sand with small gravel throughout, medium dense, moist @ 265', saturated @ 277'		
	250		SW	@ 250' - 265' 10% - 15% gravel		
	255		SW	@ 275' - 280' some clay and gravel		
	260		ML	281' - 283' FGZ Siltstone, reddish brown (5YR 5/4), with fine grain sand and caliche granules, hard, dry		
	265			Borehole Total Depth 283' bgs		
	270					
	275					
	280					
	285					
	290					
	295					

PTX06-ISB109
Triaxial Permeability
ASTM D5084
4.8E-08 cm/sec

PTX06-ISB108

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: J. Ford Texas Well Report No.: 467045	Northing: 3750705.36 Easting: 647471.65
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 283 ft bgs TD Well: 282 ft bgs
Dates Drilled: 12/12/17 Date Completed: 12/13/17	Depth to Water: 275.33 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.20 ft amsl	Top of Casing Elevation: 3516.31 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	0		ML	0' - 4' Clayey Silt, light brown (7.5YR 6/3), hard, dry		
	5		CL	4' - 24' Silty Clay, light reddish brown (5YR 6/4), with caliche nodules and stringers, hard, damp to dry		
	10					
	15					
	20					
	25		ML	24' - 38' Clayey Silt, reddish yellow (5YR 6/6), with small (<6-mm) caliche nodules, damp		
	30					
	35					
	40		ML	38' - 44' Caliche Silt with sand, pinkish white (5YR 8/2), increasing hard caliche lenses with cuttings to 4-cm, some fine to medium sand, damp		
	45					
	50		ML	44' - 57' Silt, red (2.5YR 5/6), with fine sand & clay, hard, damp to moist		
	55					
	60					
	65		SM	57' - 83' Silty Sand with clay, reddish yellow to yellowish red (5YR 6/6 - 5/6), trace caliche nodules to 6-mm, dense, damp		
	70					
	75					
	80					
	85		ML	83' - 87' Caliche Silt, pinkish white (5YR 8/2), numerous caliche lenses, hard, dry		
	90		SM-ML	87' - 95' Silty Sand to Sandy Silt, reddish brown (5YR 5/4), dense, damp		
	95		SLT-STN	95' - 106' Caliche Caprock, pinkish white (5YR 8/2), caliche nodules to 4-cm, very dense, dry		






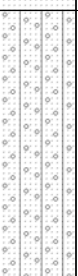

PTX06-ISB108

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: J. Ford Texas Well Report No.: 467045	Northing: 3750705.36 Easting: 647471.65
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 283 ft bgs TD Well: 282 ft bgs
Dates Drilled: 12/12/17 Date Completed: 12/13/17	Depth to Water: 275.33 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.20 ft amsl	Top of Casing Elevation: 3516.31 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	105		SLT-STN			
	110		SM	106' - 116' Silty Sand, light reddish brown (5YR 6/4), fine grain, dry to damp		
	120		SM	116' - 124' Silty Sand, reddish yellow (5YR 7/6 - 6/6), fine grain, dry to damp		
	130		SM-ML	124' - 131' Silty Sand to Sandy Silt, light reddish brown (5YR 6/4), fine to medium grain, subrounded to rounded, dense, damp		
	145		SP	131' - 159' Sand, pink to light brown (7.5YR 7/4 - 6/4), fine to medium grain, poorly graded, friable (loose) to medium dense, prevalent sandstone lenses, dry		
	170		SM	159' - 180' Silty Sand, pink (5YR 7/4), fine grain with sandstone lenses, loose to dense on lenses, damp		
	195		SP	180' - 204' Sand, pink (7.5YR 7/4), fine to medium grain, poorly graded, subrounded to rounded, loose, dry @ 190' - 200' silty sand lenses		

PTX06-ISB108

Pantex BOA 70 Release 5

Southeast ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: J. Ford Texas Well Report No.: 467045	Northing: 3750705.36 Easting: 647471.65
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 283 ft bgs TD Well: 282 ft bgs
Dates Drilled: 12/12/17 Date Completed: 12/13/17	Depth to Water: 275.33 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: ISB Injection Well, 4" Stainless Steel
Ground Elevation: 3514.20 ft amsl	Top of Casing Elevation: 3516.31 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	205		SP			
	210		SP	204' - 212' Sand, light yellowish brown (10YR 6/4), fine to medium grain, poorly graded, subrounded, with interbedded dense sandstone layers, damp		
	215			212' - 234' Sand with gravel, very pale brown (10YR 7/4), fine to medium grain with some coarse grain, flattened - rounded gravel clasts to 2.5-cm		
	220		SP			
	225					
	230					
	235					
	240		SM-ML	234' - 244' Silty Sand, light yellowish brown to brown (10YR 6/4 - 5/3), fine to medium grain, subangular to rounded, dense, damp to moist		
	245					
	250		GW	244' - 259' Sandy Gravel, light brownish gray (10YR 6/2), gravel to 4-cm, fine to coarse sand, sub-angular to sub-rounded gravel more rounded with depth, very dense, damp		
	255					
	260					
	265					
	270		SW-GW	259' - 281' Sand with Gravel to Gravel with Sand, brown (10YR 5/3), fine to coarse sand and small (6-mm) to large gravel (up to 5-cm), well graded, angular to rounded, dense, moist		
	275					
	280					
	285		ML	281' - 283' FGZ Siltstone, pink to light reddish brown (5YR 7/3 - 6/3), fine grain sand, small caliche nodules, damp to dry		
	290			Borehole Total Depth 283' bgs		
	295					

PTX06-ISB108
Triaxial Permeability
ASTM D5084
7.8E-08 cm/sec

PTX06-1195

Pantex BOA 70 Release 5

North of SE ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 469831	Northing: 3751968.74 Easting: 649096.79
Drilling Contractor: Cascade Drilling Lic. #4885 W. Blutworth	TD Borehole: 292 ft bgs TD Well: 290 ft bgs
Dates Drilled: 01/29/18 Date Completed: 01/30/18	Depth to Water: 281.97 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: Monitoring Well, 4" Sch 80 PVC
Ground Elevation: 3516.83 ft amsl	Top of Casing Elevation: 3518.88 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	0					
	5		CL	0' - 5' Lean Clay, dark reddish brown (5YR 5/4), medium plasticity, cohesive, stiff, moist		
	10		ML	5' - 15' Silt, reddish yellow (5YR 6/6), non-plastic, slightly cohesive, loose, dry		
	15					
	20		CL	15' - 20' Lean Clay, reddish brown (5YR 5/4), plastic, cohesive, stiff, trace fine sand and caliche, dry		
	25		ML	20' - 30' Silt, yellowish red (5YR 5/6), non-plastic, non-cohesive, loose, dry		
	30					
	35		SP	30' - 35' Sand, yellowish red to red (5YR 5/8 - 2.5YR 5/8), very fine grain, poorly graded, loose, dry		
	40		ML	35' - 40' Silt with sand, reddish brown (5YR 5/4), with >30% fine sand and caliche nodules to 3-cm, stiff to hard, dry		
	45					
	50		SP	40' - 62' Sand, reddish yellow (5YR 6/6), fine grain, poorly graded, medium dense, with caliche nodules throughout, dry		
	55					
	60					
	65		SM	62' - 75' Silty Sand, reddish brown (5YR 5/4), fine grain, poorly graded, with >15% silt, medium dense, dry		
	70					
	75		SP	75' - 85' Sand, yellowish red (5YR 5/6), very fine to fine grain, poorly graded, rounded, medium dense, dry		
	80					
	85		SM	85' - 95' Silty Sand, reddish yellow to pink (5YR 6/6 - 7/4), fine grain, poorly graded, with >15% silt, low plasticity, medium dense to dense, dry		
	90					
	95		SP	95' - 100' Sand, light brown (7.5YR 6/4), very fine to fine grain, poorly graded, loose, dry		

PTX06-1195

Pantex BOA 70 Release 5

North of SE ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 469831	Northing: 3751968.74 Easting: 649096.79
Drilling Contractor: Cascade Drilling Lic. #4885 W. Blutworth	TD Borehole: 292 ft bgs TD Well: 290 ft bgs
Dates Drilled: 01/29/18 Date Completed: 01/30/18	Depth to Water: 281.97 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: Monitoring Well, 4" Sch 80 PVC
Ground Elevation: 3516.83 ft amsl	Top of Casing Elevation: 3518.88 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	105		SP	100' - 105' Sand, reddish brown (5YR 5/4), fine grain, poorly graded, loose, dry		
	110		SP	105' - 120' Sand, light brown (7.5YR 6/4), fine grain, poorly graded, subrounded quartz sand, loose, dry		
	120		SP	120' - 135' Sand, light brown (7.5YR 6/4), fine grain, poorly graded, subrounded, loose, dry		
	135		SP	135' - 145' Sand, reddish yellow (7.5YR 6/6), fine grain, poorly graded, subrounded, loose, dry		
	145		SW	145' - 155' Sand, pink (7.5YR 7/4), very fine to coarse grain, well graded, subangular to subrounded, loose to medium dense, dry		
	155		SW	155' - 160' Sand with gravel, light brown (7.5YR 6/4), fine to coarse grain, well graded, subangular, with 30% - 40% cemented sand nodules and pea gravel, very dense, dry		
	160			160' - 215' Sand, light brown to light yellowish brown (7.5YR 6/4 - 10YR 6/4), very fine to fine grain, poorly graded, rounded, loose to medium dense, with a well cemented zone @ 195' - 200'		
	170					
	175					
	180		SP			
	185					
	190					
	195					

PTX06-1195

Pantex BOA 70 Release 5

North of SE ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 469831	Northing: 3751968.74 Easting: 649096.79
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 292 ft bgs TD Well: 290 ft bgs
Dates Drilled: 01/29/18 Date Completed: 01/30/18	Depth to Water: 281.97 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: Monitoring Well, 4" Sch 80 PVC
Ground Elevation: 3516.83 ft amsl	Top of Casing Elevation: 3518.88 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	205		SP			
	210					
	215		SP	215' - 220' Sand, light yellowish brown (10YR 6/4), fine to medium grain, poorly graded, subrounded quartz, loose, dry		
	220					
	225		SW	220' - 230' Sand with gravel, pale brown to light yellowish brown (10YR 6/3 - 6/4), very fine to medium grain well graded sand with <15% small to medium gravel @ 220' - 225', dense, dry		
	230					
	235		SP	230' - 245' Sand, yellowish brown (10YR 5/6), very fine to fine grain quartz, poorly graded, loose to medium dense, damp		
	240					
	245					
	250		GW	245' - 255' Gravel with sand, yellowish brown (10YR 5/4), well graded small subrounded gravel to large broken gravel with >15% sand, very dense, dry		
	255					
	260		SW	255' - 260' Sand with gravel, yellowish brown (10YR 5/4), well graded, with >15% small rounded gravel, dense, dry		
	265		SP	260' - 265' Sand, yellowish brown (10YR 5/6), fine to medium grain, poorly graded, subrounded, medium dense, dry		
	270		SW	265' - 270' Sand, yellowish brown (10YR 5/6), very fine to coarse grain, well graded, subrounded, with minor small pea gravel with flattened clasts		
	275		SW	270' - 280' Sand, yellowish brown (10YR 5/6), well graded sand with trace to 10% flattened pea gravel, moist @ 275'		
	280					
	285		SW	280' - 289' Sand with gravel, yellowish brown to dark yellowish brown (10YR 5/6 - 4/6), well graded sand with 15 - 20% small pea gravel, some circular flattened clasts to 5-cm, trace clay and limonitic alteration, saturated @ 282'		
	290		ML	289' - 292' FGZ Silt with sand, light reddish brown (5YR 6/3), silt with >30% very fine to fine sand, some caliche granules, very stiff to hard, damp to dry with depth		
	295			Borehole Total Depth 292' bgs		

PTX06-1195
Triaxial Permeability
ASTM D5084
2.3E-07 cm/sec

PTX06-1194

Pantex BOA 70 Release 5

Vance Property

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 469640	Northing: 3750477.77 Easting: 648355.41
Drilling Contractor: Cascade Drilling Lic #4885 W. Bludworth	TD Borehole: 282 ft bgs TD Well: 279 ft bgs
Dates Drilled: 01/26-27/18 Date Completed: 01/27/18	Depth to Water: 276.96 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: Monitoring Well, 4" Sch 80 PVC
Ground Elevation: 3512.68 ft amsl	Top of Casing Elevation: 3514.75 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	5		CL	0' - 10' Lean Clay, reddish brown (5YR 4/4), medium plasticity, cohesive, stiff, moist		
	10		ML	10' - 35' Silt, yellowish red (5YR 5/8), with <15% fine sand & minor clay to 15', stiff, dry		
	15					
	20					
	25		ML	35' - 45' Silt, pink (5YR 7/4), non-plastic, non-cohesive, stiff to very stiff, dry		
	30					
	35		SP	45' - 65' Sand, red (2.5YR 5/8), fine grain, poorly graded, medium dense, with 15% caliche nodules to 2-cm, moist @ 55' - 60'		
	40					
	45					
	50		ML	65' - 70' Caliche Silt (probable caprock), pink (5YR 7/4), caliche silt and caliche chunks to 3-cm with 30% fine sand, hard, dry		
	55					
	60		SP	70' - 80' Sand, reddish yellow (5YR 6/6), fine grain, poorly graded, medium dense with some well cemented nodules, dry		
	65					
	70		CL	80' - 90' Sandy Lean Clay, reddish brown (5YR 5/4), low plasticity, non-cohesive to cohesive, very stiff, with >30% fine sand, dry		
	75					
	80		ML	90' - 100' Caliche Silt (lower caprock), pinkish white (7.5YR 8/2), broken caliche to 5-cm from 90' to 95', transition to very fine to fine sand 95' to 100', hard, dry		
	85					
	90					
	95					

PTX06-1194

Pantex BOA 70 Release 5

Vance Property

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 469640	Northing: 3750477.77 Easting: 648355.41
Drilling Contractor: Cascade Drilling Lic #4885 W. Bludworth	TD Borehole: 282 ft bgs TD Well: 279 ft bgs
Dates Drilled: 01/26-27/18 Date Completed: 01/27/18	Depth to Water: 276.96 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: Monitoring Well, 4" Sch 80 PVC
Ground Elevation: 3512.68 ft amsl	Top of Casing Elevation: 3514.75 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	105			100' - 125' Sand, light reddish brown (5YR 6/4), very fine to fine grain, poorly graded, loose, dry		
	110		SP			
	115					
	120					
	125			125' - 150' Sand, light brown (7.5YR 6/4), fine grain, poorly graded, subangular to subrounded, loose with well cemented layer @ 140' - 145', dry		
	130		SP			
	135					
	140					
	145					
	150			150' - 160' Sandy Silt, pink (7.5YR 7/3), very stiff to hard, with >30% fine sand		
	155		ML			
	160			160' - 175' Sand, light brown (7.5YR 6/4), fine grain, poorly graded, loose, dry		
	165		SP			
	170					
	175			175' - 185' Sand, brownish yellow (10YR 6/6), fine grain, poorly graded, loose, dry		
	180		SP			
	185			185' - 195' Silty Sand, light brown (7.5YR 6/4), fine grain, poorly graded, with 10% silt, medium dense, dry		
	190		SM			
	195			195' - 225' Sand with gravel, light yellowish brown (10YR 6/4), well graded sand, 15% small to medium gravel		
			SW			

PTX06-1194

Pantex BOA 70 Release 5

Vance Property

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 469640	Northing: 3750477.77 Easting: 648355.41
Drilling Contractor: Cascade Drilling Lic #4885 W. Blutworth	TD Borehole: 282 ft bgs TD Well: 279 ft bgs
Dates Drilled: 01/26-27/18 Date Completed: 01/27/18	Depth to Water: 276.96 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: Monitoring Well, 4" Sch 80 PVC
Ground Elevation: 3512.68 ft amsl	Top of Casing Elevation: 3514.75 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number		
	205		SW	concentrated @ 200' - 205' & 210' - 220', dense to very dense				
	210							
	215							
	220							
	225							
	230				SP	225' - 230' Sand, dark yellowish brown (10YR 4/4), very fine to fine grain, poorly graded, dense, damp		
	235				SW	230' - 235' Sand, yellowish brown (10YR 5/6), fine to coarse grain, well graded, with <10% small rounded gravel, medium dense, dry		
	240				GW	235' - 245' Gravel with sand, light yellowish brown (5YR 6/4) sand matrix, well graded small to large gravel, rounded to broken angular clasts, very dense, dry		
	245				SW	245' - 255' Sand, light yellowish brown (10YR 6/4), well graded, medium dense, dry		
	250				SW			
	255		SW	255' - 260' Sand with Gravel, yellowish brown (10YR 5/6), well graded sand and gravel, >15% gravel, dense to very dense, moist				
	260		SW	260' - 278' Sand, light yellowish brown (10YR 6/4), well graded fine to coarse grain, subangular to rounded, trace pea gravel @ 275' - 278', moist to saturated at 276'				
	265		SW					
	270		SW					
	275		SW					
	280		ML	278' - 282' FGZ Sandy Silt, reddish brown (5YR 5/4), silt with >30% very fine to fine sand, some caliche, very stiff to hard, moist to dry with depth				
	285			Borehole Total Depth 282' bgs				
	290							
	295							

PTX06-1194
Triaxial permeability
ASTM D5084
6.1E-07 cm/sec

PTX06-1193

Pantex BOA 70 Release 5

Vance Property

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 469508	Northing: 3749346.75 Easting: 646719.13
Drilling Contractor: Cascade Drilling Lic.#4885 W. Blutworth	TD Borehole: 272 ft bgs TD Well: 268 ft bgs
Dates Drilled: 01/23-24/18 Date Completed: 01/24/18	Depth to Water: Dry
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: Monitoring Well, 4" Sch 80 PVC
Ground Elevation: 3508.28 ft amsl	Top of Casing Elevation: 3510.37 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	5		CL	0' - 5' Lean Clay, dark reddish brown (5YR 3/4), medium plasticity, cohesive, hard, moist		
	10		ML	5' - 20' Silt, reddish brown (5YR 5/4), medium plasticity, cohesive, hard, caliche stringers, manganese oxide stains, moist		
	20		CL	20' - 25' Sandy Lean Clay, reddish brown (5YR 5/4), >30% fine sand, very stiff, dry		
	30		ML	25' - 35' Silt with Sand, reddish yellow (5YR 6/6), >30% sand, medium stiff, dry		
	40		SM	35' - 60' Silty Sand, red to light red (2.5YR 5/6 - 6/6), fine grain with >15% silt, medium dense, with caliche nodules throughout, but increased caliche @ 55' - 60', dry		
	60		SLT-STN	60' - 70' Caliche Caprock, white (5YR 8/1), calcrete, with some very fine sand, hard, dry		
	75		SP	70' - 85' Sand, pink (5YR 7/4), very fine to fine grain, poorly graded, medium dense to loose, dry		
	90		SP	85' - 100' Sand, light reddish brown (5YR 6/4), very fine grain, poorly graded, loose, dry		

PTX06-1193

Pantex BOA 70 Release 5

Vance Property

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 469508	Northing: 3749346.75 Easting: 646719.13
Drilling Contractor: Cascade Drilling Lic.#4885 W. Bludworth	TD Borehole: 272 ft bgs TD Well: 268 ft bgs
Dates Drilled: 01/23-24/18 Date Completed: 01/24/18	Depth to Water: Dry
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: Monitoring Well, 4" Sch 80 PVC
Ground Elevation: 3508.28 ft amsl	Top of Casing Elevation: 3510.37 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	105			100' -120' Sand, pink (7.5YR 7/4), very fine to fine grain, poorly graded, loose, dry		
	110		SP			
	115					
	120			120' - 130' Silty Sand, yellowish red (5YR 5/6), fine grain, with >15% silt, poorly graded, loose, dry		
	125		SM			
	130			130' - 145' Sand, pink (7.5YR 7/3), fine grain quartz sand, poorly graded, loose, dry		
	135		SP			
	140					
	145			145' - 190' Sand, reddish yellow (7.5YR 6/6), fine grain, poorly graded, subrounded to rounded, loose, dry		
	150					
	155					
	160					
	165		SP			
	170					
	175					
	180					
	185					
	190			190' - 215' Sand, light yellowish brown (10YR 6/4), very fine to medium grain, well graded, angular to subangular quartz, some well cemented sandstone nodules to 5-cm, loose to medium dense, dry		
	195		SW			

PTX06-1193

Pantex BOA 70 Release 5

Vance Property

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 469508	Northing: 3749346.75 Easting: 646719.13
Drilling Contractor: Cascade Drilling Lic.#4885 W. Bludworth	TD Borehole: 272 ft bgs TD Well: 268 ft bgs
Dates Drilled: 01/23-24/18 Date Completed: 01/24/18	Depth to Water: Dry
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: Monitoring Well, 4" Sch 80 PVC
Ground Elevation: 3508.28 ft amsl	Top of Casing Elevation: 3510.37 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	205		SW			
	210					
	215		SW	215' - 225' Sand with gravel, yellowish brown (10YR 6/6), very fine to coarse grain, well graded, angular to subangular, with <15% small to medium gravel, medium dense, dry		
	220					
	225		SP	225' - 240' Sand, light yellowish brown (10YR 6/4), fine grain, poorly graded, with trace rounded medium gravel @ 240', loose, dry		
	230					
	235					
	240		SW	240' - 255' Sand with Gravel, yellowish brown (10YR 5/6), very fine to very coarse grain, well graded, angular to rounded, with >15% pea gravel, small gravel 245' - 250'		
	245					
	250					
	255		SW	255' - 267' Sand with Gravel, yellowish brown (10YR 5/8), fine to very coarse grain, well graded, with >15% flattened gravel clasts, moist		
	260					
	265					
	270		SM	267' - 272' FGZ, Silty Sand, reddish brown to light reddish brown (5YR 5/4 - 6/4), fine grain sand, rounded, with >15% silt, weak plasticity, non-cohesive, with some caliche nodules, damp to dry with depth Borehole Total Depth 272' bgs		
	275					
	280					
	285					
	290					
	295					

PTX06-1193
Triaxial Permeability
ASTM D5084
4.6E-05 cm/sec

PTX06-1192

Pantex BOA 70 Release 5

Vance Property

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 469487	Northing: 3749893.14 Easting: 649119.32
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 296 ft bgs TD Well: 296 ft bgs
Dates Drilled: 01/16-18/18 Date Completed: 01/19/18	Depth to Water: 279.03 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: Monitoring Well, 4" Sch 80 PVC
Ground Elevation: 3510.23 ft amsl	Top of Casing Elevation: 3512.32 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	5		CL	0' - 5' Lean clay, reddish brown (5YR 4/3), moderate plasticity, cohesive, medium stiff, dry		
	10		CL	5' - 15' Silty Clay, light reddish brown (5YR 6/4), moderate plasticity, cohesive, medium stiff, trace fine sand and caliche, dry		
	15		ML	15' - 20' Silt, reddish yellow (5YR 7/4), non-plastic, non-cohesive, trace to minor clay, medium stiff, dry		
	20		CL	20' - 30' Lean Clay, light reddish brown (5YR 6/4), low plasticity, cohesive, medium stiff, dry		
	25		CL	20' - 30' Lean Clay, light reddish brown (5YR 6/4), low plasticity, cohesive, medium stiff, dry		
	30		ML	30' - 40' Silt, yellowish red (5YR 5/6), trace very fine sand, some caliche, soft, dry		
	35		ML	30' - 40' Silt, yellowish red (5YR 5/6), trace very fine sand, some caliche, soft, dry		
	40		SP	40' - 70' Sand, red (2.5YR 5/8 - 6/8), very fine to fine grain, poorly graded, subrounded, medium dense, caliche nodules to 3-cm, dry to moist		
	45		SP	40' - 70' Sand, red (2.5YR 5/8 - 6/8), very fine to fine grain, poorly graded, subrounded, medium dense, caliche nodules to 3-cm, dry to moist		
	50		SP	40' - 70' Sand, red (2.5YR 5/8 - 6/8), very fine to fine grain, poorly graded, subrounded, medium dense, caliche nodules to 3-cm, dry to moist		
	55		SP	40' - 70' Sand, red (2.5YR 5/8 - 6/8), very fine to fine grain, poorly graded, subrounded, medium dense, caliche nodules to 3-cm, dry to moist		
	60		SP	40' - 70' Sand, red (2.5YR 5/8 - 6/8), very fine to fine grain, poorly graded, subrounded, medium dense, caliche nodules to 3-cm, dry to moist		
	65		SP	40' - 70' Sand, red (2.5YR 5/8 - 6/8), very fine to fine grain, poorly graded, subrounded, medium dense, caliche nodules to 3-cm, dry to moist		
	70		SM	70' - 80' Silty Sand, reddish yellow (5YR 6/8), very fine to fine grain with >15% silt, poorly graded, medium dense, with caliche nodules to 5-cm throughout, dry		
	75		SM	70' - 80' Silty Sand, reddish yellow (5YR 6/8), very fine to fine grain with >15% silt, poorly graded, medium dense, with caliche nodules to 5-cm throughout, dry		
	80		SP-SM	80' - 95' Sand with Silt, yellowish red (5YR 5/6), dense, with well cemented cuttings to 5-cm, dry		
	85		SP-SM	80' - 95' Sand with Silt, yellowish red (5YR 5/6), dense, with well cemented cuttings to 5-cm, dry		
	90		SP-SM	80' - 95' Sand with Silt, yellowish red (5YR 5/6), dense, with well cemented cuttings to 5-cm, dry		
	95		SP	95' - 100' Sand, yellowish red (5YR 5/6), very fine to fine grain, poorly graded, rounded, loose, dry		
	100		SP	95' - 100' Sand, yellowish red (5YR 5/6), very fine to fine grain, poorly graded, rounded, loose, dry		
	105		SP-SM	100' - 115' Sand with silt, light reddish brown (5YR 6/4), poorly graded, dense, dry		
	110		SP-SM	100' - 115' Sand with silt, light reddish brown (5YR 6/4), poorly graded, dense, dry		

PTX06-1192

Pantex BOA 70 Release 5

Vance Property

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 469487	Northing: 3749893.14 Easting: 649119.32
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 296 ft bgs TD Well: 296 ft bgs
Dates Drilled: 01/16-18/18 Date Completed: 01/19/18	Depth to Water: 279.03 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: Monitoring Well, 4" Sch 80 PVC
Ground Elevation: 3510.23 ft amsl	Top of Casing Elevation: 3512.32 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	120		SP	115' - 130' Sand, yellowish red (5YR 5/6), very fine to fine grain, poorly graded, rounded, loose, dry		
	130		SP	130' - 160' Sand, light brown (7.5YR 6/4), very fine to fine grain, poorly graded, subrounded to rounded, loose, dry		
	160		SM	160' - 180' Silty Sand, pink (7.5YR 7/4), very fine to fine grain with >15% silt, poorly graded, non-plastic, medium dense, with well cemented nodules to 2-cm, dry		
	180		SP	180' - 200' Sand, reddish yellow (7.5YR 6/6), very fine grain, poorly graded, medium dense, dry		
	200		sw	200' - 215' Sand, light yellowish brown (10YR 6/4), very fine to coarse grain, well graded, subrounded to rounded quartz, medium dense, dry		
	215		sw	215' - 235' Well graded Sand with Gravel, light yellowish brown (10YR 6/4), coarse sand with >15% fine to coarse gravel (gravel clasts to 5-cm), dense with well cemented sandstone clasts to 5-cm, dry		

PTX06-1192

Pantex BOA 70 Release 5

Vance Property

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 469487	Northing: 3749893.14 Easting: 649119.32
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 296 ft bgs TD Well: 296 ft bgs
Dates Drilled: 01/16-18/18 Date Completed: 01/19/18	Depth to Water: 279.03 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: Monitoring Well, 4" Sch 80 PVC
Ground Elevation: 3510.23 ft amsl	Top of Casing Elevation: 3512.32 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	235		SW			
	240		SP	235' - 240' Sand, strong brown (7.5YR 5/6), fine grain, poorly graded, rounded, medium dense, dry		
	245		GW	240' - 245' Well graded Gravel with Sand, light yellowish brown (10YR 6/4), small to large (7.5-cm) gravel, with well graded sand, dense to very dense, dry		
	250		SW	245' - 255' Sand, yellowish brown (10YR 5/4), well graded, medium dense, dry		
	260		SW	255' - 280' Well graded Sand with Gravel, yellowish brown (10YR 5/4 - 5/6), fine to coarse sand with >15% gravel overall, subrounded to rounded sand, with 30% - 40% subrounded to rounded gravel @ 275' - 280', dense to very dense, moist @ 270', saturated @ 280'		
	280		SW	280' - 292' Sand, yellowish brown (10YR 5/4), very fine to coarse grain, well graded, with minor rounded pea gravel to 285' that increases to >15% with depth, medium dense, saturated		
	295		SM	292' - 296' Silty Sand, reddish brown to light reddish brown (5YR 5/4 - 5/6), medium to very fine grain (decreases downward), >15% silt, cohesive, caliche nodules to 1-cm, dense, moist to dry with depth		
	300			Borehole Total Depth 296' bgs		
	305					
	310					
	315					
	320					
	325					
	330					
	335					
	340					

PTX06-1192
Triaxial Permeability
ASTM D5084
9.0E-06 cm/sec

PTX06-1191

Pantex BOA 70 Release 5

Vance Property

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 469506	Northing: 3750720.88 Easting: 648996.85
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 295 ft bgs TD Well: 292 ft bgs
Dates Drilled: 01/20-21/18 Date Completed: 01/22/18	Depth to Water: 279.17 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: Monitoring Well, 4" Sch 80 PVC
Ground Elevation: 3513.02 ft amsl	Top of Casing Elevation: 3515.08 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number	
	5		CL	0' - 5' Lean Clay, reddish brown (5YR 4/3), silty, trace very fine sand, moderate plasticity, cohesive, medium stiff, dry			
	10		ML	5' - 27' Silt, yellowish red (5YR 5/6), medium plasticity, cohesive, medium stiff, trace fine sand, some 2-4mm caliche nodules, moist			
	25			25' - 27' very stiff, increasing caliche			
	30		SM	27' - 35' Silty Sand, yellowish red (5YR 4/6), very fine to fine grain, poorly graded, with >15% silt, non-plastic, medium dense, dry			
	40		ML	35' - 45' Sandy Silt, light reddish brown (5YR 6/4), 15 - 20% very fine sand, low plasticity, some caliche nodules to 5-mm, medium stiff, dry			
	50		SP	45' - 72' Sand, red (2.5YR 4/8), fine grain with some very fine grain, poorly graded, rounded, loose, with 5% caliche nodules to 1-cm, dry			
	75			ML	72' - 83' Caliche Silt, pink (5YR 7/4), probable caliche caprock calcrete with caliche clasts to 3-cm, 15% very fine sand, stiff to hard, dry		
	85			SP-SM	83' - 92' Silty Sand, yellowish red (5YR 5/6), fine grain, poorly graded, loose, dry		
	95		SP-SM	92' - 105' Sand & Silt, pink (5YR 7/4), fine grain, poorly graded, medium dense, dry			
	100						

PTX06-1191

Pantex BOA 70 Release 5

Vance Property

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 469506	Northing: 3750720.88 Easting: 648996.85
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 295 ft bgs TD Well: 292 ft bgs
Dates Drilled: 01/20-21/18 Date Completed: 01/22/18	Depth to Water: 279.17 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: Monitoring Well, 4" Sch 80 PVC
Ground Elevation: 3513.02 ft amsl	Top of Casing Elevation: 3515.08 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	110		SM	105' - 135' Silty Sand, light reddish brown (5YR 6/4), very fine to fine grain with >15% non-plastic silt, poorly graded, loose with some cemented sandstone nodules 105' -110', dry		
	120			135' - 160' Sand, light brown (7.5YR 6/4), fine grain, poorly graded, sub-rounded to rounded, loose quartz sand		
	135		SP	160' - 180' Sand, pink (7.5YR 7/4), very fine to fine grain, poorly graded, loose to medium dense, dry		
	140			180' - 195' Sand, light brown (7.5YR 6/4), fine grain, poorly graded, subrounded to rounded, medium dense, dry		
	145		SP	195' - 205' Sand with Silt, strong brown (7.5YR 5/6), very fine to fine grain with 10% silt, poorly graded, rounded, medium dense, dry		
	150	SP-SM				

PTX06-1191

Pantex BOA 70 Release 5

Vance Property

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 469506	Northing: 3750720.88 Easting: 648996.85
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 295 ft bgs TD Well: 292 ft bgs
Dates Drilled: 01/20-21/18 Date Completed: 01/22/18	Depth to Water: 279.17 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: Monitoring Well, 4" Sch 80 PVC
Ground Elevation: 3513.02 ft amsl	Top of Casing Elevation: 3515.08 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	210			205' - 235' Sand, light yellowish brown (10YR 6/4), fine grain, poorly graded, medium dense to dense in well cemented intervals from 215' to 220'		
	215					
	220		SP			
	225					
	230					
	235					
	240		SM	235' - 245' Silty Sand, strong brown (7.5YR 5/6), very fine to fine grain with 10% silt, poorly graded, subrounded to rounded, medium dense, with fine gravel @ 240' - 245', moist		
	245					
	250		GW	245' - 260' Gravel, pale brown (10YR 6/3), fine to coarse, well graded, subrounded, with some well graded subangular sand, very dense, dry		
	255					
	260		SW	260' - 265' Sand, pale brown (10YR 6/3), fine to coarse grain, well graded, subrounded, medium dense, quartz sand		
	265		SW	265' - 270' Sand with Gravel, light yellowish brown (10YR 6/4), fine to coarse well graded sand with >15% fine gravel with flattened clasts, dense, dry		
	270		SW	270' - 275' Sand, light yellowish brown (10YR 6/4), well graded quartz sand, medium dense, dry		
	275		SW	275' - 291' Well graded Sand with Gravel, yellowish brown (10YR 5/6), fine to very coarse grain with >15% fine gravel, flattened clasts, medium dense, dry to moist, saturated @ 279'		
	280					
	285		SW			
	290					
	295		SM	291' - 295' FGZ Silty Sand, pink to light reddish brown (5YR 7/4 - 6/4), very fine to fine grain poorly graded sand with >15% silt, hard caliche nodes to 5-mm, medium stiff to hard with depth, moist to dry with depth		
	300			Borehole Total Depth 295' bgs		

PTX06-1191
Triaxial Permeability
ASTM D5084
2.4E-06 cm/sec

PTX06-1190

Pantex BOA 70 Release 5

North of SE ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 464293	Northing: 3751439.44 Easting: 648281.22
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 287 ft bgs TD Well: 287 ft bgs
Dates Drilled: 10/19/17 Date Completed: 10/20/17	Depth to Water: 279.68 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: Monitoring Well, 4" Sch 80 PVC
Ground Elevation: 3516.35 ft amsl	Top of Casing Elevation: 3518.48 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	5		CL	0' - 5' Lean Clay, reddish brown (5YR 4/4), medium plasticity, cohesive, moist		
	10		ML	5' - 20' Silt with sand, reddish brown (5YR 5/4), 15% very fine sand with 2-mm caliche nodules, medium plastic, cohesive, damp		
	20		ML	20' - 30' Silt, light reddish brown (5YR 6/4), some caliche, low plasticity, noncohesive, dry		
	30		ML	30' - 45' Silt, yellowish red (5YR 5/6) to reddish yellow (5YR 6/6), with increasing caliche, low plasticity, noncohesive, dry, caliche granules to 1-cm		
	45		ML	45' - 63' Silt, light reddish brown (5YR 6/4) to pink (5YR 7/4), dry, noncohesive, caliche to 30-40% in alternating layers up to 2' thick, caliche nodules up to 3-cm		
	65		CL	63' - 70' Lean Clay, pink (5YR 7/3) to yellowish red (5YR 5/6) with interbedded silt, moist, low plasticity, cohesive		
	70		SP	70' - 75' Sand, yellowish red (7.5YR 6/4), fine grain, rounded, medium dense, damp		
	75		CL	75' - 85' Lean Clay with silt, reddish brown (5YR 5/4), dry		
	85		ML	85' - 100' Silt with some sand, light reddish brown to reddish brown (5YR 6/4 - 5/4), dry		

PTX06-1190

Pantex BOA 70 Release 5

North of SE ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 464293	Northing: 3751439.44 Easting: 648281.22
Drilling Contractor: Cascade Drilling Lic. #4885 W. Blutworth	TD Borehole: 287 ft bgs TD Well: 287 ft bgs
Dates Drilled: 10/19/17 Date Completed: 10/20/17	Depth to Water: 279.68 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: Monitoring Well, 4" Sch 80 PVC
Ground Elevation: 3516.35 ft amsl	Top of Casing Elevation: 3518.48 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number
	105			100' - 135' Sand, light brown (7.5YR 6/4), fine grain with some medium grain, loose, dry, subrounded to rounded, quartz sand, with 10% gravel 130'-135'		
	110					
	115		SP			
	120					
	125					
	130					
	135					
	140		SP	135' - 140' Sand, reddish yellow (7.5YR 6/6), fine grain to very fine grain, subrounded, loose, dry		
	145		SP	140' - 150' Sand, light brown (7.5YR 6/4), fine and very fine grain, subrounded, loose, dry		
	150					
	155			150' - 170' Sand, pink (7.5YR 7/4), very fine grain, some cemented sandstone nodules up to 2-mm, medium dense, dry		
	160		SP			
	165					
	170					
	175			170' - 190' Sand, reddish yellow (7.5YR 6/6), very fine to fine grain, subrounded to rounded, some cemented nodules, coarsening to medium grain 180' to 190'		
	180		SP			
	185					
	190					
	195		SP	190' - 195' Sand, light brown (7.5YR 6/4), very fine to fine grain, subrounded to rounded, medium dense, dry to damp		
			SP	195' - 200' Sand, strong brown (7.5YR 5/6), very fine grain, medium dense, dry to damp		

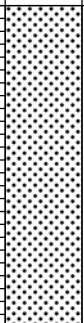
PTX06-1190

Pantex BOA 70 Release 5

North of SE ISB Extension Wellfield

DOE Pantex Plant

SN3 Project Number: 4638-05	Client: CNS Pantex Contract #67841
Geologist: R. Rupp Texas Well Report No.: 464293	Northing: 3751439.44 Easting: 648281.22
Drilling Contractor: Cascade Drilling Lic. #4885 W. Bludworth	TD Borehole: 287 ft bgs TD Well: 287 ft bgs
Dates Drilled: 10/19/17 Date Completed: 10/20/17	Depth to Water: 279.68 ft bgs
Borehole Diameter: 10" Drilling Method: ARCH	Well Type: Monitoring Well, 4" Sch 80 PVC
Ground Elevation: 3516.35 ft amsl	Top of Casing Elevation: 3518.48 ft amsl

Completion	Depth (Ft.)	Lithology	USCS	Description	Sample	Sample Number		
	205		SW	200' - 225' Sand with gravel, light yellowish brown (10YR 6/4), well graded, coarse to very fine grain, subrounded to rounded with some angular, 15% pea gravel 205' to 210', subangular gravel clasts to 3-cm 220' to 225', dense, dry				
	210							
	215							
	220							
	225							
	230		SP	225' - 230' Sand, medium grain with <10% large angular and broken gravel, dense, moist				
	235		SP	230' - 235' Sand, yellowish brown (10YR 5/6), fine grain with <10% gravel, dense, moist				
	240		SC	235' - 240' Sand, fine grain with >15% clay, moist				
	245		GW	240' - 245' Gravel, grayish brown to brown (10YR 5/2 - 5/3), well graded medium gravel, with fine to coarse subrounded sand, dense, dry				
	250		SW	245' - 255' Sand with gravel, yellowish brown (10YR 5/8), fine to coarse grain, well graded sand with pea gravel, medium dense, dry				
	255		SW	255' - 275' Sand with gravel, light yellowish brown (10YR 6/4) 255' to 265', brown (10YR 5/3) 265' to 275', well graded fine to coarse grain subrounded sand, 15 - 20% pea gravel, dry to moist at 270'				
	260							
	265							
	270							
	275		SW	275' - 280' Sand, pale brown (10YR 6/3), fine to coarse grain, well graded, subrounded, moist, with 15% pea gravel				
	280		SP	280' - 286' Sand with gravel, yellowish brown (10YR 5/6), poorly graded medium grain sand with 15% rounded pea gravel, saturated at 283'				
	285		ML	286' - 287' Silt with 15 - 25% very fine sand (FGZ), reddish brown (5YR 5/4), damp to dry, with caliche granules				
	290			Borehole Total Depth 287' bgs				
	295							

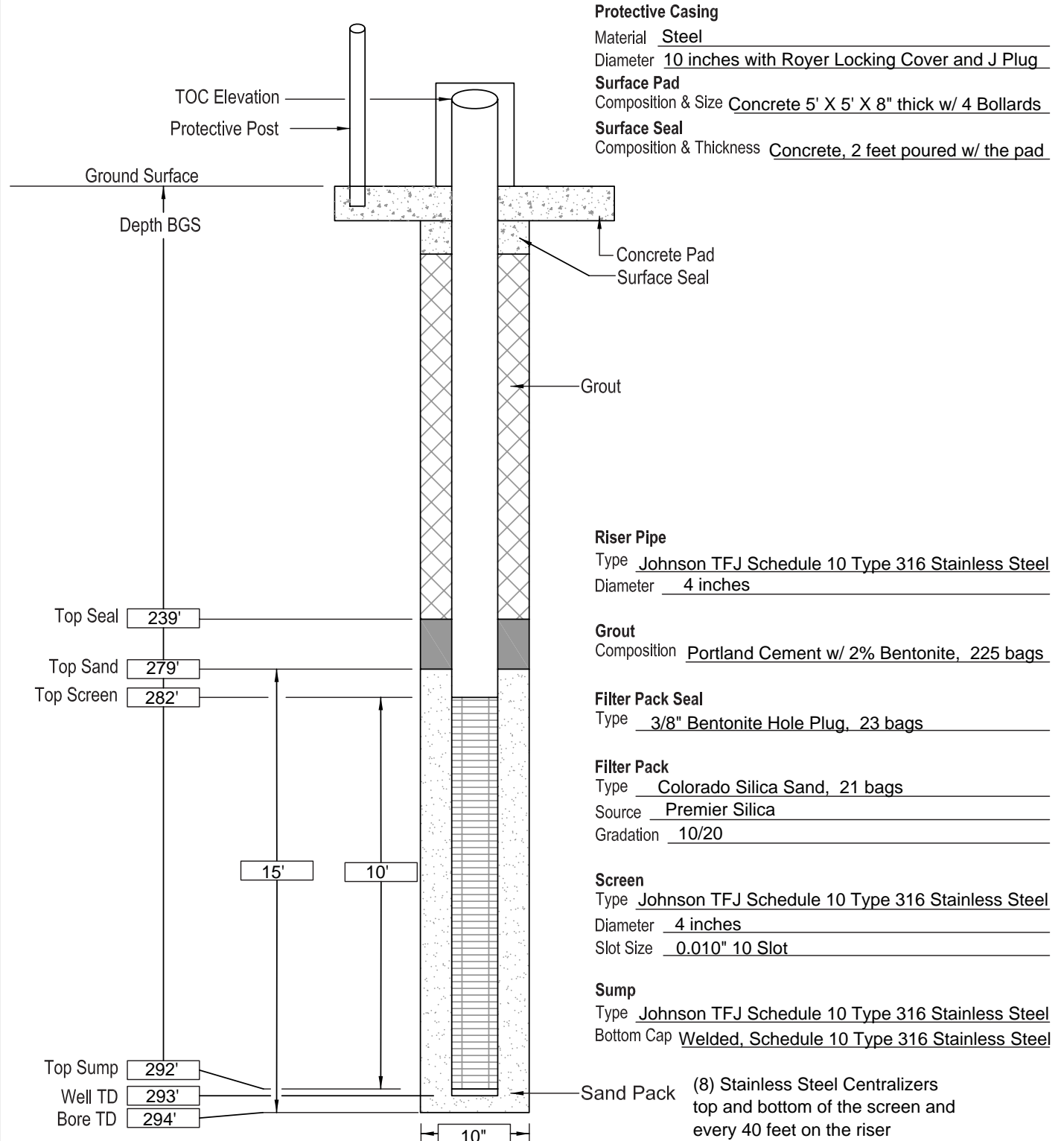
PTX06-1190
Triaxial Permeability
ASTM D5084
1.0E-08 cm/sec

Well Installation Diagram

Project: BOA 70 Release 5
 Location: Southeast ISB Extension Well Field
 Contractor: Stoller Newport News Nuclear
 Driller: Cascade
 Well Coordinates: 3751308.18 N 649090.64 E
 TOC Elevation: 3517.20 ft AMSL
 Surface Elevation: 3515.20 ft AMSL

Well No: PTX06-ISB131
 Well Type: ISB Injection
 Date Constructed: 10/26/2017 to 11/01/2017
 Observed By: R Rupp

Sheet 1 of 1

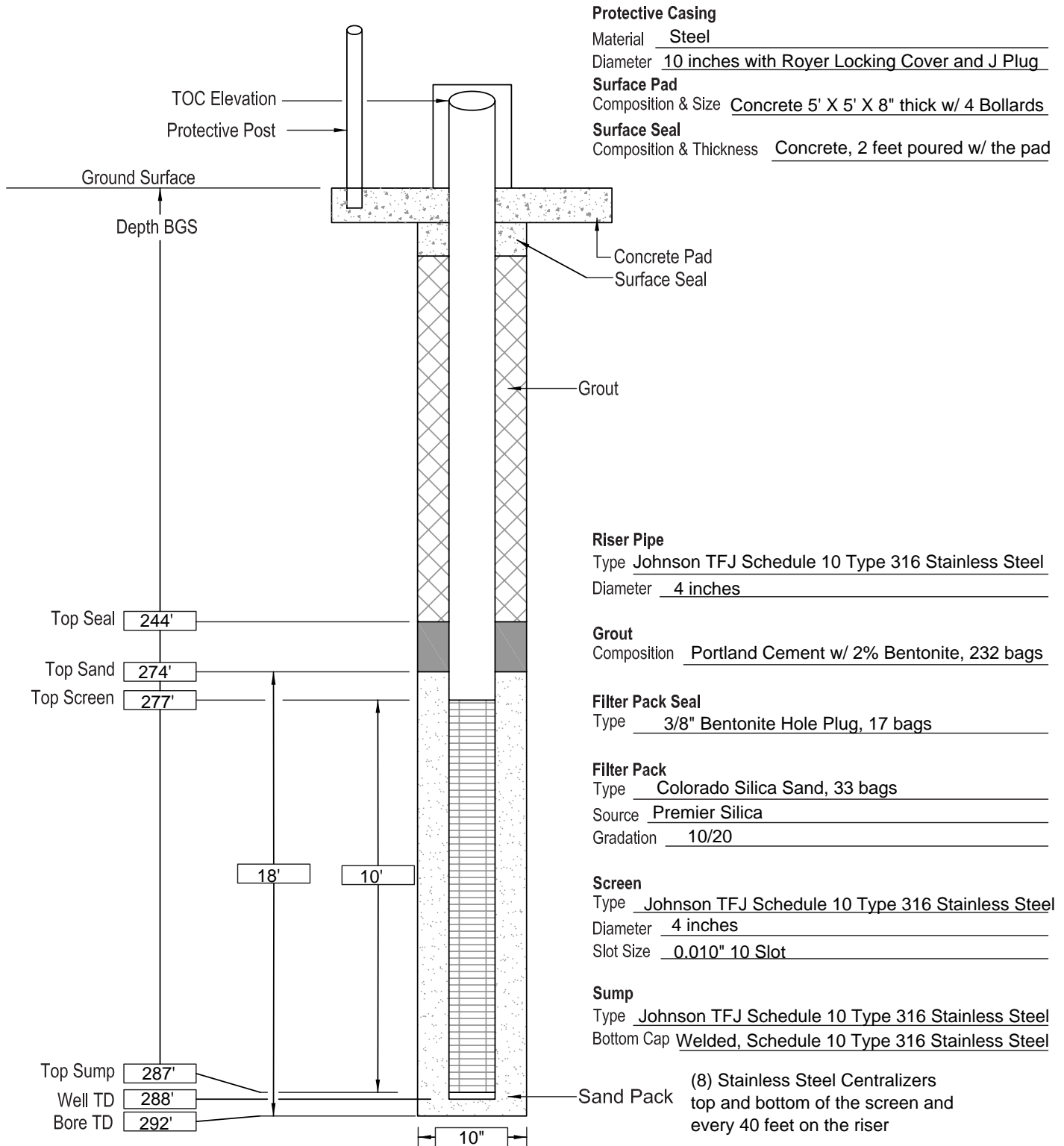


Well Installation Diagram

Project: BOA 70 Release 5
 Location: Southeast ISB Extension Well Field
 Contractor: Stoller Newport News Nuclear
 Driller: Cascade
 Well Coordinates: 3751282.05 N 649020.47 E
 TOC Elevation: 3517.28 ft AMSL
 Surface Elevation: 3515.23 ft AMSL

Well No: PTX06-ISB130
 Well Type: ISB Injection
 Date Constructed: 11/13/2017
 Observed By: R Dickerson

Sheet 1 of 1

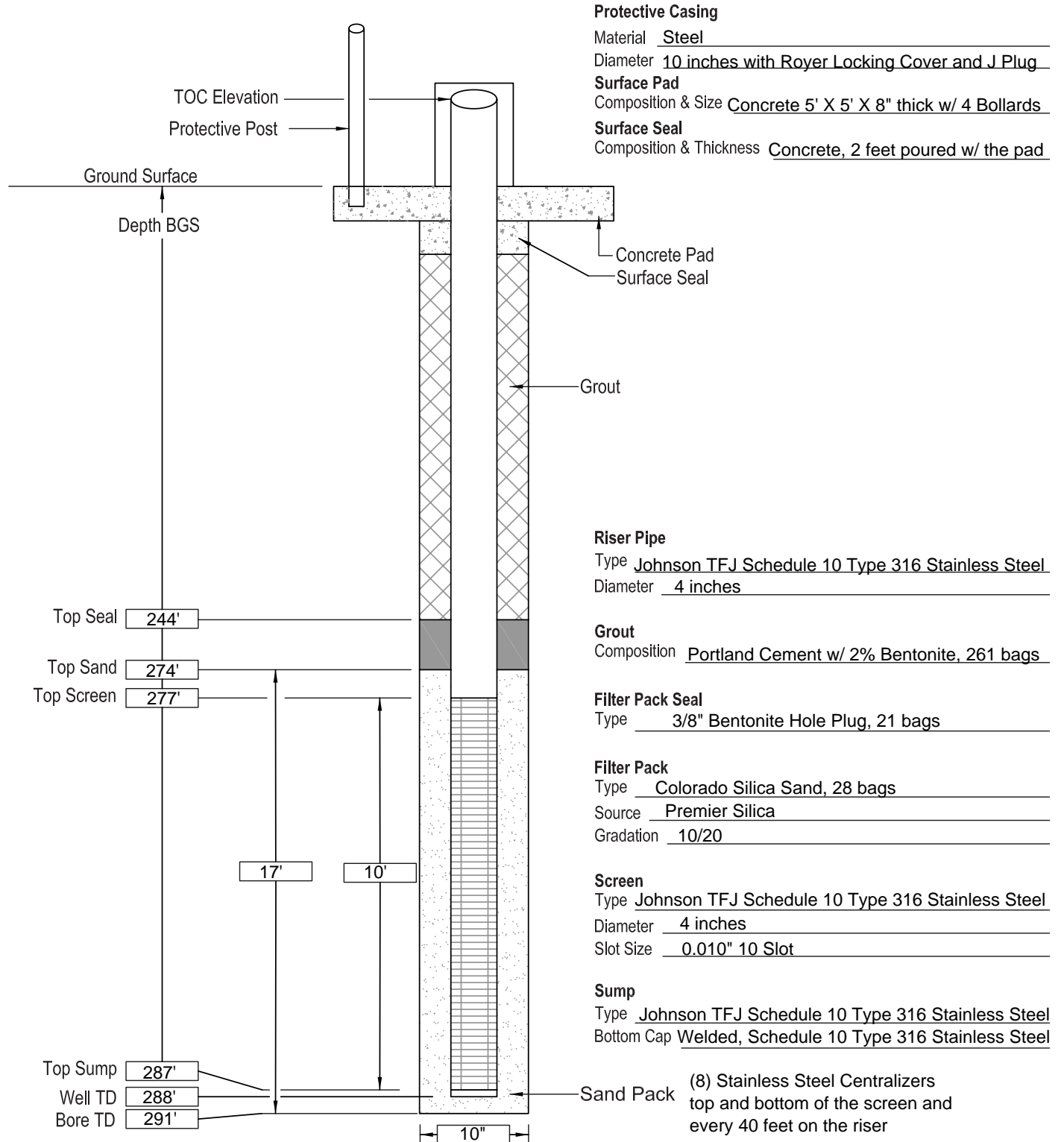


Well Installation Diagram

Project: BOA 70 Release 5
 Location: Southeast ISB Extension Well Field
 Contractor: Stoller Newport News Nuclear
 Driller: Cascade
 Well Coordinates: 3751255.41 N 648950.08 E
 TOC Elevation: 3517.13 ft AMSL
 Surface Elevation: 3515.12 ft AMSL

Well No: PTX06-ISB129
 Well Type: ISB Injection
 Date Constructed: 11/15/2017
 Observed By: R Dickerson

Sheet 1 of 1

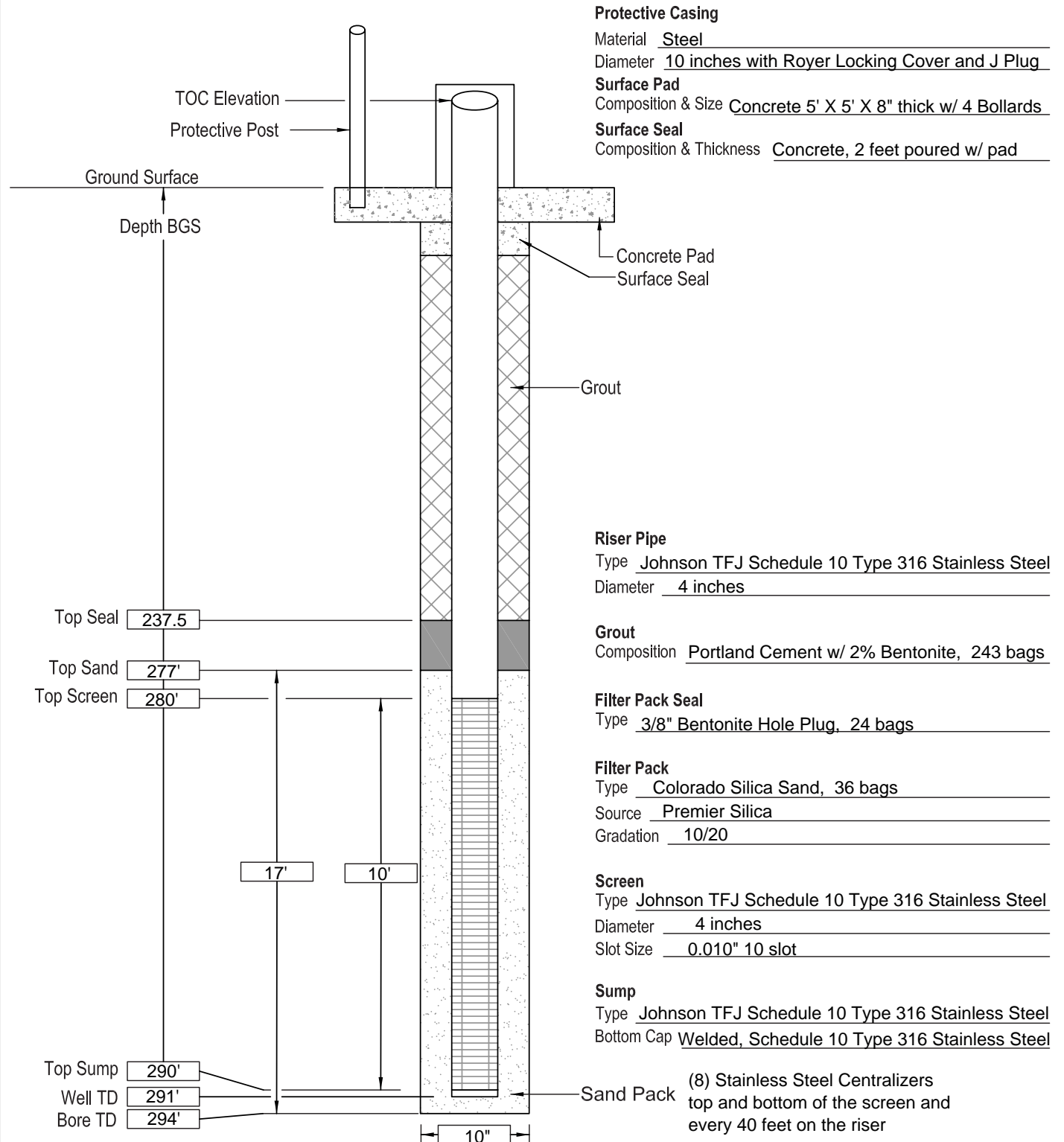


Well Installation Diagram

Project: BOA 70 Release 5
 Location: Southeast ISB Extension Well Field
 Contractor: Stoller Newport News Nuclear
 Driller: Cascade
 Well Coordinates: 3751229.17 N 648879.71 E
 TOC Elevation: 3517.11 ft AMSL
 Surface Elevation: 3515.08 ft AMSL

Well No: PTX06-ISB128
 Well Type: ISB Injection
 Date Constructed: 10/22/2017 to 10/24/2017
 Observed By: R Rupp

Sheet 1 of 1

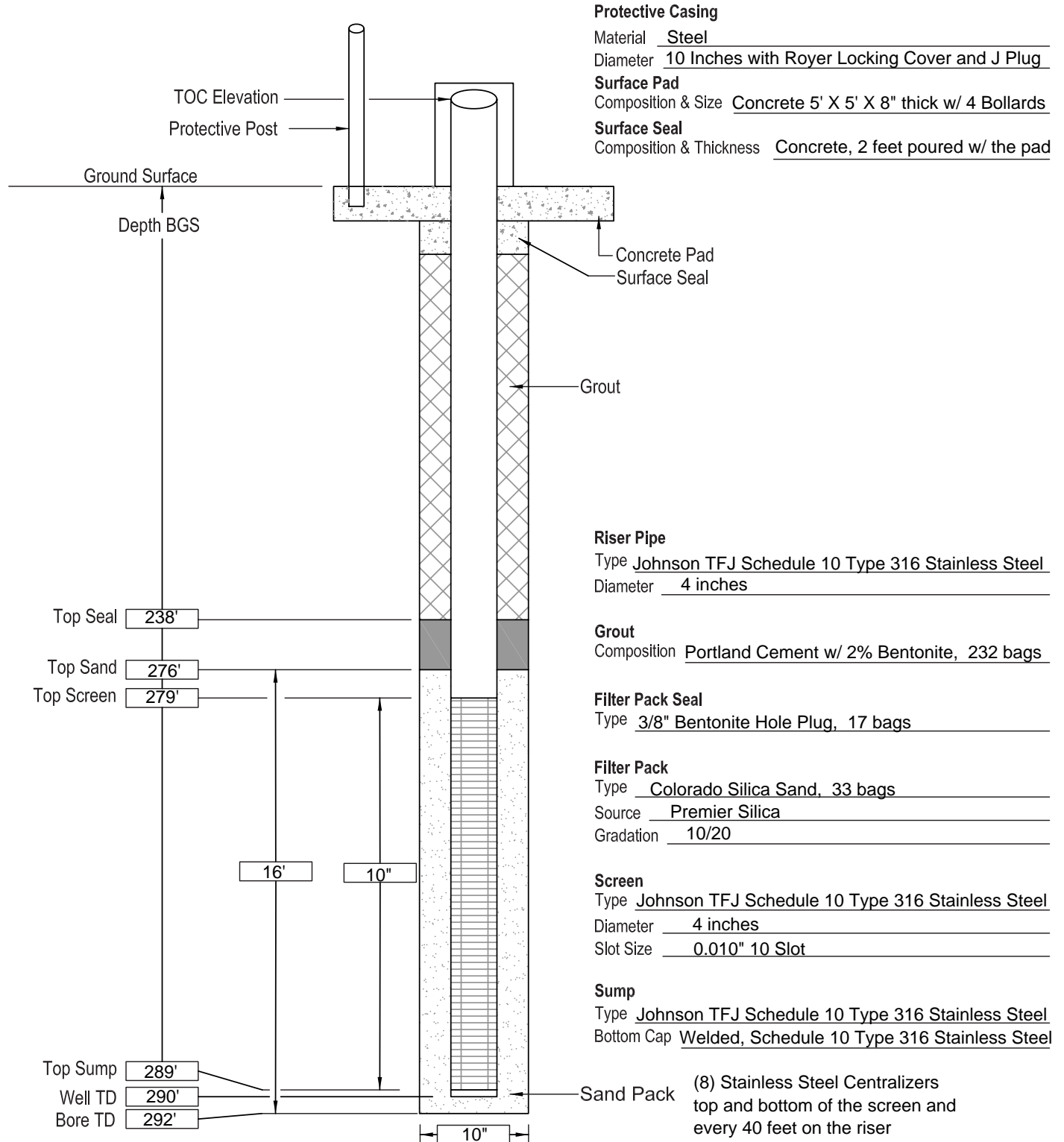


Well Installation Diagram

Project: BOA 70 Release 5
 Location: Southeast ISB Extension Well Field
 Contractor: Stoller Newport News Nuclear
 Driller: Cascade
 Well Coordinates: 3751203.15 N 648809.07 E
 TOC Elevation: 3517.14 ft AMSL
 Surface Elevation: 3515.09 ft AMSL

Well No: PTX06-ISB127
 Well Type: ISB Injection
 Date Constructed: 11/29/2017
 Observed By: R Dickerson

Sheet 1 of 1

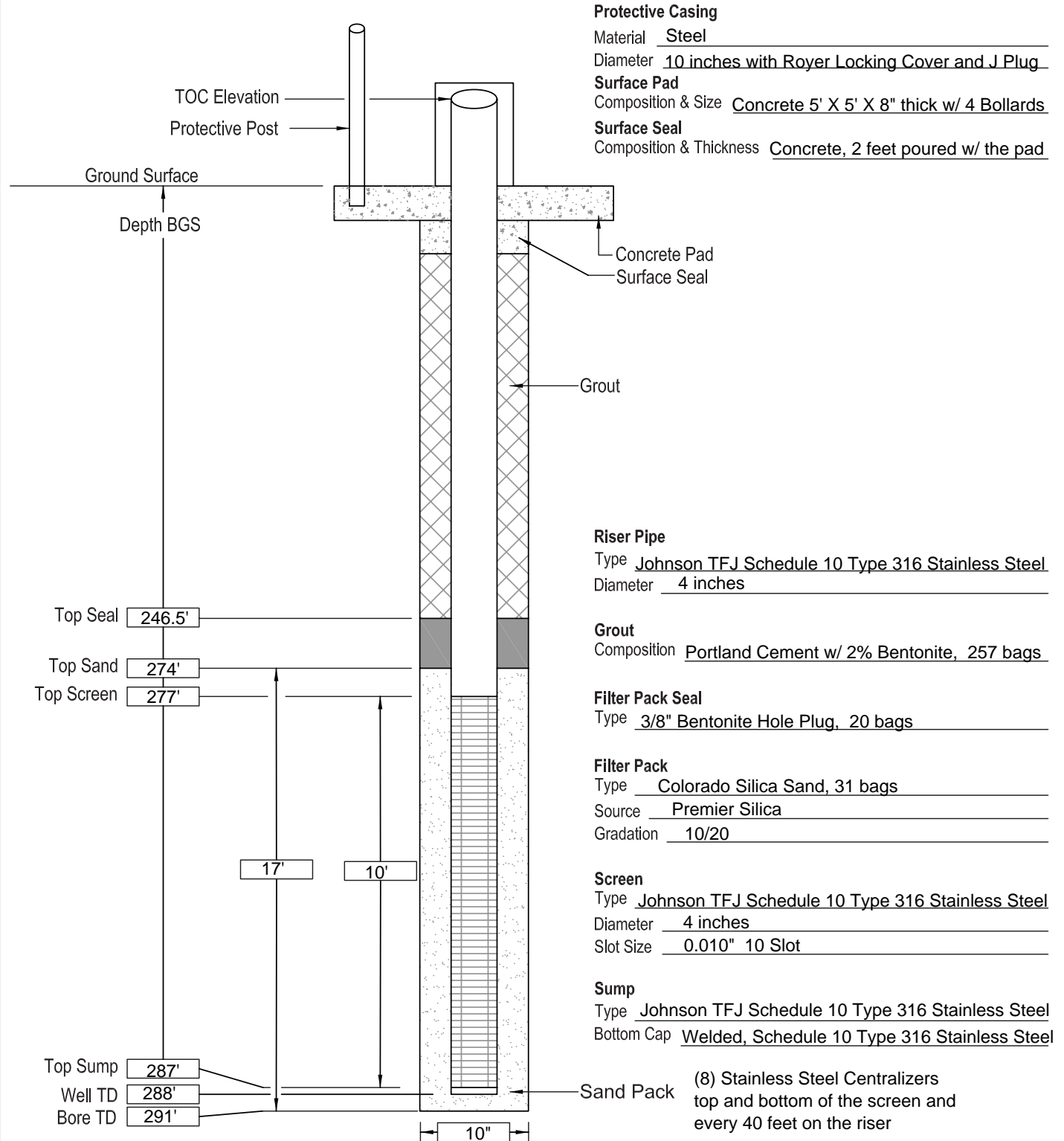


Well Installation Diagram

Project: BOA 70 Release 5
 Location: Southeast ISB Extension Well field
 Contractor: Stoller Newport News Nuclear
 Driller: Cascade
 Well Coordinates: 3751176.87 N 648738.78 E
 TOC Elevation: 3517.09 ft AMSL
 Surface Elevation: 3515.03 ft AMSL

Well No: PTX06-ISB126
 Well Type: ISB Injection
 Date Constructed: 11/16/2017
 Observed By: R Dickerson

Sheet 1 of 1

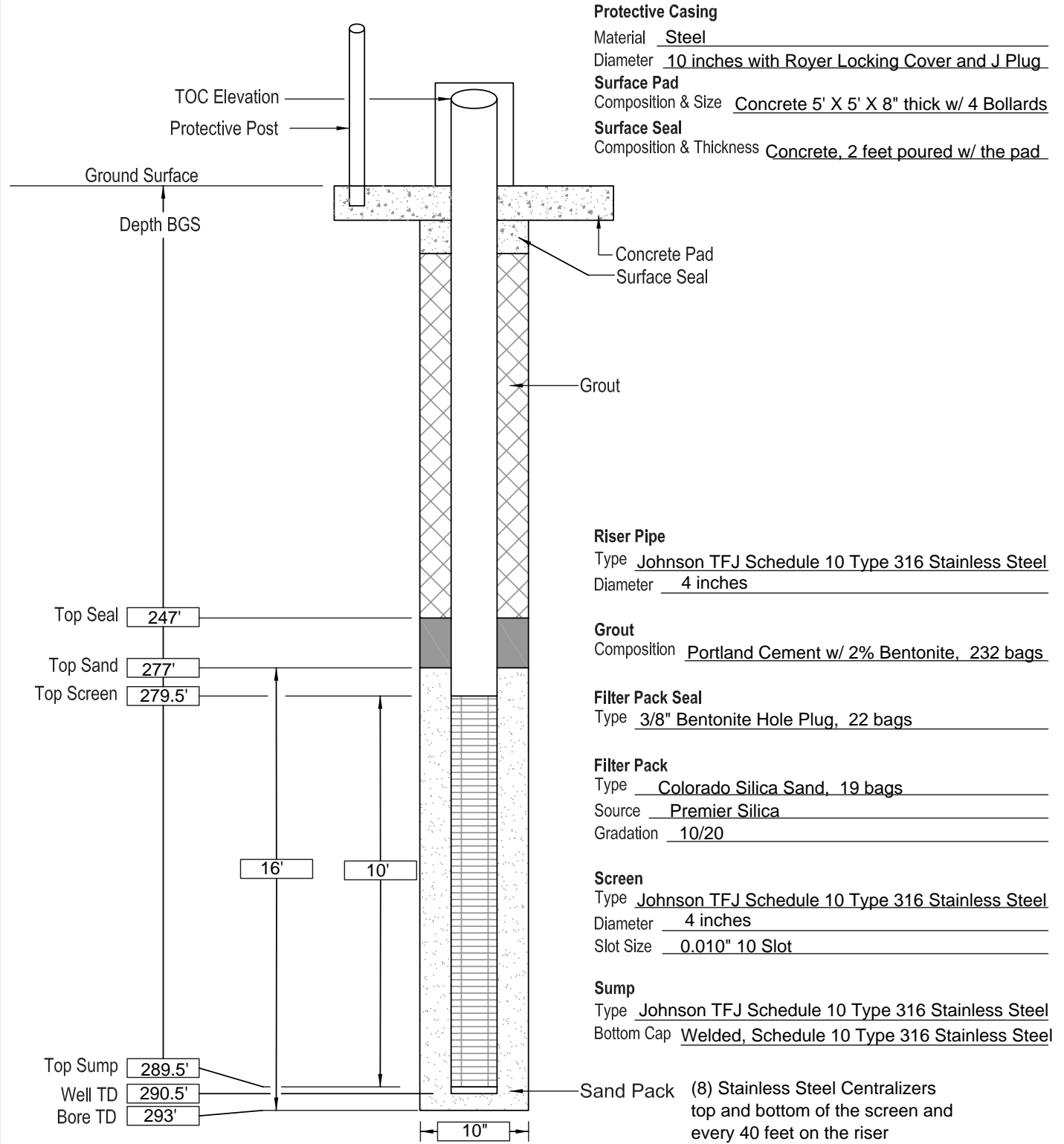


Well Installation Diagram

Project: BOA 70 Release 5
 Location: Southeast ISB Extension Well Field
 Contractor: Stoller Newport News Nuclear
 Driller: Cascade
 Well Coordinates: 3751150.76 N 648668.62 E
 TOC Elevation: 3517.15 ft AMSL
 Surface Elevation: 3515.16 ft AMSL

Well No: PTX06-ISB125
 Well Type: ISB Injection
 Date Constructed: 12/01/2017
 Observed By: R Dickerson

Sheet 1 of 1

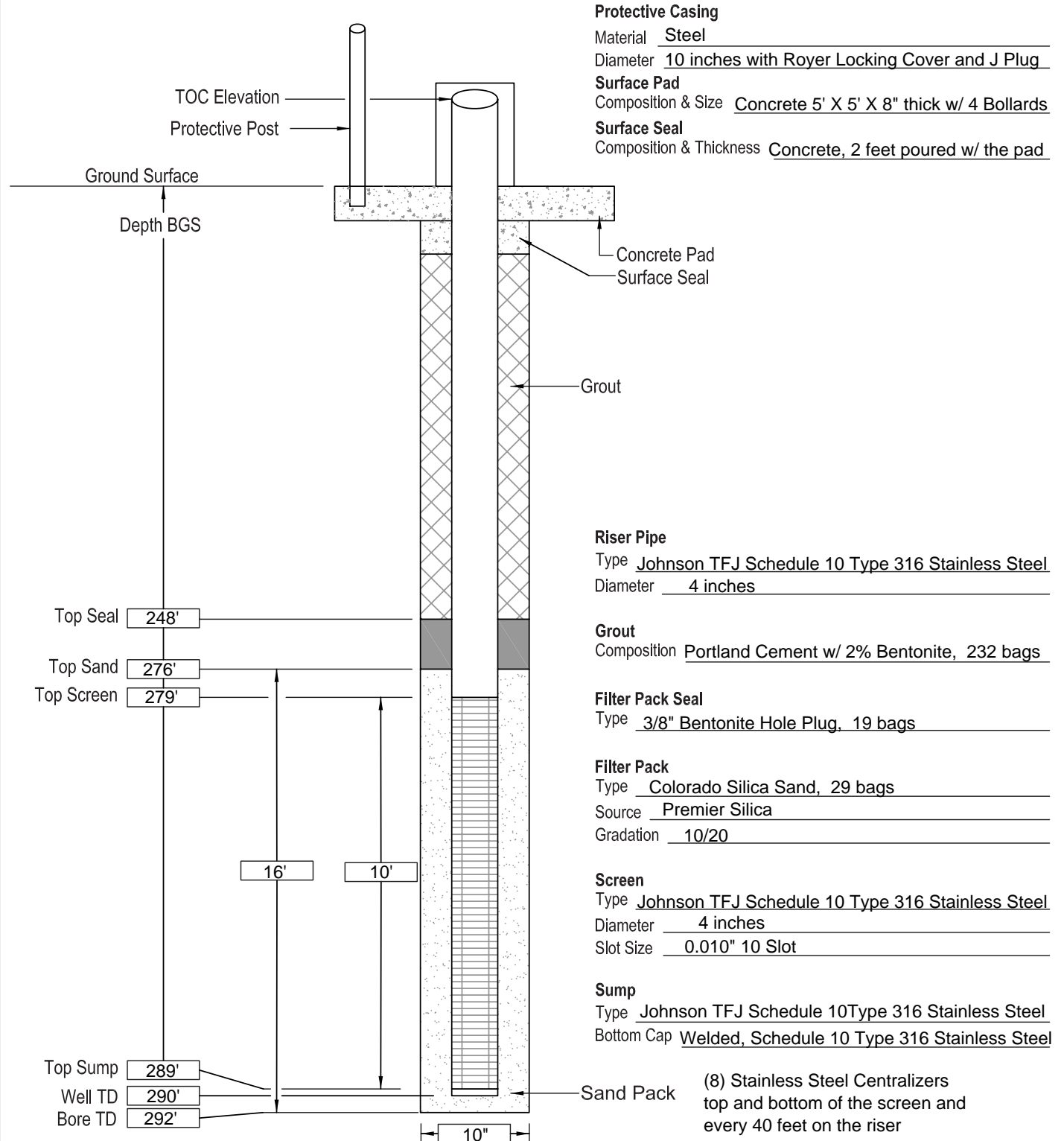


Well Installation Diagram

Project: BOA 70 Release 5
 Location: Southeast ISB Extension Well Field
 Contractor: Stoller Newport News Nuclear
 Driller: Cascade
 Well Coordinates: 3751124.55 N 648597.96 E
 TOC Elevation: 3517.11 ft AMSL
 Surface Elevation: 3515.02 ft AMSL

Well No: PTX06-ISB124
 Well Type: ISB Injection
 Date Constructed: 12/03/2017
 Observed By: R Dickerson

Sheet 1 of 1

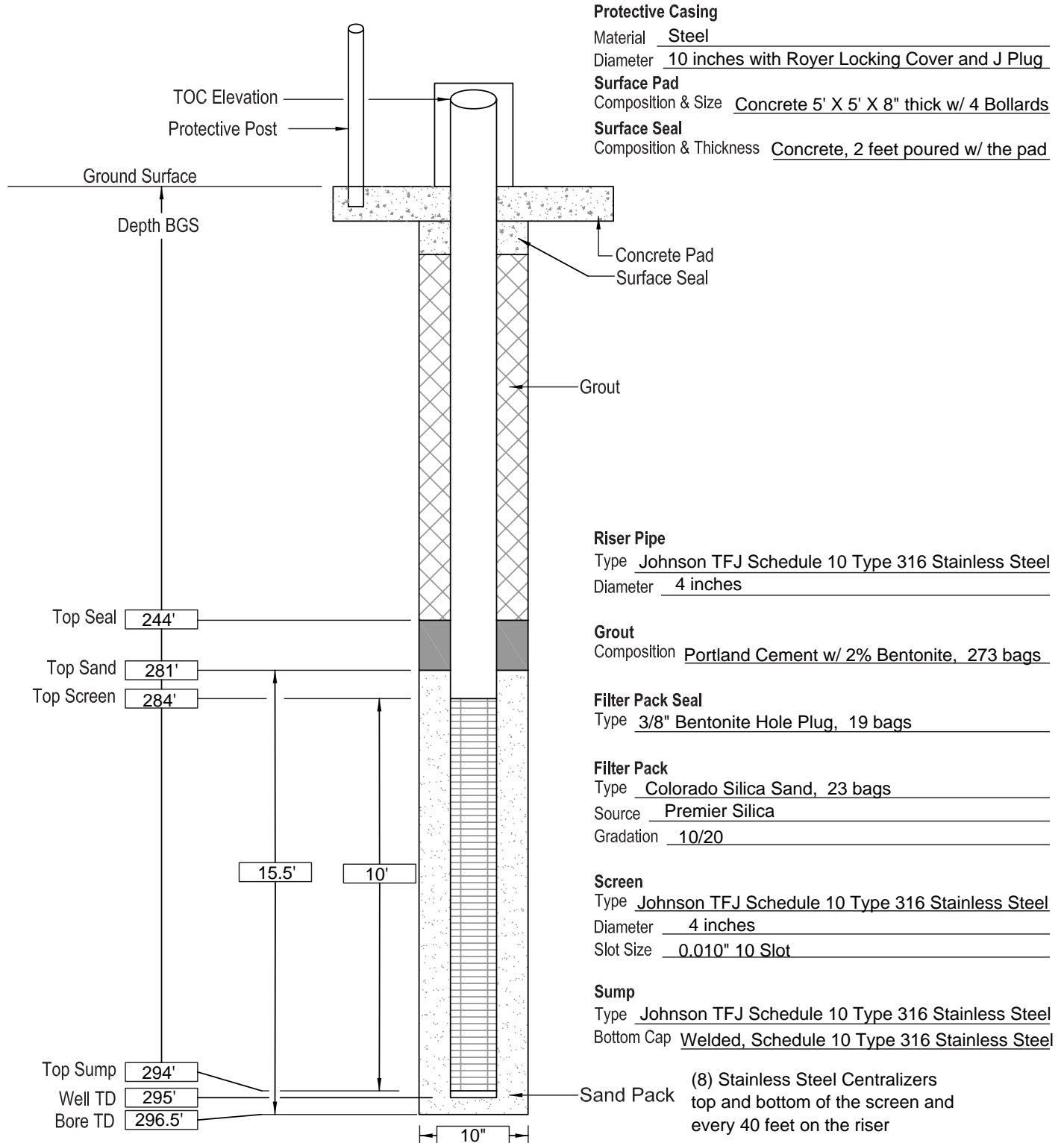


Well Installation Diagram

Project: BOA 70 Release 5
 Location: Southeast ISB Extension Well Field
 Contractor: Stoller Newport News Nuclear
 Driller: Cascade
 Well Coordinates: 3751098.16 N 648527.50 E
 TOC Elevation: 3517.30 ft AMSL
 Surface Elevation: 3515.06 ft AMSL

Well No: PTX06-ISB123
 Well Type: ISB Injection
 Date Constructed: 11/4/2017
 Observed By: R Dickerson

Sheet 1 of 1

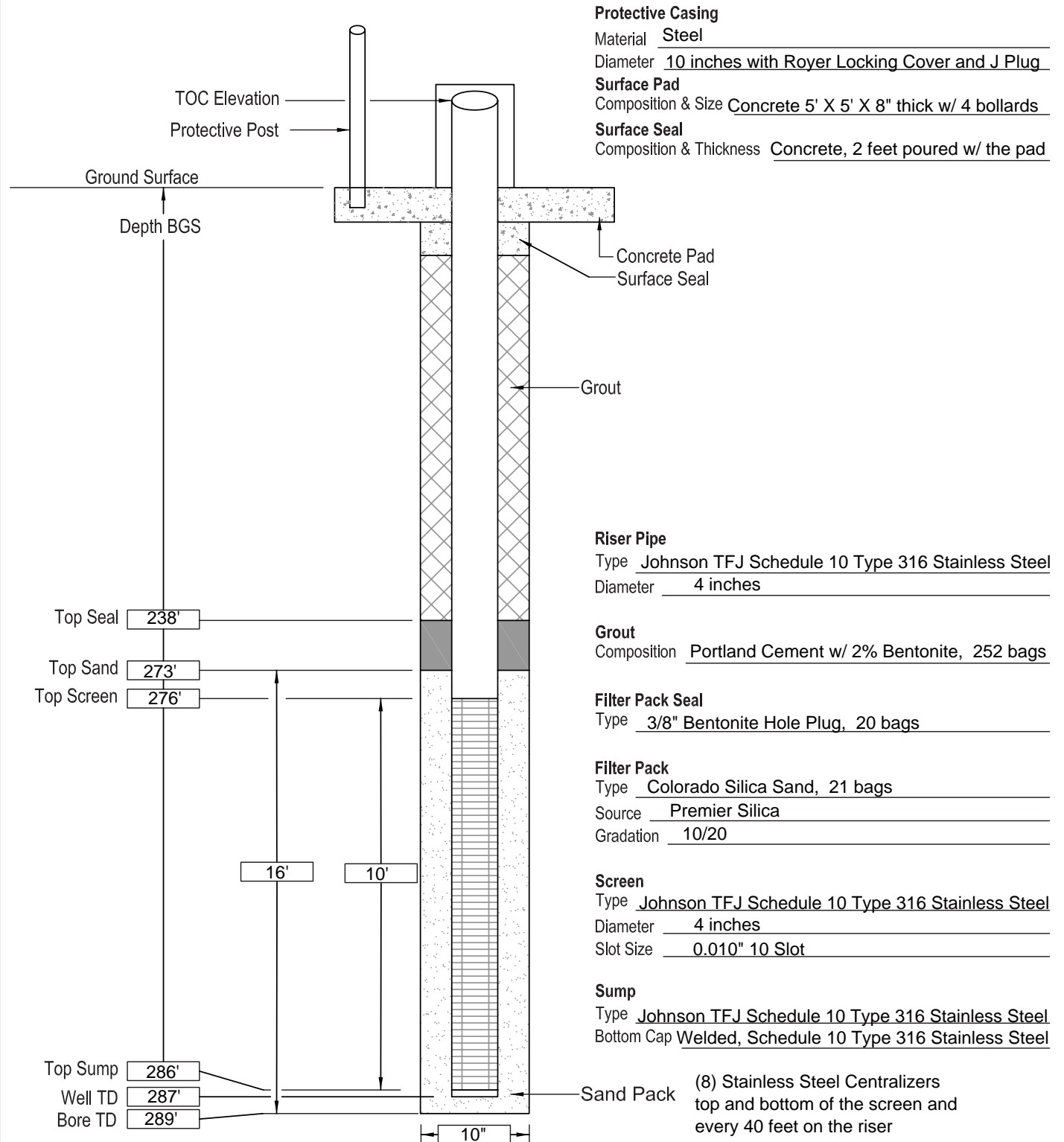


Well Installation Diagram

Project: BOA 70 Release 5
 Location: Southeast ISB Extension Well Field
 Contractor: Stoller Newport News Nuclear
 Driller: Cascade
 Well Coordinates: 3751072.09 N 648457.75 E
 TOC Elevation: 3517.21 ft AMSL
 Surface Elevation: 3515.12 ft AMSL

Well No: PTX06-ISB122
 Well Type: ISB Injection
 Date Constructed: 11/06/2017
 Observed By: R Dickerson

Sheet 1 of 1

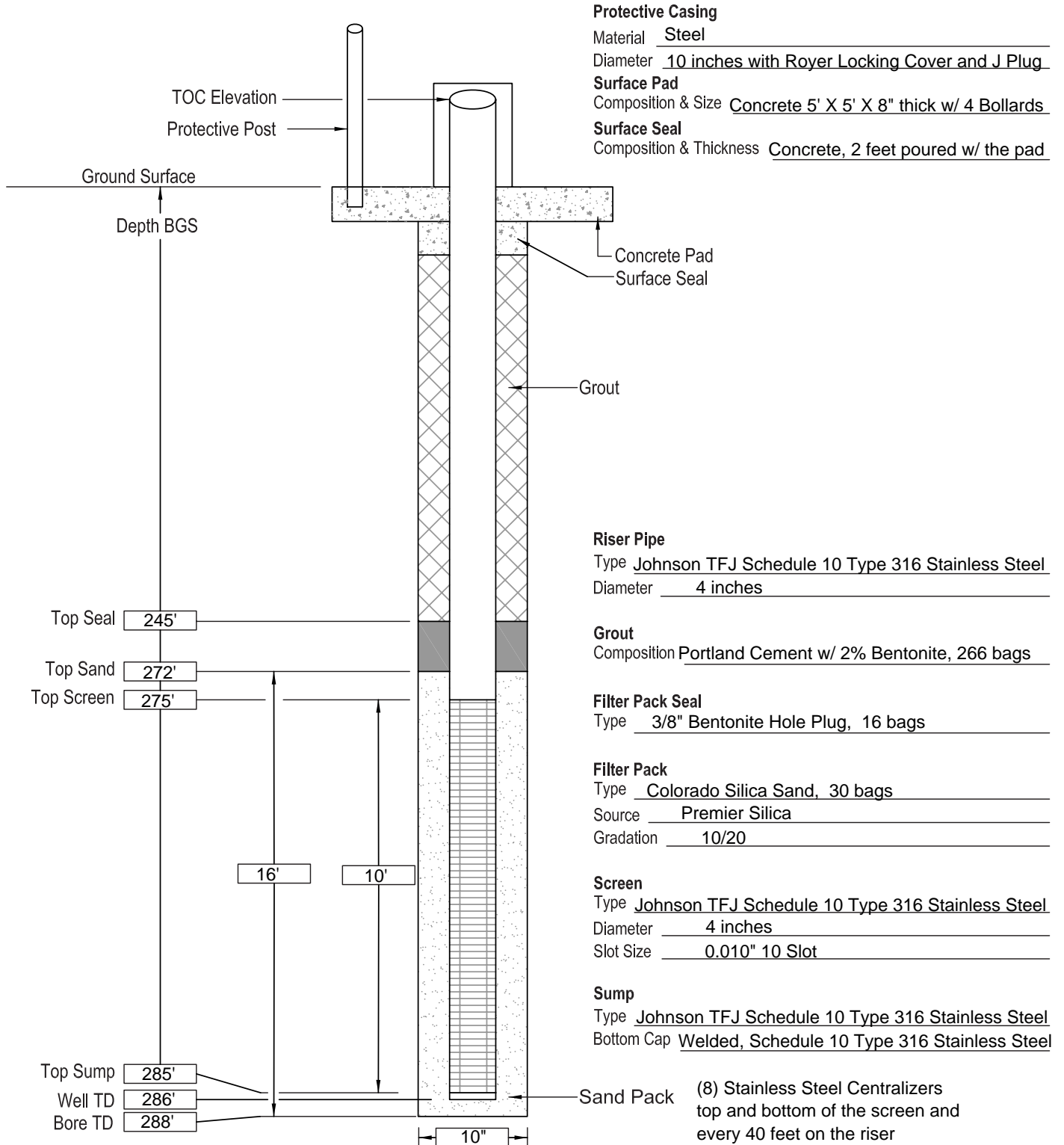


Well Installation Diagram

Project: BOA 70 Release 5
 Location: Southeast ISB Extension Well Field
 Contractor: Stoller Newport News Nuclear
 Driller: Cascade
 Well Coordinates: 3751045.71 N 648386.52 E
 TOC Elevation: 3517.26 ft AMSL
 Surface Elevation: 3515.20 ft AMSL

Well No: PTX06-ISB121
 Well Type: ISB Injection
 Date Constructed: 11/08/2017
 Observed By: R Dickerson

Sheet 1 of 1

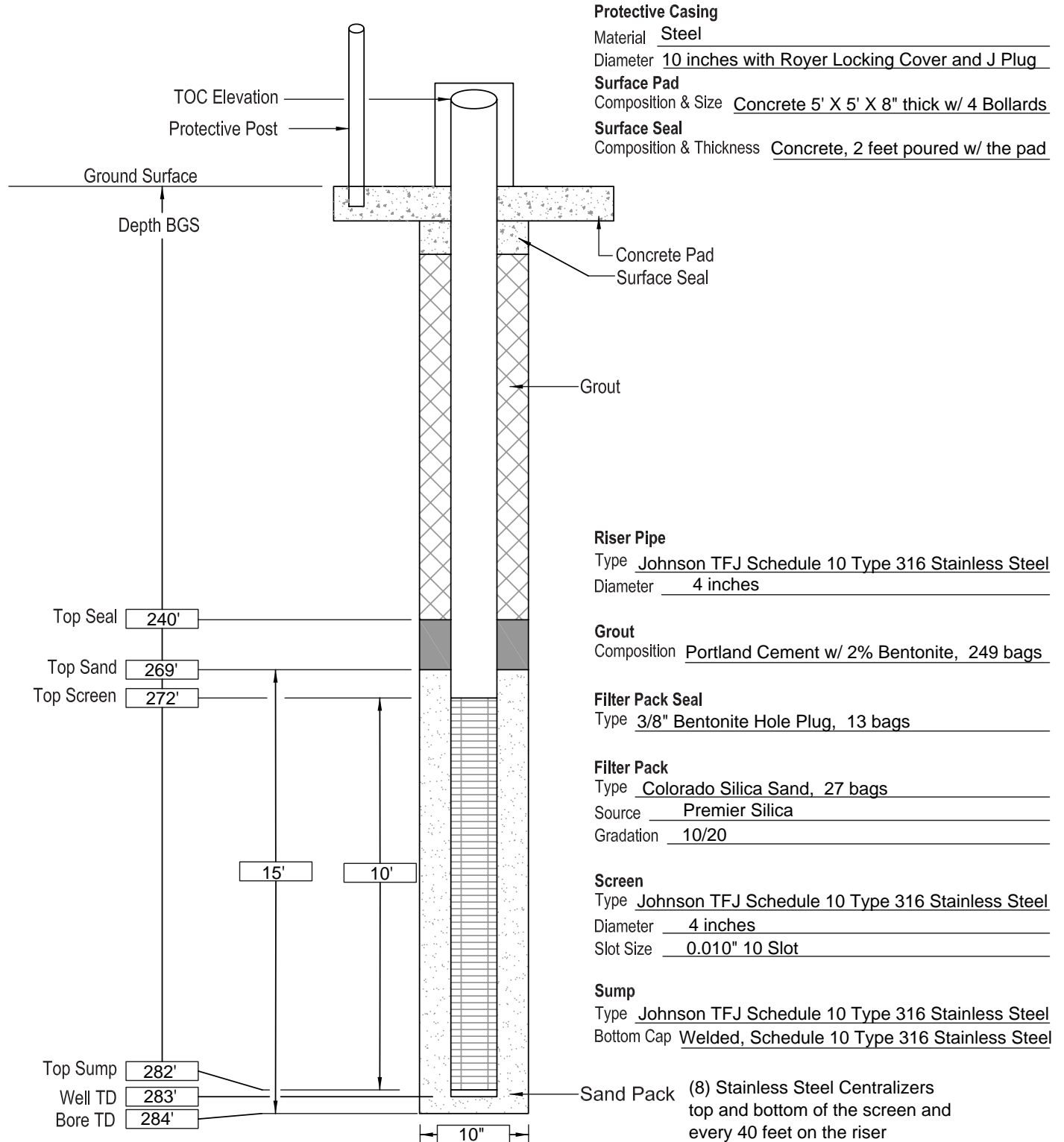


Well Installation Diagram

Project: BOA 70 Release 5
 Location: Southeast ISB Extension Well Field
 Contractor: Stoller Newport News Nuclear
 Driller: Cascade
 Well Coordinates: 3751019.54 N 648316.24 E
 TOC Elevation: 3516.95 ft AMSL
 Surface Elevation: 3514.94 ft AMSL

Well No: PTX06-ISB120
 Well Type: ISB Injection
 Date Constructed: 11/29/2017 to 11/30/2017
 Observed By: R Rupp

Sheet 1 of 1

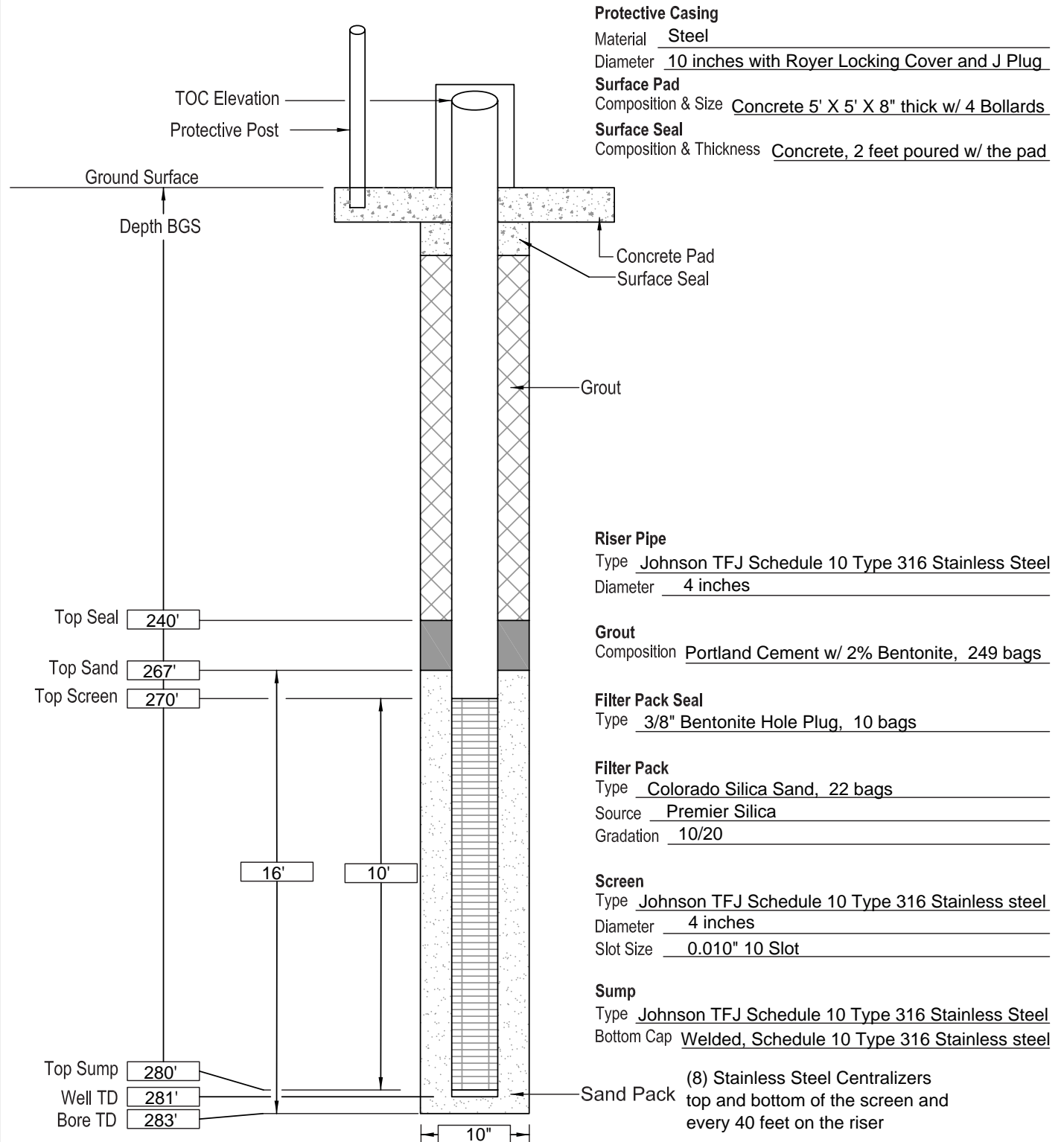


Well Installation Diagram

Project: BOA 70 Release 5
 Location: Southeast ISB Extension Well Field
 Contractor: Stoller Newport News Nuclear
 Driller: Cascade
 Well Coordinates: 3750993.50 N 648245.97 E
 TOC Elevation: 3516.75 ft AMSL
 Surface Elevation: 3514.83 ft AMSL

Well No: PTX06-ISB119
 Well Type: ISB Injection
 Date Constructed: 11/17/2017
 Observed By: J Ford

Sheet 1 of 1

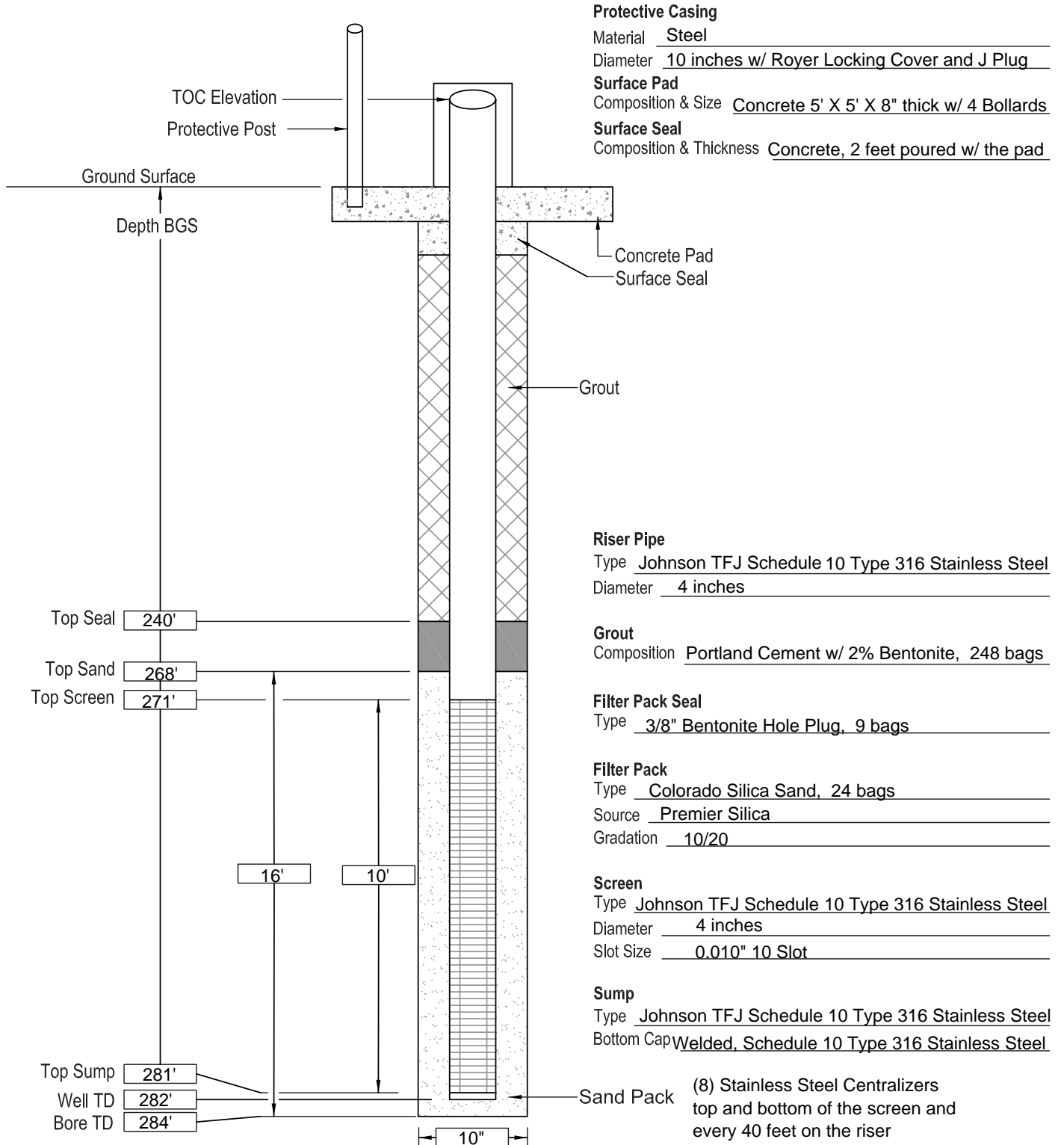


Well Installation Diagram

Project: BOA 70 Release 5
 Location: Southeast ISB Extension Well Field
 Contractor: Stoller Newport News Nuclear
 Driller: Cascade
 Well Coordinates: 3750967.12 N 648175.64 E
 TOC Elevation: 3516.81 ft AMSL
 Surface Elevation: 3514.86 ft AMSL

Well No: PTX06-ISB118
 Well Type: ISB Injection
 Date Constructed: 11/15/2017
 Observed By: J Ford

Sheet 1 of 1

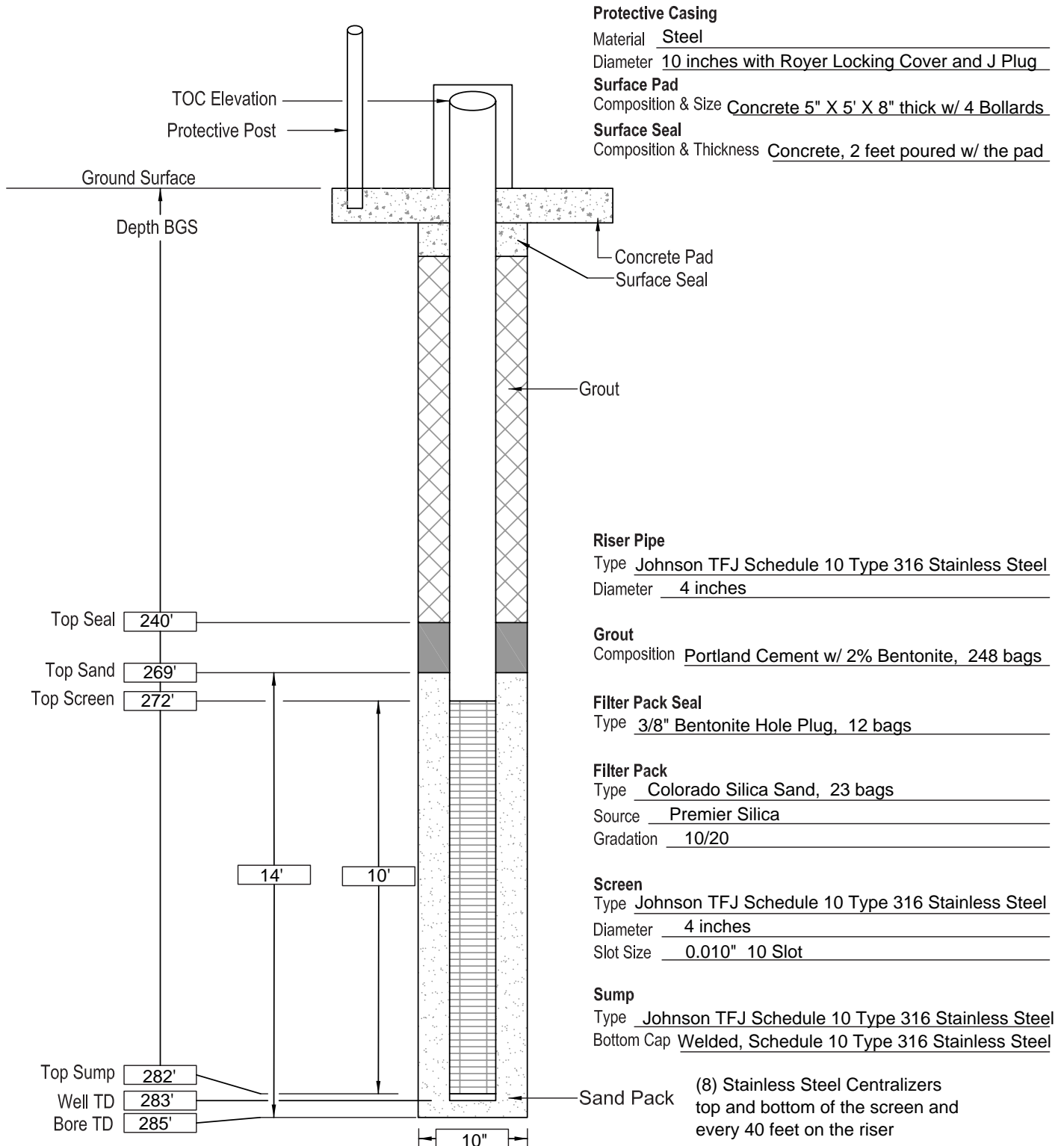


Well Installation Diagram

Project: BOA 70 Release 5
 Location: Southeast ISB Extension Well Field
 Contractor: Stoller Newport News Nuclear
 Driller: Cascade
 Well Coordinates: 3750940.93 N 648105.30 E
 TOC Elevation: 3516.78 ft AMSL
 Surface Elevation: 3514.84 ft AMSL

Well No: PTX06-ISB117
 Well Type: ISB Injection
 Date Constructed: 11/13/2017 to 11/14/2017
 Observed By: J Ford

Sheet 1 of 1

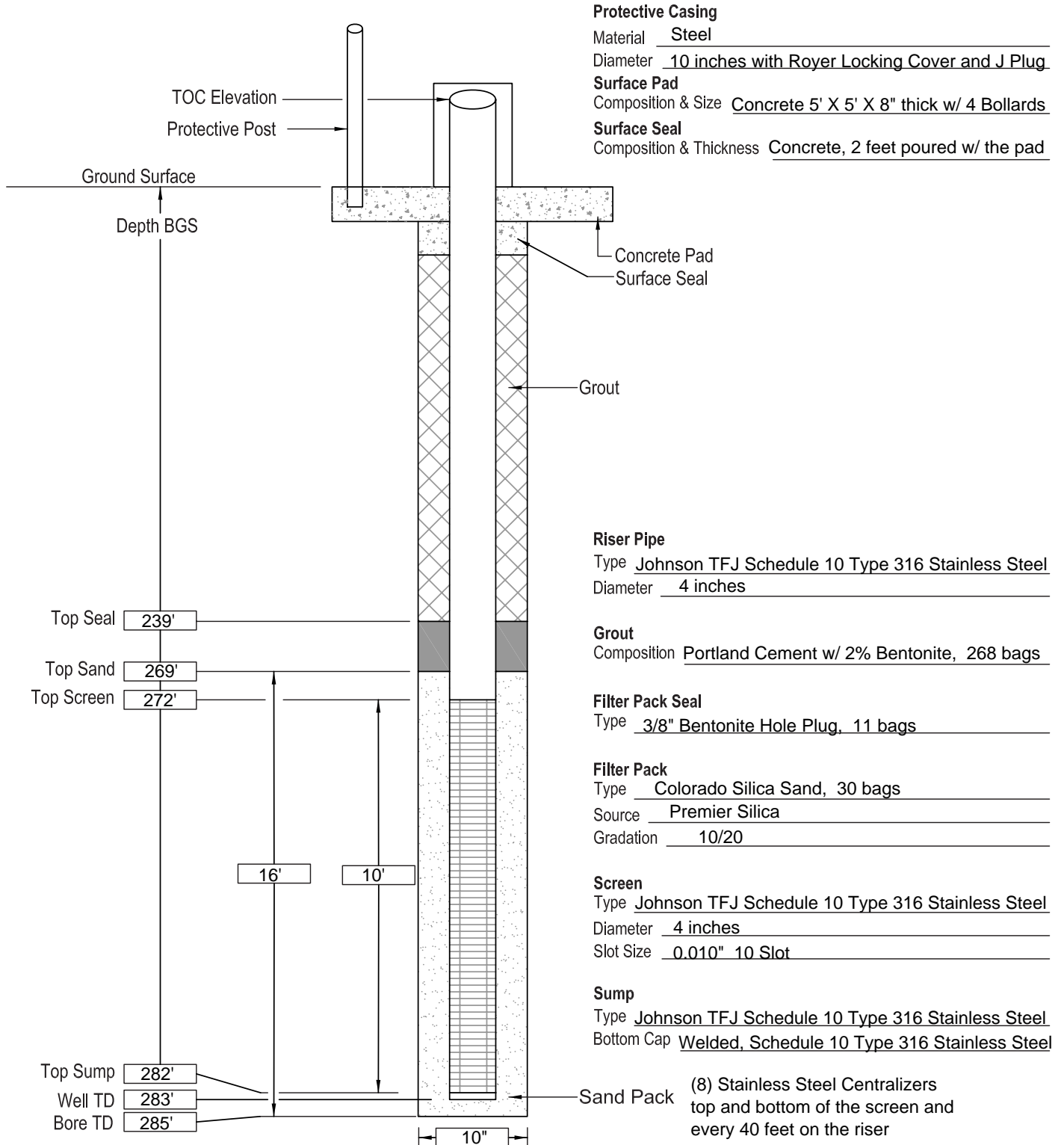


Well Installation Diagram

Project: BOA 70 Release 5
 Location: Southeast ISB Extension Well Field
 Contractor: Stoller Newport News Nuclear
 Driller: Cascade
 Well Coordinates: 3750914.87 N 648034.69 E
 TOC Elevation: 3516.79 ft AMSL
 Surface Elevation: 3514.80 ft AMSL

Well No: PTX06-ISB116
 Well Type: ISB Injection
 Date Constructed: 11/05/2017
 Observed By: R Rupp

Sheet 1 of 1

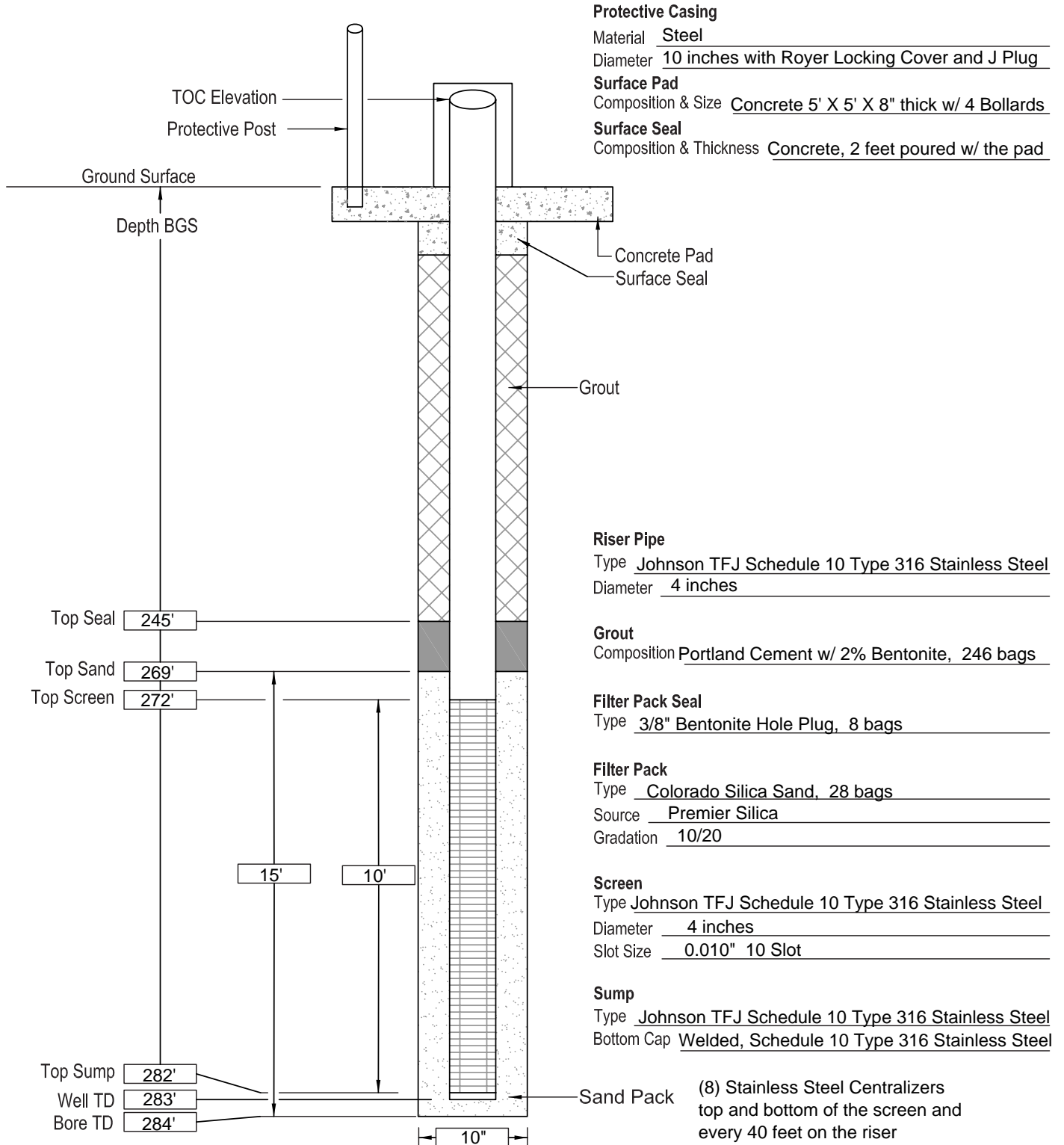


Well Installation Diagram

Project: BOA 70 Release 5
 Location: Southeast ISB Extension Well Field
 Contractor: Stoller Newport News Nuclear
 Driller: Cascade
 Well Coordinates: 3750888.51 N 647964.07 E
 TOC Elevation: 3516.79 ft AMSL
 Surface Elevation: 3514.84 ft AMSL

Well No: PTX06-ISB115
 Well Type: ISB Injection
 Date Constructed: 11/03/17
 Observed By: R Rupp

Sheet 1 of 1

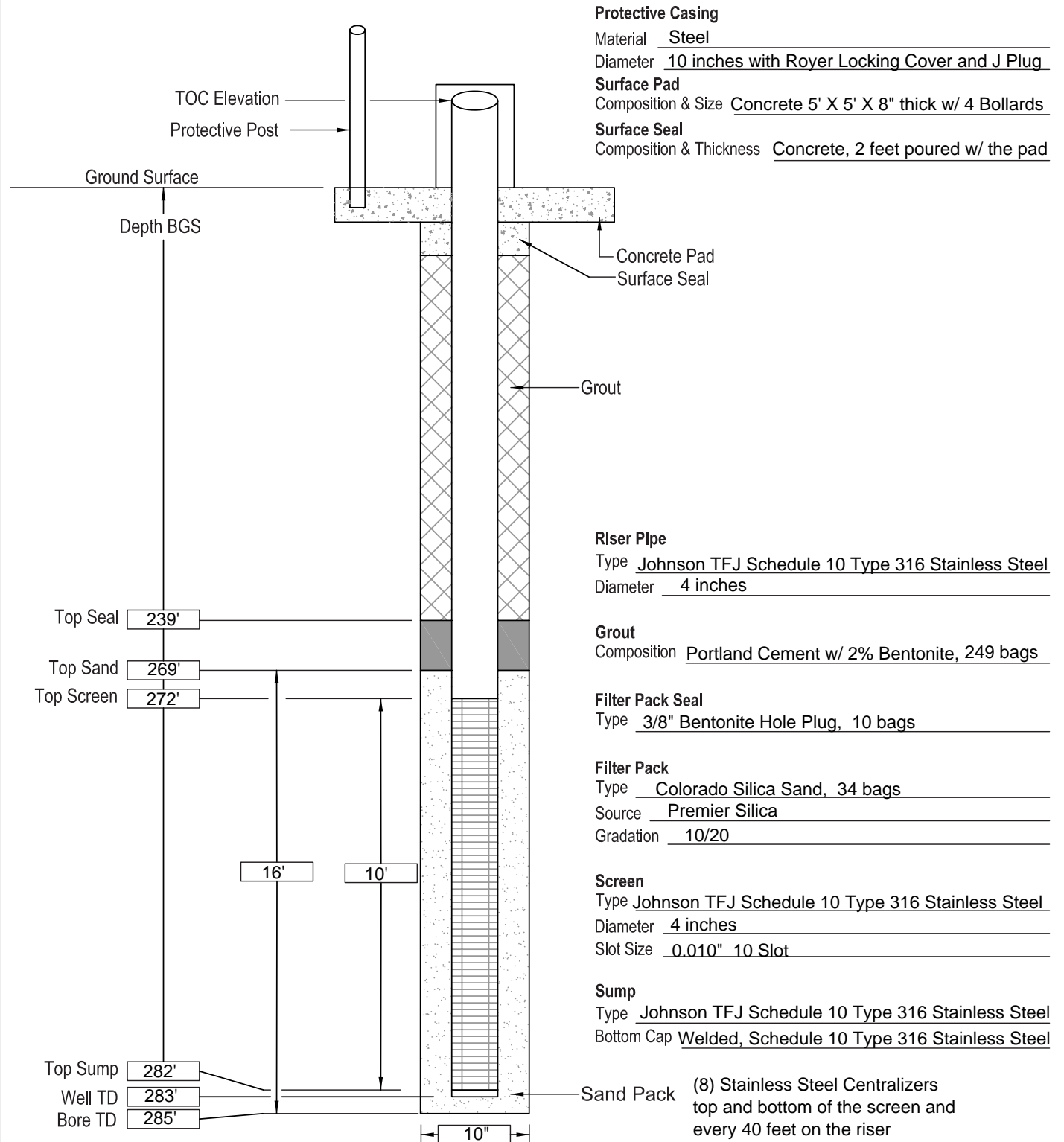


Well Installation Diagram

Project: BOA 70 Release 5
 Location: Southeast ISB Extension Well Field
 Contractor: Stoller Newport News Nuclear
 Driller: Cascade
 Well Coordinates: 3750862.53 N 647894.07 E
 TOC Elevation: 3516.72 ft AMSL
 Surface Elevation: 3514.70 ft AMSL

Well No: PTX06-ISB 114
 Well Type: ISB Injection
 Date Constructed: 11/06/2017 to 11/07/2017
 Observed By: R Rupp

Sheet 1 of 1

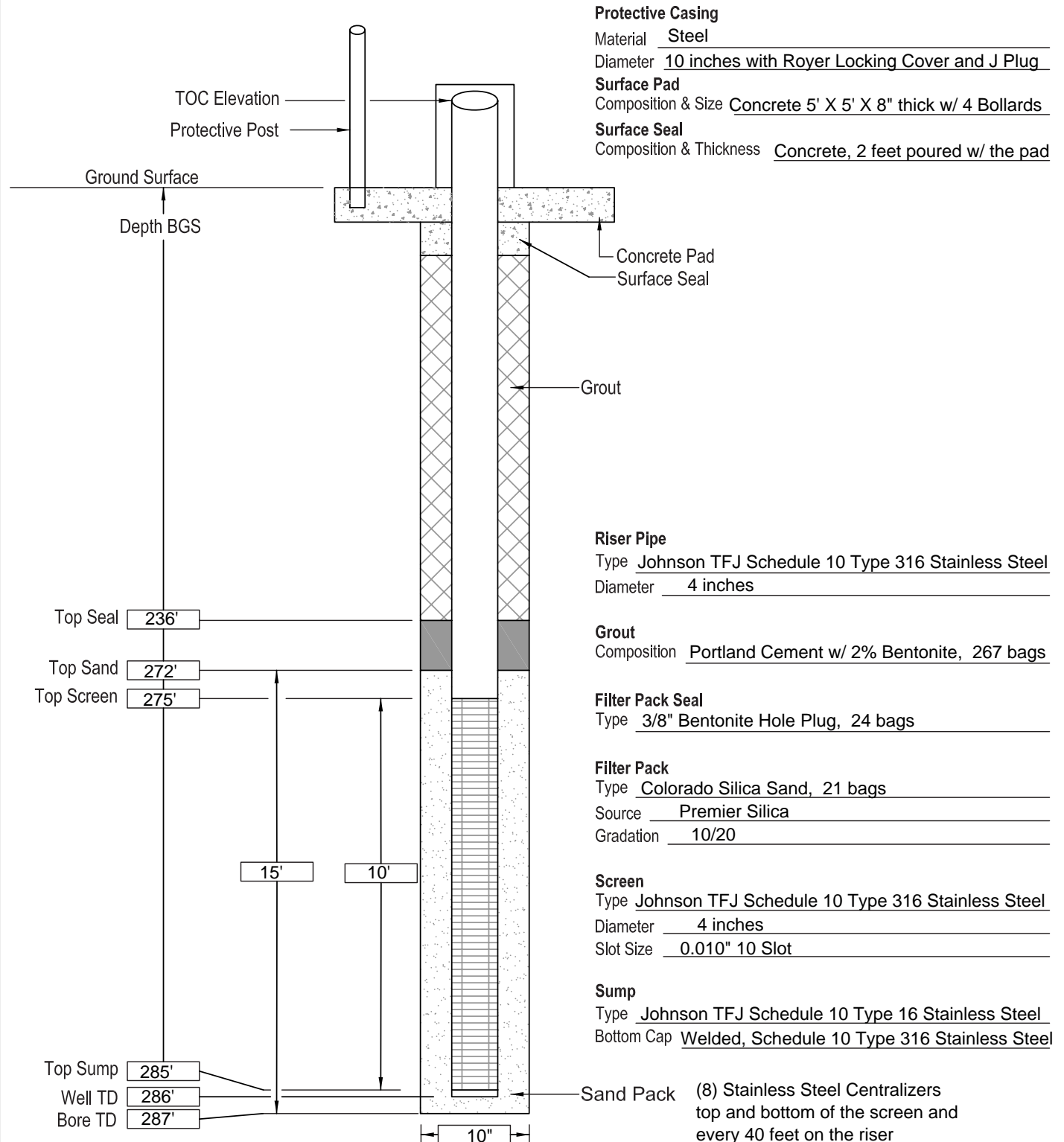


Well Installation Diagram

Project: BOA 70 Release 5
 Location: Southeast ISB Extension Well Field
 Contractor: Stoller Newport News Nuclear
 Driller: Cascade
 Well Coordinates: 3750836.66 N 647823.09 E
 TOC Elevation: 3516.68 ft AMSL
 Surface Elevation: 3514.60 ft AMSL

Well No: PTX06-ISB113
 Well Type: ISB Injection
 Date Constructed: 11/02/2017
 Observed By: R Dickerson

Sheet 1 of 1

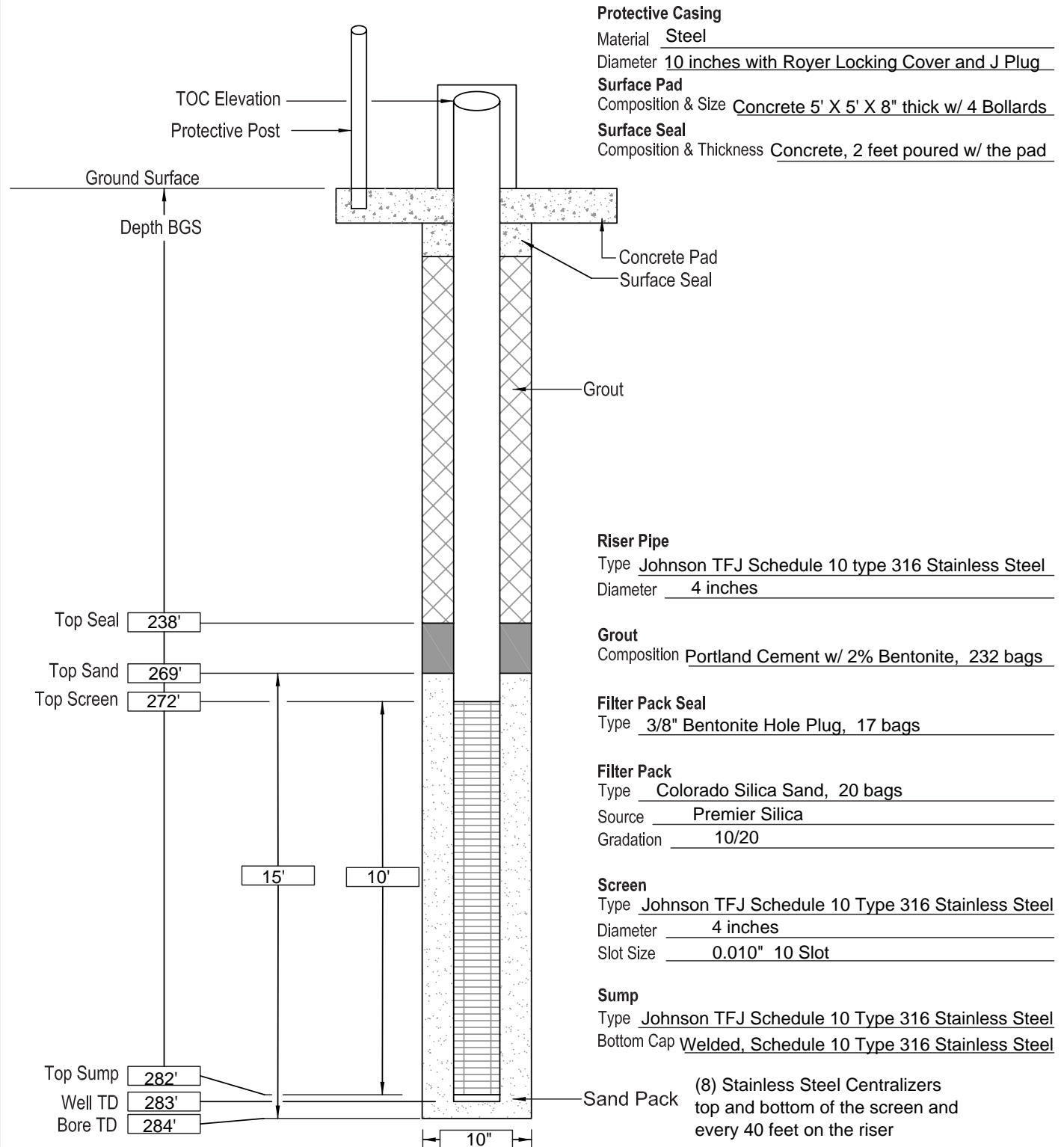


Well Installation Diagram

Project: BOA 70 Release 5
 Location: Southeast ISB Extension Well Field
 Contractor: Stoller Newport News Nuclear
 Driller: Cascade
 Well Coordinates: 3750810.07 N 647753.08 E
 TOC Elevation: 3516.60 ft AMSL
 Surface Elevation: 3514.57 ft AMSL

Well No: PTX06-ISB112
 Well Type: ISB Injection
 Date Constructed: 12/12/2017
 Observed By: R Rupp

Sheet 1 of 1

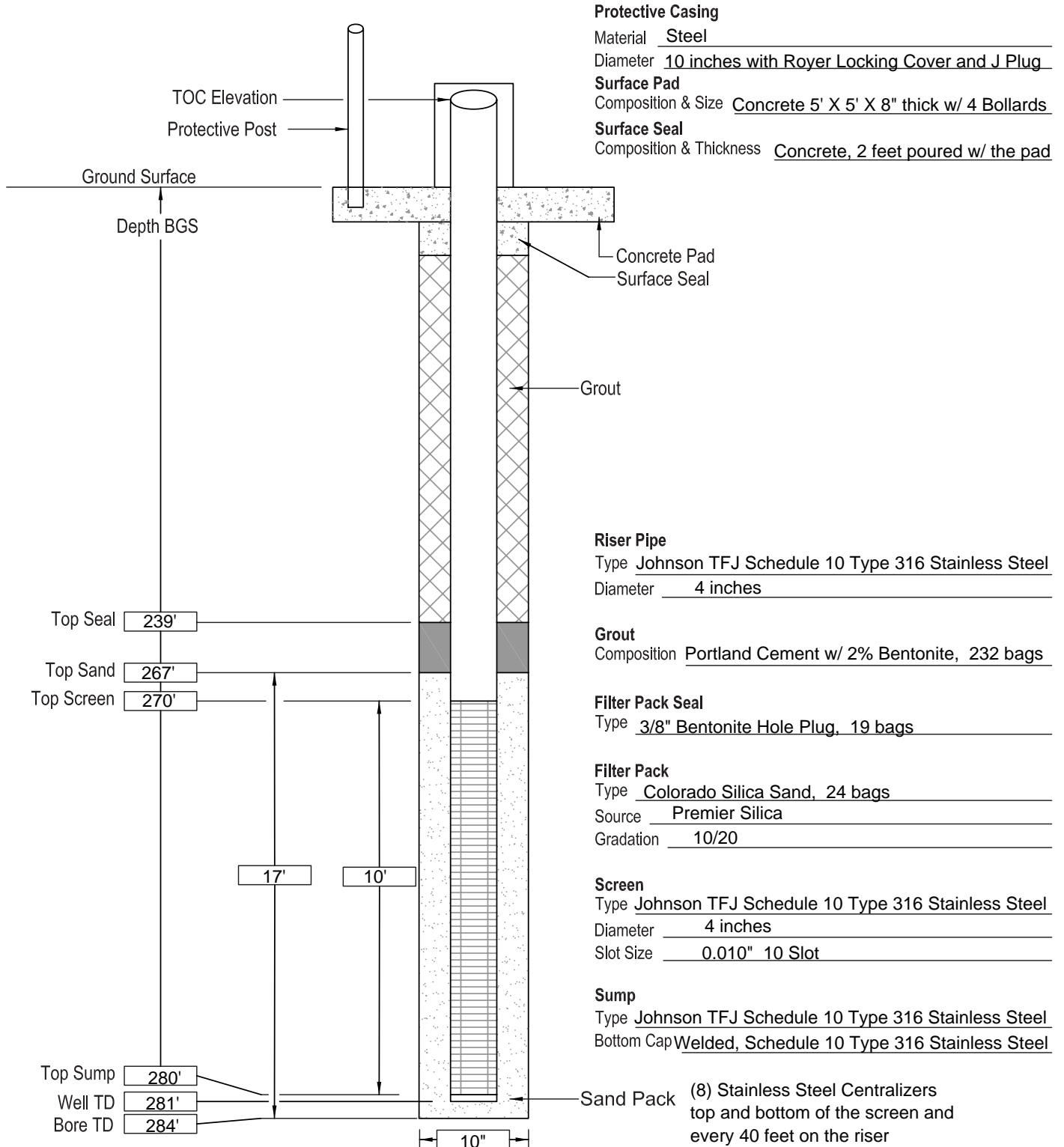


Well Installation Diagram

Project: BOA 70 Release 5
 Location: Southeast ISB Extension Well Field
 Contractor: Stoller Newport News Nuclear
 Driller: Cascade
 Well Coordinates: 3750783.88 N 647682.57 E
 TOC Elevation: 3516.75 ft AMSL
 Surface Elevation: 3514.63 ft AMSL

Well No: PTX06-ISB111
 Well Type: ISB Injection
 Date Constructed: 12/14/2017 - 12/15/2017
 Observed By: J Ford

Sheet 1 of 1

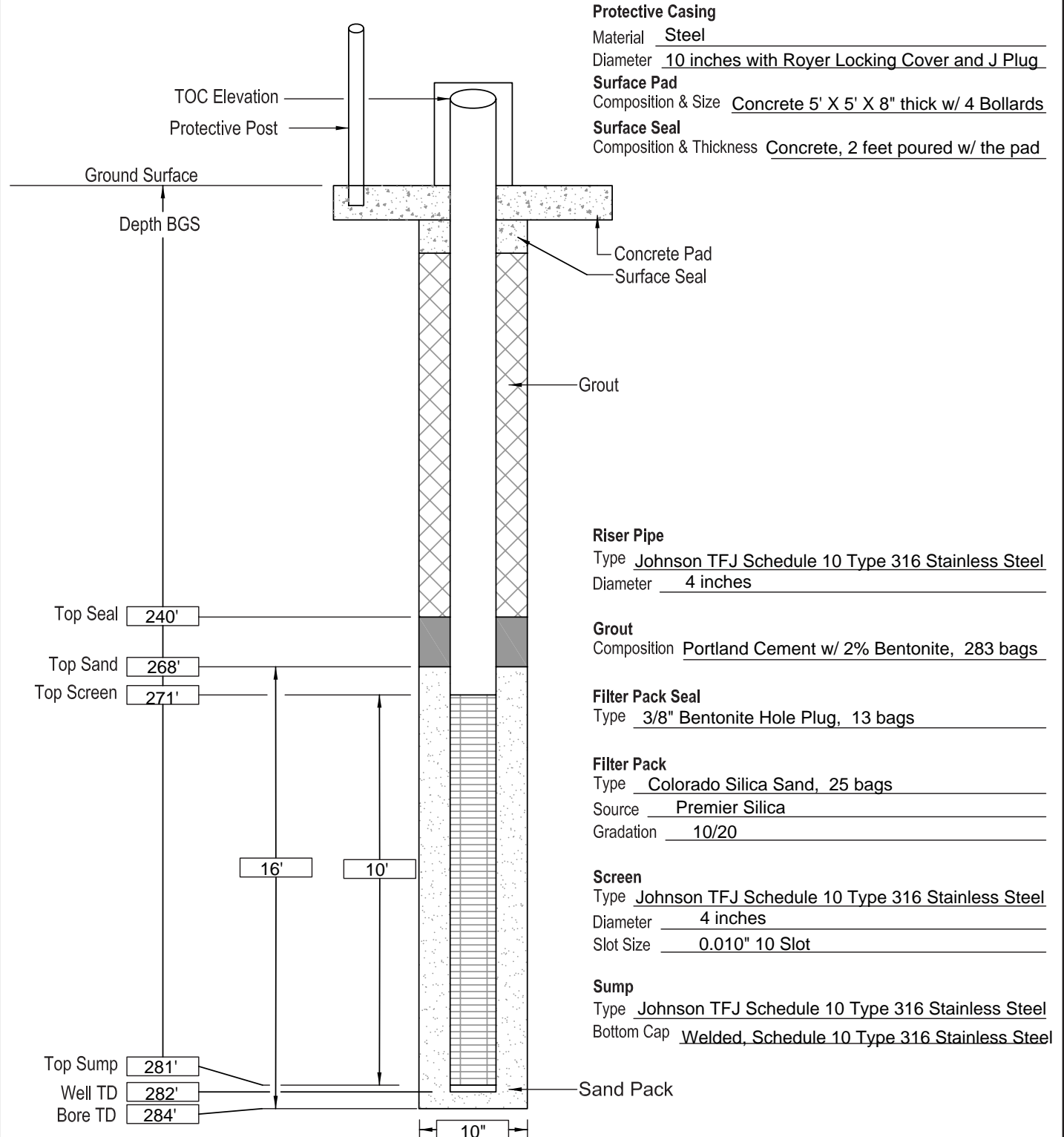


Well Installation Diagram

Project: BOA 70 Release 5
 Location: Southeast ISB Extension Well Field
 Contractor: Stoller Newport News Nuclear
 Driller: Cascade
 Well Coordinates: 3750757.59 N 647612.02 E
 TOC Elevation: 3516.41 ft AMSL
 Surface Elevation: 3514.33 ft AMSL

Well No: PTX06-ISB110
 Well Type: ISB Injection
 Date Constructed: 12/01/2017 to 12/02/2017
 Observed By: R Rupp

Sheet 1 of 1

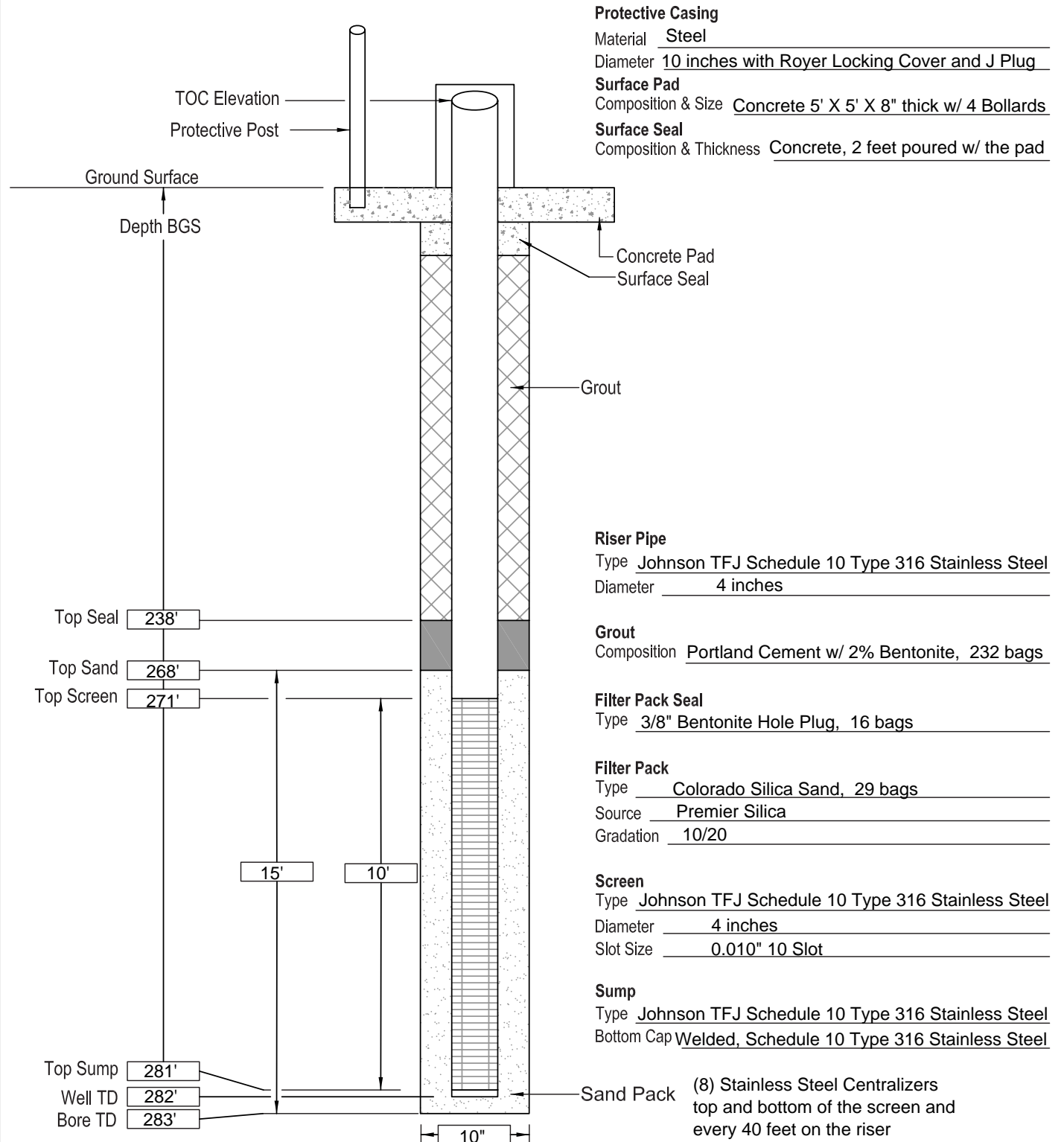


Well Installation Diagram

Project: BOA 70 Release 5
 Location: Southeast ISB Extension Well Field
 Contractor: Stoller Newport News Nuclear
 Driller: Cascade
 Well Coordinates: 3750731.23 N 647541.96 E
 TOC Elevation: 3516.25 ft AMSL
 Surface Elevation: 3514.18 ft AMSL

Well No: PTX06-ISB109
 Well Type: ISB Injection
 Date Constructed: 12/04/2017
 Observed By: R Rupp

Sheet 1 of 1

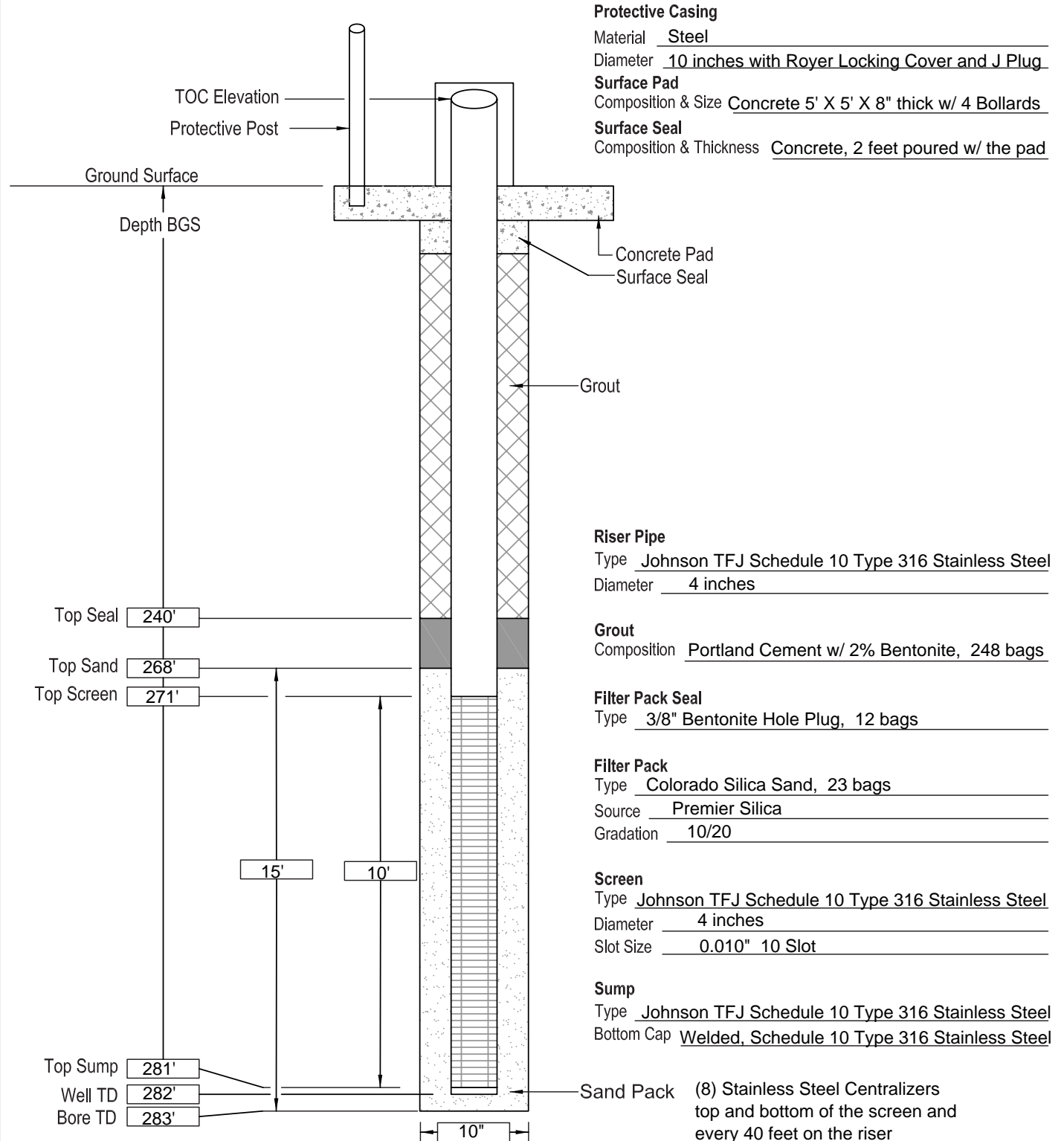


Well Installation Diagram

Project: BOA 70 Release 5
 Location: Southeast ISB Extension Well Field
 Contractor: Stoller Newport News Nuclear
 Driller: Cascade
 Well Coordinates: 3750705.36 N 647471.65 E
 TOC Elevation: 3516.31 ft AMSL
 Surface Elevation: 3514.20 ft AMSL

Well No: PTX06-ISB108
 Well Type: ISB Injection
 Date Constructed: 12/12/2017 - 12/13/2017
 Observed By: J Ford

Sheet 1 of 1

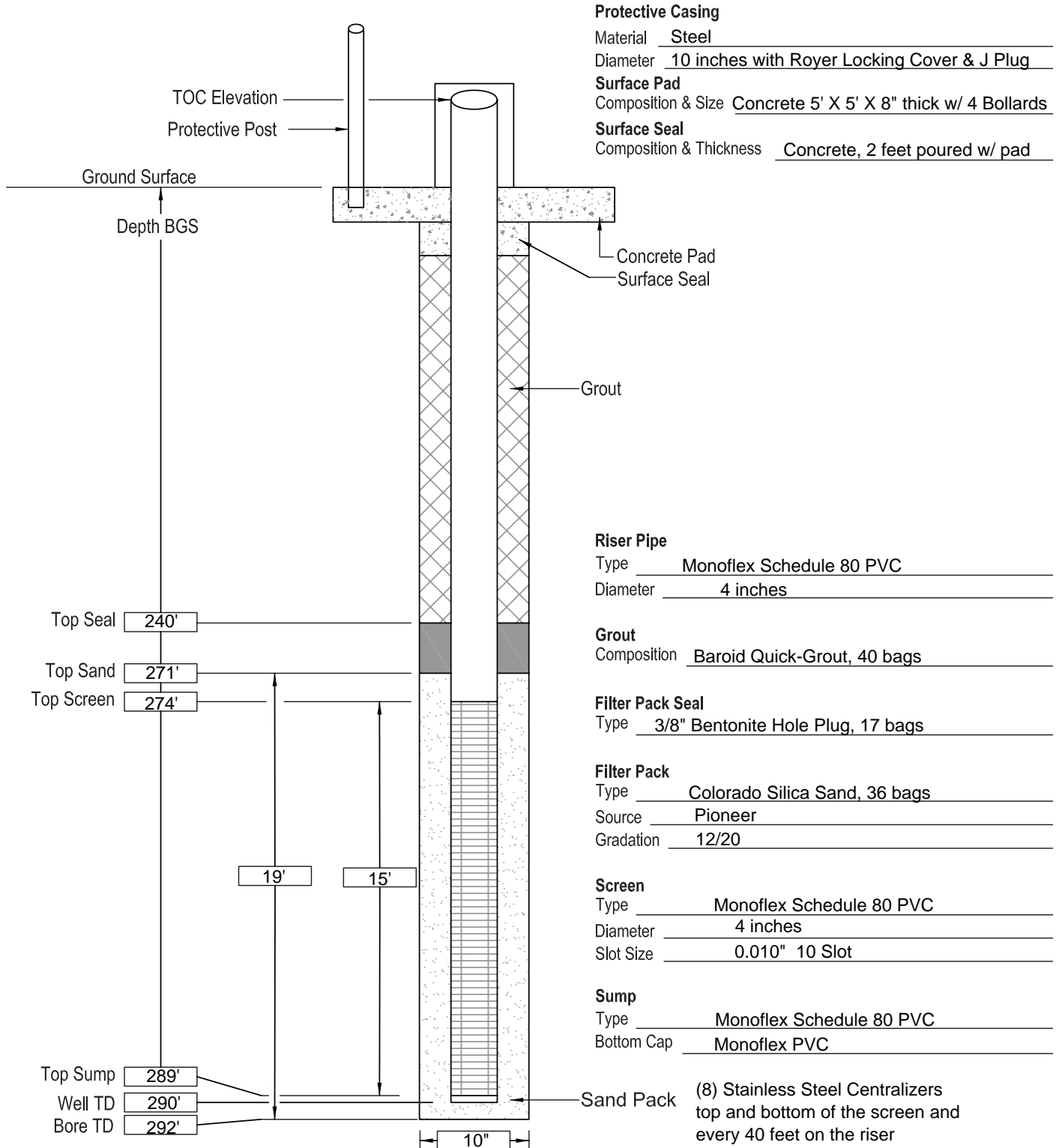


Well Installation Diagram

Project: BOA 70 Release 5
 Location: North of SE ISB Extension Well Field
 Contractor: Stoller Newport News Nuclear
 Driller: Cascade
 Well Coordinates: 3751968.74 N 649096.79 E
 TOC Elevation: 3518.88 ft AMSL
 Surface Elevation: 3516.83 ft AMSL

Well No: PTX06-1195
 Well Type: Monitor
 Date Constructed: 01/30/2018
 Observed By: R Rupp

Sheet 1 of 1

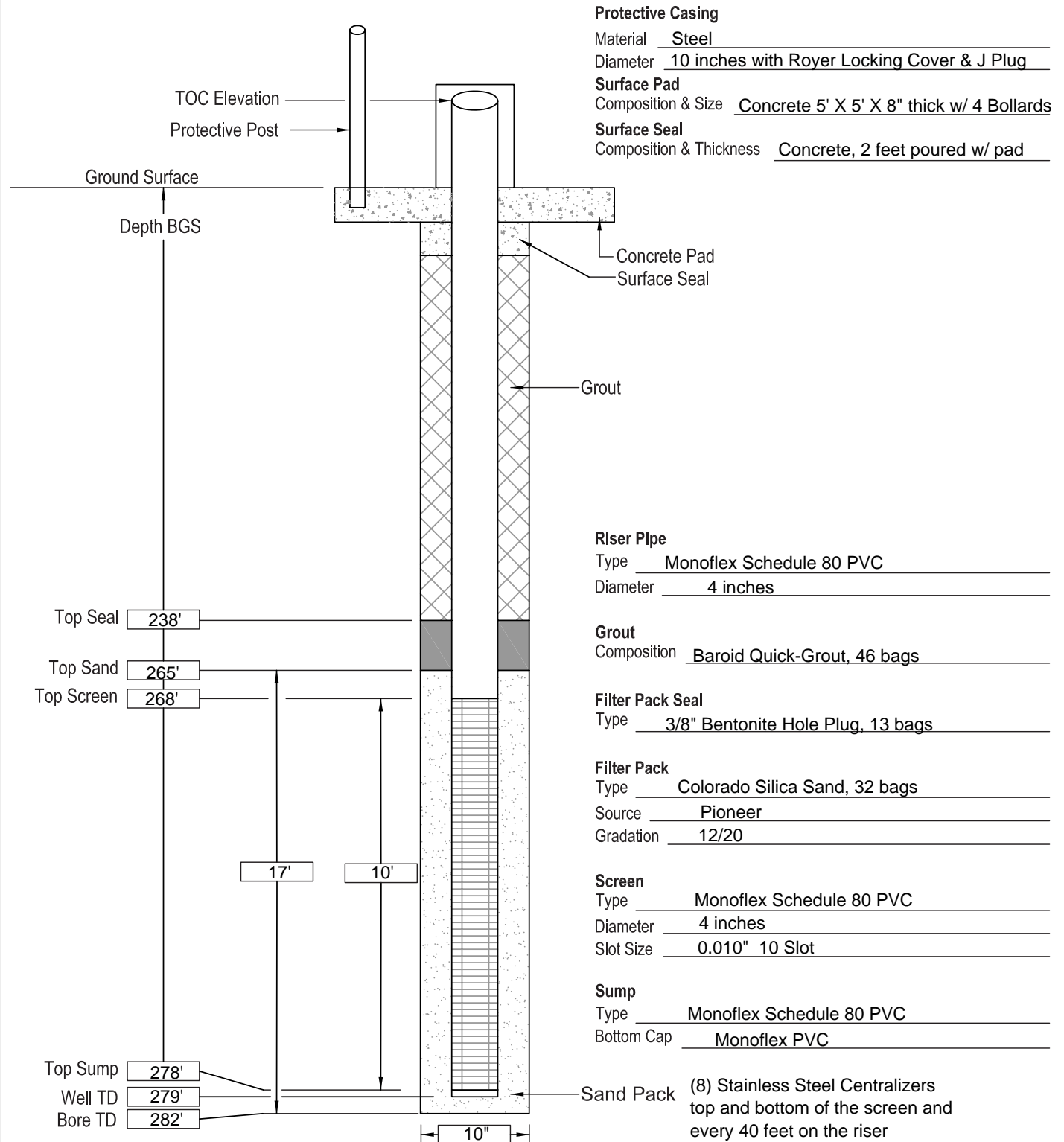


Well Installation Diagram

Project: BOA 70 Release 5
 Location: Vance Property
 Contractor: Stoller Newport News Nuclear
 Driller: Cascade
 Well Coordinates: 3750477.77 N 648355.41 E
 TOC Elevation: 3514.75 ft AMSL
 Surface Elevation: 3512.68 ft AMSL

Well No: PTX06-1194
 Well Type: Monitor
 Date Constructed: 01/27/2018
 Observed By: R Rupp

Sheet 1 of 1

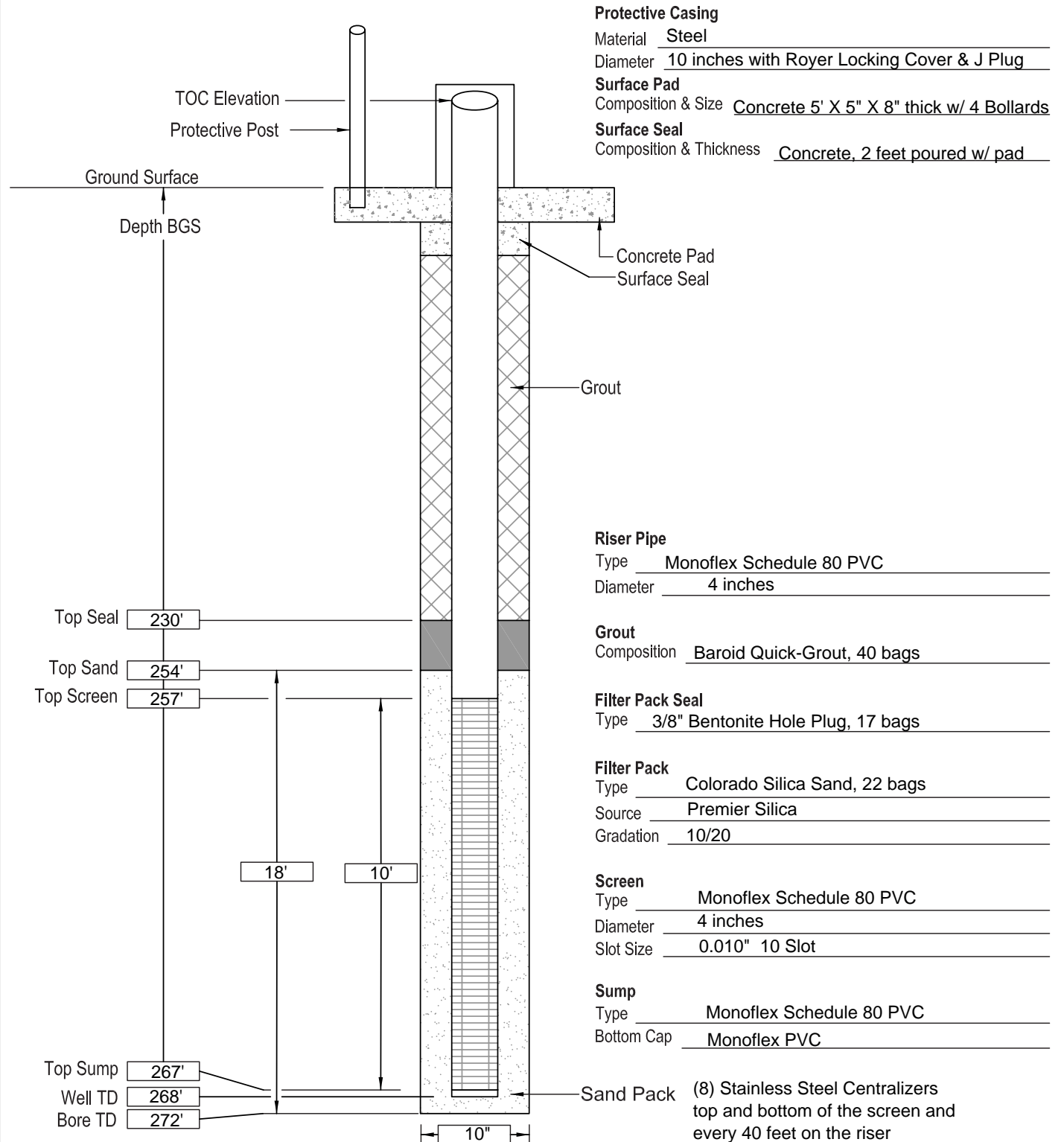


Well Installation Diagram

Project: BOA 70 Release 5
 Location: Vance Property
 Contractor: Stoller Newport News Nuclear
 Driller: Cascade
 Well Coordinates: 3749346.75 N 646719.13 E
 TOC Elevation: 3510.37 ft AMSL
 Surface Elevation: 3508.28 ft AMSL

Well No: PTX06-1193
 Well Type: Monitor
 Date Constructed: 01/24/2018
 Observed By: R Rupp

Sheet 1 of 1

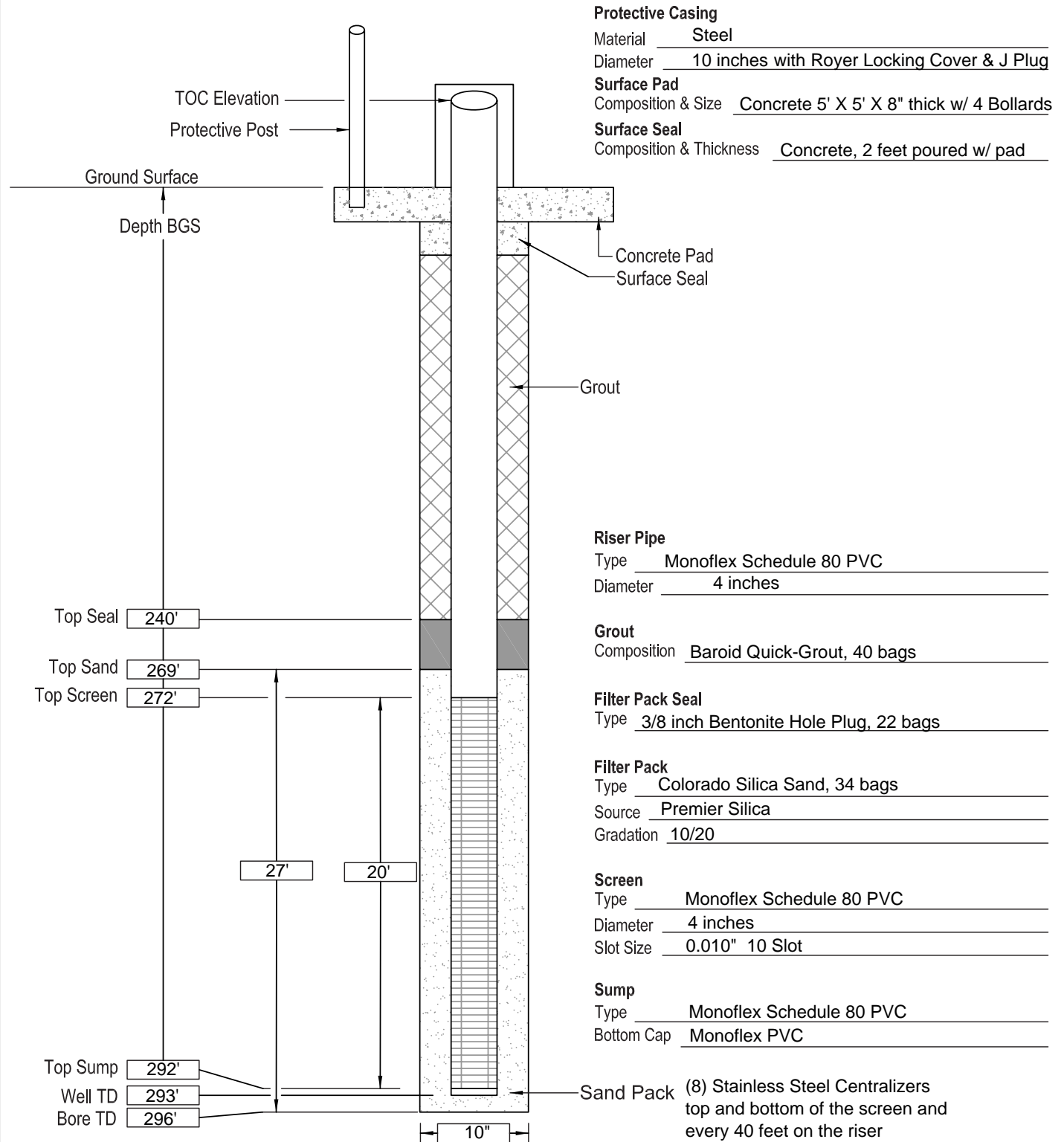


Well Installation Diagram

Project: BOA 70 Release 5
 Location: Vance Property
 Contractor: Stoller Newport News Nuclear
 Driller: Cascade
 Well Coordinates: 3749893.14 N 649119.32 E
 TOC Elevation: 3512.32 ft AMSL
 Surface Elevation: 3510.23 ft AMSL

Well No: PTX06-1192
 Well Type: Monitor
 Date Constructed: 01/18/2018 - 01/19/2018
 Observed By: R Rupp

Sheet 1 of 1

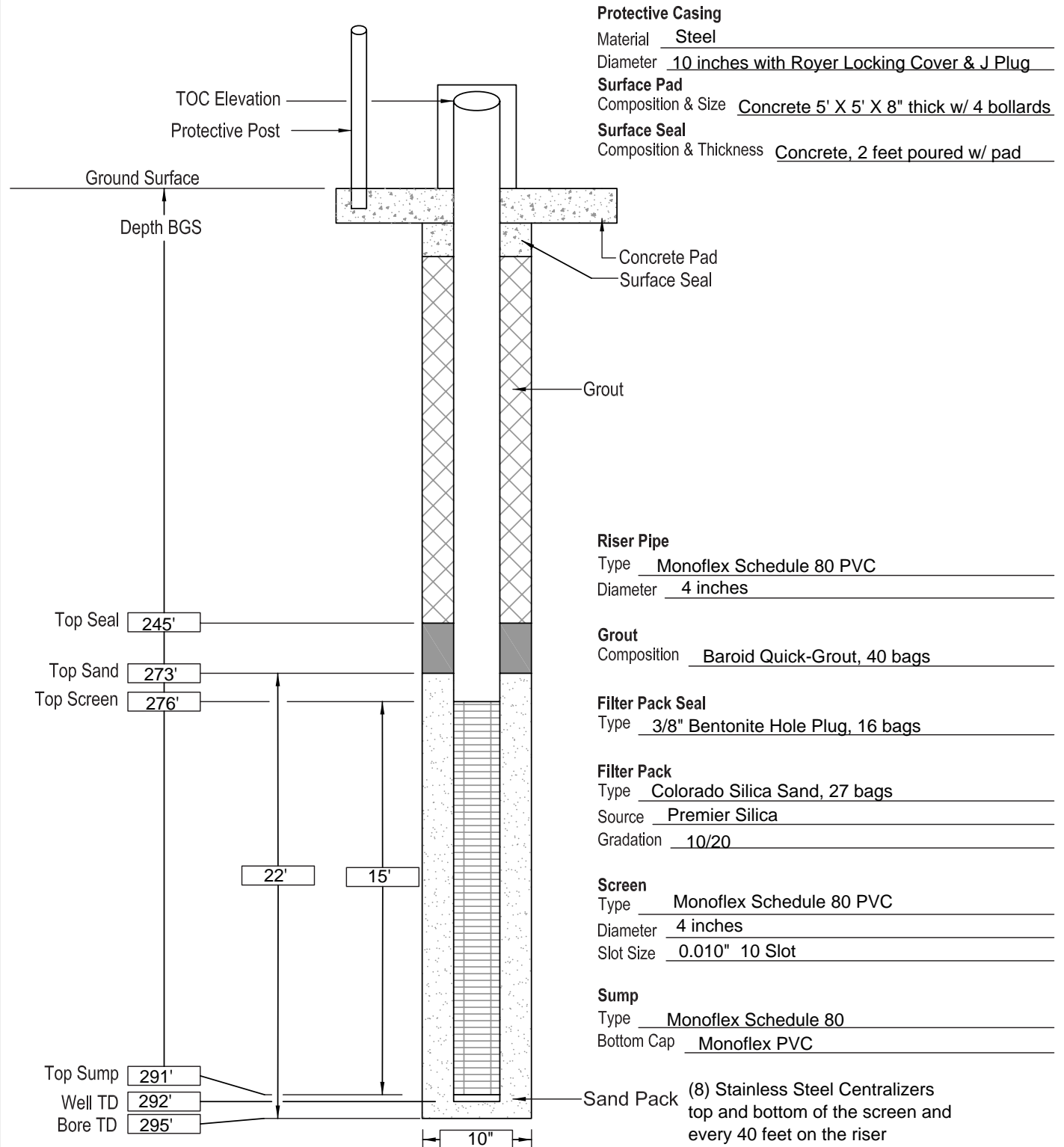


Well Installation Diagram

Project: BOA 70 Release 5
 Location: Vance Property
 Contractor: Stoller Newport News Nuclear
 Driller: Cascade
 Well Coordinates: 3750720.88 N 648996.85 E
 TOC Elevation: 3515.08 AMSL
 Surface Elevation: 3513.02 AMSL

Well No: PTX06-1191
 Well Type: Monitor
 Date Constructed: 01/21/2018 - 01/22/2018
 Observed By: R Rupp

Sheet 1 of 1

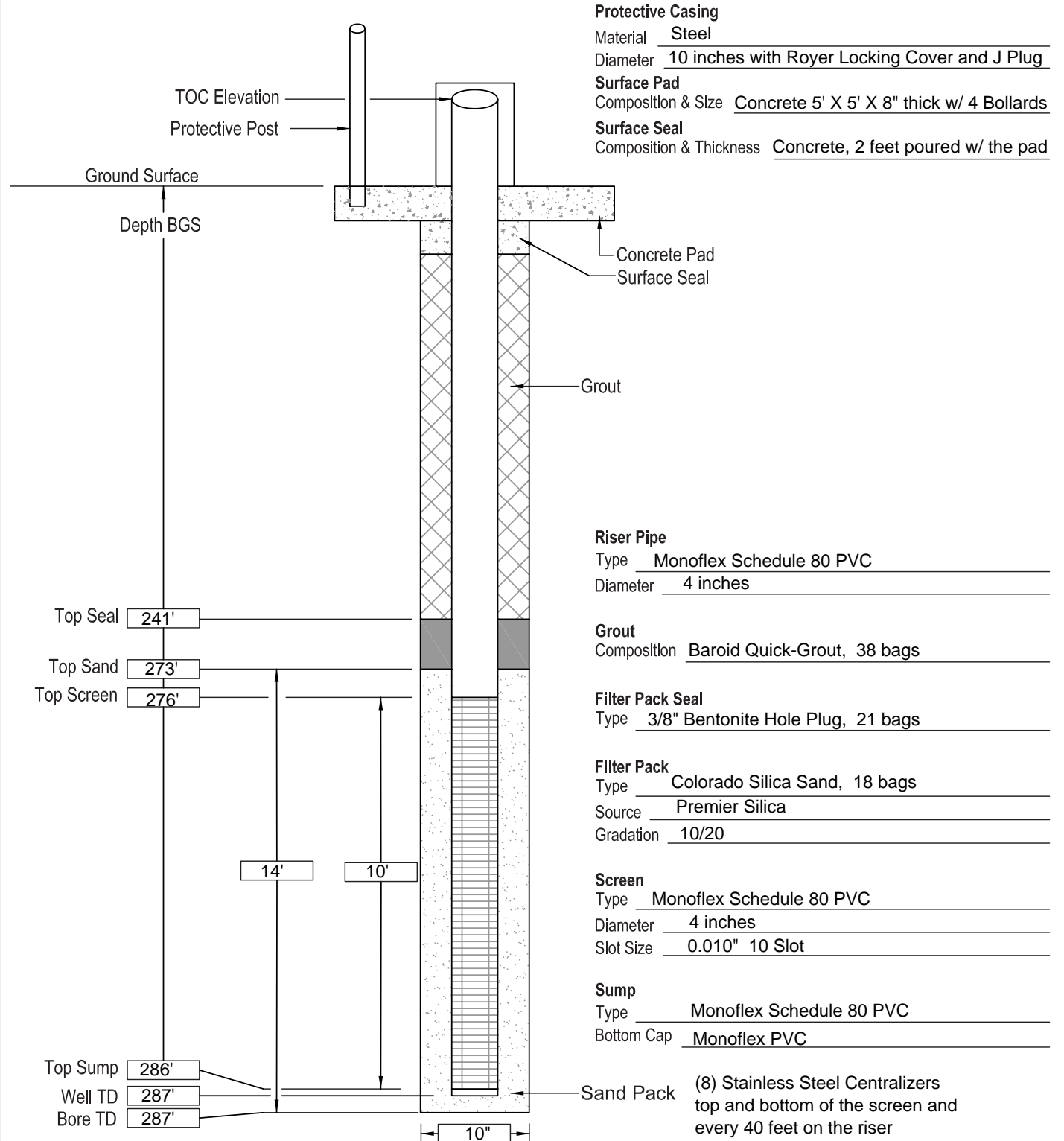


Well Installation Diagram

Project: BOA 70 Release 5
 Location: Southeast ISB Extension Well Field
 Contractor: Stoller Newport News Nuclear
 Driller: Cascade
 Well Coordinates: 3751439.44 N 648281.22 E
 TOC Elevation: 3518.48 ft
 Surface Elevation: 3516.35 ft

Well No: PTX06-1190
 Well Type: Monitor
 Date Constructed: 10/20/2017
 Observed By: R Rupp

Sheet 1 of 1



Appendix B

State of Texas Well Reports

STATE OF TEXAS PLUGGING REPORT for Tracking #173867

Owner: U.S. Dept. of Energy	Owner Well #: PTX06-PRB16
Address: P.O. Box 30020 Amarillo, TX 79120	Grid #: 06-44-5
Well Location: U.S. Hwy 60 and FM 2373 Panhandle, TX 79068	Latitude: 35° 17' 56" N
Well County: Carson	Longitude: 101° 32' 51" W
	Elevation: 3534

Well Type: **PRB Injection**

Drilling Information

Company: WDC Exploration and Wells	Date Drilled: 8/30/2006
Driller: George F Sheehan	License Number: 1399

Well Report Tracking #91955

	Diameter (in.)	Top Depth (ft.)	Bottom Depth (ft.)
Borehole:	12	0	310

Plugging Information

Date Plugged: **12/14/2017** Plugger: **William B. Bludworth**

Plug Method: **Tremmie pipe cement from bottom to top**

Casing Left in Well:

Dia (in.)	Top (ft.)	Bottom (ft.)
4	17	278.5

Plug(s) Placed in Well:

Top (ft.)	Bottom (ft.)	Description (number of sacks & material)
0	2	Backfill/ Topsoil 1 Yards
2	278.5	Cement 64 Bags/Sacks

Certification Data: The driller certified that the driller plugged this well (or the well was plugged under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the reports(s) being returned for completion and resubmittal.

