Pinyon Environmental, Inc.
Phoenix Office
1783 W University Drive, Suite 137, Tempe, AZ 85281
T: 602.274.0533
www.pinyon-env.com

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Jocelyn Clark, P.E.
Physical Scientist
Land, Chemicals, and Redevelopment Division – RCRA Branch
U.S. Environmental Protection Agency – Region 9
775 Hawthorne Street, LND-4-2
San Francisco, California 94105

Subject: Third Quarter 2023 Groundwater Monitoring Results, Former Thermal Treatment Unit, Nammo Defense Systems Inc., Mesa, Arizona

Dear Ms. Clark:

Pinyon Environmental, Inc. (Pinyon), has prepared the following Third Quarter 2023 (Q3 2023) Groundwater Monitoring Report (Report) on behalf of Nammo Defense Systems Inc. (NDS). The report documents field activities and results for groundwater sampling at the NDS former Thermal Treatment Unit (TTU) in Mesa, Arizona (the Site; Figure 1). The monitoring activities were planned and executed following the scope of work and requirements outlined in the *Groundwater Water Sampling and Analysis Plan, Former Thermal Treatment Unit, Nammo Defense Systems Inc., Mesa Arizona*, dated September 30, 2022 (TTU SAP); and the *Quality Assurance Project Plan, Nammo Defense Systems Inc. Facility, Mesa, Arizona*, dated April 28, 2022 (NDS Facility QAPP). The TTU SAP was submitted to the U.S. Environmental Protection Agency (EPA) for review and comments were received on August 23, 2022. A revised TTU SAP incorporating responses to EPA's comments was submitted on September 30, 2022. Any changes or deviations from these documents are provided in subsequent sections of this report.

Based on the *Data Management Plan, Nammo Defense Systems Inc., Mesa Arizona*, dated November 2022 (revised May 2023) groundwater data will be provided as electronic data deliverables (EDDs) with spatial data provided as shape files. The EDDs and shape files will be provided as a separate deliverable.

1. SCOPE OF ACTIVITIES

Groundwater monitoring and pumping/extraction wells were sampled between September 5 and 14, 2023. Well construction details are summarized in Table 1 and well locations are shown on Figure 2.

1.1 Deviations from Work Plan

The Q3 2023 groundwater monitoring was conducted in accordance with the TTU SAP and NDS Facility QAPP.

1.2 Groundwater Elevation Measurement

Table 2 provides a summary of groundwater elevation gauging for the Q3 2023 sampling event. The depth to groundwater measurements were collected using an electronic water level indicator. The depths were measured to the nearest 0.01 foot on the north side, top of casing at each well. Well TTU-18 was dry and was therefore not sampled.

1.3 Groundwater Sampling

For extraction/pumping wells, the wells were activated and allowed to purge for at least 15 minutes prior to sample collection. Water was taken from the spigot closest to the wellhead. From each sampled well, field parameter measurements were collected using a YSI ProQuatro water quality meter to evaluate water temperature, pH, oxidation reduction potential (ORP), conductivity, and dissolved oxygen (DO); turbidity was measured using a HACH 2100 Turbidimeter. For the production wells TTU-1, TTU-2, TTU-20, and PF-2, field readings were collected every 5 minutes during the minimum 15-minute purging/stabilization period. If purging took longer than 15 minutes, the reasons and rationale are provided on the individual well sampling records presented in Attachment 1. No issues with field parameter stabilization during purging were encountered during the Q3 2023 sampling event. For non-pumping wells, one round of field parameter measurements was collected at the time of sample collection.

Monitoring wells and other non-pumping wells were sampled using HydraSleeve samplers. The samplers were deployed by Pinyon at the end of the Q2 2023 sampling event. The samplers were suspended inside the wells/boreholes at the depths summarized in Table 3.

Groundwater samples were collected into laboratory provided and preserved sample containers based on analytical method requirements as described in the TTU SAP. Each groundwater sample was labeled, secured from breakage, and stored on-ice inside an insulated cooler. The samples were transported under chain-of-custody protocol to Pace Analytical and Eurofins-Sacramento for analysis. Pace Analytical and Eurofins-Sacramento are Arizona Department of Health Services (ADHS) certified laboratories (#AZ0728 and #AZ0708, respectively).

The groundwater samples were analyzed for total volatile organic compounds (VOCs) using Method 8260B, 1,4-dioxane using Method 8260B-SIM, and perchlorate using Method 314.0 Mod by Pace Analytical. The sample from PF-2 was analyzed for perchlorate salts using EPA Method 6850 by Eurofins-Sacramento.

1.4 Sampling Equipment Decontamination

Disposable sampling equipment such as protective gloves and paper towels were containerized and disposed of as non-hazardous commercial or household waste. Reusable equipment such as the YSI meter and the water level indicator were decontaminated prior to use and between each well using an Alconox and distilled water solution followed by a double rinse with distilled water. The reusable equipment was allowed to air dry prior to its next use.

2. GROUNDWATER MONITORING RESULTS

Laboratory reports and chain-of-custody forms are presented in Attachment 2. The following data summary tables are provided:

- Table 1 – Former Thermal Treatment Unit Groundwater Monitoring Network
- Table 2 – Groundwater Elevations - Third Quarter 2023
- Table 3 – Summary of Perchlorate Concentrations - Third Quarter 2023
- Table 4 – Summary of Detected VOC Concentrations - Third Quarter 2023
- Table 5 – Historical 1,4-Dioxane and TCE Concentrations

The following figures are provided for reference and data presentation:

- Figure 1 – Site Vicinity Map
- Figure 2 – Quarterly Groundwater Contour Map – Third Quarter 2023
- Figure 3 – Perchlorate Detections in Groundwater – Third Quarter 2023
- Figure 4 – 1,4-Dioxane Detections in Groundwater – Third Quarter 2023
- Figure 5 – 1,1-Dichloroethene Detections in Groundwater – Third Quarter 2023
- Figure 6 – Trichloroethene Detections in Groundwater – Third Quarter 2023
- Figure 7 – VOC Exceedances in Groundwater – Third Quarter 2023

2.1 Estimated Groundwater Flow Direction

The horizontal groundwater gradient was measured across the Site at approximately 0.12 feet per foot (ft/ft) to the west for the plane defined between wells TTU-5, TTU-9A, and TTU-10. This gradient is similar to the 0.11 ft/ft reported during the Q2 2023 groundwater sampling event. Groundwater flow appears to be affected by the significant land surface elevation increase at TTU-15, TTU-16, and TTU-17 creating an area of northern groundwater flow (Figure 2).

2.2 Groundwater Laboratory Results

Perchlorate was detected at concentrations above the Arizona Department of Environmental Quality (ADEQ) Health Based Guidance Level (HBGL) of 14 micrograms per liter (µg/L) in 16 of the 25 wells sampled. 1,4-dioxane was detected at concentrations above the interim screening level of 3.5 µg/L in 15 of the 25 wells sampled. 1,1-dichloroethene (DCE) was detected at concentrations above the Arizona Aquifer Water Quality Standard (AWQS) of 7 µg/L in 9 of the 25 wells sampled. TCE was detected at concentrations above the AWQS for TCE of 5 µg/L in 11 of the 25 wells sampled. Analytical results for Q3 2023 are provided in Table 3 for perchlorate and Table 4 for detected VOCs with an established screening value and on Figures 3 through 7.

The Q3 2023 analytical data are generally consistent with Q2 2023; however, the following was noted:

- In accordance with the TTU SAP and NDS Facility QAPP, the sample from production well PF-2 was submitted to Eurofins-Sacramento for analysis of perchlorate using EPA Method 6850. Upon receipt of the laboratory data package from Eurofins-Sacramento, it was noted that the sample results included a T5 data qualifier, indicating that Eurofins-Sacramento no longer carries the ADHS certification for analysis of perchlorate in water using EPA Method 6850. Based on the analytical result the value is consistent with historical concentrations and appears to be accurate. Following agreement with EPA, future samples will be submitted to an ADHS certified lab for perchlorate analysis.

- The concentrations of 1,4-Dioxane reported for the duplicate pair associated with TTU-8 (Dup-01) were outside of relative percent difference for acceptable quality assurance. Based on communication with Pace the duplicate was analyzed after the sample from TTU-EX-3 which had a 1,4-Dioxane concentration of 598 µg/L and the result from Dup-01 is biased high. Based on the parent sample being below detection limits and no historical detections of 1,4-Dioxane the analytical result for DUP-01 was rejected.

2.3 Groundwater Concentration Versus Time

Concentration and groundwater elevation versus time plots for TCE, 1,1- DCE, perchlorate, and 1,4-dioxane are presented in Attachment 3. Based on a review of the plots, no groundwater elevations or chemical concentrations were outside of their respective historical ranges. A full analysis of the concentration trends will be provided in the 2023 Annual Groundwater Monitoring Report prepared following the Q4 2023 sampling event. Prior to the Q3 2023 sampling event TTU-20 was converted to an extraction well. The COC concentrations in TTU-20 decreased enough to be outside of the historical range except for 1,4-dioxane which declined but was within the historical range. The COC concentrations will continue to be monitored to see if a trend emerges. No other significant changes in concentrations at any other wells were noted during Q3 2023 relative to historical concentration ranges.

2.4 Discussion

Based on the Q3 2023 groundwater monitoring results, no trigger level conditions were encountered for the contingency plan wells during Q3 2023 for any of the COPCs.

2.5 Data Validation

A Tier 1A data validation of the laboratory results according to EPA guidance and the laboratory results are qualified as usable for meeting project objectives with the exception of Dup-01 which was rejected as discussed in section 2.2. A data validation summary is provided in Attachment 4.

3. CLOSING

Overall, the Q3 2023 groundwater monitoring data indicates primarily stable conditions associated with the Site.

Sincerely,
Pinyon Environmental, Inc.

Jeremy Musson
Principal

Andrew Parker R.G. (AZ# 53601)
Senior Geologist

Copies to: Matthew Trask, Nammo Defense Systems, Inc. (electronic)
Christopher Horan, Salt River Pima-Maricopa Indian Community (electronic)
Carol Hibbard, Salt River Pima-Maricopa Indian Community (electronic)
Kyle Johnson, Arizona Department of Environmental Quality (electronic)
Anthony Leverock, Arizona Department of Environmental Quality (electronic)
William Frier, U.S. Environmental Protection Agency (electronic)
Isaac Roll, Geosyntec Consultants (electronic)
Fabrizio Mascioni, Geosyntec Consultants (electronic)

Tables

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Figures

Figure 1 – Site Vicinity Map
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Figure 6 – Trichloroethene Detections in Groundwater – Third Quarter 2023
Figure 7 –VOC Exceedances in Groundwater – Third Quarter 2023

Attachments

Attachment 1 – Field Notes
Attachment 2 – Laboratory Analytical Reports
Attachment 3 – Concentration and Groundwater Elevation versus Time Plots
Attachment 4 – Data Validation Tables

Tables

TABLE 1:
FORMER THERMAL TREATMENT UNIT
GROUNDWATER MONITORING NETWORK
NAMMO DEFENSE SYSTEMS INC.
MESA, ARIZONA

Well ID (Location)	Install Date	Latitude	Longitude	Survey Date	Survey Coordinate Datum	Measuring Point Elevation Top of Casing (ft asml)	Ground Surface Elevation (ft asml)	Well Stickup Height (ft)	ADWR Number	Well Type/Use	Well Name/ Owner	Well Owner Information	Well Const	Well Diameter (in)	Screen Interval (ft bgs)	Casing Depth (ft bgs)	Boring Depth (ft bgs)
Plume Monitoring Wells																	
TTU-3	10/18/2013	33 29 57.98	-111 43 00.91	NP	NAVD 88	1308.03	1305.50	2.50	N/A	Monitoring	Nammo Defense Systems Inc.	P.O. Box 34299 Mesa, AZ 85279	PVC	4	78.1-138.1	143.6	180
TTU-4	10/25/2013	33 30 01.65	-111 42 59.09	NP	NAVD 88	1305.12	1302.50	2.50	N/A	Monitoring	Nammo Defense Systems Inc.	P.O. Box 34299 Mesa, AZ 85280	PVC	4	39.5-99.5	104.9	180
TTU-5	9/20/2014	33 29 52.48	-111 42 58.40	NP	NAVD 88	1314.93	1312.30	3.00	N/A	Monitoring	Nammo Defense Systems Inc.	P.O. Box 34299 Mesa, AZ 85281	PVC	4	59.5-164.5	169.5	174
TTU-6	10/7/2014	33 29 57.57	-111 43 04.79	NP	NAVD 88	1300.84	1299.40	2.37	N/A	Monitoring	Nammo Defense Systems Inc.	P.O. Box 34299 Mesa, AZ 85282	PVC	4	110-175	180	185
TTU-7	10/8/2014	33 29 57.85	-111 43 05.18	NP	NAVD 88	1301.84	1299.30	2.52	N/A	Monitoring	Nammo Defense Systems Inc.	P.O. Box 34299 Mesa, AZ 85282	Steel Open Borehole	8.5 8	282-410	282 None	410
TTU-8	4/18/2016	33 30 01.91	-111 43 05.31	NP	NAVD 88	1310.23	1307.60	2.98	N/A	Monitoring	Nammo Defense Systems Inc.	P.O. Box 34299 Mesa, AZ 85282	PVC	4	135-185	190	204
TTU-9A	6/16/2016	33 30 04.61	-111 42 51.19	NP	NAVD 88	1318.04	1316.00	2.5	N/A	Monitoring	Nammo Defense Systems Inc.	P.O. Box 34299 Mesa, AZ 85282	PVC	4	24-99	104	105
TTU-10	4/18/2016	33 29 54.60	-111 43 07.90	NP	NAVD 88	1302.42	1299.80	3.17	N/A	Monitoring	Nammo Defense Systems Inc.	P.O. Box 34299 Mesa, AZ 85282	PVC	4	115-180	185	204
TTU-12	7/19/2018	33 29 56.03	-111 42 58.38	NP	NP	1312.21	NP	1.33	N/A	Monitoring	Nammo Defense Systems Inc.	P.O. Box 34299 Mesa, AZ 85282	Steel Open Borehole	5.5 5	30-180	30 None	180
TTU-13	7/20/2018	33 29 58.99	-111 42 56.85	NP	NP	1310.79	NP	1.46	N/A	Monitoring	Nammo Defense Systems Inc.	P.O. Box 34299 Mesa, AZ 85283	Steel Open Borehole	5.5 5	30-80	30 None	80
TTU-14	7/19/2018	33 29 57.20	-111 42 57.46	NP	NP	1319.30	1316.80	1.38	N/A	Monitoring	Nammo Defense Systems Inc.	P.O. Box 34299 Mesa, AZ 85284	Steel Open Borehole	5.5 5	45-100	45 None	100
TTU-15	1/25/2018	33 29 56.78	-111 42 47.03	NP	NP	1350.85	NP	1.88	55-228014	Monitoring	Nammo Defense Systems Inc.	P.O. Box 34299 Mesa, AZ 85285	Steel Open Borehole	5 4.5	10-100	10 None	100
TTU-16	1/28/2020	33 29 56.18	-111 42 49.59	NP	NP	1338.55	NP	1.19	55-231730	Monitoring	Nammo Defense Systems Inc.	P.O. Box 34299 Mesa, AZ 85286	Steel Open Borehole	8 8	20-95.6	20 None	95.6
TTU-17	1/28/2020	33 29 58.61	-111 42 45.69	NP	NP	1347.49	NP	0.60	55-231735	Monitoring	Nammo Defense Systems Inc.	P.O. Box 34299 Mesa, AZ 85287	Steel Open Borehole	8 8	20-101	20 None	101
TTU-18	1/25/2020	33 29 47.20	-111 42 58.10	NP	NP	1320.25	NP	NP	55-231737	Monitoring	Nammo Defense Systems Inc.	P.O. Box 34299 Mesa, AZ 85288	Steel Open Borehole	8 8	21-140	21 None	140
TTU-20	9/24/2020	33 29 55.17	-111 42 51.58	NP	NP	1336.90	NP	0.85	55-232968	Monitoring	Nammo Defense Systems Inc.	P.O. Box 34299 Mesa, AZ 85288	PVC	4	25-95	95	100

TABLE 1:
FORMER THERMAL TREATMENT UNIT
GROUNDWATER MONITORING NETWORK
NAMMO DEFENSE SYSTEMS INC.
MESA, ARIZONA

Well ID (Location)	Install Date	Latitude	Longitude	Survey Date	Survey Coordinate Datum	Measuring Point Elevation Top of Casing (ft asml)	Ground Surface Elevation (ft asml)	Well Stickup Height (ft)	ADWR Number	Well Type/Use	Well Name/ Owner	Well Owner Information	Well Const	Well Diameter (in)	Screen Interval (ft bgs)	Casing Depth (ft bgs)	Boring Depth (ft bgs)
Extraction and Injection Wells																	
TTU-1	6/6/2012	33 29 59.14	-111 42 56.27	NP	NAVD 88	1312.73	1309.70	3.03	55-914440	Extraction	Nammo Defense Systems Inc.	P.O. Box 34299 Mesa, AZ 85277	PVC	4	30-70	75	200
TTU-2	10/17/2013	33 29 55.85	-111 42 57.85	NP	NAVD 88	1314.44	1311.80	2.64	N/A	Extraction	Nammo Defense Systems Inc.	P.O. Box 34299 Mesa, AZ 85278	PVC	4	49.4-179.6	185	187.5
TTU-11	9/11/2015	33 29 55.28	-111 42 51.47	NP	NAVD 88	1339.20	1336.60	2.60	55-918534	Extraction/ Injection [1]	Nammo Defense Systems Inc.	P.O. Box 34299 Mesa, AZ 85282	PVC	4	24.1-89.1	94	136
TTU-19	9/24/2020	33 29 55.25	-111 42 51.50	NP	NP	1336.67	NP	NP	55-232969	Monitoring/ Injection [2]	Nammo Defense Systems Inc.	P.O. Box 34299 Mesa, AZ 85288	PVC	4	25-90	95	96
TTU-EX-1	1/25/2020	33 29 58.42	-111 42 52.55	NP	NP	1321.69	NP	1.60	55-231733	Extraction	Nammo Defense Systems Inc.	P.O. Box 34299 Mesa, AZ 85288	Steel	8	20-110.7	20	110.7
													Open Borehole	8		None	
TTU-EX-2	1/23/2020	33 29 57.61	-111 42 53.79	NP	NP	1316.40	NP	1.10	55-231734	Extraction	Nammo Defense Systems Inc.	P.O. Box 34299 Mesa, AZ 85289	Steel	8	20-110	20	110
													Open Borehole	8		None	
TTU-EX-3	1/24/2020	33 29 56.29	-111 42 54.12	NP	NP	1316.85	NP	0.58	55-231731	Extraction	Nammo Defense Systems Inc.	P.O. Box 34299 Mesa, AZ 85290	Steel	8	20-101.45	20	111
													Open Borehole	8		None	
TTU-EX-4	1/24/2020	33 29 55.46	-111 42 54.39	NP	NP	1319.96	NP	1.42	55-231732	Extraction	Nammo Defense Systems Inc.	P.O. Box 34299 Mesa, AZ 85291	Steel	8	20-110.7	20	110.7
													Open Borehole	8		None	
TTU-EX-5	1/24/2020	33 29 54.68	-111 42 54.62	NP	NP	1319.50	NP	0.96	55-231736	Extraction	Nammo Defense Systems Inc.	P.O. Box 34299 Mesa, AZ 85292	Steel	8	20-110.8	20	110.8
													Open Borehole	8		None	
Production Wells																	
PF-1	NP	33 29 56.60	-111 43 09.75	NP	NP	1295.99	NP	NP	N/A	Production	University of Washington	4202 N Higley Rd Mesa, AZ 85215	Unknown	Unknown	Unknown	Unknown	Unknown
PF-2	3/27/2013	33 29 56.65	-111 43 09.96	NP	NP	1296.35	NP	NP	N/A	Production	University of Washington	4202 N Higley Rd Mesa, AZ 85215	Steel	6 5/8	300-400	400	400

Notes:

ft amsl = feet above mean sea level (NAVD88)
ADWR = Arizona Department of Water Resources
Const = construction
in = inches
N/A = Not applicable
PVC = polyvinyl chloride
ft bgs = feet below ground surface
TTU = Thermal Treatment Unit
EX = Extraction
PF = Primate Facility
NP = Not Provided
Drill Log TOC Different from Original
Drill Log TOC listed

(1) - TTU-11 was converted from an extraction well to an injection well in October 2020 for a In-Situ Bioremediation Pilot Test.

(2) - TTU-19 was converted from a monitoring well to an injection well in February 2021 for an In-Situ Bioremediation Pilot Test

(3) - Monitoring well stick-up was measured using a tape measure to the top of the protective casing and not to the top of the well casing as no survey equipment was utilized.

TTU-EX-1 through TTU-EX-5 are not currently operating as extraction wells. TTU-11 and TTU-19 are not currently operating as injection wells.

TABLE 2:
GROUNDWATER ELEVATIONS - THIRD QUARTER 2023
FORMER THERMAL TREATMENT UNIT
NAMMO DEFENSE SYSTEMS INC.

Location	Northing (intl ft)	Easting (intl ft)	Top of Casing Elevation (ft asml)	Date Measured	Depth to Water (ft btoc)	Groundwater Elevation (ft asml)
TTU-1	909420.734	761281.203	1312.73	9/14/2023	40.83	1,271.90
TTU-2	909087.852	761148.265	1314.44	9/14/2023	71.54	1,242.90
TTU-3	909303.363	760888.204	1308.03	9/5/2023	85.60	1,222.43
TTU-4	909673.680	761041.975	1305.12	9/5/2023	52.05	1,253.07
TTU-5	908747.636	761102.227	1314.93	9/6/2023	80.03	1,234.90
TTU-6	909260.820	760560.096	1300.84	9/5/2023	120.73	1,180.11
TTU-7	909287.611	760527.269	1301.84	9/5/2023	131.35	1,170.49
TTU-8	909699.266	760514.908	1310.23	9/5/2023	145.44	1,164.79
TTU-9A	909974.490	761710.151	1318.04	9/6/2023	26.61	1,291.43
TTU-10	908960.114	760297.013	1302.42	9/5/2023	163.68	1,138.74
TTU-11	909029.758	761706.470	1339.20	9/5/2023	33.31	1,305.89
TTU-12	909105.990	761103.280	1312.21	9/7/2023	71.33	1,240.88
TTU-13	909405.920	761232.180	1310.79	9/6/2023	40.66	1,270.13
TTU-14	909224.260	761181.230	1316.80	9/7/2023	57.41	1,259.39
TTU-15	909185.100	762065.910	1350.85	9/6/2023	31.71	1,319.14
TTU-16	909124.980	761848.851	1338.55	9/7/2023	23.35	1,315.20
TTU-17	909370.903	762179.168	1347.49	9/6/2023	38.80	1,308.69
TTU-18	908215.829	761130.011	1320.25	9/6/2023	DRY	
TTU-19	909030.750	761687.700	1336.81	9/7/2023	31.60	1,305.21
TTU-20	909022.530	761681.990	1336.90	9/14/2023	31.03	1,305.87
TTU-EX-1	909350.574	761597.823	1321.69	9/6/2023	27.85	1,293.84
TTU-EX-2	909268.187	761493.214	1316.40	9/6/2023	36.33	1,280.07
TTU-EX-3	909134.941	761465.507	1316.85	9/6/2023	38.75	1,278.10
TTU-EX-4	909051.298	761442.876	1319.96	9/7/2023	42.98	1,276.98
TTU-EX-5	908971.770	761423.325	1319.50	9/7/2023	40.19	1,279.31
PF-1	909161.578	760140.434	1295.99	NM	NM	NM
PF-2	909166.890	760122.250	1296.35	9/5/2023	155.87	1,140.48

Notes:

intl ft - international foot

ft amsl - feet above mean sea level

ft btoc - feet below top of casing

NM - not measured

TABLE 3:
SUMMARY OF PERCHLORATE CONCENTRATIONS - THIRD QUARTER 2023
FORMER THERMAL TREATMENT UNIT
NAMMO DEFENSE SYSTEMS INC.

			Analyte	Perchlorate	
			EPA Method	314	6850
			Units	µg/l	
			HBGL	14	
Location	Sample Depth (ft btoc)	Sample Date	Sample Type	Concentration	
TTU-1	50	9/14/2023	Primary	**4470 R8**	--
TTU-2	114	9/14/2023	Primary	**150000**	--
DUP-04			Duplicate	**170000**	--
TTU-3	108	9/5/2023	Primary	**20.2**	--
TTU-4	57	9/5/2023	Primary	<4.00	--
TTU-5	110	9/6/2023	Primary	**41.4**	--
TTU-6	143	9/5/2023	Primary	**21.4 M1**	--
TTU-7	345	9/5/2023	Primary	<4.00	--
TTU-8	164	9/5/2023	Primary	5.81	--
DUP-01			Duplicate	<4.00	--
TTU-9A	61	9/6/2023	Primary	<4.00	--
TTU-10	172	9/5/2023	Primary	<4.00	--
TTU-11	73	9/5/2023	Primary	**486**	--
TTU-12	82	9/7/2023	Primary	**136000 M3**	--
TTU-13	51	9/6/2023	Primary	**23700**	--
TTU-14	64	9/7/2023	Primary	**144000**	--
TTU-15	75	9/6/2023	Primary	**9860**	--
TTU-16	80	9/7/2023	Primary	**766000**	--
TTU-17	80	9/6/2023	Primary	<4.00	--
TTU-19	73	9/7/2023	Primary	**14.7**	--
TTU-20	73	9/14/2023	Primary	<4.00	--
TTU-EX-1	69	9/6/2023	Primary	**104000**	--
DUP-02			Duplicate	**94100**	--
TTU-EX-2	74	9/6/2023	Primary	**87000**	--
TTU-EX-3	76	9/6/2023	Primary	**457000**	--
TTU-EX-4	77	9/7/2023	Primary	**90400**	--
Dup-03			Duplicate	**90600**	--
TTU-EX-5	88	9/7/2023	Primary	<4.00	--
PF-2*	400	9/5/2023	Primary	--	0.40 E4,T5

Notes:
ft btoc - feet below top of casing
µg/l - micrograms per liter
EPA - United States Environmental Protection Agency
HBGL - Health-Based Guidance Level
<Grey - Concentration is below laboratory reporting limits
** - The concentration limit for PF-2 is 6.4 µg/l and the trigger level is 3.2 µg/l*
– - Not reported
***BOLD** - Concentration exceeds its respective HGBL*

E4 - Concentration estimated. Analyte was detected below laboratory minimum reporting level (MRL) but above MDL.

M1 - Matrix spike recovery was high; the associated blank spike recovery was acceptable.

M3 - The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The associated blank spike recovery was acceptable.
R8 - Sample RPD exceeded the method acceptance limit.
T5 - Laboratory not licensed for this parameter.

TABLE 4:
SUMMARY OF DETECTED VOC CONCENTRATIONS - THIRD QUARTER 2023
FORMER THERMAL TREATMENT UNIT
NAMMO DEFENSE SYSTEMS INC.

