Semi-Annual Groundwater and Methane Monitoring Report for Phillips Army Airfield Rubble Landfill

Aberdeen Area
Aberdeen Proving Ground, Maryland

Prepared for:

Directorate of Public Works Environmental Division
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Aberdeen Proving Ground, Maryland 21005

Contract: W562TN-17-D-0009
Delivery Order: W562TN-19-F-0155
Distribution Restriction Statement Approved for Public Release Distribution is Unlimited: #20020-7-28

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ACRONYMS AND ABBREVIATIONS

µg/L	micrograms per liter
±	plus or minus
%	percent
<	less than
°C	degrees Celsius
amsl	above mean sea level
APG	Aberdeen Proving Ground
CoC	Chain-of-Custody
DO	dissolved oxygen
EA	EA Engineering, Science and Technology, Inc.
ECC	Environmental Chemical Corporation
GP	General Physics Corporation
MCL	Maximum Contaminant Level
MDE	Maryland Department of the Environment
MF/L	Million Fibers per Liter
PAAF	Phillips Army Airfield
pCi/L	picoCuries per Liter
PQL	Project Quantitation Limit
PVC	polyvinyl chloride
SMCL	Secondary MCL
USEPA	United States Environmental Protection Agency
UXO	unexploded ordnance
VOC	volatile organic compound

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1.0 INTRODUCTION

Environmental Chemical Corporation (ECC) has been contracted by the Aberdeen Proving Ground (APG) Directorate of Public Works, Environmental Division under Contract Number W562TN-17-D-0009 to perform groundwater monitoring at the Phillips Army Airfield (PAAF) Rubble Landfill, Delivery Order Number W562TN-19-F-0155, within the Aberdeen Area of APG, Maryland.

The methane and groundwater monitoring program consists of the following tasks:

- Quarterly methane gas monitoring;
- Quarterly measurement and evaluation of groundwater elevations; and
- Semi-annual sampling of groundwater and evaluation of results.

1.1 Site Background

The PAAF Rubble Landfill is located in the Aberdeen Area of APG, north of the PAAF (**Figure 1**). Disposal operations began in 1971 and the landfill was closed in 2001. Waste accepted at the landfill included concrete, brick, stone, metal, asphalt, plastic, and other construction and land clearing debris. The PAAF Rubble Landfill permit specifically prohibited the disposal of controlled hazardous substances, waste containing free liquids, infectious waste, radioactive materials, animal carcasses, chemical/petroleum oil lubricant spill cleanup material, and drums or tanks, unless the drums and tanks were empty and crushed.

A monitoring program has been implemented for the PAAF Rubble Landfill which consists of quarterly methane gas monitoring, monthly groundwater well gauging to determine groundwater elevations, and annual groundwater sampling to monitor groundwater quality. During 2011, the monitoring program was revised to include quarterly, rather than monthly, groundwater gauging. In addition, the list of wells which are included in the monitoring program was revised and shortened (EA, 2011a).

1.2 Purpose

This semi-annual report documents the methodology and results for monitoring activities conducted during the third and fourth quarters of 2019. Monitoring activities were conducted according to the recently updated *Sampling and Analysis Plan for the Phillips Army Airfield Rubble Landfill Methane and Groundwater Monitoring Program* (EA, 2011a).

The purpose of methane monitoring is to provide the Maryland Department of the Environment (MDE) with information to ensure that unsafe concentrations of methane gas are not leaving the permitted landfill boundary. Groundwater sampling is conducted at the PAAF Rubble Landfill, in accordance with the groundwater discharge permit (MDE No. 2014-GWD-3049), to evaluate groundwater trends and to ensure that contaminants are not migrating towards waters of the State.

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2.0 SUMMARY OF FIELD ACTIVITIES

Groundwater elevation measurements, groundwater sampling, and methane monitoring were conducted in accordance with the *Sampling and Analysis Plan for the Phillips Army Airfield Rubble Landfill Methane and Groundwater Monitoring Program* (EA, 2011a), as discussed in **Section 1.2**.

2.1 Methane Monitoring

Methane monitoring at the PAAF Rubble Landfill was conducted at seven monitoring points (PM-01 to PM-05 and PM-07 to PM-08) on July 26, 2019 and November 7, 2019 (**Figure 1**). The methane monitoring points were installed at a depth of 22 to 24 inches, which corresponds to the maximum depth cleared for unexploded ordnance by a magnetometer sweep (General Physics [GP], 2008). At this depth, dilution of methane in the soil gas due to ambient air penetrating the soil is minimized. Methane monitoring was conducted using the Landtec Gas Analyzer and Extraction Monitor 5000, which is a hand-held gas meter designed for landfill gas monitoring. The methane probe was calibrated prior to each use. The calibration logs for the probe are included in **Appendix A.** The results of the July and November 2019 methane monitoring are included in **Table 1.**

2.2 Groundwater Elevation Measurements

Groundwater elevation measurements were collected from PAAF Rubble Landfill monitoring wells PW-11, PW-12, PW-16, PW-17, PW-19, and PW-20 (**Figure 1**). Elevation measurements were not collected during the third quarter of 2019. The gauging event also included an evaluation of monitoring well condition, confirmation of well construction, and an assessment of sediment build-up. Gauging data collected from the wells during the November 2019 monitoring event are summarized in **Table 1**.

All monitoring wells were inspected, and structural components of wells PW-11, PW-12, PW-16, and PW-20 appeared to be in good condition. The protective casing over monitoring well PW-17's polyvinyl chloride (PVC) riser is missing, and damage to the PVC riser in monitoring well PW-19 was observed. The well inspections also noted that locks were missing from all wells associated with the PAAF Rubble Landfill.

2.3 Groundwater Sampling

Six monitoring wells (PW-11, PW-12, PW-16, PW-17, PW-19, and PW-20) were sampled during the fourth quarter of 2019, on November 12-13, 2019. Low stress (low flow) purging and sampling procedures were used to ensure a representative groundwater sample. All six of the monitoring wells were sampled with a Grundfos low-flow, submersible pump.

Water quality parameters were monitored in the field during groundwater sampling to ensure well stabilization using a Horiba U-52 Water Quality Meter. Parameters monitored included temperature, conductivity, pH, turbidity, oxidation/reduction potential (ORP), dissolved oxygen (DO), and salinity. Readings were collected at five-minute intervals. Stabilization was defined as three consecutive readings that were within plus or minus (±)0.1 for pH, ±3 percent (%) for conductivity, and ±10% for DO and ±10% or less than (<) 10 nephelometric turbidity units for turbidity. The calibration logs for the instruments can be found in **Appendix A** and purge logs from the groundwater sampling are included in **Appendix B**.

Samples were collected in laboratory-supplied sample containers and packed on ice in portable coolers immediately following containerization to maintain a temperature of 4 degrees Celsius (ºC). Volatile organic compound (VOC) sample containers were stored in the same cooler along with the trip blanks.

Chain-of-Custody (CoC) procedures were maintained to provide a record of samples collected and to document custody transfer of the samples from collection to analysis. Samples were submitted to CT Laboratories in Baraboo, Wisconsin for the following analyses:

- VOCs (United States Environmental Protection Agency [USEPA] 624 Modified)
- Total Metals (USEPA 200.8, 200.7, Mercury EPA 245.1)
- Chemical Oxygen Demand (USEPA 410.4)
- Hardness (USEPA 130.2)
- Nitrate/Nitrite (USEPA 353.2)
- Alkalinity (USEPA 310.1)
- Chloride (USEPA 325.3)
- Specific Conductance (USEPA 120.1)
- Sulfate (USEPA 375.4)
- pH (USEPA 150.1)
- Turbidity (USEPA 180.1)
- Total Dissolved Solids (USEPA 160.1)
- Ammonia (USEPA 350.3)

The laboratory reported analytical results based on the practical quantitation limits defined within the State of Maryland discharge permit for the PAAF Rubble Landfill. A copy of the CoCs provided to the lab are included in **Appendix C**.

2.4 Decontamination Procedures

Decontamination procedures outlined in *Sampling and Analysis Plan for the Phillips Army Airfield Rubble Landfill Methane and Groundwater Monitoring Program* (EA, 2011a) were followed during the semi-annual groundwater sampling event.

2.5 Health and Safety

As described in the approved Site Safety and Health Plan (ECC, 2014), a health and safety tailgate meeting was held at the beginning of the work day. The daily tailgate meeting forms are included in **Appendix D**.

3.0 RESULTS

3.1 Methane Monitoring

The annual methane monitoring results are shown in **Table 1**. Methane was not detected in any of the methane monitoring locations at the PAAF Rubble Landfill during the July and November 2019 monitoring events. This follows the historical trend, which shows no methane detected over the past several years. The regulatory level of concern for the site is 1.25% methane in air, which is 25% of the lower explosive limit. Historical results of methane monitoring for the 2010 to 2019 are summarized in **Appendix E**.

3.2 Groundwater Monitoring

3.2.1 Groundwater Elevation Measurements

Groundwater elevations at PAAF Rubble Landfill site ranged from 24.65 to 36.73 feet above mean sea level (amsl) during the November 2019 gauging event (**Table 2**). Groundwater elevations at the PAAF Rubble Landfill exhibit slight seasonal fluctuations compared to historical groundwater elevations.

Groundwater elevation gauging data is used to determine the direction of groundwater flow during each monitoring event. The November 2019 groundwater elevations were used to form a groundwater contour map for the landfill (**Figure 2).** Groundwater at the site flows to the south and southeast with minimal variation during the year. Since the landfill type is area fill, the landfill bottom is the original ground surface elevation (GP 2009).

3.2.2 November 2019 Sampling Event

Analytes detected in groundwater were compared to primary or secondary Maximum Contaminant Levels (MCLs) for drinking water supplies from https://www.epa.gov/ground-water-and-drinking-water/national-primary-drinking-water-regulations and https://www.epa.gov/dwstandardsregulations/secondary-drinking-water-standards-guidance-nuisance-chemicals (USEPA, 2019). The analytes detected in exceedance of their MCLs during the November 2019 groundwater monitoring event are summarized in **Table 3** and a summary of the detected compound results are shown in **Table 4**. The complete laboratory analytical data package for the November 2019 sampling event is included in **Appendix F**. All analytical results below the reporting limit that could be estimated by the laboratory are reported with a "J" qualifier.

During the November 2019 groundwater sampling event, no analytes were detected above MCLs in monitoring wells PW-11, PW-17, PW-19, and PW-20. The VOCs trichloroethene (TCE) (at 6.9 µg/L) and vinyl chloride (at 2.9 µg/L) were detected at PW-16 above their respective MCLs of 5 µg/L and 2 µg/L. TCE and vinyl chloride were also detected at well PW-12 below the MCL at 3.8 µg/L and above the MCL at 2.4 µg/L, respectively. Re-sampling of well PW-12 on December 18, 2019 confirmed that the detection of vinyl chloride during the November 2019 sampling event was above the MCL. December 2019 re-sampling of well PW-12 contained vinyl chloride at 1.9 µg/L in the sample and 2.2 µg/L in the duplicate sample. TCE and vinyl chloride was also detected in downgradient monitoring well PW-11 below the MCL at 0.28 µg/L and 0.51 µg/L, respectively.

Numerous VOCs and metals were also detected at low levels (i.e., estimated/J-qualified values) in groundwater at the PAAF Rubble Landfill during the November 2019 sampling event. Although no metals were detected above their MCL values, several metals (aluminum, iron, manganese, and sodium) were detected above their secondary MCL (SMCL) values in groundwater at the site. Secondary MCLs (SMCLs) were exceeded for total manganese and total sodium in well PW-11; for total aluminum, total iron, total

manganese, and total sodium in monitoring well PW-12; for total manganese in well PW-16; for total iron, total manganese, and total sodium in well PW-17; and for total sodium in well PW-20.

3.2.3 Historical Monitoring Data

Historical groundwater monitoring data (since March 1999) is included in **Appendix G**. Historical data were compared to MCLs and SMCLs, and USEPA Guidance Levels where no MCLs were available.

The only VOCs to exceed MCLs during long-term monitoring at the PAAF Landfill were dichloromethane, vinyl chloride, and TCE. Dichloromethane was detected sporadically at five wells at levels exceeding the MCL of 5 µg/L. The most recent occurrence of dichloromethane above the MCL was March 2007 in monitoring well PW-12 at 6.3 µg/L. The remainder of the dichloromethane detections were reported at higher concentrations, but only during the September 2000 and March 2004 sampling events. The exceedances of the MCLs for trichloroethene (5 µg/L) and vinyl chloride (2 µg/L) occurred in November 2019 at two monitoring wells, PW-16 and PW-12. PW-16 contained TCE at 6.9 µg/L and vinyl chloride at 2.9 µg/L. TCE and vinyl chloride were detected at well PW-12 below the MCL at 3.8 µg/L and above the MCL at 2.4 µg/L, respectively. During November 2019, well PW-11 also contained low level concentrations of TCE and vinyl chloride, below the MCLs. TCE and vinyl chloride have been detected sporadically at PW-16 over the last 20 years and recent detections in downgradient wells PW-11 and PW-12 may be an indication that migration of these constituents is occurring. However, the recent detections of TCE and vinyl chloride in wells PW-11 and PW-12 may also be the result of impacts to groundwater from landfilled waste material in close proximity to the two wells. This waste material is located within separate source areas not associated with the PAAF Rubble Landfill.

Detections above MCLs of six metals, arsenic, beryllium, cadmium, lead, mercury, and nickel, have been reported since the start of landfill monitoring in 1999. These detections have varied between non-detect and levels above the MCL values (i.e. are not sustained) and show no distinct patterns of migration at the site. Cadmium has only been detected at a level above its MCL once, within well PW-12 in September 2004. Within well PW-19, arsenic, beryllium, lead, and nickel have been detected once in November 2015 above their MCLs. Mercury concentrations have exceeded its MCL value three times at PW-11 during 2015 and once within well PW-20 during 2002. The metals aluminum, iron, manganese, and sodium have been routinely detected in groundwater above SMCLs during the 20 years of long-term monitoring at the PAAF Rubble Landfill. Secondary MCLs are non-enforceable advisory standards related to aesthetics and physical characteristics (e.g., turbidity, taste, color, odor, etc.) of drinking water. The presence of these four metals in groundwater underlying a construction debris landfill is commonly expected.

The following metals were detected above MCLs or SMCLs (location and date of most recent exceedance noted):

- Aluminum (PW-12 during November 2019; PW-19 during October 2016)
- Arsenic (PW-19 during November 2015)
- Beryllium (PW-19 during November 2015)
- Cadmium (PW-12 during September 2004)
- Iron (PW-11 and PW-16 during April 2019; PW-12 and PW-17 during November 2019; PW-19 during October 2018; PW-20 during October 2016)
- Lead (PW-19 during November 2015)
- Manganese (PW-11, PW-12, PW-16, and PW-17 during November 2019; PW19 during April 2019; and PW-20 during October 2016)
- Mercury (PW-11 during January 2015; PW-20 during August 2002)

- Nickel (PW-19 during November 2015)
- Sodium (PW-11, PW-12, PW-16 during November 2019; PW-17 and PW-19 during April 2019; PW-20 during October 2018)

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4.0 CONCLUSIONS

The overall groundwater flow direction at the PAAF Rubble Landfill is to the southeast, and consistent with past groundwater flow trends at the site (GP 2008; GP 2009; EA 2010; and, EA 2011b). Groundwater elevations ranged from 24.65 to 36.73 feet amsl during the 2019 gauging event.

Methane gas was not detected from the landfill vents during the 2019 methane monitoring event.

Based on groundwater monitoring performed at the PAAF Rubble Landfill since 1999, the release of contaminants from the landfill to groundwater has been minimal with few exceedances of MCLs. The only VOCs to exceed the MCLs from 1999 to April 2016 were dichloromethane and TCE. Dichloromethane was detected sporadically at multiple wells (PW-12, PW-16, PW-17, PW-19, and PW-20) at levels exceeding the MCL of 5 µg/L. The most recent occurrence of dichloromethane above the MCL occurred in March 2007 (PW-12). Dichloromethane was not detected in groundwater samples collected from 2008 to 2019. TCE concentrations have fluctuated in wells PW-11, PW-12, and PW-16 between non-detect and levels slightly above the MCL of 5 µg/L between 1999 and 2019. Beginning in September 2005 through November 2019, vinyl chloride concentrations have also fluctuated in well PW-12 and PW-16 between non-detect and above the MCL of 2 µg/L. In November 2019, vinyl chloride was also detected below the MCL in well PW-11.

Metals were detected above MCLs infrequently during historical monitoring of groundwater at the PAAF Rubble Landfill. The metals detected in groundwater reflect typical regional conditions, and recent exceedances were only of SMCLs for aluminum, iron, manganese, and sodium.

It is recommended that the current methane and groundwater monitoring program for the PAAF Rubble Landfill be continued, with the next semi-annual sampling event planned for Spring 2020.

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5.0 REFERENCES

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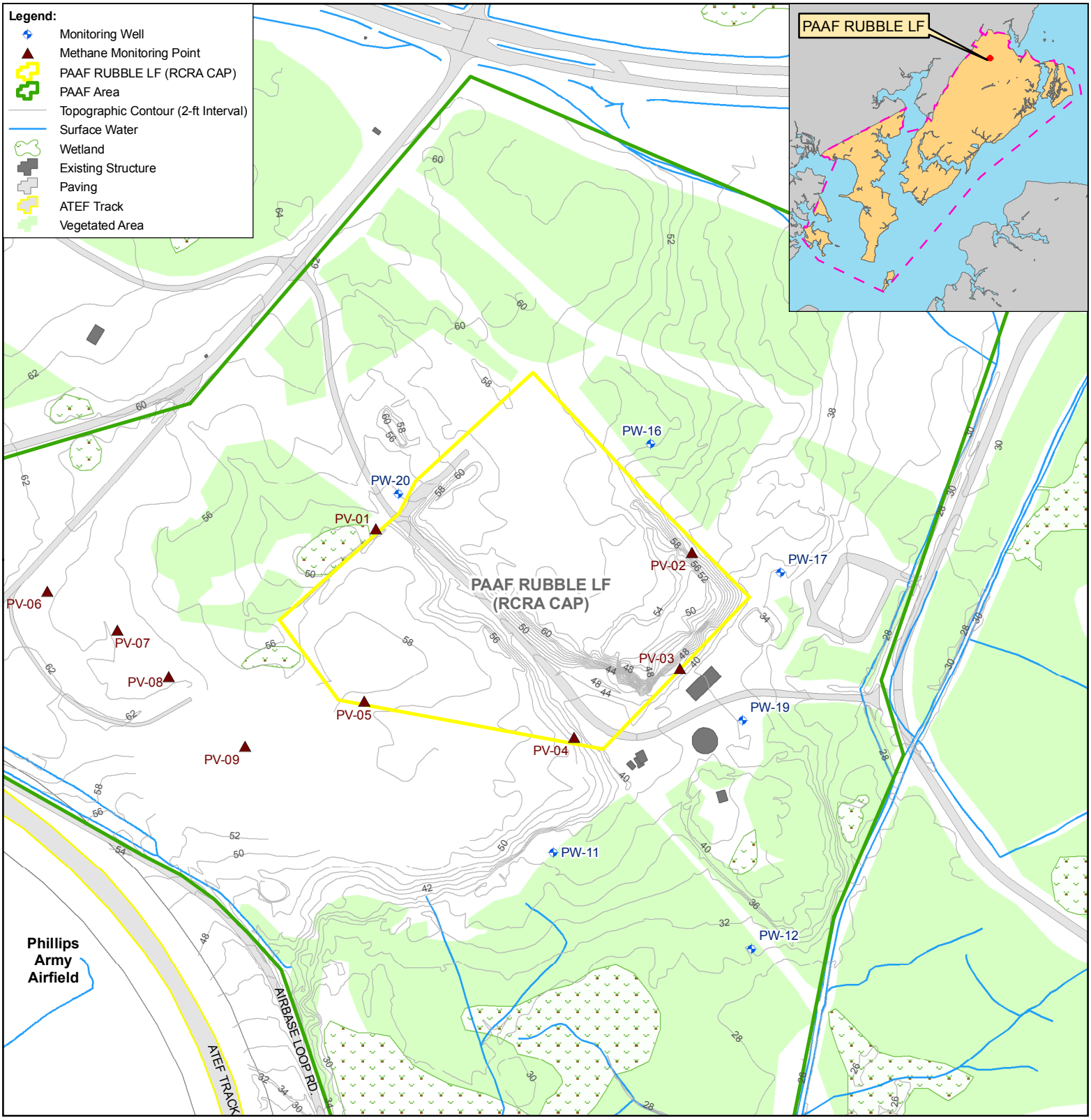
FIGURES



NOTES & SOURCES
1. Coordinate Projection: UTM Zone 18N (units: meters), Datum: WGS 84

TITLE
SITE MAP **PAAF RUBBLE LANDFILL** **Western Boundary Study Area** **Aberdeen Proving Ground**

0 200 400 800 Feet

N

RENOVA/SOVEREIGN JOINT VENTURE

ECC
Abingdon, Maryland

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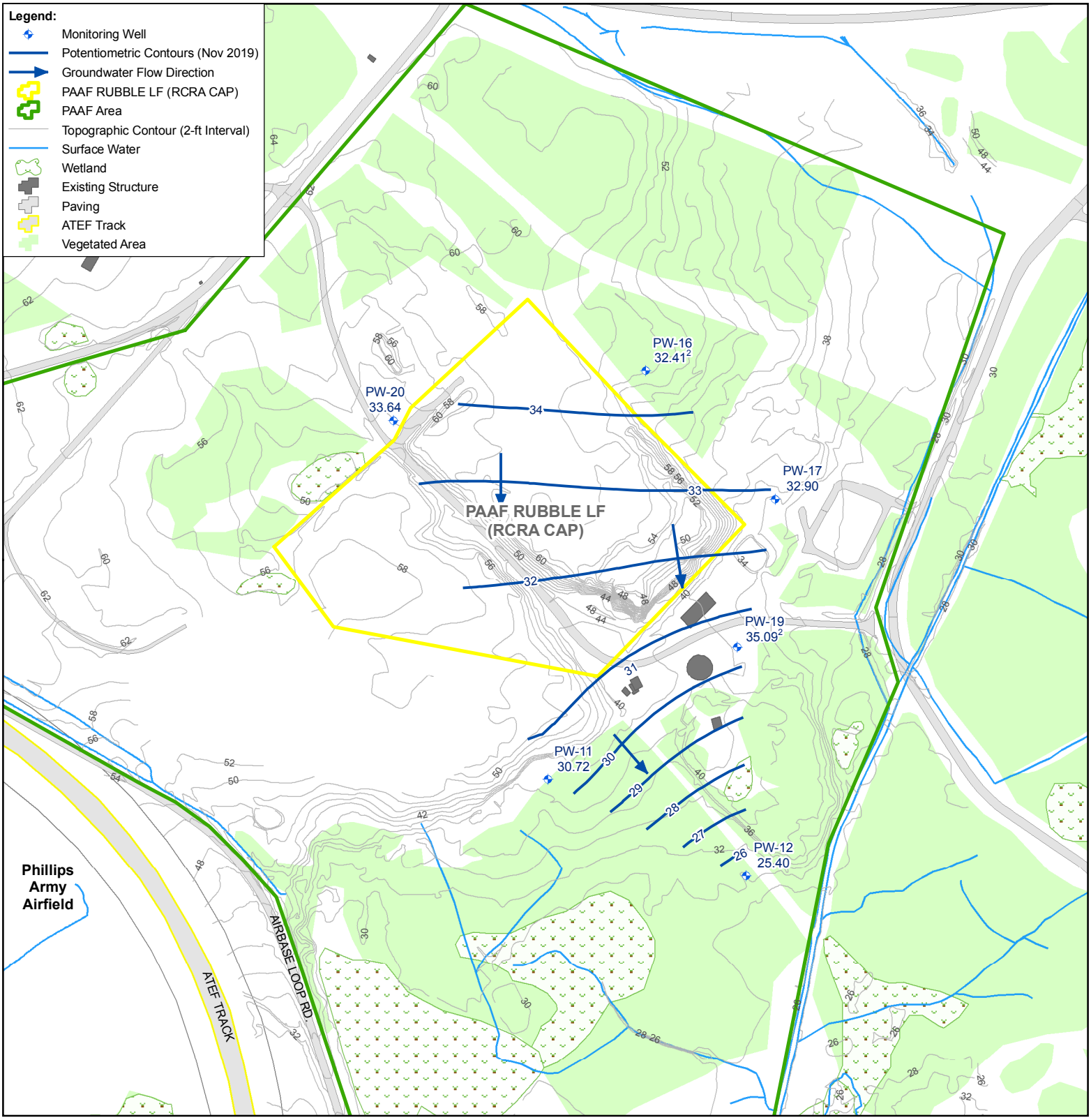
Fig1_MapForExcavationPermit_PAALF
Sept 2016 DWN BY: JG CHKD BY: BK

FIGURE
1



NOTES & SOURCES

1. Wells were gauged on 11/7/19.
2. Water elevations for PW-16 and PW-19 were not used for contouring.
3. Coordinate Projection: UTM Zone 18N (units: meters), Datum: WGS 84

TITLE

POTENTIOMETRIC CONTOURS
NOVEMBER 2019
PAAF RUBBLE LANDFILL

Western Boundary Study Area
Aberdeen Proving Ground

0 200 400 800 Feet

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RENOVA/SOVEREIGN JOINT VENTURE

ECC
Abingdon, Maryland

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Fig1_MapForExcavationPermit_PAALF
Sept 2016 DWN BY: JG CHKD BY: BK

FIGURE
2

TABLES

Table 1. Methane Monitoring Results, July 26, 2019

Well Identification	Concentration (%)		Barometric Pressure
	CH_4	O_2	
PM-01	0	19.9	Not recorded
PM-02	0	19.8	Not recorded
PM-03	0	19.8	Not recorded
PM-04	0	19.8	Not recorded
PM-05	0	19.9	Not recorded

Methane Monitoring Results, November 7, 2019

Well Identification	Concentration (%)		Barometric Pressure
	CH_4	O_2	
PM-01	0	21.4	29.94
PM-02	0	21.4	29.97
PM-03	0	21.5	29.97
PM-04	0	21.3	29.94
PM-05	0	21.5	29.95
PM-06	0	---	---
PM-07	0	21.0	29.93
PM-08	0	21.0	29.92
PM-09	0	---	---

Notes:
% = percent
CH_4 = methane
O_2 = oxygen
--- = Unable to locate well due to dense vegetation.

Table 2. November 2019 Groundwater Elevation Data

Site	Well ID	Date Gauged	Top of Riser (ft amsl)	Depth to Water (ft TOC)	Depth to Bottom (ft TOC)	Elevation (ft amsl)
Phillips Army Airfield	PW-17	11/7/2019	40.20	7.30	28.56	34.66
	PW-19	11/7/2019	42.60	7.51	15.29	36.73
	PW-20	11/7/2019	56.00	22.36	31.08	36.73
	PW-16	11/7/2019	58.43	26.02	48.92	24.65
	PW-11	11/7/2019	41.24	10.52	22.80	32.63
	PW-12	11/7/2019	32.46	7.06	29.81	28.26

Notes:
Ft = feet
amsl – above mean sea level
TOC = top of casing

Table 3. Summary of Groundwater Sampling Results above MCLs
12 & 13 November 2019

Analyte	Result (µg/L)	MCL (µg/L)
PW-11		
Manganese	632	50 (s)
Sodium	49,700	20,000 (g)
PW-12[1]		
Aluminum	65.5	50 (s)
Iron	49,900	300 (s)
Manganese	1,190	50 (s)
Sodium	27,600	20,000 (g)
Vinyl Chloride	2.4/2.2 (Dup)	2
PW-16		
Manganese	1,900	50 (s)
Trichloroethene	6.9	5
Vinyl Chloride	2.9	2
PW-17		
Iron	953	300 (s)
Manganese	895	50 (s)
Sodium	21,400	20,000 (g)
PW-19		
Chloride	1,300	250 (s)
Total Dissolved Solids	2,500	500 (s)
Sulfate	270	250 (s)
PW-20		
Sodium	23,000	20,000 (g)

Notes:

[1] Monitoring well PW-12 was re-sampled on December 18, 2019 to confirm the detection of vinyl chloride above the MCL value. Re-sampling results indicated the presence of vinyl chloride remained above the MCL value at 1.9 µg/L in the sample and 2.2 µg/L in the duplicate sample.

µg/L = micrograms per Liter

MCL = Maximum Contaminant Level; ; Analytes detected in groundwater were compared to primary or secondary MCLs for drinking water supplies from https://www.epa.gov/ground-water-and-drinking-water/national-primary-drinking-water-regulations and https://www.epa.gov/dwstandardsregulations/secondary-drinking-water-standards-guidance-nuisance-chemicals (USEPA, 2019)

(g) = guidance level

(s) = Secondary MCL

Dup = Duplicate quality control sample

Table 4. Detected Compounds in Groundwater Monitoring Wells, 12 & 13 November 2019

Analyte	MCL	Units	PW-20	PW-19	PW-17	PW-16	PW-12	PW-12** (Resample)	PW-11
Metals									
Aluminum	50-200 (s)	µg/L	14.2 J	20.3 J	36.7	19.9 J	65.5	NA	17.7 J
Antimony	6	µg/L	ND	ND	ND	ND	ND	NA	ND
Arsenic	10	µg/L	ND	1.7 J	ND	ND	ND	NA	ND
Barium	2,000	µg/L	55	87.6	78.9	57.3	142	NA	56.5
Beryllium	4	µg/L	ND	ND	ND	ND	0.29 J	NA	0.12 J
Cadmium	5	µg/L	ND	ND	ND	ND	ND	NA	ND
Calcium	---	µg/L	15,100	111,000	52,700	7,790	19,000	NA	14,300
Chromium	100	µg/L	ND	0.96 J	ND	ND	ND	NA	ND
Cobalt	----	µg/L	ND	ND	1.7 J	3 J	ND	NA	18
Copper	1,300	µg/L	ND	8.1	2.2 J	1.8 J	1.4 J	NA	1.4 J
Iron	300 (s)	µg/L	16.9 J	23.6 J	953	82 J	49,900	NA	189
Lead	15	µg/L	ND	ND	ND	ND	2 J	NA	ND
Magnesium	---	µg/L	10,100	153,000	20,700	6,740	11,700	NA	10,500
Manganese	50 (s)	µg/L	21.5	7.2	895	1,900	1,190	NA	632
Mercury	2	µg/L	0.052 J	ND	ND	ND	ND	NA	0.35
Nickel	100	µg/L	1.1 J	10.5	9.4	2.4 J	ND	NA	10.2
Potassium	---	µg/L	2,50	24,700	3,520	1,680	952	NA	2,100
Selenium	50	µg/L	2.9 J	ND	ND	ND	ND	NA	ND
Silver	100 (s)	µg/L	ND	ND	ND	ND	3.9 J	NA	ND
Sodium	20,000 (g)	µg/L	23,000	ND	20,700	17,000	27,600	NA	49,700
Thallium	2	µg/L	ND	ND	ND	ND	ND	NA	ND
Vanadium	----	µg/L	ND	2.5 J	ND	ND	ND	NA	ND
Zinc	5,000 (s)	µg/L	4 J	4.7 J	9.3 J	8.5 J	2.1 J	NA	19.3
Volatile Organic Compounds									
1,1,1,2-Tetrachloroethane	----	µg/L	ND	ND	ND	ND	ND	NA	ND
1,1,1-Trichloroethane	200	µg/L	ND	ND	ND	ND	ND	NA	ND
1,1,2,2-Tetrachloroethane	----	µg/L	ND	ND	ND	ND	ND	NA	ND
1,1,2-Trichloroethane	5	µg/L	ND	ND	ND	ND	ND	NA	ND
1,1-Dichloroethane	----	µg/L	ND	ND	0.031 J	ND	ND	NA	ND
1,1-Dichloroethene	7	µg/L	ND	ND	ND	0.13 J	0.086 J	NA	0.074 J
1,1-Dichloropropene	---	µg/L	ND	ND	ND	ND	ND	NA	ND
1,2,3-Trichlorobenzene	---	µg/L	ND	ND	ND	ND	ND	NA	ND
1,2,3-Trichloropropane	----	µg/L	ND	ND	ND	ND	ND	NA	ND
1,2-Dibromo-3-chloropropane	----	µg/L	ND	ND	ND	ND	ND	NA	ND
1,2-Dibromoethane	----	µg/L	ND	ND	ND	ND	ND	NA	ND
1,2-Dichlorobenzene	600	µg/L	ND	ND	ND	ND	ND	NA	0.32
1,2-Dichloroethane	5	µg/L	ND	ND	ND	ND	0.078 J	NA	ND
1,2-Dichloropropane	5	µg/L	ND	ND	0.072 J	ND	ND	NA	ND
1,3-Dichlorobenzene	----	µg/L	ND	ND	ND	ND	ND	NA	ND
1,4-Dichlorobenzene	75	µg/L	ND	ND	0.34	0.2	ND	NA	3.7
2-Butanone	----	µg/L	ND	ND	ND	ND	ND	NA	ND
2-Hexanone	----	µg/L	ND	ND	ND	ND	ND	NA	ND
4-Methyl-2-pentanone	----	µg/L	ND	ND	ND	ND	ND	NA	ND
Acetone	----	µg/L	ND	ND	ND	ND	ND	NA	ND
Benzene	5	µg/L	ND	ND	0.2	0.071 J	0.026 J	NA	0.24
Bromochloromethane	----	µg/L	ND	ND	ND	ND	ND	NA	ND
Bromodichloromethane	----	µg/L	ND	ND	ND	ND	ND	NA	ND
Bromoform	----	µg/L	ND	ND	ND	ND	ND	NA	ND
Bromomethane	----	µg/L	ND	ND	ND	ND	ND	NA	ND