Company Information: **Cascade Drilling**
3621 Hwy 47
Peralta, NM 87042

Driller Name: **William B. Bludworth** License Number: **4885**

Comments: **PRB Injection Well (Passive Reactive Barrier).**

Detailed owner records indicate that the original bore to 310' was plugged back to 280' w/ bentonite pellets prior to well installation.

Cement Sacks are 47 lbs. each. 3% Bentonite gel added to Portland slurry.

STATE OF TEXAS WELL REPORT for Tracking #466090

Owner: U.S. Department of Energy Address: P.O. Box 30030 Amarillo, TX 79120 Well Location: Pantex Plant US Hwy 60 and FM 2373 Panhandle, TX 79068 In field at NE corner of Hwy 60 and FM 2373, adjacent to RR tracks. Well County: Carson	Owner Well #: PTX06-ISB131 Grid #: 06-44-6 Latitude: 35° 17' 33.68" N Longitude: 101° 31' 25.32" W Elevation: 3513 ft. above sea level
Type of Work: New Well	
Proposed Use: Injection	

Drilling Start Date: **10/25/2017** Drilling End Date: **10/26/2017**

	Diameter (in.)	Top Depth (ft.)	Bottom Depth (ft.)
Borehole:	10	0	294

Drilling Method: **Air Rotary Casing Hammer**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	Bottom Depth (ft.)	Filter Material	Size
Filter Pack Intervals:	279	294	Sand	10/20

	Top Depth (ft.)	Bottom Depth (ft.)	Description (number of sacks & material)
Annular Seal Data:	3	239	Cement 225 Bags/Sacks
	239	279	Bentonite 23 Bags/Sacks

Seal Method: **Tremie**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Sleeve Installed** **Surface Completion by Driller**

Water Level: **280.5 ft. below land surface on 2017-10-26** Measurement Method: **Electric Line**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

Water Quality:	Strata Depth (ft.)	Water Type
	265 - 292	Perched Aquifer

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Cascade Drilling**
3621 Hwy 47
Peralta, TX 87042

Driller Name: **William B. Blutworth** License Number: **4885**

Comments: **Stainless Steel Centralizers above and below screen and every 40'.**
Portland sacks = 47 lb.; Bent. chip sacks = 50 lb.
Surface completion is a 5' X 5' X 8" concrete slab w/ 10" steel protective casing and 4 bollards.
Well installed as part of ISB Well field for perched aquifer remediation.

Lithology:
 DESCRIPTION & COLOR OF FORMATION MATERIAL

Casing:
 BLANK PIPE & WELL SCREEN DATA

Top (ft.)	Bottom (ft.)	Description
0	5	CLAY, lean, dark redish brown, plastic, stiff, moist.
5	37	SILT, w/ Caliche, reddish brown to pink, medium dense, dry.
37	42	Caliche SILT and angular chips, pink to white, hard, dry.
42	55	SAND w/ Silt, reddish yellow, fine sand, medium dense, dry.
55	72	SAND w/ Silt and Caliche, reddish yellow, medium dense, dry.
72	85	SAND, yellowish red, fine grain, medium dense, dry.
85	95	CLAY, lean, reddish brown, plastic, very stiff, moist.
95	110	SILTY SAND, some Caliche, reddish yellow, medium dense, dry.
110	155	SAND, fine grain, reddish yellow, dry.

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4	Riser	Stainless Steel	10	0	282
4	Screen	Rod Base Stainless Steel	10 0.010	282	292
4	Blank	Stainless Steel	10	292	293

155	165	SANDSTONE, very fine and fine grain, light brown, very dense, cemented, dry.
165	185	SAND, reddish yellow, fine grain, loose, dry.
185	215	SAND, light brown to reddish yellow, fine grain, loose, dry.
215	225	SAND w/ small Gravel, cemented, light brown, fine grain, dense, dry.
225	235	SAND, light yellowish brown, medium and fine grain, medium dense, dry.
235	245	SAND, yellowish brown, medium dense, dry.
245	250	SAND w/ large Gravel, light yellowish brown, dense, dry.
250	255	GRAVEL w/ Sand, yellowish brown, very dense, dry.
255	260	SAND w/ small Gravel, coarse to fine sand, pale brown, dense, dry.
260	265	GRAVEL w/ Sand, small - medium gravel, yellowish brown, very dense, dry.
265	292	SAND, well graded, some Gravel, yellowish brown, moist to saturated, dense.
292	294	SILTSTONE, Sandy w/ Caliche nodes, light reddish brown, stiff to hard, dry.

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Austin, TX 78711
(512) 334-5540**

STATE OF TEXAS WELL REPORT for Tracking #466196

Owner: U.S. Department of Energy Address: P.O. Box 30030 Amarillo, TX 79120 Well Location: Pantex Plant US Hwy 60 @ FM 2373 Panhandle, TX 79068 In field at NE corner of Hwy 60 and FM 2373, adjacent to RR tracks. Well County: Carson	Owner Well #: PTX06-ISB130 Grid #: 06-44-6 Latitude: 35° 17' 33.23" N Longitude: 101° 31' 26.31" W Elevation: 3513 ft. above sea level
Type of Work: New Well	
Proposed Use: Injection	

Drilling Start Date: **11/13/2017** Drilling End Date: **11/14/2017**

	Diameter (in.)	Top Depth (ft.)	Bottom Depth (ft.)
Borehole:	10	0	292

Drilling Method: **Air Rotary Casing Hammer**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	Bottom Depth (ft.)	Filter Material	Size
Filter Pack Intervals:	274	292	Sand	10/20

	Top Depth (ft.)	Bottom Depth (ft.)	Description (number of sacks & material)
Annular Seal Data:	2	244	Cement 232 Bags/Sacks
	244	274	Bentonite 17 Bags/Sacks

Seal Method: **Tremie**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Sleeve Installed**

Surface Completion by Driller

Water Level: **280.5 ft. below land surface on 2017-11-14** Measurement Method: **Electric Line**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

Water Quality:

Strata Depth (ft.)	Water Type
270 - 287	Perched Aquifer

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Cascade Drilling**
3621 Hwy 47
Peralta, NM 87042

Driller Name: **William B. Blutworth** License Number: **4885**

Comments: **Portland sacks = 47 lb.; Bent. chip sacks = 50 lb.**
Surface completion is a 5' X 5' X 8" concrete slab w/ 10" steel protective casing and 4 bollards.
Well installed as part of ISB well field for perched aquifer remediation.

Lithology:
 DESCRIPTION & COLOR OF FORMATION MATERIAL

Casing:
 BLANK PIPE & WELL SCREEN DATA

Top (ft.)	Bottom (ft.)	Description
0	3	SILTY CLAY LOAM, moderate plasticity, grayish red.
3	10	SILTY CLAY to CLAYEY SILT, poorly graded, low plasticity, moderate reddish orange.
10	20	Same as above, moderate orange pink.
20	30	SILTY CLAY, poorly graded, low plasticity, w/ small Caliche nodules, moderate orange pink.
30	35	Same as above, moderate reddish orange.
35	40	Same as above, moderate orange pink.
40	45	CALCRETE, dry, hard, grayish orange pink.
45	55	CLAYEY SILT, poorly graded, dry, w/ some Caliche nodules, moderate orange pink.
55	60	SILTY CLAY, low plasticity, poorly graded, dry, minor caliche, moderate reddish orange.

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4	Riser	New Stainless Steel	10	0	277
4	Screen	New Rod Base Stainless Steel	10 0.010	277	287
4	Blank	New Stainless Steel	10	287	288

60	65	SILT w/ minor Clay, poorly graded, damp, moderate reddish orange.
65	70	Same as above, only slightly damp, moderate orange pink.
70	75	SILTY SANDY CLAY, moderately graded, dry, moderate reddish orange.
75	80	CLAYEY SILT, poorly graded, dry, w/ minor Caliche nodules, moderate reddish orange.
80	90	SILTY CLAY, poorly graded, w/ minor Caliche nodules and minor carbonaceous matter, dry, pale reddish brown.
90	100	CLAYEY SILT, poorly graded, dry, orange pink.
100	120	SILT, very poorly graded, dry, mostly friable but w/ some very well-lithified hard zones, orange pink.
120	150	SAND, very fine, very poorly graded, mostly friable but w/ some hard, well-lithified layers, grayish orange.
150	160	Same as above, very pale orange.
160	205	Same as above, grayish orange.
205	220	GRAVEL and SAND, interbedded fine to coarse gravel and fine sand, well graded, dry, grayish orange.
220	240	SAND, fine, poorly graded, slightly damp, w/ some interbedded fine to medium moderately graded Gravel, grayish orange.
240	245	CLAYEY SAND, fine, interbedded w/ fine to medium Gravel, well graded, grayish orange.
245	255	SAND, fine to coarse, w/ some fine Gravel, well graded, damp, grayish orange.
255	260	GRAVEL, fine to coarse, w/ some fine to coarse Sand, well graded, damp, very pale orange.
260	265	SAND, fine to coarse, moderately graded, damp, grayish orange.

265	287	SAND & GRAVEL, fine to coarse sand and fine to coarse gravel, well graded, wet below 278', grayish orange.
287	292	CLAYEY SILTSTONE, hard, poorly graded, grayish orange.

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(512) 334-5540**

STATE OF TEXAS WELL REPORT for Tracking #466191

Owner: U.S. Department of Energy Address: PO Box 30030 Amarillo, TX 79120 Well Location: Pantex Plant U.S. Hwy 60 @ FM 2373 Panhandle, TX 79068 In field at NE corner of Hwy 60 and FM 2373, adjacent to RR tracks. Well County: Carson	Owner Well #: PTX06-ISB129 Grid #: 06-44-6 Latitude: 35° 17' 32.94" N Longitude: 101° 31' 27.13" W Elevation: 3513 ft. above sea level
Type of Work: New Well	
	Proposed Use: Injection

Drilling Start Date: **11/14/2017** Drilling End Date: **11/15/2017**

	Diameter (in.)	Top Depth (ft.)	Bottom Depth (ft.)
Borehole:	10	0	291

Drilling Method: **Air Rotary Casing Hammer**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	Bottom Depth (ft.)	Filter Material	Size
Filter Pack Intervals:	274	291	Sand	10/20

	Top Depth (ft.)	Bottom Depth (ft.)	Description (number of sacks & material)
Annular Seal Data:	2	244	Cement 261 Bags/Sacks
	244	274	Bentonite 21 Bags/Sacks

Seal Method: **Tremie**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Sleeve Installed**

Surface Completion by Driller

Water Level: **278.35 ft. below land surface on 2017-11-17** Measurement Method: **Electric Line**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

Water Quality:	Strata Depth (ft.)	Water Type
	271 - 287	Perched Aquifer

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Cascade Drilling**
3621 Hwy 47
Peralta, NM 87042

Driller Name: **William B. Blutworth** License Number: **4885**

Comments: **Stainless Steel Centralizers above and below screen and every 40'.**
Portland sacks = 47 lb.; Bent. chip sacks = 50 lb.
Surface completion is a 5' X 5' X 8" concrete slab w/ 10" steel protective casing and 4 bollards.
Well installed as part of ISB well field for perched aquifer remediation.

Lithology:
 DESCRIPTION & COLOR OF FORMATION MATERIAL

Casing:
 BLANK PIPE & WELL SCREEN DATA

Top (ft.)	Bottom (ft.)	Description
0	3	SANDY CLAY LOAM, poor grading, high plasticity, damp.
3	10	FAT CLAY, some very fine Sand, poor grading, high plasticity.
10	35	SILTY CLAY, some very fine Sand, poorly graded, non-plastic, dry.
35	40	CLAYEY SILT, some very fine Sand, poorly graded, dry, some well-indurated, w/ Caliche.
40	60	SILT & SAND, very fine, poorly graded, dry. Interbedded w/ hard Calcrete from 50'.
60	65	SAND, very fine, w/ some Clay, slightly damp, poorly graded.
65	70	SILT & SAND, very fine, poor grading, dry.
70	80	SILTY CLAY to CLAYEY SILT, very poorly graded, dry.

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4	Riser	New Stainless Steel	10	0	277
4	Screen	New Rod Base Stainless Steel	10 0.010	277	287
4	Blank	New Stainless Steel	10	287	288

80	90	SILTY CLAY, poorly graded, dry, low plasticity.
90	100	SILTY SAND, very fine, w/ some minor Clay, poor grading, dry, w/ some interbedded fat clay.
100	110	SILTSTONE/ SANDSTONE, hard, well-indurated, w/ some interbedded friable layers.
110	115	SAND, very fine, friable, very poorly graded, dry.
115	120	SILT, friable to indurated, very poorly graded, dry.
120	180	SILTY SAND, very fine, poorly graded, very friable w/ thin beds of well-indurated very fine grain Sandstone, dry to slightly damp.
180	210	SANDY GRAVEL, fine to medium gravel & fine to coarse sand, well graded, dry.
210	215	SAND, fine to medium, poorly graded, dry.
215	220	GRAVELLY SAND, fine to medium, well graded, dry.
220	225	SAND, fine, poorly graded, mostly friable w/ a few hard layers, dry.
225	230	GRAVELLY SAND, fine to medium gravel, fine sand, moderately graded, dry.
230	240	SAND, fine, poorly graded, mostly friable w/ minor hard layers, slightly damp.
240	245	SAND, fine to medium w/ some coarse grain & some interbedded fat Clay layers, moderately graded, damp.
245	250	SANDY GRAVEL, fine to coarse, very well graded, dry.
250	258	SAND, fine to medium, poorly graded, dry.
258	262	SANDY GRAVEL, very coarse, very well graded, dry.
262	265	SAND, fine, w/ damp fat clay and thin pea gravel beds, well graded, dry.
265	268	SAND, fine to coarse, w/ some pea Gravel, well graded, dry.
268	271	Prominent Pea GRAVEL bed, moderate grading, dry.
271	275	GRAVELLY SAND, fine to coarse, well graded, dry.

275	280	SANDY GRAVEL, fine to medium sand & fine to coarse gravel, w/ thin Gravel bed at 275', slightly damp, very well graded.
280	287	SAND, fine to coarse, interbedded w/ GRAVEL, fine to medium, well graded, wet.
287	291	CLAYEY SILTSTONE.

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(512) 334-5540**

STATE OF TEXAS WELL REPORT for Tracking #466089

Owner: U.S. Department of Energy Address: P.O. Box 30030 Amarillo, TX 79120 Well Location: Pantex Plant U.S. Hwy 60 and FM2373 Panhandle, TX 79068 Outside Plant; in field in NE corner of Hwy 60 and FM 2373, adjacent railroad tracks. Well County: Carson	Owner Well #: PTX06-ISB128 Grid #: 06-44-6 Latitude: 35° 17' 32.7" N Longitude: 101° 31' 28.05" W Elevation: 3513 ft. above sea level
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Type of Work: New Well	Proposed Use: Injection
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Drilling Start Date: **10/22/2017** Drilling End Date: **10/24/2017**

	Diameter (in.)	Top Depth (ft.)	Bottom Depth (ft.)
Borehole:	10	0	294

Drilling Method: **Air Rotary Casing Hammer**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	Bottom Depth (ft.)	Filter Material	Size
Filter Pack Intervals:	277	294	Sand	10/20

	Top Depth (ft.)	Bottom Depth (ft.)	Description (number of sacks & material)
Annular Seal Data:	2	237.5	Cement 243 Bags/Sacks
	237.5	277	Bentonite 24 Bags/Sacks

Seal Method: **Tremie**

Distance to Property Line (ft.): **No Data**

Sealed By: **Driller**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: Surface Sleeve Installed	Surface Completion by Driller
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Water Level: **280.45 ft. below land surface on 2017-10-24** Measurement Method: **Electric Line**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

Water Quality:

Strata Depth (ft.)	Water Type
275 - 290	Perched Aquifer

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Cascade Drilling**
3621 Hwy 47
Peralta, TX 87042

Driller Name: **William B. Blutworth** License Number: **4885**

Comments: **Stainless Steel Centralizers above and below screen and every 40'.**
Portland sacks = 47 lb.; Bent. chip sacks = 50 lb.
Surface completion is a 5' X 5' X 8" concrete slab w/ 10" steel protective casing and 4 bollards.
Well installed as part of ISB Well field for perched aquifer remediation.

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Casing:
BLANK PIPE & WELL SCREEN DATA

Top (ft.)	Bottom (ft.)	Description
0	5	SILTY CLAY Loam, dark reddish brown, stiff, moist to wet.
5	30	SILT, yellowish red, with caliche nodes and fine sand, moist.
30	36	SILT, yellowish red, trace very fine sand, moist.
36	45	SILTY SANDY CALICHE, hard chunks, pink to light reddish brown.
45	65	SILTY SAND, yellowish red, medium dense, damp.
65	75	SAND, reddish yellow, fine grain, loose, moist.
75	95	SILT and SAND, reddish brown, medium dense, moist.
95	105	SAND, light reddish brown, fine grain, loose, dry.
105	120	SILTY SAND, reddish brown, fine grain, medium dense, dry.

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4	Riser	New Stainless Steel	10	0	280
4	Screen	New Stainless Steel	10 0.010	280	290
4	Blank	New Stainless Steel	10	290	291

120	145	SAND, reddish yellow, fine grain, loose, dry.
145	185	SAND, light brown, fine grain, trace Silt, loose, dry.
185	200	SAND, brown, fine grain, loose, dry.
200	215	SAND, brown, fine and medium grain, loose to medium dense, moist.
215	235	SAND, very pale brown, medium grain, medium dense, dry.
235	250	SAND, yellowish brown, fine and medium grain, medium dense, moist.
250	265	GRAVEL and SAND, pale brown, hard conglomerate pea gravel, dry.
265	270	SAND and GRAVEL, light yellowish brown, well graded, some pea gravel.
270	275	GRAVEL and SAND, pale brown, well graded gravel, hard.
275	290	SAND, light yellowish brown, very coarse to fine grain, medium dense, moist @ 277', wet @ 285'.
290	294	SILTSTONE w/ fine Sand and Caliche nodes, pink to reddish brown, hard, damp to dry.

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(512) 334-5540**

STATE OF TEXAS WELL REPORT for Tracking #466194

Owner: U.S. Department of Energy Address: PO Box 30030 Amarillo, TX 79120 Well Location: Pantex Plant US Hwy 60 @ FM 2373 Panhandle, TX 79068 In field at NE corner of Hwy 60 and FM 2373, adjacent to RR tracks. Well County: Carson	Owner Well #: PTX06-ISB127 Grid #: 06-44-6 Latitude: 35° 17' 32.38" N Longitude: 101° 31' 28.77" W Elevation: 3513 ft. above sea level
Type of Work: New Well	
Proposed Use: Injection	

Drilling Start Date: **11/28/2017** Drilling End Date: **11/29/2017**

	Diameter (in.)	Top Depth (ft.)	Bottom Depth (ft.)
Borehole:	10	0	292

Drilling Method: **Air Rotary Casing Hammer**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	Bottom Depth (ft.)	Filter Material	Size
Filter Pack Intervals:	276	292	Sand	10/20

	Top Depth (ft.)	Bottom Depth (ft.)	Description (number of sacks & material)
Annular Seal Data:	2	238	Cement 232 Bags/Sacks
	238	276	Bentonite 17 Bags/Sacks

Seal Method: **Tremie**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Sleeve Installed**

Surface Completion by Driller

Water Level: **280.35 ft. below land surface on 2017-11-30** Measurement Method: **Electric Line**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

Water Quality:	Strata Depth (ft.)	Water Type
	270 - 289	Perched Aquifer

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Cascade Drilling**
3621 Hwy 47
Peralta, NM 87042

Driller Name: **William B. Blutworth** License Number: **4885**

Comments: **Stainless Steel Centralizers above and below screen and every 40'.**
Portland sacks = 47 lb.; Bent. chip sacks = 50 lb.
Surface completion is a 5' X 5' X 8" concrete slab w/ 10" steel protective casing and 4 bollards.
Well installed as part of ISB well field for perched aquifer remediation.

Lithology:
 DESCRIPTION & COLOR OF FORMATION MATERIAL

Casing:
 BLANK PIPE & WELL SCREEN DATA

Top (ft.)	Bottom (ft.)	Description
0	5	LEAN CLAY, dark reddish brown, moist, plastic, stiff.
5	20	SILTY CLAY, yellowish red, moist, trace Sand, some Caliche, stiff.
20	25	SANDY SILT, yellowish red, dry, medium stiff.
25	35	SILT, light reddish brown, soft, dry.
35	50	SILTY SAND w/ Caliche, red, dry, fine grain, medium dense.
50	55	SAND, w/ Caliche, light reddish brown, dry, medium dense.
55	70	SAND, yellowish red, dry, fine grain, loose to medium dense.
70	80	CLAYEY SAND, reddish brown, dry, medium dense.
80	90	LEAN CLAY, reddish brown, moist, dense, trace Sand.
90	95	SAND, yellowish red, dry, medium dense.

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4	Riser	New Stainless Steel	10	0	279
4	Screen	New Rod Base Stainless Steel	10 0.010	279	289
4	Blank	New Stainless Steel	10	289	290

95	100	SAND, reddish yellow, dry, loose, fine grain.
100	105	SAND & Caliche SILT, pink, dry, medium dense.
105	120	SILTY SAND, yellowish red, dry, loose, some cemented Sandstone nodes.
120	145	SAND, reddish yellow, dry, loose, fine grain.
145	165	SAND, light brown, dry, loose, fine grain.
165	210	SAND, reddish yellow, poorly graded, dry, loose.
210	235	SAND w/ GRAVEL, light yellowish brown, medium dense, dry.
235	240	SAND, poorly graded, yellowish brown, fine grain, loose, dry.
240	260	SAND w/ GRAVEL, well graded, small gravel, moist, dense.
260	265	GRAVEL, small, very pale brown, dry, dense.
265	280	SAND w/ small GRAVEL, very pale brown, dry, medium dense.
280	289	SAND, well graded, w/ GRAVEL, small to large, saturated, dense.
289	292	SILTSTONE, light reddish brown, Sandy, w/ Caliche nodes, dry.

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(512) 334-5540**

STATE OF TEXAS WELL REPORT for Tracking #466195

Owner: U.S. Department of Energy Address: P.O. Box 30030 Amarillo, TX 79120 Well Location: Pantex Plant US Hwy 60 @ FM 2373 Panhandle, TX 79068 In field at NE corner of Hwy 60 and FM 2373, adjacent to RR tracks. Well County: Carson	Owner Well #: PTX06-ISB126 Grid #: 06-44-6 Latitude: 35° 17' 32.11" N Longitude: 101° 31' 29.66" W Elevation: 3513 ft. above sea level
Type of Work: New Well	
Proposed Use: Injection	

Drilling Start Date: **11/16/2017** Drilling End Date: **11/17/2017**

	Diameter (in.)	Top Depth (ft.)	Bottom Depth (ft.)
Borehole:	10	0	291

Drilling Method: **Air Rotary Casing Hammer**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	Bottom Depth (ft.)	Filter Material	Size
Filter Pack Intervals:	274	291	Sand	10/20

	Top Depth (ft.)	Bottom Depth (ft.)	Description (number of sacks & material)
Annular Seal Data:	2	246.5	Cement 257 Bags/Sacks
	246.5	274	Bentonite 20 Bags/Sacks

Seal Method: **Tremie**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Sleeve Installed**

Surface Completion by Driller

Water Level: **279.85 ft. below land surface on 2017-11-17** Measurement Method: **Electric Line**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

Water Quality:	Strata Depth (ft.)	Water Type
	270 - 287	Perched Aquifer

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Cascade Drilling**
3621 Hwy 47
Peralta, NM 87042

Driller Name: **William B. Blutworth** License Number: **4885**

Comments: **Stainless Steel Centralizers above and below screen and every 40'.**
Portland sacks = 47 lb.; Bent. chip sacks = 50 lb.
Surface completion is a 5' X 5' X 8" concrete slab w/ 10" steel protective casing and 4 bollards.
Well installed as part of ISB well field for perched aquifer remediation.

Lithology:
 DESCRIPTION & COLOR OF FORMATION MATERIAL

Casing:
 BLANK PIPE & WELL SCREEN DATA

Top (ft.)	Bottom (ft.)	Description
0	3	SANDY CLAY LOAM, moderately graded, damp, dark yellowish brown.
3	10	SILTY SANDY CLAY, moderately graded, slightly damp, moderately reddish brown.
10	20	SILTY CLAY, damp, poorly graded, moderate plasticity, w/ minor Caliche nodules, moderate reddish brown.
20	25	SILTY CLAY, poorly graded, high plasticity, slightly damp, pale reddish brown.
25	30	CLAYEY SILT, poorly graded, very slightly damp, moderate orange pink.
30	60	SILT, poorly graded, dry, increasing Caliche nodules, moderate orange pink to grayish orange pink.
60	73	SAND, very fine w/ some Silt, poorly graded, dry, moderate reddish brown.

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4	Riser	New Stainless Steel	10	0	277
4	Screen	New Rod Base Stainless Steel	10 0.010	277	287
4	Blank	New Stainless Steel	10	287	288

73	100	SILTY CLAY, poorly to moderately graded, moderate plasticity, dry, some Caliche nodules, reddish orange to reddish brown.
100	115	SAND & SILT, very fine, very poorly graded, dry, w/ minor well-indurated thin zones, orange pink.
115	120	SILTY CLAY/ CLAYEY SILT, poorly graded, dry, pale reddish brown.
120	218	SAND, very fine, very poorly graded, dry, friable, reddish orange to grayish orange. Thin reddish brown clay bed @ 164', and thin medium Gravel bed @ 210'.
218	223	GRAVEL, medium to coarse, well graded, dry, grayish orange.
223	240	SAND, very fine, damp to dry, grayish orange.
240	245	SAND, very fine to medium, w/ some minor Clay & Gravel, well graded, damp, pale reddish brown.
245	250	GRAVEL, fine to medium, moderately graded, dry, grayish orange.
250	265	SAND, fine, w/ some minor Gravel, poorly to moderately graded, dry to damp, grayish orange.
265	287	SAND & GRAVEL, fine to coarse sand and fine to pea gravel, well graded, damp to wet @ 278', grayish orange.
287	291	CLAYEY SILT, poorly graded, grayish orange.

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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**Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 334-5540**

STATE OF TEXAS WELL REPORT for Tracking #466193

Owner: U.S. Department of Energy Address: PO Box 30030 Amarillo, TX 79120 Well Location: Pantex Plant US Hwy 60 @ FM 2373 Panhandle, TX 79068 In field at NE corner of Hwy 60 and FM 2373, adjacent to RR tracks. Well County: Carson	Owner Well #: PTX06-ISB125 Grid #: 06-44-6 Latitude: 35° 17' 31.84" N Longitude: 101° 31' 30.52" W Elevation: 3513 ft. above sea level
Type of Work: New Well	
Proposed Use: Injection	

Drilling Start Date: **11/30/2017** Drilling End Date: **12/1/2017**

	Diameter (in.)	Top Depth (ft.)	Bottom Depth (ft.)
Borehole:	10	0	293

Drilling Method: **Air Rotary Casing Hammer**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	Bottom Depth (ft.)	Filter Material	Size
Filter Pack Intervals:	277	293	Sand	10/20

	Top Depth (ft.)	Bottom Depth (ft.)	Description (number of sacks & material)
Annular Seal Data:	2	247	Cement 232 Bags/Sacks
	247	277	Bentonite 19 Bags/Sacks

Seal Method: **Tremie**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Sleeve Installed**

Surface Completion by Driller

Water Level: **280.31 ft. below land surface on 2017-12-01** Measurement Method: **Electric Line**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

Water Quality:	Strata Depth (ft.)	Water Type
	270 - 290	Perched Aquifer

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Cascade Drilling**
3621 Hwy 47
Peralta, NM 87042

Driller Name: **William B. Blutworth** License Number: **4885**

Comments: **Stainless Steel Centralizers above and below screen and every 40'.**
Portland sacks = 47 lb.; Bent. chip sacks = 50 lb.
Surface completion is a 5' X 5' X 8" concrete slab w/ 10" steel protective casing and 4 bollards.
Well installed as part of ISB well field for perched aquifer remediation.

Lithology:
 DESCRIPTION & COLOR OF FORMATION MATERIAL

Casing:
 BLANK PIPE & WELL SCREEN DATA

Top (ft.)	Bottom (ft.)	Description
0	5	SILTY CLAY LOAM, damp, plastic, poorly graded, pale red.
5	55	SILTY CLAY & CLAYEY SILT, dry, poorly graded, w/ Caliche nodules, pale red to red orange to orange pink.
55	60	SILT, loose, dry, poorly graded, w/ Caliche nodules, orange pink.
60	70	SILTY SAND, very fine, loose, slightly damp, some Caliche nodules, pale reddish brown.
70	75	CLAYEY SILT & SAND, very fine sand, dry, pale reddish brown.
75	80	SAND, very fine, loose, dry, w/ some interbedded Clayey Sand, pale reddish brown.
80	90	SILTY CLAY & SANDY CLAY, very fine sand, dry, pale reddish brown.

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4	Riser	New Stainless Steel	10	0	279.5
4	Screen	New Rod Base Stainless Steel	10 0.010	279.5	289.5
4	Blank	New Stainless Steel	10	289.5	290.5

90	95	SAND, very fine, loose, poorly graded, dry, some Caliche, reddish orange.
95	100	CALCRETE, hard, grayish orange pink.
100	207	SAND, very fine, loose, dry, poorly graded, orange pink to light brown to pale orange to grayish orange.
201	215	GRAVEL, fine, w/ Sand, moderately graded, dry, grayish orange.
215	220	SAND, very fine, poorly graded, dry, grayish orange.
220	225	SAND, fine to coarse, w/ Gravel, fine to medium, well graded dry, very pale orange.
225	240	SAND, fine to very fine, poorly graded, loose, damp to slightly damp, grayish orange. Some well-cemented Sandstone zones from 228'.
240	250	GRAVEL, fine to coarse, well graded, dry, pale brown.
250	255	SAND, fine to very coarse, w/fine Gravel, well graded, dry, pale brown.
255	260	SAND & GRAVEL, fine to coarse, very well graded, dry, pale yellow brown.
260	280	SAND, fine to very coarse, w/ Gravel, fine to coarse, very well graded, slightly damp to damp, pale yellow brown.
280	290	SAND, fine to medium, w/ some fine Gravel, moderately graded, wet, prominent gravel bed @ 288-290'.
290	293	SILTSTONE & CLAYEY SILT, grayish orange.

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P.O. Box 12157
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(512) 334-5540**

STATE OF TEXAS WELL REPORT for Tracking #466190

Owner: U.S. Department of Energy Address: PO Box 30030 Amarillo, TX 79120 Well Location: Pantex Plant U.S. Hwy 60 @ FM 2373 Panhandle, TX 79068 In field at NE corner of Hwy 60 and FM 2373, adjacent to RR tracks. Well County: Carson	Owner Well #: PTX06-ISB124 Grid #: 06-44-6 Latitude: 35° 17' 31.62" N Longitude: 101° 31' 31.33" W Elevation: 3513 ft. above sea level
Type of Work: New Well Proposed Use: Injection	

Drilling Start Date: **12/2/2017** Drilling End Date: **12/3/2017**

	Diameter (in.)	Top Depth (ft.)	Bottom Depth (ft.)
Borehole:	10	0	292

Drilling Method: **Air Rotary Casing Hammer**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	Bottom Depth (ft.)	Filter Material	Size
Filter Pack Intervals:	276	292	Sand	10/20

	Top Depth (ft.)	Bottom Depth (ft.)	Description (number of sacks & material)
Annular Seal Data:	2	248	Cement 232 Bags/Sacks
	248	276	Bentonite 19 Bags/Sacks

Seal Method: **Tremie**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Sleeve Installed** **Surface Completion by Driller**

Water Level: **279.55 ft. below land surface on 2017-12-03** Measurement Method: **Electric Line**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

Water Quality:	Strata Depth (ft.)	Water Type
	270 - 289	Perched Aquifer

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Cascade Drilling**
3621 Hwy 47
Peralta, NM 87042

Driller Name: **William B. Blutworth** License Number: **4885**

Comments: **Stainless Steel Centralizers above and below screen and every 40'.**
Portland sacks = 47 lb.; Bent. chip sacks = 50 lb.
Surface completion is a 5' X 5' X 8" concrete slab w/ 10" steel protective casing and 4 bollards.
Well installed as part of ISB well field for perched aquifer remediation.

Lithology:
 DESCRIPTION & COLOR OF FORMATION MATERIAL

Casing:
 BLANK PIPE & WELL SCREEN DATA

Top (ft.)	Bottom (ft.)	Description
0	10	SILTY SANDY CLAY LOAM, grayish red.
10	35	CLAYEY SILT, poorly graded, pale reddish brown.
35	60	SILT, poorly graded, w/ minor Caliche, reddish orange.
60	75	SAND, fine, poorly graded, loose, dry, pale to moderate reddish brown.
75	95	SILT & CLAYEY SILT, poorly graded, dry, reddish orange.
95	100	SAND, fine, poorly graded, dry, orange pink.
100	105	CALCRETE, hard, grayish orange pink.
105	218	SAND, fine, poorly graded, loose, moderate orange pink to grayish orange.
218	222	SAND, fine to coarse, w/ some Gravel, well graded, dry, grayish orange pink.
222	226	SAND, fine, poorly graded, slightly damp, grayish orange.

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4	Riser	New Stainless Steel	10	0	279
4	Screen	New Rod Base Stainless Steel	10 0.010	279	289
4	Blank	New Stainless Steel	10	289	290

226	235	SAND AND GRAVEL, fine sand and coarse gravel, well graded, slightly damp.
235	240	SAND, fine, poorly graded, slightly damp, yellow brown.
240	245	SANDY GRAVEL, well graded, dry.
245	250	GRAVEL, well graded, dry, pale yellowish brown.
250	265	SAND, w/ some Gravel, well graded, slightly damp, grayish orange.
265	270	SAND, fine to coarse, well graded, slightly damp, grayish orange.
270	274	GRAVEL, poorly graded, dry, pale yellowish brown.
274	280	SAND, poorly graded, damp, dark yellowish orange.
280	289	SAND & GRAVEL, well graded, wet, pale yellowish brown.
289	292	CLAYEY SILTSTONE, grayish orange.

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(512) 334-5540**

STATE OF TEXAS WELL REPORT for Tracking #466088

Owner: U.S. Department of Energy Address: P.O. Box 30030 Amarillo, TX 79120 Well Location: Pantex Plant U.S. Hwy 60 and FM 2373 Panhandle, TX 79068 In field at NE corner of Hwy 60 and FM 2373, adjacent to RR tracks. Well County: Carson	Owner Well #: PTX06-ISB123 Grid #: 06-44-6 Latitude: 35° 17' 31.34" N Longitude: 101° 31' 32.09" W Elevation: 3513 ft. above sea level
Type of Work: New Well Proposed Use: Injection	

Drilling Start Date: **11/3/2017** Drilling End Date: **11/4/2017**

	Diameter (in.)	Top Depth (ft.)	Bottom Depth (ft.)
Borehole:	10	0	297

Drilling Method: **Air Rotary Casing Hammer**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	Bottom Depth (ft.)	Filter Material	Size
Filter Pack Intervals:	281	297	Sand	10/20

	Top Depth (ft.)	Bottom Depth (ft.)	Description (number of sacks & material)
Annular Seal Data:	2	244	Cement 273 Bags/Sacks
	244	281	Bentonite 19 Bags/Sacks

Seal Method: **Tremie**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Sleeve Installed** **Surface Completion by Driller**

Water Level: **279.55 ft. below land surface on 2017-11-05** Measurement Method: **Electric Line**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

Water Quality:	Strata Depth (ft.)	Water Type
	270 - 294	Perched Aquifer

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Cascade Drilling**
3621 Hwy 47
Peralta, NM 87042

Driller Name: **William B. Blutworth** License Number: **4885**

Comments: **Stainless Steel Centralizers above and below screen and every 40'.**
Portland sacks = 47 lb.; Bent. chip sacks = 50 lb.
Surface completion is a 5' X 5' X 8" concrete slab w/ 10" steel protective casing and 4 bollards.
Well installed as part of ISB well field for perched aquifer remediation.

Lithology:
 DESCRIPTION & COLOR OF FORMATION MATERIAL

Casing:
 BLANK PIPE & WELL SCREEN DATA

Top (ft.)	Bottom (ft.)	Description
0	5	SILTY CLAY Loam, gray orange, high plasticity, poorly graded, damp.
5	25	SILTY CLAY, reddish orange, moderate to high plasticity, poorly graded.
25	33	SILTY CLAY, reddish orange, low plasticity, w/ caliche nodules.
33	36	CLAYEY SILT, moderate orange pink, poorly graded, dry.
36	41	CALICHE Calcrete, hard, orange pink, dry.
41	50	SILTY SAND, w/ minor orange pink, fine grain, moderate orange pink, dry.
50	80	SILTY CLAY, w/ Caliche nodules, moderate orange pink, dry.
80	94	SILTY CLAY, moderate orange pink, poorly graded, dry.

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4	Riser	New Stainless Steel	10	0	284
4	Screen	New Rod Base Stainless Steel	10 0.010	284	294
4	Blank	New Stainless Steel	10	294	295

94	105	CALICHE Calcrete, grayish pink.
105	110	SILT, w/ Caliche, moderate orange pink, dry.
110	200	SILT and SAND, very fine grain, moderate orange pink to grayish orange, poorly graded, dry. Damp between 170 and 180.'
200	220	SAND/ SILT/ GRAVEL, fine grain sand, very pale orange, moderately graded, dry.
220	225	SAND w/ SILT, fine to medium grain sand, very pale orange, well cemented, very hard and tight.
225	240	SAND, gray orange, very fine grain, poorly graded, dry.
240	262	SAND, fine, w/ some Gravel, gray orange to dark yellowish orange, moderate grading, dry.
262	265	SAND, fine to coarse, gray orange, moderate grading, damp.
265	270	SILTY CLAYEY SAND, some Gravel, gray orange, well graded, damp.
270	283	SAND, some Gravel, fine to coarse, gray orange, moderate grading, damp.
283	288	SAND, w/ some interbedded hard Clay and Gravel layers, fine to coarse, gray orange, wet.
288	291	SANDY GRAVEL, gray orange, well graded, wet.
291	294	SANDY CLAY, gray orange, poor to moderate grading, wet.
294	297	CLAYEY SILTSTONE, fine grain, orange pink, poorly graded, nonplastic, dry.

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(512) 334-5540

STATE OF TEXAS WELL REPORT for Tracking #466081

Owner: U.S. Department of Energy Address: P.O. Box 30030 Amarillo, TX 79120 Well Location: Pantex Plant US Hwy 60 @ FM 2373 Panhandle, TX 79068 In field at NE corner of Hwy 60 and FM 2373, adjacent to RR tracks. Well County: Carson	Owner Well #: PTX06-ISB122 Grid #: 06-44-6 Latitude: 35° 17' 31.13" N Longitude: 101° 31' 33.03" W Elevation: 3513 ft. above sea level
Type of Work: New Well Proposed Use: Injection	

Drilling Start Date: **11/5/2017** Drilling End Date: **11/6/2017**

	Diameter (in.)	Top Depth (ft.)	Bottom Depth (ft.)
Borehole:	10	0	289

Drilling Method: **Air Rotary Casing Hammer**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	Bottom Depth (ft.)	Filter Material	Size
Filter Pack Intervals:	273	289	Sand	10/20

	Top Depth (ft.)	Bottom Depth (ft.)	Description (number of sacks & material)
Annular Seal Data:	2	238	Cement 252 Bags/Sacks
	238	273	Bentonite 20 Bags/Sacks

Seal Method: **Tremie**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Sleeve Installed** **Surface Completion by Driller**

Water Level: **279.62 ft. below land surface on 2017-11-06** Measurement Method: **Electric Line**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

Water Quality:	Strata Depth (ft.)	Water Type
	272 - 286	Perched Aquifer

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Cascade Drilling**
3621 Hwy 47
Peralta, NM 87042

Driller Name: **William B. Blutworth** License Number: **4885**

Comments: **Stainless Steel Centralizers above and below screen and every 40'.**
Portland sacks = 47 lb.; Bent. chip sacks = 50 lb.
Surface completion is a 5' X 5' X 8" concrete slab w/ 10" steel protective casing and 4 bollards.
Well installed as part of ISB well field for perched aquifer remediation.

Lithology:
 DESCRIPTION & COLOR OF FORMATION MATERIAL

Casing:
 BLANK PIPE & WELL SCREEN DATA

Top (ft.)	Bottom (ft.)	Description
0	5	SAND & SILT, fine to coarse, moderately graded, orange pink.
5	20	SILTY CLAY, moderate plasticity, slightly damp, grayish orange pink.
20	25	CLAYEY SILT, poorly graded, grayish pink.
25	35	SILTY CLAY & minor Silt, dry, moderate reddish orange.
35	55	SILT & CLAYEY SILT, poorly graded, dry, w/ Caliche, moderate reddish orange.
55	70	SILT w/ very minor Clay, dry, no caliche, orange pink.
70	75	SAND, fine w/ some coarse, moderate grading, dry, orange pink.
75	80	SILT, poorly graded, dry, orange pink.
80	90	SILTY CLAY, non-plastic, dry, reddish brown.
90	100	CALCRETE, hard, dry, orange pink.

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4	Riser	New Stainless Steel	10	0	276
4	Screen	New Rod Base Stainless Steel	10 0.010	276	286
4	Blank	New Stainless Steel	10	286	287

100	115	SILT, w/ minor Clay stringers, dry, orange pink.
115	210	SAND & SILT, sand very fine, poorly graded, dry, grayish orange.
210	220	SAND, very fine, poorly graded, w/ interbedded Gravel, dry, grayish orange.
220	235	SAND, very fine, poorly graded, some friable but some well-cemented, dry, grayish orange.
235	240	Same as above, but damp.
240	248	GRAVEL, fine to coarse, well-graded, dry, pale yellowish brown.
248	258	SAND, fine to very coarse, well graded, dry, w/ beds of pea Gravel, very pale orange.
258	262	CLAYEY GRAVEL, well graded, damp, grayish orange.
262	286	SAND, fine to coarse, minor interbedded Gravels, damp @ 272', wet @ 276', grayish orange.
286	289	SILTY CLAY, grayish pink.

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P.O. Box 12157
Austin, TX 78711
(512) 334-5540**

STATE OF TEXAS WELL REPORT for Tracking #466087

Owner: U.S. Department of Energy Address: P.O. Box 30030 Amarillo, TX 79120 Well Location: Pantex Plant U.S. Hwy 60 and FM 2373 Panhandle, TX 79068 Outside Plant; in field in NE corner of Hwy 60 and FM 2373, adjacent railroad tracks. Well County: Carson	Owner Well #: PTX06-ISB121 Grid #: 06-44-6 Latitude: 35° 17' 30.81" N Longitude: 101° 31' 33.83" W Elevation: 3513 ft. above sea level
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Type of Work: New Well	Proposed Use: Injection
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Drilling Start Date: **11/7/2017** Drilling End Date: **11/8/2017**

	Diameter (in.)	Top Depth (ft.)	Bottom Depth (ft.)
Borehole:	10	0	288

Drilling Method: **Air Rotary Casing Hammer**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	Bottom Depth (ft.)	Filter Material	Size
Filter Pack Intervals:	272	288	Sand	10/20

	Top Depth (ft.)	Bottom Depth (ft.)	Description (number of sacks & material)
Annular Seal Data:	2	245	Cement 266 Bags/Sacks
	245	272	Bentonite 16 Bags/Sacks

Seal Method: **Tremie**

Distance to Property Line (ft.): **No Data**

Sealed By: **Driller**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: Surface Sleeve Installed	Surface Completion by Driller
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Water Level: 278.9 ft. below land surface on 2017-11-08	Measurement Method: Electric Line
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Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

Water Quality:

Strata Depth (ft.)	Water Type
270 - 285	Perched Aquifer

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Cascade Drilling**
3621 Hwy 47
Peralta, NM 87042

Driller Name: **William B. Blutworth** License Number: **4885**

Comments: **Stainless Steel Centralizers above and below screen and every 40'.
Portland sacks = 47 lb.; Bent. chip sacks = 50 lb.
Surface completion is a 5' X 5' X 8" concrete slab w/ 10" steel protective casing and 4 bollards.
Well installed as part of ISB Well field for perched aquifer remediation.**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Casing:
BLANK PIPE & WELL SCREEN DATA

Top (ft.)	Bottom (ft.)	Description
0	5	SILTY CLAY LOAM, grayish red, damp.
5	10	SILTY CLAY, w/ minor Sand, low plasticity, dry, reddish orange.
10	15	SILTY SANDY CLAY, moderately graded, reddish brown, dry.
15	20	SILTY CLAY, poorly graded, reddish brown, dry.
20	35	SILTY CLAY to CLAYEY SILT, poorly graded, reddish orange, dry.
35	40	SILTY SANDY CLAY, moderately graded, orange pink, dry.
40	50	CLAYEY SILT, dry, poorly graded, reddish orange.
50	55	SILTY SANDY CLAY w/ very fine sand, dry, moderately graded, reddish orange.

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4	Riser	New Stainless Steel	10	0	275
4	Screen	New Rod Base Stainless Steel	10 0.010	275	285
4	Blank	New Stainless Steel	10	285	286

55	70	CLAYEY SILT, poorly graded, w/ Caliche nodules, reddish orange.
70	80	CALICHE beds and CLAYEY SILT beds, dry, reddish orange.
80	85	CLAY, weakly graded, dry, w/ black carbonaceous matter, pale reddish brown.
85	100	SILT w/ minor Clay, locally well indurated, dry, w/ minor Caliche nodules, orange pink.
100	105	CALCRETE, hard, dry, grayish orange pink.
105	135	SILT w/ minor Clay, friable, dry, nongraded, orange pink.
135	155	SILT w/ very fine SAND, nongraded, dry, very friable, w/ minor interbedded thin layers well cemented Siltstone, grayish orange.
155	160	Same as above, slightly damp.
160	195	SAND, very fine, nongraded, mostly friable, but w/ minor thin, well indurated Sandstone, dry, grayish orange.
195	210	Same as above, becoming slightly damp.
210	215	SAND, fine to medium, w/ gravel up to 2 cm, rounded, well graded, very pale orange.
215	233	SAND, fine to coarse, w/ GRAVEL, fine to coarse, well graded, dry, very pale orange.
233	240	Same as above, damp.
240	245	GRAVEL, fine to medium, w/ Sand, fine to very coarse, well graded, dry, pale yellowish brown.
245	255	SAND, fine to very coarse, w/ some fine Gravel, dry, grayish orange pink.
255	260	GRAVEL, fine to medium, and SAND, fine to very coarse, well graded, minor interbedded clean Clay layers, pale brown, damp.
260	270	SAND, fine to medium, w/ some interbedded fine Gravel beds, sand is poorly graded, gravel is moderately graded, damp, grayish orange.

270	275	SAND, fine to medium w/ some coarse, moderately graded, damp, grayish orange.
275	281	SAND, fine to medium w/ some coarse sand and fine gravel, moderately graded, damp (wet below 278), grayish orange.
281	285	GRAVEL, fine to coarse, w/ some Sand, fine to coarse, well graded, wet, grayish orange pink.
285	288	SILTY CLAY/ CLAYEY SILT, poorly graded, w/ minor small Caliche nodules, grayish orange to dark yellowish orange, dry.

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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Please include the report's Tracking Number on your written request.

**Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 334-5540**

STATE OF TEXAS WELL REPORT for Tracking #466192

Owner: U.S. Department of Energy Address: PO Box 30030 Amarillo, TX 79120 Well Location: Pantex Plant US HWY 60 @ FM 2373 Panhandle, TX 79068 In field at NE corner of Hwy 60 and FM 2373, adjacent to RR tracks. Well County: Carson	Owner Well #: PTX06-ISB120 Grid #: 06-44-6 Latitude: 35° 17' 30.57" N Longitude: 101° 31' 34.77" W Elevation: 3513 ft. above sea level
Type of Work: New Well	
Proposed Use: Injection	

Drilling Start Date: **11/29/2017** Drilling End Date: **11/30/2017**

	Diameter (in.)	Top Depth (ft.)	Bottom Depth (ft.)
Borehole:	10	0	284

Drilling Method: **Air Rotary Casing Hammer**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	Bottom Depth (ft.)	Filter Material	Size
Filter Pack Intervals:	269	284	Sand	10/20

	Top Depth (ft.)	Bottom Depth (ft.)	Description (number of sacks & material)
Annular Seal Data:	2	240	Cement 249 Bags/Sacks
	240	269	Bentonite 13 Bags/Sacks

Seal Method: **Tremie**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other
concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Sleeve Installed**

Surface Completion by Driller

Water Level: **279.22 ft. below land surface on 2017-11-30** Measurement Method: **Electric Line**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

Water Quality:	Strata Depth (ft.)	Water Type
	270 - 282	Perched Aquifer

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Cascade Drilling**
3621 Hwy 47
Peralta, NM 87042

Driller Name: **William B. Blutworth** License Number: **4885**

Comments: **Stainless Steel Centralizers above and below screen and every 40'.**
Portland sacks = 47 lb.; Bent. chip sacks = 50 lb.
Surface completion is a 5' X 5' X 8" concrete slab w/ 10" steel protective casing and 4 bollards.
Well installed as part of ISB well field for perched aquifer remediation.

Lithology:
 DESCRIPTION & COLOR OF FORMATION MATERIAL

Casing:
 BLANK PIPE & WELL SCREEN DATA

Top (ft.)	Bottom (ft.)	Description
0	5	CLAY, dark reddish brown, moist, plastic, very stiff.
5	25	SILTY CLAY, yellowish red, moist, low plasticity, stiff.
25	35	SILT, yellowish red, dry, medium stiff.
35	45	SILT W/ CALICHE, pink, dry, medium stiff.
45	65	SAND, red, dry, fine grain, poorly graded.
65	75	SILTY SAND, yellowish red, dry, loose.
75	80	SILT W/ CLAY, reddish brown, hard, dry.
80	90	SAND, yellowish red, dry, medium dense.
90	100	CALICHE SILT, pink, dry, stiff.
100	135	SAND, light reddish brown, loose, dry.
135	150	SAND, pink, poorly graded, loose, dry.
150	157	SAND, reddish yellow, loose, dry.

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4	Riser	New Stainless Steel	10	0	272
4	Screen	New Rod Base Stainless Steel	10 0.010	272	282
4	Blank	New Stainless Steel	10	282	283

157	190	SAND, light brown to brownish yellow, fine grain, loose, dry.
190	195	SILTY SAND, reddish yellow, medium dense, dry.
195	220	SAND W/ GRAVEL, light yellowish brown, dry, dense.
220	225	SILTY SAND, strong brown, dry, medium dense.
225	240	SAND, light yellowish brown, medium dense, dry, some Gravel.
240	245	GRAVEL, light yellowish brown, very dense, dry.
245	257	SAND, yellowish brown, some Gravel, moist, medium dense.
257	282	SAND W/ GRAVEL, medium dense, yellowish brown, moist to saturated @ 279'.
282	284	SILTSTONE, light reddish brown, some Sand & Caliche, hard, dry.

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Please include the report's Tracking Number on your written request.

**Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 334-5540**

STATE OF TEXAS WELL REPORT for Tracking #466181

Owner: U.S. Department of Energy Address: PO Box 30030 Amarillo, TX 79120 Well Location: Pantex Plant U.S. Hwy 60 @ FM 2373 Panhandle, TX 79068 In field, NE Corner of Hwy 60 and FM 2373, adjacent to RR tracks. Well County: Carson	Owner Well #: PTX06-ISB119 Grid #: 06-44-6 Latitude: 35° 17' 30.27" N Longitude: 101° 31' 35.55" W Elevation: 3513 ft. above sea level
Type of Work: New Well	
Proposed Use: Injection	

Drilling Start Date: **11/16/2017** Drilling End Date: **11/17/2017**

	Diameter (in.)	Top Depth (ft.)	Bottom Depth (ft.)
Borehole:	10	0	283

Drilling Method: **Air Rotary Casing Hammer**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	Bottom Depth (ft.)	Filter Material	Size
Filter Pack Intervals:	267	283	Sand	10/20

	Top Depth (ft.)	Bottom Depth (ft.)	Description (number of sacks & material)
Annular Seal Data:	2	240	Cement 249 Bags/Sacks
	240	267	Bentonite 10 Bags/Sacks

Seal Method: **Tremie**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Sleeve Installed**

Surface Completion by Driller

Water Level: **278.73 ft. below land surface on 2017-11-17** Measurement Method: **Electric Line**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

Water Quality:	Strata Depth (ft.)	Water Type
	274 - 280	Perched Aquifer

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Cascade Drilling**
3621 Hwy 47
Peralta, NM 87042

Driller Name: **William B. Blutworth** License Number: **4885**

Comments: **Stainless Steel Centralizers above and below screen and every 40'.**
Portland sacks = 47 lb.; Bent. chip sacks = 50 lb.
Surface completion is a 5' X 5' X 8" concrete slab w/ 10" steel protective casing and 4 bollards.
Well installed as part of ISB Well field for perched aquifer remediation.

Lithology:
 DESCRIPTION & COLOR OF FORMATION MATERIAL

Casing:
 BLANK PIPE & WELL SCREEN DATA

Top (ft.)	Bottom (ft.)	Description
0	4	CLAYEY SILT, dry to damp, hard brown.
4	19	SILTY CLAY to CLAYEY SILT, damp, very stiff, dark reddish brown.
19	38	CLAYEY SILT, damp to dry, stiff to very hard, Caliche nodules and some MnO2 veinlets, yellowish red to red brown, increasing caliche below 35'.
38	58	SILTY CLAY, very stiff, w/ Caliche, pink to pinkish white color changing to light reddish brown between 47-48' and back to pink below 52', trace fine Sand below 52"
58	72	CLAYEY SILT W/ SAND, very fine, damp, hard, yellowish red
72	76	CALICHE W/ SAND, hard, dry, pinkish white.
76	87	SILTY SAND W/ CLAY, very dense, dry, Caliche nodules, light reddish brown.

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4	Riser	New Stainless Steel	10	0	270
4	Screen	New Rod Base Stainless Steel	10 0.010	270	280
4	Blank	New Stainless Steel	10	280	281

87	98	CALICHE, very dense, dry, nodules to 3/4", pinkish white to pink, interbedded w/ Silty Sand.
98	125	SILTY SAND, very fine to fine, dry, dense, light reddish brown.
125	154	SAND, w/ some Silt, fine to medium, loose to dense in SS lenses, pink to light brown.
154	163	SILTY SAND, damp, very fine to fine, some SS lenses, dry.
163	183	SAND, fine w/ some medium, loose, dry, very pale brown.
183	192	SILTY SAND, very fine to fine w/ some medium, loose, dry, light brown.
192	198	SAND, fine to very fine w/ numerous lenses,
198	205	SILTY SAND, very fine to fine, dry, medium dense.
205	234	SAND to GRAVELLY SAND, fine to coarse, some SS lenses, very pale brown to pale brown.
234	240	SILTY SAND, damp, very fine to fine, w/ some SS lenses, brown.
240	248	SANDY GRAVEL, fine to coarse sand, gravel to 1 1/4", dense, dry.
248	274	PEBBLY SAND, fine to coarse, dry, very dense, light gray to light brownish gray. Some very pale brown poorly graded Sand layers from 264-268.
274	280	GRAVELLY SAND, fine to coarse, moist.
280	283	SILTY SAND to SANDSTONE, fine grain, damp to dry, very dense, light reddish brown..

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Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 334-5540

STATE OF TEXAS WELL REPORT for Tracking #466199

Owner: U.S. Department of Energy Address: PO Box 30030 Amarillo, TX 79120 Well Location: Pantex Plant Hwy 60 and FM 2373 Panhandle, TX 79068 Outside plant; In field, NE Corner of Hwy 60 and FM 2373, adjacent to RR tracks. Well County: Carson	Owner Well #: PTX06-ISB118 Grid #: 06-44-6 Latitude: 35° 17' 30.04" N Longitude: 101° 31' 36.45" W Elevation: 3513 ft. above sea level
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Type of Work: New Well	Proposed Use: Injection
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Drilling Start Date: **11/14/2017** Drilling End Date: **11/15/2017**

	Diameter (in.)	Top Depth (ft.)	Bottom Depth (ft.)
Borehole:	10	0	284

Drilling Method: **Air Rotary Casing Hammer**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	Bottom Depth (ft.)	Filter Material	Size
Filter Pack Intervals:	260	268	Sand	10/20

	Top Depth (ft.)	Bottom Depth (ft.)	Description (number of sacks & material)
Annular Seal Data:	2	240	Bentonite Grout 248 Bags/Sacks
	240	268	Bentonite Chips 9 Bags/Sacks

Seal Method: **Tremie**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: Surface Sleeve Installed	Surface Completion by Driller
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Water Level: **278.35 ft. below land surface on 2017-11-16**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

Water Quality:

Strata Depth (ft.)	Water Type
270 - 281	Perched Aquifer

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Cascade Drilling**
3621 Hwy 47
Peralta, NM 87042

Driller Name: **William B. Blutworth** License Number: **4885**

Comments: **Stainless Steel Centralizers above and below screen and every 40'.
Portland sacks = 47 lb.; Bent. chip sacks = 50 lb.
Surface completion is a 5' X 5' X 8" concrete slab w/ 10" steel protective casing and 4 bollards.
Well installed as part of ISB Well field for perched aquifer remediation.**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Casing:
BLANK PIPE & WELL SCREEN DATA

Top (ft.)	Bottom (ft.)	Description
0	4	CLAYEY SILT, dry, hard to damp.
4	18	SILTY CLAY to CLAYEY SILT, damp, very stiff, reddish gray.
18	37	CLAYEY SILT, damp to dry, stiff to hard, trace Caliche nodules and Mno2 stringers, light red-brown to yellowish red to red-brown, Caliche more prevalent between 28-34'.
37	49	SILTY CLAY, damp to dry, very stiff, Caliche nodules to 1/4", pink.
49	57	SILTY CLAY w/ trace SAND, dry, very stiff, reddish yellow.
57	64	CLAYEY SILT w/ SAND, very fine, damp, small Caliche nodules, yellowish red.
64	74	SILTY SAND, very fine to fine, dry, dense, pink, Caliche to 1/2".

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4	Riser	New Stainless Steel	10	0	271
4	Screen	New Rod Base Stainless Steel	10 0.010	271	281
4	Blank	New Stainless Steel	10	281	282

74	77	CALICHE w/ Sand, hard, dry, pinkish white.
77	86	SILTY SAND w/ CLAY, dry, dense, light reddish brown.
86	110	SILTY SAND w/ Caliche nodules to 1/4", thin Caprock @ 93-94', pink, dry, dense.
110	124	SILTY SAND, dry, very fine to fine, medium dense, light brown.
124	154	SAND, fine w/ some medium grains, loose, dry, very pale brown.
154	159	SILTY SAND, fine, dry, loose, light brown.
159	178	SAND, fine to medium w/ some Silt, loose, dry, very pale brown.
178	193	SILTY SAND, very fine to fine w/ trace medium grain, loose, dry, pink, some light brown lenses.
193	198	SANDSTONE layers, very dense, fine to medium, dry, very pale brown.
198	206	SAND, fine to medium, trace coarse, SS lenses and Gravel to 1/2", generally loose and dry.
206	218.5	GRAVELLY SAND, fine to coarse, dense, very pale brown to light gray.
218.5	230.5	SAND, fine, loose, dry, rounded.
230.5	240	SILTY SAND, fine w/ medium grains, loose to medium dense, brown to yellowish brown.
240	260	SANDY GRAVEL to GRAVELLY SAND, sand fine to coarse, gravel to 1/2", very dense, dry, grayish brown to light gray.
260	281	SAND, fine to coarse, damp to moist @ 270', light yellowish brown to pale brown.
281	284	SILTY SAND & SANDY SILTSTONE, damp to dry, light reddish brown.

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Please include the report's Tracking Number on your written request.

**Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 334-5540**

STATE OF TEXAS WELL REPORT for Tracking #466197

Owner: U.S. Department of Energy Address: P.O. Box 30030 Amarillo, TX 79120 Well Location: Pantex Plant US Hwy 60 @ FM 2373 Panhandle, TX 79068 In field at NE corner of Hwy 60 and FM 2373, adjacent to RR tracks. Well County: Carson	Owner Well #: PTX06-ISB117 Grid #: 06-44-9 Latitude: 35° 17' 29.79" N Longitude: 101° 31' 37.38" W Elevation: 3513 ft. above sea level
Type of Work: New Well Proposed Use: Injection	

Drilling Start Date: **11/13/2017** Drilling End Date: **11/14/2017**

	Diameter (in.)	Top Depth (ft.)	Bottom Depth (ft.)
Borehole:	10	0	284.7

Drilling Method: **Air Rotary Casing Hammer**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	Bottom Depth (ft.)	Filter Material	Size
Filter Pack Intervals:	269	284.7	Sand	10/20

	Top Depth (ft.)	Bottom Depth (ft.)	Description (number of sacks & material)
Annular Seal Data:	2	239.5	Cement 248 Bags/Sacks
	239.5	269	Bentonite 12 Bags/Sacks

Seal Method: **Tremie**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Sleeve Installed** **Surface Completion by Driller**

Water Level: **279.3 ft. below land surface on 2017-11-14** Measurement Method: **Electric Line**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

Water Quality:	Strata Depth (ft.)	Water Type
	266 - 282	Perched Aquifer

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Cascade Drilling**
3621 Hwy 47
Peralta, NM 87042

Driller Name: **William B. Blutworth** License Number: **4885**

Comments: **Stainless Steel Centralizers above and below screen and every 40'.**
Portland sacks = 47 lb.; Bent. chip sacks = 50 lb.
Surface completion is a 5' X 5' X 8" concrete slab w/ 10" steel protective casing and 4 bollards.
Well installed as part of ISB well field for perched aquifer remediation.

Lithology:
 DESCRIPTION & COLOR OF FORMATION MATERIAL

Casing:
 BLANK PIPE & WELL SCREEN DATA

Top (ft.)	Bottom (ft.)	Description
0	4	TOPSOIL, damp to moist.
4	18	SILTY CLAY/CLAYEY SILT, w/ Caliche streaks, damp, very stiff, reddish brown.
18	54	CLAYEY SILT, damp, stiff to very stiff, yellowish red to red-brown.
54	66	SILTY CLAY w/ some Sand, damp to slightly moist, stiff, Caliche nodules to 1/2", yellow-red.
66	76	SILTY SAND w/ some Clay, moist, medium dense, fine to medium w/ some coarse grain, light red-brown.
76	80	SAND w/ Caliche, hard, dry, pink.
80	94	SILTY SAND w/ some Clay, moist, medium dense, fine to medium w/ some coarse grain, light red-brown.
94	97	CALICHE CAPROCK, very hard, dense, dry, pinkish white.

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4	Riser	New Stainless Steel	10	0	272
4	Screen	New Rod Base Stainless Steel	10 0.010	272	282
4	Blank	New Stainless Steel	10	282	283

97	125	SILTY SAND, fine to medium, damp to dry, light brown.
125	152	SAND, fine/medium, dry, loose, very pale brown.
152	161	SAND, very fine to fine, dry, loose, pink.
161	176	SAND, fine to medium, w/ Silt, damp, light brown.
176	184	SILTY SAND, very fine to fine, trace Gravel to 1/4", damp, light brown.
184	195	SAND w/ some Silt, fine to medium, dry, loose, brown.
195	203	SAND, fine to medium, trace coarse, loose, damp, very pale brown.
203	212	GRAVELLY SAND, fine to coarse, gravel to 1/2", very dense, cemented, very pale brown.
212	228	SAND, fine to medium w/ some coarse, trace Gravel, dry, very dense.
228	238	SAND to SILTY SAND, fine to medium, damp, loose, brown.
238	243	SAND, fine to medium, w/ Gravel to 3/4", dry, very dense.
243	254	SANDY GRAVEL, fine to coarse, gravel to 1/2", dense.
254	262	SAND, w/ Gravel, fine to coarse, dense, dry, grayish brown.
262	266	SAND, fine to medium, w/ some Gravel, brown.
266	282	SAND, fine to coarse, increasing moisture w/ depth, w/ Gravel up to 1".
282	284.7	SILTY SAND to SANDY SILTSTONE, fine grain, w/ Caliche nodules, moist to dry, very dense, light brown to light reddish brown.

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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**Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 334-5540**

STATE OF TEXAS WELL REPORT for Tracking #466086

Owner: U.S. Department of Energy Address: P.O. Box 30030 Amarillo, TX 79120 Well Location: Pantex Plant US Hwy 60 @ FM 2373 Panhandle, TX 79068 In field at NE corner of Hwy 60 and FM 2373, adjacent to RR tracks. Well County: Carson	Owner Well #: PTX06-ISB116 Grid #: 06-44-9 Latitude: 35° 17' 29.66" N Longitude: 101° 31' 38.11" W Elevation: 3511 ft. above sea level
Type of Work: New Well Proposed Use: Injection	

Drilling Start Date: **11/4/2017** Drilling End Date: **11/5/2017**

	Diameter (in.)	Top Depth (ft.)	Bottom Depth (ft.)
Borehole:	10	0	285

Drilling Method: **Air Rotary Casing Hammer**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	Bottom Depth (ft.)	Filter Material	Size
Filter Pack Intervals:	269	285	Sand	10/20

	Top Depth (ft.)	Bottom Depth (ft.)	Description (number of sacks & material)
Annular Seal Data:	2	239	Cement 268 Bags/Sacks
	239	269	Bentonite 11 Bags/Sacks

Seal Method: **Tremie**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Sleeve Installed** **Surface Completion by Driller**

Water Level: **277.87 ft. below land surface on 2017-11-05** Measurement Method: **Electric Line**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

Water Quality:	Strata Depth (ft.)	Water Type
	275 - 282	Perched Aquifer

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Cascade Drilling**
3621 Hwy 47
Peralta, NM 87042

Driller Name: **William B. Blutworth** License Number: **4885**

Comments: **Stainless Steel Centralizers above and below screen and every 40'.**
Portland sacks = 47 lb.; Bent. chip sacks = 50 lb.
Surface completion is a 5' X 5' X 8" concrete slab w/ 10" steel protective casing and 4 bollards.
Well installed as part of ISB well field for perched aquifer remediation.

Lithology:
 DESCRIPTION & COLOR OF FORMATION MATERIAL

Casing:
 BLANK PIPE & WELL SCREEN DATA

Top (ft.)	Bottom (ft.)	Description
0	3	LEAN CLAY, dark reddish brown, moist, plastic, stiff.
3	35	SILT and LEAN CLAY, reddish brown to yellowish red, moist, stiff, dry with depth.
35	37	SILT, reddish yellow, non-plastic, stiff, dry.
37	45	Caliche SILT, pinkish white to pink, hard, dry.
45	60	Silty Clayey SAND, reddish yellow, medium dense, dry.
60	70	SAND, yellowish red, poorly graded, medium dense, dry.
70	80	SAND w/ Caliche Silt, medium dense, dry.
80	85	SAND, yellowish red, poorly graded, medium dense, dry.
85	90	CLAYEY SAND, light reddish brown, poorly graded, dense, dry.
90	100	SILTY SAND, pink, very dense, dry.

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4	Riser	New Stainless Steel	10	0	272
4	Screen	New Rod Base Stainless Steel	10 0.010	272	282
4	Blank	New Stainless Steel	10	282	283

100	135	SAND, light brown, poorly graded, dense, dry.
135	157	SAND, pink to light brown, fine grain quartz sand, loose, dry.
157	170	SAND, light brown, very fine grain cemented sandstone, dense, dry.
170	185	SAND, brownish yellow, loose, dry.
185	205	SANDSTONE, yellowish brown, very dense, dry.
205	220	SAND w/ Gravel, well graded, very pale brown, very dense, dry.
220	235	SAND, yellowish brown, poorly graded, medium dense, moist.
235	245	GRAVEL, light yellowish brown, well graded w/ sand, very dense, dry.
245	250	SAND, well graded, very pale brown, loose, dry.
250	255	SAND w/ Gravel, well graded, yellowish brown, dense, dry.
255	260	GRAVEL w/ Sand, yellowish brown, small gravel, dense, dry, well-graded sand.
260	275	SAND, pale brown, well graded, medium dense, moist.
275	282	Well graded SAND w/ GRAVEL, yellowish brown, medium dense, saturated @ 278.'
282	285	SILTSTONE, light reddish brown, w/ very fine grain sand and caliche granules.

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(512) 334-5540**

STATE OF TEXAS WELL REPORT for Tracking #466079

Owner: U.S. Department of Energy Address: PO Box 30030 Amarillo, TX 79120 Well Location: Pantex Plant FM 2373 Panhandle, TX 79068 In field NE corner of US 60 and FM 2373, adjacent to RR tracks. Well County: Carson	Owner Well #: PTX06-ISB115 Grid #: 06-44-9 Latitude: 35° 17' 29.34" N Longitude: 101° 31' 39.02" W Elevation: 3513 ft. above sea level
Type of Work: New Well	
Proposed Use: Injection	

Drilling Start Date: **11/1/2017** Drilling End Date: **11/3/2017**

	Diameter (in.)	Top Depth (ft.)	Bottom Depth (ft.)
Borehole:	10	0	284

Drilling Method: **Air Rotary Casing Hammer**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	Bottom Depth (ft.)	Filter Material	Size
Filter Pack Intervals:	269	284	Sand	10/20

	Top Depth (ft.)	Bottom Depth (ft.)	Description (number of sacks & material)
Annular Seal Data:	2	245	Cement 246 Bags/Sacks
	245	269	Bentonite 8 Bags/Sacks

Seal Method: **Tremie**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Sleeve Installed**

Surface Completion by Driller

Water Level: **277.46 ft. below land surface on 2017-11-03** Measurement Method: **Electric Line**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

Water Quality:	Strata Depth (ft.)	Water Type
	260 - 282	Perched Aquifer

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Cascade Drilling**
3621 Hwy 47
Peralta, NM 87042

Driller Name: **William B. Blutworth** License Number: **4885**

Comments: **Stainless Steel Centralizers above and below screen and every 40'.**
Portland sacks = 47 lb.; Bent. chip sacks = 50 lb.
Surface completion is a 5' X 5' X 8" concrete slab w/ 10" steel protective casing and 4 bollards.
Well installed as part of ISB Well field for perched aquifer remediation.

Lithology:
 DESCRIPTION & COLOR OF FORMATION MATERIAL

Casing:
 BLANK PIPE & WELL SCREEN DATA

Top (ft.)	Bottom (ft.)	Description
0	3	LEAN CLAY, dark reddish brown, moist, stiff, plactic.
3	22	SILT, reddish brown, moist, stiff, some Clay and Caliche.
22	35	CLAY with SILT, reddish yellow, moist, stiff.
35	47	SILT w/ SAND, reddish yellow, stiff, dry.
47	65	SAND w/ SILT, yellowish red, heavy caliche 50-55.'
65	77	SAND, pinkish gray, fine grain, loose, dry.
77	90	SAND, reddish yellow, loose, dry, silty below 282.'
90	105	SILT, w/ Caliche fragments , hard fragments, dry, pink.
105	135	SAND w/ SILT, reddish yellow, medium dense, dry.
135	150	SAND, light brown, dense, dry.
150	160	SAND, light brown, medium dense, dry, some, caliche.

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4	Riser	New Stainless Steel	10	0	272
4	Screen	New Rod Base Stainless Steel	10 0.010	272	282
4	Blank	New Stainless Steel	10	282	283

160	185	SAND, reddish yellow, fine grain, medium dense, dry, Silty 165-170.
185	200	Sand, light brown, medium dense, dry.
200	205	SAND, light brown, medium dense, dry.SAND, pink, well graded, medium dense, dey.
205	220	SAND w/ GRAVEL, well graded, brown, very dense, dry.
220	230	SAND, brownish yellow, medium dense, dry.
230	240	SAND, yellowish brown, fine grain, medium dense, dry.
240	260	SAND w/ GRAVEL, yellowish brown to dark brown, dry.
260	282	SAND, yellowish brown, well graded w/ small gravel, moist to saturated.
282	284	SILTSTONE, reddish brown, Sandy, w/ Caliche granules, dry.

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(512) 334-5540**

STATE OF TEXAS WELL REPORT for Tracking #466085

Owner: U.S. Department of Energy Address: P.O. Box 30030 Amarillo, TX 79120 Well Location: Pantex Plant U.S. Hwy 60 and FM2373 Panhandle, TX 79068 Outside Plant; in field in NE corner of Hwy 60 and FM 2373, adjacent railroad tracks. Well County: Carson	Owner Well #: PTX06-ISB114 Grid #: 06-44-9 Latitude: 35° 17' 29.1" N Longitude: 101° 31' 39.81" W Elevation: 3513 ft. above sea level
Type of Work: New Well	
Proposed Use: Injection	

Drilling Start Date: **11/6/2017** Drilling End Date: **11/7/2017**

	Diameter (in.)	Top Depth (ft.)	Bottom Depth (ft.)
Borehole:	10	0	285

Drilling Method: **Air Rotary Casing Hammer**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	Bottom Depth (ft.)	Filter Material	Size
Filter Pack Intervals:	269	285	Sand	10/20

	Top Depth (ft.)	Bottom Depth (ft.)	Description (number of sacks & material)
Annular Seal Data:	2	239	Cement 249 Bags/Sacks
	239	269	Bentonite 10 Bags/Sacks

Seal Method: **Tremie**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Sleeve Installed**

Surface Completion by Driller

Water Level: **277.21 ft. below land surface on 2017-11-07** Measurement Method: **Electric Line**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

Water Quality:

Strata Depth (ft.)	Water Type
270 - 282	Perched Aquifer

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Cascade Drilling**
3621 Hwy 47
Peralta, NM 87042

Driller Name: **William B. Blutworth** License Number: **4885**

Comments: **Stainless Steel Centralizers above and below screen and every 40'.
Portland sacks = 47 lb.; Bent. chip sacks = 50 lb.
Surface completion is a 5' X 5' X 8" concrete slab w/ 10" steel protective casing and 4 bollards.
Well installed as part of ISB Well field for perched aquifer remediation.**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Casing:
BLANK PIPE & WELL SCREEN DATA

Top (ft.)	Bottom (ft.)	Description
0	3	CLAY, reddish brown, plastic, moist, stiff.
3	15	SILT, w/ Clay, reddish brown, trace Sand, low plasticity, moist, stiff.
15	30	SILTY CLAY w/ Caliche, reddish brown, low plasticity, dry, stiff.
30	40	SILT, reddish yellow, some Sand, dry, stiff.
40	50	SILT, w/ Caliche, reddish yellow, dry, stiff.
50	65	SILT, light reddish brown, some Sand, dry, stiff.
65	75	SAND w/ SILT, very fine sand, Caliche silt, pink, dry, stiff, medium dense.
75	77	SAND, pinkish gray, some cemented nodes, dry, medium dense.
77	80	SAND, light reddish brown, very fine grain, dry, loose.

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4	Riser	New Stainless Steel	10	0	272
4	Screen	New Rod Base Stainless Steel	10 0.010	272	282
4	Blank	New Stainless Steel	10	282	283

80	90	SAND, w/ Clay, yellowish red, fine grain, dry, medium dense.
90	97	CALICHE SILT, pinkish white, trace sand, dry, hard.
97	105	SAND w/ SILT, light reddish brown, poorly graded, medium dense, dry.
105	130	SAND, light reddish brown to reddish yellow, poorly graded, dry, loose.
130	150	SAND, light brown, fine grain, dry, loose.
150	155	SAND, strong brown, poorly graded, dry, loose.
155	165	SAND, light brown, fine grain, medium dense, dry, some cemented nodes.
165	190	SAND, reddish yellow, fine grain, dry, loose.
190	200	SANDSTONE, light brown to reddish yellow, well cemented, dense, moist.
200	207	SAND, well graded, very pale brown to light yellowish brown, loose, dry.
207	225	SAND, w/ Gravel, light yellowish brown, well graded, small gravel, dense, dry.
225	235	SAND, yellowish brown, fine grain, medium dense, moist.
235	250	GRAVEL w/ SAND, grayish brown, well graded gravel and sand, very dense, dry.
250	265	SAND, well graded, yellowish brown, small gravel, medium dense, moist.
265	270	SAND w/ GRAVEL, dark yellowish brown, pea gravel, very dense, moist.
270	282	SAND, yellowish brown, fine-medium grain, some small gravel, saturated @ 278'.
282	285	SILTSTONE, light reddish brown, w/ 2 mm caliche nodes, some sand, dry.

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P.O. Box 12157
Austin, TX 78711
(512) 334-5540**

STATE OF TEXAS WELL REPORT for Tracking #466083

Owner: U.S. Department of Energy Address: P.O. Box 30030 Amarillo, TX 79120 Well Location: Pantex Plant U.S. Hwy 60 and FM 2373 Panhandle, TX 79068 In field, NE Corner of Hwy 60 and FM 2373, adjacent to RR tracks. Well County: Carson	Owner Well #: PTX06-ISB113 Grid #: 06-44-9 Latitude: 35° 17' 28.8" N Longitude: 101° 31' 40.6" W Elevation: 3513 ft. above sea level
Type of Work: New Well	
Proposed Use: Injection	

Drilling Start Date: **11/1/2017** Drilling End Date: **11/2/2017**

	Diameter (in.)	Top Depth (ft.)	Bottom Depth (ft.)
Borehole:	10	0	287

Drilling Method: **Air Rotary Casing Hammer**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	Bottom Depth (ft.)	Filter Material	Size
Filter Pack Intervals:	272	287	Sand	10/20

	Top Depth (ft.)	Bottom Depth (ft.)	Description (number of sacks & material)
Annular Seal Data:	2	236	Cement 267 Bags/Sacks
	236	272	Bentonite 24 Bags/Sacks

Seal Method: **Tremie**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Sleeve Installed**

Surface Completion by Driller

Water Level: **276.95 ft. below land surface on 2017-11-03** Measurement Method: **Electric Line**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

Water Quality:	Strata Depth (ft.)	Water Type
	260 - 285	Perched Aquifer

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Cascade Drilling**
3621 Hwy 47
Peralta, NM 87042

Driller Name: **William B. Blutworth** License Number: **4885**

Comments: **Stainless Steel Centralizers above and below screen and every 40'.**
Portland sacks = 47 lb.; Bent. chip sacks = 50 lb.
Surface completion is a 5' X 5' X 8" concrete slab w/ 10" steel protective casing and 4 bollards.
Well installed as part of ISB Well field for perched aquifer remediation.

Lithology:
 DESCRIPTION & COLOR OF FORMATION MATERIAL

Casing:
 BLANK PIPE & WELL SCREEN DATA

Top (ft.)	Bottom (ft.)	Description
0	10	SILTY CLAY LOAM, damp, poorly graded, grayish orange pink.
10	25	CLAY, lean, light brown, slightly moist.
25	32	SILTY CLAY, light brown, dry.
32	45	CLAY, lean, grayish orange, some very minor Silt.
45	65	CALICHE, Caprock.
65	95	SILTY CLAY, very pale orange to grayish orange.
95	120	SILT and CLAYEY SILT, pale orange.
120	190	SAND and SILT, very fine grained, very pale orange.
190	200	SILT and minor CLAY, grayish orange.
200	215	SAND and SILT, very fine grained, very pale orange.
215	220	SAND, some Gravel, fine to coarse grained, well graded, very pale orange.

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4	Riser	New Stainless Steel	10	0	275
4	Screen	New Rod Base Stainless Steel	10 0.010	275	285
4	Blank	New Stainless Steel	10	285	286

220	235	SAND, some Gravel, fine to medium grained, grayish orange to dark yellow orange.
235	255	SAND, w/ some interbedded lean Clay, very fine to coarse, grayish orange.
255	260	SAND and GRAVEL, very fine to coarse, well graded, grayish orange, dry.
260	280	SAND, fine, w/ minor interbedded lean Clay, dark yellow orange, damp.
280	285	CLAYEY SAND to SANDY CLAY, dark yellow orange, damp.
285	287	SILTY CLAY and lithified CLAYEY SILT, orange pink, dry.

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STATE OF TEXAS WELL REPORT for Tracking #467046

Owner: U.S. Department of Energy Address: PO Box 30030 Amarillo, TX 79120 Well Location: Pantex Plant U.S. Hwy 60 @ FM 2373 Panhandle, TX 79068 In field at NE corner of Hwy 60 and FM 2373, adjacent to RR tracks. Well County: Carson	Owner Well #: PTX06-ISB112 Grid #: 06-44-9 Latitude: 35° 17' 28.28" N Longitude: 101° 31' 41.9" W Elevation: 3513 ft. above sea level
Type of Work: New Well	
Proposed Use: Injection	

Drilling Start Date: **12/12/2017** Drilling End Date: **12/13/2017**

	Diameter (in.)	Top Depth (ft.)	Bottom Depth (ft.)
Borehole:	10	0	284

Drilling Method: **Air Rotary Casing Hammer**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	Bottom Depth (ft.)	Filter Material	Size
Filter Pack Intervals:	269	284	Sand	10/20

	Top Depth (ft.)	Bottom Depth (ft.)	Description (number of sacks & material)
Annular Seal Data:	2	238	Cement 232 Bags/Sacks
	238	269	Bentonite 17 Bags/Sacks

Seal Method: **Tremie**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Sleeve Installed**

Surface Completion by Driller

Water Level: **275.5 ft. below land surface on 2017-12-13** Measurement Method: **Electric Line**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

Water Quality:	Strata Depth (ft.)	Water Type
	270 - 282	Perched Aquifer

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Cascade Drilling**
3621 Hwy 47
Peralta, NM 87042

Driller Name: **William B. Blutworth** License Number: **4885**

Comments: **Stainless Steel Centralizers above and below screen and every 40'.**
Portland sacks = 47 lb.; Bent. chip sacks = 50 lb.
Surface completion is a 5' X 5' X 8" concrete slab w/ 10" steel protective casing and 4 bollards.
Well installed as part of ISB well field for perched aquifer remediation.

Lithology:
 DESCRIPTION & COLOR OF FORMATION MATERIAL

Casing:
 BLANK PIPE & WELL SCREEN DATA

Top (ft.)	Bottom (ft.)	Description
0	5	LEAN CLAY, dark reddish brown, plastic, damp.
5	30	LEAN CLAY, some Sand, medium plastic, reddish brown, moist.
30	65	SILTY SAND, red, w/ Caliche nodes, medium dense, moist.
65	75	SAND, pink, fine grain, medium dense, dry.
75	85	LEAN CLAY w/ Sand, reddish brown, dry, plastic, stiff.
85	105	SILT, w/ Caliche, pink, stiff to hard, dry.
105	120	SILTY SAND, reddish yellow, fine grain, loose, dry.
120	130	SAND, light brown, medium dense, dry, w/ cemented nodes.
130	140	SAND, pink, loose, dry.
140	155	SAND, light brown, medium dense, dry, hard, cemented nodes.

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4	Riser	New Stainless Steel	10	0	272
4	Screen	New Rod Base Stainless Steel	10 0.010	272	282
4	Blank	New Stainless Steel	10	282	283

155	160	SILT, trace Sand, pink, medium stiff, dry.
160	185	SAND, light brown, mostly fine grain quartz sand, loose, dry.
185	200	SAND, light brown, medium dense, dry.
200	225	SAND, light yellowish brown, w/ medium Gravel, dense, dry.
225	235	SAND, brown, medium dense, dry.
235	245	GRAVEL, w/ Sand, brown to dark grayish brown, dense, dry.
245	260	SAND, yellowish brown, medium dense, moist.
260	270	SAND, some Pea Gravel, light yellowish brown, dense, dry.
270	282	SAND, some Gravel, pale brown, moist to saturated @ 276', dense.
282	284	SILTSTONE, w/ Caliche nodes, light reddish brown, hard, dry.

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(512) 334-5540**

STATE OF TEXAS WELL REPORT for Tracking #467047

Owner: U.S. Department of Energy Address: PO Box 30030 Amarillo, TX 79120 Well Location: Pantex Plant Hwy 60 and FM 2373 Panhandle, TX 79068 Outside plant; In field, NE Corner of Hwy 60 and FM 2373, adjacent to RR tracks. Well County: Carson	Owner Well #: PTX06-ISB111 Grid #: 06-44-6 Latitude: 35° 17' 30.11" N Longitude: 101° 31' 42.33" W Elevation: 3513 ft. above sea level
Type of Work: New Well	
Proposed Use: Injection	

Drilling Start Date: **12/14/2017** Drilling End Date: **12/15/2017**

	Diameter (in.)	Top Depth (ft.)	Bottom Depth (ft.)
Borehole:	10	0	284

Drilling Method: **Air Rotary Casing Hammer**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	Bottom Depth (ft.)	Filter Material	Size
Filter Pack Intervals:	267	284	Sand	10/20

	Top Depth (ft.)	Bottom Depth (ft.)	Description (number of sacks & material)
Annular Seal Data:	2	239	Cement 232 Bags/Sacks
	239	267	Bentonite 19 Bags/Sacks

Seal Method: **Tremie**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Sleeve Installed** **Surface Completion by Driller**

Water Level: **276 ft. below land surface on 2017-12-15**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

Water Quality:	<i>Strata Depth (ft.)</i>	<i>Water Type</i>
	270 - 280	Perched Aquifer

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Cascade Drilling**
3621 Hwy 47
Peralta, NM 87042

Driller Name: **William B. Blutworth** License Number: **4885**

Comments: **Stainless Steel Centralizers above and below screen and every 40'.**
Portland sacks = 47 lb.; Bent. chip sacks = 50 lb.
Surface completion is a 5' X 5' X 8" concrete slab w/ 10" steel protective casing and 4 bollards.
Well installed as part of ISB Well field for perched aquifer remediation.

Lithology:
 DESCRIPTION & COLOR OF FORMATION MATERIAL

Casing:
 BLANK PIPE & WELL SCREEN DATA

<i>Top (ft.)</i>	<i>Bottom (ft.)</i>	<i>Description</i>
0	4	CLAYEY SILT, topsoil.
4	37	SILTY CLAY, reddish brown.
37	48	CLAYEY SILT, Caliche nodules, pink.
48	69	SILTY SAND, w/ Clay, dense, damp, red.
69	80	SAND to SILTY SAND, damp to moist, very fine to fine, reddish yellow.
80	93	SILTY SAND, damp, moderate dense, fine grain, reddish brown.
93	103	SILTY SAND, pink to pinkish white, dry, very dense.
103	131	SILTY SAND, very fine to fine, moderate dense to loose, reddish yellow.
131	158	SAND, w/ some Silt, loose, dry to damp, pink to light brown.
158	168	SILTY SAND, very fine, dry, loose, pink.

<i>Dia (in.)</i>	<i>Type</i>	<i>Material</i>	<i>Sch./Gage</i>	<i>Top (ft.)</i>	<i>Bottom (ft.)</i>
4	Riser	New Stainless Steel	10	0	270
4	Screen	New Rod Base Stainless Steel	10 0.010	270	280
4	Blank	New Stainless Steel	10	280	281

168	188	SAND, very fine to fine w/ medium, loose, dry, thin Sandstone lenses, light brown.
188	196	SILTY SAND to SAND, very fine to fine, loose, dry, light brown.
196	204	SILTY SAND, very fine, damp, loose, reddish yellow.
204	213	SAND, fine to medium, trace pebbles and coarse sand, loose, dry.
213	227	SANDY GRAVEL, fine to coarse sand, gravel to 1 1/2", w/ pebbles, moderate dense, light brownish gray.
227	239	SAND, fine to medium, loose, damp, brownish yellow.
239	252	SANDY PEBBLY GRAVEL, sand fine to medium, 3/4" gravel, dense, damp, light brownish gray.
252	267	SAND, fine to medium w/ some coarse, damp, loose, sub-angular to sub-rounded, very pale brown.
267	280	SANDY GRAVEL w/ PEBBLES, fine to coarse sand, gravel to 1", light brownish gray. Wet @ 276'.
280	284	SILTY SAND, fine, w/ some Caliche nodules to 1/4", damp, light reddish brown.

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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Austin, TX 78711
(512) 334-5540**

STATE OF TEXAS WELL REPORT for Tracking #466189

Owner: U.S. Department of Energy Address: PO Box 30030 Amarillo, TX 79068 Well Location: Pantex Plant U.S. Hwy 60 @ FM 2373 Panhandle, TX 79068 Outside Plant; in field in NE corner of Hwy 60 and FM 2373, adjacent railroad tracks. Well County: Carson	Owner Well #: PTX06-ISB110 Grid #: 06-44-9 Latitude: 35° 17' 28" N Longitude: 101° 31' 43.35" W Elevation: 3513 ft. above sea level
Type of Work: New Well	
Proposed Use: Injection	

Drilling Start Date: **11/30/2017** Drilling End Date: **12/2/2017**

	Diameter (in.)	Top Depth (ft.)	Bottom Depth (ft.)
Borehole:	10	0	284

Drilling Method: **Air Rotary Casing Hammer**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	Bottom Depth (ft.)	Filter Material	Size
Filter Pack Intervals:	268	284	Sand	10/20

	Top Depth (ft.)	Bottom Depth (ft.)	Description (number of sacks & material)
Annular Seal Data:	2	240	Cement 283 Bags/Sacks
	240	268	Bentonite 13 Bags/Sacks

Seal Method: **Tremie**

Distance to Property Line (ft.): **No Data**

Sealed By: **Driller**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Sleeve Installed**

Surface Completion by Driller

Water Level: **276.04 ft. below land surface on 2017-12-02** Measurement Method: **Electric Line**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

Water Quality:

Strata Depth (ft.)	Water Type
270 - 281	Perched Aquifer

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Cascade Drilling**
3621 Hwy 47
Peralta, NM 87042

Driller Name: **William B. Blutworth** License Number: **4885**

Comments: **Stainless Steel Centralizers above and below screen and every 40'.
Portland sacks = 47 lb.; Bent. chip sacks = 50 lb.
Surface completion is a 5' X 5' X 8" concrete slab w/ 10" steel protective casing and 4 bollards.
Well installed as part of ISB Well field for perched aquifer remediation.**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Casing:
BLANK PIPE & WELL SCREEN DATA

Top (ft.)	Bottom (ft.)	Description
0	5	CLAY, dark reddish brown, stiff, plastic, moist.
5	35	SILTY CLAY, yellowish red, stiff, plastic, moist.
35	45	SILT, w/ Caliche, reddish yellow, stiff, dry.
45	70	SAND, w/ Caliche, red, loose, dry.
70	75	SILT, light reddish brown, medium stiff, dry.
75	94	CLAY, some Sand, reddish brown, dense, dry.
94	105	SILT & CALICHE, pink, medium stiff, dry.
105	200	SAND, reddish yellow to light brown, fine grain, loose to medium dense, dry.
200	225	SAND, some Gravel, yellow to pale brown, dense, dry.
225	240	SAND, yellowish brown, well graded, dense, dry.

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4	Riser	New Stainless Steel	10	0	271
4	Screen	New Rod Base Stainless Steel	10 0.010	271	281
4	Blank	New Stainless Steel	10	281	282

240	281	SAND w/ GRAVEL, well graded, yellowish brown, some Clay, medium dense, wet @ 277'.
281	284	SILTSTONE, reddish brown, sandy with caliche, hard, dry.

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STATE OF TEXAS WELL REPORT for Tracking #466180

Owner: U.S. Department of Energy Address: PO Box 30030 Amarillo, TX 79120 Well Location: Pantex Plant U.S. Hwy 60 @ FM 2373 Panhandle, TX 79068 In field, NE Corner of Hwy 60 and FM 2373, adjacent to RR tracks. Well County: Carson	Owner Well #: PTX06-ISB109 Grid #: 06-44-9 Latitude: 35° 17' 27.75" N Longitude: 101° 31' 44.2" W Elevation: 3513 ft. above sea level
Type of Work: New Well	
Proposed Use: Injection	

Drilling Start Date: **12/3/2017** Drilling End Date: **12/4/2017**

	Diameter (in.)	Top Depth (ft.)	Bottom Depth (ft.)
Borehole:	10	0	283

Drilling Method: **Air Rotary Casing Hammer**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	Bottom Depth (ft.)	Filter Material	Size
Filter Pack Intervals:	268	283	Sand	10/20

	Top Depth (ft.)	Bottom Depth (ft.)	Description (number of sacks & material)
Annular Seal Data:	2	238	Cement 232 Bags/Sacks
	238	268	Bentonite 16 Bags/Sacks

Seal Method: **Tremie**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Sleeve Installed**

Surface Completion by Driller

Water Level: **275.54 ft. below land surface on 2017-12-04** Measurement Method: **Electric Line**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

Water Quality:	Strata Depth (ft.)	Water Type
	270 - 281	Perched Aquifer

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Cascade Drilling**
3621 Hwy 47
Peralta, NM 87042

Driller Name: **William B. Blutworth** License Number: **4885**

Comments: **Stainless Steel Centralizers above and below screen and every 40'.**
Portland sacks = 47 lb.; Bent. chip sacks = 50 lb.
Surface completion is a 5' X 5' X 8" concrete slab w/ 10" steel protective casing and 4 bollards.
Well installed as part of ISB Well field for perched aquifer remediation.

Lithology:
 DESCRIPTION & COLOR OF FORMATION MATERIAL

Casing:
 BLANK PIPE & WELL SCREEN DATA

Top (ft.)	Bottom (ft.)	Description
0	5	CLAY, dark reddish brown, very stiff, plastic, moist.
5	35	SILTY CLAY, reddish brown, stiff, dry to moist.
35	45	SILT, reddish yellow, medium stiff, dry.
45	75	SAND, red, fine grain, medium dense, dry.
75	95	SAND, reddish brown, loose to medium dense, some Clay, dry.
95	100	SILTY SAND, pink, medium dense, dry.
100	205	SAND, reddish yellow to light brown, fine grain, loose to densely cemented, dry.
205	210	CLAYEY SAND, yellowish brown, dense, dry.
210	225	SAND, brownish yellow, well graded, some Gravel, medium dense, dry.
225	235	SILTY SAND, yellowish brown, medium dense, moist.

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4	Riser	New Stainless Steel	10	0	271
4	Screen	New Rod Base Stainless Steel	10 0.010	271	281
4	Blank	New Stainless Steel	10	281	282

235	245	GRAVEL, small, yellowish brown, very dense, dry.
245	281	SAND W/ GRAVEL, well graded, medium dense, wet @ 277', some Clay, yellowish brown.
281	283	SANDY SILTSTONE, reddish brown, w/ Caliche, hard, dry.

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STATE OF TEXAS WELL REPORT for Tracking #467045

Owner: U.S. Department of Energy	Owner Well #: PTX06-ISB108
Address: PO Box 30030 Amarillo, TX 79120	Grid #: 06-44-9
Well Location: Pantex Plant Hwy 60 and FM 2373 Panhandle, TX 79068	Latitude: 35° 17' 27.3" N
	Longitude: 101° 31' 47.68" W
Outside plant; In field, NE Corner of Hwy 60 and FM 2373, adjacent to RR tracks.	Elevation: 3513 ft. above sea level
Well County: Carson	

Type of Work: New Well	Proposed Use: Injection
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Drilling Start Date: **12/12/2017** Drilling End Date: **12/13/2017**

	<i>Diameter (in.)</i>	<i>Top Depth (ft.)</i>	<i>Bottom Depth (ft.)</i>
Borehole:	10	0	283

Drilling Method: **Air Rotary Casing Hammer**

Borehole Completion: **Filter Packed**

	<i>Top Depth (ft.)</i>	<i>Bottom Depth (ft.)</i>	<i>Filter Material</i>	<i>Size</i>
Filter Pack Intervals:	268	283	Sand	10/20

	<i>Top Depth (ft.)</i>	<i>Bottom Depth (ft.)</i>	<i>Description (number of sacks & material)</i>
Annular Seal Data:	2	240	Cement 248 Bags/Sacks
	240	268	Bentonite 12 Bags/Sacks

Seal Method: **Tremie**

Distance to Property Line (ft.): **No Data**

Sealed By: **Driller**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: Surface Sleeve Installed	Surface Completion by Driller
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Water Level: **275.33 ft. below land surface on 2017-12-13** Measurement Method: **Electric Line**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

Water Quality:

Strata Depth (ft.)	Water Type
270 - 281	Perched Aquifer

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Cascade Drilling**
3621 Hwy 47
Peralta, NM 87042

Driller Name: **William B. Blutworth** License Number: **4885**

Comments: **Stainless Steel Centralizers above and below screen and every 40'.**
Portland sacks = 47 lb.; Bent. chip sacks = 50 lb.
Surface completion is a 5' X 5' X 8" concrete slab w/ 10" steel protective casing and 4 bollards.
Well installed as part of ISB Well field for perched aquifer remediation.

Lithology:
 DESCRIPTION & COLOR OF FORMATION MATERIAL

Casing:
 BLANK PIPE & WELL SCREEN DATA

Top (ft.)	Bottom (ft.)	Description
0	4	Topsoil.
4	24	SILTY CLAY, reddish brown.
24	38	CLAYEY SILT, reddish yellow.
38	44	CALICHE, white.
44	57	SANDY CLAYEY SILT, red.
57	83	SILTY SAND, yellowish red.
83	87	CALICHE
87	95	SILTY SAND-SANDY SILT, reddish brown.
95	106	CALICHE
106	131	SILTY SAND, damp, fine, light reddish brown.
131	159	SAND, fine to medium, loose, dry, light brown.
159	204	SILTY SAND, w/ Sand, fine, damp, light reddish brown.
204	234	SAND, w/ Gravel to 1", fine to medium sand, very pale brown.

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4	Riser	New Stainless Steel	10	0	271
4	Screen	New Rod Base Stainless Steel	10 0.010	271	281
4	Blank	New Stainless Steel	10	281	282

234	244	SAND, w/ Silt, damp to moist, fine-medium, light yellowish brown.
244	259	SANDY GRAVEL, sand fine to coarse, gravel to 1-1/2", very dense, damp, ligh brownish gray.
259	281	PEBBLY SAND to SANDY GRAVEL, fine to coarse sand, gravel to 2", moist, dense, wet @ 275'.
281	283	SAND to SANDSTONE, damp to dry, very dense, w/ small Caliche nodules, pink to light reddish brown.

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STATE OF TEXAS WELL REPORT for Tracking #469831

Owner:	U.S. Department of Energy	Owner Well #:	PTX06-1195
Address:	PO Box 30030 Amarillo, TX 79120	Grid #:	06-44-6
Well Location:	Pantex Plant NW corner of Hwy 60 and FM 2373 Panhandle, TX 79068	Latitude:	35° 17' 40.09" N
	In field, NE Corner of Hwy 60 and FM 2373.	Longitude:	101° 31' 25.32" W
		Elevation:	3513 ft. above sea level
Well County:	Carson		
Type of Work: New Well		Proposed Use: Monitor	

Drilling Start Date: **1/29/2018** Drilling End Date: **1/30/2018**

	Diameter (in.)	Top Depth (ft.)	Bottom Depth (ft.)
Borehole:	10	0	292

Drilling Method: **Air Rotary Casing Hammer**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	Bottom Depth (ft.)	Filter Material	Size
Filter Pack Intervals:	271	292	Sand	12/20

	Top Depth (ft.)	Bottom Depth (ft.)	Description (number of sacks & material)
Annular Seal Data:	2	240	Bentonite Grout 40 Bags/Sacks
	240	271	Bentonite Chips 17 Bags/Sacks

Seal Method: **Tremie**

Distance to Property Line (ft.): **No Data**

Sealed By: **Driller**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Sleeve Installed**

Surface Completion by Driller

Water Level: **281.97 ft. below land surface on 2018-01-30** Measurement Method: **Electric Line**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

Water Quality:	Strata Depth (ft.)	Water Type
	275 - 289	Perched Aquifer

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Cascade Drilling**
3621 Hwy 47
Peralta, NM 87042

Driller Name: **William B. Blutworth** License Number: **4885**

Comments: **-Surface completion is a 5' X 5' X 8" concrete slab w/ 10" steel protective casing and 4bollards.**
-Well installed to delineate extent of contaminated aquifer - analysis pending.
-S.S. Centralizers at top and bottom of screen and every 40' on riser.

Lithology:
 DESCRIPTION & COLOR OF FORMATION MATERIAL

Casing:
 BLANK PIPE & WELL SCREEN DATA

Top (ft.)	Bottom (ft.)	Description
0	5	LEAN CLAY, dark reddish brown, moist, plastic, stiff.
5	15	SILT, reddish yellow, non-plastic, stiff, dry.
15	20	LEAN CLAY, reddish brown, trace Sand & Caliche, stiff, dry.
20	30	SILT, yellowish red, non-plastic, loose, dry.
30	35	SAND, yellowish red to red, loose, dry.
35	40	SANDY SILT, reddish brown, w/ hard Caliche, stiff to hard, dry.
40	62	SAND, reddish yellow, w/ Caliche granules throughout, medium dense, dry.
62	75	SILTY SAND, reddish brown, medium dense, dry.
75	85	SAND, yellowish red, medium dense, dry.
85	95	SILTY SAND, reddish yellow to pink, medium dense, dry.

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4	Riser	New Plastic (PVC)	80	0	274
4	Screen	New Plastic (PVC)	80 0.010	274	289
4	Blank	New Plastic (PVC)	80	289	290

95	145	SAND, poorly graded, light brown to reddish yellow, loose, dry.
145	160	SAND, well graded, pink to light brown, medium dense to dense, dry, some Gravel and hard, cemented Sandstone.
160	220	SAND, poorly graded, light brown to light yellowish brown, loose to medium dense, dry.
220	230	SAND w/ GRAVEL, pale brown to light yellowish brown, small gravel, dense, dry.
230	245	SAND, poorly graded, yellowish brown, dense, dry.
245	255	GRAVEL w/ Sand, yellowish brown, well graded, very dense, dry.
255	260	SAND, well graded, w/ Gravel, yellowish brown, dense, dry.
260	265	SAND, poorly graded, yellowish brown, medium dense, dry.
265	275	SAND, well graded, yellowish brown, some pea Gravel, medium dense, dry.
275	289	SAND, well graded, w/ Gravel, dark yellowish brown, 20% gravel- small to large, oblong and circular flattened gravel to 2" diameter, trace Clay, medium dense, moist @ 275', saturated @ 282'.
289	292	SANDY SILT, light reddish brown, fine sand and Caliche, very stiff to hard, damp to dry w/ depth.

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STATE OF TEXAS WELL REPORT for Tracking #469640

Owner: U.S. Department of Energy	Owner Well #: PTX06-1194
Address: PO Box 30030 Amarillo, TX 79120	Grid #: 06-44-9
Well Location: Approx. 0.5 miles east of FM 2373 and 50 yards south of U.S. 60, just inside fence. Panhandle, TX 79068	Latitude: 35° 17' 25.28" N
	Longitude: 101° 31' 34.29" W
	Elevation: 3513 ft. above sea level
Well County: Carson	

Type of Work: New Well	Proposed Use: Monitor
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Drilling Start Date: **1/26/2018** Drilling End Date: **1/27/2018**

	Diameter (in.)	Top Depth (ft.)	Bottom Depth (ft.)
Borehole:	10	0	282

Drilling Method: **Air Rotary Casing Hammer**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	Bottom Depth (ft.)	Filter Material	Size
Filter Pack Intervals:	265	282	Sand	12/20

	Top Depth (ft.)	Bottom Depth (ft.)	Description (number of sacks & material)
Annular Seal Data:	2	238	Bentonite Grout 46 Bags/Sacks
	238	265	Bentonite Chips 13 Bags/Sacks

Seal Method: **Tremie**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: Surface Sleeve Installed	Surface Completion by Driller
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Water Level: **276.96 ft. below land surface on 2018-01-27** Measurement Method: **Electric Line**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

Water Quality:

Strata Depth (ft.)	Water Type
275 - 278	Perched Aquifer

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Cascade Drilling**
3621 Hwy 47
Peralta, NM 87042

Driller Name: **William B. Bludworth** License Number: **4885**

Comments: **-Surface completion is a 5' X 5' X 8" concrete slab w/ 10" steel protective casing and 4bollards.**

-S.S. Centralizers at top and bottom of screen and every 40' on riser.

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Casing:
BLANK PIPE & WELL SCREEN DATA

Top (ft.)	Bottom (ft.)	Description
0	10	LEAN CLAY, reddish brown, plastic, cohesive, stiff, moist.
10	45	SILT, yellowish red to pink, some Sand and Clay to 35', stiff, dry.
45	65	SAND, red, poorly graded, Caliche granules, medium dense, dry.
65	70	SANDY SILT, pink, large Caliche fragments, hard, dry.
70	80	SAND, reddish yellow, medium dense, dry.
80	90	SANDY LEAN CLAY reddish brown, low plasticity, very stiff, dry.
90	100	CALICHE SILT, pinkish white, hard, dry.
100	150	SAND, light reddish brown to light brown, loose to dense in cemented intervals below 125', dry.
150	160	SANDY SILT, pink, very stiff to hard.

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4	Riser	New Plastic (PVC)	80	0	268
4	Screen	New Plastic (PVC)	80 0.010	268	278
4	Blank	New Plastic (PVC)	80	278	279

160	195	SAND to SILTY SAND, light brown to brownish yellow to light brown, loose to medium dense, dry.
195	235	SAND w/ GRAVEL, light yellowish brown to dark yellowish brown, very dense to dense, dry. Damp w/ no gravel from 225-230'.
235	245	GRAVEL, light yellowish brown, very dense, dry.
245	260	SAND, well graded sand w/ Gravel, yellowish brown, dense, dry.
260	278	SAND, well-graded, light yellowish brown, dense, moist to saturated @ 277'.
278	282	SANDY SILT, reddish brown, w/ Caliche, very stiff to hard, moist to dry.

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**Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 334-5540**

STATE OF TEXAS WELL REPORT for Tracking #469508

Owner: U.S. Department of Energy	Owner Well #: PTX06-1193
Address: PO Box 30030 Amarillo, TX 79120	Grid #: 06-44-9
Well Location: Approx. 0.4 miles east of FM 2373 and 200 yards south of U.S. 60, next to unnamed road that is perpendicular to and intersects U.S. 60. Panhandle, TX 79068	Latitude: 35° 17' 15.49" N
	Longitude: 101° 31' 54.16" W
	Elevation: 3513 ft. above sea level
Well County: Carson	

Type of Work: New Well	Proposed Use: Monitor
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Drilling Start Date: **1/23/2018** Drilling End Date: **1/24/2018**

	<i>Diameter (in.)</i>	<i>Top Depth (ft.)</i>	<i>Bottom Depth (ft.)</i>
Borehole:	10	0	272

Drilling Method: **Air Rotary Casing Hammer**

Borehole Completion: **Filter Packed**

	<i>Top Depth (ft.)</i>	<i>Bottom Depth (ft.)</i>	<i>Filter Material</i>	<i>Size</i>
Filter Pack Intervals:	254	272	Sand	10/20

	<i>Top Depth (ft.)</i>	<i>Bottom Depth (ft.)</i>	<i>Description (number of sacks & material)</i>
Annular Seal Data:	2	230	Bentonite Grout 40 Bags/Sacks
	230	254	Bentonite Chips 17 Bags/Sacks

Seal Method: **Tremie**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other
concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: Surface Sleeve Installed	Surface Completion by Driller
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Water Level: **No Data on 2018-01-24**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

Water Quality:

<i>Strata Depth (ft.)</i>	<i>Water Type</i>
No Data	No Water

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Cascade Drilling**
3621 Hwy 47
Peralta, NM 87042

Driller Name: **William B. Bludworth** License Number: **4885**

Comments: **-Surface completion is a 5' X 5' X 8" concrete slab w/ 10" steel protective casing and 4bollards.**
-S.S. Centralizers at top and bottom of screen and every 40' on riser.

Lithology:
 DESCRIPTION & COLOR OF FORMATION MATERIAL

Casing:
 BLANK PIPE & WELL SCREEN DATA

<i>Top (ft.)</i>	<i>Bottom (ft.)</i>	<i>Description</i>
0	5	LEAN CLAY, dark reddish brown, plastic, hard, moist.
5	20	SILT, reddish brown, some Caliche, hard, moist.
20	25	SANDY LEAN CLAY, reddish brown, very stiff, dry.
25	35	SANDY SILT, reddish yellow, medium stiff, dry.
35	60	SILTY SAND, red to light red, Caliche granules, medium dense, dry.
60	70	CALICHE CAPROCK, white, hard, dry.
70	120	SAND, pink to light reddish brown, loose, dry.
120	130	SILTY SAND, yellowish red, non-plastic, loose, dry.
130	190	SAND, pink to reddish yellow, loose, dry.
190	225	SAND, well graded, yellowish brown, some Gravel, medium dense, dry.
225	240	SAND, light yellowish brown, fine grain, loose, dry.

<i>Dia (in.)</i>	<i>Type</i>	<i>Material</i>	<i>Sch./Gage</i>	<i>Top (ft.)</i>	<i>Bottom (ft.)</i>
4	Riser	New Plastic (PVC)	80	0	257
4	Screen	New Plastic (PVC)	80 0.010	257	267
4	Blank	New Plastic (PVC)	80	267	268

240	255	SAND w/ GRAVEL, well graded, yellowish brown, dense , dry.
255	267	SAND w/ GRAVEL, yellowish brown, very coarse to fine grain sand and pea gravel, moist throughout but not saturated.
267	272	SILTY SAND, reddish brown, >15% fines, some Caliche granules, damp to dry w/ depth.

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P.O. Box 12157
Austin, TX 78711
(512) 334-5540**

STATE OF TEXAS WELL REPORT for Tracking #469487

Owner: **U.S. Department of Energy** Owner Well #: **PTX06-1192**
Address: **PO Box 30030** Grid #: **06-44-9**
Amarillo, TX 79120
Well Location: **In field, SE Corner of Hwy 60 and FM** Latitude: **35° 17' 19.07" N**
2373. Longitude: **101° 31' 25.24" W**
Panhandle, TX 79068 Elevation: **3513 ft. above sea level**
Well County: **Carson**

Type of Work: **New Well** Proposed Use: **Monitor**

Drilling Start Date: **1/16/2018** Drilling End Date: **1/19/2018**

	<i>Diameter (in.)</i>	<i>Top Depth (ft.)</i>	<i>Bottom Depth (ft.)</i>
Borehole:	10	0	296

Drilling Method: **Air Rotary Casing Hammer**

Borehole Completion: **Filter Packed**

	<i>Top Depth (ft.)</i>	<i>Bottom Depth (ft.)</i>	<i>Filter Material</i>	<i>Size</i>
Filter Pack Intervals:	269	296	Sand	10/20

	<i>Top Depth (ft.)</i>	<i>Bottom Depth (ft.)</i>	<i>Description (number of sacks & material)</i>
Annular Seal Data:	2	240	Bentonite Grout 40 Bags/Sacks
	240	269	Bentonite Chips 22 Bags/Sacks

Seal Method: **Tremie**

Distance to Property Line (ft.): **No Data**

Sealed By: **Driller**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Sleeve Installed**

Surface Completion by Driller

Water Level: **279 ft. below land surface on 2018-01-19** Measurement Method: **Electric Line**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

Water Quality:

<i>Strata Depth (ft.)</i>	<i>Water Type</i>
270 - 292	Perched Aquifer

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Cascade Drilling**
3621 Hwy 47
Peralta, NM 87042

Driller Name: **William B. Bludworth** License Number: **4885**

Comments: **-Surface completion is a 5' X 5' X 8" concrete slab w/ 10" steel protective casing and 4bollards.**

-S.S. Centralizers at top and bottom of screen and every 40' on riser.

Report Amended on 1/29/2018 by Request #24110

Lithology:
 DESCRIPTION & COLOR OF FORMATION MATERIAL

Casing:
 BLANK PIPE & WELL SCREEN DATA

<i>Top (ft.)</i>	<i>Bottom (ft.)</i>	<i>Description</i>
0	5	LEAN CLAY, reddish brown, medium stiff, dry.
5	15	SILTY CLAY, light reddish brown, medium stiff, dry.
15	20	SILT, reddish yellow, medium stiff, dry.
20	30	LEAN CLAY, light reddish brown, medium stiff, dry.
30	40	SILT, yellowish red, some Caliche, soft, dry.
40	70	SAND, red, fine grained, medium dense, dry to moist, some Caliche nodes.
70	80	SILTY SAND,reddish yellow, medium dense, dry.
80	115	SAND w/ SILT, yellowish red, dense, dry.
115	160	SAND, poorly graded, yellowish red to light brown, loose, dry.
160	180	SILTY SAND, pink, poorly graded, medium dense, dry.

<i>Dia (in.)</i>	<i>Type</i>	<i>Material</i>	<i>Sch./Gage</i>	<i>Top (ft.)</i>	<i>Bottom (ft.)</i>
4	Riser	New Plastic (PVC)	80	0	272
4	Screen	New Plastic (PVC)	80 0.010	272	292
4	Blank	New Plastic (PVC)	80	292	293

180	200	SAND, reddish yellow, poorly graded, medium dense, dry.
200	235	SAND, w/ some Gravel, light yellowish brown, well graded, dense, dry.
235	240	SAND, strong brown, medium dense, dry.
240	245	GRAVEL, well graded,w/ Sand, light yellowish brown to yellowish brown, dense, dry.
245	292	SAND & GRAVEL, well graded, yellowish brown, moist @ 270'; saturated @ 280.'
292	296	SILTY SAND, reddish brown, medium to very fine grain w/ depth, plastic fines, hard Caliche nodes, stiff to very stiff; moist to dry w/ depth.

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Texas Department of Licensing and Regulation
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Austin, TX 78711
(512) 334-5540

STATE OF TEXAS WELL REPORT for Tracking #469506

Owner: U.S. Department of Energy	Owner Well #: PTX06-1191
Address: PO Box 30030 Amarillo, TX 79120	Grid #: 06-44-9
Well Location: In field, SE Corner of U.S. Hwy 60 and FM 2373, approximately 75 yards south of Hwy 60. Panhandle, TX 79068	Latitude: 35° 17' 27.78" N
	Longitude: 101° 31' 26.38" W
	Elevation: 3513 ft. above sea level
Well County: Carson	

Type of Work: New Well	Proposed Use: Monitor
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Drilling Start Date: **1/20/2018** Drilling End Date: **1/22/2018**

	<i>Diameter (in.)</i>	<i>Top Depth (ft.)</i>	<i>Bottom Depth (ft.)</i>
Borehole:	10	0	295

Drilling Method: **Air Rotary Casing Hammer**

Borehole Completion: **Filter Packed**

	<i>Top Depth (ft.)</i>	<i>Bottom Depth (ft.)</i>	<i>Filter Material</i>	<i>Size</i>
Filter Pack Intervals:	273	295	Sand	10/20

	<i>Top Depth (ft.)</i>	<i>Bottom Depth (ft.)</i>	<i>Description (number of sacks & material)</i>
Annular Seal Data:	2	245	Bentonite Grout 40 Bags/Sacks
	245	273	Bentonite Chips 16 Bags/Sacks

Seal Method: **Tremie**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: Surface Sleeve Installed	Surface Completion by Driller
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Water Level: **279.17 ft. below land surface on 2018-01-22** Measurement Method: **Electric Line**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

Water Quality:

Strata Depth (ft.)	Water Type
275 - 291	Perched Aquifer

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Cascade Drilling**
3621 Hwy 47
Peralta, NM 87042

Driller Name: **William B. Bludworth**

License Number: **4885**

Comments: **-Surface completion is a 5' X 5' X 8" concrete slab w/ 10" steel protective casing and 4 bollards.**

-S.S. Centralizers at top and bottom of screen and every 40' on riser.

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Casing:
BLANK PIPE & WELL SCREEN DATA

Top (ft.)	Bottom (ft.)	Description
0	5	LEAN CLAY, reddish brown, plastic, medium stiff, dry.
5	27	SILTY, yellowish red, plastic, medium stiff, moist.
27	35	SILTY SAND, yellowish red, non-plastic, medium dense, dry.
35	45	SANDY SILT. light reddish brown, some Caliche, medium stiff, dry.
45	72	SAND, red, fine grain, some Caliche grains, loose, dry.
72	83	SILT, Caliche silt, pink, stiff to hard, dry.
83	92	SAND w/ SILT, yellowish red, loose, dry.
92	105	SAND w/ SILT, pink, Caliche silt, medium dense, dry.
105	135	SAND w/ SILT, light reddish brown, loose, dry.
135	160	SAND, light brown, weakly cemented quartz sand, loose, dry.
160	180	SAND, pink, loose to medium dense, dry.

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4	Riser	New Plastic (PVC)	80	0	276
4	Screen	New Plastic (PVC)	80 0.010	276	291
4	Blank	New Plastic (PVC)	80	291	292

180	195	SAND, light brown, medium dense, dry.
195	205	SAND w/ SILT, strong brown, medium dense, dry.
205	235	SAND, light yellowish brown, medium dense to dense, dry.
235	245	SAND w/ SILT, strong brown, small Gravel, medium dense, moist.
245	260	GRAVEL w/ SAND, pale brown, very dense, dry.
260	265	SAND, pale brown, medium dense, dry.
265	270	SAND w/ GRAVEL, light yellowish brown, dense, dry.
270	275	SAND, light yellowish brown, medium dense, dry.
275	291	SAND w/ GRAVEL, yellowish brown, moist, saturated @ 279'.
291	295	SILTY SAND, pink to light reddish brown, cohesive, stiff to hard, moist to dry.

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Austin, TX 78711
(512) 334-5540**

STATE OF TEXAS WELL REPORT for Tracking #464293

Owner: U.S. Department of Energy Address: PO Box 30030 Amarillo, TX 79120 Well Location: Pantex Plant NW corner of Hwy 60 and FM 2373 Panhandle, TX 79068 In field, NE Corner of Hwy 60 and FM 2373, adjacent to RR tracks. Well County: Carson	Owner Well #: PTX06-1190 Grid #: 06-44-6 Latitude: 35° 17' 34.8" N Longitude: 101° 31' 35.09" W Elevation: 3513 ft. above sea level
Type of Work: New Well	
Proposed Use: Monitor	

Drilling Start Date: **10/19/2017** Drilling End Date: **10/20/2017**

	Diameter (in.)	Top Depth (ft.)	Bottom Depth (ft.)
Borehole:	10	0	287

Drilling Method: **Air Rotary Casing Hammer**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	Bottom Depth (ft.)	Filter Material	Size
Filter Pack Intervals:	273	287	Sand	10/20

	Top Depth (ft.)	Bottom Depth (ft.)	Description (number of sacks & material)
Annular Seal Data:	2	241	Bentonite Grout 38 Bags/Sacks
	241	273	Bentonite Chips 21 Bags/Sacks

Seal Method: **Tremie**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Surface Sleeve Installed**

Surface Completion by Driller

Water Level: **280 ft. below land surface on 2017-10-20** Measurement Method: **Electric Line**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

Water Quality:

Strata Depth (ft.)	Water Type
280 - 286	Perched Aquifer

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Cascade Drilling**
3621 Hwy 47
Peralta, NM 87042

Driller Name: **William B. Bludworth**

License Number: **4885**

Comments: **-Surface completion is a 5' X 5' X 8" concrete slab w/ 10" steel protective casing and 4bollards.**
-Well installed to delineate extent of contaminated aquifer - analysis pending.
-S.S. Centralizers at top and bottom of screen and every 40' on riser.

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Casing:
BLANK PIPE & WELL SCREEN DATA

Top (ft.)	Bottom (ft.)	Description
0	5	SILTY CLAY LOAM, reddish brown, moist, plastic.
5	20	SILT, w/ sand and caliche, reddish brown, damp.
20	30	SILT, light reddish brown, dry.
30	45	SILT, w/ Caliche, yellowish red, dry.
45	63	SILT, light reddish brown, bedded w/ Caliche, dry.
63	70	CLAY/SILT, yellowish red, lean, moist.
70	75	SAND, yellowish red, medium dense, damp.
75	85	CLAY, reddish brown, lean, dry.
85	100	SILT, with sand, light reddish brown, dry.
100	135	SAND, light brown, fine-grain, dry.
135	170	SAND, reddish yellow to pink, fine-grain, loose, dry.

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4	Riser	New Plastic (PVC)	80	0	276
4	Screen	New Plastic (PVC)	80 0.010	276	286
4	Blank	New Plastic (PVC)	80	286	287

170	200	SAND, reddish yellow to strong brown, very fine-grain, dry.
200	235	SAND, w/ Gravel, brown, dense, dry to moist.
235	240	SAND and bedded CLAY, brown, fine-grain, moist.
240	280	SAND and GRAVEL, gray brown to yellowish brown, dry to moist.
280	286	SAND, medium, and pea gravel, yellowish brown, wet.
286	287	SILT, w/ very fine SAND and CALICHE, reddish brown, damp to dry w/ depth.