Location	Sample Depth (ft btoc)	Chemical Name	1,4-Dioxane	Acetone	1,1-dichloroethane	1,1-dichloroethene	1,2-dichloroethane	Benzene	Carbon Disulfide	Chloroform	cis-1,2-dichloroethene	Dichloromethane (methylene chloride)	Isopropylbenzene	Tetrachloroethene	Toluene	trans-1,2-dichloroethene	1,1,2-trichloroethane	Trichloroethene	Vinyl chloride	2-butanone (MEK)	4-methyl-2-pentanone (MIBK)	Xylene Total
		EPA Method	8260B SIM	8260B																		
		Unit	µg/l																			
		Screening Level	3.5(1)	1800(2)	2.8(2)	7	5	5	81(2)	80(3)	70	5	45(2)	5	1000	100	5	5	2	560(2)	630(2)	10000
		Sample Date																				
PF-2	400	9/5/2023	<0.597	<11.3	<0.100	<0.188	<0.0819	<0.0941	<0.0962	<0.111 LI	<0.126	<0.430 LI	<0.105	<0.300	<0.278	<0.149	<0.158	<0.190	<0.234	<1.19	<0.478	<0.174
TTU-1	50	9/14/2023	**6.07**	<11.3	<0.100	0.211 E4	<0.0819	<0.0941	<0.0962	<0.111	<0.126	<0.430	<0.105	<0.300	<0.278	<0.149	<0.158	1.38	<0.234	<1.19 R5	<0.478	<0.174
TTU-2	114	9/14/2023	**200**	<113	<1.00	**38.5**	<0.819	1.17 E4	<0.962	1.71 E4	<1.26	<4.30	<1.05	<3.00	<2.78	<1.49	2.53 E4	**501**	<2.34	<11.9	<4.78	<1.74
DUP-04			**234**	<11.3	0.938 E4	**45.3**	0.143 E4	1.24	<0.0962	1.95 E4	1.66	<0.430	<0.105	0.675 E4	<0.278	0.214 E4	2.13	**566**	<0.234	<1.19	<0.478	<0.174
TTU-3	108	9/5/2023	<0.597	<11.3	<0.100	<0.188	<0.0819	<0.0941	<0.0962	<0.111 LI	<0.126	<0.430 LI	<0.105	<0.300	<0.278	<0.149	<0.158	<0.190	<0.234	<1.19	<0.478	<0.174
TTU-4	57	9/5/2023	<0.597	<11.3	<0.100	<0.188	<0.0819	<0.0941	<0.0962	<0.111 LI	<0.126	<0.430 LI	<0.105	<0.300	<0.278	<0.149	<0.158	<0.190	<0.234	<1.19	<0.478	<0.174
TTU-5	110	9/6/2023	<0.597	<11.3	<0.100	<0.188	<0.0819	<0.0941	<0.0962	<0.111 LI	<0.126	<0.430 LI	<0.105	<0.300	<0.278	<0.149	<0.158	<0.190	<0.234	<1.19	<0.478	<0.174
TTU-6	143	9/5/2023	<0.597	<11.3	<0.100	<0.188	<0.0819	<0.0941	<0.0962	<0.111 LI	<0.126	<0.430 LI	<0.105	<0.300	<0.278	<0.149	<0.158	<0.190	<0.234	<1.19	<0.478	<0.174
TTU-7	345	9/5/2023	<0.597	<11.3	<0.100	<0.188	<0.0819	0.127 E4	<0.0962	<0.111 LI	<0.126	<0.430 LI	0.123 E4	<0.300	0.699 E4	<0.149	<0.158	<0.190	<0.234	<1.19	<0.478	0.228 E4
TTU-8	164	9/5/2023	<0.597	<11.3	<0.100	<0.188	<0.0819	<0.0941	<0.0962	<0.111 LI	<0.126	<0.430 LI	<0.105	<0.300	<0.278	<0.149	<0.158	<0.190	<0.234	<1.19	<0.478	<0.174
DUP-01			R	<11.3	<0.100	<0.188	<0.0819	<0.0941	<0.0962	<0.111 LI	<0.126	<0.430 LI	<0.105	<0.300	<0.278	<0.149	<0.158	<0.190	<0.234	<1.19	<0.478	<0.174
TTU-9A	61	9/5/2023	<0.597	<11.3	<0.100	<0.188	<0.0819	<0.0941	<0.0962	<0.111 LI	<0.126	<0.430 LI	<0.105	<0.300	<0.278	<0.149	<0.158	<0.190	<0.234	<1.19	<0.478	<0.174
TTU-10	172	9/5/2023	<0.597	<11.3	<0.100	<0.188	<0.0819	<0.0941	<0.0962	<0.111	<0.126	<0.430	<0.105 R5	<0.300	<0.278	<0.149	<0.158	<0.190 R5	<0.234	<1.19	<0.478	<0.174
TTU-11	73	9/5/2023	<0.597	**2260**	<2.50	6.69 E4	<2.05	<2.35	<2.41	<2.78 LI	20.2 E4	<10.7 LI	17.2 E4	<7.50	<6.95	<3.73	<3.95	**78.6**	<5.85	**1690**	155 E4	<4.35
TTU-12	82	9/7/2023	**131**	<113 LI	<1.00	**72.6**	<0.819	0.817 E4	<0.962	1.47 E4	<1.26	<4.30	<1.05	<3.00	0.414 E4	<1.49	<1.58	**519 M3**	<2.34	<11.9	<4.78	7.22 E4
TTU-13	51	9/6/2023	**37.4**	<11.3	<0.100	3.66	<0.0819	<0.0941	<0.0962	<0.111 LI	<0.126	<0.430 LI	<0.105	<0.300	<0.278	<0.149	<0.158	**9.79**	<0.234	<1.19	<0.478	<0.174
TTU-14	64	9/7/2023	**246**	<113 LI	1.57 E4	**123**	<0.819	2.34 E4	<0.962	2.04 E4	2.67 E4	<4.30	<1.05	<3.00	<2.78	<1.49	<1.58	**921**	<2.34	<11.9	<4.78	<1.74
TTU-15	75	9/6/2023	**4.69**	<11.3	<0.100	0.898 E4	<0.0819	<0.0941	<0.0962	<0.111 LI	0.599 E4	<0.430 LI	<0.105	<0.300	<0.278	<0.149	<0.158	3.05	<0.234	<1.19	<0.478	<0.174
TTU-16	80	9/7/2023	**2880**	<22600 LI	<200	**2560**	<164	**326 E4**	<192	<222	<252	**52600**	<210	<600	<556	<298	<316	**59400**	<468	<2380	<956	<348
TTU-17	80	9/6/2023	<0.597	<11.3	<0.100	<0.188	<0.0819	<0.0941	<0.0962	<0.111 LI	0.861 E4	<0.430 LI	<0.105	<0.300	<0.278	<0.149	<0.158	1.2	<0.234	<1.19	<0.478	<0.174
TTU-19	73	9/7/2023	**209**	<56.5	<0.500	**10.5**	<0.409	2.83 E4	<0.481	<0.555	**117**	2.15 E4	<0.525	<1.50	<1.39	3.33 E4	<0.790	**158**	<1.17	<5.95 L2;R7	<2.39	<0.870
TTU-20	73	9/14/2023	**499**	**2290**	<1.00	<1.88	<0.819	<0.941	<0.962	<1.11	<1.26	<4.30	<1.05	<3.00	<2.78	<1.49	<1.58	2.43 E4	<2.34	77.0 E4	<4.78	<1.74
TTU-EX-1	69	9/6/2023	**163**	<113	<1.00	**96.1**	<0.819	<0.941	<0.962	<1.11 LI	<1.26	<4.30 LI	<1.05	<3.00	<2.78	<1.49	<1.58	**195**	<2.34	<11.9	<4.78	<1.74
DUP-02			**202**	<11.3	0.746 E4	**125**	0.224 E4	0.245 E4	<0.0962	1.20 E4;L1	<0.126	<0.430 LI	<0.105	0.998 E4	<0.278	0.199 E4	1.11	**194**	<0.234	<1.19	<0.478	<0.174
TTU-EX-2	74	9/6/2023	**191**	<226	<2.00	**110**	<1.64	<1.88	<1.92	<2.22 LI	<2.52	<8.60 LI	<2.10	<6.00	<5.56	<2.98	<3.16	**433**	<4.68	<23.8	<9.56	<3.48
TTU-EX-3	76	9/6/2023	**598**	<2820	<25.0	**946**	<20.5	<23.5	<24.1	<27.8 LI	<31.5	<108 LI	<26.3	<75.0	<69.5	<37.3	<39.5	**8100**	<58.5	<298	<120	<43.5
TTU-EX-4	77	9/7/2023	**19.8**	<282 LI	<2.50	**112**	<2.05	<2.35	<2.41	<2.78	<3.15	<10.7	<2.63	<7.50	<6.95	<3.73	<3.95	**698**	<5.85	<29.8	<12.0	<4.35
DUP-03			**12.1**	<11.3	1.41	**125**	<0.0819	1.22	<0.0962	1.76 E4;L1	2.76	<0.430 LI	<0.105	1.52	<0.278	0.550 E4	0.825 E4	**742**	<0.234	<1.19	<0.478	<0.174
TTU-EX-5	80	9/7/2023	<0.597	<11.3 LI	<0.100	<0.188	<0.0819	<0.0941	<0.0962	<0.111	0.180 E4	<0.430	<0.105	<0.300	<0.278	<0.149	<0.158	3.45	<0.234	<1.19	<0.478	0.320 E4

Notes:

ft btoc - feet below top of casing
µg/l - micrograms per liter
AWQS - Arizona Aquifer Water Quality Standard
Detected VOCs with established screening value presented
EPA - Environmental Protection Agency
** Reported to Method Detection Limit*
SIM - Selected Ion Monitoring
<Gray - Concentration is below laboratory reporting limits
BOLD - Concentration exceeds its respective AWQS or screening level
(1) - Interim Screening Level
(2) - Tap water regional screening level, AWQS has not been established
(3) - The total trihalomethane (TTHM) standard is exceeded when the sum of the four compounds exceeds 80 µg/L as a rolling average
PF-2, TTU-6, and TTU-7 have a Concentration Limit at the AWQS and a Trigger Level at 1/2 the AWQS

E4 - Concentration estimated. Analyte was detected below laboratory minimum reporting level (MRL) but above MDL.
LI - The associated blank spikerecovery was above laboratory acceptance limits
M3 - The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The associated blank spike recovery was acceptable.
R5 - MS/MSD RPD exceeded the laboratory acceptance limit. Recovery met acceptance criteria.
R7 - LFB/LFBD RPD exceeded the laboratory acceptance limit. Recovery met acceptance criteria.
R - Data determined as rejected after data validation

TABLE 5:
HISTORICAL 1,4-DIOXANE AND TCE CONCENTRATIONS
FORMER THERMAL TREATMENT UNIT
NAMMO DEFENSE SYSTEMS INC.

		Chemical Name	1,4-Dioxane	Trichloroethene
		EPA Method	8260B SIM	8260B
		Unit	µg/l	
Location	Sample Type	Screening Level	3.5[1]	5
		Sample Date		
			3.5	5
Contigency Level/ Trigger Level at PF-1, PF-2, TTU-6, and TTU-7			3.5/1.75	5/2.5
PF-1	Primary	3/27/2018	<0.36 U	<0.18 U
	Primary	6/28/2018	<0.72 U	<0.15 U
	Primary	9/10/2018	<0.26 U	<0.15 U
	Primary	12/10/2018	<0.26 U	<0.15 U
	Primary	3/26/2019	<0.597 U	<0.398 U
PF-2	Primary	3/27/2018	<0.36 U	<0.18 U
	Primary	6/28/2018	<0.72 U	<0.15 U
	Primary	9/10/2018	<0.26 U	<0.15 U
	Primary	12/10/2018	<0.26 U	<0.15 U
	Primary	3/26/2019	<0.597 U	<0.398 U
	Primary	9/16/2019	<0.597 U	<0.398 U
	Field Duplicate	9/16/2019	<0.597 U	<0.398 U
	Primary	12/23/2019	<0.597 U	<0.398 U
	Primary	3/13/2020	<0.597 U	<0.398 U
	Primary	12/4/2020	<0.597 U	<0.19 U
	Field Duplicate	12/4/2020	<0.597 U	<0.19 U
	Primary	3/29/2021	<0.597 U	<0.19 U
	Primary	5/6/2021	<0.597 U	<0.19 U
	Primary	8/6/2021	<0.597 U	<0.19 U
	Primary	11/18/2021	<0.597 U	<0.19 U
	Primary	3/31/2022	<0.597	<0.19 R7
	Field Duplicate	3/31/2022	<0.597	<0.19 R7
	Primary	6/21/2022	<0.597	<0.19 J3
	Field Duplicate	6/21/2022	<0.597	<0.19
	Primary	9/9/2022	<0.597 R7	<0.19
	Primary	11/30/2022	<0.597	<0.19
	Primary	2/27/2023	<0.597	<0.19
	Primary	6/12/2023	<0.597	<0.19
	Field Duplicate	6/12/2023	<0.597	<0.19 L1
	Primary	9/5/2023	<0.597	<0.190

TABLE 5:
HISTORICAL 1,4-DIOXANE AND TCE CONCENTRATIONS
FORMER THERMAL TREATMENT UNIT
NAMMO DEFENSE SYSTEMS INC.

		Chemical Name	1,4-Dioxane	Trichloroethene
		EPA Method	8260B SIM	8260B
		Unit	µg/l	
Location	Sample Type	Screening Level	3.5[1]	5
		Sample Date		
TTU-1	Primary	11/18/2014	NA	6.1
	Primary	12/23/2014	NA	8.8
	Primary	2/5/2015	26	10
	Primary	5/18/2015	20	6.1
	Primary	9/9/2015	17	5.2
	Primary	11/23/2015	14	5.1
	Primary	2/25/2016	11	4.6
	Primary	6/1/2016	12.7	3.03
	Primary	8/18/2016	11	3.7
	Primary	11/22/2016	27	5.5
	Primary	2/22/2017	18.4	5.5
	Primary	5/23/2017	14.1	7.2
	Primary	8/29/2017	11	1.4
	Primary	11/27/2017	17.7	7.1
	Field Duplicate	11/27/2017	18.1	7.2
	Primary	3/27/2018	17.1	4.6
	Primary	9/12/2018	31.8	11.2
	Field Duplicate	9/12/2018	29.1	12.4
	Primary	12/4/2018	7.3	4.4
	Primary	9/16/2019	13.9	5.72
	Field Duplicate	9/16/2019	10.8	4.85
	Primary	12/20/2019	5.06	5.19
	Primary	3/12/2020	4.63 J	3.91
	Primary	6/18/2020	17.1	7.6
	Primary	7/20/2020	3.71	6.09
	Primary	12/2/2020	29.9	1.33
	Primary	3/30/2021	18.9 J	6.4
	Primary	5/6/2021	22	17.1 J
	Primary	7/29/2021	37.7	14.3
	Primary	12/22/2021	11.1	8.82
	Primary	3/26/2022	18.4	3.72
	Field Duplicate	3/26/2022	19.9	4.46
	Primary	6/16/2022	17.5 Q	4.42
	Field Duplicate	6/16/2022	35.5	4.12
	Primary	10/11/2022	15.1	5.13

TABLE 5:
HISTORICAL 1,4-DIOXANE AND TCE CONCENTRATIONS
FORMER THERMAL TREATMENT UNIT
NAMMO DEFENSE SYSTEMS INC.

		Chemical Name	1,4-Dioxane	Trichloroethene
		EPA Method	8260B SIM	8260B
		Unit	µg/l	
Location	Sample Type	Screening Level	3.5[1]	5
		Sample Date		
	Field Duplicate	10/11/2022	14.5	5.85
	Primary	11/28/2022	11.8 B	4.86
	Primary	2/23/2023	14.9	5.02 M1
	Primary	6/15/2023	9.66	4.18
	Primary	9/14/2023	6.07	1.38

TABLE 5:
HISTORICAL 1,4-DIOXANE AND TCE CONCENTRATIONS
FORMER THERMAL TREATMENT UNIT
NAMMO DEFENSE SYSTEMS INC.

		Chemical Name	1,4-Dioxane	Trichloroethene
		EPA Method	8260B SIM	8260B
		Unit	µg/l	
Location	Sample Type	Screening Level	3.5[1]	5
		Sample Date		
TTU-2	Primary	11/18/2014	NA	370
	Primary	12/23/2014	NA	280
	Primary	2/5/2015	170	280
	Primary	5/18/2015	160	190
	Primary	9/9/2015	170	200
	Primary	11/23/2015	140	150
	Primary	2/25/2016	110	150
	Primary	6/1/2016	88.2	50.3
	Primary	8/18/2016	150	360
	Primary	11/22/2016	260	780
	Primary	2/22/2017	244	727
	Primary	5/23/2017	222	880
	Primary	8/29/2017	241	93.2
	Field Duplicate	8/29/2017	227	89.7
	Primary	11/27/2017	235	353
	Primary	3/27/2018	219	236
	Field Duplicate	3/27/2018	152	274
	Primary	6/28/2018	246	498
	Primary	9/10/2018	246	433
	Primary	12/4/2018	232	288
	Primary	3/25/2019	313	364
	Primary	9/16/2019	295	475
	Primary	12/20/2019	211	711
	Field Duplicate	12/20/2019	215	742
	Primary	3/12/2020	227 J	511
	Primary	6/18/2020	292	824
	Primary	7/20/2020	156	959
	Primary	12/2/2020	329	785
	Primary	3/30/2021	196 J	656
	Field Duplicate	3/30/2021	244 J	720
	Primary	5/6/2021	316	683
	Primary	7/29/2021	373	654
	Primary	12/22/2021	280	627
	Field Duplicate	12/22/2021	281	653
	Primary	3/26/2022	251	823

TABLE 5:
HISTORICAL 1,4-DIOXANE AND TCE CONCENTRATIONS
FORMER THERMAL TREATMENT UNIT
NAMMO DEFENSE SYSTEMS INC.

		Chemical Name	1,4-Dioxane	Trichloroethene
		EPA Method	8260B SIM	8260B
		Unit	µg/l	
Location	Sample Type	Screening Level	3.5[1]	5
		Sample Date		
	Primary	6/16/2022	246 Q	443
	Primary	10/10/2022	170	596 M3
	Primary	11/28/2022	230 V	643 V
	Primary	2/23/2023	362	648
	Primary	6/15/2023	239	406
	Field Duplicate	6/15/2023	269	429
	Primary	9/14/2023	200	501
	Field Duplicate	9/14/2023	234	566
TTU-3	Primary	5/23/2017	NA	2.5
	Primary	3/27/2018	<0.36 U	<0.18 U
	Primary	6/28/2018	<0.72 U	<0.15 U
	Primary	9/10/2018	<0.26 U	<0.15 U
	Primary	12/10/2018	<0.26 U	<0.15 U
	Primary	3/26/2019	<0.597 U	<0.398 U
	Primary	6/7/2019	<0.597 U	<0.398 U
	Primary	9/16/2019	<0.597 U	<0.398 U
	Primary	12/23/2019	<0.597 U	<0.398 U
	Primary	3/13/2020	<0.597 U	<0.398 U
	Primary	6/18/2020	<0.597 U	<0.19 U
	Primary	7/21/2020	<0.597 U	<0.19 U
	Primary	12/4/2020	<0.597 U	<0.19 U
	Primary	3/29/2021	<0.597 U	<0.19 U
	Primary	5/6/2021	<0.597 U	<0.19 U
	Field Duplicate	5/6/2021	<0.597 U	<0.19 U
	Primary	7/30/2021	<0.597 U	<0.19 U
	Primary	11/18/2021	<0.597 U	<0.19 U
	Primary	3/22/2022	<0.597	0.454 E4
	Primary	6/14/2022	<0.597 J3	<0.19 J3
	Primary	9/9/2022	<0.597	<0.19
	Primary	11/30/2022	<0.597 J3	<0.19
	Field Duplicate	11/30/2022	<0.597	<0.19
	Primary	2/25/2023	<0.597	0.266 E4
	Field Duplicate	2/25/2023	<0.597	<0.19
	Primary	6/12/2023	<0.597	<0.19
	Primary	9/5/2023	<0.597	<0.190

TABLE 5:
HISTORICAL 1,4-DIOXANE AND TCE CONCENTRATIONS
FORMER THERMAL TREATMENT UNIT
NAMMO DEFENSE SYSTEMS INC.

		Chemical Name	1,4-Dioxane	Trichloroethene
		EPA Method	8260B SIM	8260B
		Unit	µg/l	
Location	Sample Type	Screening Level	3.5[1]	5
		Sample Date		
TTU-4	Primary	5/23/2017	NA	0.31
	Primary	3/27/2018	<0.36 U	<0.18 U
	Field Duplicate	3/27/2018	<0.36 U	<0.18 U
	Primary	6/28/2018	<0.72 U	<0.15 U
	Field Duplicate	6/28/2018	<0.72 U	<0.15 U
	Primary	9/10/2018	<0.26 U	<0.15 U
	Field Duplicate	9/10/2018	<0.26 U	<0.15 U
	Primary	12/10/2018	<0.26 U	<0.15 U
	Field Duplicate	12/10/2018	<0.26 U	<0.15 U
	Primary	3/26/2019	<0.597 U	<0.398 U
	Primary	6/7/2019	<0.597 U	<0.398 U
	Primary	9/16/2019	<0.597 U	<0.398 U
	Primary	12/23/2019	<0.597 U	<0.398 U
	Primary	3/13/2020	<0.597 U	<0.398 U
	Primary	6/18/2020	<0.597 U	<0.19 U
	Primary	7/21/2020	<0.597 U	<0.19 U
	Field Duplicate	7/21/2020	<0.597 U	<0.19 U
	Primary	12/4/2020	<0.597 U	<0.19 U
	Primary	3/29/2021	<0.597 U	<0.19 U
	Primary	5/6/2021	<0.597 U	<0.19 U
	Field Duplicate	5/6/2021	<0.597 U	<0.19 U
	Primary	7/30/2021	<0.597 U	<0.19 U
	Field Duplicate	7/30/2021	<0.597 U	<0.19 U
	Primary	11/18/2021	<0.597 U	<0.19 U
	Primary	3/22/2022	<0.597	<0.19
	Field Duplicate	3/22/2022	2.59 E4	<0.19
	Primary	6/14/2022	11.1	<0.19 J3
	Primary	7/21/2022	<0.597	<0.19
	Field Duplicate	7/21/2022	<0.597	<0.19
	Primary	9/9/2022	<0.597	<0.19
	Primary	11/30/2022	1.84 J	<0.19
	Primary	2/25/2023	<0.597	<0.19
	Primary	6/12/2023	<0.597	<0.19
	Primary	9/5/2023	<0.597	<0.190
	Primary	3/27/2018	<0.36 U	<0.18 U

TABLE 5:
HISTORICAL 1,4-DIOXANE AND TCE CONCENTRATIONS
FORMER THERMAL TREATMENT UNIT
NAMMO DEFENSE SYSTEMS INC.

		Chemical Name	1,4-Dioxane	Trichloroethene
		EPA Method	8260B SIM	8260B
		Unit	µg/l	
Location	Sample Type	Screening Level	3.5[1]	5
		Sample Date		
TTU-5	Primary	6/28/2018	<0.72 U	<0.15 U
	Primary	9/10/2018	<0.26 U	<0.15 U
	Primary	12/10/2018	<0.26 U	<0.15 U
	Primary	3/26/2019	<0.597 U	<0.398 U
	Primary	6/7/2019	<0.597 U	<0.398 U
	Primary	9/16/2019	<0.597 U	<0.398 U
	Primary	12/20/2019	3.54	<0.398 U
	Primary	3/12/2020	<0.597 U	<0.398 U
	Primary	6/17/2020	<0.597 U	<0.19 U
	Primary	7/20/2020	<0.597 U	<0.19 U
	Primary	12/2/2020	<0.597 U	0.877 J
	Primary	3/30/2021	<0.597 U	<0.19 U
	Primary	5/6/2021	<0.597 U	<0.19 U
	Primary	7/29/2021	<0.597 U	<0.19 U
	Primary	11/17/2021	<0.597 U	<0.19 U
	Primary	3/21/2022	<0.597	0.64 E4
	Primary	6/13/2022	130	<0.19
	Primary	7/21/2022	<0.597	<0.19
	Primary	9/8/2022	<0.597	<0.19
	Primary	11/29/2022	21.5	<0.19
	Primary	2/25/2023	<0.597	<0.19
	Primary	6/13/2023	<0.597	<0.19
	Primary	9/6/2023	<0.597	<0.190
	Primary	8/29/2017	NA	0.38
	Primary	3/27/2018	<0.36 U	<0.18 U
	Primary	6/28/2018	<0.72 U	<0.15 U
	Primary	9/10/2018	<0.26 U	<0.15 U
	Primary	12/10/2018	<0.26 U	<0.15 U
	Primary	3/26/2019	<0.597 U	<0.398 U
	Primary	6/7/2019	<0.597 U	<0.398 U
	Field Duplicate	6/7/2019	<0.597 U	<0.398 U
	Primary	9/16/2019	<0.597 U	<0.398 U
	Primary	12/23/2019	<0.597 U	<0.398 U
	Primary	3/13/2020	<0.597 U	<0.398 U
	Primary	6/18/2020	<0.597 U	<0.19 U

TABLE 5:
HISTORICAL 1,4-DIOXANE AND TCE CONCENTRATIONS
FORMER THERMAL TREATMENT UNIT
NAMMO DEFENSE SYSTEMS INC.

		Chemical Name	1,4-Dioxane	Trichloroethene
		EPA Method	8260B SIM	8260B
		Unit	µg/l	
Location	Sample Type	Screening Level	3.5[1]	5
		Sample Date		
TTU-6	Primary	7/21/2020	<0.597 U	<0.19 U
	Primary	12/4/2020	<0.597 U	<0.19 U
	Primary	3/29/2021	<0.597 U	<0.19 U
	Primary	5/6/2021	<0.597 U	<0.19 U
	Primary	7/30/2021	<0.597 U	<0.19 U
	Primary	11/18/2021	<0.597 U	<0.19 U
	Primary	3/22/2022	<0.597	<0.19
	Primary	6/14/2022	<0.597 J3	<0.19
	Primary	9/9/2022	<0.597 R5	<0.19
	Primary	11/30/2022	<0.597	<0.19
	Primary	2/25/2023	<0.597	0.218 E4
	Primary	6/12/2023	<0.597	<0.19
	Primary	9/5/2023	<0.597	<0.190
TTU-7	Primary	3/27/2018	<0.36 U	<0.18 U
	Primary	6/28/2018	<0.72 U	<0.15 U
	Primary	9/10/2018	<0.26 U	<0.15 U
	Primary	12/10/2018	<0.26 U	<0.15 U
	Primary	3/26/2019	<0.597 U	<0.398 U
	Field Duplicate	3/26/2019	<0.597 U	<0.398 U
	Primary	6/7/2019	<0.597 U	<0.398 U
	Primary	9/16/2019	<0.597 U	<0.398 U
	Primary	12/23/2019	<0.597 U	<0.398 U
	Primary	3/13/2020	<0.597 U	<0.398 U
	Primary	6/18/2020	<0.597 U	<0.19 U
	Primary	7/21/2020	<0.597 U	<0.19 U
	Primary	12/4/2020	<0.597 U	<0.19 U
	Primary	3/29/2021	<0.597 U	<0.19 U
	Primary	5/6/2021	<0.597 U	<0.19 U
	Primary	7/30/2021	<0.597 U	<0.19 U
	Primary	11/18/2021	<0.597 U	<0.19 U
	Primary	3/22/2022	<0.597	<0.19
	Primary	6/14/2022	<0.597 J3	<0.19 J3
	Primary	9/9/2022	<0.597	<0.19
	Primary	11/30/2022	<0.597	<0.19
	Primary	2/25/2023	<0.597	<0.19

TABLE 5:
HISTORICAL 1,4-DIOXANE AND TCE CONCENTRATIONS
FORMER THERMAL TREATMENT UNIT
NAMMO DEFENSE SYSTEMS INC.