Analyte	MCL	Units	PW-20	PW-19	PW-17	PW-16	PW-12	PW-12** (Resample)	PW-11
Carbon disulfide	----	µg/L	ND	ND	ND	ND	0.037 J	NA	ND
Carbon tetrachloride	5	µg/L	ND	0.021 J	ND	ND	ND	NA	ND
Chlorobenzene	100	µg/L	ND	ND	0.39	0.07 J	ND	NA	13
Chloroethane	----	µg/L	ND	ND	ND	ND	ND	NA	ND
Chloroform	----	µg/L	ND	ND	0.029 J	ND	ND	NA	ND
Chloromethane	----	µg/L	ND	0.031 J	ND	0.034 J	ND	NA	ND
cis-1,2-Dichloroethene	70	µg/L	ND	ND	0.11	5.6	4.4	NA	0.51
cis-1,3-Dichloropropene	----	µg/L	ND	ND	ND	ND	ND	NA	ND
Dibromochloromethane	----	µg/L	ND	ND	ND	ND	ND	NA	ND
Dibromomethane	----	µg/L	ND	ND	ND	ND	ND	NA	ND
Dichlorodifluoromethane	----	µg/L	ND	ND	ND	ND	ND	NA	ND
Ethylbenzene	700	µg/L	ND	0.018 J	0.016 J	0.016 J	0.028 J	NA	0.023 J
Iodomethane	----	µg/L	ND	ND	ND	ND	ND	NA	ND
m & p-Xylene	10,000	µg/L	0.059 J	0.078 J	0.067 J	0.096 J	0.15 J	NA	0.085 J
Methyl tert-butyl ether	100	µg/L	ND	ND	ND	ND	ND	NA	ND
Methylene chloride	----	µg/L	ND	ND	ND	ND	ND	NA	ND
o-Xylene	10,000	µg/L	ND	0.023 J	0.021 J	0.021 J	0.04 J	NA	0.03 J
Styrene	100	µg/L	ND	ND	ND	ND	0.014 J	NA	ND
Tetrachloroethene	5	µg/L	ND	ND	ND	ND	ND	NA	ND
Toluene	1,000	µg/L	ND	ND	ND	0.021 J	0.027 J	NA	0.024 J
trans-1,2-Dichloroethene	100	µg/L	ND	ND	ND	0.12	ND	NA	ND
trans-1,3-Dichloropropene	----	µg/L	ND	ND	ND	ND	ND	NA	ND
Trichloroethene	5	µg/L	ND	ND	ND	6.9	3.8	NA	0.28 J
Trichlorofluoromethane	----	µg/L	ND	ND	ND	ND	ND	NA	1.4
Vinyl acetate	----	µg/L	ND	ND	ND	ND	ND	NA	1.4 J
Vinyl chloride	2	µg/L	ND	ND	0.044 J	2.9	2.4	2.2 (Dup)	0.51
Wet Chemistry									
Alkalinity	----	mg/L	42	270	220	34	19 J	NA	56
Ammonia	----	mg/L	ND	ND	ND	ND	1.4	NA	0.067 J
Chemical Oxygen Demand	----	mg/L	ND	260	ND	32 J	18 J	NA	ND
Chloride	250 (s)	mg/L	38	1300	32	40	94	NA	54
Nitrate (N)	10	mg/L	0.36 J	ND	0.36 J	0.57	ND	NA	ND
Nitrate/Nitrite	10	mg/L	ND	ND	ND	ND	ND	NA	ND
pH	6.5-8.5 (s)	--	6.24	7.43	6.81	6.01	5.74	NA	6.10
Specific Conductivity	----	µmho/cm	340	4780	581	237	606	NA	490
Conductivity	---	µmho	ND	ND	ND	ND	ND	NA	ND
Sulfate	250 (s)	mg/L	44	270	24	10	110	NA	73
Total Dissolved Solids	500 (s)	mg/L	170	2500	280	110	310	NA	250
Total Hardness	----	mg/L	79	910	220	46	96	NA	79
Total Organic Carbon	----	mg/L	ND	ND	ND	ND	ND	NA	ND
Total Organic Halides	----	mg/L	ND	ND	ND	ND	ND	NA	ND
Turbidity	----	ntu	1	1	4.8	1.2	3.9	NA	1

Notes:

RED HIGHLIGHT = Exceedance of MCL
YELLOW HIGHLIGHT = Exceedance of Secondary MCL or Guidance Level
MCL = Maximum Contaminant Level
NA = Not Analyzed
ND = Non-detect
(s) = Secondary MCL
(g) = guidance level
-- = No regulatory limit

** = Resampled 12/18/19 to verify vinyl chloride detection
pCi/L = picocuries per Liter
umho/cm = micro mho per centimeter
µS/cm = microsiemens per centimeter
mg/L = milligrams per liter
µg/L = micrograms per Liter
MF/L = million fibers per Liter
ntu = Nephelometric turbidity unit
J = Estimated Value > MDL but < RL

Analytes detected in groundwater were compared to primary or secondary MCLs for drinking water supplies from https://www.epa.gov/ground-water-and-drinking-water/national-primary-drinking-water-regulations and https://www.epa.gov/dwstandardsregulations/ secondary-drinking-water-standards-guidance-nuisance-chemicals (USEPA, 2019)

APPENDIX A

Instrument Calibration Logs

INSTRUMENT CALIBRATION LOG

Instrument: Landtec GEM5000

Serial #: 43891

Calibration Gas Mixture:

Standard A: CH_4 (50%)

Standard B: CO_2 (35%)

Standard C: Nitrogen (Balance)

Date	Standard (A, B, C)	Standard Value	Instrument Value	Calibrated (Yes, No)
11/7/19	A	50%	49.9%	YES
↓	B	35%	35%	↓
↓	C	BAL	BAL	↓

Environmental Chemical Corporation

Instrument Calibration Log

Project	Phillips Army Airfield Semi Annual	Date	11/12/2019	Weather	Light Rain 45
Calibrated by	G. Carmichael	Instrument	Horiba U-52	Serial Number	S70HLMON/8DDTUOLM

Parameters	Calibration	Comments
pH (4.01)	3.95	N/A
Conductivity (4.49 mS/cm)	4.49	N/A
Turbidity (0.0 NTU)	0.00	N/A
Dissolved Oxygen (mg/L)	9.06	N/A
Temperature (ºC)	19.54	N/A
ORP (mV)	255.00	N/A

Environmental Chemical Corporation

Instrument Calibration Log

Project	Phillips Landfill	Date	11/13/2019	Weather	Sunny 30s
Calibrated by	H. Cavanagh	Instrument	Horiba U-52	Serial Number	UP2XGB98/P4BVH27L

Parameters	Calibration	Comments
pH (4.01)	4.00	N/A
Conductivity (4.49 mS/cm)	4.49	N/A
Turbidity (0.0 NTU)	0.00	N/A
Dissolved Oxygen (mg/L)	8.25	N/A
Temperature (ºC)	16.21	N/A
ORP (mV)	253	N/A

Environmental Chemical Corporation

Instrument Calibration Log

Project	Phillips Airfield	Date	11/13/2019	Weather	Partly Cloudy 30
Calibrated by	C. Bigelow	Instrument	Horiba U-52	Serial Number	S70HLMON/8DDTUOLM

Parameters	Calibration	Comments
pH (4.01)	3.85	
Conductivity (4.49 mS/cm)	4.46	
Turbidity (0.0 NTU)	0.0	
Dissolved Oxygen (mg/L)	8.12	
Temperature (ºC)	16.73	
ORP (mV)	266	

December 18, 2019

Environmental Chemical Corporation

Instrument Calibration Log

Project	PAALF	Date	12/18/2019	Weather	Sunny 35
Calibrated by	G. Carmichael	Instrument	Horiba U-52	Serial Number	AMBRE594/2FH2W38D

Parameters	Calibration	Comments
pH (4.01)	4.00	
Conductivity (4.49 mS/cm)	4.50	
Turbidity (0.0 NTU)	0.0	
Dissolved Oxygen (mg/L)	10.02	
Temperature (ºC)	16.69	
ORP (mV)	280	

APPENDIX B

Groundwater Sampling Logs

Environmental Chemical Corporation

Low Flow/Low Stress Groundwater Sampling Log

Project: Phillips Airfield LTM - November 2019
Date: 11/13/2019
Location: APG, MD
Sampler: C. Bigelow
Well ID: PW11
Weather: Sunny 30
Screen Interval: 13-23
Start Time: 1000 **End Time:** 1240
Well Construction: 4" PVC stick-up
Depth to water: 10.80
Well Depth: 23.31
Water Column: 12.51
3 Well Volumes (gal): 24.0
Total Volume Removed (gal): 24.0

Field Testing Equipment

Make	Model	Serial #
Horiba	U52	S70HLMON/8DDTUOLM
Grundfos	Redi-Flo 2	R1805A2053
Solinst	101	336724

Time	Flow Rate (ml/min)	Depth to Water (ft)	Temp (celsius)	pH (STD)	SPC mS/cm	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Salinity (ppt)	Color
11:05	400	11.12	14.87	4.60	0.323	1.15	200	2.0	0.200	clear
11:15	400	11.03	15.55	4.52	0.321	1.10	207	0.0	0.200	clear
11:25	400	11.03	15.74	4.51	0.322	1.08	208	0.0	0.200	clear
11:35	400	11.03	15.82	4.45	0.322	1.04	213	0.0	0.200	clear
11:40	400	11.03	15.83	4.47	0.322	1.04	213	0.0	0.200	clear
11:45	400	11.03	15.83	4.48	0.322	1.02	212	0.0	0.200	clear
11:50	400	11.03	15.70	4.49	0.322	1.01	213	0.0	0.200	clear
11:55	400	11.04	15.84	4.49	0.322	1.00	213	0.0	0.200	clear
12:00	400	11.04	15.83	4.50	0.322	0.99	213	0.0	0.200	clear
12:05	400	11.04	15.78	4.50	0.322	0.98	213	0.0	0.200	clear
12:10	400	11.04	15.88	4.51	0.322	0.98	213	0.0	0.200	clear
12:15	400	11.04	15.65	4.65	0.323	0.98	206	0.0	0.200	clear
12:20	400	11.04	15.90	4.62	0.322	0.98	208	0.0	0.200	clear

Post Sample Reading

12:35	400	11.04	16	4.46	0.322	0.92	218	0.0	0.200	clear
Acceptance Criteria:		< 0.3 ft	3%	± 0.2	3%	10%	±10mv	<10 NTUs	N/A	N/A

Sample Collection

Time	Sample ID			Container	# of Bottles	Preservative	Analyses
12:25	PAALF	PW11	111319	40 mL Vial	3	NONE	VOCs
12:25	PAALF	PW11	111319	500 ml Poly	1	HNO3	Total Metals, Hardness
12:25	PAALF	PW11	111319f	500 ml Poly (field filtered)	1	HNO3	Dissolved Metals
12:25	PAALF	PW11	111319	1 L Poly	1	NONE	Anions (Nitrate/Nitrite/Chloride/Sulfate), Alkalinity, Specific Conductance, pH, Turbidity, TDS
12:25	PAALF	PW11	111319	125 ml Poly	1	H2SO4	Chemical Oxygen Demand, Ammonia

Comments

Purged to ground

Purged 16 gal at 1000 ml/min before beginning readings

C. Bigelow
Signature

11/13/2019
Date

Environmental Chemical Corporation

Low Flow/Low Stress Groundwater Sampling Log

Project: Phillips Airfield LTM - November 2019
Date: 11/13/2019
Location: APG, MD
Sampler: H. Cavanagh
Well ID: PW-12
Weather: Sunny 30s
Screen Interval: 14-29
Start Time: 954 **End Time:** 1430
Well Construction: 4" PVC stick-up
Depth to water: 7.21
Well Depth: 29.55
Water Column: 22.34
3 Well Volumes (gal): 44.0
Total Volume Removed (gal): 21.0

Field Testing Equipment

Make	Model	Serial #
Horiba	U52	UP2XGB98/P4BVH27L
Grundfos	Redi-Flo 2	P114230033/R1802A7019
Solinst	101	53425

Time	Flow Rate (ml/min)	Depth to Water (ft)	Temp (celsius)	pH (STD)	SPC mS/cm	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Salinity (ppt)	Color
13:10	300	10.49	14.19	4.87	0.603	0.25	44	9.2	0.3	clear
13:15	300	10.49	14.10	4.88	0.607	0.26	43	8.1	0.3	clear
13:20	300	10.49	13.96	4.88	0.607	0.26	43	7.8	0.3	clear
13:25	300	10.50	14.10	4.89	0.605	0.25	42	7.8	0.3	clear
13:30	300	10.50	14.17	4.90	0.607	0.25	41	7.2	0.3	clear
13:35	300	10.51	14.08	4.90	0.608	0.24	41	7.3	0.3	clear
13:40	300	10.51	14.04	4.90	0.606	0.25	41	7.1	0.3	clear
13:45	300	10.51	13.96	4.91	0.605	0.24	41	6.7	0.3	clear
13:50	300	10.51	14.02	4.92	0.604	0.23	40	6.4	0.3	clear
13:55	300	10.51	14.06	4.92	0.605	0.24	40	6.6	0.3	clear
14:00	300	10.51	14.02	4.92	0.606	0.23	40	6.6	0.3	clear
14:05	300	10.51	14.01	4.92	0.605	0.23	40	6.5	0.3	clear
14:10	300	10.51	14.00	4.92	0.605	0.23	40	6.4	0.3	clear

Post Sample Reading

14:25	300	10.51	14.06	4.93	0.605	0.25	43	8.4	0.3	clear
Acceptance Criteria:		< 0.3 ft	3%	± 0.2	3%	10%	±10mv	<10 NTUs	N/A	N/A

Sample Collection

Time	Sample ID	Container	# of Bottles	Preservative	Analyses
14:12	PAALF-PW12-111319	40 mL Vial	3	NONE	VOCs
14:12	PAALF-PW12-111319	500 ml Poly	1	HNO3	Total Metals, Hardness
14:12	PAALF-PW12-111319f	500 ml Poly (field filtered)	1	HNO3	Dissolved Metals
14:12	PAALF-PW12-111319	1 L Poly	1	NONE	Anions (Nitrate/Nitrite/Chloride/Sulfate), Alkalinity, Specific Conductance, pH, Turbidity, TDS
14:12	PAALF-PW12-111319	125 ml Poly	1	H2SO4	Chemical Oxygen Demand, Ammonia

Comments

Purged to ground
Purged 15 gal at 300 ml/min before beginning readings
Started purging @ 9:55

H. Cavanagh
Signature

11/13/2019
Date

Environmental Chemical Corporation

Low Flow/Low Stress Groundwater Sampling Log

Project: Phillips Airfield LTM - November 2019
Date: 11/12/2019
Location: APG, MD
Sampler: G. Carmichael
Well ID: PW16
Weather: Light Rain 50
Screen Interval: 35-45
Start Time: 903 **End Time:** 1215
Well Construction: 4" PVC stick-up
Depth to water: 26.15
Well Depth: 48.94
Water Column: 22.79
3 Well Volumes (gal): 45.0
Total Volume Removed (gal): 45.0

Field Testing Equipment

Make	Model	Serial #
Horiba	U52	S70HLMON/8DDTUOLM
Grundfos	Redi-Flo 2	R1805A2053
Solinst	101	336724

Time	Flow Rate (ml/min)	Depth to Water (ft)	Temp (celsius)	pH (STD)	SPC mS/cm	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Salinity (ppt)	Color
10:05	400	26.22	14.60	4.54	0.149	0.65	251	1.4	0.100	clear
10:15	400	26.22	15.27	4.55	0.157	0.54	242	0.9	0.100	clear
10:25	400	26.22	15.32	4.54	0.154	0.54	236	0.9	0.100	clear
10:35	400	26.22	15.27	4.56	0.153	0.53	229	0.7	0.100	clear
10:45	400	26.22	15.56	4.55	0.150	0.55	226	0.9	0.100	clear
10:55	400	26.22	15.60	4.56	0.152	0.51	223	0.9	0.100	clear
11:05	400	26.22	15.60	4.55	0.148	0.55	224	0.7	0.100	clear
11:15	400	26.22	15.96	4.56	0.146	0.57	221	0.7	0.100	clear
11:25	400	26.21	15.69	4.58	0.148	0.54	219	0.6	0.100	clear
11:35	400	26.21	15.68	4.59	0.148	0.54	220	0.5	0.100	clear
11:40	400	26.21	15.73	4.61	0.148	0.54	221	0.4	0.100	clear
11:45	400	26.21	15.73	4.63	0.149	0.53	222	0.5	0.100	clear
11:50	400	26.21	15.71	4.61	0.148	0.54	222	0.4	0.100	clear
11:55	400	26.21	15.79	4.62	0.146	0.56	223	0.5	0.100	clear

Post Sample Reading

12:07	400	26.22	16	4.54	0.153	0.47	227	0.5	0.100	clear
Acceptance Criteria:		< 0.3 ft	3%	± 0.2	3%	10%	±10mv	<10 NTUs	N/A	N/A

Sample Collection

Time	Sample ID			Container	# of Bottles	Preservative	Analyses
12:00	PAALF	PW16	111219	40 mL Vial	3	NONE	VOCs
12:00	PAALF	PW16	111219	500 ml Poly	1	HNO3	Total Metals, Hardness
12:00	PAALF	PW16	111219f	500 ml Poly (field filtered)	1	HNO3	Dissolved Metals
12:00	PAALF	PW16	111219	1 L Poly	1	NONE	Anions (Nitrate/Nitrite/Chloride/Sulfate), Alkalinity, Specific Conductance, pH, Turbidity, TDS
12:00	PAALF	PW16	111219	125 ml Poly	1	H2SO4	Chemical Oxygen Demand, Ammonia

Comments

Purged to ground
purged 35 gal at 2300 ml/min then started readings

G. Carmichael
Signature

11/12/2019
Date

Environmental Chemical Corporation

Low Flow/Low Stress Groundwater Sampling Log

Project: Phillips Airfield LTM - November 2019
Date: 11/13/2019
Location: APG, MD
Sampler: C. Bigelow
Well ID: PW17
Weather: Sunny 35
Screen Interval: 21-31
Start Time: 1315 **End Time:** 1715
Well Construction: 4" PVC stick-up
Depth to water: 7.50
Well Depth: 29.33
Water Column: 21.83
3 Well Volumes (gal): 42.0
Total Volume Removed (gal): 22.5

Field Testing Equipment

Make	Model	Serial #
Horiba	U52	S70HLMON/8DDTUOLM
Grundfos	Redi-Flo 2	R1805A2053
Solinst	101	336724

Time	Flow Rate (ml/min)	Depth to Water (ft)	Temp (celsius)	pH (STD)	SPC mS/cm	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Salinity (ppt)	Color
15:15	400	9.10	15.86	6.33	0.413	1.12	11	9.4	0.200	clear
15:25	400	9.10	15.89	6.33	0.410	1.08	11	9.4	0.200	clear
15:35	400	9.10	15.78	6.33	0.409	1.08	11	8.4	0.200	clear
15:45	400	9.05	15.97	6.33	0.407	1.07	11	8.5	0.200	clear
15:55	400	9.15	15.81	6.32	0.401	0.91	11	7.4	0.200	clear
16:05	400	9.14	15.80	6.32	0.399	0.84	11	7.1	0.200	clear
16:10	400	9.12	15.79	6.32	0.397	0.75	11	7.1	0.200	clear
16:15	400	9.07	15.66	6.32	0.396	0.69	11	8.2	0.200	clear
16:20	400	9.02	15.75	6.31	0.395	0.66	11	7.4	0.200	clear
16:25	400	9.02	15.74	6.32	0.396	0.65	11	7.7	0.200	clear
16:30	400	9.00	15.71	6.33	0.397	0.63	11	8.0	0.200	clear
16:35	400	9.01	15.71	6.33	0.394	0.58	11	7.7	0.200	clear
16:40	400	9.01	15.68	6.32	0.392	0.55	11	7.5	0.200	clear
16:45	400	9.01	15.66	6.32	0.391	0.53	11	7.5	0.200	clear

Post Sample Reading

17:10	400	9.02	16	6.32	0.391	0.49	11	8.1	0.200	clear
Acceptance Criteria:		< 0.3 ft	3%	± 0.2	3%	10%	±10mv	<10 NTUs	N/A	N/A

Sample Collection

Time	Sample ID			Container	# of Bottles	Preservative	Analyses
16:50	PAALF	PW17	111319	40 mL Vial	3	NONE	VOCs
16:50	PAALF	PW17	111319	500 ml Poly	1	HNO3	Total Metals, Hardness
16:50	PAALF	PW17	111319f	500 ml Poly (field filtered)	1	HNO3	Dissolved Metals
16:50	PAALF	PW17	111319	1 L Poly	1	NONE	Anions (Nitrate/Nitrite/Chloride/Sulfate), Alkalinity, Specific Conductance, pH, Turbidity, TDS
16:50	PAALF	PW17	111319	125 ml Poly	1	H2SO4	Chemical Oxygen Demand, Ammonia
16:50	PAALF	PW17	111319dup	SAME AS ABOVE			

Comments

Purged to ground
Purged 13 gal at 400 ml/min before beginning readings
DUP collected at this location

C. Bigelow
Signature

11/13/2019
Date

Environmental Chemical Corporation

Low Flow/Low Stress Groundwater Sampling Log

Project: Phillips Airfield LTM - November 2019
Date: 11/13/2019
Location: APG, MD
Sampler: H. Cavanagh
Well ID: PW-19
Weather: Sunny 30s
Screen Interval: 4.9-16
Start Time: 1507 **End Time:** 1706
Well Construction: 4" PVC stick-up
Depth to water: 8.45
Well Depth: 15.10
Water Column: 6.65
3 Well Volumes (gal): 13.0
Total Volume Removed (gal): 14.0

Field Testing Equipment

Make	Model	Serial #
Horiba	U52	UP2XGB98/P4BVH27L
Grundfos	Redi-Flo 2	P114230033/R1802A7019
Solinst	101	53425

Time	Flow Rate (ml/min)	Depth to Water (ft)	Temp (celsius)	pH (STD)	SPC mS/cm	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Salinity (ppt)	Color
16:18	500	9.10	15.45	7.65	4.47	3.30	11	0.6	2.37	clear
16:23	500	9.10	15.58	7.67	4.45	3.32	13	0.6	2.36	clear
16:28	500	9.10	15.62	7.69	4.46	3.28	13	0.3	2.37	clear
16:33	500	9.10	15.69	7.70	4.44	3.36	14	0.3	2.36	clear
16:38	500	9.10	15.61	7.72	4.46	3.31	15	0.3	2.37	clear
16:43	500	9.10	15.67	7.73	4.44	3.30	15	0.3	2.36	clear
16:48	500	9.10	15.68	7.72	4.44	3.30	15	0.3	2.35	clear
16:53	500	9.10	15.69	7.73	4.44	3.31	16	0.3	2.35	clear

Post Sample Reading

17:05	500	9.11	16	7.72	4.440	3.28	18	0.4	2.360	clear
Acceptance Criteria:		< 0.3 ft	3%	± 0.2	3%	10%	±10mv	<10 NTUs	N/A	N/A

Sample Collection

Time	Sample ID	Container	# of Bottles	Preservative	Analyses
16:55	PAALF-PW19-111319	40 mL Vial	3	NONE	VOCs
16:55	PAALF-PW19-111319	500 ml Poly	1	HNO3	Total Metals, Hardness
16:55	PAALF-PW19-111319f	500 ml Poly (field filtered)	1	HNO3	Dissolved Metals
16:55	PAALF-PW19-111319	1 L Poly	1	NONE	Anions (Nitrate/Nitrite/Chloride/Sulfate), Alkalinity, Specific Conductance, pH, Turbidity, TDS
16:55	PAALF-PW19-111319	125 ml Poly	1	H2SO4	Chemical Oxygen Demand, Ammonia

Comments

Purged to ground
Purged 8.5 gal at 500 ml/min before beginning readings
Started purging @ 15:08

H. Cavanagh
Signature

11/13/2019
Date

Environmental Chemical Corporation

Low Flow/Low Stress Groundwater Sampling Log

Project: Phillips Airfield LTM - November 2019
Date: 11/12/2019
Location: APG, MD
Sampler: G. Carmichael
Well ID: PW20
Weather: Cloudy 35
Screen Interval: 12.5-29.1
Start Time: 1320 **End Time:** 1520
Well Construction: 4" PVC stick-up
Depth to water: 22.42
Well Depth: 32.79
Water Column: 10.37
3 Well Volumes (gal): 18.0
Total Volume Removed (gal): 18.0

Field Testing Equipment

Make	Model	Serial #
Horiba	U52	S70HLMON/8DDTUOLM
Grundfos	Redi-Flo 2	R1805A2053
Solinst	101	336724

Time	Flow Rate (ml/min)	Depth to Water (ft)	Temp (celsius)	pH (STD)	SPC mS/cm	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Salinity (ppt)	Color
14:00	400	22.50	14.79	5.22	0.221	4.18	238	0.0	0.100	clear
14:10	400	22.50	15.30	5.14	0.221	4.03	241	0.0	0.100	clear
14:20	400	22.50	16.04	5.17	0.227	4.06	239	0.0	0.100	clear
14:25	400	22.51	16.59	5.33	0.229	4.36	234	0.1	0.100	clear
14:30	400	22.51	16.67	5.25	0.221	4.14	236	0.0	0.100	clear
14:35	400	22.49	16.32	5.22	0.216	4.01	237	0.0	0.100	clear
14:40	400	22.48	16.32	5.18	0.215	3.89	239	0.0	0.100	clear
14:45	400	22.50	16.64	5.25	0.218	4.04	236	0.0	0.100	clear
14:50	400	22.50	16.74	5.19	0.216	3.88	239	0.0	0.100	clear
14:55	400	22.50	16.79	5.20	0.218	3.92	238	0.0	0.100	clear
15:00	400	22.50	16.80	5.22	0.217	4.01	236	0.0	0.100	clear

Post Sample Reading

15:17	400	22.50	14.72	5.25	0.217	4.08	242	1.1	0.100	clear
Acceptance Criteria:		< 0.3 ft	3%	± 0.2	3%	10%	±10mv	<10 NTUs	N/A	N/A

Sample Collection

Time	Sample ID			Container	# of Bottles	Preservative	Analyses
15:05	PAALF	PW20	111219	40 mL Vial	3	NONE	VOCs
15:05	PAALF	PW20	111219	500 ml Poly	1	HNO3	Total Metals, Hardness
15:05	PAALF	PW20	111219f	500 ml Poly (field filtered)	1	HNO3	Dissolved Metals
15:05	PAALF	PW20	111219	1 L Poly	1	NONE	Anions (Nitrate/Nitrite/Chloride/Sulfate), Alkalinity, Specific Conductance, pH, Turbidity, TDS
15:05	PAALF	PW20	111219	125 ml Poly	1	H2SO4	Chemical Oxygen Demand, Ammonia

Comments

Purged to ground
purged 12 gal at 1200 ml/min before taking readings

G. Carmichael
Signature

11/12/2019
Date

December 18, 2019

Environmental Chemical Corporation

Low Flow/Low Stress Groundwater Sampling Log

Project: Phillips Airfield LTM - November 2019
Date: 12/18/2019
Location: APG, MD
Sampler: G. Carmichael
Well ID: PW12
Weather: Sunny 35
Screen Interval: 14-29
Start Time: 945 **End Time:** 1245
Well Construction: 4" PVC stick-up
Depth to water: 5.83
Well Depth: 29.83
Water Column: 24.00
3 Well Volumes (gal): 44.0
Total Volume Removed (gal): 12.0

Field Testing Equipment

Make	Model	Serial #
Horiba	U52	AMBRE594/2FH2W38D
Grundfos	Redi-Flo 2	R1805A2053
Solinst	101	336391

Time	Flow Rate (ml/min)	Depth to Water (ft)	Temp (celsius)	pH (STD)	SPC mS/cm	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Salinity (ppt)	Color
11:35	300	8.52	13.83	5.72	0.541	0.68	77	37.9	0.26	clear
11:40	300	8.60	14.25	5.71	0.537	0.71	81	33.6	0.26	clear
11:45	300	8.61	14.03	5.74	0.539	0.68	78	32.0	0.26	clear
11:50	300	8.62	13.81	5.78	0.541	0.65	74	28.7	0.26	clear
11:55	300	8.62	13.64	5.81	0.547	0.61	71	25.2	0.26	clear
12:00	300	8.62	13.65	5.82	0.547	0.60	68	24.1	0.26	clear
12:05	300	8.62	13.66	5.83	0.548	0.57	67	23.8	0.26	clear
12:10	300	8.60	13.73	5.83	0.547	0.57	66	21.8	0.26	clear
12:15	300	8.60	13.71	5.84	0.549	0.54	64	21.5	0.26	clear
12:20	300	8.60	13.63	5.84	0.550	0.55	64	22.1	0.26	clear
12:25	300	8.61	13.61	5.84	0.549	0.54	64	21.7	0.26	clear

Post Sample Reading

12:40	300	8.62	14	5.78	0.534	0.72	75	18.9	0.260	clear
Acceptance Criteria:		< 0.3 ft	3%	± 0.2	3%	10%	±10mv	<10 NTUs	N/A	N/A

Sample Collection

Time	Sample ID			Container	# of Bottles	Preservative	Analyses
12:30	PAALF	PW12	121819	40 mL Vial	3	NONE	VOCs
0:00	PAALF	PW12	121819dup	SAME AS ABOVE			

Comments

Purged to ground
Purged 9 gal at 300 ml/min before beginning readings
DUP collected at this location
Only analyzing for vinyl chloride

G. Carmichael
Signature

12/18/2019
Date

APPENDIX C

Laboratory Sample Chain-of-Custody Forms

Rev. 02/2017

CHAIN OF CUSTODY

Company: ECC
Project Contact: Jennifer Schaefer
Telephone: 410-671-2970
Project Name: PAALF Semi-Annual GW Sampling Event – November 2019
Project #: 5406
Location: APG, MD
Sampled By: G. Carmichael, C. Bigelow

CT LABORATORIES
1230 Lange Court, Baraboo, WI 53913
608-356-2760 Fax 608-356-2766
www.ctlaboratories.com

Lab Use Only
Place Header Sticker Here:

Program:
QSM RCRA SDWA NPDES
Solid Waste Other _____
PO 5406

Report To:
EMAIL: JSchaefer@ecc.net
Company: ECC
Address: 1304 Governor Ct. Ste. 101 Abingdon, MD 21009

Invoice To:*
EMAIL:
Company: SAME
Address:

*Party listed is responsible for payment of invoice as per CT Laboratories' terms and conditions

Client Special Instructions

Matrix:
GW – groundwater SW - surface water WW - wastewater DW - drinking water
S - soil/sediment SL - sludge A - air M - misc/waste

Turnaround Time
Normal RUSH*
Date Needed: _____
Rush analysis requires prior CT Laboratories' approval
Surcharges:
24 hr 200%
2-3 days 100%
4-9 days 50%

ANALYSIS REQUESTED

Collection Date	Collection Time	Matrix	Grab/ Comp	Sample #	Sample ID Description	Filtered? Y/N	VOCs (8260C)	Total Metals (6010C, 7470C)	Dissolved Metals (6010C, 7470C)	Hardness (410.4)	Anions [Nitrate, Nitrite, Sulfate, Chloride] (9056A)	Alkalinity (310.2)	Specific Conductance (9050A)	pH (9040C)	Turbidity (180.1)	Total Dissolved Solids (2540C)	Ammonia (350.1)	Chemical Oxygen Demand (2340B)				Total # Containers	Designated MS/MSD	CT Lab ID # (Lab use only)
11/12/19	12:00	GW	Grab		PAALF-PW16-111219	N	3	1		1	1	1	1	1	1	1	1	1				6		
	12:00				PAALF-PW16-111219f	Y			1													1		
	15:05				PAALF-PW20-111219	N	3	1		1	1	1	1	1	1	1	1	1				6		
	15:05				PAALF-PW20-111219f	Y			1													1		
	09:00				PAALF-TB-111219	N	2															2		

Relinquished By: G. Carmichael
Date/Time: 11/12/19 1600
Received By:
Date/Time

Received by:
Date/Time
Received for Laboratory by:
Date/Time

Lab Use Only
Ice Present Yes No
Temp _____ IR Gun _____
Cooler # _____

Rev. 02/2017

CHAIN OF CUSTODY

Company: ECC
Project Contact: Jennifer Schaefer
Telephone: 410.671.2970
Project Name: PAALF Semi-Annual GW Sampling Event – November 2019
Project #: 5406
Location: APG, MD
Sampled By: G. Carmichael, C. Bigelow, H. Cavanagh

CT LABORATORIES

1230 Lange Court, Baraboo, WI 53913
608-356-2760 Fax 608-356-2766
www.ctlaboratories.com

Lab Use Only
Place Header Sticker Here:

Program:
QSM RCRA SDWA NPDES
Solid Waste Other _____

PO: 5406

Report To:
EMAIL: JSchaefer@ecc.net
Company: ECC
Address: 1304 Governor Ct. Ste. 101 Abingdon, MD 21009

Invoice To:*
EMAIL:
Company:
Address: SAME

*Party listed is responsible for payment of invoice as per CT Laboratories' terms and conditions

Client Special Instructions

Matrix:
GW – groundwater SW - surface water WW - wastewater DW - drinking water
S - soil/sediment SL - sludge A - air M - misc/waste

Turnaround Time
Normal RUSH*
Date Needed: _____
Rush analysis requires prior CT Laboratories' approval
Surcharges:
24 hr 200%
2-3 days 100%
4-9 days 50%

ANALYSES REQUESTED

Collection Date	Collection Time	Matrix	Grab/ Comp	Sample #	Sample ID Description	Filtered? Y/N	VOCs (8260C)	Total Metals (6010C, 7470C)	Dissolved Metals (6010C, 7470C)	Hardness (410.4)	Anions [Nitrate, Nitrite, Sulfate, Chloride] (9056A)	Alkalinity (310.2)	Specific Conductance (9050A)	pH (9040C)	Turbidity (180.1)	Total Dissolved Solids (2540C)	Ammonia (350.1)	Chemical Oxygen Demand (2340B)				Total # Containers	Designated MS/MSD	CT Lab ID # (Lab use only)
							Fill in Spaces with Bottles per Test																	
11/13/19	9:00	W			PAALF - TB - 111319	N	2															2		
	12:25	GW			PAALF - PW11 - 111319	N	3	1		1	1	1	1	1	1	1	1	1				6		
	12:25				PAALF - PW11 - 111319f	Y			1													1		
	14:12				PAALF - PW12 - 111319	N	3	1		1	1	1	1	1	1	1	1	1				6		
	14:12				PAALF - PW12 - 111319f	Y			1													1		
	16:50				PAALF - PW17 - 111319		3	1		1	1	1	1	1	1	1	1	1				6		
	16:50				PAALF - PW17 - 111319f	Y			1													1		
	16:50				PAALF - PW17 - 111319dup		3	1		1	1	1	1	1	1	1	1	1				6		
	16:50				PAALF - PW17 - 111319fdup	Y			1													1		
	16:55				PAALF - PW19 - 111319		3	1		1	1	1	1	1	1	1	1	1				6		
	16:55				PAALF - PW19 - 111319f	Y			1													1		
	17:10	W			PAALF - PW19 - 111319RB		3	1		1	1	1	1	1	1	1	1	1				6		

Relinquished By:	Date/Time	Received By:	Date/Time
H. Cavanagh	11/13/19 18:00		
Received by:	Date/Time	Received for Laboratory by:	Date/Time

Lab Use Only
Ice Present Yes No
Temp _____ IR Gun _____
Cooler # _____

Rev. 02/2017

CHAIN OF CUSTODY

Company: ECC
Project Contact: Jennifer Schaefer
Telephone: 410-671-2970
Project Name: PAALF Semi-Annual GW Sampling Event – November 2019
Project #: 5406
Location: APG, MD
Sampled By: G. Carmichael, C. Bigelow, H. Cavanagh

CT LABORATORIES

1230 Lange Court, Baraboo, WI 53913
608-356-2760 Fax 608-356-2766
www.ctlaboratories.com

Lab Use Only
Place Header Sticker Here:

Program:
QSM RCRA SDWA NPDES
Solid Waste Other _____

PO 5406

Report To:
EMAIL: JSchaefer@ecc.net
Company: ECC
Address: 1304 Governor Ct. Ste. 101 Abingdon, MD 21009

Invoice To:*
EMAIL:
Company: SAME
Address:

*Party listed is responsible for payment of invoice as per CT Laboratories' terms and conditions

Client Special Instructions

Matrix:
GW – groundwater SW - surface water WW - wastewater DW - drinking water
S - soil/sediment SL - sludge A - air M - misc/waste

Turnaround Time
Normal RUSH*
Date Needed: _____
Rush analysis requires prior CT Laboratories' approval
Surcharges:
24 hr 200%
2-3 days 100%
4-9 days 50%

ANALYSES REQUESTED

Collection Date	Collection Time	Matrix	Grab/ Comp	Sample #	Sample ID Description	Filtered? Y/N	VOCs (8260C)	Total Metals (6010C, 7470C)	Dissolved Metals (6010C, 7470C)	Hardness (410.4)	Anions [Nitrate, Nitrite, Sulfate, Chloride] (9056A)	Alkalinity (310.2)	Specific Conductance (9050A)	pH (9040C)	Turbidity (180.1)	Total Dissolved Solids (2540C)	Ammonia (350.1)	Chemical Oxygen Demand (2340B)			Total # Containers	Designated MS/MSD	CT Lab ID # (Lab use only)
11/13/19	17:10	W			PAALF-PW19-111319FB	Y			1												1		

Fill in Spaces with Bottles per Test

Relinquished By:	Date/Time	Received By:	Date/Time
H. Cavanagh	11/13/19 18:00		
Received by:	Date/Time	Received for Laboratory by:	Date/Time

Lab Use Only
Ice Present Yes No
Temp _____ IR Gun _____
Cooler # _____

December 18, 2019

Rev. 02/2017

CHAIN OF CUSTODY

Company: ECC
Project Contact: Jennifer Schaefer
Telephone: 410-671-2970
Project Name: PAALF GW Sampling Event – December 2019
Project #: 5406
Location: APG, MD
Sampled By: G. Carmichael, C. Bigelow

CT LABORATORIES

1230 Lange Court, Baraboo, WI 53913
608-356-2760 Fax 608-356-2766
www.ctlaboratories.com

Lab Use Only
Place Header Sticker Here:

Program:
QSM RCRA SDWA NPDES
Solid Waste Other _____

PO # 5406

Report To:
EMAIL: jschaefer@ecc.net
Company: ECC
Address: 1304 Governor Ct. Ste. 101 Abingdon, MD 21009

Invoice To:*
EMAIL:
Company: SAME
Address:

*Party listed is responsible for payment of invoice as per CT Laboratories' terms and conditions

Client Special Instructions

Matrix:
GW – groundwater SW - surface water WW - wastewater DW - drinking water
S - soil/sediment SL - sludge A - air M - misc/waste

Turnaround Time
Normal RUSH*
Date Needed: 12/23/19
Rush analysis requires prior CT Laboratories' approval
Surcharges:
24 hr 200%
2-3 days 100%
4-9 days 50%

ANALYSES REQUESTED

Collection Date	Collection Time	Matrix	Grab/ Comp	Sample #	Sample ID Description	Filtered? Y/N	Vinyl chloride (8260C)	Total # Containers	Designated MS/MSD	CT Lab ID # (Lab use only)
12/18/19	1000				PAALF-TB-121819	N	2			
↓	1230	GW	Grab		PAALF-PW12-121819	↓	3			
↓	00:00	GW	Grab		PAALF-PW12-121819dup	↓	3			

Fill in Spaces with Bottles per Test

Relinquished By:	Date/Time	Received By:	Date/Time
Grace Carmichael	12/18/19 1600		
Received by:	Date/Time	Received for Laboratory by:	Date/Time

Lab Use Only
Ice Present Yes No
Temp _____ IR Gun _____
Cooler # _____

APPENDIX D

Daily Health and Safety Tailgate Briefing Forms

ECC
DAILY TAILGATE SAFETY MEETING

Meeting conducted by: H. Cavanagh Date: 11/7/19

Project Site: Phillips Landfill, APG, MD Task: Quarterly methane monitoring and well gauging.