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(512) 334-5540**

Appendix C

Groundwater Level Data



Groundwater Level Data
BOA 70 Release 5 Contract # 67841

Well Name	Date	Time	Depth to Water Ft (FTOC)	Casing Stickup Ft	Depth to Water Ft (bgs)	Comment
PTX06-1190	10/20/17	15:00	284.38	4.70	279.68	Initial - 6.32 ft Saturation
	11/01/17	15:00	284.63	4.44	280.19	
	12/02/17	11:45	282.15	2.13	280.02	After Survey & Development
	12/14/17	09:45	282.15	2.13	280.02	
PTX06-1191	01/22/18	14:30	284.47	5.30	279.17	Initial - 11.83 ft Saturation
	01/24/18	15:20	281.63	3.10	278.53	Development
	02/07/18	13:45	281.71	2.15	279.56	
PTX06-1192	01/19/18	16:00	283.33	4.30	279.03	Initial - 12.97 ft Saturation
	01/23/18	12:20	282.00	2.91	279.09	Development
	01/28/18	11:30	281.50	2.91	278.59	2nd Development
	02/07/18	14:00	281.28	2.16	279.12	
PTX06-1193	01/24/18	17:27	272.90	4.50	268.4	Initial - Dry - Well TD
	02/01/18	16:00	272.90	4.50	268.4	Dry - Well TD
	02/07/18	14:30	270.56	2.16	268.4	Dry - Well TD
PTX06-1194	01/27/18	17:25	280.56	3.60	276.96	Initial - 1.04 ft Saturation
	01/30/18	10:30	280.34	3.60	276.74	Development
	02/07/18	14:15	279.91	2.19	277.72	
PTX06-1195	01/30/18	16:00	286.37	4.40	281.97	Initial - 7.03 ft Saturation
	01/31/18	14:25	284.72	3.17	281.55	
	02/01/18	13:40	284.93	3.17	281.76	Development
	02/07/18	13:00	284.66	2.16	282.5	
PTX06-ISB108	12/13/17	14:15	280.63	5.30	275.33	Initial - 5.67 ft Saturation
	12/16/17	11:15	277.45	2.11	275.34	Development
PTX06-ISB109	12/04/17	15:00	280.84	5.30	275.54	Initial - 5.46 ft Saturation
	12/16/17	16:00	277.50	2.07	275.43	After Survey & Development
PTX06-ISB110	12/02/17	14:30	281.34	5.30	276.04	Initial - 4.96 ft Saturation
	12/18/17	08:05	278.15	2.08	276.07	After Survey & Development
PTX06-ISB111	12/15/17	16:00	282.47	6.20	276.27	Initial - 3.73 ft Saturation
	12/17/17	08:50	278.62	2.12	276.5	Development
	01/27/18	15:00	279.95	2.12	277.83	2nd Development

Groundwater Level Data
BOA 70 Release 5 Contract # 67841

Well Name	Date	Time	Depth to Water Ft (FTOC)	Casing Stickup Ft	Depth to Water Ft (bgs)	Comment
PTX06-ISB112	12/13/17	14:30	280.70	4.20	276.5	Initial - 5.50 ft Saturation
	12/17/17	12:15	278.70	2.03	276.67	Development
PTX06-ISB113	11/03/17	14:00	277.60	0.65	276.95	Initial - 8.05 ft Saturation
	12/15/17	11:45	278.84	2.08	276.76	After Survey & Development
PTX06-ISB114	11/07/17	14:30	281.41	4.20	277.21	Initial - 4.79 ft Saturation
	11/28/17	10:00	279.22	2.06	277.16	Development
	12/13/17	13:20	279.07	2.02	277.05	After Survey
PTX06-ISB115	11/03/17	17:30	281.66	4.20	277.46	Initial - 4.54 ft Saturation
	11/29/17	07:50	279.65	1.96	277.69	Development
	12/12/17	13:15	279.42	1.95	277.47	After Survey
PTX06-ISB116	11/05/17	15:00	282.17	4.30	277.87	Initial - 4.13 ft Saturation
	11/30/17	07:45	279.40	1.99	277.41	After Survey & Development
	12/13/17	11:55	279.79	1.99	277.8	
PTX06-ISB117	11/14/17	17:15	283.30	4.00	279.3	Initial - 2.20 ft Saturation
	11/30/17	13:50	280.24	1.94	278.3	After Survey
	12/13/17	11:40	280.11	1.94	278.17	Development
PTX06-ISB118	11/16/17	09:15	283.65	5.30	278.35	Initial - 2.65 ft Saturation
	12/01/17	12:40	280.35	1.95	278.4	After Survey & Development
	12/13/17	11:10	280.42	1.95	278.47	
PTX06-ISB119	11/17/17	08:00	284.38	6.25	278.13	Initial - 1.87 ft Saturation
	12/02/17	07:50	280.82	1.95	278.87	After Survey & Development
	12/13/17	11:05	280.65	1.95	278.7	After 2nd Development
PTX06-ISB120	11/30/17	11:00	283.47	4.25	279.22	Initial - 2.78 ft Saturation
	12/14/17	16:15	281.11	2.01	279.1	After Survey & Development
PTX05-ISB121	11/08/17	13:30	279.90	1.00	278.9	Initial - 6.10 ft Saturation
	12/14/17	10:55	281.71	2.06	279.65	After Survey & Development

Groundwater Level Data
BOA 70 Release 5 Contract # 67841

Well Name	Date	Time	Depth to Water Ft (FTOC)	Casing Stickup Ft	Depth to Water Ft (bgs)	Comment
PTX06-ISB122	11/06/17	16:45	284.62	5.00	279.62	Initial - 6.38 ft Saturation
	12/13/17	10:20	281.56	2.09	279.47	After Survey & Development
PTX06-ISB123	11/05/17	16:00	280.45	0.90	279.55	Initial - 14.45 ft Saturation
	12/06/17	10:40	282.14	2.24	279.9	After Survey & Development
	12/13/17	10:15	281.84	2.24	279.6	
PTX06-ISB124	12/03/17	17:00	281.00	1.45	279.55	Initial - 9.45 ft Saturation
	12/13/17	08:45	281.70	2.09	279.61	After Survey & Development
PTX06-ISB125	12/01/17	16:00	280.81	0.50	280.31	Initial - 9.69 ft Saturation
	12/12/17	14:00	282.00	1.99	280.01	After Survey & Development
	12/13/17	08:25	281.90	1.99	279.91	
	01/26/18	10:30	282.19	2.09	280.1	2nd Development
PTX06-ISB126	11/17/17	16:30	283.00	3.15	279.85	Initial - 7.15 ft Saturation
	12/05/17	14:20	282.40	2.06	280.34	After Survey & Development
	12/13/17	10:05	282.02	2.06	279.96	
PTX06-ISB127	11/30/17	08:55	286.35	6.00	280.35	Initial - 8.65 ft Saturation
	12/12/17	07:55	282.48	2.05	280.43	After Survey & Development
	12/13/17	10:00	282.18	2.05	280.13	
PTX06-ISB128	10/24/17	09:00	285.45	5.00	280.45	Initial - 9.55 ft Saturation
	11/01/17	15:00	279.85	0.00	279.85	
	12/05/17	08:05	282.45	2.06	280.39	Development
	12/13/17	09:35	282.24	2.03	280.21	After Survey
PTX06-ISB129	11/17/17	17:00	283.48	3.13	280.35	Initial - 6.65 ft Saturation
	12/04/17	12:10	282.78	2.01	280.77	After Survey & Development
	12/13/17	09:30	282.41	2.01	280.4	
PTX06-ISB130	11/14/17	13:00	284.80	4.30	280.5	Initial - 6.5 ft Saturation
	12/03/17	13:00	282.68	2.05	280.63	After Survey & Development
	12/13/17	09:20	282.65	2.05	280.6	
	01/27/18	11:20	283.20	2.05	281.15	2nd Development
PTX06-ISB131	10/26/17	15:00	284.20	3.70	280.5	Initial - 11.5 ft Saturation
	11/01/17	15:00	279.85	0.00	279.85	
	12/03/17	07:55	282.90	2.00	280.9	After Survey & Development
	12/13/17	09:00	282.71	2.00	280.71	

Appendix D

Hydraulic Conductivity (Permeability) Data



PERMEABILITY TEST - BACK PRESSURE SATURATED - FLOW PUMP METHOD

ASTM D5084 Method D

CLIENT	SN3	JOB NO.	2984-2
PROJECT	Pantex BOA 70 Release 5		
PROJECT NO.	4638-05	SAMPLED	10/26/2017 By: RER
BORING NO.	E24 PTX06-ISB131	TEST STARTED	11/6/2017 By: CAL
DEPTH	294'	TEST FINISHED	11/9/2017 By: CAL
SAMPLE NO.	3	CELL NUMBER	1
LOCATION	--	PERMEANT	Tap Water
SAMPLE TYPE	liner	CONF. PRES. - (psf)	36144

MOISTURE / DENSITY DATA	BEFORE TEST	AFTER TEST
Wt. Soil + Moisture - (g)	283.86	264.65
Wt. Wet Soil & Pan - (g)	290.50	271.29
Wt. Dry Soil & Pan - (g)	231.88	231.88
Wt. Lost Moisture - (g)	58.62	39.41
Wt. of Pan Only - (g)	6.64	6.64
Wt. of Dry Soil - (g)	225.24	225.24
Moisture Content - (%)	26.0	17.5
Wet Density - (pcf)	122.9	149.3
Dry Density - (pcf)	97.5	127.0
Init. Diameter - (in)	1.919	
Init. Area - (sq in)	2.892	
Init. Height - (in)	3.043	
Vol. Bef. Consol. - (cu ft)	0.00509	
Vol. After Consol. - (cu ft)	0.00391	
Porosity - (%)	35.60	

FLOW PUMP CALCULATIONS	
Pump Setting (gear number)	12
Percentage of Pump Setting	100
Q - (cc/s)	2.30E-05
Height - (in)	2.845
Diameter - (in)	1.739
Pressure - (psi)	0.429
Area after consol. - (sq cm)	15.316
Gradient	4.174
Permeability k - (cm/s)	3.6E-07
Permeability k - (m/s)	3.6E-09
Back Pressure - (psi)	48.0
Cell Pressure - (psi)	299.0
Ave. Effective Stress - (psi)	250.786
Average temperature degree - (c°)	21.1

Data entry by:	CAL	Date:	11/10/2017
Checked by:	<i>KE</i>	Date:	<i>11/21/17</i>



PERMEABILITY TEST - BACK PRESSURE SATURATED - FLOW PUMP METHOD

ASTM D5084 Method D

CLIENT	SN3	JOB NO.	2984-2
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PROJECT	Pantex BOA 70 Release 5		
PROJECT NO.	4638-05	SAMPLED	10/26/2017 By: RER
BORING NO.	E24 PTX06-ISB131	TEST STARTED	11/6/2017 By: CAL
DEPTH	294'	TEST FINISHED	11/9/2017 By: CAL
SAMPLE NO.	3	CELL NUMBER	1
LOCATION	--	PERMEANT	Tap Water
SAMPLE TYPE	liner	CONF. PRES. - (psf)	36144

SATURATION DATA

Cell Press. (psi)	Back Press. (psi)	Burette Reading (cc)		Pore Press. (psi)		Change	B
		Close	Open	Close	Open		
40.0	38.0	2.4	16.5				
50.0	48.0	18.3	20.0	38.3	47.1	8.8	0.88
60.0		20.1	20.3	48.2	57.7	9.5	0.95

CONSOLIDATION DATA

Elapsed Time (Min)	SQRT Time (Min)	Burette Reading (cc)	Volume Def. (cc)
0.00	0.00	0.40	0.00
0.25	0.50	9.90	-9.50
0.5	0.71	11.90	-11.50
1	1.00	14.50	-14.10
2	1.41	18.30	-17.90
4	2.00	22.80	-22.40
9	3.00	26.50	-26.10
16	4.00	27.50	-27.10
30	5.48	28.50	-28.10
60	7.75	30.05	-29.65
120	10.95	31.80	-31.40
240	15.49	33.60	-33.20
360	18.97	34.80	-34.40

Initial Height - (in)	3.043	Init. Vol. - (cc)	144.25
Height Change - (in)	0.198	Vol. Change - (cc)	75.60
Ht. After Cons. - (in)	2.845	Cell Exp. - (cc)	42.05
Initial Area - (sq in)	2.892	Net Change - (cc)	33.55
Area After Cons. - sq in	2.374	Cons. Vol. - (cc)	110.70



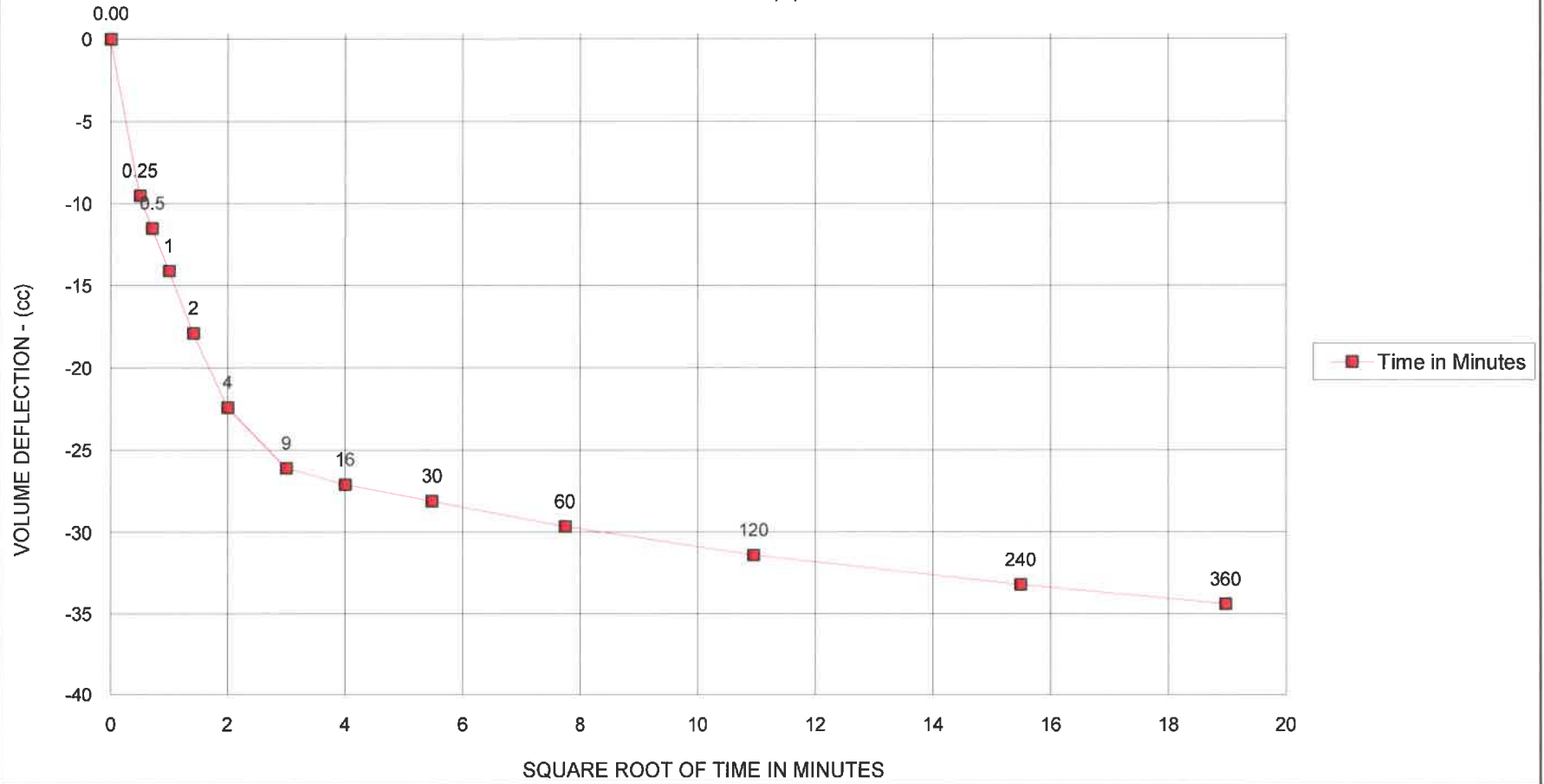
PERMEABILITY TEST - BACK PRESSURE SATURATED - FLOW PUMP METHOD
ASTM D5084 Method D

CLIENT SN3

JOB NO. 2984-2

PTX06-ISB131
CONSOLIDATION DATA

E24,3,294'

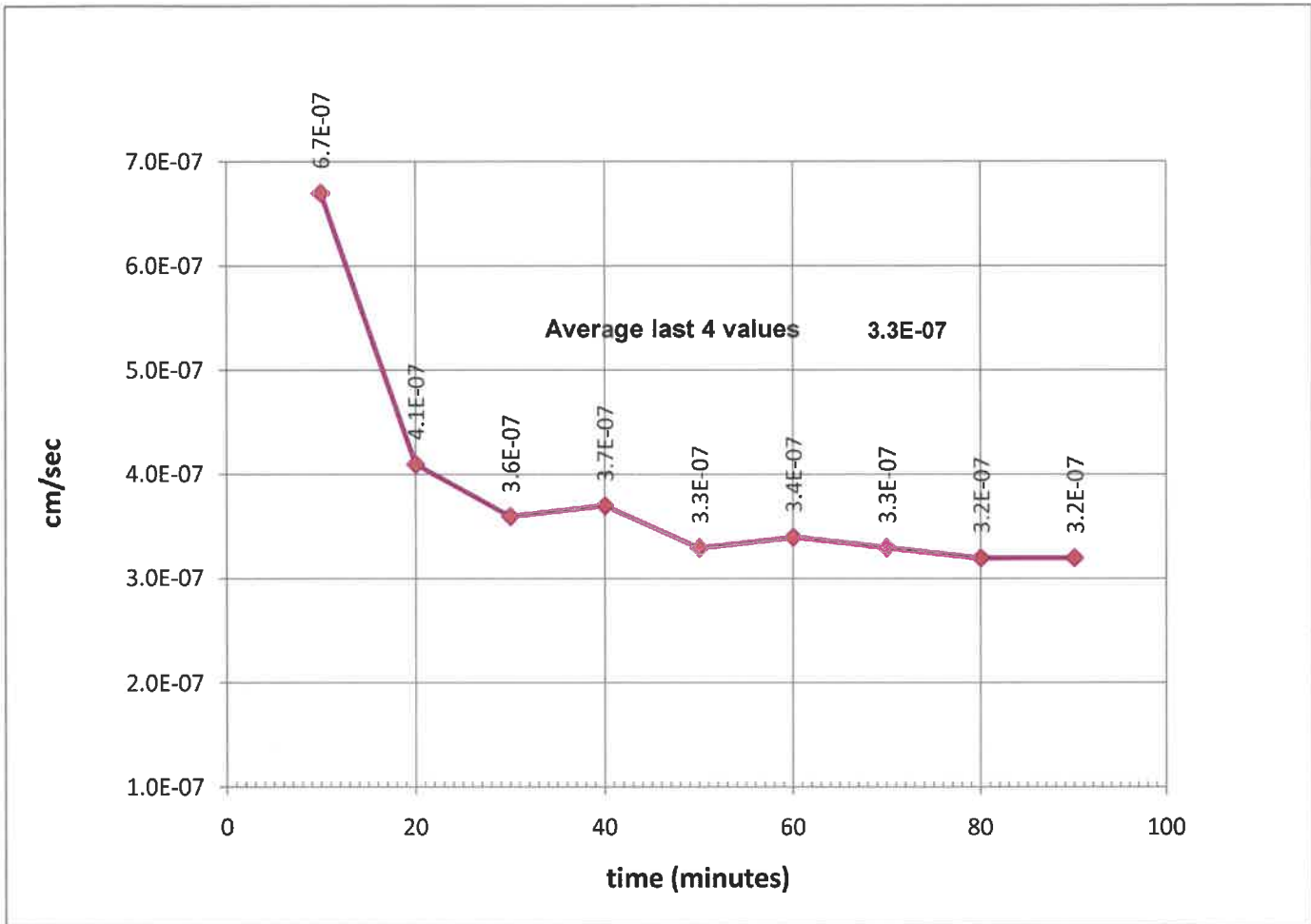




Preliminary Flow Pump Test Data ASTM D5084

Client: SN3
Job Number: 2984-2
Project: Pantex BOA 70 Release 5
Location: --
Project Number: 4638-05

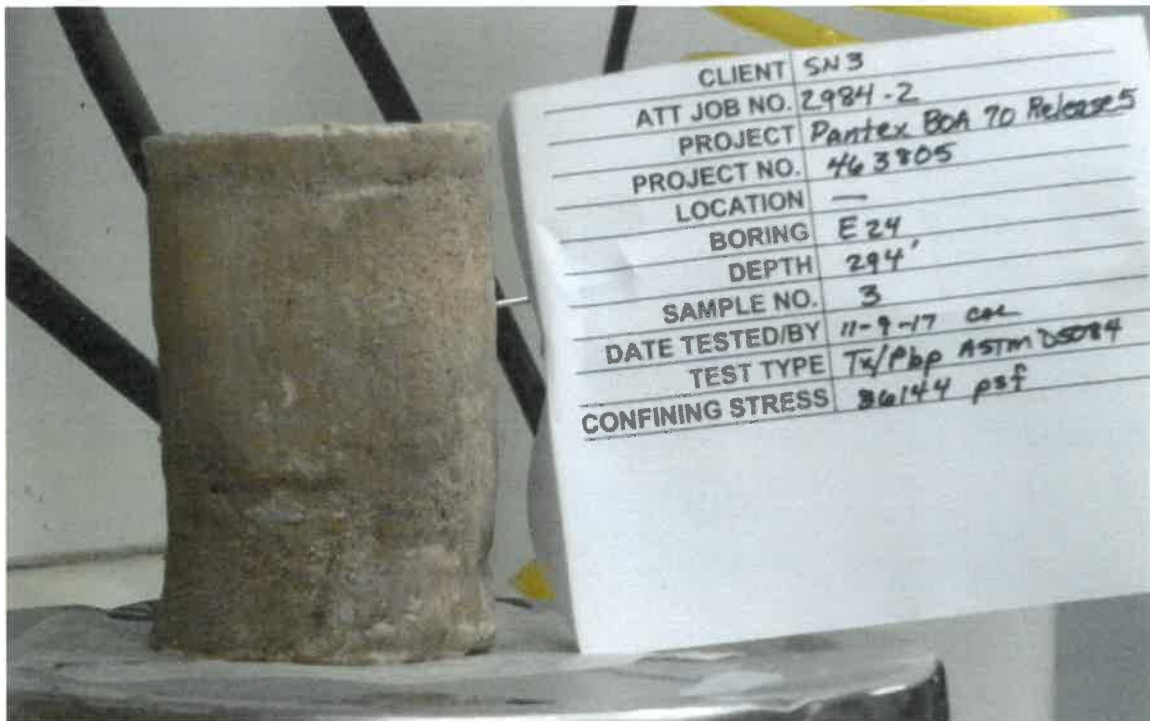
Boring Number: E24 **PTX06-ISB131**
Depth: 294'
Sample Number: 3
Sampled Date: 10/26/2017
Test Date: 11/9/2017
Sampled By: RER
Technician: CAL



Data Entered By: CAL
Date: 11/10/2017
File Name: 2984_2_PrelimPerm_ASTMD-5084-methodD-R0_1.xls

Checked By: VR
Date: 11/21/17

PTX06-ISB131



2984\2\PICTURE\DSCF6895.JPG



PERMEABILITY TEST - BACK PRESSURE SATURATED - FLOW PUMP METHOD

ASTM D5084 Method D

CLIENT SN3	JOB NO. 2984-2
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PROJECT Pantex BOA 70 Release 5	SAMPLED 11/13/2017 By: BD
PROJECT NO. 4638-05	TEST STARTED 12/4/2017
BORING NO. E23 PTX06-ISB130	TEST FINISHED 12/7/2017 By: CAL
DEPTH 292'	CELL NUMBER 2
SAMPLE NO. --	PERMEANT Tap Water
LOCATION --	CONF. PRES. - (psf) 35424
SOIL DESC split spoon	

MOISTURE / DENSITY DATA	BEFORE TEST	AFTER TEST
Wt. Soil + Moisture - (g)	281.35	265.80
Wt. Wet Soil & Pan - (g)	288.00	272.45
Wt. Dry Soil & Pan - (g)	227.12	227.12
Wt. Lost Moisture - (g)	60.88	45.33
Wt. of Pan Only - (g)	6.65	6.65
Wt. of Dry Soil - (g)	220.47	220.47
Moisture Content - (%)	27.6	20.6
Wet Density - (pcf)	121.2	124.8
Dry Density - (pcf)	95.0	103.5
Init. Diameter - (in)	1.932	
Init. Area - (sq in)	2.932	
Init. Height - (in)	3.016	
Vol. Bef. Consol. - (cu ft)	0.00512	
Vol. After Consol. - (cu ft)	0.00469	
Porosity - (%)	34.09	

FLOW PUMP CALCULATIONS

Pump Setting	69
Velocity - (cm/sec)	4.55E-04
Q - (cc/s)	1.46E-05
Height - (in)	2.786
Diameter - (in)	1.926
Pressure - (psi)	0.784
Area after consol. - (cm*cm)	18.787
Gradient	7.789
Permeability k - (cm/s)	1.0E-07
Permeability k - (m/s)	1.0E-09
Back Pressure - (psi)	38.0
Cell Pressure - (psi)	284.0
Ave. Effective Stress - (psi)	245.608
Average Temperature Degree - (C°)	22.3

Data entry by: CAL	Date: 12/08/2017
Checked by: <i>CLM</i>	Date: <i>12/11/17</i>



PERMEABILITY TEST - BACK PRESSURE SATURATED - FLOW PUMP METHOD

ASTM D5084 Method D

CLIENT	SN3	JOB NO.	2984-2
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PROJECT	Pantex BOA 70 Release 5	SAMPLED	11/13/2017	By: BD
PROJECT NO.	4638-05	TEST STARTED	12/4/2017	
BORING NO.	E23 PTX06-ISB130	TEST FINISHED	12/7/2017	By: CAL
DEPTH	292'	CELL NUMBER	2	
SAMPLE NO.	--	PERMEANT	Tap Water	
LOCATION	--	CONF. PRES. - (psf)	35424	
SOIL DESC	split spoon			

SATURATION DATA

Cell Pres. (psi)	Back Pres. (psi)	Burette Reading (cc)		Pore Pressure (psi)		Change	B
		Close	Open	Close	Open		
40.0	38.0	2.1	14.7				
50.0		15.8	16.2	38.5	48.3	9.8	0.98

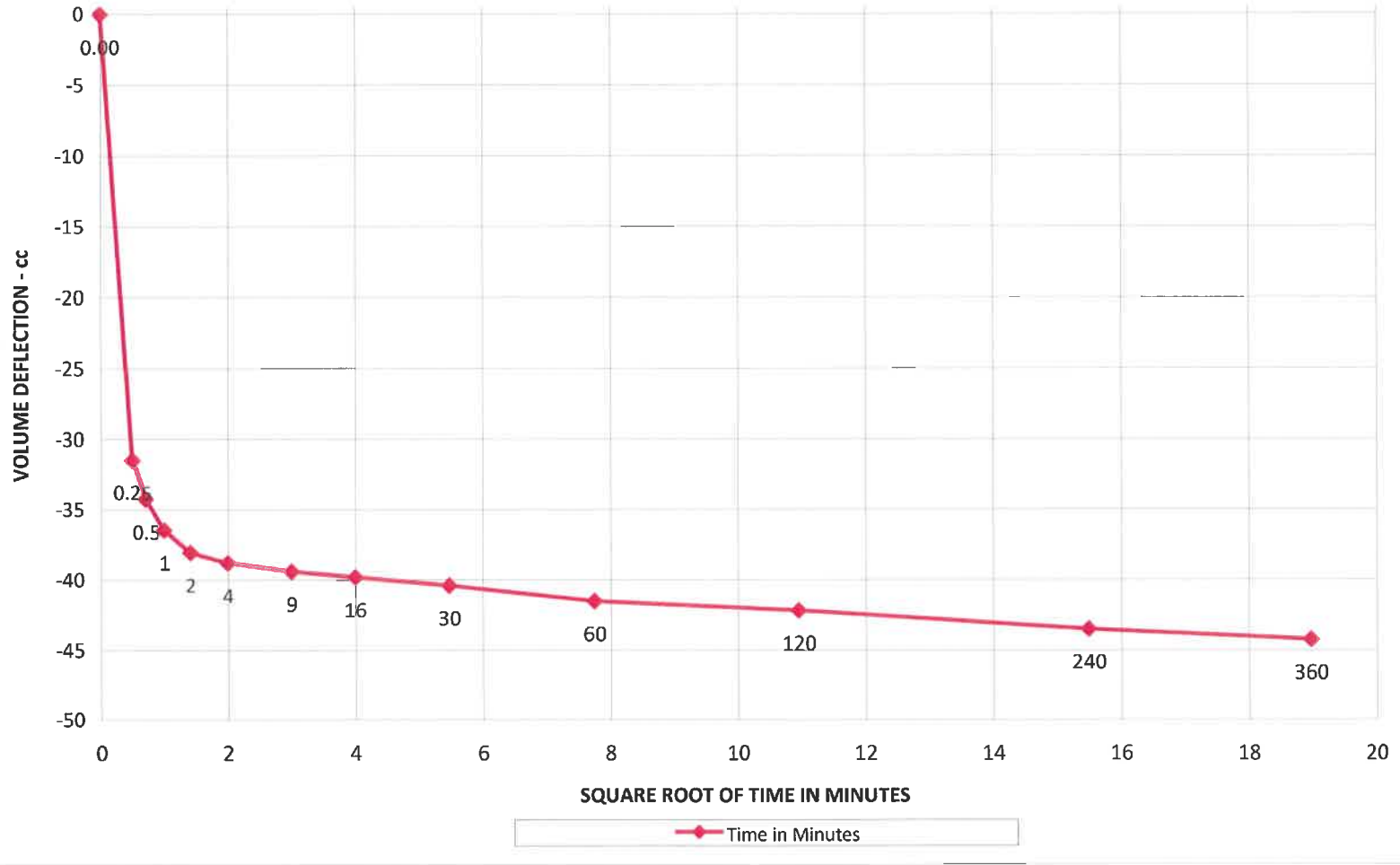
CONSOLIDATION DATA

Elapsed Time (min)	SQRT Time (min)	Burette Reading (cc)	Volume Defl. (cc)
0.00	0.00	0.10	0.00
0.25	0.50	31.60	-31.50
0.5	0.71	34.35	-34.25
1	1.00	36.55	-36.45
2	1.41	38.15	-38.05
4	2.00	38.90	-38.80
9	3.00	39.50	-39.40
16	4.00	39.90	-39.80
30	5.48	40.50	-40.40
60	7.75	41.60	-41.50
120	10.95	42.30	-42.20
240	15.49	43.60	-43.50
360	18.97	44.35	-44.25

Initial Height - (in)	3.016	Init. Vol. - (cc)	144.92
Height Change - (in)	0.230	Vol. Change - (cc)	62.10
Ht. After Cons. - (in)	2.786	Cell Exp. - (cc)	50.15
Initial Area - (sq in)	2.932	Net Change - (cc)	11.95
Area After Cons.-(sq in)	2.912	Cons. Vol. - (cc)	132.97

CLIENT SN3	JOB NO. 2984-2
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PTX06-ISB130
CONSOLIDATION DATA
 E23,--,292'



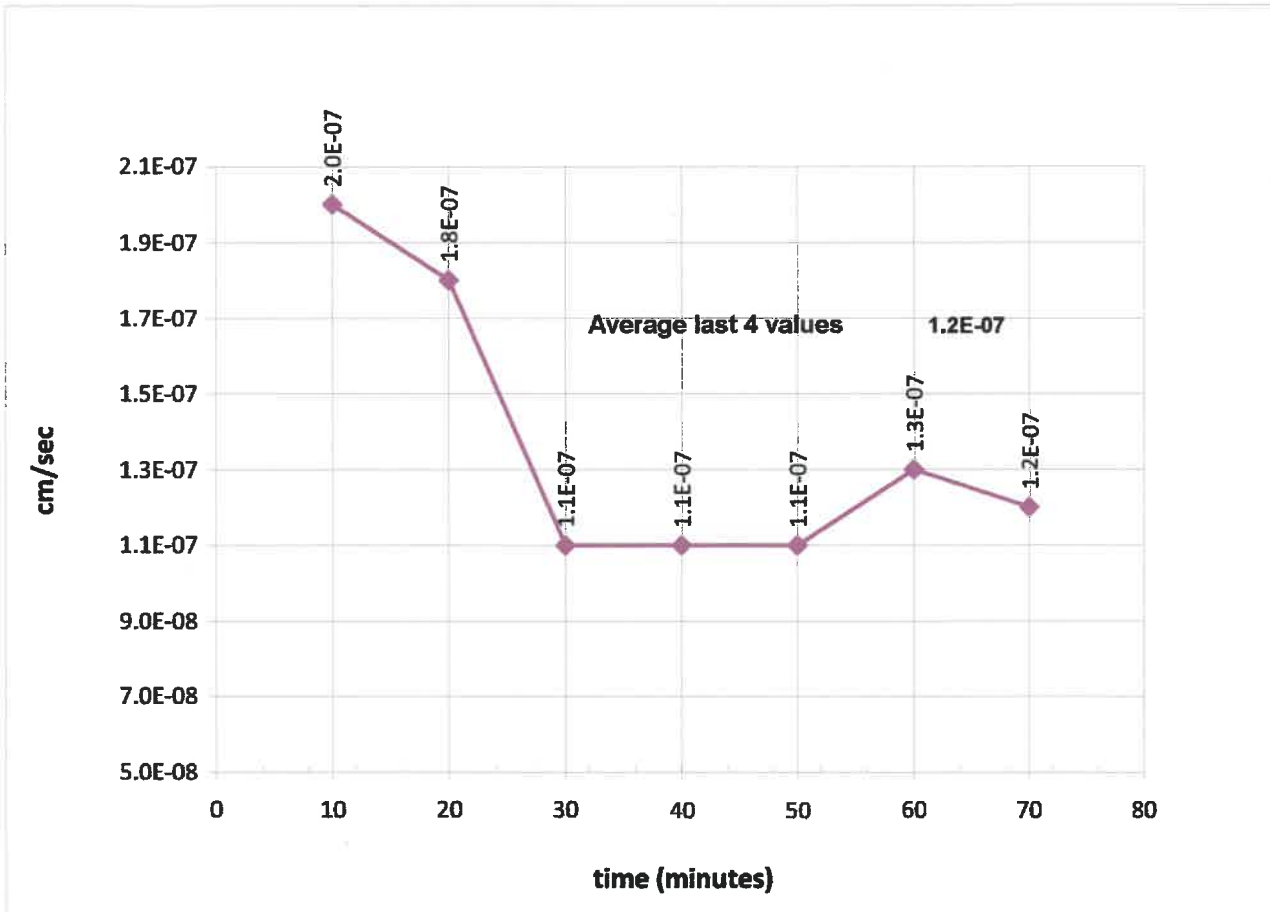


Preliminary Flow Pump Test Data ASTM D5084 Method D

Client: SN3
Job Number: 2984-2
Project: Pantex BOA 70 Release 5
Location: --
Project Number: 4638-05

Boring Number: E23 **PTX06-1SB130**
Depth: 292'
Sample Number: --
Sampled Date: 11/13/2017
Test Date: 12/7/2017

Sampled By: BD
Technician: CAL



Data Entered By: CAL
Date: 12/7/2017
File Name: 2984_2_PrelimPerm_ASTMD-5084-methodD-R0_9.xls

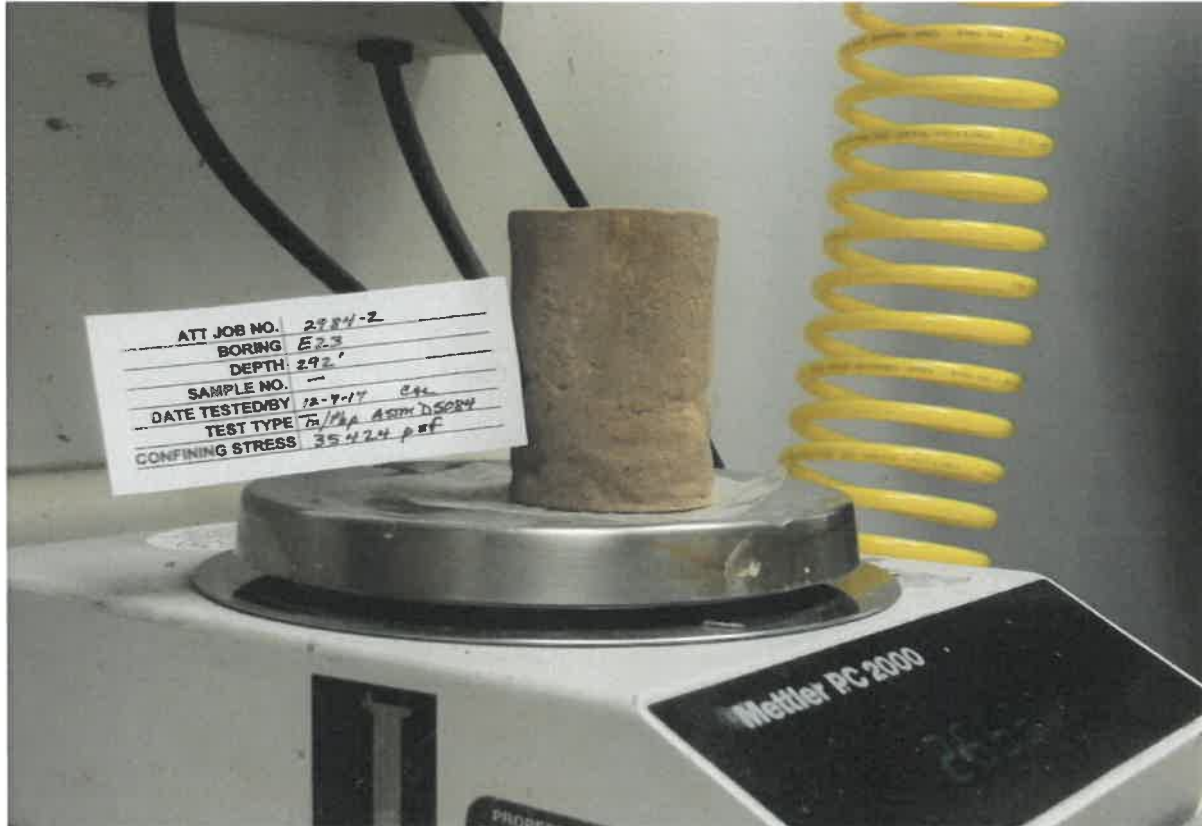
Checked By: DAM
Date: 12/6/17



Image Attachment

ADVANCED TERRA TESTING

CLIENT SN3
JOB NO. 2984-2
PROJECT Pantex BOA 70 Release 5
PROJECT NO. 4638-05
LOCATION -- PTX06-ISB130



NOTES

File name: 2984_2_Image_17_12_08_08_34_06



PERMEABILITY TEST - BACK PRESSURE SATURATED - FLOW PUMP METHOD

ASTM D5084 Method D

CLIENT	SN3	JOB NO.	2984-2
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PROJECT	Pantex BOA 70 Release 5		
PROJECT NO.	4638-05	SAMPLED	11/15/2017 By: BD
BORING NO.	E-22 PTX06-ISB129	TEST STARTED	12/6/2017 By: CAL
DEPTH	291.2'	TEST FINISHED	12/15/2017 By: CAL
SAMPLE NO.	--	CELL NUMBER	2N
LOCATION	--	PERMEANT	Tap Water
SAMPLE TYPE	split spoon	CONF. PRES. - (psf)	35683

MOISTURE / DENSITY DATA	BEFORE TEST	AFTER TEST
Wt. Soil + Moisture - (g)	281.63	274.67
Wt. Wet Soil & Pan - (g)	288.26	281.30
Wt. Dry Soil & Pan - (g)	231.23	231.23
Wt. Lost Moisture - (g)	57.03	50.07
Wt. of Pan Only - (g)	6.63	6.63
Wt. of Dry Soil - (g)	224.60	224.60
Moisture Content - (%)	25.4	22.3
Wet Density - (pcf)	122.5	132.2
Dry Density - (pcf)	97.7	108.1
Init. Diameter - (in)	1.930	
Init. Area - (sq in)	2.926	
Init. Height - (in)	2.993	
Vol. Bef. Consol. - (cu ft)	0.00507	
Vol. After Consol. - (cu ft)	0.00458	
Porosity - (%)	38.60	

FLOW PUMP CALCULATIONS	
Pump Setting (gear number)	12
Percentage of Pump Setting	100
Q - (cc/s)	2.30E-05
Height - (in)	2.843
Diameter - (in)	1.883
Pressure - (psi)	0.440
Area after consol. - (sq cm)	17.961
Gradient	4.284
Permeability k - (cm/s)	3.0E-07
Permeability k - (m/s)	3.0E-09
Back Pressure - (psi)	88.0
Cell Pressure - (psi)	335.8
Ave. Effective Stress - (psi)	247.580
Average temperature degree - (c°)	21.3

Data entry by:	CAL	Date:	01/02/2018
Checked by:	<i>Kie</i>	Date:	<i>1/8/18</i>



PERMEABILITY TEST - BACK PRESSURE SATURATED - FLOW PUMP METHOD

ASTM D5084 Method D

CLIENT	SN3	JOB NO.	2984-2
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PROJECT	Pantex BOA 70 Release 5		
PROJECT NO.	4638-05	SAMPLED	11/15/2017 By: BD
BORING NO.	E-22 PTX06-ISB129	TEST STARTED	12/6/2017 By: CAL
DEPTH	291.2'	TEST FINISHED	12/15/2017 By: CAL
SAMPLE NO.	-	CELL NUMBER	2N
LOCATION	-	PERMEANT	Tap Water
SAMPLE TYPE	split spoon	CONF. PRES. - (psf)	35683

SATURATION DATA

Cell Press. (psi)	Back Press. (psi)	Burette Reading (cc)		Pore Press. (psi)		Change	B
		Close	Open	Close	Open		
40.0	38.0	1.9	12.1				
50.0	48.0	11.3	12.2	39.1	48.1	9.0	0.90
60.0	58.0	12.4	13.2	49.2	58.5	9.3	0.93
70.0	68.0	13.5	14.2	59.3	68.4	9.1	0.91
80.0	78.0	14.3	15.0	68.3	77.6	9.3	0.93
90.0	88.0	15.0	15.7	79.2	88.5	9.3	0.93
100.0		15.7	15.8	89.0	98.8	9.8	0.98

CONSOLIDATION DATA

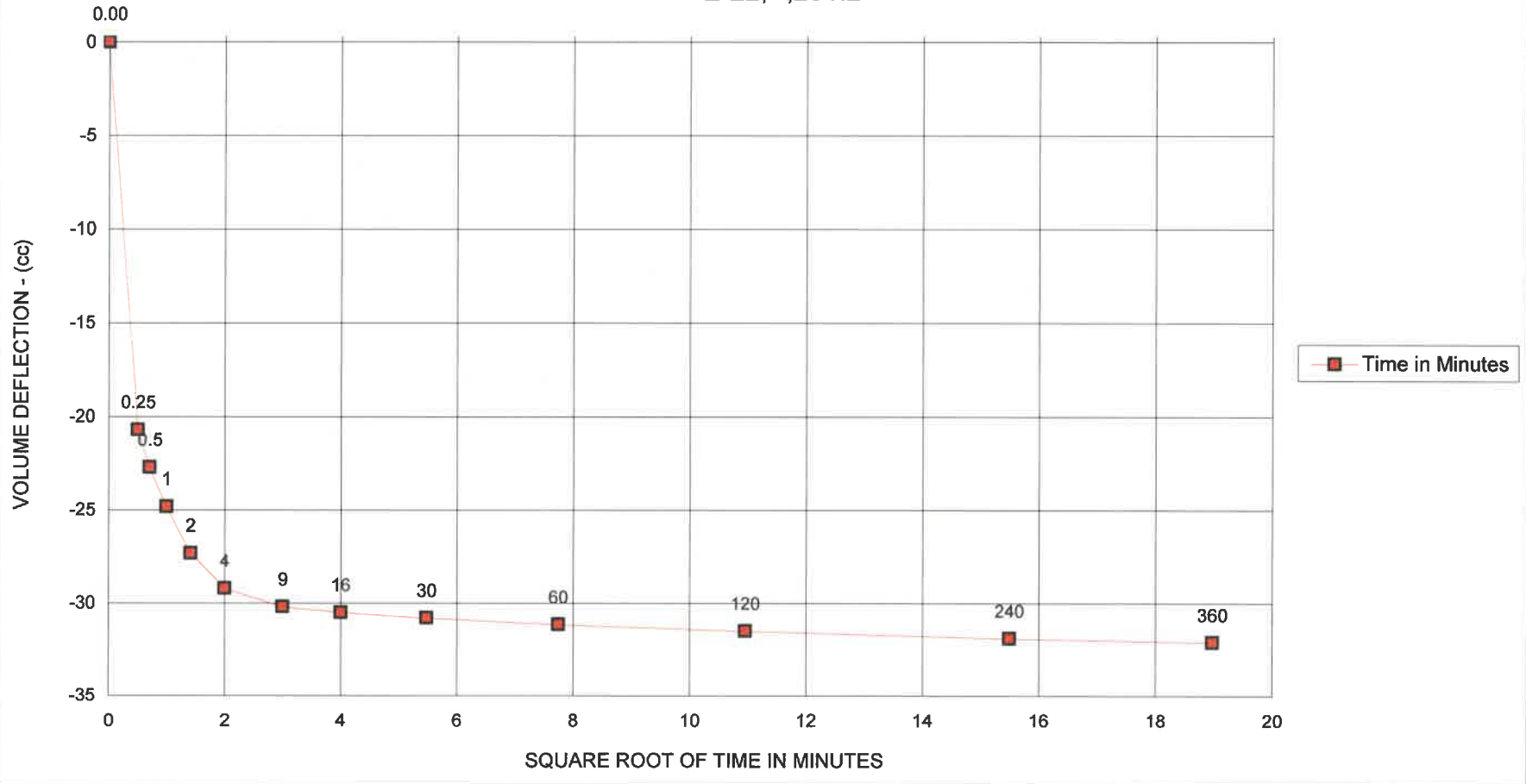
Elapsed Time (Min)	SQRT Time (Min)	Burette Reading (cc)	Volume Def. (cc)
0.00	0.00	0.50	0.00
0.25	0.50	21.20	-20.70
0.5	0.71	23.20	-22.70
1	1.00	25.30	-24.80
2	1.41	27.80	-27.30
4	2.00	29.70	-29.20
9	3.00	30.70	-30.20
16	4.00	31.00	-30.50
30	5.48	31.30	-30.80
60	7.75	31.65	-31.15
120	10.95	32.00	-31.50
240	15.49	32.40	-31.90
360	18.97	32.60	-32.10

Initial Height - (in)	2.993	Init. Vol. - (cc)	143.51
Height Change - (in)	0.150	Vol. Change - (cc)	47.00
Ht. After Cons. - (in)	2.843	Cell Exp. - (cc)	33.21
Initial Area - (sq in)	2.926	Net Change - (cc)	13.79
Area After Cons. - sq in	2.784	Cons. Vol. - (cc)	129.72

CLIENT SN3

JOB NO. 2984-2

PTX06-**ISB129**
CONSOLIDATION DATA
E-22,--,291.2'

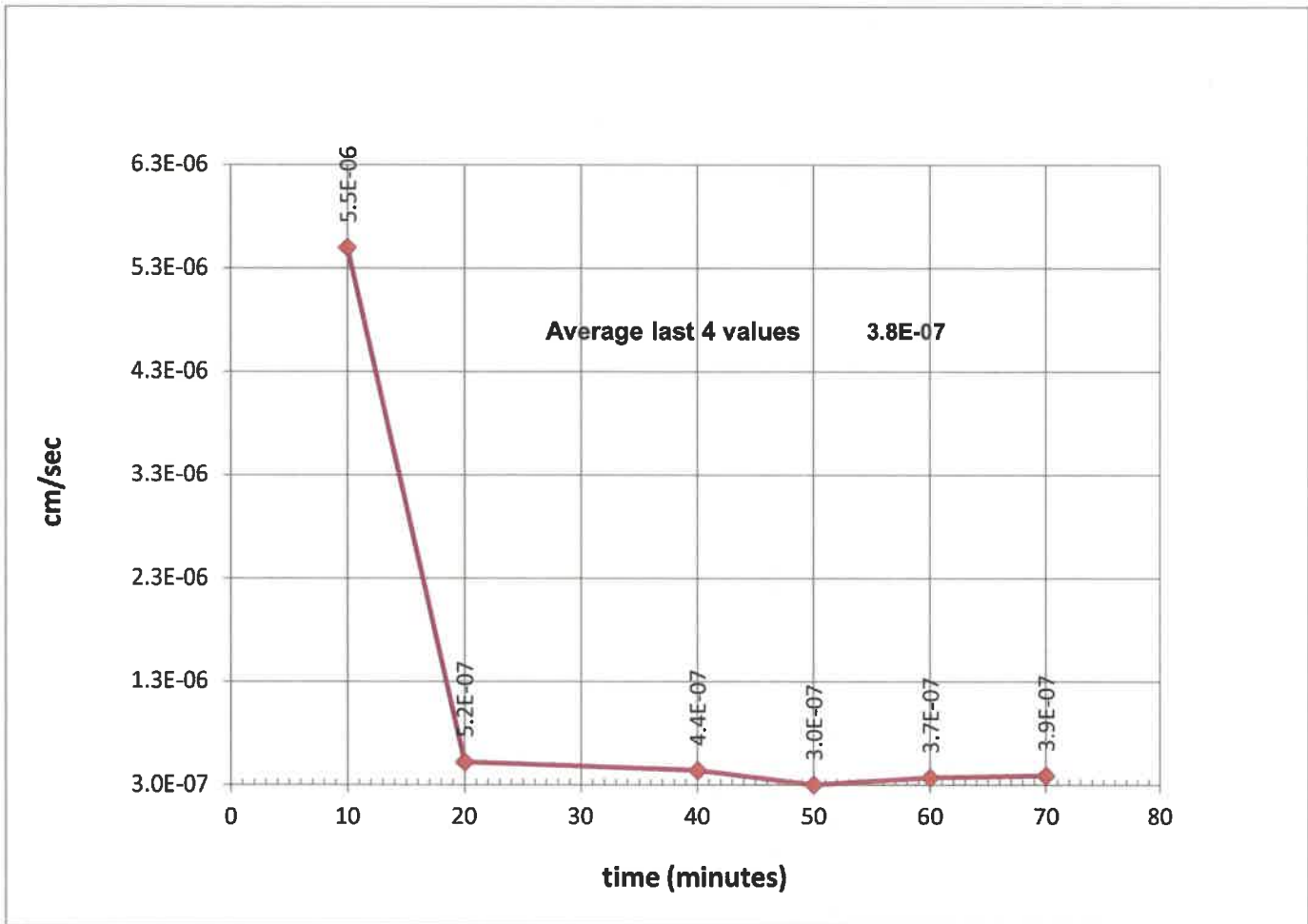




Preliminary Flow Pump Test Data ASTM D5084

Client: SN3
Job Number: 2984-2
Project: Pantex BOA 70 Release 5
Location: --
Project Number: 4638-05

Boring Number: E22 **PTX06-ISB129**
Depth: 291.2'
Sample Number: --
Sampled Date: 11/15/2017
Test Date: 12/15/2017
Sampled By: BD
Technician: CAL



Data Entered By: CAL
Date: 12/15/2017
File Name: 2984_2_PrelimPerm_ASTMD-5084-methodD-R0_12.xls

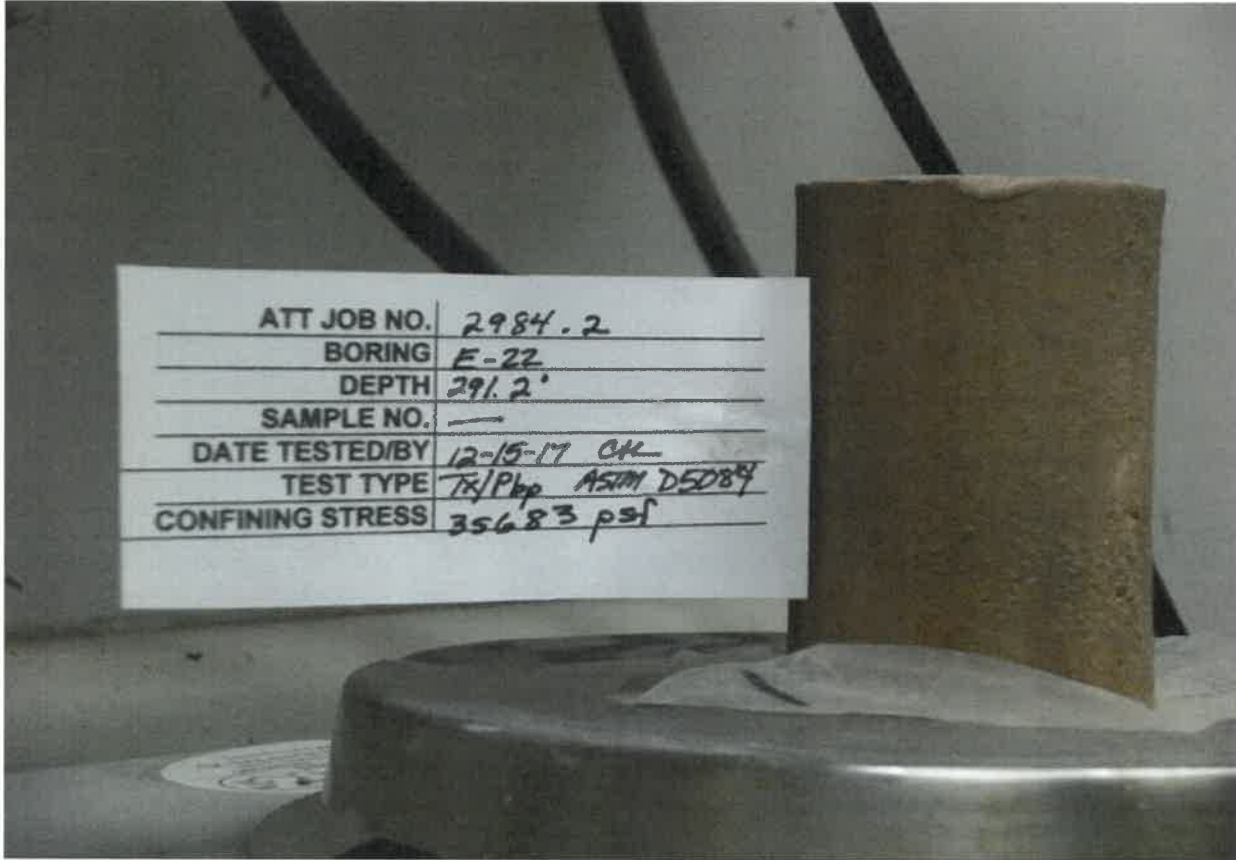
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Date: 1/8/16



Image Attachment

ADVANCED TERRA TESTING

CLIENT SN3
JOB NO. 2984-2
PROJECT Pantex BOA 70 Release 5
PROJECT NO. 4638-05
LOCATION -- PTX06-ISB129



NOTES

File name: 2984_2_Image_17_12_15_14_58_12



PERMEABILITY TEST - BACK PRESSURE SATURATED - FLOW PUMP METHOD

ASTM D5084 Method D

CLIENT	SN3	JOB NO.	2984-2
PROJECT	Pantex BOA 70 Release 5		
PROJECT NO.	4638-05	SAMPLED	10/22/2017 By: RER
BORING NO.	E21 PTX06-ISB128	TEST STARTED	10/31/2017 By: CAL
DEPTH	294'	TEST FINISHED	11/4/2017 By: CAL
SAMPLE NO.	2	CELL NUMBER	1
LOCATION	--	PERMEANT	Tap Water
SAMPLE TYPE	liner	CONF. PRES. - (psf)	35351

MOISTURE / DENSITY DATA	BEFORE TEST	AFTER TEST
Wt. Soil + Moisture - (g)	360.58	337.02
Wt. Wet Soil & Pan - (g)	367.22	343.66
Wt. Dry Soil & Pan - (g)	284.19	284.19
Wt. Lost Moisture - (g)	83.03	59.47
Wt. of Pan Only - (g)	6.64	6.64
Wt. of Dry Soil - (g)	277.55	277.55
Moisture Content - (%)	29.9	21.4
Wet Density - (pcf)	120.2	140.7
Dry Density - (pcf)	92.6	115.9
Init. Diameter - (in)	1.906	
Init. Area - (sq in)	2.853	
Init. Height - (in)	4.004	
Vol. Bef. Consol. - (cu ft)	0.00661	
Vol. After Consol. - (cu ft)	0.00528	
Porosity - (%)	39.76	

FLOW PUMP CALCULATIONS	
Pump Setting (gear number)	12
Percentage of Pump Setting	100
Q - (cc/s)	2.30E-05
Height - (in)	3.787
Diameter - (in)	1.752
Pressure - (psi)	1.114
Area after consol. - (sq cm)	15.547
Gradient	8.143
Permeability k - (cm/s)	1.8E-07
Permeability k - (m/s)	1.8E-09
Back Pressure - (psi)	48.0
Cell Pressure - (psi)	293.5
Ave. Effective Stress - (psi)	244.943
Average temperature degree - (c°)	22.2

Data entry by: CAL	Date: 11/06/2017
Checked by: <i>DPM</i>	Date: <i>11/2/17</i>



PERMEABILITY TEST - BACK PRESSURE SATURATED - FLOW PUMP METHOD

ASTM D5084 Method D

CLIENT	SN3	JOB NO.	2984-2
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PROJECT	Pantex BOA 70 Release 5		
PROJECT NO.	4638-05	SAMPLED	10/22/2017 By: RER
BORING NO.	E21 PTX06-ISB128	TEST STARTED	10/31/2017 By: CAL
DEPTH	294'	TEST FINISHED	11/4/2017 By: CAL
SAMPLE NO.	2	CELL NUMBER	1
LOCATION	--	PERMEANT	Tap Water
SAMPLE TYPE	liner	CONF. PRES. - (psf)	35351

SATURATION DATA

Cell Press. (psi)	Back Press. (psi)	Burette Reading (cc)		Pore Press. (psi)		Change	B
		Close	Open	Close	Open		
40.0	38.0	2.8	16.2				
50.0	48.0	18.3	19.5	38.4	47.2	8.8	0.88
60.0		20.3	20.5	48.3	57.8	9.5	0.95

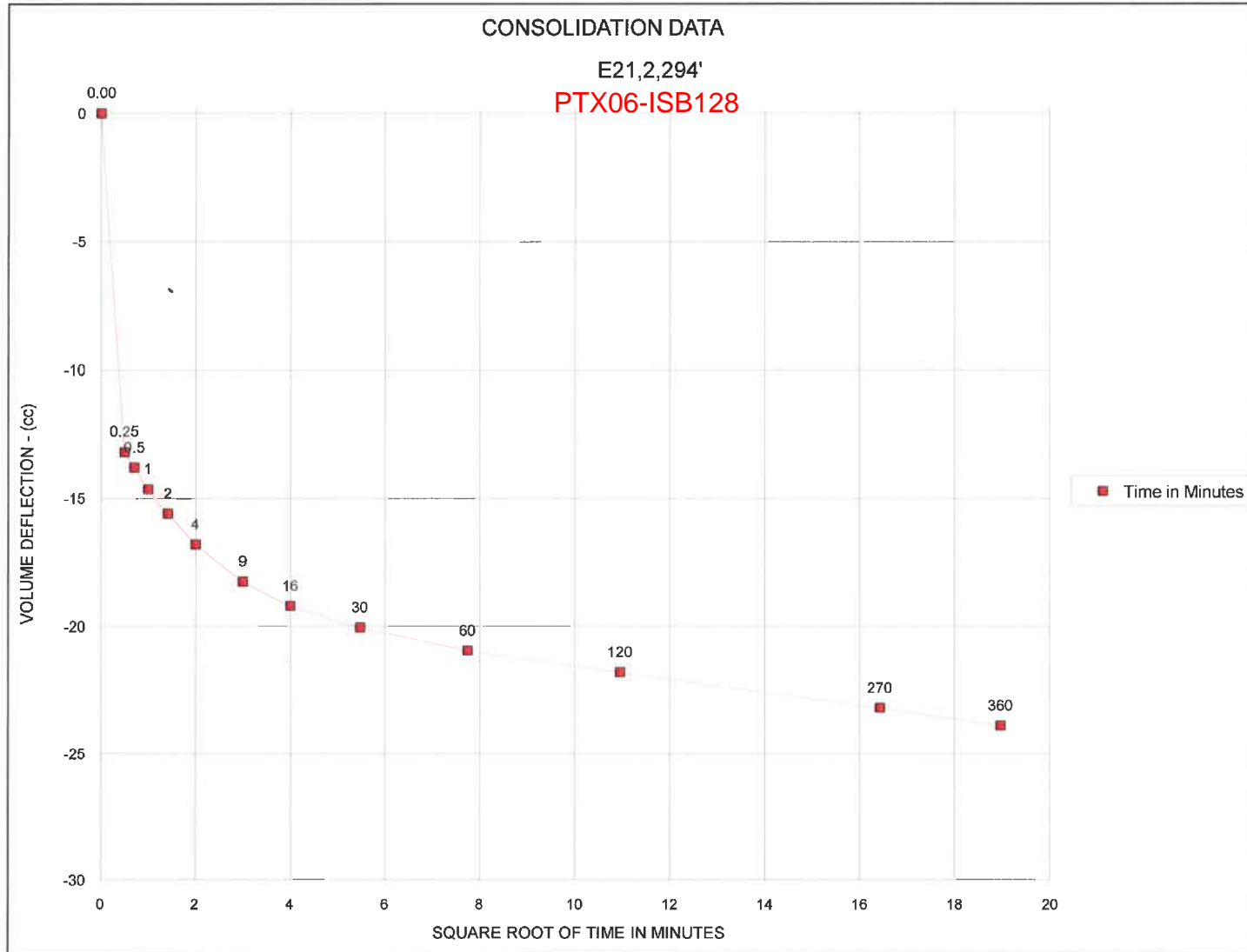
CONSOLIDATION DATA

Elapsed Time (Min)	SQRT Time (Min)	Burette Reading (cc)	Volume Defl. (cc)
0.00	0.00	0.20	0.00
0.25	0.50	13.40	-13.20
0.5	0.71	14.00	-13.80
1	1.00	14.85	-14.65
2	1.41	15.80	-15.60
4	2.00	17.00	-16.80
9	3.00	18.45	-18.25
16	4.00	19.40	-19.20
30	5.48	20.25	-20.05
60	7.75	21.15	-20.95
120	10.95	22.00	-21.80
270	16.43	23.40	-23.20
360	18.97	24.10	-23.90

Initial Height - (in)	4.004	Init. Vol. - (cc)	187.24
Height Change - (in)	0.217	Vol. Change - (cc)	79.00
Ht. After Cons. - (in)	3.787	Cell Exp. - (cc)	41.33
Initial Area - (sq in)	2.853	Net Change - (cc)	37.67
Area After Cons. - sq in	2.410	Cons. Vol. - (cc)	149.57

CLIENT SN3

JOB NO. 2984-2

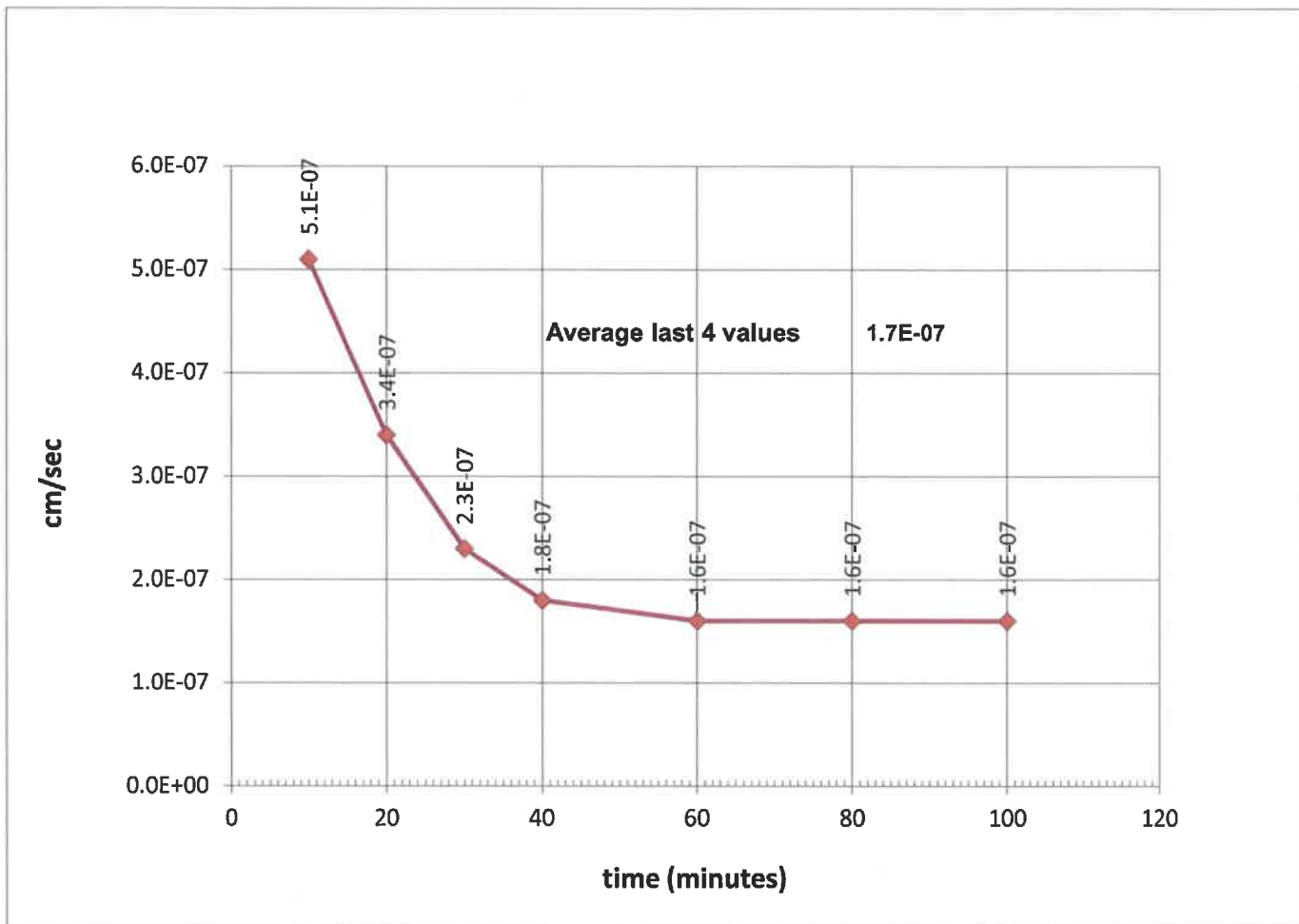




Preliminary Flow Pump Test Data ASTM D5084

Client: SN3
Job Number: 2984-2
Project: Pantex BOA 70 Release 5
Location: --
Project Number: 4638-05

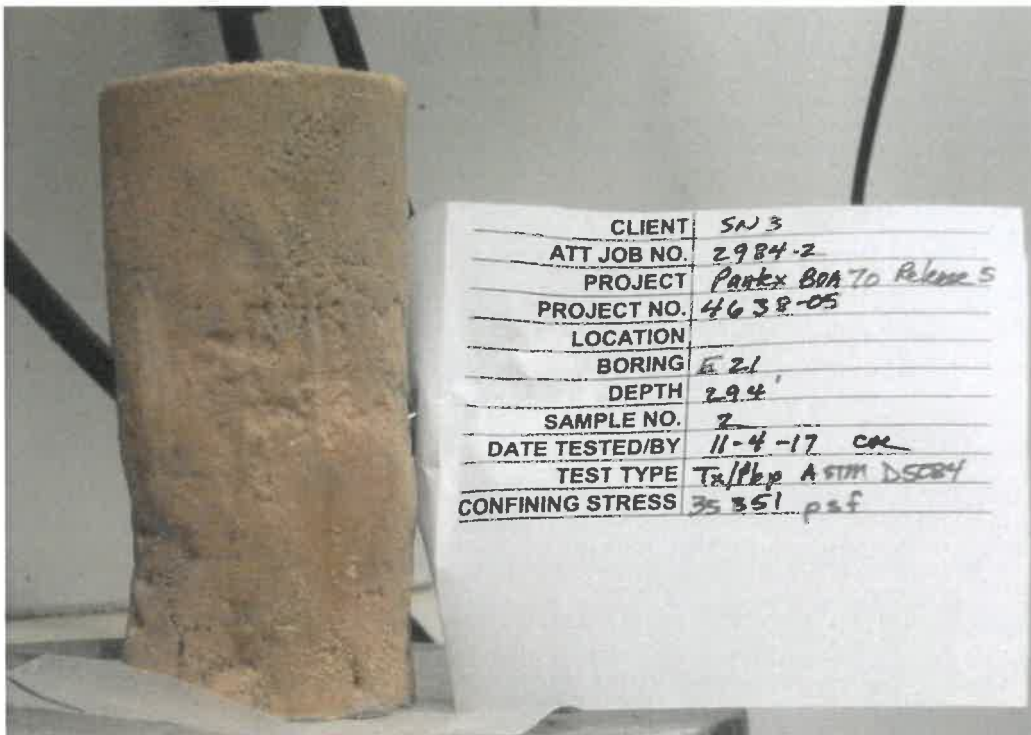
Boring Number: E21 **PTX06-ISB128**
Depth: 294'
Sample Number: 2
Sampled Date: 10/22/2017
Test Date: 11/4/2017
Sampled By: RER
Technician: CAL



Data Entered By: CAL
Date: 11/4/2017
File Name: 2984_2_PrelimPerm_ASTMD-5084-methodD-R0_0.xls

Checked By: OPM
Date: 11/7/17

PTX06-ISB128



Q:\Client Data File\2984\2\PICTURE\DSCF6893.JPG



PERMEABILITY TEST - BACK PRESSURE SATURATED - FLOW PUMP METHOD

ASTM D5084 Method D

CLIENT	SN3	JOB NO.	2984-2
PROJECT	Pantex BOA 70 Release 5		
PROJECT NO.	4638-05	SAMPLED	11/28/2017 By: RER
BORING NO.	E 20 PTX06-ISB127	TEST STARTED	12/14/2017 By: DPM
DEPTH	292'	TEST FINISHED	12/20/2017 By: DPM
SAMPLE NO.	1	CELL NUMBER	1N
LOCATION	--	PERMEANT	Tap Water
SAMPLE TYPE	split spoon	CONF. PRES. - (psf)	35971

MOISTURE / DENSITY DATA	BEFORE TEST	AFTER TEST
Wt. Soil + Moisture - (g)	282.94	272.50
Wt. Wet Soil & Pan - (g)	289.49	279.05
Wt. Dry Soil & Pan - (g)	233.25	233.25
Wt. Lost Moisture - (g)	56.24	45.80
Wt. of Pan Only - (g)	6.55	6.55
Wt. of Dry Soil - (g)	226.70	226.70
Moisture Content - (%)	24.8	20.2
Wet Density - (pcf)	123.2	136.7
Dry Density - (pcf)	98.7	113.7
Init. Diameter - (in)	1.932	
Init. Area - (sq in)	2.932	
Init. Height - (in)	2.985	
Vol. Bef. Consol. - (cu ft)	0.00506	
Vol. After Consol. - (cu ft)	0.00440	
Porosity - (%)	36.78	

FLOW PUMP CALCULATIONS	
Pump Setting (gear number)	12
Percentage of Pump Setting	100
Q - (cc/s)	2.30E-05
Height - (in)	2.796
Diameter - (in)	1.860
Pressure - (psi)	2.090
Area after consol. - (sq cm)	17.529
Gradient	20.691
Permeability k - (cm/s)	6.3E-08
Permeability k - (m/s)	6.3E-10
Back Pressure - (psi)	48.0
Cell Pressure - (psi)	297.8
Ave. Effective Stress - (psi)	248.755
Average temperature degree - (c°)	22.4

Data entry by: CAL	Date: 01/02/2018
Checked by:	Date: <i>1/8/18</i>



PERMEABILITY TEST - BACK PRESSURE SATURATED - FLOW PUMP METHOD

ASTM D5084 Method D

CLIENT	SN3	JOB NO.	2984-2
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PROJECT	Pantex BOA 70 Release 5		
PROJECT NO.	4638-05	SAMPLED	11/28/2017 By: RER
BORING NO.	E 20 PTX06-ISB127	TEST STARTED	12/14/2017 By: DPM
DEPTH	292'	TEST FINISHED	12/20/2017 By: DPM
SAMPLE NO.	1	CELL NUMBER	1N
LOCATION	-	PERMEANT	Tap Water
SAMPLE TYPE	split spoon	CONF. PRES. - (psf)	35971

SATURATION DATA

Cell Press. (psi)	Back Press. (psi)	Burette Reading (cc)		Pore Press. (psi)		Change	B
		Close	Open	Close	Open		
40.0	38.0	1.7	10.4				
50.0	48.0	11.4	12.2	38.5	46.9	8.4	0.84
60.0		12.5	12.6	48.5	58.4	9.9	0.99

CONSOLIDATION DATA

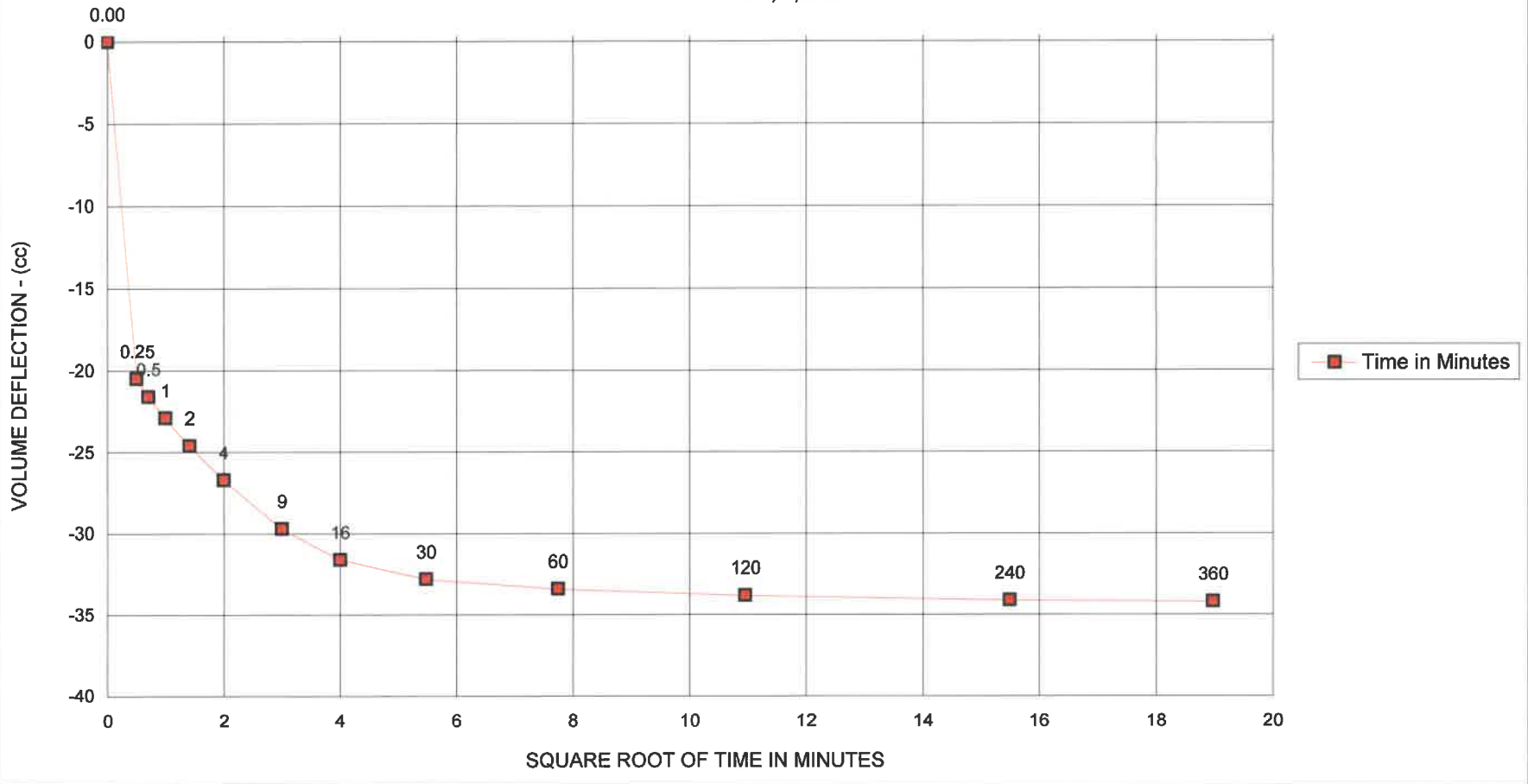
Elapsed Time (Min)	SQRT Time (Min)	Burette Reading (cc)	Volume Def. (cc)
0.00	0.00	0.10	0.00
0.25	0.50	20.60	-20.50
0.5	0.71	21.70	-21.60
1	1.00	23.00	-22.90
2	1.41	24.70	-24.60
4	2.00	26.80	-26.70
9	3.00	29.80	-29.70
16	4.00	31.70	-31.60
30	5.48	32.90	-32.80
60	7.75	33.50	-33.40
120	10.95	33.90	-33.80
240	15.49	34.20	-34.10
360	18.97	34.30	-34.20

Initial Height - (in)	2.985	Init. Vol. - (cc)	143.43
Height Change - (in)	0.189	Vol. Change - (cc)	46.40
Ht. After Cons. - (in)	2.796	Cell Exp. - (cc)	27.48
Initial Area - (sq in)	2.932	Net Change - (cc)	18.92
Area After Cons. - sq in	2.717	Cons. Vol. - (cc)	124.51

CLIENT SN3

JOB NO. 2984-2

PTX06-ISB127
 CONSOLIDATION DATA
 E 20,1,292'



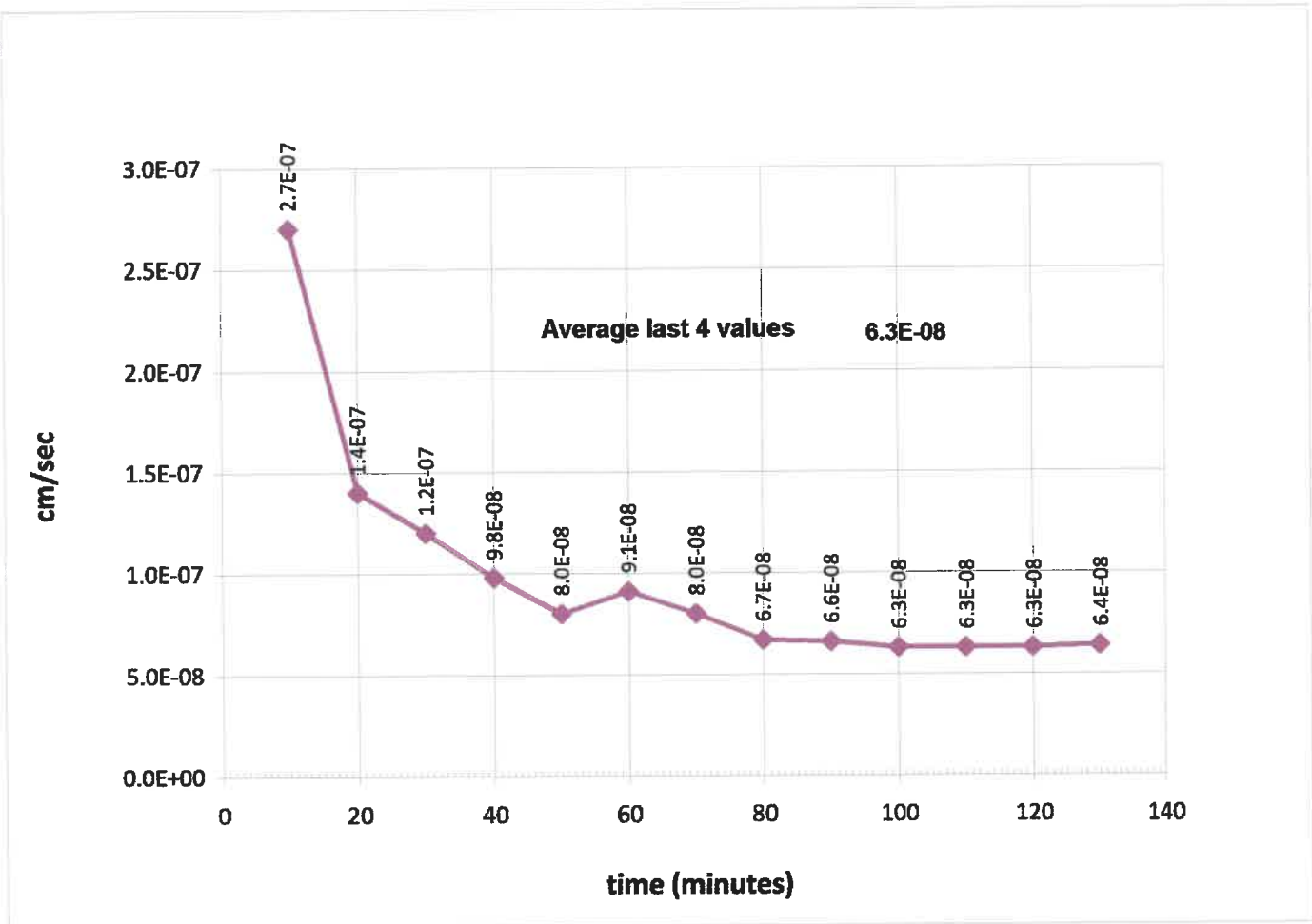


Preliminary Flow Pump Test Data ASTM D5084

Client: SN3
Job Number: 2984-2
Project: Pantex BOA 70 Release 5
Location: --
Project Number: 4638-05

Boring Number: E20 **PTX06-ISB127**
Depth: 292'
Sample Number: 1
Sampled Date: 11/28/2017
Test Date: 12/20/2017

Sampled By: RER
Technician: DPM



Data Entered By: DPM
Date: 12/20/2017
File Name: 2984_2_PrelimPerm_ASTMD-5084-methodD-R0_16.xls

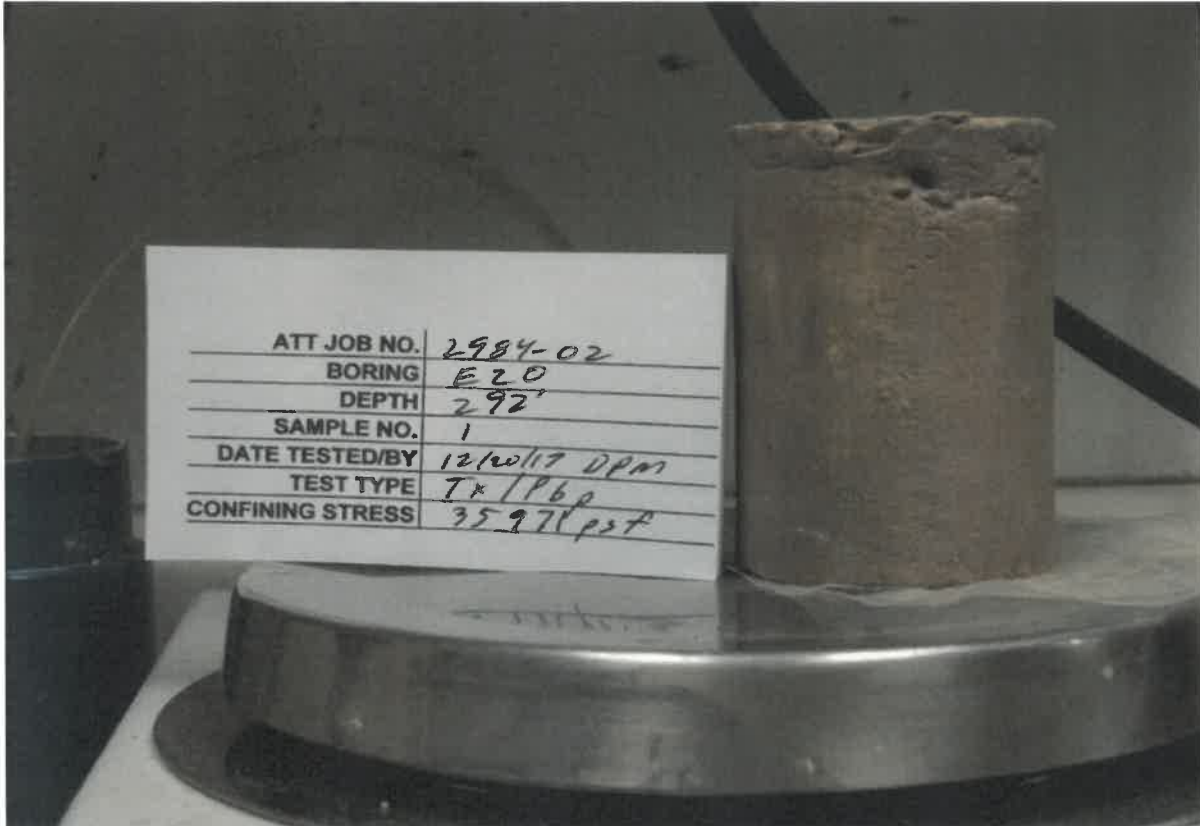
Checked By:
Date: 1/18/18



ADVANCED TERRA TESTING

Image Attachment

CLIENT SN3
JOB NO. 2984-2
PROJECT Pantex BOA 70 Release 5
PROJECT NO. 4638-05
LOCATION -- PTX06-**ISB127**



NOTES

File name: 2984_2_Image_18_01_02_09_07_44



PERMEABILITY TEST - BACK PRESSURE SATURATED - FLOW PUMP METHOD

ASTM D5084 Method D

CLIENT	SN3	JOB NO.	2984-2
PROJECT	Pantex BOA 70 Release 5		
PROJECT NO.	4638-05	SAMPLED	11/16/2017 By: RD
BORING NO.	E-19 PTX06-ISB126	TEST STARTED	12/12/2017 By: DPM
DEPTH	291.1'	TEST FINISHED	12/19/2017 By: DPM
SAMPLE NO.	--	CELL NUMBER	3N
LOCATION	--	PERMEANT	Tap Water
SAMPLE TYPE	split spoon	CONF. PRES. - (psf)	35395

MOISTURE / DENSITY DATA	BEFORE TEST	AFTER TEST
Wt. Soil + Moisture - (g)	279.64	271.55
Wt. Wet Soil & Pan - (g)	286.28	278.19
Wt. Dry Soil & Pan - (g)	233.23	233.23
Wt. Lost Moisture - (g)	53.05	44.96
Wt. of Pan Only - (g)	6.64	6.64
Wt. of Dry Soil - (g)	226.59	226.59
Moisture Content - (%)	23.4	19.8
Wet Density - (pcf)	121.6	131.3
Dry Density - (pcf)	98.5	109.6
Init. Diameter - (in)	1.923	
Init. Area - (sq in)	2.904	
Init. Height - (in)	3.017	
Vol. Bef. Consol. - (cu ft)	0.00507	
Vol. After Consol. - (cu ft)	0.00456	
Porosity - (%)	34.83	

FLOW PUMP CALCULATIONS	
Pump Setting (gear number)	12
Percentage of Pump Setting	100
Q - (cc/s)	2.30E-05
Height - (in)	2.844
Diameter - (in)	1.878
Pressure - (psi)	0.665
Area after consol. - (sq cm)	17.868
Gradient	6.472
Permeability k - (cm/s)	2.0E-07
Permeability k - (m/s)	2.0E-09
Back Pressure - (psi)	68.0
Cell Pressure - (psi)	313.8
Ave. Effective Stress - (psi)	245.468
Average temperature degree - (c°)	22.3

Data entry by:	CAL	Date:	01/02/2018
Checked by:	<i>KR</i>	Date:	1/8/18



PERMEABILITY TEST - BACK PRESSURE SATURATED - FLOW PUMP METHOD

ASTM D5084 Method D

CLIENT	SN3	JOB NO.	2984-2
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PROJECT	Pantex BOA 70 Release 5		
PROJECT NO.	4638-05	SAMPLED	11/16/2017 By: RD
BORING NO.	E-19 PTX06-ISB126	TEST STARTED	12/12/2017 By: DPM
DEPTH	291.1'	TEST FINISHED	12/19/2017 By: DPM
SAMPLE NO.	--	CELL NUMBER	3N
LOCATION	--	PERMEANT	Tap Water
SAMPLE TYPE	split spoon	CONF. PRES. - (psf)	35395

SATURATION DATA

Cell Press. (psi)	Back Press. (psi)	Burette Reading (cc)		Pore Press. (psi)		Change	B
		Close	Open	Close	Open		
40.0	38.0	2.7	14.4				
50.0	48.0	14.7	15.6	38.9	47.3	8.4	0.84
60.0	58.0	15.2	16.2	48.8	58.0	9.2	0.92
70.0	68.0	16.3	17.1	58.7	68.1	9.4	0.94
80.0		17.4	17.5	68.3	78.2	9.9	0.99

CONSOLIDATION DATA

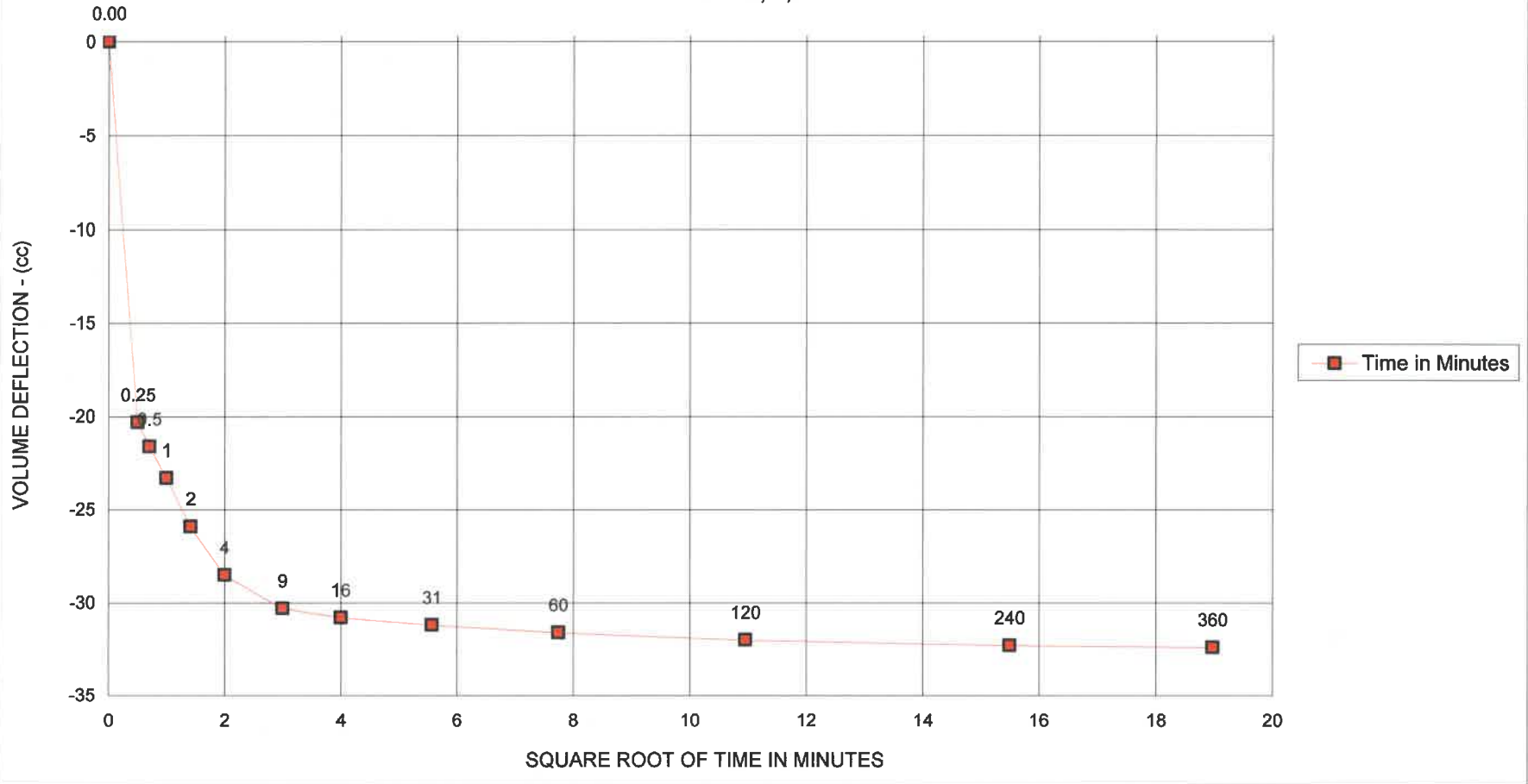
Elapsed Time (Min)	SQRT Time (Min)	Burette Reading (cc)	Volume Defl. (cc)
0.00	0.00	0.20	0.00
0.25	0.50	20.50	-20.30
0.5	0.71	21.80	-21.60
1	1.00	23.50	-23.30
2	1.41	26.10	-25.90
4	2.00	28.70	-28.50
9	3.00	30.50	-30.30
16	4.00	31.00	-30.80
31	5.57	31.40	-31.20
60	7.75	31.80	-31.60
120	10.95	32.20	-32.00
240	15.49	32.50	-32.30
360	18.97	32.60	-32.40

Initial Height - (in)	3.017	Init. Vol. - (cc)	143.62
Height Change - (in)	0.173	Vol. Change - (cc)	48.40
Ht. After Cons. - (in)	2.844	Cell Exp. - (cc)	33.88
Initial Area - (sq in)	2.904	Net Change - (cc)	14.52
Area After Cons. - sq in	2.770	Cons. Vol. - (cc)	129.10

CLIENT SN3

JOB NO. 2984-2

PTX06-ISB126
CONSOLIDATION DATA
E-19,--,291.1'

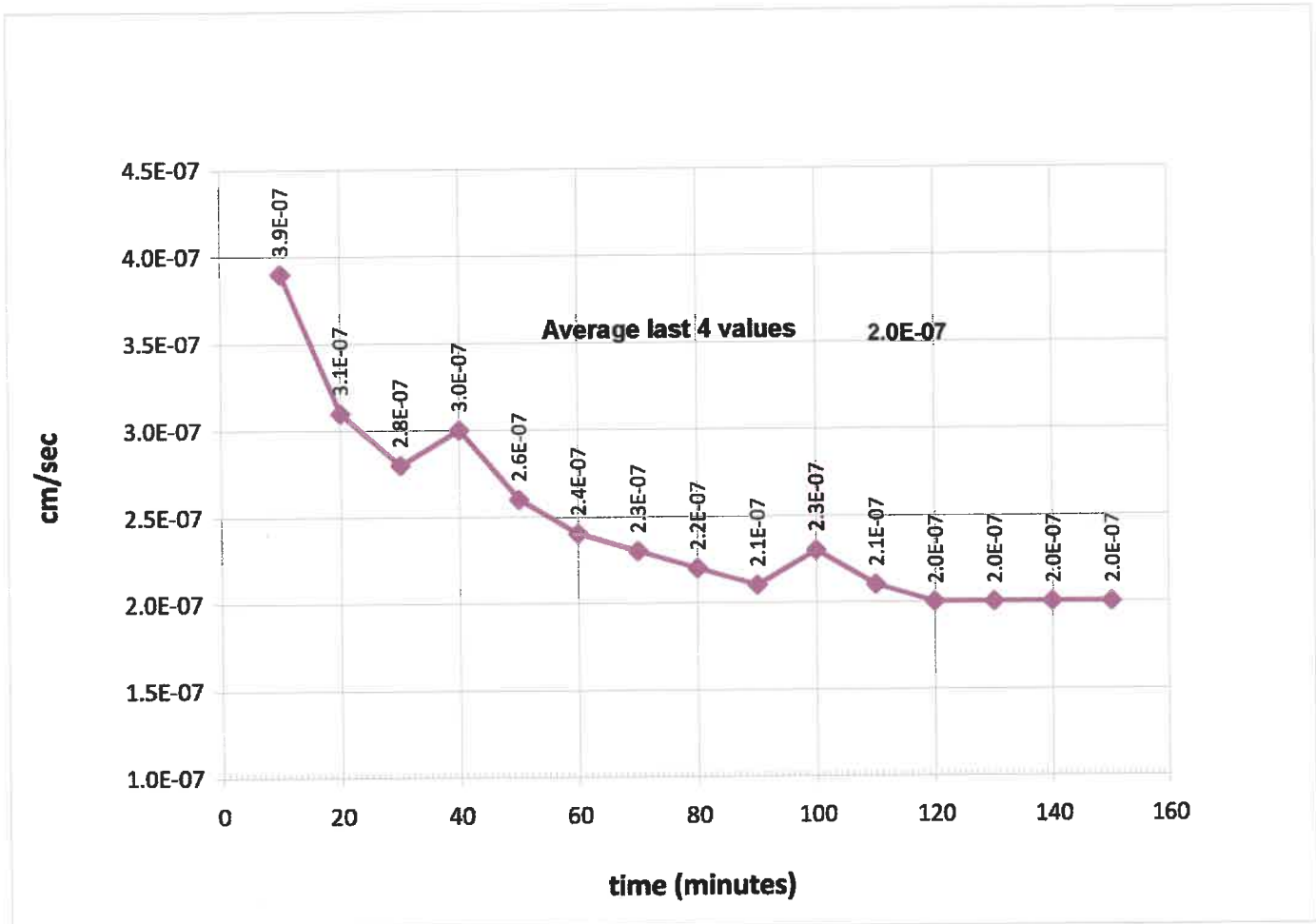




Preliminary Flow Pump Test Data ASTM D5084

Client: SN3
Job Number: 2984-2
Project: Pantex BOA 70 Release 5
Location: -
Project Number: 4638-05

Boring Number: E-19 **PTX06-ISB126**
Depth: 291.1
Sample Number: --
Sampled Date: 11/16/2017
Test Date: 12/19/2017
Sampled By: RD
Technician: DPM



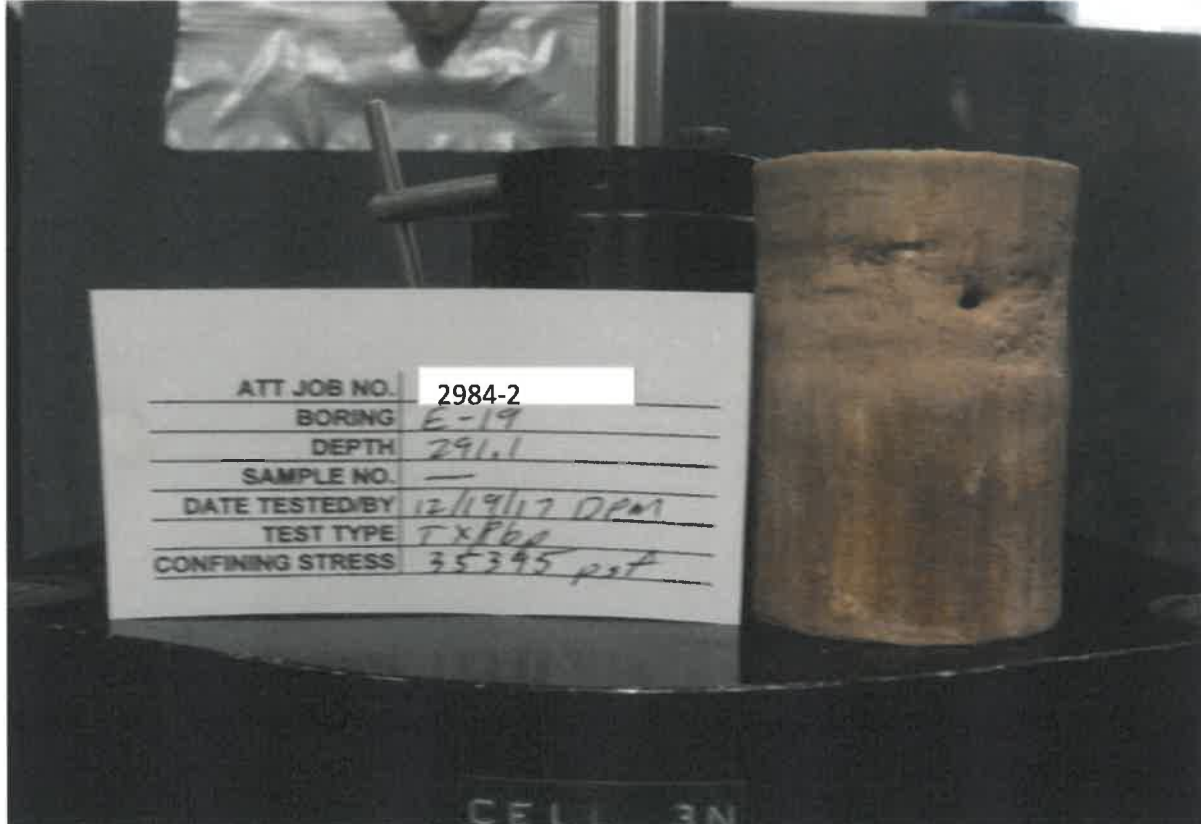
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Date: 12/19/2017
File Name: 2984_2_PrelimPerm_ASTMD-5084-methodD-R0_15.xls

Checked By: VR
Date: 1/8/18



ADVANCED TERRA TESTING

CLIENT SN3
JOB NO. 2984-2
PROJECT Pantex BOA 70 Release 5
PROJECT NO. 4638-05
LOCATION -- PTX06-ISB126



NOTES

File name: 2984_2_Image_18_01_02_09_07_02



PERMEABILITY TEST - BACK PRESSURE SATURATED - FLOW PUMP METHOD

ASTM D5084 Method D

CLIENT	SN3	JOB NO.	2984-2
PROJECT	Pantex BOA 70 Release 5		
PROJECT NO.	4638-05	SAMPLED	12/1/2017 By: RPD
BORING NO.	E18 PTX06-ISB125	TEST STARTED	12/18/2017 By: DPM
DEPTH	293'	TEST FINISHED	12/22/2017 By: DPM
SAMPLE NO.	4	CELL NUMBER	1
LOCATION	--	PERMEANT	Tap Water
SAMPLE TYPE	split spoon	CONF. PRES. - (psf)	37584

MOISTURE / DENSITY DATA	BEFORE TEST	AFTER TEST
Wt. Soil + Moisture - (g)	282.07	281.09
Wt. Wet Soil & Pan - (g)	288.67	287.69
Wt. Dry Soil & Pan - (g)	136.22	136.22
Wt. Lost Moisture - (g)	152.45	151.47
Wt. of Pan Only - (g)	6.60	6.60
Wt. of Dry Soil - (g)	129.62	129.62
Moisture Content - (%)	117.6	116.9
Wet Density - (pcf)	123.3	136.1
Dry Density - (pcf)	56.7	62.8
Init. Diameter - (in)	1.927	
Init. Area - (sq in)	2.916	
Init. Height - (in)	2.987	
Vol. Bef. Consol. - (cu ft)	0.00504	
Vol. After Consol. - (cu ft)	0.00455	
Porosity - (%)	117.47	

FLOW PUMP CALCULATIONS		
Pump Setting (gear number)	12	NOTE: Test was run at 10 psi higher than calculated. This is equivalent to 10.6' of depth.
Percentage of Pump Setting	100	
Q - (cc/s)	2.30E-05	
Height - (in)	2.851	
Diameter - (in)	1.874	
Pressure - (psi)	0.312	
Area after consol. - (sq cm)	17.803	
Gradient	3.029	
Permeability k - (cm/s)	4.3E-07	
Permeability k - (m/s)	4.3E-09	
Back Pressure - (psi)	58.0	
Cell Pressure - (psi)	319.0	
Ave. Effective Stress - (psi)	260.844	
Average temperature degree - (c°)	22.6	

Data entry by:	CAL	Date:	01/02/2018
Checked by:	<i>KR</i>	Date:	<i>1/9/18</i>



PERMEABILITY TEST - BACK PRESSURE SATURATED - FLOW PUMP METHOD

ASTM D5084 Method D

CLIENT	SN3	JOB NO.	2984-2
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PROJECT	Pantex BOA 70 Release 5	SAMPLED	12/1/2017	By: RPD
PROJECT NO.	4638-05	TEST STARTED	12/18/2017	By: DPM
BORING NO.	E18 PTX06-ISB125	TEST FINISHED	12/22/2017	By: DPM
DEPTH	293'	CELL NUMBER	1	
SAMPLE NO.	4	PERMEANT	Tap Water	
LOCATION	--	CONF. PRES. - (psf)	37584	
SAMPLE TYPE	split spoon			

SATURATION DATA

Cell Press. (psi)	Back Press. (psi)	Burette Reading (cc)		Pore Press. (psi)		Change	B
		Close	Open	Close	Open		
40.0	38.0	1.7	9.8				
50.0	48.0	8.2	9.3	38.3	47.2	8.9	0.89
60.0	58.0	9.5	10.5	48.5	57.8	9.3	0.93
70.0		11.0	11.1	58.4	67.9	9.5	0.95

CONSOLIDATION DATA

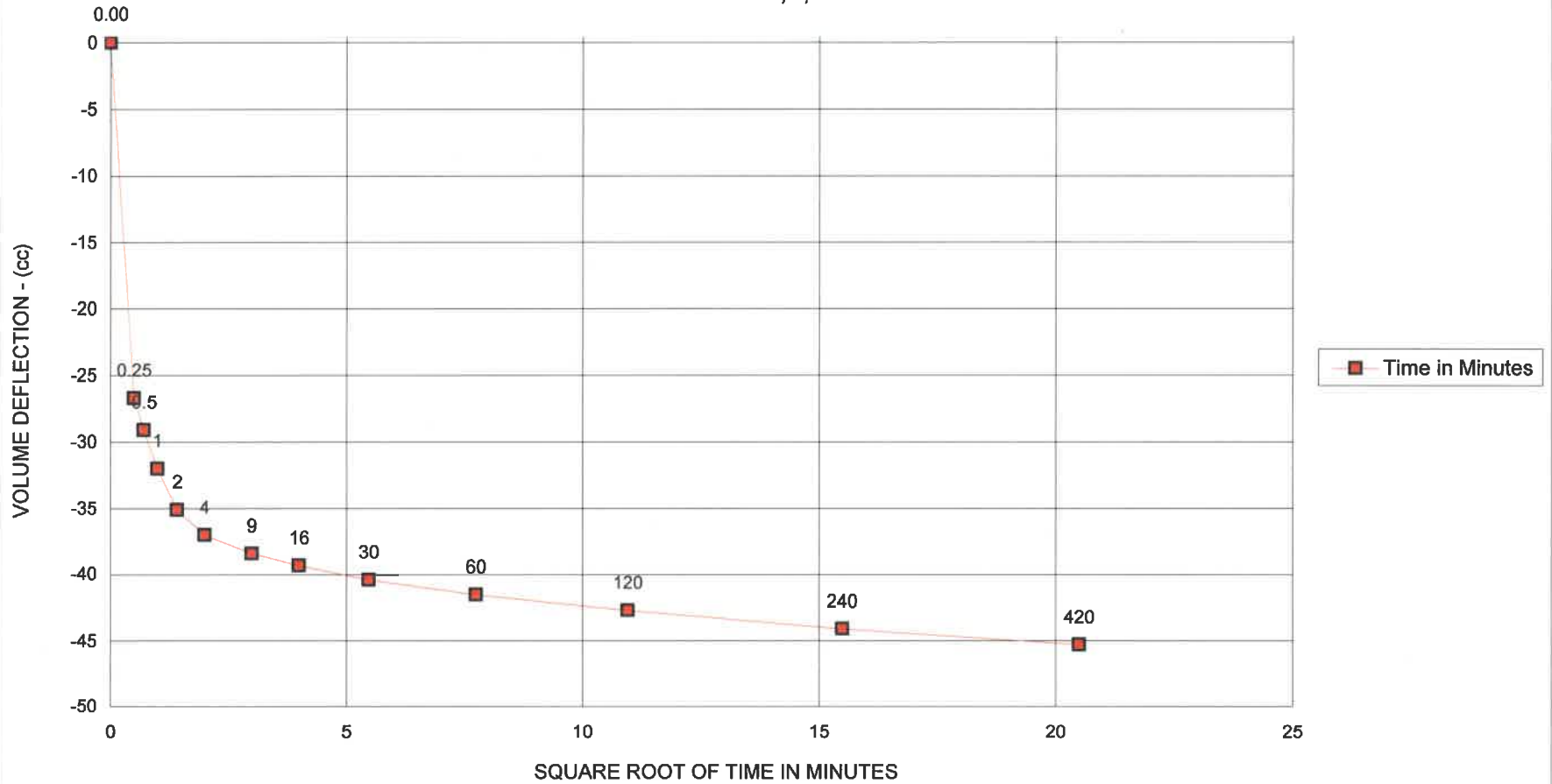
Elapsed Time (Min)	SQRT Time (Min)	Burette Reading (cc)	Volume Def. (cc)
0.00	0.00	0.20	0.00
0.25	0.50	26.90	-26.70
0.5	0.71	29.30	-29.10
1	1.00	32.20	-32.00
2	1.41	35.30	-35.10
4	2.00	37.20	-37.00
9	3.00	38.60	-38.40
16	4.00	39.50	-39.30
30	5.48	40.60	-40.40
60	7.75	41.70	-41.50
120	10.95	42.90	-42.70
240	15.49	44.30	-44.10
420	20.49	45.50	-45.30

Initial Height - (in)	2.987	Init. Vol. - (cc)	142.78
Height Change - (in)	0.136	Vol. Change - (cc)	58.50
Ht. After Cons. - (in)	2.851	Cell Exp. - (cc)	44.66
Initial Area - (sq in)	2.916	Net Change - (cc)	13.84
Area After Cons. - sq in	2.759	Cons. Vol. - (cc)	128.94

CLIENT SN3

JOB NO. 2984-2

PTX06-ISB125
CONSOLIDATION DATA
E18,4,293'

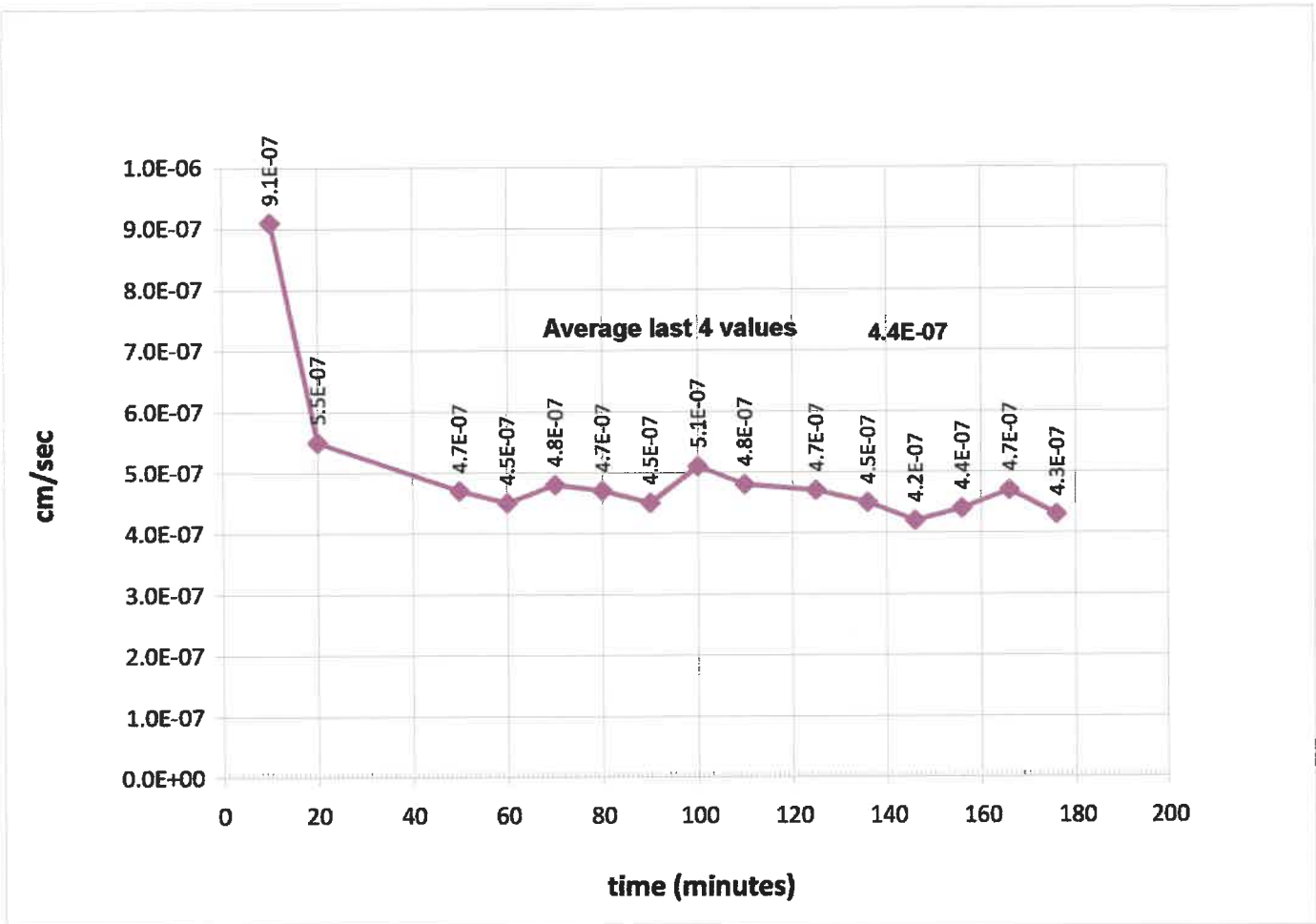




Preliminary Flow Pump Test Data ASTM D5084

Client: SN3
Job Number: 2984-2
Project: Pantex BOA 70 Release 5
Location: --
Project Number: 4638-05

Boring Number: E18 **PTX06-ISB125**
Depth: 293'
Sample Number: 4
Sampled Date: 12/1/2017
Test Date: 12/22/2017
Sampled By: RPD
Technician: DPM



Data Entered By: DPM
Date: 12/22/2017
File Name: 2984_2_PrelimPerm_ASTMD-5084-methodD-R0_18.xls

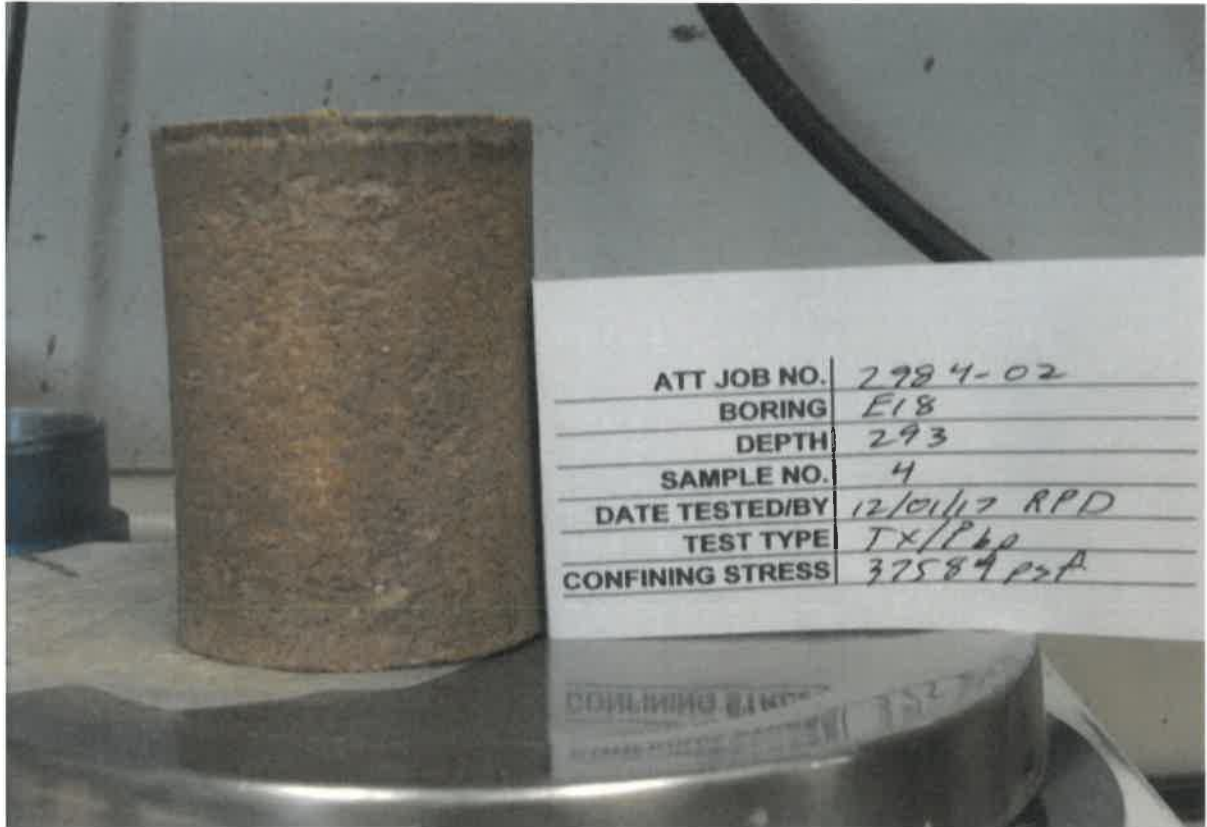
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Date: 1/9/18



Image Attachment

ADVANCED TERRA TESTING

CLIENT SN3
JOB NO. 2984-2
PROJECT Pantex BOA 70 Release 5
PROJECT NO. 4638-05
LOCATION -- PTX06-ISB125



NOTES

File name: 2984_2_Image_18_01_02_09_09_43



PERMEABILITY TEST - BACK PRESSURE SATURATED - FLOW PUMP METHOD

ASTM D5084 Method D

CLIENT	SN3	JOB NO.	2984-2
PROJECT	Pantex BOA 70 Release 5		
PROJECT NO.	4638-05	SAMPLED	12/2/2017 By: RPD
BORING NO.	E17 PTX06-ISB124	TEST STARTED	12/21/2017 By: DPM
DEPTH	292'	TEST FINISHED	12/28/2017 By: DPM
SAMPLE NO.	#5	CELL NUMBER	1N
LOCATION	--	PERMEANT	Tap Water
SAMPLE TYPE	split spoon	CONF. PRES. - (psf)	36562

MOISTURE / DENSITY DATA	BEFORE TEST	AFTER TEST
Wt. Soil + Moisture - (g)	285.96	284.70
Wt. Wet Soil & Pan - (g)	292.54	291.28
Wt. Dry Soil & Pan - (g)	243.57	243.57
Wt. Lost Moisture - (g)	48.97	47.71
Wt. of Pan Only - (g)	6.58	6.58
Wt. of Dry Soil - (g)	236.99	236.99
Moisture Content - (%)	20.7	20.1
Wet Density - (pcf)	125.2	142.7
Dry Density - (pcf)	103.8	118.8
Init. Diameter - (in)	1.930	
Init. Area - (sq in)	2.926	
Init. Height - (in)	2.974	
Vol. Bef. Consol. - (cu ft)	0.00504	
Vol. After Consol. - (cu ft)	0.00440	
Porosity - (%)	38.31	

FLOW PUMP CALCULATIONS	
Pump Setting (gear number)	12
Percentage of Pump Setting	100
Q - (cc/s)	2.30E-05
Height - (in)	2.811
Diameter - (in)	1.855
Pressure - (psi)	0.947
Area after consol. - (sq cm)	17.439
Gradient	9.325
Permeability k - (cm/s)	1.4E-07
Permeability k - (m/s)	1.4E-09
Back Pressure - (psi)	38.0
Cell Pressure - (psi)	291.9
Ave. Effective Stress - (psi)	253.427
Average temperature degree - (c°)	22.9

Data entry by:	CAL	Date:	01/02/2018
Checked by:	<i>KR</i>	Date:	<i>1/9/18</i>



PERMEABILITY TEST - BACK PRESSURE SATURATED - FLOW PUMP METHOD

ASTM D5084 Method D

CLIENT	SN3	JOB NO.	2984-2
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PROJECT		Pantex BOA 70 Release 5	
PROJECT NO.	4638-05	SAMPLED	12/2/2017 By: RPD
BORING NO.	E17 PTX06-ISB124	TEST STARTED	12/21/2017 By: DPM
DEPTH	292'	TEST FINISHED	12/28/2017 By: DPM
SAMPLE NO.	#5	CELL NUMBER	1N
LOCATION	--	PERMEANT	Tap Water
SAMPLE TYPE	split spoon	CONF. PRES. - (psf)	36562

SATURATION DATA

Cell Press. (psi)	Back Press. (psi)	Burette Reading (cc)		Pore Press. (psi)		Change	B
		Close	Open	Close	Open		
40.0	38.0	2.3	11.9				
50.0		13.6	13.8	38.8	48.7	9.9	0.99

CONSOLIDATION DATA

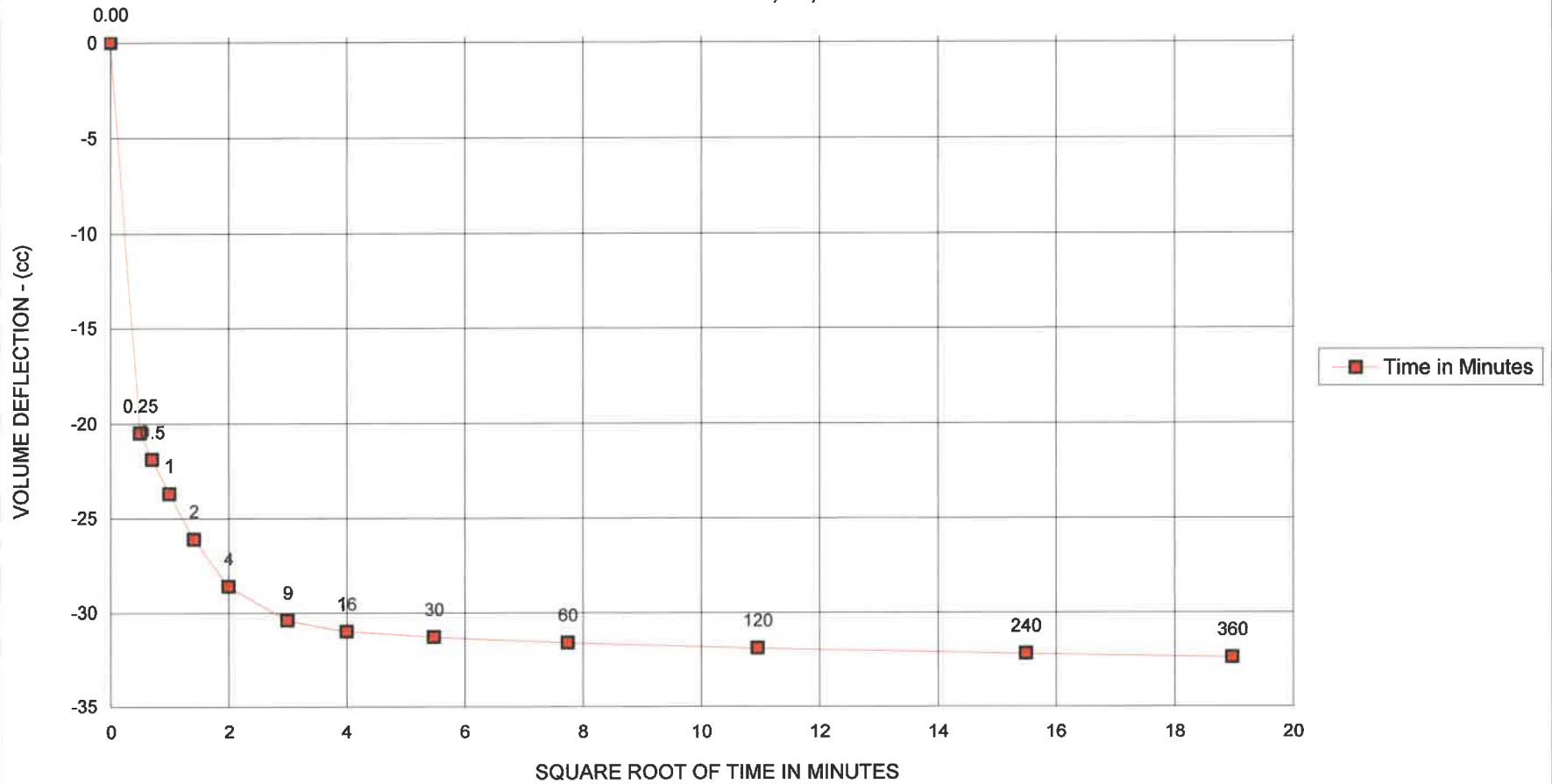
Elapsed Time (Min)	SQRT Time (Min)	Burette Reading (cc)	Volume Def. (cc)
0.00	0.00	0.20	0.00
0.25	0.50	20.70	-20.50
0.5	0.71	22.10	-21.90
1	1.00	23.90	-23.70
2	1.41	26.30	-26.10
4	2.00	28.80	-28.60
9	3.00	30.60	-30.40
16	4.00	31.20	-31.00
30	5.48	31.50	-31.30
60	7.75	31.80	-31.60
120	10.95	32.10	-31.90
240	15.49	32.40	-32.20
360	18.97	32.60	-32.40

Initial Height - (in)	2.974	Init. Vol. - (cc)	142.60
Height Change - (in)	0.163	Vol. Change - (cc)	45.10
Ht. After Cons. - (in)	2.811	Cell Exp. - (cc)	27.04
Initial Area - (sq in)	2.926	Net Change - (cc)	18.06
Area After Cons. - sq in	2.703	Cons. Vol. - (cc)	124.54

CLIENT SN3

JOB NO. 2984-2

PTX06-ISB124
CONSOLIDATION DATA
E17,#5,292'

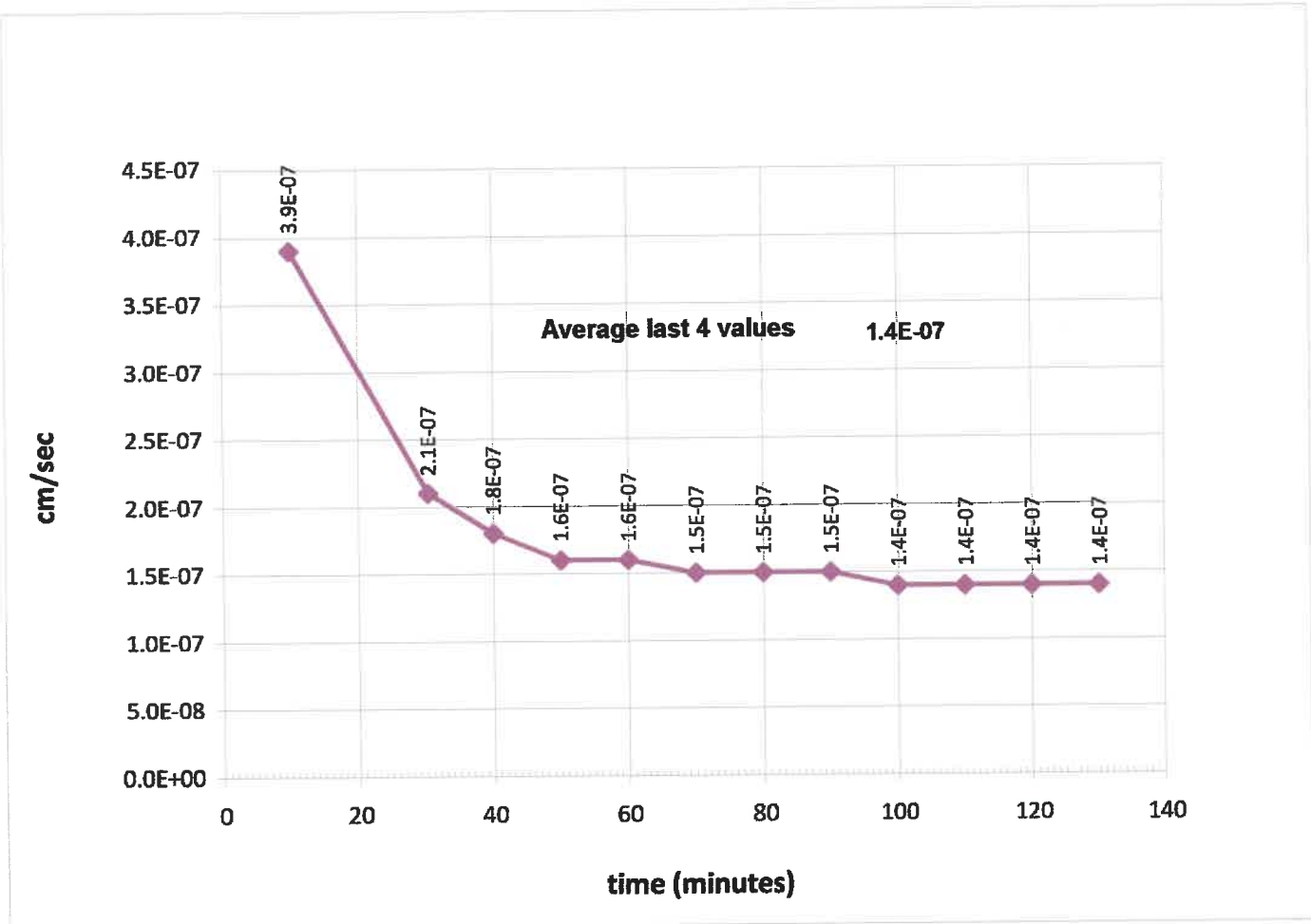




Preliminary Flow Pump Test Data ASTM D5084

Client: SN3
Job Number: 2984-2
Project: Pantex BOA 70 Release 5
Location: --
Project Number: 4638-05

Boring Number: E17 **PTX06-ISB124**
Depth: 292'
Sample Number: #5
Sampled Date: 12/2/2017
Test Date: 12/28/2017
Sampled By: RPD
Technician: DPM



Data Entered By: DPM
Date: 12/28/2017
File Name: 2984_2_PrelimPerm_ASTMD-5084-methodD-R0_20.xls

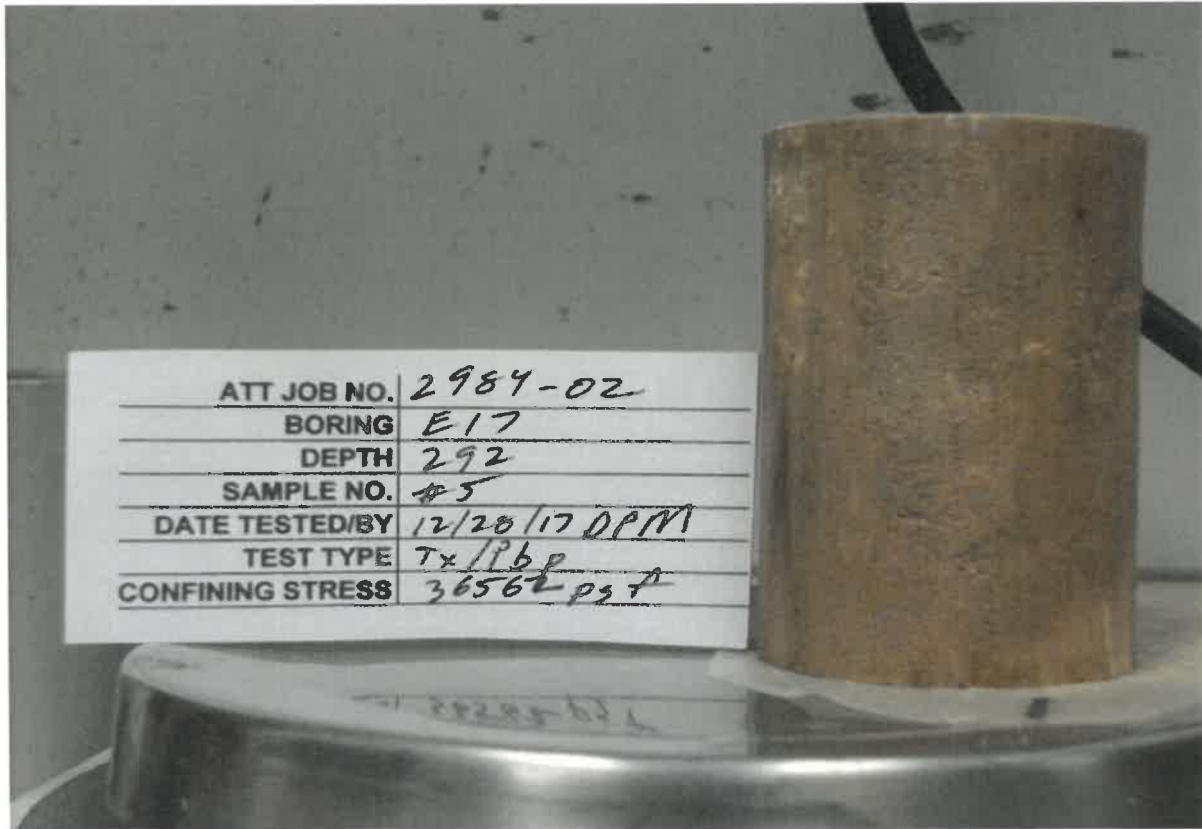
Checked By: RPD
Date: 1/9/18



ADVANCED TERRA TESTING

Image Attachment

CLIENT SN3
JOB NO. 2984-2
PROJECT Pantex BOA 70 Release 5
PROJECT NO. 4638-05
LOCATION -- PTX06-ISB124



NOTES

File name: 2984_2_Image_18_01_02_09_27_48



PERMEABILITY TEST - BACK PRESSURE SATURATED - FLOW PUMP METHOD

ASTM D5084 Method D

CLIENT	SN3	JOB NO.	2984-2
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PROJECT	Pantex BOA 70 Release 5		
PROJECT NO.	4638-05	SAMPLED	11/4/2017 By: RPD
BORING NO.	E16 PTX06-ISB123	TEST STARTED	11/20/2017 By: CAL
DEPTH	296.5'	TEST FINISHED	11/28/2017 By: CAL
SAMPLE NO.	SN3 #3	CELL NUMBER	3N
LOCATION	--	PERMEANT	Tap Water
SAMPLE TYPE	liner (split spoon)	CONF. PRES. - (psf)	37296

MOISTURE / DENSITY DATA	BEFORE TEST	AFTER TEST
Wt. Soil + Moisture - (g)	294.49	292.66
Wt. Wet Soil & Pan - (g)	301.27	299.44
Wt. Dry Soil & Pan - (g)	253.25	253.25
Wt. Lost Moisture - (g)	48.02	46.19
Wt. of Pan Only - (g)	6.78	6.78
Wt. of Dry Soil - (g)	246.47	246.47
Moisture Content - (%)	19.5	18.7
Wet Density - (pcf)	126.0	137.0
Dry Density - (pcf)	105.4	115.4
Init. Diameter - (in)	1.936	
Init. Area - (sq in)	2.944	
Init. Height - (in)	3.025	
Vol. Bef. Consol. - (cu ft)	0.00515	
Vol. After Consol. - (cu ft)	0.00471	
Porosity - (%)	34.63	

FLOW PUMP CALCULATIONS	
Pump Setting (gear number)	10
Percentage of Pump Setting	100
Q - (cc/s)	1.15E-04
Height - (in)	2.982
Diameter - (in)	1.864
Pressure - (psi)	0.373
Area after consol. - (sq cm)	17.604
Gradient	3.462
Permeability k - (cm/s)	1.9E-06
Permeability k - (m/s)	1.9E-08
Back Pressure - (psi)	48.0
Cell Pressure - (psi)	307.0
Ave. Effective Stress - (psi)	258.814
Average temperature degree - (c°)	21.4

Data entry by: CAL	Date: 11/29/2017
Checked by: <i>DPM</i>	Date: <i>11/29/17</i>



PERMEABILITY TEST - BACK PRESSURE SATURATED - FLOW PUMP METHOD

ASTM D5084 Method D

CLIENT	SN3	JOB NO.	2984-2
--------	-----	---------	--------

PROJECT	Pantex BOA 70 Release 5		
PROJECT NO.	4638-05	SAMPLED	11/4/2017 By: RPD
BORING NO.	E16 PTX06-ISB123	TEST STARTED	11/20/2017 By: CAL
DEPTH	296.5'	TEST FINISHED	11/28/2017 By: CAL
SAMPLE NO.	SN3 #3	CELL NUMBER	3N
LOCATION	--	PERMEANT	Tap Water
SAMPLE TYPE	liner (split spoon)	CONF. PRES. - (psf)	37296

SATURATION DATA

Cell Press. (psi)	Back Press. (psi)	Burette Reading (cc)		Pore Press. (psi)		Change	B
		Close	Open	Close	Open		
40.0	38.0	2.4	13.1				
50.0	48.0	14.2	15.0	38.5	47.5	9.0	0.90
60.0		15.3	15.3	49.2	58.7	9.5	0.95

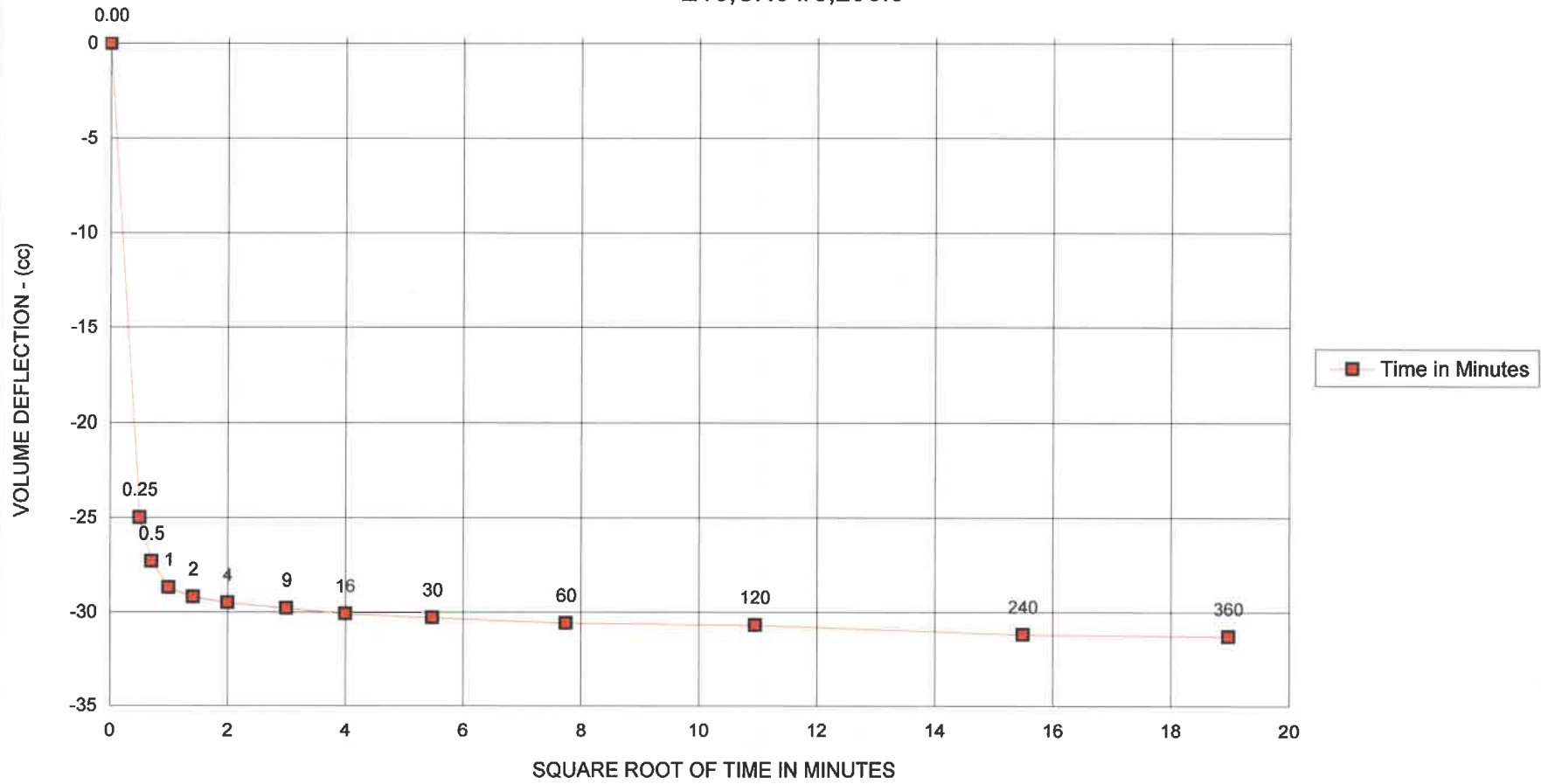
CONSOLIDATION DATA

Elapsed Time (Min)	SQRT Time (Min)	Burette Reading (cc)	Volume Def. (cc)
0.00	0.00	0.30	0.00
0.25	0.50	25.30	-25.00
0.5	0.71	27.60	-27.30
1	1.00	29.00	-28.70
2	1.41	29.50	-29.20
4	2.00	29.80	-29.50
9	3.00	30.10	-29.80
16	4.00	30.40	-30.10
30	5.48	30.60	-30.30
60	7.75	30.90	-30.60
120	10.95	31.00	-30.70
240	15.49	31.50	-31.20
360	18.97	31.60	-31.30

Initial Height - (in)	3.025	Init. Vol. - (cc)	145.95
Height Change - (in)	0.043	Vol. Change - (cc)	45.90
Ht. After Cons. - (in)	2.982	Cell Exp. - (cc)	33.31
Initial Area - (sq in)	2.944	Net Change - (cc)	12.59
Area After Cons. - sq in	2.729	Cons. Vol. - (cc)	133.36

CLIENT SN3 | JOB NO. 2984-2

PTX06-ISB123
 CONSOLIDATION DATA
 E16, SN3 #3,296.5'

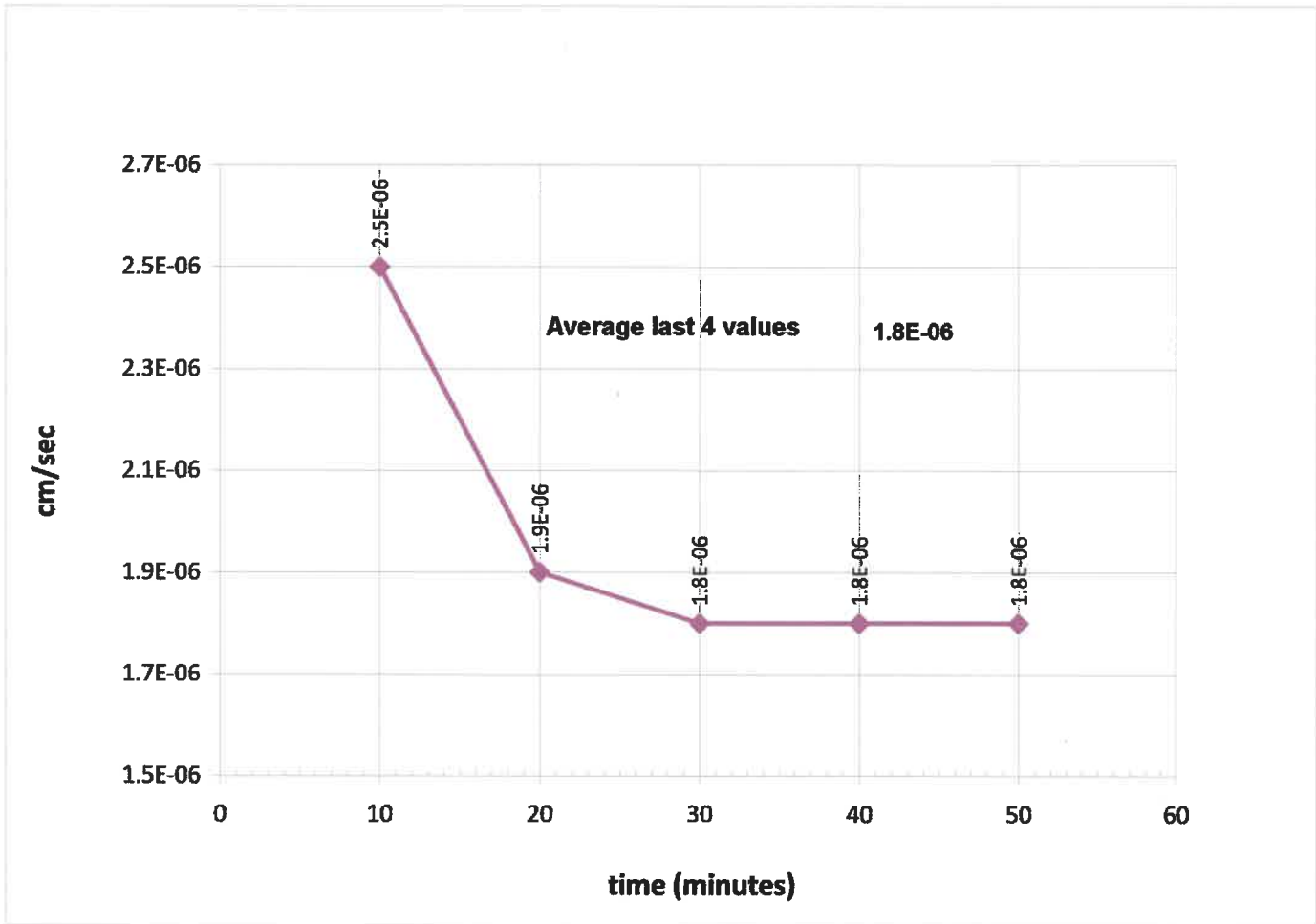




Preliminary Flow Pump Test Data ASTM D5084

Client: SN3
Job Number: 2984-2
Project: Pantex BOA 70 Release 5
Location: --
Project Number: 4638-05

Boring Number: E16 **PTX06-ISB123**
Depth: 296.5'
Sample Number: SN3 #3
Sampled Date: 11/4/2017
Test Date: 11/28/2017
Sampled By: RDD
Technician: CAL



Data Entered By: CAL
Date: 11/28/2017
File Name: 2984_2_PrelimPerm_ASTMD-5084-methodD-R0_5.xls

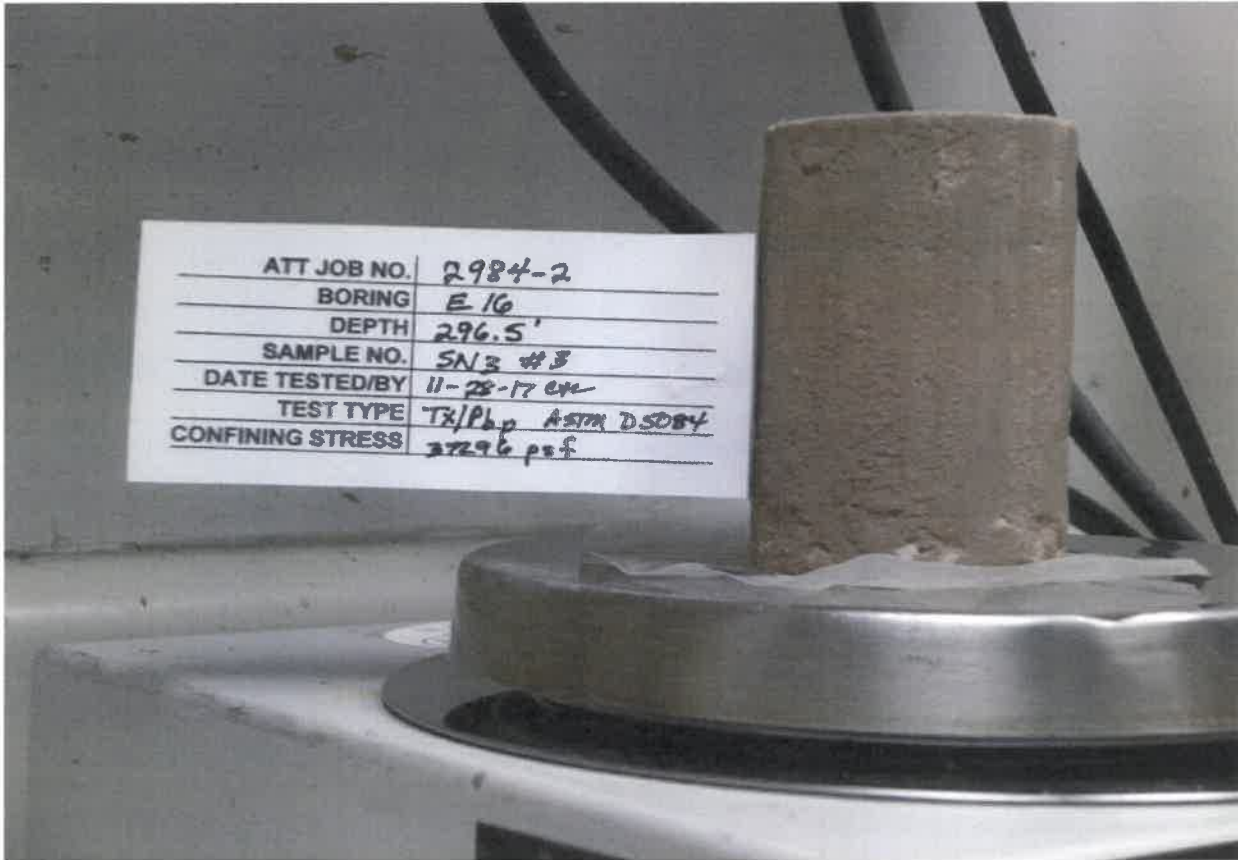
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Date: 11/29/17

Image Attachment



ADVANCED TERRA TESTING

CLIENT SN3
JOB NO. 2984-2
PROJECT Pantex BOA 70 Release 5
PROJECT NO. 4638-05
LOCATION -- PTX06-ISB123



NOTES

File name: 2984_2_Image_17_11_28_11_59_21



PERMEABILITY TEST - BACK PRESSURE SATURATED - FLOW PUMP METHOD

ASTM D5084 Method D

CLIENT	SN3	JOB NO.	2984-2
PROJECT	Pantex BOA 70 Release 5		
PROJECT NO.	4638-05	SAMPLED	11/5/2017 By: RPD
BORING NO.	E15 PTX06-ISB122	TEST STARTED	11/27/2017 By: CAL
DEPTH	289'	TEST FINISHED	12/1/2017 By: CAL
SAMPLE NO.	SN3 #5	CELL NUMBER	2
LOCATION	--	PERMEANT	Tap Water
SAMPLE TYPE	split-spoon	CONF. PRES. - (psf)	35856

MOISTURE / DENSITY DATA	BEFORE TEST	AFTER TEST
Wt. Soil + Moisture - (g)	283.33	277.47
Wt. Wet Soil & Pan - (g)	289.92	284.06
Wt. Dry Soil & Pan - (g)	237.37	237.37
Wt. Lost Moisture - (g)	52.55	46.69
Wt. of Pan Only - (g)	6.59	6.59
Wt. of Dry Soil - (g)	230.78	230.78
Moisture Content - (%)	22.8	20.2
Wet Density - (pcf)	124.2	128.1
Dry Density - (pcf)	101.1	106.6
Init. Diameter - (in)	1.925	
Init. Area - (sq in)	2.910	
Init. Height - (in)	2.987	
Vol. Bef. Consol. - (cu ft)	0.00503	
Vol. After Consol. - (cu ft)	0.00477	
Porosity - (%)	34.53	

FLOW PUMP CALCULATIONS	
Pump Setting (gear number)	12
Percentage of Pump Setting	100
Q - (cc/s)	2.30E-05
Height - (in)	2.860
Diameter - (in)	1.916
Pressure - (psi)	0.456
Area after consol. - (sq cm)	18.609
Gradient	4.413
Permeability k - (cm/s)	2.8E-07
Permeability k - (m/s)	2.8E-09
Back Pressure - (psi)	48.0
Cell Pressure - (psi)	297.0
Ave. Effective Stress - (psi)	248.772
Average temperature degree - (c°)	21.7

Data entry by:	CAL	Date:	12/04/2017
Checked by:	<i>DDM</i>	Date:	<i>12/5/17</i>



PERMEABILITY TEST - BACK PRESSURE SATURATED - FLOW PUMP METHOD

ASTM D5084 Method D

CLIENT	SN3	JOB NO.	2984-2
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PROJECT	Pantex BOA 70 Release 5		
PROJECT NO.	4638-05	SAMPLED	11/5/2017 By: RPD
BORING NO.	E15 PTX06-ISB122	TEST STARTED	11/27/2017 By: CAL
DEPTH	289'	TEST FINISHED	12/1/2017 By: CAL
SAMPLE NO.	SN3 #5	CELL NUMBER	2
LOCATION	--	PERMEANT	Tap Water
SAMPLE TYPE	split-spoon	CONF. PRES. - (psf)	35856

SATURATION DATA

Cell Press. (psi)	Back Press. (psi)	Burette Reading (cc)		Pore Press. (psi)		Change	B
		Close	Open	Close	Open		
40.0	38.0	1.4	15.2				
50.0	48.0	14.1	15.4	38.4	47.3	8.9	0.89
60.0		15.7	16.0	48.4	58.0	9.6	0.96

CONSOLIDATION DATA

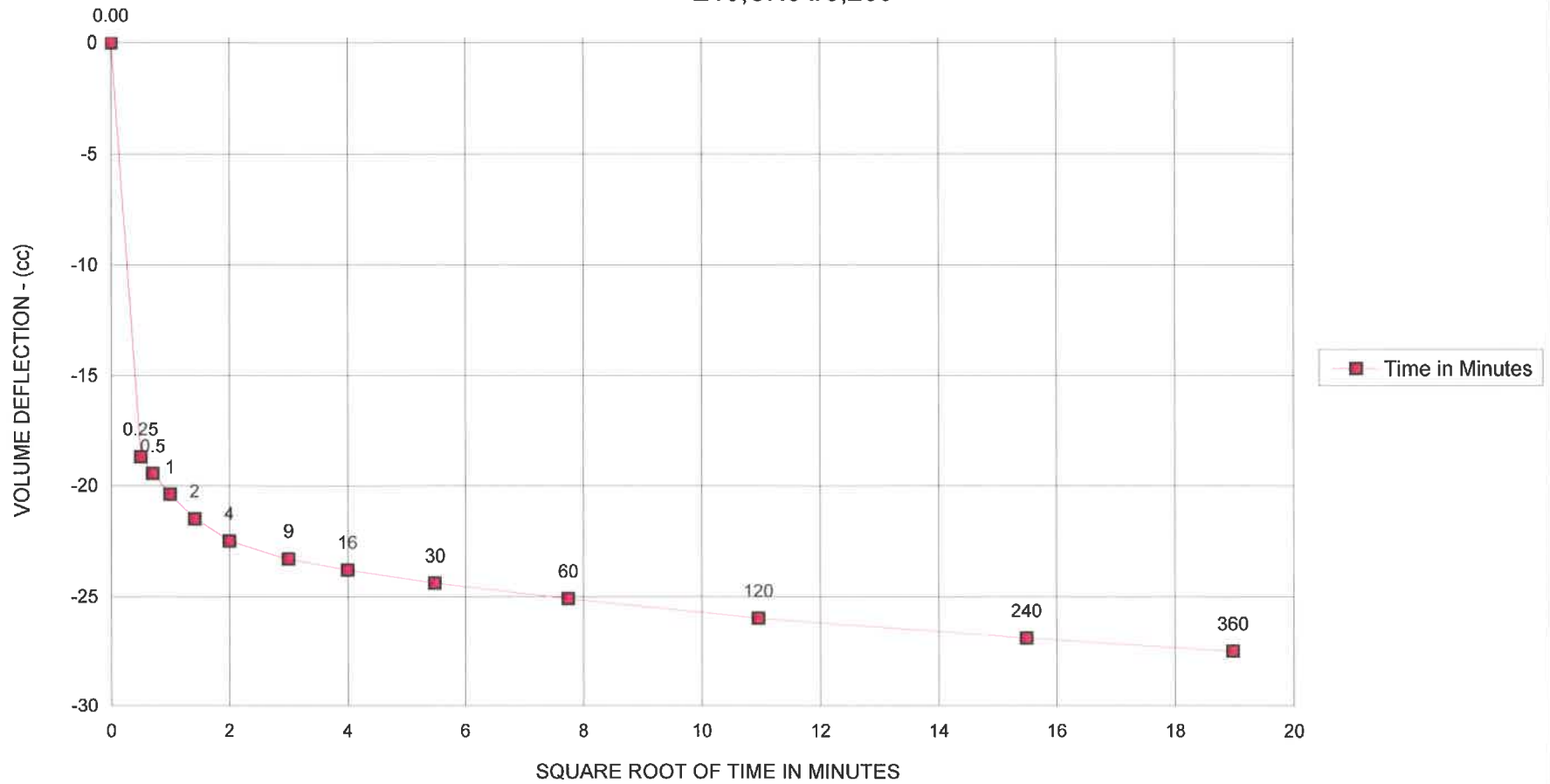
Elapsed Time (Min)	SQRT Time (Min)	Burette Reading (cc)	Volume Def. (cc)
0.00	0.00	0.20	0.00
0.25	0.50	18.90	-18.70
0.5	0.71	19.65	-19.45
1	1.00	20.60	-20.40
2	1.41	21.70	-21.50
4	2.00	22.70	-22.50
9	3.00	23.50	-23.30
16	4.00	24.00	-23.80
30	5.48	24.60	-24.40
60	7.75	25.30	-25.10
120	10.95	26.20	-26.00
240	15.49	27.10	-26.90
360	18.97	27.70	-27.50

Initial Height - (in)	2.987	Init. Vol. - (cc)	142.48
Height Change - (in)	0.127	Vol. Change - (cc)	59.30
Ht. After Cons. - (in)	2.860	Cell Exp. - (cc)	52.03
Initial Area - (sq in)	2.910	Net Change - (cc)	7.27
Area After Cons. - sq in	2.884	Cons. Vol. - (cc)	135.21

CLIENT SN3

JOB NO. 2984-2

PTX06-**ISB122**
 CONSOLIDATION DATA
 E15,SN3 #5,289'

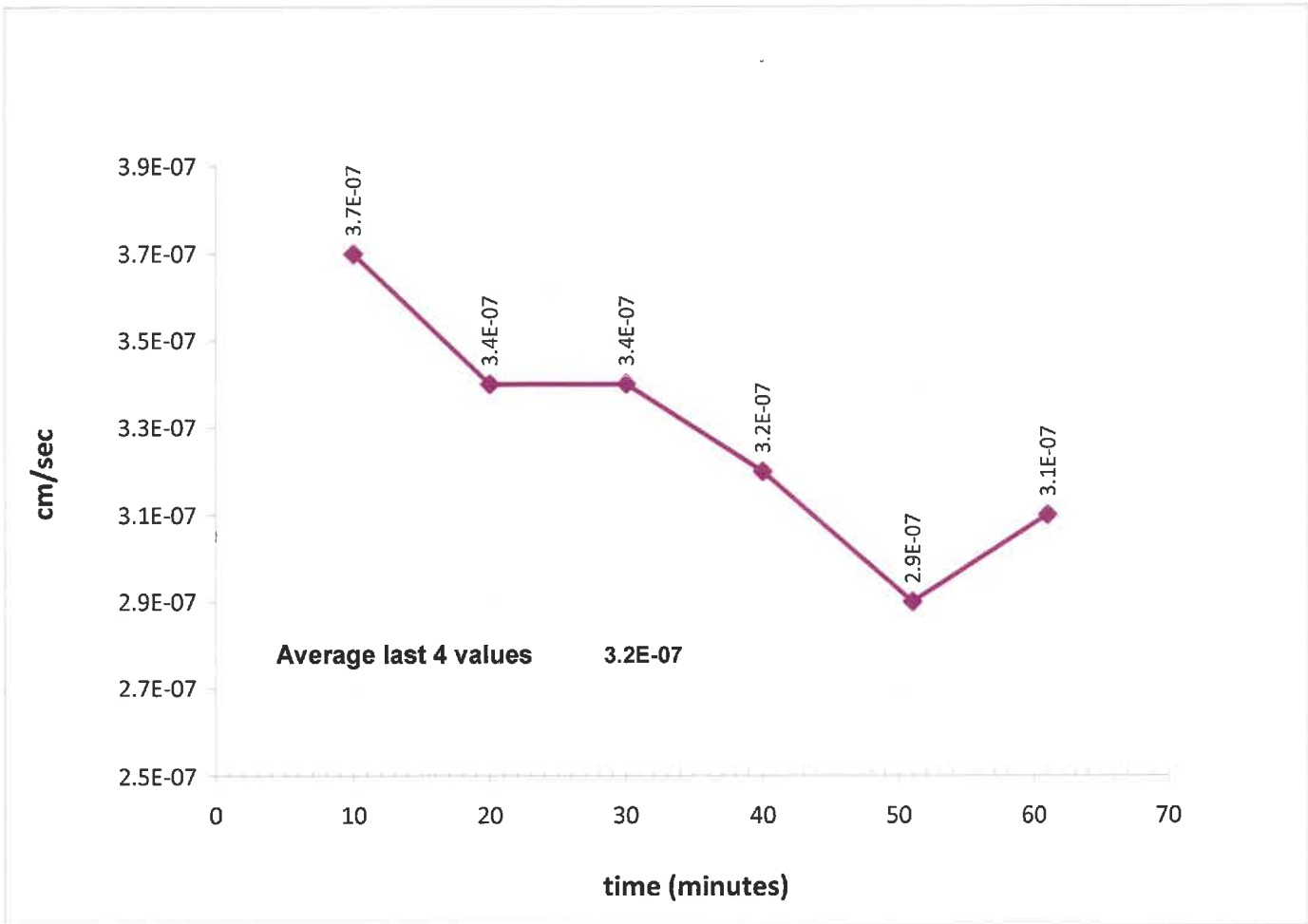




Preliminary Flow Pump Test Data ASTM D5084

Client: SN3
Job Number: 2984-2
Project: Pantex BOA 70 Release 5
Location: --
Project Number: 4638-05