		Chemical Name	1,4-Dioxane	Trichloroethene
		EPA Method	8260B SIM	8260B
		Unit	µg/l	
Location	Sample Type	Screening Level	3.5[1]	5
		Sample Date		
	Primary	6/12/2023	<0.597	<0.19
	Field Duplicate	6/12/2023	<0.597	<0.19 L1
	Primary	9/5/2023	<0.597	<0.190
TTU-8	Primary	3/27/2018	<0.36 U	<0.18 U
	Primary	6/28/2018	<0.72 U	<0.15 U
	Primary	9/10/2018	<0.26 U	<0.15 U
	Primary	12/10/2018	<0.26 U	<0.15 U
	Primary	3/26/2019	<0.597 U	<0.398 U
	Primary	6/7/2019	<0.597 U	<0.398 U
	Primary	9/16/2019	<0.597 U	<0.398 U
	Primary	12/23/2019	<0.597 U	<0.398 U
	Primary	3/16/2020	<0.597 U	<0.398 U
	Field Duplicate	3/16/2020	<0.597 U	<0.398 U
	Primary	6/18/2020	<0.597 U	<0.19 U
	Field Duplicate	6/18/2020	<0.597 U	<0.19 U
	Primary	7/21/2020	<0.597 U	<0.19 U
	Primary	12/4/2020	<0.597 U	<0.19 U
	Primary	3/29/2021	<0.597 U	<0.19 U
	Primary	5/6/2021	<0.597 U	<0.19 U
	Primary	7/30/2021	<0.597 U	<0.19 U
	Primary	11/18/2021	<0.597 U	<0.19 U
	Primary	3/22/2022	<0.597	<0.19
	Primary	6/14/2022	<0.597	<0.19
	Primary	9/9/2022	<0.597	<0.19
	Field Duplicate	9/9/2022	<0.597	<0.19
	Primary	11/30/2022	<0.597	<0.19
	Primary	2/25/2023	<0.597	<0.19
	Primary	6/12/2023	<0.597	<0.19
	Primary	9/5/2023	<0.597	<0.190
	Field Duplicate	9/6/2023	28.7	<0.190
	Primary	3/27/2018	<0.36 U	<0.18 U
	Primary	6/28/2018	<0.72 U	<0.15 U
	Primary	9/10/2018	<0.26 U	<0.15 U
	Primary	12/10/2018	<0.26 U	<0.15 U
	Primary	3/26/2019	<0.597 U	<0.398 U

TABLE 5:
HISTORICAL 1,4-DIOXANE AND TCE CONCENTRATIONS
FORMER THERMAL TREATMENT UNIT
NAMMO DEFENSE SYSTEMS INC.

		Chemical Name	1,4-Dioxane	Trichloroethene
		EPA Method	8260B SIM	8260B
		Unit	µg/l	
Location	Sample Type	Screening Level	3.5[1]	5
		Sample Date		
TTU-9A	Primary	6/7/2019	<0.597 U	<0.398 U
	Primary	9/16/2019	<0.597 U	<0.398 U
	Primary	12/20/2019	1.01 J	<0.398 U
	Primary	3/12/2020	11.9 J	<0.398 U
	Primary	6/17/2020	<0.597 U	<0.19 U
	Primary	7/20/2020	<0.597 U	<0.19 U
	Primary	12/2/2020	<0.597 U	6.46 J
	Primary	3/30/2021	<0.597 U	7.53
	Primary	5/6/2021	<0.597 U	4.76
	Primary	7/29/2021	<0.597 U	2.75
	Primary	11/17/2021	<0.597 U	0.911 J
	Field Duplicate	11/17/2021	<0.597 U	0.985 J
	Primary	3/22/2022	<0.597	0.944 E4
	Primary	6/13/2022	4.82	<0.19
	Primary	7/21/2022	<0.597	0.221 J
	Primary	9/8/2022	<0.597	<0.19
	Primary	11/29/2022	<0.597	<0.19
	Primary	2/23/2023	18.4	<0.19
	Primary	3/21/2023	<0.597	<0.19
	Primary	6/13/2023	<0.597	<0.19
	Field Duplicate	6/13/2023	<0.597	<0.19 L1
	Primary	9/6/2023	<0.597	<0.190
TTU-10	Primary	3/27/2018	<0.36 U	<0.18 U
	Primary	6/28/2018	<0.72 U	<0.15 U
	Primary	9/10/2018	<0.26 U	<0.15 U
	Primary	12/10/2018	<0.26 U	<0.15 U
	Primary	3/26/2019	<0.597 U	<0.398 U
	Primary	9/16/2019	<0.597 U	<0.398 U
	Primary	12/23/2019	<0.597 U	<0.398 U
	Primary	3/13/2020	<0.597 U	<0.398 U
	Primary	6/18/2020	<0.597 U	<0.19 U
	Primary	7/21/2020	<0.597 U	<0.19 U
	Primary	12/4/2020	<0.597 U	<0.19 U
	Primary	3/29/2021	<0.597 U	<0.19 U
	Primary	5/6/2021	<0.597 U	<0.19 U

TABLE 5:
HISTORICAL 1,4-DIOXANE AND TCE CONCENTRATIONS
FORMER THERMAL TREATMENT UNIT
NAMMO DEFENSE SYSTEMS INC.

		Chemical Name	1,4-Dioxane	Trichloroethene
		EPA Method	8260B SIM	8260B
		Unit	µg/l	
Location	Sample Type	Screening Level	3.5[1]	5
		Sample Date		
	Primary	8/6/2021	<0.597 U	<0.19 U
	Primary	11/18/2021	<0.597 U	<0.19 U
	Primary	3/22/2022	1.58 E4	<0.19
	Primary	6/14/2022	<0.597 J3	<0.19
	Field Duplicate	6/14/2022	<0.597 J3	<0.19
	Primary	9/9/2022	<0.597	<0.19
	Primary	11/30/2022	<0.597	<0.19
	Primary	2/27/2023	<0.597	<0.19
	Primary	6/12/2023	<0.597	<0.19
	Primary	9/5/2023	<0.597	<0.190 R5
TTU-11	Primary	9/23/2015	380	3100
	Field Duplicate	9/23/2015	400	3100
	Primary	11/23/2015	270	2900
	Primary	2/25/2016	250	2400
	Primary	6/1/2016	282	1600
	Primary	8/18/2016	240	1800
	Primary	11/22/2016	310	2500
	Field Duplicate	11/22/2016	340	2400
	Primary	2/22/2017	222	2010
	Field Duplicate	2/22/2017	224	2080
	Primary	5/23/2017	201	1560
	Field Duplicate	5/23/2017	192	1710
	Primary	8/29/2017	1450	807
	Primary	3/27/2018	671	461
	Primary	9/12/2018	1060	4650
	Primary	12/4/2018	1820	14500
	Field Duplicate	12/4/2018	1840	14800
	Primary	12/10/2018	1820	14500
	Field Duplicate	12/10/2018	1840	14800
	Primary	9/16/2019	1510	11200
	Primary	12/20/2019	855 J-	11500
	Field Duplicate	12/20/2019	907 J-	9400
	Primary	3/12/2020	863	6780
	Primary	6/18/2020	1570	15000
	Primary	7/20/2020	977	17600

TABLE 5:
HISTORICAL 1,4-DIOXANE AND TCE CONCENTRATIONS
FORMER THERMAL TREATMENT UNIT
NAMMO DEFENSE SYSTEMS INC.

		Chemical Name	1,4-Dioxane	Trichloroethene
		EPA Method	8260B SIM	8260B
		Unit	µg/l	
Location	Sample Type	Screening Level	3.5[1]	5
		Sample Date		
TTU-12	Primary	10/26/2020	358 J	4430
	Primary	10/26/2020	562 J	4870
	Primary	9/23/2021	6.95 J-	69.8
	Primary	6/20/2022	<0.597	56.3
	Primary	9/3/2022	<0.597 R7	58.2
	Primary	11/30/2022	<0.597 J3	71.5
	Primary	2/25/2023	11600	67.8
	Primary	6/13/2023	<5.97	45.5
	Primary	9/5/2023	<0.597	78.6
	Primary	8/29/2017	85.7	335
	Primary	11/27/2017	84.1	301
	Primary	3/27/2018	85.5	484
	Primary	6/28/2018	108	339
	Primary	9/10/2018	91	460
	Primary	12/10/2018	107	454
	Primary	3/25/2019	136	176
	Primary	6/7/2019	120	507
	Primary	9/16/2019	160	543
	Primary	12/20/2019	106	567
	Primary	3/12/2020	94.8 J	407
	Primary	6/17/2020	184	471
	Primary	7/20/2020	82.2	547
	Primary	12/2/2020	159	531
	Primary	3/30/2021	115 J	480
	Primary	5/6/2021	142	540
	Primary	7/29/2021	176	466
	Primary	11/18/2021	133	624
	Field Duplicate	11/18/2021	141	617
	Primary	3/22/2022	149	538
	Primary	6/13/2022	170	487
	Primary	9/9/2022	119	529
	Primary	11/29/2022	117	463
	Primary	2/23/2023	209	452
	Primary	6/13/2023	127	448
	Primary	9/7/2023	131	519 M3

TABLE 5:
HISTORICAL 1,4-DIOXANE AND TCE CONCENTRATIONS
FORMER THERMAL TREATMENT UNIT
NAMMO DEFENSE SYSTEMS INC.

		Chemical Name	1,4-Dioxane	Trichloroethene
		EPA Method	8260B SIM	8260B
		Unit	µg/l	
Location	Sample Type	Screening Level	3.5[1]	5
		Sample Date		
TTU-13	Primary	8/29/2017	4	2.6
	Primary	11/27/2017	14.1	5.7
	Primary	3/27/2018	18.3	7.3
	Primary	6/28/2018	33.9	12.6
	Primary	9/10/2018	47.3	24.2
	Primary	12/10/2018	45.2	20.1
	Primary	3/25/2019	55.8	21.7
	Primary	6/7/2019	39.9	22.6
	Primary	9/16/2019	58	18.3
	Primary	12/20/2019	40.2	17
	Primary	3/16/2020	32.2 J	15.4
	Field Duplicate	3/16/2020	33.5 J	14.9
	Primary	6/17/2020	48.5	14.6
	Field Duplicate	6/17/2020	54.1	16.6
	Primary	7/20/2020	29.6	13.3
	Field Duplicate	7/20/2020	27.7	13.8
	Primary	12/3/2020	25.3	11.2 J
	Primary	3/30/2021	37.7 J	17.1
	Primary	5/6/2021	37.9	12.9
	Primary	7/29/2021	58.6	11.1
	Primary	11/18/2021	3.26	1.44 J
	Primary	3/22/2022	9.96	5.76
	Primary	6/13/2022	28.9	5.52
	Primary	9/8/2022	13.7	7.06
	Primary	11/29/2022	33.5	12.7
	Primary	2/23/2023	40.1	12.8
	Primary	6/13/2023	32.5	9.34
	Primary	9/6/2023	37.4	9.79
	Primary	8/29/2017	367	657
	Primary	11/27/2017	356	828
	Primary	3/27/2018	363	1030
	Primary	6/28/2018	381	875
	Primary	9/10/2018	338	689
	Primary	12/17/2018	331	694
	Primary	3/27/2019	356	780

TABLE 5:
HISTORICAL 1,4-DIOXANE AND TCE CONCENTRATIONS
FORMER THERMAL TREATMENT UNIT
NAMMO DEFENSE SYSTEMS INC.

		Chemical Name	1,4-Dioxane	Trichloroethene
		EPA Method	8260B SIM	8260B
		Unit	µg/l	
Location	Sample Type	Screening Level	3.5[1]	5
		Sample Date		
TTU-14	Primary	9/16/2019	422	921
	Primary	12/20/2019	280	1060
	Primary	3/12/2020	278 J	880
	Primary	6/17/2020	504	891
	Primary	7/20/2020	241	1210
	Primary	12/2/2020	388	917
	Primary	3/30/2021	280 J	990
	Primary	5/6/2021	370	831
	Primary	7/29/2021	493	966
	Primary	11/18/2021	279	917
	Primary	3/22/2022	339	908
	Field Duplicate	3/22/2022	321	879
	Primary	6/14/2022	297 J3	1040
	Primary	9/9/2022	297	1020
	Primary	11/29/2022	288	882
	Primary	2/25/2023	339	807
	Primary	6/13/2023	269	764
	Primary	9/7/2023	246	921
TTU-15	Primary	3/27/2019	3.54	<0.398 U
	Primary	9/16/2019	3.95	<0.398 U
	Primary	12/20/2019	6.09	<0.398 U
	Primary	3/12/2020	3.02	<0.398 U
	Primary	6/17/2020	5.32	<0.19 U
	Primary	7/20/2020	2.81 J	<0.19 U
	Primary	12/2/2020	<0.597 U	3.1
	Primary	3/29/2021	5.33 J	12.9
	Primary	5/5/2021	3.83	11.7
	Primary	7/29/2021	6.26	13
	Primary	11/17/2021	5.9	10.3
	Primary	3/21/2022	6.93	7.89
	Primary	6/13/2022	9.83	6.23
	Primary	9/8/2022	8.21	6.08
	Primary	11/29/2022	27.5	5.13
	Primary	2/25/2023	15.7	4.9
	Primary	6/12/2023	13.5	3.76

TABLE 5:
HISTORICAL 1,4-DIOXANE AND TCE CONCENTRATIONS
FORMER THERMAL TREATMENT UNIT
NAMMO DEFENSE SYSTEMS INC.

		Chemical Name	1,4-Dioxane	Trichloroethene
		EPA Method	8260B SIM	8260B
		Unit	µg/l	
Location	Sample Type	Screening Level	3.5[1]	5
		Sample Date		
	Primary	9/6/2023	4.69	3.05
TTU-16	Primary	3/13/2020	2470 J	51500
	Primary	6/17/2020	4310	68400
	Field Duplicate	6/17/2020	5610	70200
	Primary	7/20/2020	2220 J-	92200
	Primary	12/2/2020	1730	80000
	Field Duplicate	12/2/2020	1990	96000
	Primary	3/29/2021	2880	76800
	Field Duplicate	3/29/2021	2550	71800
	Primary	5/5/2021	4920	77400 J
	Field Duplicate	5/5/2021	5270	38500 J
	Primary	7/29/2021	5140	86000
	Field Duplicate	7/29/2021	5710	87300
	Primary	11/17/2021	3930	93200
	Primary	3/21/2022	5430	103000
	Primary	6/13/2022	3600 J3	96500
	Primary	9/8/2022	3820 R7	9520
	Primary	11/29/2022	3180	80000
	Primary	2/25/2023	32800	69100
	Field Duplicate	2/25/2023	39600	83600
	Primary	6/13/2023	2300	78000 L1
	Primary	9/7/2023	2880	59400
TTU-17	Primary	3/13/2020	<0.0474 U	0.463 J
	Primary	6/17/2020	<0.597 U	0.321 J
	Primary	7/20/2020	<0.597 U	0.367 J
	Primary	12/2/2020	<0.597 U	1.56
	Primary	3/29/2021	<0.597 U	5
	Primary	5/5/2021	<0.597 U	4.13
	Primary	7/29/2021	<0.597 U	3.99
	Primary	11/17/2021	<0.597 U	3.08
	Primary	3/21/2022	4.75	3.51
	Primary	6/13/2022	10.1	2.1
	Primary	9/8/2022	242	2.1
	Primary	11/29/2022	264	1.41
	Field Duplicate	11/29/2022	2.11 B;J	1.57

TABLE 5:
HISTORICAL 1,4-DIOXANE AND TCE CONCENTRATIONS
FORMER THERMAL TREATMENT UNIT
NAMMO DEFENSE SYSTEMS INC.

		Chemical Name	1,4-Dioxane	Trichloroethene
		EPA Method	8260B SIM	8260B
		Unit	µg/l	
Location	Sample Type	Screening Level	3.5[1]	5
		Sample Date		
	Primary	2/25/2023	<0.597	1.28
	Primary	6/12/2023	<0.597	1.15 L1
	Primary	9/6/2023	<0.597	1.20
TTU-19	Primary	10/26/2020	915 J	9990
	Primary	10/26/2020	781 J	12900
	Primary	9/23/2021	70.4 J-	478
	Primary	6/20/2022	<0.597	189
	Field Duplicate	6/20/2022	<0.597	373
	Primary	9/3/2022	152 H1	293 M3
	Primary	11/30/2022	<0.597	360
	Primary	2/25/2023	318	348
	Primary	6/13/2023	247	310 L1
	Primary	9/7/2023	209	158

TABLE 5:
HISTORICAL 1,4-DIOXANE AND TCE CONCENTRATIONS
FORMER THERMAL TREATMENT UNIT
NAMMO DEFENSE SYSTEMS INC.

		Chemical Name	1,4-Dioxane	Trichloroethene
		EPA Method	8260B SIM	8260B
		Unit	µg/l	
Location	Sample Type	Screening Level	3.5[(1)]	5
		Sample Date		
TTU-20	Primary	10/26/2020	567 J	4480
	Primary	10/26/2020	824 J	6360
	Primary	6/14/2021	1450 J	11200 J
	Primary	9/23/2021	841 J	14300
	Primary	11/18/2021	2140	13400
	Primary	6/16/2022	1540 Q	10800
	Primary	9/3/2022	1140 H1	13200 L1
	Field Duplicate	9/3/2022	1250 H1	10700
	Primary	11/30/2022	1490	12400
	Primary	2/25/2023	19600	12800
	Primary	9/14/2023	499	2.43 E4
TTU-EX-1	Primary	3/13/2020	24.5	265
	Primary	6/17/2020	284	168
	Primary	7/20/2020	207	163
	Primary	12/2/2020	466	240
	Primary	3/29/2021	340 J	262
	Primary	5/5/2021	258	286
	Primary	7/29/2021	702	372
	Primary	11/17/2021	112	79
	Primary	3/21/2022	244	181
	Primary	6/13/2022	324 J3	174
	Primary	9/8/2022	68.2	75.1
	Primary	11/29/2022	105	59.1
	Primary	2/23/2023	251	127
	Primary	6/13/2023	220	161 L1
	Primary	9/6/2023	163	195
	Field Duplicate	9/6/2023	202	194

TABLE 5:
HISTORICAL 1,4-DIOXANE AND TCE CONCENTRATIONS
FORMER THERMAL TREATMENT UNIT
NAMMO DEFENSE SYSTEMS INC.

		Chemical Name	1,4-Dioxane	Trichloroethene
		EPA Method	8260B SIM	8260B
		Unit	µg/l	
Location	Sample Type	Screening Level	3.5[1]	5
		Sample Date		
TTU-EX-2	Primary	3/13/2020	198 J	327
	Primary	6/17/2020	405	549
	Primary	7/20/2020	212	561
	Primary	12/2/2020	424	506
	Primary	3/30/2021	334 J	634
	Primary	5/5/2021	218	536
	Primary	7/29/2021	523	630
	Primary	11/17/2021	158	238
	Primary	3/21/2022	213	234
	Primary	6/13/2022	189 J3	315
	Primary	9/8/2022	74.9	68.1
	Primary	11/29/2022	143	197
	Primary	2/23/2023	162	166
	Field Duplicate	2/23/2023	197	143
	Primary	6/13/2023	220	161 L1
	Primary	9/6/2023	191	433
TTU-EX-3	Primary	3/13/2020	175 J	5960
	Primary	6/17/2020	785	6050
	Primary	7/20/2020	610	7390
	Primary	12/2/2020	805 J-	5970 J
	Primary	3/30/2021	697	5560
	Primary	5/5/2021	536	5540
	Primary	7/29/2021	1010	7260
	Primary	11/17/2021	909	8120
	Field Duplicate	11/17/2021	969	8010
	Primary	3/21/2022	885	6560
	Primary	6/13/2022	863 J3	6020
	Primary	9/8/2022	741	7220
	Primary	11/29/2022	735	6620
	Primary	2/23/2023	916	6520
	Primary	6/13/2023	761	7690 L1
	Field Duplicate	6/12/2023	721	7580 L1
	Primary	9/6/2023	598	8100

TABLE 5:
HISTORICAL 1,4-DIOXANE AND TCE CONCENTRATIONS
FORMER THERMAL TREATMENT UNIT
NAMMO DEFENSE SYSTEMS INC.

		Chemical Name	1,4-Dioxane	Trichloroethene
		EPA Method	8260B SIM	8260B
		Unit	µg/l	
Location	Sample Type	Screening Level	3.5[1]	5
		Sample Date		
TTU-EX-4	Primary	3/13/2020	16.1	811
	Primary	6/17/2020	23.7	1040
	Primary	7/20/2020	18.1	934
	Primary	12/2/2020	20.7	501
	Primary	3/30/2021	16.3	486
	Primary	5/5/2021	12.8	420
	Primary	7/29/2021	29	461
	Primary	11/17/2021	16.1	755
	Primary	3/21/2022	23.9	909
	Primary	6/13/2022	27.4	579
	Field Duplicate	6/13/2022	26.1	635
	Primary	9/8/2022	41.4	698
	Primary	11/29/2022	51.5	612
	Primary	2/23/2023	16.7	836
	Primary	6/13/2023	13.5	970 L1
	Primary	9/7/2023	19.8	698
	Field Duplicate	9/7/2023	12.1	742
TTU-EX-5	Primary	3/13/2020	<0.0532 U	0.929 J
	Field Duplicate	3/13/2020	<0.055 U	0.775 J
	Primary	6/17/2020	<0.597 U	0.456 J
	Primary	7/20/2020	<0.597 U	0.562 J
	Field Duplicate	7/20/2020	<0.597 U	0.637 J
	Primary	12/2/2020	<0.597 U	4.18 J
	Field Duplicate	12/2/2020	<0.597 U	3.89 J
	Primary	3/30/2021	<0.597 U	6.53
	Primary	5/5/2021	<0.597 U	5.52
	Primary	7/29/2021	<0.597 U	5.51
	Primary	11/17/2021	<0.597 U	6.91
	Primary	3/21/2022	<0.597	5.74
	Field Duplicate	3/21/2022	<0.597	5.98
	Primary	6/13/2022	<0.597	5.58
	Primary	9/8/2022	2.16 E4	4.96
	Field Duplicate	9/8/2022	<0.597	5.06
	Primary	11/29/2022	3.4 B	4.51
	Primary	2/23/2023	<0.597	4.45

TABLE 5:
HISTORICAL 1,4-DIOXANE AND TCE CONCENTRATIONS
FORMER THERMAL TREATMENT UNIT
NAMMO DEFENSE SYSTEMS INC.

		Chemical Name	1,4-Dioxane	Trichloroethene
		EPA Method	8260B SIM	8260B
		Unit	µg/l	
Location	Sample Type	Screening Level	3.5[1]	5
		Sample Date		
	Primary	6/12/2023	<0.597	4.01 L1
	Primary	9/7/2023	<0.597	3.45

TABLE 5:
HISTORICAL 1,4-DIOXANE AND TCE CONCENTRATIONS
FORMER THERMAL TREATMENT UNIT
NAMMO DEFENSE SYSTEMS INC.

		Chemical Name	1,4-Dioxane	Trichloroethene
		EPA Method	8260B SIM	8260B
		Unit	µg/l	
Location	Sample Type	Screening Level	3.5(1)	5
		Sample Date		

Notes:

µg/l - micrograms per liter

AWQS - Arizona Aquifer Water Quality Standard

EPA - Environmental Protection Agency

NA - Not Analyzed

NS - No sample collected

SIM - Selected Ion Monitoring

< - Concentration is below laboratory reporting limits

- - - Not reported

Concentration detected above the method detection limit

(1) - Interim Screening Level

V = The sample concentration is too high to evalulate accurate spike recoveries

J = The analyte was positively identified; the associated numerical value is the approximate concentration

J3 = The associated batch QC was outside the established quality control range for precision

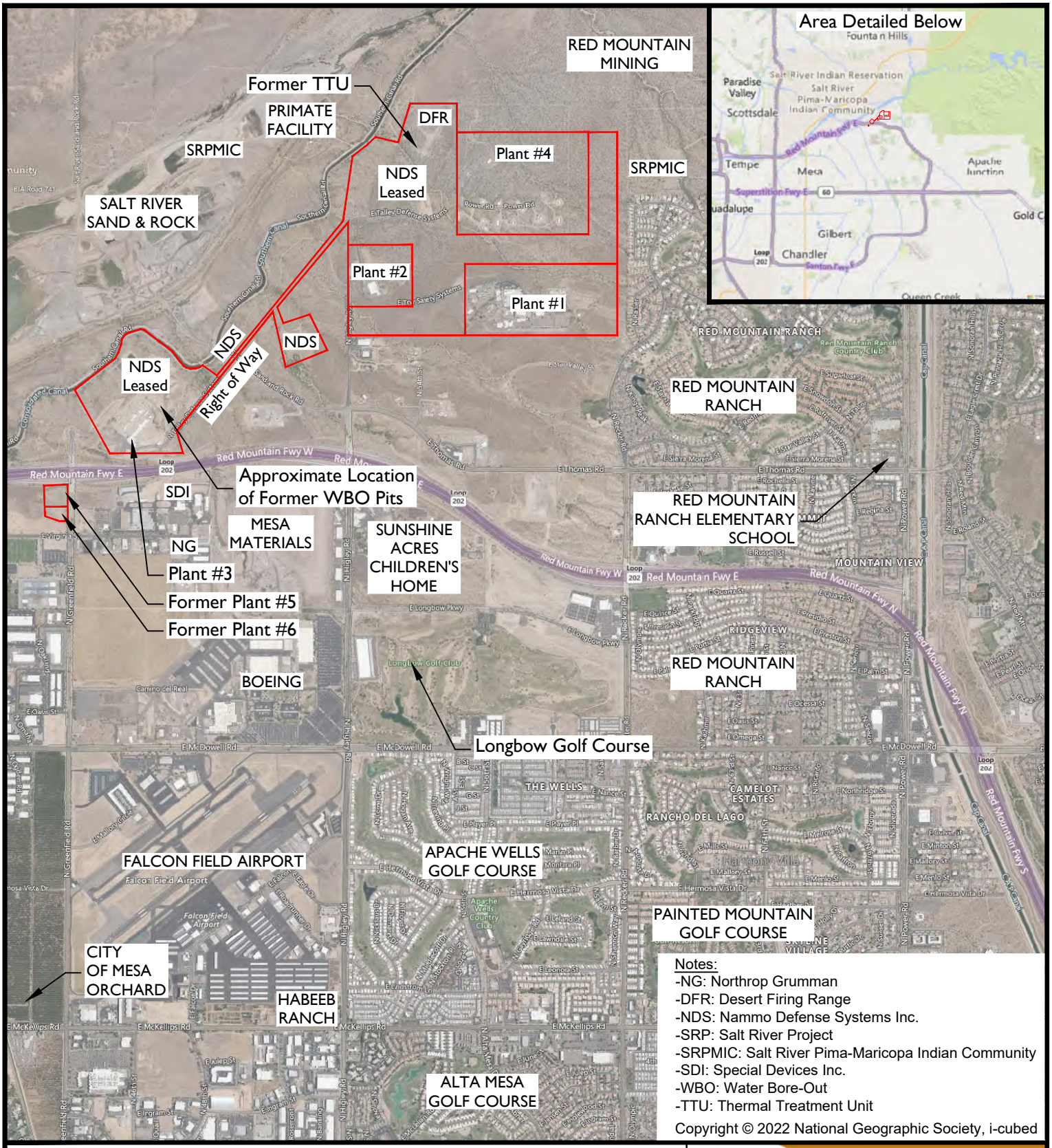
J4 = The associarred batch QC was outside the established quality control range for accuracy

T8 = Method used not listed in 40 CFR 136; alternate method chosen as acceptable per permit.