Personal protective Equipment:

Level D

Daily Activities:

methane monitoring.
monitoring well gauging

Hazards & Control Measures:

Ticks, mosquitos, chiggers---Tape bottom of pants. Use bug spray.
Spiders, Bees, Wasps, Snakes, Mice --- Be cautious opening monitoring wells.
Slips/Trips/Falls---Walk carefully through wooded areas.
Hunting Areas---Submit range request. Wear safety vests/hivis clothing.

Emergency Procedures:

911 Down Range #: 410-436-4471
Cell Phones
Buddy System

Hospital/Clinic: Upper Chesapeake Medical Center (7 miles - 25 minutes)
Address: 520 Upper Chesapeake Drive Bel Air, MD 21014
Phone: (443)- 843-5500

Attendees

Name printed	Signature
Grace Carmichael	
Courtney Bigelow	
Helen Cavanagh	H. Cavanagh

ECC
DAILY TAILGATE SAFETY MEETING

Meeting conducted by: G. Carmichael Date: 11/12/19

Project Site: Phillips Landfill, APG, MD Task: Semi-Annual Groundwater Sampling

Personal protective Equipment:

Level D

Daily Activities:

groundwater sampling

Hazards & Control Measures:

Ticks, mosquitos, chiggers---Tape bottom of pants. Use bug spray.
Spiders, Bees, Wasps, Snakes, Mice --- Be cautious opening monitoring wells.
Slips/Trips/Falls---Walk carefully through wooded areas.
Hunting Areas---Submit range request. Wear safety vests/hivis clothing.
Dehydration ---Drink water throughout day.

Emergency Procedures:

911 Down Range #: 410-436-4471
Cell Phones
Buddy System

Hospital/Clinic: Upper Chesapeake Medical Center (7 miles - 25 minutes)
Address: 520 Upper Chesapeake Drive Bel Air, MD 21014
Phone: (443)- 843-5500

Attendees

Name printed	Signature
Grace Carmichael	
Courtney Bigelow	
~~Helen Cavanagh~~ GC	

ECC
DAILY TAILGATE SAFETY MEETING

Meeting conducted by: H. Cavanagh Date: 11/13/19

Project Site: Phillips Landfill, APG, MD Task: Semi-Annual Groundwater Sampling

Personal protective Equipment:

Level D

Daily Activities:

groundwater sampling

Hazards & Control Measures:

Ticks, mosquitos, chiggers---Tape bottom of pants. Use bug spray.
Spiders, Bees, Wasps, Snakes, Mice --- Be cautious opening monitoring wells.
Slips/Trips/Falls---Walk carefully through wooded areas.
Hunting Areas---Submit range request. Wear safety vests/hivis clothing.
Dehydration ---Drink water throughout day.
Cold weather --- wear warm clothing - hats, gloves, winter coats

Emergency Procedures:

911 Down Range #: 410-436-4471
Cell Phones
Buddy System

Hospital/Clinic: Upper Chesapeake Medical Center (7 miles - 25 minutes)
Address: 520 Upper Chesapeake Drive Bel Air, MD 21014
Phone: (443)- 843-5500

Attendees

Name printed	Signature
Grace Carmichael	
Courtney Bigelow	
Helen Cavanagh	H. Cavanagh

December 18, 2019

ECC
DAILY TAILGATE SAFETY MEETING

Meeting conducted by: Grace Carmichael Date: 12/ 18 /19

Project Site: PAALF, APG, MD Task: Semi-Annual Groundwater Sampling - Resample

Personal protective Equipment:

Level D

Daily Activities:

groundwater sampling

Hazards & Control Measures:

Ticks, mosquitos, chiggers---Tape bottom of pants. Use bug spray.
Spiders, Bees, Wasps, Snakes, Mice --- Be cautious opening monitoring wells.
Slips/Trips/Falls---Walk carefully through wooded areas.
Hunting Areas---Submit range request. Wear safety vests/hivis clothing.
Dehydration ---Drink water throughout day.
Cold weather --- wear warm clothing - hats, gloves, winter coats

Emergency Procedures:

911 Down Range #: 410-436-4471
Cell Phones
Buddy System

Hospital/Clinic: Upper Chesapeake Medical Center (7 miles - 25 minutes)
Address: 520 Upper Chesapeake Drive Bel Air, MD 21014
Phone: (443)- 843-5500

Attendees

Name printed	Signature
Grace Carmichael	
Courtney Bigelow	

APPENDIX E

Historical Methane Monitoring Results

Historic Methane Concentrations, 2010 - 2019

Monitoring Point	2/24/10	5/17/10	8/5/10	11/3/10	2/15/11	5/19/11	8/24/11	11/30/11	2/14/12	5/17/12	11/1/12	3/26/13	6/18/13	9/12/13	10/22/13	4/4/14	6/3/14	8/12/14	10/28/14	5/12/15
PM-01	NS	NS	0	0	NS	0	NS	NS	0	0	NS	1	1	0	0	1	0	0	0	0.2
PM-02	NS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2
PM-03	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0
PM-04	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2
PM-05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1
PM-06	0	0	0	0	0	0	0	0	0	0	0	0.1	0	1	1	0.1	0	0	0	0.1
PM-07	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0
PM-08	0	0	0	0	0	0	0	0	0	0	0	0.1	0	1	1	0	0	0	0	0
PM-09	0	0	NS	NS	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0

Monitoring Point	11/23/15	1/12/16	4/13/16	10/23/16	10/89/18	4/17/19	11/7/19
PM-01	0	0	0	0	0	0	0
PM-02	0	0	0	0	0	0	0
PM-03	0	0	0	0	0	0	0
PM-04	0	0	0	0	0	0	0
PM-05	0	0	0	0	0	0	0
PM-06	0	0	0	0	0	NS	NS
PM-07	0	0	0	0	0	NS	0
PM-08	0	0	0	0	0	NS	0
PM-09	0	0	0	0	0	NS	NS

Notes:
NS = Not Sampled

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Appendix F

Laboratory Analytical Data Reports

CT LABORATORIES
delivering more than data from your environmental analyses

1230 Lange Court • Baraboo, WI 53913 • 608-356-2760
www.ctlaboratories.com

REVISED

ANALYTICAL SUMMARY REPORT

This report at a minimum contains the following information:

Analytical Report of Test Results
Description of QC Qualifiers
Chain of Custody (copy)
Quality Control Summary (if applicable)
Case Narrative (if applicable)
Correspondence with Client (if applicable)

Revision Date 12/10/2019
Reason for Revision
Added missing sodium data.

This report has been specifically prepared to satisfy project or program requirements. These results are in compliance with NELAC requirements for parameters where accreditation is required or available, unless otherwise noted in the case narrative.

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

REVISED

ANALYTICAL SAMPLE DATA

ECC
JEN SCHAEFER
1304 GOVERNOR CT
SUITE 101
ABINGDON, MD 21009

Project Name: PHILLIPS ARMY RUBBLE LF
Project Phase:
Project #: 5406
Folder #: 149586
Purchase Order #: 5406
Contract #: 3321

Arrival Temperature: 3.5
Report Date: 12/05/2019
Date Received: 11/13/2019
Reprint Date: 12/10/2019

CT LAB#: 357860 Sample Description: PAALF-PW16-111219 Client Sample #: Sampled: 11/12/2019 1200

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method	
Inorganic Results													
Conductivity	***237.0***	uS/cm	1	1	1	1	1.00			11/14/19 13:05	CLB	EPA 9050A	
pH	***6.01***	S.U.	0.1	0.1	0.1	0.1	1.00			11/14/19 14:05	GMJ	EPA 9040C	^
Ammonia Nitrogen	<0.10	mg/L	0.022	0.10	0.20	0.20	1.00	U		11/20/19 14:42	SRW	EPA 350.1	^
Alkalinity	***34***	mg/L	6.0	15	30	30	1.00	M		11/18/19 16:13	SRW	EPA 310.2	^
COD	***32***	mg/L	15	35	75	75	1.00	J	11/19/2019 10:35	11/19/19 14:44	GMJ	EPA 410.4	^
Total Dissolved Solids	***110***	mg/L	10	10	10	10	1.00			11/14/19 13:45	CLB	SM 2540C	
Chloride	***40***	mg/L	1.0	1.5	3.0	3.0	1.00			11/14/19 10:20	TMG	EPA 9056A	
Nitrate Nitrogen	***0.57***	mg/L	0.12	0.20	0.40	0.40	1.00			11/14/19 10:20	TMG	EPA 9056A	
Nitrite Nitrogen	<0.30	mg/L	0.14	0.30	0.60	0.60	1.00	U		11/14/19 10:20	TMG	EPA 9056A	
Sulfate	***10***	mg/L	0.80	1.5	3.0	3.0	1.00			11/14/19 10:20	TMG	EPA 9056A	
Metals Results													
Turbidity	***1.2***	NTU	1.0	1.0	1.0	1.0	1.00			11/14/19 15:00	NAH	EPA 180.1	
Total Antimony	<3.0	ug/L	1.0	3.0	6.0	6.0	1.00	U	11/18/2019 09:30	11/19/19 12:24	MDS	EPA 7010	^
Total Arsenic	<2.0	ug/L	0.80	2.0	4.0	4.0	1.00	U	11/22/2019 11:15	11/23/19 17:32	MDS	EPA 7010	^
Total Thallium	<0.80	ug/L	0.26	0.80	1.6	1.6	1.00	U	11/20/2019 09:20	11/21/19 12:42	MDS	EPA 7010	^

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB#: 357860 Sample Description: PAALF-PW16-111219 Client Sample #: Sampled: 11/12/2019 1200

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Total Hardness	***46***	mg/L	0.067	0.21	0.41	0.41	1.00		11/14/2019 12:49	11/20/19 18:32	NAH	SM2340B/6010C
Total Potassium	***1680***	ug/L	90	250	500	500	1.00		11/14/2019 12:49	11/15/19 12:10	MDS	EPA 6010C
Total Sodium	***17000***	ug/L	100	300	600	600	1.00		11/14/2019 12:49	11/15/19 12:10	MDS	EPA 6010C
Total Aluminum	***19.9***	ug/L	6.0	18	36	36	1.00	J	11/14/2019 12:49	11/20/19 18:32	NAH	EPA 6010C
Total Barium	***57.3***	ug/L	0.29	0.90	1.8	1.8	1.00		11/14/2019 12:49	11/20/19 18:32	NAH	EPA 6010C
Total Beryllium	<0.30	ug/L	0.10	0.30	0.60	0.60	1.00	U	11/14/2019 12:49	11/20/19 18:32	NAH	EPA 6010C
Total Cadmium	<1.0	ug/L	0.30	1.0	2.0	2.0	1.00	U	11/14/2019 12:49	11/20/19 18:32	NAH	EPA 6010C
Total Calcium	***7790***	ug/L	17	50	100	100	1.00		11/14/2019 12:49	11/20/19 18:32	NAH	EPA 6010C
Total Chromium	<2.0	ug/L	0.60	2.0	4.0	4.0	1.00	U	11/14/2019 12:49	11/20/19 18:32	NAH	EPA 6010C
Total Cobalt	***3.0***	ug/L	0.70	2.0	4.0	4.0	1.00	J	11/14/2019 12:49	11/20/19 18:32	NAH	EPA 6010C
Total Copper	***1.8***	ug/L	1.2	3.5	7.0	7.0	1.00	J	11/14/2019 12:49	11/20/19 18:32	NAH	EPA 6010C
Total Iron	***82.0***	ug/L	16	50	100	100	1.00	J M	11/14/2019 12:49	11/20/19 18:32	NAH	EPA 6010C
Total Lead	<2.0	ug/L	1.4	2.0	4.0	4.0	1.00	U	11/14/2019 12:49	11/20/19 18:32	NAH	EPA 6010C
Total Magnesium	***6740***	ug/L	6.0	20	40	40	1.00		11/14/2019 12:49	11/20/19 18:32	NAH	EPA 6010C
Total Manganese	***1900***	ug/L	0.70	2.0	4.0	4.0	1.00		11/14/2019 12:49	11/20/19 18:32	NAH	EPA 6010C
Total Nickel	***2.4***	ug/L	1.0	3.0	6.0	6.0	1.00	J	11/14/2019 12:49	11/20/19 18:32	NAH	EPA 6010C
Total Selenium	<6.5	ug/L	2.2	6.5	13	13	1.00	U	11/14/2019 12:49	11/20/19 18:32	NAH	EPA 6010C
Total Silver	<2.0	ug/L	0.70	2.0	4.0	4.0	1.00	U	11/14/2019 12:49	11/20/19 18:32	NAH	EPA 6010C
Total Vanadium	<2.5	ug/L	0.80	2.5	5.0	5.0	1.00	U	11/14/2019 12:49	11/20/19 18:32	NAH	EPA 6010C
Total Zinc	***8.5***	ug/L	1.6	5.0	10	10	1.00	J B	11/14/2019 12:49	11/20/19 18:32	NAH	EPA 6010C
Total Mercury	<0.060	ug/L	0.030	0.060	0.12	0.12	1.00	U	11/21/2019 12:10	11/22/19 11:03	MDS	EPA 7470A

Organic Results

1,1,1,2-Tetrachloroethane	<0.10	ug/L	0.018	0.10	0.20	0.20	1.00	U		11/22/19 17:07	RLD	EPA 8260C
1,1,1-Trichloroethane	<0.050	ug/L	0.018	0.050	0.10	0.10	1.00	U		11/22/19 17:07	RLD	EPA 8260C
1,1,2,2-Tetrachloroethane	<0.050	ug/L	0.014	0.050	0.10	0.10	1.00	U		11/22/19 17:07	RLD	EPA 8260C
1,1,2-Trichloroethane	<0.10	ug/L	0.019	0.10	0.20	0.20	1.00	U		11/22/19 17:07	RLD	EPA 8260C
1,1-Dichloroethane	<0.050	ug/L	0.015	0.050	0.10	0.10	1.00	U		11/22/19 17:07	RLD	EPA 8260C

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB#: 357860 Sample Description: PAALF-PW16-111219 Client Sample #: Sampled: 11/12/2019 1200

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
1,1-Dichloroethene	***0.13***	ug/L	0.040	0.10	0.20	0.20	1.00	J		11/22/19 17:07	RLD	EPA 8260C
1,2,3-Trichloropropane	<0.10	ug/L	0.070	0.10	0.20	0.20	1.00	U		11/22/19 17:07	RLD	EPA 8260C
1,2-Dibromo-3-chloropropane	<0.10	ug/L	0.070	0.10	0.20	0.20	1.00	U		11/22/19 17:07	RLD	EPA 8260C
1,2-Dibromoethane	<0.10	ug/L	0.040	0.10	0.20	0.20	1.00	U		11/22/19 17:07	RLD	EPA 8260C
1,2-Dichlorobenzene	<0.050	ug/L	0.022	0.050	0.10	0.10	1.00	U		11/22/19 17:07	RLD	EPA 8260C
1,2-Dichloroethane	<0.050	ug/L	0.024	0.050	0.10	0.10	1.00	U		11/22/19 17:07	RLD	EPA 8260C
1,2-Dichloropropane	<0.050	ug/L	0.024	0.050	0.10	0.10	1.00	U		11/22/19 17:07	RLD	EPA 8260C
1,4-Dichloro-2-butene	<0.10	ug/L	0.060	0.10	0.20	0.20	1.00	U		11/22/19 17:07	RLD	EPA 8260C
1,4-Dichlorobenzene	***0.20***	ug/L	0.017	0.050	0.10	0.10	1.00			11/22/19 17:07	RLD	EPA 8260C
2-Butanone	<1.0	ug/L	0.50	1.0	2.0	2.0	1.00	U		11/22/19 17:07	RLD	EPA 8260C
2-Hexanone	<1.0	ug/L	0.30	1.0	2.0	2.0	1.00	U		11/22/19 17:07	RLD	EPA 8260C
4-Methyl-2-pentanone	<0.50	ug/L	0.22	0.50	1.0	1.0	1.00	U		11/22/19 17:07	RLD	EPA 8260C
Acetone	<1.0	ug/L	0.80	1.0	2.0	2.0	1.00	U		11/22/19 17:07	RLD	EPA 8260C
Acrylonitrile	<0.50	ug/L	0.16	0.50	1.0	1.0	1.00	U		11/22/19 17:07	RLD	EPA 8260C
Benzene	***0.071***	ug/L	0.019	0.050	0.10	0.10	1.00	J		11/22/19 17:07	RLD	EPA 8260C
Bromochloromethane	<0.10	ug/L	0.040	0.10	0.20	0.20	1.00	U		11/22/19 17:07	RLD	EPA 8260C
Bromodichloromethane	<0.050	ug/L	0.028	0.050	0.10	0.10	1.00	U		11/22/19 17:07	RLD	EPA 8260C
Bromoform	<0.050	ug/L	0.030	0.050	0.20	0.20	1.00	U		11/22/19 17:07	RLD	EPA 8260C
Bromomethane	<0.10	ug/L	0.060	0.10	0.20	0.20	1.00	U Z,Y		11/22/19 17:07	RLD	EPA 8260C
Carbon disulfide	<0.040	ug/L	0.014	0.040	0.20	0.20	1.00	U		11/22/19 17:07	RLD	EPA 8260C
Carbon tetrachloride	<0.050	ug/L	0.029	0.050	0.10	0.10	1.00	U		11/22/19 17:07	RLD	EPA 8260C
Chlorobenzene	***0.070***	ug/L	0.015	0.050	0.10	0.10	1.00	J		11/22/19 17:07	RLD	EPA 8260C
Chloroethane	<0.050	ug/L	0.023	0.050	0.20	0.20	1.00	U		11/22/19 17:07	RLD	EPA 8260C
Chloroform	<0.050	ug/L	0.023	0.050	0.10	0.10	1.00	U		11/22/19 17:07	RLD	EPA 8260C
Chloromethane	***0.034***	ug/L	0.030	0.050	0.10	0.10	1.00	J		11/22/19 17:07	RLD	EPA 8260C
cis-1,2-Dichloroethene	***5.6***	ug/L	0.027	0.050	0.10	0.10	1.00			11/22/19 17:07	RLD	EPA 8260C
cis-1,3-Dichloropropene	<0.050	ug/L	0.020	0.050	0.10	0.10	1.00	U		11/22/19 17:07	RLD	EPA 8260C
Dibromochloromethane	<0.050	ug/L	0.030	0.050	0.10	0.10	1.00	U		11/22/19 17:07	RLD	EPA 8260C

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB#: 357860 Sample Description: PAALF-PW16-111219 Client Sample #: Sampled: 11/12/2019 1200

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Dibromomethane	<0.050	ug/L	0.030	0.050	0.10	0.10	1.00	U		11/22/19 17:07	RLD	EPA 8260C
Ethylbenzene	***0.016***	ug/L	0.016	0.050	0.10	0.10	1.00	J		11/22/19 17:07	RLD	EPA 8260C
Iodomethane	<0.40	ug/L	0.20	0.40	0.80	0.80	1.00	U Y,Q		11/22/19 17:07	RLD	EPA 8260C
m & p-Xylene	***0.096***	ug/L	0.030	0.10	0.20	0.20	1.00	J		11/22/19 17:07	RLD	EPA 8260C
Methyl tert-butyl ether	<0.050	ug/L	0.017	0.050	0.10	0.10	1.00	U		11/22/19 17:07	RLD	EPA 8260C
Methylene chloride	<0.10	ug/L	0.030	0.10	0.40	0.40	1.00	U Q,Z		11/22/19 17:07	RLD	EPA 8260C
o-Xylene	***0.031***	ug/L	0.017	0.050	0.10	0.10	1.00	J		11/22/19 17:07	RLD	EPA 8260C
Styrene	<0.020	ug/L	0.011	0.020	0.10	0.10	1.00	U		11/22/19 17:07	RLD	EPA 8260C
Tetrachloroethene	<0.050	ug/L	0.023	0.050	0.10	0.10	1.00	U		11/22/19 17:07	RLD	EPA 8260C
Toluene	***0.021***	ug/L	0.017	0.050	0.10	0.10	1.00	J		11/22/19 17:07	RLD	EPA 8260C
trans-1,2-Dichloroethene	***0.12***	ug/L	0.029	0.050	0.10	0.10	1.00			11/22/19 17:07	RLD	EPA 8260C
trans-1,3-Dichloropropene	<0.050	ug/L	0.030	0.050	0.20	0.20	1.00	U		11/22/19 17:07	RLD	EPA 8260C
Trichloroethene	***6.9***	ug/L	0.025	0.050	0.10	0.10	1.00			11/22/19 17:07	RLD	EPA 8260C
Trichlorofluoromethane	<0.050	ug/L	0.029	0.050	0.20	0.20	1.00	U		11/22/19 17:07	RLD	EPA 8260C
Vinyl Acetate	<1.0	ug/L	0.40	1.0	2.0	2.0	1.00	U		11/22/19 17:07	RLD	EPA 8260C
Vinyl chloride	***2.9***	ug/L	0.013	0.020	0.10	0.10	1.00			11/22/19 17:07	RLD	EPA 8260C
1,2 Dichloroethane-d4	98	% Recovery	81			118	1.00			11/22/19 17:07	RLD	EPA 8260C
Bromofluorobenzene	93	% Recovery	85			114	1.00			11/22/19 17:07	RLD	EPA 8260C
d8-Toluene	99	% Recovery	89			112	1.00			11/22/19 17:07	RLD	EPA 8260C
Dibromofluoromethane	103	% Recovery	80			119	1.00			11/22/19 17:07	RLD	EPA 8260C

CT LAB#: 357861 Sample Description: PAALF-PW16-111219F Client Sample #: Sampled: 11/12/2019 1200

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Metals Results												
Dissolved Arsenic	<2.0	ug/L	0.80	2.0	4.0	4.0	1.00	U	11/22/2019 11:15	11/23/19 15:38	MDS	EPA 7010 ^

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB#: 357861 Sample Description: PAALF-PW16-111219F Client Sample #: Sampled: 11/12/2019 1200

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method	
Dissolved Thallium	<0.80	ug/L	0.26	0.80	1.6	1.6	1.00	U	11/20/2019 09:20	11/21/19 11:10	MDS	EPA 7010	^
Dissolved Antimony	<3.0	ug/L	1.0	3.0	6.0	6.0	1.00	U	11/18/2019 09:30	11/19/19 11:12	MDS	EPA 7010	^
Dissolved Aluminum	***7.4***	ug/L	6.0	18	36	36	1.00	J B	11/14/2019 12:49	11/20/19 19:48	NAH	EPA 6010C	
Dissolved Barium	***59.4***	ug/L	0.29	0.90	1.8	1.8	1.00		11/14/2019 12:49	11/20/19 19:48	NAH	EPA 6010C	
Dissolved Beryllium	<0.30	ug/L	0.10	0.30	0.60	0.60	1.00	U	11/14/2019 12:49	11/20/19 19:48	NAH	EPA 6010C	
Dissolved Cadmium	<1.0	ug/L	0.30	1.0	2.0	2.0	1.00	U	11/14/2019 12:49	11/20/19 19:48	NAH	EPA 6010C	
Dissolved Calcium	***8200***	ug/L	17	50	100	100	1.00		11/14/2019 12:49	11/20/19 19:48	NAH	EPA 6010C	
Dissolved Chromium	<2.0	ug/L	0.60	2.0	4.0	4.0	1.00	U	11/14/2019 12:49	11/20/19 19:48	NAH	EPA 6010C	
Dissolved Cobalt	***3.4***	ug/L	0.70	2.0	4.0	4.0	1.00	J	11/14/2019 12:49	11/20/19 19:48	NAH	EPA 6010C	
Dissolved Copper	***2.4***	ug/L	1.2	3.5	7.0	7.0	1.00	J	11/14/2019 12:49	11/20/19 19:48	NAH	EPA 6010C	
Dissolved Iron	***77.4***	ug/L	16	50	100	100	1.00	J M	11/14/2019 12:49	11/20/19 19:48	NAH	EPA 6010C	
Dissolved Lead	<2.0	ug/L	1.4	2.0	4.0	4.0	1.00	U	11/14/2019 12:49	11/20/19 19:48	NAH	EPA 6010C	
Dissolved Magnesium	***7200***	ug/L	6.0	20	40	40	1.00		11/14/2019 12:49	11/20/19 19:48	NAH	EPA 6010C	
Dissolved Manganese	***2130***	ug/L	0.70	2.0	4.0	4.0	1.00	M	11/14/2019 12:49	11/20/19 19:48	NAH	EPA 6010C	
Dissolved Nickel	***2.3***	ug/L	1.0	3.0	6.0	6.0	1.00	J	11/14/2019 12:49	11/20/19 19:48	NAH	EPA 6010C	
Dissolved Selenium	<6.5	ug/L	2.2	6.5	13	13	1.00	U	11/14/2019 12:49	11/20/19 19:48	NAH	EPA 6010C	
Dissolved Silver	<2.0	ug/L	0.70	2.0	4.0	4.0	1.00	U	11/14/2019 12:49	11/20/19 19:48	NAH	EPA 6010C	
Dissolved Vanadium	<2.5	ug/L	0.80	2.5	5.0	5.0	1.00	U	11/14/2019 12:49	11/20/19 19:48	NAH	EPA 6010C	
Dissolved Zinc	***10.9***	ug/L	1.6	5.0	10	10	1.00	B	11/14/2019 12:49	11/20/19 19:48	NAH	EPA 6010C	
Dissolved Potassium	***1690***	ug/L	90	250	500	500	1.00		11/14/2019 12:49	11/15/19 12:40	MDS	EPA 6010C	
Dissolved Mercury	<0.060	ug/L	0.030	0.060	0.12	0.12	1.00	U	11/21/2019 11:12	11/22/19 15:17	MDS	EPA 7470A	
Dissolved Sodium	***18100***	ug/L	100	300	600	600	1.00		11/14/2019 12:49	11/15/19 12:40	MDS	EPA 6010C	

CT LAB#: 357872 Sample Description: PAALF-PW20-111219 Client Sample #: Sampled: 11/12/2019 1505

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method

Inorganic Results

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB#: 357872 Sample Description: PAALF-PW20-111219 Client Sample #: Sampled: 11/12/2019 1505

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method	
Conductivity	***340.0***	uS/cm	1	1	1	1	1.00			11/14/19 13:05	CLB	EPA 9050A	
pH	***6.24***	S.U.	0.1	0.1	0.1	0.1	1.00			11/14/19 14:05	GMJ	EPA 9040C	^
Ammonia Nitrogen	<0.10	mg/L	0.022	0.10	0.20	0.20	1.00	U		11/20/19 14:43	SRW	EPA 350.1	^
Alkalinity	***42***	mg/L	6.0	15	30	30	1.00			11/18/19 16:18	SRW	EPA 310.2	^
COD	<35	mg/L	15	35	75	75	1.00	U	11/19/2019 10:35	11/19/19 14:44	GMJ	EPA 410.4	^
Total Dissolved Solids	***170***	mg/L	10	10	10	10	1.00			11/14/19 13:45	CLB	SM 2540C	
Chloride	***38***	mg/L	5.0	7.5	15	15	5.00			11/14/19 13:40	TMG	EPA 9056A	
Nitrate Nitrogen	***0.36***	mg/L	0.12	0.20	0.40	0.40	1.00	J		11/14/19 10:40	TMG	EPA 9056A	
Nitrite Nitrogen	<0.30	mg/L	0.14	0.30	0.60	0.60	1.00	U		11/14/19 10:40	TMG	EPA 9056A	
Sulfate	***44***	mg/L	0.80	1.5	3.0	3.0	1.00	M		11/14/19 10:40	TMG	EPA 9056A	
Metals Results													
Turbidity	<1.0	NTU	1.0	1.0	1.0	1.0	1.00	U		11/14/19 15:00	NAH	EPA 180.1	
Total Antimony	<3.0	ug/L	1.0	3.0	6.0	6.0	1.00	U	11/18/2019 09:30	11/19/19 12:29	MDS	EPA 7010	^
Total Arsenic	<2.0	ug/L	0.80	2.0	4.0	4.0	1.00	U	11/22/2019 11:15	11/23/19 17:38	MDS	EPA 7010	^
Total Thallium	<0.80	ug/L	0.26	0.80	1.6	1.6	1.00	U	11/20/2019 09:20	11/21/19 12:48	MDS	EPA 7010	^
Total Hardness	***79***	mg/L	0.067	0.21	0.41	0.41	1.00		11/14/2019 12:49	11/20/19 19:28	NAH	SM2340B/6010C	
Total Potassium	***2050***	ug/L	90	250	500	500	1.00		11/14/2019 12:49	11/15/19 12:32	MDS	EPA 6010C	
Total Sodium	***23000***	ug/L	100	300	600	600	1.00		11/14/2019 12:49	11/15/19 12:32	MDS	EPA 6010C	
Total Aluminum	***14.2***	ug/L	6.0	18	36	36	1.00	J	11/14/2019 12:49	11/20/19 19:28	NAH	EPA 6010C	
Total Barium	***55.0***	ug/L	0.29	0.90	1.8	1.8	1.00		11/14/2019 12:49	11/20/19 19:28	NAH	EPA 6010C	
Total Beryllium	<0.30	ug/L	0.10	0.30	0.60	0.60	1.00	U	11/14/2019 12:49	11/20/19 19:28	NAH	EPA 6010C	
Total Cadmium	<1.0	ug/L	0.30	1.0	2.0	2.0	1.00	U	11/14/2019 12:49	11/20/19 19:28	NAH	EPA 6010C	
Total Calcium	***15100***	ug/L	17	50	100	100	1.00		11/14/2019 12:49	11/20/19 19:28	NAH	EPA 6010C	
Total Chromium	<2.0	ug/L	0.60	2.0	4.0	4.0	1.00	U	11/14/2019 12:49	11/20/19 19:28	NAH	EPA 6010C	
Total Cobalt	<2.0	ug/L	0.70	2.0	4.0	4.0	1.00	U	11/14/2019 12:49	11/20/19 19:28	NAH	EPA 6010C	
Total Copper	<3.5	ug/L	1.2	3.5	7.0	7.0	1.00	U	11/14/2019 12:49	11/20/19 19:28	NAH	EPA 6010C	
Total Iron	***16.9***	ug/L	16	50	100	100	1.00	J	11/14/2019 12:49	11/20/19 19:28	NAH	EPA 6010C	

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB#: 357872 Sample Description: PAALF-PW20-111219 Client Sample #: Sampled: 11/12/2019 1505

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Total Lead	<2.0	ug/L	1.4	2.0	4.0	4.0	1.00	U	11/14/2019 12:49	11/20/19 19:28	NAH	EPA 6010C
Total Magnesium	***10100***	ug/L	6.0	20	40	40	1.00		11/14/2019 12:49	11/20/19 19:28	NAH	EPA 6010C
Total Manganese	***21.5***	ug/L	0.70	2.0	4.0	4.0	1.00		11/14/2019 12:49	11/20/19 19:28	NAH	EPA 6010C
Total Nickel	***1.1***	ug/L	1.0	3.0	6.0	6.0	1.00	J	11/14/2019 12:49	11/20/19 19:28	NAH	EPA 6010C
Total Selenium	***2.9***	ug/L	2.2	6.5	13	13	1.00	J	11/14/2019 12:49	11/20/19 19:28	NAH	EPA 6010C
Total Silver	<2.0	ug/L	0.70	2.0	4.0	4.0	1.00	U	11/14/2019 12:49	11/20/19 19:28	NAH	EPA 6010C
Total Vanadium	<2.5	ug/L	0.80	2.5	5.0	5.0	1.00	U	11/14/2019 12:49	11/20/19 19:28	NAH	EPA 6010C
Total Zinc	***4.0***	ug/L	1.6	5.0	10	10	1.00	J B	11/14/2019 12:49	11/20/19 19:28	NAH	EPA 6010C
Total Mercury	***0.052***	ug/L	0.030	0.060	0.12	0.12	1.00	J	11/21/2019 12:10	11/22/19 13:10	MDS	EPA 7470A