Boring Number: E15 **PTX06-ISB122**
Depth: 289'
Sample Number: SN3 #3
Sampled Date: 11/5/2017
Test Date: 12/1/2017
Sampled By: RPD
Technician: CAL



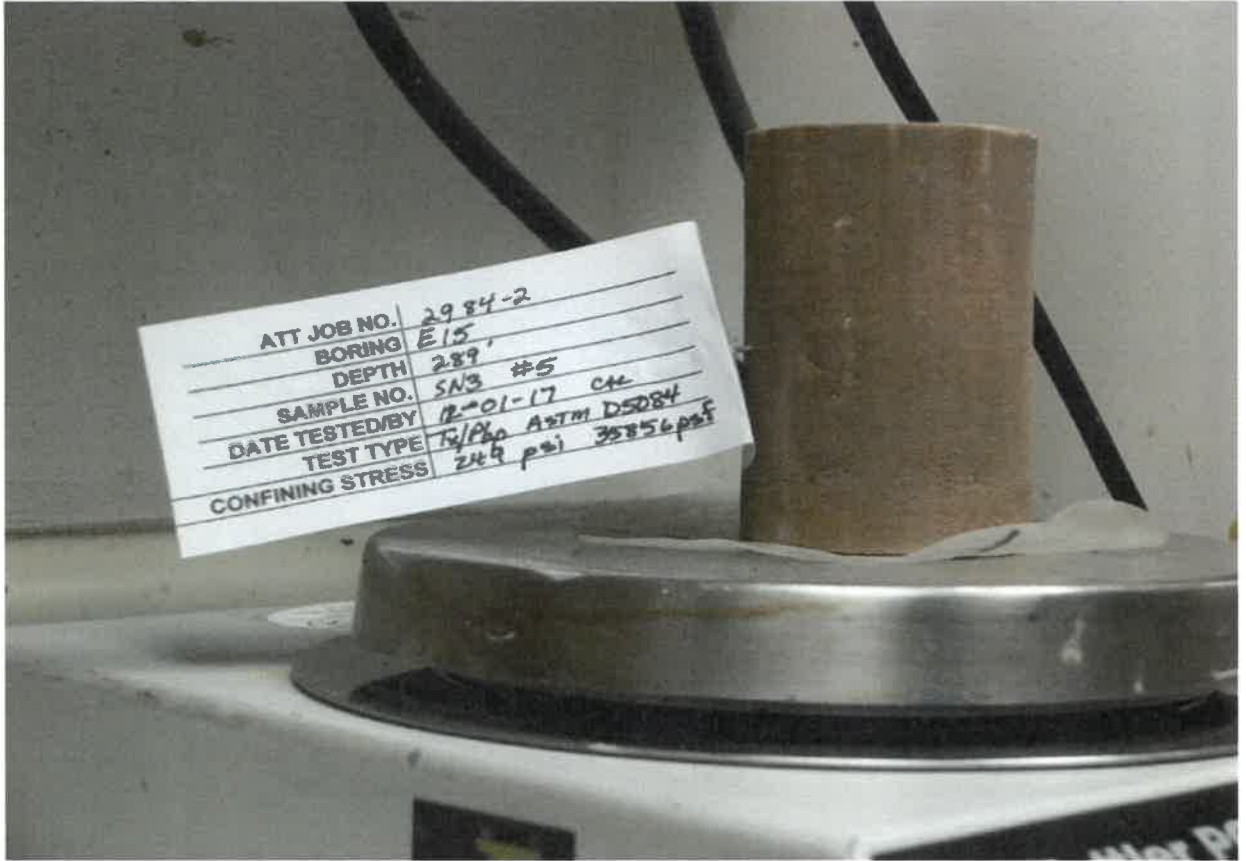
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Date: 12/6/2017
File Name: 2984_2_PrelimPerm_ASTMD-5084-methodD-R0_6.xls

Checked By: DRM
Date: 12/6/17



ADVANCED TERRA TESTING

CLIENT SN3
JOB NO. 2984-2
PROJECT Pantex BOA 70 Release 5
PROJECT NO. 4638-05
LOCATION -- PTX06-ISB122



NOTES



PERMEABILITY TEST - BACK PRESSURE SATURATED - FLOW PUMP METHOD

ASTM D5084 Method D

CLIENT	SN3	JOB NO.	2984-2
--------	-----	---------	--------

PROJECT	Pantex BOA 70 Release 5		
PROJECT NO.	4638-05	SAMPLED	11/7/2017 By: RPD
BORING NO.	E14 PTX06-ISB121	TEST STARTED	11/30/2017 By: CAL
DEPTH	288'	TEST FINISHED	12/5/2017 By: CAL
SAMPLE NO.	SN3 #7	CELL NUMBER	1N
LOCATION	--	PERMEANT	Tap Water
SAMPLE TYPE	split spoon	CONF. PRES. - (psf)	35784

MOISTURE / DENSITY DATA	BEFORE TEST	AFTER TEST
Wt. Soil + Moisture - (g)	285.85	278.88
Wt. Wet Soil & Pan - (g)	292.58	285.61
Wt. Dry Soil & Pan - (g)	240.68	240.68
Wt. Lost Moisture - (g)	51.90	44.93
Wt. of Pan Only - (g)	6.73	6.73
Wt. of Dry Soil - (g)	233.95	233.95
Moisture Content - (%)	22.2	19.2
Wet Density - (pcf)	124.2	136.3
Dry Density - (pcf)	101.7	114.4
Init. Diameter - (in)	1.929	
Init. Area - (sq in)	2.922	
Init. Height - (in)	2.999	
Vol. Bef. Consol. - (cu ft)	0.00507	
Vol. After Consol. - (cu ft)	0.00451	
Porosity - (%)	35.17	

FLOW PUMP CALCULATIONS	
Pump Setting (gear number)	12
Percentage of Pump Setting	100
Q - (cc/s)	2.30E-05
Height - (in)	2.866
Diameter - (in)	1.861
Pressure - (psi)	0.538
Area after consol. - (sq cm)	17.544
Gradient	5.196
Permeability k - (cm/s)	2.5E-07
Permeability k - (m/s)	2.5E-09
Back Pressure - (psi)	48.0
Cell Pressure - (psi)	296.5
Ave. Effective Stress - (psi)	248.231
Average temperature degree - (c°)	22.5

Data entry by: CAL	Date: 12/06/2017
Checked by: <i>DPM</i>	Date: <i>12/6/17</i>



PERMEABILITY TEST - BACK PRESSURE SATURATED - FLOW PUMP METHOD

ASTM D5084 Method D

CLIENT	SN3	JOB NO.	2984-2
--------	-----	---------	--------

PROJECT	Pantex BOA 70 Release 5		
PROJECT NO.	4638-05	SAMPLED	11/7/2017 By: RPD
BORING NO.	E14 PTX06-ISB121	TEST STARTED	11/30/2017 By: CAL
DEPTH	288'	TEST FINISHED	12/5/2017 By: CAL
SAMPLE NO.	SN3 #7	CELL NUMBER	1N
LOCATION	--	PERMEANT	Tap Water
SAMPLE TYPE	split spoon	CONF. PRES. - (psf)	35784

SATURATION DATA

Cell Press. (psi)	Back Press. (psi)	Burette Reading (cc)		Pore Press. (psi)		Change	B
		Close	Open	Close	Open		
40.0	38.0	1.2	10.2				
50.0	48.0	10.4	11.1	39.1	47.9	8.8	0.88
60.0		12.1	12.1	48.5	58.2	9.7	0.97

CONSOLIDATION DATA

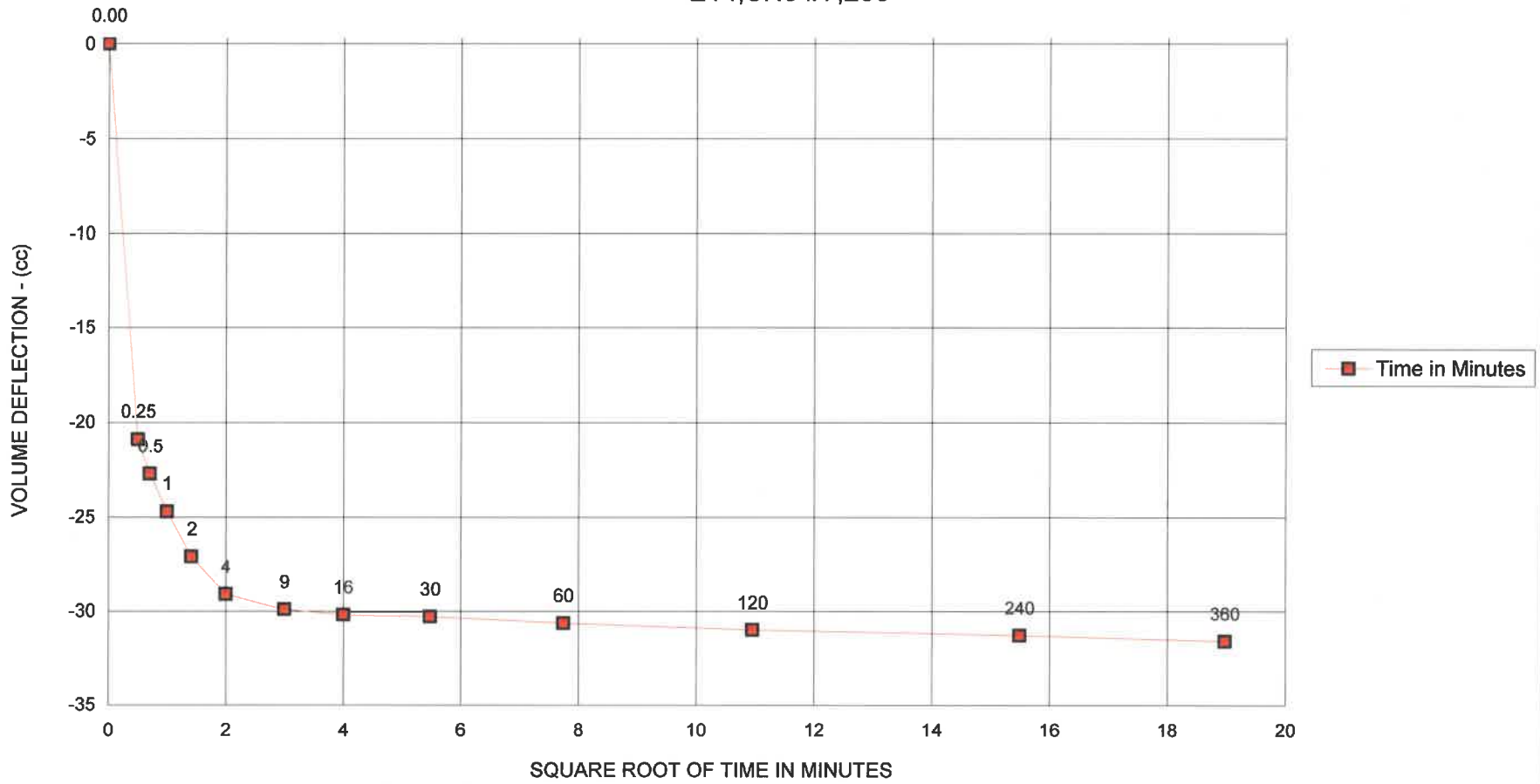
Elapsed Time (Min)	SQRT Time (Min)	Burette Reading (cc)	Volume Def. (cc)
0.00	0.00	0.20	0.00
0.25	0.50	21.10	-20.90
0.5	0.71	22.90	-22.70
1	1.00	24.90	-24.70
2	1.41	27.30	-27.10
4	2.00	29.30	-29.10
9	3.00	30.10	-29.90
16	4.00	30.40	-30.20
30	5.48	30.50	-30.30
60	7.75	30.85	-30.65
120	10.95	31.20	-31.00
240	15.49	31.50	-31.30
360	18.97	31.80	-31.60

Initial Height - (in)	2.999	Init. Vol. - (cc)	143.65
Height Change - (in)	0.133	Vol. Change - (cc)	43.30
Ht. After Cons. - (in)	2.866	Cell Exp. - (cc)	27.39
Initial Area - (sq in)	2.922	Net Change - (cc)	15.91
Area After Cons. - sq in	2.719	Cons. Vol. - (cc)	127.74

CLIENT SN3

JOB NO. 2984-2

PTX06-ISB121
CONSOLIDATION DATA
E14,SN3 #7,288'

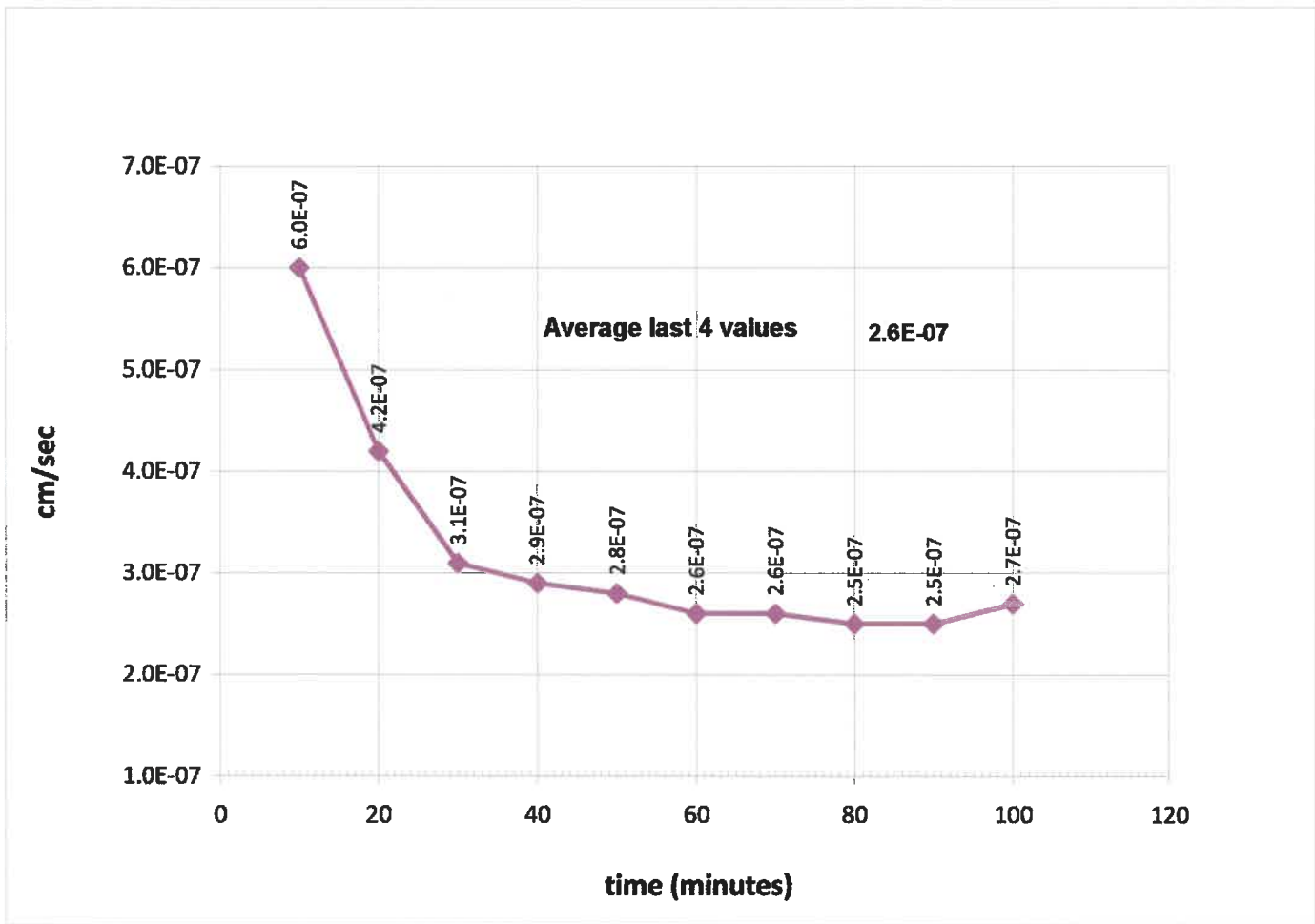




Preliminary Flow Pump Test Data ASTM D5084

Client: SN3
Job Number: 2984-2
Project: Pantex BOA 70 Release 5
Location: --
Project Number: 4638-05

Boring Number: E 14 **PTX06-ISB121**
Depth: 288'
Sample Number: SN3 #7
Sampled Date: 11/7/2017
Test Date: 12/5/2017
Sampled By: RPD
Technician: CAL



Data Entered By: CAL
Date: 12/5/2017
File Name: 2984_2_PrelimPerm_ASTMD-5084-methodD-R0_8.xls

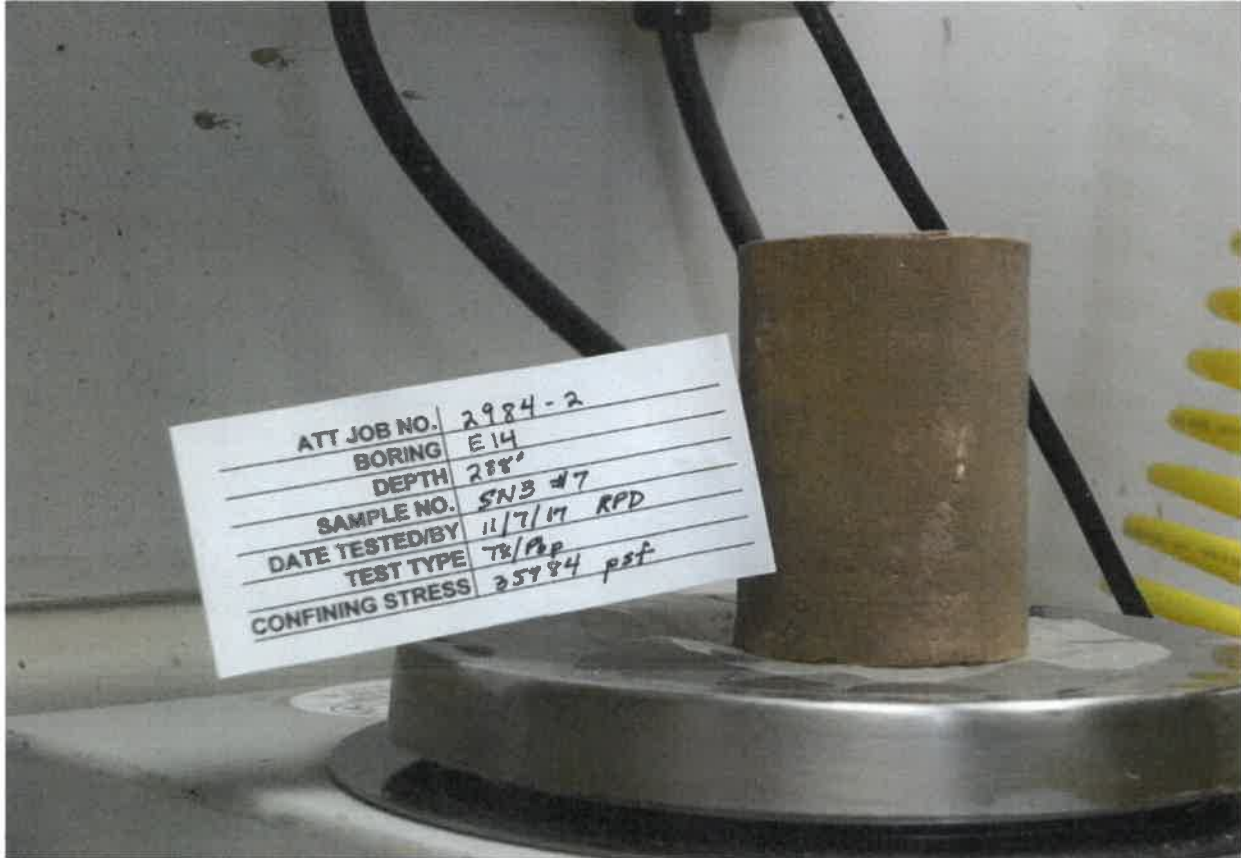
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Date: 12/6/17



Image Attachment

ADVANCED TERRA TESTING

CLIENT SN3
JOB NO. 2984-2
PROJECT Pantex BOA 70 Release 5
PROJECT NO. 4638-05
LOCATION -- PTX06-ISB121



NOTES

File name: 2984_2_Image_17_12_05_14_44_41



PERMEABILITY TEST - BACK PRESSURE SATURATED - FLOW PUMP METHOD

ASTM D5084 Method D

CLIENT	SN3	JOB NO.	2984-2
--------	-----	---------	--------

PROJECT	Pantex BOA 70 Release 5		
PROJECT NO.	4638-05	SAMPLED	11/29/2017 By: RER
BORING NO.	E 13 PTX06-ISB120	TEST STARTED	12/15/2017 By: DPM
DEPTH	284'	TEST FINISHED	12/20/2017 By: DPM
SAMPLE NO.	2	CELL NUMBER	2N
LOCATION	--	PERMEANT	Tap Water
SAMPLE TYPE	split spoon	CONF. PRES. - (psf)	35798

MOISTURE / DENSITY DATA	BEFORE TEST	AFTER TEST
Wt. Soil + Moisture - (g)	285.87	288.94
Wt. Wet Soil & Pan - (g)	292.41	295.48
Wt. Dry Soil & Pan - (g)	249.32	249.32
Wt. Lost Moisture - (g)	43.09	46.16
Wt. of Pan Only - (g)	6.54	6.54
Wt. of Dry Soil - (g)	242.78	242.78
Moisture Content - (%)	17.7	19.0
Wet Density - (pcf)	126.1	133.1
Dry Density - (pcf)	107.1	111.9
Init. Diameter - (in)	1.918	
Init. Area - (sq in)	2.889	
Init. Height - (in)	2.990	
Vol. Bef. Consol. - (cu ft)	0.00500	
Vol. After Consol. - (cu ft)	0.00478	
Porosity - (%)	34.07	

FLOW PUMP CALCULATIONS	
Pump Setting (gear number)	12
Percentage of Pump Setting	100
Q - (cc/s)	2.30E-05
Height - (in)	2.871
Diameter - (in)	1.915
Pressure - (psi)	0.781
Area after consol. - (sq cm)	18.578
Gradient	7.530
Permeability k - (cm/s)	1.6E-07
Permeability k - (m/s)	1.6E-09
Back Pressure - (psi)	48.0
Cell Pressure - (psi)	296.6
Ave. Effective Stress - (psi)	248.210
Average temperature degree - (c°)	22.7

Data entry by:	CAL	Date:	01/02/2018
Checked by:		Date:	1/9/18



PERMEABILITY TEST - BACK PRESSURE SATURATED - FLOW PUMP METHOD

ASTM D5084 Method D

CLIENT	SN3	JOB NO.	2984-2
PROJECT	Pantex BOA 70 Release 5		
PROJECT NO.	4638-05	SAMPLED	11/29/2017 By: RER
BORING NO.	E 13 PTX06-ISB120	TEST STARTED	12/15/2017 By: DPM
DEPTH	284'	TEST FINISHED	12/20/2017 By: DPM
SAMPLE NO.	2	CELL NUMBER	2N
LOCATION	--	PERMEANT	Tap Water
SAMPLE TYPE	split spoon	CONF. PRES. - (psf)	35798

SATURATION DATA

Cell Press. (psi)	Back Press. (psi)	Burette Reading (cc)		Pore Press. (psi)		Change	B
		Close	Open	Close	Open		
40.0	38.0	1.7	10.9				
50.0	48.0	8.2	8.9	38.6	47.5	8.9	0.89
60.0		9.1	9.1	48.6	58.3	9.7	0.97

CONSOLIDATION DATA

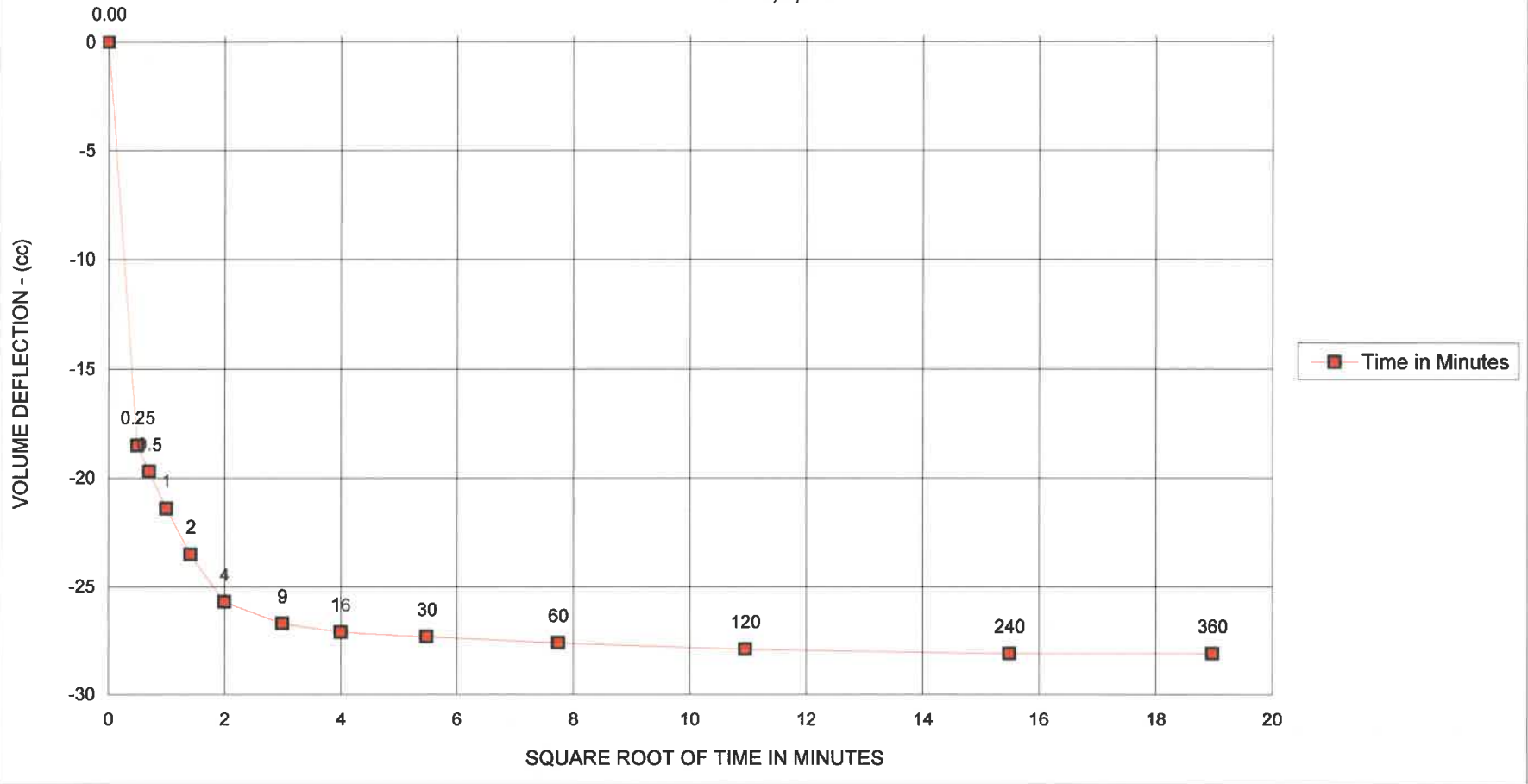
Elapsed Time (Min)	SQRT Time (Min)	Burette Reading (cc)	Volume Def. (cc)
0.00	0.00	0.30	0.00
0.25	0.50	18.80	-18.50
0.5	0.71	20.00	-19.70
1	1.00	21.70	-21.40
2	1.41	23.80	-23.50
4	2.00	26.00	-25.70
9	3.00	27.00	-26.70
16	4.00	27.40	-27.10
30	5.48	27.60	-27.30
60	7.75	27.90	-27.60
120	10.95	28.20	-27.90
240	15.49	28.40	-28.10
360	18.97	28.40	-28.10

Initial Height - (in)	2.990	Init. Vol. - (cc)	141.59
Height Change - (in)	0.119	Vol. Change - (cc)	36.40
Ht. After Cons. - (in)	2.871	Cell Exp. - (cc)	30.31
Initial Area - (sq in)	2.889	Net Change - (cc)	6.09
Area After Cons. - sq in	2.880	Cons. Vol. - (cc)	135.50

CLIENT SN3

JOB NO. 2984-2

PTX06-ISB120
CONSOLIDATION DATA
E 13,2,284'



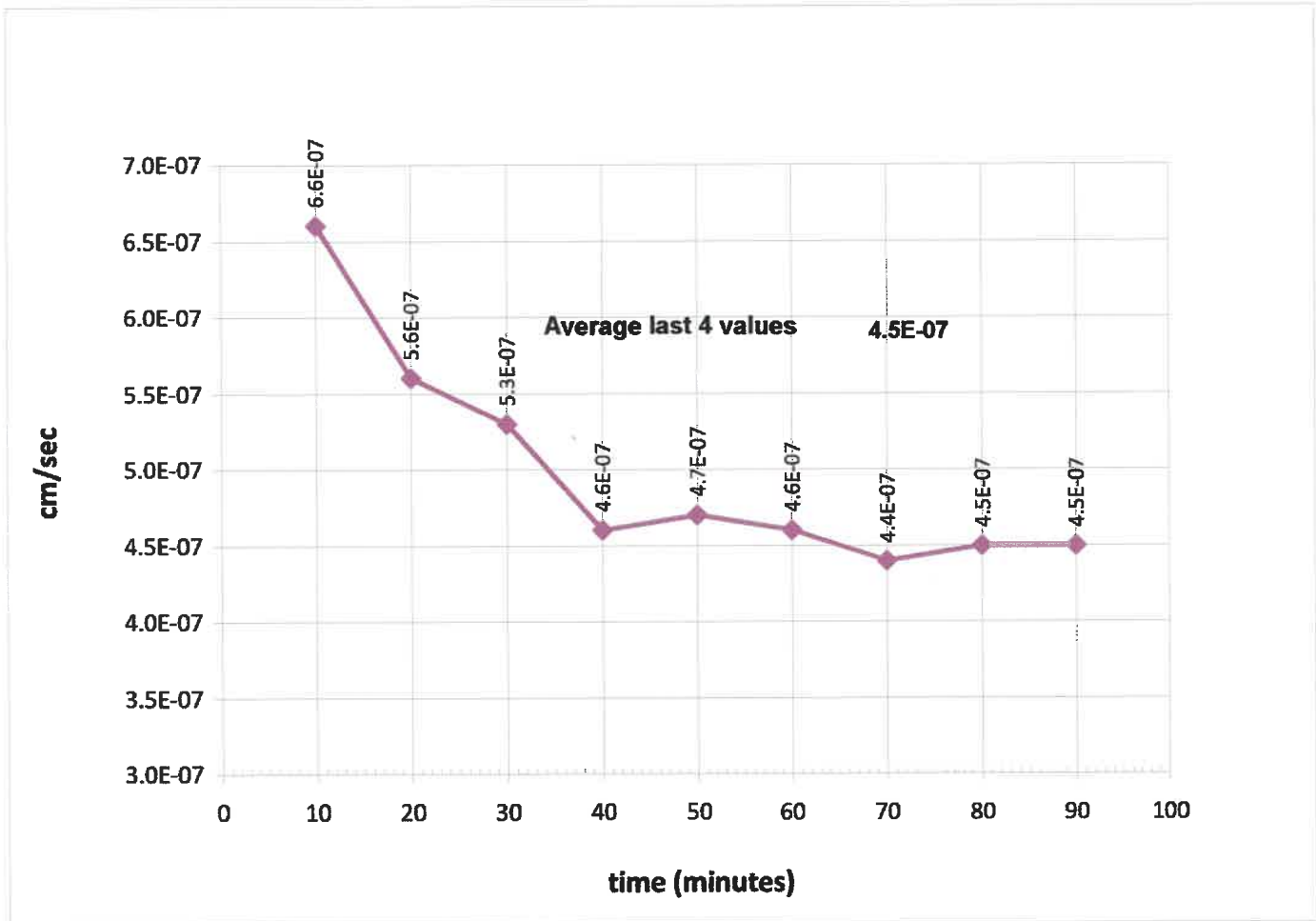


Preliminary Flow Pump Test Data ASTM D5084

Client: SN3
Job Number: 2984-2
Project: Pantex BOA 70 Release 5
Location: -
Project Number: 4638-05

Boring Number: E13 **PTX06-ISB120**
Depth: 284'
Sample Number: 2
Sampled Date: 11/29/2017
Test Date: 12/20/2017

Sampled By: RER
Technician: DPM



Data Entered By: DPM
Date: 12/20/2017
File Name: 2984_2_PrelimPerm_ASTMD-5084-methodD-R0_17.xls

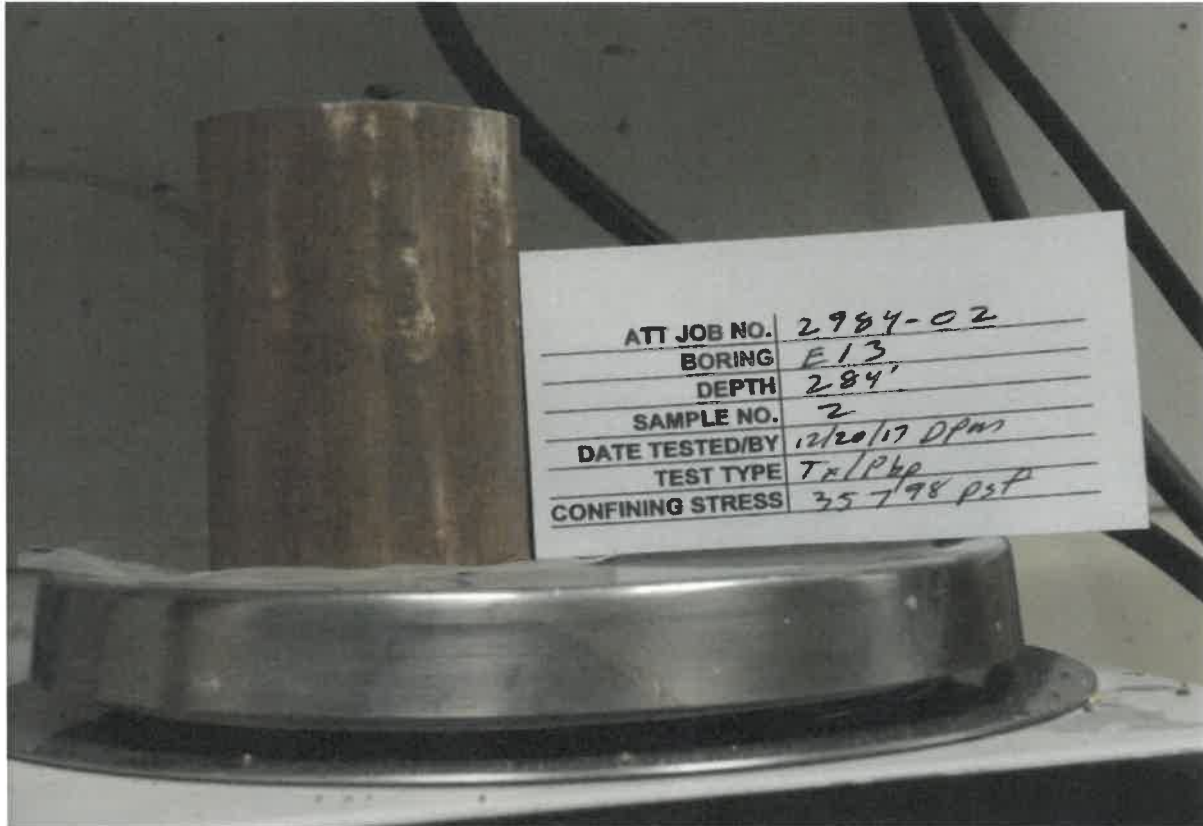
Checked By: KR
Date: 1/9/18



ADVANCED TERRA TESTING

Image Attachment

CLIENT SN3
JOB NO. 2984-2
PROJECT Pantex BOA 70 Release 5
PROJECT NO. 4638-05
LOCATION -- PTX06-ISB120



NOTES

File name: 2984_2_Image_18_01_02_09_08_13



PERMEABILITY TEST - BACK PRESSURE SATURATED - FLOW PUMP METHOD

ASTM D5084 Method D

CLIENT	SN3	JOB NO.	2984-2
PROJECT	Pantex BOA 70 Release 5		
PROJECT NO.	4638-05	SAMPLED	11/16/2017 By: JF
BORING NO.	E12 PTX06-ISB119	TEST STARTED	12/7/2017 By: CAL
DEPTH	283.8'	TEST FINISHED	12/15/2017 By: CAL
SAMPLE NO.	--	CELL NUMBER	2
LOCATION	--	PERMEANT	Tap Water
SAMPLE TYPE	split spoon	CONF. PRES. - (psf)	34272

MOISTURE / DENSITY DATA	BEFORE TEST	AFTER TEST
Wt. Soil + Moisture - (g)	278.34	277.64
Wt. Wet Soil & Pan - (g)	284.97	284.27
Wt. Dry Soil & Pan - (g)	237.25	237.25
Wt. Lost Moisture - (g)	47.72	47.02
Wt. of Pan Only - (g)	6.63	6.63
Wt. of Dry Soil - (g)	230.62	230.62
Moisture Content - (%)	20.7	20.4
Wet Density - (pcf)	120.8	126.3
Dry Density - (pcf)	100.1	104.9
Init. Diameter - (in)	1.931	
Init. Area - (sq in)	2.929	
Init. Height - (in)	2.998	
Vol. Bef. Consol. - (cu ft)	0.00508	
Vol. After Consol. - (cu ft)	0.00485	
Porosity - (%)	34.25	

FLOW PUMP CALCULATIONS	
Pump Setting (gear number)	12
Percentage of Pump Setting	100
Q - (cc/s)	2.30E-05
Height - (in)	2.870
Diameter - (in)	1.928
Pressure - (psi)	0.209
Area after consol. - (sq cm)	18.828
Gradient	2.016
Permeability k - (cm/s)	6.1E-07
Permeability k - (m/s)	6.1E-09
Back Pressure - (psi)	68.0
Cell Pressure - (psi)	306.0
Ave. Effective Stress - (psi)	237.896
Average temperature degree - (c°)	22.3

Data entry by:	CAL	Date:	01/02/2018
Checked by:	<i>KR</i>	Date:	<i>1/8/18</i>



PERMEABILITY TEST - BACK PRESSURE SATURATED - FLOW PUMP METHOD

ASTM D5084 Method D

CLIENT	SN3	JOB NO.	2984-2
PROJECT	Pantex BOA 70 Release 5		
PROJECT NO.	4638-05	SAMPLED	11/16/2017 By: JF
BORING NO.	E12 PTX06-ISB119	TEST STARTED	12/7/2017 By: CAL
DEPTH	283.8'	TEST FINISHED	12/15/2017 By: CAL
SAMPLE NO.	--	CELL NUMBER	2
LOCATION	--	PERMEANT	Tap Water
SAMPLE TYPE	split spoon	CONF. PRES. - (psf)	34272

SATURATION DATA

Cell Press. (psi)	Back Press. (psi)	Burette Reading (cc)		Pore Press. (psi)		Change	B
		Close	Open	Close	Open		
40.0	38.0	2.1	14.5				
50.0	48.0	14.2	15.2	38.4	47.0	8.6	0.86
60.0	58.0	15.6	16.6	48.7	57.6	8.9	0.89
70.0	68.0	16.9	17.9	58.6	67.6	9.0	0.90
80.0		18.0	18.2	68.3	78.0	9.7	0.97

CONSOLIDATION DATA

Elapsed Time (Min)	SQRT Time (Min)	Burette Reading (cc)	Volume Defl. (cc)
0.00	0.00	0.30	0.00
0.25	0.50	28.60	-28.30
0.5	0.71	30.90	-30.60
1	1.00	33.10	-32.80
2	1.41	34.50	-34.20
4	2.00	35.15	-34.85
9	3.00	35.85	-35.55
16	4.00	36.35	-36.05
30	5.48	37.00	-36.70
60	7.75	37.85	-37.55
120	10.95	38.80	-38.50
240	15.49	39.90	-39.60
360	18.97	40.65	-40.35

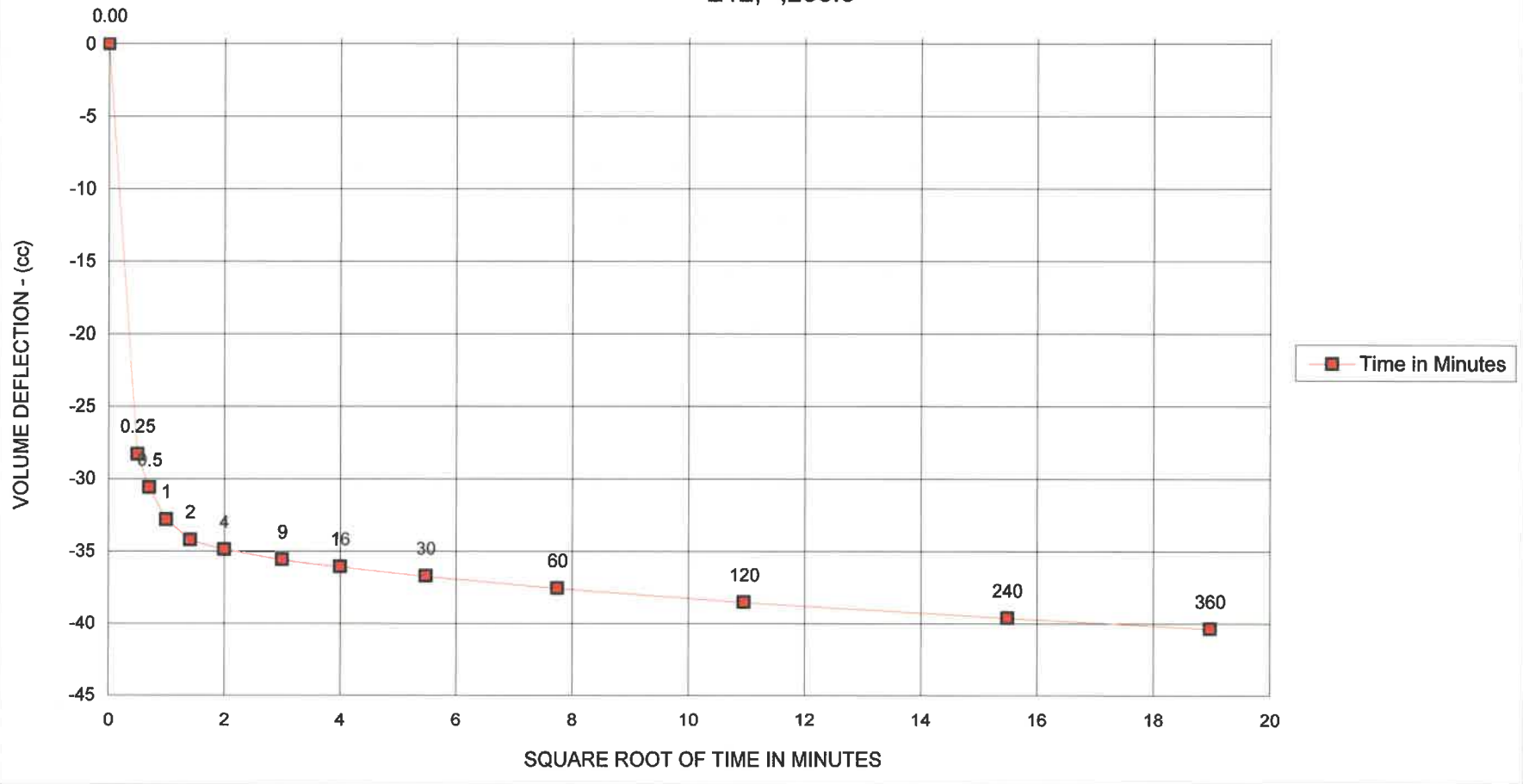
Initial Height - (in)	2.998	Init. Vol. - (cc)	143.90
Height Change - (in)	0.128	Vol. Change - (cc)	59.95
Ht. After Cons. - (in)	2.870	Cell Exp. - (cc)	53.32
Initial Area - (sq in)	2.929	Net Change - (cc)	6.63
Area After Cons. - sq in	2.918	Cons. Vol. - (cc)	137.27

CLIENT SN3	JOB NO. 2984-2
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PTX06-ISB119

CONSOLIDATION DATA

E12,--,283.8'

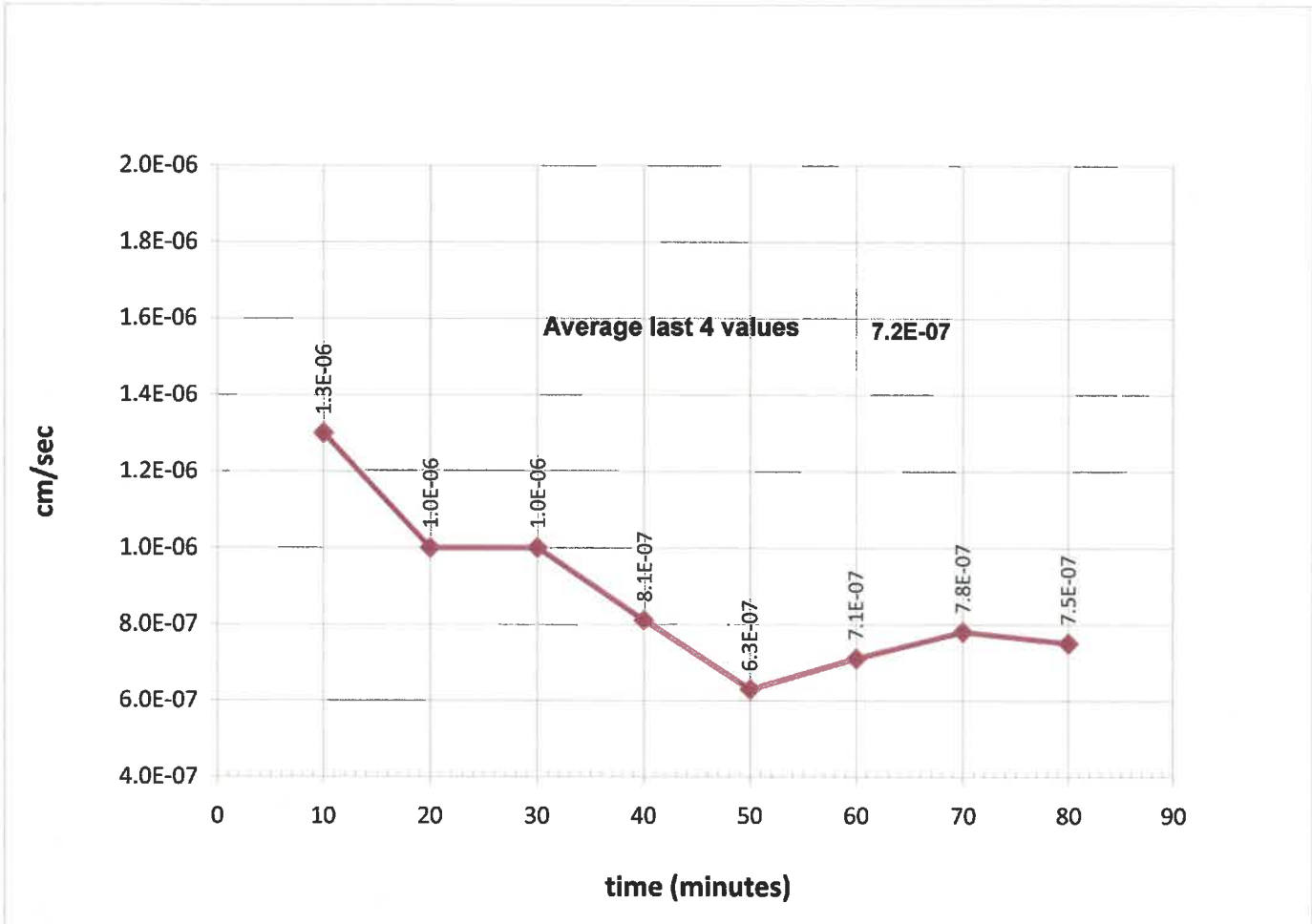




Preliminary Flow Pump Test Data ASTM D5084

Client: SN3
Job Number: 2984-2
Project: Pantex BOA 70 Release 5
Location: -
Project Number: 4638-05

Boring Number: E12 **PTX06-ISB119**
Depth: 283.8'
Sample Number: --
Sampled Date: 11/16/2017
Test Date: 12/15/2017
Sampled By: JF
Technician: CAL



Data Entered By: CAL
Date: 12/15/2017
File Name: 2984_2_PrelimPerm_ASTMD-5084-methodD-R0_14.xls

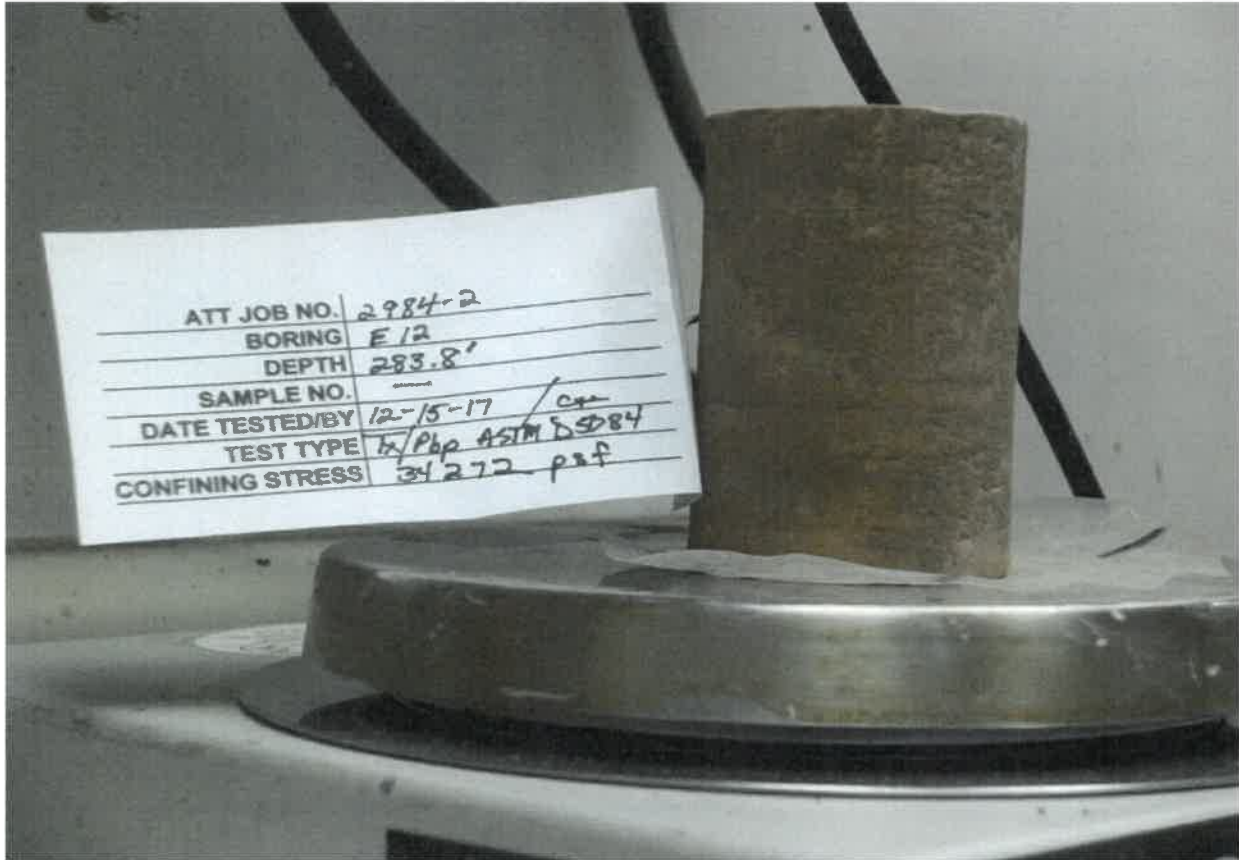
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Date: 1/3/20



Image Attachment

ADVANCED TERRA TESTING

CLIENT SN3
JOB NO. 2984-2
PROJECT Pantex BOA 70 Release 5
PROJECT NO. 4638-05
LOCATION -- PTX06-ISB119



NOTES

File name: 2984_2_Image_17_12_15_14_59_26



PERMEABILITY TEST - BACK PRESSURE SATURATED - FLOW PUMP METHOD

ASTM D5084 Method D

CLIENT	SN3	JOB NO.	2984-2
PROJECT	Pantex BOA 70 Release 5		
PROJECT NO.	4638-05	SAMPLED	11/15/2017 By: JF
BORING NO.	E11 PTX06-ISB118	TEST STARTED	12/5/2017 By: CAL
DEPTH	284.5'	TEST FINISHED	12/13/2017 By: CAL
SAMPLE NO.	--	CELL NUMBER	1N
LOCATION	--	PERMEANT	Tap Water
SAMPLE TYPE	split spoon	CONF. PRES. - (psf)	35035

MOISTURE / DENSITY DATA	BEFORE TEST	AFTER TEST
Wt. Soil + Moisture - (g)	282.87	283.04
Wt. Wet Soil & Pan - (g)	289.55	289.72
Wt. Dry Soil & Pan - (g)	242.93	242.93
Wt. Lost Moisture - (g)	46.62	46.79
Wt. of Pan Only - (g)	6.68	6.68
Wt. of Dry Soil - (g)	236.25	236.25
Moisture Content - (%)	19.7	19.8
Wet Density - (pcf)	123.2	134.6
Dry Density - (pcf)	102.9	112.3
Init. Diameter - (in)	1.930	
Init. Area - (sq in)	2.926	
Init. Height - (in)	2.991	
Vol. Bef. Consol. - (cu ft)	0.00506	
Vol. After Consol. - (cu ft)	0.00464	
Porosity - (%)	35.63	

FLOW PUMP CALCULATIONS	
Pump Setting (gear number)	12
Percentage of Pump Setting	100
Q - (cc/s)	2.30E-05
Height - (in)	2.859
Diameter - (in)	1.889
Pressure - (psi)	0.214
Area after consol. - (sq cm)	18.080
Gradient	2.072
Permeability k - (cm/s)	6.1E-07
Permeability k - (m/s)	6.1E-09
Back Pressure - (psi)	68.0
Cell Pressure - (psi)	311.3
Ave. Effective Stress - (psi)	243.193
Average temperature degree - (c°)	22.1

Data entry by: CAL	Date: 12/14/2017
Checked by: <i>KR</i>	Date: <i>1/9/18</i>



PERMEABILITY TEST - BACK PRESSURE SATURATED - FLOW PUMP METHOD

ASTM D5084 Method D

CLIENT	SN3	JOB NO.	2984-2
PROJECT	Pantex BOA 70 Release 5		
PROJECT NO.	4638-05	SAMPLED	11/15/2017 By: JF
BORING NO.	E11 PTX06-ISB118	TEST STARTED	12/5/2017 By: CAL
DEPTH	284.5'	TEST FINISHED	12/13/2017 By: CAL
SAMPLE NO.	--	CELL NUMBER	1N
LOCATION	--	PERMEANT	Tap Water
SAMPLE TYPE	split spoon	CONF. PRES. - (psf)	35035

SATURATION DATA

Cell Press. (psi)	Back Press. (psi)	Burette Reading (cc)		Pore Press. (psi)		Change	B
		Close	Open	Close	Open		
40.0	38.0	1.5	8.9				
50.0	48.0	7.3	8.2	39.2	47.8	8.6	0.86
60.0	58.0	8.2	8.9	49.1	58.1	9.0	0.90
70.0	68.0	9.0	9.8	59.1	68.3	9.2	0.92
80.0		9.9	10.0	68.8	78.5	9.7	0.97

CONSOLIDATION DATA

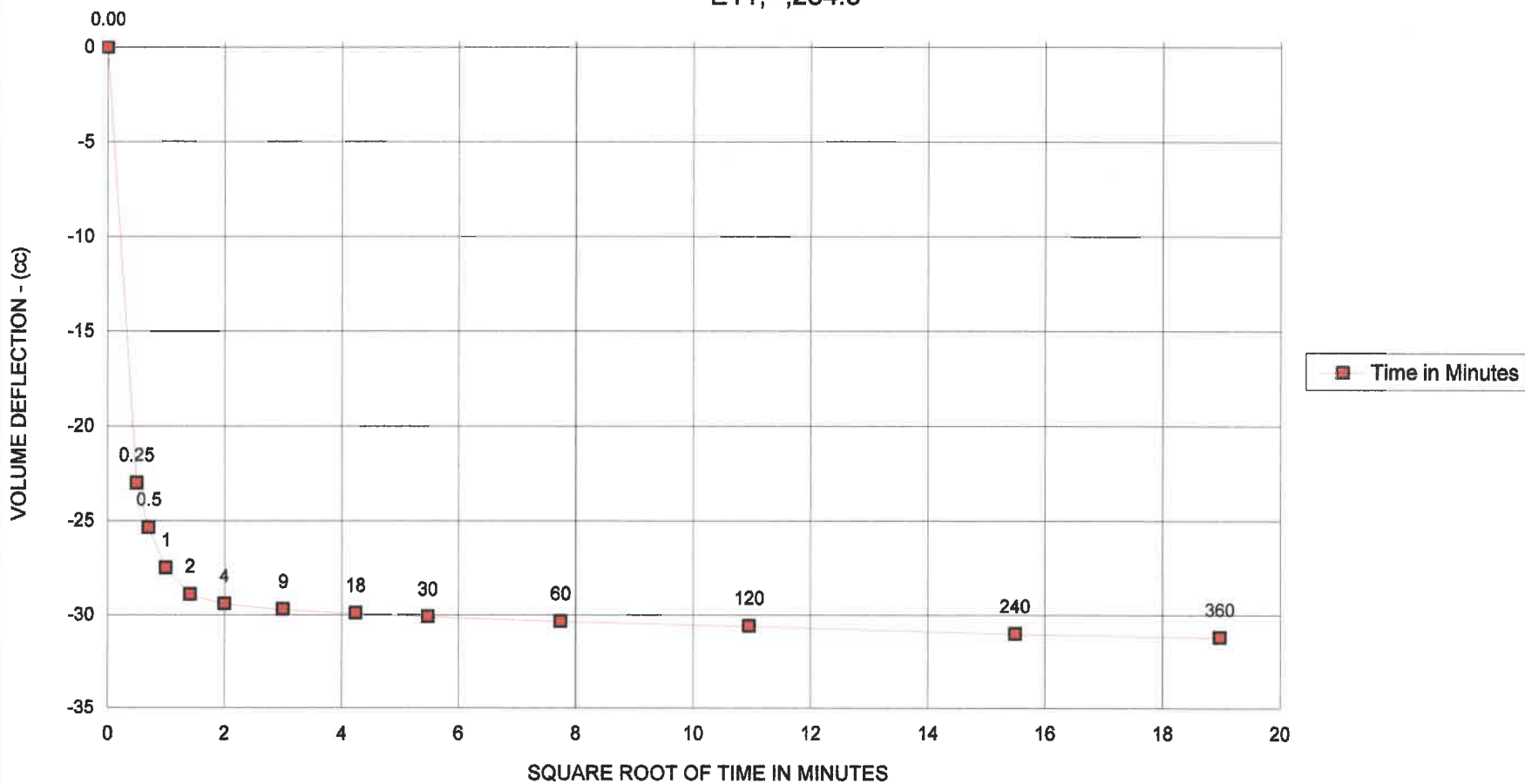
Elapsed Time (Min)	SQRT Time (Min)	Burette Reading (cc)	Volume Def. (cc)
0.00	0.00	10.00	0.00
0.25	0.50	33.00	-23.00
0.5	0.71	35.35	-25.35
1	1.00	37.50	-27.50
2	1.41	38.90	-28.90
4	2.00	39.40	-29.40
9	3.00	39.70	-29.70
18	4.24	39.90	-29.90
30	5.48	40.10	-30.10
60	7.75	40.35	-30.35
120	10.95	40.60	-30.60
240	15.49	41.00	-31.00
360	18.97	41.20	-31.20

Initial Height - (in)	2.991	Init. Vol. - (cc)	143.42
Height Change - (in)	0.132	Vol. Change - (cc)	40.60
Ht. After Cons. - (in)	2.859	Cell Exp. - (cc)	28.50
Initial Area - (sq in)	2.926	Net Change - (cc)	12.10
Area After Cons. - sq in	2.802	Cons. Vol. - (cc)	131.32

CLIENT SN3

JOB NO. 2984-2

PTX06-ISB118
 CONSOLIDATION DATA
 E11,--,284.5'

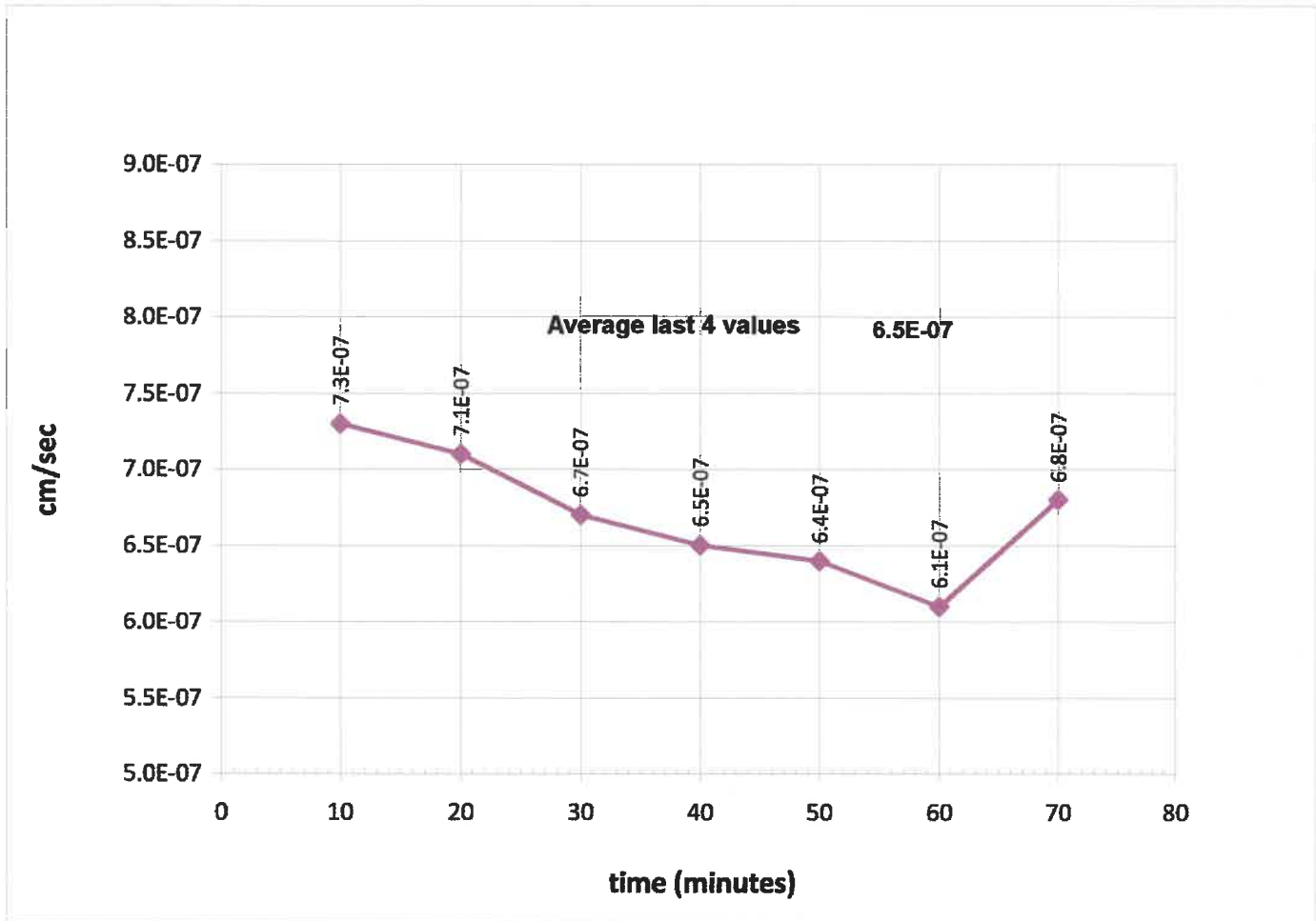




Preliminary Flow Pump Test Data ASTM D5084

Client: SN3
Job Number: 2984-2
Project: Pantex BOA 70 Release 5
Location: --
Project Number: 4638-05

Boring Number: E11 **PTX06-ISB118**
Depth: 284.5'
Sample Number: --
Sampled Date: 11/15/2017
Test Date: 12/13/2017
Sampled By: JF
Technician: CAL



Data Entered By: CAL
Date: 12/13/2017
File Name: 2984_2_PrelimPerm_ASTMD-5084-methodD-R0_11.xls

Checked By: KR
Date: 1/9/18



Image Attachment

ADVANCED TERRA TESTING

CLIENT SN3
JOB NO. 2984-2
PROJECT Pantex BOA 70 Release 5
PROJECT NO. 4638-05
LOCATION -- PTX06-ISB118



NOTES

File name: 2984_2_Image_17_12_14_07_00_51



PERMEABILITY TEST - BACK PRESSURE SATURATED - FLOW PUMP METHOD

ASTM D5084 Method D

CLIENT	SN3	JOB NO.	2984-2
PROJECT	Pantex BOA 70 Release 5		
PROJECT NO.	4638-05	SAMPLED	11/13/2017 By: JF
BORING NO.	E10 PTX06-ISB117	TEST STARTED	12/4/2017 By: CAL
DEPTH	285.25'	TEST FINISHED	12/15/2017 By: CAL
SAMPLE NO.	--	CELL NUMBER	1
LOCATION	--	PERMEANT	Tap Water
SAMPLE TYPE	split spoon	CONF. PRES. - (psf)	35424

MOISTURE / DENSITY DATA	BEFORE TEST	AFTER TEST
Wt. Soil + Moisture - (g)	286.93	290.60
Wt. Wet Soil & Pan - (g)	293.58	297.25
Wt. Dry Soil & Pan - (g)	244.93	244.93
Wt. Lost Moisture - (g)	48.65	52.32
Wt. of Pan Only - (g)	6.65	6.65
Wt. of Dry Soil - (g)	238.28	238.28
Moisture Content - (%)	20.4	22.0
Wet Density - (pcf)	124.4	152.4
Dry Density - (pcf)	103.3	125.0
Init. Diameter - (in)	1.936	
Init. Area - (sq in)	2.944	
Init. Height - (in)	2.985	
Vol. Bef. Consol. - (cu ft)	0.00509	
Vol. After Consol. - (cu ft)	0.00420	
Porosity - (%)	43.95	

FLOW PUMP CALCULATIONS	
Pump Setting (gear number)	12
Percentage of Pump Setting	100
Q - (cc/s)	2.30E-05
Height - (in)	2.866
Diameter - (in)	1.796
Pressure - (psi)	0.698
Area after consol. - (sq cm)	16.352
Gradient	6.741
Permeability k - (cm/s)	2.1E-07
Permeability k - (m/s)	2.1E-09
Back Pressure - (psi)	98.0
Cell Pressure - (psi)	344.0
Ave. Effective Stress - (psi)	245.651
Average temperature degree - (c°)	21.4

Data entry by: CAL	Date: 01/02/2018
Checked by: KR	Date: 1/3/18



PERMEABILITY TEST - BACK PRESSURE SATURATED - FLOW PUMP METHOD

ASTM D5084 Method D

CLIENT	SN3	JOB NO.	2984-2
PROJECT	Pantex BOA 70 Release 5		
PROJECT NO.	4638-05	SAMPLED	11/13/2017 By: JF
BORING NO.	E10 PTX06-ISB117	TEST STARTED	12/4/2017 By: CAL
DEPTH	285.25'	TEST FINISHED	12/15/2017 By: CAL
SAMPLE NO.	--	CELL NUMBER	1
LOCATION	--	PERMEANT	Tap Water
SAMPLE TYPE	split spoon	CONF. PRES. - (psf)	35424

SATURATION DATA

Cell Press. (psi)	Back Press. (psi)	Burette Reading (cc)		Pore Press. (psi)		Change	B
		Close	Open	Close	Open		
40.0	38.0	1.9	12.1				
50.0	48.0	12.4	13.7	38.4	46.2	7.8	0.78
60.0	58.0	13.5	14.5	48.5	56.8	8.3	0.83
70.0	68.0	15.0	16.0	58.4	66.9	8.5	0.85
80.0	78.0	17.4	18.3	68.0	76.9	8.9	0.89
90.0	88.0	18.7	19.6	78.1	87.3	9.2	0.92
100.0	98.0	19.9	20.9	88.1	97.5	9.4	0.94
110.0		21.2	21.3	98.1	107.6	9.5	0.95

CONSOLIDATION DATA

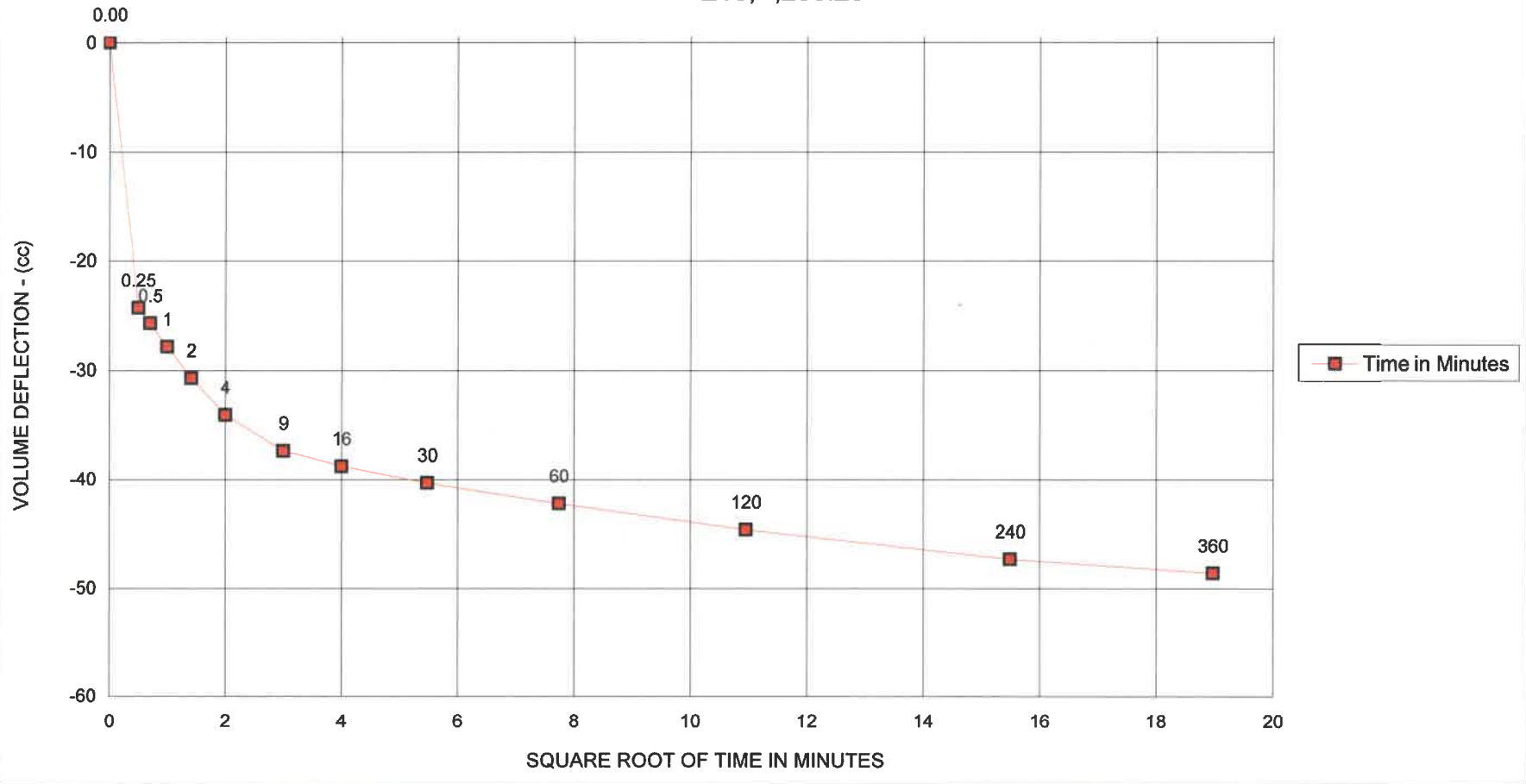
Elapsed Time (Min)	SQRT Time (Min)	Burette Reading (cc)	Volume Def. (cc)
0.00	0.00	0.40	0.00
0.25	0.50	24.70	-24.30
0.5	0.71	26.10	-25.70
1	1.00	28.25	-27.85
2	1.41	31.15	-30.75
4	2.00	34.50	-34.10
9	3.00	37.80	-37.40
16	4.00	39.20	-38.80
30	5.48	40.70	-40.30
60	7.75	42.60	-42.20
120	10.95	45.00	-44.60
240	15.49	47.70	-47.30
360	18.97	49.00	-48.60

Initial Height - (in)	2.985	Init. Vol. - (cc)	144.02
Height Change - (in)	0.119	Vol. Change - (cc)	72.90
Ht. After Cons. - (in)	2.866	Cell Exp. - (cc)	47.93
Initial Area - (sq in)	2.944	Net Change - (cc)	24.97
Area After Cons. - sq in	2.535	Cons. Vol. - (cc)	119.06

CLIENT SN3

JOB NO. 2984-2

PTX06-ISB117
CONSOLIDATION DATA
E10,--,285.25'

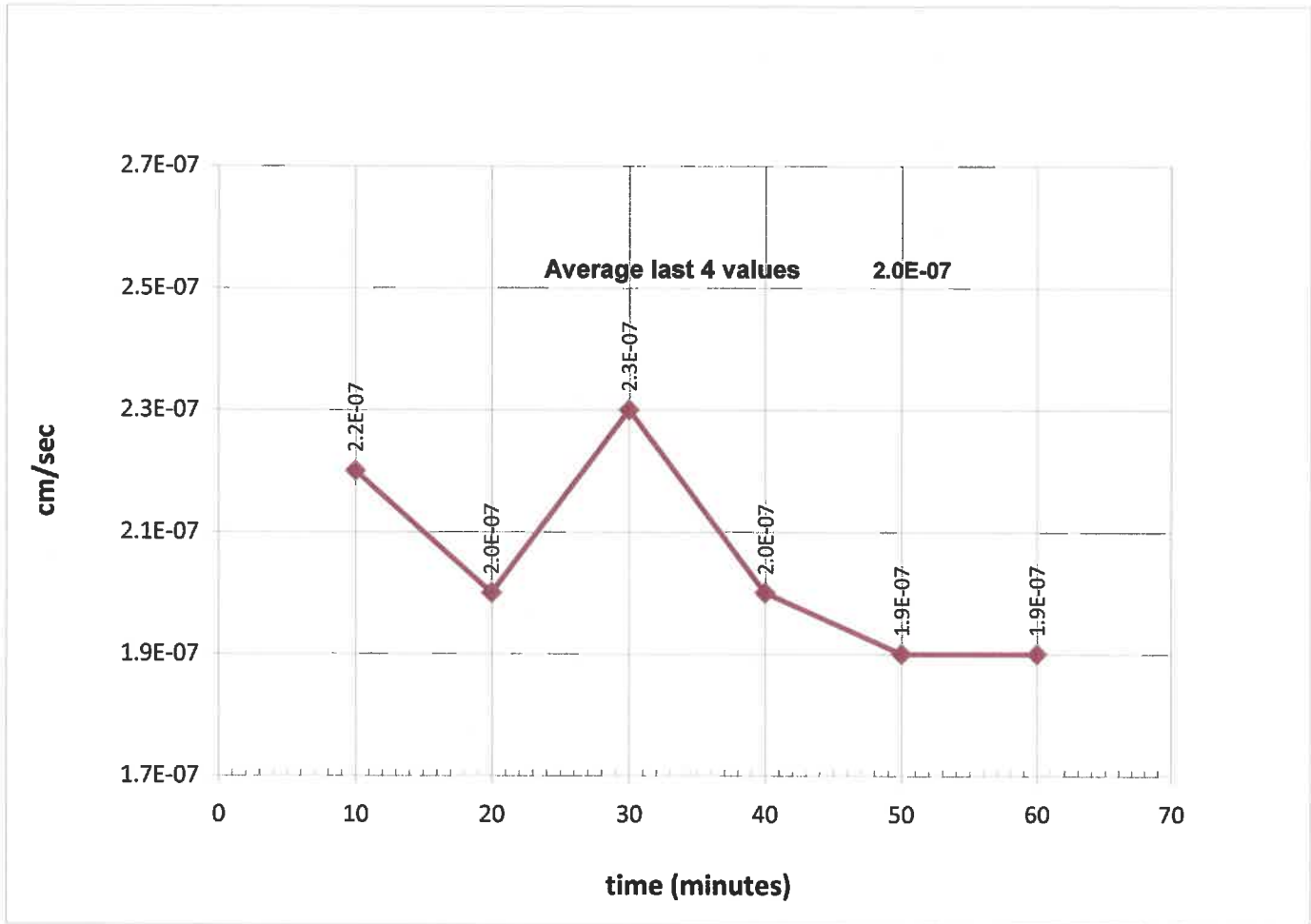




Preliminary Flow Pump Test Data ASTM D5084

Client: SN3
Job Number: 2984-2
Project: Pantex BOA 70 Release 5
Location: --
Project Number: 4638-05

Boring Number: E10 **PTX06-ISB117**
Depth: 285.25'
Sample Number: --
Sampled Date: 11/16/2017
Test Date: 12/15/2017
Sampled By: JF
Technician: CAL



Data Entered By: CAL
Date: 1/2/2018
File Name: 2984_2_PrelimPerm_ASTMD-5084-methodD-R0_13.xls

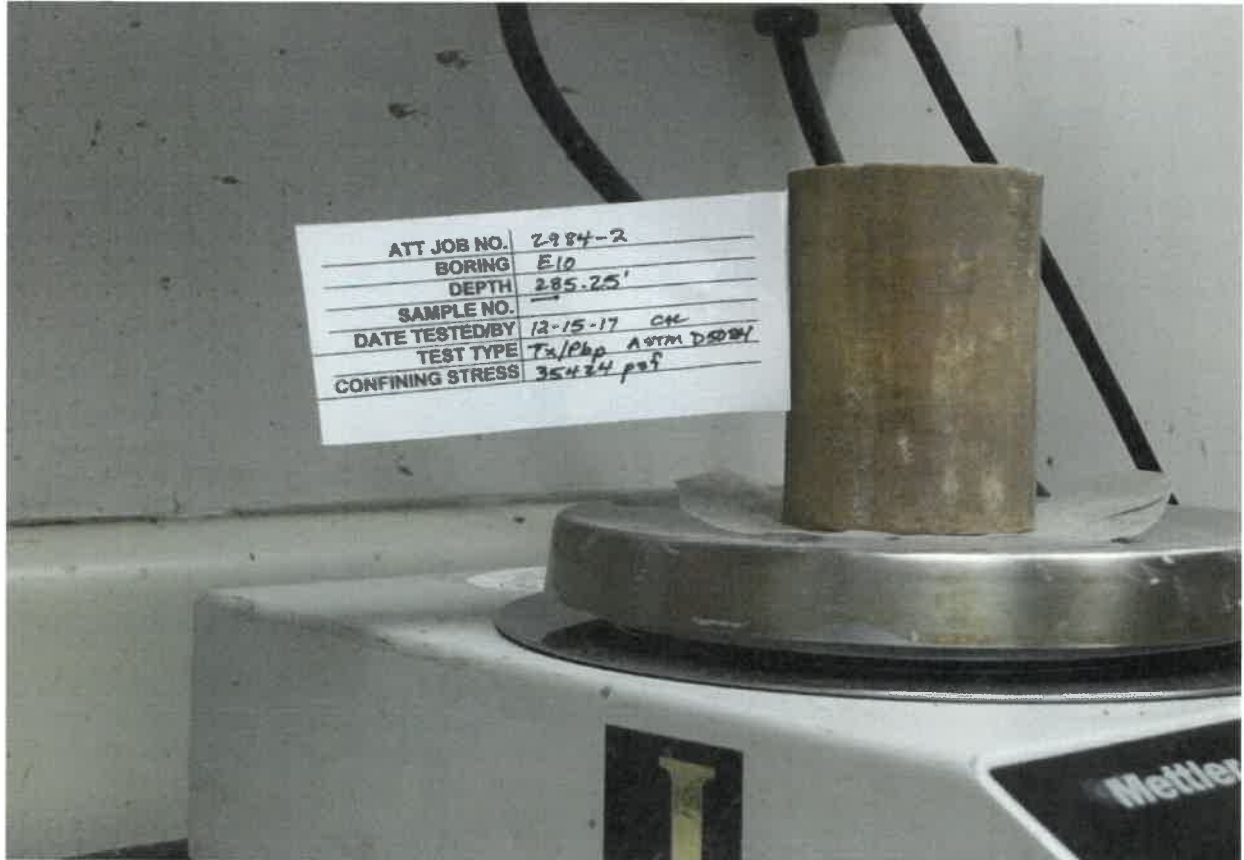
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Date: 1/2



Image Attachment

ADVANCED TERRA TESTING

CLIENT SN3
JOB NO. 2984-2
PROJECT Pantex BOA 70 Release 5
PROJECT NO. 4638-05
LOCATION -- PTX06-ISB117



NOTES

File name: 2984_2_Image_17_12_15_14_59_03



PERMEABILITY TEST - BACK PRESSURE SATURATED - FLOW PUMP METHOD

ASTM D5084 Method D

CLIENT	SN3	JOB NO.	2984-2
PROJECT	Pantex BOA 70 Release 5		
PROJECT NO.	4638-05	SAMPLED	11/4/2017 By: RER
BORING NO.	E9 PTX06-ISB116	TEST STARTED	11/21/2017 By: CAL
DEPTH	285'	TEST FINISHED	12/1/2017 By: CAL
SAMPLE NO.	SN3 #4	CELL NUMBER	1
LOCATION	--	PERMEANT	Tap Water
SAMPLE TYPE	split spoon	CONF. PRES. - (psf)	35424

MOISTURE / DENSITY DATA	BEFORE TEST	AFTER TEST
Wt. Soil + Moisture - (g)	288.05	292.48
Wt. Wet Soil & Pan - (g)	294.67	299.10
Wt. Dry Soil & Pan - (g)	249.78	249.78
Wt. Lost Moisture - (g)	44.89	49.32
Wt. of Pan Only - (g)	6.62	6.62
Wt. of Dry Soil - (g)	243.16	243.16
Moisture Content - (%)	18.5	20.3
Wet Density - (pcf)	124.4	128.6
Dry Density - (pcf)	105.0	106.9
Init. Diameter - (in)	1.936	
Init. Area - (sq in)	2.944	
Init. Height - (in)	2.996	
Vol. Bef. Consol. - (cu ft)	0.00510	
Vol. After Consol. - (cu ft)	0.00501	
Porosity - (%)	34.74	

FLOW PUMP CALCULATIONS	
Pump Setting (gear number)	11
Percentage of Pump Setting	100
Q - (cc/s)	5.71E-05
Height - (in)	2.918
Diameter - (in)	1.944
Pressure - (psi)	0.432
Area after consol. - (sq cm)	19.150
Gradient	4.098
Permeability k - (cm/s)	7.3E-07
Permeability k - (m/s)	7.3E-09
Back Pressure - (psi)	68.0
Cell Pressure - (psi)	314.0
Ave. Effective Stress - (psi)	245.784
Average temperature degree - (c°)	22.3

Data entry by: CAL	Date: 12/04/2017
Checked by: <i>DPM</i>	Date: <i>12/5/17</i>



PERMEABILITY TEST - BACK PRESSURE SATURATED - FLOW PUMP METHOD

ASTM D5084 Method D

CLIENT	SN3	JOB NO.	2984-2
--------	-----	---------	--------

PROJECT	Pantex BOA 70 Release 5		
PROJECT NO.	4638-05	SAMPLED	11/4/2017 By: RER
BORING NO.	E9 PTX06-ISB116	TEST STARTED	11/21/2017 By: CAL
DEPTH	285'	TEST FINISHED	12/1/2017 By: CAL
SAMPLE NO.	SN3 #4	CELL NUMBER	1
LOCATION	--	PERMEANT	Tap Water
SAMPLE TYPE	split spoon	CONF. PRES. - (psf)	35424

SATURATION DATA

Cell Press. (psi)	Back Press. (psi)	Burette Reading (cc)		Pore Press. (psi)		Change	B
		Close	Open	Close	Open		
40.0	38.0	1.0	10.6				
50.0	48.0	4.4	5.5	40.0	47.6	7.6	0.76
60.0	58.0	3.7	4.5	49.8	58.8	9.0	0.90
70.0	68.0	4.7	5.5	58.4	67.5	9.1	0.91
80.0		5.9	6.1	68.1	77.7	9.6	0.96

CONSOLIDATION DATA

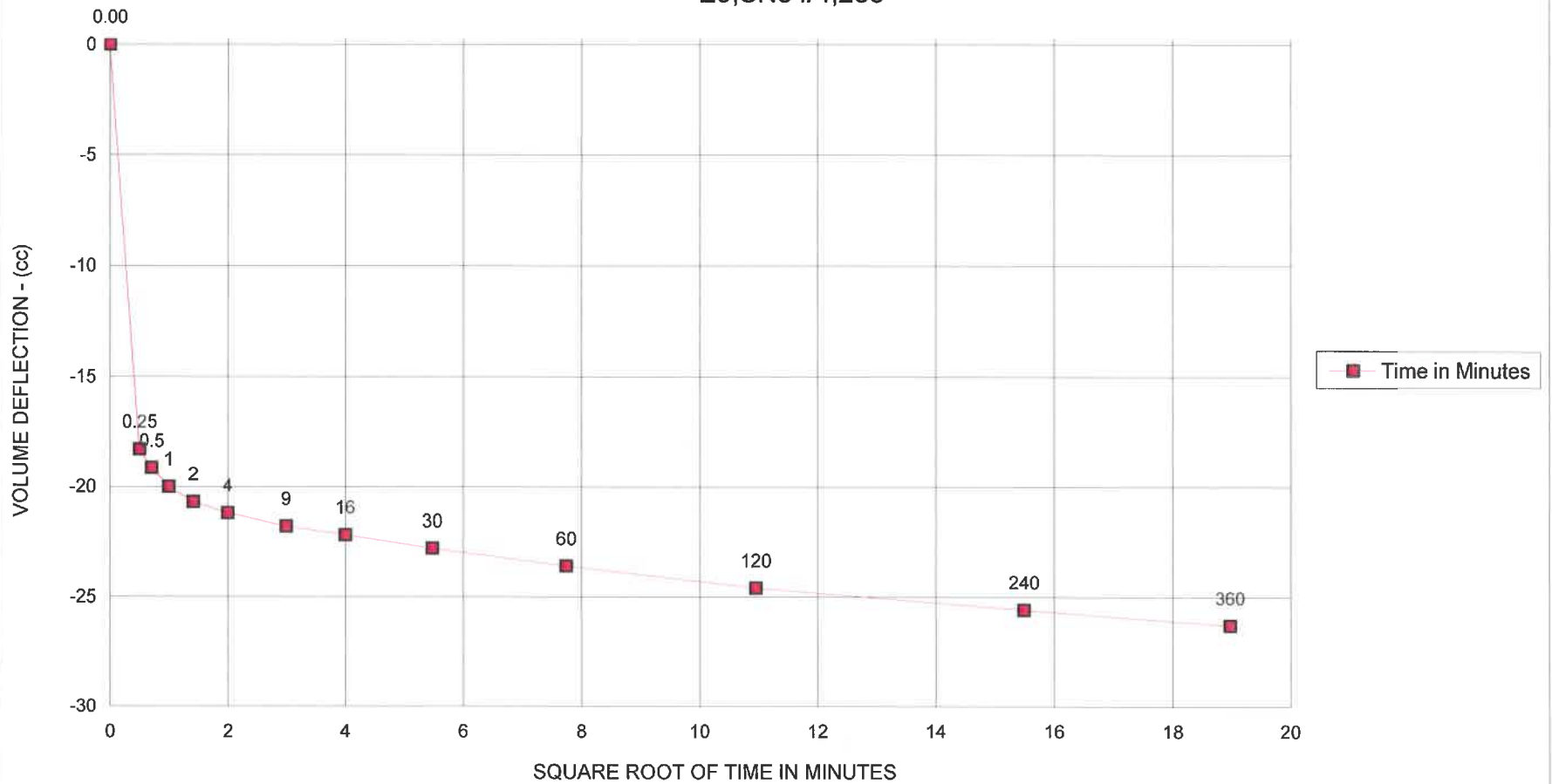
Elapsed Time (Min)	SQRT Time (Min)	Burette Reading (cc)	Volume Def. (cc)
0.00	0.00	0.20	0.00
0.25	0.50	18.50	-18.30
0.5	0.71	19.35	-19.15
1	1.00	20.20	-20.00
2	1.41	20.90	-20.70
4	2.00	21.40	-21.20
9	3.00	22.00	-21.80
16	4.00	22.40	-22.20
30	5.48	23.00	-22.80
60	7.75	23.80	-23.60
120	10.95	24.80	-24.60
240	15.49	25.80	-25.60
360	18.97	26.50	-26.30

Initial Height - (in)	2.996	Init. Vol. - (cc)	144.55
Height Change - (in)	0.078	Vol. Change - (cc)	46.60
Ht. After Cons. - (in)	2.918	Cell Exp. - (cc)	44.01
Initial Area - (sq in)	2.944	Net Change - (cc)	2.59
Area After Cons. - sq in	2.968	Cons. Vol. - (cc)	141.96

CLIENT SN3

JOB NO. 2984-2

PTX06-ISB116
CONSOLIDATION DATA
E9,SN3 #4,285'

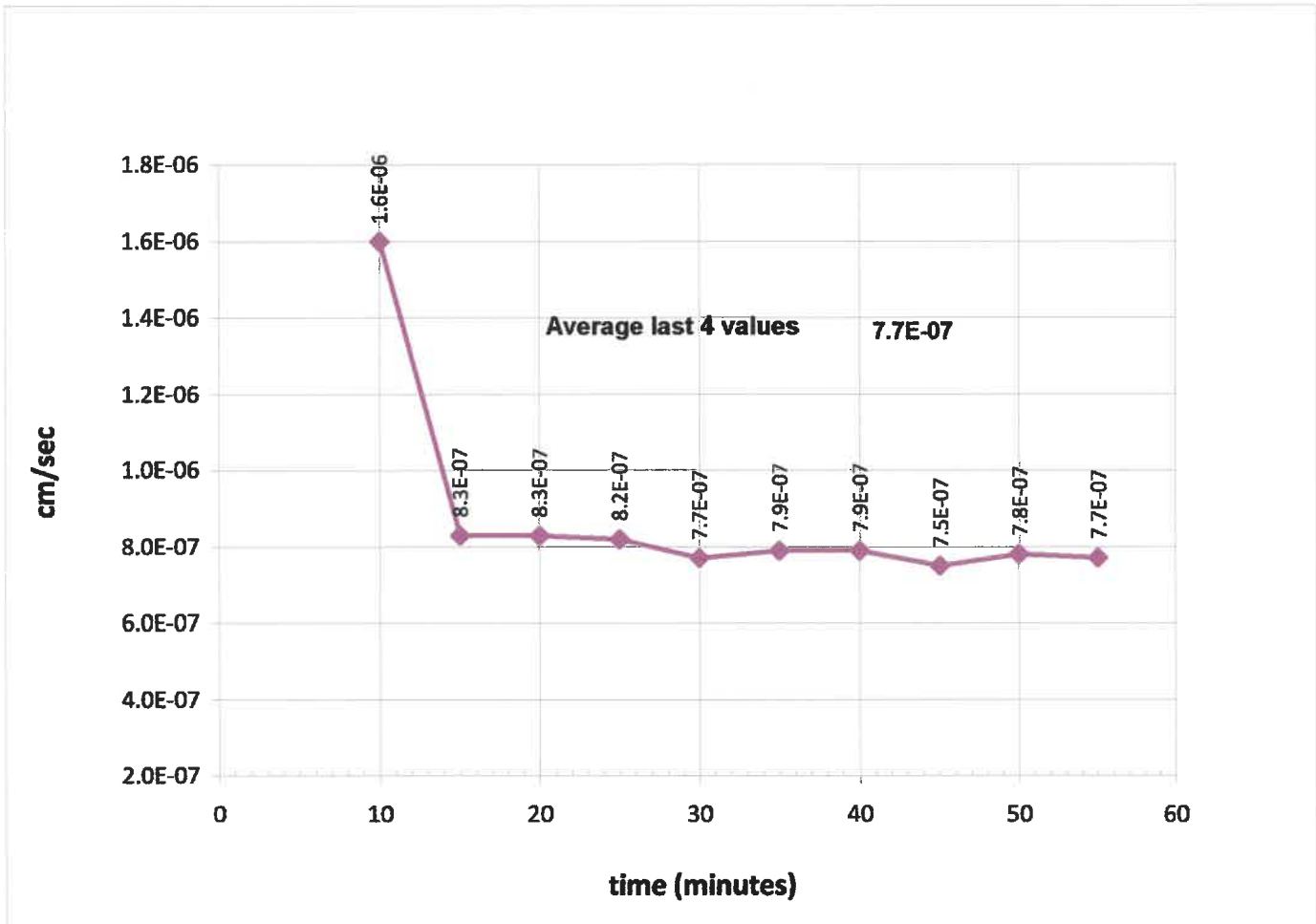




Preliminary Flow Pump Test Data ASTM D5084

Client: SN3
Job Number: 2984-2
Project: Pantex BOA 70 Release 5
Location: -
Project Number: 4638-05

Boring Number: E9 PTX06-ISB116
Depth: 285'
Sample Number: SN3 #4
Sampled Date: 11/4/2017
Test Date: 12/1/2017
Sampled By: RER
Technician: CAL



Data Entered By: CAL
Date: 12/1/2017
File Name: 2984_2_PrelimPerm_ASTMD-5084-methodD-R0_7.xls

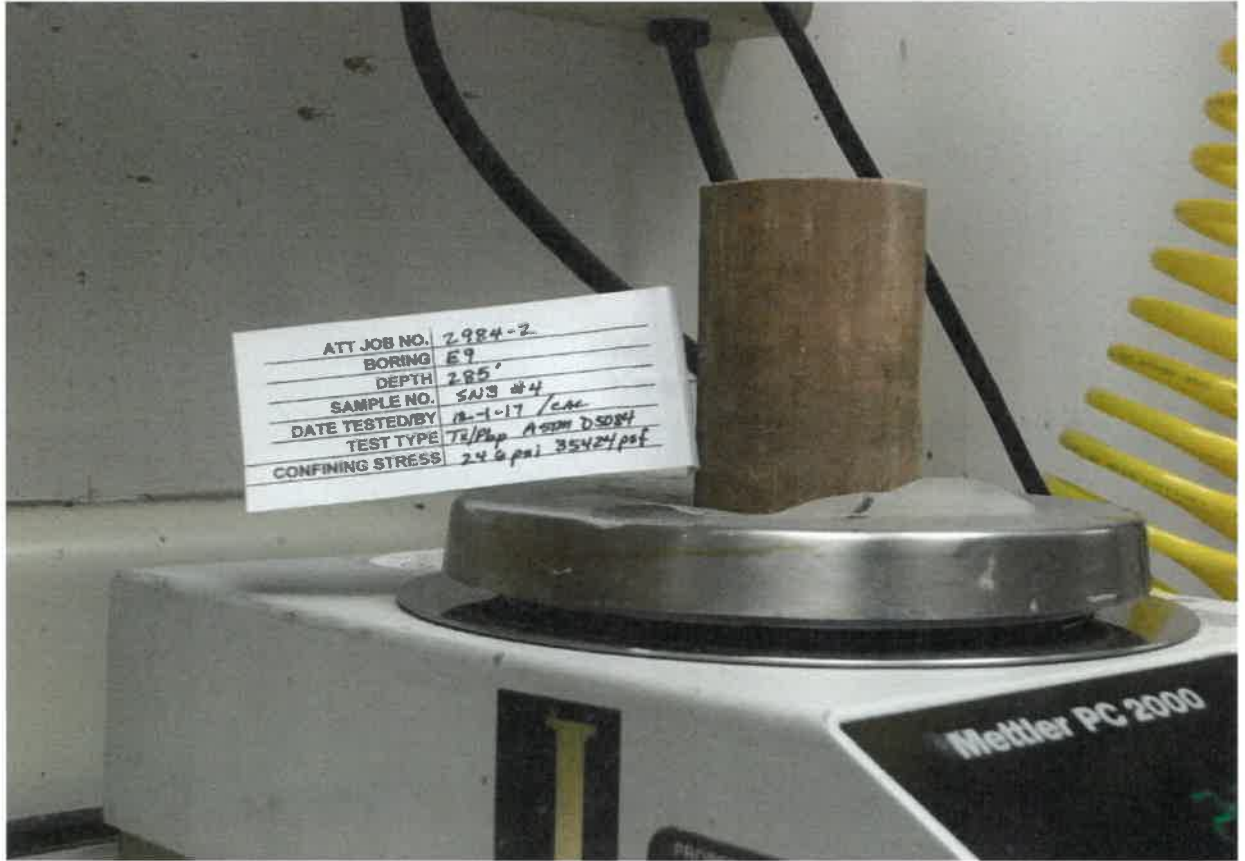
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Date: 12/5/17



Image Attachment

ADVANCED TERRA TESTING

CLIENT SN3
JOB NO. 2984-2
PROJECT Pantex BOA 70 Release 5
PROJECT NO. 4638-05
LOCATION -- PTX06-ISB116



NOTES

File name: 2984_2_Image_17_12_01_14_32_32



PERMEABILITY TEST - BACK PRESSURE SATURATED - FLOW PUMP METHOD

ASTM D5084 Method D

CLIENT	SN3	JOB NO.	2984-2
--------	-----	---------	--------

PROJECT	Pantex BOA 70 Release 5		
PROJECT NO.	4638-05	SAMPLED	11/2/2017 By: RER
BORING NO.	E8 PTX06-ISB115	TEST STARTED	11/14/2017 By: CAL
DEPTH	284'	TEST FINISHED	11/22/2017 By: CAL
SAMPLE NO.	SN3 #2	CELL NUMBER	2
LOCATION	--	PERMEANT	Tap Water
SAMPLE TYPE	split spoon/liner	CONF. PRES. - (psf)	35280

MOISTURE / DENSITY DATA	BEFORE TEST	AFTER TEST
Wt. Soil + Moisture - (g)	287.18	286.98
Wt. Wet Soil & Pan - (g)	293.90	293.70
Wt. Dry Soil & Pan - (g)	246.11	246.11
Wt. Lost Moisture - (g)	47.79	47.59
Wt. of Pan Only - (g)	6.72	6.72
Wt. of Dry Soil - (g)	239.39	239.39
Moisture Content - (%)	20.0	19.9
Wet Density - (pcf)	124.2	128.9
Dry Density - (pcf)	103.5	107.5
Init. Diameter - (in)	1.935	
Init. Area - (sq in)	2.941	
Init. Height - (in)	2.996	
Vol. Bef. Consol. - (cu ft)	0.00510	
Vol. After Consol. - (cu ft)	0.00491	
Porosity - (%)	34.23	

FLOW PUMP CALCULATIONS	
Pump Setting (gear number)	12
Percentage of Pump Setting	100
Q - (cc/s)	2.30E-05
Height - (in)	2.923
Diameter - (in)	1.922
Pressure - (psi)	0.355
Area after consol. - (sq cm)	18.723
Gradient	3.362
Permeability k - (cm/s)	3.6E-07
Permeability k - (m/s)	3.6E-09
Back Pressure - (psi)	68.0
Cell Pressure - (psi)	313.0
Ave. Effective Stress - (psi)	244.823
Average temperature degree - (c°)	21.9

Data entry by: CAL	Date: 11/27/2017
Checked by: <i>KE</i>	Date: <i>11/30/17</i>



PERMEABILITY TEST - BACK PRESSURE SATURATED - FLOW PUMP METHOD

ASTM D5084 Method D

CLIENT	SN3	JOB NO.	2984-2
--------	-----	---------	--------

PROJECT	Pantex BOA 70 Release 5		
PROJECT NO.	4638-05	SAMPLED	11/2/2017 By: RER
BORING NO.	E8 PTX06-ISB115	TEST STARTED	11/14/2017 By: CAL
DEPTH	284'	TEST FINISHED	11/22/2017 By: CAL
SAMPLE NO.	SN3 #2	CELL NUMBER	2
LOCATION	-	PERMEANT	Tap Water
SAMPLE TYPE	split spoon/liner	CONF. PRES. - (psf)	35280

SATURATION DATA

Cell Press. (psi)	Back Press. (psi)	Burette Reading (cc)		Pore Press. (psi)		Change	B
		Close	Open	Close	Open		
40.0	38.0	3.3	15.5				
50.0	48.0	14.1	15.5	38.9	46.8	7.9	0.79
60.0	58.0	15.9	17.0	49.1	57.4	8.3	0.83
70.0	68.0	17.4	18.4	58.7	67.7	9.0	0.90
80.0		19.2	19.3	68.8	78.4	9.6	0.96

CONSOLIDATION DATA

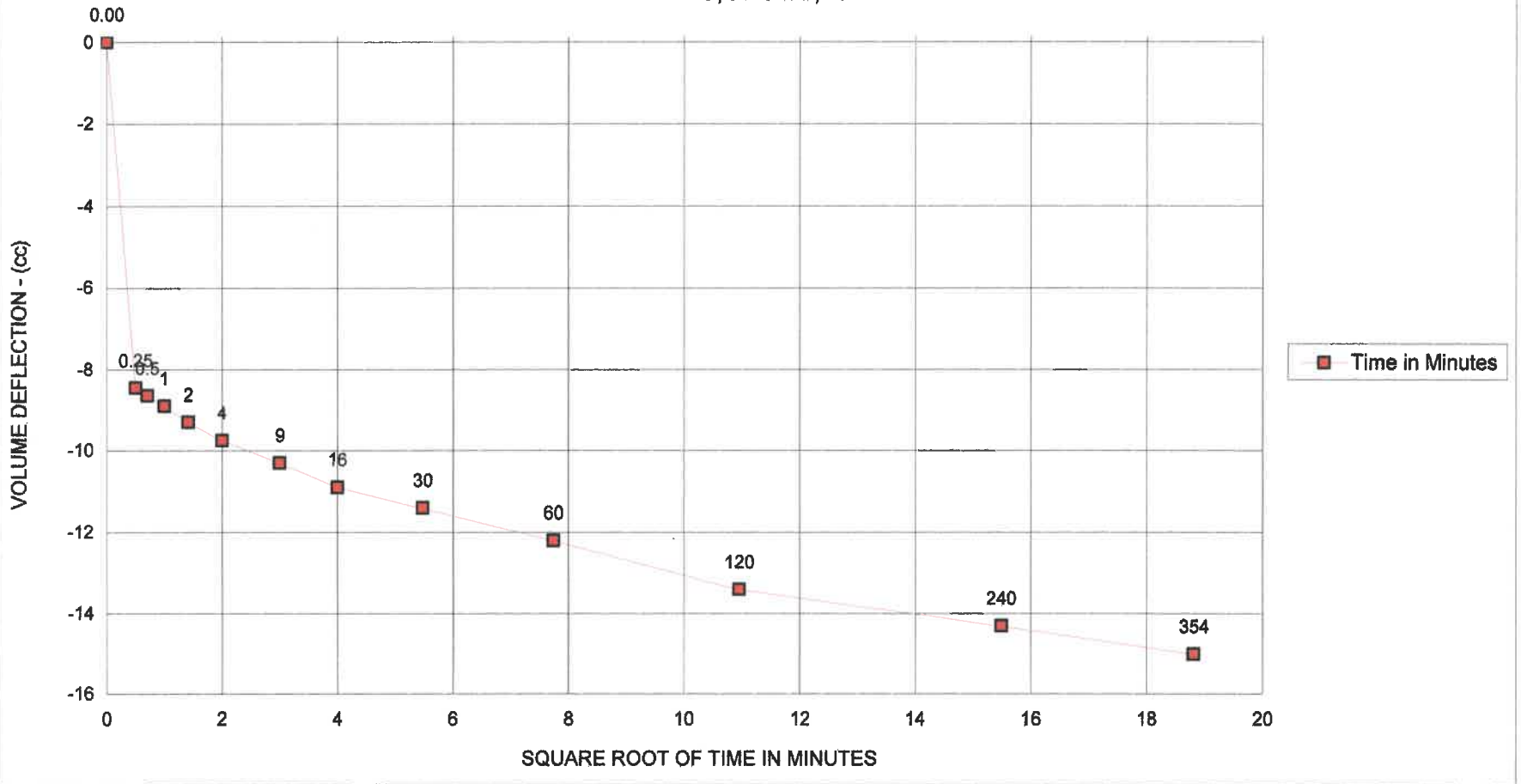
Elapsed Time (Min)	SQRT Time (Min)	Burette Reading (cc)	Volume Def. (cc)
0.00	0.00	0.60	0.00
0.25	0.50	9.05	-8.45
0.5	0.71	9.25	-8.65
1	1.00	9.50	-8.90
2	1.41	9.90	-9.30
4	2.00	10.35	-9.75
9	3.00	10.90	-10.30
16	4.00	11.50	-10.90
30	5.48	12.00	-11.40
60	7.75	12.80	-12.20
120	10.95	14.00	-13.40
240	15.49	14.90	-14.30
354	18.81	15.60	-15.00

Initial Height - (in)	2.996	Init. Vol. - (cc)	144.40
Height Change - (in)	0.073	Vol. Change - (cc)	59.70
Ht. After Cons. - (in)	2.923	Cell Exp. - (cc)	54.33
Initial Area - (sq in)	2.941	Net Change - (cc)	5.37
Area After Cons. - sq in	2.902	Cons. Vol. - (cc)	139.03

CLIENT SN3

JOB NO. 2984-2

PTX06-ISB115
CONSOLIDATION DATA
E8,SN3 #2,284'

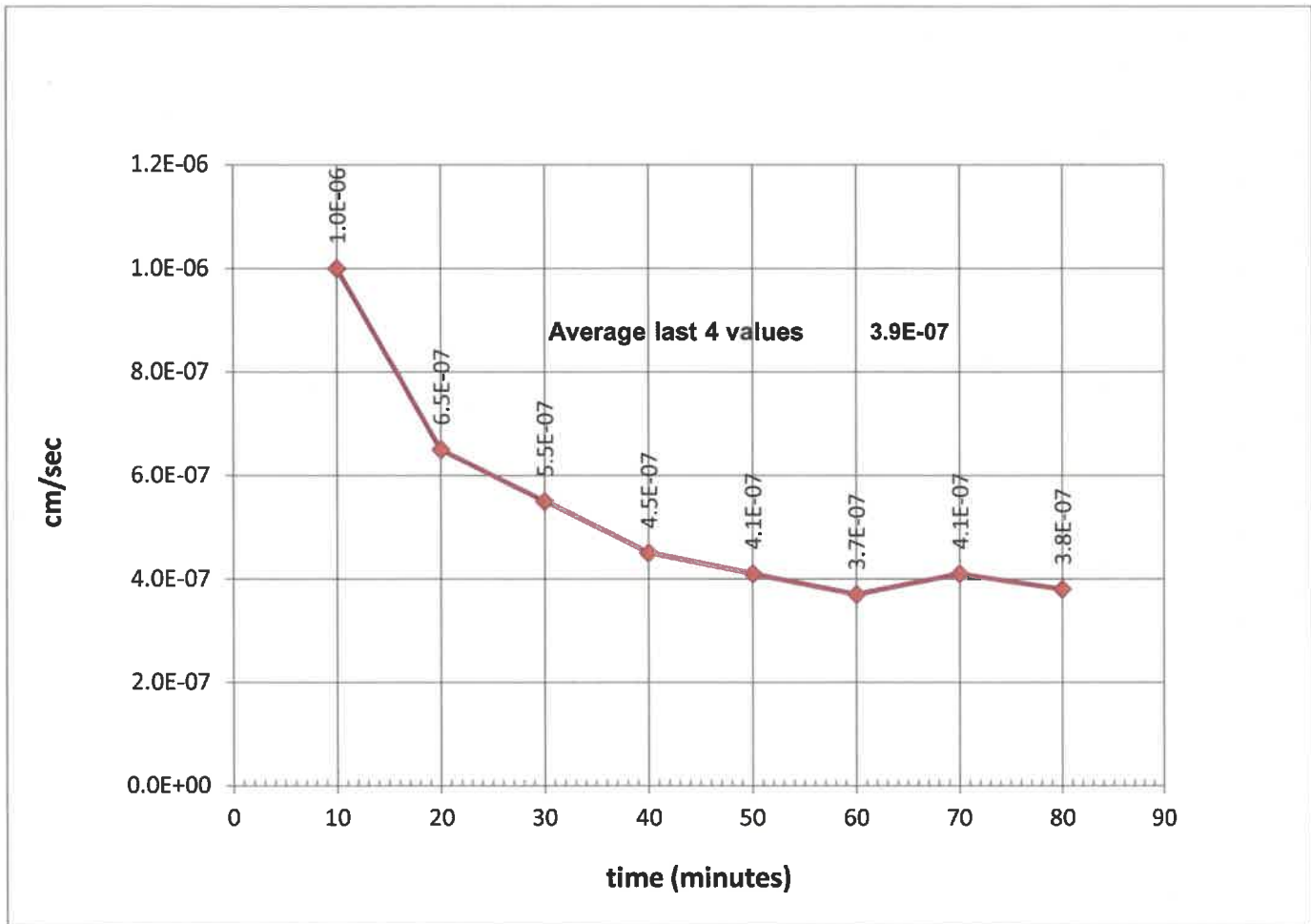




Preliminary Flow Pump Test Data ASTM D5084

Client: SN3
Job Number: 2984-2
Project: Pantex BOA 70 Release 5
Location: --
Project Number: 4638-05

Boring Number: E8 **PTX06-ISB115**
Depth: 284'
Sample Number: SN3 #2
Sampled Date: 11/2/2017
Test Date: 11/22/2017
Sampled By: RER
Technician: CAL



Data Entered By: CAL
Date: 11/22/2017
File Name: 2984_2_PrelimPerm_ASTMD-5084-methodD-R0_4.xls

Checked By: 11/30/17
Date: KR



Image Attachment

ADVANCED TERRA TESTING

CLIENT SN3
JOB NO. 2984-2
PROJECT Pantex BOA 70 Release 5
PROJECT NO. 4638-05
LOCATION -- **PTX06-ISB115**

BORING NO. E8
DEPTH 284'
SAMPLE NO. SN3 #2
DATE SAMPLED 11/02/17
DESCRIPTION split spoon/ liner



NOTES

File name: 2984_2_Image_17_11_27_09_53_36



PERMEABILITY TEST - BACK PRESSURE SATURATED - FLOW PUMP METHOD

ASTM D5084 Method D

CLIENT	SN3	JOB NO.	2984-2
PROJECT	Pantex BOA 70 Release 5		
PROJECT NO.	4638-05	SAMPLED	11/6/2017 By: RER
BORING NO.	E7 PTX06-ISB114	TEST STARTED	11/28/2017 By: CAL
DEPTH	285'	TEST FINISHED	12/12/2017 By: CAL
SAMPLE NO.	SN3 #6	CELL NUMBER	3N
LOCATION	--	PERMEANT	Tap Water
SAMPLE TYPE	split-spoon	CONF. PRES. - (psf)	37037

MOISTURE / DENSITY DATA	BEFORE TEST	AFTER TEST
Wt. Soil + Moisture - (g)	300.70	296.91
Wt. Wet Soil & Pan - (g)	307.34	303.55
Wt. Dry Soil & Pan - (g)	259.66	259.66
Wt. Lost Moisture - (g)	47.68	43.89
Wt. of Pan Only - (g)	6.64	6.64
Wt. of Dry Soil - (g)	253.02	253.02
Moisture Content - (%)	18.8	17.3
Wet Density - (pcf)	130.0	135.4
Dry Density - (pcf)	109.4	115.4
Init. Diameter - (in)	1.935	
Init. Area - (sq in)	2.941	
Init. Height - (in)	2.997	
Vol. Bef. Consol. - (cu ft)	0.00510	
Vol. After Consol. - (cu ft)	0.00483	
Porosity - (%)	32.07	

FLOW PUMP CALCULATIONS	
Pump Setting (gear number)	12
Percentage of Pump Setting	100
Q - (cc/s)	2.30E-05
Height - (in)	2.917
Diameter - (in)	1.909
Pressure - (psi)	1.996
Area after consol. - (sq cm)	18.470
Gradient	18.941
Permeability k - (cm/s)	6.6E-08
Permeability k - (m/s)	6.6E-10
Back Pressure - (psi)	118.0
Cell Pressure - (psi)	375.2
Ave. Effective Stress - (psi)	256.202
Average temperature degree - (c°)	22.7

Data entry by: CAL	Date: 12/13/2017
Checked by: <i>DPM</i>	Date: <i>12/14/17</i>



PERMEABILITY TEST - BACK PRESSURE SATURATED - FLOW PUMP METHOD

ASTM D5084 Method D

CLIENT	SN3	JOB NO.	2984-2
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PROJECT	Pantex BOA 70 Release 5		
PROJECT NO.	4638-05	SAMPLED	11/6/2017 By: RER
BORING NO.	E7 PTX06-ISB114	TEST STARTED	11/28/2017 By: CAL
DEPTH	285'	TEST FINISHED	12/12/2017 By: CAL
SAMPLE NO.	SN3 #6	CELL NUMBER	3N
LOCATION	--	PERMEANT	Tap Water
SAMPLE TYPE	split-spoon	CONF. PRES. - (psf)	37037

SATURATION DATA

Cell Press. (psi)	Back Press. (psi)	Burette Reading (cc)		Pore Press. (psi)		Change	B
		Close	Open	Close	Open		
40.0	38.0	1.6	10.3				
50.0	48.0	8.3	9.1	38.5	45.8	7.3	0.73
60.0	58.0	9.0	9.7	48.5	56.4	7.9	0.79
70.0	68.0	9.3	10.1	59.3	67.8	8.5	0.85
80.0	78.0	10.4	11.1	68.3	76.7	8.4	0.84
90.0	88.0	10.8	11.5	78.7	87.1	8.4	0.84
100.0	98.0	11.6	12.3	88.8	97.8	9.0	0.90
110.0	108.0	12.3	12.9	98.8	108.1	9.3	0.93
120.0	118.0	13.2	13.8	108.8	118.1	9.3	0.93
130.0		14.2	14.3	118.7	128.0	9.3	0.93

NOTE: Unable to achieve skempton's B parameter greater than .93

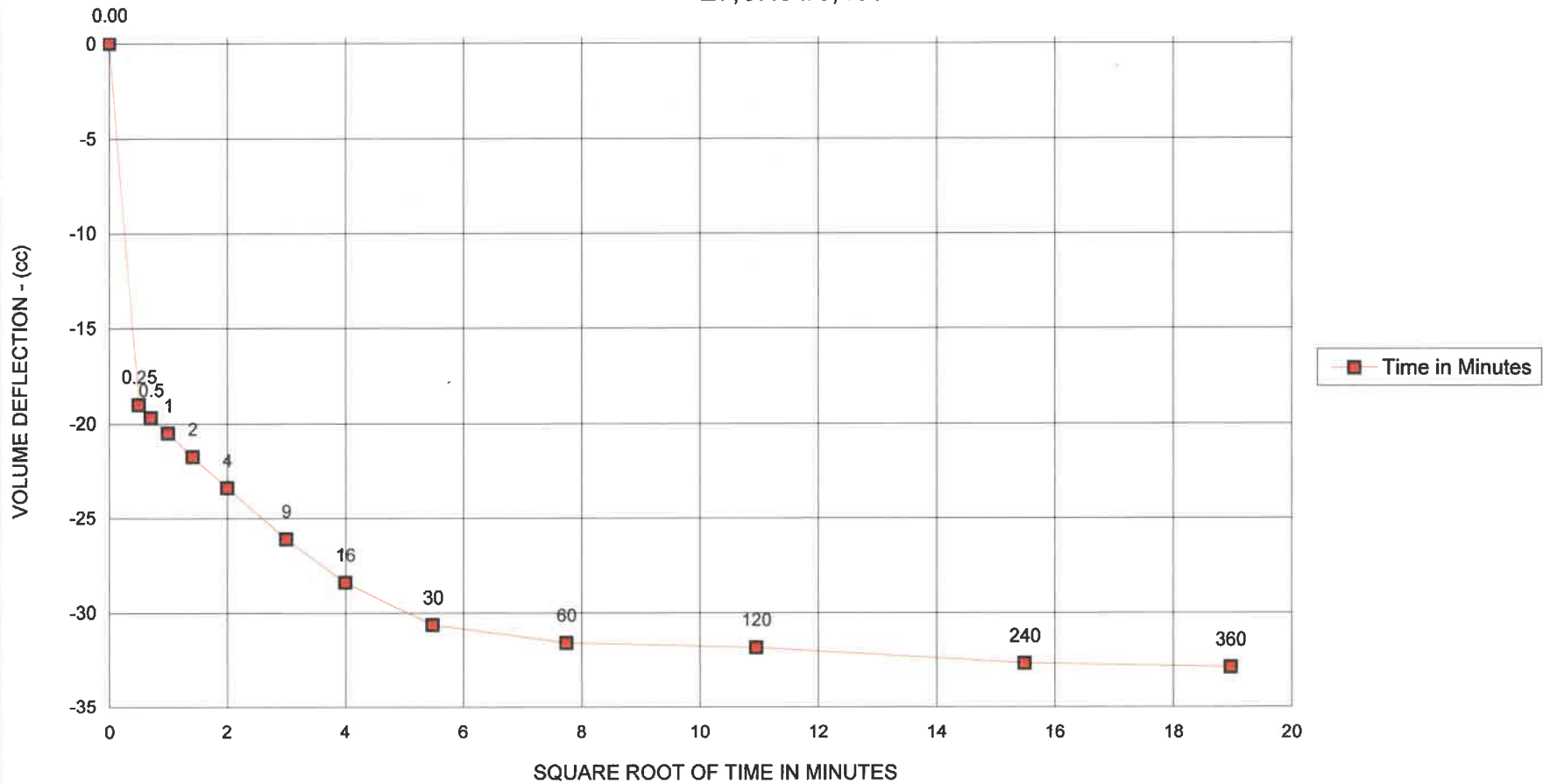
CONSOLIDATION DATA

Elapsed Time (Min)	SQRT Time (Min)	Burette Reading (cc)	Volume Def. (cc)
0.00	0.00	0.30	0.00
0.25	0.50	19.30	-19.00
0.5	0.71	20.00	-19.70
1	1.00	20.80	-20.50
2	1.41	22.05	-21.75
4	2.00	23.70	-23.40
9	3.00	26.40	-26.10
16	4.00	28.70	-28.40
30	5.48	30.95	-30.65
60	7.75	31.90	-31.60
120	10.95	32.15	-31.85
240	15.49	33.00	-32.70
360	18.97	33.20	-32.90

Initial Height - (in)	2.997	Init. Vol. - (cc)	144.45
Height Change - (in)	0.080	Vol. Change - (cc)	46.60
Ht. After Cons. - (in)	2.917	Cell Exp. - (cc)	39.02
Initial Area - (sq in)	2.941	Net Change - (cc)	7.58
Area After Cons. - sq in	2.863	Cons. Vol. - (cc)	136.87

CLIENT SN3 | JOB NO. 2984-2

PTX06-ISB114
CONSOLIDATION DATA
E7, SN3 #6,285'

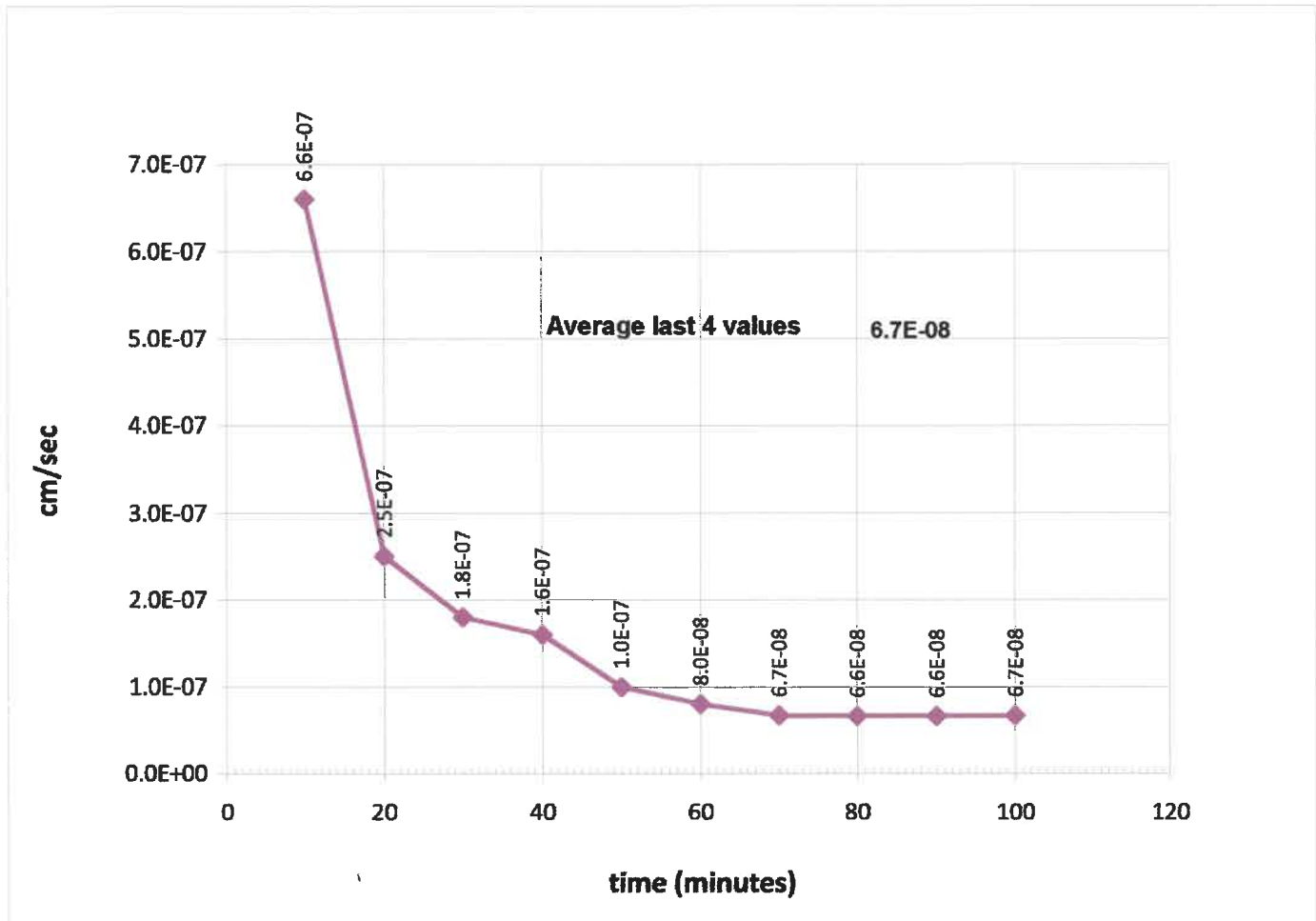




Preliminary Flow Pump Test Data ASTM D5084

Client: SN3
Job Number: 2984-2
Project: Pantex BOA 70 Release 5
Location: --
Project Number: 4638-05

Boring Number: E7 **PTX06-ISB114**
Depth: 285'
Sample Number: SN3 #6
Sampled Date: 11/6/2017
Test Date: 12/12/2017
Sampled By: RER
Technician: CAL



Data Entered By: CAL
Date: 12/12/2017
File Name: 2984_2_PrelimPerm_ASTMD-5084-methodD-R0_10.xls

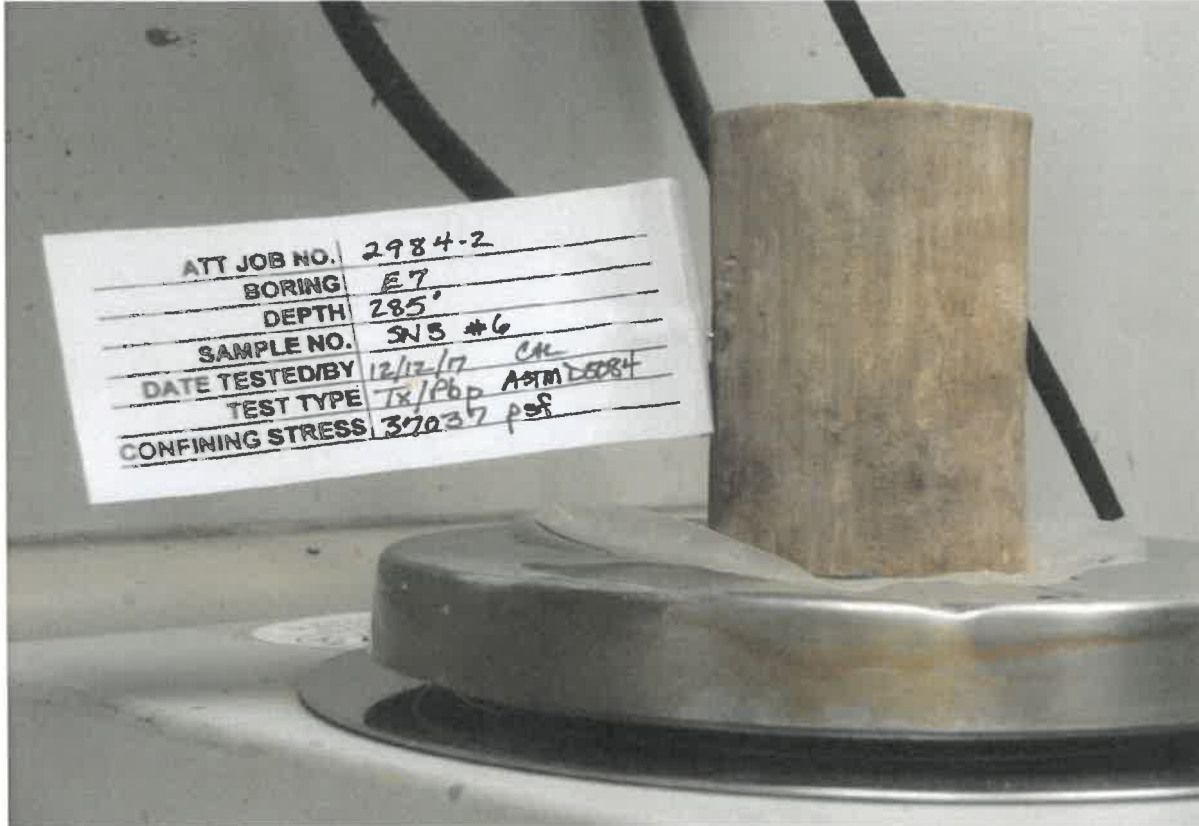
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Date: 12/14/17



ADVANCED TERRA TESTING

Image Attachment

CLIENT SN3
JOB NO. 2984-2
PROJECT Pantex BOA 70 Release 5
PROJECT NO. 4638-05
LOCATION -- PTX06-ISB114



NOTES

File name: 2984_2_Image_17_12_13_06_27_44



PERMEABILITY TEST - BACK PRESSURE SATURATED - FLOW PUMP METHOD

ASTM D5084 Method D

CLIENT SN3 JOB NO. 2984-2

PROJECT	Pantex BOA 70 Release 5	SAMPLED	11/2/2017	By: RPD
PROJECT NO.	4638-05	TEST STARTED	11/14/2017	
BORING NO.	E-6 PTX06-ISB113	TEST FINISHED	11/21/2017	By: CAL
DEPTH	287.2'	CELL NUMBER	1	
SAMPLE NO.	SN3-1	PERMEANT	Tap Water	
LOCATION	--	CONF. PRES. - (psf)	36720	
SOIL DESC	split spoon/liner			

MOISTURE / DENSITY DATA	BEFORE TEST	AFTER TEST
Wt. Soil + Moisture - (g)	284.59	278.72
Wt. Wet Soil & Pan - (g)	291.23	285.36
Wt. Dry Soil & Pan - (g)	246.93	246.93
Wt. Lost Moisture - (g)	44.30	38.43
Wt. of Pan Only - (g)	6.64	6.64
Wt. of Dry Soil - (g)	240.29	240.29
Moisture Content - (%)	18.4	16.0
Wet Density - (pcf)	127.7	154.5
Dry Density - (pcf)	107.8	133.2
Init. Diameter - (in)	1.908	
Init. Area - (sq in)	2.859	
Init. Height - (in)	2.969	
Vol. Bef. Consol. - (cu ft)	0.00491	
Vol. After Consol. - (cu ft)	0.00398	
Porosity - (%)	34.12	

FLOW PUMP CALCULATIONS

Pump Setting	89
Velocity - (cm/sec)	5.87E-04
Q - (cc/s)	1.88E-05
Height - (in)	2.834
Diameter - (in)	1.757
Pressure - (psi)	0.153
Area after consol. - (cm*cm)	15.643
Gradient	1.494
Permeability k - (cm/s)	8.0E-07
Permeability k - (m/s)	8.0E-09
Back Pressure - (psi)	68.0
Cell Pressure - (psi)	323.0
Ave. Effective Stress - (psi)	254.924
Average Temperature Degree - (C°)	21.9

Data entry by: CAL Date: 11/22/2017
 Checked by: *KR* Date: *11/27/17*



PERMEABILITY TEST - BACK PRESSURE SATURATED - FLOW PUMP METHOD

ASTM D5084 Method D

CLIENT	SN3	JOB NO.	2984-2
--------	-----	---------	--------

PROJECT	Pantex BOA 70 Release 5		
PROJECT NO.	4638-05	SAMPLED	11/2/2017 By: RPD
BORING NO.	E-6 PTX06-ISB113	TEST STARTED	11/14/2017
DEPTH	287.2'	TEST FINISHED	11/21/2017 By: CAL
SAMPLE NO.	SN3-1	CELL NUMBER	1
LOCATION	--	PERMEANT	Tap Water
SOIL DESC	split spoon/liner	CONF. PRES. - (psf)	36720

SATURATION DATA

Cell Pres. (psi)	Back Pres. (psi)	Burette Reading (cc)		Pore Pressure (psi)		Change	B
		Close	Open	Close	Open		
		3.2	16.2				
40.0	38.0	3.2	16.2				
50.0	48.0	17.5	18.9	38.5	46.8	8.3	0.83
60.0	58.0	19.5	20.5	48.3	56.9	8.6	0.86
70.0	68.0	21.2	22.3	57.7	67.1	9.4	0.94
80.0		23.1	23.1	68.0	77.8	9.8	0.98

CONSOLIDATION DATA

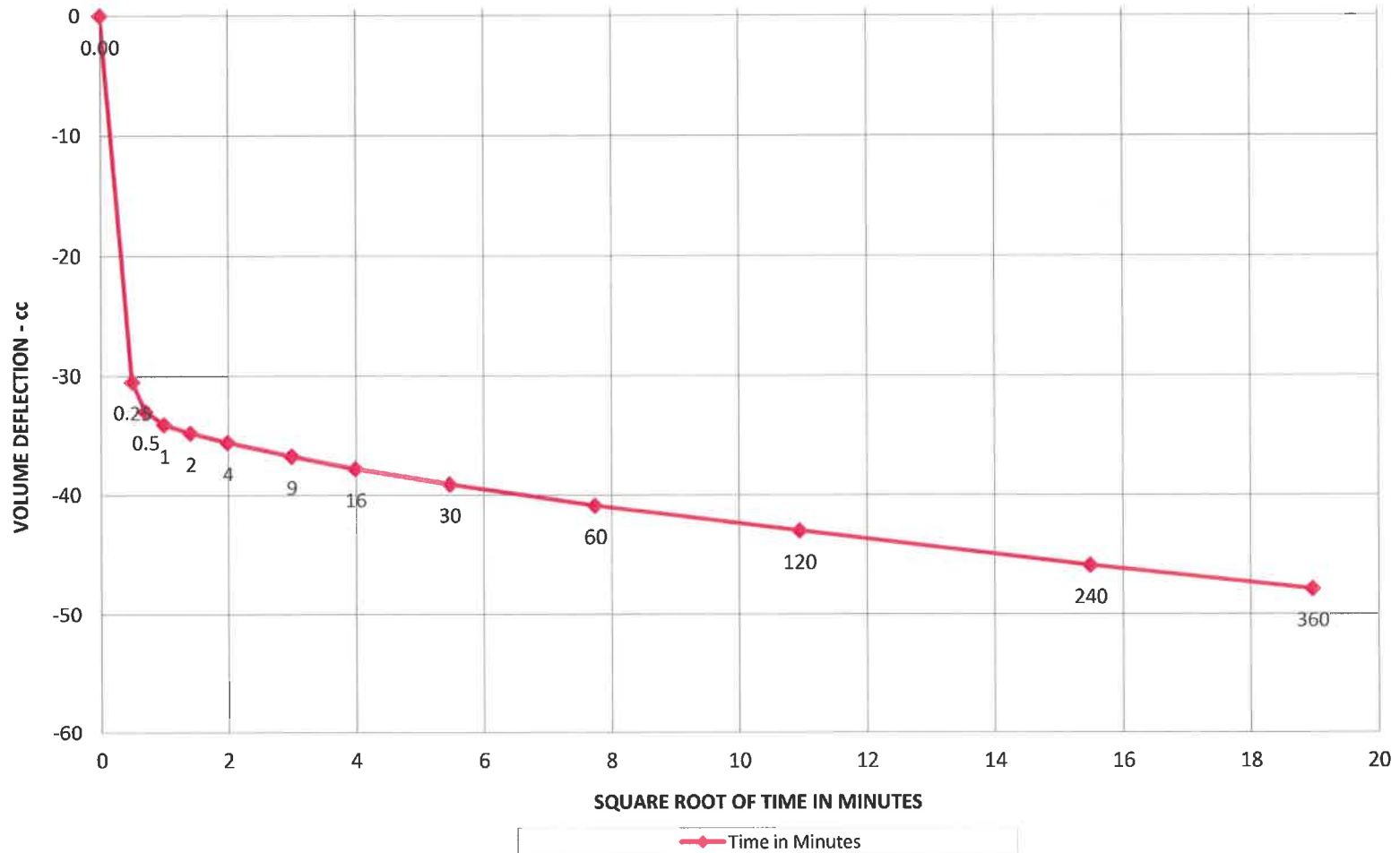
Elapsed Time (min)	SQRT Time (min)	Burette Reading (cc)	Volume Defl. (cc)
0.00	0.00	2.20	0.00
0.25	0.50	32.70	-30.50
0.5	0.71	35.20	-33.00
1	1.00	36.30	-34.10
2	1.41	37.00	-34.80
4	2.00	37.80	-35.60
9	3.00	38.95	-36.75
16	4.00	40.00	-37.80
30	5.48	41.30	-39.10
60	7.75	43.10	-40.90
120	10.95	45.20	-43.00
240	15.49	48.10	-45.90
360	18.97	50.10	-47.90

Initial Height - (in)	2.969	Init. Vol. - (cc)	139.13
Height Change - (in)	0.135	Vol. Change - (cc)	71.70
Ht. After Cons. - (in)	2.834	Cell Exp. - (cc)	45.19
Initial Area - (sq in)	2.859	Net Change - (cc)	26.51
Area After Cons.-(sq in)	2.425	Cons. Vol. - (cc)	112.62

CLIENT SN3

JOB NO. 2984-2

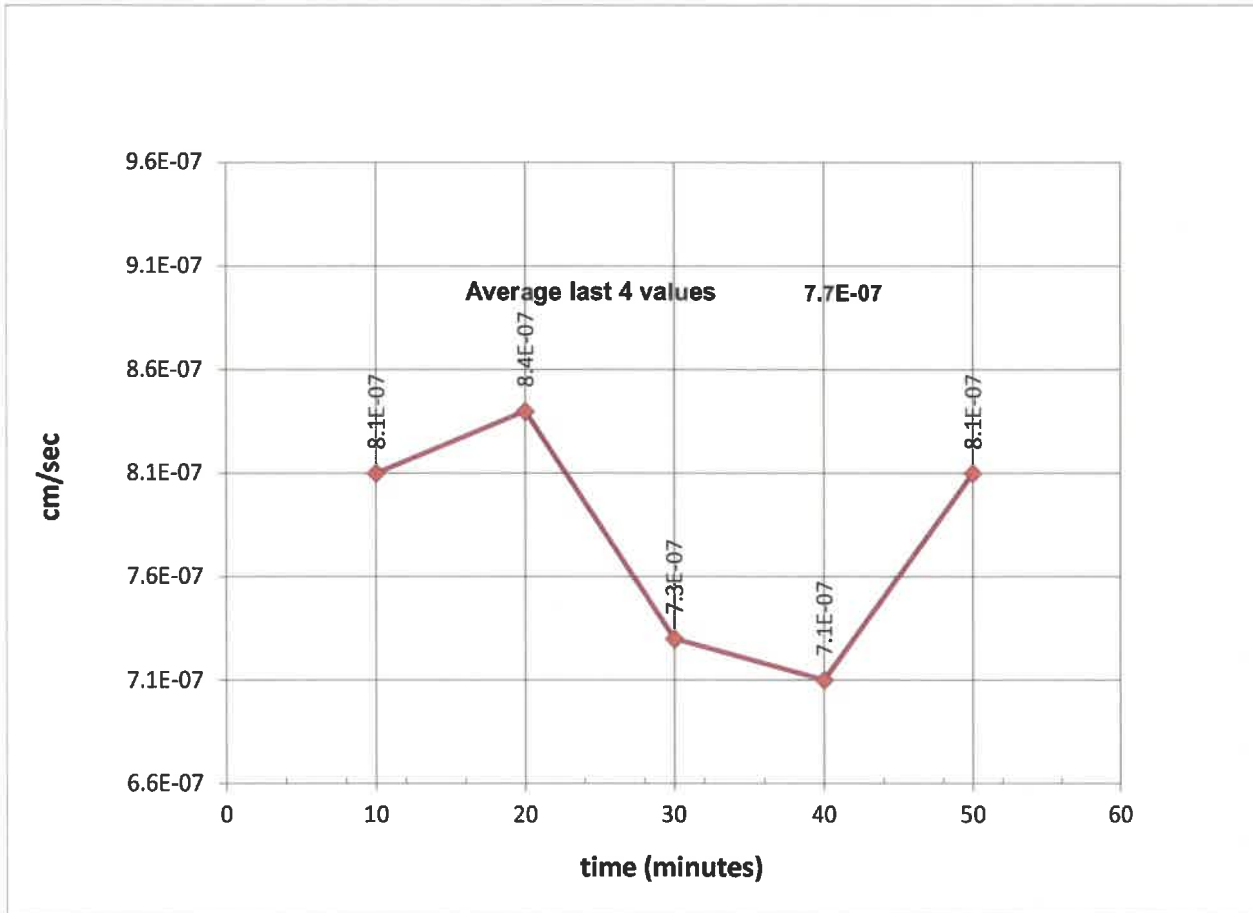
PTX06-ISB113
CONSOLIDATION DATA
 E-6,SN3-1,287.2'





Preliminary Flow Pump Test Data ASTM D5084 Method D

Client:	SN3	Boring Number:	E-6	PTX06- ISB113
Job Number:	2984-2	Depth:	287.2'	
Project:	Pantex BOA 70 Release 5	Sample Number:	SN3-1	
Location:	--	Sampled Date:	11/2/2017	Sampled By: RPD
Project Number:	4638-05	Test Date:	11/21/2017	Technician: CAL



Data Entered By: CAL
Date: 11/21/2017
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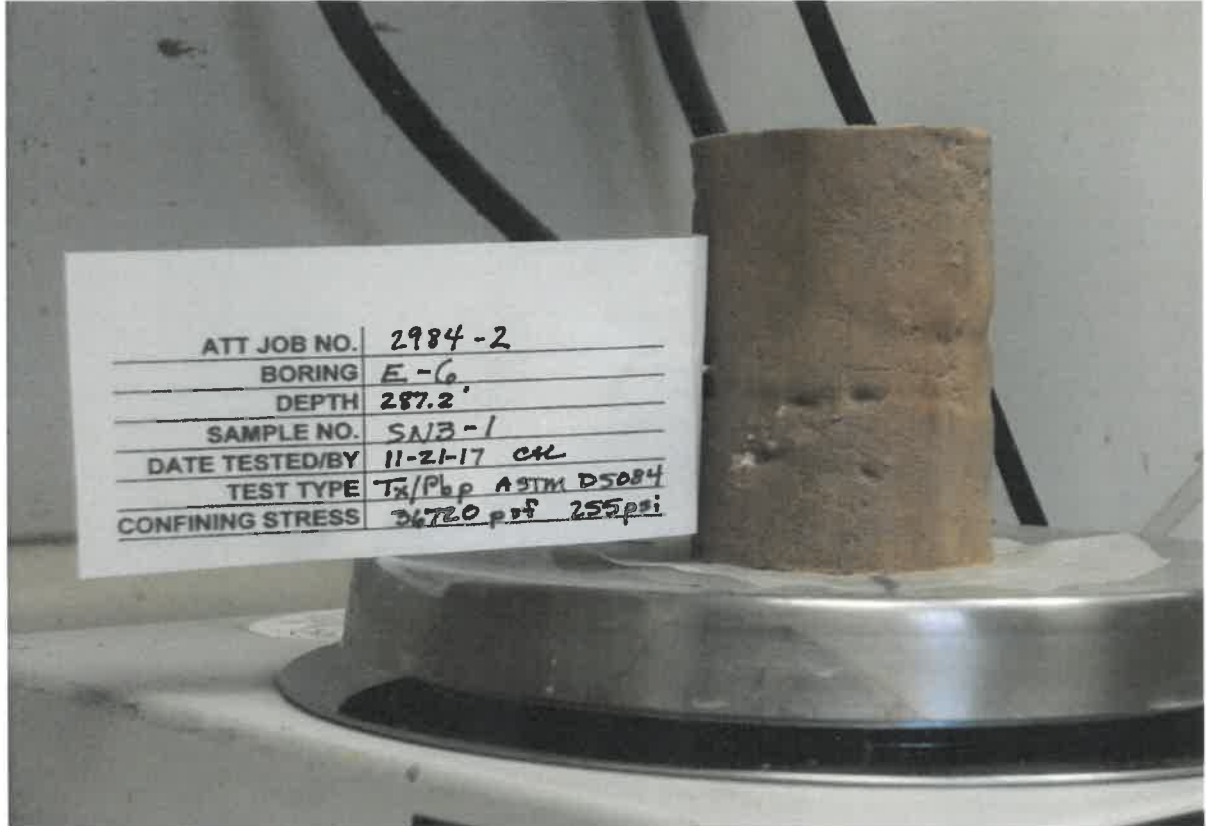
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Date: 11/27/17



Image Attachment

ADVANCED TERRA TESTING

CLIENT SN3
JOB NO. 2984-2
PROJECT Pantex BOA 70 Release 5
PROJECT NO. 4638-05
LOCATION -- PTX06-ISB113



NOTES

File name: 2984_2_Image_17_11_22_07_26_06



PERMEABILITY TEST - BACK PRESSURE SATURATED - FLOW PUMP METHOD

ASTM D5084 Method D

CLIENT	SN3	JOB NO.	2984-4
--------	-----	---------	--------

PROJECT	Pantex BOA 70 Release 5		
PROJECT NO.	4638-05	SAMPLED	12/12/2017 By: RER
BORING NO.	E-5 PTX06-ISB112	TEST STARTED	1/3/2018
DEPTH	284'	TEST FINISHED	1/11/2018 By: CAL
SAMPLE NO.	2	CELL NUMBER	1N
LOCATION	--	PERMEANT	Tap Water
SOIL DESC	split spoon	CONF. PRES. - (psf)	34056

MOISTURE / DENSITY DATA	BEFORE TEST	AFTER TEST
Wt. Soil + Moisture - (g)	279.06	279.27
Wt. Wet Soil & Pan - (g)	285.68	285.89
Wt. Dry Soil & Pan - (g)	235.73	235.73
Wt. Lost Moisture - (g)	49.95	50.16
Wt. of Pan Only - (g)	6.62	6.62
Wt. of Dry Soil - (g)	229.11	229.11
Moisture Content - (%)	21.8	21.9
Wet Density - (pcf)	119.9	131.4
Dry Density - (pcf)	98.4	107.8
Init. Diameter - (in)	1.933	
Init. Area - (sq in)	2.935	
Init. Height - (in)	3.021	
Vol. Bef. Consol. - (cu ft)	0.00513	
Vol. After Consol. - (cu ft)	0.00469	
Porosity - (%)	37.80	

FLOW PUMP CALCULATIONS	
Pump Setting	65
Velocity - (cm/sec)	4.29E-04
Q - (cc/s)	1.37E-05
Height - (in)	2.971
Diameter - (in)	1.863
Pressure - (psi)	0.506
Area after consol. - (cm*cm)	17.581
Gradient	4.714
Permeability k - (cm/s)	1.7E-07
Permeability k - (m/s)	1.7E-09
Back Pressure - (psi)	68.0
Cell Pressure - (psi)	304.5
Ave. Effective Stress - (psi)	236.247
Average Temperature Degree - (C°)	21.4

Data entry by: CAL	Date: 01/12/2018
Checked by: <i>plm</i>	Date: 1/12/18



PERMEABILITY TEST - BACK PRESSURE SATURATED - FLOW PUMP METHOD

ASTM D5084 Method D

CLIENT	SN3	JOB NO.	2984-4
--------	-----	---------	--------

PROJECT	Pantex BOA 70 Release 5		
PROJECT NO.	4638-05	SAMPLED	12/12/2017 By: RER
BORING NO.	E-5 PTX06-ISB112	TEST STARTED	1/3/2018
DEPTH	284'	TEST FINISHED	1/11/2018 By: CAL
SAMPLE NO.	2	CELL NUMBER	1N
LOCATION	--	PERMEANT	Tap Water
SOIL DESC	split spoon	CONF. PRES. - (psf)	34056

SATURATION DATA

Cell Pres. (psi)	Back Pres. (psi)	Burette Reading (cc)		Pore Pressure (psi)		Change	B
		Close	Open	Close	Open		
		1.9	11.4				
40.0	38.0	9.2	10.2	39.1	46.9	7.8	0.78
50.0	48.0	10.3	11.0	49.3	57.6	8.3	0.83
60.0	58.0	11.4	12.1	58.7	68.0	9.3	0.93
70.0	68.0	12.2	12.3	68.9	78.5	9.6	0.96
80.0							