R7 = LFB/LFBD RPD exceeded the laboratory acceptance limit. Recovery met acceptance criteria

Q = Sample was prepared and/or analyzed past holding time as defined in the method. Concentration should be considered minimum values

Figures



Notes:
-NG: Northrop Grumman
-DFR: Desert Firing Range
-NDS: Nammo Defense Systems Inc.
-SRP: Salt River Project
-SRPMIC: Salt River Pima-Maricopa Indian Community
-SDI: Special Devices Inc.
-WBO: Water Bore-Out
-TTU: Thermal Treatment Unit

LEGEND

Approximate Property Boundary

N

0 5000' 10000'

SCALE: 1" = 5000'

Pinyon Environmental, Inc.

SITE VICINITY MAP

Nammo Defense Systems Inc.
Former Thermal Treatment Unit (TTU)
Mesa, Arizona

Site Location: Section 3, 15 and 27 Township 1N, Range 6E, Gila-Salt River Meridian	Drawn By: SJA	Figure: 1
Pinyon Project Number: 7/22-1522-01.REM001.4	Reviewed By: AP	Date: 10/13/2023

Coordinate System: NAD83 ARIZONA STATE PLANES, CENTRAL ZONE, US FOOT - AZ83-CF

PLOT DATE: 10/13/2023

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PLOT DATE: 10/26/2023

TTU-9A (1,291.43)
TTU-4 (1,253.07)
TTU-8 (1,164.79)
TTU-1 (1,271.90)
TTU-17 (1,308.69)
TTU-3 (1,222.43)
TTU-13 (1,270.13)
TTU-EX-1 (1,293.84)
TTU-7 (1,170.49)
TTU-6 (1,180.11)
TTU-EX-2 (1,280.07)
TTU-14 (1,259.39)
PF-2 (1,140.48)
TTU-12 (1,240.88)
TTU-15 (1,319.14)
PF-1 (NM)
TTU-2 (1,242.90)
TTU-EX-3 (1,278.10)
TTU-16 (1,315.20)
TTU-10 (1,138.74)
TTU-11 (1,305.89)
TTU-EX-4 (1,276.98)
TTU-5 (1,234.90)
TTU-EX-5 (1,279.31)
TTU-20 (1,305.87)
TTU-19 (1,305.21)
TTU-18 (DRY)
WaNPRC
Hydraulic Gradient Est. 0.12 ft/ft
Salt River Pima-Maricopa Indian Community
Southern Canal Rd
Southern Canal
1315
1305
1295
1285
1275
1265
1245
1235
1225
1215
1205
1195
1185
1175
1165
1155
1145

LEGEND

- Extraction Well
- Monitoring Well
- Primate Production Well
- Extraction and Pilot Test Injection Well
- Monitoring / Injection Well
- Extraction Well Currently used for Monitoring
- TTU-1 = Monitoring Well Location
  1145.24 = Groundwater Elevation (ft. amsl)
- 1150 Groundwater Elevation Contour (ft amsl) (Contour Interval: 10ft)
- Estimated Regional Groundwater Flow Direction

N

Notes:
All locations are approximate.
NM: Not Measured
ft. amsl: feet above mean sea level.
TTU-18 is dry and not sampled.

WaNPRC: Washington National Primate Research Center
NDS: Nammo Defense Systems Inc.

0 250' 500'
SCALE: 1" = 250'

Pinyon Environmental, Inc.

QUARTERLY GROUNDWATER CONTOUR MAP - THIRD QUARTER 2023

Nammo Defense Systems Inc.
Former Thermal Treatment Unit (TTU)
Mesa, Arizona

Site Location: Section 23, Township 12N, Range 6E, Gila-Salt River Meridian	Drawn By: SJA	Figure: 2
Pinyon Project Number: 7/22-1522-01.REM001.4	Reviewed By: AP	Date: 10/26/2023

Coordinate System: NAD83 ARIZONA STATE PLANES, CENTRAL ZONE, US FOOT - AZ83-CF

C:\Users\Admin\Pinyon Environmental Inc\Arizona Project Delivery - NDS - Documents\NDS\WBO_TTU GWM\Figures\AutoCAD\DWG\TTU Q3 2023\TTU_GW02.dwg

Notes:
µg/l - micrograms per liter
AWQS - Arizona Aquifer Water Quality Standard
BOLD - Concentration exceeds its respective AWQS or screening level
* - Not used for contouring
E4 - Concentration estimated. Analyte was detected below laboratory minimum reporting level (MRL) but above method detection limit (MDL)
M1 - Matrix spike recovery was high; the associated blank spike recovery was acceptable
M3 - The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The associated blank spike recovery was acceptable
R8 - Sample RPD exceeded the method acceptance limit

N

Legend

- Extraction Well
- Extraction Well Currently Used for Monitoring
- Extraction/Injection Well
- Monitoring Well
- Private Production Well
- Dashed where Inferred
- Estimated extent of Perchlorate concentrations above the AWQS of 14 ug/l

((Result/Duplicate Result))

0 100 200 Feet

Pinyon Environmental, Inc.

PERCHLORATE DETECTIONS IN GROUNDWATER - THIRD QUARTER 2023

Nammo Defense Systems Inc.
Former Thermal Treatment Unit (TTU)
Mesa, Arizona

Site Location: Sections 23, Townships 12 North, Range 6 East, Gila-Salt River Meridian

Pinyon Project Number: 7/22-1522-01.REM001.4

Drawn By: CJB | Figure: 3

Reviewed By: AP | Date: 12/1/2023

Document Path: C:\Users\bowes\Pinyon Environmental Inc\Arizona Project Delivery - NDS - WBO_TTU GWM\Figures\ArcPro\TTU\2023\Q3\722152201_NammoDefenseSystems_2023Q3\722152201_NammoDefenseSystems_2023Q3.aprx

TTU-9A
(<0.597)

TTU-8
(<0.597/R)

TTU-4
(<0.597)

TTU-13
(37.4)

TTU-1
(6.07)

TTU-EX-1
(163 / 202)

TTU-17
(<0.597)

TTU-7
(<0.597)

TTU-6
(<0.597)

TTU-3
(<0.597)

TTU-EX-2
(191)

TTU-14
(246)

PF-2
(<0.597)

TTU-15
(4.69)

TTU-12
(131)

TTU-EX-3
(598)

TTU-16
(2,880)

TTU-EX-4
(19.8 / 12.1)

TTU-19
(209)

3.5

TTU-10
(<0.597)

TTU-2
(200 / 234)

TTU-EX-5
(<0.597)

TTU-20
(499)

TTU-11
(<0.597*)

TTU-5
(<0.597)

Notes:
µg/l - micrograms per liter
AWQS - Arizona Aquifer Water Quality Standard
BOLD - Concentration exceeds its respective AWQS or screening level
* - Not used for contouring
< - Less Than
R - Data determined as rejected after data validation

N

Legend

- Extraction Well
- Extraction Well Currently Used for Monitoring
- Extraction/Injection Well
- Monitoring Well
- Private Production Well
- Dashed where Inferred
- Estimated extent of 1,4-Dioxane concentrations above the interim screening level of 3.5 ug/l

((Result/Duplicate Result))

0 100 200 Feet

Pinyon Environmental, Inc.

1,4-DIOXANE DETECTIONS IN GROUNDWATER - THIRD QUARTER 2023

Nammo Defense Systems Inc.
Former Thermal Treatment Unit (TTU)
Mesa, Arizona

Site Location: Sections 23, Townships 12 North, Range 6 East, Gila-Salt River Meridian

Pinyon Project Number: 7/22-1522-01.REM001.4

Drawn By: CJB | Figure: 4

Reviewed By: AP | Date: 10/31/2023

Document Path: C:\Users\bowes\Desktop\GEOLOGY\2023\Q3\722152201_NammoDefenseSystems_2023Q3\722152201_NammoDefenseSystems_2023Q3.aprx

TTU-9A
(<0.188)

TTU-8
(<0.188 /<0.188)

TTU-4
(<0.188)

TTU-13
(3.66)

TTU-1
(0.211 E4)

TTU-EX-1
(96.1 / 125)

TTU-17
(<0.188)

TTU-7
(<0.188)

TTU-6
(<0.188)

TTU-3
(<0.188)

TTU-EX-2
(110)

TTU-14
(123)

TTU-15
(0.898 E4)

PF-2
(<0.188)

TTU-EX-3
(946)

TTU-16
(2,560)

TTU-12
(72.6)

TTU-2
(38.5 / 45.3)

TTU-19
(10.5)

TTU-EX-4
(112 / 125)

TTU-11
(6.69 E4*)

TTU-10
(<0.188)

TTU-EX-5
(<0.188)

TTU-20
(<1.88)

TTU-5
(<0.188)

Notes:
µg/l - micrograms per liter
AWQS - Arizona Aquifer Water Quality Standard
BOLD - Concentration exceeds its respective AWQS or screening level
* - Not used for contouring
E4 - Concentration estimated. Analyte was detected below laboratory minimum reporting level (MRL) but above method detection limit (MDL)
< - Less Than

N

Legend

- Extraction Well
- Extraction Well Currently Used for Monitoring
- Extraction/Injection Well
- Monitoring Well
- Private Production Well
- Dashed where Inferred
- Estimated extent of 1,1 Dichloroethene concentrations above the AWQS of 7 ug/l

((Result/Duplicate Result))

0 100 200 Feet

Pinyon Environmental, Inc.

1,1 DICHLOROETHENE DETECTIONS IN GROUNDWATER - THIRD QUARTER 2023

Nammo Defense Systems Inc.
Former Thermal Treatment Unit (TTU)
Mesa, Arizona

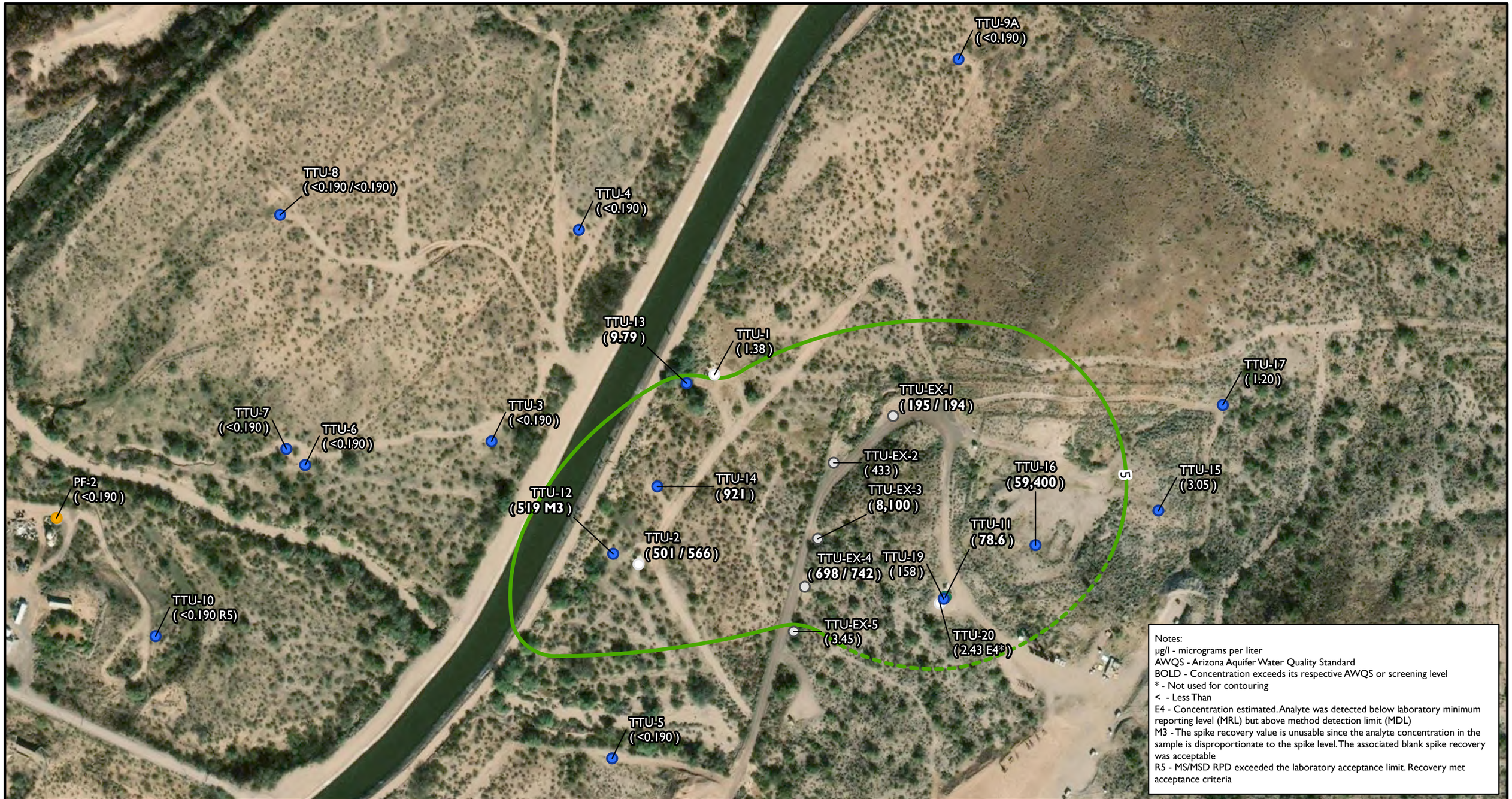
Site Location: Sections 23, Townships 12 North, Range 6 East, Gila-Salt River Meridian

Pinyon Project Number: 7/22-1522-01.REM001.4

Drawn By: CJB | Figure: 5

Reviewed By: AP | Date: 11/30/2023

Document Path: C:\Users\bowes\Pinyon Environmental Inc\Arizona Project Delivery - NDS - WBO_TTU GWM\Figures\ArcPro\TTU\2023\Q3\722152201_NammoDefenseSystems_2023Q3\722152201_NammoDefenseSystems_2023Q3.aprx



Notes:
µg/l - micrograms per liter
AWQS - Arizona Aquifer Water Quality Standard
BOLD - Concentration exceeds its respective AWQS or screening level
* - Not used for contouring
< - Less Than
E4 - Concentration estimated. Analyte was detected below laboratory minimum reporting level (MRL) but above method detection limit (MDL)
M3 - The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The associated blank spike recovery was acceptable
R5 - MS/MSD RPD exceeded the laboratory acceptance limit. Recovery met acceptance criteria

N

Legend

- Extraction Well
- Extraction Well Currently Used for Monitoring
- Extraction/Injection Well
- Monitoring Well
- Private Production Well
- Dashed where Inferred
- Estimated extent of Trichloroethene (TCE) concentrations above the AWQS of 5 ug/l

((Result/Duplicate Result))

0 150 300 Feet

Pinyon Environmental, Inc.

TRICHLOROETHENE DETECTIONS IN GROUNDWATER - THIRD QUARTER 2023

Nammo Defense Systems Inc.
Former Thermal Treatment Unit (TTU)
Mesa, Arizona

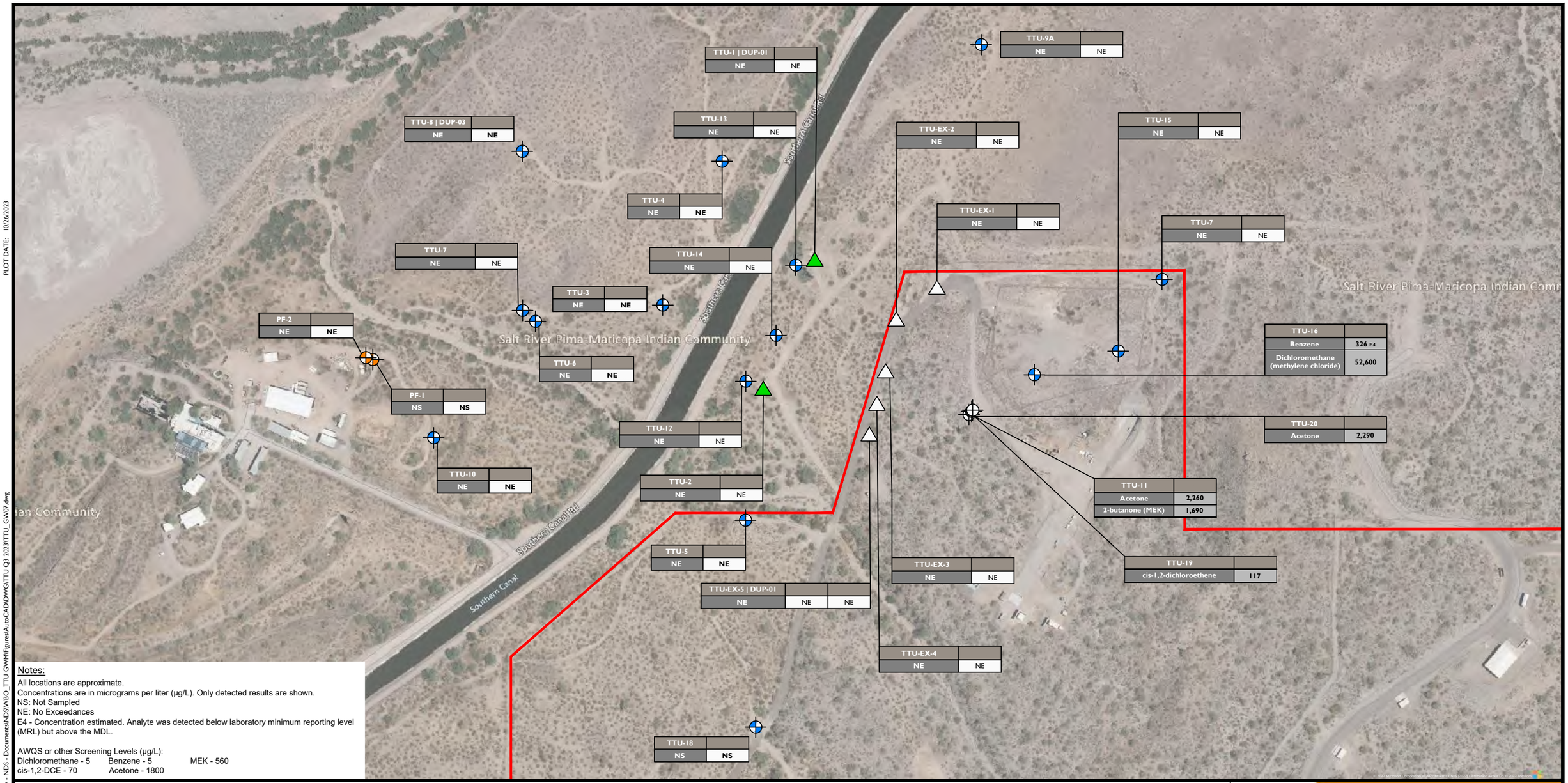
Site Location: Sections 23, Townships 12 North, Range 6 East, Gila-Salt River Meridian

Pinyon Project Number: 7/22-1522-01.REM001.4

Drawn By: CJB | Figure: 6

Reviewed By: AP | Date: 10/31/2023

Document Path: C:\Users\bowes\Desktop\GEOLOGY\2023\Q3\722152201_NammoDefenseSystems_2023Q3\722152201_NammoDefenseSystems_2023Q3.aprx



Notes:
All locations are approximate.
Concentrations are in micrograms per liter (µg/L). Only detected results are shown.
NS: Not Sampled
NE: No Exceedances
E4 - Concentration estimated. Analyte was detected below laboratory minimum reporting level (MRL) but above the MDL.

AWQS or other Screening Levels (µg/L):
Dichloromethane - 5 Benzene - 5 MEK - 560
cis-1,2-DCE - 70 Acetone - 1800

LEGEND

- Extraction Well
- Monitoring Well
- Primate Production Well
- Extraction and Pilot Test Injection Well
- Monitoring / Injection Well
- Extraction Well Currently used for Monitoring
- TTU-1 = Monitoring Well Location
- NDS Leased Property Boundary with SRP-MIC

5.76 Exceeds Aquifer Water Quality Standards or other applicable screening levels

N

0 250' 500'
SCALE: 1" = 250'

Pinyon Environmental, Inc.

VOC EXCEEDANCES IN GROUNDWATER - THIRD QUARTER 2023

Nammo Defense Systems Inc.
Former Thermal Treatment Unit (TTU)
Mesa, Arizona

Site Location: Section 23, Township 12N, Range 6E, Gila-Salt River Meridian

Pinyon Project Number: 7/22-1522-01.REM001.4

Drawn By: SJA | Figure: 7
Reviewed By: DW | Date: 10/26/2023

Coordinate System: NAD83 ARIZONA STATE PLANES, CENTRAL ZONE, US FOOT - AZ83-CF

PLOT DATE: 10/26/2023
C:\Users\Adamt\Pinyon Environmental Inc\Arizona Project Delivery - NDS - Documents\NDS\WBO_TTU GWM\Figures\AutoCAD\DWG\TTU Q3 2023\TTU_GW07.dwg

Attachments

Attachment 1 – Field Notes

Location	Measurement Date	Depth to Groundwater (ft btoc)	Measurement Date	Depth to Groundwater (ft btoc)
TTU-1	6/15/2023	41.30	9/14/23	40.83
TTU-2	6/15/2023	62.75	9/14/23	71.54
TTU-3	6/12/2023	87.57	9/5/23	85.60
TTU-4	6/12/2023	52.92	9/5/23	52.05
TTU-5	6/13/2023	79.83	9/6/23	80.03
TTU-6	6/12/2023	129.30	9/5/23	120.73
TTU-7	6/12/2023	132.72	9/5/23	131.35
TTU-8	6/12/2023	149.81	9/5/23	145.44
TTU-9A	6/13/2023	28.61	9/6/23	26.61
TTU-10	6/12/2023	159.32	9/5/23	163.68
TTU-11	6/13/2023	32.69	9/5/23	33.31
TTU-12	6/13/2023	72.27	9/7/23	71.33
TTU-13	6/13/2023	42.21	9/6/23	40.66
TTU-14	6/13/2023	58.45	9/7/23	57.41
TTU-15	6/12/2023	30.37	9/6/23	31.71
TTU-16	6/13/2023	21.16	9/7/23	23.35
TTU-17	6/12/2023	37.05	9/6/23	38.80
TTU-18	6/13/2023	Dry	9/6/23	DRY
TTU-19	6/13/2023	29.47	09/7/23	31.60
TTU-20	6/16/2023	32.82	9/14/23	31.03
TTU-EX-1	6/13/2023	25.71	9/6/23	27.85
TTU-EX-2	6/13/2023	34.98	9/6/23	36.33
TTU-EX-3	6/13/2023	37.45	9/6/23	38.75
TTU-EX-4	6/13/2023	42.37	9/7/23	42.98

TTU-EX-5	6/12/2023	39.62	9/7/23	40.19
PF-1	N/A	N/A	N/A	N/A
PF-2	N/A	N/A	9/5/23	155.87

Attachment 2 – Laboratory Analytical Reports

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Andrew Parker
Pinyon Environmental Inc
2801 E Camelback Road
Suite 200
Phoenix, Arizona 85016

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JOB DESCRIPTION

NDS TTU

JOB NUMBER

550-207248-1

Eurofins Phoenix
4625 East Cotton Center Boulevard
Suite #189
Phoenix AZ 85040

See page two for job notes and contact information.

myEOL

Job Notes

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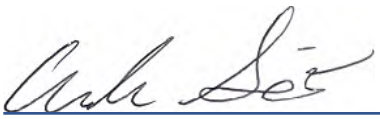