Organic Results

1,1,1,2-Tetrachloroethane	<0.10	ug/L	0.018	0.10	0.20	0.20	1.00	U		11/22/19 17:36	RLD	EPA 8260C
1,1,1-Trichloroethane	<0.050	ug/L	0.018	0.050	0.10	0.10	1.00	U		11/22/19 17:36	RLD	EPA 8260C
1,1,2,2-Tetrachloroethane	<0.050	ug/L	0.014	0.050	0.10	0.10	1.00	U		11/22/19 17:36	RLD	EPA 8260C
1,1,2-Trichloroethane	<0.10	ug/L	0.019	0.10	0.20	0.20	1.00	U		11/22/19 17:36	RLD	EPA 8260C
1,1-Dichloroethane	<0.050	ug/L	0.015	0.050	0.10	0.10	1.00	U		11/22/19 17:36	RLD	EPA 8260C
1,1-Dichloroethene	<0.10	ug/L	0.040	0.10	0.20	0.20	1.00	U		11/22/19 17:36	RLD	EPA 8260C
1,2,3-Trichloropropane	<0.10	ug/L	0.070	0.10	0.20	0.20	1.00	U		11/22/19 17:36	RLD	EPA 8260C
1,2-Dibromo-3-chloropropane	<0.10	ug/L	0.070	0.10	0.20	0.20	1.00	U		11/22/19 17:36	RLD	EPA 8260C
1,2-Dibromoethane	<0.10	ug/L	0.040	0.10	0.20	0.20	1.00	U		11/22/19 17:36	RLD	EPA 8260C
1,2-Dichlorobenzene	<0.050	ug/L	0.022	0.050	0.10	0.10	1.00	U		11/22/19 17:36	RLD	EPA 8260C
1,2-Dichloroethane	<0.050	ug/L	0.024	0.050	0.10	0.10	1.00	U		11/22/19 17:36	RLD	EPA 8260C
1,2-Dichloropropane	<0.050	ug/L	0.024	0.050	0.10	0.10	1.00	U		11/22/19 17:36	RLD	EPA 8260C
1,4-Dichloro-2-butene	<0.10	ug/L	0.060	0.10	0.20	0.20	1.00	U		11/22/19 17:36	RLD	EPA 8260C
1,4-Dichlorobenzene	<0.050	ug/L	0.017	0.050	0.10	0.10	1.00	U		11/22/19 17:36	RLD	EPA 8260C
2-Butanone	<1.0	ug/L	0.50	1.0	2.0	2.0	1.00	U		11/22/19 17:36	RLD	EPA 8260C
2-Hexanone	<1.0	ug/L	0.30	1.0	2.0	2.0	1.00	U		11/22/19 17:36	RLD	EPA 8260C
4-Methyl-2-pentanone	<0.50	ug/L	0.22	0.50	1.0	1.0	1.00	U		11/22/19 17:36	RLD	EPA 8260C

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB#: 357872 Sample Description: PAALF-PW20-111219 Client Sample #: Sampled: 11/12/2019 1505

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Acetone	<1.0	ug/L	0.80	1.0	2.0	2.0	1.00	U		11/22/19 17:36	RLD	EPA 8260C
Acrylonitrile	<0.50	ug/L	0.16	0.50	1.0	1.0	1.00	U		11/22/19 17:36	RLD	EPA 8260C
Benzene	<0.050	ug/L	0.019	0.050	0.10	0.10	1.00	U		11/22/19 17:36	RLD	EPA 8260C
Bromochloromethane	<0.10	ug/L	0.040	0.10	0.20	0.20	1.00	U		11/22/19 17:36	RLD	EPA 8260C
Bromodichloromethane	<0.050	ug/L	0.028	0.050	0.10	0.10	1.00	U		11/22/19 17:36	RLD	EPA 8260C
Bromoform	<0.050	ug/L	0.030	0.050	0.20	0.20	1.00	U		11/22/19 17:36	RLD	EPA 8260C
Bromomethane	<0.10	ug/L	0.060	0.10	0.20	0.20	1.00	U Z,Y		11/22/19 17:36	RLD	EPA 8260C
Carbon disulfide	<0.040	ug/L	0.014	0.040	0.20	0.20	1.00	U		11/22/19 17:36	RLD	EPA 8260C
Carbon tetrachloride	<0.050	ug/L	0.029	0.050	0.10	0.10	1.00	U		11/22/19 17:36	RLD	EPA 8260C
Chlorobenzene	<0.050	ug/L	0.015	0.050	0.10	0.10	1.00	U		11/22/19 17:36	RLD	EPA 8260C
Chloroethane	<0.050	ug/L	0.023	0.050	0.20	0.20	1.00	U		11/22/19 17:36	RLD	EPA 8260C
Chloroform	<0.050	ug/L	0.023	0.050	0.10	0.10	1.00	U		11/22/19 17:36	RLD	EPA 8260C
Chloromethane	<0.050	ug/L	0.030	0.050	0.10	0.10	1.00	U		11/22/19 17:36	RLD	EPA 8260C
cis-1,2-Dichloroethene	<0.050	ug/L	0.027	0.050	0.10	0.10	1.00	U		11/22/19 17:36	RLD	EPA 8260C
cis-1,3-Dichloropropene	<0.050	ug/L	0.020	0.050	0.10	0.10	1.00	U		11/22/19 17:36	RLD	EPA 8260C
Dibromochloromethane	<0.050	ug/L	0.030	0.050	0.10	0.10	1.00	U		11/22/19 17:36	RLD	EPA 8260C
Dibromomethane	<0.050	ug/L	0.030	0.050	0.10	0.10	1.00	U		11/22/19 17:36	RLD	EPA 8260C
Ethylbenzene	<0.050	ug/L	0.016	0.050	0.10	0.10	1.00	U		11/22/19 17:36	RLD	EPA 8260C
Iodomethane	<0.40	ug/L	0.20	0.40	0.80	0.80	1.00	U Q,Y		11/22/19 17:36	RLD	EPA 8260C
m & p-Xylene	***0.059***	ug/L	0.030	0.10	0.20	0.20	1.00	J		11/22/19 17:36	RLD	EPA 8260C
Methyl tert-butyl ether	<0.050	ug/L	0.017	0.050	0.10	0.10	1.00	U		11/22/19 17:36	RLD	EPA 8260C
Methylene chloride	<0.10	ug/L	0.030	0.10	0.40	0.40	1.00	U Z,Q		11/22/19 17:36	RLD	EPA 8260C
o-Xylene	<0.050	ug/L	0.017	0.050	0.10	0.10	1.00	U		11/22/19 17:36	RLD	EPA 8260C
Styrene	<0.020	ug/L	0.011	0.020	0.10	0.10	1.00	U		11/22/19 17:36	RLD	EPA 8260C
Tetrachloroethene	<0.050	ug/L	0.023	0.050	0.10	0.10	1.00	U		11/22/19 17:36	RLD	EPA 8260C
Toluene	<0.050	ug/L	0.017	0.050	0.10	0.10	1.00	U		11/22/19 17:36	RLD	EPA 8260C
trans-1,2-Dichloroethene	<0.050	ug/L	0.029	0.050	0.10	0.10	1.00	U		11/22/19 17:36	RLD	EPA 8260C
trans-1,3-Dichloropropene	<0.050	ug/L	0.030	0.050	0.20	0.20	1.00	U		11/22/19 17:36	RLD	EPA 8260C

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB#: 357872 Sample Description: PAALF-PW20-111219 Client Sample #: Sampled: 11/12/2019 1505

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Trichloroethene	<0.050	ug/L	0.025	0.050	0.10	0.10	1.00	U		11/22/19 17:36	RLD	EPA 8260C
Trichlorofluoromethane	<0.050	ug/L	0.029	0.050	0.20	0.20	1.00	U		11/22/19 17:36	RLD	EPA 8260C
Vinyl Acetate	<1.0	ug/L	0.40	1.0	2.0	2.0	1.00	U		11/22/19 17:36	RLD	EPA 8260C
Vinyl chloride	<0.020	ug/L	0.013	0.020	0.10	0.10	1.00	U		11/22/19 17:36	RLD	EPA 8260C
1,2 Dichloroethane-d4	100	% Recovery	81			118	1.00			11/22/19 17:36	RLD	EPA 8260C
Bromofluorobenzene	93	% Recovery	85			114	1.00			11/22/19 17:36	RLD	EPA 8260C
d8-Toluene	101	% Recovery	89			112	1.00			11/22/19 17:36	RLD	EPA 8260C
Dibromofluoromethane	101	% Recovery	80			119	1.00			11/22/19 17:36	RLD	EPA 8260C

CT LAB#: 357873 Sample Description: PAALF-PW20-111219F Client Sample #: Sampled: 11/12/2019 1505

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method	
Metals Results													
Dissolved Arsenic	<2.0	ug/L	0.80	2.0	4.0	4.0	1.00	U	11/22/2019 11:15	11/23/19 15:44	MDS	EPA 7010	^
Dissolved Thallium	<0.80	ug/L	0.26	0.80	1.6	1.6	1.00	U	11/20/2019 09:20	11/21/19 11:16	MDS	EPA 7010	^
Dissolved Antimony	<3.0	ug/L	1.0	3.0	6.0	6.0	1.00	U	11/18/2019 09:30	11/19/19 11:17	MDS	EPA 7010	^
Dissolved Aluminum	***13.0***	ug/L	6.0	18	36	36	1.00	J B	11/14/2019 12:49	11/20/19 20:44	NAH	EPA 6010C	
Dissolved Barium	***56.4***	ug/L	0.29	0.90	1.8	1.8	1.00		11/14/2019 12:49	11/20/19 20:44	NAH	EPA 6010C	
Dissolved Beryllium	<0.30	ug/L	0.10	0.30	0.60	0.60	1.00	U	11/14/2019 12:49	11/20/19 20:44	NAH	EPA 6010C	
Dissolved Cadmium	<1.0	ug/L	0.30	1.0	2.0	2.0	1.00	U	11/14/2019 12:49	11/20/19 20:44	NAH	EPA 6010C	
Dissolved Calcium	***14900***	ug/L	17	50	100	100	1.00		11/14/2019 12:49	11/20/19 20:44	NAH	EPA 6010C	
Dissolved Chromium	<2.0	ug/L	0.60	2.0	4.0	4.0	1.00	U	11/14/2019 12:49	11/20/19 20:44	NAH	EPA 6010C	
Dissolved Cobalt	<2.0	ug/L	0.70	2.0	4.0	4.0	1.00	U	11/14/2019 12:49	11/20/19 20:44	NAH	EPA 6010C	
Dissolved Copper	<3.5	ug/L	1.2	3.5	7.0	7.0	1.00	U	11/14/2019 12:49	11/20/19 20:44	NAH	EPA 6010C	
Dissolved Iron	<50	ug/L	16	50	100	100	1.00	U	11/14/2019 12:49	11/20/19 20:44	NAH	EPA 6010C	
Dissolved Lead	<2.0	ug/L	1.4	2.0	4.0	4.0	1.00	U	11/14/2019 12:49	11/20/19 20:44	NAH	EPA 6010C	

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB#: 357873 Sample Description: PAALF-PW20-111219F Client Sample #: Sampled: 11/12/2019 1505

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Dissolved Magnesium	***9900***	ug/L	6.0	20	40	40	1.00		11/14/2019 12:49	11/20/19 20:44	NAH	EPA 6010C
Dissolved Manganese	***21.2***	ug/L	0.70	2.0	4.0	4.0	1.00		11/14/2019 12:49	11/20/19 20:44	NAH	EPA 6010C
Dissolved Nickel	***1.2***	ug/L	1.0	3.0	6.0	6.0	1.00	J	11/14/2019 12:49	11/20/19 20:44	NAH	EPA 6010C
Dissolved Selenium	<6.5	ug/L	2.2	6.5	13	13	1.00	U	11/14/2019 12:49	11/20/19 20:44	NAH	EPA 6010C
Dissolved Silver	<2.0	ug/L	0.70	2.0	4.0	4.0	1.00	U	11/14/2019 12:49	11/20/19 20:44	NAH	EPA 6010C
Dissolved Vanadium	<2.5	ug/L	0.80	2.5	5.0	5.0	1.00	U	11/14/2019 12:49	11/20/19 20:44	NAH	EPA 6010C
Dissolved Zinc	***4.2***	ug/L	1.6	5.0	10	10	1.00	J B	11/14/2019 12:49	11/20/19 20:44	NAH	EPA 6010C
Dissolved Potassium	***2020***	ug/L	90	250	500	500	1.00		11/14/2019 12:49	11/15/19 13:02	MDS	EPA 6010C
Dissolved Mercury	***0.035***	ug/L	0.030	0.060	0.12	0.12	1.00	J	11/21/2019 11:12	11/22/19 15:19	MDS	EPA 7470A
Dissolved Sodium	***23600***	ug/L	100	300	600	600	1.00		11/14/2019 12:49	11/15/19 13:02	MDS	EPA 6010C

CT LAB#: 357874 Sample Description: PAALF-TB-111219 Client Sample #: Sampled: 11/12/2019 0900

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Organic Results												
1,1,1,2-Tetrachloroethane	<0.10	ug/L	0.018	0.10	0.20	0.20	1.00	U		11/22/19 15:43	RLD	EPA 8260C
1,1,1-Trichloroethane	<0.050	ug/L	0.018	0.050	0.10	0.10	1.00	U		11/22/19 15:43	RLD	EPA 8260C
1,1,2,2-Tetrachloroethane	<0.050	ug/L	0.014	0.050	0.10	0.10	1.00	U		11/22/19 15:43	RLD	EPA 8260C
1,1,2-Trichloroethane	<0.10	ug/L	0.019	0.10	0.20	0.20	1.00	U		11/22/19 15:43	RLD	EPA 8260C
1,1-Dichloroethane	<0.050	ug/L	0.015	0.050	0.10	0.10	1.00	U		11/22/19 15:43	RLD	EPA 8260C
1,1-Dichloroethene	<0.10	ug/L	0.040	0.10	0.20	0.20	1.00	U		11/22/19 15:43	RLD	EPA 8260C
1,2,3-Trichloropropane	<0.10	ug/L	0.070	0.10	0.20	0.20	1.00	U		11/22/19 15:43	RLD	EPA 8260C
1,2-Dibromo-3-chloropropane	<0.10	ug/L	0.070	0.10	0.20	0.20	1.00	U		11/22/19 15:43	RLD	EPA 8260C
1,2-Dibromoethane	<0.10	ug/L	0.040	0.10	0.20	0.20	1.00	U		11/22/19 15:43	RLD	EPA 8260C
1,2-Dichlorobenzene	<0.050	ug/L	0.022	0.050	0.10	0.10	1.00	U		11/22/19 15:43	RLD	EPA 8260C
1,2-Dichloroethane	<0.050	ug/L	0.024	0.050	0.10	0.10	1.00	U		11/22/19 15:43	RLD	EPA 8260C
1,2-Dichloropropane	<0.050	ug/L	0.024	0.050	0.10	0.10	1.00	U		11/22/19 15:43	RLD	EPA 8260C

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB#: 357874 Sample Description: PAALF-TB-111219 Client Sample #: Sampled: 11/12/2019 0900

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
1,4-Dichloro-2-butene	<0.10	ug/L	0.060	0.10	0.20	0.20	1.00	U		11/22/19 15:43	RLD	EPA 8260C
1,4-Dichlorobenzene	<0.050	ug/L	0.017	0.050	0.10	0.10	1.00	U		11/22/19 15:43	RLD	EPA 8260C
2-Butanone	<1.0	ug/L	0.50	1.0	2.0	2.0	1.00	U		11/22/19 15:43	RLD	EPA 8260C
2-Hexanone	<1.0	ug/L	0.30	1.0	2.0	2.0	1.00	U		11/22/19 15:43	RLD	EPA 8260C
4-Methyl-2-pentanone	<0.50	ug/L	0.22	0.50	1.0	1.0	1.00	U		11/22/19 15:43	RLD	EPA 8260C
Acetone	***9.3***	ug/L	0.80	1.0	2.0	2.0	1.00			11/22/19 15:43	RLD	EPA 8260C
Acrylonitrile	<0.50	ug/L	0.16	0.50	1.0	1.0	1.00	U		11/22/19 15:43	RLD	EPA 8260C
Benzene	<0.050	ug/L	0.019	0.050	0.10	0.10	1.00	U		11/22/19 15:43	RLD	EPA 8260C
Bromochloromethane	<0.10	ug/L	0.040	0.10	0.20	0.20	1.00	U		11/22/19 15:43	RLD	EPA 8260C
Bromodichloromethane	<0.050	ug/L	0.028	0.050	0.10	0.10	1.00	U		11/22/19 15:43	RLD	EPA 8260C
Bromoform	<0.050	ug/L	0.030	0.050	0.20	0.20	1.00	U		11/22/19 15:43	RLD	EPA 8260C
Bromomethane	<0.10	ug/L	0.060	0.10	0.20	0.20	1.00	U Z,Y		11/22/19 15:43	RLD	EPA 8260C
Carbon disulfide	<0.040	ug/L	0.014	0.040	0.20	0.20	1.00	U		11/22/19 15:43	RLD	EPA 8260C
Carbon tetrachloride	<0.050	ug/L	0.029	0.050	0.10	0.10	1.00	U		11/22/19 15:43	RLD	EPA 8260C
Chlorobenzene	<0.050	ug/L	0.015	0.050	0.10	0.10	1.00	U		11/22/19 15:43	RLD	EPA 8260C
Chloroethane	<0.050	ug/L	0.023	0.050	0.20	0.20	1.00	U		11/22/19 15:43	RLD	EPA 8260C
Chloroform	<0.050	ug/L	0.023	0.050	0.10	0.10	1.00	U		11/22/19 15:43	RLD	EPA 8260C
Chloromethane	<0.050	ug/L	0.030	0.050	0.10	0.10	1.00	U		11/22/19 15:43	RLD	EPA 8260C
cis-1,2-Dichloroethene	<0.050	ug/L	0.027	0.050	0.10	0.10	1.00	U		11/22/19 15:43	RLD	EPA 8260C
cis-1,3-Dichloropropene	<0.050	ug/L	0.020	0.050	0.10	0.10	1.00	U		11/22/19 15:43	RLD	EPA 8260C
Dibromochloromethane	<0.050	ug/L	0.030	0.050	0.10	0.10	1.00	U		11/22/19 15:43	RLD	EPA 8260C
Dibromomethane	<0.050	ug/L	0.030	0.050	0.10	0.10	1.00	U		11/22/19 15:43	RLD	EPA 8260C
Ethylbenzene	<0.050	ug/L	0.016	0.050	0.10	0.10	1.00	U		11/22/19 15:43	RLD	EPA 8260C
Iodomethane	<0.40	ug/L	0.20	0.40	0.80	0.80	1.00	U Q,Y		11/22/19 15:43	RLD	EPA 8260C
m & p-Xylene	<0.10	ug/L	0.030	0.10	0.20	0.20	1.00	U		11/22/19 15:43	RLD	EPA 8260C
Methyl tert-butyl ether	<0.050	ug/L	0.017	0.050	0.10	0.10	1.00	U		11/22/19 15:43	RLD	EPA 8260C
Methylene chloride	<0.10	ug/L	0.030	0.10	0.40	0.40	1.00	U Z,Q		11/22/19 15:43	RLD	EPA 8260C
o-Xylene	<0.050	ug/L	0.017	0.050	0.10	0.10	1.00	U		11/22/19 15:43	RLD	EPA 8260C

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB#: 357874 Sample Description: PAALF-TB-111219 Client Sample #: Sampled: 11/12/2019 0900

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Styrene	<0.020	ug/L	0.011	0.020	0.10	0.10	1.00	U		11/22/19 15:43	RLD	EPA 8260C
Tetrachloroethene	<0.050	ug/L	0.023	0.050	0.10	0.10	1.00	U		11/22/19 15:43	RLD	EPA 8260C
Toluene	<0.050	ug/L	0.017	0.050	0.10	0.10	1.00	U		11/22/19 15:43	RLD	EPA 8260C
trans-1,2-Dichloroethene	<0.050	ug/L	0.029	0.050	0.10	0.10	1.00	U		11/22/19 15:43	RLD	EPA 8260C
trans-1,3-Dichloropropene	<0.050	ug/L	0.030	0.050	0.20	0.20	1.00	U		11/22/19 15:43	RLD	EPA 8260C
Trichloroethene	<0.050	ug/L	0.025	0.050	0.10	0.10	1.00	U		11/22/19 15:43	RLD	EPA 8260C
Trichlorofluoromethane	<0.050	ug/L	0.029	0.050	0.20	0.20	1.00	U		11/22/19 15:43	RLD	EPA 8260C
Vinyl Acetate	<1.0	ug/L	0.40	1.0	2.0	2.0	1.00	U		11/22/19 15:43	RLD	EPA 8260C
Vinyl chloride	<0.020	ug/L	0.013	0.020	0.10	0.10	1.00	U		11/22/19 15:43	RLD	EPA 8260C
1,2 Dichloroethane-d4	97	% Recovery	81			118	1.00			11/22/19 15:43	RLD	EPA 8260C
Bromofluorobenzene	95	% Recovery	85			114	1.00			11/22/19 15:43	RLD	EPA 8260C
d8-Toluene	99	% Recovery	89			112	1.00			11/22/19 15:43	RLD	EPA 8260C
Dibromofluoromethane	97	% Recovery	80			119	1.00			11/22/19 15:43	RLD	EPA 8260C

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

Notes:

^ Indicates the laboratory is NELAP accredited for this analyte by the indicated matrix and method. DL (detection limit), LOD (limit of detection), loq (limit of quantitation) as defined by most recent DOD QSM version.

All samples were received intact and properly preserved unless otherwise noted. The results reported relate only to the samples tested. This report shall not be reproduced, except in full, without written approval of this laboratory. The Chain of Custody is attached.

This report has been specifically prepared to satisfy project or program requirements. These results are in compliance with NELAC requirements for the parameters where accreditation is required or available, unless noted in the case narrative.

Submitted by: Eric T. Korthals
Project Manager
608-356-2760

QC Qualifiers

Code	Description
B	Analyte detected in the associated Method Blank.
C	Toxicity present in BOD sample.
D	Diluted Out.
E	Safe, No Total Coliform detected.
F	Unsafe, Total Coliform detected, no E. Coli detected.
G	Unsafe, Total Coliform detected and E. Coli detected.
H	Holding time exceeded.
I	Incubator temperature was outside acceptance limits during test period.
J	Estimated value.
L	Significant peaks were detected outside the chromatographic window.
M	Matrix spike and/or Matrix Spike Duplicate recovery outside acceptance limits.
N	Insufficient BOD oxygen depletion.
O	Complete BOD oxygen depletion.
P	Concentration of analyte differs more than 40% between primary and confirmation analysis.
Q	Laboratory Control Sample outside acceptance limits.
R	See Narrative at end of report.
S	Surrogate standard recovery outside acceptance limits due to apparent matrix effects.
T	Sample received with improper preservation or temperature.
U	Analyte concentration was below detection limit.
V	Raised Quantitation or Reporting Limit due to limited sample amount or dilution for matrix background interference.
W	Sample amount received was below program minimum.
X	Analyte exceeded calibration range.
Y	Replicate/Duplicate precision outside acceptance limits.
Z	Specified calibration criteria was not met.

Current CT Laboratories Certifications

Wisconsin (WDNR) Chemistry ID# 157066030
Wisconsin (DATCP) Bacteriology ID# 289
Louisiana NELAP (primary) ID# ACC20190002
Illinois NELAP Lab ID# 200073
Kansas NELAP Lab ID# E-10368
Virginia NELAP Lab ID# 460203
Maryland Lab ID# 344
ISO/IEC 17025-2005 A2LA Cert # 3806.01
DoD-ELAP A2LA 3806.01
GA EPD Stipulation ID ACC20190002

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QC SUMMARY REPORT

ECC **Project Name: PHILLIPS ARMY RUBBLE LF**

SDG #: 0 **Folder #: 149586** **Project #: 5406**

Duplicate

Analytical Run #:	166582	Analysis Date:	11/14/2019	Prep Batch #:		Matrix:	GROUND WATER
CTLab #:	359616	Analysis Time:	14:00	Prep Date/Time:		Method:	SW9056A
Parent Sample #:	357872	Analyst:	TMG	Prep Analyst:			

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Chloride	36.7	mg/L	38				3.0	3	10
Nitrate Nitrogen	0.364	mg/L	0.36				0.40	1	10
Nitrite Nitrogen	0.140	mg/L	<0.140	U			0.60	0	10
Sulfate	44.2	mg/L	44				3.0	0	10

Lab Control Spike Water

Analytical Run #:	166582	Analysis Date:	11/14/2019	Prep Batch #:		Matrix:	LIQUID
CTLab #:	359622	Analysis Time:	13:00	Prep Date/Time:		Method:	SW9056A
Parent Sample #:		Analyst:	TMG	Prep Analyst:			

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Chloride	14.51	mg/L			15.00	97	87 --- 111		
Nitrate Nitrogen	3.485	mg/L			3.500	100	88 --- 111		
Nitrite Nitrogen	3.471	mg/L			3.500	99	87 --- 111		
Sulfate	24.99	mg/L			25.00	100	87 --- 112		

Method Blank Water

Analytical Run #:	166582	Analysis Date:	11/14/2019	Prep Batch #:		Matrix:	LIQUID
CTLab #:	359621	Analysis Time:	13:20	Prep Date/Time:		Method:	SW9056A
Parent Sample #:		Analyst:	TMG	Prep Analyst:			

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Chloride	1.0	mg/L		U	0		1.5		
Nitrate Nitrogen	0.12	mg/L		U	0		0.20		
Nitrite Nitrogen	0.14	mg/L		U	0		0.30		
Sulfate	0.8	mg/L		U	0		1.5		

Matrix Spike Duplicate Water

Analytical Run #:	166582	Analysis Date:	11/14/2019	Prep Batch #:		Matrix:	GROUND WATER
CTLab #:	359615	Analysis Time:	14:41	Prep Date/Time:		Method:	SW9056A
Parent Sample #:	359614	Analyst:	TMG	Prep Analyst:			

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Chloride	75.5	mg/L	38		40.0	94	87 --- 111	1	15
Nitrate Nitrogen	2.38	mg/L	0.36		2.00	101	88 --- 111	0	15
Nitrite Nitrogen	1.97	mg/L	BDL		2.00	98	87 --- 111	1	15
Sulfate	50.5	mg/L	44		8.00	81	87 --- 112	0	15

Matrix Spike Water

Analytical Run #:	166582	Analysis Date:	11/14/2019	Prep Batch #:		Matrix:	GROUND WATER
CTLab #:	359614	Analysis Time:	14:21	Prep Date/Time:		Method:	SW9056A
Parent Sample #:	357872	Analyst:	TMG	Prep Analyst:			

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Chloride	74.7	mg/L	38		40.0	92	87 --- 111		15
Nitrate Nitrogen	2.37	mg/L	0.36		2.00	100	88 --- 111		15
Nitrite Nitrogen	1.96	mg/L	BDL		2.00	98	87 --- 111		15
Sulfate	50.5	mg/L	44		8.00	81	87 --- 112		15

Duplicate

Analytical Run #:	166628	Analysis Date:	11/14/2019	Prep Batch #:		Matrix:	GROUND WATER
CTLab #:	358634	Analysis Time:	13:05	Prep Date/Time:		Method:	
Parent Sample #:	357860	Analyst:	CLB	Prep Analyst:			

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Conductivity	236.0	uS/cm	237.0					0	7

Lab Control Spike Water

Analytical Run #:	166628	Analysis Date:	11/14/2019	Prep Batch #:		Matrix:	LIQUID
CTLab #:	358632	Analysis Time:	13:05	Prep Date/Time:		Method:	
Parent Sample #:		Analyst:	CLB	Prep Analyst:			

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Conductivity	997	uS/cm			998	100	97 --- 102		

Method Blank Water

Analytical Run #:	166628	Analysis Date:	11/14/2019	Prep Batch #:		Matrix:	LIQUID
CTLab #:	358633	Analysis Time:	13:05	Prep Date/Time:		Method:	
Parent Sample #:		Analyst:	CLB	Prep Analyst:			

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Conductivity	1	uS/cm		U	0		1		

Duplicate

Analytical Run #:	166705	Analysis Date:	11/18/2019	Prep Batch #:		Matrix:	GROUND WATER
CTLab #:	359370	Analysis Time:	16:15	Prep Date/Time:		Method:	E310.2
Parent Sample #:	357860	Analyst:	SRW	Prep Analyst:			

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Alkalinity	32.4	mg/L	34					5	20

Lab Control Spike Water

Analytical Run #:	166705	Analysis Date:	11/18/2019	Prep Batch #:		Matrix:	LIQUID
CTLab #:	359184	Analysis Time:	16:11	Prep Date/Time:		Method:	E310.2
Parent Sample #:		Analyst:	SRW	Prep Analyst:			

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Alkalinity	363.0	mg/L			375.0	97	90 --- 110		

Method Blank Water

Analytical Run #:	166705	Analysis Date:	11/18/2019	Prep Batch #:		Matrix:	LIQUID
CTLab #:	359185	Analysis Time:	16:12	Prep Date/Time:		Method:	E310.2
Parent Sample #:		Analyst:	SRW	Prep Analyst:			

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Alkalinity	6	mg/L		U	0		15		

Matrix Spike Duplicate Water

Analytical Run #:	166705	Analysis Date:	11/18/2019	Prep Batch #:		Matrix:	GROUND WATER
CTLab #:	359372	Analysis Time:	16:17	Prep Date/Time:		Method:	E310.2
Parent Sample #:	359371	Analyst:	SRW	Prep Analyst:			

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Alkalinity	122	mg/L	34		100	88	90 --- 110	1	20

Matrix Spike Water

Analytical Run #:	166705	Analysis Date:	11/18/2019	Prep Batch #:		Matrix:	GROUND WATER
CTLab #:	359371	Analysis Time:	16:16	Prep Date/Time:		Method:	E310.2
Parent Sample #:	357860	Analyst:	SRW	Prep Analyst:			

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Alkalinity	121	mg/L	34		100	87	90 --- 110		20

Duplicate

Analytical Run #:	166775	Analysis Date:	11/19/2019	Prep Batch #:	74612	Matrix:	GROUND WATER
CTLab #:	359834	Analysis Time:	14:44	Prep Date/Time:	11/19/2019 10:35	Method:	E410.4
Parent Sample #:	357860	Analyst:	GMJ	Prep Analyst:	GMJ		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
COD	15.4	mg/L	32					70	20

Lab Control Spike Water

Analytical Run #:	166775	Analysis Date:	11/19/2019	Prep Batch #:	74612	Matrix:	LIQUID
CTLab #:	360096	Analysis Time:	14:44	Prep Date/Time:	11/19/2019 10:35	Method:	E410.4
Parent Sample #:		Analyst:	GMJ	Prep Analyst:	GMJ		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
COD	404.2	mg/L			400.0	101	90 --- 110		

Method Blank Water

Analytical Run #:	166775	Analysis Date:	11/19/2019	Prep Batch #:	74612	Matrix:	LIQUID
CTLab #:	360095	Analysis Time:	14:44	Prep Date/Time:	11/19/2019 10:35	Method:	E410.4
Parent Sample #:		Analyst:	GMJ	Prep Analyst:	GMJ		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Total COD	15	mg/L		U	0		35		

Matrix Spike Duplicate Water

Analytical Run #:	166775	Analysis Date:	11/19/2019	Prep Batch #:	74612	Matrix:	GROUND WATER
CTLab #:	359836	Analysis Time:	14:44	Prep Date/Time:	11/19/2019 10:35	Method:	E410.4
Parent Sample #:	359835	Analyst:	GMJ	Prep Analyst:	GMJ		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
COD	167	mg/L	32		148	91	90 --- 110	1	20

Matrix Spike Water

Analytical Run #:	166775	Analysis Date:	11/19/2019	Prep Batch #:	74612	Matrix:	GROUND WATER
CTLab #:	359835	Analysis Time:	14:44	Prep Date/Time:	11/19/2019 10:35	Method:	E410.4
Parent Sample #:	357860	Analyst:	GMJ	Prep Analyst:	GMJ		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
COD	169	mg/L	32		148	93	90 --- 110		

Lab Control Spike Water

Analytical Run #:	166810	Analysis Date:	11/20/2019	Prep Batch #:		Matrix:	LIQUID
CTLab #:	360564	Analysis Time:	14:40	Prep Date/Time:		Method:	E350.1
Parent Sample #:		Analyst:	SRW	Prep Analyst:			

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Ammonia Nitrogen	1.21	mg/L			1.25	97	90 --- 110		

Method Blank Water

Analytical Run #:	166810	Analysis Date:	11/20/2019	Prep Batch #:		Matrix:	LIQUID
CTLab #:	360565	Analysis Time:	14:41	Prep Date/Time:		Method:	E350.1
Parent Sample #:		Analyst:	SRW	Prep Analyst:			

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Ammonia Nitrogen	0.022	mg/L		U	0		0.10		

Duplicate

Analytical Run #:	166639	Analysis Date:	11/20/2019	Prep Batch #:	74510	Matrix:	GROUND WATER
CTLab #:	357895	Analysis Time:	20:01	Prep Date/Time:	11/14/2019 12:49	Method:	SW6010
Parent Sample #:	357861	Analyst:	NAH	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Dissolved Aluminum	6.00	ug/L	7.4	U			36	200	20
Dissolved Barium	57.7	ug/L	59.4				1.80	3	20
Dissolved Beryllium	0.100	ug/L	<0.100	U			0.60	0	20
Dissolved Cadmium	0.300	ug/L	<0.300	U			2.0	0	20
Dissolved Calcium	8010	ug/L	8200				100	2	20
Dissolved Chromium	0.600	ug/L	<0.600	U			4.0	0	20
Dissolved Cobalt	3.3	ug/L	3.4				4.0	3	20
Dissolved Copper	1.20	ug/L	2.4	U			7.0	200	20
Dissolved Iron	72.3	ug/L	77.4				100	7	20
Dissolved Lead	1.40	ug/L	<1.40	U			4.0	0	20
Dissolved Magnesium	6990	ug/L	7200				40	3	20
Dissolved Manganese	2070	ug/L	2130				4.0	3	20
Dissolved Nickel	2.4	ug/L	2.3				6.0	4	20
Dissolved Selenium	2.3	ug/L	<2.20				13.0	200	20
Dissolved Silver	0.700	ug/L	<0.700	U			4.0	0	20
Dissolved Vanadium	0.800	ug/L	<0.800	U			5.0	0	20
Dissolved Zinc	8.6	ug/L	10.9				10.0	24	20

Lab Control Spike Water

Analytical Run #:	166639	Analysis Date:	11/20/2019	Prep Batch #:	74510	Matrix:	LIQUID
CTLab #:	357894	Analysis Time:	19:35	Prep Date/Time:	11/14/2019 12:49	Method:	SW6010
Parent Sample #:		Analyst:	NAH	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Dissolved Aluminum	756.0	ug/L			800.0	94	86 --- 115		20
Dissolved Barium	767.0	ug/L			800.0	96	88 --- 113		20
Dissolved Beryllium	19.50	ug/L			20.00	98	89 --- 112		20
Dissolved Cadmium	18.40	ug/L			20.00	92	88 --- 113		20
Dissolved Calcium	175000	ug/L			200000	88	87 --- 113		20
Dissolved Chromium	75.80	ug/L			80.00	95	90 --- 113		20
Dissolved Cobalt	192.0	ug/L			200.0	96	89 --- 114		20
Dissolved Copper	105.0	ug/L			100.0	105	86 --- 114		20
Dissolved Iron	415.0	ug/L			400.0	104	87 --- 115		20
Dissolved Lead	179.0	ug/L			200.0	90	86 --- 113		20
Dissolved Magnesium	93300	ug/L			100000	93	85 --- 113		20
Dissolved Manganese	197.0	ug/L			200.0	98	90 --- 114		20
Dissolved Nickel	194.0	ug/L			200.0	97	88 --- 113		20
Dissolved Selenium	813.0	ug/L			800.0	102	83 --- 114		20
Dissolved Silver	17.30	ug/L			20.00	86	84 --- 115		20
Dissolved Vanadium	204.0	ug/L			200.0	102	90 --- 111		20
Dissolved Zinc	204.0	ug/L			200.0	102	87 --- 115		20