CONSOLIDATION DATA

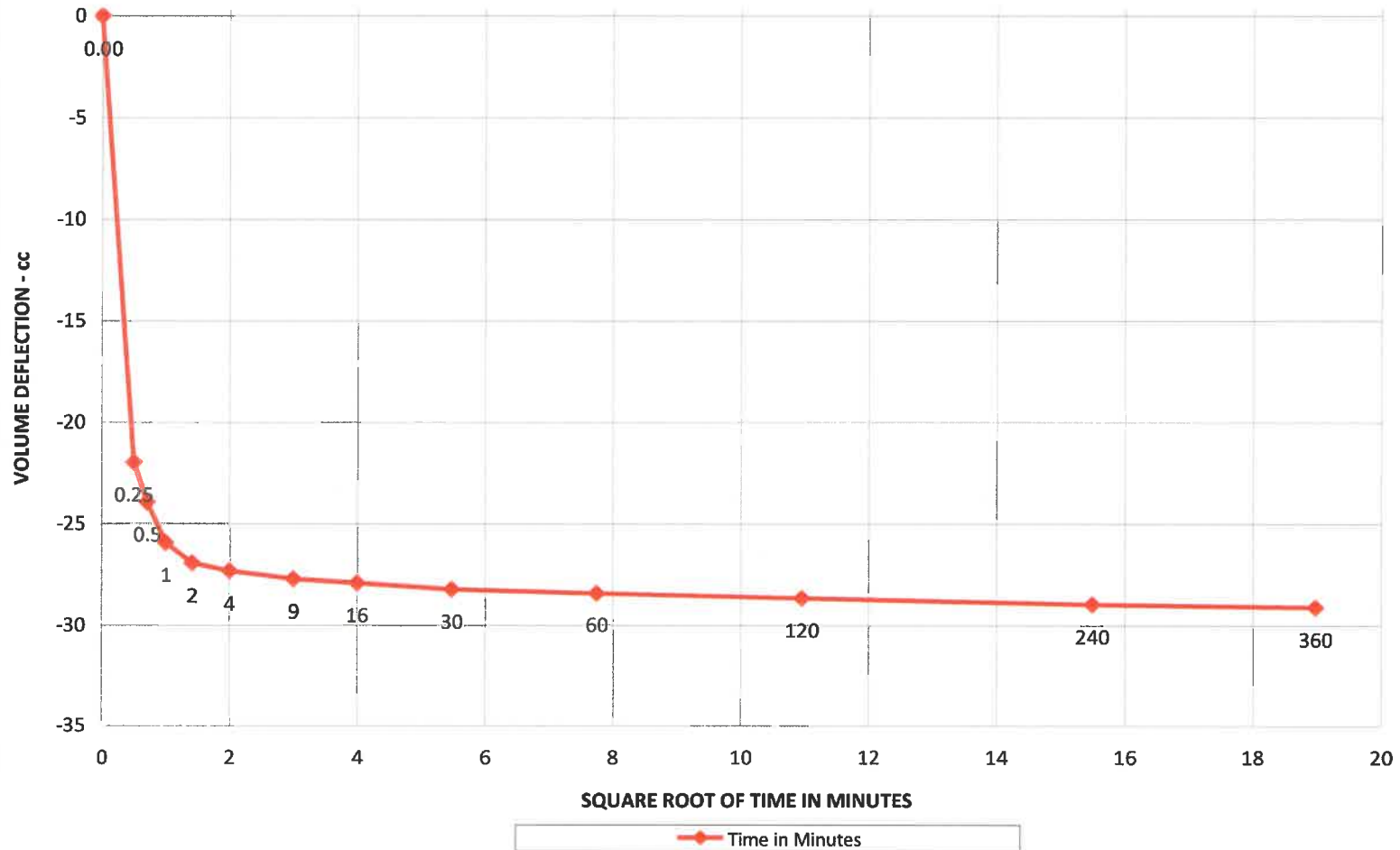
Elapsed Time (min)	SQRT Time (min)	Burette Reading (cc)	Volume Defl. (cc)
0.00	0.00	0.30	0.00
0.25	0.50	22.25	-21.95
0.5	0.71	24.20	-23.90
1	1.00	26.20	-25.90
2	1.41	27.20	-26.90
4	2.00	27.60	-27.30
9	3.00	28.00	-27.70
16	4.00	28.20	-27.90
30	5.48	28.50	-28.20
60	7.75	28.70	-28.40
120	10.95	28.95	-28.65
240	15.49	29.25	-28.95
360	18.97	29.40	-29.10

Initial Height - (in)	3.021	Init. Vol. - (cc)	145.31
Height Change - (in)	0.050	Vol. Change - (cc)	40.60
Ht. After Cons. - (in)	2.971	Cell Exp. - (cc)	27.99
Initial Area - (sq in)	2.935	Net Change - (cc)	12.61
Area After Cons. - (sq in)	2.725	Cons. Vol. - (cc)	132.70

CLIENT SN3

JOB NO. 2984-4

PTX06-ISB112
CONSOLIDATION DATA
E-5,2,284'



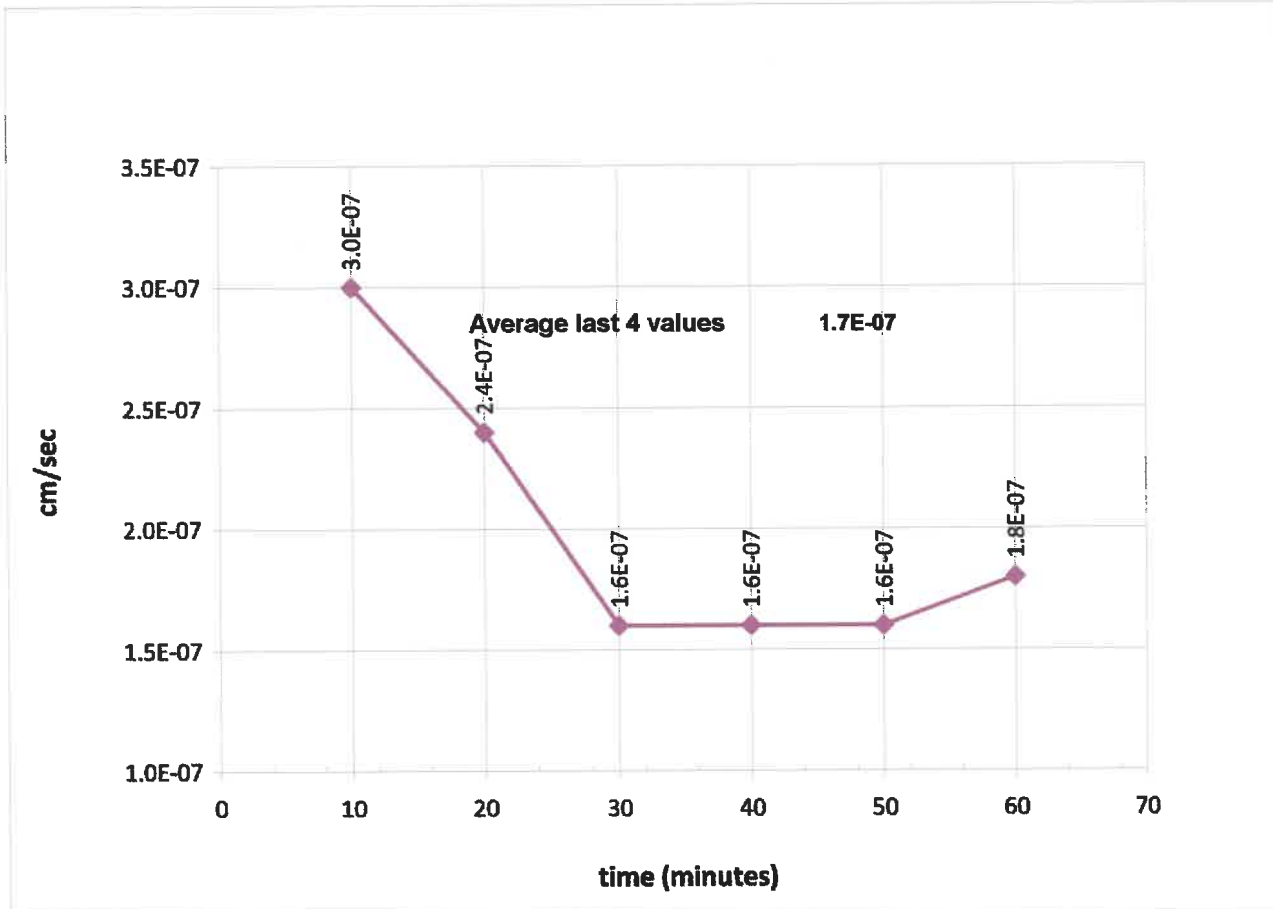


Preliminary Flow Pump Test Data ASTM D5084 Method D

Client: SN3
Job Number: 2984-4
Project: Pantex BOA 70 Release 5
Location: -
Project Number: 4638-05

Boring Number: E-5 **PTX06-ISB112**
Depth: 284'
Sample Number: 2
Sampled Date: 12/12/2017
Test Date: 1/11/2018

Sampled By: RER
Technician: CAL



Data Entered By: CAL
Date: 1/11/2018
File Name: 2984_4_PrelimPerm_ASTMD-5084-methodD-R0_1.xls

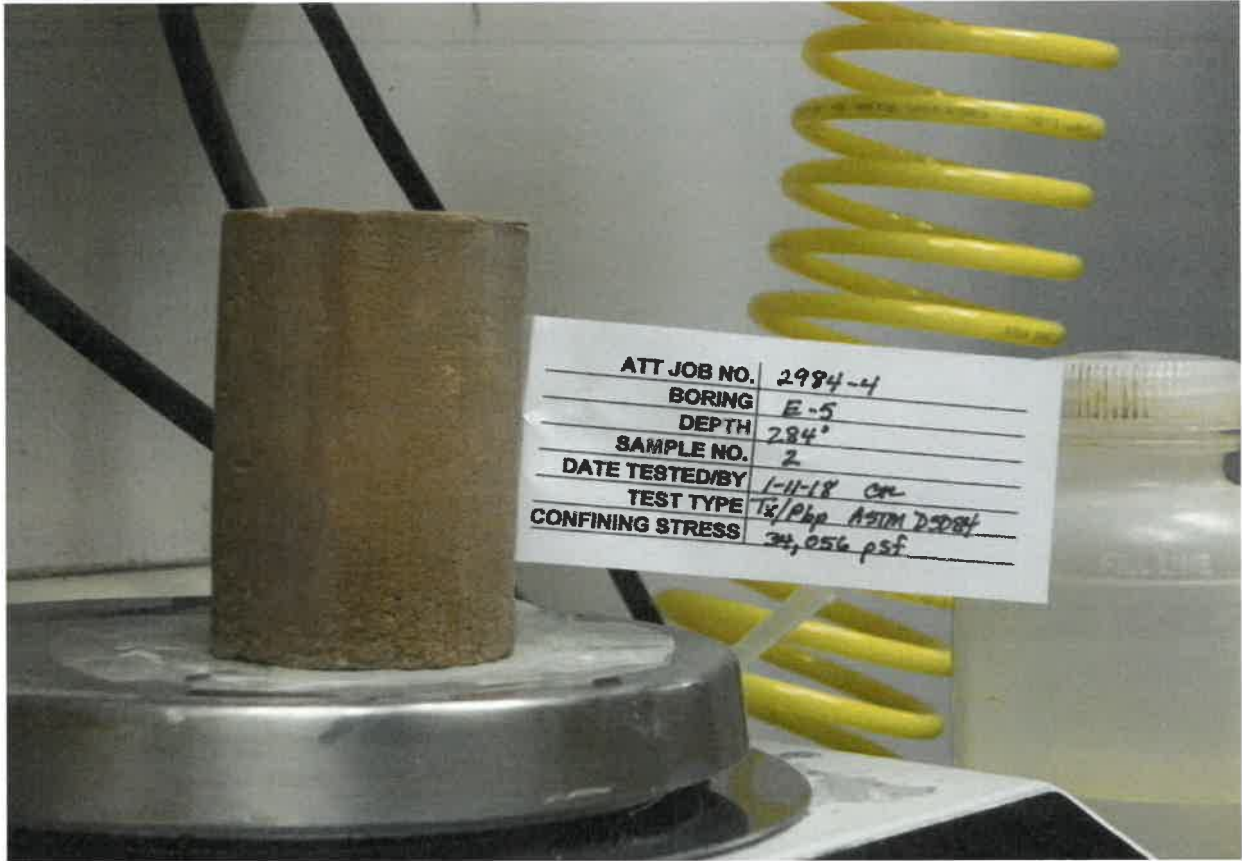
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Date: 1/12/18



ADVANCED TERRA TESTING

Image Attachment

CLIENT SN3
JOB NO. 2984-4
PROJECT Pantex BOA 70 Release 5
PROJECT NO. 4638-05
LOCATION -- PTX06-ISB112



NOTES

File name: 2984_4_Image_18_01_12_07_07_15



PERMEABILITY TEST - BACK PRESSURE SATURATED - FLOW PUMP METHOD

ASTM D5084 Method D

CLIENT	SN3	JOB NO.	2984-4
PROJECT	Pantex BOA 70 Release 5		
PROJECT NO.	4638-05	SAMPLED	12/14/2017 By: JF
BORING NO.	E-4 PTX06-ISB111	TEST STARTED	1/4/2018
DEPTH	284'	TEST FINISHED	1/9/2018 By: CAL
SAMPLE NO.	3	CELL NUMBER	2N
LOCATION	--	PERMEANT	Tap Water
SOIL DESC	split-spoon	CONF. PRES. - (psf)	36086

MOISTURE / DENSITY DATA	BEFORE TEST	AFTER TEST
Wt. Soil + Moisture - (g)	292.50	285.99
Wt. Wet Soil & Pan - (g)	299.24	292.73
Wt. Dry Soil & Pan - (g)	250.17	250.17
Wt. Lost Moisture - (g)	49.07	42.56
Wt. of Pan Only - (g)	6.74	6.74
Wt. of Dry Soil - (g)	243.43	243.43
Moisture Content - (%)	20.2	17.5
Wet Density - (pcf)	127.1	133.0
Dry Density - (pcf)	105.8	113.2
Init. Diameter - (in)	1.924	
Init. Area - (sq in)	2.907	
Init. Height - (in)	3.016	
Vol. Bef. Consol. - (cu ft)	0.00507	
Vol. After Consol. - (cu ft)	0.00474	
Porosity - (%)	31.70	

FLOW PUMP CALCULATIONS	
Pump Setting	65
Velocity - (cm/sec)	4.29E-04
Q - (cc/s)	1.37E-05
Height - (in)	2.913
Diameter - (in)	1.892
Pressure - (psi)	0.582
Area after consol. - (cm*cm)	18.140
Gradient	5.530
Permeability k - (cm/s)	1.4E-07
Permeability k - (m/s)	1.4E-09
Back Pressure - (psi)	38.0
Cell Pressure - (psi)	288.6
Ave. Effective Stress - (psi)	250.309
Average Temperature Degree - (C°)	21.7

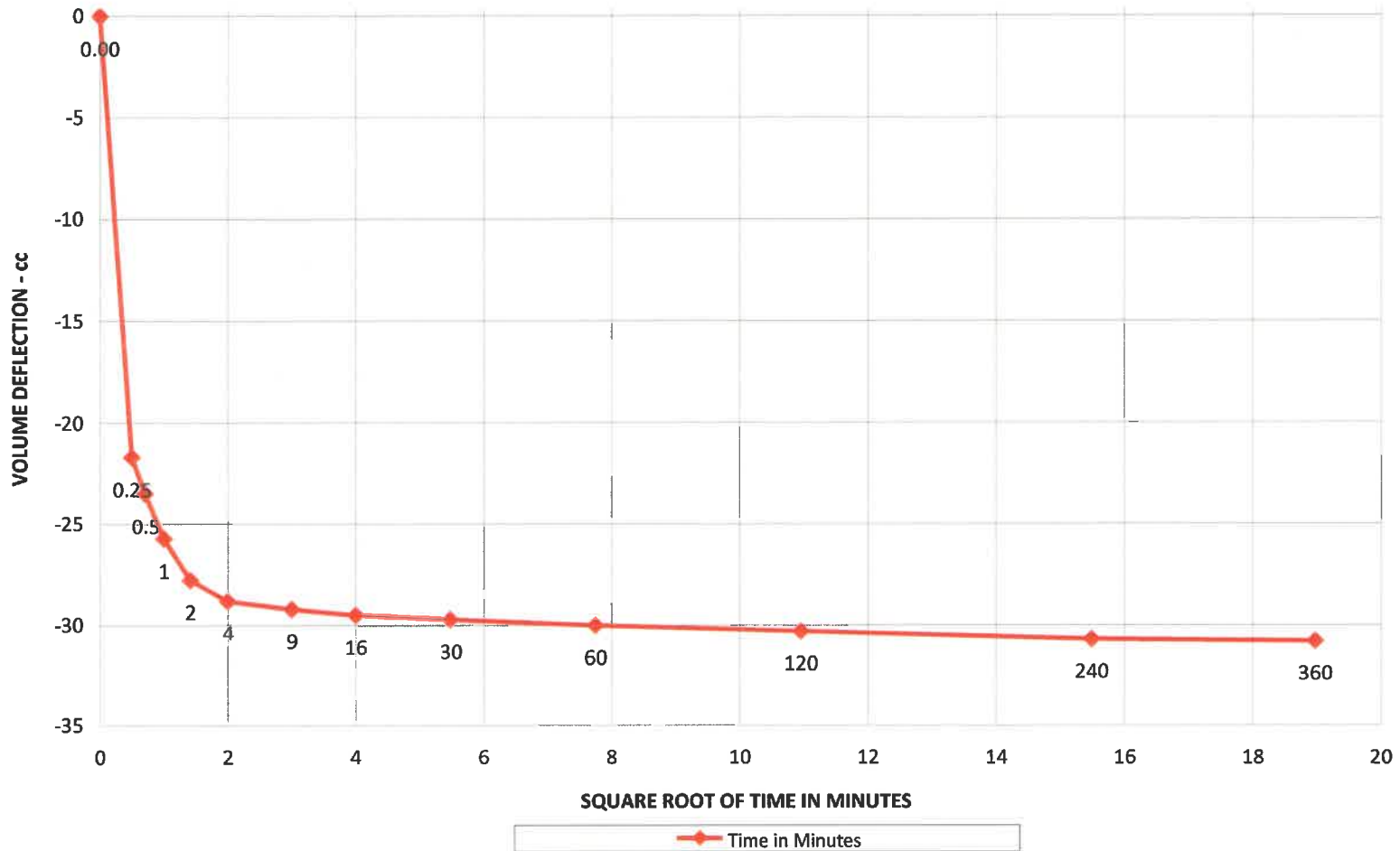
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Checked by: <i>DM</i>	Date: <i>1/10/18</i>

CLIENT SN3

JOB NO. 2984-4

PTX06-ISB111
CONSOLIDATION DATA

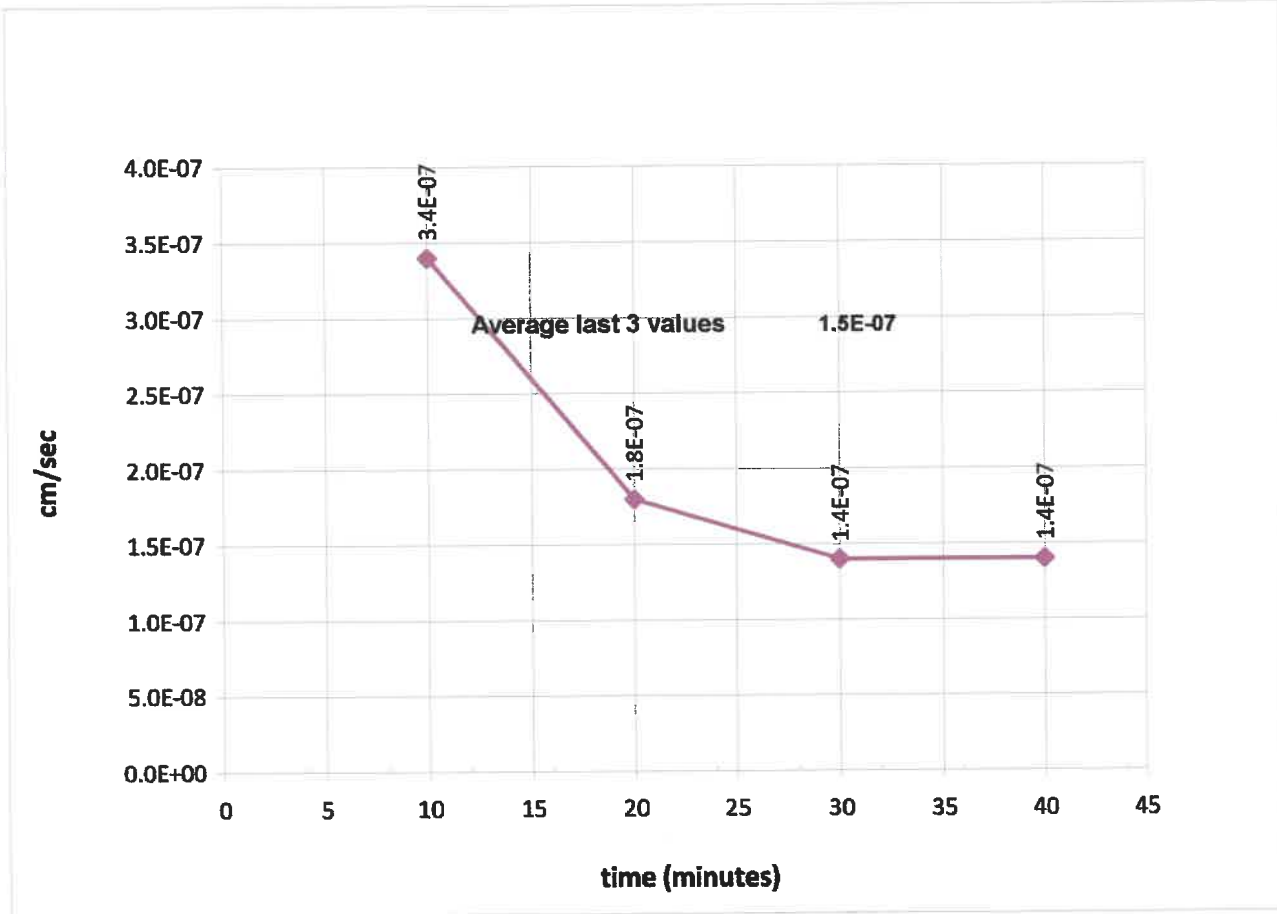
E-4,3,284'





Preliminary Flow Pump Test Data ASTM D5084 Method D

Client:	SN3	Boring Number:	E-4	PTX06- ISB111
Job Number:	2984-4	Depth:	284'	
Project:	Pantex BOA 70 Release 5	Sample Number:	3	
Location:	-	Sampled Date:	12/14/2017	Sampled By: JF
Project Number:	4638-05	Test Date:	1/9/2018	Technician: CAL



Data Entered By: CAL
Date: 1/9/2018
File Name: 2984_4_PrelimPerm_ASTMD-5084-methodD-R0_0.xls

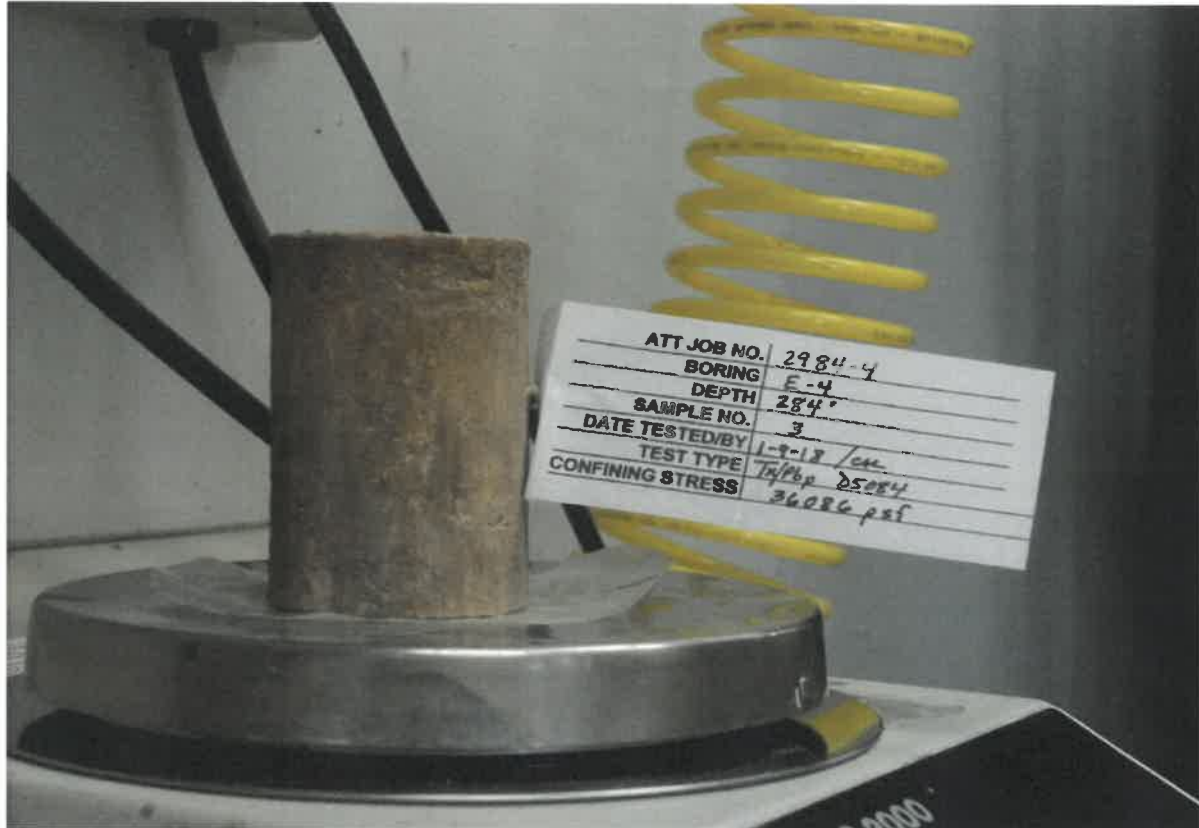
Checked By: DM
Date: 1/11/18



ADVANCED TERRA TESTING

Image Attachment

CLIENT SN3
JOB NO. 2984-4
PROJECT Pantex BOA 70 Release 5
PROJECT NO. 4638-05
LOCATION -- PTX06-ISB111



NOTES

File name: 2984_4_Image_18_01_10_06_39_03



PERMEABILITY TEST - BACK PRESSURE SATURATED - FLOW PUMP METHOD

ASTM D5084 Method D

CLIENT	SN3	JOB NO.	2984-2
PROJECT	Pantex BOA 70 Release 5		
PROJECT NO.	4638-05	SAMPLED	12/1/2017 By: RER
BORING NO.	E3 PTX06-ISB110	TEST STARTED	12/18/2017 By: CAL
DEPTH	284'	TEST FINISHED	12/27/2017 By: CAL
SAMPLE NO.	3	CELL NUMBER	2
LOCATION	--	PERMEANT	Tap Water
SAMPLE TYPE	split spoon	CONF. PRES. - (psf)	35669

MOISTURE / DENSITY DATA	BEFORE TEST	AFTER TEST
Wt. Soil + Moisture - (g)	290.01	293.40
Wt. Wet Soil & Pan - (g)	296.59	299.98
Wt. Dry Soil & Pan - (g)	252.43	252.43
Wt. Lost Moisture - (g)	44.16	47.55
Wt. of Pan Only - (g)	6.58	6.58
Wt. of Dry Soil - (g)	245.85	245.85
Moisture Content - (%)	18.0	19.3
Wet Density - (pcf)	125.6	125.8
Dry Density - (pcf)	106.5	105.4
Init. Diameter - (in)	1.933	
Init. Area - (sq in)	2.935	
Init. Height - (in)	2.998	
Vol. Bef. Consol. - (cu ft)	0.00509	
Vol. After Consol. - (cu ft)	0.00514	
Porosity - (%)	32.65	

FLOW PUMP CALCULATIONS	
Pump Setting (gear number)	12
Percentage of Pump Setting	100
Q - (cc/s)	2.30E-05
Height - (in)	2.901
Diameter - (in)	1.975
Pressure - (psi)	0.325
Area after consol. - (sq cm)	19.759
Gradient	3.101
Permeability k - (cm/s)	3.7E-07
Permeability k - (m/s)	3.7E-09
Back Pressure - (psi)	68.0
Cell Pressure - (psi)	315.7
Ave. Effective Stress - (psi)	247.538
Average temperature degree - (c°)	22.2

Data entry by:	CAL	Date:	01/02/2018
Checked by:	<i>KR</i>	Date:	<i>1/9/18</i>



PERMEABILITY TEST - BACK PRESSURE SATURATED - FLOW PUMP METHOD

ASTM D5084 Method D

CLIENT	SN3	JOB NO.	2984-2
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PROJECT	Pantex BOA 70 Release 5		
PROJECT NO.	4638-05	SAMPLED	12/1/2017 By: RER
BORING NO.	E3 PTX06-ISB110	TEST STARTED	12/18/2017 By: CAL
DEPTH	284'	TEST FINISHED	12/27/2017 By: CAL
SAMPLE NO.	3	CELL NUMBER	2
LOCATION	--	PERMEANT	Tap Water
SAMPLE TYPE	split spoon	CONF. PRES. - (psf)	35669

SATURATION DATA

Cell Press. (psi)	Back Press. (psi)	Burette Reading (cc)		Pore Press. (psi)		Change	B
		Close	Open	Close	Open		
40.0	38.0	1.5	9.1				
50.0	48.0	9.4	10.4	38.3	46.1	7.8	0.78
60.0	58.0	11.2	12.1	48.2	56.8	8.6	0.86
70.0	68.0	12.7	13.5	58.2	67.3	9.1	0.91
80.0		14.2	14.3	68.0	77.6	9.6	0.96

CONSOLIDATION DATA

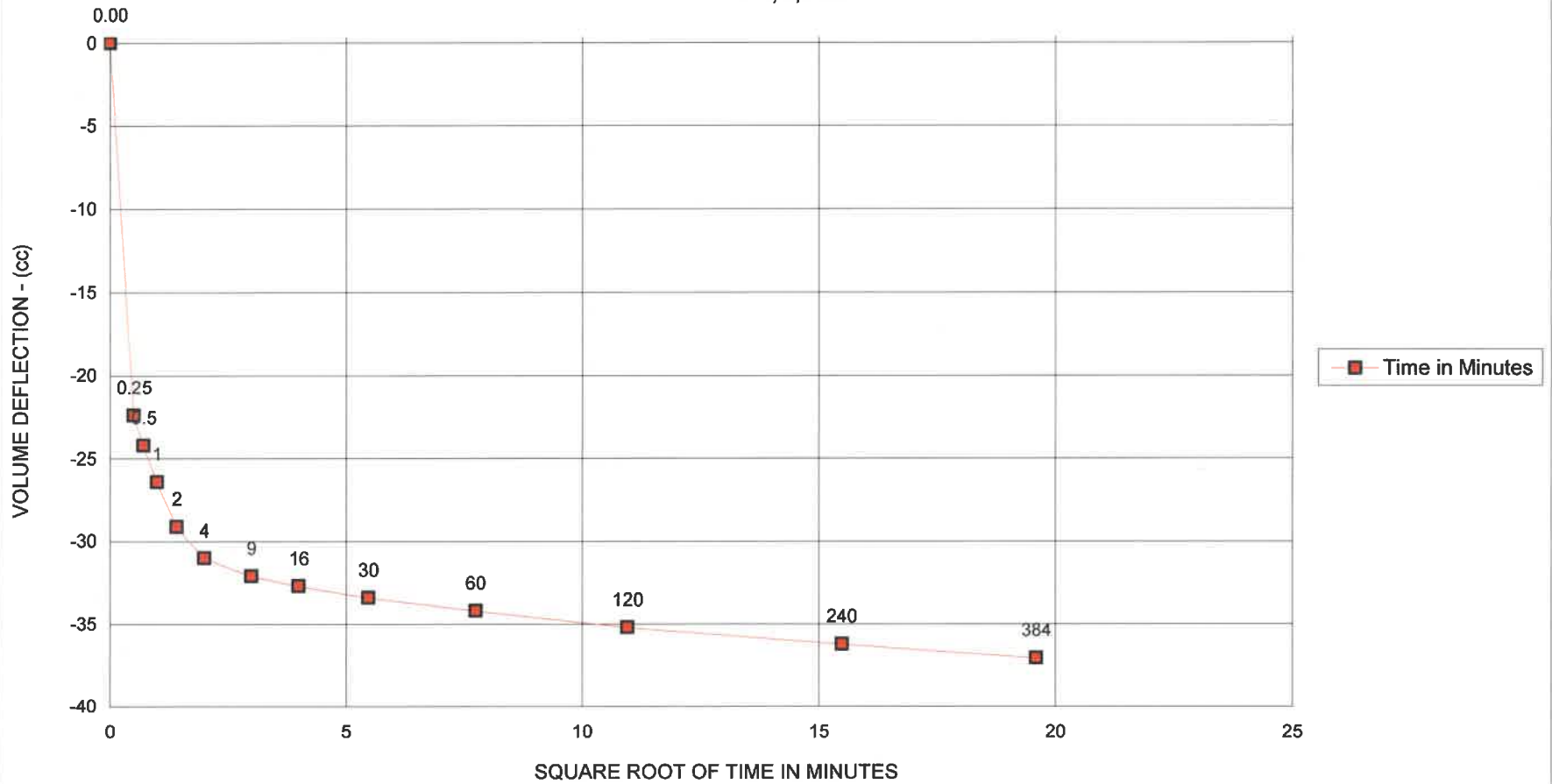
Elapsed Time (Min)	SQRT Time (Min)	Burette Reading (cc)	Volume Def. (cc)
0.00	0.00	0.20	0.00
0.25	0.50	22.60	-22.40
0.5	0.71	24.40	-24.20
1	1.00	26.60	-26.40
2	1.41	29.30	-29.10
4	2.00	31.20	-31.00
9	3.00	32.30	-32.10
16	4.00	32.90	-32.70
30	5.48	33.60	-33.40
60	7.75	34.40	-34.20
120	10.95	35.40	-35.20
240	15.49	36.40	-36.20
384	19.60	37.25	-37.05

Initial Height - (in)	2.998	Init. Vol. - (cc)	144.20
Height Change - (in)	0.097	Vol. Change - (cc)	53.30
Ht. After Cons. - (in)	2.901	Cell Exp. - (cc)	54.72
Initial Area - (sq in)	2.935	Net Change - (cc)	-1.42
Area After Cons. - sq in	3.063	Cons. Vol. - (cc)	145.62

CLIENT SN3

JOB NO. 2984-2

PTX06-ISB110
CONSOLIDATION DATA
E3,3,284'



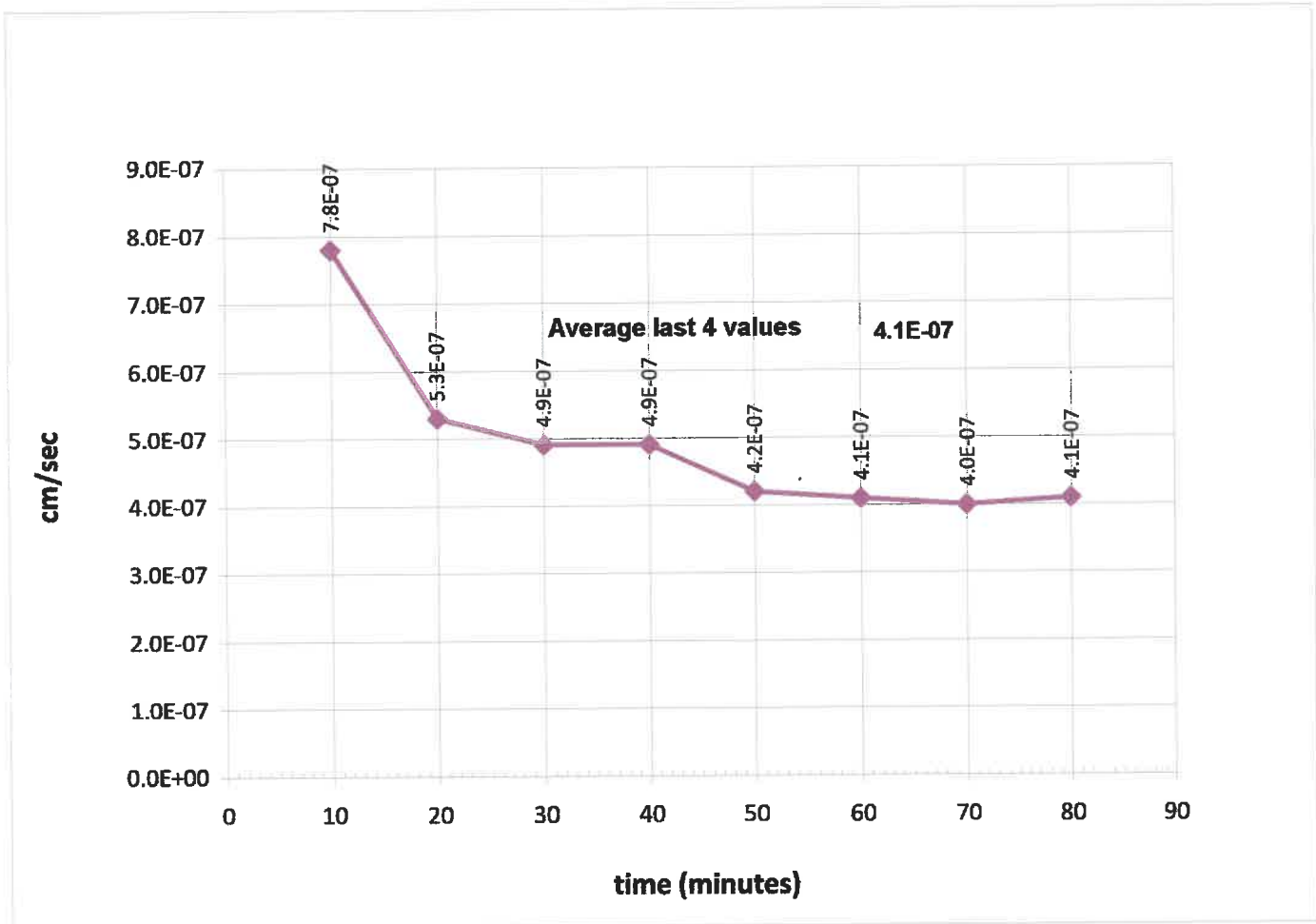


Preliminary Flow Pump Test Data ASTM D5084

Client: SN3
Job Number: 2984-2
Project: Pantex BOA 70 Release 5
Location: --
Project Number: 4638-05

Boring Number: E3 **PTX06-ISB110**
Depth: 284'
Sample Number: 3
Sampled Date: 12/6/2012
Test Date: 12/27/2017

Sampled By: RER
Technician: DPM



Data Entered By: DPM
Date: 12/27/2017
File Name: 2984_2_PrelimPerm_ASTMD-5084-methodD-R0_19.xls

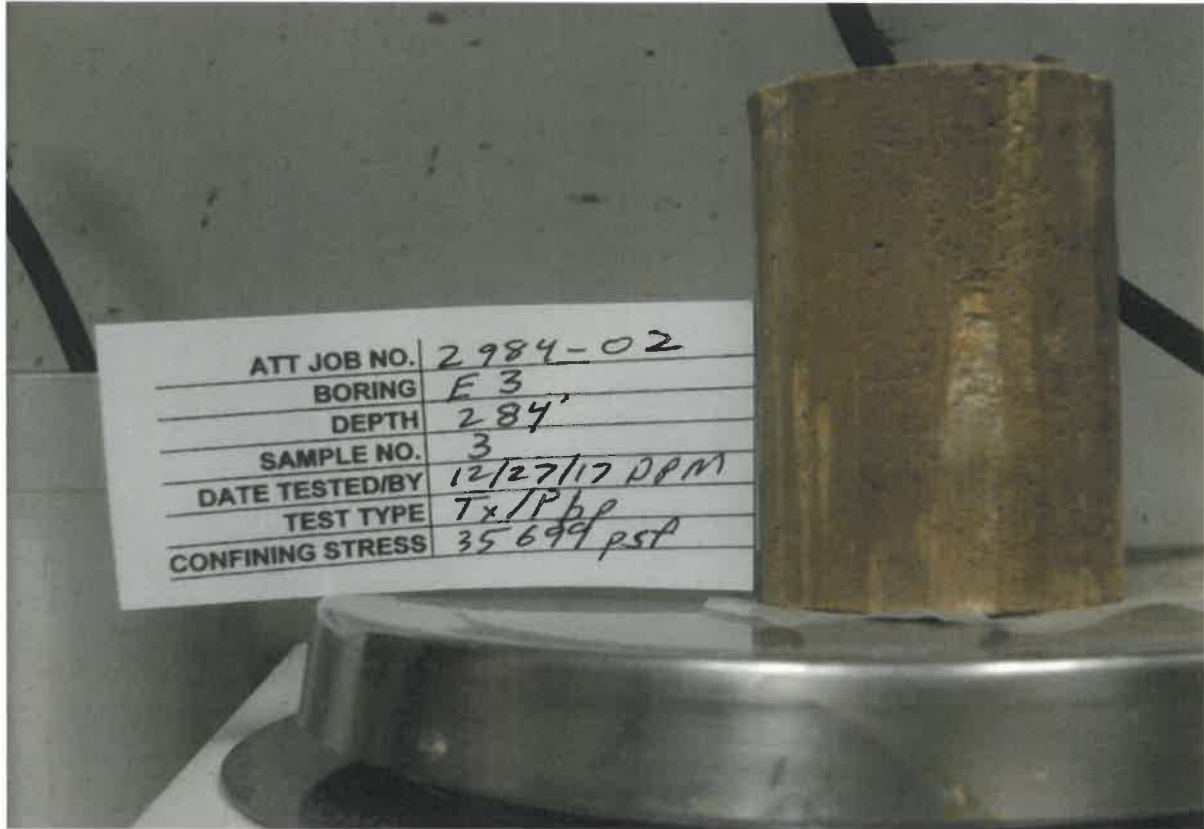
Checked By: KC
Date: 1/9/18



ADVANCED TERRA TESTING

Image Attachment

CLIENT SN3
JOB NO. 2984-2
PROJECT Pantex BOA 70 Release 5
PROJECT NO. 4638-05
LOCATION -- PTX06-ISB110



NOTES

File name: 2984_2_Image_18_01_02_09_27_14



PERMEABILITY TEST - BACK PRESSURE SATURATED - FLOW PUMP METHOD

ASTM D5084 Method D

CLIENT SN3 JOB NO. 2984-2

PROJECT	Pantex BOA 70 Release 5	SAMPLED	12/3/2017	By: --
PROJECT NO.	4638-05	TEST STARTED	12/26/2017	
BORING NO.	E2 PTX06-ISB109	TEST FINISHED	1/4/2018	By: CAL
DEPTH	283'	CELL NUMBER	2N	
SAMPLE NO.	6	PERMEANT	Tap Water	
LOCATION	--	CONF. PRES. - (psf)	36403	
SOIL DESC	split spoon			

MOISTURE / DENSITY DATA	BEFORE TEST	AFTER TEST
Wt. Soil + Moisture - (g)	292.52	291.81
Wt. Wet Soil & Pan - (g)	299.21	298.50
Wt. Dry Soil & Pan - (g)	255.87	255.87
Wt. Lost Moisture - (g)	43.34	42.63
Wt. of Pan Only - (g)	6.69	6.69
Wt. of Dry Soil - (g)	249.18	249.18
Moisture Content - (%)	17.4	17.1
Wet Density - (pcf)	128.6	137.1
Dry Density - (pcf)	109.6	117.1
Init. Diameter - (in)	1.923	
Init. Area - (sq in)	2.904	
Init. Height - (in)	2.983	
Vol. Bef. Consol. - (cu ft)	0.00501	
Vol. After Consol. - (cu ft)	0.00469	
Porosity - (%)	32.09	

FLOW PUMP CALCULATIONS

Pump Setting	29
Velocity - (cm/sec)	1.93E-04
Q - (cc/s)	6.16E-06
Height - (in)	2.881
Diameter - (in)	1.893
Pressure - (psi)	0.733
Area after consol. - (cm*cm)	18.153
Gradient	7.043
Permeability k - (cm/s)	4.8E-08
Permeability k - (m/s)	4.8E-10
Back Pressure - (psi)	58.0
Cell Pressure - (psi)	310.8
Ave. Effective Stress - (psi)	252.434
Average Temperature Degree - (C°)	21.5

Data entry by: CAL Date: 01/05/2018
 Checked by: KR Date: 1/8/18



PERMEABILITY TEST - BACK PRESSURE SATURATED - FLOW PUMP METHOD

ASTM D5084 Method D

CLIENT	SN3	JOB NO.	2984-2
PROJECT	Pantex BOA 70 Release 5		
PROJECT NO.	4638-05	SAMPLED	12/3/2017 By: --
BORING NO.	E2 PTX06-ISB109	TEST STARTED	12/26/2017
DEPTH	283'	TEST FINISHED	1/4/2018 By: CAL
SAMPLE NO.	6	CELL NUMBER	2N
LOCATION	--	PERMEANT	Tap Water
SOIL DESC	split spoon	CONF. PRES. - (psf)	36403

SATURATION DATA

Cell Pres. (psi)	Back Pres. (psi)	Burette Reading (cc)		Pore Pressure (psi)		Change	B
		Close	Open	Close	Open		
		1.7	9.5				
40.0	38.0	9.8	10.6	38.1	47.5	9.4	0.94
50.0	48.0	10.8	11.4	49.2	58.3	9.1	0.91
60.0	58.0	11.6	11.7	58.5	68.2	9.7	0.97
70.0							

CONSOLIDATION DATA

Elapsed Time (min)	SQRT Time (min)	Burette Reading (cc)	Volume Defl. (cc)
0.00	0.00	0.30	0.00
0.25	0.50	18.70	-18.40
0.5	0.71	19.75	-19.45
1	1.00	21.30	-21.00
2	1.41	23.45	-23.15
4	2.00	25.95	-25.65
9	3.00	27.80	-27.50
16	4.00	28.30	-28.00
30	5.48	28.60	-28.30
60	7.75	29.00	-28.70
120	10.95	29.20	-28.90
240	15.49	29.60	-29.30
360	18.97	29.80	-29.50

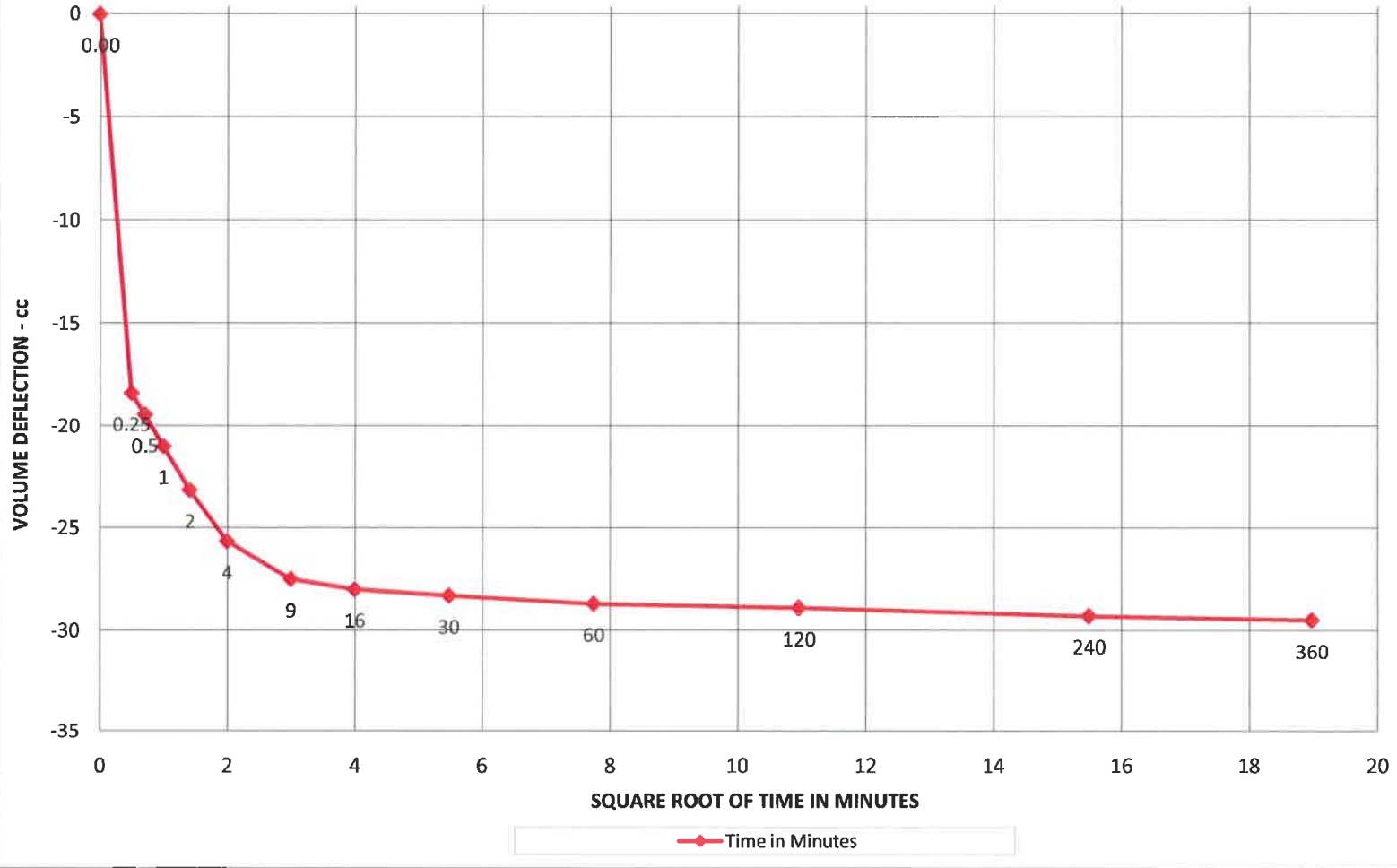
Initial Height - (in)	2.983	Init. Vol. - (cc)	142.00
Height Change - (in)	0.102	Vol. Change - (cc)	40.50
Ht. After Cons. - (in)	2.881	Cell Exp. - (cc)	31.36
Initial Area - (sq in)	2.904	Net Change - (cc)	9.14
Area After Cons.-(sq in)	2.814	Cons. Vol. - (cc)	132.86

CLIENT SN3

JOB NO. 2984-2

PTX06-ISB109
CONSOLIDATION DATA

E2,6,283'



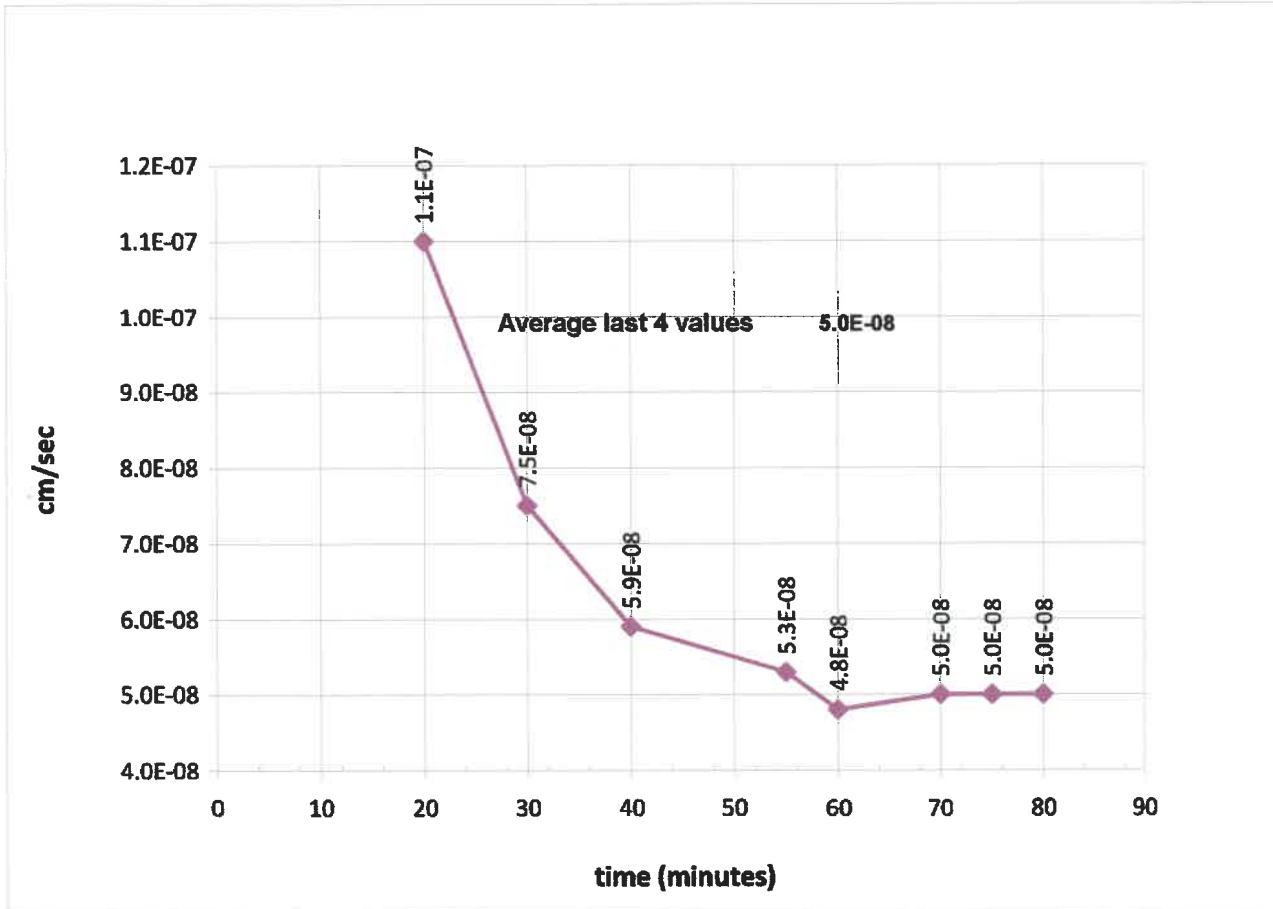


Preliminary Flow Pump Test Data ASTM D5084 Method D

Client: SN3
Job Number: 2984-2
Project: Pantex BOA 70 Release 5
Location: -
Project Number: 4638-05

Boring Number: E2 **PTX06-ISB109**
Depth: 283'
Sample Number: 6
Sampled Date: 12/3/2017
Test Date: 1/4/2018

Sampled By: RER
Technician: CAL



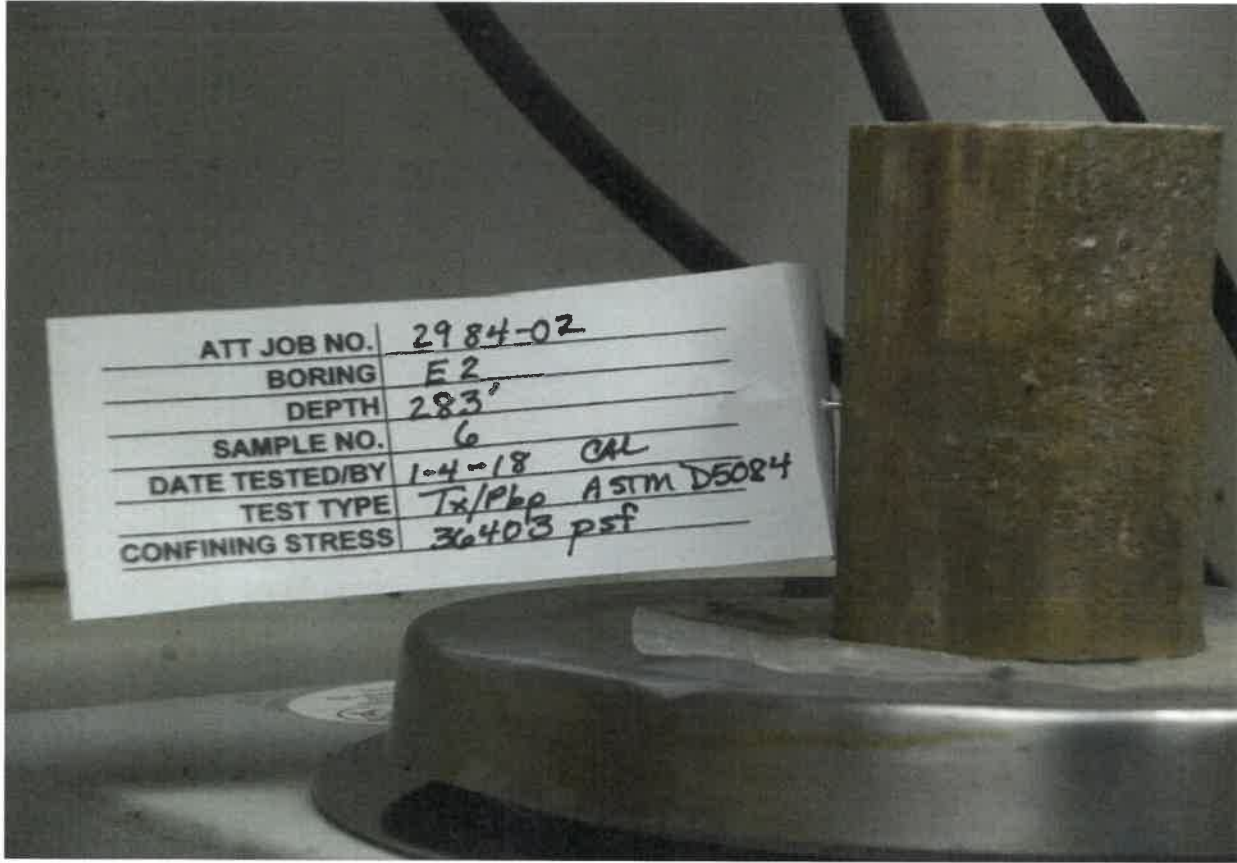
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Checked By: KR
Date: 1/8/18



ADVANCED TERRA TESTING

CLIENT SN3
JOB NO. 2984-2
PROJECT Pantex BOA 70 Release 5
PROJECT NO. 4638-05
LOCATION -- PTX06-ISB109



NOTES



PERMEABILITY TEST - BACK PRESSURE SATURATED - FLOW PUMP METHOD

ASTM D5084 Method D

CLIENT	SN3	JOB NO.	2984-4
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PROJECT	Pantex BOA 70 Release 5		
PROJECT NO.	4638-05	SAMPLED	12/12/2017 By: JF
BORING NO.	E-1 PTX06-ISB108	TEST STARTED	1/3/2018
DEPTH	283'	TEST FINISHED	1/16/2018 By: CAL
SAMPLE NO.	1	CELL NUMBER	1
LOCATION	--	PERMEANT	Tap Water
SOIL DESC	split-spoon	CONF. PRES. - (psf)	36288

MOISTURE / DENSITY DATA	BEFORE TEST	AFTER TEST
Wt. Soil + Moisture - (g)	296.10	302.80
Wt. Wet Soil & Pan - (g)	302.73	309.43
Wt. Dry Soil & Pan - (g)	263.77	263.77
Wt. Lost Moisture - (g)	38.96	45.66
Wt. of Pan Only - (g)	6.63	6.63
Wt. of Dry Soil - (g)	257.14	257.14
Moisture Content - (%)	15.2	17.8
Wet Density - (pcf)	128.0	141.2
Dry Density - (pcf)	111.1	119.9
Init. Diameter - (in)	1.933	
Init. Area - (sq in)	2.935	
Init. Height - (in)	3.004	
Vol. Bef. Consol. - (cu ft)	0.00510	
Vol. After Consol. - (cu ft)	0.00473	
Porosity - (%)	34.10	

FLOW PUMP CALCULATIONS	
Pump Setting	45
Velocity - (cm/sec)	2.98E-04
Q - (cc/s)	9.52E-06
Height - (in)	2.893
Diameter - (in)	1.896
Pressure - (psi)	0.696
Area after consol. - (cm*cm)	18.217
Gradient	6.659
Permeability k - (cm/s)	7.8E-08
Permeability k - (m/s)	7.8E-10
Back Pressure - (psi)	68.0
Cell Pressure - (psi)	320.0
Ave. Effective Stress - (psi)	251.652
Average Temperature Degree - (C°)	22.3

Data entry by: CAL	Date: 01/17/2018
Checked by: <i>AM</i>	Date: <i>1/16/18</i>



PERMEABILITY TEST - BACK PRESSURE SATURATED - FLOW PUMP METHOD

ASTM D5084 Method D

CLIENT	SN3	JOB NO.	2984-4
--------	-----	---------	--------

PROJECT	Pantex BOA 70 Release 5		
PROJECT NO.	4638-05	SAMPLED	12/12/2017 By: JF
BORING NO.	E-1 PTX06-ISB108	TEST STARTED	1/3/2018
DEPTH	283'	TEST FINISHED	1/16/2018 By: CAL
SAMPLE NO.	1	CELL NUMBER	1
LOCATION	--	PERMEANT	Tap Water
SOIL DESC	split-spoon	CONF. PRES. - (psf)	36288

SATURATION DATA

Cell Pres. (psi)	Back Pres. (psi)	Burette Reading (cc)		Pore Pressure (psi)		Change	B
		Close	Open	Close	Open		
		1.6	13.4				
40.0	38.0	9.2	10.4	38.3	46.4	8.1	0.81
50.0	48.0	10.7	--	48.4	57.2	8.8	0.88
60.0	58.0	13.0	13.9	58.3	67.7	9.4	0.94
70.0	68.0	14.3	14.5	68.0	78.0	10.0	1.00
80.0							

CONSOLIDATION DATA

Elapsed Time (min)	SQRT Time (min)	Burette Reading (cc)	Volume Defl. (cc)
0.00	0.00	0.20	0.00
0.25	0.50	16.05	-15.85
0.5	0.71	16.60	-16.40
1	1.00	17.20	-17.00
2	1.41	17.75	-17.55
4	2.00	18.20	-18.00
9	3.00	18.75	-18.55
16	4.00	19.15	-18.95
30	5.48	19.70	-19.50
60	7.75	20.40	-20.20
120	10.95	21.20	-21.00
240	15.49	22.30	-22.10
360	18.97	22.85	-22.65

Initial Height - (in)	3.004	Init. Vol. - (cc)	144.49
Height Change - (in)	0.111	Vol. Change - (cc)	55.40
Ht. After Cons. - (in)	2.893	Cell Exp. - (cc)	44.80
Initial Area - (sq in)	2.935	Net Change - (cc)	10.60
Area After Cons.-(sq in)	2.824	Cons. Vol. - (cc)	133.88

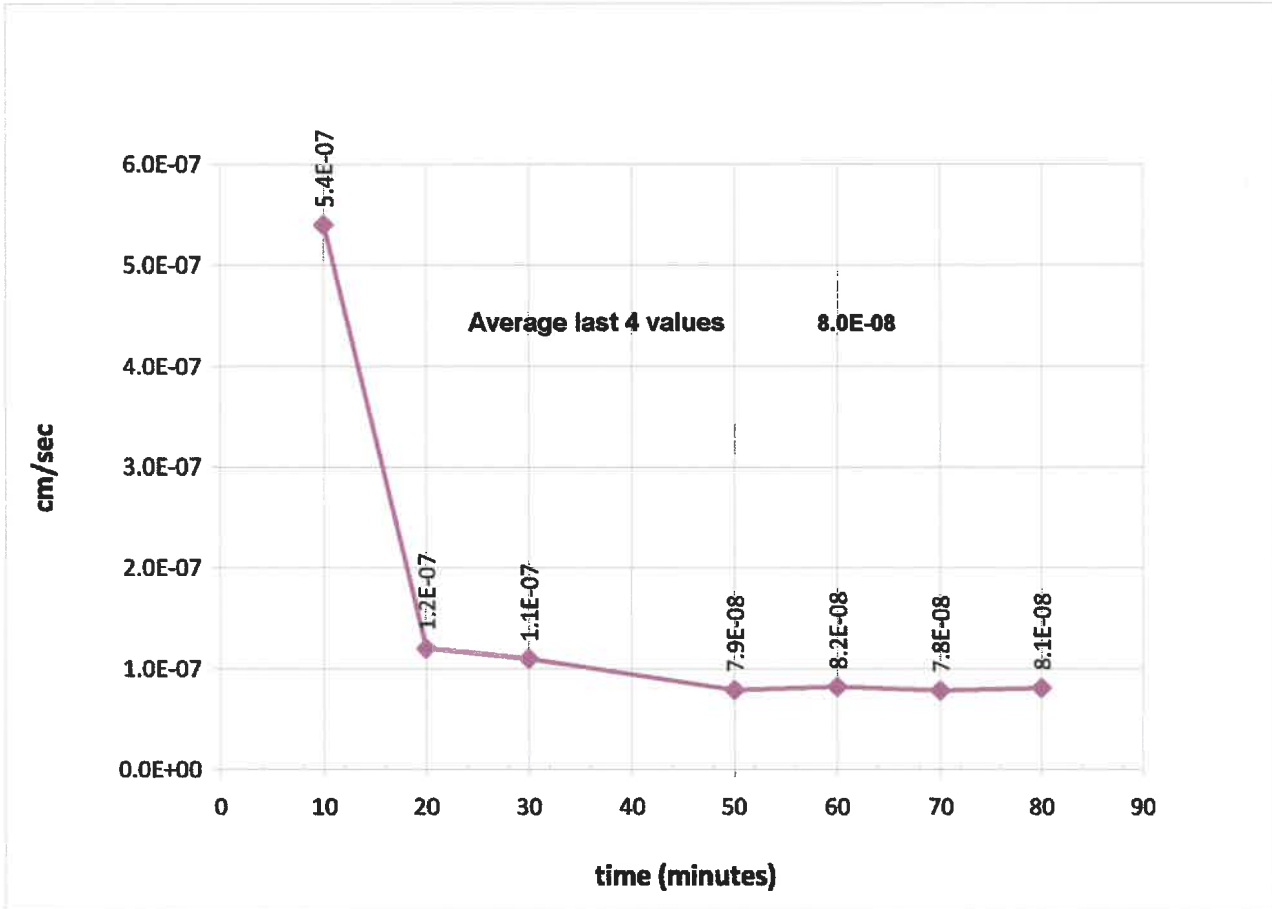


Preliminary Flow Pump Test Data ASTM D5084 Method D

Client: SN3
Job Number: 2984-4
Project: Pantex BOA 70 Release 5
Location: --
Project Number: 4638-05

Boring Number: E-1 **PTX06-ISB108**
Depth: 283'
Sample Number: 1
Sampled Date: 12/12/2017
Test Date: 1/16/2018

Sampled By: JF
Technician: CAL



Data Entered By: CAL
Date: 1/16/2018
File Name: 2984_4_PrelimPerm_ASTMD-5084-methodD-R0_2.xls

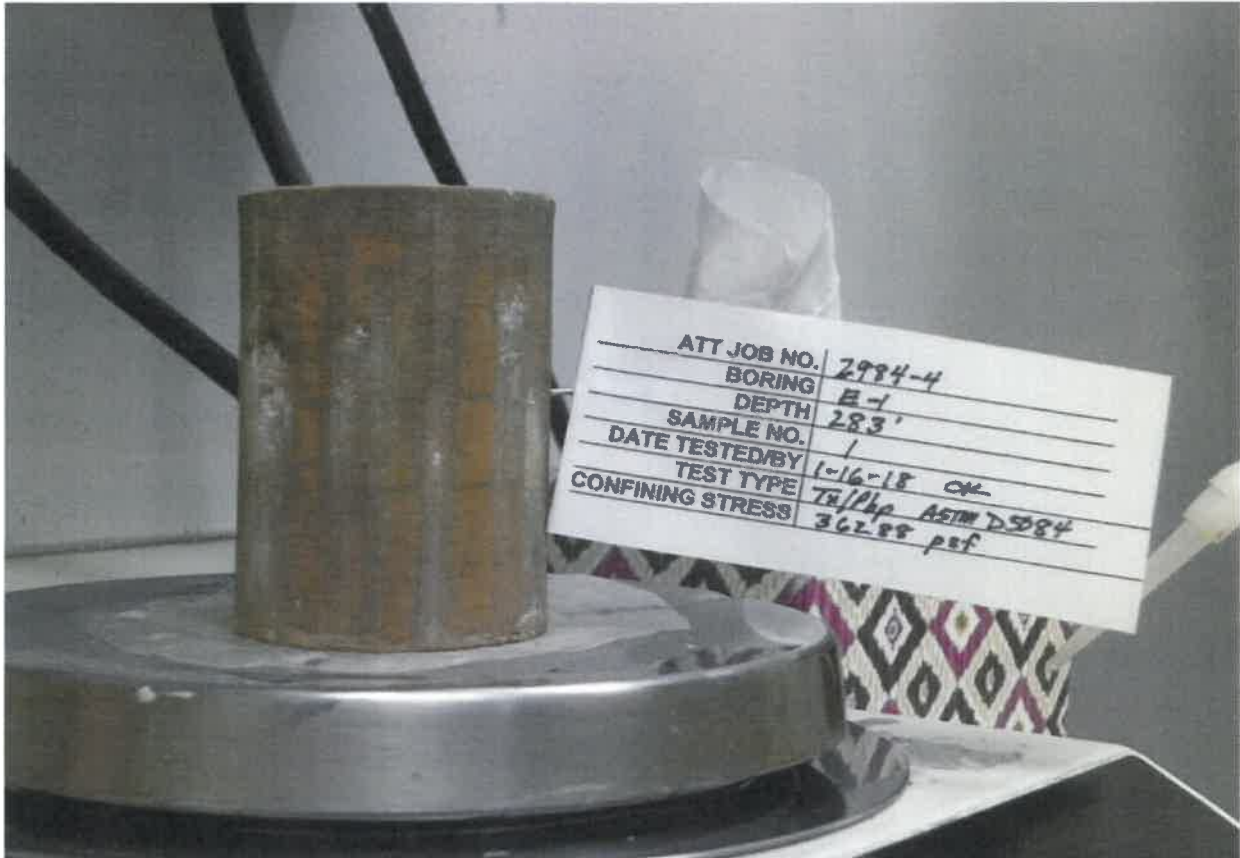
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Date: 1/16/18



Image Attachment

ADVANCED TERRA TESTING

CLIENT SN3
JOB NO. 2984-4
PROJECT Pantex BOA 70 Release 5
PROJECT NO. 4638-05
LOCATION -- PTX06-ISB108



NOTES

File name: 2984_4_Image_18_01_17_13_05_03



PERMEABILITY TEST - BACK PRESSURE SATURATED - FLOW PUMP METHOD

ASTM D5084 Method D

CLIENT	SN3	JOB NO.	2984-5
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PROJECT	Pantex BOA 70 Release 5		
PROJECT NO.	4638-05	SAMPLED	1/29/2018 By: RER
BORING NO.	PTX06-1195	TEST STARTED	2/22/2018
DEPTH	292'	TEST FINISHED	3/6/2018 By: CAL
SAMPLE NO.	5	CELL NUMBER	1
LOCATION	--	PERMEANT	Tap Water
SOIL DESC	split spoon	CONF. PRES. - (psf)	36000

MOISTURE / DENSITY DATA	BEFORE TEST	AFTER TEST
Wt. Soil + Moisture - (g)	284.07	284.15
Wt. Wet Soil & Pan - (g)	290.60	290.68
Wt. Dry Soil & Pan - (g)	241.54	241.54
Wt. Lost Moisture - (g)	49.06	49.14
Wt. of Pan Only - (g)	6.53	6.53
Wt. of Dry Soil - (g)	235.01	235.01
Moisture Content - (%)	20.9	20.9
Wet Density - (pcf)	123.2	142.0
Dry Density - (pcf)	101.9	117.4
Init. Diameter - (in)	1.932	
Init. Area - (sq in)	2.932	
Init. Height - (in)	2.997	
Vol. Bef. Consol. - (cu ft)	0.00508	
Vol. After Consol. - (cu ft)	0.00441	
Porosity - (%)	39.32	

FLOW PUMP CALCULATIONS	
Pump Setting	69
Velocity - (cm/sec)	4.55E-04
Q - (cc/s)	1.46E-05
Height - (in)	2.885
Diameter - (in)	1.834
Pressure - (psi)	0.384
Area after consol. - (cm*cm)	17.052
Gradient	3.684
Permeability k - (cm/s)	2.3E-07
Permeability k - (m/s)	2.3E-09
Back Pressure - (psi)	58.0
Cell Pressure - (psi)	308.0
Ave. Effective Stress - (psi)	249.808
Average Temperature Degree - (C°)	21.0

Data entry by: CAL	Date: 03/07/2018
Checked by: <i>KE</i>	Date: <i>3/8/18</i>



PERMEABILITY TEST - BACK PRESSURE SATURATED - FLOW PUMP METHOD

ASTM D5084 Method D

CLIENT	SN3	JOB NO.	2984-5
PROJECT	Pantex BOA 70 Release 5		
PROJECT NO.	4638-05	SAMPLED	1/29/2018 By: RER
BORING NO.	PTX06-1195	TEST STARTED	2/22/2018
DEPTH	292'	TEST FINISHED	3/6/2018 By: CAL
SAMPLE NO.	5	CELL NUMBER	1
LOCATION	--	PERMEANT	Tap Water
SOIL DESC	split spoon	CONF. PRES. - (psf)	36000

SATURATION DATA

Cell Pres. (psi)	Back Pres. (psi)	Burette Reading (cc)		Pore Pressure (psi)		Change	B
		Close	Open	Close	Open		
		0.4	14.5				
40.0	38.0	0.4	14.5				
50.0	48.0	13.3	14.4	37.3	46.4	9.1	0.91
60.0	58.0	14.5	15.4	46.9	56.3	9.4	0.94
70.0		15.9	16.1	57.6	67.6	10.0	1.00

CONSOLIDATION DATA

Elapsed Time (min)	SQRT Time (min)	Burette Reading (cc)	Volume Defl. (cc)
0.00	0.00	0.00	0.00
0.25	0.50	21.65	-21.65
0.5	0.71	22.50	-22.50
1	1.00	23.55	-23.55
2	1.41	24.30	-24.30
4	2.00	24.70	-24.70
9	3.00	25.20	-25.20
16	4.00	25.55	-25.55
30	5.48	26.05	-26.05
60	7.75	26.70	-26.70
120	10.95	27.50	-27.50
240	15.49	28.50	-28.50
360	18.97	29.20	-29.20

Initial Height - (in)	2.997	Init. Vol. - (cc)	144.00
Height Change - (in)	0.112	Vol. Change - (cc)	62.25
Ht. After Cons. - (in)	2.885	Cell Exp. - (cc)	43.23
Initial Area - (sq in)	2.932	Net Change - (cc)	19.02
Area After Cons.-(sq in)	2.643	Cons. Vol. - (cc)	124.98



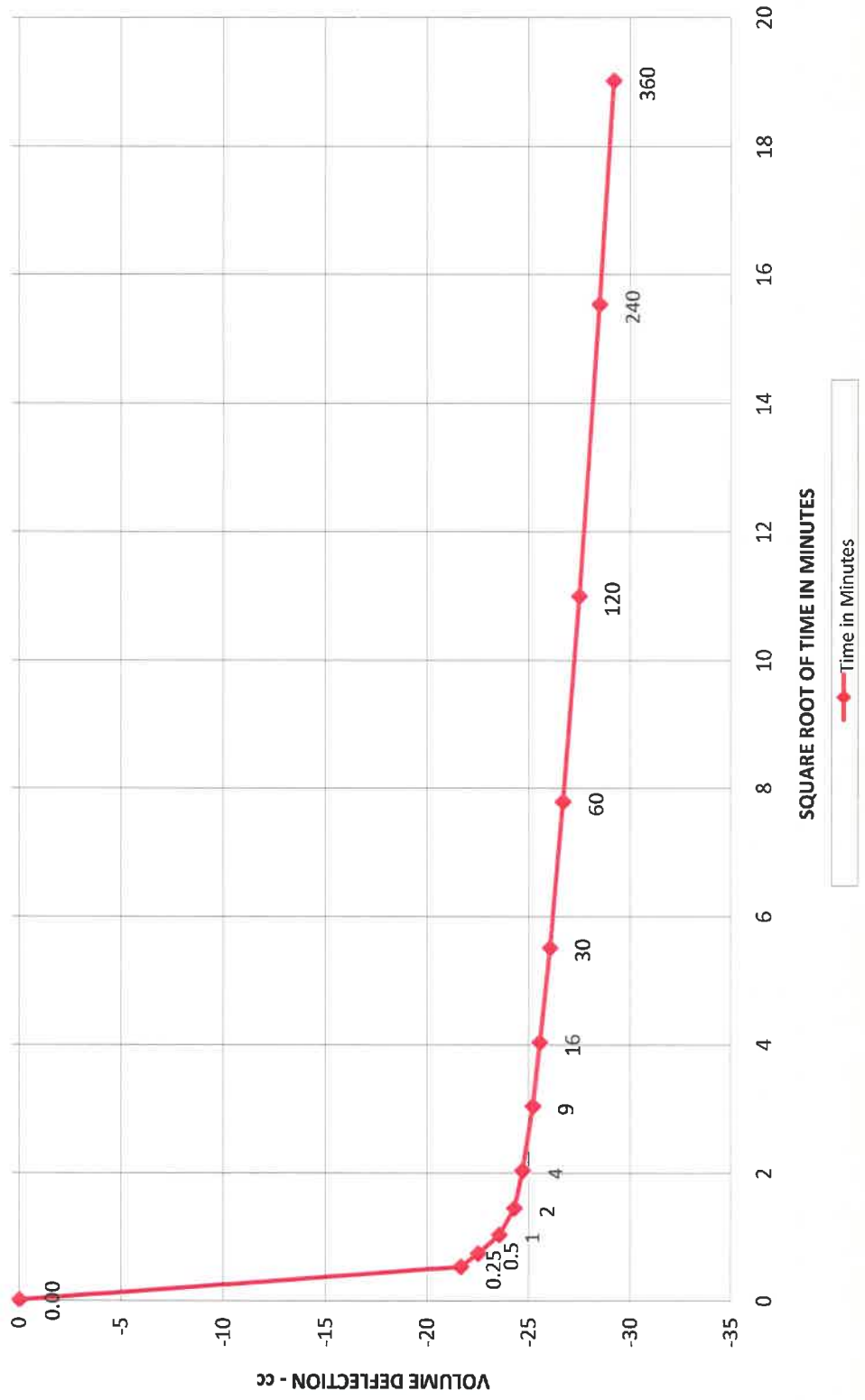
PERMEABILITY TEST - BACK PRESSURE SATURATED - FLOW PUMP METHOD
ASTM D5084 Method D

CLIENT SN3

JOB NO. 2984-5

CONSOLIDATION DATA

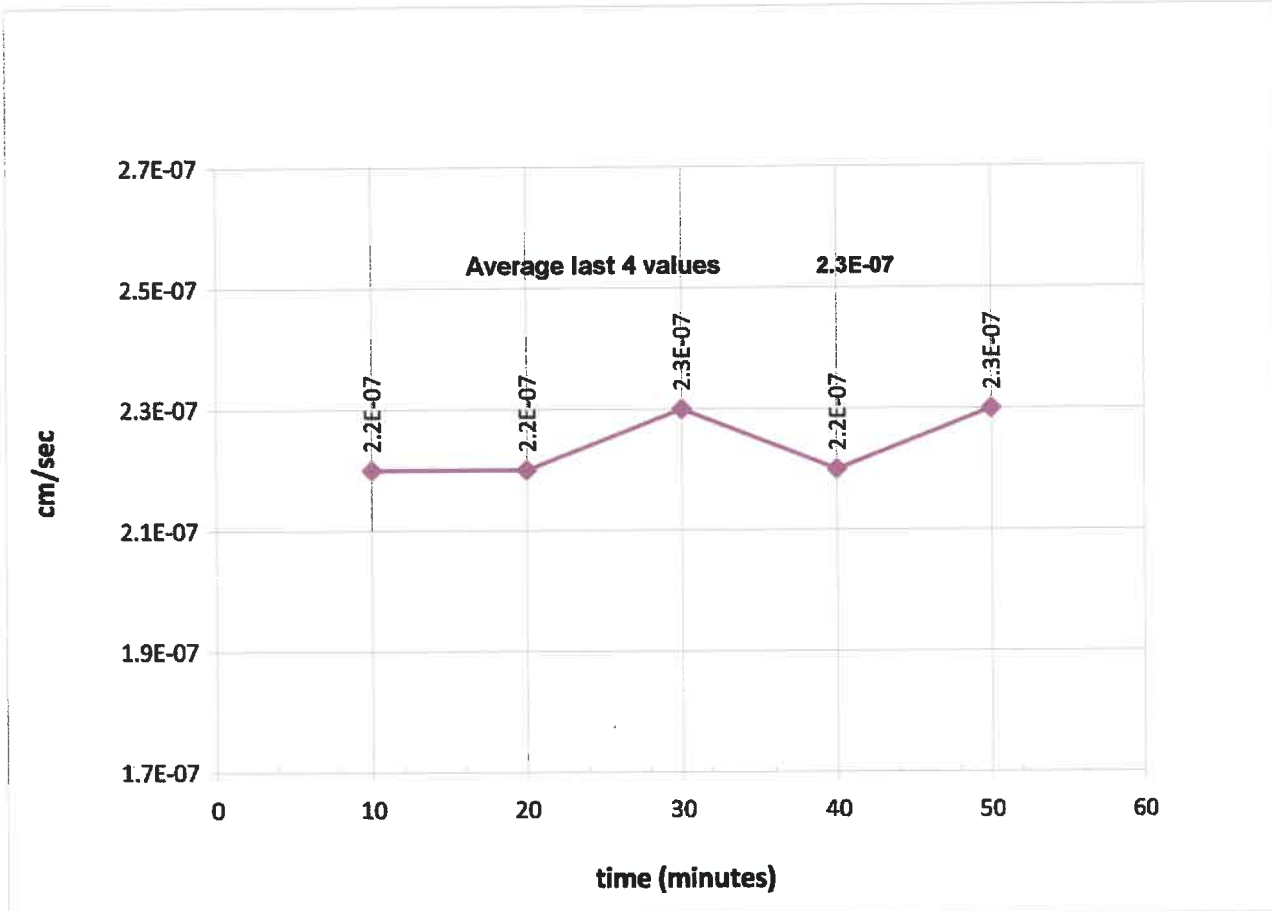
PTX06-1195,5,292'





Preliminary Flow Pump Test Data ASTM D5084 Method D

Client:	SN3	Boring Number:	PTX06-1195	Sampled By:	RER
Job Number:	2984-5	Depth:	292'	Technician:	CAL
Project:	Pantex BOA 70 Release 5	Sample Number:	5		
Location:	-	Sampled Date:	1/29/2018		
Project Number:	4638-05	Test Date:	3/6/2018		



Data Entered By: CAL
Date: 3/6/2018
File Name: 2984_5_PrelimPerm_ASTMD-5084-methodD-R0_4.xls

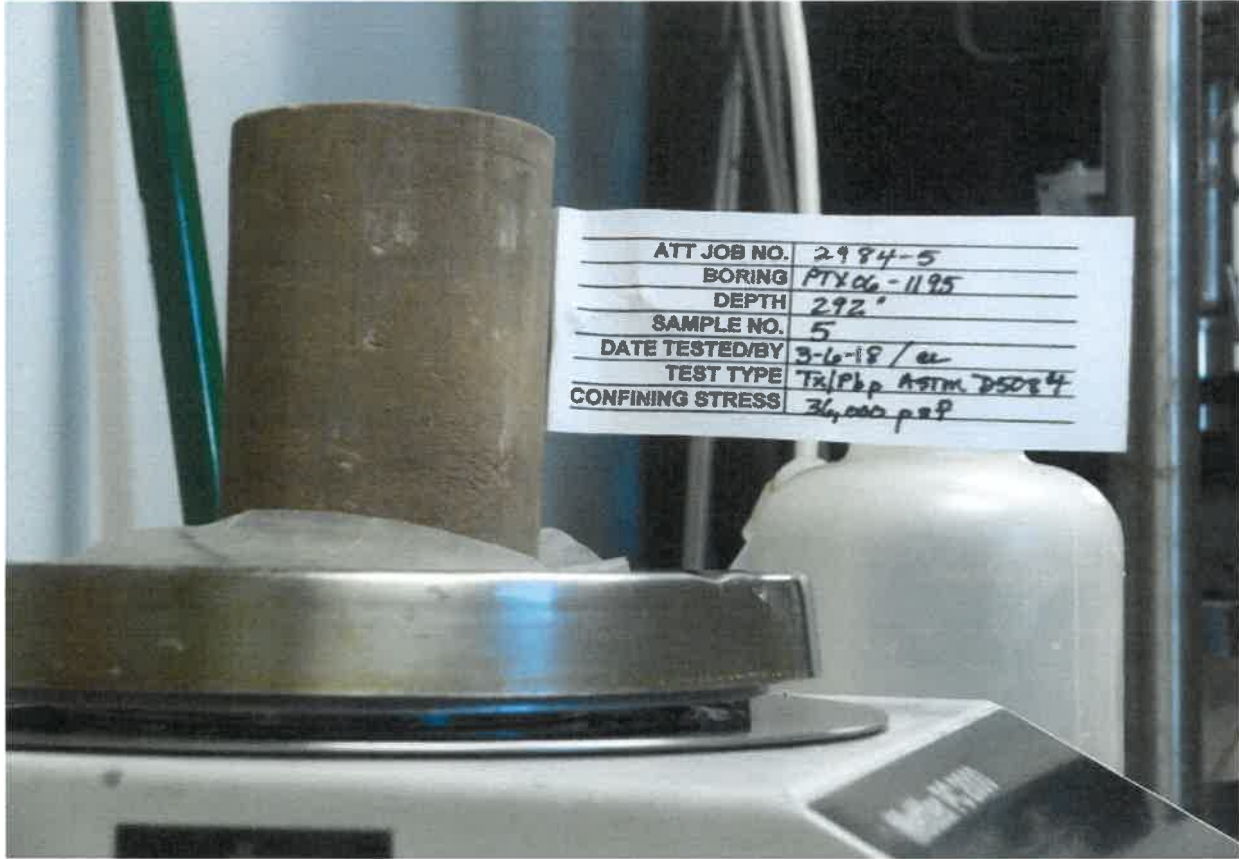
Checked By: VR
Date: 3/9/2018



Image Attachment

ADVANCED TERRA TESTING

CLIENT SN3
JOB NO. 2984-5
PROJECT Pantex BOA 70 Release 5
PROJECT NO. 4638-05
LOCATION --



NOTES

File name: 2984_5_Image_18_03_07_08_30_53



PERMEABILITY TEST - BACK PRESSURE SATURATED - FLOW PUMP METHOD

ASTM D5084 Method D

CLIENT	SN3	JOB NO.	2984-5
PROJECT	Pantex BOA 70 Release 5		
PROJECT NO.	4638-05	SAMPLED	1/27/2018 By: RER
BORING NO.	PTX06-1194	TEST STARTED	2/16/2018 By: CAL
DEPTH	282'	TEST FINISHED	3/1/2018 By: CAL
SAMPLE NO.	4	CELL NUMBER	2
LOCATION	--	PERMEANT	Tap Water
SAMPLE TYPE	split spoon	CONF. PRES. - (psf)	34848

MOISTURE / DENSITY DATA	BEFORE TEST	AFTER TEST
Wt. Soil + Moisture - (g)	284.94	287.34
Wt. Wet Soil & Pan - (g)	291.61	294.01
Wt. Dry Soil & Pan - (g)	241.74	241.74
Wt. Lost Moisture - (g)	49.87	52.27
Wt. of Pan Only - (g)	6.67	6.67
Wt. of Dry Soil - (g)	235.07	235.07
Moisture Content - (%)	21.2	22.2
Wet Density - (pcf)	123.4	126.3
Dry Density - (pcf)	101.8	103.3
Init. Diameter - (in)	1.934	
Init. Area - (sq in)	2.938	
Init. Height - (in)	2.994	
Vol. Bef. Consol. - (cu ft)	0.00509	
Vol. After Consol. - (cu ft)	0.00502	
Porosity - (%)	36.78	

FLOW PUMP CALCULATIONS	
Pump Setting (gear number)	12
Percentage of Pump Setting	100
Q - (cc/s)	2.30E-05
Height - (in)	2.906
Diameter - (in)	1.949
Pressure - (psi)	0.206
Area after consol. - (sq cm)	19.249
Gradient	1.962
Permeability k - (cm/s)	6.1E-07
Permeability k - (m/s)	6.1E-09
Back Pressure - (psi)	68.0
Cell Pressure - (psi)	310.0
Ave. Effective Stress - (psi)	241.897
Average temperature degree - (c°)	22.3

Data entry by: CAL	Date: 03/02/2018
Checked by: <i>KR</i>	Date: <i>3/5/18</i>



PERMEABILITY TEST - BACK PRESSURE SATURATED - FLOW PUMP METHOD

ASTM D5084 Method D

CLIENT	SN3	JOB NO.	2984-5
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PROJECT	Pantex BOA 70 Release 5	SAMPLED	1/27/2018	By: RER
PROJECT NO.	4638-05	TEST STARTED	2/16/2018	By: CAL
BORING NO.	PTX06-1194	TEST FINISHED	3/1/2018	By: CAL
DEPTH	282'	CELL NUMBER	2	
SAMPLE NO.	4	PERMEANT	Tap Water	
LOCATION	--	CONF. PRES. - (psf)	34848	
SAMPLE TYPE	split spoon			

SATURATION DATA

Cell Press. (psi)	Back Press. (psi)	Burette Reading (cc)		Pore Press. (psi)		Change	B
		Close	Open	Close	Open		
40.0	38.0	2.5	11.4				
50.0	48.0	9.7	10.9	38.2	46.9	8.7	0.87
60.0	58.0	11.6	12.6	48.9	57.5	8.6	0.86
70.0	68.0	13.0	14.0	59.1	68.5	9.4	0.94
80.0		14.5	14.7	69.7	79.3	9.6	0.96

CONSOLIDATION DATA

Elapsed Time (Min)	SQRT Time (Min)	Burette Reading (cc)	Volume Defl. (cc)
0.00	0.00	0.40	0.00
0.25	0.50	18.85	-18.45
0.5	0.71	19.70	-19.30
1	1.00	20.75	-20.35
2	1.41	21.70	-21.30
4	2.00	22.40	-22.00
9	3.00	22.95	-22.55
16	4.00	23.40	-23.00
30	5.48	23.95	-23.55
60	7.75	24.65	-24.25
120	10.95	25.40	-25.00
240	15.49	26.40	-26.00
360	18.97	27.10	-26.70

Initial Height - (in)	2.994	Init. Vol. - (cc)	144.16
Height Change - (in)	0.088	Vol. Change - (cc)	55.95
Ht. After Cons. - (in)	2.906	Cell Exp. - (cc)	53.90
Initial Area - (sq in)	2.938	Net Change - (cc)	2.05
Area After Cons. - sq in	2.984	Cons. Vol. - (cc)	142.11

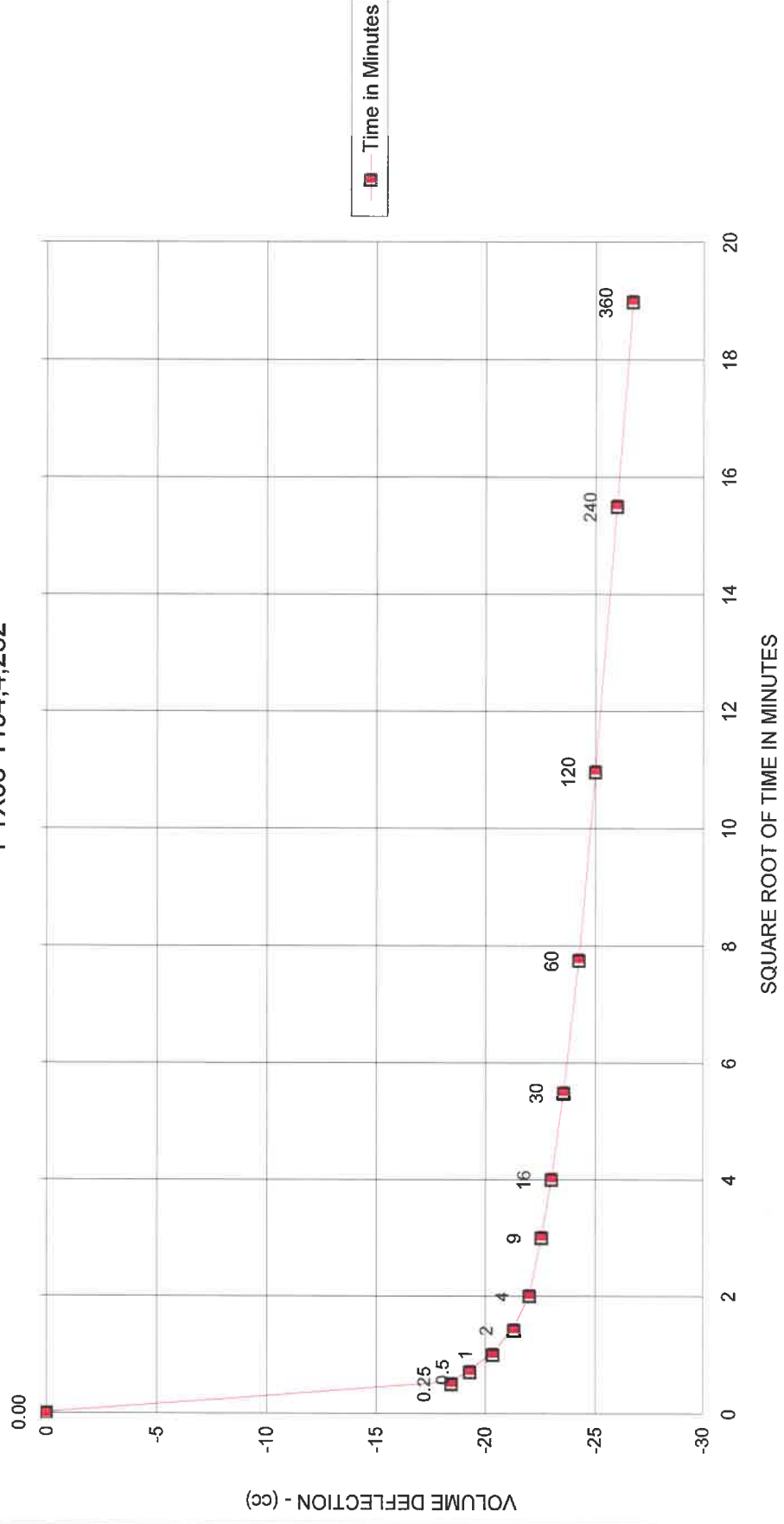


PERMEABILITY TEST - BACK PRESSURE SATURATED - FLOW PUMP METHOD
ASTM D5084 Method D

CLIENT SN3

JOB NO. 2984-5

CONSOLIDATION DATA
PTX06-1194,4,282'

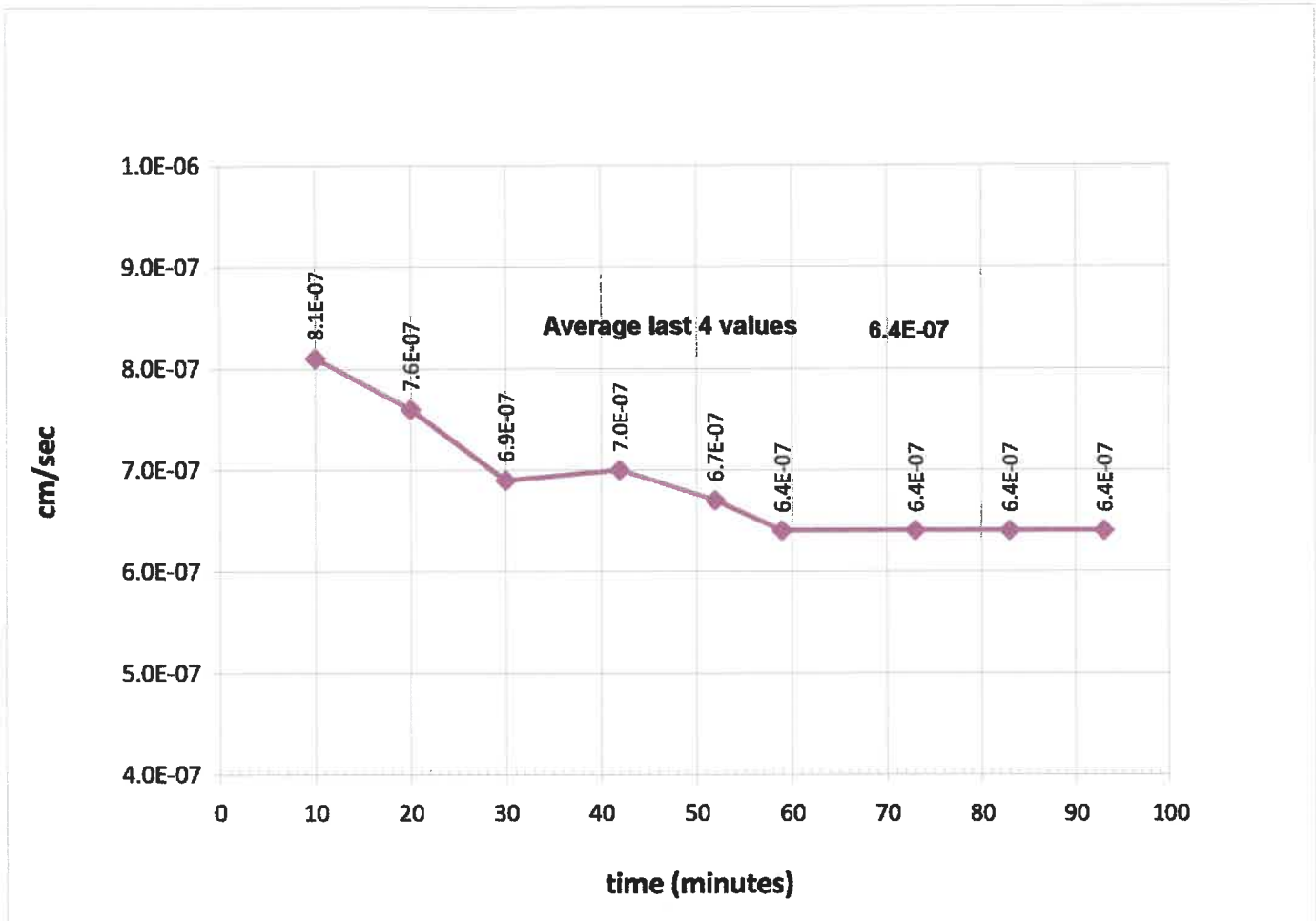




Preliminary Flow Pump Test Data ASTM D5084

Client: SN3
Job Number: 2984-5
Project: Pantex BOA 70 Release 5
Location: -
Project Number: 4638-05

Boring Number: PTX06-1194
Depth: 282'
Sample Number: 4
Sampled Date: 1/27/2018
Test Date: 3/1/2018
Sampled By: RER
Technician: CAL



Data Entered By: CAL
Date: 3/1/2018
File Name: 2984_5_PrelimPerm_ASTMD-5084-methodD-R0_3.xls

Checked By: KR
Date: 3/5/18



Image Attachment

ADVANCED TERRA TESTING

CLIENT SN3
JOB NO. 2984-5
PROJECT Pantex BOA 70 Release 5
PROJECT NO. 4638-05
LOCATION --



NOTES



PERMEABILITY TEST - BACK PRESSURE SATURATED - FLOW PUMP METHOD

ASTM D5084 Method D

CLIENT	SN3	JOB NO.	2984-5
PROJECT	Pantex BOA 70 Release 5		
PROJECT NO.	4638-05	SAMPLED	1/24/2018 By: RER
BORING NO.	PTX06-1193	TEST STARTED	2/14/2018 By: CAL
DEPTH	272'	TEST FINISHED	2/22/2018 By: CAL
SAMPLE NO.	3	CELL NUMBER	1
LOCATION	-	PERMEANT	Tap Water
SAMPLE TYPE	split spoon	CONF. PRES. - (psf)	30240

MOISTURE / DENSITY DATA	BEFORE TEST	AFTER TEST	
Wt. Soil + Moisture - (g)	270.16	285.88	NOTE: Overburden pressure was calculated incorrectly. Confining pressure should have been 31994 psf.
Wt. Wet Soil & Pan - (g)	276.83	292.55	
Wt. Dry Soil & Pan - (g)	247.75	247.75	
Wt. Lost Moisture - (g)	29.08	44.80	
Wt. of Pan Only - (g)	6.67	6.67	
Wt. of Dry Soil - (g)	241.08	241.08	
Moisture Content - (%)	12.1	18.6	
Wet Density - (pcf)	117.6	127.7	
Dry Density - (pcf)	105.0	107.7	
Init. Diameter - (in)	1.929		
Init. Area - (sq in)	2.922		
Init. Height - (in)	2.994		
Vol. Bef. Consol. - (cu ft)	0.00506		
Vol. After Consol. - (cu ft)	0.00494		
Porosity - (%)	32.05		

FLOW PUMP CALCULATIONS	
Pump Setting (gear number)	7
Percentage of Pump Setting	100
Q - (cc/s)	1.15E-03
Height - (in)	2.937
Diameter - (in)	1.923
Pressure - (psi)	0.142
Area after consol. - (sq cm)	18.733
Gradient	1.338
Permeability k - (cm/s)	4.6E-05
Permeability k - (m/s)	4.6E-07
Back Pressure - (psi)	78.0
Cell Pressure - (psi)	288.0
Ave. Effective Stress - (psi)	209.929
Average temperature degree - (c°)	21.8

Data entry by: CAL	Date: 02/23/2018
Checked by: <i>oim</i>	Date: <i>2/1/18</i>



PERMEABILITY TEST - BACK PRESSURE SATURATED - FLOW PUMP METHOD

ASTM D5084 Method D

CLIENT	SN3	JOB NO.	2984-5
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PROJECT	Pantex BOA 70 Release 5		
PROJECT NO.	4638-05	SAMPLED	1/24/2018 By: RER
BORING NO.	PTX06-1193	TEST STARTED	2/14/2018 By: CAL
DEPTH	272'	TEST FINISHED	2/22/2018 By: CAL
SAMPLE NO.	3	CELL NUMBER	1
LOCATION	-	PERMEANT	Tap Water
SAMPLE TYPE	split spoon	CONF. PRES. - (psf)	30240

SATURATION DATA

Cell Press. (psi)	Back Press. (psi)	Burette Reading (cc)		Pore Press. (psi)		Change	B
		Close	Open	Close	Open		
40.0	38.0	2.4	12.0				
50.0	48.0	6.9	8.0	37.4	44.0	6.6	0.66
60.0	58.0	7.0	7.9	47.6	54.1	6.5	0.65
70.0	68.0	7.7	8.6	57.6	66.5	8.9	0.89
80.0	78.0	8.9	9.8	68.6	77.3	8.7	0.87
90.0		10.2	10.4	78.5	88.2	9.7	0.97

CONSOLIDATION DATA

Elapsed Time (Min)	SQRT Time (Min)	Burette Reading (cc)	Volume Def. (cc)
0.00	0.00	0.10	0.00
0.25	0.50	17.45	-17.35
0.5	0.71	17.55	-17.45
1	1.00	17.70	-17.60
2	1.41	17.95	-17.85
4	2.00	18.10	-18.00
9	3.00	18.70	-18.60
16	4.00	19.10	-19.00
30	5.48	19.60	-19.50
60	7.75	20.10	-20.00
185	13.60	21.70	-21.60
240	15.49	22.05	-21.95
360	18.97	22.80	-22.70

Initial Height - (in)	2.994	Init. Vol. - (cc)	143.41
Height Change - (in)	0.057	Vol. Change - (cc)	44.25
Ht. After Cons. - (in)	2.937	Cell Exp. - (cc)	40.61
Initial Area - (sq in)	2.922	Net Change - (cc)	3.64
Area After Cons. - sq in	2.904	Cons. Vol. - (cc)	139.77

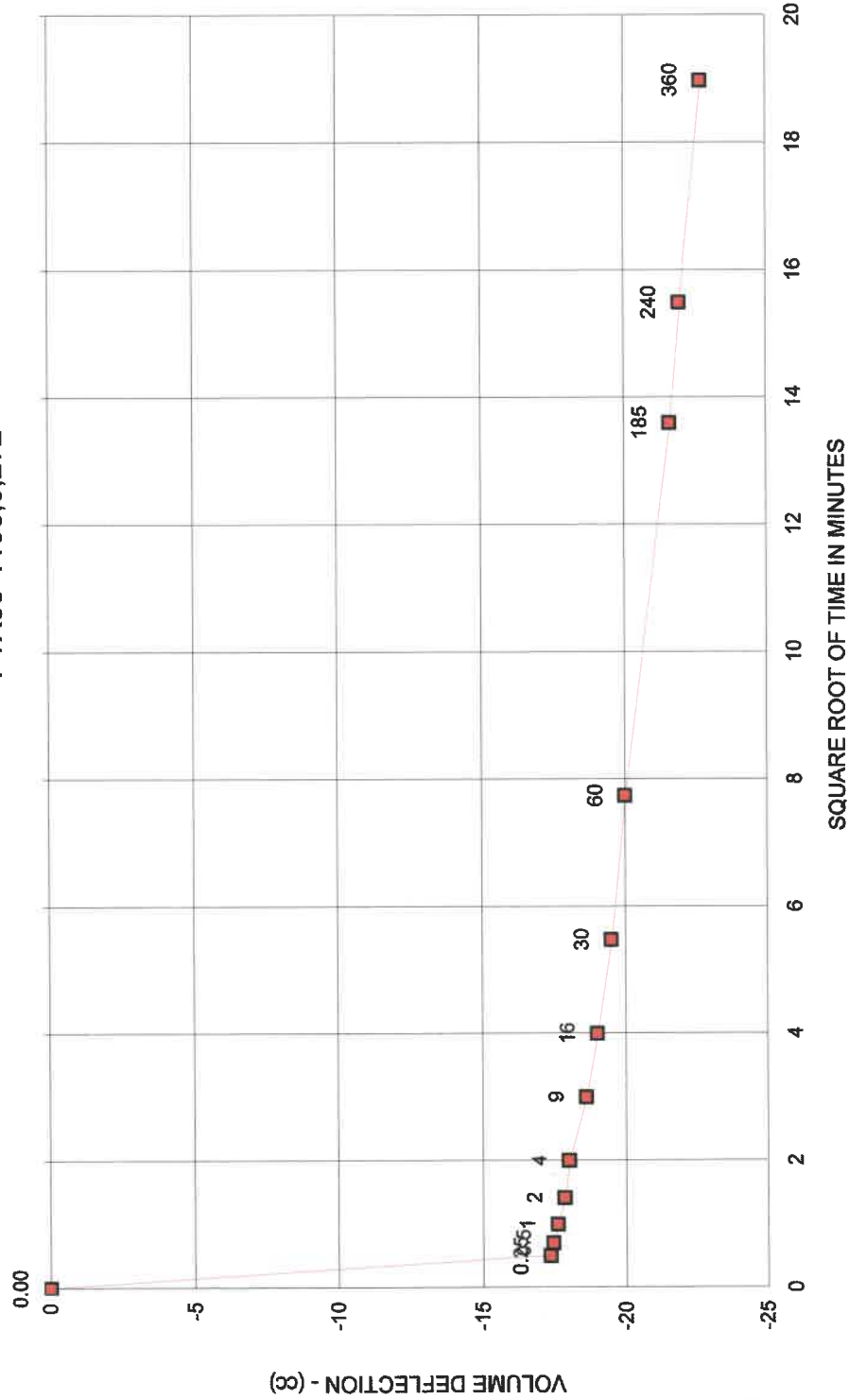


PERMEABILITY TEST - BACK PRESSURE SATURATED - FLOW PUMP METHOD
ASTM D5084 Method D

CLIENT SN3

JOB NO. 2984-5

CONSOLIDATION DATA
PTX06-1193,3,272'



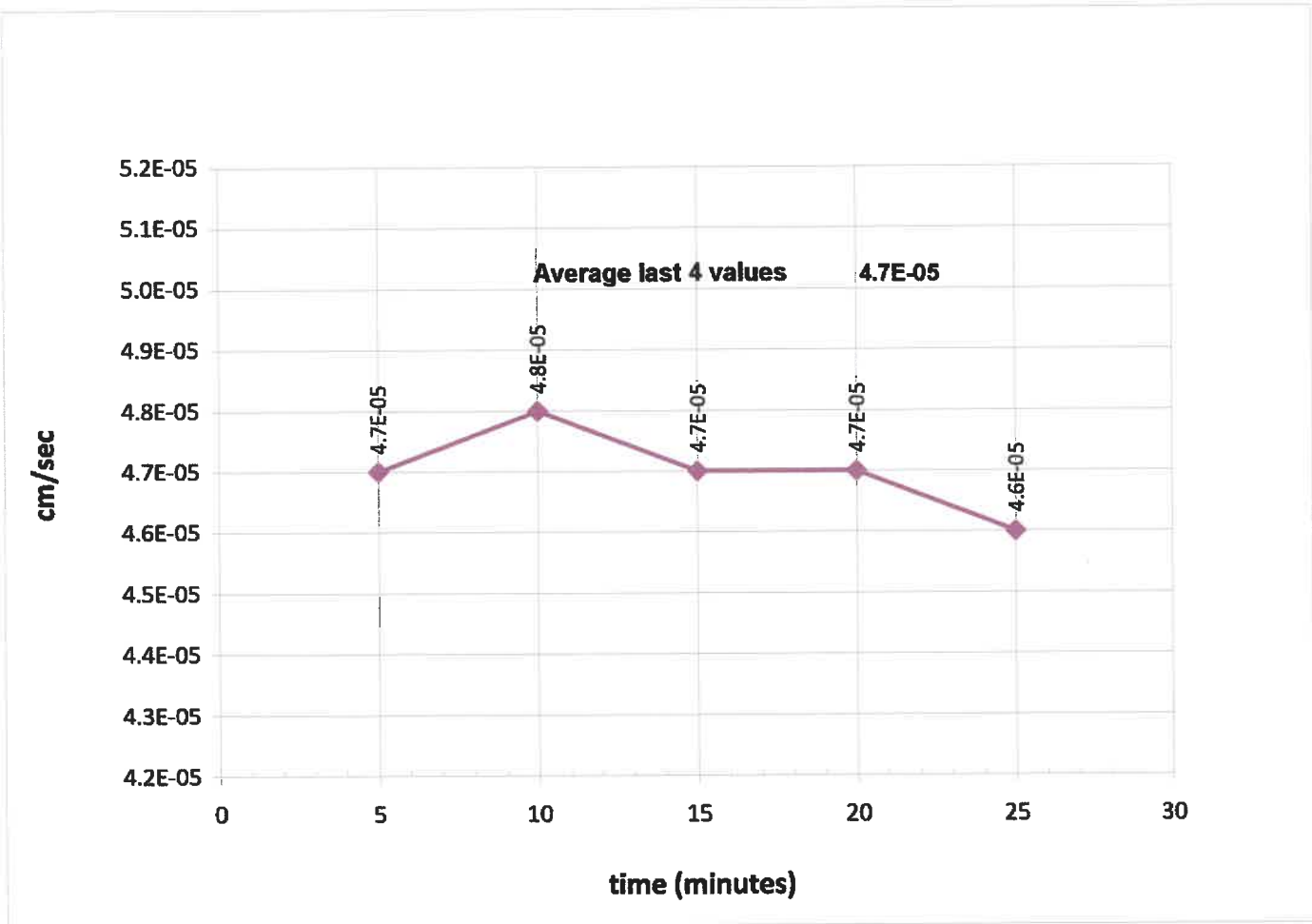


Preliminary Flow Pump Test Data ASTM D5084

Client: SN3
Job Number: 2984-5
Project: Pantex BOA 70 Release 5
Location: -
Project Number: 4638-05

Boring Number: PTX06-1193
Depth: 272'
Sample Number: 3
Sampled Date: 1/24/2018
Test Date: 2/22/2018

Sampled By: RER
Technician: CAL



Data Entered By: CAL
Date: 2/22/2018
File Name: 2984_5_PrelimPerm_ASTMD-5084-methodD-R0_2.xls

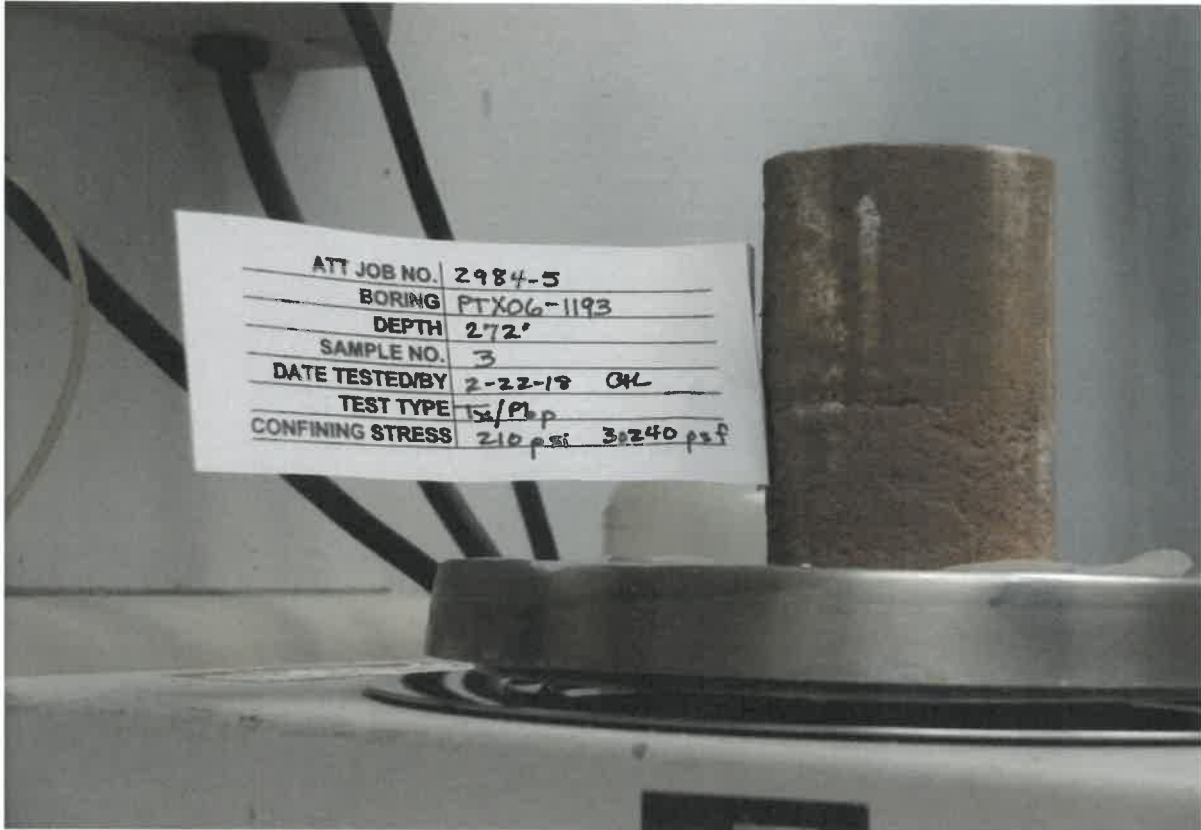
Checked By: *JPM*
Date: 2/22/18



Image Attachment

ADVANCED TERRA TESTING

CLIENT SN3
JOB NO. 2984-5
PROJECT Pantex BOA 70 Release 5
PROJECT NO. 4638-05
LOCATION --



NOTES

File name: 2984_5_Image_18_02_23_07_38_30



PERMEABILITY TEST - BACK PRESSURE SATURATED - FLOW PUMP METHOD

ASTM D5084 Method D

CLIENT	SN3	JOB NO.	2984-5
PROJECT	Pantex BOA 70 Release 5		
PROJECT NO.	4638-05	SAMPLED	1/18/2018 By: RER
BORING NO.	PTX06-1192	TEST STARTED	2/6/2018 By: CAL
DEPTH	296'	TEST FINISHED	2/14/2018 By: CAL
SAMPLE NO.	1	CELL NUMBER	1
LOCATION	--	PERMEANT	Tap Water
SAMPLE TYPE	split spoon	CONF. PRES. - (psi)	38736

MOISTURE / DENSITY DATA	BEFORE TEST	AFTER TEST
Wt. Soil + Moisture - (g)	301.93	311.28
Wt. Wet Soil & Pan - (g)	308.56	317.91
Wt. Dry Soil & Pan - (g)	274.82	274.82
Wt. Lost Moisture - (g)	33.74	43.09
Wt. of Pan Only - (g)	6.63	6.63
Wt. of Dry Soil - (g)	268.19	268.19
Moisture Content - (%)	12.6	16.1
Wet Density - (pcf)	130.7	148.2
Dry Density - (pcf)	116.1	127.7
Init. Diameter - (in)	1.930	
Init. Area - (sq in)	2.926	
Init. Height - (in)	3.008	
Vol. Bef. Consol. - (cu ft)	0.00509	
Vol. After Consol. - (cu ft)	0.00463	
Porosity - (%)	32.86	

FLOW PUMP CALCULATIONS	
Pump Setting (gear number)	9
Percentage of Pump Setting	100
Q - (cc/s)	2.28E-04
Height - (in)	2.951
Diameter - (in)	1.858
Pressure - (psi)	0.154
Area after consol. - (sq cm)	17.493
Gradient	1.445
Permeability k - (cm/s)	9.0E-06
Permeability k - (m/s)	9.0E-08
Back Pressure - (psi)	58.0
Cell Pressure - (psi)	327.0
Ave. Effective Stress - (psi)	268.923
Average temperature degree - (c°)	22.8

Data entry by: CAL	Date: 02/15/2018
Checked by: <i>OPM</i>	Date: <i>2/15/18</i>



PERMEABILITY TEST - BACK PRESSURE SATURATED - FLOW PUMP METHOD

ASTM D5084 Method D

CLIENT	SN3	JOB NO.	2984-5
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PROJECT	Pantex BOA 70 Release 5		
PROJECT NO.	4638-05	SAMPLED	1/18/2018 By: RER
BORING NO.	PTX06-1192	TEST STARTED	2/6/2018 By: CAL
DEPTH	296'	TEST FINISHED	2/14/2018 By: CAL
SAMPLE NO.	1	CELL NUMBER	1
LOCATION	-	PERMEANT	Tap Water
SAMPLE TYPE	split spoon	CONF. PRES. - (psf)	38736

SATURATION DATA

Cell Press. (psi)	Back Press. (psi)	Burette Reading (cc)		Pore Press. (psi)		Change	B
		Close	Open	Close	Open		
40.0	38.0	2.0	13.8				
50.0	48.0	12.3	13.6	38.4	47.0	8.6	0.86
60.0	58.0	14.1	15.1	48.1	56.5	8.4	0.84
70.0		16.3	16.5	58.2	67.8	9.6	0.96

CONSOLIDATION DATA

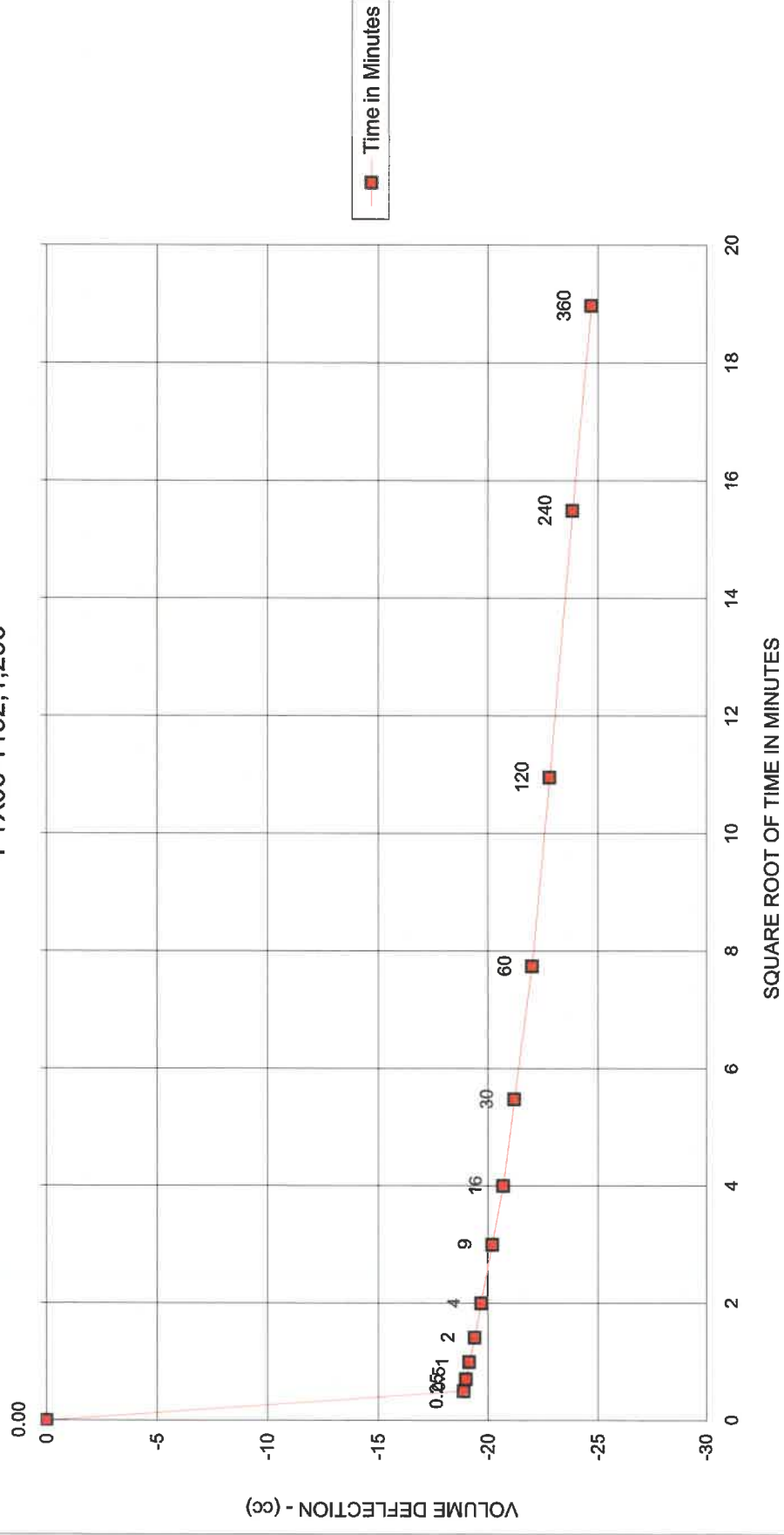
Elapsed Time (Min)	SQRT Time (Min)	Burette Reading (cc)	Volume Defl. (cc)
0.00	0.00	0.10	0.00
0.25	0.50	19.00	-18.90
0.5	0.71	19.10	-19.00
1	1.00	19.25	-19.15
2	1.41	19.50	-19.40
4	2.00	19.80	-19.70
9	3.00	20.30	-20.20
16	4.00	20.80	-20.70
30	5.48	21.30	-21.20
60	7.75	22.10	-22.00
120	10.95	22.90	-22.80
240	15.49	23.95	-23.85
360	18.97	24.80	-24.70

Initial Height - (in)	3.008	Init. Vol. - (cc)	144.23
Height Change - (in)	0.057	Vol. Change - (cc)	58.80
Ht. After Cons. - (in)	2.951	Cell Exp. - (cc)	45.71
Initial Area - (sq in)	2.926	Net Change - (cc)	13.09
Area After Cons. - sq in	2.711	Cons. Vol. - (cc)	131.14

CLIENT SN3

JOB NO. 2984-5

CONSOLIDATION DATA
PTX06-1192,1,296'

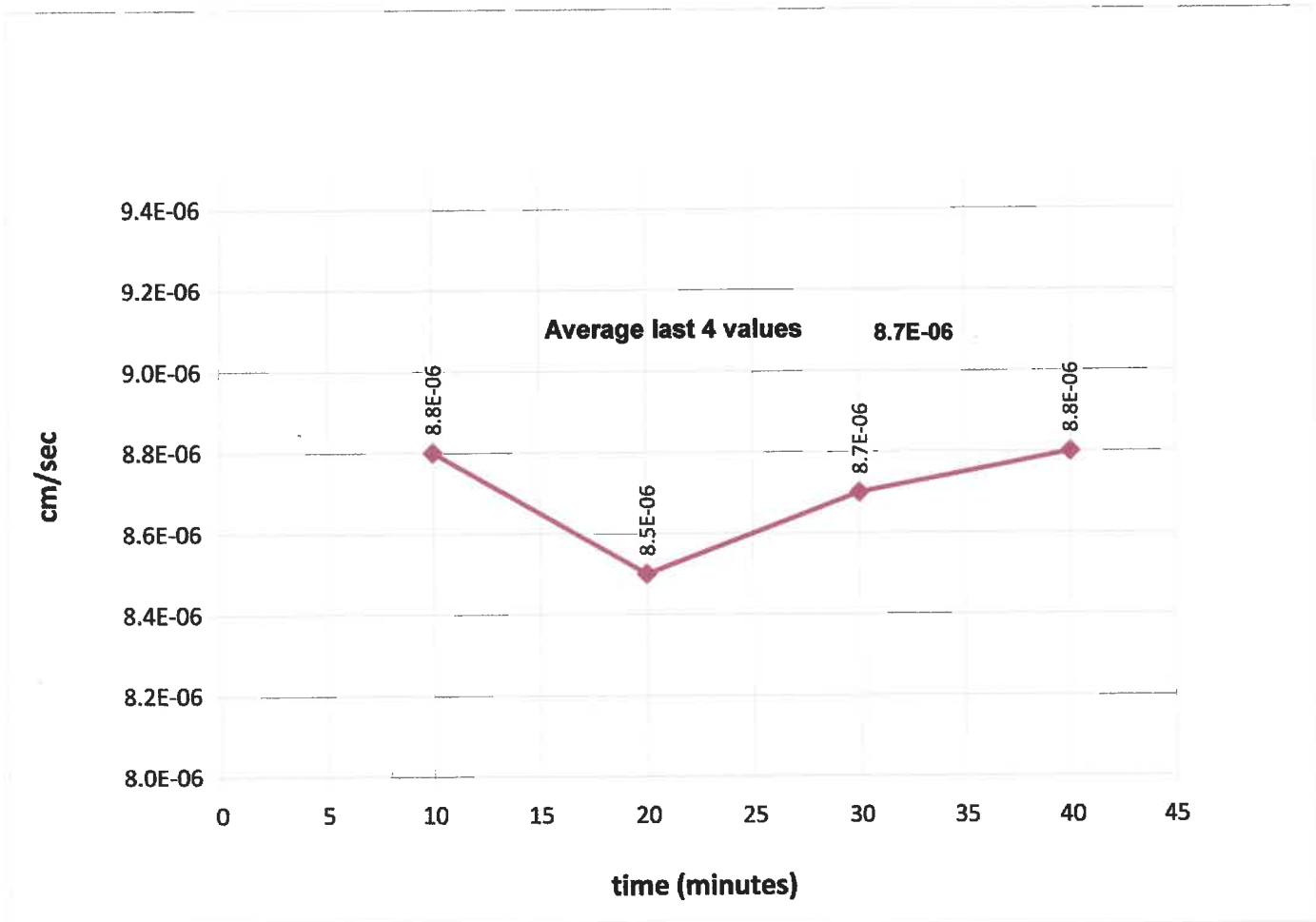




Preliminary Flow Pump Test Data ASTM D5084

Client: SN3
Job Number: 2984-5
Project: Pantex BOA 70 Release 5
Location: --
Project Number: 4638-05

Boring Number: PTX06-1192
Depth: 296'
Sample Number: 1
Sampled Date: 1/18/2018
Test Date: 2/14/2018
Sampled By: RER
Technician: CAL



Data Entered By: CAL
Date: 2/16/2018
File Name: 2984_5_PrelimPerm_ASTMD-5084-methodD-R0_0.xls

Checked By: *[Signature]*
Date: 2/17/18



Image Attachment

ADVANCED TERRA TESTING

CLIENT SN3
JOB NO. 2984-5
PROJECT Pantex BOA 70 Release 5
PROJECT NO. 4638-05
LOCATION --



NOTES

File name: 2984_5_Image_18_02_15_13_26_59



PERMEABILITY TEST - BACK PRESSURE SATURATED - FLOW PUMP METHOD

ASTM D5084 Method D

CLIENT	SN3	JOB NO.	2984-5
PROJECT	Pantex BOA 70 Release 5		
PROJECT NO.	4638-05	SAMPLED	1/21/2018 By: RER
BORING NO.	PTX06-1191	TEST STARTED	2/6/2018 By: CAL
DEPTH	295'	TEST FINISHED	2/16/2018 By: CAL
SAMPLE NO.	2	CELL NUMBER	2
LOCATION	--	PERMEANT	Tap Water
SAMPLE TYPE	split spoon	CONF. PRES. - (psf)	37584

MOISTURE / DENSITY DATA	BEFORE TEST	AFTER TEST
Wt. Soil + Moisture - (g)	297.47	291.55
Wt. Wet Soil & Pan - (g)	304.09	298.17
Wt. Dry Soil & Pan - (g)	254.53	254.53
Wt. Lost Moisture - (g)	49.56	43.64
Wt. of Pan Only - (g)	6.62	6.62
Wt. of Dry Soil - (g)	247.91	247.91
Moisture Content - (%)	20.0	17.6
Wet Density - (pcf)	127.6	149.3
Dry Density - (pcf)	106.4	126.9
Init. Diameter - (in)	1.934	
Init. Area - (sq in)	2.938	
Init. Height - (in)	3.022	
Vol. Bef. Consol. - (cu ft)	0.00514	
Vol. After Consol. - (cu ft)	0.00431	
Porosity - (%)	35.79	

FLOW PUMP CALCULATIONS	
Pump Setting (gear number)	10
Percentage of Pump Setting	100
Q - (cc/s)	1.15E-04
Height - (in)	2.918
Diameter - (in)	1.802
Pressure - (psi)	0.303
Area after consol. - (sq cm)	16.450
Gradient	2.874
Permeability k - (cm/s)	2.4E-06
Permeability k - (m/s)	2.4E-08
Back Pressure - (psi)	68.0
Cell Pressure - (psi)	329.0
Ave. Effective Stress - (psi)	260.849
Average temperature degree - (c°)	21.7

Data entry by: CAL	Date: 02/19/2018
Checked by: <i>dim</i>	Date: <i>2/19/18</i>



PERMEABILITY TEST - BACK PRESSURE SATURATED - FLOW PUMP METHOD

ASTM D5084 Method D

CLIENT	SN3	JOB NO.	2984-5
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PROJECT	Pantex BOA 70 Release 5	SAMPLED	1/21/2018	By: RER
PROJECT NO.	4638-05	TEST STARTED	2/6/2018	By: CAL
BORING NO.	PTX06-1191	TEST FINISHED	2/16/2018	By: CAL
DEPTH	295'	CELL NUMBER	2	
SAMPLE NO.	2	PERMEANT	Tap Water	
LOCATION	--	CONF. PRES. - (psf)	37584	
SAMPLE TYPE	split spoon			

SATURATION DATA

Cell Press. (psi)	Back Press. (psi)	Burette Reading (cc)		Pore Press. (psi)		Change	B
		Close	Open	Close	Open		
40.0	38.0	3.3	17.1				
50.0	48.0	26.4	27.7	39.1	48.0	8.9	0.89
60.0	58.0	61.0	32.0	49.2	58.0	8.8	0.88
70.0	68.0	35.3	36.4	59.8	68.8	9.0	0.90
80.0		37.2	37.2	70.0	79.6	9.6	0.96

CONSOLIDATION DATA

Elapsed Time (Min)	SQRT Time (Min)	Burette Reading (cc)	Volume Defl. (cc)
0.00	0.00	0.00	0.00
0.25	0.50	18.40	-18.40
0.5	0.71	18.75	-18.75
1	1.00	19.00	-19.00
2	1.41	19.35	-19.35
4	2.00	19.60	-19.60
9	3.00	20.10	-20.10
16	4.00	20.60	-20.60
30	5.48	21.10	-21.10
60	7.75	21.75	-21.75
120	10.95	22.50	-22.50
240	15.49	23.50	-23.50
360	18.97	24.15	-24.15

Initial Height - (in)	3.022	Init. Vol. - (cc)	145.50
Height Change - (in)	0.104	Vol. Change - (cc)	80.20
Ht. After Cons. - (in)	2.918	Cell Exp. - (cc)	56.64
Initial Area - (sq in)	2.938	Net Change - (cc)	23.56
Area After Cons. - sq in	2.550	Cons. Vol. - (cc)	121.94

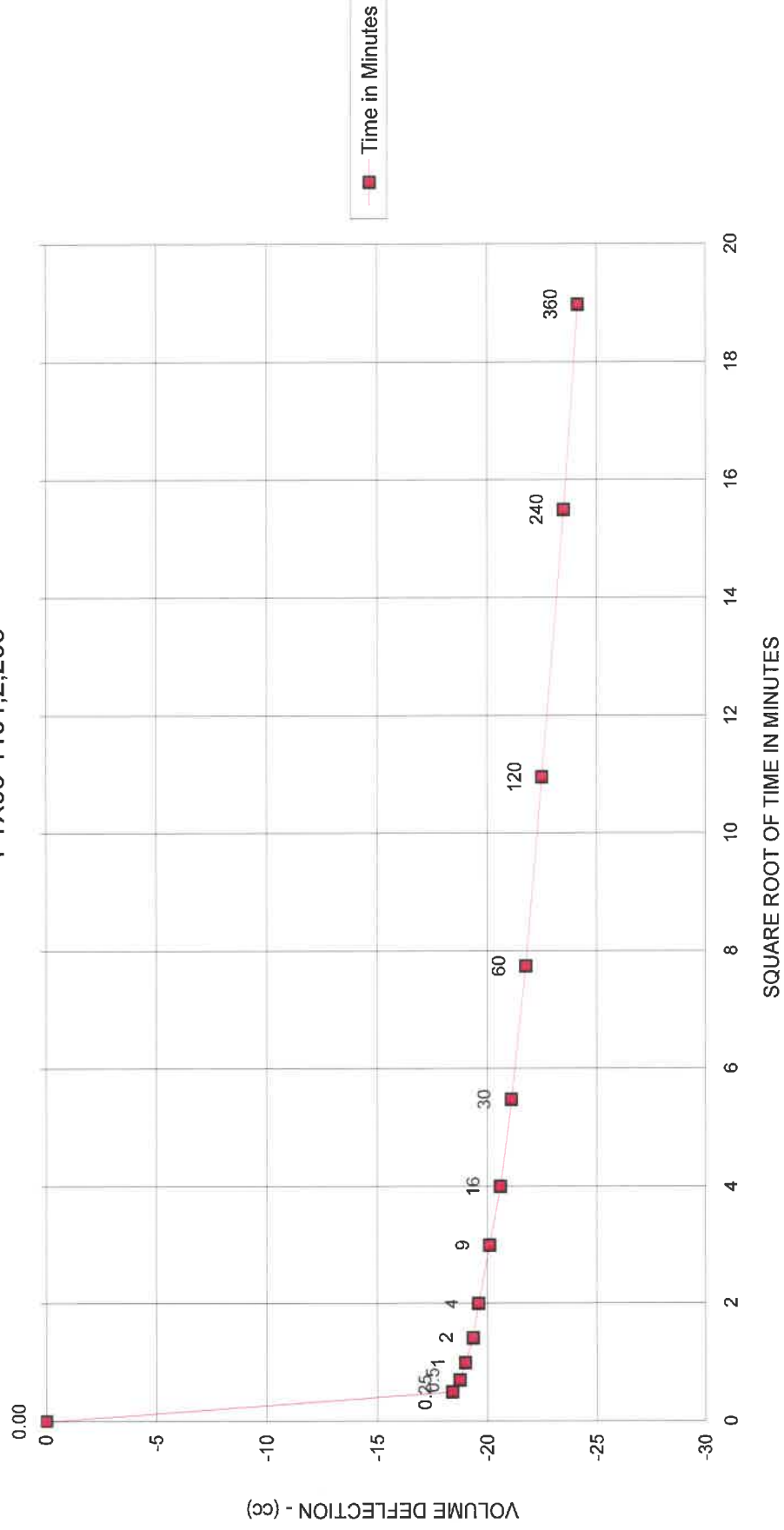


PERMEABILITY TEST - BACK PRESSURE SATURATED - FLOW PUMP METHOD
ASTM D5084 Method D

CLIENT SN3

JOB NO. 2984-5

CONSOLIDATION DATA
PTX06-1191,2,295'



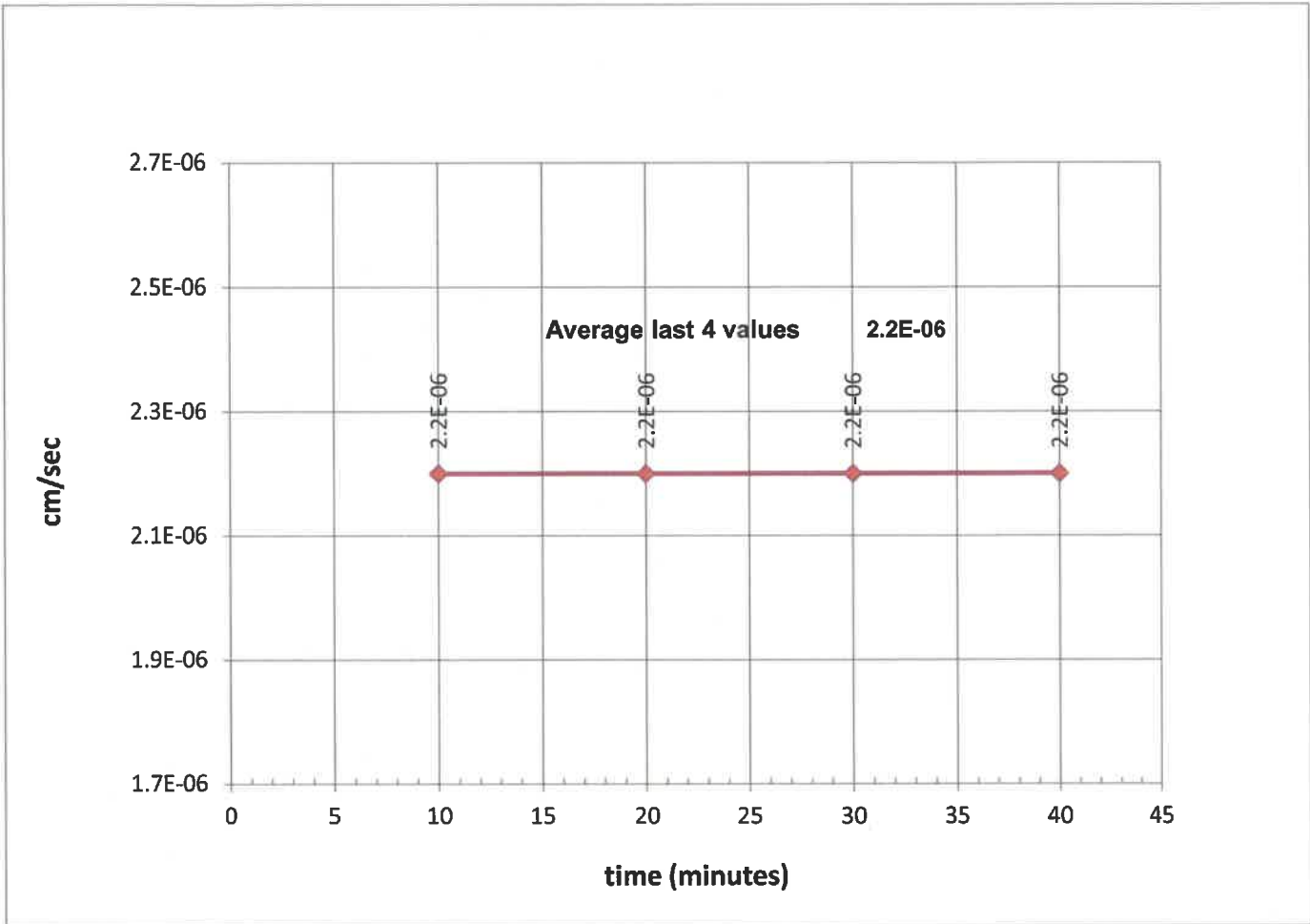


Preliminary Flow Pump Test Data ASTM D5084

Client: SN3
Job Number: 2984-5
Project: Pantex BOA 70 Release 5
Location: --
Project Number: 4638-05

Boring Number: PTX06-1191
Depth: 295'
Sample Number: 2
Sampled Date: 1/21/2018
Test Date: 2/16/2018

Sampled By: RER
Technician: CAL



Data Entered By: CAL
Date: 2/16/2018
File Name: 2984_5_PrelimPerm_ASTMD-5084-methodD-R0_1.xls

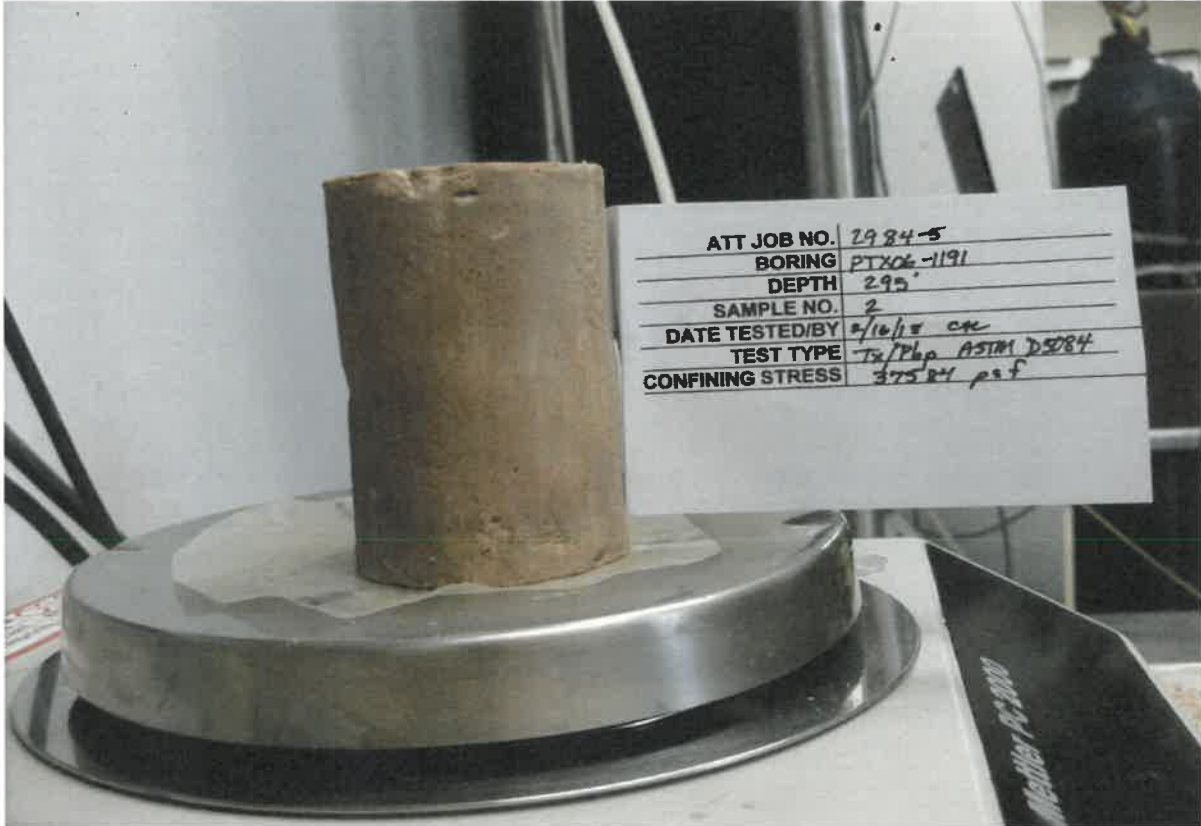
Checked By: DPM
Date: 2/19/18



Image Attachment

ADVANCED TERRA TESTING

CLIENT SN3
JOB NO. 2984-5
PROJECT Pantex BOA 70 Release 5
PROJECT NO. 4638-05
LOCATION --



NOTES

File name: 2984_5_Image_18_02_19_07_52_29

**PERMEABILITY TEST - BACK PRESSURE SATURATED - FLOW PUMP METHOD**

ASTM D5084 Method D

CLIENT	SN3	JOB NO.	2984-2
--------	-----	---------	--------

PROJECT	Pantex BOA 70 Release 5	SAMPLED	10/20/2017	By: RER
PROJECT NO.	4638-05	TEST STARTED	11/1/2017	
BORING NO.	PTX06-1190	TEST FINISHED	11/10/2017	By: CAL
DEPTH	287'	CELL NUMBER	2	
SAMPLE NO.	1	PERMEANT	Tap Water	
LOCATION	--	CONF. PRES. - (psf)	34272	
SOIL DESC	liner			

MOISTURE / DENSITY DATA	BEFORE TEST	AFTER TEST
Wt. Soil + Moisture - (g)	354.34	340.96
Wt. Wet Soil & Pan - (g)	360.96	347.58
Wt. Dry Soil & Pan - (g)	292.19	292.19
Wt. Lost Moisture - (g)	68.77	55.39
Wt. of Pan Only - (g)	6.62	6.62
Wt. of Dry Soil - (g)	285.57	285.57
Moisture Content - (%)	24.1	19.4
Wet Density - (pcf)	124.5	133.5
Dry Density - (pcf)	100.4	111.8
Init. Diameter - (in)	1.920	
Init. Area - (sq in)	2.895	
Init. Height - (in)	3.744	
Vol. Bef. Consol. - (cu ft)	0.00627	
Vol. After Consol. - (cu ft)	0.00563	
Porosity - (%)	34.74	

FLOW PUMP CALCULATIONS	
Pump Setting	9
Velocity - (cm/sec)	6.11E-05
Q - (cc/s)	1.95E-06
Height - (in)	3.575
Diameter - (in)	1.861
Pressure - (psi)	1.404
Area after consol. - (cm*cm)	17.556
Gradient	10.871
Permeability k - (cm/s)	1.0E-08
Permeability k - (m/s)	1.0E-10
Back Pressure - (psi)	58.0
Cell Pressure - (psi)	296.0
Ave. Effective Stress - (psi)	237.298
Average Temperature Degree - (C°)	22.3

Data entry by: CAL	Date: 11/11/2017
Checked by: <i>KR</i>	Date: <i>11/21/17</i>



PERMEABILITY TEST - BACK PRESSURE SATURATED - FLOW PUMP METHOD

ASTM D5084 Method D

CLIENT	SN3	JOB NO.	2984-2
--------	-----	---------	--------

PROJECT	Pantex BOA 70 Release 5		
PROJECT NO.	4638-05	SAMPLED	10/20/2017 By: RER
BORING NO.	PTX06-1190	TEST STARTED	11/1/2017
DEPTH	287'	TEST FINISHED	11/10/2017 By: CAL
SAMPLE NO.	1	CELL NUMBER	2
LOCATION	--	PERMEANT	Tap Water
SOIL DESC	liner	CONF. PRES. - (psf)	34272

SATURATION DATA

Cell Pres. (psi)	Back Pres. (psi)	Burette Reading (cc)		Pore Pressure (psi)		Change	B
		Close	Open	Close	Open		
40.0	38.0	2.8	15.5				
50.0	48.0	18.8	20.0	38.9	47.7	8.8	0.88
60.0	58.0	20.5	21.5	48.9	58.2	9.3	0.93
70.0		22.1	21.5	59.3	68.8	9.5	0.95

CONSOLIDATION DATA

Elapsed Time (min)	SQRT Time (min)	Burette Reading (cc)	Volume Defl. (cc)
0.00	0.00	0.20	0.00
0.25	0.50	14.85	-14.65
0.5	0.71	15.15	-14.95
1	1.00	15.60	-15.40
2	1.41	16.10	-15.90
4	2.00	17.00	-16.80
9	3.00	18.30	-18.10
16	4.00	19.20	-19.00
31	5.57	20.10	-19.90
60	7.75	20.80	-20.60
120	10.95	21.50	-21.30
240	15.49	22.55	-22.35
360	18.97	23.00	-22.80

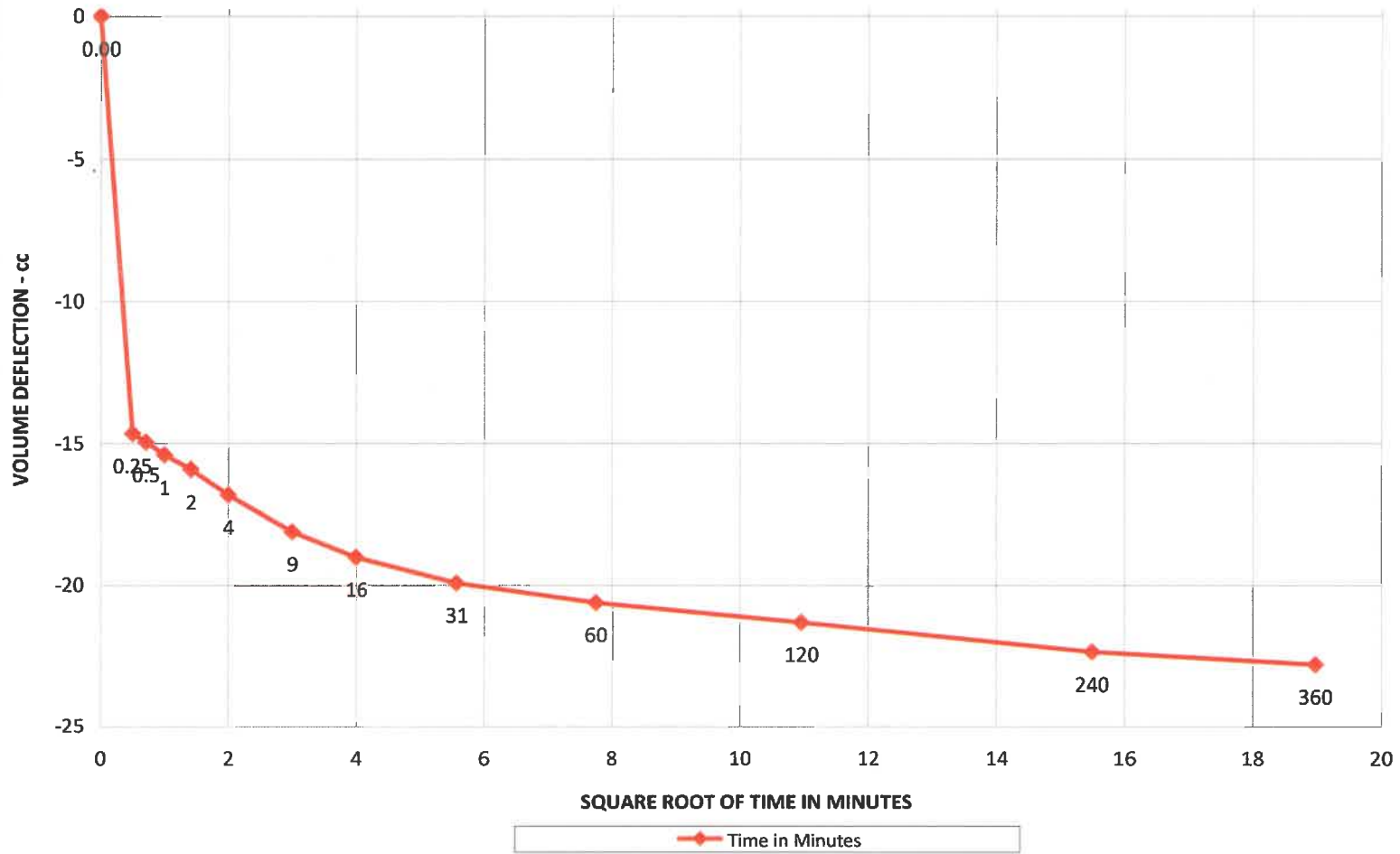
Initial Height - (in)	3.744	Init. Vol. - (cc)	177.67
Height Change - (in)	0.169	Vol. Change - (cc)	70.10
Ht. After Cons. - (in)	3.575	Cell Exp. - (cc)	51.88
Initial Area - (sq in)	2.895	Net Change - (cc)	18.22
Area After Cons.-(sq in)	2.721	Cons. Vol. - (cc)	159.45

CLIENT SN3

JOB NO. 2984-2

CONSOLIDATION DATA

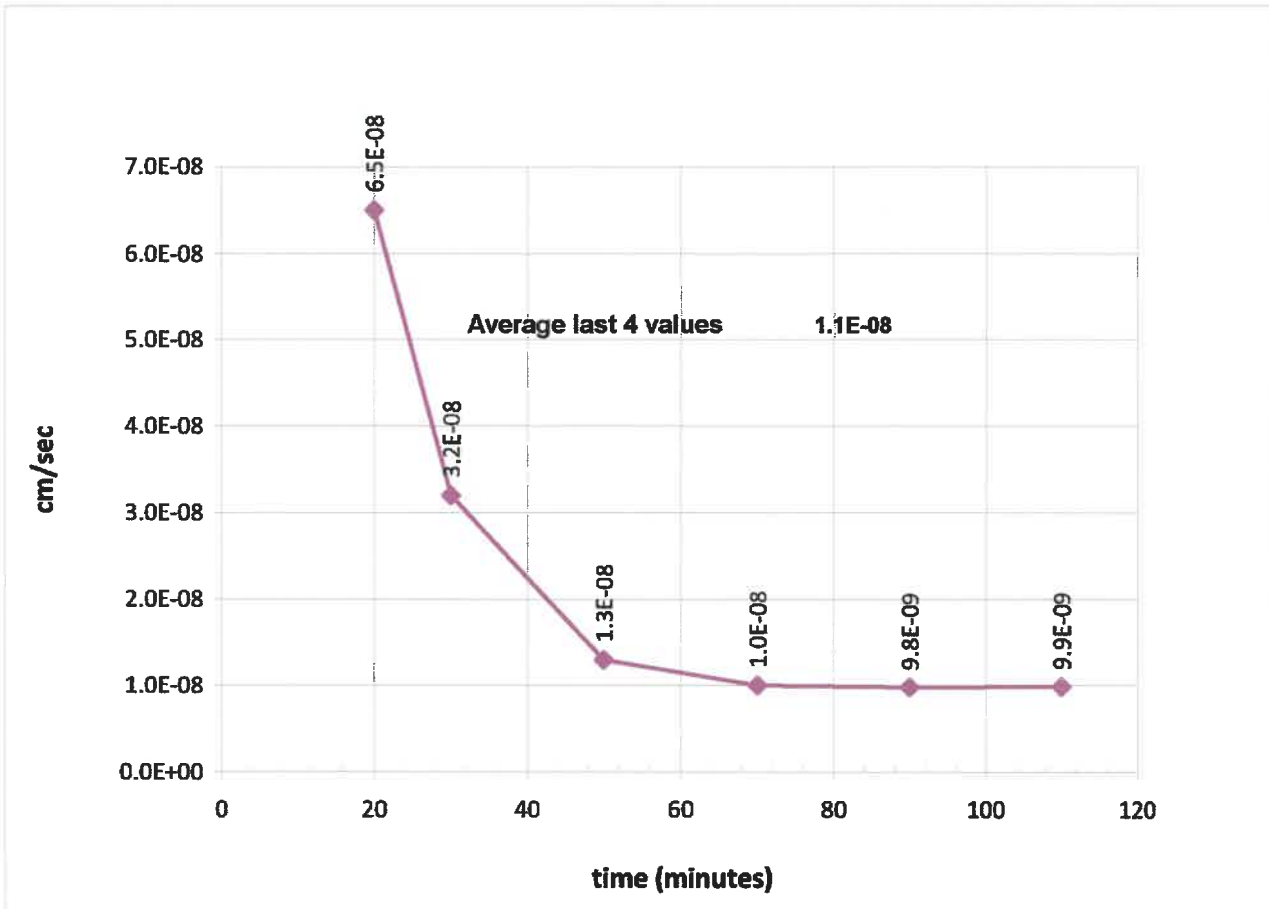
PTX06-1190,1,287'





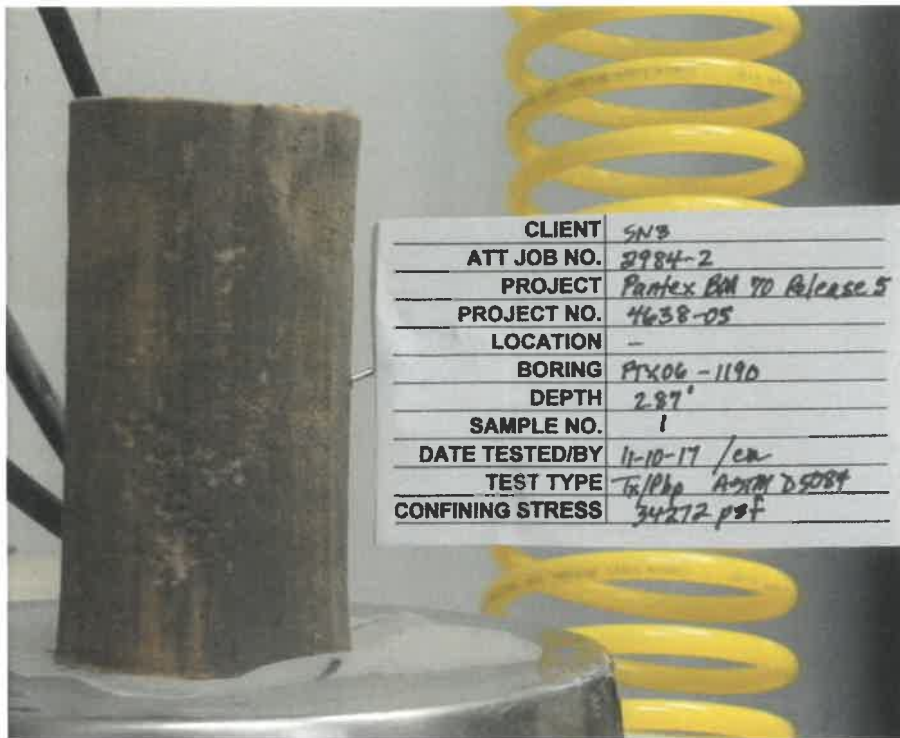
Preliminary Flow Pump Test Data ASTM D5084 Method D

Client:	SN3	Boring Number:	PTX06-1190	Sampled By:	RER
Job Number:	2984-2	Depth:	287'	Technician:	CAL
Project:	Pantex BOA 70 Release 5	Sample Number:	1		
Location:	-	Sampled Date:	10/20/2017		
Project Number:	4638-05	Test Date:	11/10/2017		



Data Entered By: CAL
Date: 11/10/2017
File Name: 2984_2_PrelimPerm_ASTMD-5084-methodD-R0_2.xls

Checked By: KR
Date: 11/20/17



DSCF6905.JPG

Appendix E
Geophysical Logs



borehole geophysics / hydrophysics

Borehole Deviation

810 Quail Street
Suite E
Lakewood, Colorado
80215
Office: 303.279.0171
Fax: 303.278.0135
www.colog.com

Company SN3
Well PTX06-ISB130
Project Pantex BOA 70 Rel. 5
County Carson
State Texas

COMPANY SN3
WELL PTX06-ISB130
PROJECT Pantex BOA 70 Release 5
COUNTY Carson
STATE Texas

LOCATION
East of FM-2373 and South of CR-8
Southeast ISB Extension Wellfield

OTHER SERVICES
None

PERMANENT DATUM Ground Level **ELEVATION** 3515.23 ft

LOG MEAS. FROM Ground Level 0.0 ft **ABOVE PERMANENT DATUM**

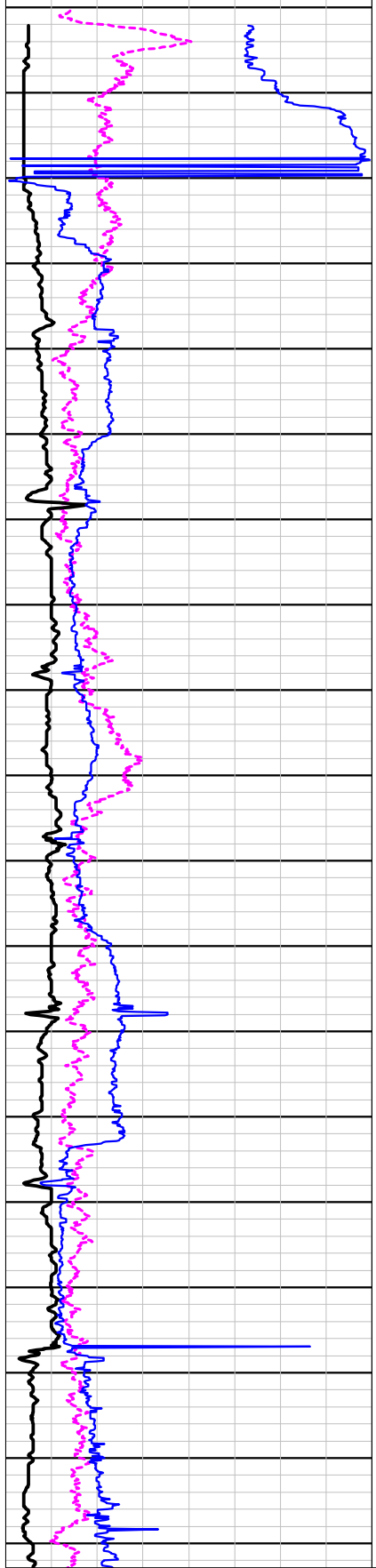
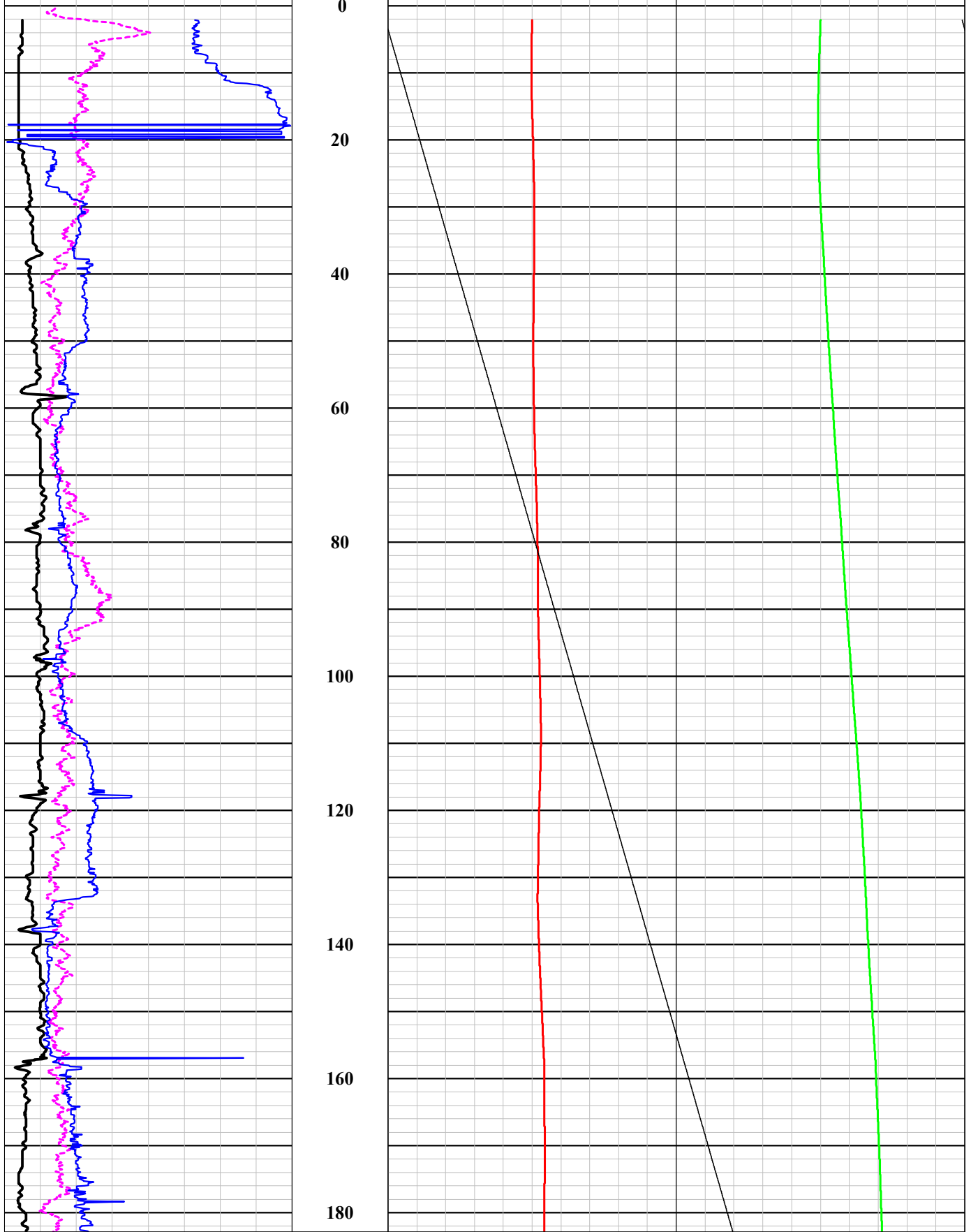
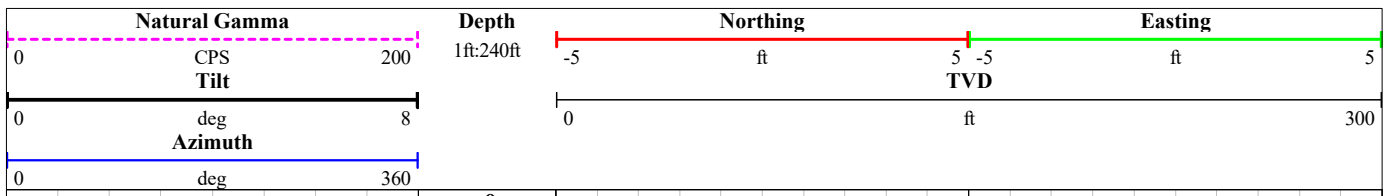
DRILLING MEAS. FROM Ground Level

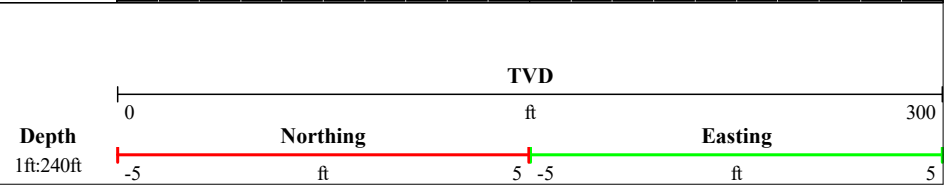
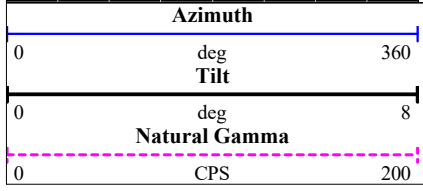
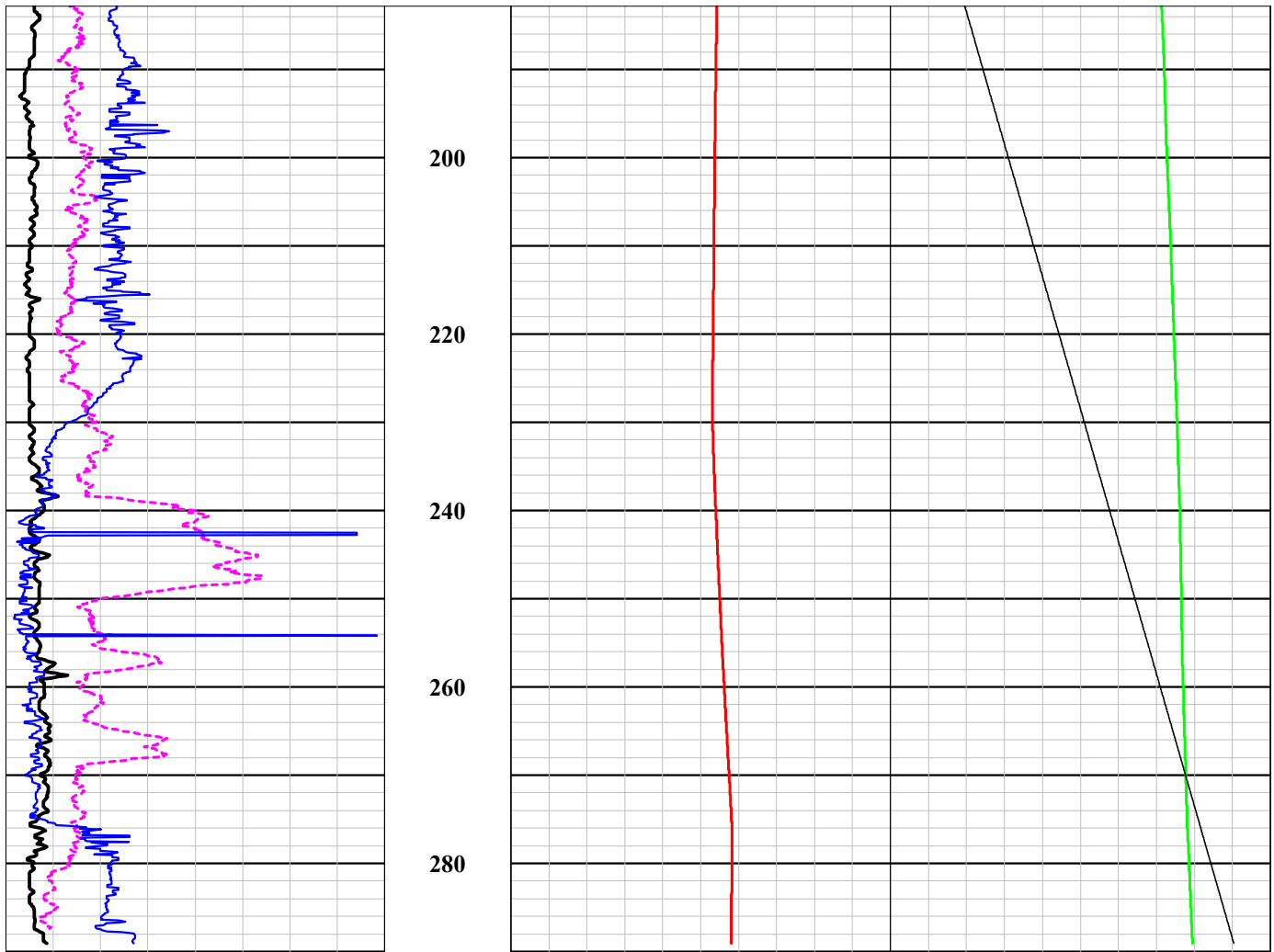
DATE ACQUIRED	19 December 2017						
RUN NUMBER	One						
LOG TYPE	Deviation						
DEPTH-DRILLER	288 ft						
DEPTH-LOGGER	289.1 ft						
BTM LOG INTERVAL	289.1 ft						
TOP LOG INTERVAL	2.1 ft						
RECORDED BY	N. Davis						
WITNESSED BY	R. Rupp						
PROBE TYPE, S/N	QL40-DEV, 112002						
LOGGING SPEED	20 ft/min						
A.S.D.E. / Sample Interval	0.0 ft / 0.1 ft						
Fluid Level / Fluid Type	AIR						
BOREHOLE RECORD			CASING RECORD				
RUN No.	BIT	FROM	TO	SIZE	WGT.	FROM	TO
1	10 in	0 ft	291 ft	4 in casing	316 SS	0 ft	277 ft
				4 in screen	316 SS	277 ft	287 ft
				4 in sump	316 SS	287 ft	288 ft

COMMENTS

NA - Not Available, N/A - Not Applicable

Directions are with respect to Magnetic North.