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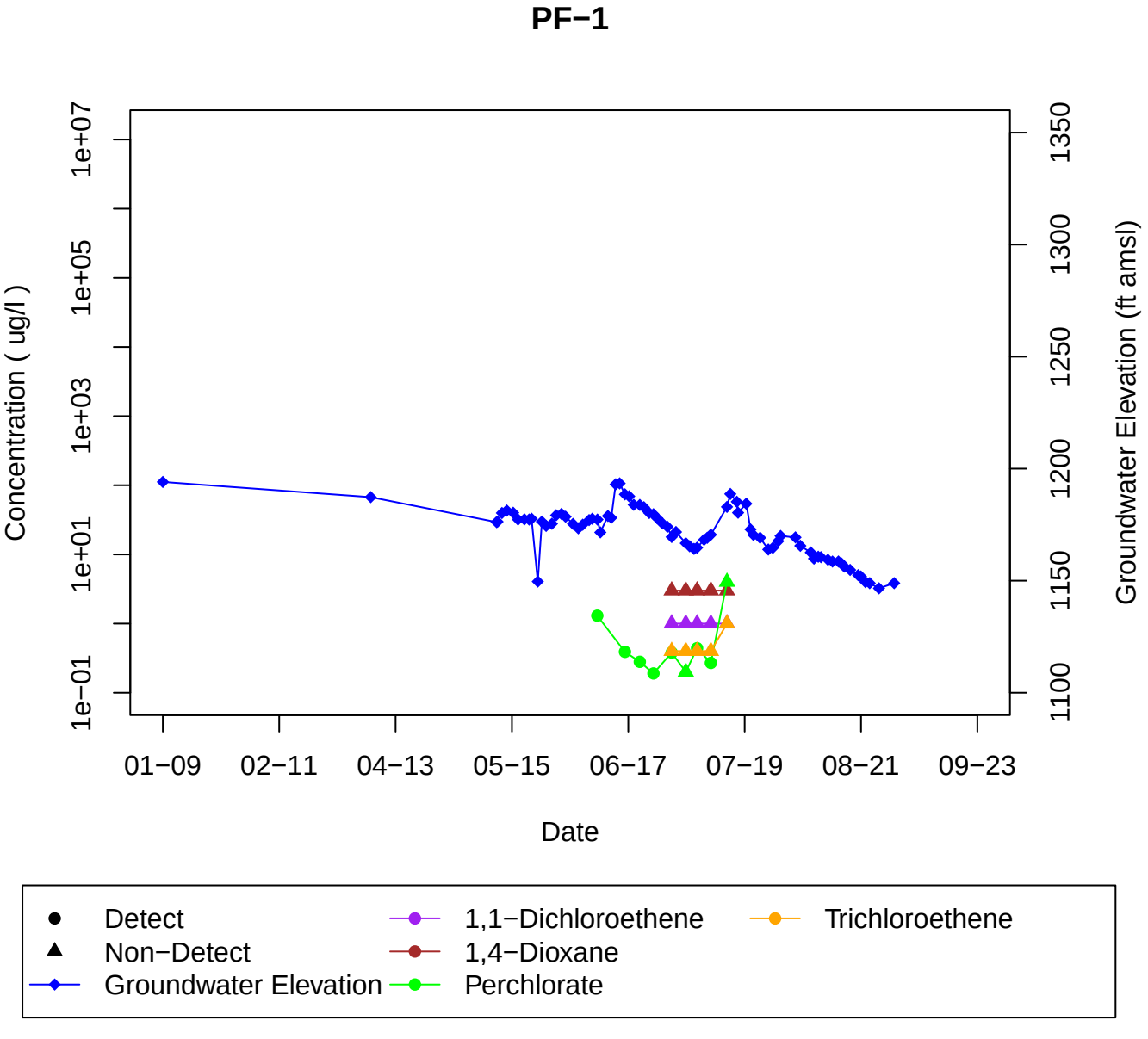
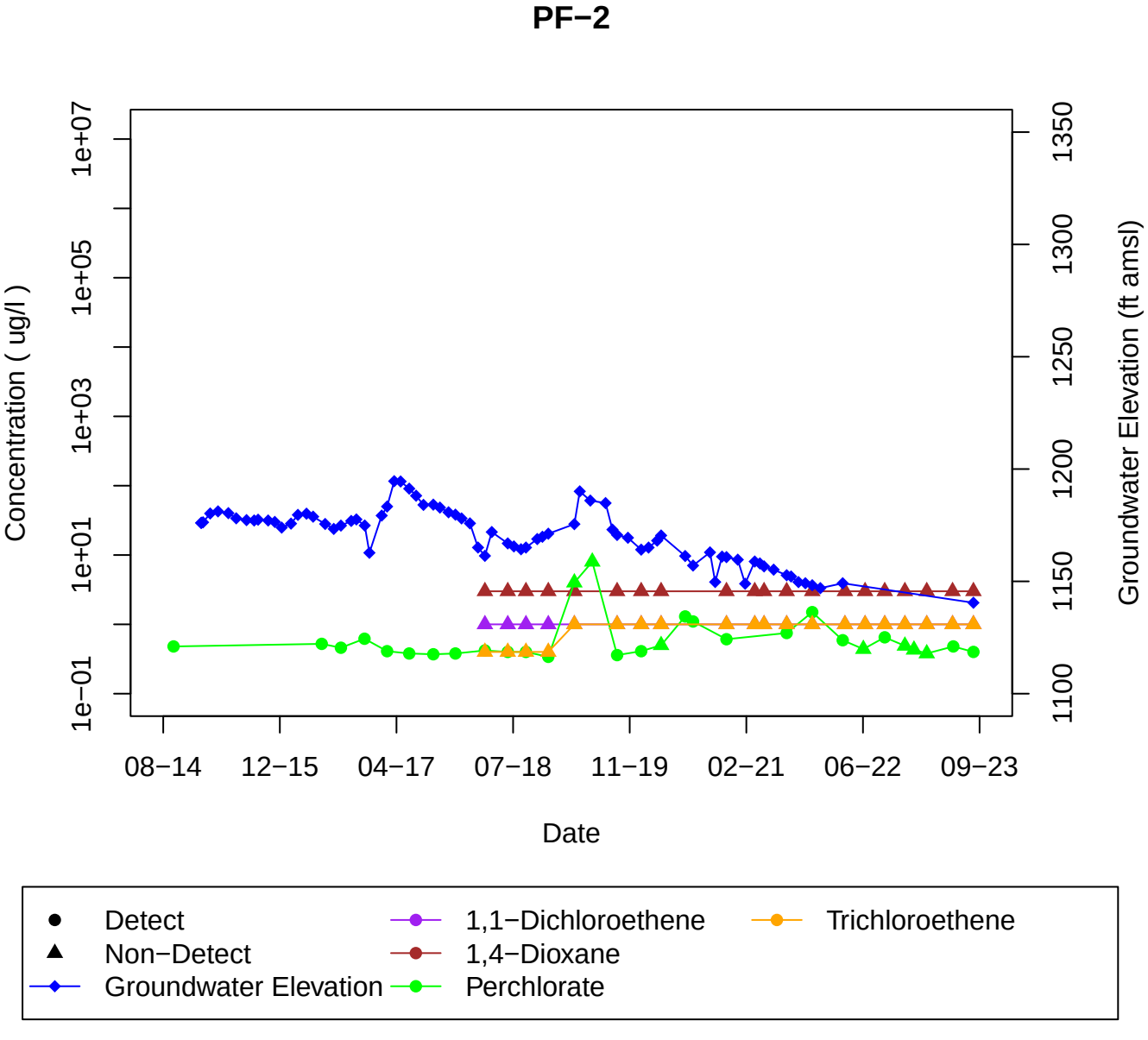
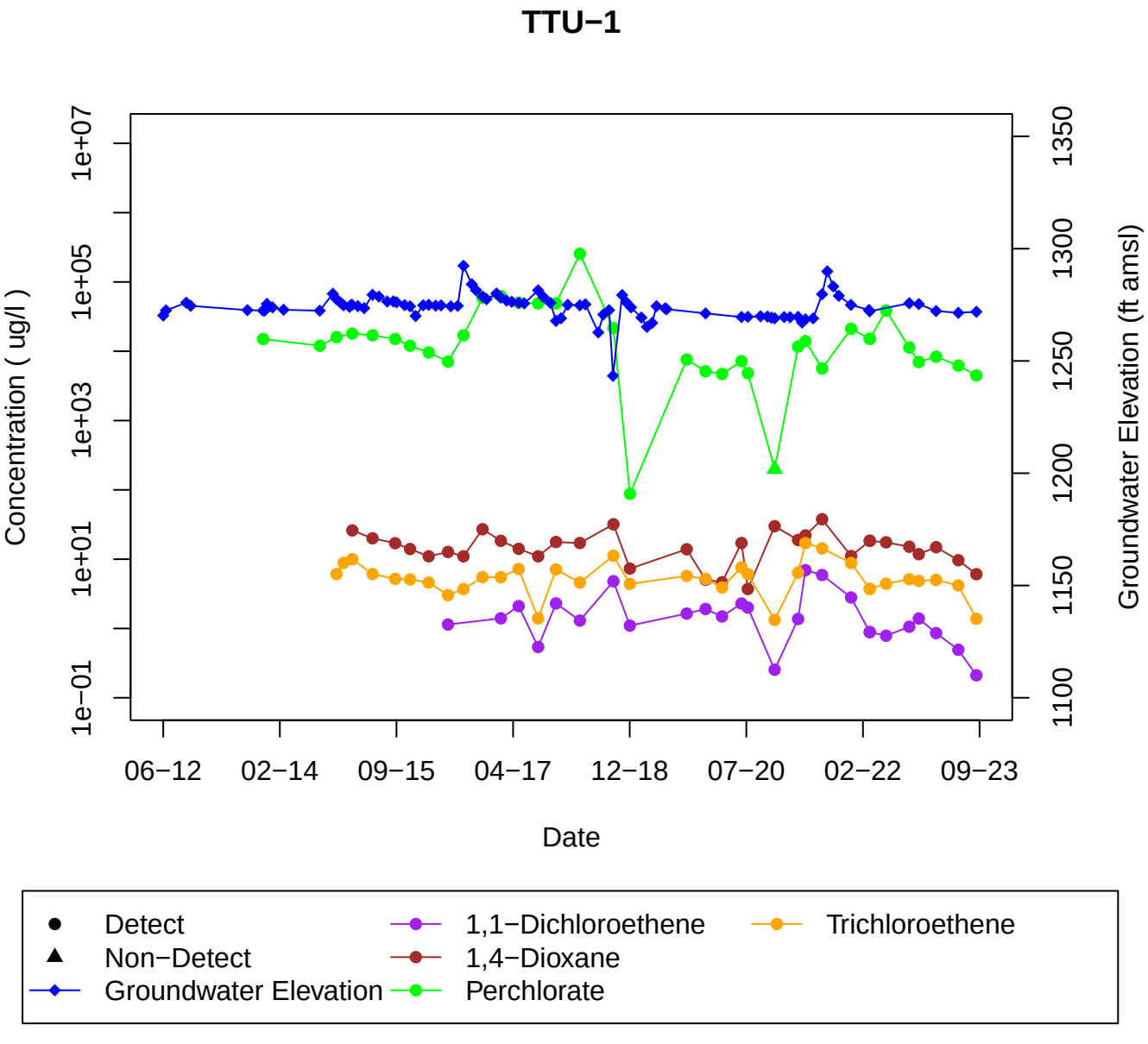
Authorized for release by
Amanda Seawright, Project Manager I
amanda.seawright@et.eurofinsus.com
(602)437-3340

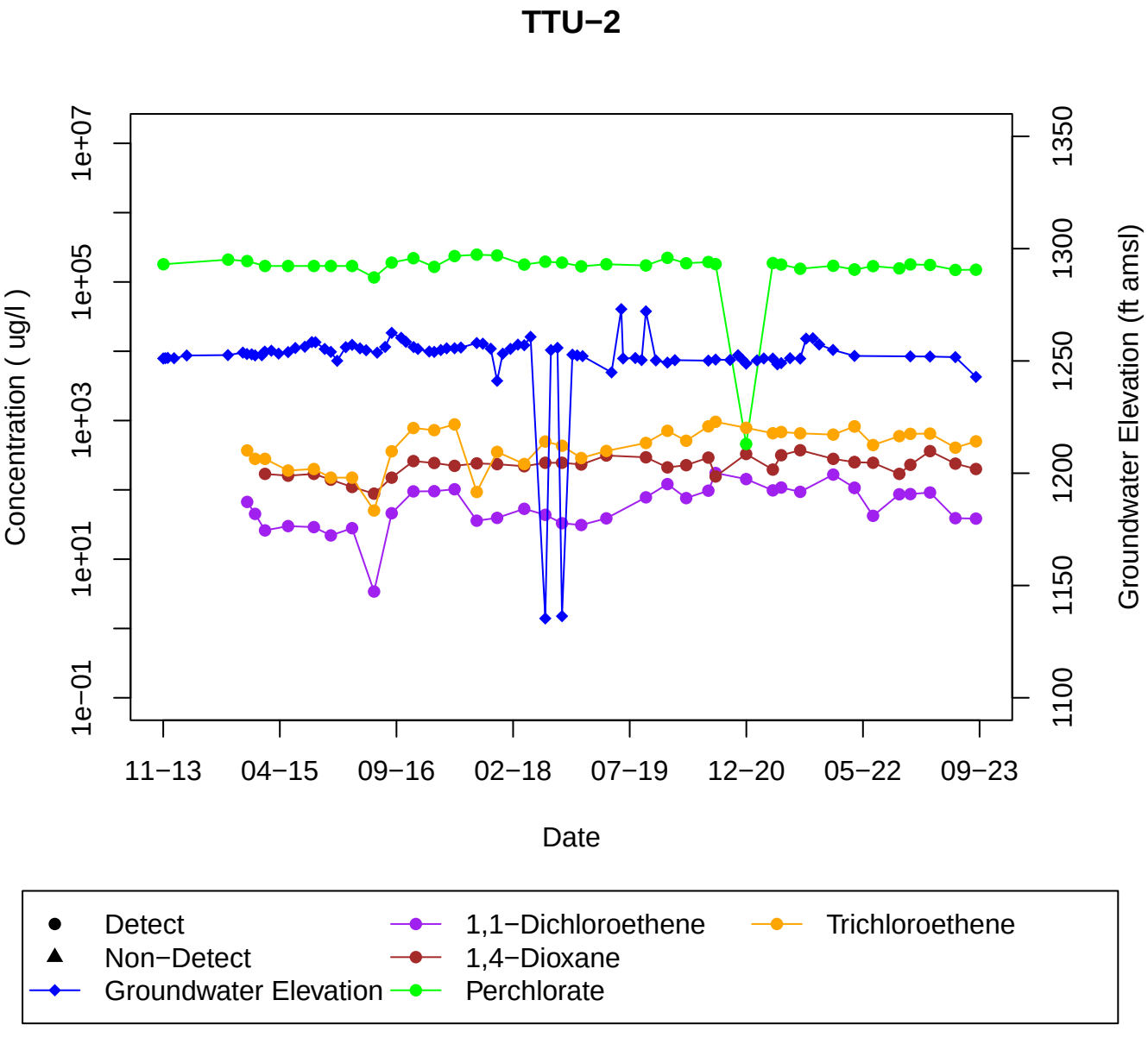
Table of Contents

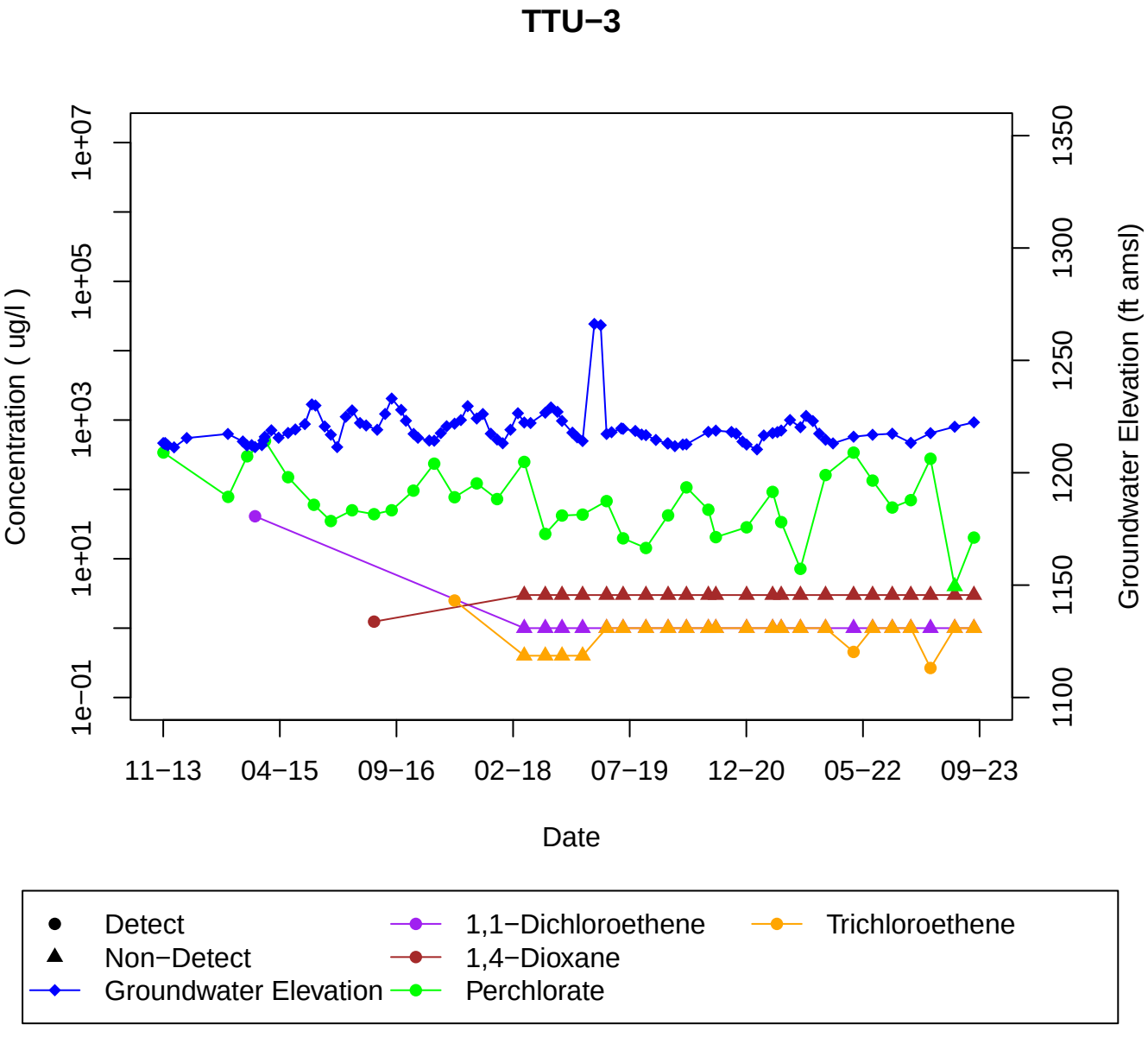
Attachment 3 – Concentration and Groundwater Elevation versus Time Plots

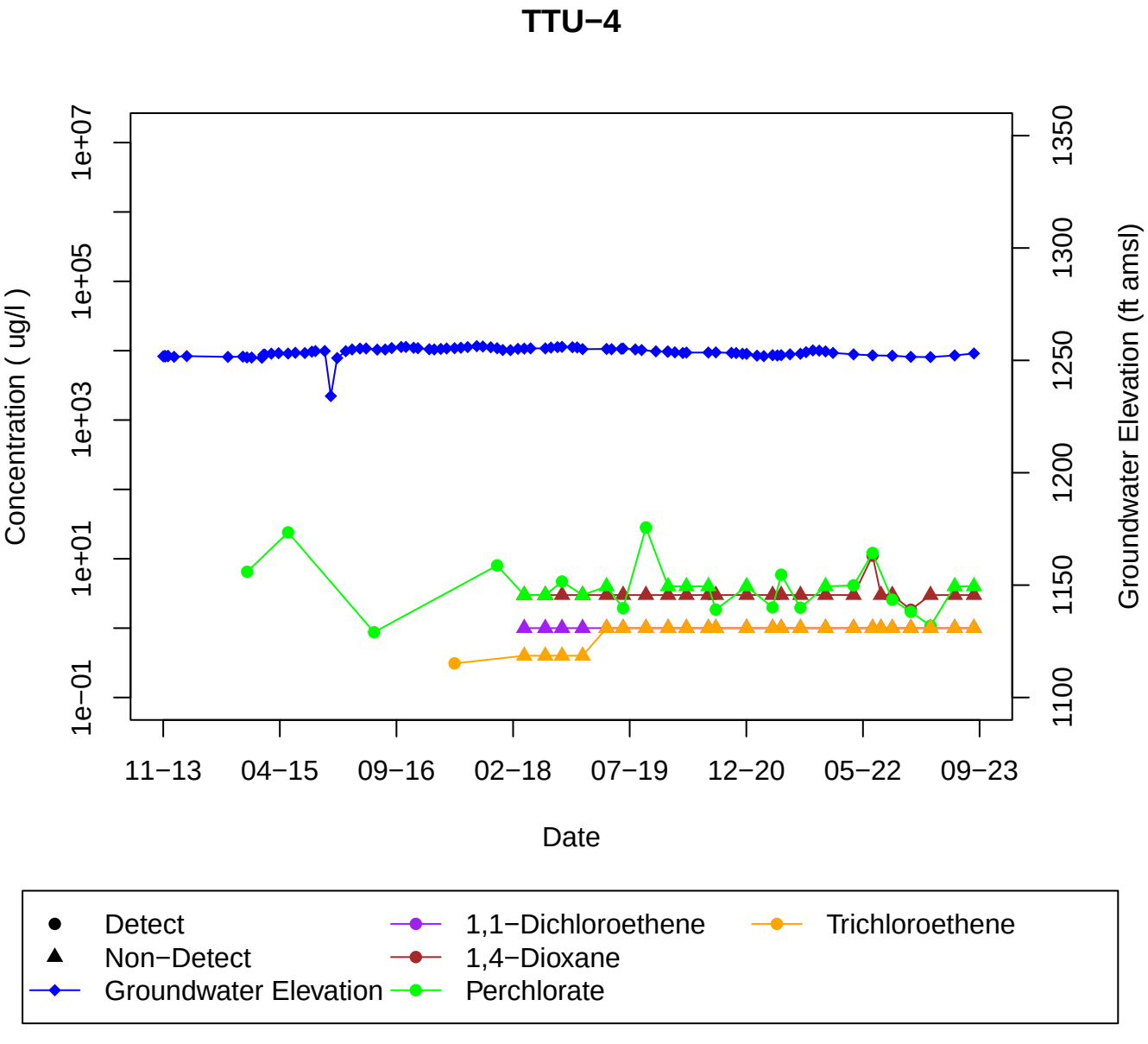

PF−1
Concentration (ug/l)
1e−01
1e+01
1e+03
1e+05
1e+07
Groundwater Elevation (ft amsl)
1100
1150
1200
1250
1300
1350
01−09
02−11
04−13
05−15
06−17
07−19
08−21
09−23
Date
Detect
Non−Detect
Groundwater Elevation
1,1−Dichloroethene
1,4−Dioxane
Perchlorate
Trichloroethene

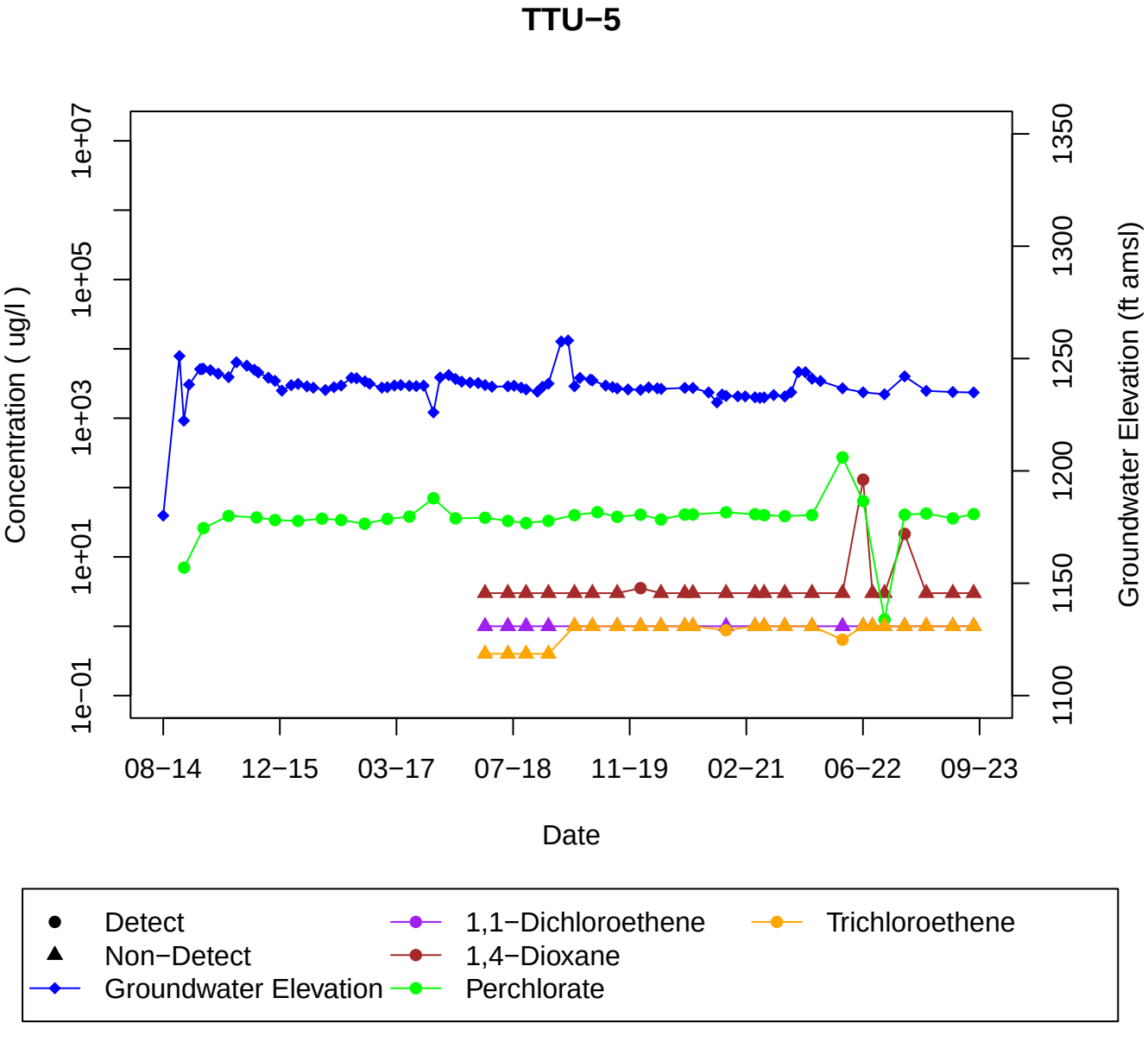

PF−2
Concentration (ug/l)
1e−01
1e+01
1e+03
1e+05
1e+07
Groundwater Elevation (ft amsl)
1100
1150
1200
1250
1300
1350
08−14
12−15
04−17
07−18
11−19
02−21
06−22
09−23
Date
Detect
Non−Detect
Groundwater Elevation
1,1−Dichloroethene
1,4−Dioxane
Perchlorate
Trichloroethene

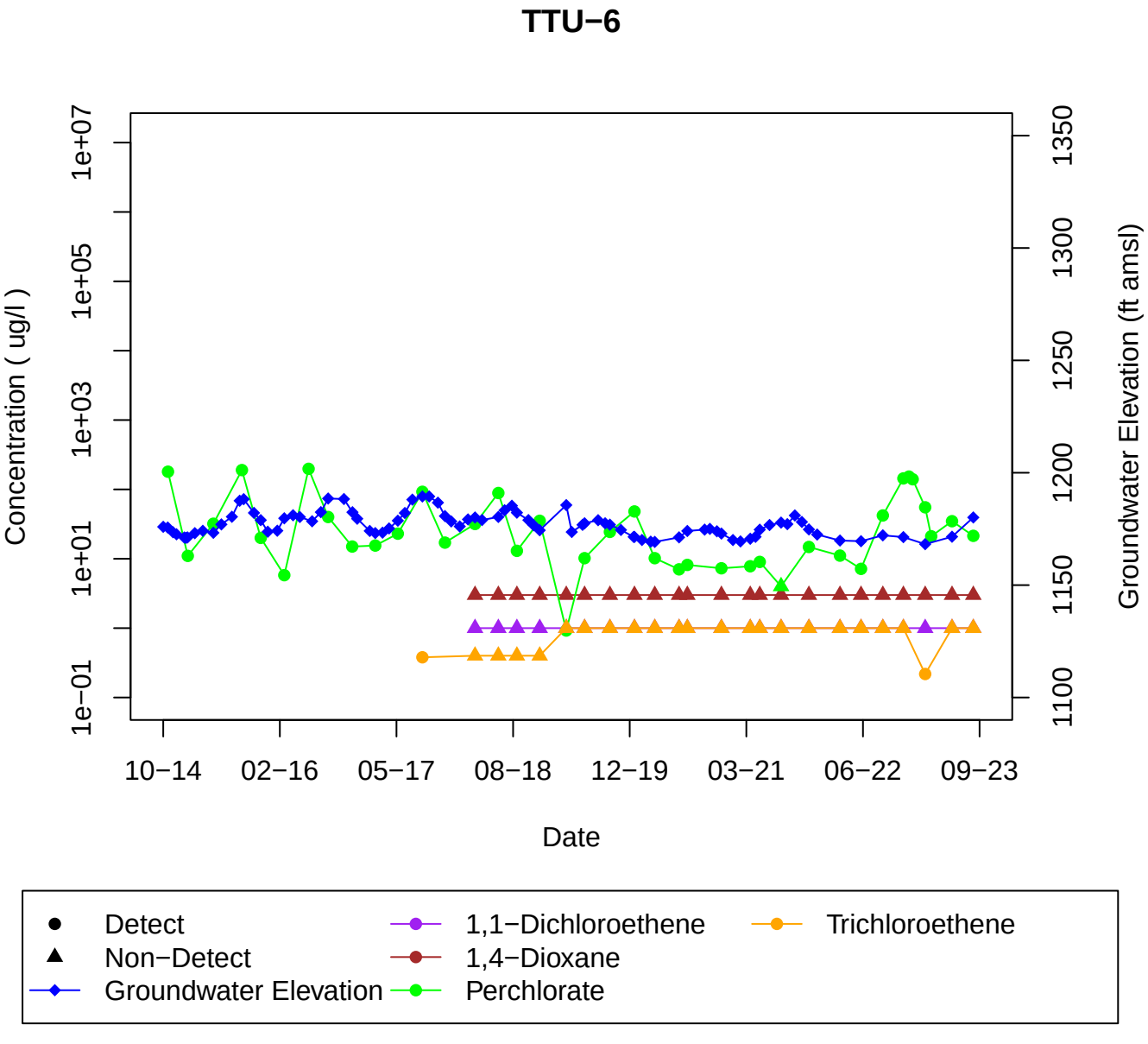

TTU−1
Concentration (ug/l)
1e−01
1e+01
1e+03
1e+05
1e+07
Groundwater Elevation (ft amsl)
1100
1150
1200
1250
1300
1350
06−12
02−14
09−15
04−17
12−18
07−20
02−22
09−23
Date
Detect
Non−Detect
Groundwater Elevation
1,1−Dichloroethene
1,4−Dioxane
Perchlorate
Trichloroethene