Method Blank Water

Analytical Run #:	166639	Analysis Date:	11/20/2019	Prep Batch #:	74510	Matrix:	LIQUID
CTLab #:	357893	Analysis Time:	19:41	Prep Date/Time:	11/14/2019 12:49	Method:	SW6010
Parent Sample #:		Analyst:	NAH	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Dissolved Aluminum	6.23	ug/L			0		18		
Dissolved Barium	0.29	ug/L		U	0		0.90		
Dissolved Beryllium	0.10	ug/L		U	0		0.30		
Dissolved Cadmium	0.3	ug/L		U	0		1.0		
Dissolved Calcium	17	ug/L		U	0		50		
Dissolved Chromium	0.6	ug/L		U	0		2.0		
Dissolved Cobalt	0.7	ug/L		U	0		2.0		
Dissolved Copper	1.2	ug/L		U	0		3.5		
Dissolved Iron	16	ug/L		U	0		50		
Dissolved Lead	1.4	ug/L		U	0		2.0		
Dissolved Magnesium	6	ug/L		U	0		20		
Dissolved Manganese	0.7	ug/L		U	0		2.0		
Dissolved Nickel	1.0	ug/L		U	0		3.0		
Dissolved Selenium	2.2	ug/L		U	0		6.5		
Dissolved Silver	0.7	ug/L		U	0		2.0		
Dissolved Vanadium	0.8	ug/L		U	0		2.5		
Dissolved Zinc	2.09	ug/L			0		5.0		

Matrix Spike Duplicate Water

Analytical Run #:	166639	Analysis Date:	11/20/2019	Prep Batch #:	74510	Matrix:	GROUND WATER
CTLab #:	357897	Analysis Time:	20:32	Prep Date/Time:	11/14/2019 12:49	Method:	SW6010
Parent Sample #:	357896	Analyst:	NAH	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Dissolved Aluminum	766	ug/L	7.4		800	95	86 --- 115	1	20
Dissolved Barium	826	ug/L	59.4		800	96	88 --- 113	2	20
Dissolved Beryllium	19.8	ug/L	BDL		20.0	99	89 --- 112	2	20
Dissolved Cadmium	18.7	ug/L	BDL		20.0	94	88 --- 113	1	20
Dissolved Calcium	182000	ug/L	8200		200000	87	87 --- 113	4	20
Dissolved Chromium	73.7	ug/L	BDL		80.0	92	90 --- 113	4	20
Dissolved Cobalt	193	ug/L	3.4		200	95	89 --- 114	4	20
Dissolved Copper	119	ug/L	2.4		100	117	86 --- 114	2	20
Dissolved Iron	396	ug/L	77.4		400	80	87 --- 115	2	20
Dissolved Lead	177	ug/L	BDL		200	88	86 --- 113	4	20
Dissolved Magnesium	99000	ug/L	7200		100000	92	85 --- 113	5	20
Dissolved Manganese	2230	ug/L	2130		200	50	90 --- 114	0	20
Dissolved Nickel	195	ug/L	2.3		200	96	88 --- 113	3	20
Dissolved Selenium	801	ug/L	BDL		800	100	83 --- 114	2	20
Dissolved Silver	17.6	ug/L	BDL		20.0	88	84 --- 115	1	20
Dissolved Vanadium	204	ug/L	BDL		200	102	90 --- 111	3	20
Dissolved Zinc	209	ug/L	10.9		200	99	87 --- 115	3	20

Matrix Spike Water

Analytical Run #:	166639	Analysis Date:	11/20/2019	Prep Batch #:	74510	Matrix:	GROUND WATER
CTLab #:	357896	Analysis Time:	20:07	Prep Date/Time:	11/14/2019 12:49	Method:	SW6010
Parent Sample #:	357861	Analyst:	NAH	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Dissolved Aluminum	774	ug/L	7.4		800	96	86 --- 115		
Dissolved Barium	845	ug/L	59.4		800	98	88 --- 113		
Dissolved Beryllium	20.2	ug/L	BDL		20.0	101	89 --- 112		
Dissolved Cadmium	18.9	ug/L	BDL		20.0	94	88 --- 113		
Dissolved Calcium	190000	ug/L	8200		200000	91	87 --- 113		
Dissolved Chromium	76.9	ug/L	BDL		80.0	96	90 --- 113		
Dissolved Cobalt	200	ug/L	3.4		200	98	89 --- 114		
Dissolved Copper	121	ug/L	2.4		100	119	86 --- 114		
Dissolved Iron	404	ug/L	77.4		400	82	87 --- 115		
Dissolved Lead	185	ug/L	BDL		200	92	86 --- 113		
Dissolved Magnesium	104000	ug/L	7200		100000	97	85 --- 113		
Dissolved Manganese	2240	ug/L	2130		200	55	90 --- 114		
Dissolved Nickel	201	ug/L	2.3		200	99	88 --- 113		
Dissolved Selenium	820	ug/L	BDL		800	102	83 --- 114		
Dissolved Silver	17.8	ug/L	BDL		20.0	89	84 --- 115		
Dissolved Vanadium	210	ug/L	BDL		200	105	90 --- 111		
Dissolved Zinc	216	ug/L	10.9		200	103	87 --- 115		

Duplicate

Analytical Run #:	166640	Analysis Date:	11/15/2019	Prep Batch #:	74510	Matrix:	GROUND WATER
CTLab #:	357895	Analysis Time:	12:46	Prep Date/Time:	11/14/2019 12:49	Method:	SW6010
Parent Sample #:	357861	Analyst:	MDS	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Dissolved Potassium	1660	ug/L	1690				0.50	2	20

Duplicate

Analytical Run #:	166640	Analysis Date:	12/10/2019	Prep Batch #:	74510	Matrix:	GROUND WATER
CTLab #:	368001	Analysis Time:	12:46	Prep Date/Time:	11/14/2019 12:49	Method:	SW6010
Parent Sample #:	357861	Analyst:	MDS	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Dissolved Sodium	17400	ug/L	18100				0.60	4	20

Lab Control Spike Water

Analytical Run #:	166640	Analysis Date:	11/15/2019	Prep Batch #:	74510	Matrix:	LIQUID
CTLab #:	357894	Analysis Time:	12:35	Prep Date/Time:	11/14/2019 12:49	Method:	SW6010
Parent Sample #:		Analyst:	MDS	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Dissolved Potassium	100000	ug/L			100000	100	86 --- 114		20

Lab Control Spike Water

Analytical Run #:	166640	Analysis Date:	12/10/2019	Prep Batch #:	74510	Matrix:	LIQUID
CTLab #:	367999	Analysis Time:	12:35	Prep Date/Time:	11/14/2019 12:49	Method:	SW6010
Parent Sample #:		Analyst:	MDS	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Dissolved Sodium	96500	ug/L			100000	96	87 --- 115		20

Method Blank Water

Analytical Run #:	166640	Analysis Date:	11/15/2019	Prep Batch #:	74510	Matrix:	LIQUID
CTLab #:	357893	Analysis Time:	12:37	Prep Date/Time:	11/14/2019 12:49	Method:	SW6010
Parent Sample #:		Analyst:	MDS	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Dissolved Potassium	113.0	ug/L			0		250		

Method Blank Water

Analytical Run #:	166640	Analysis Date:	12/10/2019	Prep Batch #:	74510	Matrix:	LIQUID
CTLab #:	367998	Analysis Time:	12:37	Prep Date/Time:	11/14/2019 12:49	Method:	SW6010
Parent Sample #:		Analyst:	MDS	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Dissolved Sodium	100	ug/L		U	0		300		

Matrix Spike Duplicate Water

Analytical Run #:	166640	Analysis Date:	11/15/2019	Prep Batch #:	74510	Matrix:	GROUND WATER
CTLab #:	357897	Analysis Time:	12:57	Prep Date/Time:	11/14/2019 12:49	Method:	SW6010
Parent Sample #:	357896	Analyst:	MDS	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Dissolved Potassium	99700	ug/L	1690		100000	98	86 --- 114	2	20

Matrix Spike Duplicate Water

Analytical Run #:	166640	Analysis Date:	12/10/2019	Prep Batch #:	74510	Matrix:	GROUND WATER
CTLab #:	368002	Analysis Time:	12:57	Prep Date/Time:	11/14/2019 12:49	Method:	SW6010
Parent Sample #:	368000	Analyst:	MDS	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Dissolved Sodium	112000	ug/L	18100		100000	94	87 --- 115	6	20

Matrix Spike Water

Analytical Run #:	166640	Analysis Date:	11/15/2019	Prep Batch #:	74510	Matrix:	GROUND WATER
CTLab #:	357896	Analysis Time:	12:49	Prep Date/Time:	11/14/2019 12:49	Method:	SW6010
Parent Sample #:	357861	Analyst:	MDS	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Dissolved Potassium	102000	ug/L	1690		100000	100	86 --- 114		

Matrix Spike Water

Analytical Run #:	166640	Analysis Date:	12/10/2019	Prep Batch #:	74510	Matrix:	GROUND WATER
CTLab #:	368000	Analysis Time:	12:51	Prep Date/Time:	11/14/2019 12:49	Method:	SW6010
Parent Sample #:	357861	Analyst:	MDS	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Dissolved Sodium	106000	ug/L	18100		100000	88	87 --- 115		

Duplicate

Analytical Run #:	166644	Analysis Date:	11/20/2019	Prep Batch #:	74512	Matrix:	GROUND WATER
CTLab #:	357905	Analysis Time:	18:45	Prep Date/Time:	11/14/2019 12:49	Method:	SW6010
Parent Sample #:	357860	Analyst:	NAH	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Total Aluminum	11.5	ug/L	19.9				36	54	20
Total Barium	58.7	ug/L	57.3				1.80	2	20
Total Beryllium	0.100	ug/L	<0.100	U			0.60	0	20
Total Cadmium	0.300	ug/L	<0.300	U			2.0	0	20
Total Calcium	7800	ug/L	7790				100	0	20
Total Chromium	0.600	ug/L	<0.600	U			4.0	0	20
Total Cobalt	3.2	ug/L	3.0				4.0	6	20
Total Copper	1.9	ug/L	1.8				7.0	5	20
Total Iron	77.8	ug/L	82.0				100	5	20
Total Lead	1.40	ug/L	<1.40	U			4.0	0	20
Total Magnesium	6890	ug/L	6740				40	2	20
Total Manganese	1970	ug/L	1900				4.0	4	20
Total Nickel	2.5	ug/L	2.4				6.0	4	20
Total Selenium	2.20	ug/L	<2.20	U			13.0	0	20
Total Silver	0.700	ug/L	<0.700	U			4.0	0	20
Total Vanadium	0.800	ug/L	<0.800	U			5.0	0	20
Total Zinc	8.1	ug/L	8.5				10.0	5	20

Lab Control Spike Water

Analytical Run #:	166644	Analysis Date:	11/20/2019	Prep Batch #:	74512	Matrix:	LIQUID
CTLab #:	357904	Analysis Time:	18:19	Prep Date/Time:	11/14/2019 12:49	Method:	SW6010
Parent Sample #:		Analyst:	NAH	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Total Aluminum	770.0	ug/L			800.0	96	86 --- 115		
Total Barium	759.0	ug/L			800.0	95	88 --- 113		
Total Beryllium	19.20	ug/L			20.00	96	89 --- 112		
Total Cadmium	18.40	ug/L			20.00	92	88 --- 113		
Total Calcium	174000	ug/L			200000	87	87 --- 113		
Total Chromium	74.40	ug/L			80.00	93	90 --- 113		
Total Cobalt	192.0	ug/L			200.0	96	89 --- 114		
Total Copper	103.0	ug/L			100.0	103	86 --- 114		
Total Iron	409.0	ug/L			400.0	102	87 --- 115		
Total Lead	181.0	ug/L			200.0	90	86 --- 113		
Total Magnesium	94300	ug/L			100000	94	85 --- 113		
Total Manganese	194.0	ug/L			200.0	97	90 --- 114		
Total Nickel	192.0	ug/L			200.0	96	88 --- 113		
Total Selenium	808.0	ug/L			800.0	101	83 --- 114		
Total Silver	17.20	ug/L			20.00	86	84 --- 115		
Total Vanadium	203.0	ug/L			200.0	102	90 --- 111		
Total Zinc	204.0	ug/L			200.0	102	87 --- 115		

Method Blank Water

Analytical Run #:	166644	Analysis Date:	11/20/2019	Prep Batch #:	74512	Matrix:	LIQUID
CTLab #:	357903	Analysis Time:	18:25	Prep Date/Time:	11/14/2019 12:49	Method:	SW6010
Parent Sample #:		Analyst:	NAH	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Total Aluminum	6	ug/L		U	0		18		
Total Barium	0.29	ug/L		U	0		0.90		
Total Beryllium	0.10	ug/L		U	0		0.30		
Total Cadmium	0.3	ug/L		U	0		1.0		
Total Calcium	21.10	ug/L			0		50		
Total Chromium	0.6	ug/L		U	0		2.0		
Total Cobalt	0.7	ug/L		U	0		2.0		
Total Copper	1.2	ug/L		U	0		3.5		
Total Iron	16	ug/L		U	0		50		
Total Lead	1.4	ug/L		U	0		2.0		
Total Magnesium	6	ug/L		U	0		20		
Total Manganese	0.7	ug/L		U	0		2.0		
Total Nickel	1.0	ug/L		U	0		3.0		
Total Selenium	2.2	ug/L		U	0		6.5		
Total Silver	0.7	ug/L		U	0		2.0		
Total Vanadium	0.8	ug/L		U	0		2.5		
Total Zinc	2.17	ug/L			0		5.0		

Matrix Spike Duplicate Water

Analytical Run #:	166644	Analysis Date:	11/20/2019	Prep Batch #:	74512	Matrix:	GROUND WATER
CTLab #:	357907	Analysis Time:	19:16	Prep Date/Time:	11/14/2019 12:49	Method:	SW6010
Parent Sample #:	357906	Analyst:	NAH	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Total Aluminum	753	ug/L	19.9		800	92	86 --- 115	1	20
Total Barium	805	ug/L	57.3		800	93	88 --- 113	2	20
Total Beryllium	19.2	ug/L	BDL		20.0	96	89 --- 112	3	20
Total Cadmium	17.9	ug/L	BDL		20.0	90	88 --- 113	2	20
Total Calcium	179000	ug/L	7790		200000	86	87 --- 113	2	20
Total Chromium	72.3	ug/L	BDL		80.0	90	90 --- 113	6	20
Total Cobalt	187	ug/L	3.0		200	92	89 --- 114	3	20
Total Copper	116	ug/L	1.8		100	114	86 --- 114	2	20
Total Iron	400	ug/L	82.0		400	80	87 --- 115	1	20
Total Lead	171	ug/L	BDL		200	86	86 --- 113	5	20
Total Magnesium	97200	ug/L	6740		100000	90	85 --- 113	2	20
Total Manganese	2110	ug/L	1900		200	105	90 --- 114	4	20
Total Nickel	190	ug/L	2.4		200	94	88 --- 113	3	20
Total Selenium	770	ug/L	BDL		800	96	83 --- 114	3	20
Total Silver	17.3	ug/L	BDL		20.0	86	84 --- 115	1	20
Total Vanadium	199	ug/L	BDL		200	100	90 --- 111	3	20
Total Zinc	203	ug/L	8.5		200	97	87 --- 115	2	20

Matrix Spike Water

Analytical Run #:	166644	Analysis Date:	11/20/2019	Prep Batch #:	74512	Matrix:	GROUND WATER
CTLab #:	357906	Analysis Time:	19:09	Prep Date/Time:	11/14/2019 12:49	Method:	SW6010
Parent Sample #:	357860	Analyst:	NAH	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Total Aluminum	763	ug/L	19.9		800	93	86 --- 115		
Total Barium	824	ug/L	57.3		800	96	88 --- 113		
Total Beryllium	19.7	ug/L	BDL		20.0	98	89 --- 112		
Total Cadmium	18.3	ug/L	BDL		20.0	92	88 --- 113		
Total Calcium	182000	ug/L	7790		200000	87	87 --- 113		
Total Chromium	76.4	ug/L	BDL		80.0	96	90 --- 113		
Total Cobalt	192	ug/L	3.0		200	94	89 --- 114		
Total Copper	118	ug/L	1.8		100	116	86 --- 114		
Total Iron	398	ug/L	82.0		400	79	87 --- 115		
Total Lead	179	ug/L	BDL		200	90	86 --- 113		
Total Magnesium	99400	ug/L	6740		100000	93	85 --- 113		
Total Manganese	2030	ug/L	1900		200	65	90 --- 114		
Total Nickel	195	ug/L	2.4		200	96	88 --- 113		
Total Selenium	792	ug/L	BDL		800	99	83 --- 114		
Total Silver	17.5	ug/L	BDL		20.0	88	84 --- 115		
Total Vanadium	205	ug/L	BDL		200	102	90 --- 111		
Total Zinc	207	ug/L	8.5		200	99	87 --- 115		

Duplicate

Analytical Run #:	166645	Analysis Date:	11/15/2019	Prep Batch #:	74512	Matrix:	GROUND WATER
CTLab #:	357905	Analysis Time:	12:15	Prep Date/Time:	11/14/2019 12:49	Method:	SW6010
Parent Sample #:	357860	Analyst:	MDS	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Total Potassium	1710	ug/L	1680				0.500	2	20

Duplicate

Analytical Run #:	166645	Analysis Date:	11/15/2019	Prep Batch #:	74512	Matrix:	GROUND WATER
CTLab #:	368011	Analysis Time:	12:15	Prep Date/Time:	11/14/2019 12:49	Method:	SW6010
Parent Sample #:	357860	Analyst:	MDS	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Total Sodium	17300	ug/L	17000				0.600	2	20

Lab Control Spike Water

Analytical Run #:	166645	Analysis Date:	11/15/2019	Prep Batch #:	74512	Matrix:	LIQUID
CTLab #:	357904	Analysis Time:	12:04	Prep Date/Time:	11/14/2019 12:49	Method:	SW6010
Parent Sample #:		Analyst:	MDS	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Total Potassium	99100	ug/L			100000	99	86 --- 114		

Lab Control Spike Water

Analytical Run #:	166645	Analysis Date:	11/15/2019	Prep Batch #:	74512	Matrix:	LIQUID
CTLab #:	368009	Analysis Time:	12:04	Prep Date/Time:	11/14/2019 12:49	Method:	SW6010
Parent Sample #:		Analyst:	MDS	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Total Sodium	96500	ug/L			100000	96	87 --- 115		

Method Blank Water

Analytical Run #:	166645	Analysis Date:	11/15/2019	Prep Batch #:	74512	Matrix:	LIQUID
CTLab #:	357903	Analysis Time:	12:07	Prep Date/Time:	11/14/2019 12:49	Method:	SW6010
Parent Sample #:		Analyst:	MDS	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Total Potassium	102.0	ug/L			0		250		

Method Blank Water

Analytical Run #:	166645	Analysis Date:	11/15/2019	Prep Batch #:	74512	Matrix:	LIQUID
CTLab #:	368008	Analysis Time:	12:07	Prep Date/Time:	11/14/2019 12:49	Method:	SW6010
Parent Sample #:		Analyst:	MDS	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Total Sodium	100	ug/L		U	0		300		

Matrix Spike Duplicate Water

Analytical Run #:	166645	Analysis Date:	11/15/2019	Prep Batch #:	74512	Matrix:	GROUND WATER
CTLab #:	357907	Analysis Time:	12:26	Prep Date/Time:	11/14/2019 12:49	Method:	SW6010
Parent Sample #:	357906	Analyst:	MDS	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Total Potassium	99400	ug/L	1680		100000	98	86 --- 114	0	20

Matrix Spike Duplicate Water

Analytical Run #:	166645	Analysis Date:	11/15/2019	Prep Batch #:	74512	Matrix:	GROUND WATER
CTLab #:	368012	Analysis Time:	12:26	Prep Date/Time:	11/14/2019 12:49	Method:	SW6010
Parent Sample #:	368010	Analyst:	MDS	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Total Sodium	112000	ug/L	17000		100000	95	87 --- 115	1	20

Matrix Spike Water

Analytical Run #:	166645	Analysis Date:	11/15/2019	Prep Batch #:	74512	Matrix:	GROUND WATER
CTLab #:	357906	Analysis Time:	12:24	Prep Date/Time:	11/14/2019 12:49	Method:	SW6010
Parent Sample #:	357860	Analyst:	MDS	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Total Potassium	99700	ug/L	1680		100000	98	86 --- 114		

Matrix Spike Water

Analytical Run #:	166645	Analysis Date:	11/15/2019	Prep Batch #:	74512	Matrix:	GROUND WATER
CTLab #:	368010	Analysis Time:	12:24	Prep Date/Time:	11/14/2019 12:49	Method:	SW6010
Parent Sample #:	357860	Analyst:	MDS	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Total Sodium	111000	ug/L	17000		100000	94	87 --- 115		

Duplicate

Analytical Run #:	166646	Analysis Date:	11/20/2019	Prep Batch #:	74511	Matrix:	GROUND WATER
CTLab #:	357900	Analysis Time:	18:45	Prep Date/Time:	11/14/2019 12:49	Method:	SW6010
Parent Sample #:	357860	Analyst:	NAH	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Calcium	7.57	mg/L	7.5				100	1	20
Magnesium	6.89	mg/L	6.7				40	3	20

Lab Control Spike Water

Analytical Run #:	166646	Analysis Date:	11/20/2019	Prep Batch #:	74511	Matrix:	LIQUID
CTLab #:	357899	Analysis Time:	18:19	Prep Date/Time:	11/14/2019 12:49	Method:	SW6010
Parent Sample #:		Analyst:	NAH	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Calcium	174.0	mg/L			200.0	87	87 --- 113		
Magnesium	94.30	mg/L			100.0	94	85 --- 113		

Method Blank Water

Analytical Run #:	166646	Analysis Date:	11/20/2019	Prep Batch #:	74511	Matrix:	LIQUID
CTLab #:	357898	Analysis Time:	18:25	Prep Date/Time:	11/14/2019 12:49	Method:	SW6010
Parent Sample #:		Analyst:	NAH	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Calcium	0.0211	mg/L			0		0.050		
Magnesium	0.006	mg/L		U	0		0.020		

Matrix Spike Duplicate Water

Analytical Run #:	166646	Analysis Date:	11/20/2019	Prep Batch #:	74511	Matrix:	GROUND WATER
CTLab #:	357902	Analysis Time:	19:16	Prep Date/Time:	11/14/2019 12:49	Method:	SW6010
Parent Sample #:	357901	Analyst:	NAH	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Calcium	179	mg/L	7.5		200	86	87 --- 113	2	20
Magnesium	97.2	mg/L	6.7		100	90	85 --- 113	2	20

Matrix Spike Water

Analytical Run #:	166646	Analysis Date:	11/20/2019	Prep Batch #:	74511	Matrix:	GROUND WATER
CTLab #:	357901	Analysis Time:	19:09	Prep Date/Time:	11/14/2019 12:49	Method:	SW6010
Parent Sample #:	357860	Analyst:	NAH	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Calcium	182	mg/L	7.5		200	87	87 --- 113		
Magnesium	99.4	mg/L	6.7		100	93	85 --- 113		

Duplicate

Analytical Run #:	166737	Analysis Date:	11/19/2019	Prep Batch #:	74528	Matrix:	GROUND WATER
CTLab #:	358413	Analysis Time:	11:32	Prep Date/Time:	11/18/2019 09:30	Method:	SW7010
Parent Sample #:	357873	Analyst:	MDS	Prep Analyst:	MDS		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Dissolved Antimony	1.00	ug/L	<1.00	U			6.0	0	20

Lab Control Spike Water

Analytical Run #:	166737	Analysis Date:	11/19/2019	Prep Batch #:	74528	Matrix:	LIQUID
CTLab #:	358411	Analysis Time:	11:03	Prep Date/Time:	11/18/2019 09:30	Method:	SW7010
Parent Sample #:		Analyst:	MDS	Prep Analyst:	MDS		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Dissolved Antimony	15.35	ug/L			15.00	102	80 --- 120		

Method Blank Water

Analytical Run #:	166737	Analysis Date:	11/19/2019	Prep Batch #:	74528	Matrix:	LIQUID
CTLab #:	358410	Analysis Time:	11:08	Prep Date/Time:	11/18/2019 09:30	Method:	SW7010
Parent Sample #:		Analyst:	MDS	Prep Analyst:	MDS		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Dissolved Antimony	1.0	ug/L		U	0		2.0		

Matrix Spike Duplicate Water

Analytical Run #:	166737	Analysis Date:	11/19/2019	Prep Batch #:	74528	Matrix:	GROUND WATER
CTLab #:	358415	Analysis Time:	11:41	Prep Date/Time:	11/18/2019 09:30	Method:	SW7010
Parent Sample #:	358414	Analyst:	MDS	Prep Analyst:	MDS		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Dissolved Antimony	13.6	ug/L	BDL		15.0	91	80 --- 120	1	20

Matrix Spike Water

Analytical Run #:	166737	Analysis Date:	11/19/2019	Prep Batch #:	74528	Matrix:	GROUND WATER
CTLab #:	358414	Analysis Time:	11:36	Prep Date/Time:	11/18/2019 09:30	Method:	SW7010
Parent Sample #:	357873	Analyst:	MDS	Prep Analyst:	MDS		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Dissolved Antimony	13.7	ug/L	BDL		15.0	91	80 --- 120		

Lab Control Spike Water

Analytical Run #:	166738	Analysis Date:	11/19/2019	Prep Batch #:	74529	Matrix:	LIQUID
CTLab #:	358417	Analysis Time:	11:03	Prep Date/Time:	11/18/2019 09:30	Method:	SW7010
Parent Sample #:		Analyst:	MDS	Prep Analyst:	MDS		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Total Antimony	15.35	ug/L			15.00	102	80 --- 120		

Method Blank Water

Analytical Run #:	166738	Analysis Date:	11/19/2019	Prep Batch #:	74529	Matrix:	LIQUID
CTLab #:	358416	Analysis Time:	11:08	Prep Date/Time:	11/18/2019 09:30	Method:	SW7010
Parent Sample #:		Analyst:	MDS	Prep Analyst:	MDS		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Total Antimony	1.0	ug/L		U	0		2.0		

Lab Control Spike Water

Analytical Run #:	166817	Analysis Date:	11/21/2019	Prep Batch #:	74533	Matrix:	LIQUID
CTLab #:	358438	Analysis Time:	10:58	Prep Date/Time:	11/20/2019 09:20	Method:	SW7010
Parent Sample #:		Analyst:	MDS	Prep Analyst:	MDS		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Dissolved Thallium	14.08	ug/L			15.00	94	80 --- 120		

Method Blank Water

Analytical Run #:	166817	Analysis Date:	11/21/2019	Prep Batch #:	74533	Matrix:	LIQUID
CTLab #:	358437	Analysis Time:	11:04	Prep Date/Time:	11/20/2019 09:20	Method:	SW7010
Parent Sample #:		Analyst:	MDS	Prep Analyst:	MDS		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Dissolved Thallium	0.26	ug/L		U	0		0.80		

Lab Control Spike Water

Analytical Run #:	166818	Analysis Date:	11/21/2019	Prep Batch #:	74534	Matrix:	LIQUID
CTLab #:	358443	Analysis Time:	10:58	Prep Date/Time:	11/20/2019 09:20	Method:	SW7010
Parent Sample #:		Analyst:	MDS	Prep Analyst:	MDS		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Total Thallium	14.08	ug/L			15.00	94	80 --- 120		

Method Blank Water

Analytical Run #:	166818	Analysis Date:	11/21/2019	Prep Batch #:	74534	Matrix:	LIQUID
CTLab #:	358442	Analysis Time:	11:04	Prep Date/Time:	11/20/2019 09:20	Method:	SW7010
Parent Sample #:		Analyst:	MDS	Prep Analyst:	MDS		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Total Thallium	0.26	ug/L		U	0		0.80		

Lab Control Spike Water

Analytical Run #:	166907	Analysis Date:	11/22/2019	Prep Batch #:	74548	Matrix:	LIQUID
CTLab #:	358871	Analysis Time:	10:57	Prep Date/Time:	11/21/2019 12:10	Method:	SW7470A
Parent Sample #:		Analyst:	MDS	Prep Analyst:	BMM		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Total Mercury	1.91	ug/L			2.00	96	82 --- 119		

Method Blank Water

Analytical Run #:	166907	Analysis Date:	11/22/2019	Prep Batch #:	74548	Matrix:	LIQUID
CTLab #:	358870	Analysis Time:	11:01	Prep Date/Time:	11/21/2019 12:10	Method:	SW7470A
Parent Sample #:		Analyst:	MDS	Prep Analyst:	BMM		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Total Mercury	0.03	ug/L		U	0		0.06		

Lab Control Spike Water

Analytical Run #:	166915	Analysis Date:	11/22/2019	Prep Batch #:	74542	Matrix:	LIQUID
CTLab #:	358852	Analysis Time:	15:11	Prep Date/Time:	11/21/2019 11:12	Method:	SW7470A
Parent Sample #:		Analyst:	MDS	Prep Analyst:	BMM		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Dissolved Mercury	1.73	ug/L			2.00	86	82 --- 119		

Method Blank Water

Analytical Run #:	166915	Analysis Date:	11/22/2019	Prep Batch #:	74542	Matrix:	LIQUID
CTLab #:	358851	Analysis Time:	15:15	Prep Date/Time:	11/21/2019 11:12	Method:	SW7470A
Parent Sample #:		Analyst:	MDS	Prep Analyst:	BMM		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Dissolved Mercury	0.03	ug/L		U	0		0.06		

Lab Control Spike Water

Analytical Run #:	166952	Analysis Date:	11/23/2019	Prep Batch #:	74530	Matrix:	LIQUID
CTLab #:	358423	Analysis Time:	14:02	Prep Date/Time:	11/22/2019 11:15	Method:	SW7010
Parent Sample #:		Analyst:	MDS	Prep Analyst:	MDS		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Dissolved Arsenic	14.68	ug/L			15.00	98	80 --- 120		

Method Blank Water

Analytical Run #:	166952	Analysis Date:	11/23/2019	Prep Batch #:	74530	Matrix:	LIQUID
CTLab #:	358422	Analysis Time:	14:08	Prep Date/Time:	11/22/2019 11:15	Method:	SW7010
Parent Sample #:		Analyst:	MDS	Prep Analyst:	MDS		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Dissolved Arsenic	0.8	ug/L		U	0		2.0		

Lab Control Spike Water

Analytical Run #:	166953	Analysis Date:	11/23/2019	Prep Batch #:	74531	Matrix:	LIQUID
CTLab #:	358428	Analysis Time:	17:20	Prep Date/Time:	11/22/2019 11:15	Method:	SW7010
Parent Sample #:		Analyst:	MDS	Prep Analyst:	MDS		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Total Arsenic	13.99	ug/L			15.00	93	80 --- 120		

Method Blank Water

Analytical Run #:	166953	Analysis Date:	11/23/2019	Prep Batch #:	74531	Matrix:	LIQUID
CTLab #:	358427	Analysis Time:	17:26	Prep Date/Time:	11/22/2019 11:15	Method:	SW7010
Parent Sample #:		Analyst:	MDS	Prep Analyst:	MDS		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Total Arsenic	0.8	ug/L		U	0		2.0		

Lab Control Spike Duplicate Water

Analytical Run #:	166752	Analysis Date:	11/23/2019	Prep Batch #:		Matrix:	LIQUID
CTLab #:	362294	Analysis Time:	00:11	Prep Date/Time:		Method:	SW8260C
Parent Sample #:	362146	Analyst:	RLD	Prep Analyst:			

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits			RPD	RPD Limit
1,1,1,2-Tetrachloroethane	4.24	ug/L			4.00	106	78	---	124	11	20
1,1,1-Trichloroethane	4.56	ug/L			4.00	114	74	---	131	12	20
1,1,2,2-Tetrachloroethane	4.22	ug/L			4.00	106	71	---	121	6	20
1,1,2-Trichloroethane	4.44	ug/L			4.00	111	80	---	119	2	20
1,1-Dichloroethane	4.27	ug/L			4.00	107	77	---	125	9	20
1,1-Dichloroethene	4.70	ug/L			4.00	118	71	---	131	2	20
1,2,3-Trichloropropane	3.77	ug/L			4.00	94	73	---	122	6	20
1,2-Dibromo-3-chloropropane	4.00	ug/L			4.00	100	62	---	128	6	20
1,2-Dibromoethane	4.39	ug/L			4.00	110	77	---	121	3	20
1,2-Dichlorobenzene	4.19	ug/L			4.00	105	80	---	119	10	20
1,2-Dichloroethane	4.41	ug/L			4.00	110	73	---	128	3	20
1,2-Dichloropropane	4.51	ug/L			4.00	113	78	---	122	3	20
1,4-Dichloro-2-butene	3.26	ug/L			4.00	82	43	---	146	4	20
1,4-Dichlorobenzene	4.20	ug/L			4.00	105	79	---	118	10	20
2-Butanone	41.9	ug/L			40.0	105	56	---	143	4	20
2-Hexanone	38.7	ug/L			40.0	97	57	---	139	6	20
4-Methyl-2-pentanone	43.4	ug/L			40.0	108	67	---	130	4	20
Acetone	44.6	ug/L			40.0	112	39	---	160	3	20
Acrylonitrile	20.6	ug/L			20.0	103	63	---	135	1	20
Benzene	4.32	ug/L			4.00	108	79	---	120	5	20
Bromochloromethane	4.56	ug/L			4.00	114	78	---	123	0	20
Bromodichloromethane	4.42	ug/L			4.00	110	79	---	125	4	20
Bromoform	3.82	ug/L			4.00	96	66	---	130	8	20
Bromomethane	3.58	ug/L			4.00	90	53	---	141	32	20
Carbon disulfide	9.25	ug/L			8.00	116	64	---	133	1	20
Carbon tetrachloride	4.61	ug/L			4.00	115	72	---	136	11	20
Chlorobenzene	4.43	ug/L			4.00	111	82	---	118	9	20
Chloroethane	4.38	ug/L			4.00	110	60	---	138	7	20
Chloroform	4.31	ug/L			4.00	108	79	---	124	8	20
Chloromethane	4.29	ug/L			4.00	107	50	---	139	5	20
cis-1,2-Dichloroethene	4.48	ug/L			4.00	112	78	---	123	12	20
cis-1,3-Dichloropropene	4.09	ug/L			4.00	102	75	---	124	12	20
Dibromochloromethane	4.14	ug/L			4.00	104	74	---	126	7	20
Dibromomethane	4.49	ug/L			4.00	112	79	---	123	3	20
Ethylbenzene	4.35	ug/L			4.00	109	79	---	121	4	20
Iodomethane	5.17	ug/L			8.00	65	69	---	131	47	20
m & p-Xylene	8.80	ug/L			8.00	110	80	---	121	5	20
Methyl tert-butyl ether	4.31	ug/L			4.00	108	71	---	124	3	20
Methylene chloride	2.32	ug/L			4.00	58	74	---	124	7	20
o-Xylene	4.37	ug/L			4.00	109	78	---	122	7	20
Styrene	4.59	ug/L			4.00	115	78	---	123	16	20
Tetrachloroethene	4.63	ug/L			4.00	116	74	---	129	6	20
Toluene	4.13	ug/L			4.00	103	80	---	121	9	20

Lab Control Spike Duplicate Water

Analytical Run #:	166752	Analysis Date:	11/23/2019	Prep Batch #:		Matrix:	LIQUID
CTLab #:	362294	Analysis Time:	00:11	Prep Date/Time:		Method:	SW8260C
Parent Sample #:	362146	Analyst:	RLD	Prep Analyst:			