Deviation Survey for: SN3 Field: Pantex BOA 70 Rel. Date: 19-Dec-2017
 Well: PTX06-ISB130 Depth Ref.: GL Total Depth: 289.07 Probe Type, S/N: QL-DEV 112002

Depth (feet)	Inclination (degrees)	Bearing (degrees)	ClosureLength (line ft.)	ClosureDist. (horiz. ft.)	ClosureDepth (vertical ft.)	Northing (feet)	Easting (feet)	TrueDepth (feet)	Dist.Sum (feet)	NorthSum (feet)	EastSum (feet)
0.0	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5.0	0.50	236.50	5	0.04	5.00	-0.02	-0.04	5.00	0.04	-0.02	-0.04
10.0	0.40	268.20	5	0.03	5.00	0.00	-0.03	10.00	0.08	-0.03	-0.07
15.0	0.40	341.50	5	0.03	5.00	0.03	-0.01	15.00	0.08	0.01	-0.08
20.0	0.40	10.60	5	0.03	5.00	0.03	0.01	20.00	0.09	0.04	-0.08
25.0	0.60	55.40	5	0.05	5.00	0.03	0.04	25.00	0.08	0.07	-0.03
30.0	0.70	96.50	5	0.06	5.00	-0.01	0.06	30.00	0.07	0.07	0.03
35.0	0.80	89.50	5	0.07	5.00	0.00	0.07	35.00	0.12	0.07	0.10
40.0	0.70	102.70	5	0.06	5.00	-0.01	0.06	40.00	0.17	0.05	0.16
45.0	0.80	104.10	5	0.07	5.00	-0.02	0.07	45.00	0.23	0.04	0.22
50.0	0.80	100.80	5	0.07	5.00	-0.01	0.07	50.00	0.29	0.02	0.29
55.0	1.00	72.60	5	0.09	5.00	0.03	0.08	55.00	0.38	0.05	0.38
60.0	0.90	81.50	5	0.08	5.00	0.01	0.08	60.00	0.46	0.06	0.45
65.0	1.00	63.40	5	0.09	5.00	0.04	0.08	64.99	0.54	0.10	0.53
70.0	1.00	69.40	5	0.09	5.00	0.03	0.08	69.99	0.63	0.13	0.61
75.0	1.10	68.70	5	0.10	5.00	0.03	0.09	74.99	0.72	0.16	0.70
80.0	1.00	69.10	5	0.09	5.00	0.03	0.08	79.99	0.81	0.20	0.79
85.0	0.90	84.70	5	0.08	5.00	0.01	0.08	84.99	0.89	0.20	0.86
90.0	0.90	84.60	5	0.08	5.00	0.01	0.08	89.99	0.96	0.21	0.94
95.0	1.20	70.70	5	0.10	5.00	0.03	0.10	94.99	1.07	0.24	1.04
100.0	0.90	66.60	5	0.08	5.00	0.03	0.07	99.99	1.15	0.28	1.11
105.0	1.10	72.00	5	0.10	5.00	0.03	0.09	104.99	1.24	0.31	1.20
110.0	1.00	101.50	5	0.09	5.00	-0.02	0.09	109.99	1.32	0.29	1.29
115.0	1.00	108.50	5	0.09	5.00	-0.03	0.08	114.99	1.40	0.26	1.37
120.0	0.90	115.70	5	0.08	5.00	-0.03	0.07	119.99	1.46	0.23	1.44
125.0	0.80	104.10	5	0.07	5.00	-0.02	0.07	124.99	1.52	0.21	1.51
130.0	0.60	114.50	5	0.05	5.00	-0.02	0.05	129.99	1.57	0.19	1.56
135.0	0.80	56.30	5	0.07	5.00	0.04	0.06	134.99	1.63	0.23	1.62
140.0	1.00	60.40	5	0.09	5.00	0.04	0.08	139.98	1.71	0.27	1.69
145.0	1.00	55.70	5	0.09	5.00	0.05	0.07	144.98	1.79	0.32	1.76
150.0	1.00	54.60	5	0.09	5.00	0.05	0.07	149.98	1.87	0.37	1.84
155.0	1.00	54.50	5	0.09	5.00	0.05	0.07	154.98	1.95	0.42	1.91
160.0	0.50	77.00	5	0.04	5.00	0.01	0.04	159.98	2.00	0.43	1.95
165.0	0.50	83.20	5	0.04	5.00	0.01	0.04	164.98	2.04	0.44	1.99
170.0	0.60	96.90	5	0.05	5.00	-0.01	0.05	169.98	2.09	0.43	2.04
175.0	0.40	94.10	5	0.03	5.00	0.00	0.03	174.98	2.12	0.43	2.08
180.0	0.60	94.60	5	0.05	5.00	0.00	0.05	179.98	2.17	0.42	2.13
185.0	0.60	102.60	5	0.05	5.00	-0.01	0.05	184.98	2.22	0.41	2.18
190.0	0.40	113.20	5	0.03	5.00	-0.01	0.03	189.98	2.25	0.40	2.21
195.0	0.50	117.70	5	0.04	5.00	-0.02	0.04	194.98	2.28	0.38	2.25
200.0	0.40	113.60	5	0.03	5.00	-0.01	0.03	199.98	2.31	0.36	2.28
205.0	0.60	106.60	5	0.05	5.00	-0.01	0.05	204.98	2.36	0.35	2.34
210.0	0.60	93.40	5	0.05	5.00	0.00	0.05	209.98	2.41	0.34	2.39
215.0	0.50	95.70	5	0.04	5.00	0.00	0.04	214.98	2.45	0.34	2.43
220.0	0.50	108.90	5	0.04	5.00	-0.01	0.04	219.98	2.49	0.33	2.47
225.0	0.50	111.20	5	0.04	5.00	-0.02	0.04	224.98	2.53	0.31	2.51
230.0	0.50	59.70	5	0.04	5.00	0.02	0.04	229.98	2.57	0.33	2.55
235.0	0.70	40.20	5	0.06	5.00	0.05	0.04	234.98	2.62	0.38	2.59
240.0	0.80	27.90	5	0.07	5.00	0.06	0.03	239.98	2.66	0.44	2.62
245.0	1.00	31.40	5	0.09	5.00	0.07	0.05	244.98	2.72	0.52	2.67
250.0	0.70	15.20	5	0.06	5.00	0.06	0.02	249.98	2.74	0.57	2.68
255.0	0.70	20.80	5	0.06	5.00	0.06	0.02	254.98	2.78	0.63	2.71
260.0	0.80	24.50	5	0.07	5.00	0.06	0.03	259.98	2.82	0.69	2.73
265.0	0.90	32.30	5	0.08	5.00	0.07	0.04	264.98	2.88	0.76	2.78
270.0	0.70	17.80	5	0.06	5.00	0.06	0.02	269.98	2.91	0.82	2.80
275.0	0.70	32.90	5	0.06	5.00	0.05	0.03	274.97	2.96	0.87	2.83
280.0	0.60	99.80	5	0.05	5.00	-0.01	0.05	279.97	3.01	0.86	2.88
285.0	0.50	95.10	5	0.04	5.00	0.00	0.04	284.97	3.05	0.86	2.92
289.1	0.90	121.40	4	0.06	4.10	-0.03	0.05	289.07	3.09	0.82	2.98

Totals:			
True Depth	DistSum	NorthSum	EastSum
289.07	3.09	0.82	2.98

Orientations are with respect to Magnetic North

Deviation Survey for: SN3 **Field:** Pantex BOA 70 Rel. **Date:** 19-Dec-2017
Well: PTX06-ISB130 **Depth Ref.:** GL **Total Depth:** 289.07 **Probe Type, S/N:** QL-DEV 112002

Definitions

Bearing = Azimuth Degrees from Magnetic North (Raw Data)

ClosureDistance = Horizontal Feet Between Each Station

ClosureDepth = Vertical Feet Between Each Interval

Northing = North/South Component of Horizontal Distance Between Each Station (Negative = South)
(Closure Dist.) x cos(Bearing)

Easting = East/West Component of Horizontal Distance Between Each Station (Negative = West)
(Closure Dist.) x sin(Bearing)

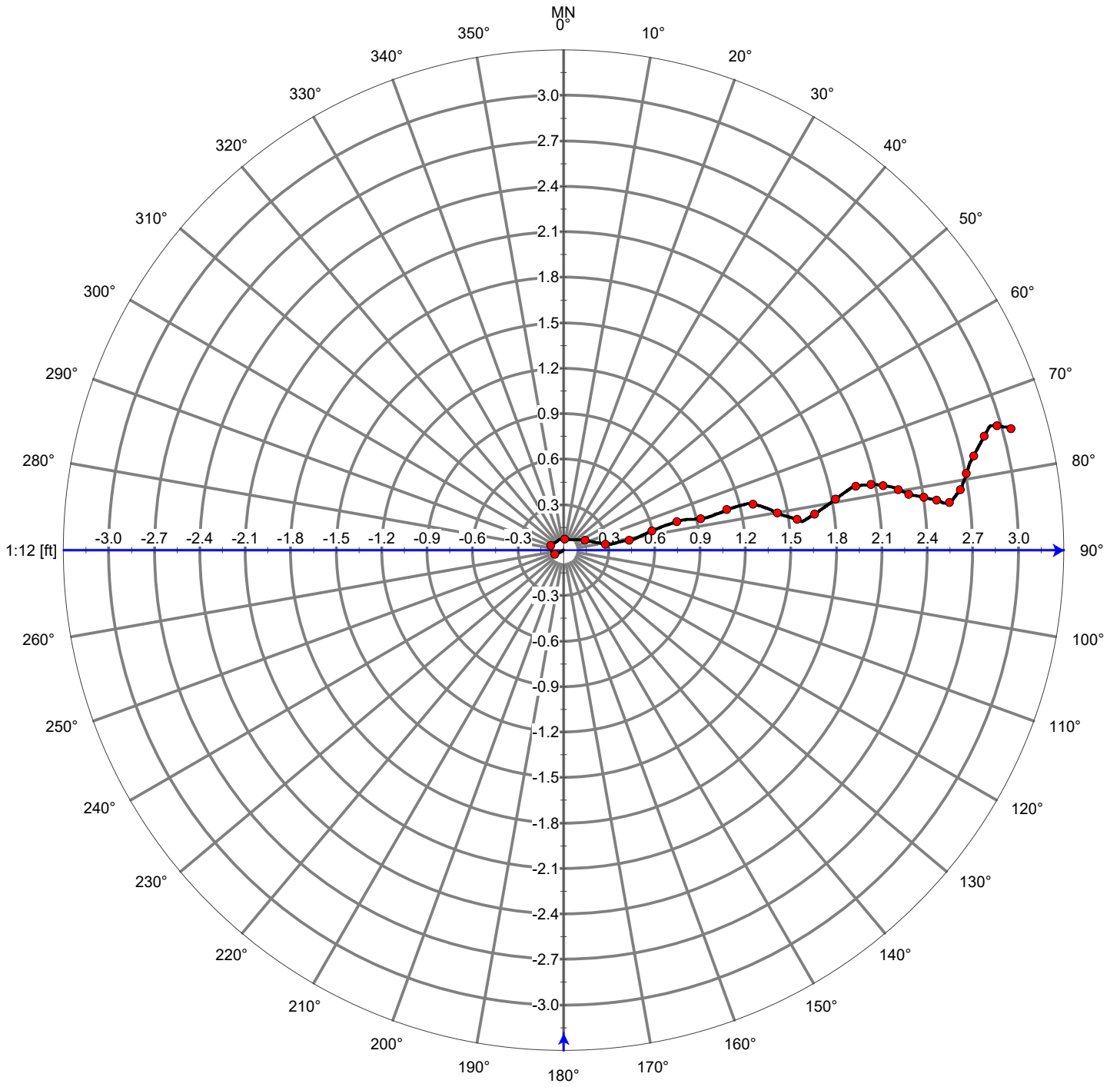
TrueDepth = Vertical Depth from the Surface to This Station

DistanceSum = Horizontal Distance from Wellhead to this Station

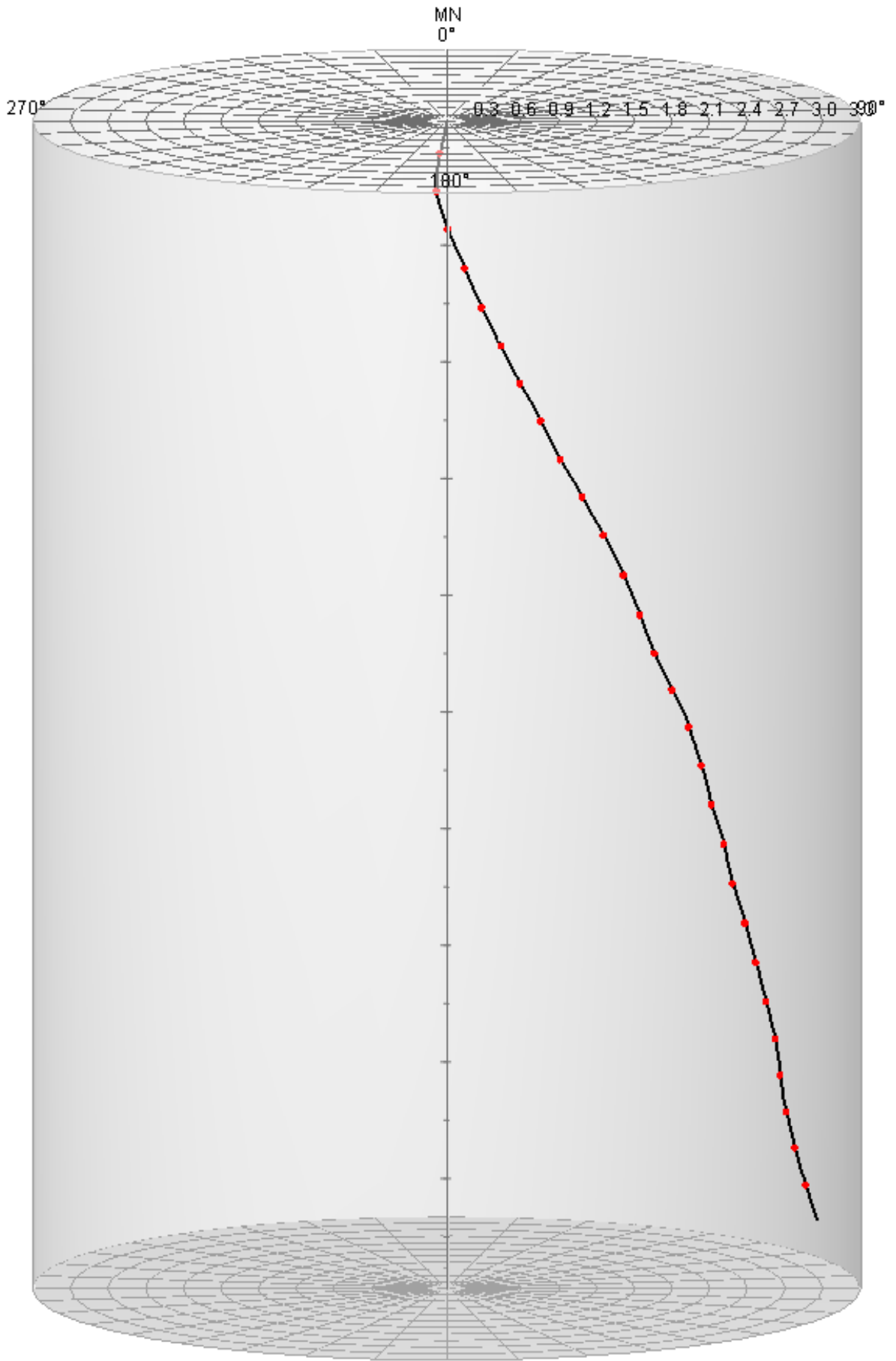
NorthSum = North/South Component of Horizontal Distance from the Wellhead to This Station (Negative = South)
Running Sum of Northing

EastSum = East/West Component of Horizontal Distance from the Wellhead to This Station (Negative = West)
Running Sum of Easting

PTX06-ISB130



PTX06-ISB130





borehole geophysics / hydrophysics

Borehole Deviation

810 Quail Street
Suite E
Lakewood, Colorado
80215
Office: 303.279.0171
Fax: 303.278.0135
www.colog.com

Company SN3
Well PTX06-ISB126
Project Pantex BOA 70 Rel. 5
County Carson
State Texas

COMPANY SN3
WELL PTX06-ISB126
PROJECT Pantex BOA 70 Release 5
COUNTY Carson
STATE Texas

LOCATION
East of FM-2373 and South of CR-8
Southeast ISB Extension Wellfield

OTHER SERVICES
None

PERMANENT DATUM Ground Level **ELEVATION** 3515.03 ft

LOG MEAS. FROM Ground Level 0.0 ft **ABOVE PERMANENT DATUM**

DRILLING MEAS. FROM Ground Level

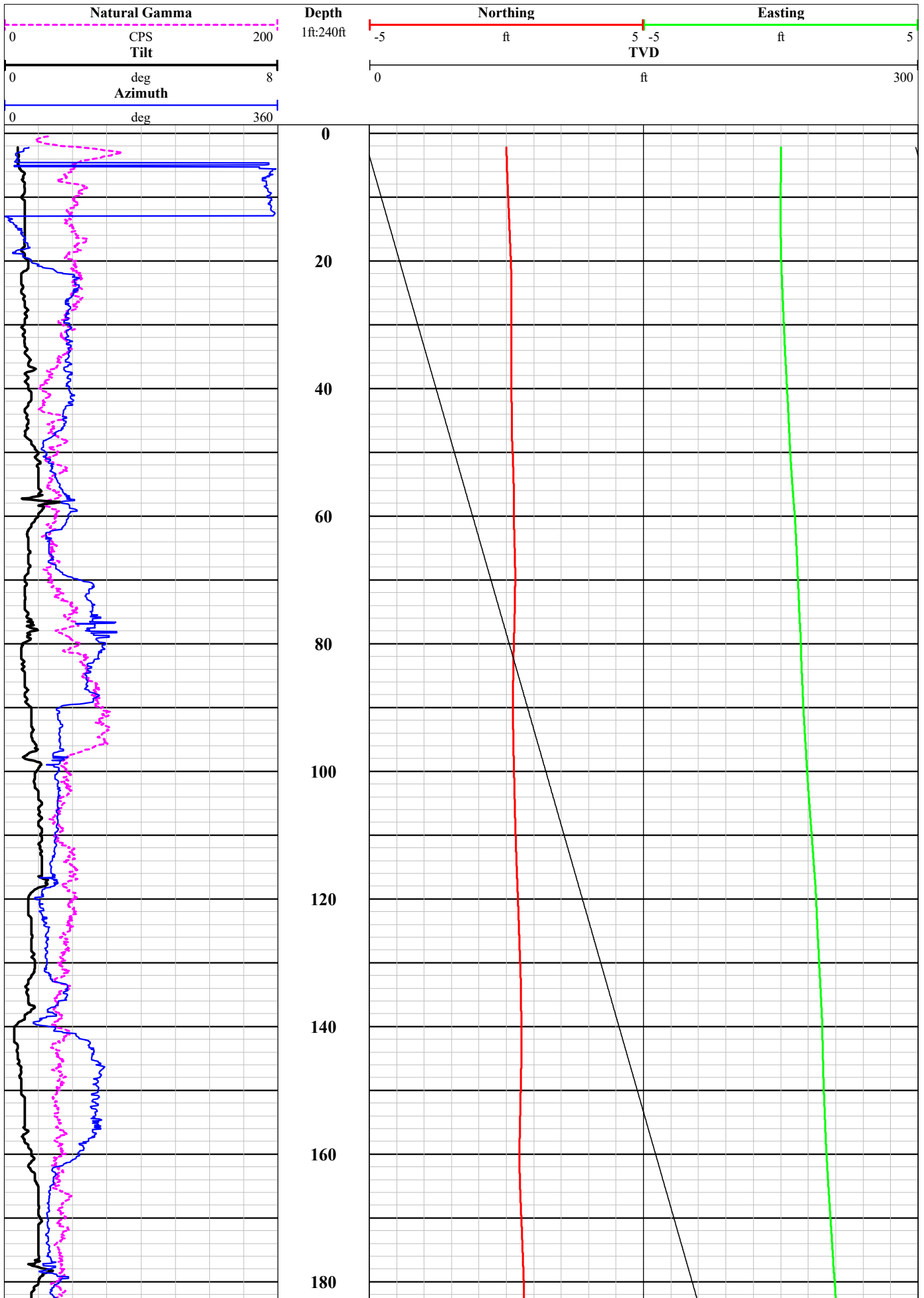
DATE ACQUIRED	19 December 2017
RUN NUMBER	One
LOG TYPE	Deviation
DEPTH-DRILLER	288 ft
DEPTH-LOGGER	287.2 ft
BTM LOG INTERVAL	287.2 ft
TOP LOG INTERVAL	2.2 ft
RECORDED BY	N. Davis
WITNESSED BY	R. Rupp
PROBE TYPE, S/N	QL40-DEV, 112002
LOGGING SPEED	20 ft/min
A.S.D.E. / Sample Interval	0.14 ft / 0.1 ft
Fluid Level / Fluid Type	AIR

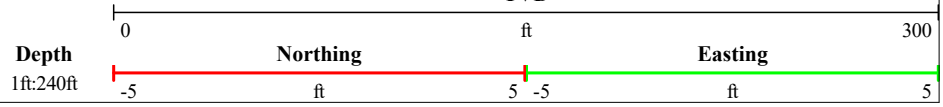
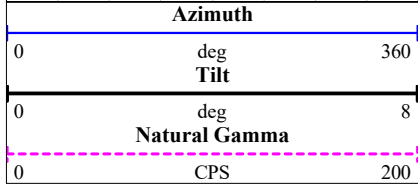
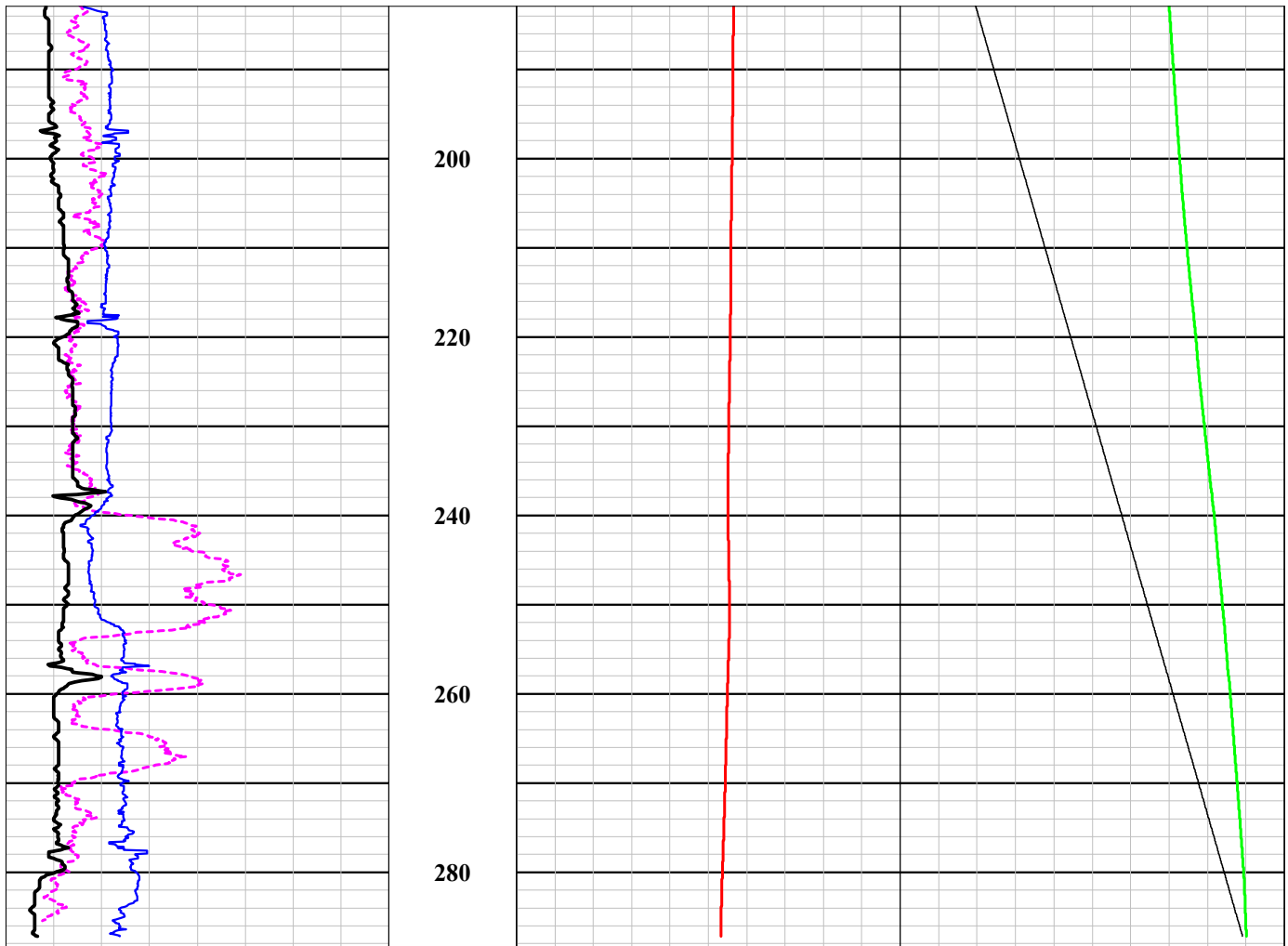
BOREHOLE RECORD		CASING RECORD					
RUN No.	BIT	FROM	TO	SIZE	WGT.	FROM	TO
1	10 in	0 ft	291 ft	4 in casing	316 SS	0 ft	277 ft
				4 in screen	316 SS	277 ft	287 ft
				4 in sump	316 SS	287 ft	288 ft

NA - Not Available, N/A - Not Applicable

COMMENTS

Directions are with respect to Magnetic North.





Deviation Survey for: SN3 Field: Pantex BOA 70 Rel. Date: 19-Dec-2017
 Well: PTX06-ISB126 Depth Ref.: GL Total Depth: 287.16 Probe Type, S/N: QL-DEV 112002

Depth (feet)	Inclination (degrees)	Bearing (degrees)	ClosureLength (line ft.)	ClosureDist. (horiz. ft.)	ClosureDepth (vertical ft.)	Northing (feet)	Easting (feet)	TrueDepth (feet)	Dist.Sum (feet)	NorthSum (feet)	EastSum (feet)
0.0	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5.0	0.40	342.00	5	0.03	5.00	0.03	-0.01	5.00	0.03	0.03	-0.01
10.0	0.50	346.60	5	0.04	5.00	0.04	-0.01	10.00	0.08	0.08	-0.02
15.0	0.60	23.00	5	0.05	5.00	0.05	0.02	15.00	0.12	0.12	0.00
20.0	0.70	34.70	5	0.06	5.00	0.05	0.03	20.00	0.18	0.17	0.03
25.0	0.50	91.20	5	0.04	5.00	0.00	0.04	25.00	0.19	0.17	0.08
30.0	0.60	85.70	5	0.05	5.00	0.00	0.05	30.00	0.22	0.18	0.13
35.0	0.70	85.50	5	0.06	5.00	0.00	0.06	35.00	0.26	0.18	0.19
40.0	0.70	84.90	5	0.06	5.00	0.01	0.06	40.00	0.31	0.19	0.25
45.0	0.70	78.00	5	0.06	5.00	0.01	0.06	45.00	0.37	0.20	0.31
50.0	1.00	55.80	5	0.09	5.00	0.05	0.07	50.00	0.46	0.25	0.38
55.0	1.00	73.30	5	0.09	5.00	0.03	0.08	55.00	0.54	0.27	0.47
60.0	1.00	84.50	5	0.09	5.00	0.01	0.09	60.00	0.62	0.28	0.55
65.0	0.70	58.70	5	0.06	5.00	0.03	0.05	64.99	0.68	0.31	0.61
70.0	0.60	96.60	5	0.05	5.00	-0.01	0.05	69.99	0.73	0.31	0.66
75.0	0.70	112.80	5	0.06	5.00	-0.02	0.06	74.99	0.77	0.28	0.71
80.0	0.50	133.00	5	0.04	5.00	-0.03	0.03	79.99	0.79	0.25	0.75
85.0	0.60	107.60	5	0.05	5.00	-0.02	0.05	84.99	0.83	0.24	0.80
90.0	0.80	73.10	5	0.07	5.00	0.02	0.07	89.99	0.90	0.26	0.86
95.0	0.90	72.10	5	0.08	5.00	0.02	0.07	94.99	0.98	0.28	0.94
100.0	1.00	71.50	5	0.09	5.00	0.03	0.08	99.99	1.07	0.31	1.02
105.0	1.10	70.80	5	0.10	5.00	0.03	0.09	104.99	1.16	0.34	1.11
110.0	1.00	67.60	5	0.09	5.00	0.03	0.08	109.99	1.25	0.38	1.19
115.0	1.10	62.10	5	0.10	5.00	0.04	0.08	114.99	1.34	0.42	1.28
120.0	0.70	40.10	5	0.06	5.00	0.05	0.04	119.99	1.40	0.47	1.32
125.0	0.80	58.40	5	0.07	5.00	0.04	0.06	124.99	1.47	0.50	1.38
130.0	0.90	56.10	5	0.08	5.00	0.04	0.07	129.99	1.54	0.55	1.44
135.0	0.70	83.10	5	0.06	5.00	0.01	0.06	134.99	1.60	0.56	1.50
140.0	0.30	57.30	5	0.03	5.00	0.01	0.02	139.99	1.63	0.57	1.52
145.0	0.40	114.70	5	0.03	5.00	-0.01	0.03	144.99	1.65	0.55	1.56
150.0	0.50	123.30	5	0.04	5.00	-0.02	0.04	149.99	1.68	0.53	1.59
155.0	0.60	121.90	5	0.05	5.00	-0.03	0.04	154.99	1.71	0.50	1.64
160.0	0.80	98.80	5	0.07	5.00	-0.01	0.07	159.99	1.78	0.49	1.71
165.0	1.00	61.60	5	0.09	5.00	0.04	0.08	164.99	1.86	0.53	1.78
170.0	1.00	56.90	5	0.09	5.00	0.05	0.07	169.98	1.94	0.58	1.86
175.0	1.00	58.90	5	0.09	5.00	0.05	0.07	174.98	2.03	0.63	1.93
180.0	1.00	74.10	5	0.09	5.00	0.02	0.08	179.98	2.12	0.65	2.01
185.0	0.90	93.70	5	0.08	5.00	-0.01	0.08	184.98	2.19	0.65	2.09
190.0	0.90	99.90	5	0.08	5.00	-0.01	0.08	189.98	2.26	0.63	2.17
195.0	0.90	98.60	5	0.08	5.00	-0.01	0.08	194.98	2.33	0.62	2.25
200.0	0.90	102.10	5	0.08	5.00	-0.02	0.08	199.98	2.40	0.60	2.32
205.0	1.10	97.90	5	0.10	5.00	-0.01	0.10	204.98	2.49	0.59	2.42
210.0	1.20	94.40	5	0.10	5.00	-0.01	0.10	209.98	2.59	0.58	2.52
215.0	1.40	93.70	5	0.12	5.00	-0.01	0.12	214.98	2.71	0.57	2.65
220.0	1.20	102.00	5	0.10	5.00	-0.02	0.10	219.98	2.80	0.55	2.75
225.0	1.40	99.20	5	0.12	5.00	-0.02	0.12	224.97	2.92	0.53	2.87
230.0	1.40	99.20	5	0.12	5.00	-0.02	0.12	229.97	3.03	0.51	2.99
235.0	1.40	95.60	5	0.12	5.00	-0.01	0.12	234.97	3.15	0.50	3.11
240.0	1.40	81.30	5	0.12	5.00	0.02	0.12	239.97	3.27	0.52	3.23
245.0	1.20	80.40	5	0.10	5.00	0.02	0.10	244.97	3.38	0.54	3.33
250.0	1.30	82.90	5	0.11	5.00	0.01	0.11	249.97	3.49	0.55	3.45
255.0	1.10	111.60	5	0.10	5.00	-0.04	0.09	254.97	3.57	0.52	3.54
260.0	1.10	109.70	5	0.10	5.00	-0.03	0.09	259.97	3.66	0.48	3.63
265.0	1.00	108.30	5	0.09	5.00	-0.03	0.08	264.97	3.74	0.46	3.71
270.0	1.10	110.40	5	0.10	5.00	-0.03	0.09	269.96	3.82	0.42	3.80
275.0	1.00	114.10	5	0.09	5.00	-0.04	0.08	274.96	3.90	0.39	3.88
280.0	1.10	121.70	5	0.10	5.00	-0.05	0.08	279.96	3.98	0.34	3.96
285.0	0.60	111.60	5	0.05	5.00	-0.02	0.05	284.96	4.02	0.32	4.01
287.2	0.70	107.10	2	0.03	2.20	-0.01	0.03	287.16	4.05	0.31	4.04

Totals:			
True Depth	DistSum	NorthSum	EastSum
287.16	4.05	0.31	4.04

Orientations are with respect to Magnetic North

Deviation Survey for: SN3 **Field:** Pantex BOA 70 Rel. **Date:** 19-Dec-2017
Well: PTX06-ISB126 **Depth Ref.:** GL **Total Depth:** 287.16 **Probe Type, S/N:** QL-DEV 112002

Definitions

Bearing = Azimuth Degrees from Magnetic North (Raw Data)

ClosureDistance = Horizontal Feet Between Each Station

ClosureDepth = Vertical Feet Between Each Interval

Northing = North/South Component of Horizontal Distance Between Each Station (Negative = South)
(Closure Dist.) x cos(Bearing)

Easting = East/West Component of Horizontal Distance Between Each Station (Negative = West)
(Closure Dist.) x sin(Bearing)

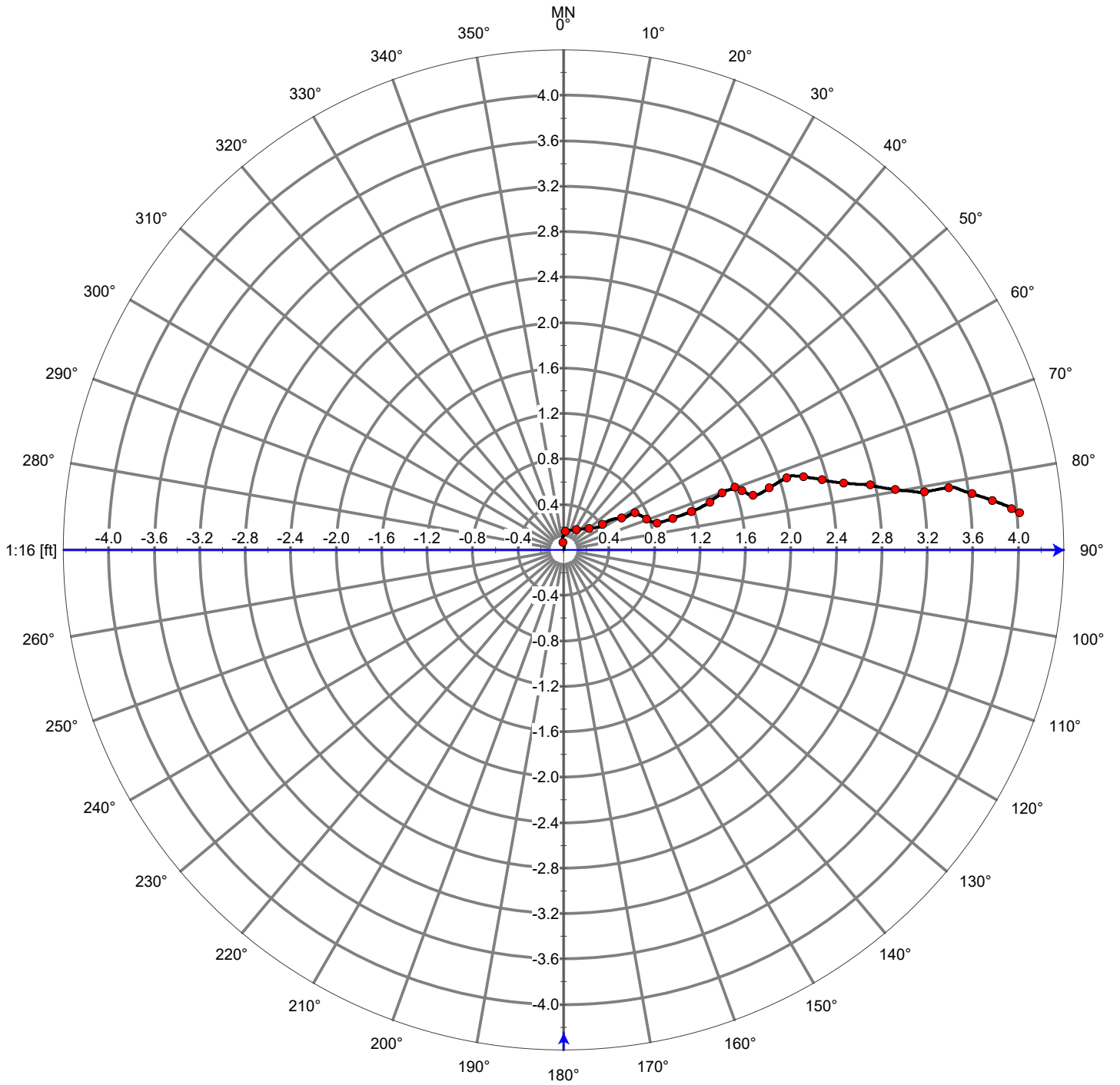
TrueDepth = Vertical Depth from the Surface to This Station

DistanceSum = Horizontal Distance from Wellhead to this Station

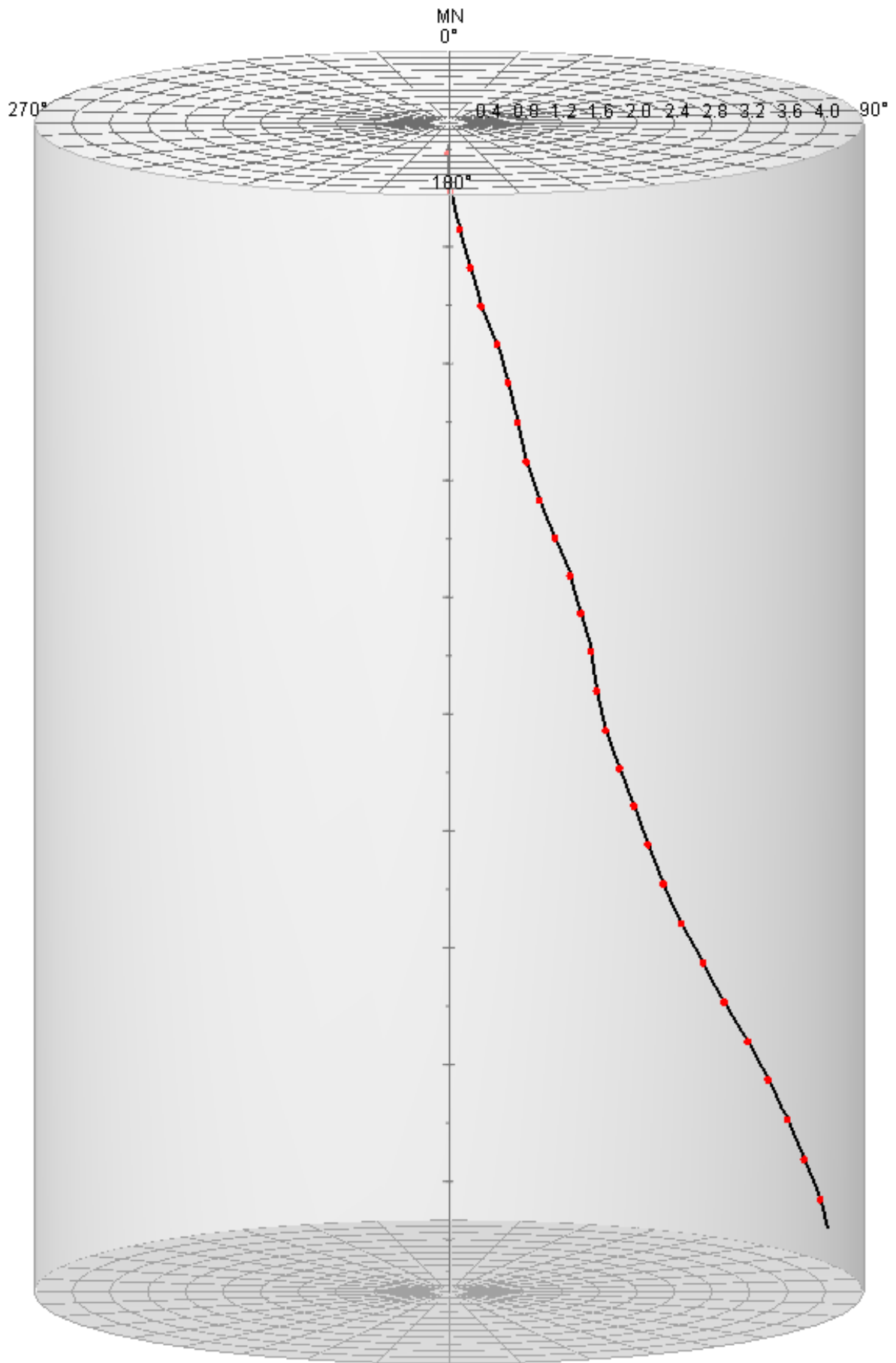
NorthSum = North/South Component of Horizontal Distance from the Wellhead to This Station (Negative = South)
Running Sum of Northing

EastSum = East/West Component of Horizontal Distance from the Wellhead to This Station (Negative = West)
Running Sum of Easting

PTX06-ISB126



PTX06-ISB126





borehole geophysics / hydrophysics

810 Quail Street
Suite E
Lakewood, Colorado
80215
Office: 303.279.0171
Fax: 303.278.0135
www.colog.com

Borehole Deviation

Company SN3
Well PTX06-ISB122
Project Pantex BOA 70 Rel. 5
County Carson
State Texas

COMPANY SN3
WELL PTX06-ISB122
PROJECT Pantex BOA 70 Release 5
COUNTY Carson
STATE Texas

LOCATION
East of FM-2373 and South of CR-8
Southeast ISB Extension Wellfield

OTHER SERVICES
None

PERMANENT DATUM Ground Level **ELEVATION** 3515.12 ft

LOG MEAS. FROM Ground Level 0.0 ft **ABOVE PERMANENT DATUM**

DRILLING MEAS. FROM Ground Level

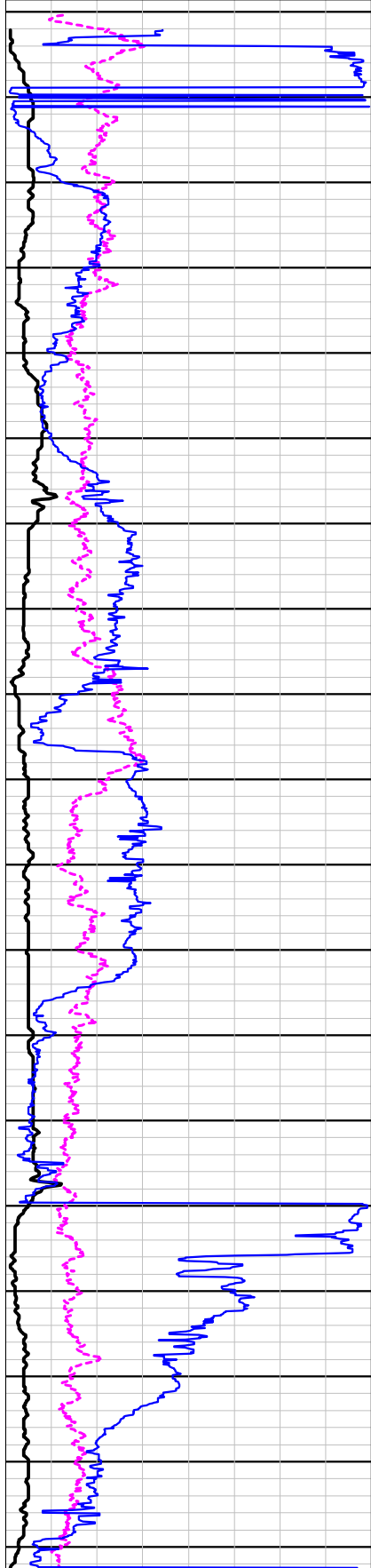
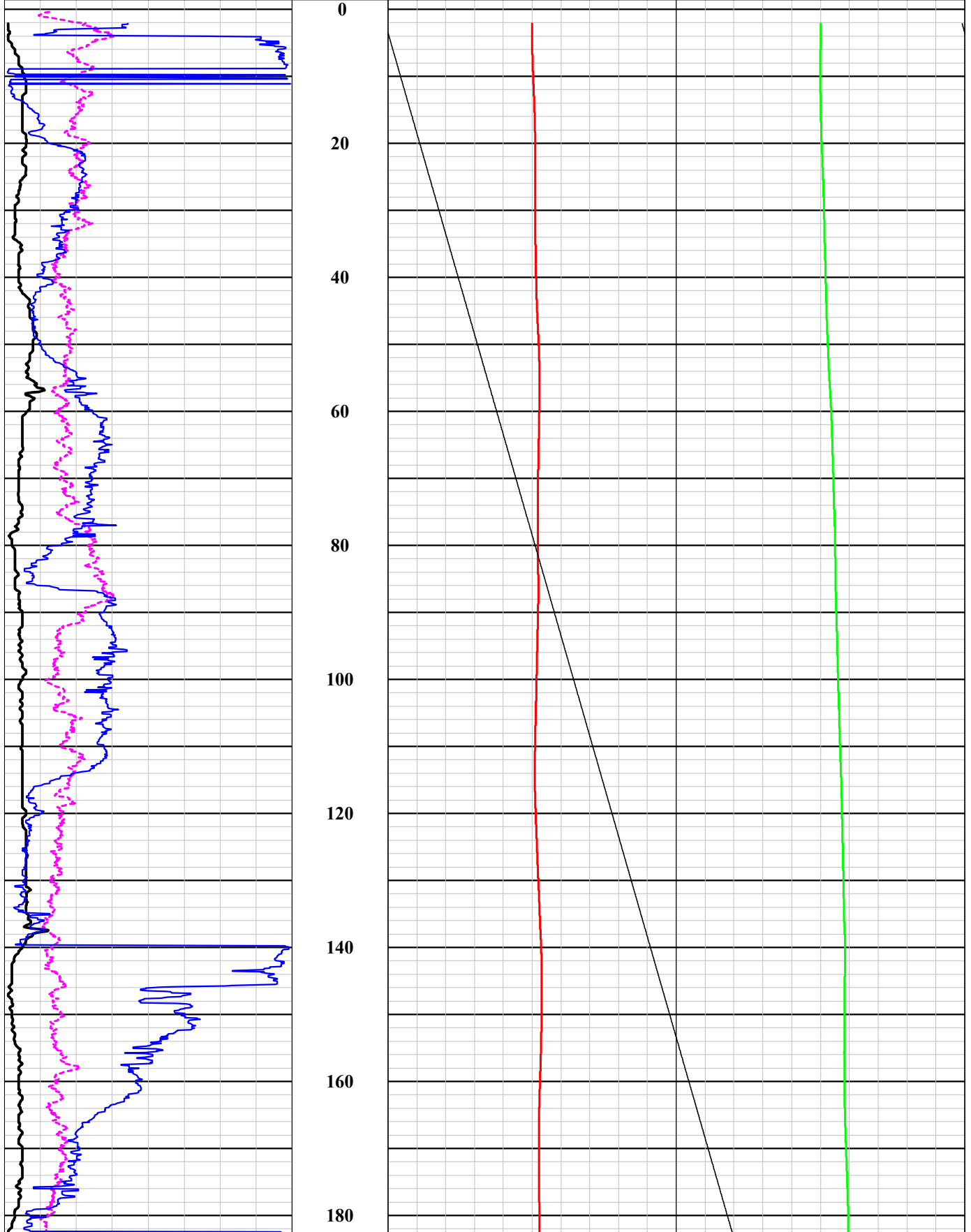
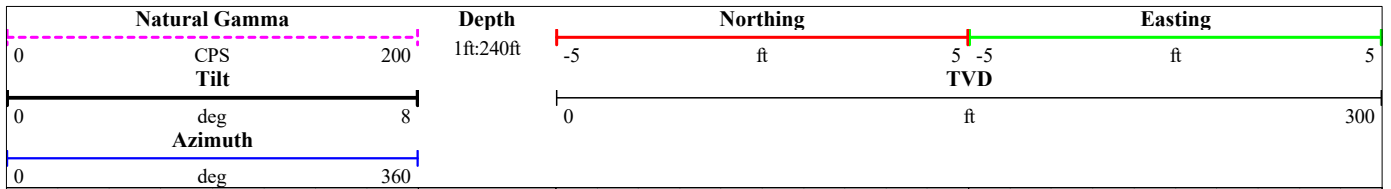
DATE ACQUIRED	19 December 2017
RUN NUMBER	One
LOG TYPE	Deviation
DEPTH-DRILLER	287 ft
DEPTH-LOGGER	286.5 ft
BTM LOG INTERVAL	286.5 ft
TOP LOG INTERVAL	2.1 ft
RECORDED BY	N. Davis
WITNESSED BY	R. Rupp
PROBE TYPE, S/N	QL40-DEV, 112002
LOGGING SPEED	20 ft/min
A.S.D.E. / Sample Interval	-0.02 ft / 0.1 ft
Fluid Level / Fluid Type	AIR

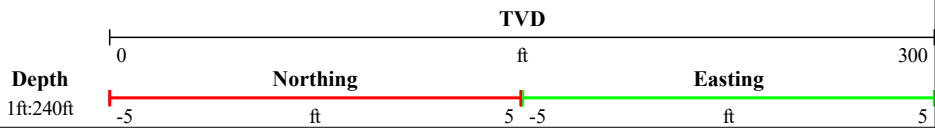
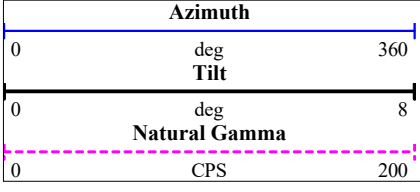
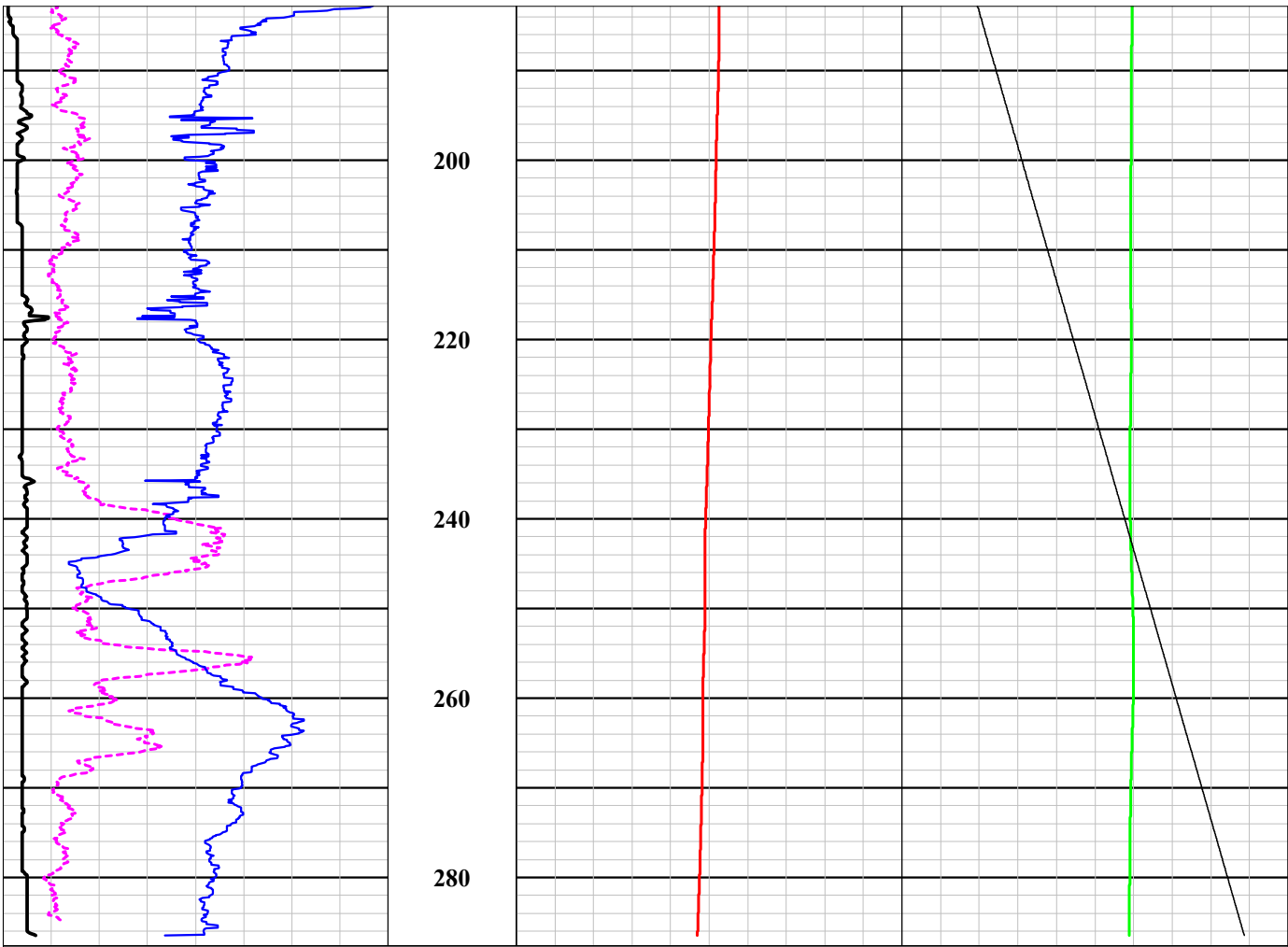
BOREHOLE RECORD		CASING RECORD					
RUN No.	BIT	FROM	TO	SIZE	WGT.	FROM	TO
1	10 in	0 ft	289 ft	4 in casing	316 SS	0 ft	276 ft
				4 in screen	316 SS	276 ft	286 ft
				4 in sump	316 SS	286 ft	287 ft

NA - Not Available, N/A - Not Applicable

COMMENTS

Directions are with respect to Magnetic North.





Deviation Survey for: SN3 Field: Pantex BOA 70 Rel. Date: 19-Dec-2017
 Well: PTX06-ISB122 Depth Ref.: GL Total Depth: 286.49 Probe Type, S/N: QL-DEV 112002

Depth (feet)	Inclination (degrees)	Bearing (degrees)	ClosureLength (line ft.)	ClosureDist. (horiz. ft.)	ClosureDepth (vertical ft.)	Northing (feet)	Easting (feet)	TrueDepth (feet)	Dist.Sum (feet)	NorthSum (feet)	EastSum (feet)
0.0	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5.0	0.20	343.40	5	0.02	5.00	0.02	0.00	5.00	0.02	0.02	0.00
10.0	0.60	13.00	5	0.05	5.00	0.05	0.01	10.00	0.07	0.07	0.01
15.0	0.50	34.80	5	0.04	5.00	0.04	0.02	15.00	0.11	0.10	0.03
20.0	0.60	57.40	5	0.05	5.00	0.03	0.04	20.00	0.15	0.13	0.08
25.0	0.50	97.50	5	0.04	5.00	-0.01	0.04	25.00	0.17	0.13	0.12
30.0	0.30	76.90	5	0.03	5.00	0.01	0.03	30.00	0.20	0.13	0.14
35.0	0.50	68.80	5	0.04	5.00	0.02	0.04	35.00	0.24	0.15	0.19
40.0	0.40	47.90	5	0.03	5.00	0.02	0.03	40.00	0.27	0.17	0.21
45.0	0.70	36.20	5	0.06	5.00	0.05	0.04	45.00	0.33	0.22	0.25
50.0	0.80	44.40	5	0.07	5.00	0.05	0.05	50.00	0.40	0.27	0.30
55.0	0.60	101.90	5	0.05	5.00	-0.01	0.05	55.00	0.43	0.26	0.35
60.0	0.60	110.50	5	0.05	5.00	-0.02	0.05	60.00	0.46	0.24	0.40
65.0	0.50	127.10	5	0.04	5.00	-0.03	0.03	65.00	0.48	0.21	0.43
70.0	0.40	109.60	5	0.03	5.00	-0.01	0.03	70.00	0.51	0.20	0.46
75.0	0.40	107.20	5	0.03	5.00	-0.01	0.03	75.00	0.53	0.19	0.50
80.0	0.20	71.30	5	0.02	5.00	0.01	0.02	80.00	0.55	0.20	0.51
85.0	0.30	34.70	5	0.03	5.00	0.02	0.01	85.00	0.57	0.22	0.53
90.0	0.50	123.10	5	0.04	5.00	-0.02	0.04	90.00	0.60	0.20	0.57
95.0	0.40	139.80	5	0.03	5.00	-0.03	0.02	95.00	0.61	0.17	0.59
100.0	0.50	129.60	5	0.04	5.00	-0.03	0.03	100.00	0.64	0.14	0.62
105.0	0.50	122.30	5	0.04	5.00	-0.02	0.04	105.00	0.67	0.12	0.66
110.0	0.50	124.50	5	0.04	5.00	-0.02	0.04	110.00	0.70	0.09	0.69
115.0	0.50	60.70	5	0.04	5.00	0.02	0.04	115.00	0.74	0.12	0.73
120.0	0.60	47.20	5	0.05	5.00	0.04	0.04	120.00	0.79	0.15	0.77
125.0	0.60	26.60	5	0.05	5.00	0.05	0.02	125.00	0.82	0.20	0.79
130.0	0.60	23.80	5	0.05	5.00	0.05	0.02	129.99	0.85	0.25	0.82
135.0	0.60	56.90	5	0.05	5.00	0.03	0.04	134.99	0.90	0.27	0.86
140.0	0.50	355.80	5	0.04	5.00	0.04	0.00	139.99	0.91	0.32	0.86
145.0	0.20	341.50	5	0.02	5.00	0.02	-0.01	144.99	0.91	0.33	0.85
150.0	0.20	225.00	5	0.02	5.00	-0.01	-0.01	149.99	0.90	0.32	0.84
155.0	0.40	161.30	5	0.03	5.00	-0.03	0.01	154.99	0.90	0.29	0.85
160.0	0.40	164.40	5	0.03	5.00	-0.03	0.01	159.99	0.90	0.25	0.86
165.0	0.40	114.00	5	0.03	5.00	-0.01	0.03	164.99	0.92	0.24	0.89
170.0	0.50	93.90	5	0.04	5.00	0.00	0.04	169.99	0.96	0.24	0.93
175.0	0.40	71.30	5	0.03	5.00	0.01	0.03	174.99	1.00	0.25	0.97
180.0	0.30	31.30	5	0.03	5.00	0.02	0.01	179.99	1.02	0.27	0.98
185.0	0.20	236.30	5	0.02	5.00	-0.01	-0.01	184.99	1.00	0.26	0.97
190.0	0.30	211.70	5	0.03	5.00	-0.02	-0.01	189.99	0.98	0.24	0.95
195.0	0.50	179.00	5	0.04	5.00	-0.04	0.00	194.99	0.97	0.20	0.95
200.0	0.40	174.50	5	0.03	5.00	-0.03	0.00	199.99	0.97	0.16	0.96
205.0	0.30	193.50	5	0.03	5.00	-0.03	-0.01	204.99	0.96	0.14	0.95
210.0	0.40	176.20	5	0.03	5.00	-0.03	0.00	209.99	0.96	0.10	0.95
215.0	0.40	179.50	5	0.03	5.00	-0.03	0.00	214.99	0.96	0.07	0.95
220.0	0.50	182.50	5	0.04	5.00	-0.04	0.00	219.99	0.95	0.02	0.95
225.0	0.40	213.10	5	0.03	5.00	-0.03	-0.02	224.99	0.93	-0.01	0.93
230.0	0.40	199.30	5	0.03	5.00	-0.03	-0.01	229.99	0.92	-0.04	0.92
235.0	0.40	183.50	5	0.03	5.00	-0.03	0.00	234.99	0.92	-0.07	0.92
240.0	0.50	151.00	5	0.04	5.00	-0.04	0.02	239.99	0.95	-0.11	0.94
245.0	0.50	61.20	5	0.04	5.00	0.02	0.04	244.99	0.98	-0.09	0.98
250.0	0.50	119.60	5	0.04	5.00	-0.02	0.04	249.99	1.02	-0.11	1.02
255.0	0.50	162.40	5	0.04	5.00	-0.04	0.01	254.99	1.04	-0.16	1.03
260.0	0.40	242.70	5	0.03	5.00	-0.02	-0.03	259.99	1.01	-0.17	1.00
265.0	0.40	268.00	5	0.03	5.00	0.00	-0.03	264.99	0.98	-0.17	0.96
270.0	0.40	222.30	5	0.03	5.00	-0.03	-0.02	269.99	0.96	-0.20	0.94
275.0	0.40	205.50	5	0.03	5.00	-0.03	-0.02	274.99	0.95	-0.23	0.92
280.0	0.50	198.40	5	0.04	5.00	-0.04	-0.01	279.99	0.95	-0.27	0.91
285.0	0.50	190.20	5	0.04	5.00	-0.04	-0.01	284.99	0.96	-0.31	0.90
286.5	0.70	188.30	2	0.02	1.50	-0.02	0.00	286.49	0.96	-0.33	0.90

Totals:			
True Depth	DistSum	NorthSum	EastSum
286.49	0.96	-0.33	0.90

Orientations are with respect to Magnetic North

Deviation Survey for: SN3 **Field:** Pantex BOA 70 Rel. **Date:** 19-Dec-2017
Well: PTX06-ISB122 **Depth Ref.:** GL **Total Depth:** 286.49 **Probe Type, S/N:** QL-DEV 112002

Definitions

Bearing = Azimuth Degrees from Magnetic North (Raw Data)

ClosureDistance = Horizontal Feet Between Each Station

ClosureDepth = Vertical Feet Between Each Interval

Northing = North/South Component of Horizontal Distance Between Each Station (Negative = South)
(Closure Dist.) x cos(Bearing)

Easting = East/West Component of Horizontal Distance Between Each Station (Negative = West)
(Closure Dist.) x sin(Bearing)

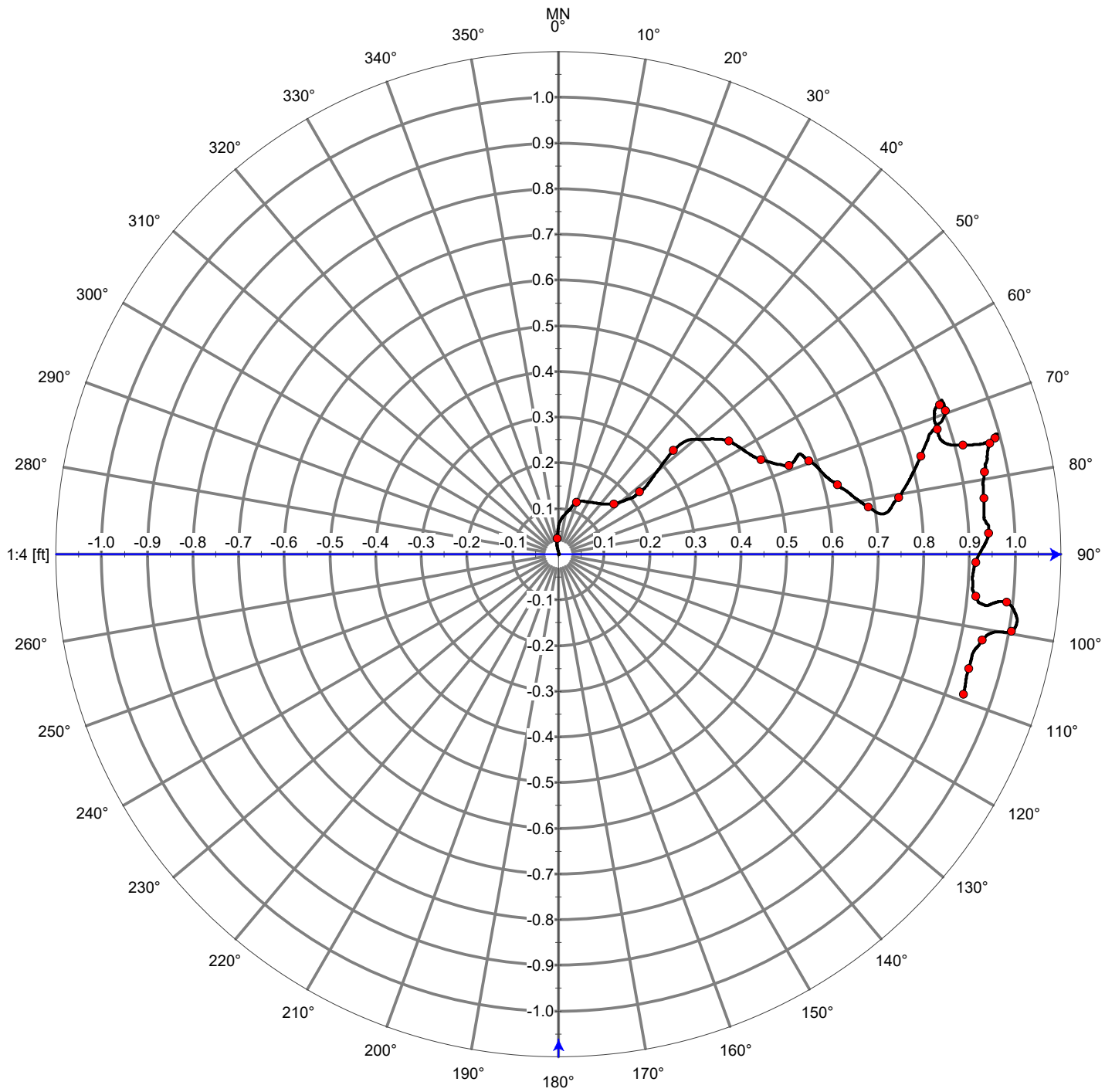
TrueDepth = Vertical Depth from the Surface to This Station

DistanceSum = Horizontal Distance from Wellhead to this Station

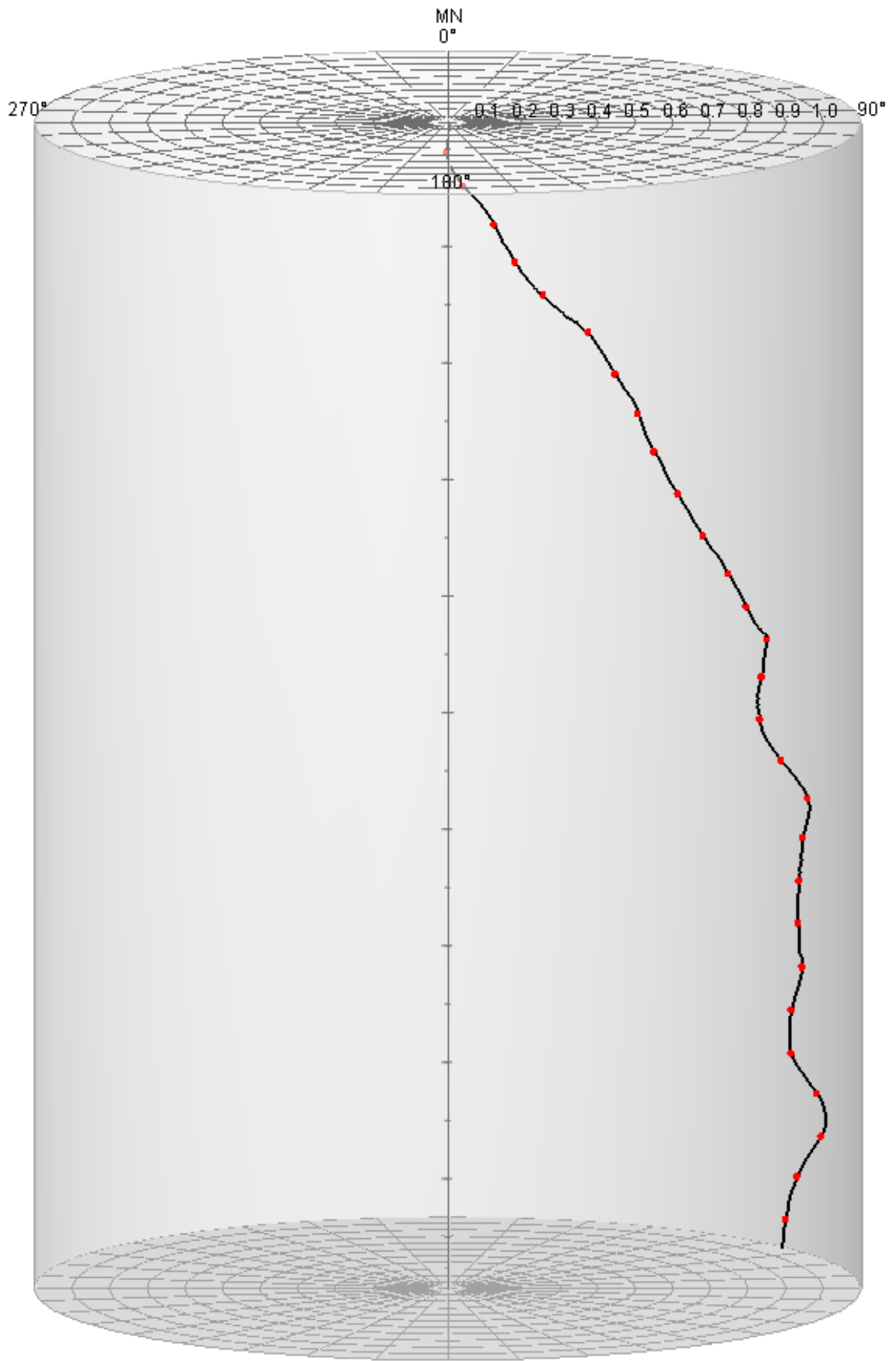
NorthSum = North/South Component of Horizontal Distance from the Wellhead to This Station (Negative = South)
Running Sum of Northing

EastSum = East/West Component of Horizontal Distance from the Wellhead to This Station (Negative = West)
Running Sum of Easting

PTX06-ISB122



PTX06-ISB122





borehole geophysics / hydrophysics

810 Quail Street
Suite E
Lakewood, Colorado
80215
Office: 303.279.0171
Fax: 303.278.0135
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Borehole Deviation

Company SN3
Well PTX06-ISB118
Project Pantex BOA 70 Rel. 5
County Carson
State Texas

COMPANY SN3
WELL PTX06-ISB118
PROJECT Pantex BOA 70 Release 5
COUNTY Carson
STATE Texas

LOCATION
East of FM-2373 and South of CR-8
Southeast ISB Extension Wellfield

OTHER SERVICES
None

QTR **SEC** **TWP** **RGE**

PERMANENT DATUM Ground Level **ELEVATION** 3514.86 ft

LOG MEAS. FROM Ground Level 0.0 ft **ABOVE PERMANENT DATUM**

DRILLING MEAS. FROM Ground Level

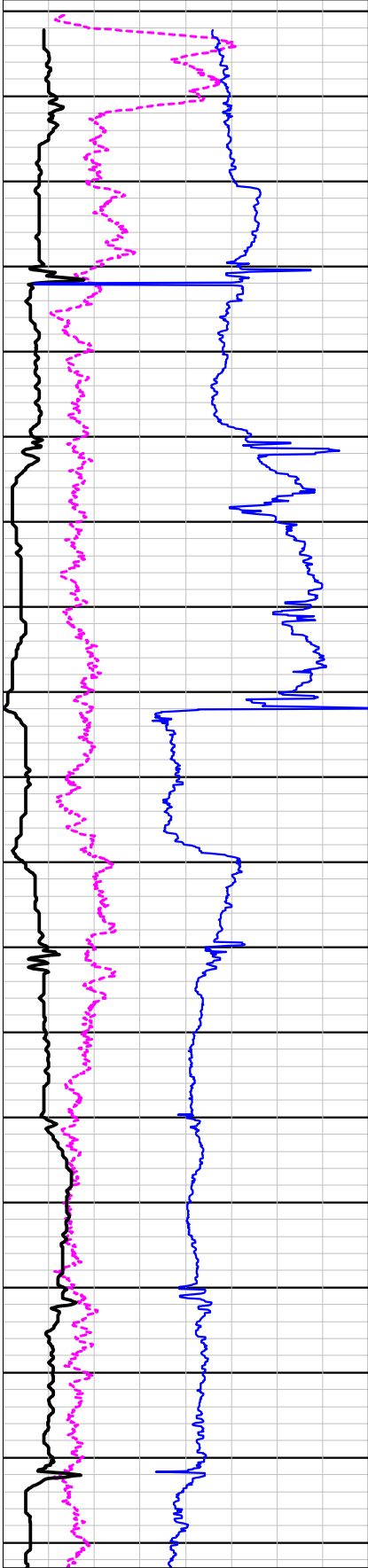
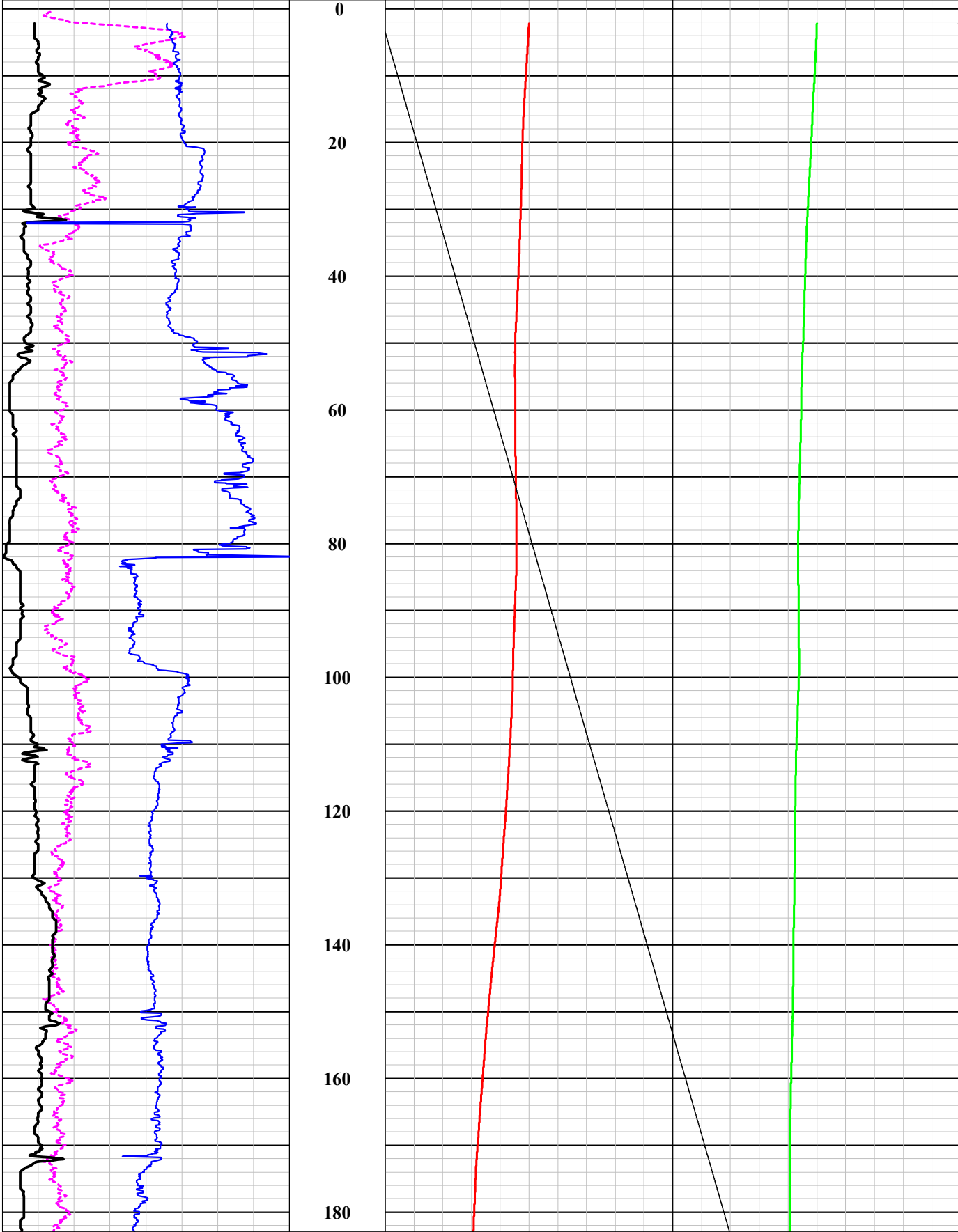
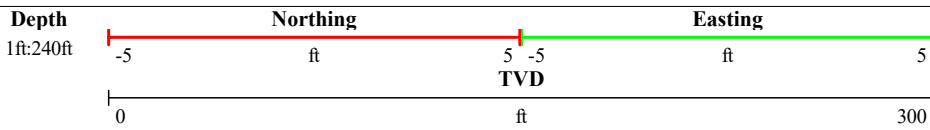
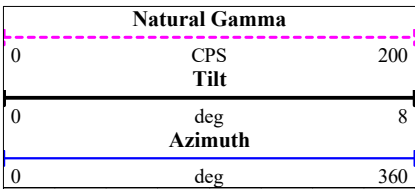
DATE ACQUIRED	19 December 2017
RUN NUMBER	One
LOG TYPE	Deviation
DEPTH-DRILLER	282 ft
DEPTH-LOGGER	281.2 ft
BTM LOG INTERVAL	281.2 ft
TOP LOG INTERVAL	2.2 ft
RECORDED BY	N. Davis
WITNESSED BY	R. Rupp
PROBE TYPE, S/N	QL40-DEV, 112002
LOGGING SPEED	20 ft/min
A.S.D.E. / Sample Interval	-0.22 ft / 0.1 ft
Fluid Level / Fluid Type	Air

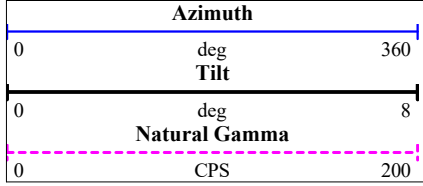
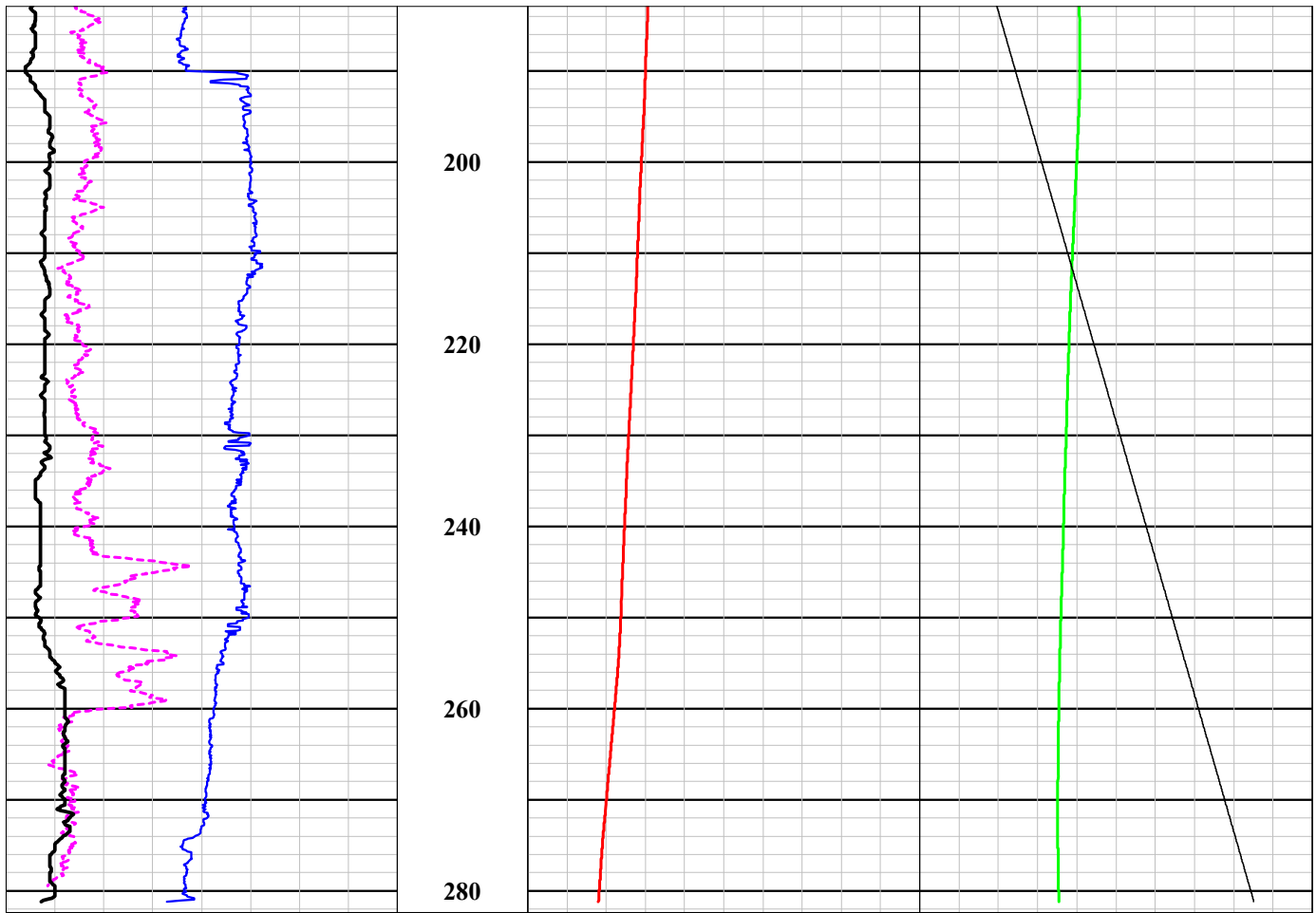
BOREHOLE RECORD		CASING RECORD					
RUN No.	BIT	FROM	TO	SIZE	WGT.	FROM	TO
1	10 in	0 ft	284 ft	4 in casing	316 SS	0 ft	271 ft
				4 in screen	316 SS	271 ft	281 ft
				4 in sump	316 SS	281 ft	282 ft

NA - Not Available, N/A - Not Applicable

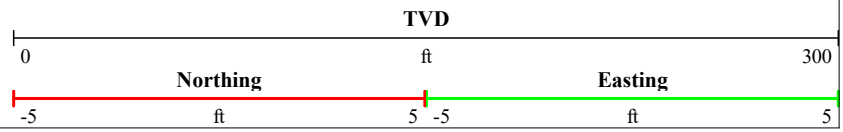
COMMENTS

Directions are with respect to Magnetic North.





Depth
1ft:240ft



Deviation Survey for: SN3 Field: Pantex BOA 70 Rel. Date: 19-Dec-2017
 Well: PTX06-ISB118 Depth Ref.: GL Total Depth: 281.17 Probe Type, S/N: QL-DEV 112002

Depth (feet)	Inclination (degrees)	Bearing (degrees)	ClosureLength (line ft.)	ClosureDist. (horiz. ft.)	ClosureDepth (vertical ft.)	Northing (feet)	Easting (feet)	TrueDepth (feet)	Dist.Sum (feet)	NorthSum (feet)	EastSum (feet)
0.0	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5.0	1.00	213.40	5	0.09	5.00	-0.07	-0.05	5.00	0.09	-0.07	-0.05
10.0	1.10	222.90	5	0.10	5.00	-0.07	-0.07	10.00	0.18	-0.14	-0.11
15.0	1.00	224.40	5	0.09	5.00	-0.06	-0.06	15.00	0.27	-0.21	-0.17
20.0	0.80	227.60	5	0.07	5.00	-0.05	-0.05	20.00	0.34	-0.25	-0.23
25.0	0.80	252.00	5	0.07	5.00	-0.02	-0.07	25.00	0.40	-0.27	-0.29
30.0	0.90	230.60	5	0.08	5.00	-0.05	-0.06	30.00	0.48	-0.32	-0.35
35.0	0.60	220.60	5	0.05	5.00	-0.04	-0.03	35.00	0.53	-0.36	-0.39
40.0	0.70	216.60	5	0.06	5.00	-0.05	-0.04	40.00	0.59	-0.41	-0.42
45.0	0.80	210.70	5	0.07	5.00	-0.06	-0.04	44.99	0.66	-0.47	-0.46
50.0	0.60	242.20	5	0.05	5.00	-0.02	-0.05	49.99	0.71	-0.50	-0.51
55.0	0.30	291.30	5	0.03	5.00	0.01	-0.02	54.99	0.72	-0.49	-0.53
60.0	0.20	268.50	5	0.02	5.00	0.00	-0.02	59.99	0.73	-0.49	-0.55
65.0	0.40	304.70	5	0.03	5.00	0.02	-0.03	64.99	0.74	-0.47	-0.58
70.0	0.40	303.80	5	0.03	5.00	0.02	-0.03	69.99	0.75	-0.45	-0.61
75.0	0.30	311.20	5	0.03	5.00	0.02	-0.02	74.99	0.76	-0.43	-0.62
80.0	0.10	287.00	5	0.01	5.00	0.00	-0.01	79.99	0.76	-0.43	-0.63
85.0	0.50	169.50	5	0.04	5.00	-0.04	0.01	84.99	0.78	-0.47	-0.63
90.0	0.50	173.80	5	0.04	5.00	-0.04	0.00	89.99	0.81	-0.52	-0.62
95.0	0.40	165.10	5	0.03	5.00	-0.03	0.01	94.99	0.82	-0.55	-0.61
100.0	0.40	230.80	5	0.03	5.00	-0.02	-0.03	99.99	0.86	-0.57	-0.64
105.0	0.70	223.10	5	0.06	5.00	-0.04	-0.04	104.99	0.92	-0.62	-0.68
110.0	1.00	199.70	5	0.09	5.00	-0.08	-0.03	109.99	1.00	-0.70	-0.71
115.0	0.90	189.50	5	0.08	5.00	-0.08	-0.01	114.99	1.06	-0.78	-0.72
120.0	1.00	189.80	5	0.09	5.00	-0.09	-0.01	119.99	1.13	-0.86	-0.74
125.0	1.00	185.50	5	0.09	5.00	-0.09	-0.01	124.99	1.21	-0.95	-0.75
130.0	0.90	181.30	5	0.08	5.00	-0.08	0.00	129.99	1.27	-1.03	-0.75
135.0	1.40	194.50	5	0.12	5.00	-0.12	-0.03	134.99	1.38	-1.15	-0.78
140.0	1.40	182.90	5	0.12	5.00	-0.12	-0.01	139.99	1.49	-1.27	-0.78
145.0	1.30	186.50	5	0.11	5.00	-0.11	-0.01	144.99	1.59	-1.38	-0.80
150.0	1.50	173.70	5	0.13	5.00	-0.13	0.01	149.98	1.70	-1.51	-0.78
155.0	1.00	190.00	5	0.09	5.00	-0.09	-0.02	154.98	1.78	-1.60	-0.80
160.0	1.10	197.00	5	0.10	5.00	-0.09	-0.03	159.98	1.88	-1.69	-0.83
165.0	1.00	195.30	5	0.09	5.00	-0.08	-0.02	164.98	1.96	-1.77	-0.85
170.0	1.10	198.20	5	0.10	5.00	-0.09	-0.03	169.98	2.06	-1.86	-0.88
175.0	0.50	173.10	5	0.04	5.00	-0.04	0.01	174.98	2.10	-1.91	-0.87
180.0	0.60	172.00	5	0.05	5.00	-0.05	0.01	179.98	2.14	-1.96	-0.87
185.0	0.60	162.70	5	0.05	5.00	-0.05	0.02	184.98	2.18	-2.01	-0.85
190.0	0.40	165.70	5	0.03	5.00	-0.03	0.01	189.98	2.21	-2.04	-0.84
195.0	0.90	217.90	5	0.08	5.00	-0.06	-0.05	194.98	2.28	-2.10	-0.89
200.0	0.90	225.40	5	0.08	5.00	-0.06	-0.06	199.98	2.36	-2.16	-0.95
205.0	0.80	227.00	5	0.07	5.00	-0.05	-0.05	204.98	2.42	-2.21	-1.00
210.0	0.80	229.70	5	0.07	5.00	-0.05	-0.05	209.98	2.48	-2.25	-1.05
215.0	0.80	218.70	5	0.07	5.00	-0.05	-0.04	214.98	2.55	-2.31	-1.09
220.0	0.80	214.90	5	0.07	5.00	-0.06	-0.04	219.98	2.62	-2.36	-1.13
225.0	0.80	208.20	5	0.07	5.00	-0.06	-0.03	224.98	2.69	-2.43	-1.17
230.0	0.80	224.10	5	0.07	5.00	-0.05	-0.05	229.98	2.76	-2.48	-1.22
235.0	0.60	216.90	5	0.05	5.00	-0.04	-0.03	234.97	2.81	-2.52	-1.25
240.0	0.70	210.10	5	0.06	5.00	-0.05	-0.03	239.97	2.87	-2.57	-1.28
245.0	0.70	213.10	5	0.06	5.00	-0.05	-0.03	244.97	2.93	-2.62	-1.31
250.0	0.70	223.00	5	0.06	5.00	-0.04	-0.04	249.97	2.99	-2.67	-1.35
255.0	1.00	200.30	5	0.09	5.00	-0.08	-0.03	254.97	3.08	-2.75	-1.38
260.0	1.20	191.20	5	0.10	5.00	-0.10	-0.02	259.97	3.18	-2.85	-1.40
265.0	1.20	187.10	5	0.10	5.00	-0.10	-0.01	264.97	3.28	-2.95	-1.42
270.0	1.20	183.30	5	0.10	5.00	-0.10	-0.01	269.97	3.37	-3.06	-1.42
275.0	1.00	162.30	5	0.09	5.00	-0.08	0.03	274.97	3.44	-3.14	-1.40
280.0	1.00	163.60	5	0.09	5.00	-0.08	0.02	279.97	3.51	-3.23	-1.37
281.2	0.70	162.50	1	0.01	1.20	-0.01	0.00	281.17	3.52	-3.24	-1.37

Totals:			
True Depth	DistSum	NorthSum	EastSum
281.17	3.52	-3.24	-1.37

Orientations are with respect to Magnetic North

Deviation Survey for: SN3 Field: Pantex BOA 70 Rel. Date: 19-Dec-2017
Well: PTX06-ISB118 Depth Ref.: GL Total Depth: 281.17 Probe Type, S/N: QL-DEV 112002

Definitions

Bearing = Azimuth Degrees from Magnetic North (Raw Data)

ClosureDistance = Horizontal Feet Between Each Station

ClosureDepth = Vertical Feet Between Each Interval

Northing = North/South Component of Horizontal Distance Between Each Station (Negative = South)
(Closure Dist.) x cos(Bearing)

Easting = East/West Component of Horizontal Distance Between Each Station (Negative = West)
(Closure Dist.) x sin(Bearing)

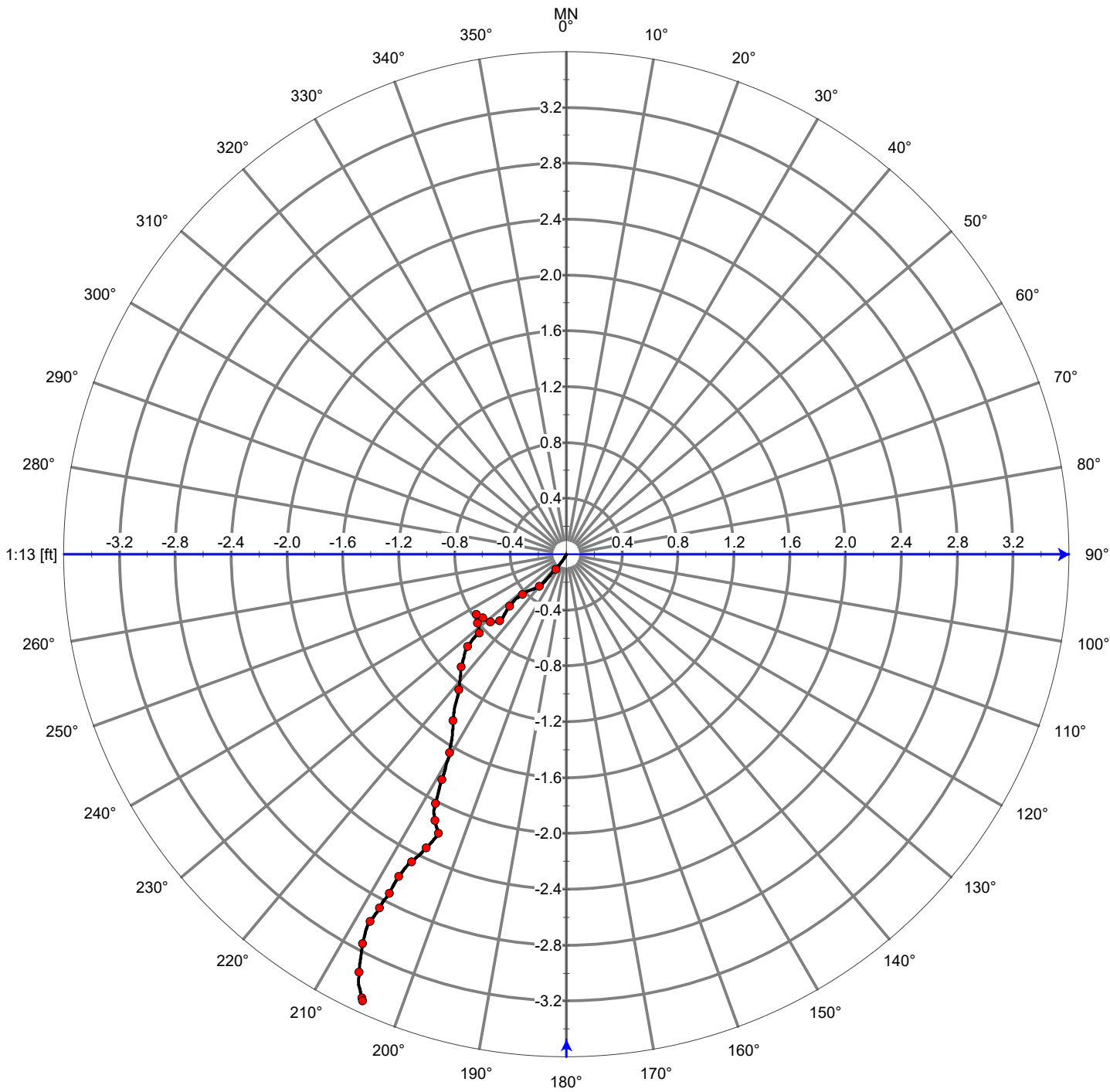
TrueDepth = Vertical Depth from the Surface to This Station

DistanceSum = Horizontal Distance from Wellhead to this Station

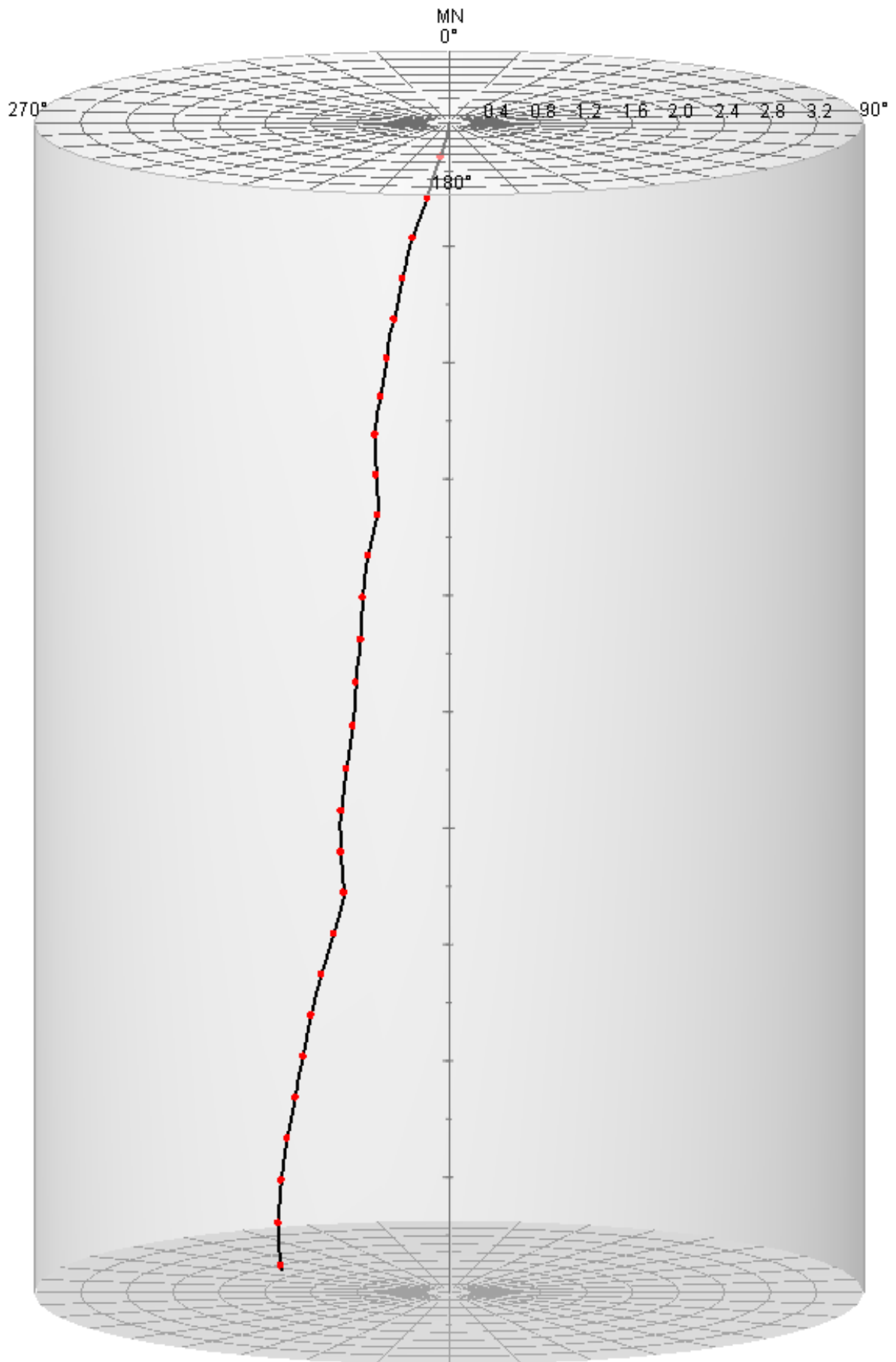
NorthSum = North/South Component of Horizontal Distance from the Wellhead to This Station (Negative = South)
Running Sum of Northing

EastSum = East/West Component of Horizontal Distance from the Wellhead to This Station (Negative = West)
Running Sum of Easting

PTX06-ISB118



PTX06-ISB118





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Company SN3
Well PTX06-ISB114
Project Pantex BOA 70 Rel. 5
County Carson
State Texas

COMPANY SN3
WELL PTX06-ISB114
PROJECT Pantex BOA 70 Release 5
COUNTY Carson
STATE Texas

LOCATION
East of FM-2373 and South of CR-8
Southeast ISB Extension Wellfield

OTHER SERVICES
None

PERMANENT DATUM Ground Level **ELEVATION** 3514.70 ft

LOG MEAS. FROM Ground Level 0.0 ft **ABOVE PERMANENT DATUM**

DRILLING MEAS. FROM Ground Level

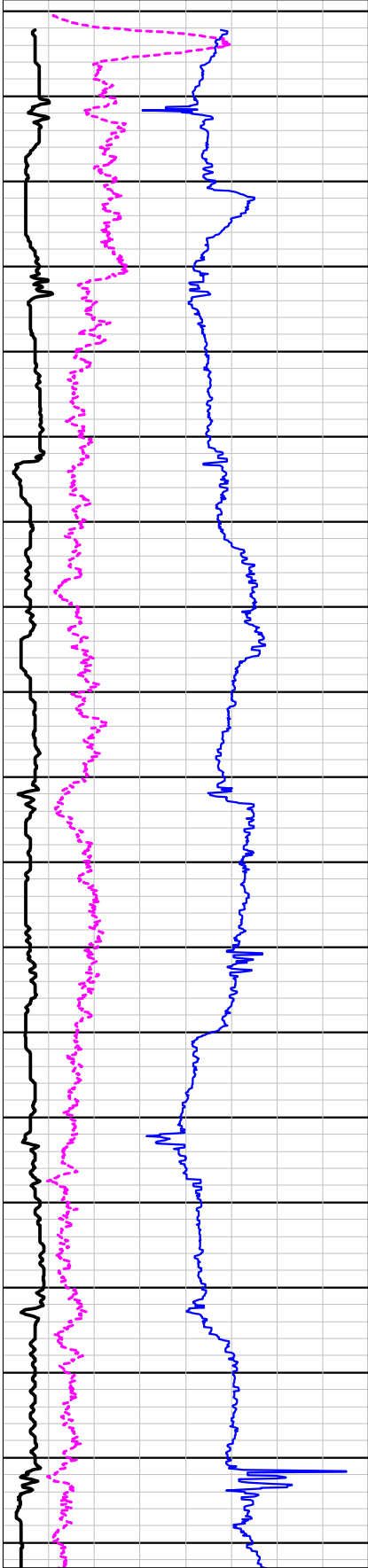
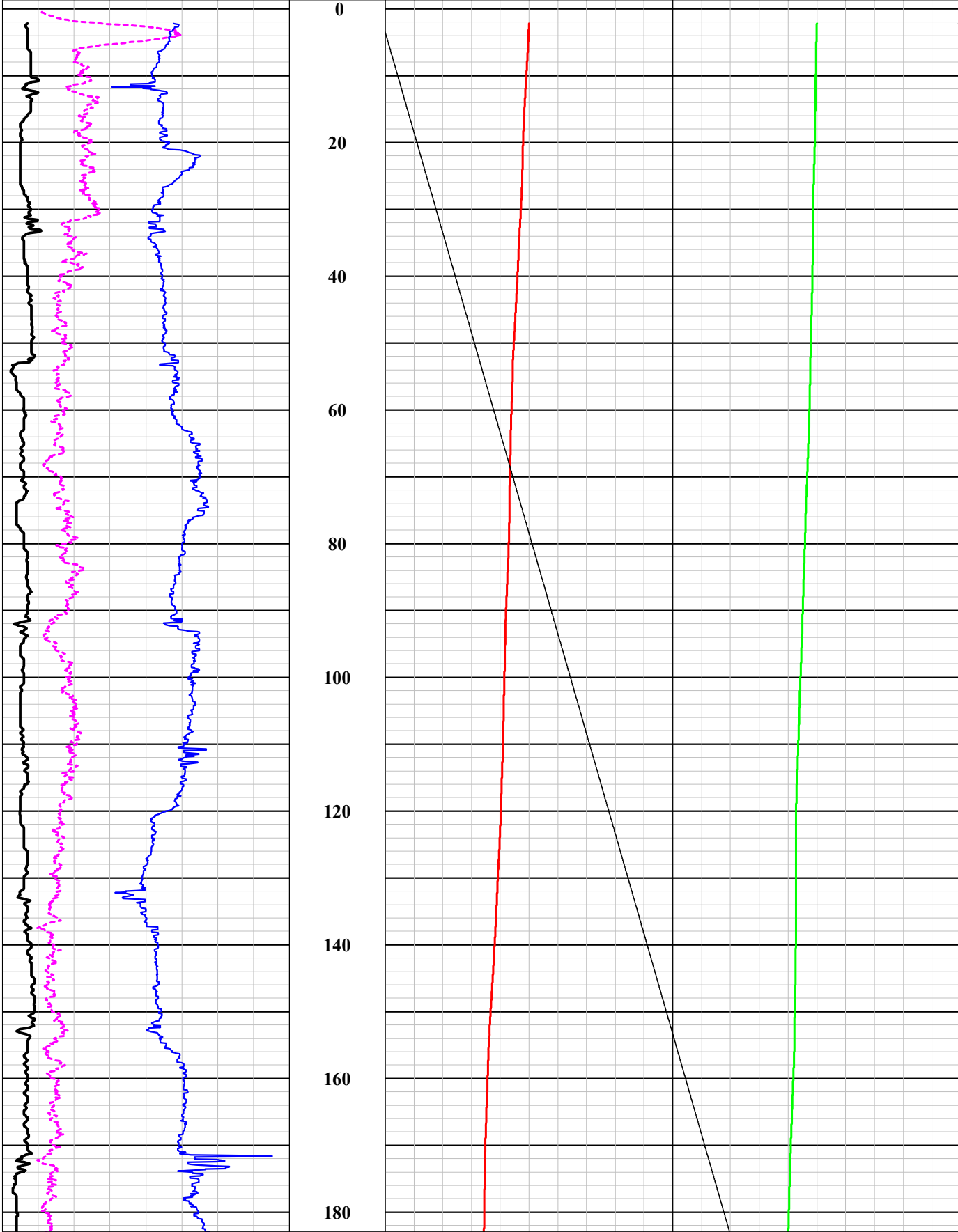
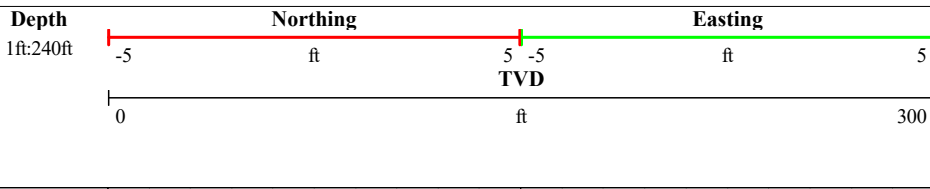
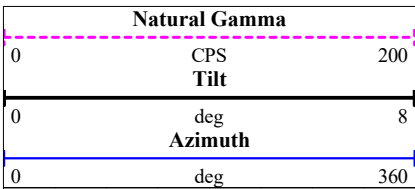
DATE ACQUIRED	19 December 2017
RUN NUMBER	One
LOG TYPE	Deviation
DEPTH-DRILLER	283 ft
DEPTH-LOGGER	281.8 ft
BTM LOG INTERVAL	281.8 ft
TOP LOG INTERVAL	2.2 ft
RECORDED BY	N. Davis
WITNESSED BY	R. Rupp
PROBE TYPE, S/N	QL40-DEV, 112002
LOGGING SPEED	20 ft/min
A.S.D.E. / Sample Interval	-0.20 ft / 0.1 ft
Fluid Level / Fluid Type	Air

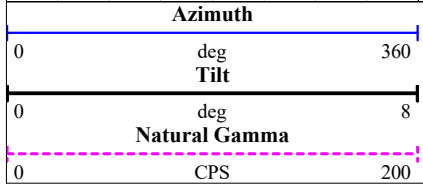
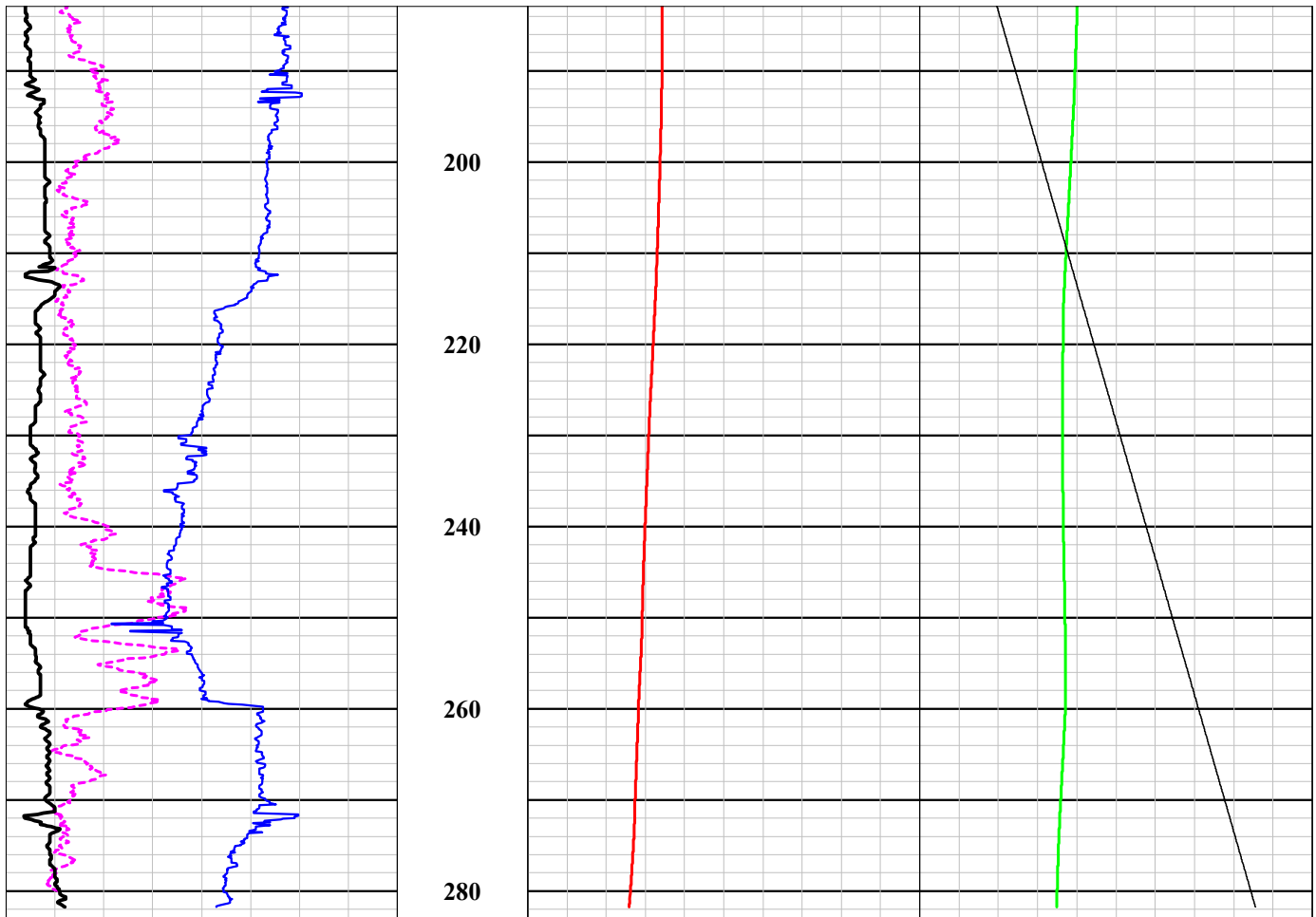
BOREHOLE RECORD		CASING RECORD					
RUN No.	BIT	FROM	TO	SIZE	WGT.	FROM	TO
1	10 in	0 ft	285 ft	4 in casing	316 SS	0 ft	272 ft
				4 in screen	316 SS	272 ft	282 ft
				4 in sump	316 SS	282 ft	283 ft

NA - Not Available, N/A - Not Applicable

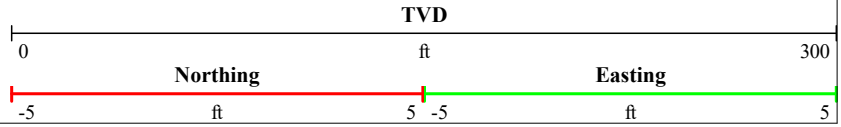
COMMENTS

Directions are with respect to Magnetic North.





Depth
1ft:240ft



Deviation Survey for: SN3 Field: Pantex BOA 70 Rel. Date: 19-Dec-2017
 Well: PTX06-ISB114 Depth Ref.: GL Total Depth: 281.78 Probe Type, S/N: QL-DEV 112002

Depth (feet)	Inclination (degrees)	Bearing (degrees)	ClosureLength (line ft.)	ClosureDist. (horiz. ft.)	ClosureDepth (vertical ft.)	Northing (feet)	Easting (feet)	TrueDepth (feet)	Dist.Sum (feet)	NorthSum (feet)	EastSum (feet)
0.0	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5.0	0.70	208.40	5	0.06	5.00	-0.05	-0.03	5.00	0.06	-0.05	-0.03
10.0	0.80	187.80	5	0.07	5.00	-0.07	-0.01	10.00	0.13	-0.12	-0.04
15.0	0.80	201.60	5	0.07	5.00	-0.06	-0.03	15.00	0.20	-0.19	-0.06
20.0	0.50	204.80	5	0.04	5.00	-0.04	-0.02	20.00	0.24	-0.23	-0.08
25.0	0.50	222.50	5	0.04	5.00	-0.03	-0.03	25.00	0.28	-0.26	-0.11
30.0	0.80	188.80	5	0.07	5.00	-0.07	-0.01	30.00	0.35	-0.33	-0.12
35.0	0.60	191.10	5	0.05	5.00	-0.05	-0.01	35.00	0.40	-0.38	-0.13
40.0	0.70	201.10	5	0.06	5.00	-0.06	-0.02	40.00	0.46	-0.44	-0.15
45.0	0.80	202.70	5	0.07	5.00	-0.06	-0.03	45.00	0.53	-0.50	-0.18
50.0	0.80	204.00	5	0.07	5.00	-0.06	-0.03	50.00	0.60	-0.57	-0.21
55.0	0.40	214.60	5	0.03	5.00	-0.03	-0.02	55.00	0.64	-0.59	-0.23
60.0	0.50	212.90	5	0.04	5.00	-0.04	-0.02	60.00	0.68	-0.63	-0.25
65.0	0.60	247.60	5	0.05	5.00	-0.02	-0.05	65.00	0.72	-0.65	-0.30
70.0	0.60	246.70	5	0.05	5.00	-0.02	-0.05	70.00	0.76	-0.67	-0.35
75.0	0.40	245.20	5	0.03	5.00	-0.01	-0.03	75.00	0.78	-0.69	-0.38
80.0	0.60	225.60	5	0.05	5.00	-0.04	-0.04	79.99	0.84	-0.72	-0.42
85.0	0.70	216.50	5	0.06	5.00	-0.05	-0.04	84.99	0.90	-0.77	-0.46
90.0	0.70	216.90	5	0.06	5.00	-0.05	-0.04	89.99	0.96	-0.82	-0.49
95.0	0.60	244.90	5	0.05	5.00	-0.02	-0.05	94.99	1.00	-0.84	-0.54
100.0	0.60	233.10	5	0.05	5.00	-0.03	-0.04	99.99	1.05	-0.87	-0.58
105.0	0.50	236.60	5	0.04	5.00	-0.02	-0.04	104.99	1.09	-0.90	-0.62
110.0	0.60	230.10	5	0.05	5.00	-0.03	-0.04	109.99	1.14	-0.93	-0.66
115.0	0.70	224.50	5	0.06	5.00	-0.04	-0.04	114.99	1.20	-0.98	-0.70
120.0	0.50	204.60	5	0.04	5.00	-0.04	-0.02	119.99	1.24	-1.01	-0.72
125.0	0.60	189.30	5	0.05	5.00	-0.05	-0.01	124.99	1.29	-1.07	-0.73
130.0	0.60	174.10	5	0.05	5.00	-0.05	0.01	129.99	1.33	-1.12	-0.72
135.0	0.70	179.50	5	0.06	5.00	-0.06	0.00	134.99	1.38	-1.18	-0.72
140.0	0.80	194.70	5	0.07	5.00	-0.07	-0.02	139.99	1.45	-1.25	-0.74
145.0	0.90	194.40	5	0.08	5.00	-0.08	-0.02	144.99	1.53	-1.32	-0.76
150.0	0.90	196.30	5	0.08	5.00	-0.08	-0.02	149.99	1.60	-1.40	-0.78
155.0	0.70	205.30	5	0.06	5.00	-0.06	-0.03	154.99	1.66	-1.45	-0.81
160.0	0.70	226.60	5	0.06	5.00	-0.04	-0.04	159.99	1.72	-1.50	-0.85
165.0	0.60	227.50	5	0.05	5.00	-0.04	-0.04	164.99	1.77	-1.53	-0.89
170.0	0.70	221.40	5	0.06	5.00	-0.05	-0.04	169.99	1.83	-1.58	-0.93
175.0	0.40	243.80	5	0.03	5.00	-0.02	-0.03	174.99	1.86	-1.59	-0.96
180.0	0.40	245.60	5	0.03	5.00	-0.01	-0.03	179.99	1.89	-1.61	-0.99
185.0	0.50	253.60	5	0.04	5.00	-0.01	-0.04	184.99	1.92	-1.62	-1.04
190.0	0.50	248.80	5	0.04	5.00	-0.02	-0.04	189.99	1.96	-1.64	-1.08
195.0	0.70	248.50	5	0.06	5.00	-0.02	-0.06	194.99	2.01	-1.66	-1.13
200.0	0.80	240.00	5	0.07	5.00	-0.03	-0.06	199.99	2.07	-1.69	-1.19
205.0	0.80	238.50	5	0.07	5.00	-0.04	-0.06	204.99	2.14	-1.73	-1.25
210.0	0.90	233.30	5	0.08	5.00	-0.05	-0.06	209.99	2.21	-1.78	-1.32
215.0	0.90	219.70	5	0.08	5.00	-0.06	-0.05	214.99	2.29	-1.84	-1.37
220.0	0.70	196.30	5	0.06	5.00	-0.06	-0.02	219.98	2.35	-1.89	-1.38
225.0	0.70	184.90	5	0.06	5.00	-0.06	-0.01	224.98	2.40	-1.96	-1.39
230.0	0.50	165.10	5	0.04	5.00	-0.04	0.01	229.98	2.43	-2.00	-1.38
235.0	0.60	173.20	5	0.05	5.00	-0.05	0.01	234.98	2.47	-2.05	-1.37
240.0	0.60	160.60	5	0.05	5.00	-0.05	0.02	239.98	2.50	-2.10	-1.35
245.0	0.50	151.40	5	0.04	5.00	-0.04	0.02	244.98	2.52	-2.14	-1.33
250.0	0.40	148.70	5	0.03	5.00	-0.03	0.02	249.98	2.53	-2.17	-1.31
255.0	0.60	175.30	5	0.05	5.00	-0.05	0.00	254.98	2.58	-2.22	-1.31
260.0	0.70	236.80	5	0.06	5.00	-0.03	-0.05	259.98	2.63	-2.25	-1.36
265.0	0.90	235.10	5	0.08	5.00	-0.04	-0.06	264.98	2.70	-2.30	-1.43
270.0	0.80	238.70	5	0.07	5.00	-0.04	-0.06	269.98	2.77	-2.33	-1.49
275.0	0.80	216.20	5	0.07	5.00	-0.06	-0.04	274.98	2.84	-2.39	-1.53
280.0	1.10	199.90	5	0.10	5.00	-0.09	-0.03	279.98	2.93	-2.48	-1.56
281.8	1.20	193.40	2	0.04	1.80	-0.04	-0.01	281.78	2.97	-2.52	-1.57

Totals:			
True Depth	DistSum	NorthSum	EastSum
281.78	2.97	-2.52	-1.57

Orientations are with respect to Magnetic North

Deviation Survey for: SN3 **Field:** Pantex BOA 70 Rel. **Date:** 19-Dec-2017
Well: PTX06-ISB114 **Depth Ref.:** GL **Total Depth:** 281.78 **Probe Type, S/N:** QL-DEV 112002

Definitions

Bearing = Azimuth Degrees from Magnetic North (Raw Data)

ClosureDistance = Horizontal Feet Between Each Station

ClosureDepth = Vertical Feet Between Each Interval

Northing = North/South Component of Horizontal Distance Between Each Station (Negative = South)
(Closure Dist.) x cos(Bearing)

Easting = East/West Component of Horizontal Distance Between Each Station (Negative = West)
(Closure Dist.) x sin(Bearing)

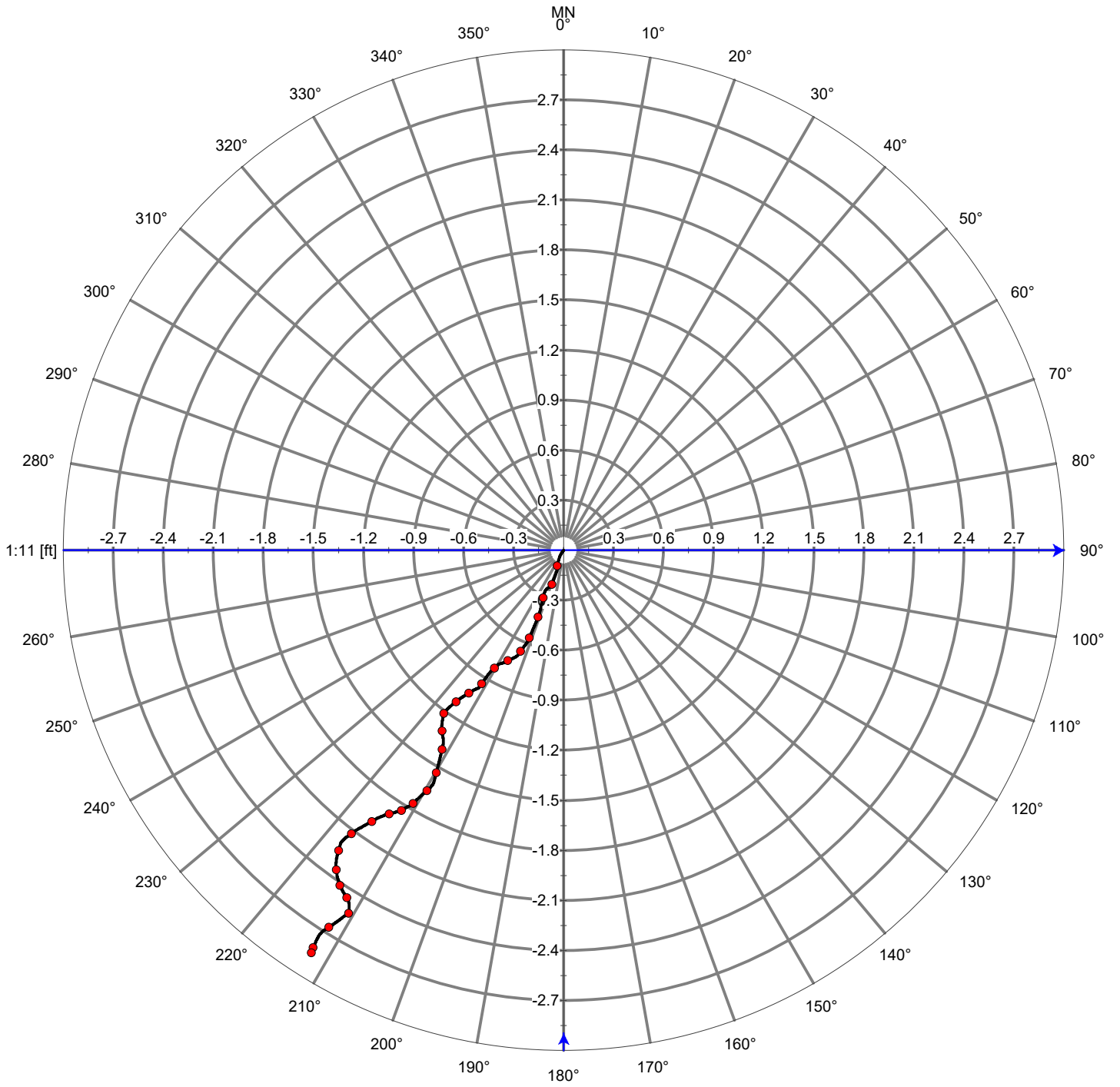
TrueDepth = Vertical Depth from the Surface to This Station

DistanceSum = Horizontal Distance from Wellhead to this Station

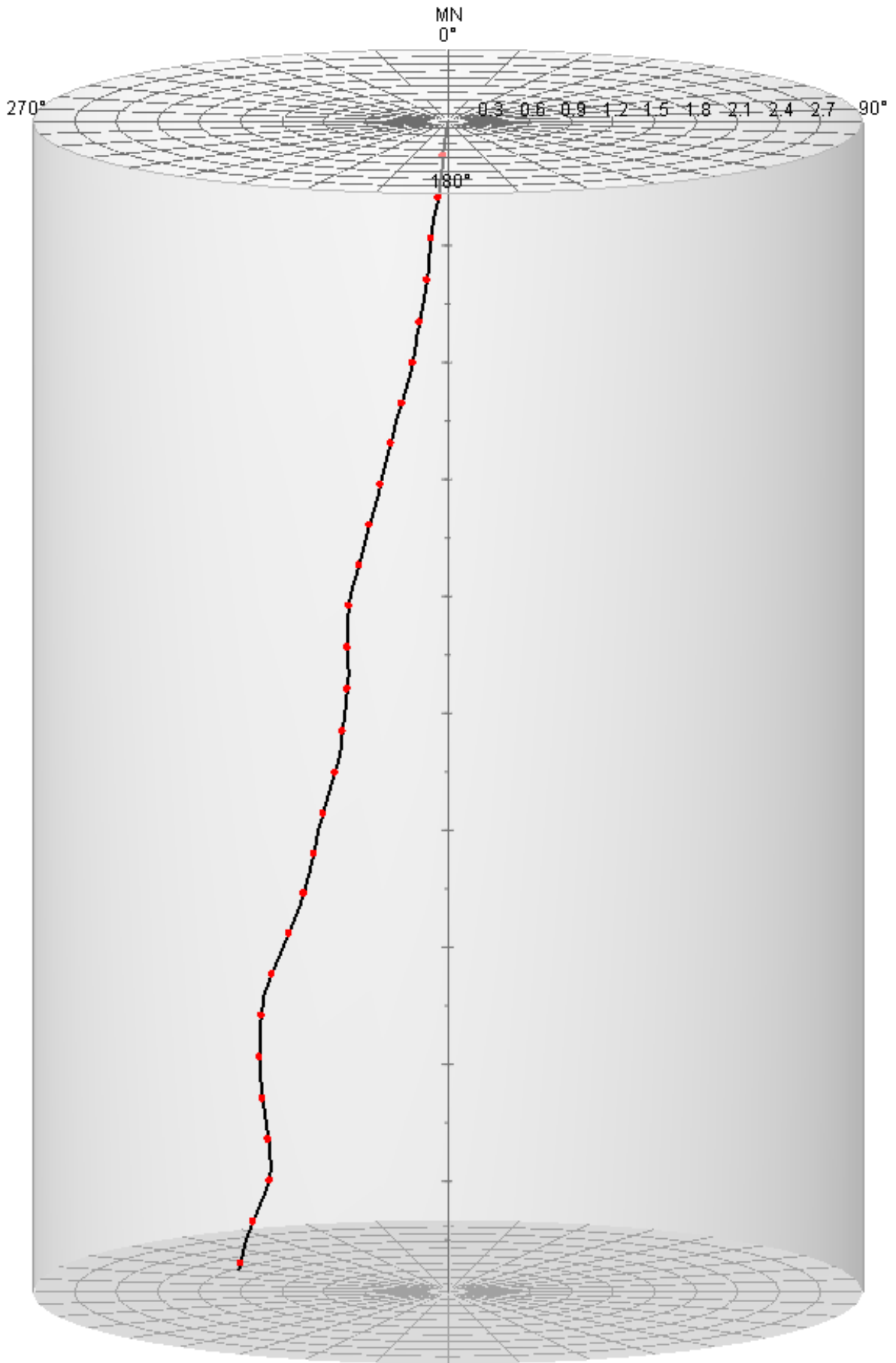
NorthSum = North/South Component of Horizontal Distance from the Wellhead to This Station (Negative = South)
Running Sum of Northing

EastSum = East/West Component of Horizontal Distance from the Wellhead to This Station (Negative = West)
Running Sum of Easting

PTX06-ISB114



PTX06-ISB114





borehole geophysics / hydrophysics

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Lakewood, Colorado

80215

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Fax: 303.278.0135

www.colog.com

Borehole Deviation

Company SN3
Well PTX06-ISB110
Project Pantex BOA 70 Rel. 5
County Carson
State Texas

COMPANY SN3
WELL PTX06-ISB110
PROJECT Pantex BOA 70 Release 5
COUNTY Carson
STATE Texas

LOCATION
 East of FM-2373 and South of CR-8
 Southeast ISB Extension Wellfield

OTHER SERVICES
 None

PERMANENT DATUM Ground Level **ELEVATION** 3514.33 ft

LOG MEAS. FROM Ground Level **0.0 ft ABOVE PERMANENT DATUM**

DRILLING MEAS. FROM Ground Level

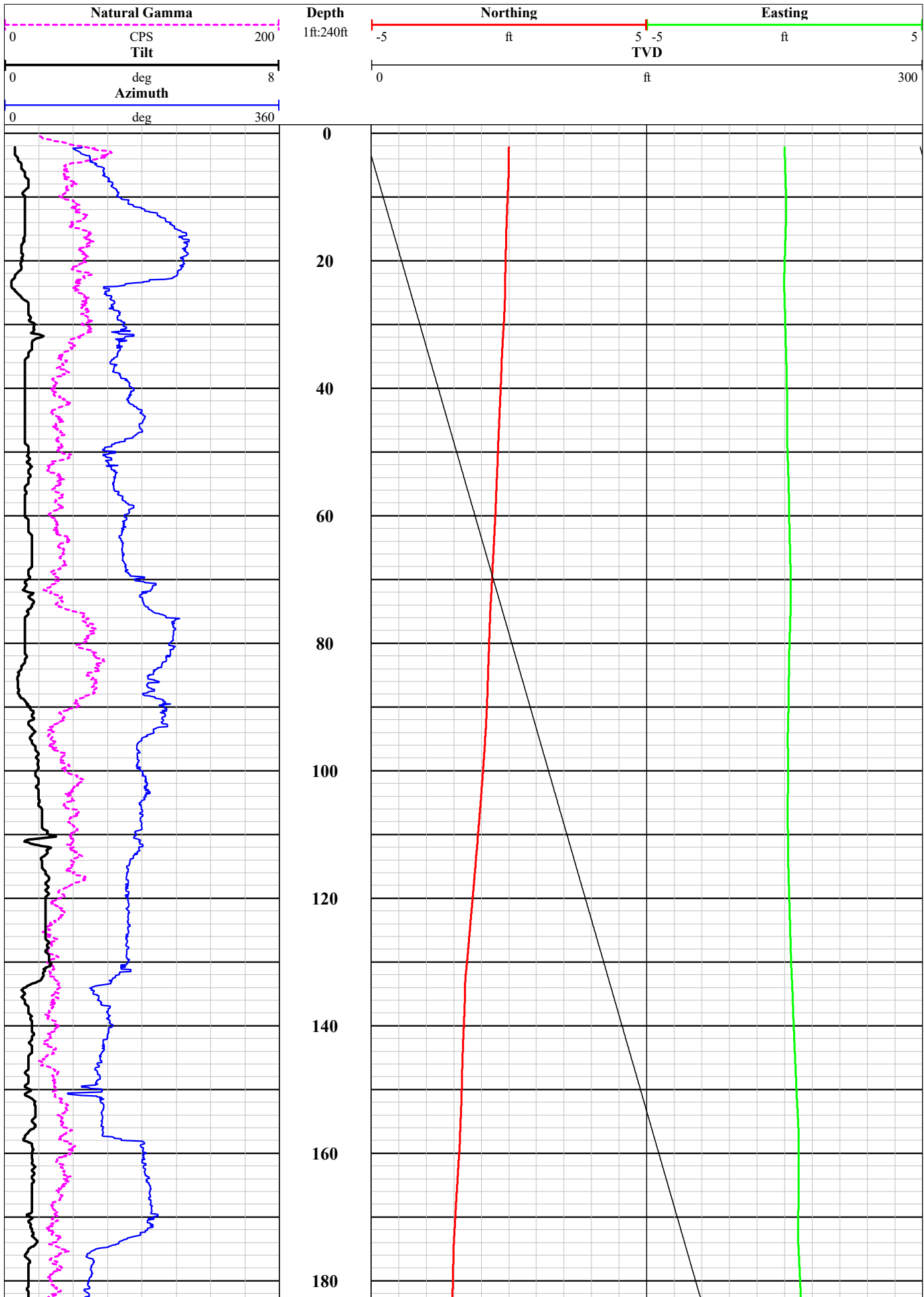
DATE ACQUIRED	19 December 2017
RUN NUMBER	One
LOG TYPE	Deviation
DEPTH-DRILLER	282 ft
DEPTH-LOGGER	280.8 ft
BTM LOG INTERVAL	280.8 ft
TOP LOG INTERVAL	2.2 ft
RECORDED BY	N. Davis
WITNESSED BY	R. Rupp
PROBE TYPE, S/N	QL40-DEV, 112002
LOGGING SPEED	20 ft/min
A.S.D.E. / Sample Interval	-0.25 ft / 0.1 ft
Fluid Level / Fluid Type	NA

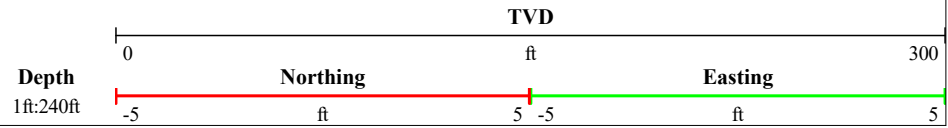
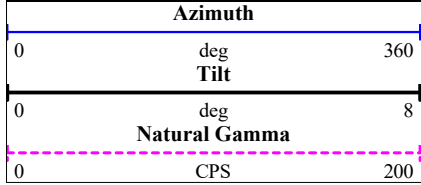
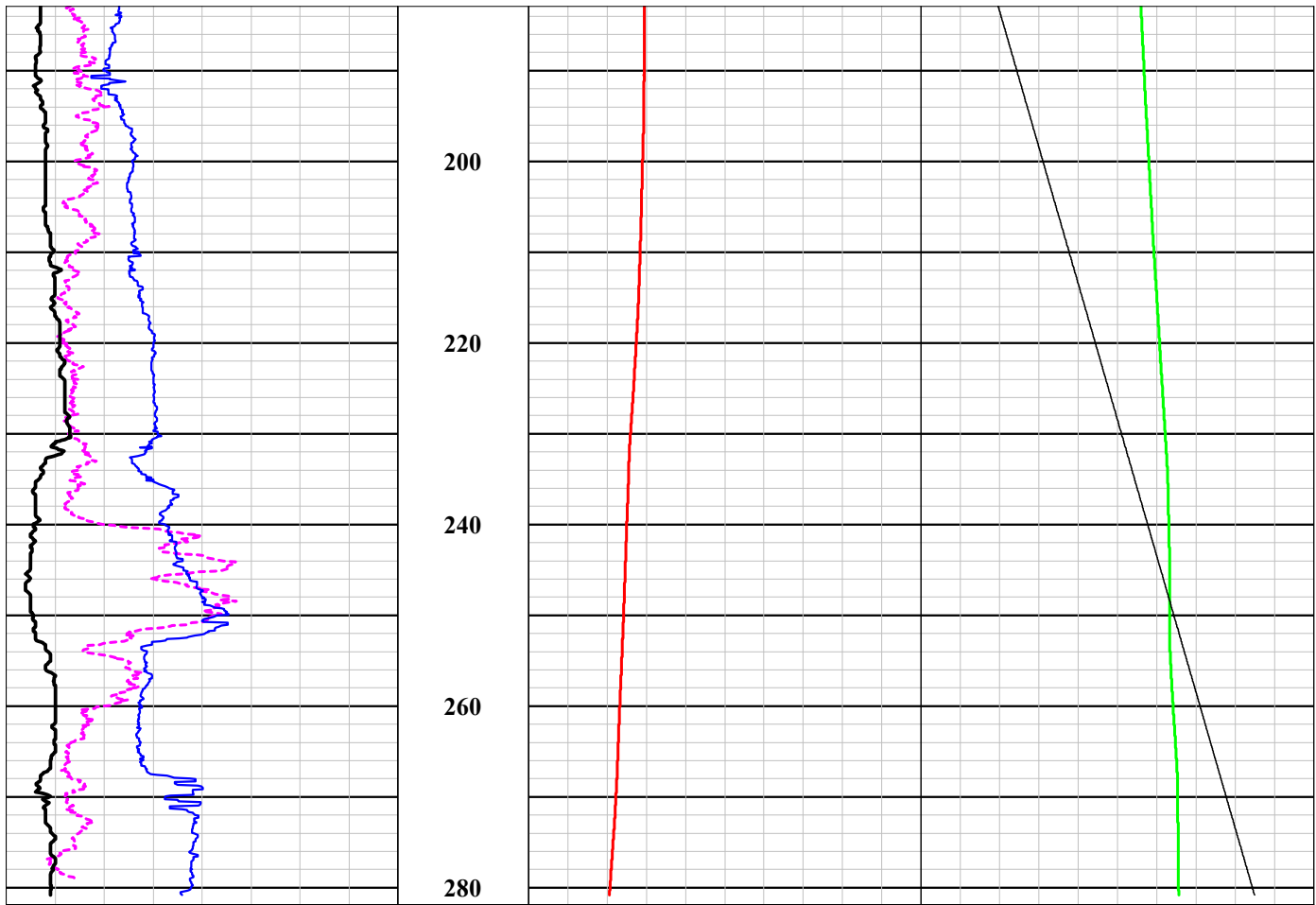
BOREHOLE RECORD		CASING RECORD					
RUN No.	BIT	FROM	TO	SIZE	WGT.	FROM	TO
1	10 in	0 ft	284 ft	4 in casing	316 SS	0 ft	271 ft
				4 in screen	316 SS	271 ft	281 ft
				4 in sump	316 SS	281 ft	282 ft

NA - Not Available, N/A - Not Applicable

COMMENTS

Directions are with respect to Magnetic North.