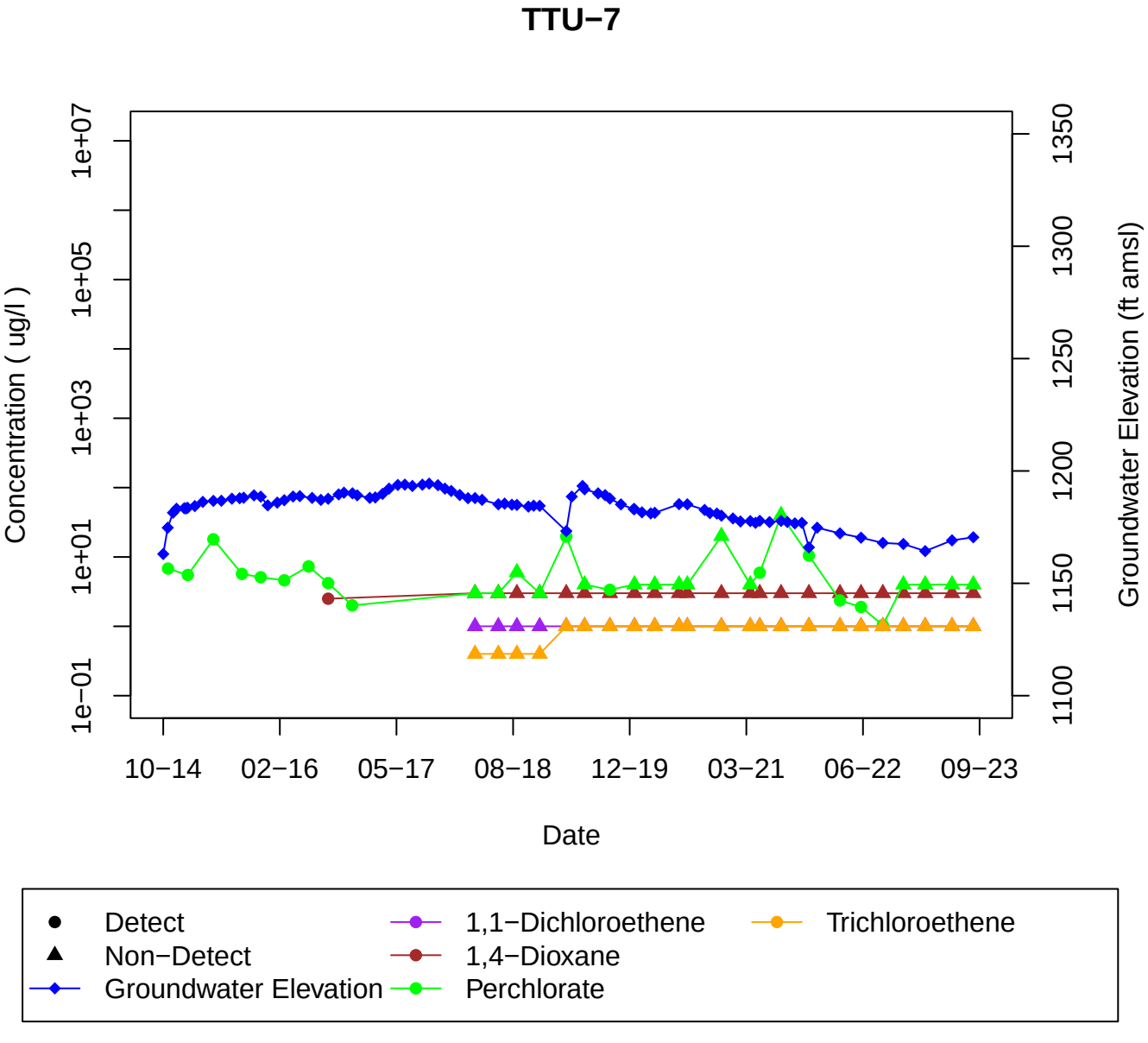

TTU−2
Concentration (ug/l)
1e−01
1e+01
1e+03
1e+05
1e+07
Groundwater Elevation (ft amsl)
1100
1150
1200
1250
1300
1350
11−13
04−15
09−16
02−18
07−19
12−20
05−22
09−23
Date
Detect
Non−Detect
Groundwater Elevation
1,1−Dichloroethene
1,4−Dioxane
Perchlorate
Trichloroethene

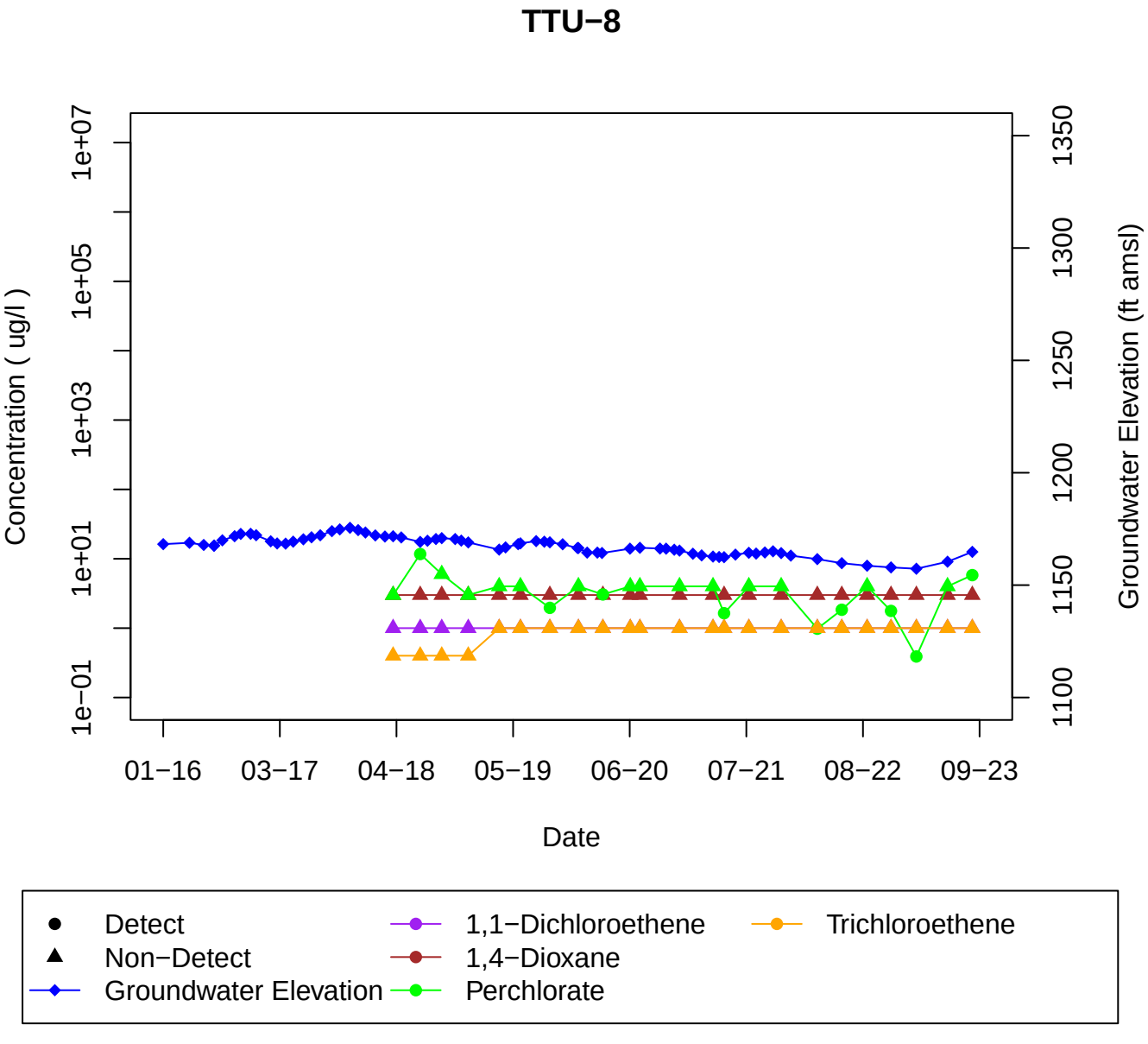

TTU−3
Concentration (ug/l)
1e−01
1e+01
1e+03
1e+05
1e+07
Groundwater Elevation (ft amsl)
1100
1150
1200
1250
1300
1350
11−13
04−15
09−16
02−18
07−19
12−20
05−22
09−23
Date
Detect
Non−Detect
Groundwater Elevation
1,1−Dichloroethene
1,4−Dioxane
Perchlorate
Trichloroethene

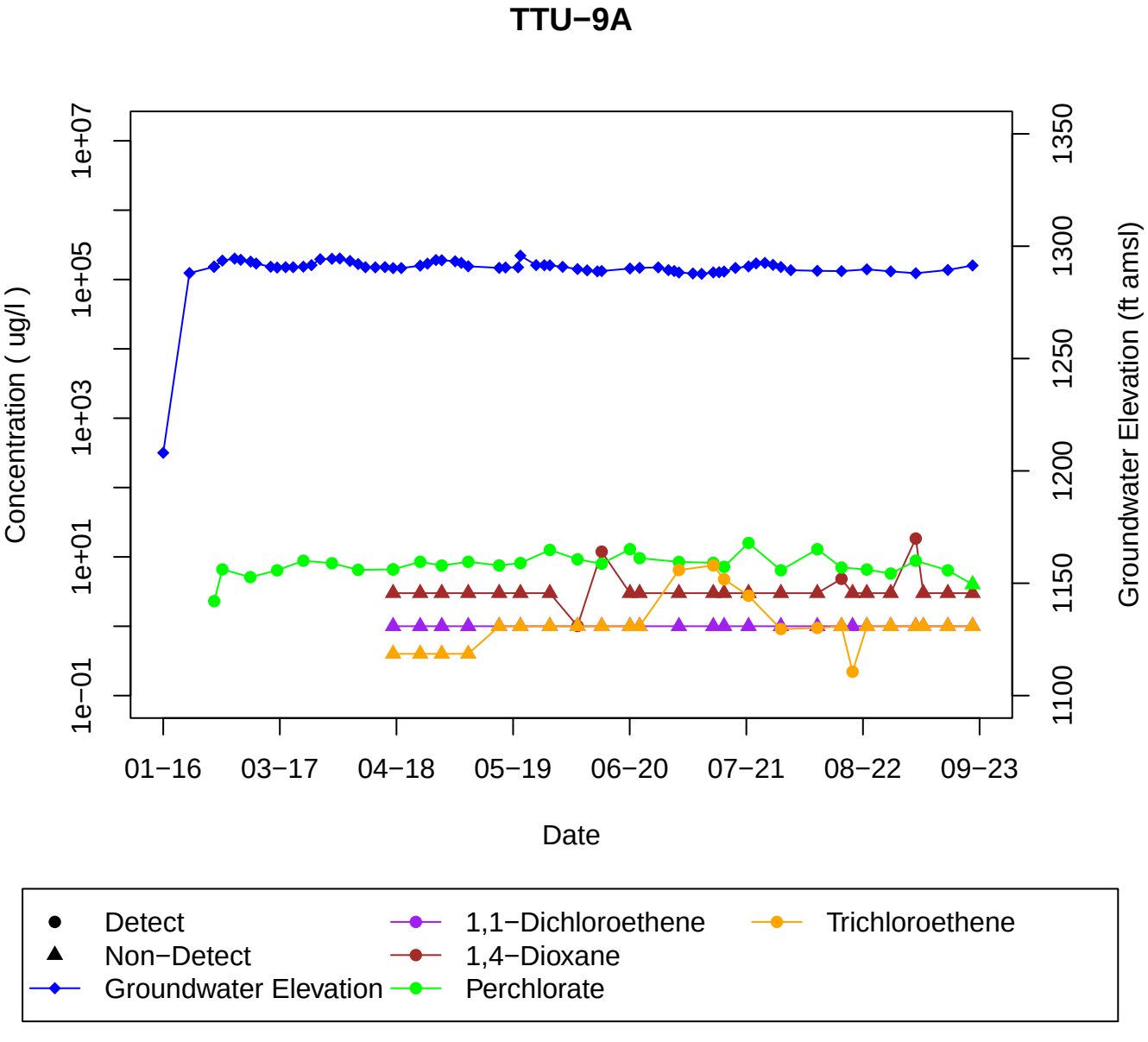

TTU−4
Concentration (ug/l)
1e−01
1e+01
1e+03
1e+05
1e+07
Groundwater Elevation (ft amsl)
1100
1150
1200
1250
1300
1350
11−13
04−15
09−16
02−18
07−19
12−20
05−22
09−23
Date
Detect
Non−Detect
Groundwater Elevation
1,1−Dichloroethene
1,4−Dioxane
Perchlorate
Trichloroethene

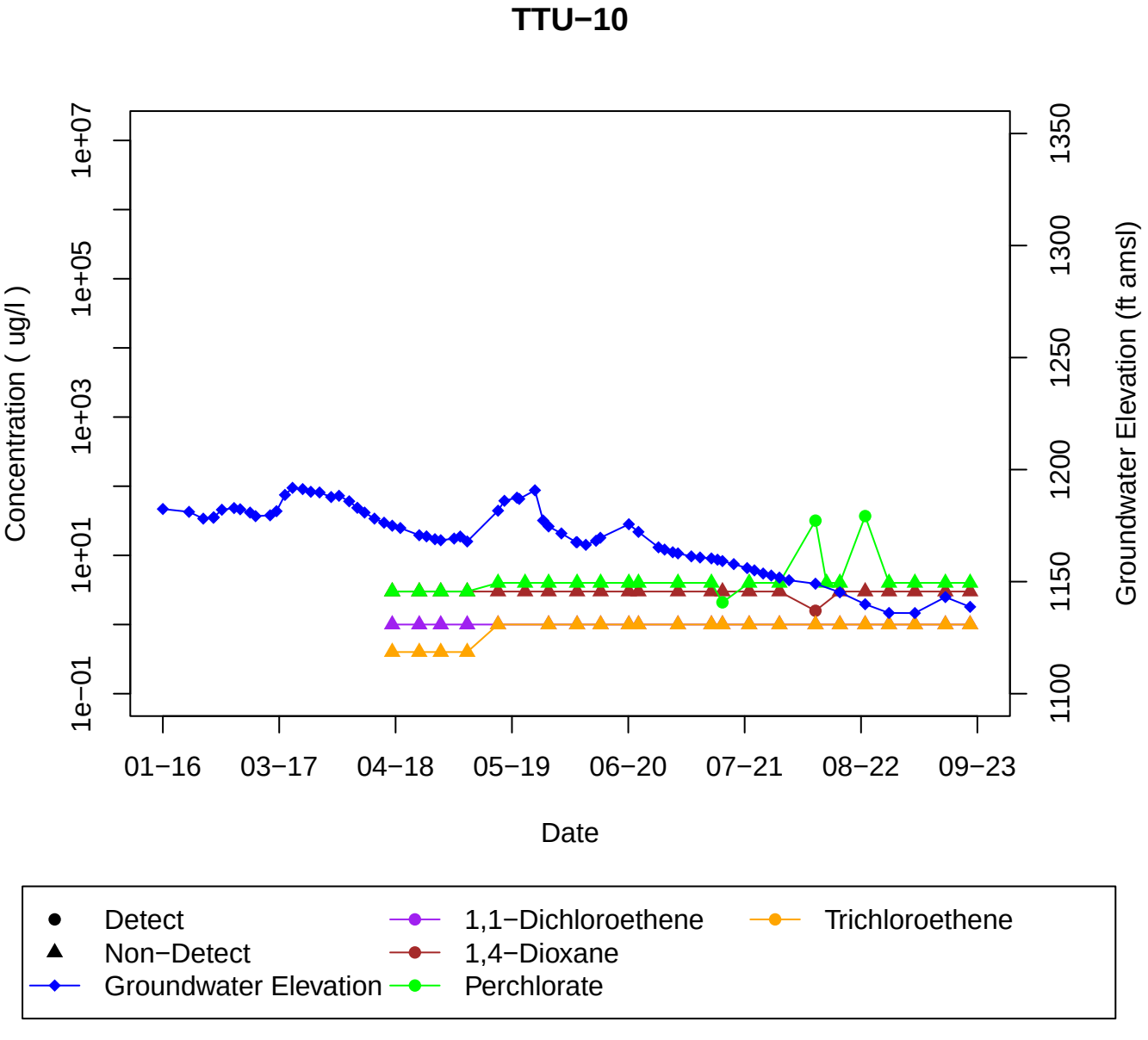

TTU−5
Concentration (ug/l)
1e−01
1e+01
1e+03
1e+05
1e+07
Groundwater Elevation (ft amsl)
1100
1150
1200
1250
1300
1350
08−14
12−15
03−17
07−18
11−19
02−21
06−22
09−23
Date
Detect
Non−Detect
Groundwater Elevation
1,1−Dichloroethene
1,4−Dioxane
Perchlorate
Trichloroethene

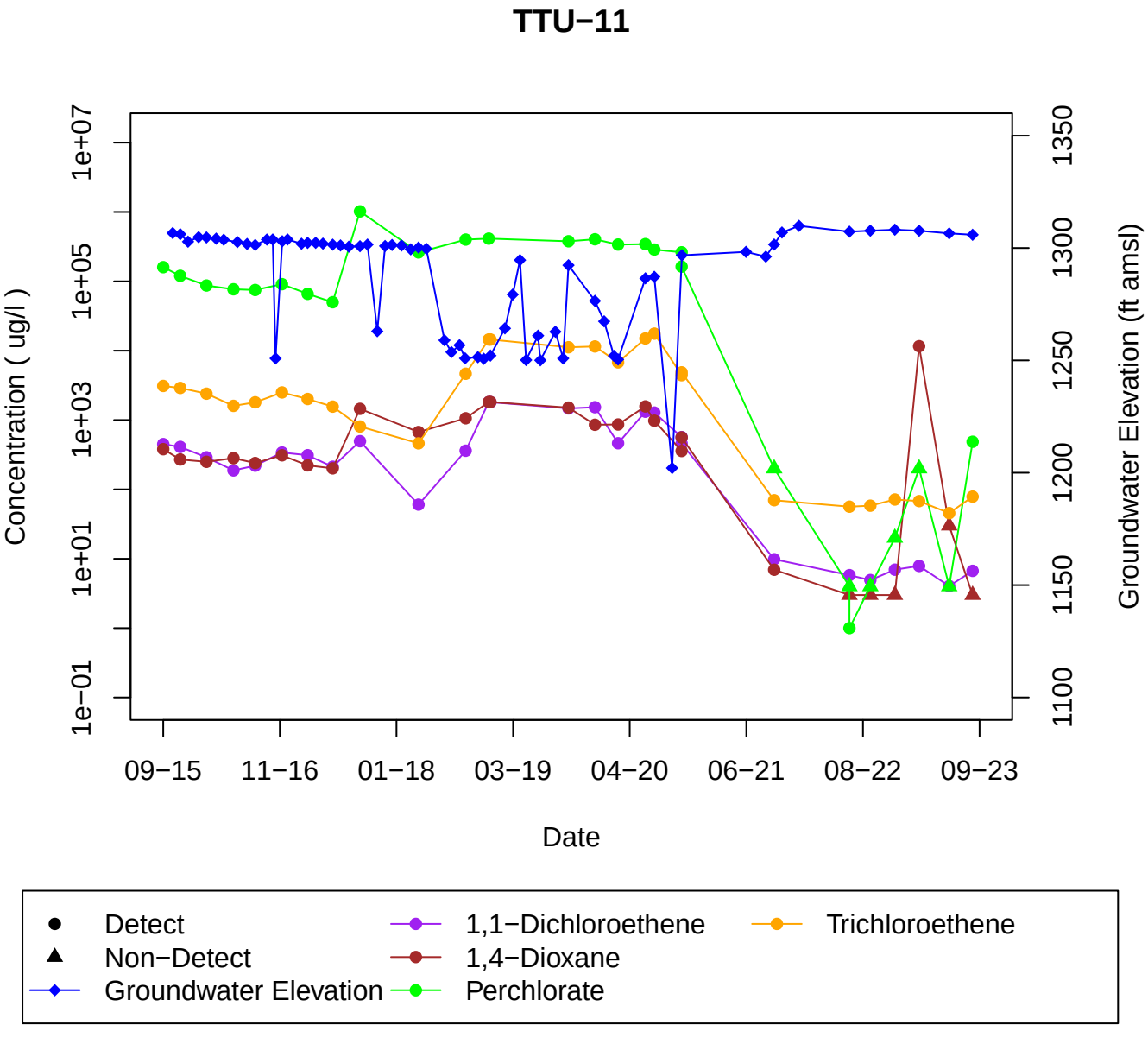

TTU−6
Concentration (ug/l)
1e−01
1e+01
1e+03
1e+05
1e+07
Groundwater Elevation (ft amsl)
1100
1150
1200
1250
1300
1350
10−14
02−16
05−17
08−18
12−19
03−21
06−22
09−23
Date
Detect
Non−Detect
Groundwater Elevation
1,1−Dichloroethene
1,4−Dioxane
Perchlorate
Trichloroethene

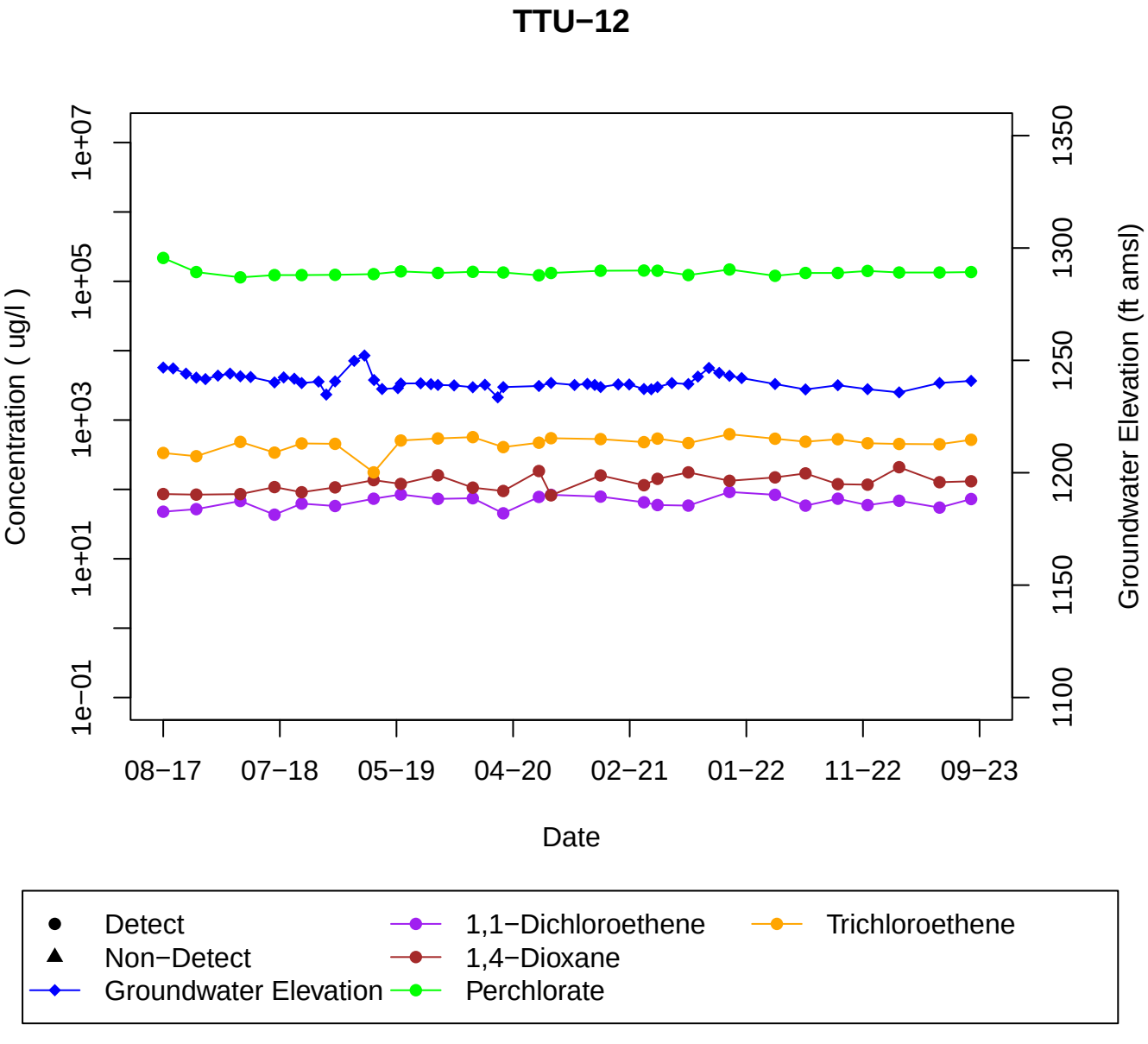

TTU−7
Concentration (ug/l)
1e−01
1e+01
1e+03
1e+05
1e+07
Groundwater Elevation (ft amsl)
1100
1150
1200
1250
1300
1350
10−14
02−16
05−17
08−18
12−19
03−21
06−22
09−23
Date
Detect
Non−Detect
Groundwater Elevation
1,1−Dichloroethene
1,4−Dioxane
Perchlorate
Trichloroethene