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
trans-1,2-Dichloroethene	4.50	ug/L			4.00	112	75 --- 124	8	20
trans-1,3-Dichloropropene	4.16	ug/L			4.00	104	73 --- 127	9	20
Trichloroethene	4.46	ug/L			4.00	112	79 --- 123	8	20
Trichlorofluoromethane	4.53	ug/L			4.00	113	65 --- 141	1	20
Vinyl Acetate	38.3	ug/L			40.0	96	54 --- 146	5	20
Vinyl chloride	4.62	ug/L			4.00	116	58 --- 137	5	20

Lab Control Spike Water

Analytical Run #:	166752	Analysis Date:	11/22/2019	Prep Batch #:		Matrix:	LIQUID
CTLab #:	362146	Analysis Time:	13:49	Prep Date/Time:		Method:	SW8260C
Parent Sample #:		Analyst:	RLD	Prep Analyst:			

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	4.72	ug/L			4.00	118	78 --- 124		20
1,1,1-Trichloroethane	4.04	ug/L			4.00	101	74 --- 131		20
1,1,2,2-Tetrachloroethane	4.48	ug/L			4.00	112	71 --- 121		20
1,1,2-Trichloroethane	4.51	ug/L			4.00	113	80 --- 119		20
1,1-Dichloroethane	4.68	ug/L			4.00	117	77 --- 125		20
1,1-Dichloroethene	4.62	ug/L			4.00	116	71 --- 131		20
1,2,3-Trichloropropane	4.02	ug/L			4.00	100	73 --- 122		20
1,2-Dibromo-3-chloropropane	4.25	ug/L			4.00	106	62 --- 128		20
1,2-Dibromoethane	4.54	ug/L			4.00	114	77 --- 121		20
1,2-Dichlorobenzene	4.61	ug/L			4.00	115	80 --- 119		20
1,2-Dichloroethane	4.53	ug/L			4.00	113	73 --- 128		20
1,2-Dichloropropane	4.63	ug/L			4.00	116	78 --- 122		20
1,4-Dichloro-2-butene	3.38	ug/L			4.00	84	43 --- 146		20
1,4-Dichlorobenzene	4.62	ug/L			4.00	116	79 --- 118		20
2-Butanone	43.6	ug/L			40.0	109	56 --- 143		20
2-Hexanone	41.0	ug/L			40.0	102	57 --- 139		20
4-Methyl-2-pentanone	45.0	ug/L			40.0	112	67 --- 130		20
Acetone	46.0	ug/L			40.0	115	39 --- 160		20
Acrylonitrile	20.9	ug/L			20.0	104	63 --- 135		20
Benzene	4.53	ug/L			4.00	113	79 --- 120		20
Bromochloromethane	4.55	ug/L			4.00	114	78 --- 123		20
Bromodichloromethane	4.58	ug/L			4.00	114	79 --- 125		20
Bromoform	4.14	ug/L			4.00	104	66 --- 130		20
Bromomethane	4.93	ug/L			4.00	123	53 --- 141		20
Carbon disulfide	9.15	ug/L			8.00	114	64 --- 133		20
Carbon tetrachloride	4.11	ug/L			4.00	103	72 --- 136		20
Chlorobenzene	4.03	ug/L			4.00	101	82 --- 118		20
Chloroethane	4.68	ug/L			4.00	117	60 --- 138		20
Chloroform	4.67	ug/L			4.00	117	79 --- 124		20
Chloromethane	4.50	ug/L			4.00	112	50 --- 139		20
cis-1,2-Dichloroethene	3.96	ug/L			4.00	99	78 --- 123		20
cis-1,3-Dichloropropene	4.61	ug/L			4.00	115	75 --- 124		20
Dibromochloromethane	4.44	ug/L			4.00	111	74 --- 126		20
Dibromomethane	4.62	ug/L			4.00	116	79 --- 123		20
Ethylbenzene	4.17	ug/L			4.00	104	79 --- 121		20
Iodomethane	8.35	ug/L			8.00	104	69 --- 131		20
m & p-Xylene	8.36	ug/L			8.00	104	80 --- 121		20
Methyl tert-butyl ether	4.46	ug/L			4.00	112	71 --- 124		20
Methylene chloride	2.48	ug/L			4.00	62	74 --- 124		20
o-Xylene	4.08	ug/L			4.00	102	78 --- 122		20
Styrene	3.91	ug/L			4.00	98	78 --- 123		20
Tetrachloroethene	4.34	ug/L			4.00	108	74 --- 129		20
Toluene	4.53	ug/L			4.00	113	80 --- 121		20

Lab Control Spike Water

Analytical Run #:	166752	Analysis Date:	11/22/2019	Prep Batch #:		Matrix:	LIQUID
CTLab #:	362146	Analysis Time:	13:49	Prep Date/Time:		Method:	SW8260C
Parent Sample #:		Analyst:	RLD	Prep Analyst:			

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
trans-1,2-Dichloroethene	4.16	ug/L			4.00	104	75 --- 124		20
trans-1,3-Dichloropropene	4.54	ug/L			4.00	114	73 --- 127		20
Trichloroethene	4.12	ug/L			4.00	103	79 --- 123		20
Trichlorofluoromethane	4.58	ug/L			4.00	114	65 --- 141		20
Vinyl Acetate	40.4	ug/L			40.0	101	54 --- 146		20
Vinyl chloride	4.38	ug/L			4.00	110	58 --- 137		20

Method Blank Water

Analytical Run #:	166752	Analysis Date:	11/22/2019	Prep Batch #:		Matrix:	LIQUID
CTLab #:	362194	Analysis Time:	15:15	Prep Date/Time:		Method:	SW8260C
Parent Sample #:		Analyst:	RLD	Prep Analyst:			

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	0.018	ug/L		U	0		0.100		
1,1,1-Trichloroethane	0.018	ug/L		U	0		0.050		
1,1,2,2-Tetrachloroethane	0.014	ug/L		U	0		0.050		
1,1,2-Trichloroethane	0.019	ug/L		U	0		0.100		
1,1-Dichloroethane	0.015	ug/L		U	0		0.050		
1,1-Dichloroethene	0.04	ug/L		U	0		0.10		
1,2,3-Trichloropropane	0.07	ug/L		U	0		0.10		
1,2-Dibromo-3-chloropropane	0.07	ug/L		U	0		0.10		
1,2-Dibromoethane	0.04	ug/L		U	0		0.10		
1,2-Dichlorobenzene	0.022	ug/L		U	0		0.050		
1,2-Dichloroethane	0.024	ug/L		U	0		0.050		
1,2-Dichloropropane	0.024	ug/L		U	0		0.050		
1,4-Dichloro-2-butene	0.06	ug/L		U	0		0.10		
1,4-Dichlorobenzene	0.017	ug/L		U	0		0.050		
2-Butanone	0.5	ug/L		U	0		1.0		
2-Hexanone	0.3	ug/L		U	0		1.0		
4-Methyl-2-pentanone	0.22	ug/L		U	0		0.50		
Acetone	0.8	ug/L		U	0		1.0		
Acrylonitrile	0.16	ug/L		U	0		0.50		
Benzene	0.019	ug/L		U	0		0.050		
Bromochloromethane	0.04	ug/L		U	0		0.10		
Bromodichloromethane	0.028	ug/L		U	0		0.050		
Bromoform	0.03	ug/L		U	0		0.10		
Bromomethane	0.06	ug/L		U	0		0.10		
Carbon disulfide	0.014	ug/L		U	0		0.10		
Carbon tetrachloride	0.029	ug/L		U	0		0.050		
Chlorobenzene	0.015	ug/L		U	0		0.050		
Chloroethane	0.023	ug/L		U	0		0.100		
Chloroform	0.023	ug/L		U	0		0.050		
Chloromethane	0.03	ug/L		U	0		0.05		
cis-1,2-Dichloroethene	0.027	ug/L		U	0		0.050		
cis-1,3-Dichloropropene	0.020	ug/L		U	0		0.050		
Dibromochloromethane	0.03	ug/L		U	0		0.05		
Dibromomethane	0.03	ug/L		U	0		0.05		
Ethylbenzene	0.016	ug/L		U	0		0.050		
Iodomethane	0.246	ug/L			0		0.40		
m & p-Xylene	0.03	ug/L		U	0		0.10		
Methyl tert-butyl ether	0.017	ug/L		U	0		0.050		
Methylene chloride	0.03	ug/L		U	0		0.20		
o-Xylene	0.017	ug/L		U	0		0.050		
Styrene	0.011	ug/L		U	0		0.050		
Tetrachloroethene	0.023	ug/L		U	0		0.050		
Toluene	0.017	ug/L		U	0		0.050		

Method Blank Water

Analytical Run #:	166752	Analysis Date:	11/22/2019	Prep Batch #:		Matrix:	LIQUID
CTLab #:	362194	Analysis Time:	15:15	Prep Date/Time:		Method:	SW8260C
Parent Sample #:		Analyst:	RLD	Prep Analyst:			

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
trans-1,2-Dichloroethene	0.029	ug/L		U	0		0.050		
trans-1,3-Dichloropropene	0.03	ug/L		U	0		0.10		
Trichloroethene	0.025	ug/L		U	0		0.050		
Trichlorofluoromethane	0.029	ug/L		U	0		0.100		
Vinyl Acetate	0.4	ug/L		U	0		1.0		
Vinyl chloride	0.019	ug/L		U	0		0.050		

CT LABORATORIES
delivering more than data from your environmental analyses

Sample Condition Report

Folder #: 149586
Client: ECC

Print Date / Time: 11/13/2019 15:41
Received Date / Time / By: 11/13/2019 10:06 EKB

Project Name: PHILLIPS ARMY RUBBLE LF
Project Phase:

Log-In Date / Time / By: 11/13/2019 15:41 JLS
Project #: 5406 PM: ETK

Coolers: UNMARKED
Custody Seals Present : **Y**

Temperature: 3.5 C On Ice: **Y**
COC Present:? **Y** Complete? **Y**

Seal Intact? **Y**
Ship Method: UPS
Adequate Packaging: **Y**

Numbers: DATED AND SIGNED
Tracking Number: 1Z11R4831399146203
Temp Blank Enclosed? **Y**

Notes: SAMPLES REC'D IN GOOD CONDITION ON ICE
1 CUSTODY SEAL PRESENT AND INTACT, DATED 11-12-19 AND SIGNED

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
357860 PAALF-PW16-111219				
	UNPRES PL	1	/	ALK,Anions,CND,pH,TURB
	Total # of Containers of Type	(***UNPRES PL***) = **1**		
357860 PAALF-PW16-111219				
	HNO3	1	Y /	AS,HG,HRD,ICP,K,SB,TL
	Total # of Containers of Type	(***HNO3***) = **1**		
357860 PAALF-PW16-111219				
	H2SO4 PL	1	Y /	COD,NH3N
	Total # of Containers of Type	(***H2SO4 PL***) = **1**		
357860 PAALF-PW16-111219				
	VOA HCL	1	/	VOC
	VOA HCL	1	/	VOC
	VOA HCL	1	/	VOC
	Total # of Containers of Type	(***VOA HCL***) = **3**		

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
357861 PAALF-PW16-111219F				
	HNO3	1	Y /	AS,HG,ICP,K,SB,TL
	Total # of Containers of Type	(***HNO3***) = **1**		

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
357872 PAALF-PW20-111219				
	UNPRES PL	1	/	ALK,Anions,CND,pH,TURB
	Total # of Containers of Type	(***UNPRES PL***) = **1**		
357872 PAALF-PW20-111219				
	HNO3	1	Y /	AS,HG,HRD,ICP,K,SB,TL
	Total # of Containers of Type	(***HNO3***) = **1**		
357872 PAALF-PW20-111219				
	H2SO4 PL	1	Y /	COD,NH3N
	Total # of Containers of Type	(***H2SO4 PL***) = **1**		

357872 PAALF-PW20-111219

VOA HCL	1		/	VOC
VOA HCL	1		/	VOC
VOA HCL	1		/	VOC

Total # of Containers of Type (*VOA HCL*) = 3

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests

357873 PAALF-PW20-111219F

HNO3	1	Y	/	AS,HG,ICP,K,SB,TL

Total # of Containers of Type (*HNO3*) = 1

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests

357874 PAALF-TB-111219

VOA HCL	1		/	VOC
VOA HCL	1		/	VOC

Total # of Containers of Type (*VOA HCL*) = 2

Condition Code	*Condition Description*
1	Sample Received OK

149586

Rev. 02/2017

Page 1 of 1

Folder # 149586
Company: ECC
Project: RUBBLE LF
Logged By: JLS PM: ET

230 Lange Court, Baraboo, WI 53913
608-356-2760 Fax 608-356-2766
www.ctlaboratories.com

Company: ECC
Project Contact: Jennifer Schaefer
Telephone: 410-671-2970
Project Name: PAALF Semi-Annual GW Sampling Event – November 2019
Project #: 5406
Location: APG, MD
Sampled By: G. Carmichael, C. Bigelow

Program: 1 RCRA SDWA NPDES
Solid Waste Other _____
PO# 5406

Report To:
EMAIL: JSchaefer@ecc.net
Company: ECC
Address: 1304 Governor Ct. Ste. 101 Abingdon, MD 21009

Invoice To:*
EMAIL:
Company:
Address: SAME

*Party listed is responsible for payment of invoice as per CT Laboratories' terms and conditions

Client Special Instructions
Tot metals w/o Na
Sb, As, Tl as GFA

Matrix:
GW – groundwater SW - surface water WW - wastewater DW - drinking water
S - soil/sediment SL - sludge A - air M - misc/waste

Turnaround Time
Normal RUSH*
Date Needed: _____
Rush analysis requires prior CT Laboratories' approval
Surcharges:
24 hr 200%
2-3 days 100%
4-9 days 50%

ANALYSES REQUESTED

Collection Date	Collection Time	Matrix	Grab/ Comp	Sample #	Sample ID Description	Filtered? Y/N	VOCs (8260C)	Total Metals (6010C, 7470C)	Dissolved Metals (6010C, 7470C)	Hardness (410.4)	Anions (Nitrate, Nitrite, Sulfate, Chloride)	Alkalinity (310.2)	Specific Conductance (9050C)	pH (9040C)	Turbidity (180.1)	Total Dissolved Solids (2540C)	Ammonia (350.1)	Chemical Oxygen Demand (5340B)			Total # Containers	Designated MS/MSD	CT Lab ID # (Lab use only)
11/12/19	12:00	GW	Grab		PAALF-PW16-111219	N	3	1		1	1	1	1	1	1	1	1	1			6		357860
	12:00				PAALF-PW16-111219F	Y			1												1		357861
	15:05				PAALF-PW20-111219	N	3	1		1	1	1	1	1	1	1	1	1			6		357872
	15:05				PAALF-PW20-111219F	Y			1												1		357873
	09:00				PAALF-TB-111219	N	2														2		357874

Fill in Spaces with Bottles per Test

Relinquished By:	Date/Time	Received By:	Date/Time	Lab Use Only
G. Carmichael	11/12/19 1600	ekb	11-13-19 10:06	Ice Present Yes No
Received by:	Date/Time	Received for Laboratory by:	Date/Time	Temp 3.5 IR Gun 24
			11/13/19 1541	Cooler # XXXX

Cooler Receipt Form

Ice Present YES NO

Temperature 3.5

IR Gun # 24

Initials elk

Date 11-13-19 Time 10:06A

Cooler #: XXXX

ECC
410-671-2970
ECC
1304 GOVERNOR COURT
ABINGDON MD 21009

34 LBS

1 OF 1

SHIP TO:
SAMPLE RECEIVING
608-356-2760
CT LABORATORIES
1230 LANGE COURT
BARABOO WI 53913-3109

WI 539 0-10

UPS NEXT DAY AIR SAVER 1P

TRACKING #: 1Z 11R 483 13 9914 6203

BILLING: F/C BILL RECEIVER

US 21.5.48. WNINV50 20.0A 10/2019

CUSTODY SEAL
DATE 11-13-19
SIGNATURE ECC

QEC
Quality Environmental Containers
800-255-3950 • www.qecusa.com

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www.ctlaboratories.com

REVISED

ANALYTICAL SUMMARY REPORT

This report at a minimum contains the following information:

Analytical Report of Test Results
Description of QC Qualifiers
Chain of Custody (copy)
Quality Control Summary (if applicable)
Case Narrative (if applicable)
Correspondence with Client (if applicable)

Revision Date 12/10/2019
Reason for Revision
Added missing sodium results.

This report has been specifically prepared to satisfy project or program requirements. These results are in compliance with NELAC requirements for parameters where accreditation is required or available, unless otherwise noted in the case narrative.

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

REVISED

ANALYTICAL SAMPLE DATA

ECC
JEN SCHAEFER
1304 GOVERNOR CT
SUITE 101
ABINGDON, MD 21009

Project Name: PHILLIPS ARMY RUBBLE LF
Project Phase:
Project #: 5406
Folder #: 149603
Purchase Order #: 5406
Contract #: 3321

Arrival Temperature: 2.1
Report Date: 12/05/2019
Date Received: 11/14/2019
Reprint Date: 12/10/2019

CT LAB#: 358080 Sample Description: PAALF-TB-1111319 Client Sample #: Sampled: 11/13/2019 0900

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Organic Results												
1,1,1,2-Tetrachloroethane	<0.10	ug/L	0.018	0.10	0.20	0.20	1.00	U		11/22/19 16:11	RLD	EPA 8260C
1,1,1-Trichloroethane	<0.050	ug/L	0.018	0.050	0.10	0.10	1.00	U		11/22/19 16:11	RLD	EPA 8260C
1,1,2,2-Tetrachloroethane	<0.050	ug/L	0.014	0.050	0.10	0.10	1.00	U		11/22/19 16:11	RLD	EPA 8260C
1,1,2-Trichloroethane	<0.10	ug/L	0.019	0.10	0.20	0.20	1.00	U		11/22/19 16:11	RLD	EPA 8260C
1,1-Dichloroethane	<0.050	ug/L	0.015	0.050	0.10	0.10	1.00	U		11/22/19 16:11	RLD	EPA 8260C
1,1-Dichloroethene	<0.10	ug/L	0.040	0.10	0.20	0.20	1.00	U		11/22/19 16:11	RLD	EPA 8260C
1,2,3-Trichloropropane	<0.10	ug/L	0.070	0.10	0.20	0.20	1.00	U		11/22/19 16:11	RLD	EPA 8260C
1,2-Dibromo-3-chloropropane	<0.10	ug/L	0.070	0.10	0.20	0.20	1.00	U		11/22/19 16:11	RLD	EPA 8260C
1,2-Dibromoethane	<0.10	ug/L	0.040	0.10	0.20	0.20	1.00	U		11/22/19 16:11	RLD	EPA 8260C
1,2-Dichlorobenzene	<0.050	ug/L	0.022	0.050	0.10	0.10	1.00	U		11/22/19 16:11	RLD	EPA 8260C
1,2-Dichloroethane	<0.050	ug/L	0.024	0.050	0.10	0.10	1.00	U		11/22/19 16:11	RLD	EPA 8260C
1,2-Dichloropropane	<0.050	ug/L	0.024	0.050	0.10	0.10	1.00	U		11/22/19 16:11	RLD	EPA 8260C
1,4-Dichloro-2-butene	<0.10	ug/L	0.060	0.10	0.20	0.20	1.00	U		11/22/19 16:11	RLD	EPA 8260C
1,4-Dichlorobenzene	<0.050	ug/L	0.017	0.050	0.10	0.10	1.00	U		11/22/19 16:11	RLD	EPA 8260C
2-Butanone	<1.0	ug/L	0.50	1.0	2.0	2.0	1.00	U		11/22/19 16:11	RLD	EPA 8260C
2-Hexanone	<1.0	ug/L	0.30	1.0	2.0	2.0	1.00	U		11/22/19 16:11	RLD	EPA 8260C

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB#: 358080 Sample Description: PAALF-TB-1111319 Client Sample #: Sampled: 11/13/2019 0900

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
4-Methyl-2-pentanone	<0.50	ug/L	0.22	0.50	1.0	1.0	1.00	U		11/22/19 16:11	RLD	EPA 8260C
Acetone	***10***	ug/L	0.80	1.0	2.0	2.0	1.00			11/22/19 16:11	RLD	EPA 8260C
Acrylonitrile	<0.50	ug/L	0.16	0.50	1.0	1.0	1.00	U		11/22/19 16:11	RLD	EPA 8260C
Benzene	<0.050	ug/L	0.019	0.050	0.10	0.10	1.00	U		11/22/19 16:11	RLD	EPA 8260C
Bromochloromethane	<0.10	ug/L	0.040	0.10	0.20	0.20	1.00	U		11/22/19 16:11	RLD	EPA 8260C
Bromodichloromethane	<0.050	ug/L	0.028	0.050	0.10	0.10	1.00	U		11/22/19 16:11	RLD	EPA 8260C
Bromoform	<0.050	ug/L	0.030	0.050	0.20	0.20	1.00	U		11/22/19 16:11	RLD	EPA 8260C
Bromomethane	<0.10	ug/L	0.060	0.10	0.20	0.20	1.00	U Z,Y		11/22/19 16:11	RLD	EPA 8260C
Carbon disulfide	<0.040	ug/L	0.014	0.040	0.20	0.20	1.00	U		11/22/19 16:11	RLD	EPA 8260C
Carbon tetrachloride	<0.050	ug/L	0.029	0.050	0.10	0.10	1.00	U		11/22/19 16:11	RLD	EPA 8260C
Chlorobenzene	<0.050	ug/L	0.015	0.050	0.10	0.10	1.00	U		11/22/19 16:11	RLD	EPA 8260C
Chloroethane	<0.050	ug/L	0.023	0.050	0.20	0.20	1.00	U		11/22/19 16:11	RLD	EPA 8260C
Chloroform	<0.050	ug/L	0.023	0.050	0.10	0.10	1.00	U		11/22/19 16:11	RLD	EPA 8260C
Chloromethane	***0.035***	ug/L	0.030	0.050	0.10	0.10	1.00	J		11/22/19 16:11	RLD	EPA 8260C
cis-1,2-Dichloroethene	<0.050	ug/L	0.027	0.050	0.10	0.10	1.00	U		11/22/19 16:11	RLD	EPA 8260C
cis-1,3-Dichloropropene	<0.050	ug/L	0.020	0.050	0.10	0.10	1.00	U		11/22/19 16:11	RLD	EPA 8260C
Dibromochloromethane	<0.050	ug/L	0.030	0.050	0.10	0.10	1.00	U		11/22/19 16:11	RLD	EPA 8260C
Dibromomethane	<0.050	ug/L	0.030	0.050	0.10	0.10	1.00	U		11/22/19 16:11	RLD	EPA 8260C
Ethylbenzene	<0.050	ug/L	0.016	0.050	0.10	0.10	1.00	U		11/22/19 16:11	RLD	EPA 8260C
Iodomethane	<0.40	ug/L	0.20	0.40	0.80	0.80	1.00	U Q,Y		11/22/19 16:11	RLD	EPA 8260C
m & p-Xylene	<0.10	ug/L	0.030	0.10	0.20	0.20	1.00	U		11/22/19 16:11	RLD	EPA 8260C
Methyl tert-butyl ether	<0.050	ug/L	0.017	0.050	0.10	0.10	1.00	U		11/22/19 16:11	RLD	EPA 8260C
Methylene chloride	<0.10	ug/L	0.030	0.10	0.40	0.40	1.00	U Z,Q		11/22/19 16:11	RLD	EPA 8260C
o-Xylene	<0.050	ug/L	0.017	0.050	0.10	0.10	1.00	U		11/22/19 16:11	RLD	EPA 8260C
Styrene	<0.020	ug/L	0.011	0.020	0.10	0.10	1.00	U		11/22/19 16:11	RLD	EPA 8260C
Tetrachloroethene	<0.050	ug/L	0.023	0.050	0.10	0.10	1.00	U		11/22/19 16:11	RLD	EPA 8260C
Toluene	<0.050	ug/L	0.017	0.050	0.10	0.10	1.00	U		11/22/19 16:11	RLD	EPA 8260C
trans-1,2-Dichloroethene	<0.050	ug/L	0.029	0.050	0.10	0.10	1.00	U		11/22/19 16:11	RLD	EPA 8260C

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB#: 358080 Sample Description: PAALF-TB-1111319 Client Sample #: Sampled: 11/13/2019 0900

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
trans-1,3-Dichloropropene	<0.050	ug/L	0.030	0.050	0.20	0.20	1.00	U		11/22/19 16:11	RLD	EPA 8260C
Trichloroethene	<0.050	ug/L	0.025	0.050	0.10	0.10	1.00	U		11/22/19 16:11	RLD	EPA 8260C
Trichlorofluoromethane	<0.050	ug/L	0.029	0.050	0.20	0.20	1.00	U		11/22/19 16:11	RLD	EPA 8260C
Vinyl Acetate	<1.0	ug/L	0.40	1.0	2.0	2.0	1.00	U		11/22/19 16:11	RLD	EPA 8260C
Vinyl chloride	<0.020	ug/L	0.013	0.020	0.10	0.10	1.00	U		11/22/19 16:11	RLD	EPA 8260C
1,2 Dichloroethane-d4	98	% Recovery	81			118	1.00			11/22/19 16:11	RLD	EPA 8260C
Bromofluorobenzene	97	% Recovery	85			114	1.00			11/22/19 16:11	RLD	EPA 8260C
d8-Toluene	98	% Recovery	89			112	1.00			11/22/19 16:11	RLD	EPA 8260C
Dibromofluoromethane	101	% Recovery	80			119	1.00			11/22/19 16:11	RLD	EPA 8260C

CT LAB#: 358081 Sample Description: PAALF-PW11-111319 Client Sample #: Sampled: 11/13/2019 1225

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method	
Inorganic Results													
Conductivity	***490.0***	uS/cm	1	1	1	1	1.00			11/14/19 13:05	CLB	EPA 9050A	
pH	***6.10***	S.U.	0.1	0.1	0.1	0.1	1.00			11/14/19 14:05	GMJ	EPA 9040C	^
Ammonia Nitrogen	***0.067***	mg/L	0.022	0.10	0.20	0.20	1.00	J		11/20/19 14:45	SRW	EPA 350.1	^
Alkalinity	***56***	mg/L	6.0	15	30	30	1.00			11/18/19 16:21	SRW	EPA 310.2	^
COD	<35	mg/L	15	35	75	75	1.00	U	11/19/2019 10:35	11/19/19 14:44	GMJ	EPA 410.4	^
Total Dissolved Solids	***250***	mg/L	10	10	10	10	1.00			11/14/19 13:45	CLB	SM 2540C	
Chloride	***54***	mg/L	5.0	7.5	15	15	5.00			11/15/19 09:13	TMG	EPA 9056A	
Nitrate Nitrogen	<0.20	mg/L	0.12	0.20	0.40	0.40	1.00	U		11/14/19 19:04	TMG	EPA 9056A	
Nitrite Nitrogen	<0.30	mg/L	0.14	0.30	0.60	0.60	1.00	U		11/14/19 19:04	TMG	EPA 9056A	
Sulfate	***73***	mg/L	4.0	7.5	15	15	5.00			11/15/19 09:13	TMG	EPA 9056A	

Metals Results

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB#: 358081 Sample Description: PAALF-PW11-111319 Client Sample #: Sampled: 11/13/2019 1225

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method	
Turbidity	<1.0	NTU	1.0	1.0	1.0	1.0	1.00	U		11/14/19 15:00	NAH	EPA 180.1	
Total Antimony	<3.0	ug/L	1.0	3.0	6.0	6.0	1.00	U	11/18/2019 09:30	11/19/19 12:34	MDS	EPA 7010	^
Total Arsenic	<2.0	ug/L	0.80	2.0	4.0	4.0	1.00	U	11/22/2019 11:15	11/23/19 17:44	MDS	EPA 7010	^
Total Thallium	<0.80	ug/L	0.26	0.80	1.6	1.6	1.00	U	11/20/2019 09:20	11/21/19 12:54	MDS	EPA 7010	^
Total Hardness	***79***	mg/L	0.067	0.21	0.41	0.41	1.00		11/14/2019 12:16	11/20/19 12:34	NAH	SM2340B/6010C	
Total Potassium	***2100***	ug/L	90	250	500	500	1.00		11/14/2019 12:16	11/21/19 16:46	MDS	EPA 6010C	
Total Sodium	***49700***	ug/L	100	300	600	600	1.00		11/14/2019 12:16	11/21/19 16:46	MDS	EPA 6010C	
Total Aluminum	***17.7***	ug/L	6.0	18	36	36	1.00	J	11/14/2019 12:16	11/20/19 12:34	NAH	EPA 6010C	
Total Barium	***56.5***	ug/L	0.29	0.90	1.8	1.8	1.00		11/14/2019 12:16	11/20/19 12:34	NAH	EPA 6010C	
Total Beryllium	***0.12***	ug/L	0.10	0.30	0.60	0.60	1.00	J	11/14/2019 12:16	11/20/19 12:34	NAH	EPA 6010C	
Total Cadmium	<1.0	ug/L	0.30	1.0	2.0	2.0	1.00	U	11/14/2019 12:16	11/20/19 12:34	NAH	EPA 6010C	
Total Calcium	***14300***	ug/L	17	50	100	100	1.00		11/14/2019 12:16	11/20/19 12:34	NAH	EPA 6010C	
Total Chromium	<2.0	ug/L	0.60	2.0	4.0	4.0	1.00	U	11/14/2019 12:16	11/20/19 12:34	NAH	EPA 6010C	
Total Cobalt	***18.0***	ug/L	0.70	2.0	4.0	4.0	1.00		11/14/2019 12:16	11/20/19 12:34	NAH	EPA 6010C	
Total Copper	***1.4***	ug/L	1.2	3.5	7.0	7.0	1.00	J	11/14/2019 12:16	11/20/19 12:34	NAH	EPA 6010C	
Total Iron	***189***	ug/L	16	50	100	100	1.00	B,M	11/14/2019 12:16	11/20/19 12:34	NAH	EPA 6010C	
Total Lead	<2.0	ug/L	1.4	2.0	4.0	4.0	1.00	U	11/14/2019 12:16	11/20/19 12:34	NAH	EPA 6010C	
Total Magnesium	***10500***	ug/L	6.0	20	40	40	1.00		11/14/2019 12:16	11/20/19 12:34	NAH	EPA 6010C	
Total Manganese	***632***	ug/L	0.70	2.0	4.0	4.0	1.00		11/14/2019 12:16	11/20/19 12:34	NAH	EPA 6010C	
Total Nickel	***10.2***	ug/L	1.0	3.0	6.0	6.0	1.00		11/14/2019 12:16	11/20/19 12:34	NAH	EPA 6010C	
Total Selenium	<6.5	ug/L	2.2	6.5	13	13	1.00	U	11/14/2019 12:16	11/20/19 12:34	NAH	EPA 6010C	
Total Silver	<2.0	ug/L	0.70	2.0	4.0	4.0	1.00	U	11/14/2019 12:16	11/20/19 12:34	NAH	EPA 6010C	
Total Vanadium	<2.5	ug/L	0.80	2.5	5.0	5.0	1.00	U	11/14/2019 12:16	11/20/19 12:34	NAH	EPA 6010C	
Total Zinc	***19.3***	ug/L	1.6	5.0	10	10	1.00	B	11/14/2019 12:16	11/20/19 12:34	NAH	EPA 6010C	
Total Mercury	***0.35***	ug/L	0.030	0.060	0.12	0.12	1.00		11/21/2019 12:10	11/22/19 13:12	MDS	EPA 7470A	

Organic Results

1,1,1,2-Tetrachloroethane	<0.10	ug/L	0.018	0.10	0.20	0.20	1.00	U		11/22/19 18:04	RLD	EPA 8260C	

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB#: 358081 Sample Description: PAALF-PW11-111319 Client Sample #: Sampled: 11/13/2019 1225

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
1,1,1-Trichloroethane	<0.050	ug/L	0.018	0.050	0.10	0.10	1.00	U		11/22/19 18:04	RLD	EPA 8260C
1,1,2,2-Tetrachloroethane	<0.050	ug/L	0.014	0.050	0.10	0.10	1.00	U		11/22/19 18:04	RLD	EPA 8260C
1,1,2-Trichloroethane	<0.10	ug/L	0.019	0.10	0.20	0.20	1.00	U		11/22/19 18:04	RLD	EPA 8260C
1,1-Dichloroethane	<0.050	ug/L	0.015	0.050	0.10	0.10	1.00	U		11/22/19 18:04	RLD	EPA 8260C
1,1-Dichloroethene	***0.074***	ug/L	0.040	0.10	0.20	0.20	1.00	J		11/22/19 18:04	RLD	EPA 8260C
1,2,3-Trichloropropane	<0.10	ug/L	0.070	0.10	0.20	0.20	1.00	U		11/22/19 18:04	RLD	EPA 8260C
1,2-Dibromo-3-chloropropane	<0.10	ug/L	0.070	0.10	0.20	0.20	1.00	U		11/22/19 18:04	RLD	EPA 8260C
1,2-Dibromoethane	<0.10	ug/L	0.040	0.10	0.20	0.20	1.00	U		11/22/19 18:04	RLD	EPA 8260C
1,2-Dichlorobenzene	***0.32***	ug/L	0.022	0.050	0.10	0.10	1.00			11/22/19 18:04	RLD	EPA 8260C
1,2-Dichloroethane	<0.050	ug/L	0.024	0.050	0.10	0.10	1.00	U		11/22/19 18:04	RLD	EPA 8260C
1,2-Dichloropropane	<0.050	ug/L	0.024	0.050	0.10	0.10	1.00	U		11/22/19 18:04	RLD	EPA 8260C
1,4-Dichloro-2-butene	<0.10	ug/L	0.060	0.10	0.20	0.20	1.00	U		11/22/19 18:04	RLD	EPA 8260C
1,4-Dichlorobenzene	***3.7***	ug/L	0.017	0.050	0.10	0.10	1.00			11/22/19 18:04	RLD	EPA 8260C
2-Butanone	<1.0	ug/L	0.50	1.0	2.0	2.0	1.00	U		11/22/19 18:04	RLD	EPA 8260C
2-Hexanone	<1.0	ug/L	0.30	1.0	2.0	2.0	1.00	U		11/22/19 18:04	RLD	EPA 8260C
4-Methyl-2-pentanone	<0.50	ug/L	0.22	0.50	1.0	1.0	1.00	U		11/22/19 18:04	RLD	EPA 8260C
Acetone	<1.0	ug/L	0.80	1.0	2.0	2.0	1.00	U		11/22/19 18:04	RLD	EPA 8260C
Acrylonitrile	<0.50	ug/L	0.16	0.50	1.0	1.0	1.00	U		11/22/19 18:04	RLD	EPA 8260C
Benzene	***0.24***	ug/L	0.019	0.050	0.10	0.10	1.00			11/22/19 18:04	RLD	EPA 8260C
Bromochloromethane	<0.10	ug/L	0.040	0.10	0.20	0.20	1.00	U		11/22/19 18:04	RLD	EPA 8260C
Bromodichloromethane	<0.050	ug/L	0.028	0.050	0.10	0.10	1.00	U		11/22/19 18:04	RLD	EPA 8260C
Bromoform	<0.050	ug/L	0.030	0.050	0.20	0.20	1.00	U		11/22/19 18:04	RLD	EPA 8260C
Bromomethane	<0.10	ug/L	0.060	0.10	0.20	0.20	1.00	U Z,Y		11/22/19 18:04	RLD	EPA 8260C
Carbon disulfide	<0.040	ug/L	0.014	0.040	0.20	0.20	1.00	U		11/22/19 18:04	RLD	EPA 8260C
Carbon tetrachloride	<0.050	ug/L	0.029	0.050	0.10	0.10	1.00	U		11/22/19 18:04	RLD	EPA 8260C
Chlorobenzene	***13***	ug/L	0.015	0.050	0.10	0.10	1.00			11/22/19 18:04	RLD	EPA 8260C
Chloroethane	<0.050	ug/L	0.023	0.050	0.20	0.20	1.00	U		11/22/19 18:04	RLD	EPA 8260C
Chloroform	<0.050	ug/L	0.023	0.050	0.10	0.10	1.00	U		11/22/19 18:04	RLD	EPA 8260C