Deviation Survey for: SN3 Field: Pantex BOA 70 Rel. Date: 19-Dec-2017
 Well: PTX06-ISB110 Depth Ref.: GL Total Depth: 280.77 Probe Type, S/N: QL-DEV 112002

Depth (feet)	Inclination (degrees)	Bearing (degrees)	ClosureLength (line ft.)	ClosureDist. (horiz. ft.)	ClosureDepth (vertical ft.)	Northing (feet)	Easting (feet)	TrueDepth (feet)	Dist.Sum (feet)	NorthSum (feet)	EastSum (feet)
0.0	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5.0	0.50	120.30	5	0.04	5.00	-0.02	0.04	5.00	0.04	-0.02	0.04
10.0	0.60	148.90	5	0.05	5.00	-0.04	0.03	10.00	0.09	-0.07	0.06
15.0	0.60	222.70	5	0.05	5.00	-0.04	-0.04	15.00	0.11	-0.11	0.03
20.0	0.60	234.70	5	0.05	5.00	-0.03	-0.04	20.00	0.14	-0.14	-0.01
25.0	0.40	132.20	5	0.03	5.00	-0.02	0.03	25.00	0.16	-0.16	0.01
30.0	0.90	155.30	5	0.08	5.00	-0.07	0.03	30.00	0.23	-0.23	0.05
35.0	0.70	147.50	5	0.06	5.00	-0.05	0.03	35.00	0.29	-0.28	0.08
40.0	0.60	169.70	5	0.05	5.00	-0.05	0.01	40.00	0.34	-0.33	0.09
45.0	0.60	182.10	5	0.05	5.00	-0.05	0.00	45.00	0.40	-0.39	0.09
50.0	0.70	145.10	5	0.06	5.00	-0.05	0.03	50.00	0.45	-0.44	0.12
55.0	0.70	142.10	5	0.06	5.00	-0.05	0.04	55.00	0.51	-0.48	0.16
60.0	0.60	157.20	5	0.05	5.00	-0.05	0.02	60.00	0.56	-0.53	0.18
65.0	0.80	154.10	5	0.07	5.00	-0.06	0.03	65.00	0.63	-0.60	0.21
70.0	0.70	170.50	5	0.06	5.00	-0.06	0.01	70.00	0.69	-0.66	0.22
75.0	0.60	193.00	5	0.05	5.00	-0.05	-0.01	75.00	0.74	-0.71	0.21
80.0	0.60	217.00	5	0.05	5.00	-0.04	-0.03	79.99	0.77	-0.75	0.18
85.0	0.40	189.00	5	0.03	5.00	-0.03	-0.01	84.99	0.80	-0.78	0.17
90.0	0.80	209.70	5	0.07	5.00	-0.06	-0.03	89.99	0.85	-0.84	0.14
95.0	0.70	179.90	5	0.06	5.00	-0.06	0.00	94.99	0.91	-0.90	0.14
100.0	0.90	178.40	5	0.08	5.00	-0.08	0.00	99.99	0.99	-0.98	0.14
105.0	1.00	177.80	5	0.09	5.00	-0.09	0.00	104.99	1.08	-1.07	0.14
110.0	1.20	172.00	5	0.10	5.00	-0.10	0.01	109.99	1.18	-1.17	0.16
115.0	1.10	160.20	5	0.10	5.00	-0.09	0.03	114.99	1.28	-1.26	0.19
120.0	1.20	161.50	5	0.10	5.00	-0.10	0.03	119.99	1.38	-1.36	0.22
125.0	1.20	162.20	5	0.10	5.00	-0.10	0.03	124.99	1.48	-1.46	0.25
130.0	1.30	162.20	5	0.11	5.00	-0.11	0.03	129.99	1.60	-1.57	0.29
135.0	0.60	116.60	5	0.05	5.00	-0.02	0.05	134.99	1.63	-1.59	0.33
140.0	0.80	141.60	5	0.07	5.00	-0.05	0.04	139.99	1.69	-1.65	0.38
145.0	0.70	125.40	5	0.06	5.00	-0.04	0.05	144.99	1.74	-1.68	0.43
150.0	0.80	127.80	5	0.07	5.00	-0.04	0.06	149.99	1.79	-1.73	0.48
155.0	0.80	127.90	5	0.07	5.00	-0.04	0.06	154.98	1.85	-1.77	0.54
160.0	0.80	185.10	5	0.07	5.00	-0.07	-0.01	159.98	1.92	-1.84	0.53
165.0	0.80	189.60	5	0.07	5.00	-0.07	-0.01	164.98	1.98	-1.91	0.52
170.0	0.80	196.00	5	0.07	5.00	-0.07	-0.02	169.98	2.04	-1.98	0.50
175.0	0.70	122.00	5	0.06	5.00	-0.03	0.05	174.98	2.08	-2.01	0.55
180.0	0.70	110.30	5	0.06	5.00	-0.02	0.06	179.98	2.12	-2.03	0.61
185.0	0.70	100.60	5	0.06	5.00	-0.01	0.06	184.98	2.15	-2.04	0.67
190.0	0.60	89.60	5	0.05	5.00	0.00	0.05	189.98	2.16	-2.04	0.72
195.0	0.80	106.90	5	0.07	5.00	-0.02	0.07	194.98	2.21	-2.06	0.79
200.0	0.80	115.80	5	0.07	5.00	-0.03	0.06	199.98	2.26	-2.09	0.85
205.0	0.80	115.70	5	0.07	5.00	-0.03	0.06	204.98	2.31	-2.12	0.92
210.0	1.00	122.00	5	0.09	5.00	-0.05	0.07	209.98	2.38	-2.17	0.99
215.0	0.90	121.80	5	0.08	5.00	-0.04	0.07	214.98	2.45	-2.21	1.06
220.0	1.10	135.00	5	0.10	5.00	-0.07	0.07	219.98	2.54	-2.28	1.12
225.0	1.20	135.80	5	0.10	5.00	-0.08	0.07	224.98	2.64	-2.35	1.20
230.0	1.30	139.00	5	0.11	5.00	-0.09	0.07	229.98	2.75	-2.44	1.27
235.0	0.70	135.20	5	0.06	5.00	-0.04	0.04	234.98	2.81	-2.48	1.31
240.0	0.50	146.30	5	0.04	5.00	-0.04	0.02	239.98	2.85	-2.52	1.34
245.0	0.50	163.20	5	0.04	5.00	-0.04	0.01	244.98	2.89	-2.56	1.35
250.0	0.60	193.60	5	0.05	5.00	-0.05	-0.01	249.97	2.93	-2.61	1.34
255.0	0.90	127.70	5	0.08	5.00	-0.05	0.06	254.97	3.00	-2.66	1.40
260.0	1.00	124.70	5	0.09	5.00	-0.05	0.07	259.97	3.08	-2.71	1.47
265.0	1.00	122.20	5	0.09	5.00	-0.05	0.07	264.97	3.16	-2.75	1.55
270.0	1.00	146.20	5	0.09	5.00	-0.07	0.05	269.97	3.25	-2.83	1.60
275.0	0.90	172.20	5	0.08	5.00	-0.08	0.01	274.97	3.32	-2.90	1.61
280.0	1.00	169.90	5	0.09	5.00	-0.09	0.02	279.97	3.40	-2.99	1.62
280.8	0.90	161.80	1	0.01	0.80	-0.01	0.00	280.77	3.41	-3.00	1.62

Totals:			
True Depth	DistSum	NorthSum	EastSum
280.77	3.41	-3.00	1.62

Orientations are with respect to Magnetic North

Deviation Survey for: SN3 **Field:** Pantex BOA 70 Rel. **Date:** 19-Dec-2017
Well: PTX06-ISB110 **Depth Ref.:** GL **Total Depth:** 280.77 **Probe Type, S/N:** QL-DEV 112002

Definitions

Bearing = Azimuth Degrees from Magnetic North (Raw Data)

ClosureDistance = Horizontal Feet Between Each Station

ClosureDepth = Vertical Feet Between Each Interval

Northing = North/South Component of Horizontal Distance Between Each Station (Negative = South)
 (Closure Dist.) x cos(Bearing)

Easting = East/West Component of Horizontal Distance Between Each Station (Negative = West)
 (Closure Dist.) x sin(Bearing)

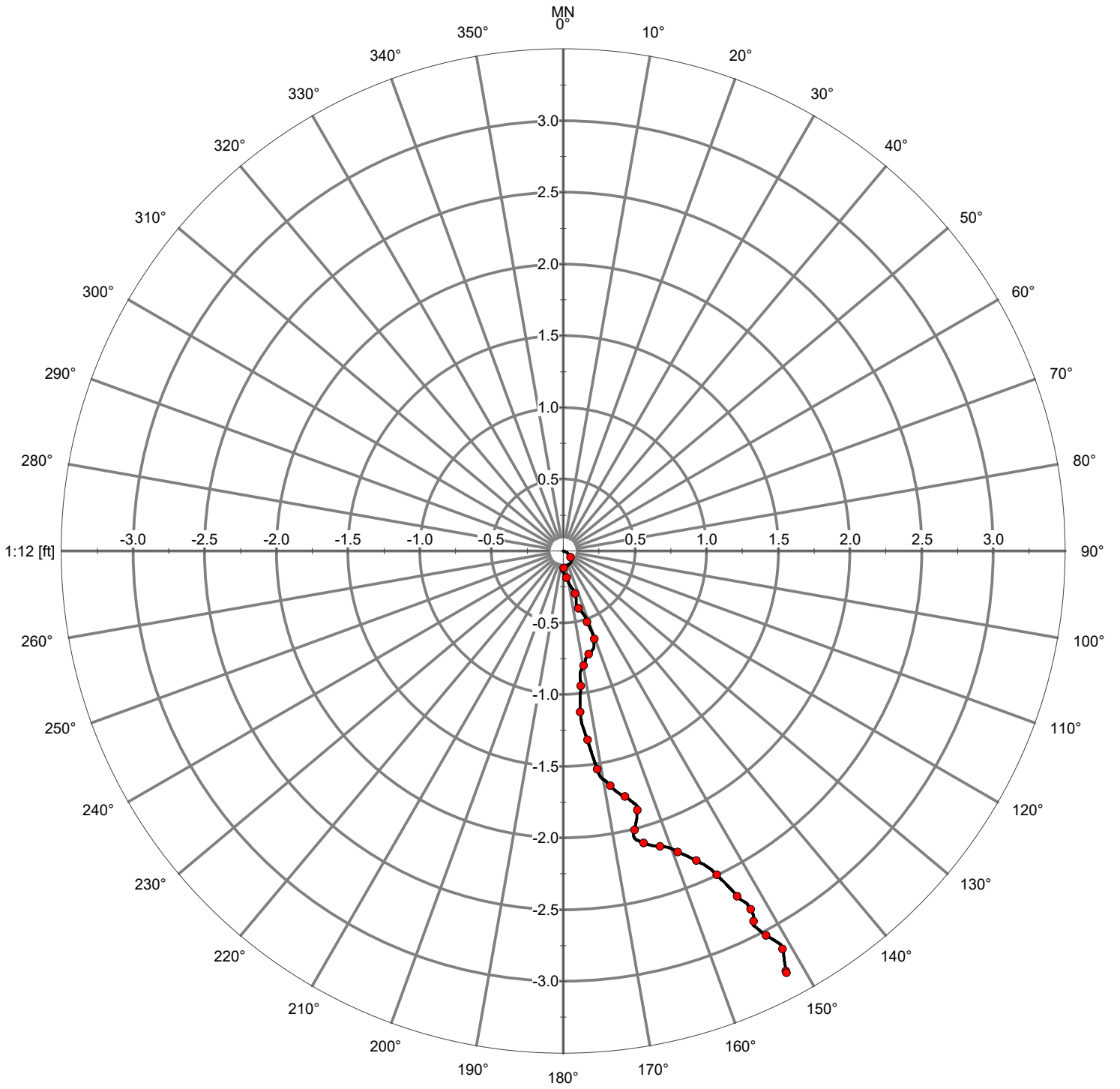
TrueDepth = Vertical Depth from the Surface to This Station

DistanceSum = Horizontal Distance from Wellhead to this Station

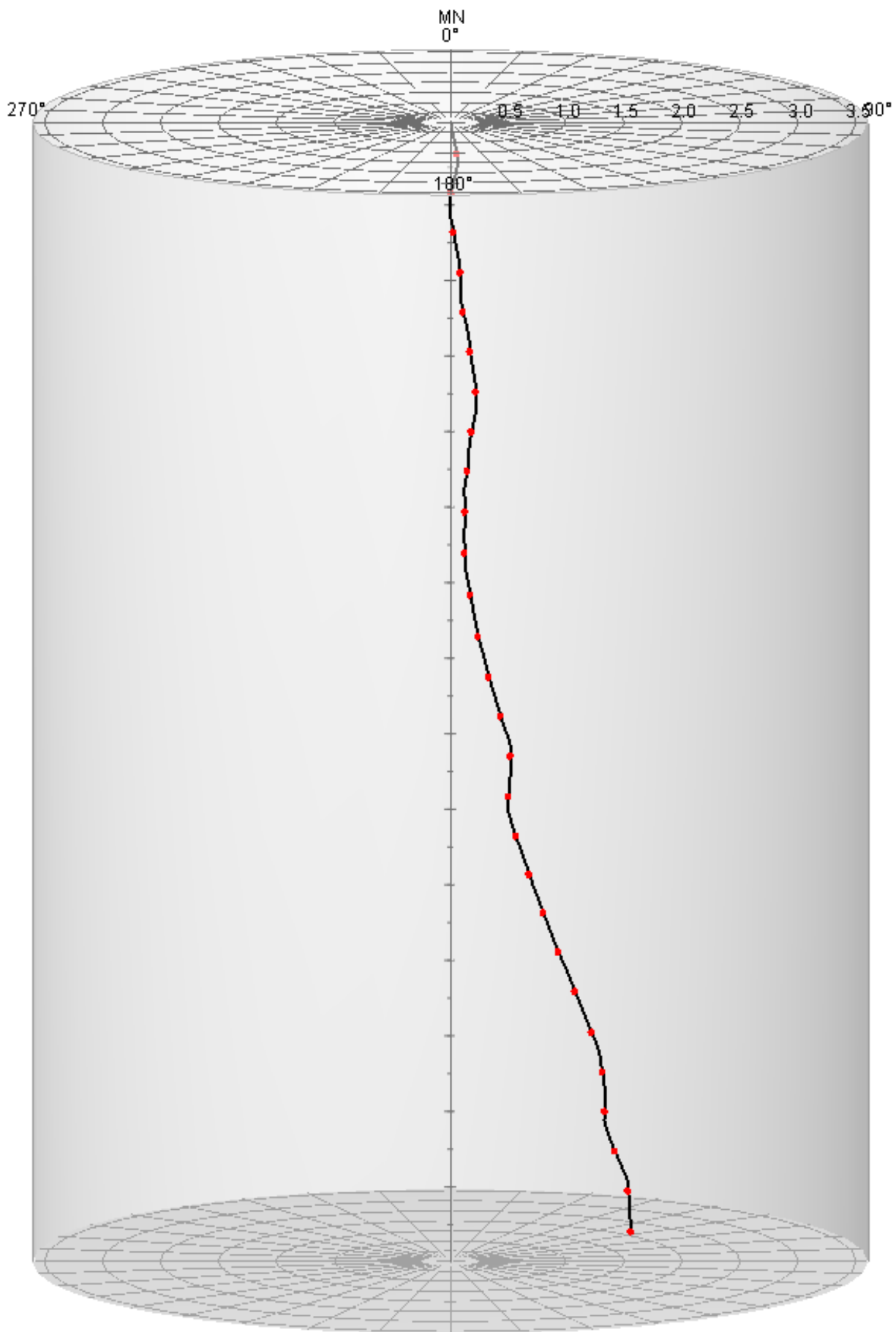
NorthSum = North/South Component of Horizontal Distance from the Wellhead to This Station (Negative = South)
 Running Sum of Northing

EastSum = East/West Component of Horizontal Distance from the Wellhead to This Station (Negative = West)
 Running Sum of Easting

PTX06-ISB110



PTX06-ISB110





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Borehole Deviation

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Fax: 303.278.0135
www.colog.com

Company SN3	COMPANY SN3	LOCATION East of FM-2373 and South of County Road 8 North of Southeast ISB Extension Wellfield	OTHER SERVICES None
Well PTX06-1195	WELL PTX06-1195		
Project Pantex BOA 70 Rel. 5	PROJECT Pantex BOA 70 Release 5		
County Carson	COUNTY Carson		
State Texas	STATE Texas		
	QTR	SEC	TWP
		RGE	

PERMANENT DATUM Ground Level **ELEVATION** 3516.83 ft

LOG MEAS. FROM Ground Level 0.0 ft **ABOVE PERMANENT DATUM**

DRILLING MEAS. FROM Ground Level

DATE ACQUIRED	6 February 2018
RUN NUMBER	One
LOG TYPE	Deviation
DEPTH-DRILLER	290 ft
DEPTH-LOGGER	290.6 ft
BTM LOG INTERVAL	290.6 ft
TOP LOG INTERVAL	0.0 ft
RECORDED BY	N. Davis
WITNESSED BY	R. Rupp
PROBE TYPE, S/N	QL40-DEV, 112002
LOGGING SPEED	15 ft/min
A.S.D.E. / Sample Interval	0.0 ft / 0.1 ft
Fluid Level / Fluid Type	AIR

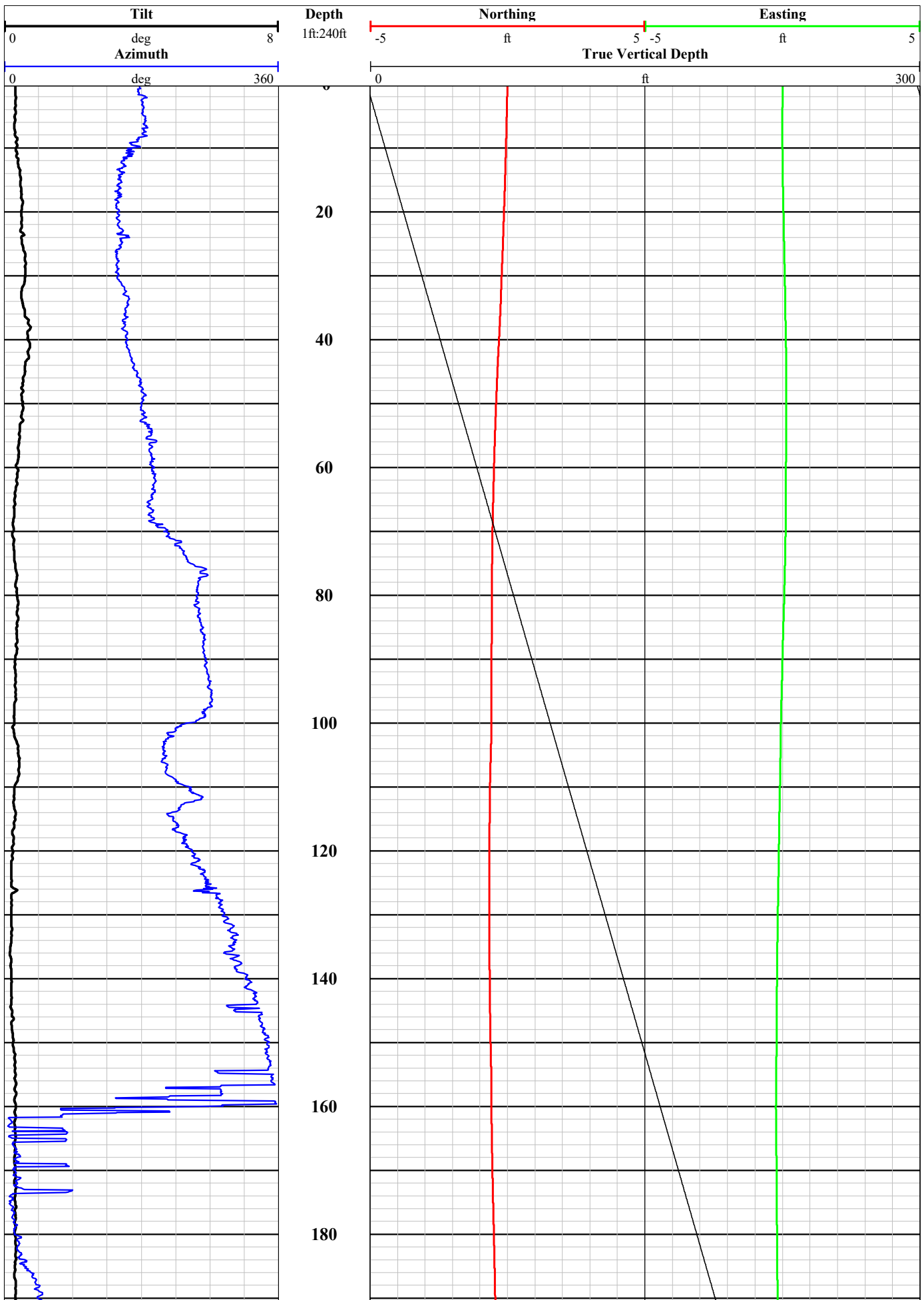
BOREHOLE RECORD		CASING RECORD	
RUN No.	BIT	FROM	TO
1	10 in	0 ft	292 ft
		4 in casing	4 in casing
		4 in screen	4 in screen
		4 in sump	4 in sump

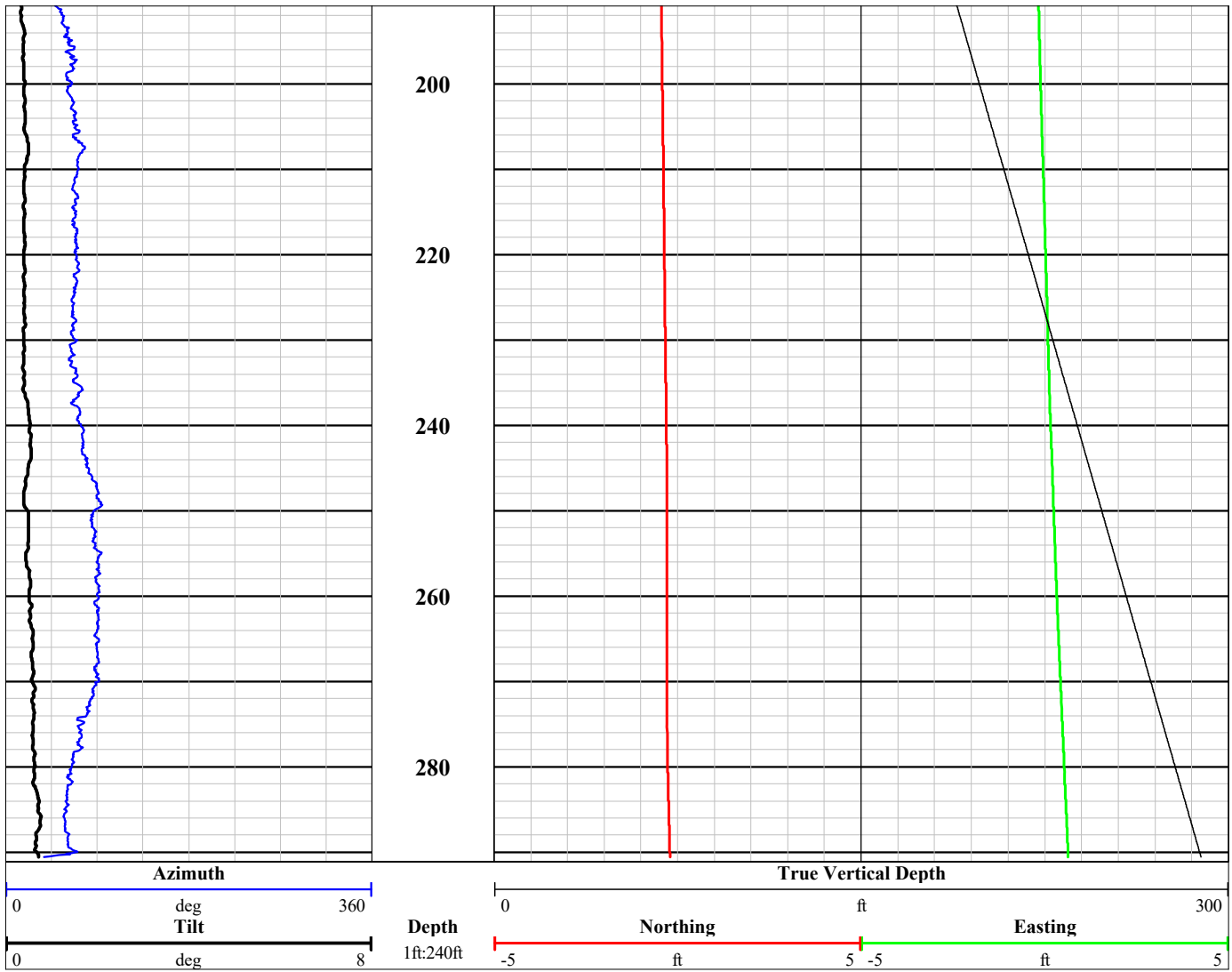
		WT.	FROM	TO
		Sch 80 PVC	0 ft	274 ft
		Sch 80 PVC	274 ft	289 ft
		Sch 80 PVC	289 ft	290 ft

NA - Not Available, N/A - Not Applicable

COMMENTS

Directions are with respect to Magnetic North.





Azimuth

0 deg 360

Tilt

0 deg 8

Depth
1ft:240ft

True Vertical Depth

0 ft 300

Northing

-5 ft 5

Easting

-5 ft 5

Deviation Survey for: SN3 Field: Pantex BOA 70 Rel. Date: 6-Feb-2018
 Well: PTX06-1195 Depth Ref.: GL Total Depth: 289.99 Probe Type, S/N: QL-DEV 112002

Depth (feet)	Inclination (degrees)	Bearing (degrees)	ClosureLength (line ft.)	ClosureDist. (horiz. ft.)	ClosureDepth (vertical ft.)	Northing (feet)	Easting (feet)	TrueDepth (feet)	Dist.Sum (feet)	NorthSum (feet)	EastSum (feet)
0.0	0.32	182.40	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5.0	0.30	185.64	5	0.03	5.00	-0.03	0.00	5.00	0.03	-0.03	0.00
10.0	0.34	171.50	5	0.03	5.00	-0.03	0.00	10.00	0.06	-0.06	0.00
15.0	0.48	150.18	5	0.04	5.00	-0.04	0.02	15.00	0.09	-0.09	0.02
20.0	0.50	149.34	5	0.04	5.00	-0.04	0.02	20.00	0.14	-0.13	0.04
25.0	0.52	153.70	5	0.05	5.00	-0.04	0.02	25.00	0.18	-0.17	0.06
30.0	0.62	149.58	5	0.05	5.00	-0.05	0.03	30.00	0.24	-0.22	0.09
35.0	0.56	160.36	5	0.05	5.00	-0.05	0.02	35.00	0.28	-0.26	0.11
40.0	0.68	161.64	5	0.06	5.00	-0.06	0.02	40.00	0.34	-0.32	0.13
45.0	0.60	174.60	5	0.05	5.00	-0.05	0.00	45.00	0.39	-0.37	0.13
50.0	0.52	179.80	5	0.05	5.00	-0.05	0.00	50.00	0.44	-0.42	0.13
55.0	0.44	191.92	5	0.04	5.00	-0.04	-0.01	55.00	0.47	-0.45	0.12
60.0	0.36	196.64	5	0.03	5.00	-0.03	-0.01	60.00	0.50	-0.48	0.12
65.0	0.30	195.16	5	0.03	5.00	-0.03	-0.01	65.00	0.52	-0.51	0.11
70.0	0.26	209.58	5	0.02	5.00	-0.02	-0.01	70.00	0.54	-0.53	0.10
75.0	0.32	244.84	5	0.03	5.00	-0.01	-0.03	75.00	0.55	-0.54	0.07
80.0	0.38	252.42	5	0.03	5.00	-0.01	-0.03	80.00	0.55	-0.55	0.04
85.0	0.36	260.54	5	0.03	5.00	-0.01	-0.03	85.00	0.56	-0.56	0.01
90.0	0.32	264.94	5	0.03	5.00	0.00	-0.03	90.00	0.56	-0.56	-0.02
95.0	0.34	271.92	5	0.03	5.00	0.00	-0.03	95.00	0.56	-0.56	-0.05
100.0	0.30	238.48	5	0.03	5.00	-0.01	-0.02	100.00	0.58	-0.57	-0.07
105.0	0.42	209.90	5	0.04	5.00	-0.03	-0.02	105.00	0.61	-0.60	-0.09
110.0	0.30	241.70	5	0.03	5.00	-0.01	-0.02	110.00	0.63	-0.62	-0.11
115.0	0.32	221.54	5	0.03	5.00	-0.02	-0.02	115.00	0.65	-0.64	-0.13
120.0	0.26	245.86	5	0.02	5.00	-0.01	-0.02	120.00	0.66	-0.65	-0.15
125.0	0.20	263.26	5	0.02	5.00	0.00	-0.02	125.00	0.67	-0.65	-0.17
130.0	0.20	287.90	5	0.02	5.00	0.01	-0.02	130.00	0.67	-0.64	-0.18
135.0	0.18	295.70	5	0.02	5.00	0.01	-0.01	135.00	0.67	-0.64	-0.20
140.0	0.20	319.28	5	0.02	5.00	0.01	-0.01	140.00	0.66	-0.62	-0.21
145.0	0.22	301.20	5	0.02	5.00	0.01	-0.02	145.00	0.65	-0.61	-0.23
150.0	0.24	346.04	5	0.02	5.00	0.02	-0.01	150.00	0.64	-0.59	-0.23
155.0	0.34	352.04	5	0.03	5.00	0.03	0.00	155.00	0.61	-0.56	-0.24
160.0	0.34	287.04	5	0.03	5.00	0.01	-0.03	160.00	0.61	-0.55	-0.26
165.0	0.34	10.22	5	0.03	5.00	0.03	0.01	165.00	0.59	-0.52	-0.26
170.0	0.32	14.36	5	0.03	5.00	0.03	0.01	170.00	0.56	-0.50	-0.25
175.0	0.32	8.62	5	0.03	5.00	0.03	0.00	175.00	0.53	-0.47	-0.25
180.0	0.30	12.94	5	0.03	5.00	0.03	0.01	180.00	0.51	-0.44	-0.24
185.0	0.30	28.12	5	0.03	5.00	0.02	0.01	185.00	0.48	-0.42	-0.23
190.0	0.34	43.26	5	0.03	5.00	0.02	0.02	190.00	0.45	-0.40	-0.21
195.0	0.40	64.28	5	0.03	5.00	0.02	0.03	195.00	0.42	-0.38	-0.18
200.0	0.42	65.08	5	0.04	5.00	0.02	0.03	200.00	0.40	-0.37	-0.14
205.0	0.40	69.02	5	0.03	5.00	0.01	0.03	205.00	0.37	-0.36	-0.11
210.0	0.42	71.34	5	0.04	5.00	0.01	0.03	210.00	0.35	-0.35	-0.08
215.0	0.42	69.42	5	0.04	5.00	0.01	0.03	215.00	0.33	-0.33	-0.04
220.0	0.40	69.40	5	0.03	5.00	0.01	0.03	220.00	0.32	-0.32	-0.01
225.0	0.40	66.74	5	0.03	5.00	0.01	0.03	224.99	0.31	-0.31	0.02
230.0	0.40	70.52	5	0.03	5.00	0.01	0.03	229.99	0.30	-0.29	0.05
235.0	0.42	68.70	5	0.04	5.00	0.01	0.03	234.99	0.29	-0.28	0.09
240.0	0.52	74.08	5	0.05	5.00	0.01	0.04	239.99	0.30	-0.27	0.13
245.0	0.50	81.38	5	0.04	5.00	0.01	0.04	244.99	0.32	-0.26	0.18
250.0	0.50	87.18	5	0.04	5.00	0.00	0.04	249.99	0.34	-0.26	0.22
255.0	0.42	93.68	5	0.04	5.00	0.00	0.04	254.99	0.37	-0.26	0.26
260.0	0.52	90.96	5	0.05	5.00	0.00	0.05	259.99	0.40	-0.26	0.30
265.0	0.58	91.15	5	0.05	5.00	0.00	0.05	264.99	0.44	-0.26	0.35
270.0	0.56	91.80	5	0.05	5.00	0.00	0.05	269.99	0.48	-0.27	0.40
275.0	0.60	75.48	5	0.05	5.00	0.01	0.05	274.99	0.52	-0.25	0.45
280.0	0.64	64.78	5	0.06	5.00	0.02	0.05	279.99	0.55	-0.23	0.50
285.0	0.70	59.24	5	0.06	5.00	0.03	0.05	284.99	0.59	-0.20	0.55
290.0	0.66	65.66	5	0.06	5.00	0.02	0.05	289.99	0.63	-0.17	0.61

Totals:			
True Depth	DistSum	NorthSum	EastSum
289.99	0.63	-0.17	0.61

Orientations are with respect to Magnetic North

Deviation Survey for: SN3 **Field:** Pantex BOA 70 Rel. **Date:** 6-Feb-2018
Well: PTX06-1195 **Depth Ref.:** GL **Total Depth:** 289.99 **Probe Type, S/N:** QL-DEV 112002

Definitions

Bearing = Azimuth Degrees from Magnetic North (Raw Data)

ClosureDistance = Horizontal Feet Between Each Station

ClosureDepth = Vertical Feet Between Each Interval

Northing = North/South Component of Horizontal Distance Between Each Station (Negative = South)
(Closure Dist.) x cos(Bearing)

Easting = East/West Component of Horizontal Distance Between Each Station (Negative = West)
(Closure Dist.) x sin(Bearing)

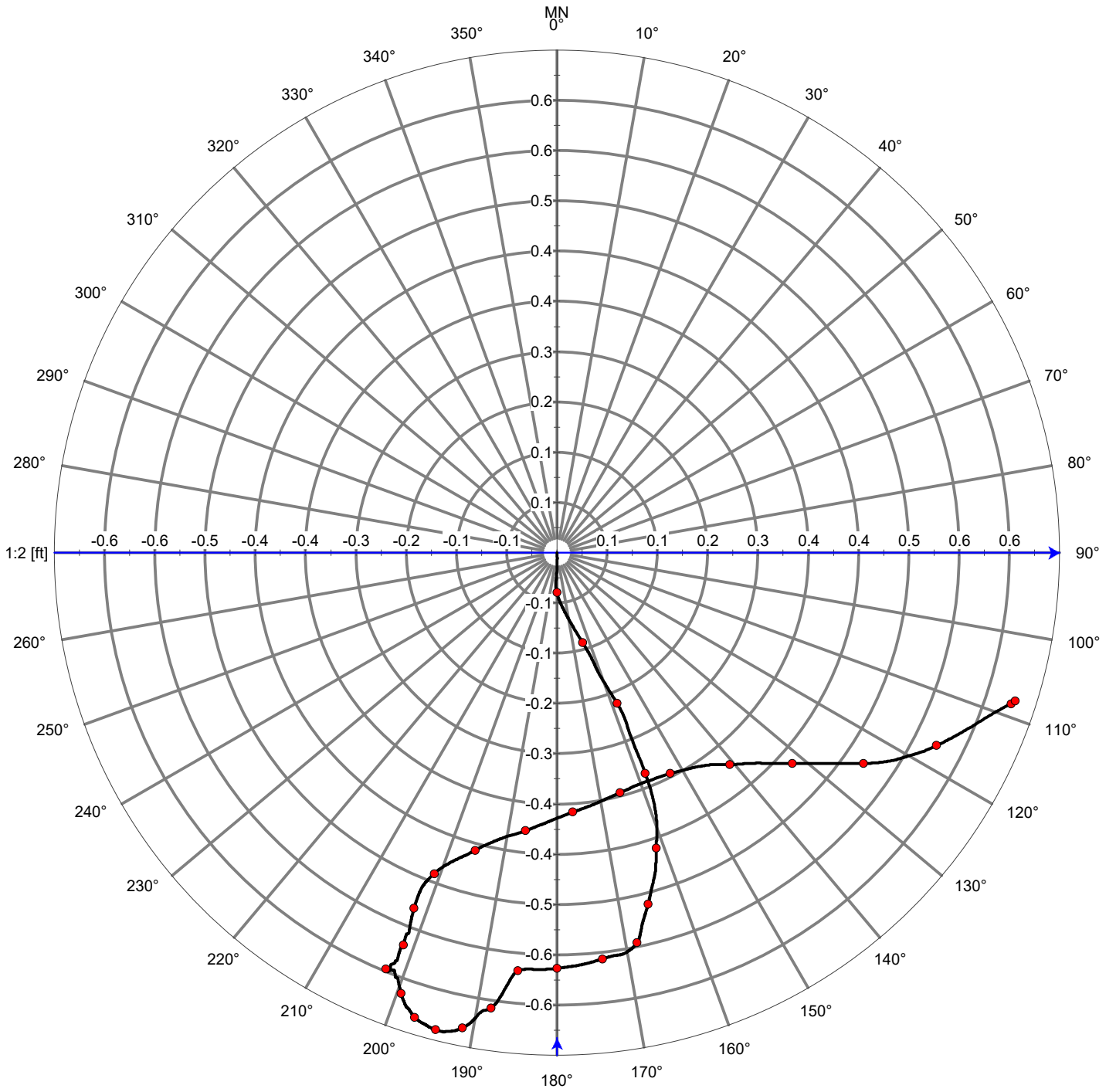
TrueDepth = Vertical Depth from the Surface to This Station

DistanceSum = Horizontal Distance from Wellhead to this Station

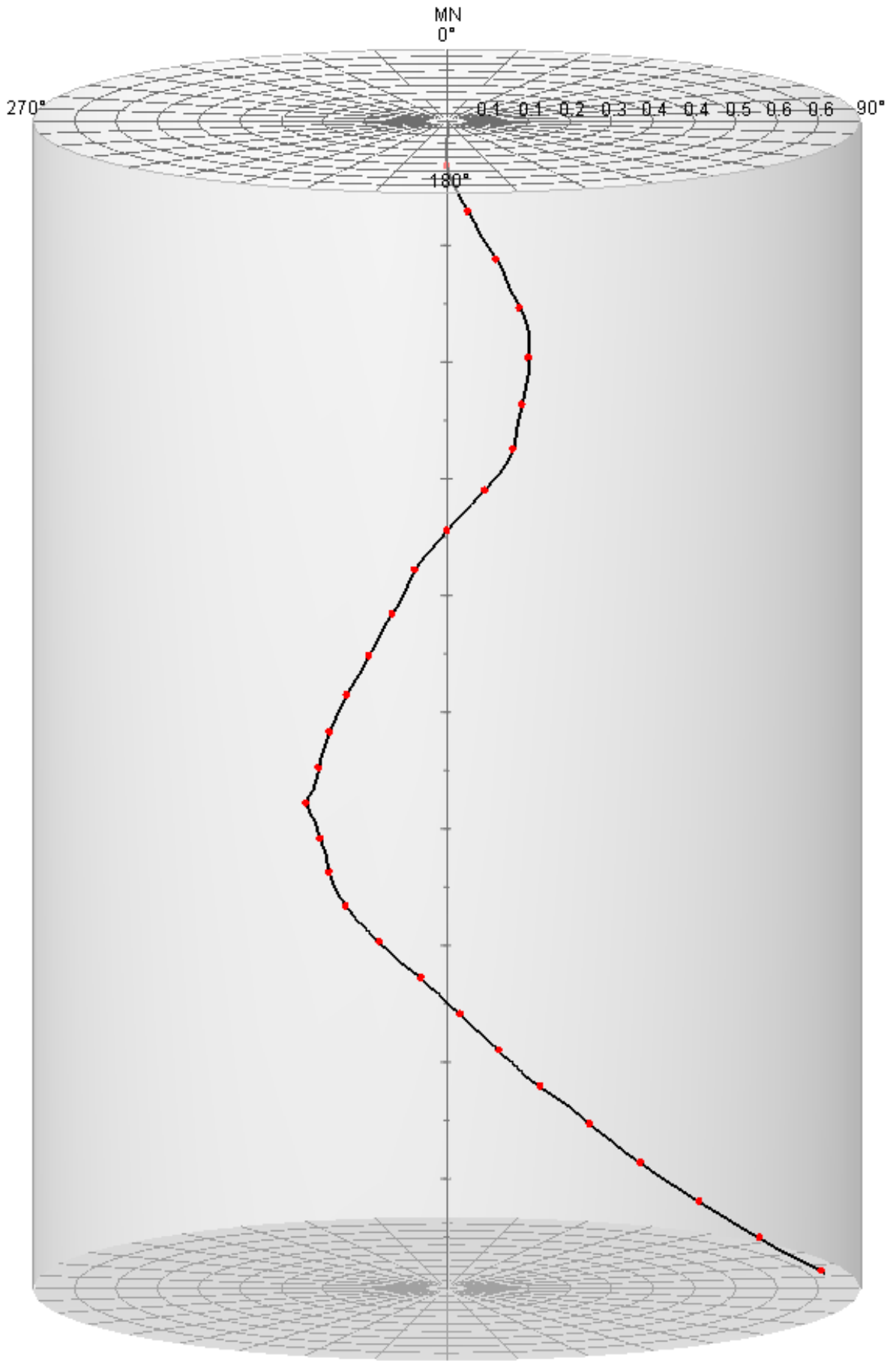
NorthSum = North/South Component of Horizontal Distance from the Wellhead to This Station (Negative = South)
Running Sum of Northing

EastSum = East/West Component of Horizontal Distance from the Wellhead to This Station (Negative = West)
Running Sum of Easting

PTX06-1195



PTX06-1195





borehole geophysics / hydrophysics

810 Quail Street
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80215
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Fax: 303.278.0135
www.colog.com

Borehole Deviation

Company SN3
Well PTX06-1194
Project Pantex BOA 70 Rel. 5
County Carson
State Texas

COMPANY SN3
WELL PTX06-1194
PROJECT Pantex BOA 70 Release 5
COUNTY Carson
STATE Texas

LOCATION
East of FM-2373 and South of HWY 60
Vance Property

OTHER SERVICES
None

PERMANENT DATUM Ground Level **ELEVATION** 3512.68 ft

LOG MEAS. FROM Ground Level **0.0 ft ABOVE PERMANENT DATUM**

DRILLING MEAS. FROM Ground Level

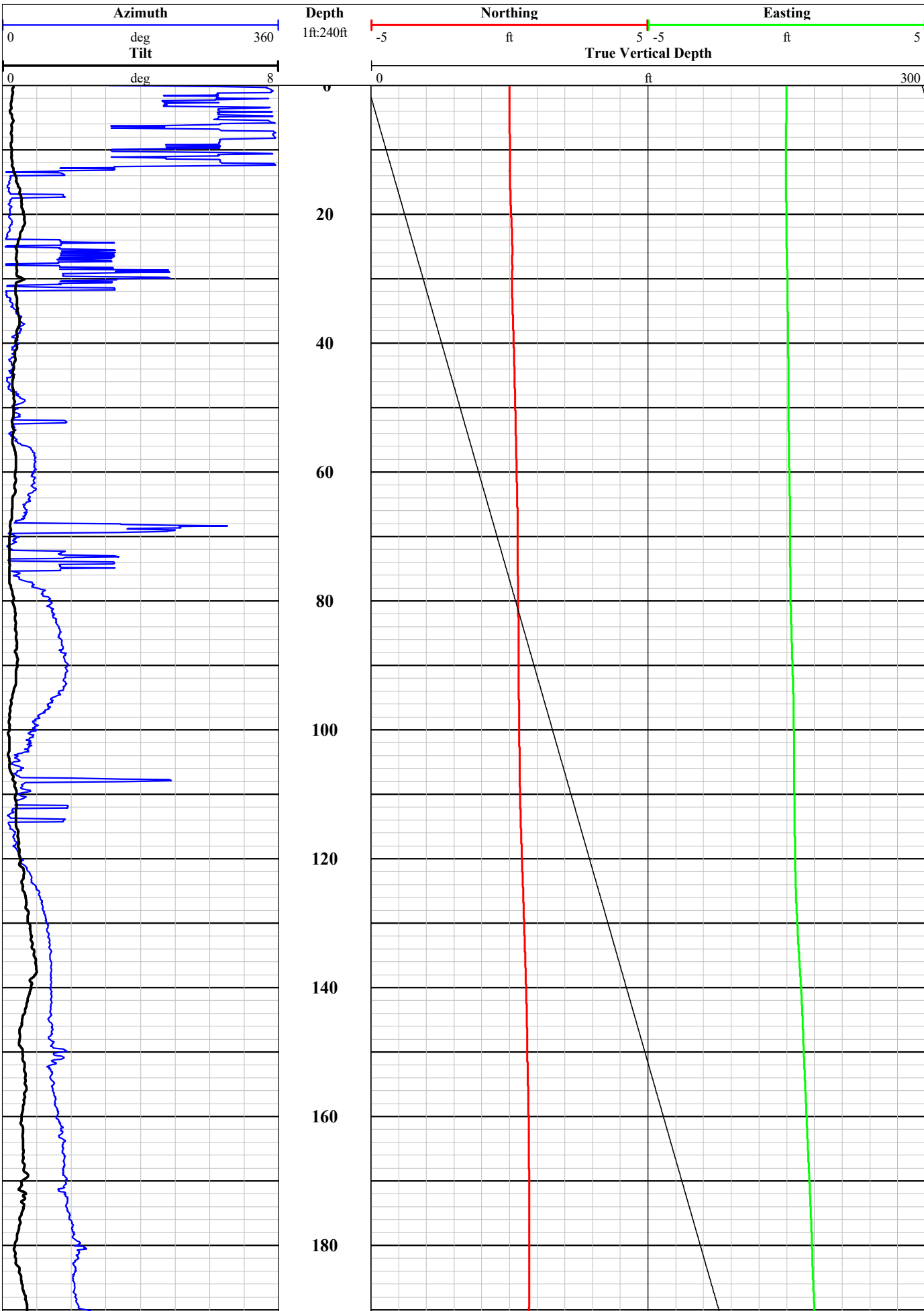
DATE ACQUIRED	6 February 2018
RUN NUMBER	One
LOG TYPE	Deviation
DEPTH-DRILLER	279 ft
DEPTH-LOGGER	279.4 ft
BTM LOG INTERVAL	279.4 ft
TOP LOG INTERVAL	0.0 ft
RECORDED BY	N. Davis
WITNESSED BY	R. Rupp
PROBE TYPE, S/N	QL40-DEV, 112002
LOGGING SPEED	15 ft/min
A.S.D.E. / Sample Interval	-0.05 ft / 0.1 ft
Fluid Level / Fluid Type	AIR

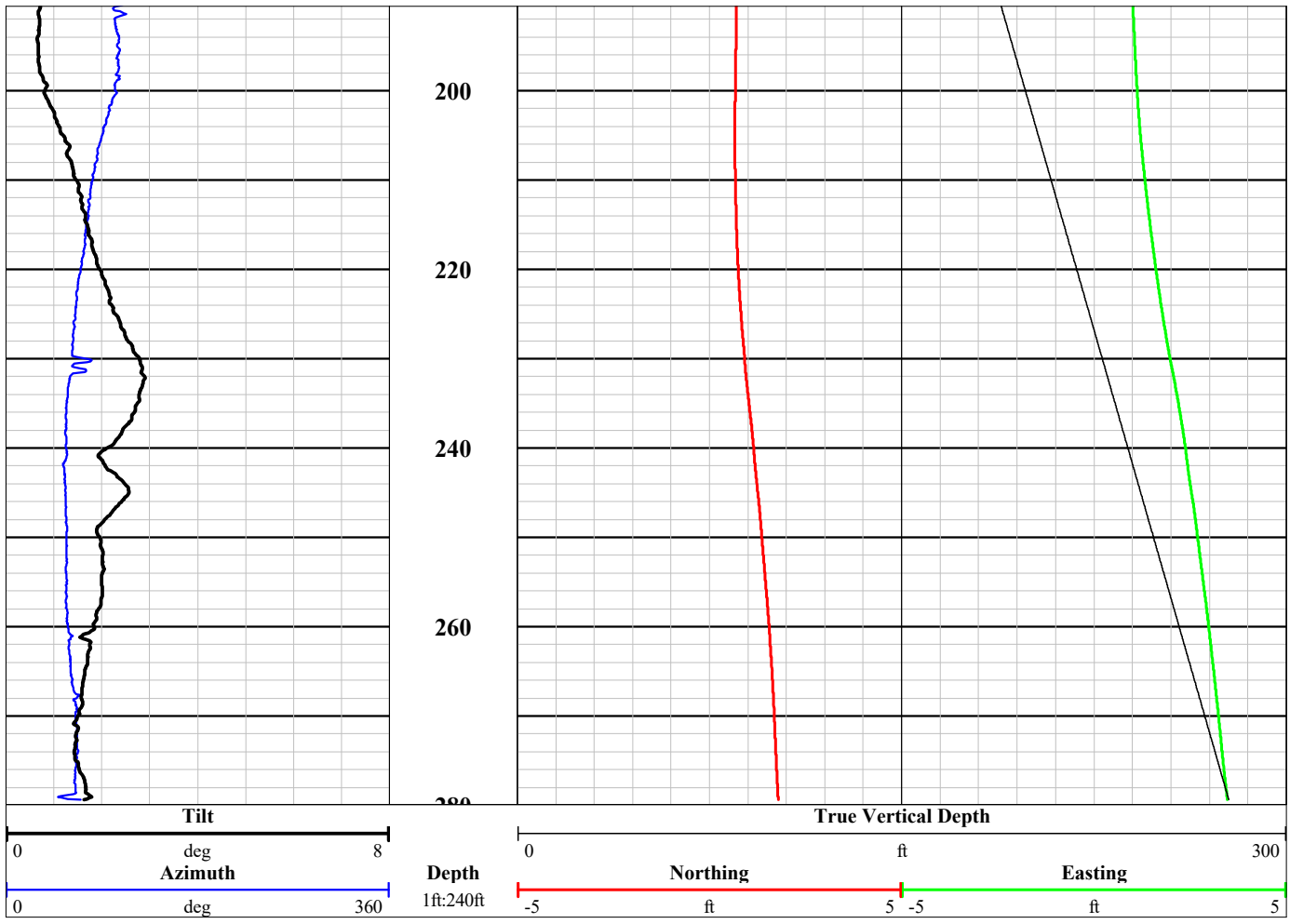
BOREHOLE RECORD		CASING RECORD					
RUN No.	BIT	FROM	TO	SIZE	WGT.	FROM	TO
1	10 in	0 ft	282 ft	4 in casing	Sch 80 PVC	0 ft	268 ft
				4 in screen	Sch 80 PVC	268 ft	278 ft
				4 in sump	Sch 80 PVC	278 ft	279 ft

NA - Not Available, N/A - Not Applicable

COMMENTS

Directions are with respect to Magnetic North.





Deviation Survey for: SN3 Field: Pantex BOA 70 Rel. Date: 6-Feb-2018
 Well: PTX06-1194 Depth Ref.: GL Total Depth: 279.34 Probe Type, S/N: QL-DEV 112002

Depth (feet)	Inclination (degrees)	Bearing (degrees)	ClosureLength (line ft.)	ClosureDist. (horiz. ft.)	ClosureDepth (vertical ft.)	Northing (feet)	Easting (feet)	TrueDepth (feet)	Dist.Sum (feet)	NorthSum (feet)	EastSum (feet)
0.0	0.32	139.22	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5.0	0.28	282.36	5	0.02	5.00	0.01	-0.02	5.00	0.02	0.01	-0.02
10.0	0.30	142.68	5	0.03	5.00	-0.02	0.02	10.00	0.02	-0.02	-0.01
15.0	0.40	8.64	5	0.03	5.00	0.03	0.01	15.00	0.02	0.02	0.00
20.0	0.62	11.10	5	0.05	5.00	0.05	0.01	20.00	0.07	0.07	0.01
25.0	0.40	4.50	5	0.03	5.00	0.03	0.00	25.00	0.11	0.11	0.01
30.0	0.68	149.68	5	0.06	5.00	-0.05	0.03	30.00	0.07	0.06	0.04
35.0	0.44	17.50	5	0.04	5.00	0.04	0.01	35.00	0.11	0.09	0.05
40.0	0.40	20.72	5	0.03	5.00	0.03	0.01	40.00	0.14	0.12	0.06
45.0	0.32	12.52	5	0.03	5.00	0.03	0.01	45.00	0.17	0.15	0.07
50.0	0.32	14.72	5	0.03	5.00	0.03	0.01	50.00	0.20	0.18	0.08
55.0	0.30	19.16	5	0.03	5.00	0.02	0.01	55.00	0.22	0.20	0.09
60.0	0.38	39.50	5	0.03	5.00	0.03	0.02	60.00	0.25	0.23	0.11
65.0	0.30	26.92	5	0.03	5.00	0.02	0.01	65.00	0.28	0.25	0.12
70.0	0.22	17.12	5	0.02	5.00	0.02	0.01	70.00	0.30	0.27	0.12
75.0	0.20	76.32	5	0.02	5.00	0.00	0.02	75.00	0.31	0.28	0.14
80.0	0.30	60.10	5	0.03	5.00	0.01	0.02	80.00	0.33	0.29	0.16
85.0	0.42	74.42	5	0.04	5.00	0.01	0.04	85.00	0.36	0.30	0.20
90.0	0.46	85.52	5	0.04	5.00	0.00	0.04	90.00	0.38	0.30	0.24
95.0	0.30	65.48	5	0.03	5.00	0.01	0.02	95.00	0.41	0.31	0.26
100.0	0.22	44.64	5	0.02	5.00	0.01	0.01	100.00	0.43	0.33	0.28
105.0	0.22	14.24	5	0.02	5.00	0.02	0.00	105.00	0.44	0.34	0.28
110.0	0.40	20.38	5	0.03	5.00	0.03	0.01	110.00	0.48	0.38	0.29
115.0	0.40	10.50	5	0.03	5.00	0.03	0.01	115.00	0.51	0.41	0.30
120.0	0.52	25.20	5	0.05	5.00	0.04	0.02	120.00	0.55	0.45	0.32
125.0	0.60	47.34	5	0.05	5.00	0.04	0.04	125.00	0.61	0.49	0.36
130.0	0.76	57.84	5	0.07	5.00	0.04	0.06	130.00	0.67	0.52	0.41
135.0	0.92	61.82	5	0.08	5.00	0.04	0.07	135.00	0.74	0.56	0.48
140.0	0.84	63.48	5	0.07	5.00	0.03	0.07	140.00	0.81	0.59	0.55
145.0	0.56	60.74	5	0.05	5.00	0.02	0.04	145.00	0.86	0.62	0.59
150.0	0.58	78.76	5	0.05	5.00	0.01	0.05	149.99	0.90	0.63	0.64
155.0	0.66	67.60	5	0.06	5.00	0.02	0.05	154.99	0.95	0.65	0.70
160.0	0.56	70.18	5	0.05	5.00	0.02	0.05	159.99	1.00	0.67	0.74
165.0	0.60	79.54	5	0.05	5.00	0.01	0.05	164.99	1.04	0.68	0.79
170.0	0.54	82.48	5	0.05	5.00	0.01	0.05	169.99	1.08	0.68	0.84
175.0	0.56	87.12	5	0.05	5.00	0.00	0.05	174.99	1.12	0.68	0.89
180.0	0.38	95.10	5	0.03	5.00	0.00	0.03	179.99	1.15	0.68	0.92
185.0	0.56	91.58	5	0.05	5.00	0.00	0.05	184.99	1.19	0.68	0.97
190.0	0.74	111.00	5	0.06	5.00	-0.02	0.06	189.99	1.22	0.66	1.03
195.0	0.66	104.58	5	0.06	5.00	-0.01	0.06	194.99	1.26	0.64	1.09
200.0	0.82	102.52	5	0.07	5.00	-0.02	0.07	199.99	1.32	0.63	1.16
205.0	1.18	90.68	5	0.10	5.00	0.00	0.10	204.99	1.41	0.63	1.26
210.0	1.48	81.18	5	0.13	5.00	0.02	0.13	209.99	1.53	0.65	1.39
215.0	1.70	75.10	5	0.15	5.00	0.04	0.14	214.99	1.68	0.68	1.53
220.0	1.98	69.70	5	0.17	5.00	0.06	0.16	219.98	1.85	0.74	1.69
225.0	2.26	65.08	5	0.20	5.00	0.08	0.18	224.98	2.05	0.83	1.87
230.0	2.78	75.08	5	0.24	4.99	0.06	0.23	229.97	2.29	0.89	2.11
235.0	2.74	57.04	5	0.24	4.99	0.13	0.20	234.97	2.52	1.02	2.31
240.0	2.08	56.72	5	0.18	5.00	0.10	0.15	239.97	2.70	1.12	2.46
245.0	2.58	55.88	5	0.23	4.99	0.13	0.19	244.96	2.92	1.24	2.64
250.0	1.94	57.06	5	0.17	5.00	0.09	0.14	249.96	3.09	1.34	2.79
255.0	2.00	57.12	5	0.17	5.00	0.09	0.15	254.95	3.26	1.43	2.93
260.0	1.84	58.22	5	0.16	5.00	0.08	0.14	259.95	3.42	1.52	3.07
265.0	1.64	60.98	5	0.14	5.00	0.07	0.13	264.95	3.57	1.59	3.19
270.0	1.48	65.64	5	0.13	5.00	0.05	0.12	269.95	3.70	1.64	3.31
275.0	1.44	66.36	5	0.13	5.00	0.05	0.12	274.95	3.82	1.69	3.43
279.4	1.54	70.06	4	0.12	4.40	0.04	0.11	279.34	3.94	1.73	3.54

Totals:			
True Depth	DistSum	NorthSum	EastSum
279.34	3.94	1.73	3.54

Orientations are with respect to Magnetic North

Deviation Survey for: SN3 **Field:** Pantex BOA 70 Rel. **Date:** 6-Feb-2018
Well: PTX06-1194 **Depth Ref.:** GL **Total Depth:** 279.34 **Probe Type, S/N:** QL-DEV 112002

Definitions

Bearing = Azimuth Degrees from Magnetic North (Raw Data)

ClosureDistance = Horizontal Feet Between Each Station

ClosureDepth = Vertical Feet Between Each Interval

Northing = North/South Component of Horizontal Distance Between Each Station (Negative = South)
(Closure Dist.) x cos(Bearing)

Easting = East/West Component of Horizontal Distance Between Each Station (Negative = West)
(Closure Dist.) x sin(Bearing)

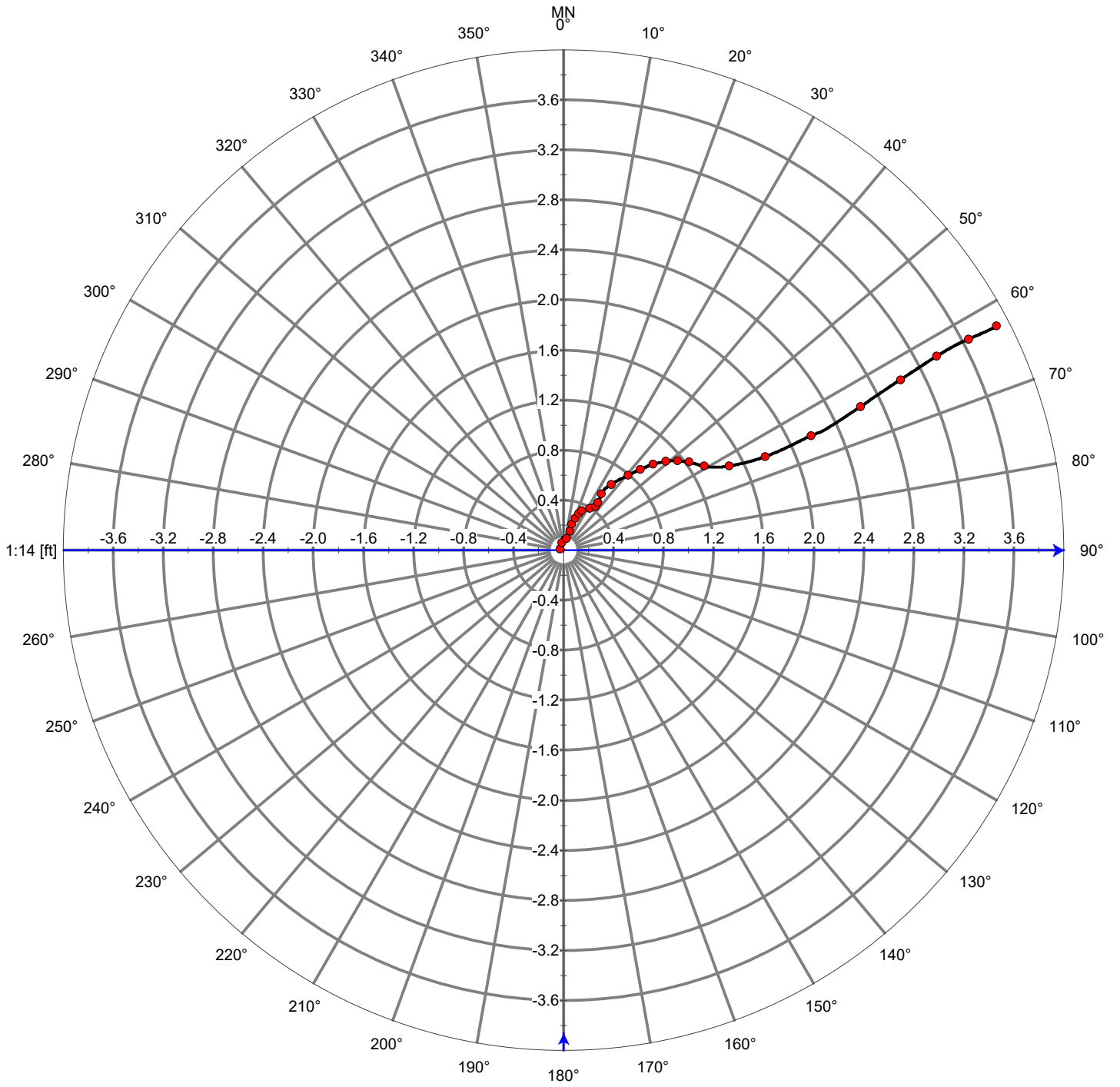
TrueDepth = Vertical Depth from the Surface to This Station

DistanceSum = Horizontal Distance from Wellhead to this Station

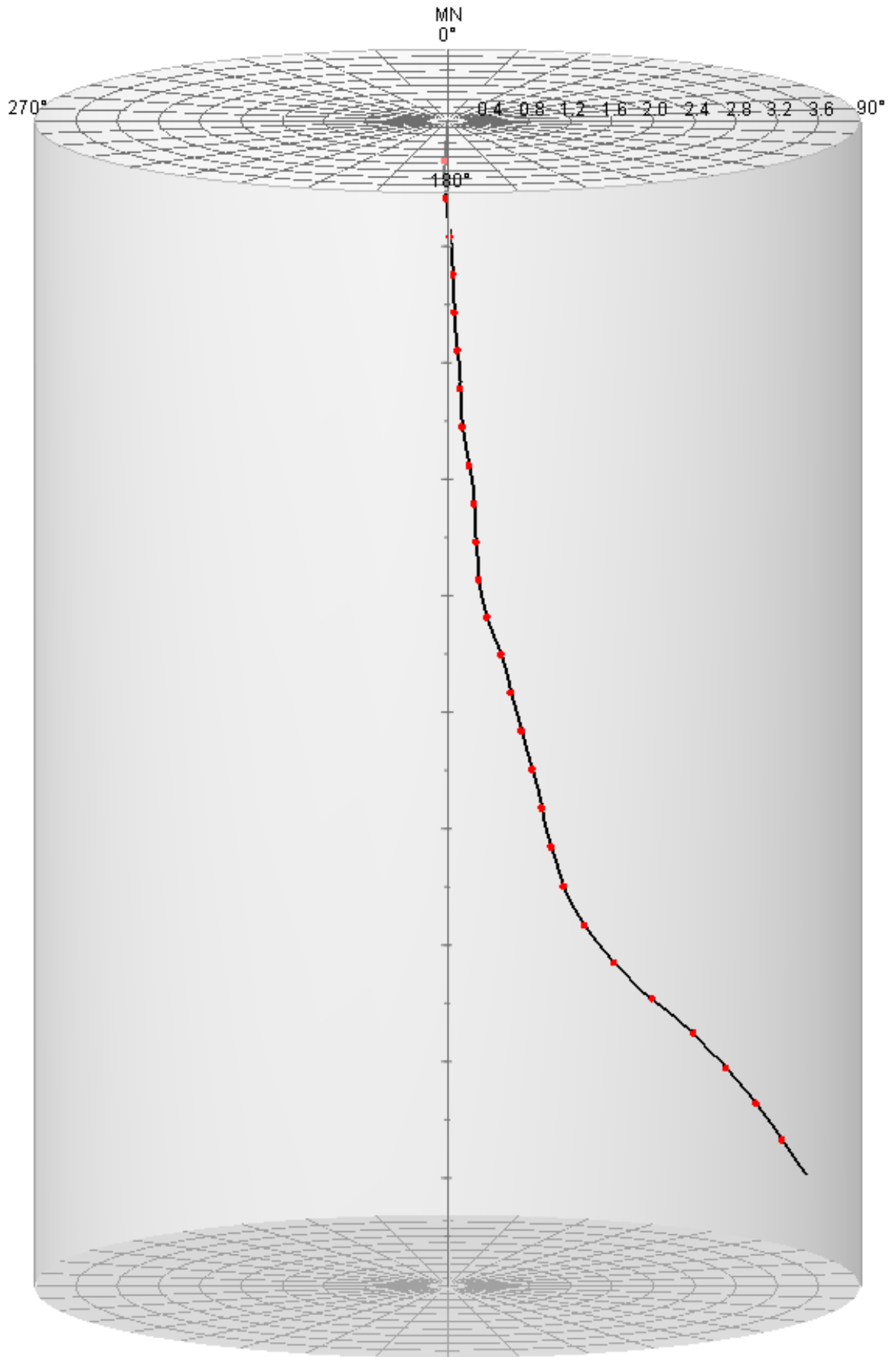
NorthSum = North/South Component of Horizontal Distance from the Wellhead to This Station (Negative = South)
Running Sum of Northing

EastSum = East/West Component of Horizontal Distance from the Wellhead to This Station (Negative = West)
Running Sum of Easting

PTX06-1194



PTX06-1194





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Borehole Deviation

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80215
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Fax: 303.278.0135
www.colog.com

Company SN3
Well PTX06-1193
Project Pantex BOA 70 Rel. 5
County Carson
State Texas

COMPANY SN3
WELL PTX06-1193
PROJECT Pantex BOA 70 Release 5
COUNTY Carson
STATE Texas

LOCATION
East of FM-2373 and South of HWY 60
Vance Property

OTHER SERVICES
None

QTR **SEC** **TWP** **RGE**

PERMANENT DATUM Ground Level **ELEVATION** 3508.28 ft

LOG MEAS. FROM Ground Level **0.0 ft ABOVE PERMANENT DATUM**

DRILLING MEAS. FROM Ground Level

DATE ACQUIRED 6 February 2018

RUN NUMBER One

LOG TYPE Deviation

DEPTH-DRILLER 268 ft

DEPTH-LOGGER 268.2 ft

BTM LOG INTERVAL 268.2 ft

TOP LOG INTERVAL 0.0 ft

RECORDED BY N. Davis

WITNESSED BY R. Rupp

PROBE TYPE, S/N QL40-DEV, 112002

LOGGING SPEED 15 ft/min

A.S.D.E. / Sample Interval -0.4 ft / 0.1 ft

Fluid Level / Fluid Type AIR

BOREHOLE RECORD

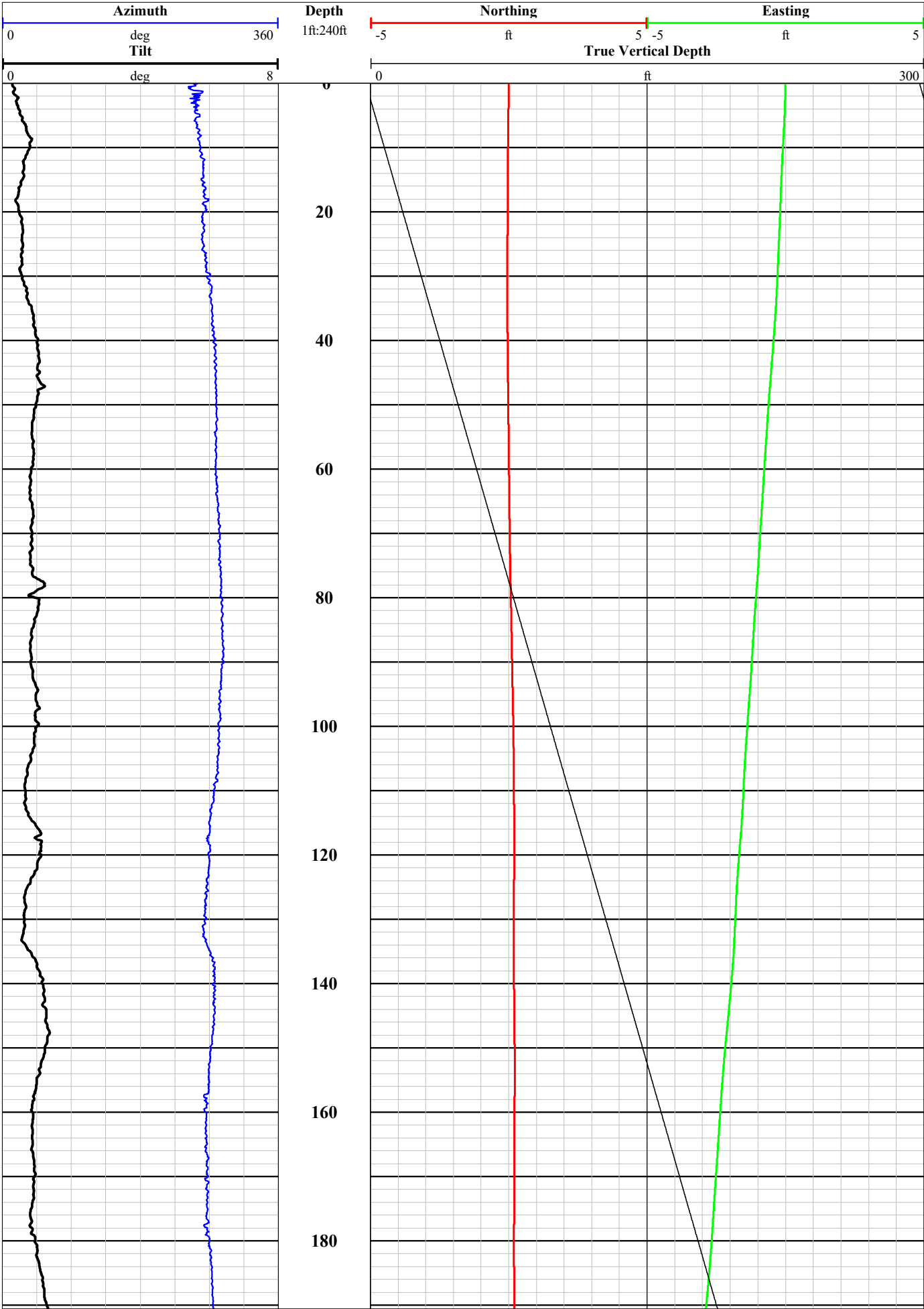
CASING RECORD

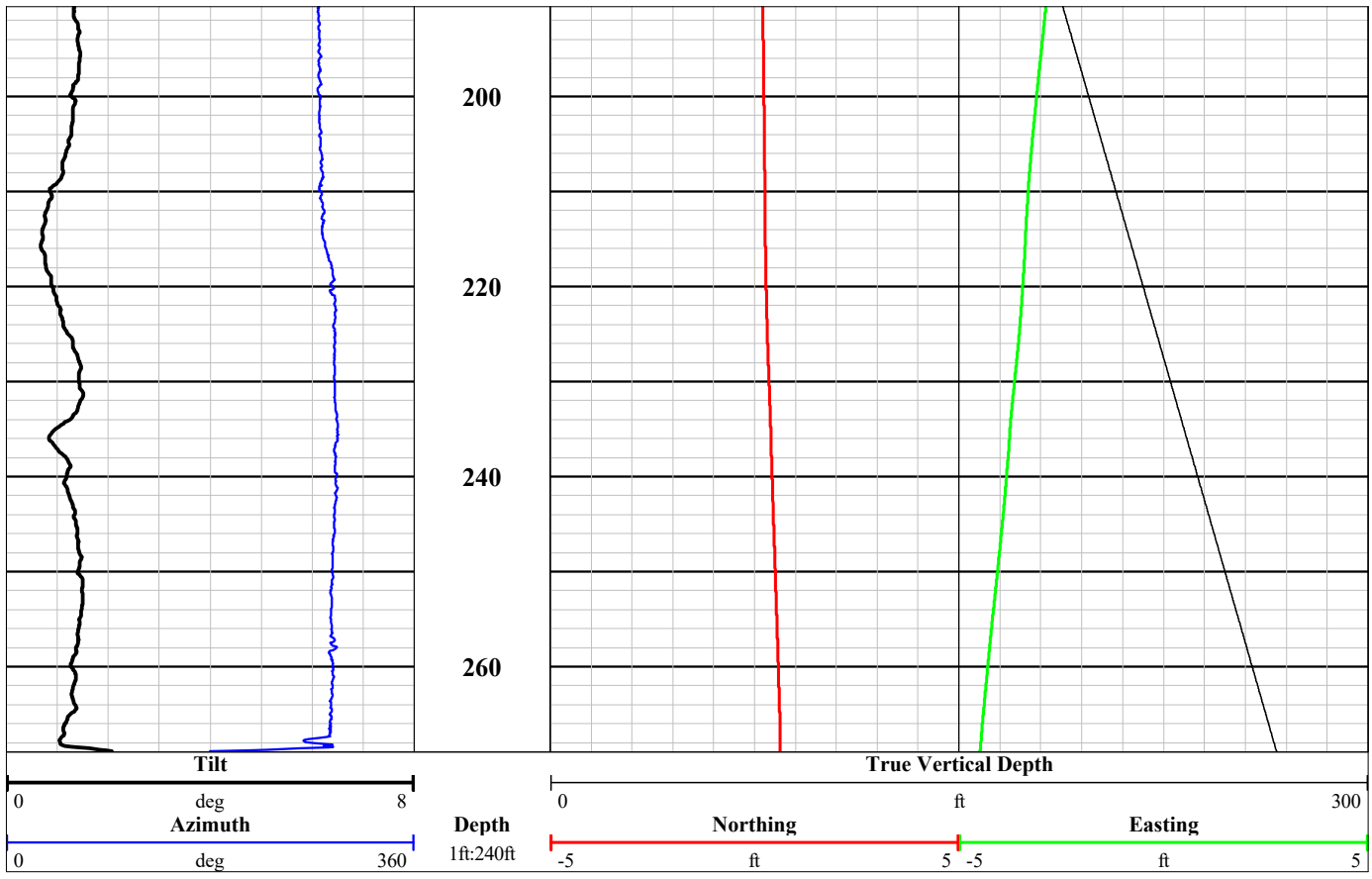
RUN No.	BIT	FROM	TO	SIZE	WGT.	FROM	TO
1	10 in	0 ft	272 ft	4 in casing	Sch 80 PVC	0 ft	257 ft
				4 in screen	Sch 80 PVC	257 ft	267 ft
				4 in sump	Sch 80 PVC	267 ft	268 ft

COMMENTS

NA - Not Available, N/A - Not Applicable

Directions are with respect to Magnetic North.





Deviation Survey for: SN3 Field: Pantex BOA 70 Rel. Date: 6-Feb-2018
 Well: PTX06-1193 Depth Ref.: GL Total Depth: 268.16 Probe Type, S/N: QL-DEV 112002

Depth (feet)	Inclination (degrees)	Bearing (degrees)	ClosureLength (line ft.)	ClosureDist. (horiz. ft.)	ClosureDepth (vertical ft.)	Northing (feet)	Easting (feet)	TrueDepth (feet)	Dist.Sum (feet)	NorthSum (feet)	EastSum (feet)
0.0	0.30	248.34	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5.0	0.54	257.42	5	0.05	5.00	-0.01	-0.05	5.00	0.05	-0.01	-0.05
10.0	0.80	259.64	5	0.07	5.00	-0.01	-0.07	10.00	0.12	-0.02	-0.11
15.0	0.58	259.78	5	0.05	5.00	-0.01	-0.05	15.00	0.17	-0.03	-0.16
20.0	0.50	262.66	5	0.04	5.00	-0.01	-0.04	20.00	0.21	-0.04	-0.21
25.0	0.60	261.94	5	0.05	5.00	-0.01	-0.05	25.00	0.26	-0.04	-0.26
30.0	0.60	269.18	5	0.05	5.00	0.00	-0.05	30.00	0.32	-0.05	-0.31
35.0	0.84	273.84	5	0.07	5.00	0.00	-0.07	35.00	0.39	-0.04	-0.39
40.0	1.02	276.20	5	0.09	5.00	0.01	-0.09	40.00	0.47	-0.03	-0.47
45.0	1.10	278.28	5	0.10	5.00	0.01	-0.09	45.00	0.57	-0.02	-0.57
50.0	0.98	278.54	5	0.09	5.00	0.01	-0.08	50.00	0.65	0.00	-0.65
55.0	0.86	278.58	5	0.08	5.00	0.01	-0.07	54.99	0.73	0.01	-0.73
60.0	0.82	278.28	5	0.07	5.00	0.01	-0.07	59.99	0.80	0.02	-0.80
65.0	0.84	280.88	5	0.07	5.00	0.01	-0.07	64.99	0.87	0.03	-0.87
70.0	0.86	283.92	5	0.08	5.00	0.02	-0.07	69.99	0.94	0.05	-0.94
75.0	0.82	282.96	5	0.07	5.00	0.02	-0.07	74.99	1.01	0.07	-1.01
80.0	1.04	285.76	5	0.09	5.00	0.02	-0.09	79.99	1.10	0.09	-1.10
85.0	0.84	286.94	5	0.07	5.00	0.02	-0.07	84.99	1.18	0.11	-1.17
90.0	0.82	288.68	5	0.07	5.00	0.02	-0.07	89.99	1.25	0.13	-1.24
95.0	0.98	283.94	5	0.09	5.00	0.02	-0.08	94.99	1.33	0.15	-1.32
100.0	1.06	282.20	5	0.09	5.00	0.02	-0.09	99.99	1.42	0.17	-1.41
105.0	0.84	281.02	5	0.07	5.00	0.01	-0.07	104.99	1.50	0.19	-1.48
110.0	0.68	276.28	5	0.06	5.00	0.01	-0.06	109.99	1.55	0.19	-1.54
115.0	0.96	269.46	5	0.08	5.00	0.00	-0.08	114.99	1.64	0.19	-1.63
120.0	1.10	268.58	5	0.10	5.00	0.00	-0.10	119.99	1.73	0.19	-1.72
125.0	0.74	266.48	5	0.06	5.00	0.00	-0.06	124.99	1.80	0.19	-1.79
130.0	0.66	265.28	5	0.06	5.00	0.00	-0.06	129.99	1.85	0.18	-1.84
135.0	0.80	270.96	5	0.07	5.00	0.00	-0.07	134.99	1.92	0.18	-1.91
140.0	1.16	274.24	5	0.10	5.00	0.01	-0.10	139.98	2.02	0.19	-2.01
145.0	1.28	275.62	5	0.11	5.00	0.01	-0.11	144.98	2.14	0.20	-2.13
150.0	1.24	271.22	5	0.11	5.00	0.00	-0.11	149.98	2.24	0.20	-2.23
155.0	1.00	269.16	5	0.09	5.00	0.00	-0.09	154.98	2.33	0.20	-2.32
160.0	0.90	267.18	5	0.08	5.00	0.00	-0.08	159.98	2.41	0.20	-2.40
165.0	0.88	266.66	5	0.08	5.00	0.00	-0.08	164.98	2.48	0.20	-2.48
170.0	0.94	267.20	5	0.08	5.00	0.00	-0.08	169.98	2.57	0.19	-2.56
175.0	0.84	267.78	5	0.07	5.00	0.00	-0.07	174.98	2.64	0.19	-2.63
180.0	0.94	269.50	5	0.08	5.00	0.00	-0.08	179.98	2.72	0.19	-2.71
185.0	1.12	273.68	5	0.10	5.00	0.01	-0.10	184.98	2.82	0.19	-2.81
190.0	1.28	274.46	5	0.11	5.00	0.01	-0.11	189.98	2.93	0.20	-2.92
195.0	1.42	276.30	5	0.12	5.00	0.01	-0.12	194.97	3.05	0.22	-3.05
200.0	1.24	277.18	5	0.11	5.00	0.01	-0.11	199.97	3.16	0.23	-3.15
205.0	1.24	277.52	5	0.11	5.00	0.01	-0.11	204.97	3.27	0.24	-3.26
210.0	0.88	278.26	5	0.08	5.00	0.01	-0.08	209.97	3.35	0.25	-3.34
215.0	0.72	280.04	5	0.06	5.00	0.01	-0.06	214.97	3.41	0.27	-3.40
220.0	0.90	288.30	5	0.08	5.00	0.02	-0.07	219.97	3.48	0.29	-3.47
225.0	1.22	290.10	5	0.11	5.00	0.04	-0.10	224.97	3.59	0.33	-3.57
230.0	1.42	290.08	5	0.12	5.00	0.04	-0.12	229.97	3.71	0.37	-3.69
235.0	0.96	292.18	5	0.08	5.00	0.03	-0.08	234.97	3.79	0.40	-3.77
240.0	1.18	291.02	5	0.10	5.00	0.04	-0.10	239.97	3.89	0.44	-3.86
245.0	1.36	289.30	5	0.12	5.00	0.04	-0.11	244.96	4.00	0.48	-3.97
250.0	1.38	287.52	5	0.12	5.00	0.04	-0.11	249.96	4.12	0.51	-4.09
255.0	1.42	286.48	5	0.12	5.00	0.04	-0.12	254.96	4.24	0.55	-4.21
260.0	1.28	288.36	5	0.11	5.00	0.04	-0.11	259.96	4.35	0.58	-4.31
265.0	1.24	285.56	5	0.11	5.00	0.03	-0.10	264.96	4.46	0.61	-4.42
268.2	1.06	287.82	3	0.06	3.20	0.02	-0.06	268.16	4.52	0.63	-4.47

Totals:			
True Depth	DistSum	NorthSum	EastSum
268.16	4.52	0.63	-4.47

Orientations are with respect to Magnetic North

Deviation Survey for: SN3 **Field:** Pantex BOA 70 Rel. **Date:** 6-Feb-2018
Well: PTX06-1193 **Depth Ref.:** GL **Total Depth:** 268.16 **Probe Type, S/N:** QL-DEV 112002

Definitions

Bearing = Azimuth Degrees from Magnetic North (Raw Data)

ClosureDistance = Horizontal Feet Between Each Station

ClosureDepth = Vertical Feet Between Each Interval

Northing = North/South Component of Horizontal Distance Between Each Station (Negative = South)
(Closure Dist.) x cos(Bearing)

Easting = East/West Component of Horizontal Distance Between Each Station (Negative = West)
(Closure Dist.) x sin(Bearing)

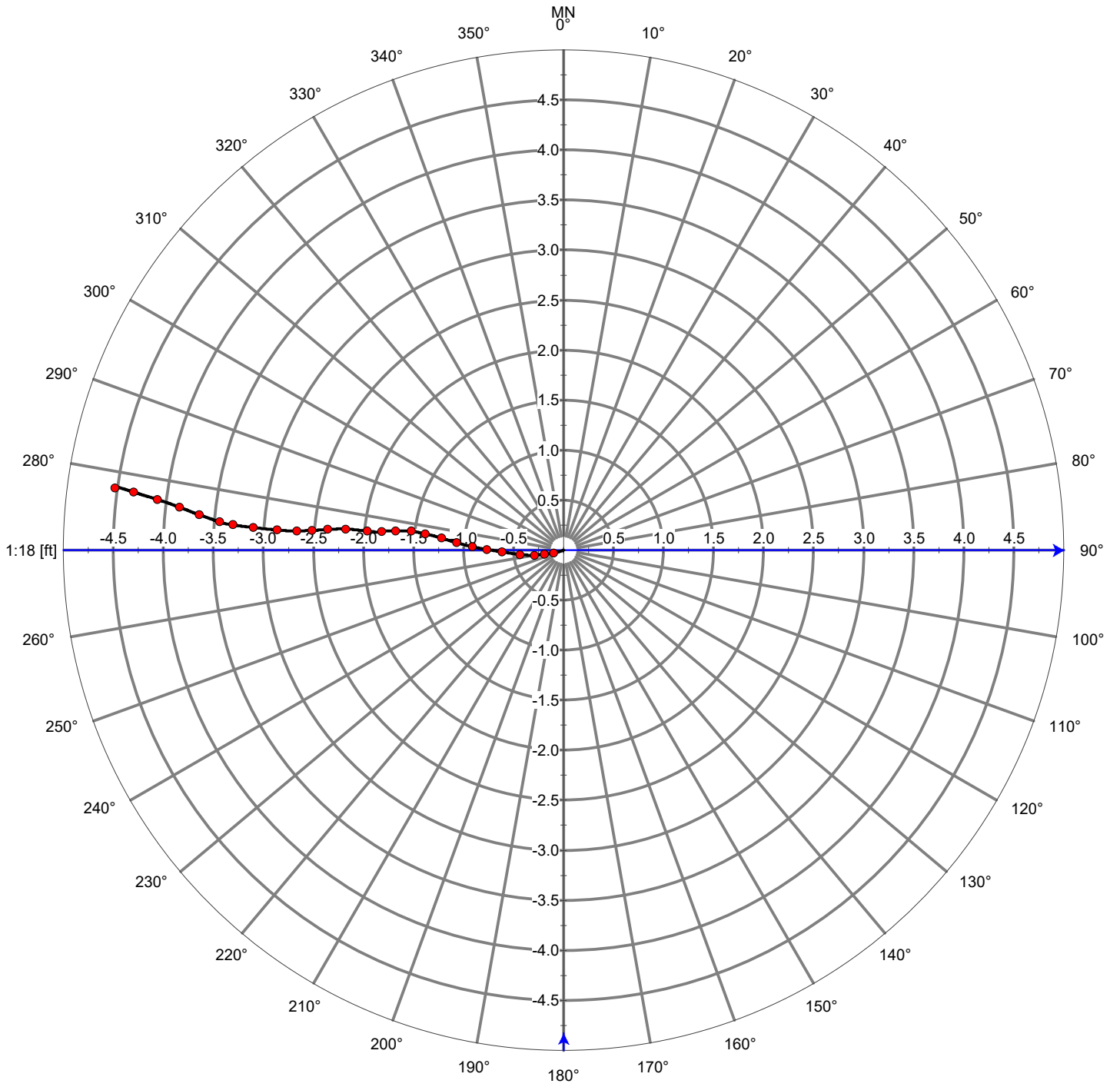
TrueDepth = Vertical Depth from the Surface to This Station

DistanceSum = Horizontal Distance from Wellhead to this Station

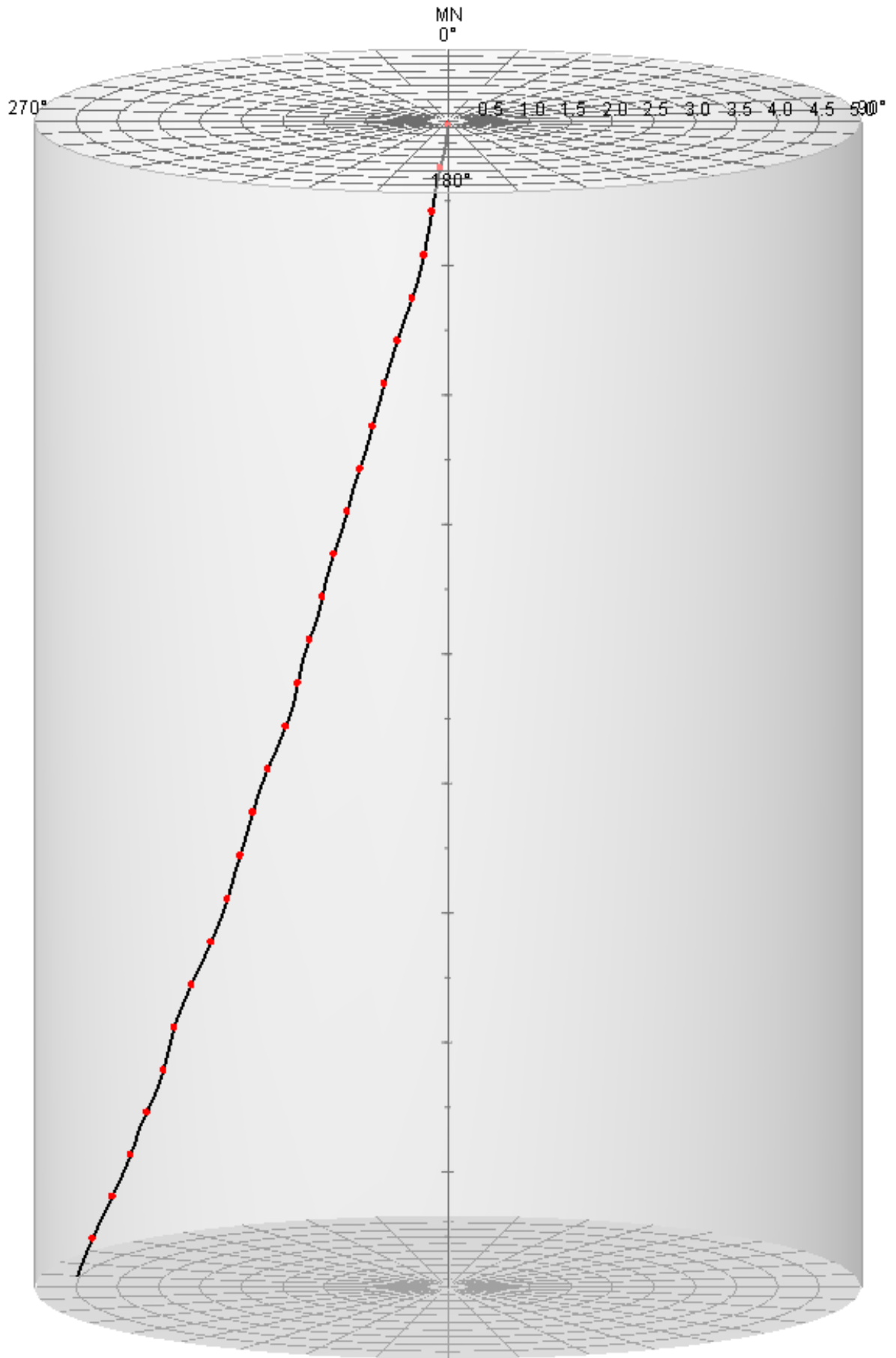
NorthSum = North/South Component of Horizontal Distance from the Wellhead to This Station (Negative = South)
Running Sum of Northing

EastSum = East/West Component of Horizontal Distance from the Wellhead to This Station (Negative = West)
Running Sum of Easting

PTX06-1193



PTX06-1193





borehole geophysics / hydrophysics

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Borehole Deviation

Company SN3
Well PTX06-1192
Project Pantex BOA 70 Rel. 5
County Carson
State Texas

COMPANY SN3
WELL PTX06-1192
PROJECT Pantex BOA 70 Release 5
COUNTY Carson STATE Texas

LOCATION
East of FM-2373 and South of HWY 60
Vance Property

OTHER SERVICES
None

QTR SEC TWP RGE

PERMANENT DATUM Ground Level ELEVATION 3510.23 ft

LOG MEAS. FROM Ground Level 0.0 ft ABOVE PERMANENT DATUM

DRILLING MEAS. FROM Ground Level

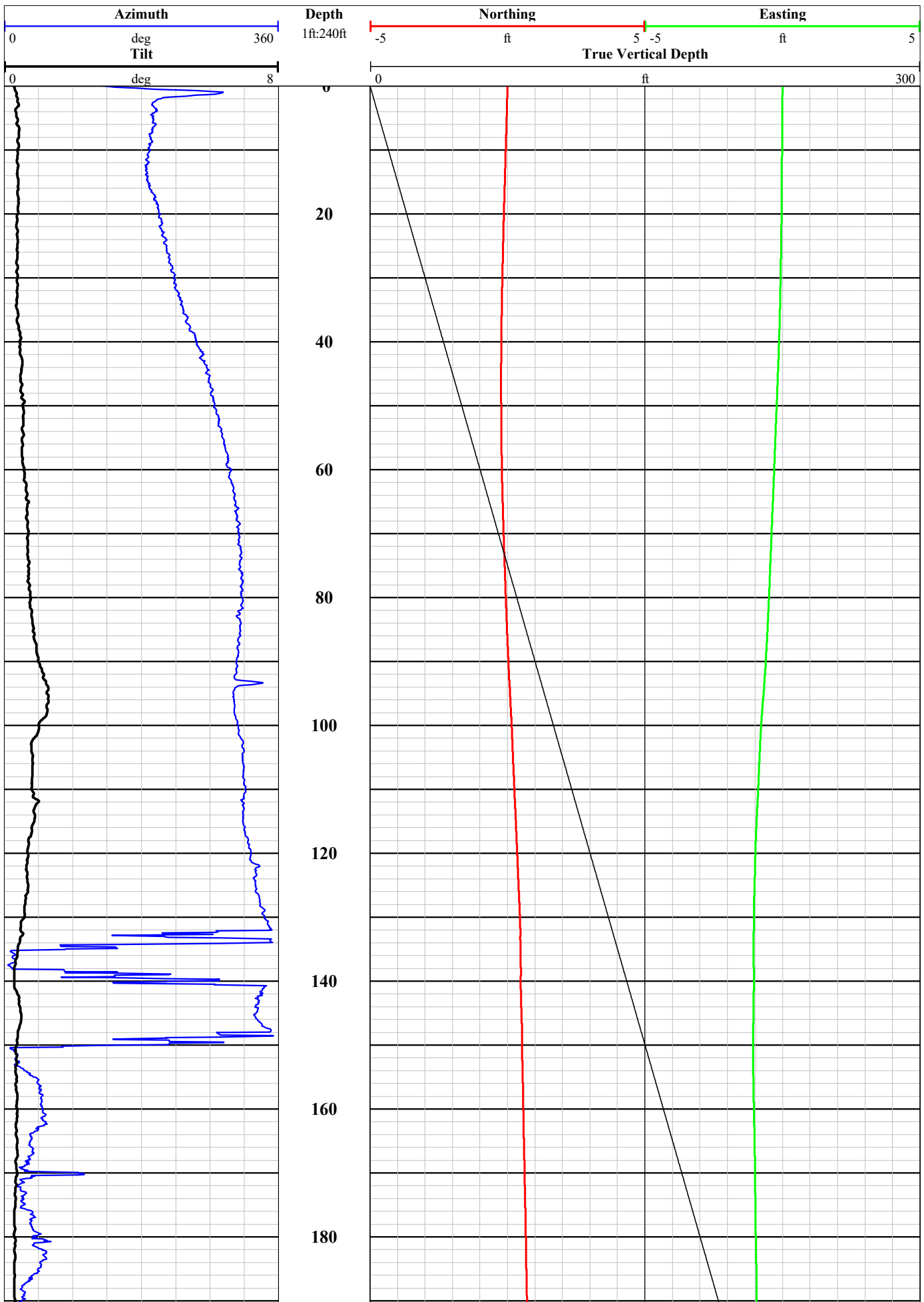
DATE ACQUIRED	6 February 2018	
RUN NUMBER	One	
LOG TYPE	Deviation	
DEPTH-DRILLER	293 ft	
DEPTH-LOGGER	291.9 ft	
BTM LOG INTERVAL	291.9 ft	
TOP LOG INTERVAL	0.0 ft	
RECORDED BY	N. Davis	
WITNESSED BY	R. Rupp	
PROBE TYPE, S/N	QL40-DEV, 112002	
LOGGING SPEED	15 ft/min	
A.S.D.E. / Sample Interval	-0.06 ft / 0.1 ft	
Fluid Level / Fluid Type	AIR	

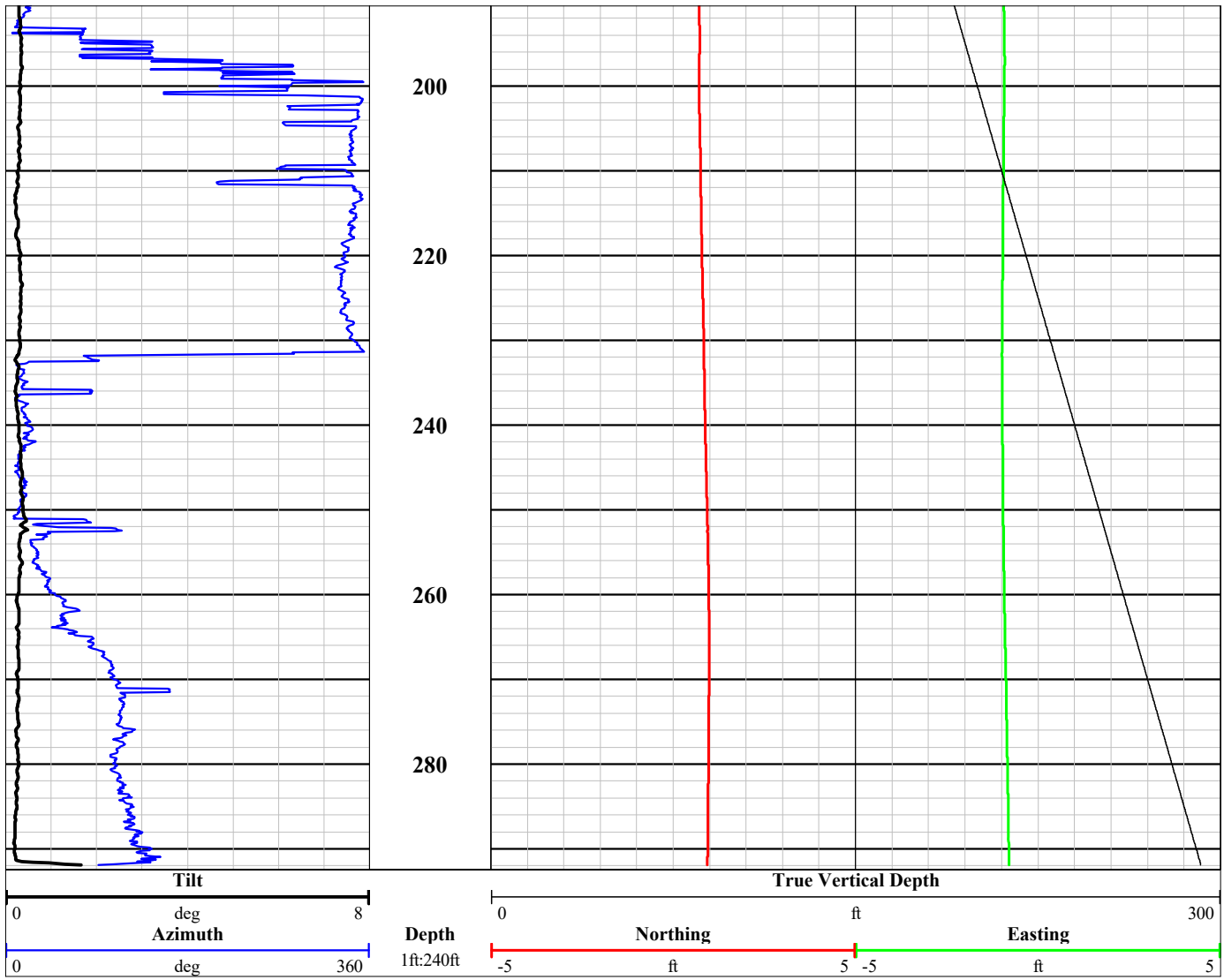
BOREHOLE RECORD				CASING RECORD			
RUN No.	BIT	FROM	TO	SIZE	WGT.	FROM	TO
1	10 in	0 ft	296 ft	4 in casing	Sch 80 PVC	0 ft	272 ft
				4 in screen	Sch 80 PVC	272 ft	292 ft
				4 in sump	Sch 80 PVC	292 ft	293 ft

NA - Not Available, N/A - Not Applicable

COMMENTS

Directions are with respect to Magnetic North.





Deviation Survey for: SN3 Field: Pantex BOA 70 Rel. Date: 6-Feb-2018
 Well: PTX06-1192 Depth Ref.: GL Total Depth: 291.89 Probe Type, S/N: QL-DEV 112002

Depth (feet)	Inclination (degrees)	Bearing (degrees)	ClosureLength (line ft.)	ClosureDist. (horiz. ft.)	ClosureDepth (vertical ft.)	Northing (feet)	Easting (feet)	TrueDepth (feet)	Dist.Sum (feet)	NorthSum (feet)	EastSum (feet)
0.0	0.28	131.96	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5.0	0.38	195.76	5	0.03	5.00	-0.03	-0.01	5.00	0.03	-0.03	-0.01
10.0	0.38	191.72	5	0.03	5.00	-0.03	-0.01	10.00	0.07	-0.06	-0.02
15.0	0.40	188.06	5	0.03	5.00	-0.03	0.00	15.00	0.10	-0.10	-0.02
20.0	0.40	205.42	5	0.03	5.00	-0.03	-0.01	20.00	0.14	-0.13	-0.04
25.0	0.38	213.58	5	0.03	5.00	-0.03	-0.02	25.00	0.17	-0.16	-0.05
30.0	0.38	222.86	5	0.03	5.00	-0.02	-0.02	30.00	0.20	-0.18	-0.08
35.0	0.38	235.24	5	0.03	5.00	-0.02	-0.03	35.00	0.23	-0.20	-0.10
40.0	0.44	253.22	5	0.04	5.00	-0.01	-0.04	40.00	0.25	-0.21	-0.14
45.0	0.48	266.82	5	0.04	5.00	0.00	-0.04	45.00	0.28	-0.21	-0.18
50.0	0.52	275.70	5	0.05	5.00	0.00	-0.05	50.00	0.31	-0.21	-0.23
55.0	0.50	286.88	5	0.04	5.00	0.01	-0.04	55.00	0.33	-0.20	-0.27
60.0	0.54	299.04	5	0.05	5.00	0.02	-0.04	60.00	0.36	-0.17	-0.31
65.0	0.74	303.44	5	0.06	5.00	0.04	-0.05	65.00	0.39	-0.14	-0.36
70.0	0.70	308.26	5	0.06	5.00	0.04	-0.05	70.00	0.42	-0.10	-0.41
75.0	0.68	310.04	5	0.06	5.00	0.04	-0.05	75.00	0.46	-0.06	-0.46
80.0	0.78	312.14	5	0.07	5.00	0.05	-0.05	80.00	0.51	-0.02	-0.51
85.0	0.86	309.24	5	0.08	5.00	0.05	-0.06	85.00	0.57	0.03	-0.57
90.0	0.98	305.08	5	0.09	5.00	0.05	-0.07	90.00	0.64	0.08	-0.64
95.0	1.24	301.18	5	0.11	5.00	0.06	-0.09	94.99	0.74	0.14	-0.73
100.0	1.00	307.14	5	0.09	5.00	0.05	-0.07	99.99	0.82	0.19	-0.80
105.0	0.84	312.84	5	0.07	5.00	0.05	-0.05	104.99	0.88	0.24	-0.85
110.0	0.80	316.52	5	0.07	5.00	0.05	-0.05	109.99	0.95	0.29	-0.90
115.0	0.88	313.42	5	0.08	5.00	0.05	-0.06	114.99	1.02	0.34	-0.96
120.0	0.70	324.12	5	0.06	5.00	0.05	-0.04	119.99	1.07	0.39	-0.99
125.0	0.70	330.18	5	0.06	5.00	0.05	-0.03	124.99	1.11	0.44	-1.02
130.0	0.58	342.36	5	0.05	5.00	0.05	-0.02	129.99	1.15	0.49	-1.04
135.0	0.40	80.36	5	0.03	5.00	0.01	0.03	134.99	1.12	0.50	-1.00
140.0	0.30	214.24	5	0.03	5.00	-0.02	-0.01	139.99	1.12	0.48	-1.02
145.0	0.48	330.16	5	0.04	5.00	0.04	-0.02	144.99	1.16	0.51	-1.04
150.0	0.36	146.42	5	0.03	5.00	-0.03	0.02	149.99	1.13	0.49	-1.02
155.0	0.38	41.82	5	0.03	5.00	0.02	0.02	154.99	1.12	0.51	-1.00
160.0	0.38	49.78	5	0.03	5.00	0.02	0.03	159.99	1.11	0.53	-0.97
165.0	0.38	34.40	5	0.03	5.00	0.03	0.02	164.99	1.11	0.56	-0.96
170.0	0.38	95.78	5	0.03	5.00	0.00	0.03	169.99	1.08	0.56	-0.92
175.0	0.32	25.16	5	0.03	5.00	0.03	0.01	174.99	1.08	0.58	-0.91
180.0	0.30	36.74	5	0.03	5.00	0.02	0.02	179.99	1.08	0.60	-0.89
185.0	0.30	44.30	5	0.03	5.00	0.02	0.02	184.99	1.07	0.62	-0.88
190.0	0.32	22.94	5	0.03	5.00	0.03	0.01	189.99	1.08	0.65	-0.87
195.0	0.34	77.78	5	0.03	5.00	0.01	0.03	194.99	1.06	0.65	-0.84
200.0	0.34	211.34	5	0.03	5.00	-0.03	-0.02	199.99	1.06	0.63	-0.85
205.0	0.26	345.66	5	0.02	5.00	0.02	-0.01	204.99	1.08	0.65	-0.86
210.0	0.26	336.70	5	0.02	5.00	0.02	-0.01	209.99	1.10	0.67	-0.87
215.0	0.22	341.72	5	0.02	5.00	0.02	-0.01	214.99	1.11	0.69	-0.87
220.0	0.34	335.98	5	0.03	5.00	0.03	-0.01	219.99	1.14	0.72	-0.88
225.0	0.36	335.50	5	0.03	5.00	0.03	-0.01	224.99	1.17	0.74	-0.90
230.0	0.30	344.92	5	0.03	5.00	0.03	-0.01	229.99	1.19	0.77	-0.90
235.0	0.26	20.52	5	0.02	5.00	0.02	0.01	234.99	1.20	0.79	-0.90
240.0	0.30	22.08	5	0.03	5.00	0.02	0.01	239.99	1.20	0.82	-0.89
245.0	0.34	13.20	5	0.03	5.00	0.03	0.01	244.99	1.22	0.84	-0.88
250.0	0.36	12.90	5	0.03	5.00	0.03	0.01	249.99	1.24	0.88	-0.87
255.0	0.32	32.42	5	0.03	5.00	0.02	0.01	254.99	1.24	0.90	-0.86
260.0	0.26	47.90	5	0.02	5.00	0.02	0.02	259.99	1.24	0.91	-0.84
265.0	0.30	85.08	5	0.03	5.00	0.00	0.03	264.99	1.23	0.92	-0.81
270.0	0.26	107.10	5	0.02	5.00	-0.01	0.02	269.99	1.21	0.91	-0.79
275.0	0.28	112.72	5	0.02	5.00	-0.01	0.02	274.99	1.18	0.90	-0.77
280.0	0.30	108.24	5	0.03	5.00	-0.01	0.02	279.99	1.16	0.89	-0.75
285.0	0.26	123.34	5	0.02	5.00	-0.01	0.02	284.99	1.14	0.88	-0.73
290.0	0.20	144.36	5	0.02	5.00	-0.01	0.01	289.99	1.12	0.87	-0.72
291.9	0.26	131.14	2	0.01	1.90	-0.01	0.01	291.89	1.11	0.86	-0.71

Totals:			
True Depth	DistSum	NorthSum	EastSum
291.89	1.11	0.86	-0.71

Orientations are with respect to Magnetic North

Deviation Survey for: SN3 **Field:** Pantex BOA 70 Rel. **Date:** 6-Feb-2018
Well: PTX06-1192 **Depth Ref.:** GL **Total Depth:** 291.89 **Probe Type, S/N:** QL-DEV 112002

Definitions

Bearing = Azimuth Degrees from Magnetic North (Raw Data)

ClosureDistance = Horizontal Feet Between Each Station

ClosureDepth = Vertical Feet Between Each Interval

Northing = North/South Component of Horizontal Distance Between Each Station (Negative = South)
(Closure Dist.) x cos(Bearing)

Easting = East/West Component of Horizontal Distance Between Each Station (Negative = West)
(Closure Dist.) x sin(Bearing)

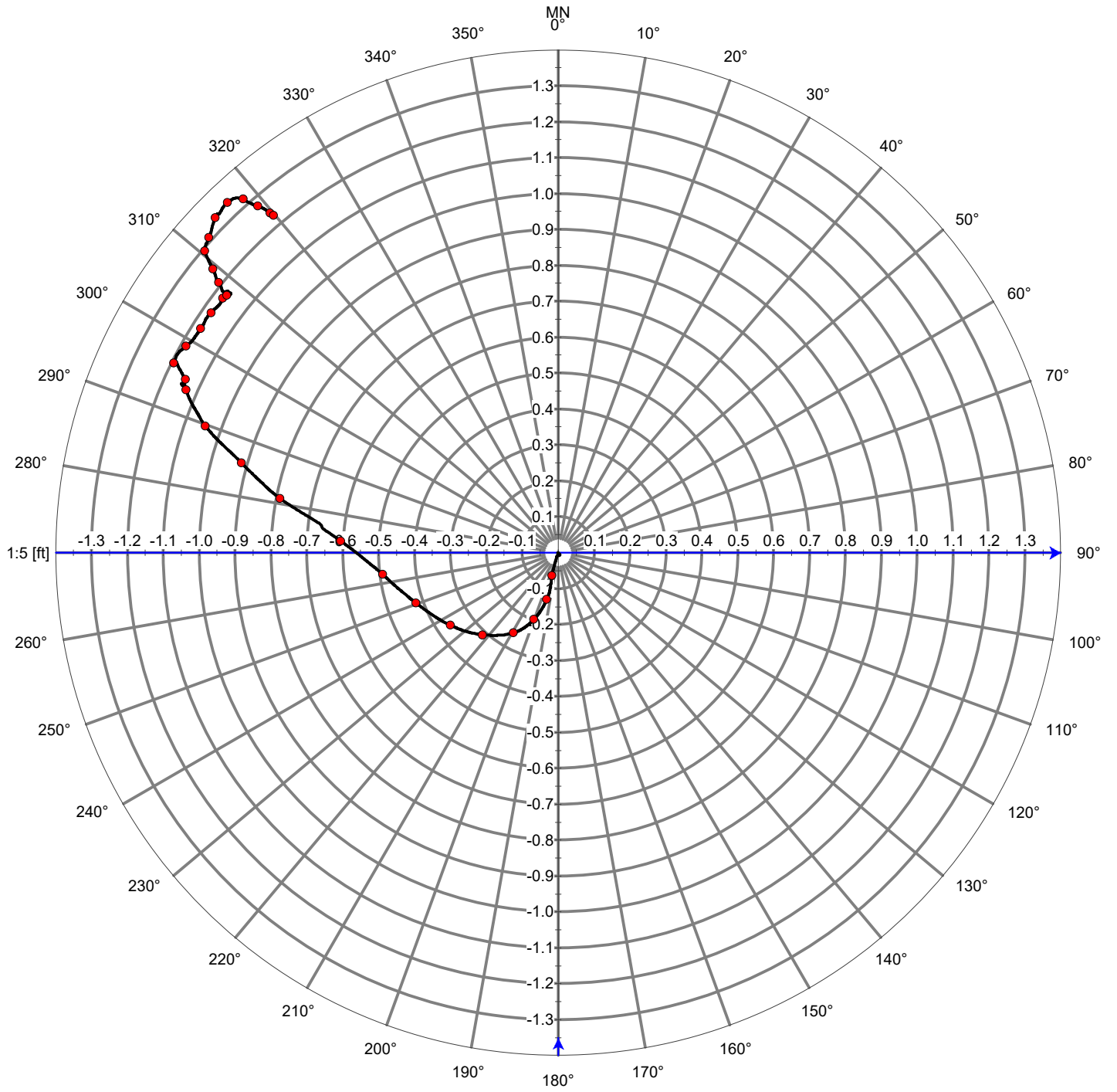
TrueDepth = Vertical Depth from the Surface to This Station

DistanceSum = Horizontal Distance from Wellhead to this Station

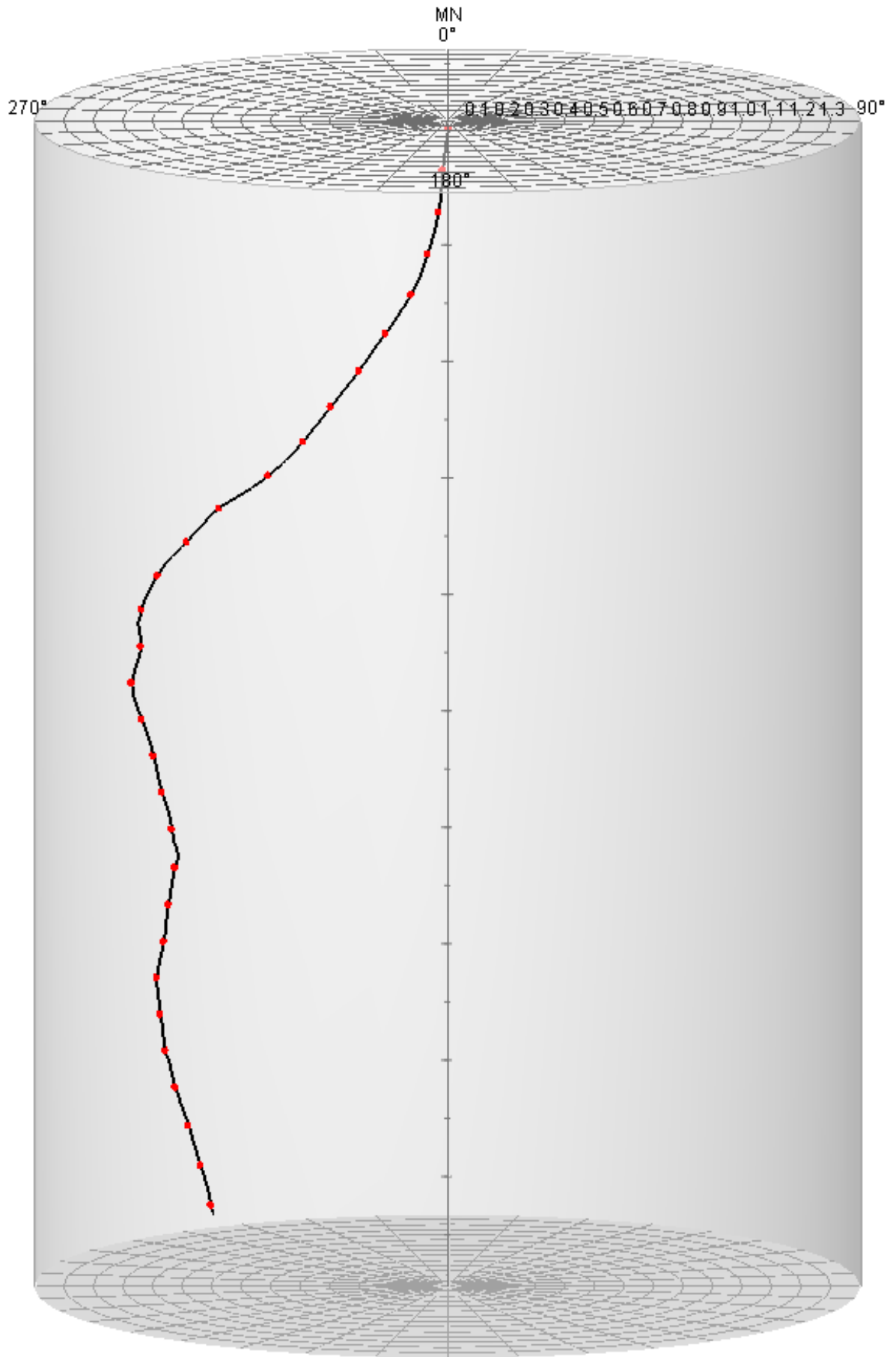
NorthSum = North/South Component of Horizontal Distance from the Wellhead to This Station (Negative = South)
Running Sum of Northing

EastSum = East/West Component of Horizontal Distance from the Wellhead to This Station (Negative = West)
Running Sum of Easting

PTX06-1192



PTX06-1192





borehole geophysics / hydrophysics

810 Quail Street
Suite E
Lakewood, Colorado
80215
Office: 303.279.0171
Fax: 303.278.0135
www.colog.com

Borehole Deviation

Company SN3
Well PTX06-1191
Project Pantex BOA 70 Rel. 5
County Carson
State Texas

COMPANY SN3
WELL PTX06-1191
PROJECT Pantex BOA 70 Release 5
COUNTY Carson STATE Texas

LOCATION
East of FM-2373 and South of HWY 60
Vance Property

OTHER SERVICES
None

QTR SEC TWP RGE

PERMANENT DATUM Ground Level ELEVATION 3513.02 ft

LOG MEAS. FROM Ground Level 0.0 ft ABOVE PERMANENT DATUM

DRILLING MEAS. FROM Ground Level

DATE ACQUIRED	6 February 2018
RUN NUMBER	One
LOG TYPE	Deviation
DEPTH-DRILLER	292 ft
DEPTH-LOGGER	290.7 ft
BTM LOG INTERVAL	290.7 ft
TOP LOG INTERVAL	0.0 ft
RECORDED BY	N. Davis
WITNESSED BY	R. Rupp
PROBE TYPE, S/N	QL40-DEV, 112002
LOGGING SPEED	15 ft/min
A.S.D.E. / Sample Interval	-1.1 ft / 0.1 ft
Fluid Level / Fluid Type	AIR

BOREHOLE RECORD

RUN No.	BIT	FROM	TO	SIZE	WGT.	FROM	TO
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1	10 in	0 ft	295 ft	4 in casing	Sch 80 PVC	0 ft	276 ft
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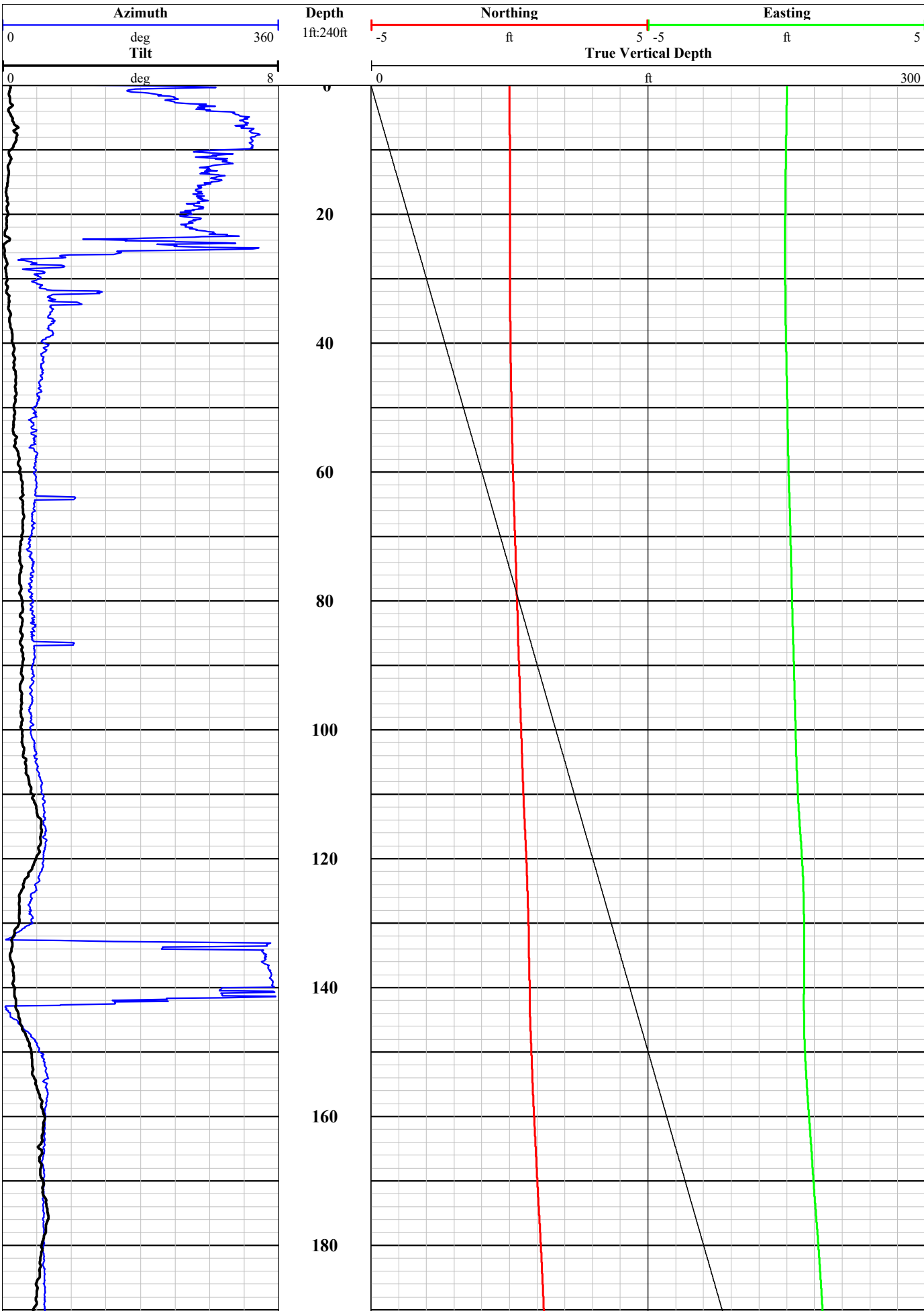
				4 in screen	Sch 80 PVC	276 ft	291 ft
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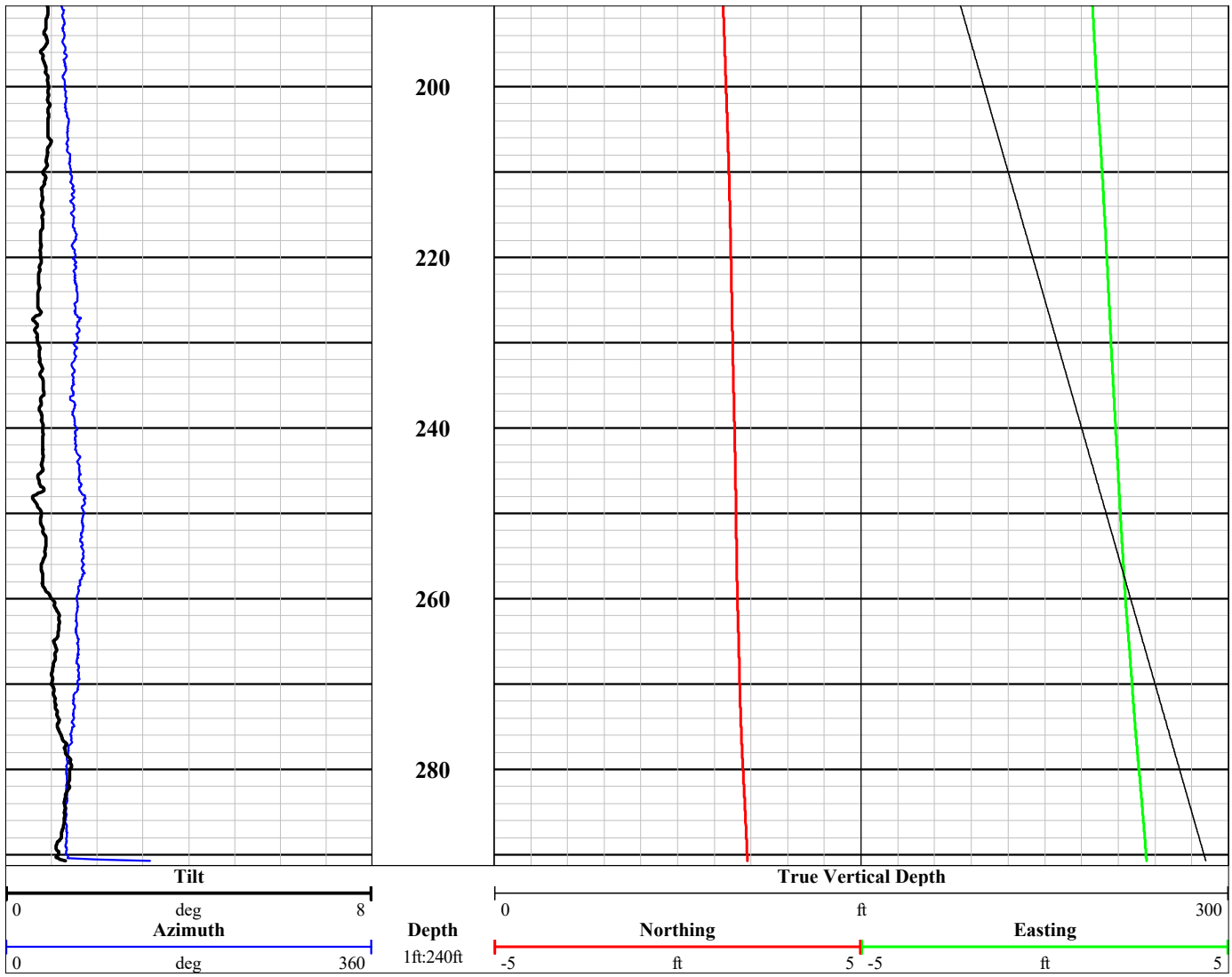
				4 in sump	Sch 80 PVC	291 ft	292 ft
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NA - Not Available, N/A - Not Applicable

COMMENTS

Directions are with respect to Magnetic North.





Deviation Survey for: SN3 Field: Pantex BOA 70 Rel. Date: 6-Feb-2018
 Well: PTX06-1191 Depth Ref.: GL Total Depth: 290.67 Probe Type, S/N: QL-DEV 112002

Depth (feet)	Inclination (degrees)	Bearing (degrees)	ClosureLength (line ft.)	ClosureDist. (horiz. ft.)	ClosureDepth (vertical ft.)	Northing (feet)	Easting (feet)	TrueDepth (feet)	Dist.Sum (feet)	NorthSum (feet)	EastSum (feet)
0.0	0.22	153.12	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5.0	0.30	319.12	5	0.03	5.00	0.02	-0.02	5.00	0.03	0.02	-0.02
10.0	0.24	282.74	5	0.02	5.00	0.00	-0.02	10.00	0.04	0.02	-0.04
15.0	0.16	272.66	5	0.01	5.00	0.00	-0.01	15.00	0.06	0.03	-0.05
20.0	0.18	247.30	5	0.02	5.00	-0.01	-0.01	20.00	0.07	0.02	-0.07
25.0	0.04	224.24	5	0.00	5.00	0.00	0.00	25.00	0.07	0.02	-0.07
30.0	0.14	48.60	5	0.01	5.00	0.01	0.01	30.00	0.06	0.02	-0.06
35.0	0.20	64.76	5	0.02	5.00	0.01	0.02	35.00	0.05	0.03	-0.04
40.0	0.30	55.60	5	0.03	5.00	0.01	0.02	40.00	0.05	0.05	-0.02
45.0	0.40	49.74	5	0.03	5.00	0.02	0.03	45.00	0.07	0.07	0.00
50.0	0.34	40.54	5	0.03	5.00	0.02	0.02	50.00	0.10	0.09	0.02
55.0	0.36	41.14	5	0.03	5.00	0.02	0.02	55.00	0.12	0.12	0.04
60.0	0.48	41.16	5	0.04	5.00	0.03	0.03	60.00	0.16	0.15	0.07
65.0	0.60	41.48	5	0.05	5.00	0.04	0.03	65.00	0.21	0.19	0.11
70.0	0.54	36.46	5	0.05	5.00	0.04	0.03	70.00	0.26	0.22	0.13
75.0	0.54	38.40	5	0.05	5.00	0.04	0.03	75.00	0.31	0.26	0.16
80.0	0.58	40.82	5	0.05	5.00	0.04	0.03	80.00	0.36	0.30	0.20
85.0	0.58	39.20	5	0.05	5.00	0.04	0.03	85.00	0.41	0.34	0.23
90.0	0.58	39.64	5	0.05	5.00	0.04	0.03	90.00	0.46	0.38	0.26
95.0	0.58	39.74	5	0.05	5.00	0.04	0.03	95.00	0.51	0.42	0.29
100.0	0.58	37.54	5	0.05	5.00	0.04	0.03	100.00	0.56	0.46	0.32
105.0	0.66	43.02	5	0.06	5.00	0.04	0.04	105.00	0.62	0.50	0.36
110.0	0.90	52.60	5	0.08	5.00	0.05	0.06	110.00	0.69	0.55	0.43
115.0	1.12	56.30	5	0.10	5.00	0.05	0.08	115.00	0.79	0.60	0.51
120.0	0.98	53.74	5	0.09	5.00	0.05	0.07	119.99	0.87	0.65	0.58
125.0	0.54	43.70	5	0.05	5.00	0.03	0.03	124.99	0.92	0.69	0.61
130.0	0.48	39.46	5	0.04	5.00	0.03	0.03	129.99	0.96	0.72	0.64
135.0	0.20	342.44	5	0.02	5.00	0.02	-0.01	134.99	0.97	0.73	0.63
140.0	0.38	285.86	5	0.03	5.00	0.01	-0.03	139.99	0.95	0.74	0.60
145.0	0.52	16.96	5	0.05	5.00	0.04	0.01	144.99	1.00	0.79	0.61
150.0	0.82	48.84	5	0.07	5.00	0.05	0.05	149.99	1.07	0.83	0.67
155.0	0.96	58.24	5	0.08	5.00	0.04	0.07	154.99	1.15	0.88	0.74
160.0	1.22	56.60	5	0.11	5.00	0.06	0.09	159.99	1.25	0.94	0.83
165.0	1.12	54.58	5	0.10	5.00	0.06	0.08	164.99	1.34	0.99	0.91
170.0	1.20	53.94	5	0.10	5.00	0.06	0.08	169.99	1.45	1.05	0.99
175.0	1.32	53.94	5	0.12	5.00	0.07	0.09	174.99	1.56	1.12	1.08
180.0	1.14	54.26	5	0.10	5.00	0.06	0.08	179.99	1.66	1.18	1.16
185.0	1.08	55.10	5	0.09	5.00	0.05	0.08	184.99	1.75	1.23	1.24
190.0	0.90	55.66	5	0.08	5.00	0.04	0.06	189.99	1.83	1.28	1.31
195.0	0.90	56.74	5	0.08	5.00	0.04	0.07	194.99	1.91	1.32	1.37
200.0	0.94	58.20	5	0.08	5.00	0.04	0.07	199.98	1.99	1.37	1.44
205.0	0.92	60.90	5	0.08	5.00	0.04	0.07	204.98	2.06	1.40	1.51
210.0	0.80	63.78	5	0.07	5.00	0.03	0.06	209.98	2.13	1.44	1.57
215.0	0.80	65.40	5	0.07	5.00	0.03	0.06	214.98	2.20	1.46	1.64
220.0	0.76	66.78	5	0.07	5.00	0.03	0.06	219.98	2.26	1.49	1.70
225.0	0.70	70.60	5	0.06	5.00	0.02	0.06	224.98	2.32	1.51	1.76
230.0	0.70	68.16	5	0.06	5.00	0.02	0.06	229.98	2.37	1.53	1.81
235.0	0.82	65.64	5	0.07	5.00	0.03	0.07	234.98	2.44	1.56	1.88
240.0	0.80	69.70	5	0.07	5.00	0.02	0.07	239.98	2.51	1.59	1.94
245.0	0.82	72.48	5	0.07	5.00	0.02	0.07	244.98	2.58	1.61	2.01
250.0	0.78	76.72	5	0.07	5.00	0.02	0.07	249.98	2.64	1.62	2.08
255.0	0.86	76.42	5	0.08	5.00	0.02	0.07	254.98	2.71	1.64	2.15
260.0	1.00	69.98	5	0.09	5.00	0.03	0.08	259.98	2.79	1.67	2.23
265.0	1.04	71.32	5	0.09	5.00	0.03	0.09	264.98	2.88	1.70	2.32
270.0	1.00	71.18	5	0.09	5.00	0.03	0.08	269.98	2.96	1.73	2.40
275.0	1.12	67.40	5	0.10	5.00	0.04	0.09	274.98	3.05	1.77	2.49
280.0	1.40	59.88	5	0.12	5.00	0.06	0.11	279.97	3.18	1.83	2.60
285.0	1.28	59.14	5	0.11	5.00	0.06	0.10	284.97	3.29	1.89	2.69
290.0	1.14	59.82	5	0.10	5.00	0.05	0.09	289.97	3.39	1.94	2.78
290.7	1.36	60.74	1	0.02	0.70	0.01	0.01	290.67	3.40	1.94	2.79

Totals:			
True Depth	DistSum	NorthSum	EastSum
290.67	3.40	1.94	2.79

Orientations are with respect to Magnetic North

Deviation Survey for: SN3 **Field:** Pantex BOA 70 Rel. **Date:** 6-Feb-2018
Well: PTX06-1191 **Depth Ref.:** GL **Total Depth:** 290.67 **Probe Type, S/N:** QL-DEV 112002

Definitions

Bearing = Azimuth Degrees from Magnetic North (Raw Data)

ClosureDistance = Horizontal Feet Between Each Station

ClosureDepth = Vertical Feet Between Each Interval

Northing = North/South Component of Horizontal Distance Between Each Station (Negative = South)
(Closure Dist.) x cos(Bearing)

Easting = East/West Component of Horizontal Distance Between Each Station (Negative = West)
(Closure Dist.) x sin(Bearing)

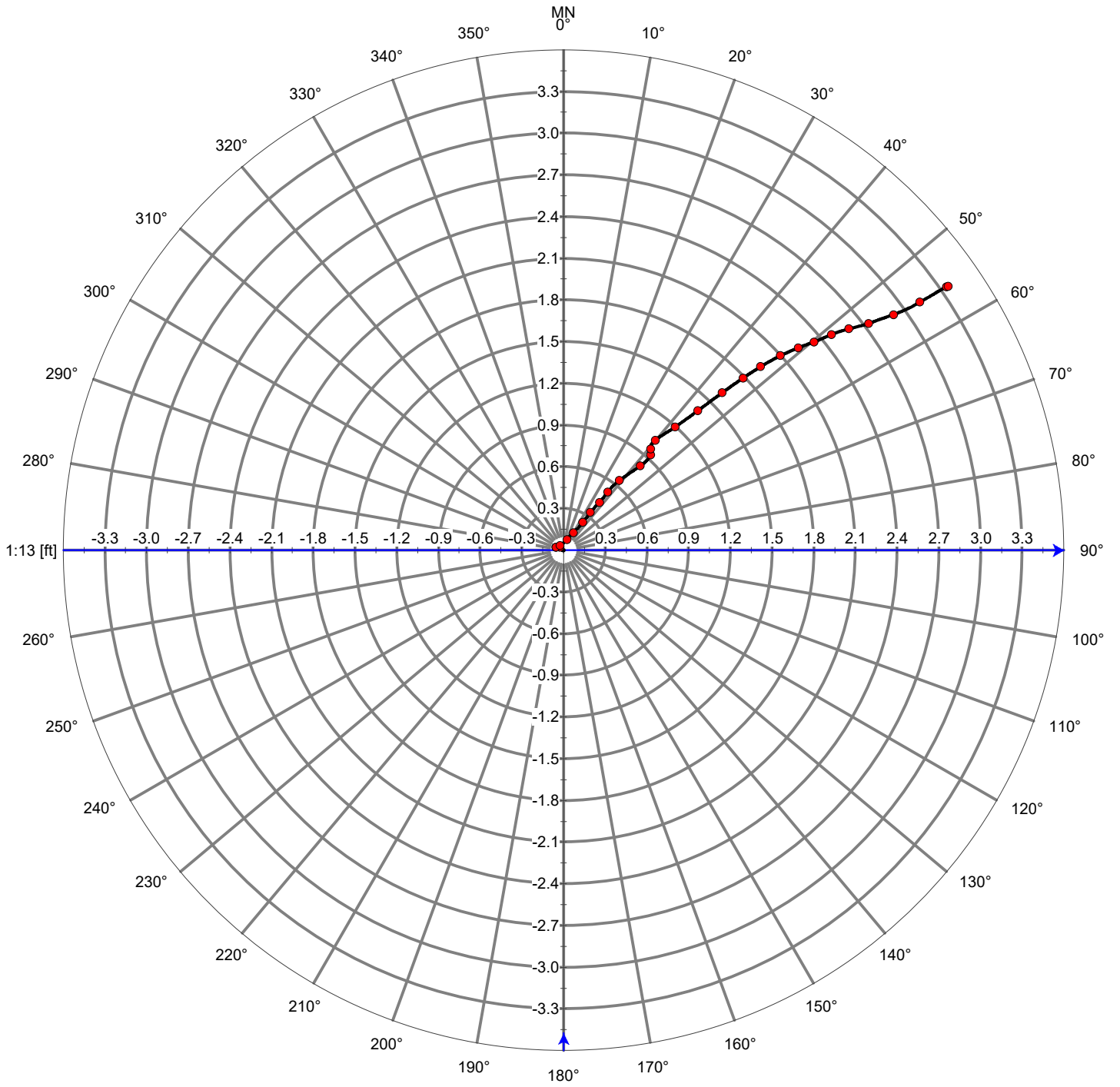
TrueDepth = Vertical Depth from the Surface to This Station

DistanceSum = Horizontal Distance from Wellhead to this Station

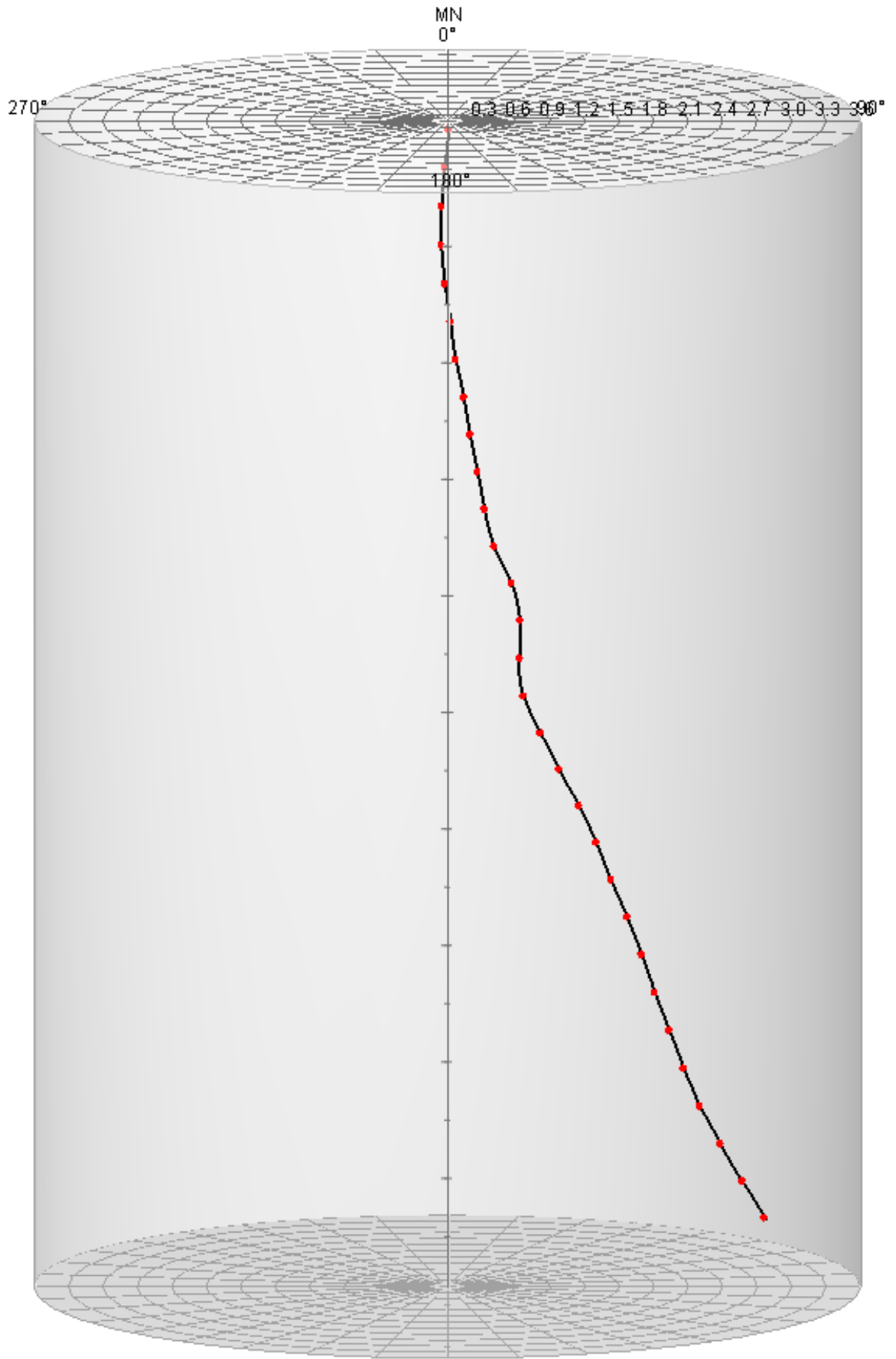
NorthSum = North/South Component of Horizontal Distance from the Wellhead to This Station (Negative = South)
Running Sum of Northing

EastSum = East/West Component of Horizontal Distance from the Wellhead to This Station (Negative = West)
Running Sum of Easting

PTX06-1191



PTX06-1191





borehole geophysics / hydrophysics

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80215
Office: 303.279.0171
Fax: 303.278.0135
www.colog.com

Borehole Deviation

Company SN3
Well PTX06-1190
Project Pantex BOA 70 Rel. 5
County Carson
State Texas

COMPANY SN3
WELL PTX06-1190
PROJECT Pantex BOA 70 Release 5
COUNTY Carson
STATE Texas

LOCATION
East of FM-2373 and South of CR-8
Southeast ISB Extension Wellfield

OTHER SERVICES
None

PERMANENT DATUM Ground Level **ELEVATION** 3516.35 ft

LOG MEAS. FROM Ground Level 0.0 ft **ABOVE PERMANENT DATUM**

DRILLING MEAS. FROM Ground Level

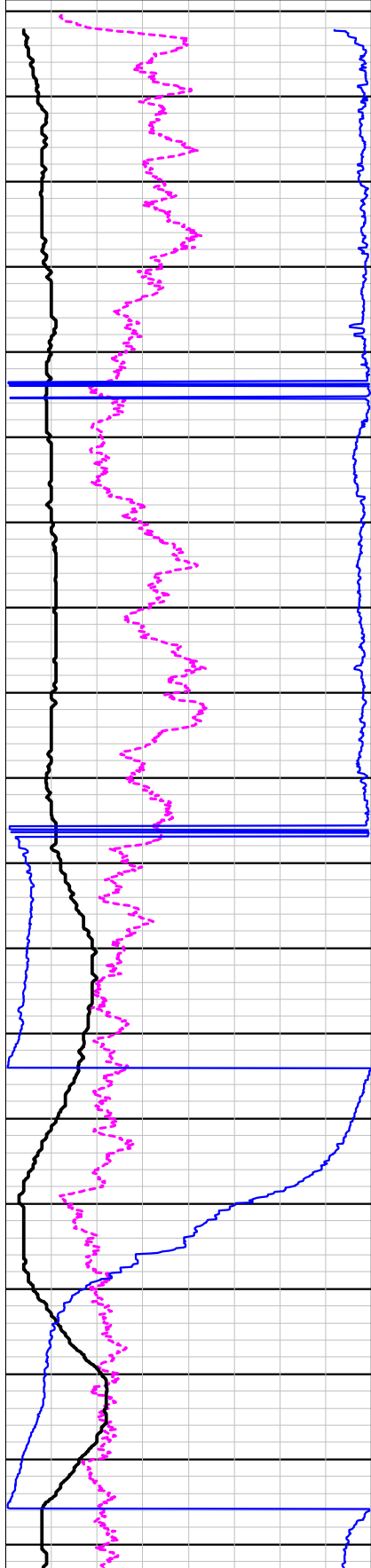
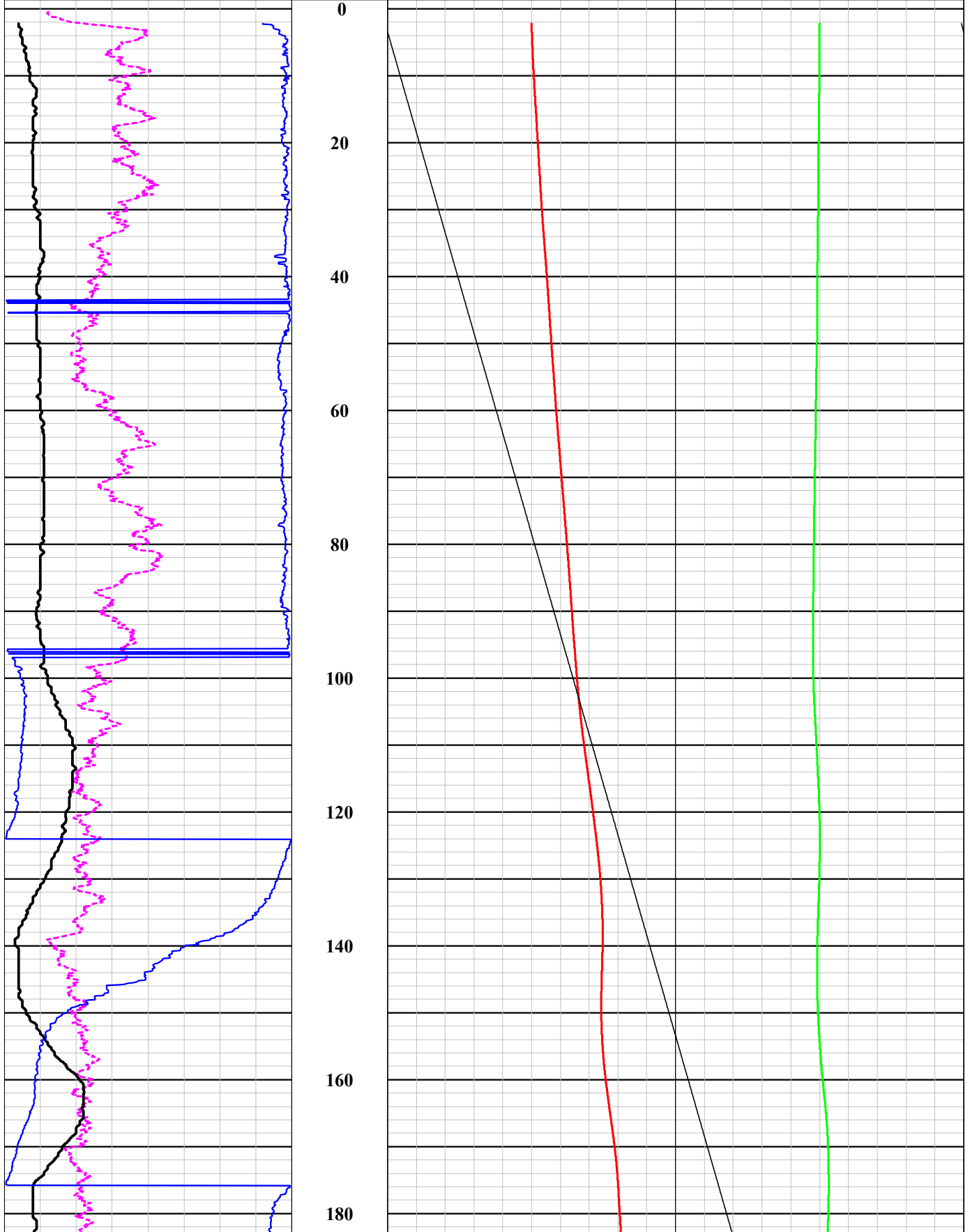
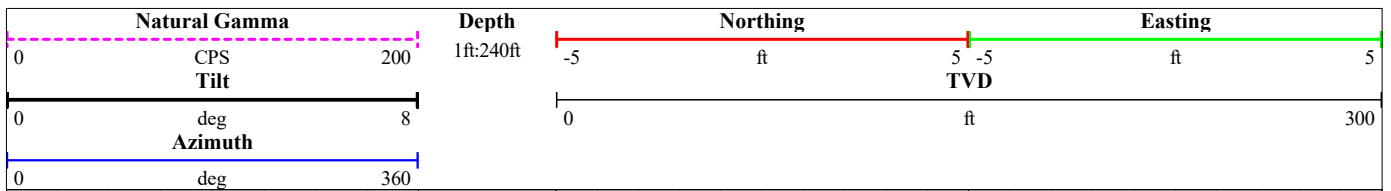
DATE ACQUIRED	19 December 2017
RUN NUMBER	One
LOG TYPE	Deviation
DEPTH-DRILLER	287 ft
DEPTH-LOGGER	286.2 ft
BTM LOG INTERVAL	286.2 ft
TOP LOG INTERVAL	2.2 ft
RECORDED BY	N. Davis
WITNESSED BY	R. Rupp
PROBE TYPE, S/N	QL40-DEV, 112002
LOGGING SPEED	20 ft/min
A.S.D.E. / Sample Interval	0.14 ft / 0.1 ft
Fluid Level / Fluid Type	Air

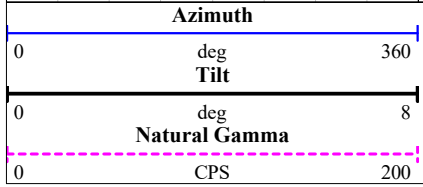
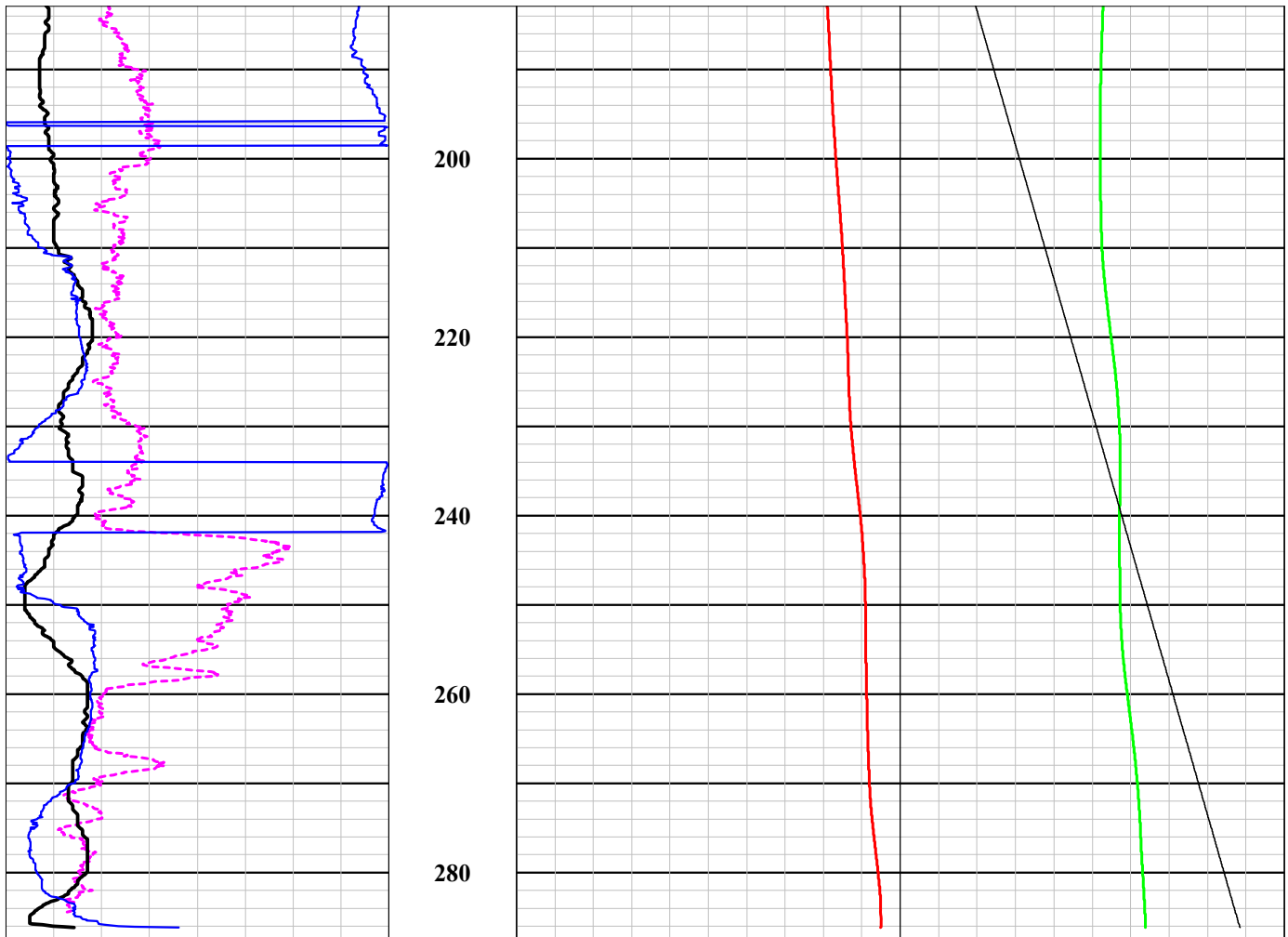
BOREHOLE RECORD		CASING RECORD					
RUN No.	BIT	FROM	TO	SIZE	WGT.	FROM	TO
1	10 in	0 ft	287 ft	4 in casing	sch 80 PVC	0 ft	276 ft
				4 in screen	sch 80 PVC	276 ft	286 ft
				4 in sump	sch 80 PVC	286 ft	287 ft

NA - Not Available, N/A - Not Applicable

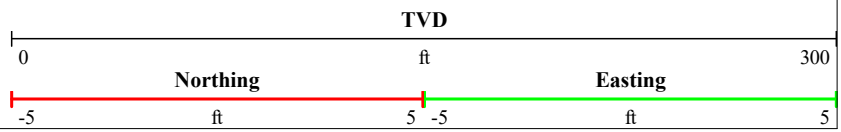
COMMENTS

Directions are with respect to Magnetic North.