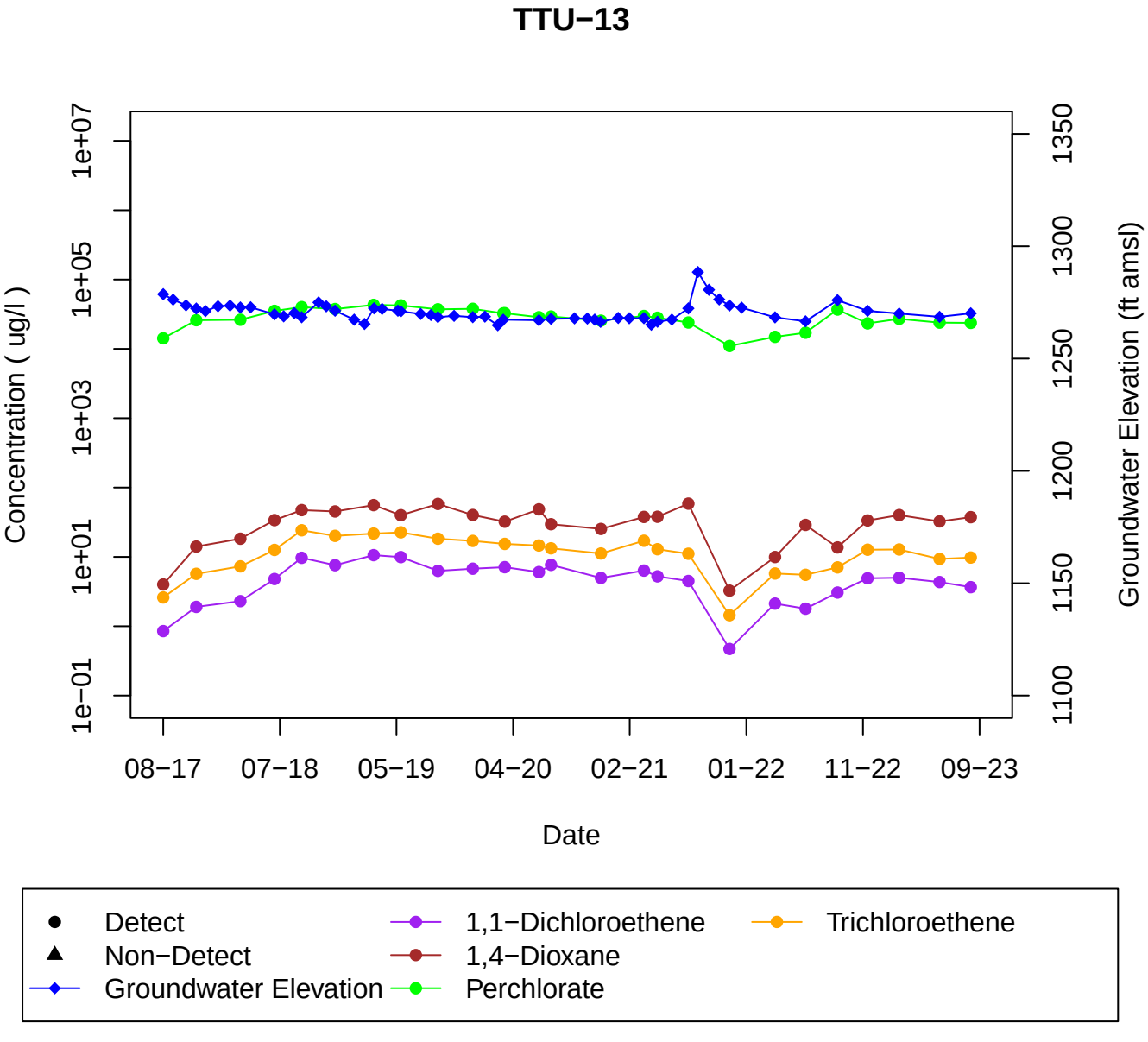

TTU−8
Concentration (ug/l)
1e−01
1e+01
1e+03
1e+05
1e+07
Groundwater Elevation (ft amsl)
1100
1150
1200
1250
1300
1350
01−16
03−17
04−18
05−19
06−20
07−21
08−22
09−23
Date
Detect
Non−Detect
Groundwater Elevation
1,1−Dichloroethene
1,4−Dioxane
Perchlorate
Trichloroethene

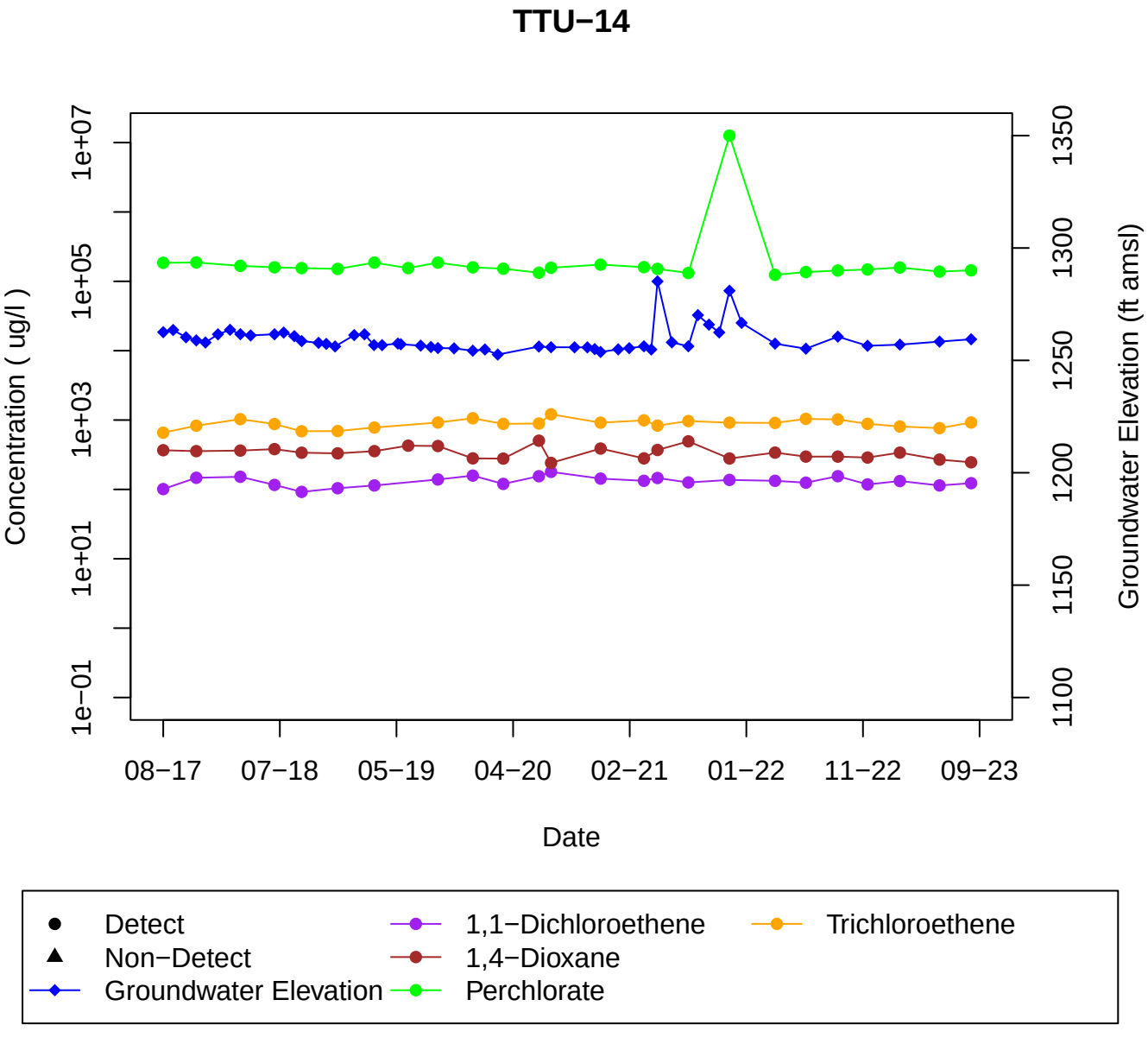

TTU−9A
Concentration (ug/l)
1e−01
1e+01
1e+03
1e+05
1e+07
Groundwater Elevation (ft amsl)
1100
1150
1200
1250
1300
1350
01−16
03−17
04−18
05−19
06−20
07−21
08−22
09−23
Date
Detect
Non−Detect
Groundwater Elevation
1,1−Dichloroethene
1,4−Dioxane
Perchlorate
Trichloroethene

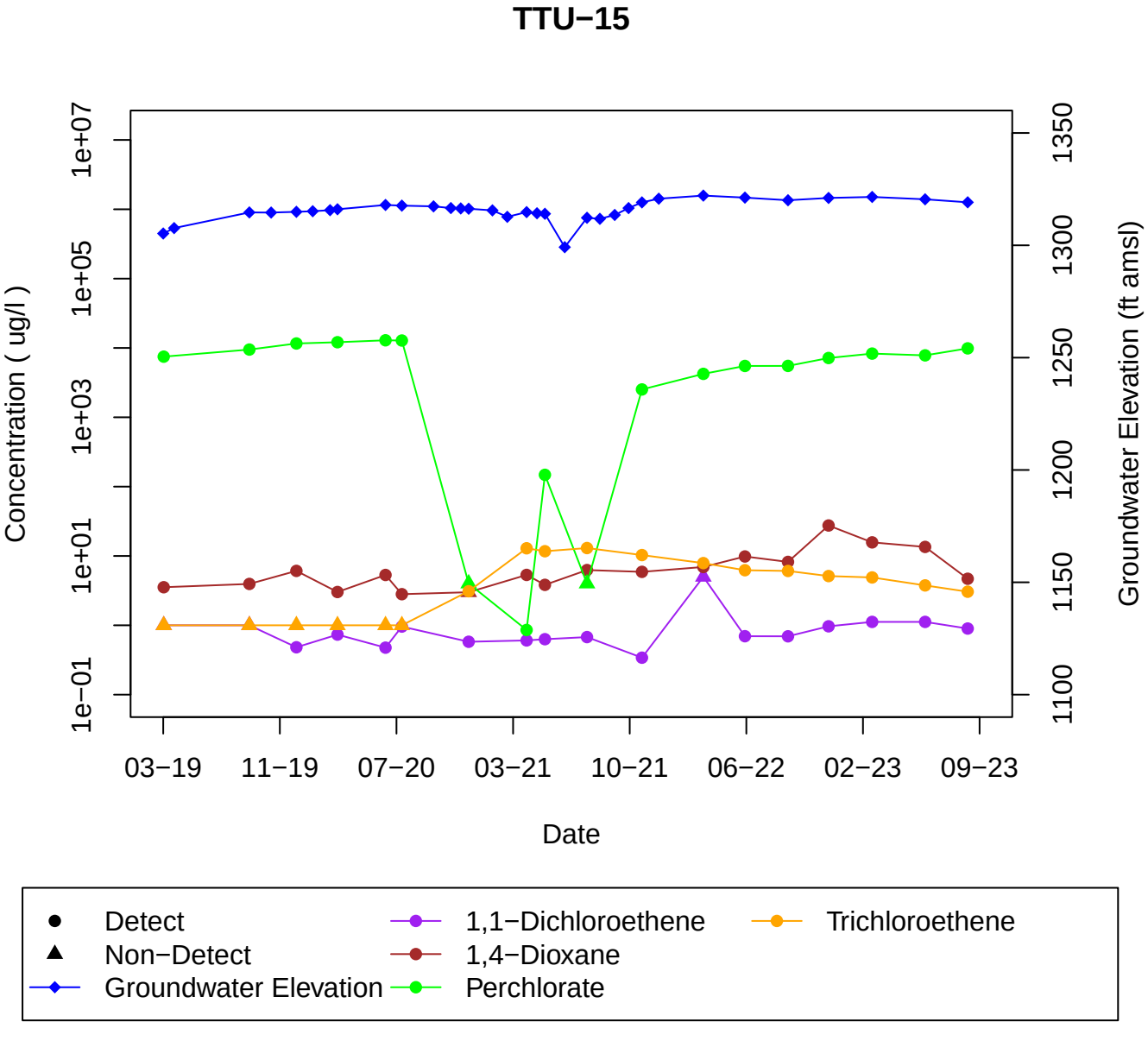

TTU−10
Concentration (ug/l)
1e−01
1e+01
1e+03
1e+05
1e+07
Groundwater Elevation (ft amsl)
1100
1150
1200
1250
1300
1350
01−16
03−17
04−18
05−19
06−20
07−21
08−22
09−23
Date
Detect
Non−Detect
Groundwater Elevation
1,1−Dichloroethene
1,4−Dioxane
Perchlorate
Trichloroethene

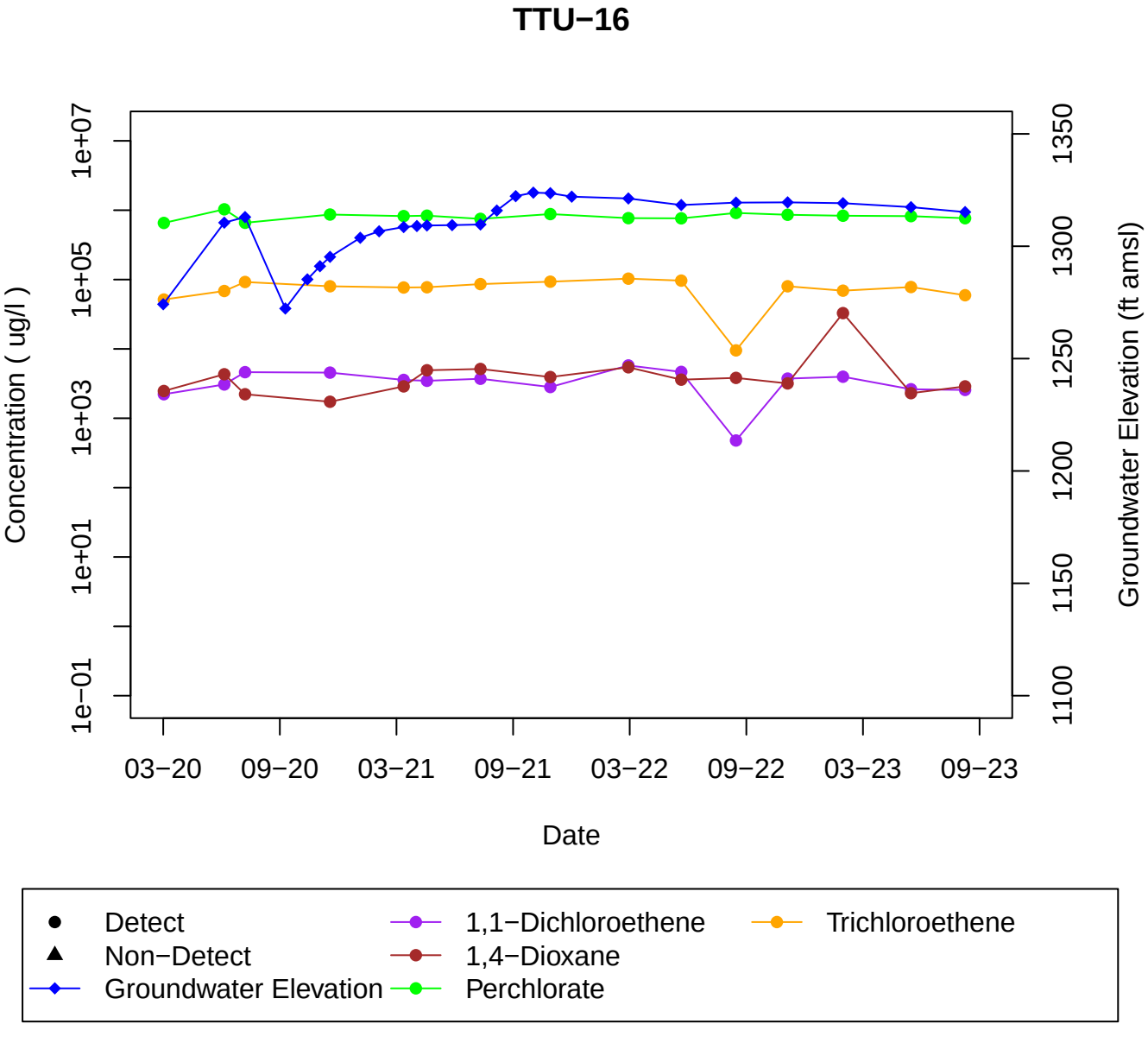

TTU−11
Concentration (ug/l)
1e−01
1e+01
1e+03
1e+05
1e+07
Groundwater Elevation (ft amsl)
1100
1150
1200
1250
1300
1350
09−15
11−16
01−18
03−19
04−20
06−21
08−22
09−23
Date
Detect
Non−Detect
Groundwater Elevation
1,1−Dichloroethene
1,4−Dioxane
Perchlorate
Trichloroethene

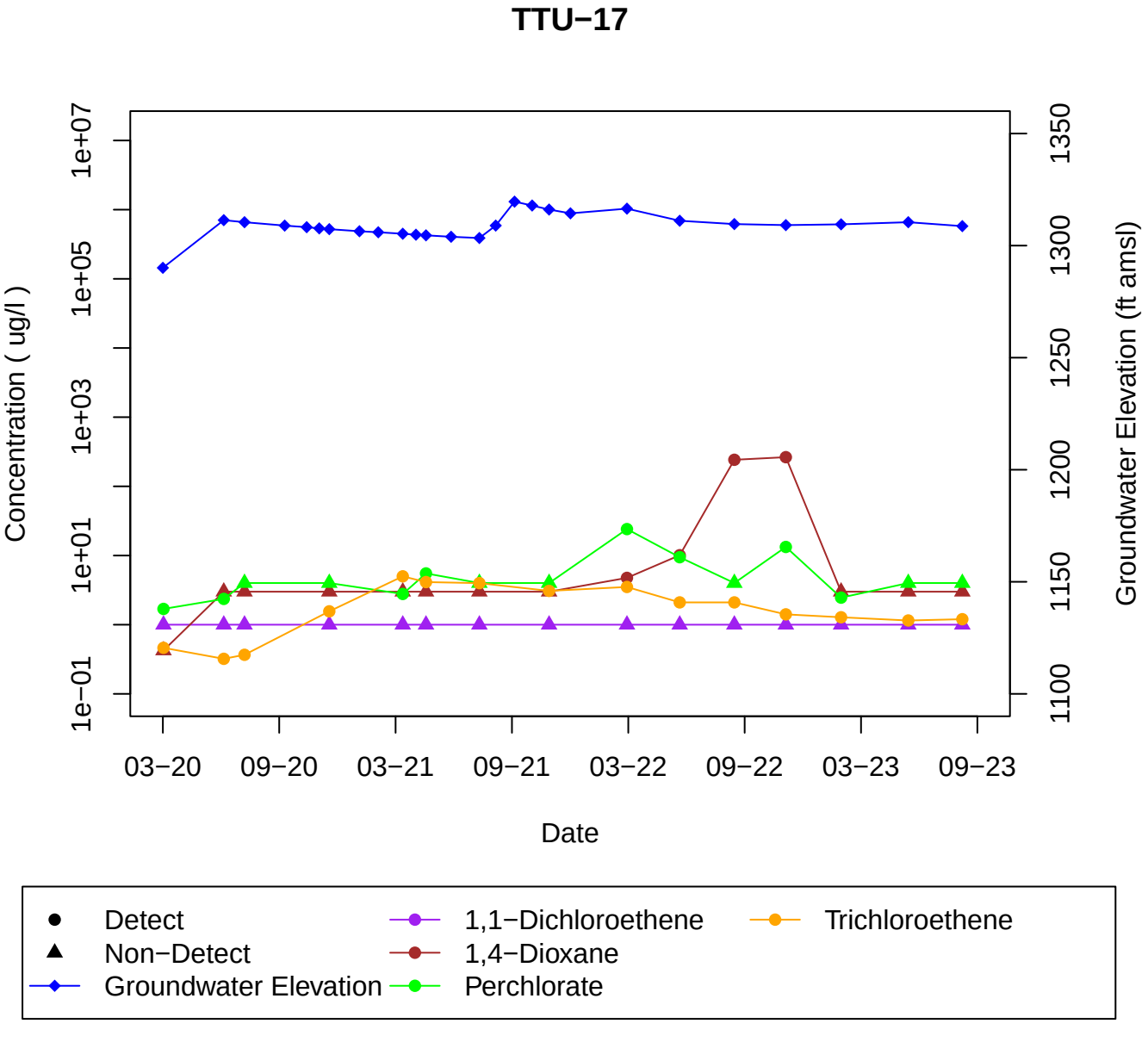

TTU−12
Concentration (ug/l)
1e−01
1e+01
1e+03
1e+05
1e+07
Groundwater Elevation (ft amsl)
1100
1150
1200
1250
1300
1350
08−17
07−18
05−19
04−20
02−21
01−22
11−22
09−23
Date
Detect
Non−Detect
Groundwater Elevation
1,1−Dichloroethene
1,4−Dioxane
Perchlorate
Trichloroethene

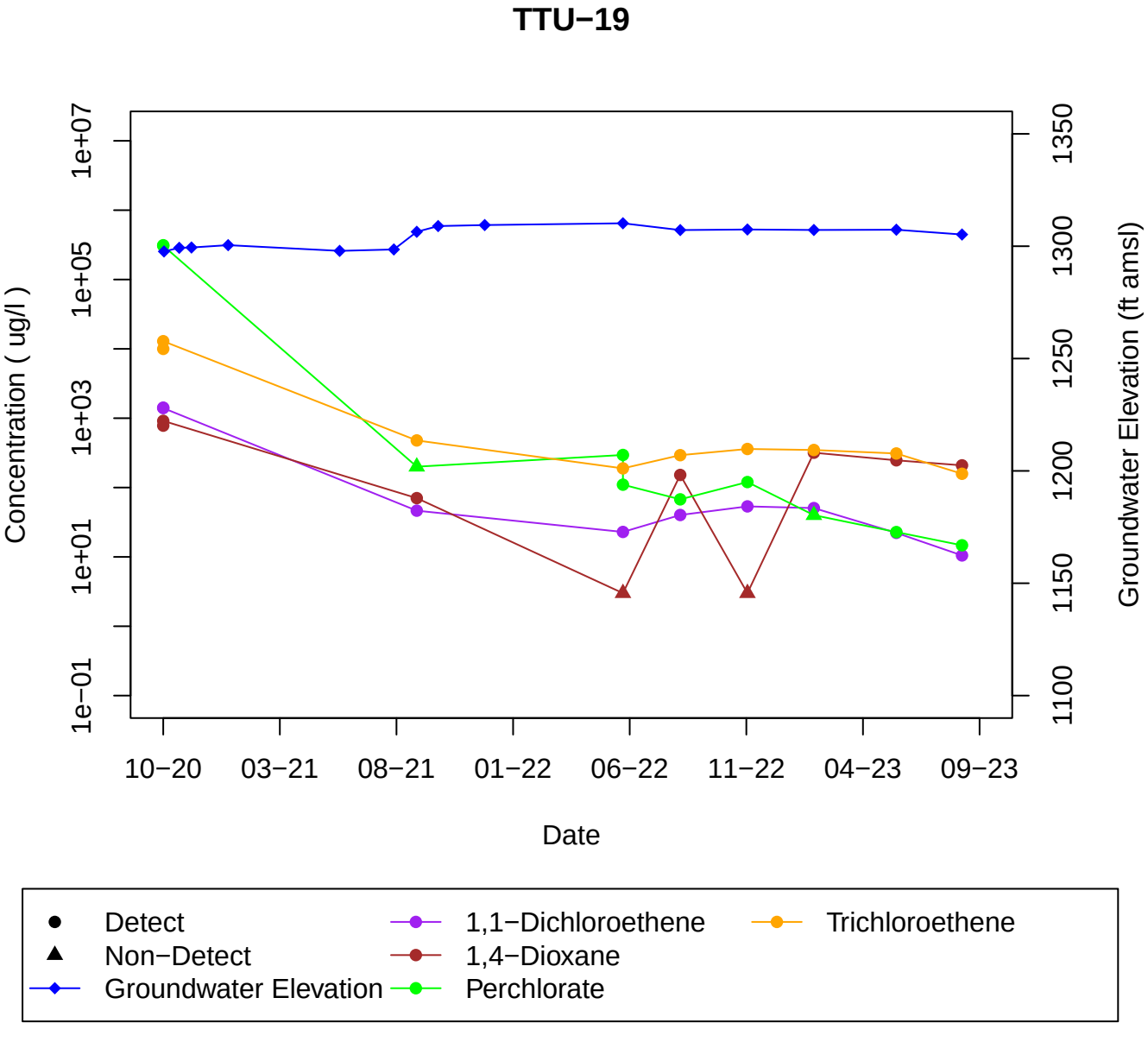

TTU−13
Concentration (ug/l)
1e−01
1e+01
1e+03
1e+05
1e+07
Groundwater Elevation (ft amsl)
1100
1150
1200
1250
1300
1350
08−17
07−18
05−19
04−20
02−21
01−22
11−22
09−23
Date
Detect
Non−Detect
Groundwater Elevation
1,1−Dichloroethene
1,4−Dioxane
Perchlorate
Trichloroethene

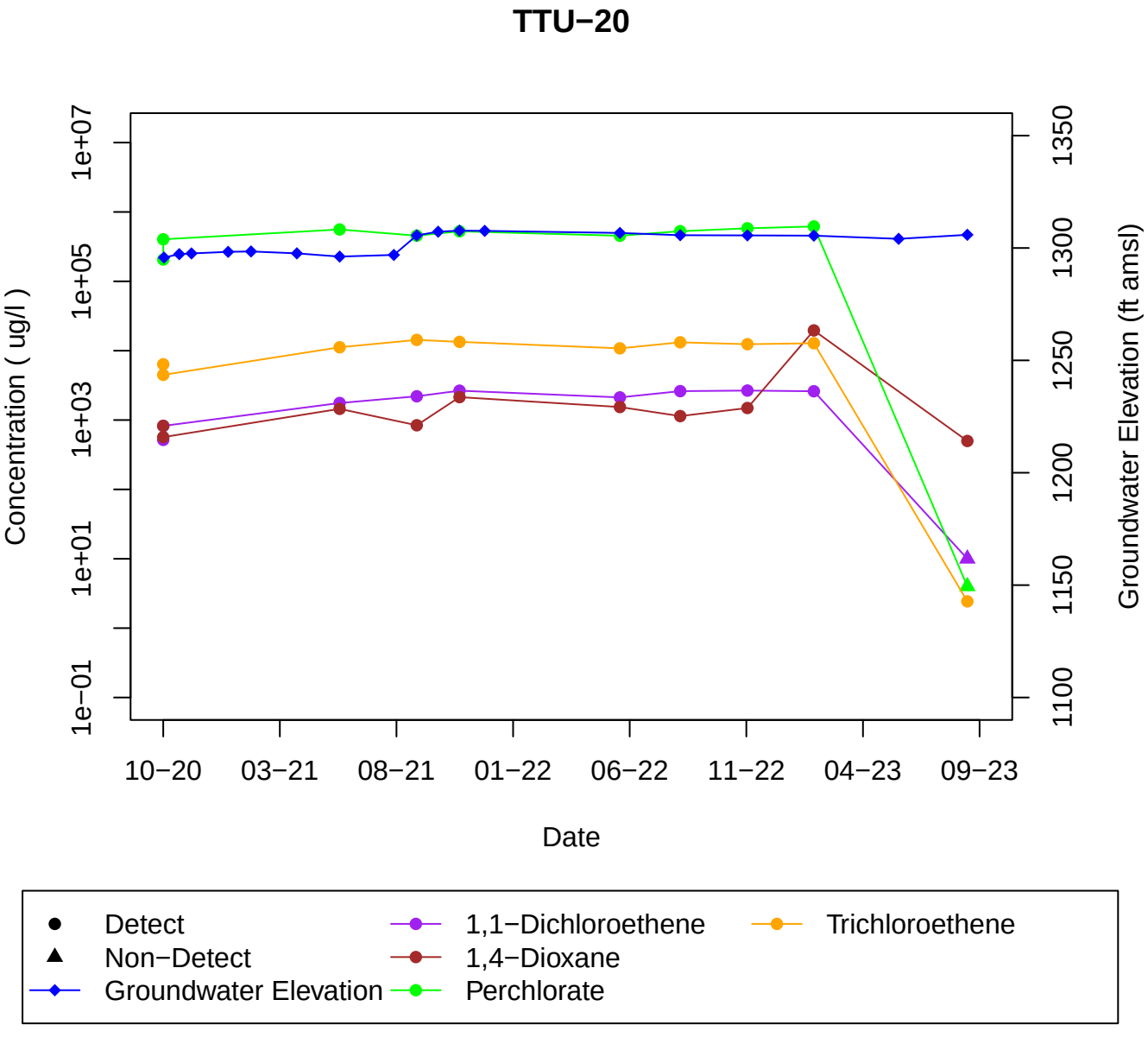

TTU−14
Concentration (ug/l)
1e−01
1e+01
1e+03
1e+05
1e+07
Groundwater Elevation (ft amsl)
1100
1150
1200
1250
1300
1350
08−17
07−18
05−19
04−20
02−21
01−22
11−22
09−23
Date
Detect
Non−Detect
Groundwater Elevation
1,1−Dichloroethene
1,4−Dioxane
Perchlorate
Trichloroethene