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB#: 358081 Sample Description: PAALF-PW11-111319 Client Sample #: Sampled: 11/13/2019 1225

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Chloromethane	<0.050	ug/L	0.030	0.050	0.10	0.10	1.00	U		11/22/19 18:04	RLD	EPA 8260C
cis-1,2-Dichloroethene	***0.51***	ug/L	0.027	0.050	0.10	0.10	1.00			11/22/19 18:04	RLD	EPA 8260C
cis-1,3-Dichloropropene	<0.050	ug/L	0.020	0.050	0.10	0.10	1.00	U		11/22/19 18:04	RLD	EPA 8260C
Dibromochloromethane	<0.050	ug/L	0.030	0.050	0.10	0.10	1.00	U		11/22/19 18:04	RLD	EPA 8260C
Dibromomethane	<0.050	ug/L	0.030	0.050	0.10	0.10	1.00	U		11/22/19 18:04	RLD	EPA 8260C
Ethylbenzene	***0.023***	ug/L	0.016	0.050	0.10	0.10	1.00	J		11/22/19 18:04	RLD	EPA 8260C
Iodomethane	<0.40	ug/L	0.20	0.40	0.80	0.80	1.00	U Q,Y		11/22/19 18:04	RLD	EPA 8260C
m & p-Xylene	***0.085***	ug/L	0.030	0.10	0.20	0.20	1.00	J		11/22/19 18:04	RLD	EPA 8260C
Methyl tert-butyl ether	<0.050	ug/L	0.017	0.050	0.10	0.10	1.00	U		11/22/19 18:04	RLD	EPA 8260C
Methylene chloride	<0.10	ug/L	0.030	0.10	0.40	0.40	1.00	U Q,Z		11/22/19 18:04	RLD	EPA 8260C
o-Xylene	***0.030***	ug/L	0.017	0.050	0.10	0.10	1.00	J		11/22/19 18:04	RLD	EPA 8260C
Styrene	<0.020	ug/L	0.011	0.020	0.10	0.10	1.00	U		11/22/19 18:04	RLD	EPA 8260C
Tetrachloroethene	<0.050	ug/L	0.023	0.050	0.10	0.10	1.00	U		11/22/19 18:04	RLD	EPA 8260C
Toluene	***0.024***	ug/L	0.017	0.050	0.10	0.10	1.00	J		11/22/19 18:04	RLD	EPA 8260C
trans-1,2-Dichloroethene	<0.050	ug/L	0.029	0.050	0.10	0.10	1.00	U		11/22/19 18:04	RLD	EPA 8260C
trans-1,3-Dichloropropene	<0.050	ug/L	0.030	0.050	0.20	0.20	1.00	U		11/22/19 18:04	RLD	EPA 8260C
Trichloroethene	***0.28***	ug/L	0.025	0.050	0.10	0.10	1.00			11/22/19 18:04	RLD	EPA 8260C
Trichlorofluoromethane	***1.4***	ug/L	0.029	0.050	0.20	0.20	1.00			11/22/19 18:04	RLD	EPA 8260C
Vinyl Acetate	***1.4***	ug/L	0.40	1.0	2.0	2.0	1.00	J		11/22/19 18:04	RLD	EPA 8260C
Vinyl chloride	***0.51***	ug/L	0.013	0.020	0.10	0.10	1.00			11/22/19 18:04	RLD	EPA 8260C
1,2 Dichloroethane-d4	96	% Recovery	81			118	1.00			11/22/19 18:04	RLD	EPA 8260C
Bromofluorobenzene	96	% Recovery	85			114	1.00			11/22/19 18:04	RLD	EPA 8260C
d8-Toluene	100	% Recovery	89			112	1.00			11/22/19 18:04	RLD	EPA 8260C
Dibromofluoromethane	103	% Recovery	80			119	1.00			11/22/19 18:04	RLD	EPA 8260C

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB#: 358082 Sample Description: PAALF-PW11-111319F Client Sample #: Sampled: 11/13/2019 1225

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method	
Metals Results													
Dissolved Arsenic	<2.0	ug/L	0.80	2.0	4.0	4.0	1.00	U	11/22/2019 11:15	11/23/19 15:50	MDS	EPA 7010	^
Dissolved Thallium	<0.80	ug/L	0.26	0.80	1.6	1.6	1.00	U	11/20/2019 09:20	11/21/19 11:22	MDS	EPA 7010	^
Dissolved Antimony	<3.0	ug/L	1.0	3.0	6.0	6.0	1.00	U	11/18/2019 09:30	11/19/19 11:46	MDS	EPA 7010	^
Dissolved Aluminum	***17.0***	ug/L	6.0	18	36	36	1.00	J B	11/15/2019 12:16	11/20/19 16:49	NAH	EPA 6010C	
Dissolved Barium	***57.9***	ug/L	0.29	0.90	1.8	1.8	1.00		11/15/2019 12:16	11/20/19 16:49	NAH	EPA 6010C	
Dissolved Beryllium	<0.30	ug/L	0.10	0.30	0.60	0.60	1.00	U	11/15/2019 12:16	11/20/19 16:49	NAH	EPA 6010C	
Dissolved Cadmium	<1.0	ug/L	0.30	1.0	2.0	2.0	1.00	U	11/15/2019 12:16	11/20/19 16:49	NAH	EPA 6010C	
Dissolved Calcium	***14000***	ug/L	17	50	100	100	1.00		11/15/2019 12:16	11/20/19 16:49	NAH	EPA 6010C	
Dissolved Chromium	<2.0	ug/L	0.60	2.0	4.0	4.0	1.00	U	11/15/2019 12:16	11/20/19 16:49	NAH	EPA 6010C	
Dissolved Cobalt	***16.5***	ug/L	0.70	2.0	4.0	4.0	1.00		11/15/2019 12:16	11/20/19 16:49	NAH	EPA 6010C	
Dissolved Copper	***2.4***	ug/L	1.2	3.5	7.0	7.0	1.00	J	11/15/2019 12:16	11/20/19 16:49	NAH	EPA 6010C	
Dissolved Iron	***154***	ug/L	16	50	100	100	1.00	M	11/15/2019 12:16	11/20/19 16:49	NAH	EPA 6010C	
Dissolved Lead	***1.5***	ug/L	1.4	2.0	4.0	4.0	1.00	J	11/15/2019 12:16	11/20/19 16:49	NAH	EPA 6010C	
Dissolved Magnesium	***10000***	ug/L	6.0	20	40	40	1.00		11/15/2019 12:16	11/20/19 16:49	NAH	EPA 6010C	
Dissolved Manganese	***622***	ug/L	0.70	2.0	4.0	4.0	1.00		11/15/2019 12:16	11/20/19 16:49	NAH	EPA 6010C	
Dissolved Nickel	***9.6***	ug/L	1.0	3.0	6.0	6.0	1.00		11/15/2019 12:16	11/20/19 16:49	NAH	EPA 6010C	
Dissolved Selenium	<6.5	ug/L	2.2	6.5	13	13	1.00	U	11/15/2019 12:16	11/20/19 16:49	NAH	EPA 6010C	
Dissolved Silver	<2.0	ug/L	0.70	2.0	4.0	4.0	1.00	U	11/15/2019 12:16	11/20/19 16:49	NAH	EPA 6010C	
Dissolved Vanadium	<2.5	ug/L	0.80	2.5	5.0	5.0	1.00	U	11/15/2019 12:16	11/20/19 16:49	NAH	EPA 6010C	
Dissolved Zinc	***25.5***	ug/L	1.6	5.0	10	10	1.00	B	11/15/2019 12:16	11/20/19 16:49	NAH	EPA 6010C	
Dissolved Potassium	***2120***	ug/L	90	250	500	500	1.00		11/15/2019 12:16	11/21/19 17:28	MDS	EPA 6010C	
Dissolved Mercury	***0.055***	ug/L	0.030	0.060	0.12	0.12	1.00	J	11/21/2019 11:12	11/22/19 15:21	MDS	EPA 7470A	
Dissolved Sodium	***46900***	ug/L	100	300	600	600	1.00	M	11/15/2019 12:16	11/21/19 17:28	MDS	EPA 6010C	

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB#: 358085 Sample Description: PAALF-PW12-111319 Client Sample #: Sampled: 11/13/2019 1412

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method	
Inorganic Results													
Conductivity	***606.0***	uS/cm	1	1	1	1	1.00			11/14/19 13:05	CLB	EPA 9050A	
pH	***5.74***	S.U.	0.1	0.1	0.1	0.1	1.00			11/14/19 14:05	GMJ	EPA 9040C	^
Ammonia Nitrogen	***1.4***	mg/L	0.022	0.10	0.20	0.20	1.00			11/20/19 14:48	SRW	EPA 350.1	^
Alkalinity	***19***	mg/L	6.0	15	30	30	1.00	J		11/18/19 16:22	SRW	EPA 310.2	^
COD	***18***	mg/L	15	35	75	75	1.00	J	11/19/2019 10:35	11/19/19 14:44	GMJ	EPA 410.4	^
Total Dissolved Solids	***310***	mg/L	10	10	10	10	1.00			11/14/19 13:45	CLB	SM 2540C	
Chloride	***94***	mg/L	5.0	7.5	15	15	5.00			11/15/19 09:33	TMG	EPA 9056A	
Nitrate Nitrogen	<0.20	mg/L	0.12	0.20	0.40	0.40	1.00	U		11/14/19 19:24	TMG	EPA 9056A	
Nitrite Nitrogen	<0.30	mg/L	0.14	0.30	0.60	0.60	1.00	U		11/14/19 19:24	TMG	EPA 9056A	
Sulfate	***110***	mg/L	4.0	7.5	15	15	5.00			11/15/19 09:33	TMG	EPA 9056A	
Metals Results													
Turbidity	***3.9***	NTU	1.0	1.0	1.0	1.0	1.00			11/14/19 15:00	NAH	EPA 180.1	
Total Antimony	<3.0	ug/L	1.0	3.0	6.0	6.0	1.00	U	11/18/2019 09:30	11/19/19 12:39	MDS	EPA 7010	^
Total Arsenic	<2.0	ug/L	0.80	2.0	4.0	4.0	1.00	U	11/22/2019 11:15	11/23/19 17:50	MDS	EPA 7010	^
Total Thallium	<0.80	ug/L	0.26	0.80	1.6	1.6	1.00	U	11/20/2019 09:20	11/21/19 13:00	MDS	EPA 7010	^
Total Hardness	***96***	mg/L	0.067	0.21	0.41	0.41	1.00		11/14/2019 12:16	11/20/19 13:14	NAH	SM2340B/6010C	
Total Potassium	***952***	ug/L	90	250	500	500	1.00		11/14/2019 12:16	11/21/19 17:08	MDS	EPA 6010C	
Total Sodium	***27600***	ug/L	100	300	600	600	1.00		11/14/2019 12:16	11/21/19 17:08	MDS	EPA 6010C	
Total Aluminum	***65.5***	ug/L	6.0	18	36	36	1.00		11/14/2019 12:16	11/20/19 13:14	NAH	EPA 6010C	
Total Barium	***142***	ug/L	0.29	0.90	1.8	1.8	1.00		11/14/2019 12:16	11/20/19 13:14	NAH	EPA 6010C	
Total Beryllium	***0.29***	ug/L	0.10	0.30	0.60	0.60	1.00	J	11/14/2019 12:16	11/20/19 13:14	NAH	EPA 6010C	
Total Cadmium	<1.0	ug/L	0.30	1.0	2.0	2.0	1.00	U	11/14/2019 12:16	11/20/19 13:14	NAH	EPA 6010C	
Total Calcium	***19000***	ug/L	17	50	100	100	1.00		11/14/2019 12:16	11/20/19 13:14	NAH	EPA 6010C	
Total Chromium	<2.0	ug/L	0.60	2.0	4.0	4.0	1.00	U	11/14/2019 12:16	11/20/19 13:14	NAH	EPA 6010C	
Total Cobalt	<2.0	ug/L	0.70	2.0	4.0	4.0	1.00	U	11/14/2019 12:16	11/20/19 13:14	NAH	EPA 6010C	
Total Copper	***1.4***	ug/L	1.2	3.5	7.0	7.0	1.00	J	11/14/2019 12:16	11/20/19 13:14	NAH	EPA 6010C	

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB#: 358085 Sample Description: PAALF-PW12-111319 Client Sample #: Sampled: 11/13/2019 1412

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Total Iron	***49900***	ug/L	16	50	100	100	1.00		11/14/2019 12:16	11/20/19 13:14	NAH	EPA 6010C
Total Lead	***2.0***	ug/L	1.4	2.0	4.0	4.0	1.00	J	11/14/2019 12:16	11/20/19 13:14	NAH	EPA 6010C
Total Magnesium	***11700***	ug/L	6.0	20	40	40	1.00		11/14/2019 12:16	11/20/19 13:14	NAH	EPA 6010C
Total Manganese	***1190***	ug/L	0.70	2.0	4.0	4.0	1.00		11/14/2019 12:16	11/20/19 13:14	NAH	EPA 6010C
Total Nickel	<3.0	ug/L	1.0	3.0	6.0	6.0	1.00	U	11/14/2019 12:16	11/20/19 13:14	NAH	EPA 6010C
Total Selenium	<6.5	ug/L	2.2	6.5	13	13	1.00	U	11/14/2019 12:16	11/20/19 13:14	NAH	EPA 6010C
Total Silver	***3.9***	ug/L	0.70	2.0	4.0	4.0	1.00	J	11/14/2019 12:16	11/20/19 13:14	NAH	EPA 6010C
Total Vanadium	<2.5	ug/L	0.80	2.5	5.0	5.0	1.00	U	11/14/2019 12:16	11/20/19 13:14	NAH	EPA 6010C
Total Zinc	***2.1***	ug/L	1.6	5.0	10	10	1.00	J B	11/14/2019 12:16	11/20/19 13:14	NAH	EPA 6010C
Total Mercury	<0.060	ug/L	0.030	0.060	0.12	0.12	1.00	U	11/21/2019 12:10	11/22/19 13:14	MDS	EPA 7470A
Organic Results												
1,1,1,2-Tetrachloroethane	<0.10	ug/L	0.018	0.10	0.20	0.20	1.00	U		11/22/19 18:32	RLD	EPA 8260C
1,1,1-Trichloroethane	<0.050	ug/L	0.018	0.050	0.10	0.10	1.00	U		11/22/19 18:32	RLD	EPA 8260C
1,1,2,2-Tetrachloroethane	<0.050	ug/L	0.014	0.050	0.10	0.10	1.00	U		11/22/19 18:32	RLD	EPA 8260C
1,1,2-Trichloroethane	<0.10	ug/L	0.019	0.10	0.20	0.20	1.00	U		11/22/19 18:32	RLD	EPA 8260C
1,1-Dichloroethane	<0.050	ug/L	0.015	0.050	0.10	0.10	1.00	U		11/22/19 18:32	RLD	EPA 8260C
1,1-Dichloroethene	***0.086***	ug/L	0.040	0.10	0.20	0.20	1.00	J		11/22/19 18:32	RLD	EPA 8260C
1,2,3-Trichloropropane	<0.10	ug/L	0.070	0.10	0.20	0.20	1.00	U		11/22/19 18:32	RLD	EPA 8260C
1,2-Dibromo-3-chloropropane	<0.10	ug/L	0.070	0.10	0.20	0.20	1.00	U		11/22/19 18:32	RLD	EPA 8260C
1,2-Dibromoethane	<0.10	ug/L	0.040	0.10	0.20	0.20	1.00	U		11/22/19 18:32	RLD	EPA 8260C
1,2-Dichlorobenzene	<0.050	ug/L	0.022	0.050	0.10	0.10	1.00	U		11/22/19 18:32	RLD	EPA 8260C
1,2-Dichloroethane	***0.078***	ug/L	0.024	0.050	0.10	0.10	1.00	J		11/22/19 18:32	RLD	EPA 8260C
1,2-Dichloropropane	<0.050	ug/L	0.024	0.050	0.10	0.10	1.00	U		11/22/19 18:32	RLD	EPA 8260C
1,4-Dichloro-2-butene	<0.10	ug/L	0.060	0.10	0.20	0.20	1.00	U		11/22/19 18:32	RLD	EPA 8260C
1,4-Dichlorobenzene	<0.050	ug/L	0.017	0.050	0.10	0.10	1.00	U		11/22/19 18:32	RLD	EPA 8260C
2-Butanone	<1.0	ug/L	0.50	1.0	2.0	2.0	1.00	U		11/22/19 18:32	RLD	EPA 8260C
2-Hexanone	<1.0	ug/L	0.30	1.0	2.0	2.0	1.00	U		11/22/19 18:32	RLD	EPA 8260C

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB#: 358085 Sample Description: PAALF-PW12-111319 Client Sample #: Sampled: 11/13/2019 1412

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
4-Methyl-2-pentanone	<0.50	ug/L	0.22	0.50	1.0	1.0	1.00	U		11/22/19 18:32	RLD	EPA 8260C
Acetone	<1.0	ug/L	0.80	1.0	2.0	2.0	1.00	U		11/22/19 18:32	RLD	EPA 8260C
Acrylonitrile	<0.50	ug/L	0.16	0.50	1.0	1.0	1.00	U		11/22/19 18:32	RLD	EPA 8260C
Benzene	***0.026***	ug/L	0.019	0.050	0.10	0.10	1.00	J		11/22/19 18:32	RLD	EPA 8260C
Bromochloromethane	<0.10	ug/L	0.040	0.10	0.20	0.20	1.00	U		11/22/19 18:32	RLD	EPA 8260C
Bromodichloromethane	<0.050	ug/L	0.028	0.050	0.10	0.10	1.00	U		11/22/19 18:32	RLD	EPA 8260C
Bromoform	<0.050	ug/L	0.030	0.050	0.20	0.20	1.00	U		11/22/19 18:32	RLD	EPA 8260C
Bromomethane	<0.10	ug/L	0.060	0.10	0.20	0.20	1.00	U Z,Y		11/22/19 18:32	RLD	EPA 8260C
Carbon disulfide	***0.037***	ug/L	0.014	0.040	0.20	0.20	1.00	J		11/22/19 18:32	RLD	EPA 8260C
Carbon tetrachloride	<0.050	ug/L	0.029	0.050	0.10	0.10	1.00	U		11/22/19 18:32	RLD	EPA 8260C
Chlorobenzene	<0.050	ug/L	0.015	0.050	0.10	0.10	1.00	U		11/22/19 18:32	RLD	EPA 8260C
Chloroethane	<0.050	ug/L	0.023	0.050	0.20	0.20	1.00	U		11/22/19 18:32	RLD	EPA 8260C
Chloroform	<0.050	ug/L	0.023	0.050	0.10	0.10	1.00	U		11/22/19 18:32	RLD	EPA 8260C
Chloromethane	<0.050	ug/L	0.030	0.050	0.10	0.10	1.00	U		11/22/19 18:32	RLD	EPA 8260C
cis-1,2-Dichloroethene	***4.4***	ug/L	0.027	0.050	0.10	0.10	1.00			11/22/19 18:32	RLD	EPA 8260C
cis-1,3-Dichloropropene	<0.050	ug/L	0.020	0.050	0.10	0.10	1.00	U		11/22/19 18:32	RLD	EPA 8260C
Dibromochloromethane	<0.050	ug/L	0.030	0.050	0.10	0.10	1.00	U		11/22/19 18:32	RLD	EPA 8260C
Dibromomethane	<0.050	ug/L	0.030	0.050	0.10	0.10	1.00	U		11/22/19 18:32	RLD	EPA 8260C
Ethylbenzene	***0.028***	ug/L	0.016	0.050	0.10	0.10	1.00	J		11/22/19 18:32	RLD	EPA 8260C
Iodomethane	<0.40	ug/L	0.20	0.40	0.80	0.80	1.00	U Q,Y		11/22/19 18:32	RLD	EPA 8260C
m & p-Xylene	***0.15***	ug/L	0.030	0.10	0.20	0.20	1.00	J		11/22/19 18:32	RLD	EPA 8260C
Methyl tert-butyl ether	<0.050	ug/L	0.017	0.050	0.10	0.10	1.00	U		11/22/19 18:32	RLD	EPA 8260C
Methylene chloride	<0.10	ug/L	0.030	0.10	0.40	0.40	1.00	U Z,Q		11/22/19 18:32	RLD	EPA 8260C
o-Xylene	***0.040***	ug/L	0.017	0.050	0.10	0.10	1.00	J		11/22/19 18:32	RLD	EPA 8260C
Styrene	***0.014***	ug/L	0.011	0.020	0.10	0.10	1.00	J		11/22/19 18:32	RLD	EPA 8260C
Tetrachloroethene	<0.050	ug/L	0.023	0.050	0.10	0.10	1.00	U		11/22/19 18:32	RLD	EPA 8260C
Toluene	***0.027***	ug/L	0.017	0.050	0.10	0.10	1.00	J		11/22/19 18:32	RLD	EPA 8260C
trans-1,2-Dichloroethene	<0.050	ug/L	0.029	0.050	0.10	0.10	1.00	U		11/22/19 18:32	RLD	EPA 8260C

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB#: 358085 Sample Description: PAALF-PW12-111319 Client Sample #: Sampled: 11/13/2019 1412

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
trans-1,3-Dichloropropene	<0.050	ug/L	0.030	0.050	0.20	0.20	1.00	U		11/22/19 18:32	RLD	EPA 8260C
Trichloroethene	***3.8***	ug/L	0.025	0.050	0.10	0.10	1.00			11/22/19 18:32	RLD	EPA 8260C
Trichlorofluoromethane	<0.050	ug/L	0.029	0.050	0.20	0.20	1.00	U		11/22/19 18:32	RLD	EPA 8260C
Vinyl Acetate	<1.0	ug/L	0.40	1.0	2.0	2.0	1.00	U		11/22/19 18:32	RLD	EPA 8260C
Vinyl chloride	***2.4***	ug/L	0.013	0.020	0.10	0.10	1.00			11/22/19 18:32	RLD	EPA 8260C
1,2 Dichloroethane-d4	101	% Recovery	81			118	1.00			11/22/19 18:32	RLD	EPA 8260C
Bromofluorobenzene	96	% Recovery	85			114	1.00			11/22/19 18:32	RLD	EPA 8260C
d8-Toluene	100	% Recovery	89			112	1.00			11/22/19 18:32	RLD	EPA 8260C
Dibromofluoromethane	101	% Recovery	80			119	1.00			11/22/19 18:32	RLD	EPA 8260C

CT LAB#: 358086 Sample Description: PAALF-PW12-111319F Client Sample #: Sampled: 11/13/2019 1412

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method	
Metals Results													
Dissolved Arsenic	<2.0	ug/L	0.80	2.0	4.0	4.0	1.00	U	11/22/2019 11:15	11/23/19 15:56	MDS	EPA 7010	^
Dissolved Thallium	<0.80	ug/L	0.26	0.80	1.6	1.6	1.00	U	11/20/2019 09:20	11/21/19 11:28	MDS	EPA 7010	^
Dissolved Antimony	<3.0	ug/L	1.0	3.0	6.0	6.0	1.00	U	11/18/2019 09:30	11/19/19 12:00	MDS	EPA 7010	^
Dissolved Aluminum	***55.6***	ug/L	6.0	18	36	36	1.00	B	11/15/2019 12:16	11/20/19 17:47	NAH	EPA 6010C	
Dissolved Barium	***145***	ug/L	0.29	0.90	1.8	1.8	1.00		11/15/2019 12:16	11/20/19 17:47	NAH	EPA 6010C	
Dissolved Beryllium	***0.26***	ug/L	0.10	0.30	0.60	0.60	1.00	J	11/15/2019 12:16	11/20/19 17:47	NAH	EPA 6010C	
Dissolved Cadmium	<1.0	ug/L	0.30	1.0	2.0	2.0	1.00	U	11/15/2019 12:16	11/20/19 17:47	NAH	EPA 6010C	
Dissolved Calcium	***19400***	ug/L	17	50	100	100	1.00		11/15/2019 12:16	11/20/19 17:47	NAH	EPA 6010C	
Dissolved Chromium	<2.0	ug/L	0.60	2.0	4.0	4.0	1.00	U	11/15/2019 12:16	11/20/19 17:47	NAH	EPA 6010C	
Dissolved Cobalt	<2.0	ug/L	0.70	2.0	4.0	4.0	1.00	U	11/15/2019 12:16	11/20/19 17:47	NAH	EPA 6010C	
Dissolved Copper	***1.2***	ug/L	1.2	3.5	7.0	7.0	1.00	J	11/15/2019 12:16	11/20/19 17:47	NAH	EPA 6010C	
Dissolved Iron	***50200***	ug/L	16	50	100	100	1.00		11/15/2019 12:16	11/20/19 17:47	NAH	EPA 6010C	

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB#: 358086 Sample Description: PAALF-PW12-111319F Client Sample #: Sampled: 11/13/2019 1412

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Dissolved Lead	***3.5***	ug/L	1.4	2.0	4.0	4.0	1.00	J	11/15/2019 12:16	11/20/19 17:47	NAH	EPA 6010C
Dissolved Magnesium	***11500***	ug/L	6.0	20	40	40	1.00		11/15/2019 12:16	11/20/19 17:47	NAH	EPA 6010C
Dissolved Manganese	***1260***	ug/L	0.70	2.0	4.0	4.0	1.00		11/15/2019 12:16	11/20/19 17:47	NAH	EPA 6010C
Dissolved Nickel	<3.0	ug/L	1.0	3.0	6.0	6.0	1.00	U	11/15/2019 12:16	11/20/19 17:47	NAH	EPA 6010C
Dissolved Selenium	***2.7***	ug/L	2.2	6.5	13	13	1.00	J	11/15/2019 12:16	11/20/19 17:47	NAH	EPA 6010C
Dissolved Silver	***2.8***	ug/L	0.70	2.0	4.0	4.0	1.00	J	11/15/2019 12:16	11/20/19 17:47	NAH	EPA 6010C
Dissolved Vanadium	<2.5	ug/L	0.80	2.5	5.0	5.0	1.00	U	11/15/2019 12:16	11/20/19 17:47	NAH	EPA 6010C
Dissolved Zinc	***2.1***	ug/L	1.6	5.0	10	10	1.00	J B	11/15/2019 12:16	11/20/19 17:47	NAH	EPA 6010C
Dissolved Potassium	***988***	ug/L	90	250	500	500	1.00		11/15/2019 12:16	11/21/19 17:47	MDS	EPA 6010C
Dissolved Mercury	<0.060	ug/L	0.030	0.060	0.12	0.12	1.00	U	11/21/2019 11:12	11/22/19 15:46	MDS	EPA 7470A
Dissolved Sodium	***27700***	ug/L	100	300	600	600	1.00		11/15/2019 12:16	11/21/19 17:47	MDS	EPA 6010C

CT LAB#: 358087 Sample Description: PAALF-PW17-111319 Client Sample #: Sampled: 11/13/2019 1650

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method	
Inorganic Results													
Conductivity	***581.0***	uS/cm	1	1	1	1	1.00			11/14/19 13:05	CLB	EPA 9050A	
pH	***6.81***	S.U.	0.1	0.1	0.1	0.1	1.00			11/14/19 14:05	GMJ	EPA 9040C	^
Ammonia Nitrogen	<0.10	mg/L	0.022	0.10	0.20	0.20	1.00	U		11/20/19 14:50	SRW	EPA 350.1	^
Alkalinity	***220***	mg/L	6.0	15	30	30	1.00			11/18/19 16:23	SRW	EPA 310.2	^
COD	<35	mg/L	15	35	75	75	1.00	U	11/19/2019 10:35	11/19/19 14:44	GMJ	EPA 410.4	^
Total Dissolved Solids	***280***	mg/L	10	10	10	10	1.00			11/14/19 13:45	CLB	SM 2540C	
Chloride	***32***	mg/L	1.0	1.5	3.0	3.0	1.00			11/14/19 19:44	TMG	EPA 9056A	
Nitrate Nitrogen	***0.36***	mg/L	0.12	0.20	0.40	0.40	1.00	J		11/14/19 19:44	TMG	EPA 9056A	
Nitrite Nitrogen	<0.30	mg/L	0.14	0.30	0.60	0.60	1.00	U		11/14/19 19:44	TMG	EPA 9056A	
Sulfate	***24***	mg/L	0.80	1.5	3.0	3.0	1.00			11/14/19 19:44	TMG	EPA 9056A	

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB#: 358087 Sample Description: PAALF-PW17-111319 Client Sample #: Sampled: 11/13/2019 1650

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method	
Metals Results													
Turbidity	***4.8***	NTU	1.0	1.0	1.0	1.0	1.00			11/14/19 15:00	NAH	EPA 180.1	
Total Antimony	<3.0	ug/L	1.0	3.0	6.0	6.0	1.00	U	11/18/2019 09:30	11/19/19 13:17	MDS	EPA 7010	^
Total Arsenic	<2.0	ug/L	0.80	2.0	4.0	4.0	1.00	U	11/22/2019 11:15	11/23/19 17:56	MDS	EPA 7010	^
Total Thallium	<0.80	ug/L	0.26	0.80	1.6	1.6	1.00	U	11/20/2019 09:20	11/21/19 13:06	MDS	EPA 7010	^
Total Hardness	***220***	mg/L	0.067	0.21	0.41	0.41	1.00		11/14/2019 12:16	11/20/19 13:39	NAH	SM2340B/6010C	
Total Potassium	***3520***	ug/L	90	250	500	500	1.00		11/14/2019 12:16	11/21/19 17:11	MDS	EPA 6010C	
Total Sodium	***20700***	ug/L	100	300	600	600	1.00		11/14/2019 12:16	11/21/19 17:11	MDS	EPA 6010C	
Total Aluminum	***36.7***	ug/L	6.0	18	36	36	1.00		11/14/2019 12:16	11/20/19 13:39	NAH	EPA 6010C	
Total Barium	***78.9***	ug/L	0.29	0.90	1.8	1.8	1.00		11/14/2019 12:16	11/20/19 13:39	NAH	EPA 6010C	
Total Beryllium	<0.30	ug/L	0.10	0.30	0.60	0.60	1.00	U	11/14/2019 12:16	11/20/19 13:39	NAH	EPA 6010C	
Total Cadmium	<1.0	ug/L	0.30	1.0	2.0	2.0	1.00	U	11/14/2019 12:16	11/20/19 13:39	NAH	EPA 6010C	
Total Calcium	***52700***	ug/L	17	50	100	100	1.00		11/14/2019 12:16	11/20/19 13:39	NAH	EPA 6010C	
Total Chromium	<2.0	ug/L	0.60	2.0	4.0	4.0	1.00	U	11/14/2019 12:16	11/20/19 13:39	NAH	EPA 6010C	
Total Cobalt	***1.7***	ug/L	0.70	2.0	4.0	4.0	1.00	J	11/14/2019 12:16	11/20/19 13:39	NAH	EPA 6010C	
Total Copper	***2.2***	ug/L	1.2	3.5	7.0	7.0	1.00	J	11/14/2019 12:16	11/20/19 13:39	NAH	EPA 6010C	
Total Iron	***953***	ug/L	16	50	100	100	1.00		11/14/2019 12:16	11/20/19 13:39	NAH	EPA 6010C	
Total Lead	<2.0	ug/L	1.4	2.0	4.0	4.0	1.00	U	11/14/2019 12:16	11/20/19 13:39	NAH	EPA 6010C	
Total Magnesium	***20700***	ug/L	6.0	20	40	40	1.00		11/14/2019 12:16	11/20/19 13:39	NAH	EPA 6010C	
Total Manganese	***895***	ug/L	0.70	2.0	4.0	4.0	1.00		11/14/2019 12:16	11/20/19 13:39	NAH	EPA 6010C	
Total Nickel	***9.4***	ug/L	1.0	3.0	6.0	6.0	1.00		11/14/2019 12:16	11/20/19 13:39	NAH	EPA 6010C	
Total Selenium	<6.5	ug/L	2.2	6.5	13	13	1.00	U	11/14/2019 12:16	11/20/19 13:39	NAH	EPA 6010C	
Total Silver	<2.0	ug/L	0.70	2.0	4.0	4.0	1.00	U	11/14/2019 12:16	11/20/19 13:39	NAH	EPA 6010C	
Total Vanadium	<2.5	ug/L	0.80	2.5	5.0	5.0	1.00	U	11/14/2019 12:16	11/20/19 13:39	NAH	EPA 6010C	
Total Zinc	***9.3***	ug/L	1.6	5.0	10	10	1.00	J B	11/14/2019 12:16	11/20/19 13:39	NAH	EPA 6010C	
Total Mercury	<0.060	ug/L	0.030	0.060	0.12	0.12	1.00	U	11/21/2019 12:10	11/22/19 13:16	MDS	EPA 7470A	

Organic Results

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB#: 358087 Sample Description: PAALF-PW17-111319 Client Sample #: Sampled: 11/13/2019 1650

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
1,1,1,2-Tetrachloroethane	<0.10	ug/L	0.018	0.10	0.20	0.20	1.00	U		11/22/19 19:00	RLD	EPA 8260C
1,1,1-Trichloroethane	<0.050	ug/L	0.018	0.050	0.10	0.10	1.00	U		11/22/19 19:00	RLD	EPA 8260C
1,1,2,2-Tetrachloroethane	<0.050	ug/L	0.014	0.050	0.10	0.10	1.00	U		11/22/19 19:00	RLD	EPA 8260C
1,1,2-Trichloroethane	<0.10	ug/L	0.019	0.10	0.20	0.20	1.00	U		11/22/19 19:00	RLD	EPA 8260C
1,1-Dichloroethane	***0.031***	ug/L	0.015	0.050	0.10	0.10	1.00	J		11/22/19 19:00	RLD	EPA 8260C
1,1-Dichloroethene	<0.10	ug/L	0.040	0.10	0.20	0.20	1.00	U		11/22/19 19:00	RLD	EPA 8260C
1,2,3-Trichloropropane	<0.10	ug/L	0.070	0.10	0.20	0.20	1.00	U		11/22/19 19:00	RLD	EPA 8260C
1,2-Dibromo-3-chloropropane	<0.10	ug/L	0.070	0.10	0.20	0.20	1.00	U		11/22/19 19:00	RLD	EPA 8260C
1,2-Dibromoethane	<0.10	ug/L	0.040	0.10	0.20	0.20	1.00	U		11/22/19 19:00	RLD	EPA 8260C
1,2-Dichlorobenzene	<0.050	ug/L	0.022	0.050	0.10	0.10	1.00	U		11/22/19 19:00	RLD	EPA 8260C
1,2-Dichloroethane	<0.050	ug/L	0.024	0.050	0.10	0.10	1.00	U		11/22/19 19:00	RLD	EPA 8260C
1,2-Dichloropropane	***0.072***	ug/L	0.024	0.050	0.10	0.10	1.00	J		11/22/19 19:00	RLD	EPA 8260C
1,4-Dichloro-2-butene	<0.10	ug/L	0.060	0.10	0.20	0.20	1.00	U		11/22/19 19:00	RLD	EPA 8260C
1,4-Dichlorobenzene	***0.34***	ug/L	0.017	0.050	0.10	0.10	1.00			11/22/19 19:00	RLD	EPA 8260C
2-Butanone	<1.0	ug/L	0.50	1.0	2.0	2.0	1.00	U		11/22/19 19:00	RLD	EPA 8260C
2-Hexanone	<1.0	ug/L	0.30	1.0	2.0	2.0	1.00	U		11/22/19 19:00	RLD	EPA 8260C
4-Methyl-2-pentanone	<0.50	ug/L	0.22	0.50	1.0	1.0	1.00	U		11/22/19 19:00	RLD	EPA 8260C
Acetone	<1.0	ug/L	0.80	1.0	2.0	2.0	1.00	U		11/22/19 19:00	RLD	EPA 8260C
Acrylonitrile	<0.50	ug/L	0.16	0.50	1.0	1.0	1.00	U		11/22/19 19:00	RLD	EPA 8260C
Benzene	***0.20***	ug/L	0.019	0.050	0.10	0.10	1.00			11/22/19 19:00	RLD	EPA 8260C
Bromochloromethane	<0.10	ug/L	0.040	0.10	0.20	0.20	1.00	U		11/22/19 19:00	RLD	EPA 8260C
Bromodichloromethane	<0.050	ug/L	0.028	0.050	0.10	0.10	1.00	U		11/22/19 19:00	RLD	EPA 8260C
Bromoform	<0.050	ug/L	0.030	0.050	0.20	0.20	1.00	U		11/22/19 19:00	RLD	EPA 8260C
Bromomethane	<0.10	ug/L	0.060	0.10	0.20	0.20	1.00	U Z,Y		11/22/19 19:00	RLD	EPA 8260C
Carbon disulfide	<0.040	ug/L	0.014	0.040	0.20	0.20	1.00	U		11/22/19 19:00	RLD	EPA 8260C
Carbon tetrachloride	<0.050	ug/L	0.029	0.050	0.10	0.10	1.00	U		11/22/19 19:00	RLD	EPA 8260C
Chlorobenzene	***0.39***	ug/L	0.015	0.050	0.10	0.10	1.00			11/22/19 19:00	RLD	EPA 8260C
Chloroethane	<0.050	ug/L	0.023	0.050	0.20	0.20	1.00	U		11/22/19 19:00	RLD	EPA 8260C