Depth
1ft:240ft



Deviation Survey for: SN3 Field: Pantex BOA 70 Rel. Date: 19-Dec-2017
 Well: PTX06-1190 Depth Ref.: GL Total Depth: 286.14 Probe Type, S/N: QL-DEV 112002

Depth (feet)	Inclination (degrees)	Bearing (degrees)	ClosureLength (line ft.)	ClosureDist. (horiz. ft.)	ClosureDepth (vertical ft.)	Northing (feet)	Easting (feet)	TrueDepth (feet)	Dist.Sum (feet)	NorthSum (feet)	EastSum (feet)
0.0	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5.0	0.50	354.30	5	0.04	5.00	0.04	0.00	5.00	0.04	0.04	0.00
10.0	0.70	352.80	5	0.06	5.00	0.06	-0.01	10.00	0.10	0.10	-0.01
15.0	0.90	351.20	5	0.08	5.00	0.08	-0.01	15.00	0.18	0.18	-0.02
20.0	0.80	348.30	5	0.07	5.00	0.07	-0.01	20.00	0.25	0.25	-0.04
25.0	0.80	352.80	5	0.07	5.00	0.07	-0.01	25.00	0.32	0.32	-0.05
30.0	0.90	354.20	5	0.08	5.00	0.08	-0.01	30.00	0.40	0.40	-0.05
35.0	1.00	352.60	5	0.09	5.00	0.09	-0.01	35.00	0.49	0.48	-0.07
40.0	1.00	354.40	5	0.09	5.00	0.09	-0.01	40.00	0.58	0.57	-0.07
45.0	0.90	357.50	5	0.08	5.00	0.08	0.00	45.00	0.65	0.65	-0.08
50.0	1.00	346.30	5	0.09	5.00	0.08	-0.02	49.99	0.74	0.73	-0.10
55.0	1.00	343.50	5	0.09	5.00	0.08	-0.02	54.99	0.83	0.82	-0.12
60.0	1.00	349.90	5	0.09	5.00	0.09	-0.02	59.99	0.91	0.90	-0.14
65.0	1.10	346.50	5	0.10	5.00	0.09	-0.02	64.99	1.01	1.00	-0.16
70.0	1.10	348.50	5	0.10	5.00	0.09	-0.02	69.99	1.11	1.09	-0.18
75.0	1.10	350.60	5	0.10	5.00	0.09	-0.02	74.99	1.20	1.19	-0.20
80.0	1.00	352.20	5	0.09	5.00	0.09	-0.01	79.99	1.29	1.27	-0.21
85.0	1.00	351.90	5	0.09	5.00	0.09	-0.01	84.99	1.38	1.36	-0.22
90.0	0.90	354.60	5	0.08	5.00	0.08	-0.01	89.99	1.45	1.44	-0.23
95.0	1.00	356.40	5	0.09	5.00	0.09	-0.01	94.99	1.54	1.52	-0.23
100.0	1.20	19.00	5	0.10	5.00	0.10	0.03	99.99	1.63	1.62	-0.20
105.0	1.60	24.80	5	0.14	5.00	0.13	0.06	104.98	1.76	1.75	-0.14
110.0	1.90	20.50	5	0.17	5.00	0.16	0.06	109.98	1.91	1.90	-0.08
115.0	1.90	17.70	5	0.17	5.00	0.16	0.05	114.98	2.06	2.06	-0.03
120.0	1.70	14.20	5	0.15	5.00	0.14	0.04	119.98	2.21	2.21	0.00
125.0	1.60	356.90	5	0.14	5.00	0.14	-0.01	124.97	2.35	2.35	0.00
130.0	1.10	342.40	5	0.10	5.00	0.09	-0.03	129.97	2.44	2.44	-0.03
135.0	0.70	313.90	5	0.06	5.00	0.04	-0.04	134.97	2.48	2.48	-0.08
140.0	0.30	226.50	5	0.03	5.00	-0.02	-0.02	139.97	2.46	2.46	-0.10
145.0	0.40	176.90	5	0.03	5.00	-0.03	0.00	144.97	2.43	2.43	-0.09
150.0	0.60	78.10	5	0.05	5.00	0.01	0.05	149.97	2.44	2.44	-0.04
155.0	1.30	44.30	5	0.11	5.00	0.08	0.08	154.97	2.52	2.52	0.04
160.0	2.10	39.40	5	0.18	5.00	0.14	0.12	159.97	2.66	2.66	0.15
165.0	2.20	32.70	5	0.19	5.00	0.16	0.10	164.96	2.83	2.82	0.26
170.0	1.60	16.20	5	0.14	5.00	0.13	0.04	169.96	2.97	2.96	0.30
175.0	0.90	4.40	5	0.08	5.00	0.08	0.01	174.96	3.05	3.03	0.30
180.0	0.80	335.80	5	0.07	5.00	0.06	-0.03	179.96	3.11	3.10	0.27
185.0	0.90	328.80	5	0.08	5.00	0.07	-0.04	184.96	3.17	3.17	0.23
190.0	0.70	337.00	5	0.06	5.00	0.06	-0.02	189.96	3.23	3.22	0.21
195.0	0.90	353.50	5	0.08	5.00	0.08	-0.01	194.96	3.31	3.30	0.20
200.0	0.90	2.10	5	0.08	5.00	0.08	0.00	199.96	3.38	3.38	0.20
205.0	1.10	6.10	5	0.10	5.00	0.10	0.01	204.96	3.48	3.47	0.21
210.0	1.10	34.30	5	0.10	5.00	0.08	0.05	209.96	3.56	3.55	0.27
215.0	1.60	61.60	5	0.14	5.00	0.07	0.12	214.96	3.64	3.62	0.39
220.0	1.80	69.10	5	0.16	5.00	0.06	0.15	219.95	3.71	3.68	0.54
225.0	1.30	70.80	5	0.11	5.00	0.04	0.11	224.95	3.77	3.71	0.64
230.0	1.10	31.00	5	0.10	5.00	0.08	0.05	229.95	3.86	3.79	0.69
235.0	1.40	357.00	5	0.12	5.00	0.12	-0.01	234.95	3.98	3.92	0.69
240.0	1.50	345.30	5	0.13	5.00	0.13	-0.03	239.95	4.10	4.04	0.65
245.0	0.80	16.10	5	0.07	5.00	0.07	0.02	244.95	4.17	4.11	0.67
250.0	0.40	51.60	5	0.03	5.00	0.02	0.03	249.95	4.19	4.13	0.70
255.0	1.10	80.70	5	0.10	5.00	0.02	0.09	254.95	4.22	4.15	0.80
260.0	1.70	79.20	5	0.15	5.00	0.03	0.15	259.94	4.28	4.18	0.94
265.0	1.60	74.20	5	0.14	5.00	0.04	0.13	264.94	4.35	4.21	1.08
270.0	1.40	65.20	5	0.12	5.00	0.05	0.11	269.94	4.43	4.26	1.19
275.0	1.50	23.10	5	0.13	5.00	0.12	0.05	274.94	4.56	4.39	1.24
280.0	1.70	28.80	5	0.15	5.00	0.13	0.07	279.94	4.70	4.52	1.31
285.0	0.50	70.50	5	0.04	5.00	0.01	0.04	284.94	4.73	4.53	1.35
286.2	0.70	92.40	1	0.01	1.20	0.00	0.01	286.14	4.73	4.53	1.36

Totals:			
True Depth	DistSum	NorthSum	EastSum
286.14	4.73	4.53	1.36

Orientations are with respect to Magnetic North

Deviation Survey for: SN3 **Field:** Pantex BOA 70 Rel. **Date:** 19-Dec-2017
Well: PTX06-1190 **Depth Ref.:** GL **Total Depth:** 286.14 **Probe Type, S/N:** QL-DEV 112002

Definitions

Bearing = Azimuth Degrees from Magnetic North (Raw Data)

ClosureDistance = Horizontal Feet Between Each Station

ClosureDepth = Vertical Feet Between Each Interval

Northing = North/South Component of Horizontal Distance Between Each Station (Negative = South)
(Closure Dist.) x cos(Bearing)

Easting = East/West Component of Horizontal Distance Between Each Station (Negative = West)
(Closure Dist.) x sin(Bearing)

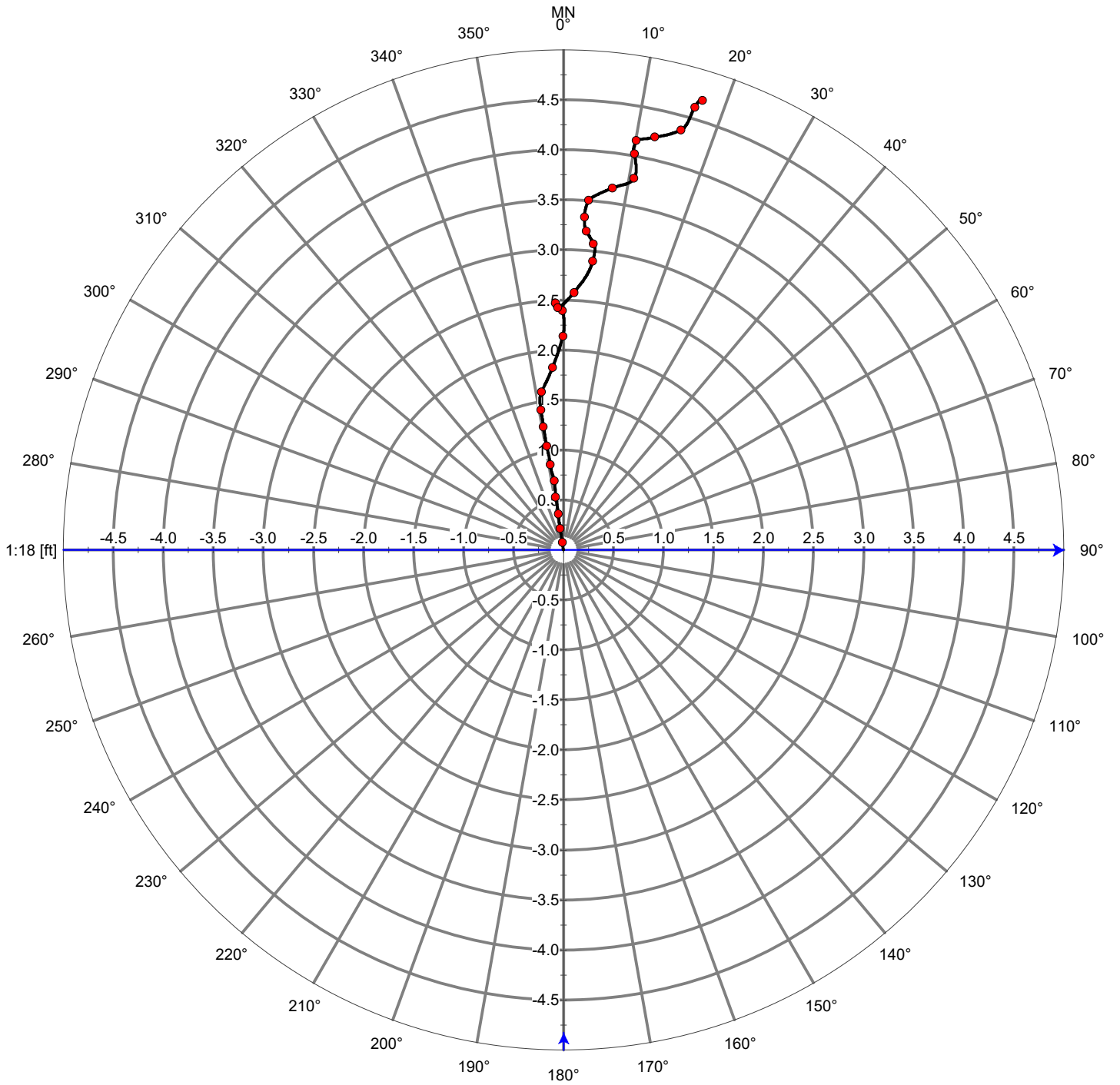
TrueDepth = Vertical Depth from the Surface to This Station

DistanceSum = Horizontal Distance from Wellhead to this Station

NorthSum = North/South Component of Horizontal Distance from the Wellhead to This Station (Negative = South)
Running Sum of Northing

EastSum = East/West Component of Horizontal Distance from the Wellhead to This Station (Negative = West)
Running Sum of Easting

PTX06-1190



PTX06-1190



Appendix F

Survey Data



Davis Geomatics, LLC

Professional Geomatic Consultants

J.D. Davis, RPLS, CFedS

Licensed State Land Surveyors

Texas Professional Surveying Firm No. 100828-00

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Certified Federal Surveyors

SN3

Pantex plant monitor well locations

11/30/2017

POINT DESCRIPTION	LATITUDE	LONGITUDE	NORTHING	EASTING	ELEVATION	CASING ELEVATION
PTX06-ISB114	35°17'29.10"	-101°31'39.92"	3750862.53	647894.07	3514.70	
PTX06-ISB114_TOC	35°17'29.10"	-101°31'39.92"	3750861.86	647894.39		3516.72
PTX06-ISB115	35°17'29.36"	-101°31'39.08"	3750888.51	647964.07	3514.84	
PTX06-ISB115_TOC	35°17'29.35"	-101°31'39.07"	3750887.89	647964.48		3516.79
PTX06-ISB116	35°17'29.62"	-101°31'38.22"	3750914.87	648034.69	3514.80	
PTX06-ISB116 TOC	35°17'29.62"	-101°31'38.22"	3750914.40	648035.04		3516.79
PTX06-ISB117	35°17'29.88"	-101°31'37.37"	3750940.93	648105.30	3514.84	
PTX06-ISB117 TOC	35°17'29.87"	-101°31'37.37"	3750940.33	648105.50		3516.78
PTX06-ISB118	35°17'30.14"	-101°31'36.52"	3750967.12	648175.64	3514.86	
PTX06-ISB118 TOC	35°17'30.13"	-101°31'36.52"	3750966.35	648176.06		3516.81
PTX06-ISB119	35°17'30.40"	-101°31'35.68"	3750993.50	648245.97	3514.83	
PTX06-ISB119 TOC	35°17'30.39"	-101°31'35.67"	3750992.74	648246.40		3516.75
PTX06-1190	35°17'34.81"	-101°31'35.25"	3751439.44	648281.22	3516.35	
PTX06-1190 TOC	35°17'34.80"	-101°31'35.25"	3751438.53	648281.30		3518.48
PTX06-ISB123	35°17'31.44"	-101°31'32.28"	3751098.16	648527.50	3515.06	
PTX06-ISB123 TOC	35°17'31.43"	-101°31'32.28"	3751097.41	648527.78		3517.30
PTX06-ISB126	35°17'32.21"	-101°31'29.73"	3751176.87	648738.78	3515.03	
PTX06-ISB126 TOC	35°17'32.21"	-101°31'29.73"	3751176.13	648739.09		3517.09
PTX06-ISB129	35°17'32.99"	-101°31'27.18"	3751255.41	648950.08	3515.12	
PTX06-ISB129 TOC	35°17'32.98"	-101°31'27.18"	3751254.57	648950.50		3517.13
PTX06-ISB130	35°17'33.26"	-101°31'26.33"	3751282.05	649020.47	3515.23	
PTX06-ISB130 TOC	35°17'33.25"	-101°31'26.33"	3751281.24	649020.89		3517.28
PTX06-ISB131	35°17'33.51"	-101°31'25.49"	3751308.18	649090.64	3515.20	
PTX06-ISB131 TOC	35°17'33.51"	-101°31'25.48"	3751307.43	649091.02		3517.20

NOTE: COORDINATE VALUES ARE TEXAS STATE PLANE, NORTH ZONE, NAD 83 AS DETERMINED FROM OPUS SOLUTION AND RELATIVE TO NGS monument P 536. ELEVATIONS ARE NAVD 88 AS DETERMINED BY OPUS SOLUTION AND RELATIVE TO NGS monument P 536.



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SN3

Pantex plant monitor well locations

12/13/2017

POINT DESCRIPTION	LATITUDE	LONGITUDE	NORTHING	EASTING	ELEVATION	CASING ELEVATION
PTX06-ISB109	35°17'27.80"	-101°31'44.17"	3750731.23	647541.96	3514.18	
PTX06-ISB109 TOC	35°17'27.80"	-101°31'44.16"	3750730.50	647542.32		3516.25
PTX06-ISB110	35°17'28.06"	-101°31'43.32"	3750757.59	647612.02	3514.33	
PTX06-ISB110 TOC	35°17'28.06"	-101°31'43.32"	3750757.03	647612.46		3516.41
PTX06-ISB113	35°17'28.85"	-101°31'40.78"	3750836.66	647823.09	3514.60	
PTX06-ISB113 TOC	35°17'28.84"	-101°31'40.77"	3750836.09	647823.55		3516.68
PTX06-ISB120	35°17'30.66"	-101°31'34.83"	3751019.54	648316.24	3514.94	
PTX06-ISB120 TOC	35°17'30.65"	-101°31'34.83"	3751018.85	648316.43		3516.95
PTX06-ISB121	35°17'30.92"	-101°31'33.98"	3751045.71	648386.52	3515.20	
PTX06-ISB121 TOC	35°17'30.91"	-101°31'33.98"	3751044.83	648386.79		3517.26
PTX06-ISB122	35°17'31.18"	-101°31'33.12"	3751072.09	648457.75	3515.12	
PTX06-ISB122 TOC	35°17'31.17"	-101°31'33.12"	3751071.44	648458.26		3517.21
PTX06-ISB124	35°17'31.70"	-101°31'31.43"	3751124.55	648597.96	3515.02	
PTX06-ISB124 TOC	35°17'31.69"	-101°31'31.43"	3751123.74	648598.29		3517.11
PTX06-ISB125	35°17'31.96"	-101°31'30.58"	3751150.76	648668.62	3515.16	
PTX06-ISB125 TOC	35°17'31.95"	-101°31'30.57"	3751150.04	648669.10		3517.15
PTX06-ISB127	35°17'32.47"	-101°31'28.88"	3751203.15	648809.07	3515.09	
PTX06-ISB127 TOC	35°17'32.47"	-101°31'28.88"	3751202.37	648809.38		3517.14
PTX06-ISB128	35°17'32.73"	-101°31'28.03"	3751229.17	648879.71	3515.08	
PTX06-ISB128 TOC	35°17'32.72"	-101°31'28.03"	3751228.33	648879.97		3517.11

NOTE: COORDINATE VALUES ARE TEXAS STATE PLANE, NORTH ZONE, NAD 83 AS DETERMINED FROM OPUS SOLUTION AND RELATIVE TO NGS monument P 536. ELEVATIONS ARE NAVD 88 AS DETERMINED BY OPUS SOLUTION AND RELATIVE TO NGS monument P 536.



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SN3

Pantex plant monitor well locations

12/20/2017

POINT DESCRIPTION	LATITUDE	LONGITUDE	NORTHING	EASTING	ELEVATION	CASING ELEVATION
PTX06-ISB108	35°17'27.55"	-101°31'45.02"	3750705.36	647471.65	3514.20	
PTX06-ISB108 TOC	35°17'27.54"	-101°31'45.01"	3750704.58	647472.15		3516.31
PTX06-ISB111	35°17'28.32"	-101°31'42.47"	3750783.88	647682.57	3514.63	
PTX06-ISB111 TOC	35°17'28.32"	-101°31'42.47"	3750782.96	647683.04		3516.75
PTX06-ISB112	35°17'28.58"	-101°31'41.62"	3750810.07	647753.08	3514.57	
PTX06-ISB112 TOC	35°17'28.58"	-101°31'41.62"	3750809.22	647753.56		3516.60

NOTE: COORDINATE VALUES ARE TEXAS STATE PLANE, NORTH ZONE, NAD 83 AS DETERMINED FROM OPUS SOLUTION AND RELATIVE TO NGS monument P 536. ELEVATIONS ARE NAVD 88 AS DETERMINED BY OPUS SOLUTION AND RELATIVE TO NGS monument P 536.



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SN3

Pantex plant monitor well locations

2/12/2018

POINT DESCRIPTION	LATITUDE	LONGITUDE	NORTHING	EASTING	ELEVATION	CASING ELEVATION
PTX06-1191	35°17'27.71"	-101°31'26.62"	3750720.88	648996.85	3513.02	
PTX06-1191 TOC	35°17'27.70"	-101°31'26.61"	3750720.14	648997.22		3515.08
PTX06-1192	35°17'19.52"	-101°31'25.14"	3749893.14	649119.32	3510.23	
PTX06-1192 TOC	35°17'19.51"	-101°31'25.14"	3749892.32	649119.35		3512.32
PTX06-1193	35°17'14.11"	-101°31'54.09"	3749346.75	646719.13	3508.28	
PTX06-1193 TOC	35°17'14.10"	-101°31'54.09"	3749346.07	646719.21		3510.37
PTX06-1194	35°17'25.30"	-101°31'34.35"	3750477.77	648355.41	3512.68	
PTX06-1194 TOC	35°17'25.29"	-101°31'34.35"	3750477.15	648355.77		3514.75
PTX06-1195	35°17'40.05"	-101°31'25.42"	3751968.74	649096.79	3516.83	
PTX06-1195 TOC	35°17'40.04"	-101°31'25.41"	3751967.97	649096.85		3518.88

NOTE: COORDINATE VALUES ARE TEXAS STATE PLANE, NORTH ZONE, NAD 83 AS DETERMINED FROM OPUS SOLUTION AND RELATIVE TO NGS monument P 536. ELEVATIONS ARE NAVD 88 AS DETERMINED BY OPUS SOLUTION AND RELATIVE TO NGS monument P 536.



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Appendix G

Well Development Records



PTX06-ISB131

Stoller Newport News Nuclear

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Well Development Record

WELL/PIEZOMETER ID _____
SHEET 1 OF 2

PROJECT NAME: BOA R/S PROJECT NO.: 4638-05 DATE: 12/3/17

LOCATION: ISR-24E DATE INSTALLED: 11/1/17

TOTAL DEPTH (FTOC) 295.67 CASING DIAMETER 4"

METHODS OF DEVELOPMENT

Swabbing Bailing Pumping Describe
Equipment decontaminated prior to development Yes No

*bailed 0745
Swabbed 0755-0810
brushed 0810-0820* *bailed 0820
pumped 0930-1500*

Describe _____

EQUIPMENT NUMBERS

pH Meter 991300 EC Meter _____ Turbidity Meter 2020 Thermometer _____

CASING VOLUME INFORMATION:

Casing ID (inch)	1.0	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (A) (gal/ft)	0.04	0.09	0.16	0.2	0.37	0.65	0.75	1.0	1.5	2.0	2.6

PURGING INFORMATION

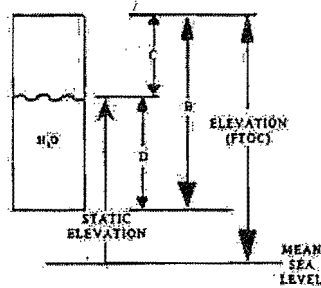
Measured Well Depth B 295.67 ft.

Measured Water Level Depth (C) 282.90 ft.

Length of Static Water Column (D) $\frac{295.67}{B} - \frac{282.90}{C} = 12.77$ ft.

Casing Water Volume (E) $\frac{0.16}{(A)} \times \frac{12.77}{(D)} = 2.14$ gal

Total Purge Volume = 140 gal



SC readings from 0820-1015 probably 1/2 of actual value

Date	Time	Water Level (FTOC)	Volume Removed (gal)	pH	EC	Temperature For C	Turbidity/Sand (ppm)	Comments
12/3	0755	282.90	1	7.78	414	61.1	1000+	bailed
	0820	-	3	7.85	186	61.0	1000+	
	0930	282.90	10	7.64	187	58.0	1000+	pumped
	0945	-	30	7.63	203	63.9	1000+	
	1000	-	40	7.82	211	66.0	92.4	
	1015	-	52	7.64	210	67.1	86.6	
	1030	-	55	7.75	478	67.2	1000+	
	1045	-	58	7.78	468	68.4	1000+	
	1100	-	59	7.83	457	68.1	1000+	
	1115	-	60	7.69	455	68.9	1000+	
	1130	-	61	7.75	451	69.3	1000+	



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Well Development Record

WELL/PIEZOMETER ID _____
SHEET 2 OF 2

PROJECT NAME: BOA R/5 PROJECT NO.: 4638-05 DATE: 12/3/17
LOCATION: ISB-24E DATE INSTALLED: _____
TOTAL DEPTH (FTOC) _____ CASING DIAMETER _____

METHODS OF DEVELOPMENT

Swabbing Bailing Pumping Describe _____
Equipment decontaminated prior to development Yes No
Describe _____

EQUIPMENT NUMBERS

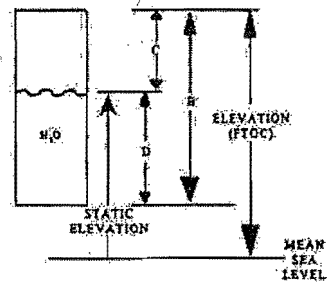
pH Meter _____ EC Meter _____ Turbidity Meter _____ Thermometer _____

CASING VOLUME INFORMATION:

Casing ID (inch)	1.0	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (A) (gal/ft)	0.04	0.09	0.16	0.2	0.37	0.65	0.75	1.0	1.5	2.0	2.6

PURGING INFORMATION

Measured Well Depth B _____ ft.
Measured Water Level Depth (C) _____ ft.
Length of Static Water Column (D) _____ = _____ ft.
Casing Water Volume (E) $\frac{B}{(A)} \times \frac{C}{(D)} =$ _____ gal
Total Purge Volume = _____ gal



Date	Time	Water Level (FTOC)	Volume Removed (gal)	pH	EC	Temperature (°C)	Turbidity/Sand (ppm)	Comments
12/3	1145	—	68	7.85	483	70.2	92.8	pumped
	1200	—	77	7.74	444	71.9	37.3	
	1215	—	83	7.77	448	75.9	20.0	
	1230	—	86	7.71	444	77.2	11.5	
	1245	—	88	7.69	451	77.1	8.7	
	1300	—	95	7.70	452	76.4	70.4	
	1315	—	99	7.82	448	75.7	32.9	
	1330	—	102	7.76	449	74.5	32.4	
	1345	—	105	7.71	450	76.2	8.1	
	1400	—	113	7.77	450	77.2	32.2	
	1415	—	117	7.84	448	77.8	7.0	
	1430	—	122	7.71	454	77.1	6.4	
	1445	—	125	7.72	452	77.0	2.4	



PTX06-~~ISB~~130

Stoller Newport News Nuclear

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Well Development Record

WELL/PIEZOMETER ID _____
SHEET 1 OF 1

PROJECT NAME: BOA R15 PROJECT NO.: 4638-05 DATE: 12/3/17

LOCATION: ISB-23E DATE INSTALLED: 11/14/17

TOTAL DEPTH (FTOC) 290.65 CASING DIAMETER 4"

METHODS OF DEVELOPMENT

Swabbing Bailing Pumping

Describe bailed 1605 swabbed 1620-1635 pumped 0820-1115 brushed 1635-1645

Equipment decontaminated prior to development

Yes No

Describe _____

EQUIPMENT NUMBERS

pH Meter 991300 EC Meter _____ Turbidity Meter 2020 Thermometer _____

CASING VOLUME INFORMATION:

Casing ID (inch)	1.0	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (A) (gal/ft)	0.04	0.09	0.16	0.2	0.37	0.65	0.75	1.0	1.5	2.0	2.6

PURGING INFORMATION

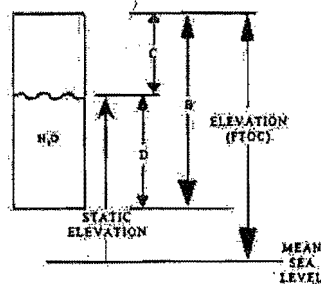
Measured Well Depth B 290.65 ft.

Measured Water Level Depth (C) 282.68 ft.

Length of Static Water Column (D) $\frac{290.65 - 282.68}{1} = 7.97$ ft.

Casing Water Volume (E) $\frac{0.65 \text{ (A)}}{1} \times \frac{7.97 \text{ (D)}}{1} = 5.18$ gal

Total Purge Volume = 80 gal



Date	Time	Water Level (FTOC)	Volume Removed (gal)	pH	EC	Temperature (°F or C)	Turbidity/Sand (ppm)	Comments
12/3	1605	282.68	1	8.04	405	65.8	1000+	
	1645	-	3	8.17	436	67.4		
12/4	0830	283.30	17	7.89	4000+	58.6		
	0845	-	27	7.52	203	63.0		suspect readings *
	0900	-	30	7.35	492	65.8		
	0915	-	35	7.20	505	66.6		
	0930	-	40	7.21	487	67.8		
	0945	-	45	7.90	1287	68.8		*
	1000	-	50	7.61	451	70.1	89.7	
	1015	-	58	7.73	429	69.7	21.1	
	1030	-	63	8.24	594	67.0	11.5	*
	1045	-	70	7.26	433	70.0	7.6	
	1100	-	75	7.20	430	69.5	6.2	
	1115	-	80	7.66	418	70.3	5.5	

282.78



PTX06-ISB130

Stoller Newport News Nuclear
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Well Development Record

WELL/PIEZOMETER ID _____
SHEET 1 OF 1

PROJECT NAME: BOA R/5 PROJECT NO.: 4638-05 DATE: 1/26/18, 1/27/18

LOCATION: PTX06-ISB130 DATE INSTALLED: _____

TOTAL DEPTH (FTOC) 290.35 CASING DIAMETER 4"

METHODS OF DEVELOPMENT

Swabbing Bailing Pumping Describe brushed 1405-1430
Equipment decontaminated prior to development Yes No bailed 1435
pumped 1600-1650 1/26
0930-1030 1/27

Describe _____

EQUIPMENT NUMBERS

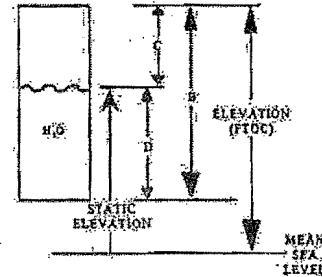
pH Meter 991300 EC Meter _____ Turbidity Meter _____ Thermometer _____

CASING VOLUME INFORMATION:

Casing ID (inch)	1.0	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (A) (gal/ft)	0.04	0.09	0.16	0.2	0.37	0.65	0.75	1.0	1.5	2.0	2.6

PURGING INFORMATION

Measured Well Depth B 290.35 ft.
Measured Water Level Depth (C) 282.80 ft.
Length of Static Water Column (D) $\frac{290.35}{B} - \frac{282.80}{C} = 7.55$ ft.
Casing Water Volume (E) $\frac{0.65}{(A)} \times \frac{7.55}{(D)} = 4.91$ gal
Total Purge Volume = 240 gal



Date	Time	Water Level (FTOC)	Volume Removed (gal)	pH	EC	Temperature (F or C)	Turbidity/Sand (ppm)	Comments
1/26	1600	282.80	10	7.65	470	63.1	gray/brown	pumped
	1615	-	40	7.53	397	62.5	cloudy	
	1630	-	70	7.55	408	62.5		
	1645	-	100	7.52	404	64.6		
1/27	0930	-	120	7.15	420	57.0	cloudy	
	0945	-	150	7.58	195*	62.1	clear	
	1000	-	150	7.70	422	64.5		
	1015	-	210	7.64	403	62.1		
	1030	-	240	7.96	406	62.2		
		283.20						

* suspect EC reading



PTX06-**ISB129**

Stoller Newport News Nuclear

A Subsidiary of Huntington Ingalls Industries

Well Development Record

WELL/PIEZOMETER ID _____
SHEET 1 OF 1

PROJECT NAME: BOA R15 PROJECT NO.: 4638-05 DATE: 12/4/17

LOCATION: ISB-22E DATE INSTALLED: 11/15/17

TOTAL DEPTH (FTOC) 290.50 CASING DIAMETER 4"

METHODS OF DEVELOPMENT

Swabbing Bailing Pumping Describe _____
Equipment decontaminated prior to development Yes No

*bailed 1255
swabbed 1305-1320 pumped 1420 -
brushed 1320-1330*

Describe _____

EQUIPMENT NUMBERS

pH Meter 991300 EC Meter _____ Turbidity Meter 2020 Thermometer _____

CASING VOLUME INFORMATION:

Casing ID (inch)	1.0	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (A) (gal/ft)	0.04	0.09	0.16	0.2	0.37	0.65	0.75	1.0	1.5	2.0	2.6

PURGING INFORMATION

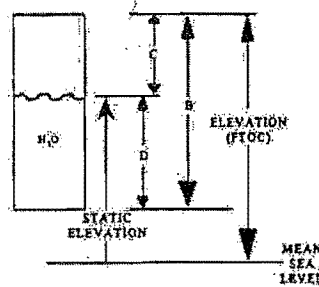
Measured Well Depth B 290.50 ft.

Measured Water Level Depth (C) 282.55 ft.

Length of Static Water Column (D) $\frac{290.50}{B} - \frac{282.55}{C} = 7.95$ ft.

Casing Water Volume (E) $\frac{0.65}{(A)} \times \frac{7.95}{(D)} = 5.17$ gal

Total Purge Volume = 90 gal



Date	Time	Water Level (FTOC)	Volume Removed (gal)	pH	EC	Temperature (F or C)	Turbidity/Sand (ppm)	Comments
12/4	1300	282.55	1	8.55	534	64.0	1000+	bailed
	1325	-	3	7.85	429	63.5	1000+	bailed
	1430	282.60	13	7.49	557	66.2	1000+	pumped
	1445	-	20	7.30	447	64.2	1000+	
	1500	-	35	8.04	431	65.9	73.6	
	1515	-	45	7.34	398	67.8	62.2	
	1530	-	60	7.70	436	68.5	12.9	
	1545	-	68	7.54	426	67.8	3.5	
	1600	-	77	7.56	425	68.2	2.6	
	1615	-	84	7.61	435	66.2	4.3	
		282.67						



PTX06-**ISB128**

Stoller Newport News Nuclear
A Subsidiary of Huntington Ingalls Industries

Well Development Record

WELL/PIEZOMETER ID _____
SHEET 1 OF 1

PROJECT NAME: BOA R/5 PROJECT NO.: 4638-05 DATE: 12/5/17

LOCATION: ISB-21E DATE INSTALLED: 10/24/17

TOTAL DEPTH (FTOC) 293.95 CASING DIAMETER 4"

METHODS OF DEVELOPMENT

Swabbing Bailing Pumping Describe _____
Equipment decontaminated prior to development Yes No

*bailed 0800 bailed 0840
swabbed 0815-0830 Pumped 0945-
bailed 0830-0840 1245*

Describe _____

EQUIPMENT NUMBERS

pH Meter 991300 EC Meter _____ Turbidity Meter 2020 Thermometer _____

CASING VOLUME INFORMATION:

Casing ID (inch)	1.0	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (A) (gal/ft)	0.04	0.09	0.16	0.2	0.37	0.65	0.75	1.0	1.5	2.0	2.6

PURGING INFORMATION

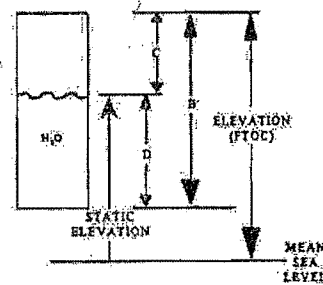
Measured Well Depth B 293.95 ft.

Measured Water Level Depth (C) 282.45 ft.

Length of Static Water Column (D) $\frac{293.95}{B} - \frac{282.45}{C} = 11.50$ ft.

Casing Water Volume (E) $\frac{0.65}{(A)} \times \frac{11.50}{(D)} = 7.48$ gal

Total Purge Volume = 200 gal



Date	Time	Water Level (FTOC)	Volume Removed (gal)	pH	EC	Temperature (F/or C)	Turbidity/ Sand (ppm)	Comments
12/5	0805	282.45	1	6.92	413	55.5	1000+	bailed
	0845	-	8	7.22	421	55.0	1000+	↓
	0945	282.79	10	7.48	457	46.5	1000+	pumped
	1000	-	15	7.38	475	53.6	1000+	
	1015	-	30	7.27	420	58.5	1000+	
	1030	-	42	7.47	445	58.7	43.5	
	1045	-	58	7.52	406	65.0	1000+	
	1100	-	75	7.55	411	64.0	28.7	
	1115	-	90	7.76	429	63.4	21.1	
	1130	-	100	7.67	427	63.0	19.4	
	1145	-	120	7.67	409	61.6	48.1	
	1200	-	130	7.80	412	62.8	10.2	
	1215	-	145	7.76	422	60.0	3.0	
	1230	-	160	7.60	411	59.1	2.3	
	1245	-	180	7.80	429	61.2	3.7	

282.70



PTX06-**ISB127**

Stoller Newport News Nuclear
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Well Development Record

WELL/PIEZOMETER ID _____
SHEET 1 OF 1

PROJECT NAME: ROA 2/S PROJECT NO.: 4638-05 DATE: 12/12/17

LOCATION: ISB-20E DATE INSTALLED: _____

TOTAL DEPTH (FTOC) 292.87 CASING DIAMETER 4"

METHODS OF DEVELOPMENT

Swabbing Bailing Pumping Describe
 Yes No

Equipment decontaminated prior to development

Describe _____

bailed 0810
swabbed 0835-0850
bailed 0905
pumped 1220-1300
brushed 0850-0905

EQUIPMENT NUMBERS

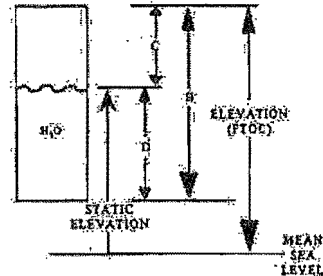
pH Meter 991300 EC Meter _____ Turbidity Meter 2020 Thermometer _____

CASING VOLUME INFORMATION:

Casing ID (inch)	1.0	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (A) (gal/ft)	0.04	0.09	0.16	0.2	0.37	0.65	0.75	1.0	1.5	2.0	2.6

PURGING INFORMATION

Measured Well Depth B 292.87 ft.
Measured Water Level Depth (C) 282.48 ft.
Length of Static Water Column (D) $\frac{292.87}{B} - \frac{282.48}{C} = 10.39$ ft.
Casing Water Volume (E) $\frac{0.65}{(A)} \times \frac{10.39}{(D)} = 6.75$ gal
Total Purge Volume = 150 gal



Date	Time	Water Level (FTOC)	Volume Removed (gal)	pH	EC	Temperature (F or C)	Turbidity/Sand (ppm)	Comments
12/12	0825	282.48	2	8.15	523	55.0	1000+	bailed
	0915		15	7.81	493	57.9	1000+	↓
	1030	282.46	35	7.65	501	58.4	1000+	pumped
	1045	-	45	7.64	454	62.1	1000+	
	1100	-	55	7.73	434	66.8	33.4	
	1115	-	75	7.78	449	70.8	1000+	
	1130	-	85	7.71	446	66.2	5.0	
	1145	-	100	8.14	447	63.7	1000+	
	1200	-	115	8.32	447	66.3	66.9	
	1215	-	125	7.61	465	67.4	42.9	
	1230	-	135	7.75	447	67.4	7.0	
	1245	-	140	7.66	425	67.5	4.9	
	1300	-	150	7.61	487	67.2	3.8	

282.30



PTX06-**ISB126**

Stoller Newport News Nuclear

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Well Development Record

WELL/PIEZOMETER ID _____
SHEET 1 OF 1

PROJECT NAME: Boh #2/5 PROJECT NO.: 4638-05 DATE: 12/5/17, 12/6/17

LOCATION: ISB-19E DATE INSTALLED: 11/17/17

TOTAL DEPTH (FTOC) 290.64 CASING DIAMETER 4"

METHODS OF DEVELOPMENT

Swabbing Bailing Pumping Describe
 Yes No

bailed 1425
swabbed 1435-1450
brushed 1450-1500
bailed 1500
pumped 1600-1700
0745-0915

Equipment decontaminated prior to development

Describe _____

EQUIPMENT NUMBERS

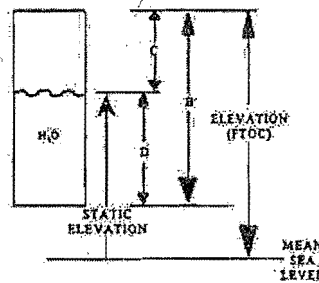
pH Meter 991300 EC Meter _____ Turbidity Meter 2020 Thermometer _____

CASING VOLUME INFORMATION:

Casing ID (inch)	1.0	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (A) (gal/ft)	0.04	0.09	0.16	0.2	0.37	0.65	0.75	1.0	1.5	2.0	2.6

PURGING INFORMATION

Measured Well Depth B 290.64 ft.
 Measured Water Level Depth (C) 282.40 ft.
 Length of Static Water Column (D) $\frac{290.64}{B} - \frac{282.40}{C} = \frac{8.24}{D}$ ft.
 Casing Water Volume (E) $\frac{0.65}{(A)} \times \frac{8.24}{(D)} = \frac{5.36}{(D)}$ gal
 Total Purge Volume = 200 gal



Date	Time	Water Level (FTOC)	Volume Removed (gal)	pH	EC	Temperature F or C	Turbidity/ Sand (ppm)	Comments
12/5	1430	282.40	2	7.79	426	56.7	1000+	bailed
	1505	-	4	7.79	438	56.9	1000+	↓
	1600	282.10	10	7.72	433	56.3	1000+	pumped
	1615	-	25	7.45	425	59.3	1000+	
	1630	-	40	7.58	426	64.1	47.6	
	1645	-	85	7.64	424	62.2	1000+	
	1700	-	107	7.62	419	60.6	41000	
12/6	0745	-	110	7.55	606	58.3	33.4	
	0830	-	140	7.93	562	60.3	35.5	
	0845	-	160	7.09	450	63.1	4.6	
	0900	-	150	7.08	446	63.5	1.6	
	0915	-	195	7.08	443	61.7	0.5	

282.37



PTX06-ISB125

Stoller Newport News Nuclear
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Well Development Record

WELL/PIEZOMETER ID _____
SHEET 1 OF 1

PROJECT NAME: BOA R/5 PROJECT NO.: 4638-05 DATE: 1/26/18

LOCATION: PTX06-ISB125 DATE INSTALLED: _____

TOTAL DEPTH (FTOC) 292.47 CASING DIAMETER 4"

METHODS OF DEVELOPMENT

Swabbing
 Bailing
 Pumping
 Describe brushed 0840-0910
 Yes No beiled 0915
 Equipment decontaminated prior to development pumped 1020-1200
 Describe _____

EQUIPMENT NUMBERS

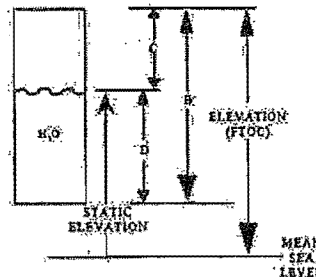
pH Meter 991300 EC Meter _____ Turbidity Meter _____ Thermometer _____

CASING VOLUME INFORMATION:

Casing ID (inch)	1.0	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (A) (gal/ft)	0.04	0.09	0.16	0.2	0.37	0.65	0.75	1.0	1.5	2.0	2.6

PURGING INFORMATION

Measured Well Depth B 292.47 ft.
 Measured Water Level Depth (C) 282.19 ft.
 Length of Static Water Column (D) $\frac{292.47 - 282.19}{10.28} = 10.28$ ft.
 Casing Water Volume (E) $\frac{0.65}{(A)} \times \frac{10.28}{(D)} = 6.68$ gal
 Total Purge Volume = 350 gal



Date	Time	Water Level (FTOC)	Volume Removed (gal)	pH	EC	Temperature (F or C)	Turbidity/Sand (ppm)	Comments
1/26	1030	282.19	55	7.75	472	57.1	clear	pumped
	1045	-	130	7.43	410	61.5	clear	
	1100	-	205	7.36	408	61.0	cloudy	
	1115	-	250	7.59	183*	62.5	clear	
	1130	-	295	7.79	409	63.8	clear	
	1145	-	325	7.76	184*	63.7	clear	
	1200	-	350	7.71	186*	65.5	clear	
		292.06						



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Well Development Record

WELL/PIEZOMETER ID _____
SHEET 1 OF 1

PROJECT NAME: BOA R/5 PROJECT NO.: 4638-05 DATE: 12/13/17

LOCATION: ISB-17E DATE INSTALLED: _____

TOTAL DEPTH (FTOC) 292.29 CASING DIAMETER 4"

METHODS OF DEVELOPMENT

Swabbing Bailing Pumping

Describe brush 0935-0945

Equipment decontaminated prior to development

Yes No

Describe _____

*haul 0905
Sures 0920-0935
brush 0935-0945*

*haul 0945
pump 1040-1300*

EQUIPMENT NUMBERS

pH Meter 991300 EC Meter _____ Turbidity Meter 2020 Thermometer _____

CASING VOLUME INFORMATION:

Casing ID (inch)	1.0	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (A) (gal/ft)	0.04	0.09	0.16	0.2	0.37	0.65	0.75	1.0	1.5	2.0	2.6

PURGING INFORMATION

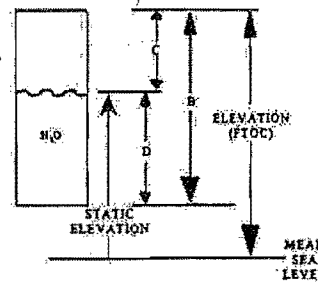
Measured Well Depth B 292.29 ft.

Measured Water Level Depth (C) 281.70 ft.

Length of Static Water Column (D) $\frac{292.29 - 281.70}{1} = 10.59$ ft.

Casing Water Volume (E) $\frac{0.65}{(A)} \times \frac{10.59}{(D)} = 6.83$ gal

Total Purge Volume = 180 gal



Date	Time	Water Level (FTOC)	Volume Removed (gal)	pH	EC	Temperature (F or C)	Turbidity/Sand (ppm)	Comments
12/13	0910	281.70	2	7.85	473	59.9	1000+	limited
	0945	-	18	7.43	217	58.4	1000+	* ↓
	1045	281.77	37	7.38	216	62.4	1000+	* pumped
	1100	-	58	7.32	211	62.5	1000+	*
	1115	-	77	7.30	211	61.7	8.8	*
	1130	-	90	7.27	211	61.9	6.3	*
	1145	-	110	7.64	210	61.9	47.7	*
	1200	-	120	7.39	215	63.5	6.0	*
	1215	-	130	7.48	205	64.1	17.2	*
	1230	-	150	7.48	213	63.3	5.4	*
	1245	-	160	7.40	214	63.6	1.7	*
	1300	-	175	7.40	222	62.6	3.5	*

281.75

* likely low SC reading



PTX06-**ISB123**

Stoller Newport News Nuclear

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Well Development Record

WELL/PIEZOMETER ID _____
SHEET 1 OF 1

PROJECT NAME: BoA R/S PROJECT NO.: 4638-05 DATE: 12/6/17

LOCATION: ISB-16E DATE INSTALLED: 11/4/17

TOTAL DEPTH (FTOC) 298.18 CASING DIAMETER 4"

METHODS OF DEVELOPMENT

Swabbing Bailing Pumping

Describe

Equipment decontaminated prior to development

Yes

*bailed 1045
swabbed 1100-1115
bailed 1125
pumped 1225-1445*

braked 1115-1125

No

Describe _____

EQUIPMENT NUMBERS

pH Meter 441300 EC Meter _____ Turbidity Meter 2020 Thermometer _____

CASING VOLUME INFORMATION:

Casing ID (inch)	1.0	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (A) (gal/ft)	0.04	0.09	0.16	0.2	0.37	0.65	0.75	1.0	1.5	2.0	2.6

PURGING INFORMATION

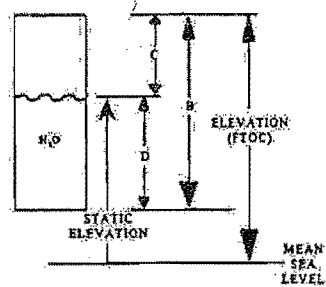
Measured Well Depth B 298.18 ft.

Measured Water Level Depth (C) 282.14 ft.

Length of Static Water Column (D) $\frac{B}{C} \times (B - C) = \frac{298.18}{282.14} \times 16.04 = 16.04$ ft.

Casing Water Volume (E) $\frac{0.65}{(A)} \times \frac{16.04}{(D)} = 10.43$ gal

Total Purge Volume = 140 gal



Date	Time	Water Level (FTOC)	Volume Removed (gal)	pH	EC	Temperature (F) or C	Turbidity/Sand (ppm)	Comments
12/6	1100	282.14	1	8.75	535	57.1	1000+	bailed
	1130	-	3	7.97	469	58.7	1000+	
	1230	282.15	15	8.17	513	59.3	1000+	pumped
	1245	-	30	7.40	427	60.1	1000+	
	1300	-	45	7.43	452	60.4	73.5	
	1315	-	60	7.36	428	60.6	67.3	
	1330	-	70	7.34	432	61.7	19.0	
	1345	-	85	7.49	429	60.8	1000+	
	1400	-	102	7.41	427	64.0	25.7	
	1415	-	115	7.44	442	65.1	9.8	
	1430	-	125	7.41	427	65.0	6.0	
	1445	-	135	7.42	446	65.6	8.9	

282.04



PTX06-**ISB122**

Stoller Newport News Nuclear
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Well Development Record

WELL/PIEZOMETER ID _____
SHEET 1 OF 1

PROJECT NAME: BOA R/S PROJECT NO.: 4638-05 DATE: 12/13/17, 12/14/17

LOCATION: ISB-15E DATE INSTALLED: _____

TOTAL DEPTH (FTOC) 289.75 CASING DIAMETER 4"

METHODS OF DEVELOPMENT

Swabbing Bailing Pumping

Describe Yes No

Equipment decontaminated prior to development

Describe _____

bailed 1515
swabbed 1530-1545
brushed 1545-1555
bailed 1600
pumped 1645-1655
0740-0930

EQUIPMENT NUMBERS

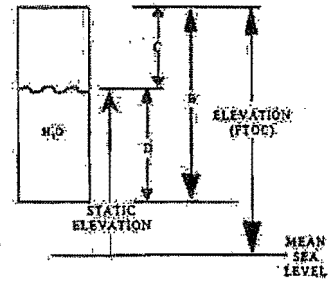
pH Meter 991300 EC Meter — Turbidity Meter 2020 Thermometer —

CASING VOLUME INFORMATION:

Casing ID (inch)	1.0	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (A) (gal/ft)	0.04	0.09	0.16	0.2	0.37	0.65	0.75	1.0	1.5	2.0	2.6

PURGING INFORMATION

Measured Well Depth B 289.75 ft.
 Measured Water Level Depth (C) 281.56 ft.
 Length of Static Water Column (D) $\frac{B}{C} \times \frac{C}{D} = \frac{289.75}{281.56} \times 281.56 = 9.19$ ft.
 Casing Water Volume (E) $\frac{0.65}{(A)} \times \frac{9.19}{(D)} = \frac{0.65}{1} \times \frac{9.19}{1} = 5.32$ gal
 Total Purge Volume = 180 gal



Date	Time	Water Level (FTOC)	Volume Removed (gal)	pH	EC	Temperature (°C)	Turbidity/Sand (ppm)	Comments
12/13	1525	281.56	2	7.56	430	65.2	1000+	bailed
	1605	—	15	7.93	440	69.6	1000+	↓
	1645	281.54	40	no	parameters	taken		pumped
12/14	0745	—	43	7.07	214	59.6	1000+	*
	0800	—	65	7.10	207	61.0	19.0	*
	0815	—	77	7.40	197	59.4	1000+	*
	0830	—	85	7.40	200	61.5	79.3	*
	0845	—	105	7.27	453	62.0	10.2	
	0900	—	125	7.34	196	61.9	3.4	*
	0915	—	145	7.24	451	60.8	2.3	
	0930	—	165	7.36	202	60.8	2.4	↓ *

* suspect SC values
281.86



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Well Development Record

WELL/PIEZOMETER ID _____
SHEET 1 OF 1

PROJECT NAME: BDA R/S PROJECT NO.: 4638-05 DATE: 12/14/17

LOCATION: 1SB-14E DATE INSTALLED: _____

TOTAL DEPTH (FTOC) 289.25 CASING DIAMETER 4"

METHODS OF DEVELOPMENT

Swabbing Bailing Pumping

Describe Yes No

Equipment decontaminated prior to development

Describe _____

*bailed 1100
swabbed 1115-1130
brushed 1130-1140*
*bailed 1140
pumped 1235-1430*

EQUIPMENT NUMBERS

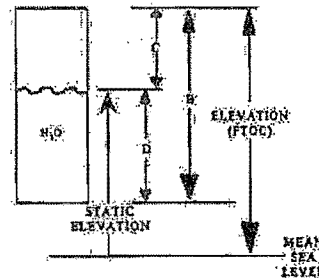
pH Meter 991300 EC Meter --- Turbidity Meter 2020 Thermometer ---

CASING VOLUME INFORMATION:

Casing ID (inch)	1.0	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (A) (gal/ft)	0.04	0.09	0.16	0.2	0.37	0.65	0.75	1.0	1.5	2.0	2.6

PURGING INFORMATION

Measured Well Depth B 289.25 ft.
 Measured Water Level Depth (C) 281.71 ft.
 Length of Static Water Column (D) $\frac{289.25}{B} - \frac{281.71}{C} = 7.54$ ft.
 Casing Water Volume (E) $\frac{0.65}{(A)} \times \frac{7.54}{(D)} = 4.90$ gal
 Total Purge Volume = 150 gal



* suspect SC reading

Date	Time	Water Level (FTOC)	Volume Removed (gal)	pH	EC	Temperature (°F or C)	Turbidity/Sand (ppm)	Comments
12/14	1110	281.71	2	8.40	148	57.3	1000+	* bailed
	1145	-	10	7.80	190	59.7	1000+	* ↓
	1245	281.85	15	7.89	213	57.4	1000+	* pumped
	1300	-	35	7.20	424	60.2	31.5	
	1315	-	45	7.31	219	61.1	13.2	* ↓
	1330	-	60	7.47	215	61.9	41.0	* ↓
	1345	-	80	7.52	221	62.4	13.3	* ↓
	1400	-	100	7.57	226	62.9	4.8	* ↓
	1415	-	120	7.40	229	62.1	4.5	* ↓
	1430	-	140	7.55	221	62.5	3.8	* ↓
		281.63						



Stoller Newport News Nuclear
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Well Development Record

WELL/PIEZOMETER ID _____
SHEET 1 OF 1

PROJECT NAME: BOA R/S PROJECT NO.: 4638-15 DATE: 12/14/17, 12/15/17

LOCATION: ISB-13E DATE INSTALLED: _____

TOTAL DEPTH (FTOC) 285.42 CASING DIAMETER 4"

METHODS OF DEVELOPMENT

- Swabbing
 Bailing
 Pumping
 Describe bailed 1620-1640 swabbed 1640-1650 pumped 0850-1030 brushed 1650-1700
 Yes No

Equipment decontaminated prior to development

Describe _____

EQUIPMENT NUMBERS

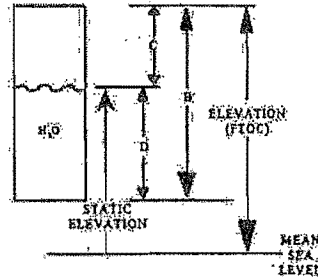
pH Meter 991300 EC Meter — Turbidity Meter 2020 Thermometer —

CASING VOLUME INFORMATION:

Casing ID (inch)	1.0	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (A) (gal/ft)	0.04	0.09	0.16	0.2	0.37	0.65	0.75	1.0	1.5	2.0	2.6

PURGING INFORMATION

Measured Well Depth B 285.42 ft.
 Measured Water Level Depth (C) 281.11 ft.
 Length of Static Water Column (D) $\frac{285.42 - 281.11}{1} = 4.31$ ft.
 Casing Water Volume (E) $\frac{0.65 \times 4.31}{1} = 2.80$ gal
 Total Purge Volume = 130 gal



*suspect SC readings

Date	Time	Water Level (FTOC)	Volume Removed (gal)	pH	EC	Temperature F or C	Turbidity/Sand (ppm)	Comments
12/14	1630	281.11	2	7.52	244	59.8	1000+	* bailed
12/15	0750	—	10	7.13	221	58.7	1000+	* ↓
	0900	281.09	12	7.27	465	51.4	1000+	pumped
	0915	—	23	7.28	449	59.7	9.2	
	0930	—	37	7.39	450	62.7	1.9	
	0945	—	55	7.58	228	63.0	27.9	*
	1000	—	80	7.55	217	62.8	2.8	*
	1015	—	105	7.52	448	62.7	1.7	
	1030	—	130	7.45	450	63.4	1.3	↓
		281.11						



PTX06-**ISB118**

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Well Development Record

WELL/PIEZOMETER ID SHEET 1 OF 7

PROJECT NAME: BOA R/S PROJECT NO.: 4638-05 DATE: 12/1/17,

LOCATION: ISB-11E DATE INSTALLED: 11/15/17

TOTAL DEPTH (FTOC) 284.20 CASING DIAMETER 4"

METHODS OF DEVELOPMENT

Swabbing
 Bailing
 Pumping
 Describe Bailed Swabbed
 Yes
 No Bailed Pumped

Equipment decontaminated prior to development

Describe _____

EQUIPMENT NUMBERS

pH Meter 991300 EC Meter _____ Turbidity Meter 2020 Thermometer _____

CASING VOLUME INFORMATION:

Casing ID (inch)	1.0	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (A) (gal/ft)	0.04	0.09	0.16	0.2	0.37	0.65	0.75	1.0	1.5	2.0	2.6

PURGING INFORMATION

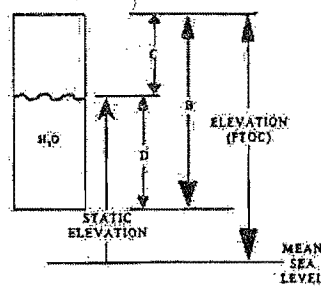
Measured Well Depth B 284.20 ft.

Measured Water Level Depth (C) 280.35 ft.

Length of Static Water Column (D) $\frac{B}{C} = \frac{284.20}{280.35} = 3.85$ ft.

Casing Water Volume (E) $\frac{0.65}{(A)} \times \frac{3.85}{(D)} = 2.50$ gal

Total Purge Volume = 45 gal



Date	Time	Water Level (FTOC)	Volume Removed (gal)	pH	EC	Temperature (F or C)	Turbidity/Sand (ppm)	Comments
12/1	1255	280.35	2	8.07	231	61.5	1000+	bailed
	1320	280.55	8	7.61	481	64.3	1000+	bailed
	1430	282.40	14	7.66	483	68.1	1000+	pumped
	1445	-	17	7.52	471	66.9	93.7	
	1500	-	20	7.53	465	68.2	82.5	
	1515	-	22	7.63	463	69.4	30.3	
	1530	-	30	7.76	468	70.1	10.1	
	1545	-	35	7.63	459	72.7	3.8	
	1600	-	39	7.60	462	73.3	3.0	
	1615	-	45	7.60	460	73.6	4.2	
		280.31						



PTX06-**ISB117**

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Well Development Record

WELL/PIEZOMETER ID
SHEET 1 OF 1

PROJECT NAME: BOA R/5 PROJECT NO.: 4638-05 DATE: 11/29 ^{NEN} 11/30/17, 12/1/17
 LOCATION: ISB-10E DATE INSTALLED: 11/14/17
 TOTAL DEPTH (FTOC) 284.40 CASING DIAMETER 4"

METHODS OF DEVELOPMENT

Swabbing Bailing Pumping

Describe Bailed 1410 Swabbed 1420-1435 Bailed 1450
Brushed 1435-1450 Pumped 1600-1650
 Yes No 0730-1130

Equipment decontaminated prior to development

Describe _____

EQUIPMENT NUMBERS

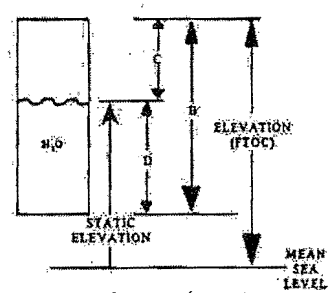
pH Meter 991300 EC Meter _____ Turbidity Meter _____ Thermometer _____

CASING VOLUME INFORMATION:

Casing ID (inch)	1.0	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (A) (gal/ft)	0.04	0.09	0.16	0.2	0.37	0.65	0.75	1.0	1.5	2.0	2.6

PURGING INFORMATION

Measured Well Depth B 284.40 ft.
 Measured Water Level Depth (C) 280.24 ft.
 Length of Static Water Column (D) $\frac{284.40}{B} - \frac{280.24}{C} = 4.16$ ft.
 Casing Water Volume (E) $0.65 \times \frac{4.16}{(A)} = 2.70$ gal
 Total Purge Volume = 75 gal



SC readings from 1015-1115 may be about 1/2 of actual value

Date	Time	Water Level (FTOC)	Volume Removed (gal)	pH	EC	Temperature (F or C)	Turbidity/Sand (ppm)	Comments
11/30	1410	280.24	2	8.20	478	64.1	1000+	bailed
	1455	280.10	3	7.60	627	64.8		
12/1	0800	282.15	8	6.92	184	57.0		pumped
	0815	-	13	7.37	460	57.6		
	0830	-	18	7.61	453	60.2		
	0845	-	22	7.60	453	60.7		
	0900	-	26	7.81	454	66.2	12.5	
	0915	-	32	7.92	445	60.7	5.0	
	0930	-	37	7.83	455	65.3	20.1	
	0945	-	40	7.92	470	68.1	75	
	1000	-	45	7.73	462	68.4	13.7	
	1015	-	50	7.69	204	70.6	70.7	
	1030	-	55	7.95	210	67.7	17.7	
	1045	-	63	7.81	209	71.7	5.6	
	1100	-	66	7.81	204	72.0	3.9	
	1115	-	72	7.76	212	72.1	2.7	

280.05



PTX06-ISB116

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Well Development Record

WELL/PIEZOMETER ID _____
SHEET 1 OF 1

PROJECT NAME: Bldg R/S PROJECT NO.: 4638-05 DATE: 11/30/17

LOCATION: ISB-9E DATE INSTALLED: 11/5/17

TOTAL DEPTH (FTOC) 285.50 CASING DIAMETER 4"

METHODS OF DEVELOPMENT

Swabbing Bailing Pumping Describe
Equipment decontaminated prior to development Yes No

*Bailed 0750 Bailed 0835
Swabbed 0755-0810 Pumped 0940-
Brushed 0815-0830 1230*

Describe _____

EQUIPMENT NUMBERS

pH Meter 991300 EC Meter _____ Turbidity Meter _____ Thermometer _____

CASING VOLUME INFORMATION:

Casing ID (inch)	1.0	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (A) (gal/ft)	0.04	0.09	0.16	0.2	0.37	0.65	0.75	1.0	1.5	2.0	2.6

PURGING INFORMATION

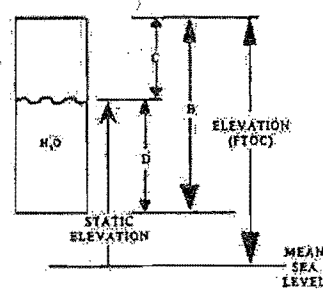
Measured Well Depth B 285.50 ft.

Measured Water Level Depth (C) 279.40 ft.

Length of Static Water Column (D) $\frac{285.50 - 279.40}{1} = 6.10$ ft.

Casing Water Volume (E) $\frac{0.65}{(A)} \times \frac{6.10}{(D)} = 397$ gal

Total Purge Volume = 60 gal



Date	Time	Water Level (FTOC)	Volume Removed (gal)	pH	EC	Temperature (F or C)	Turbidity/ Sand (ppm)	Comments
11/30	0755	279.40	5	6.94	199	56.5	1000+	bailed
	0835	283.34	10	7.49	512	52.0	1000+	↓
	1000		11	7.62	547	51.9	1000+	pumped
	1015		15	7.65	471	54.1	1000+	
	1030		20	7.57	195	60.2	1000+	
	1045		25	7.73	203	60.4	48.5	
	1100		30	7.84	202	62.4	22.2	
	1115		35	7.91	204	62.8	65.4	
	1130		40	7.90	211	64.0	57.7	
	1145		45	7.90	219	64.7	81.0	
	1200		50	7.98	219	64.1	9.9	
	1215		55	7.95	217	65.0	2.7	
	1230		60	7.90	219	66.4	1.7	



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Well Development Record

WELL/PIEZOMETER ID _____
SHEET 1 OF 42 *mem*

PROJECT NAME: BOA R/S PROJECT NO.: 4638-05 DATE: 11/29/17

LOCATION: ISB-8E DATE INSTALLED: 11/3/17

TOTAL DEPTH (FTOC) 285.50 CASING DIAMETER 4"

METHODS OF DEVELOPMENT

Swabbing Bailing Pumping Describe
Equipment decontaminated prior to development Yes No

*Bailed 0810
Swabbed 0825-0840
Brushed 0840-0855* *Bailed 0900
Pumped 1107-1530*

Describe _____

EQUIPMENT NUMBERS

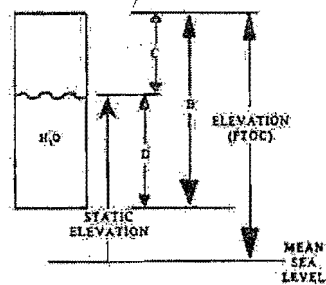
pH Meter 991300 EC Meter _____ Turbidity Meter _____ Thermometer _____

CASING VOLUME INFORMATION:

Casing ID (inch)	1.0	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (A) (gal/ft)	0.04	0.09	0.16	0.2	0.37	0.65	0.75	1.0	1.5	2.0	2.6

PURGING INFORMATION

Measured Well Depth B 285.50 ft.
Measured Water Level Depth (C) 279.65 ft.
Length of Static Water Column (D) $\frac{285.50}{B} - \frac{279.65}{C} = 5.85$ ft.
Casing Water Volume (E) $\frac{0.65}{(A)} \times \frac{5.85}{(D)} = 3.80$ gal
Total Purge Volume = 140 gal



Date	Time	Water Level (FTOC)	Volume Removed (gal)	pH	EC	Temperature (°F or C)	Turbidity/Sand (ppm)	Comments
11/24	0810	279.65	5	6.81	553	55.5	1000+	bailed
	0910	280.10	15	6.91	578	58.1		
	1107	283.55	17	7.41	579	62.4		pumped
	1115	283.10	19	6.94	460	59.6		
	1130	280.22	20	6.79	481	60.3		
	1145	283.35	35	7.37	432	65.8		
	1200	283.40	45	7.32	433	69.7		
	1215	-	53	7.64	439	68.6	30	
	1230	~283	57	7.86	427	68.5	91.7	
	1245	~283	68	7.97	469	68.9	1000+	
	1300	~283	79	7.84	204	71.9	49.8	



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Well Development Record

WELL/PIEZOMETER ID _____
SHEET 1 OF 1

PROJECT NAME: BOA R15 PROJECT NO.: 4638-05 DATE: 12/15/17

LOCATION: ISB-6E DATE INSTALLED: _____

TOTAL DEPTH (FTOC) ~~278.84~~ 288.86 CASING DIAMETER 4"

METHODS OF DEVELOPMENT

Swabbing Bailing Pumping Describe brushing 1215-1225
Equipment decontaminated prior to development Yes No
Describe _____

bailing 1150 bailing 1230
swabbing 1200-1215 pumping 1320-

EQUIPMENT NUMBERS

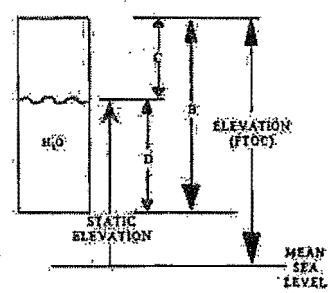
pH Meter 991300 EC Meter - Turbidity Meter 2020 Thermometer _____

CASING VOLUME INFORMATION:

Casing ID (Inch)	1.0	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (A) (gal/ft)	0.04	0.09	0.16	0.2	0.37	0.65	0.75	1.0	1.5	2.0	2.6

PURGING INFORMATION

Measured Well Depth B ~~282.86~~ 288.86 ft.
Measured Water Level Depth (C) ~~278.84~~ 278.84 ft. 10.02
Length of Static Water Column (D) ~~282.86~~ 288.86 - 278.84 4.02 ft. n/a
Casing Water Volume (E) $0.65 \times 4.02 = 2.61$ gal
Total Purge Volume = 90 gal



* suspect SL reading

Date	Time	Water Level (FTOC)	Volume Removed (gal)	pH	EC	Temperature (F or C)	Turbidity/Sand (ppm)	Comments
12/15	1200	278.84	2	7.42	193	59.5	1000+	* bailed
	1240	-	10	7.41	427	58.8	1000+	↓
	1330	279.20	15	7.59	447	61.6	1000+	pumped
	1345	-	28	7.41	426	61.3	1000+	
	1400	-	38	7.28	421	62.5	8.7	
	1415	-	50	7.22	428	63.3	8.8	
	1430	-	60	7.36	422	63.9	43.9	
	1445	-	70	7.34	212	62.6	7.1	* ↓
	1500	-	80	7.37	211	63.4	3.9	* ↓
	1515	-	90	7.30	212	64.3	5.2	* ↓
		278.72						



PTX06-ISB112

PTX06-ISB112

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Well Development Record

WELL/PIEZOMETER ID _____
SHEET 1 OF 1

PROJECT NAME: BOA R/S PROJECT NO.: 4638-05 DATE: 12/15/17 - 12/17/17

LOCATION: ISB-3E SE DATE INSTALLED: _____

TOTAL DEPTH (FTOC) 285.45 CASING DIAMETER 4"

METHODS OF DEVELOPMENT

- Swabbing Bailing Pumping Describe
 Yes No

Equipment decontaminated prior to development

Describe _____

EQUIPMENT NUMBERS

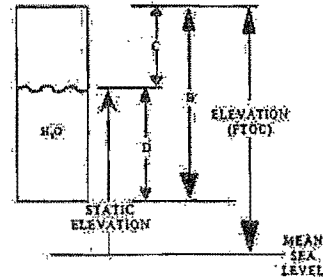
pH Meter 991300 EC Meter _____ Turbidity Meter 2020 Thermometer _____

CASING VOLUME INFORMATION:

Casing ID (inch)	1.0	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (A) (gal/ft)	0.04	0.09	0.16	0.2	0.37	0.65	0.75	1.0	1.5	2.0	2.6

PURGING INFORMATION

Measured Well Depth B 285.45 ft.
 Measured Water Level Depth (C) 278.70 ft.
 Length of Static Water Column (D) $\frac{B}{C} \times \frac{C}{D} = \frac{285.45}{278.70} \times 278.70 = 6.75$ ft.
 Casing Water Volume (E) $\frac{0.65}{(A)} \times \frac{6.75}{(D)} = 4.39$ gal
 Total Purge Volume = 115 gal



* suspect SC readings

Date	Time	Water Level (FTOC)	Volume Removed (gal)	pH	EC	Temperature (F or C)	Turbidity/Sand (ppm)	Comments
12/17	1335	278.70	2	7.91	457	57.4	1000+	bailed
	1415	-	10	7.93	207	59.5	1000+	* ↓
	1515	278.90	25	7.49	470	65.8	1000+	pumped
	1530	-	40	7.50	425	66.4	2.4	
	1545	-	70	7.46	441	67.2	1.2	
	1600	-	85	7.52	437	67.3	6.0	
	1615	-	115	7.54	410	67.3	4.3	
		278.72						



PTX06-ISB111
PTX06-ISB111

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Well Development Record

WELL/PIEZOMETER ID _____
SHEET 1 OF 1

PROJECT NAME: BOAR 1/5 PROJECT NO.: 4638-05 DATE: 12/17/17

LOCATION: ISB-4E DATE INSTALLED: _____

TOTAL DEPTH (FTOC) 283.85 CASING DIAMETER 4"

METHODS OF DEVELOPMENT

Swabbing Bailing Pumping

Describe bailed 0900 bailed 0940
swabbed 0915-0930 pumped 1025-
brushed 0930-0940

Equipment decontaminated prior to development

Yes No

Describe _____

EQUIPMENT NUMBERS

pH Meter 991300 EC Meter _____ Turbidity Meter 2020 Thermometer _____

CASING VOLUME INFORMATION:

Casing ID (inch)	1.0	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (A) (gal/ft)	0.04	0.09	0.16	0.2	0.37	0.65	0.75	1.0	1.5	2.0	2.6

PURGING INFORMATION

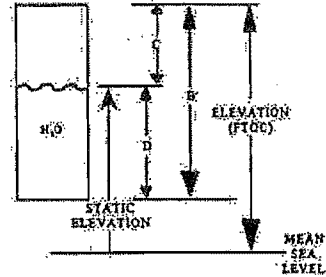
Measured Well Depth B 283.85 ft.

Measured Water Level Depth (C) 278.62 ft.

Length of Static Water Column (D) $\frac{B}{C} \times \frac{C}{D} = \frac{283.85}{278.62} \times 278.62 = 5.23$ ft.

Casing Water Volume (E) $\frac{0.65}{(A)} \times \frac{5.23}{(D)} = 3.40$ gal

Total Purge Volume = 130 gal



* suspect SL readings

Date	Time	Water Level (FTOC)	Volume Removed (gal)	pH	EC	Temperature (°F or C)	Turbidity/Sand (ppm)	Comments
12/17	0910	278.62	2	7.86	203	55.8	1000+	* bailed
	0945	-	10	7.78	212	53.9	1000+	* ↓
	1045	278.79	20	7.63	466	56.6	1000+	pumped
	1106	-	40	7.62	431	61.5	24.6	
	1115	-	58	7.84	183	63.7	1000+	* ↓
	1130	-	80	7.67	432	63.5	14.5	
	1145	-	90	7.66	177	63.2	2.7	* ↓
	1200	-	115	7.68	185	63.1	3.1	* ↓
	1215	-	130	7.68	430	62.1	1.4	↓
		278.69						



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Well Development Record

WELL/PIEZOMETER ID _____
SHEET 1 OF 1

PROJECT NAME: BOA R/S PROJECT NO.: 4638-05 DATE: 1/27/18

LOCATION: PTX06-ISR111 DATE INSTALLED: _____

TOTAL DEPTH (FTOC) 283.52 CASING DIAMETER 4"

METHODS OF DEVELOPMENT

Swabbing Bailing Pumping Describe pumped
Equipment decontaminated prior to development Yes No

Describe _____

EQUIPMENT NUMBERS

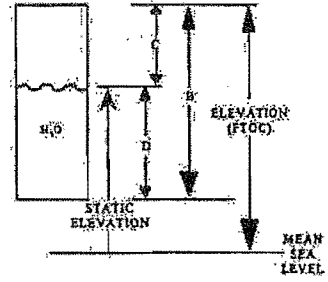
pH Meter 991300 EC Meter _____ Turbidity Meter _____ Thermometer _____

CASING VOLUME INFORMATION:

Casing ID (inch)	1.0	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (A) (gal/ft)	0.04	0.09	0.16	0.2	0.37	0.65	0.75	1.0	1.5	2.0	2.6

PURGING INFORMATION

Measured Well Depth B 283.52 ft.
Measured Water Level Depth (C) 279.95 ft.
Length of Static Water Column (D) $\frac{283.52 - 279.95}{1} = 3.57$ ft.
Casing Water Volume (E) $\frac{0.65}{(A)} \times \frac{3.57}{(D)} = 2.32$ gal
Total Purge Volume = 140 gal



Date	Time	Water Level (FTOC)	Volume Removed (gal)	pH	EC	Temperature F or C	Turbidity/Sand (ppm)	Comments
1/27	1530	279.95	20	7.92	427	71.6	cloudy	pumped
	1545	-	45	7.58	412	66.4	↓	
	1600	-	57	7.46	417	66.0	clear	
	1615	-	75	7.64	411	65.7	↓	
	1630	-	98	7.59	412	66.5	↓	
	1645	-	118	7.58	410	65.7	↓	
	1700	-	140	7.66	405	65.7	↓	
		278.75	(140)					



PTX06-**ISB110**

Stoller Newport News Nuclear
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Well Development Record

WELL/PIEZOMETER ID _____
SHEET 1 OF 1

PROJECT NAME: BOA R/S PROJECT NO.: 4638-05 DATE: 12/18/17

LOCATION: ISB-3E DATE INSTALLED: _____

TOTAL DEPTH (FTOC) 284.37 CASING DIAMETER 4"

METHODS OF DEVELOPMENT

Swabbing Bailing Pumping

Describe bailed 0820 bailed 0905
swabbed 0835-0850 pumped 1010-1130
 Yes No

Equipment decontaminated prior to development

Describe _____

EQUIPMENT NUMBERS

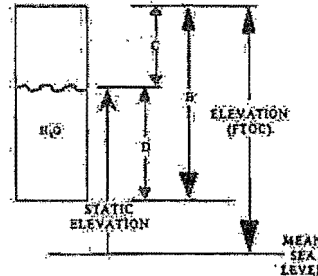
pH Meter 991300 EC Meter - Turbidity Meter 2020 Thermometer -

CASING VOLUME INFORMATION:

Casing ID (inch)	1.0	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (A) (gal/ft)	0.04	0.09	0.16	0.2	0.37	0.65	0.75	1.0	1.5	2.0	2.6

PURGING INFORMATION

Measured Well Depth B 284.37 ft.
 Measured Water Level Depth (C) 278.15 ft.
 Length of Static Water Column (D) $\frac{284.37 - 278.15}{1} = 6.22$ ft.
 Casing Water Volume (E) $\frac{0.65}{(A)} \times \frac{6.22}{(D)} = 4.04$ gal
 Total Purge Volume = 115 gal



* suspect SL reading

Date	Time	Water Level (FTOC)	Volume Removed (gal)	pH	EC	Temperature (F or C)	Turbidity/Sand (ppm)	Comments
12/18	0825	278.15	2	7.53	187	57.4	1000+	* bailed
	0910	-	10	7.89	470	54.9	1000+	
	1015	278.13	15	7.68	472	57.0	1000+	pumped
	1030	-	45	7.59	196	60.1	1000+	*
	1045	-	60	7.69	477	59.9	44.3	
	1100	-	80	7.64	207	62.2	5.7	*
	1115	-	95	7.58	216	62.1	1.4	*
	1130	-	115	7.63	271	64.2	1.9	*
		278.12						



PTX06-**ISB109**

Stoller Newport News Nuclear
A Subsidiary of Huntington Ingalls Industries

Well Development Record

WELL/PIEZOMETER ID _____
SHEET 1 OF 1

PROJECT NAME: BOA 2/5 PROJECT NO.: 4638-05 DATE: 12/16/17

LOCATION: ISB-2E DATE INSTALLED: _____

TOTAL DEPTH (FTOC) 284.60 CASING DIAMETER 4"

METHODS OF DEVELOPMENT

Swabbing Bailing Pumping

Describe bail 1245 bail 1325
swab 1255-1310 pump 1420-
brush 1310-1325 1630
 Yes No

Equipment decontaminated prior to development

Describe _____

EQUIPMENT NUMBERS

pH Meter 991300 EC Meter _____ Turbidity Meter 2020 Thermometer _____

CASING VOLUME INFORMATION:

Casing ID (inch)	1.0	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (A) (gal/ft)	0.04	0.09	0.16	0.2	0.37	0.65	0.75	1.0	1.5	2.0	2.6

PURGING INFORMATION

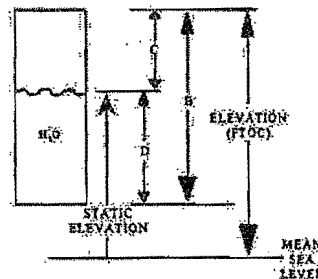
Measured Well Depth B 284.60 ft.

Measured Water Level Depth (C) 277.53 ft.

Length of Static Water Column (D) $\frac{B}{C} \times (B - C)$ 284.60 - 277.53 = 7.07 ft.

Casing Water Volume (E) $\frac{0.65}{(A)} \times \frac{7.07}{(D)} = 4.60$ gal

Total Purge Volume = 250 gal



Date	Time	Water Level (FTOC)	Volume Removed (gal)	pH	EC	Temperature (F or C)	Turbidity/Sand (ppm)	Comments
12/16	1245	277.53	2	7.74	466	62.3	1000+	bailed
	1325	-	10	7.58	471	61.7	1000+	↓
	1430	277.52	35	7.40	453	63.1	1000+	pumped
	1445	-	50	7.26	446	63.5	7.4	
	1500	-	80	7.36	440	63.7	15.6	
	1515	-	110	7.57	447	65.2	27.7	
	1530	-	140	7.26	444	64.4	4.7	
	1545	-	170	7.29	446	64.3	3.5	
	1600	-	200	7.43	447	64.3	2.0	
		277.50						



PTX06-ISB108

Stoller Newport News Nuclear
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Well Development Record

WELL/PIEZOMETER ID _____
SHEET 1 OF 1

PROJECT NAME: BOA R/S PROJECT NO.: 4638-05 DATE: 12/16/17

LOCATION: ISB-1E DATE INSTALLED: _____

TOTAL DEPTH (FTOC) 284.58 CASING DIAMETER 4"

METHODS OF DEVELOPMENT

- Swabbing
 Bailing
 Pumping
 Describe _____
 Equipment decontaminated prior to development
 Yes
 No

bailed 0755 bailed 0835
swabbed 0805-0820 pumped 0930-
brushed 0820-0830 1115

Describe _____

EQUIPMENT NUMBERS

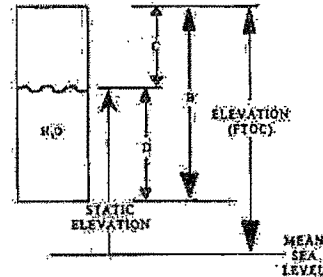
pH Meter 991300 EC Meter _____ Turbidity Meter 2020 Thermometer _____

CASING VOLUME INFORMATION:

Casing ID (inch)	1.0	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (A) (gal/ft)	0.04	0.09	0.16	0.2	0.37	0.65	0.75	1.0	1.5	2.0	2.6

PURGING INFORMATION

Measured Well Depth B 284.58 ft.
 Measured Water Level Depth (C) 277.50 ft.
 Length of Static Water Column (D) $\frac{284.58 - 277.50}{1} = 7.08$ ft.
 Casing Water Volume (E) $\frac{0.65}{(A)} \times \frac{7.08}{(D)} = 4.60$ gal
 Total Purge Volume = 150 gal



** Suspect SC readings*

Date	Time	Water Level (FTOC)	Volume Removed (gal)	pH	EC	Temperature (F or C)	Turbidity/Sand (ppm)	Comments
12/16	0800	277.50	2	7.84	452	58.9	1000+	bailed
	0840	-	10	7.91	458	54.8	1000+	
	0930	277.47	12	7.77	454	54.2	1000+	pumped
	0945	-	20	7.71	450	60.2	1000+	
	1000	-	40	7.31	436	60.2	63.0	
	1015	-	58	7.53	199	63.4	84.9	*
	1030	-	80	7.58	199	63.8	19.2	*
	1045	-	100	7.51	194	63.1	4.1	*
	1100	-	120	7.31	198	62.0	2.2	*
	1115	-	140	7.43	218	63.2	7.8	*
		277.45						

PTX06-1195



Stoller Newport News Nuclear
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Well Development Record

WELL/PIEZOMETER ID _____
SHEET 1 OF _____

PROJECT NAME: BOT-02/5 PROJECT NO.: 4638-05 DATE: 1/31/18

LOCATION: PTX06-1195 DATE INSTALLED: 1/30/18

TOTAL DEPTH (FTOC) 293.09 CASING DIAMETER 4"

METHODS OF DEVELOPMENT

Swabbing Bailing Pumping Describe _____
Equipment decontaminated prior to development Yes No
Describe _____

swabbed 1155-1230
bailed 1240
pumped 1415-1645

EQUIPMENT NUMBERS

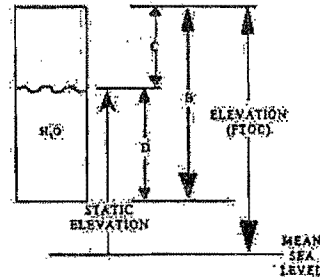
pH Meter 991300 EC Meter _____ Turbidity Meter _____ Thermometer _____

CASING VOLUME INFORMATION:

Casing ID (inch)	1.0	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (A) (gal/ft)	0.04	0.09	0.16	0.2	0.37	0.65	0.75	1.0	1.5	2.0	2.6

PURGING INFORMATION

Measured Well Depth B 293.09 ft.
Measured Water Level Depth (C) 284.72 ft.
Length of Static Water Column (D) $\frac{B}{C} \times (B - C) = \frac{293.09}{284.72} \times (293.09 - 284.72) = 3.37$ ft.
Casing Water Volume (E) $\frac{B}{A} \times D = \frac{0.65}{1} \times 3.37 = 5.44$ gal
Total Purge Volume = _____ gal



Date	Time	Water Level (FTOC)	Volume Removed (gal)	pH	EC	Temperature (F or C)	Turbidity/Sand (ppm)	Comments
1/31	1425	284.72	15	8.94	400	73.9	brown	pumped
	1445	-	25	8.33	329	76.5	↓	
	1500	-	35	7.56	337	71.6	cloudy	
	1515	-	45	7.38	334	70.7		
	1530	-	55	7.79	335	71.1		
	1545	-	65	8.05	336	70.8		
	1600	-	75	7.77	335	71.2		
	1615	-	80	7.88	334	70.5		
	1630	-	85	8.03	335	70.3		
	1645	-	90	7.92	337	70.2	↓	↓



PTX06-1195

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Well Development Record

WELL/PIEZOMETER ID _____
SHEET 2 OF 2

PROJECT NAME: BOA R/L5 PROJECT NO.: 4638-05 DATE: 2/1/18
LOCATION: PTX06-1195 DATE INSTALLED: _____
TOTAL DEPTH (FTOC) _____ CASING DIAMETER _____

METHODS OF DEVELOPMENT

Swabbing Bailing Pumping Describe _____
Equipment decontaminated prior to development Yes No
Describe _____

see page 1

EQUIPMENT NUMBERS

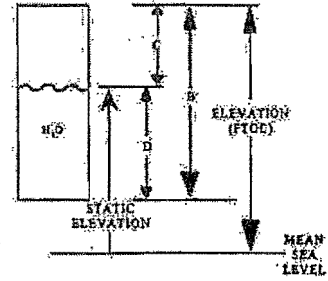
pH Meter _____ EC Meter _____ Turbidity Meter _____ Thermometer _____

CASING VOLUME INFORMATION:

Casing ID (inch)	1.0	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (A) (gal/ft)	0.04	0.09	0.16	0.2	0.37	0.65	0.75	1.0	1.5	2.0	2.6

PURGING INFORMATION

Measured Well Depth B _____ ft.
Measured Water Level Depth (C) _____ ft.
Length of Static Water Column (D) _____ - _____ = _____ ft.
Casing Water Volume (E) $\frac{B}{(A)} \times \frac{C}{(D)} =$ _____ gal
Total Purge Volume = _____ gal



Date	Time	Water Level (FTOC)	Volume Removed (gal)	pH	EC	Temperature (F or C)	Turbidity/Sand (ppm)	Comments
2/1	0930	284.90	90	7.02	400	49.9	cloudy	pumped
	0945	-	98	7.24	332	55.2		
	1000	-	106	7.49	143	58.0		
	1015	-	114	7.61	343	61.2		
	1030	-	122	7.76	338	62.5		
	1045	-	130	7.80	340	63.0		
	1100	-	138	7.71	334	63.1		
	1115	-	146	7.80	338	63.4		
	1130	-	154	7.75	142	63.2		
	1145	-	162	7.82	336	63.1		
	1200	-	170	7.83	340	64.3	clear	
	21215	-	178	7.64	338	64.1		
	1230	-	184	7.78	343	64.5		
	1245	-	190	7.71	343	65.6		
	1300	-	198	7.38	347	66.3		

284.93 (200)



PTX06-1194

Stoller Newport News Nuclear
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Well Development Record

WELL/PIEZOMETER ID _____
SHEET 1 OF 1

PROJECT NAME: BOA R/L5 PROJECT NO.: 4638-05 DATE: 1/30/18

LOCATION: PTX06-1194 DATE INSTALLED: _____

TOTAL DEPTH (FTOC) 282.14 CASING DIAMETER 4"

METHODS OF DEVELOPMENT

Swabbing Bailing Pumping Describe _____
Equipment decontaminated prior to development Yes No
Describe _____

*swabbed 0935-1010
bailed 1020*

EQUIPMENT NUMBERS

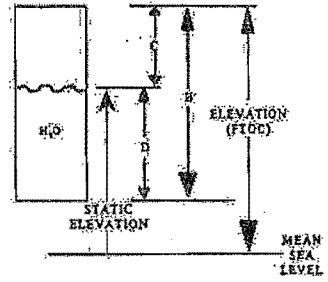
pH Meter 991300 EC Meter _____ Turbidity Meter _____ Thermometer _____

CASING VOLUME INFORMATION:

Casing ID (inch)	1.0	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (A) (gal/ft)	0.04	0.09	0.16	0.2	0.37	0.65	0.75	1.0	1.5	2.0	2.6

PURGING INFORMATION

Measured Well Depth B 282.14 ft.
Measured Water Level Depth (C) 280.34 ft.
Length of Static Water Column (D) $\frac{B}{C} \times \frac{C}{D} = \frac{282.14}{280.34} \times 1.80 = 1.80$ ft.
Casing Water Volume (E) $\frac{0.65}{(A)} \times \frac{1.80}{(D)} = 1.17$ gal
Total Purge Volume = 50 gal



Date	Time	Water Level (FTOC)	Volume Removed (gal)	pH	EC	Temperature (F or C)	Turbidity/Sand (ppm)	Comments
1/30	1030	280.34	2	7.37	545	64.0	brown	bailed
	1210	-	10	7.38	450	61.6	cloudy	
	1300	-	15	7.39	470	62.5		
	1330	-	20	7.73	484	63.3		
	1405	-	25	7.62	503	63.5		
	1445	-	30	7.55	495	63.5		
	1520	-	35	7.56	500	63.6		
	1600	-	40	7.61	501	64.2		
	1640	-	45	7.65	496	63.9		
			(50)					



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Well Development Record

WELL/PIEZOMETER ID _____
SHEET 1 OF 2

PROJECT NAME: BOA 9 ^{12/15} PROJECT NO.: 4638-05 DATE: 1/23/18, 1/24/18

LOCATION: PTX06-1192 DATE INSTALLED: _____

TOTAL DEPTH (FTOC) 292 ^{295.86} CASING DIAMETER 4"

METHODS OF DEVELOPMENT

Swabbing Bailing Pumping Describe
Equipment decontaminated prior to development Yes No

bailed 1210 pumped 1520-1645 1/23
swabbed 1235-1300 1000-1205 1/24
bailed 1300

Describe _____

EQUIPMENT NUMBERS

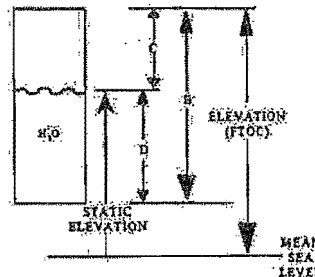
pH Meter 991300 EC Meter _____ Turbidity Meter _____ Thermometer _____

CASING VOLUME INFORMATION:

Casing ID (inch)	1.0	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (A) (gal/ft)	0.04	0.09	0.16	0.2	0.37	0.65	0.75	1.0	1.5	2.0	2.6

PURGING INFORMATION

Measured Well Depth B 295.86 ft.
Measured Water Level Depth (C) 282.00 ft.
Length of Static Water Column (D) 295.86 - 282.00 = 13.86
Casing Water Volume (E) $\frac{13.86}{(A)} \times \frac{0.65}{(D)} = 9.01$ gal
Total Purge Volume = 50 gal



stickup = 2.91'

Date	Time	Water Level (FTOC)	Volume Removed (gal)	pH	EC	Temperature (F or C)	Turbidity/Sand (ppm)	Comments
1/23	1220	282.00	2	7.63	276	67.3	brown	
	1530		15	7.80	303	60.1		
	1545		20	7.76	293	60.1		
	1600		25	7.84	280	61.3		
	1615		30	7.86	276	61.6		
	1630		35	8.04	252	62.3		
	1645		40	8.32	493	61.3		
1/24	1000	281.50	40	7.10	565	58.0		
	1015		47	7.61	221	55.5		
	1030		50	7.55	227	56.7		
	1045		53	7.58	224	57.7	cloudy	



PTX06-1192

Stoller Newport News Nuclear
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Well Development Record

WELL/PIEZOMETER ID _____
SHEET 2 OF 2

PROJECT NAME: BOA R/S PROJECT NO.: 4638-05 DATE: 1/23/18, 1/24/18
LOCATION: PTX06-1192 DATE INSTALLED: _____
TOTAL DEPTH (FTOC) _____ CASING DIAMETER _____

METHODS OF DEVELOPMENT

Swabbing Bailing Pumping Describe _____
Equipment decontaminated prior to development Yes No
Describe _____

EQUIPMENT NUMBERS

pH Meter _____ EC Meter _____ Turbidity Meter _____ Thermometer _____

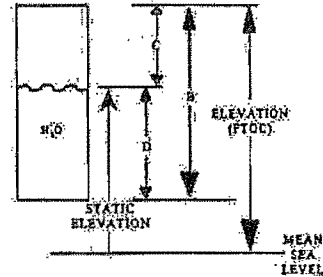
see page 1

CASING VOLUME INFORMATION:

Casing ID (inch)	1.0	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (A) (gal/ft)	0.04	0.09	0.16	0.2	0.37	0.65	0.75	1.0	1.5	2.0	2.6

PURGING INFORMATION

Measured Well Depth B _____ ft.
Measured Water Level Depth (C) _____ ft.
Length of Static Water Column (D) _____ = _____ ft.
Casing Water Volume (E) $\frac{B}{(A)} \times \frac{C}{(D)} =$ _____ gal
Total Purge Volume = _____ gal



Date	Time	Water Level (FTOC)	Volume Removed (gal)	pH	EC	Temperature (F or C)	Turbidity/Sand (ppm)	Comments
1/24	1100		56	7.73	227	61.5	cloudy	
	1115		60	8.12	248	64.9		
	1130		63	8.09	253	67.6	↓	
	1145		66	8.11	315	64.2	clear	
	1200		69	8.25	271	65.8		
	1215		72	8.20	267	65.8		
	1230		75	8.13	281	65.8		
	1245		78	8.17	251	65.5	↓	
		281.45	30					

PTX06-1192



Stoller Newport News Nuclear
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Well Development Record

WELL/PIEZOMETER ID _____
SHEET 1 OF _____

PROJECT NAME: BDA R/S PROJECT NO.: 4638-05 DATE: 1/28/18

LOCATION: PTX06-1192 DATE INSTALLED: _____

TOTAL DEPTH (FTOC) 295.86 CASING DIAMETER 4" PVC

METHODS OF DEVELOPMENT

Swabbing Bailing Pumping Describe brn swelled 0910-0955
Equipment decontaminated prior to development Yes No bailed 1000
Describe _____ pumped 1130-1555

EQUIPMENT NUMBERS

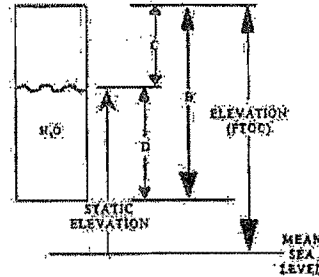
pH Meter 991300 EC Meter _____ Turbidity Meter _____ Thermometer _____

CASING VOLUME INFORMATION:

Casing ID (inch)	1.0	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (A) (gal/ft)	0.04	0.09	0.16	0.2	0.37	0.65	0.75	1.0	1.5	2.0	2.6

PURGING INFORMATION

Measured Well Depth B 295.86 ft.
Measured Water Level Depth (C) 281.50 ft.
Length of Static Water Column (D) $\frac{295.86}{B} - \frac{281.50}{C} = \frac{14.36}{D}$ ft.
Casing Water Volume (E) $\frac{0.65}{(A)} \times \frac{14.36}{(D)} = \frac{9.33}{(D)}$ gal
Total Purge Volume = 45 gal



Date	Time	Water Level (FTOC)	Volume Removed (gal)	pH	EC	Temperature (F/C)	Turbidity/Sand (ppm)	Comments
1/28	1130	281.50	3	7.54	523	56.1	brown	pumped
	1330	-	6	7.84	522	60.9	↓	
	1345	-	10	7.86	546	63.8	↓	
	1355	-	15	7.87	544	67.2	cloudy	
	1405	-	20	7.71	538	70.0	↓	
	1420	-	25	7.76	538	73.1	↓	
	1445	-	30	7.90	543	73.0	↓	
	1505	-	35	7.92	536	73.6	↓	
	1530	-	40	7.92	532	72.3	clear	
	1550	-	45	7.91	527	69.9	↓	
		281.21						



PTX06-1191

Stoller Newport News Nuclear
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Well Development Record

WELL/PIEZOMETER ID _____
SHEET 1 OF 1

PROJECT NAME: BOA R/5 PROJECT NO.: 4638-05 DATE: 1/24/18, 1/25/18

LOCATION: PTX06-1191 DATE INSTALLED: _____

TOTAL DEPTH (FTOC) 294.86 CASING DIAMETER 4"

METHODS OF DEVELOPMENT

Swabbing Bailing Pumping Describe
Equipment decontaminated prior to development Yes No

*bailed 1455
swabbed 1530-1555
bailed 1600
pumped 0930-1100
1/25/18*

Describe _____

EQUIPMENT NUMBERS

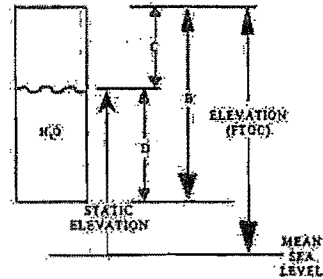
pH Meter 991300 EC Meter _____ Turbidity Meter _____ Thermometer _____

CASING VOLUME INFORMATION:

Casing ID (inch)	1.0	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (A) (gal/ft)	0.04	0.09	0.16	0.2	0.37	0.65	0.75	1.0	1.5	2.0	2.6

PURGING INFORMATION

Measured Well Depth B 294.86 ft.
Measured Water Level Depth (C) 281.63 ft.
Length of Static Water Column (D) $\frac{294.86 - 281.63}{1} = 13.23$
Casing Water Volume (E) $\frac{0.65}{(A)} \times \frac{13.23}{(D)} = 8.60$ gal
Total Purge Volume = 240 gal



stuck up 3.10'

Date	Time	Water Level (FTOC)	Volume Removed (gal)	pH	EC	Temperature (F or C)	Turbidity/Sand (ppm)	Comments
1/24	1520	281.63	2	7.87	443	62.7	brown	bailed
1/25	0930	281.63	20	7.41	469	56.3	brown	pumped
	0945	-	63	7.46	465	57.5	clear	
	1000	-	104	7.42	456	61.2	↓	
	1015	-	168	7.52	462	62.4	cloudy	
	1030	-	191	7.82	464	63.1	clear	
	1045	-	212	7.73	207*	64.3	↓	
	1100	-	233	7.73	217*	65.1	↓	
		281.58	240					

* suspect SC readings



PTX06-1190

Stoller Newport News Nuclear

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Well Development Record

WELL/PIEZOMETER ID _____
SHEET 1 OF 1

PROJECT NAME: BOA R/S PROJECT NO.: 4368-05 DATE: 12/2/17

LOCATION: PTX06-1190 DATE INSTALLED: 10/20/17

TOTAL DEPTH (FTOC) 289.20 CASING DIAMETER 4"

METHODS OF DEVELOPMENT

Swabbing Bailing Pumping Describe
Equipment decontaminated prior to development Yes No

*bailed 1155
swabbed 1205-1220 pumped 1320-1505
bailed 1220
No brushing - wouldn't fit in casing previously developed*

Describe _____

EQUIPMENT NUMBERS

pH Meter 991300 EC Meter _____ Turbidity Meter 2020 Thermometer _____

CASING VOLUME INFORMATION:

Casing ID (inch)	1.0	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (A) (gal/ft)	0.04	0.09	0.16	0.2	0.37	0.65	0.75	1.0	1.5	2.0	2.6

PURGING INFORMATION

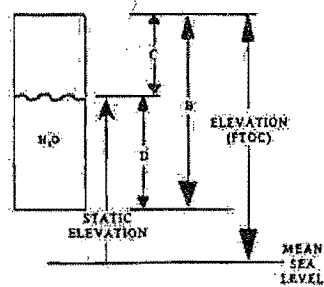
Measured Well Depth B 289.20 ft.

Measured Water Level Depth (C) 282.15 ft.

Length of Static Water Column (D) $\frac{B}{C} \times \frac{C}{D} = \frac{289.20}{282.15} \times 282.15 = 7.05$ ft.

Casing Water Volume (E) $\frac{7.05}{(A)} \times \frac{1.16}{(D)} = 1.13$ gal

Total Purge Volume = 90 gal



Date	Time	Water Level (FTOC)	Volume Removed (gal)	pH	EC	Temperature (F or C)	Turbidity/Sand (ppm)	Comments
12/2	1200	282.15	2	7.43	530	67.8	1000+	bailed
	1227	282.10	6	7.48	476	67.4	1000+	↓
	1330	-	15	7.50	482	74.8	1000+	pumped
	1345	-	27	7.61	480	69.2	79.9	
	1400	-	36	7.42	495	72.9	9.4	
	1415	-	48	7.65	501	73.0	17.6	
	1430	-	64	7.64	473	74.6	7.3	
	1445	-	77	7.47	476	74.3	4.5	
	1500	-	90	7.63	472	74.0	7.1	
		282.07						

Appendix I
Hydrologic Evaluation – East and Southeast
Zones of the Perched Groundwater at the
Pantex Plant



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the Pantex Plant**

2017 Update

May 2018

Hydrologic Evaluation

East and Southeast Zones of the Perched Aquifer at the Pantex Plant

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Attachments

Attachment 1: Comparison of 2009 and 2017 Perched Aquifer Groundwater Elevations

I. Introduction

This updated evaluation is included in the 2017 Annual Progress Report as a result of key findings in the First Five-Year Review Report (Pantex 2013). The report recognized that perched groundwater COC plumes continue to move and/or expand downgradient, especially to the east of FM 2373 and in the southeastern lobe of the perched aquifer. As stated in the Groundwater Remedy Effectiveness Evaluation (Trihydro 2012) conducted as part of the First Five-Year Review, portions of these areas are not under the short-term influence of the SEPTS and may not be under the long-term influence because of limited saturated thickness or other limiting hydrogeologic conditions (see Figure 1).

Because of the issues identified, Pantex is evaluating these areas in more detail than prior reporting efforts, which tended to focus more on the operation of installed remedial actions and effects on the perched groundwater system as a whole rather than these areas near the fringe of perched groundwater that may or may not be influenced by the installed remedial actions. This report is the sixth focusing on these areas, and will be updated and revised yearly as part of the Annual Progress Reporting as additional data are collected and analyzed. The 2017 update includes discussion of water level and COC concentration data including new information regarding the unexpected presence of perched groundwater and HEs at southeast boundary of Pantex property.

Even though several high explosive compounds are found in this region, this report focuses on the RDX plume because it is the most widespread COC occurring at the highest concentrations in these areas and has been consistently used in prior reporting and evaluations to represent the southeast plume. The following sections discuss RDX concentrations, trends, and apparent plume movement in perched groundwater east of FM 2373, along with the effects of pump and treat operations over time.

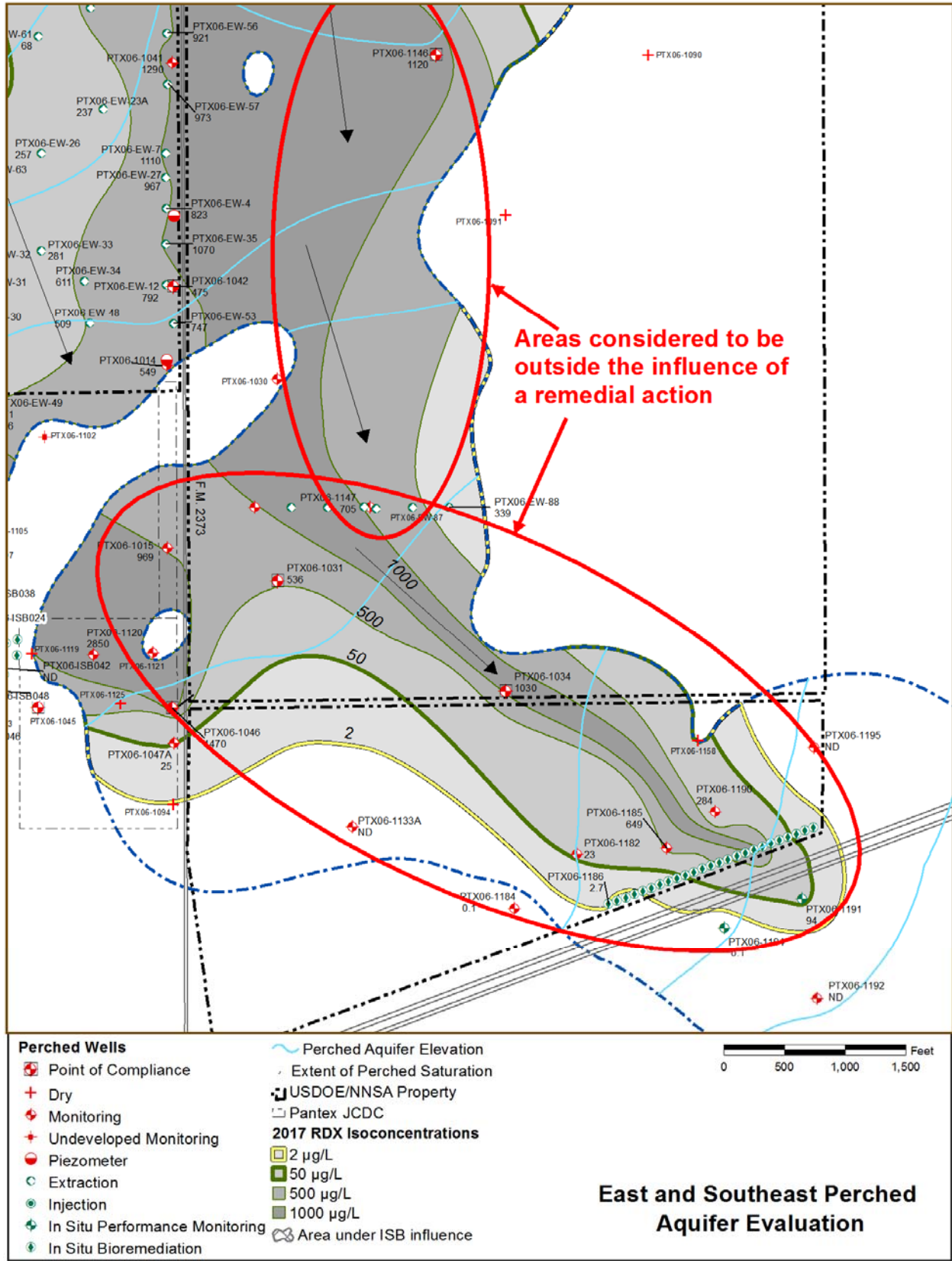


Figure 1. Areas of Perched Groundwater outside the Influence of Remedial Actions

II. Wells Evaluated

Many wells have been installed in the areas identified as currently outside the influence of a remedial action depicted in Figure 1. These wells are discussed in detail below and include:

- PTX06-1015
- PTX06-1030
- PTX06-1031
- PTX06-1034
- PTX06-1046
- PTX06-1047A
- PTX06-1094
- PTX06-1120
- PTX06-1121
- PTX06-1133A
- PTX06-1146
- PTX06-1147
- PTX06-1182
- PTX06-1184
- PTX06-1185
- PTX06-1186
- PTX06-1190
- PTX06-1191
- PTX06-1192
- PTX06-1194
- PTX06-1195

Additionally, six dry wells are installed in this region of perched groundwater and help define the perched extent. These wells are monitored at least twice per year for water levels and will be included in this evaluation if water is observed in these wells. These dry wells include:

- PTX06-1158
- PTX06-1094
- PTX06-1125
- PTX06-1090
- PTX06-1091
- PTX06-1193

PTX06-1015 was installed in 1995 on Texas Tech property approximately 150 feet west of FM 2373. RDX concentrations in this well have exceeded GWPS since installation and have fluctuated near 1,000 ug/L since 2010. Historically, this well was the closest downgradient to the SEPTS extraction well field so it may have been the first well to realize effects of extraction. However, an apparently expanding area of no perched saturation now separates this well from the primary area affected by the SEPTS extraction well field. Water levels in this well have been consistently declining at a rate of about 0.39 ft/year since the start of remedial actions.

PTX06-1030 and PTX06-1031 were installed in 1996 approximately 750 feet east of FM 2373 on the former Cockrell property, which was eventually purchased by DOE in 2008. RDX concentrations in PTX06-1030 have exceeded GWPS since monitoring began in 1996, typically ranging from 500 – 2,000 ug/L. However, a generally decreasing trend in RDX was indicated by the data collected since the start of remedial actions in 2009. The water level in this well declined in December 2017 to below the bottom of the screen, so this well could not be sampled in 2017. PTX06-1031, which was installed approximately 1,700 feet south of PTX06-1030, had non-detect RDX results in 1996 followed by a gradual increasing trend in RDX. The Mann-Kendall statistical evaluation indicates No Trend in the data since the start of

remedial actions. Water levels in PTX06-1031 are decreasing since the start of remedial actions with recent observations (over the last two years) declining at a rate of 0.56 ft/year.

PTX06-1034 was installed in 1998 in the southeast lobe of perched groundwater (former Cockrell property) and was the furthest downgradient sampled well in the area until the installation of PTX06-1182 in 2016. RDX was initially non-detect in this well, but concentrations began to dramatically increase in 2005. After declining slightly in 2015, the RDX concentration increased to the all-time high value of 1,250 ug/L during the second sampling event of 2016. RDX concentrations have since declined slightly to less than 1,000 ug/L in 2017. Water levels at this well have declined since the start of remedial actions, and recent data indicate decreasing water levels at the rate of 0.17 ft/year. Because of the concern over increasing COC trends in this well, Pantex installed an additional well (PTX06-1158) further east of PTX06-1034 in 2012, but that well has been dry since installation.

PTX06-1046 and PTX06-1047A were installed on Texas Tech property in 2000. RDX concentrations have exceeded GWPS in PTX06-1046 since monitoring began in 2000 and have remained above 1,000 ug/L since 2011. RDX was initially non-detect in PTX06-1047A, installed approximately 300 feet south of PTX06-1046, until concentrations rapidly increased in 2006. RDX levels in PTX06-1047A appear to have peaked in 2012 at over 600 ug/L and subsequently dramatically decreased to less than 10 ug/L in 2014. Recent concentrations show no trend with a concentration of 25 ug/L in the most recent sample from 2017. While these trends conflict with the general north-south gradient believed to be driving groundwater movement in the area, the measured concentrations have remained much lower than previous observations for several years. Water levels in both wells have been declining at a rate of about 0.4 ft/year since the start of remedial actions.

PTX06-1094 was previously believed to be a dry well. However, based on the recent observations of perched saturation at PTX06-1133A, PTX06-1182, and other wells installed in this area, the drilling and construction records for this well were reviewed. With the context provided by surrounding perched water levels as observed at PTX06-1047A and PTX06-1133A, this review determined that the bottom of the screen was set approximately 10 ft above the top of the FGZ. Therefore, perched saturation is likely present at this location with the water table below the bottom of the screen. Therefore, this well was not used to constrain the extent of perched saturation in this area for the 2017 mapping.

PTX06-1120 and PTX06-1121 were installed east of the Southeast ISB system in 2007 and were considered to be dry when completed; however, water appeared in both wells when measured in 2008 and routine sampling commenced in 2010. RDX concentrations have ranged from approximately 2,000 to 4,000 ug/L in PTX06-1120 and from about 800 to 1,300 ug/L in PTX06-1121. RDX data in PTX06-1120 indicate a decreasing trend. PTX06-1121 has not been sampled since 2012 because of insufficient water. Water levels in both wells had been declining at a rate of almost 0.4 ft/year since the start of remedial actions; in 2017, dry conditions were observed in both wells.

PTX06-1133A was installed in 2008 south of the known extent of perched saturation. The well was initially dry and remained dry until June 2011 when more than 3 ft of water was observed in the well. Saturation continued to be observed in this well until December 2013 when the water level suddenly declined to below the bottom of the screen. Water continued to be detected in the sump of the well until June 2016 when about 2 ft of water was found in the well. Water levels are increasing through 2017. RDX was detected for the first time in this well in 2016 at levels below the GWPS, but was non-detect in both samples collected in 2017.

PTX06-1146 and PTX06-1147 were installed along the eastern edge of the estimated perched extent in 2008. When sampling began in 2009, RDX concentrations in PTX06-1146 were around 1,400 ug/L and increased until early 2011 when the concentrations appeared to have peaked. RDX is now exhibiting a statistical decreasing trend near 1,000 ug/L in the most recent sample from PTX06-1146. RDX concentrations in PTX06-1147, installed approximately 3,800 feet south/southwest of PTX06-1146, increased from approximately 400 ug/L to over 1,000 ug/L from 2009 through 2013. Since 2014, RDX concentrations have fluctuated significantly from about 600 to near 1,200 ug/L with a concentration near 600 ug/L observed in the most recent sample in 2017. Water levels in both wells are declining at rates of 0.42 and 0.57 ft/year based on data collected during the last two years.

PTX06-1182 was installed in July 2016 outside the known extent of perched saturation in the southeast; however, almost seven feet of saturation was found in this well indicating perched water and contamination have migrated farther to the southeast. RDX was detected above the GWPS at 23 ug/L in both samples collected from this well in 2017. Water level data indicate a decreasing trend at 0.25 ft/year based on data collected through 2017.

In response to the detection of HEs in PTX06-1182, Pantex installed a series of additional wells to define the extent of the plume to the southeast. Five wells, PTX06-1184, PTX06-1185, PTX06-1186 (now PTX06-ISB107), PTX06-1190, and PTX06-1195, were drilled on Pantex property. To the east of PTX06-1182, RDX was detected at PTX06-1185 at 649 ug/L and at PTX06-1190 at 284 ug/L but was not detected at PTX06-1195. RDX was also detected below the GWPS at PTX06-1184, but this well has very little water above the bottom of the screen.

Because of the unexpected presence of HEs at the southeast boundary of the site, Pantex determined, with input from the TCEQ and EPA, the best approach would be to extend the Southeast ISB to remediate the HEs in this area of this saturated thickness. Pantex completed drilling a line of injection wells (PTX06-ISB108 through PTX06-ISB131) in December 2017; the system is planned for injection in the last half of 2018. HEs were also detected in most of these wells with the highest concentration of 1,280 ug/L observed at PTX06-ISB124. Because these wells are closely spaced at 75 ft apart, initial monitoring of RDX concentrations before the first injection provides a detailed observation of the distribution of RDX along a transect of the plume. The total width of the RDX plume (as defined by the GWPS) in this area is estimated to be less than about 2,000 ft as shown in Figure 1, and concentrations were observed to decrease to less than about 10 percent of the maximum within 300 ft to the east and within 600 ft to the

west of PTX06-ISB124. Based on this data combined with observations at other wells upgradient, movement of the plume in this area appears to be associated with preferential groundwater flow paths along channel-type features in the top of the FGZ.

Four additional wells, PTX06-1191, PTX06-1192, PTX06-1193, and PTX06-1194 were drilled in early 2018 on the property to the south across U.S. Highway 60. RDX was detected above the GWPS at PTX06-1191 at 94 ug/L and below the GWPS at PTX06-1194. RDX was not detected at PTX06-1192. No perched groundwater was encountered at PTX06-1193. Pantex is continuing to work with the neighboring landowner to the east to obtain an agreement to drill wells on that property to aid in determining the extent of contamination.

III. Pumping Effects

If the perched groundwater elevation contours are compared from 2009 to 2017 (Attachment 1), positive effects of pump and treat operations are apparent, including the reduction of the mound of groundwater beneath Playa 1 and a general shift of groundwater contours to the north in the SEPTS well field indicating reduction of saturated thickness. Further south, perched groundwater elevation contours have remained constant or actually shifted to the southeast in the extreme southeast lobe of perched groundwater because of the observed increases of saturated thickness in PTX06-1034 and PTX06-1133A along with the new data from PTX06-1182 and other recently drilled wells. The extent of perched saturation in the extreme southeast lobe has changed dramatically for 2017 because of the new information collected from these wells.

The other noticeable change in the maps is the apparent spread of the dry zone located south of the SEPTS well field caused by the decline of saturated thickness observed at PTX06-1102, PTX06-1014, PTX06-1015, and PTX06-1030. This dry zone will likely continue to expand as pump and treat operations continue to reduce saturated thickness of the perched aquifer upgradient of this area.

These observations are also supported by the 2017 Capture Zone analysis results which are depicted in Figure 2. The capture zones represent areas of influence over a five-year pumping period using 2017 well operational data coupled with a single layer groundwater model specifically developed for evaluating remedial options in the perched aquifer. While the area of influence did slightly expand to the east in recent years (likely due to an emphasis on operating the wells along FM 2373 and possible dewatering of the perched aquifer in the extraction well field), a large area to the east remains unaffected by SEPTS system operations.

As recommended in the 2015 Annual Progress Report, Pantex is actively working to extend SEPTS extraction east of FM 2373 to limit further migration of impacted perched water southward along the eastern margin of the perched aquifer. Extending the SEPTS well field to the east across FM 2373 may reduce head and thus groundwater flux before it reaches areas with lower transmissivity where pump and treat technologies are less effective. This action is in

agreement with the selected remedy for the southeast perched groundwater. The ROD selected the SEPTS as the final remedy to stabilize migration and treat perched groundwater contaminants. A total of seven potential new extraction wells have been installed east of FM 2373 in a line running east-to-west. Data collected from these wells indicate this is an area of greater saturated thickness than found to the north or south. Contracting for design of the SEPTS extension began in 2017; the wells in this area should become active later in 2018.

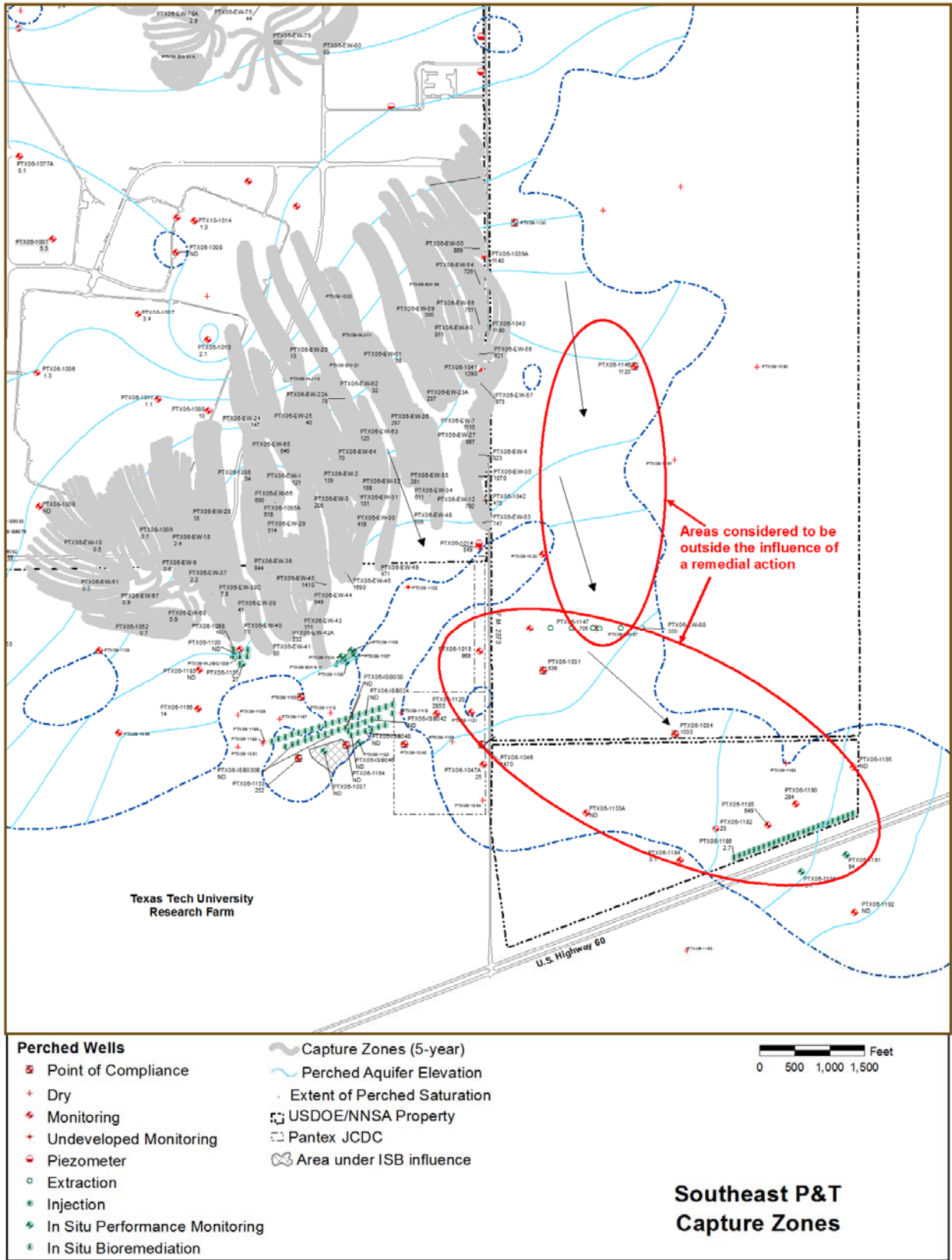


Figure 2. SEPTS Capture Zones

IV. Indicators of Plume Movement

In order to evaluate and attempt to quantify plume movement in the areas that are unlikely to be affected by pump and treat operations, RDX concentrations were plotted over time on the same axis for:

- PTX06-1030
- PTX06-1031
- PTX06-1034
- PTX06-1147

These wells were chosen because they are generally located in a line following the groundwater gradient in the area, which shifts from southerly (in the northern region) to southeasterly (in the southern region).

As depicted in Figure 3, RDX data have been collected in PTX06-1030 and PTX06-1031 since 1996. At that time, the RDX plume had already reached PTX06-1030 because, with the exception of a single data point, the concentrations consistently exceeded 200 ug/L. Concentrations subsequently increased to values ranging around 1,500 ug/L, increased sharply in 2011, and were exhibiting a somewhat stable trend at about 1,100 ug/L before the well became dry in 2017. In PTX06-1031, RDX concentrations were at or near detection limits until 1998, then gradually increased through 2008. RDX has been somewhat stable around 500 ug/L in this well since 2012, although one result in 2016 increased to 770 ug/L.

PTX06-1034 was the furthest downgradient well in the southeast perched aquifer until the installation of PTX06-1182 in 2016. RDX was non-detect in this well until 2002, then concentrations began to steadily increase. In 2010, concentrations began increasing at a much faster rate and exceeded 1,000 ug/L for the first time in 2016 although concentrations declined to below 1,000 ug/L in 2017. The rate of increase in concentrations appears to be much faster than the rate at PTX06-1031 and concentrations are now higher than high values observed at PTX06-1031. Therefore, it appears that the RDX detected in PTX06-1034 more likely migrated from the perched groundwater to the east represented by PTX06-1147.

High concentrations of RDX had already reached PTX06-1147 when installed in 2009. Concentrations in this well, installed between PTX06-1030 and PTX06-1034 but shifted to the east, increased from approximately 400 ug/L to over 1,200 ug/L in 2011. Recent data indicate that RDX concentrations are variable in this well.

PTX06-1182 was installed in 2016 in an area that was previously thought to be beyond the extent of perched saturation; the presence of RDX above the GWPS has been confirmed with the most recent sample showing a concentration of 23 ug/L. Pantex installed additional wells downgradient in 2017 and early 2018 to determine perched groundwater and contaminant extent in this area.

If the RDX concentration of approximately 400 ug/L depicted on Figure 3 is chosen as representative of the leading edge of the RDX plume and considering the temporal changes in concentration discussed above, the RDX plume appears to be moving downgradient at a rate of 100 to 200 ft/yr from PTX06-1030 to PTX06-1034. This rate of transport appears to be faster than groundwater velocities estimated for the SEISB conceptual site model, but similar to those groundwater velocities estimated for the Zone 11 ISB conceptual site model (Trihydro 2011). Note that the ISB velocities were estimated using slug testing techniques in ISB injection wells, which may or may not be representative of conditions in the surrounding formation.

Looking at the depiction of RDX in the extreme southeast lobe as shown in Figure 1, the leading edge of the RDX plume has migrated about 1,200 ft downgradient of PTX06-1034 over a period of about six years. The resulting rate of plume movement is about 200 ft/yr, consistent with the upper range calculated using data collected at PTX06-1030 and PTX06-1034. Movement of the plume in this area appears to be associated with faster groundwater flow paths along channel-type features in the top of the FGZ.

PTX06-1133A was dry when installed in 2009 and remained dry until 2011, when approximately 3 feet of water entered the well. Observed water levels subsequently declined through 2013 when the water level dropped below the bottom of the well screen. This well was sampled from December 2011 through May 2013; all VOCs and HEs were non-detect in those samples. Water was again measured in PTX06-1133A in 2016 with about 2 ft of saturation above the bottom of the screen. RDX was not detected in either sample collected in 2017.

These water level measurements and analytical results could suggest that the perched extent was slowly expanding in the area and “old” perched groundwater, unaffected by Pantex Plant operations, had now moved into this well. Alternatively, these data could indicate the influence of enhanced recharge following the very high rainfall that occurred in 2010 and again in 2014 through the large borrow pit located further south near U.S. Highway 60. However, because of the fluctuating saturated and dry conditions in this well, it is unknown whether the saturated conditions in the well are caused by an expanding extent of perched groundwater from the north or south, or by some other unknown phenomena. This well will continue to be monitored and will be sampled if sufficient water is available.

As summarized in Figure 4, the wells in the far southeastern lobe of perched groundwater are exhibiting various statistical trends in RDX considering the 2009 – 2017 data with increasing trends noted at PTX06-1034 and PTX06-1182 based on available data. However, as shown in Figure 3, RDX concentrations in the wells in this area are somewhat stable over the past few years. These conditions may be caused by mass removal upgradient and some mixing with unaffected water in the region.

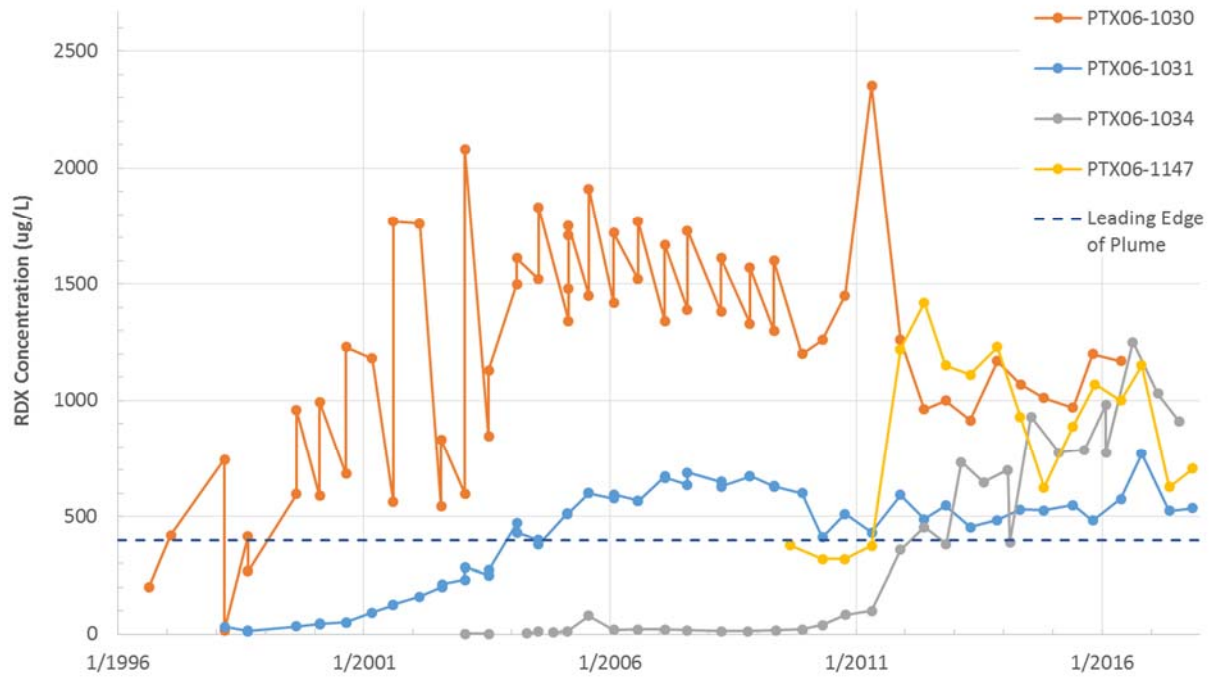


Figure 3. RDX Concentrations over time, Southeast Perched Aquifer Wells

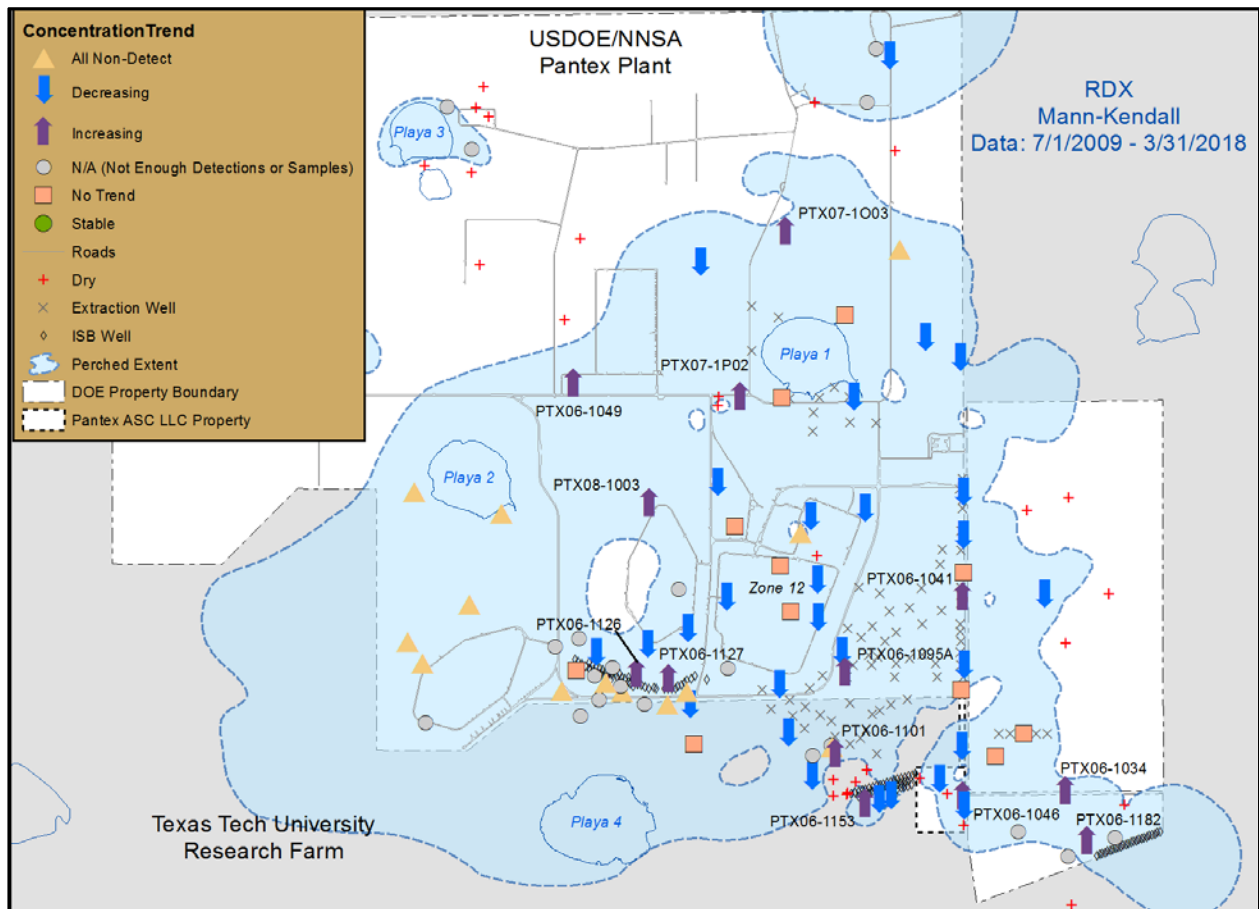


Figure 4. Recent RDX Trends in the Perched Aquifer

V. Conclusions

The evaluation of data presented in this report lead to several important conclusions. First, given the current configuration of the SEPTS well field, the system will not be able to affect water levels, spread of the perched aquifer, or COC mass currently in the southeast lobe of the perched aquifer. Monitoring data collected since 2008 in wells located within the southeast lobe of the perched aquifer indicate the continued movement of the RDX plume into this area. Water will continue to flow into this area from the north (supported by recent data from PTX06-1034) under the influence of the general hydraulic gradient, increasing both water volume and COC mass, which will likely continue to spread throughout this zone of perched groundwater.

With the recent discovery of perched groundwater and HEs at elevated levels in the area near PTX06-1182 beyond the previously known extent of perched groundwater, Pantex is moving forward with plans to extend the Southeast ISB along the southeastern property boundary along U. S. Highway 60. Pantex completed drilling a line of injection wells in December 2017, and the system is planned for injection in the latter half of 2018. Because the HE plume in this area appears to be associated with channel-type features in the top of the FGZ, this treatment technology is expected to be effective at preventing the migration of additional contaminant mass beyond the Pantex property line in this area. Pantex is continuing to work with the neighboring landowner to the east to obtain an agreement to drill wells on that property to aid in determining the extent of contamination.

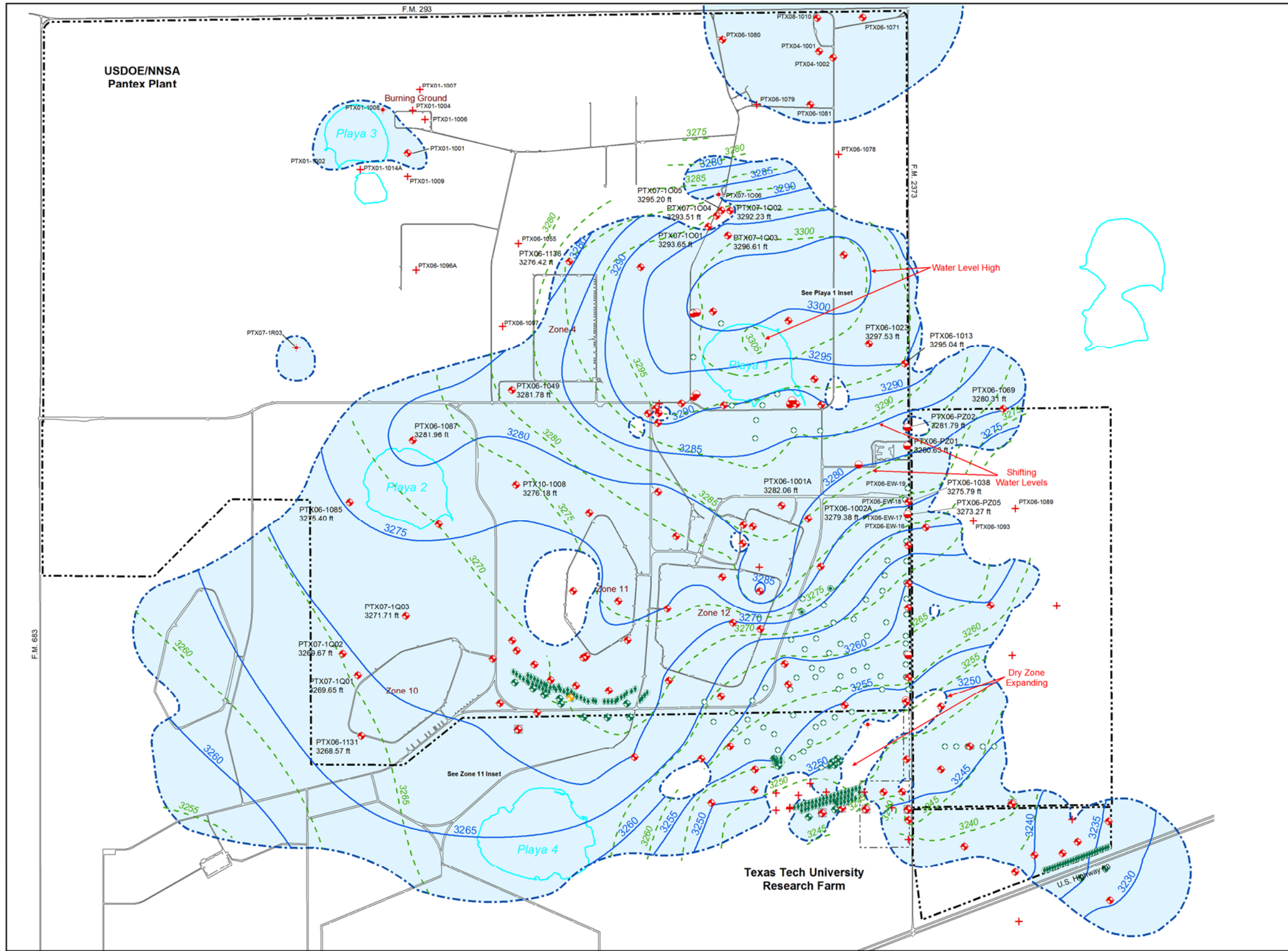
In addition, Pantex is actively working to extend SEPTS extraction east of FM 2373 to limit further migration of impacted perched water southward along the eastern margin of the perched aquifer. A total of six new extraction wells have been installed east of FM 2373 in a line running east-to-west. Contracting for design of the SEPTS extension began in 2017; the wells in this area should become active later in 2018.

VI. References

- Pantex (2013). *Final Five-Year Review Report*. First Five-Year Review Remedial Action Progress. August 2013.
- Pantex (2015). *2014 Annual Progress Report*. Prepared for USDOE/NNSA Pantex Plant. June 2015.
- TriHydro (2012). *Groundwater Remedy Effectiveness Evaluation for the CERCLA Five-Year Review Pantex Plant, Amarillo, Texas*. November 2012.
- TriHydro (2015). *Implementation Report for Pump Test East of FM 2373*. December 2015.

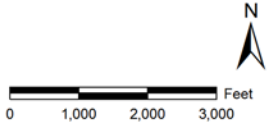
Attachment 1

Comparison of 2009 and 2017 Groundwater Elevations



Legend

- Point of Compliance
- Monitoring
- Undeveloped Monitoring
- Piezometer
- Dry
- Extraction
- Injection
- Treatment Zone Monitoring
- In Situ Performance Monitoring
- In Situ Bioremediation
- Permeable Reactive Barrier
- USDOE/NNSA Property
- Pantex JCDC
- Playas
- Extent of Perched Saturation
- Water Table Contours - ft**
- December 2017
- December 2009



**Annual Progress Report
USDOE/NNSA Pantex Plant
June 2018**

December 2017
Groundwater Elevations
Site-Wide Perched Aquifer