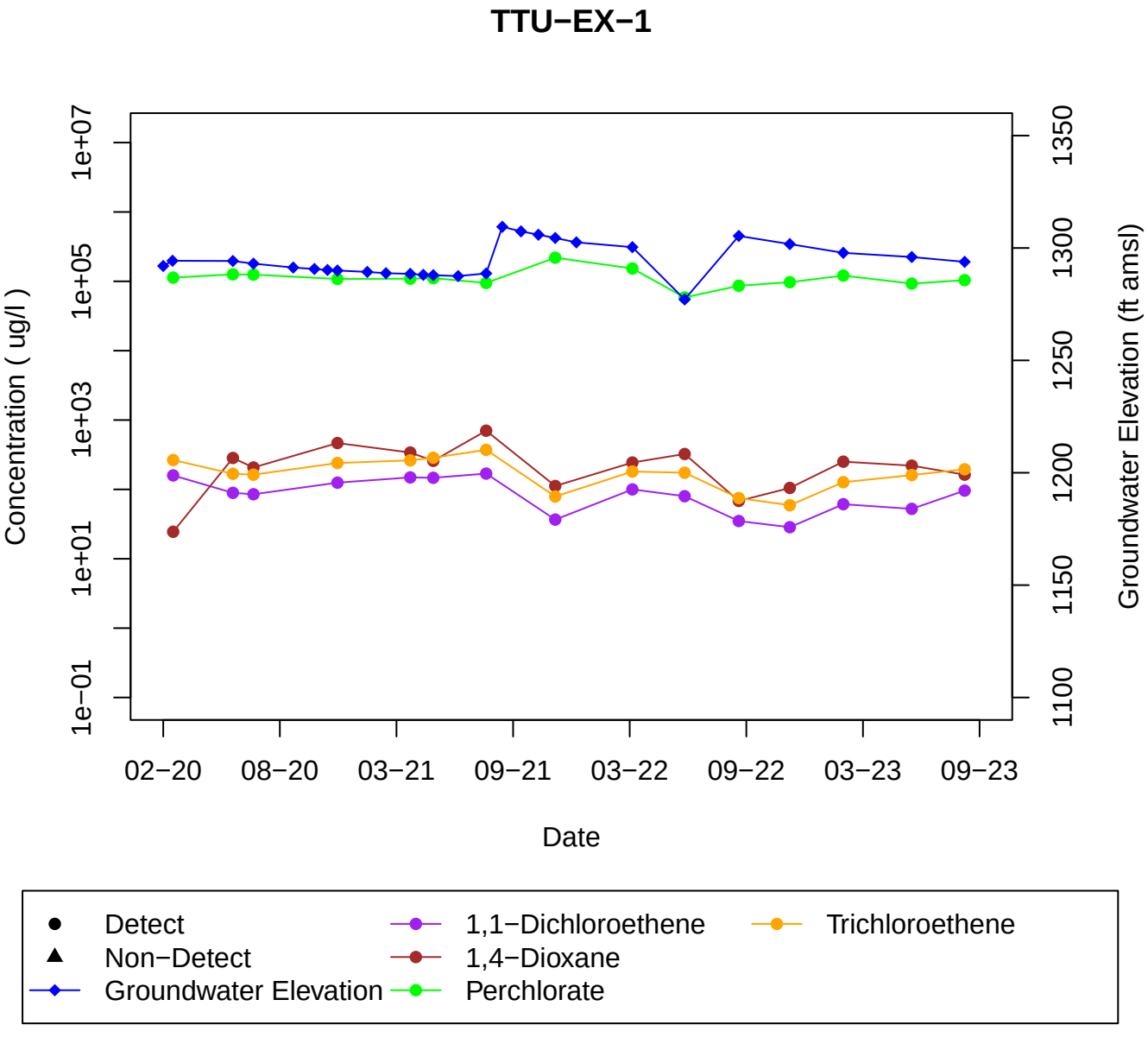

TTU−15
Concentration (ug/l)
1e−01
1e+01
1e+03
1e+05
1e+07
Groundwater Elevation (ft amsl)
1100
1150
1200
1250
1300
1350
03−19
11−19
07−20
03−21
10−21
06−22
02−23
09−23
Date
Detect
Non−Detect
Groundwater Elevation
1,1−Dichloroethene
1,4−Dioxane
Perchlorate
Trichloroethene

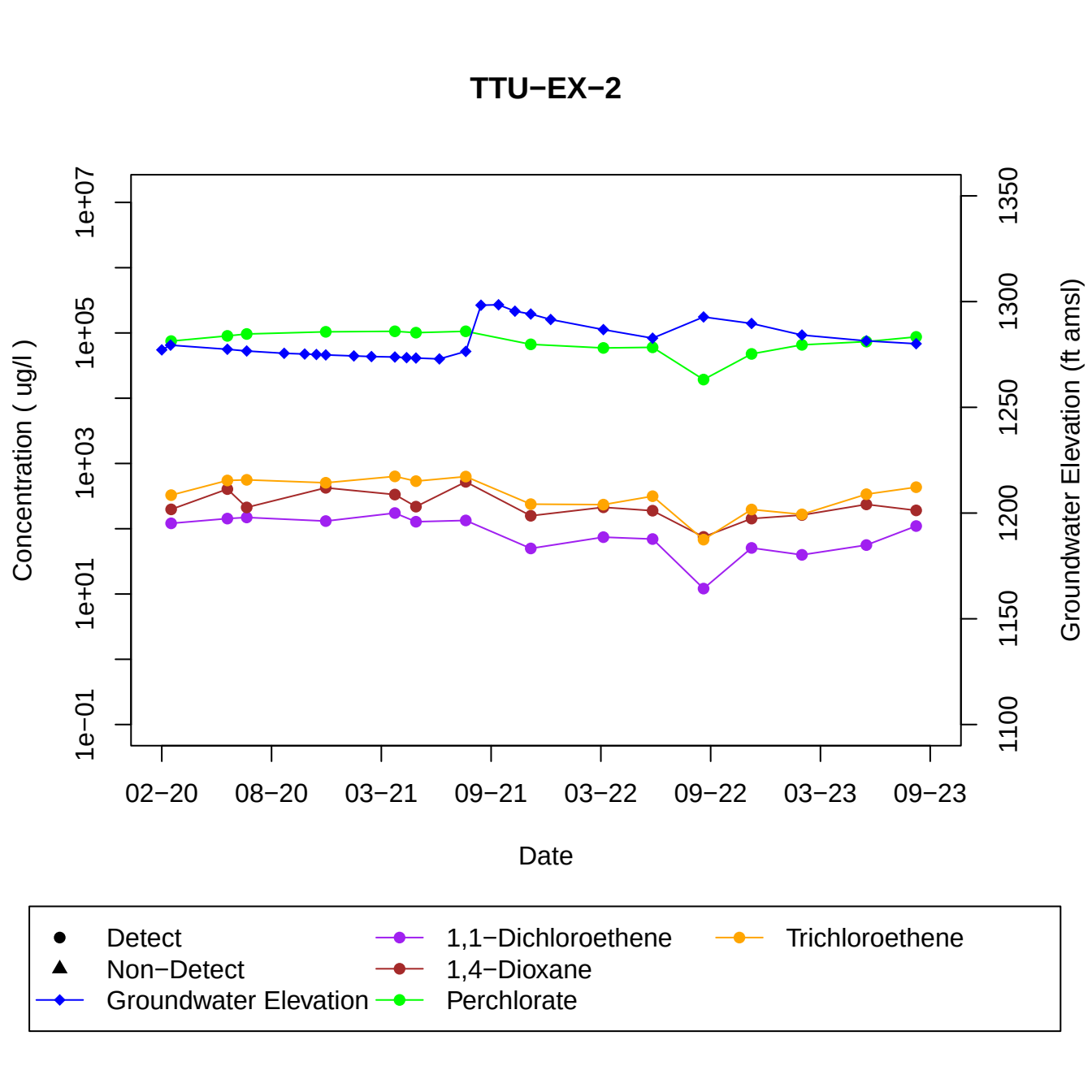

TTU−16
Concentration (ug/l)
1e−01
1e+01
1e+03
1e+05
1e+07
Groundwater Elevation (ft amsl)
1100
1150
1200
1250
1300
1350
03−20
09−20
03−21
09−21
03−22
09−22
03−23
09−23
Date
Detect
Non−Detect
Groundwater Elevation
1,1−Dichloroethene
1,4−Dioxane
Perchlorate
Trichloroethene

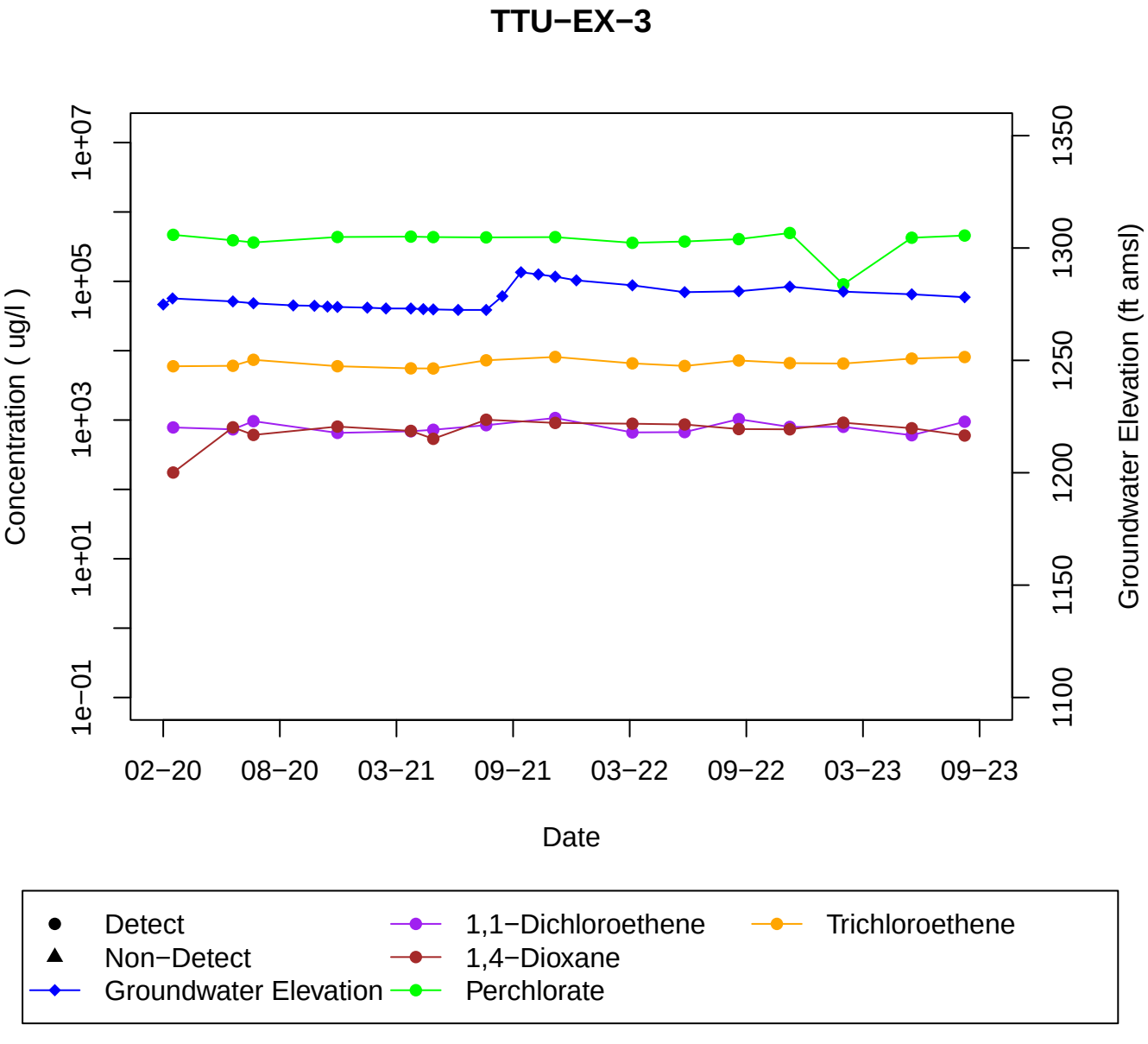

TTU−17
Concentration (ug/l)
1e−01
1e+01
1e+03
1e+05
1e+07
Groundwater Elevation (ft amsl)
1100
1150
1200
1250
1300
1350
03−20
09−20
03−21
09−21
03−22
09−22
03−23
09−23
Date
Detect
Non−Detect
Groundwater Elevation
1,1−Dichloroethene
1,4−Dioxane
Perchlorate
Trichloroethene

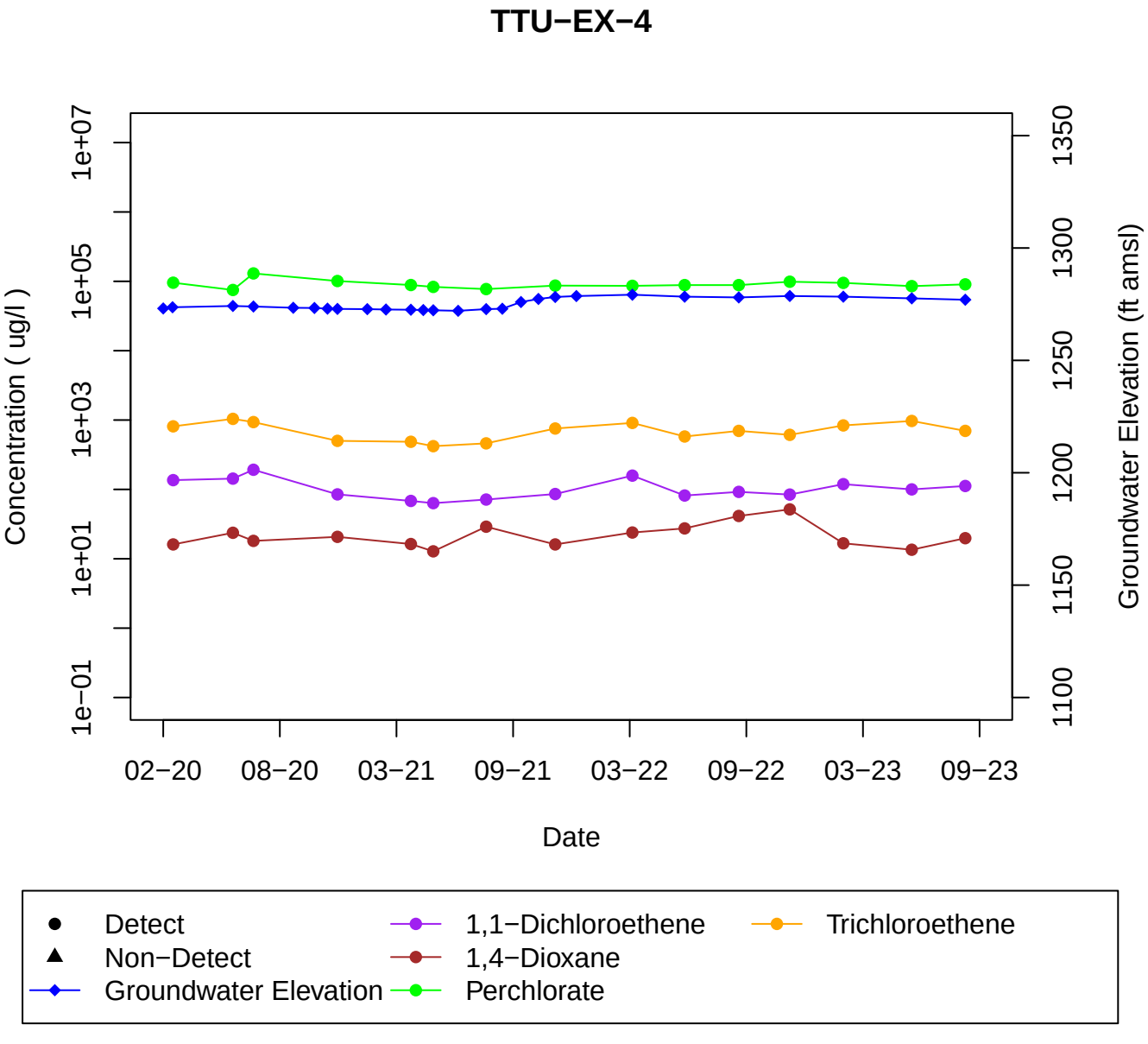

TTU−19
Concentration (ug/l)
1e−01
1e+01
1e+03
1e+05
1e+07
Groundwater Elevation (ft amsl)
1100
1150
1200
1250
1300
1350
10−20
03−21
08−21
01−22
06−22
11−22
04−23
09−23
Date
Detect
Non−Detect
Groundwater Elevation
1,1−Dichloroethene
1,4−Dioxane
Perchlorate
Trichloroethene

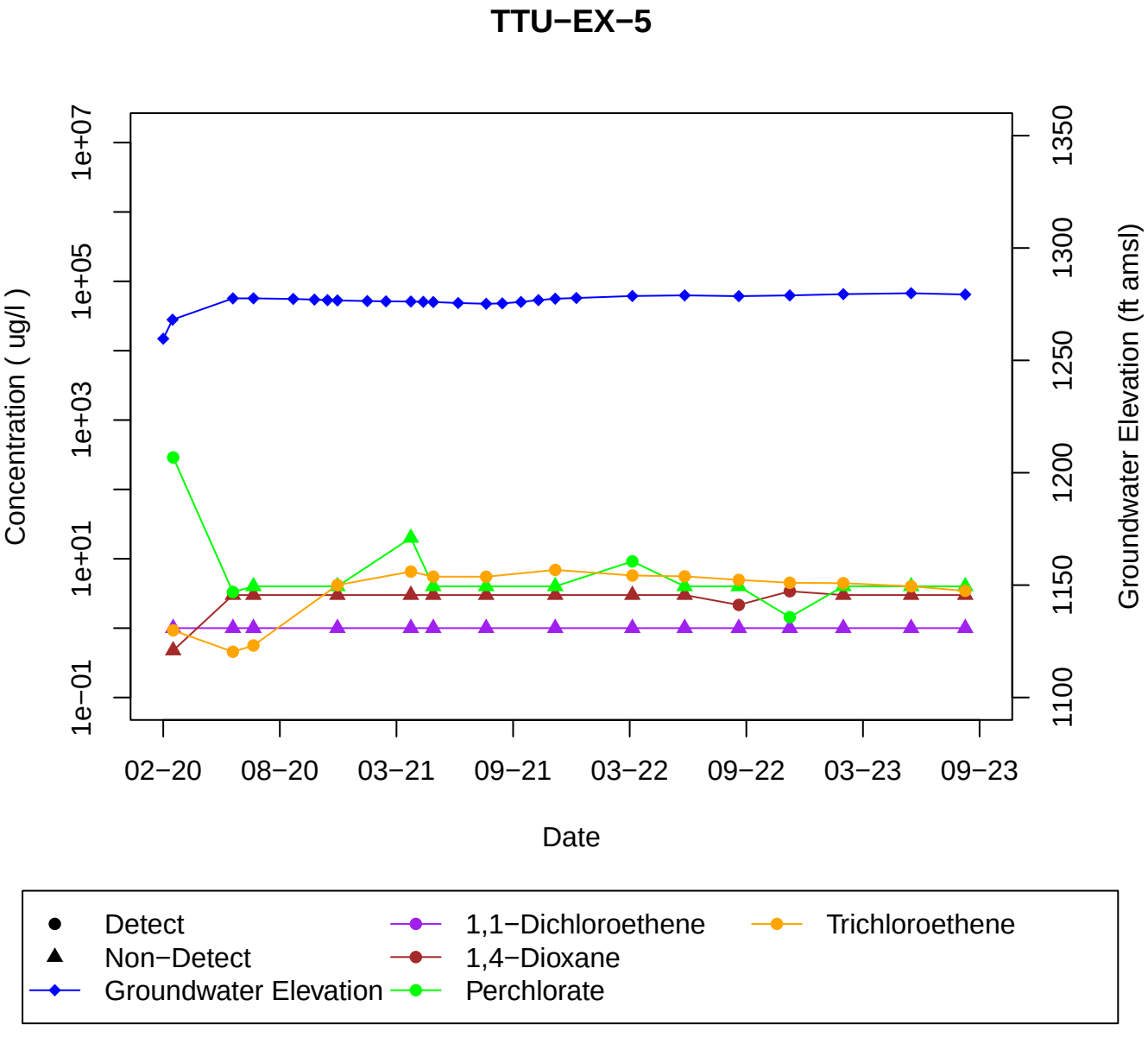

TTU−20
Concentration (ug/l)
1e−01
1e+01
1e+03
1e+05
1e+07
Groundwater Elevation (ft amsl)
1100
1150
1200
1250
1300
1350
10−20
03−21
08−21
01−22
06−22
11−22
04−23
09−23
Date
Detect
Non−Detect
Groundwater Elevation
1,1−Dichloroethene
1,4−Dioxane
Perchlorate
Trichloroethene


TTU−EX−1
Concentration (ug/l)
1e−01
1e+01
1e+03
1e+05
1e+07
Groundwater Elevation (ft amsl)
1100
1150
1200
1250
1300
1350
02−20
08−20
03−21
09−21
03−22
09−22
03−23
09−23
Date
Detect
Non−Detect
Groundwater Elevation
1,1−Dichloroethene
1,4−Dioxane
Perchlorate
Trichloroethene


TTU−EX−2
Concentration (ug/l)
1e−01
1e+01
1e+03
1e+05
1e+07
Groundwater Elevation (ft amsl)
1100
1150
1200
1250
1300
1350
02−20
08−20
03−21
09−21
03−22
09−22
03−23
09−23
Date
Detect
Non−Detect
Groundwater Elevation
1,1−Dichloroethene
1,4−Dioxane
Perchlorate
Trichloroethene


TTU−EX−3
Concentration (ug/l)
1e−01
1e+01
1e+03
1e+05
1e+07
Groundwater Elevation (ft amsl)
1100
1150
1200
1250
1300
1350
02−20
08−20
03−21
09−21
03−22
09−22
03−23
09−23
Date
Detect
Non−Detect
Groundwater Elevation
1,1−Dichloroethene
1,4−Dioxane
Perchlorate
Trichloroethene


TTU−EX−4
Concentration (ug/l)
1e−01
1e+01
1e+03
1e+05
1e+07
Groundwater Elevation (ft amsl)
1100
1150
1200
1250
1300
1350
02−20
08−20
03−21
09−21
03−22
09−22
03−23
09−23
Date
Detect
Non−Detect
Groundwater Elevation
1,1−Dichloroethene
1,4−Dioxane
Perchlorate
Trichloroethene


TTU−EX−5
Concentration (ug/l)
1e−01
1e+01
1e+03
1e+05
1e+07
Groundwater Elevation (ft amsl)
1100
1150
1200
1250
1300
1350
02−20
08−20
03−21
09−21
03−22
09−22
03−23
09−23
Date
Detect
Non−Detect
Groundwater Elevation
1,1−Dichloroethene
1,4−Dioxane
Perchlorate
Trichloroethene

Attachment 4 – Data Validation Tables

Pinyon

Data Receipt Checklist

Project Name: Nammo TTU Q3 2023 Date Collected: 9/5/23

Laboratory Report(s): J207248-1

Samples Submitted:

Number of Sample Type	Analysis: 6850	Analysis:	Analysis:	Analysis:
Total	1			
Duplicate samples	0			
Trip blanks	0			
Field blanks	0			
Equipment blanks	0			
MS/MSD	1			
Other:	0			

How were samples relinquished to the lab? Drop-off ☐ Courier ☐ Shipped to Lab ☐

Date relinquished to lab: 9/5/23 Date received by lab: 9/5/23

Yes ☑ No ☐ Do names samples match the COC?

Yes ☑ No ☐ Do dates and times for samples match the COC?

Yes ☐ No ☑ Did the lab assign date/time to samples (i.e. duplicate without date/time listed on COC)?

Yes ☑ No ☐ Were samples preserved appropriately?

Preservatives:

Yes ☑ No ☐ Where samples analyzed within holding time?

Holding Times:

Yes ☑ No ☐ Where samples received within temperature?

Temperature Received: 2.2 degrees celsius

Yes ☐ No ☑ Are tentatively identified compounds (TICs) reported?

Yes ☐ No ☐ Any analytes detect in the trip blank/field blank/equipment blank? N/A

Yes ☑ No ☐ Was an EDD received?

Yes ☑ No ☐ Is data validation required?

Data Checker: Mary G. Weiss Date: 10/19/23

Nammo TTU Q3 2023 9/5/23

J207248-1

☐	☑	
☐	☐	N/A
☑	☐	
☐	☑	
☐	☑	
☑	☐	E4, T5

Mary G. Weiss 10/19/23

J207248-1

708600	6850	1	1;1	0	1	LCS	0

Nammo TTU Q3 2023 9/5/23

J207248-1

6850
1
0
0
0
0
1
0

☑ ☐ ☐

9/5/23 9/5/23

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☑ ☐

2.2 degrees celsius

☐ ☑

☐ ☑ N/A

☑ ☐

☑ ☐

Mary G. Weiss 10/19/23

Nammo TTU Q3 2023 9/5/23

J207248-1

☑	☐	
☑	☐	N/A
☑	☐	
☑	☐	
☐	☑	
☑	☐	E4, T5

Mary G. Weiss 10/19/23

J207248-1

708600	6850	1	1;1	0	1	LCS	0

Nammo TTU Q3 2023 9/5/23

J207248-1

6850
1
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0
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1
0

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9/5/23 9/5/23

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☑ ☐

2.2 degrees celsius

☐ ☑

☐ ☑ N/A

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☑ ☐

Mary G. Weiss 10/19/23

Nammo TTU Q3 2023 9/5/23

J207248-1

☑	☐		
☑	☐	N/A	
☑	☐		
☑	☐		
☐	☑		
☑	☐		E4, T5

Concentration for 1,4-Dioxane of DUP-01 (L1653729-16) sample **REJECTED**. L1653729-16 was analyzed after L1653729-15, which had a high concentration of 1,4-Dioxane which looks to have carry overed into -16 causing a biased high result. See attachment for narrative from Pace.

IGF, 10/26/2023

Mary G. Weiss 10/19/23

J207248-1

708600	6850	1	1;1	0	1	LCS	0

Nammo TTU Q3 2023 9/5/23

J207248-1

6850
1
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0
1
0

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9/5/23 9/5/23

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☑ ☐

2.2 degrees celsius

☐ ☑

☐ ☑ N/A

☑ ☐

☑ ☐

Mary G. Weiss 10/19/23

Nammo TTU Q3 2023 9/5/23

J207248-1

☑	☐	
☑	☐	N/A
☑	☐	
☑	☑	
☐	☑	
☑	☐	E4, T5

Mary G. Weiss 10/19/23

J207248-1

708600	6850	1	1;1	0	1	LCS	0