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB#: 358087 Sample Description: PAALF-PW17-111319 Client Sample #: Sampled: 11/13/2019 1650

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Chloroform	***0.029***	ug/L	0.023	0.050	0.10	0.10	1.00	J		11/22/19 19:00	RLD	EPA 8260C
Chloromethane	<0.050	ug/L	0.030	0.050	0.10	0.10	1.00	U		11/22/19 19:00	RLD	EPA 8260C
cis-1,2-Dichloroethene	***0.11***	ug/L	0.027	0.050	0.10	0.10	1.00			11/22/19 19:00	RLD	EPA 8260C
cis-1,3-Dichloropropene	<0.050	ug/L	0.020	0.050	0.10	0.10	1.00	U		11/22/19 19:00	RLD	EPA 8260C
Dibromochloromethane	<0.050	ug/L	0.030	0.050	0.10	0.10	1.00	U		11/22/19 19:00	RLD	EPA 8260C
Dibromomethane	<0.050	ug/L	0.030	0.050	0.10	0.10	1.00	U		11/22/19 19:00	RLD	EPA 8260C
Ethylbenzene	***0.016***	ug/L	0.016	0.050	0.10	0.10	1.00	J		11/22/19 19:00	RLD	EPA 8260C
Iodomethane	<0.40	ug/L	0.20	0.40	0.80	0.80	1.00	U Q,Y		11/22/19 19:00	RLD	EPA 8260C
m & p-Xylene	***0.067***	ug/L	0.030	0.10	0.20	0.20	1.00	J		11/22/19 19:00	RLD	EPA 8260C
Methyl tert-butyl ether	<0.050	ug/L	0.017	0.050	0.10	0.10	1.00	U		11/22/19 19:00	RLD	EPA 8260C
Methylene chloride	<0.10	ug/L	0.030	0.10	0.40	0.40	1.00	U Z,Q		11/22/19 19:00	RLD	EPA 8260C
o-Xylene	***0.021***	ug/L	0.017	0.050	0.10	0.10	1.00	J		11/22/19 19:00	RLD	EPA 8260C
Styrene	<0.020	ug/L	0.011	0.020	0.10	0.10	1.00	U		11/22/19 19:00	RLD	EPA 8260C
Tetrachloroethene	<0.050	ug/L	0.023	0.050	0.10	0.10	1.00	U		11/22/19 19:00	RLD	EPA 8260C
Toluene	<0.050	ug/L	0.017	0.050	0.10	0.10	1.00	U		11/22/19 19:00	RLD	EPA 8260C
trans-1,2-Dichloroethene	<0.050	ug/L	0.029	0.050	0.10	0.10	1.00	U		11/22/19 19:00	RLD	EPA 8260C
trans-1,3-Dichloropropene	<0.050	ug/L	0.030	0.050	0.20	0.20	1.00	U		11/22/19 19:00	RLD	EPA 8260C
Trichloroethene	<0.050	ug/L	0.025	0.050	0.10	0.10	1.00	U		11/22/19 19:00	RLD	EPA 8260C
Trichlorofluoromethane	<0.050	ug/L	0.029	0.050	0.20	0.20	1.00	U		11/22/19 19:00	RLD	EPA 8260C
Vinyl Acetate	<1.0	ug/L	0.40	1.0	2.0	2.0	1.00	U		11/22/19 19:00	RLD	EPA 8260C
Vinyl chloride	***0.044***	ug/L	0.013	0.020	0.10	0.10	1.00	J		11/22/19 19:00	RLD	EPA 8260C
1,2 Dichloroethane-d4	94	% Recovery	81			118	1.00			11/22/19 19:00	RLD	EPA 8260C
Bromofluorobenzene	94	% Recovery	85			114	1.00			11/22/19 19:00	RLD	EPA 8260C
d8-Toluene	101	% Recovery	89			112	1.00			11/22/19 19:00	RLD	EPA 8260C
Dibromofluoromethane	100	% Recovery	80			119	1.00			11/22/19 19:00	RLD	EPA 8260C

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB#: 358088 Sample Description: PAALF-PW17-111319F Client Sample #: Sampled: 11/13/2019 1650

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method	
Metals Results													
Dissolved Arsenic	<2.0	ug/L	0.80	2.0	4.0	4.0	1.00	U	11/22/2019 11:15	11/23/19 16:02	MDS	EPA 7010	^
Dissolved Thallium	<0.80	ug/L	0.26	0.80	1.6	1.6	1.00	U	11/20/2019 09:20	11/21/19 11:34	MDS	EPA 7010	^
Dissolved Antimony	<3.0	ug/L	1.0	3.0	6.0	6.0	1.00	U	11/18/2019 09:30	11/19/19 12:05	MDS	EPA 7010	^
Dissolved Aluminum	***8.0***	ug/L	6.0	18	36	36	1.00	J B	11/15/2019 12:16	11/20/19 17:53	NAH	EPA 6010C	
Dissolved Barium	***84.1***	ug/L	0.29	0.90	1.8	1.8	1.00		11/15/2019 12:16	11/20/19 17:53	NAH	EPA 6010C	
Dissolved Beryllium	<0.30	ug/L	0.10	0.30	0.60	0.60	1.00	U	11/15/2019 12:16	11/20/19 17:53	NAH	EPA 6010C	
Dissolved Cadmium	<1.0	ug/L	0.30	1.0	2.0	2.0	1.00	U	11/15/2019 12:16	11/20/19 17:53	NAH	EPA 6010C	
Dissolved Calcium	***56200***	ug/L	17	50	100	100	1.00		11/15/2019 12:16	11/20/19 17:53	NAH	EPA 6010C	
Dissolved Chromium	<2.0	ug/L	0.60	2.0	4.0	4.0	1.00	U	11/15/2019 12:16	11/20/19 17:53	NAH	EPA 6010C	
Dissolved Cobalt	***1.7***	ug/L	0.70	2.0	4.0	4.0	1.00	J	11/15/2019 12:16	11/20/19 17:53	NAH	EPA 6010C	
Dissolved Copper	<3.5	ug/L	1.2	3.5	7.0	7.0	1.00	U	11/15/2019 12:16	11/20/19 17:53	NAH	EPA 6010C	
Dissolved Iron	***908***	ug/L	16	50	100	100	1.00		11/15/2019 12:16	11/20/19 17:53	NAH	EPA 6010C	
Dissolved Lead	<2.0	ug/L	1.4	2.0	4.0	4.0	1.00	U	11/15/2019 12:16	11/20/19 17:53	NAH	EPA 6010C	
Dissolved Magnesium	***21400***	ug/L	6.0	20	40	40	1.00		11/15/2019 12:16	11/20/19 17:53	NAH	EPA 6010C	
Dissolved Manganese	***964***	ug/L	0.70	2.0	4.0	4.0	1.00		11/15/2019 12:16	11/20/19 17:53	NAH	EPA 6010C	
Dissolved Nickel	***10.1***	ug/L	1.0	3.0	6.0	6.0	1.00		11/15/2019 12:16	11/20/19 17:53	NAH	EPA 6010C	
Dissolved Selenium	<6.5	ug/L	2.2	6.5	13	13	1.00	U	11/15/2019 12:16	11/20/19 17:53	NAH	EPA 6010C	
Dissolved Silver	<2.0	ug/L	0.70	2.0	4.0	4.0	1.00	U	11/15/2019 12:16	11/20/19 17:53	NAH	EPA 6010C	
Dissolved Vanadium	<2.5	ug/L	0.80	2.5	5.0	5.0	1.00	U	11/15/2019 12:16	11/20/19 17:53	NAH	EPA 6010C	
Dissolved Zinc	***9.2***	ug/L	1.6	5.0	10	10	1.00	J B	11/15/2019 12:16	11/20/19 17:53	NAH	EPA 6010C	
Dissolved Potassium	***3640***	ug/L	90	250	500	500	1.00		11/15/2019 12:16	11/21/19 17:50	MDS	EPA 6010C	
Dissolved Mercury	<0.060	ug/L	0.030	0.060	0.12	0.12	1.00	U	11/21/2019 11:12	11/22/19 15:48	MDS	EPA 7470A	
Dissolved Sodium	***21800***	ug/L	100	300	600	600	1.00		11/15/2019 12:16	11/21/19 17:50	MDS	EPA 6010C	

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB#: 358089 Sample Description: PAALF-PW17-111319DUP Client Sample #: Sampled: 11/13/2019 1650

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method	
Inorganic Results													
Conductivity	***576.0***	uS/cm	1	1	1	1	1.00			11/14/19 13:05	CLB	EPA 9050A	
pH	***6.82***	S.U.	0.1	0.1	0.1	0.1	1.00			11/14/19 14:05	GMJ	EPA 9040C	^
Ammonia Nitrogen	***0.026***	mg/L	0.022	0.10	0.20	0.20	1.00	J		11/20/19 14:55	SRW	EPA 350.1	^
Alkalinity	***220***	mg/L	6.0	15	30	30	1.00			11/18/19 16:24	SRW	EPA 310.2	^
COD	<35	mg/L	15	35	75	75	1.00	U	11/19/2019 10:35	11/19/19 14:44	GMJ	EPA 410.4	^
Total Dissolved Solids	***290***	mg/L	10	10	10	10	1.00			11/14/19 13:45	CLB	SM 2540C	
Chloride	***31***	mg/L	1.0	1.5	3.0	3.0	1.00			11/14/19 20:04	TMG	EPA 9056A	
Nitrate Nitrogen	***0.38***	mg/L	0.12	0.20	0.40	0.40	1.00	J		11/14/19 20:04	TMG	EPA 9056A	
Nitrite Nitrogen	<0.30	mg/L	0.14	0.30	0.60	0.60	1.00	U		11/14/19 20:04	TMG	EPA 9056A	
Sulfate	***26***	mg/L	0.80	1.5	3.0	3.0	1.00			11/14/19 20:04	TMG	EPA 9056A	
Metals Results													
Turbidity	***4.8***	NTU	1.0	1.0	1.0	1.0	1.00			11/14/19 15:00	NAH	EPA 180.1	
Total Antimony	<3.0	ug/L	1.0	3.0	6.0	6.0	1.00	U	11/18/2019 09:30	11/19/19 13:22	MDS	EPA 7010	^
Total Arsenic	<2.0	ug/L	0.80	2.0	4.0	4.0	1.00	U	11/22/2019 11:15	11/23/19 18:01	MDS	EPA 7010	^
Total Thallium	<0.80	ug/L	0.26	0.80	1.6	1.6	1.00	U	11/20/2019 09:20	11/21/19 13:26	MDS	EPA 7010	^
Total Hardness	***210***	mg/L	0.067	0.21	0.41	0.41	1.00		11/14/2019 12:16	11/20/19 13:46	NAH	SM2340B/6010C	
Total Potassium	***3400***	ug/L	90	250	500	500	1.00		11/14/2019 12:16	11/21/19 17:14	MDS	EPA 6010C	
Total Sodium	***21400***	ug/L	100	300	600	600	1.00		11/14/2019 12:16	11/21/19 17:14	MDS	EPA 6010C	
Total Aluminum	***41.7***	ug/L	6.0	18	36	36	1.00		11/14/2019 12:16	11/20/19 13:46	NAH	EPA 6010C	
Total Barium	***76.0***	ug/L	0.29	0.90	1.8	1.8	1.00		11/14/2019 12:16	11/20/19 13:46	NAH	EPA 6010C	
Total Beryllium	<0.30	ug/L	0.10	0.30	0.60	0.60	1.00	U	11/14/2019 12:16	11/20/19 13:46	NAH	EPA 6010C	
Total Cadmium	<1.0	ug/L	0.30	1.0	2.0	2.0	1.00	U	11/14/2019 12:16	11/20/19 13:46	NAH	EPA 6010C	
Total Calcium	***51900***	ug/L	17	50	100	100	1.00		11/14/2019 12:16	11/20/19 13:46	NAH	EPA 6010C	
Total Chromium	<2.0	ug/L	0.60	2.0	4.0	4.0	1.00	U	11/14/2019 12:16	11/20/19 13:46	NAH	EPA 6010C	
Total Cobalt	***1.5***	ug/L	0.70	2.0	4.0	4.0	1.00	J	11/14/2019 12:16	11/20/19 13:46	NAH	EPA 6010C	
Total Copper	<3.5	ug/L	1.2	3.5	7.0	7.0	1.00	U	11/14/2019 12:16	11/20/19 13:46	NAH	EPA 6010C	

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB#: 358089 Sample Description: PAALF-PW17-111319DUP Client Sample #: Sampled: 11/13/2019 1650

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Total Iron	***813***	ug/L	16	50	100	100	1.00		11/14/2019 12:16	11/20/19 13:46	NAH	EPA 6010C
Total Lead	<2.0	ug/L	1.4	2.0	4.0	4.0	1.00	U	11/14/2019 12:16	11/20/19 13:46	NAH	EPA 6010C
Total Magnesium	***20500***	ug/L	6.0	20	40	40	1.00		11/14/2019 12:16	11/20/19 13:46	NAH	EPA 6010C
Total Manganese	***781***	ug/L	0.70	2.0	4.0	4.0	1.00		11/14/2019 12:16	11/20/19 13:46	NAH	EPA 6010C
Total Nickel	***8.5***	ug/L	1.0	3.0	6.0	6.0	1.00		11/14/2019 12:16	11/20/19 13:46	NAH	EPA 6010C
Total Selenium	<6.5	ug/L	2.2	6.5	13	13	1.00	U	11/14/2019 12:16	11/20/19 13:46	NAH	EPA 6010C
Total Silver	<2.0	ug/L	0.70	2.0	4.0	4.0	1.00	U	11/14/2019 12:16	11/20/19 13:46	NAH	EPA 6010C
Total Vanadium	<2.5	ug/L	0.80	2.5	5.0	5.0	1.00	U	11/14/2019 12:16	11/20/19 13:46	NAH	EPA 6010C
Total Zinc	***9.2***	ug/L	1.6	5.0	10	10	1.00	J B	11/14/2019 12:16	11/20/19 13:46	NAH	EPA 6010C
Total Mercury	<0.060	ug/L	0.030	0.060	0.12	0.12	1.00	U	11/21/2019 12:10	11/22/19 13:18	MDS	EPA 7470A
Organic Results												
1,1,1,2-Tetrachloroethane	<0.10	ug/L	0.018	0.10	0.20	0.20	1.00	U		11/22/19 19:28	RLD	EPA 8260C
1,1,1-Trichloroethane	<0.050	ug/L	0.018	0.050	0.10	0.10	1.00	U		11/22/19 19:28	RLD	EPA 8260C
1,1,2,2-Tetrachloroethane	<0.050	ug/L	0.014	0.050	0.10	0.10	1.00	U		11/22/19 19:28	RLD	EPA 8260C
1,1,2-Trichloroethane	<0.10	ug/L	0.019	0.10	0.20	0.20	1.00	U		11/22/19 19:28	RLD	EPA 8260C
1,1-Dichloroethane	***0.028***	ug/L	0.015	0.050	0.10	0.10	1.00	J		11/22/19 19:28	RLD	EPA 8260C
1,1-Dichloroethene	<0.10	ug/L	0.040	0.10	0.20	0.20	1.00	U		11/22/19 19:28	RLD	EPA 8260C
1,2,3-Trichloropropane	<0.10	ug/L	0.070	0.10	0.20	0.20	1.00	U		11/22/19 19:28	RLD	EPA 8260C
1,2-Dibromo-3-chloropropane	<0.10	ug/L	0.070	0.10	0.20	0.20	1.00	U		11/22/19 19:28	RLD	EPA 8260C
1,2-Dibromoethane	<0.10	ug/L	0.040	0.10	0.20	0.20	1.00	U		11/22/19 19:28	RLD	EPA 8260C
1,2-Dichlorobenzene	<0.050	ug/L	0.022	0.050	0.10	0.10	1.00	U		11/22/19 19:28	RLD	EPA 8260C
1,2-Dichloroethane	<0.050	ug/L	0.024	0.050	0.10	0.10	1.00	U		11/22/19 19:28	RLD	EPA 8260C
1,2-Dichloropropane	***0.092***	ug/L	0.024	0.050	0.10	0.10	1.00	J		11/22/19 19:28	RLD	EPA 8260C
1,4-Dichloro-2-butene	<0.10	ug/L	0.060	0.10	0.20	0.20	1.00	U		11/22/19 19:28	RLD	EPA 8260C
1,4-Dichlorobenzene	***0.34***	ug/L	0.017	0.050	0.10	0.10	1.00			11/22/19 19:28	RLD	EPA 8260C
2-Butanone	<1.0	ug/L	0.50	1.0	2.0	2.0	1.00	U		11/22/19 19:28	RLD	EPA 8260C
2-Hexanone	<1.0	ug/L	0.30	1.0	2.0	2.0	1.00	U		11/22/19 19:28	RLD	EPA 8260C

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB#: 358089 Sample Description: PAALF-PW17-111319DUP Client Sample #: Sampled: 11/13/2019 1650

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
4-Methyl-2-pentanone	<0.50	ug/L	0.22	0.50	1.0	1.0	1.00	U		11/22/19 19:28	RLD	EPA 8260C
Acetone	<1.0	ug/L	0.80	1.0	2.0	2.0	1.00	U		11/22/19 19:28	RLD	EPA 8260C
Acrylonitrile	<0.50	ug/L	0.16	0.50	1.0	1.0	1.00	U		11/22/19 19:28	RLD	EPA 8260C
Benzene	***0.20***	ug/L	0.019	0.050	0.10	0.10	1.00			11/22/19 19:28	RLD	EPA 8260C
Bromochloromethane	<0.10	ug/L	0.040	0.10	0.20	0.20	1.00	U		11/22/19 19:28	RLD	EPA 8260C
Bromodichloromethane	<0.050	ug/L	0.028	0.050	0.10	0.10	1.00	U		11/22/19 19:28	RLD	EPA 8260C
Bromoform	<0.050	ug/L	0.030	0.050	0.20	0.20	1.00	U		11/22/19 19:28	RLD	EPA 8260C
Bromomethane	<0.10	ug/L	0.060	0.10	0.20	0.20	1.00	U Y,Z		11/22/19 19:28	RLD	EPA 8260C
Carbon disulfide	<0.040	ug/L	0.014	0.040	0.20	0.20	1.00	U		11/22/19 19:28	RLD	EPA 8260C
Carbon tetrachloride	<0.050	ug/L	0.029	0.050	0.10	0.10	1.00	U		11/22/19 19:28	RLD	EPA 8260C
Chlorobenzene	***0.39***	ug/L	0.015	0.050	0.10	0.10	1.00			11/22/19 19:28	RLD	EPA 8260C
Chloroethane	<0.050	ug/L	0.023	0.050	0.20	0.20	1.00	U		11/22/19 19:28	RLD	EPA 8260C
Chloroform	***0.031***	ug/L	0.023	0.050	0.10	0.10	1.00	J		11/22/19 19:28	RLD	EPA 8260C
Chloromethane	<0.050	ug/L	0.030	0.050	0.10	0.10	1.00	U		11/22/19 19:28	RLD	EPA 8260C
cis-1,2-Dichloroethene	***0.099***	ug/L	0.027	0.050	0.10	0.10	1.00	J		11/22/19 19:28	RLD	EPA 8260C
cis-1,3-Dichloropropene	<0.050	ug/L	0.020	0.050	0.10	0.10	1.00	U		11/22/19 19:28	RLD	EPA 8260C
Dibromochloromethane	<0.050	ug/L	0.030	0.050	0.10	0.10	1.00	U		11/22/19 19:28	RLD	EPA 8260C
Dibromomethane	<0.050	ug/L	0.030	0.050	0.10	0.10	1.00	U		11/22/19 19:28	RLD	EPA 8260C
Ethylbenzene	<0.050	ug/L	0.016	0.050	0.10	0.10	1.00	U		11/22/19 19:28	RLD	EPA 8260C
Iodomethane	<0.40	ug/L	0.20	0.40	0.80	0.80	1.00	U Q,Y		11/22/19 19:28	RLD	EPA 8260C
m & p-Xylene	***0.065***	ug/L	0.030	0.10	0.20	0.20	1.00	J		11/22/19 19:28	RLD	EPA 8260C
Methyl tert-butyl ether	<0.050	ug/L	0.017	0.050	0.10	0.10	1.00	U		11/22/19 19:28	RLD	EPA 8260C
Methylene chloride	<0.10	ug/L	0.030	0.10	0.40	0.40	1.00	U Z,Q		11/22/19 19:28	RLD	EPA 8260C
o-Xylene	<0.050	ug/L	0.017	0.050	0.10	0.10	1.00	U		11/22/19 19:28	RLD	EPA 8260C
Styrene	<0.020	ug/L	0.011	0.020	0.10	0.10	1.00	U		11/22/19 19:28	RLD	EPA 8260C
Tetrachloroethene	<0.050	ug/L	0.023	0.050	0.10	0.10	1.00	U		11/22/19 19:28	RLD	EPA 8260C
Toluene	***0.019***	ug/L	0.017	0.050	0.10	0.10	1.00	J		11/22/19 19:28	RLD	EPA 8260C
trans-1,2-Dichloroethene	<0.050	ug/L	0.029	0.050	0.10	0.10	1.00	U		11/22/19 19:28	RLD	EPA 8260C

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB#: 358089 Sample Description: PAALF-PW17-111319DUP Client Sample #: Sampled: 11/13/2019 1650

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
trans-1,3-Dichloropropene	<0.050	ug/L	0.030	0.050	0.20	0.20	1.00	U		11/22/19 19:28	RLD	EPA 8260C
Trichloroethene	<0.050	ug/L	0.025	0.050	0.10	0.10	1.00	U		11/22/19 19:28	RLD	EPA 8260C
Trichlorofluoromethane	<0.050	ug/L	0.029	0.050	0.20	0.20	1.00	U		11/22/19 19:28	RLD	EPA 8260C
Vinyl Acetate	<1.0	ug/L	0.40	1.0	2.0	2.0	1.00	U		11/22/19 19:28	RLD	EPA 8260C
Vinyl chloride	***0.046***	ug/L	0.013	0.020	0.10	0.10	1.00	J		11/22/19 19:28	RLD	EPA 8260C
1,2 Dichloroethane-d4	97	% Recovery	81			118	1.00			11/22/19 19:28	RLD	EPA 8260C
Bromofluorobenzene	94	% Recovery	85			114	1.00			11/22/19 19:28	RLD	EPA 8260C
d8-Toluene	101	% Recovery	89			112	1.00			11/22/19 19:28	RLD	EPA 8260C
Dibromofluoromethane	101	% Recovery	80			119	1.00			11/22/19 19:28	RLD	EPA 8260C

CT LAB#: 358090 Sample Description: PAALF-PW17-111319FDUP Client Sample #: Sampled: 11/13/2019 1650

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method	
Metals Results													
Dissolved Arsenic	***1.8***	ug/L	0.80	2.0	4.0	4.0	1.00	J	11/22/2019 11:15	11/23/19 16:08	MDS	EPA 7010	^
Dissolved Thallium	<0.80	ug/L	0.26	0.80	1.6	1.6	1.00	U	11/20/2019 09:20	11/21/19 12:24	MDS	EPA 7010	^
Dissolved Antimony	<3.0	ug/L	1.0	3.0	6.0	6.0	1.00	U	11/18/2019 09:30	11/19/19 12:10	MDS	EPA 7010	^
Dissolved Aluminum	***7.7***	ug/L	6.0	18	36	36	1.00	J B	11/15/2019 12:16	11/20/19 18:00	NAH	EPA 6010C	
Dissolved Barium	***87.7***	ug/L	0.29	0.90	1.8	1.8	1.00		11/15/2019 12:16	11/20/19 18:00	NAH	EPA 6010C	
Dissolved Beryllium	<0.30	ug/L	0.10	0.30	0.60	0.60	1.00	U	11/15/2019 12:16	11/20/19 18:00	NAH	EPA 6010C	
Dissolved Cadmium	<1.0	ug/L	0.30	1.0	2.0	2.0	1.00	U	11/15/2019 12:16	11/20/19 18:00	NAH	EPA 6010C	
Dissolved Calcium	***55800***	ug/L	17	50	100	100	1.00		11/15/2019 12:16	11/20/19 18:00	NAH	EPA 6010C	
Dissolved Chromium	<2.0	ug/L	0.60	2.0	4.0	4.0	1.00	U	11/15/2019 12:16	11/20/19 18:00	NAH	EPA 6010C	
Dissolved Cobalt	***1.8***	ug/L	0.70	2.0	4.0	4.0	1.00	J	11/15/2019 12:16	11/20/19 18:00	NAH	EPA 6010C	
Dissolved Copper	***1.3***	ug/L	1.2	3.5	7.0	7.0	1.00	J	11/15/2019 12:16	11/20/19 18:00	NAH	EPA 6010C	
Dissolved Iron	***952***	ug/L	16	50	100	100	1.00		11/15/2019 12:16	11/20/19 18:00	NAH	EPA 6010C	

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB#: 358090 Sample Description: PAALF-PW17-111319FDUP Client Sample #: Sampled: 11/13/2019 1650

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Dissolved Lead	<2.0	ug/L	1.4	2.0	4.0	4.0	1.00	U	11/15/2019 12:16	11/20/19 18:00	NAH	EPA 6010C
Dissolved Magnesium	***21300***	ug/L	6.0	20	40	40	1.00		11/15/2019 12:16	11/20/19 18:00	NAH	EPA 6010C
Dissolved Manganese	***978***	ug/L	0.70	2.0	4.0	4.0	1.00		11/15/2019 12:16	11/20/19 18:00	NAH	EPA 6010C
Dissolved Nickel	***10.1***	ug/L	1.0	3.0	6.0	6.0	1.00		11/15/2019 12:16	11/20/19 18:00	NAH	EPA 6010C
Dissolved Selenium	<6.5	ug/L	2.2	6.5	13	13	1.00	U	11/15/2019 12:16	11/20/19 18:00	NAH	EPA 6010C
Dissolved Silver	<2.0	ug/L	0.70	2.0	4.0	4.0	1.00	U	11/15/2019 12:16	11/20/19 18:00	NAH	EPA 6010C
Dissolved Vanadium	<2.5	ug/L	0.80	2.5	5.0	5.0	1.00	U	11/15/2019 12:16	11/20/19 18:00	NAH	EPA 6010C
Dissolved Zinc	***9.9***	ug/L	1.6	5.0	10	10	1.00	J B	11/15/2019 12:16	11/20/19 18:00	NAH	EPA 6010C
Dissolved Potassium	***3660***	ug/L	90	250	500	500	1.00		11/15/2019 12:16	11/21/19 17:53	MDS	EPA 6010C
Dissolved Mercury	<0.060	ug/L	0.030	0.060	0.12	0.12	1.00	U	11/21/2019 11:12	11/22/19 15:50	MDS	EPA 7470A
Dissolved Sodium	***21400***	ug/L	100	300	600	600	1.00		11/15/2019 12:16	11/21/19 17:53	MDS	EPA 6010C

CT LAB#: 358091 Sample Description: PAALF-PW19-111319 Client Sample #: Sampled: 11/13/2019 1655

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method	
Inorganic Results													
Conductivity	***4780.0***	uS/cm	1	1	1	1	1.00			11/14/19 13:05	CLB	EPA 9050A	
pH	***7.43***	S.U.	0.1	0.1	0.1	0.1	1.00			11/14/19 14:05	GMJ	EPA 9040C	^
Ammonia Nitrogen	<0.10	mg/L	0.022	0.10	0.20	0.20	1.00	U		11/20/19 14:56	SRW	EPA 350.1	^
Alkalinity	***270***	mg/L	6.0	15	30	30	1.00			11/18/19 16:25	SRW	EPA 310.2	^
COD	***260***	mg/L	15	35	75	75	1.00		11/19/2019 10:35	11/19/19 14:44	GMJ	EPA 410.4	^
Total Dissolved Solids	***2500***	mg/L	50	10	10	50	1.00			11/15/19 13:45	CLB	SM 2540C	
Chloride	***1300***	mg/L	100	150	300	300	100.00			11/15/19 09:53	TMG	EPA 9056A	
Nitrate Nitrogen	<0.20	mg/L	0.12	0.20	0.40	0.40	1.00	U		11/14/19 20:24	TMG	EPA 9056A	
Nitrite Nitrogen	<0.30	mg/L	0.14	0.30	0.60	0.60	1.00	U		11/14/19 20:24	TMG	EPA 9056A	
Sulfate	***270***	mg/L	8.0	15	30	30	10.00			11/15/19 10:13	TMG	EPA 9056A	

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB#: 358091 Sample Description: PAALF-PW19-111319 Client Sample #: Sampled: 11/13/2019 1655

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method	
Metals Results													
Turbidity	<1.0	NTU	1.0	1.0	1.0	1.0	1.00	U		11/14/19 15:00	NAH	EPA 180.1	
Total Antimony	<3.0	ug/L	1.0	3.0	6.0	6.0	1.00	U	11/18/2019 09:30	11/19/19 13:26	MDS	EPA 7010	^
Total Arsenic	***1.7***	ug/L	0.80	2.0	4.0	4.0	1.00	J	11/22/2019 11:15	11/25/19 12:25	MDS	EPA 7010	^
Total Thallium	<0.80	ug/L	0.26	0.80	1.6	1.6	1.00	U	11/20/2019 09:20	11/21/19 13:32	MDS	EPA 7010	^
Total Hardness	***910***	mg/L	0.067	0.21	0.41	0.41	1.00		11/14/2019 12:16	11/20/19 13:52	NAH	SM2340B/6010C	
Total Potassium	***24700***	ug/L	90	250	500	500	1.00		11/14/2019 12:16	11/21/19 17:17	MDS	EPA 6010C	
Total Sodium	<300	ug/L	100	300	600	600	1.00	U	11/14/2019 12:16	11/21/19 17:17	MDS	EPA 6010C	
Total Aluminum	***20.3***	ug/L	6.0	18	36	36	1.00	J	11/14/2019 12:16	11/20/19 13:52	NAH	EPA 6010C	
Total Barium	***87.6***	ug/L	0.29	0.90	1.8	1.8	1.00		11/14/2019 12:16	11/20/19 13:52	NAH	EPA 6010C	
Total Beryllium	<0.30	ug/L	0.10	0.30	0.60	0.60	1.00	U	11/14/2019 12:16	11/20/19 13:52	NAH	EPA 6010C	
Total Cadmium	<1.0	ug/L	0.30	1.0	2.0	2.0	1.00	U	11/14/2019 12:16	11/20/19 13:52	NAH	EPA 6010C	
Total Calcium	***111000***	ug/L	17	50	100	100	1.00		11/14/2019 12:16	11/20/19 13:52	NAH	EPA 6010C	
Total Chromium	***0.96***	ug/L	0.60	2.0	4.0	4.0	1.00	J	11/14/2019 12:16	11/20/19 13:52	NAH	EPA 6010C	
Total Cobalt	<2.0	ug/L	0.70	2.0	4.0	4.0	1.00	U	11/14/2019 12:16	11/20/19 13:52	NAH	EPA 6010C	
Total Copper	***8.1***	ug/L	1.2	3.5	7.0	7.0	1.00		11/14/2019 12:16	11/20/19 13:52	NAH	EPA 6010C	
Total Iron	***23.6***	ug/L	16	50	100	100	1.00	J B	11/14/2019 12:16	11/20/19 13:52	NAH	EPA 6010C	
Total Lead	<2.0	ug/L	1.4	2.0	4.0	4.0	1.00	U	11/14/2019 12:16	11/20/19 13:52	NAH	EPA 6010C	
Total Magnesium	***153000***	ug/L	6.0	20	40	40	1.00		11/14/2019 12:16	11/20/19 13:52	NAH	EPA 6010C	
Total Manganese	***7.2***	ug/L	0.70	2.0	4.0	4.0	1.00		11/14/2019 12:16	11/20/19 13:52	NAH	EPA 6010C	
Total Nickel	***10.5***	ug/L	1.0	3.0	6.0	6.0	1.00		11/14/2019 12:16	11/20/19 13:52	NAH	EPA 6010C	
Total Selenium	<6.5	ug/L	2.2	6.5	13	13	1.00	U	11/14/2019 12:16	11/20/19 13:52	NAH	EPA 6010C	
Total Silver	<2.0	ug/L	0.70	2.0	4.0	4.0	1.00	U	11/14/2019 12:16	11/20/19 13:52	NAH	EPA 6010C	
Total Vanadium	***2.5***	ug/L	0.80	2.5	5.0	5.0	1.00	J	11/14/2019 12:16	11/20/19 13:52	NAH	EPA 6010C	
Total Zinc	***4.7***	ug/L	1.6	5.0	10	10	1.00	J B	11/14/2019 12:16	11/20/19 13:52	NAH	EPA 6010C	
Total Mercury	<0.060	ug/L	0.030	0.060	0.12	0.12	1.00	U	11/21/2019 12:10	11/22/19 13:20	MDS	EPA 7470A	

Organic Results

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB#: 358091 Sample Description: PAALF-PW19-111319 Client Sample #: Sampled: 11/13/2019 1655

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
1,1,1,2-Tetrachloroethane	<0.10	ug/L	0.018	0.10	0.20	0.20	1.00	U		11/22/19 19:57	RLD	EPA 8260C
1,1,1-Trichloroethane	<0.050	ug/L	0.018	0.050	0.10	0.10	1.00	U		11/22/19 19:57	RLD	EPA 8260C
1,1,2,2-Tetrachloroethane	<0.050	ug/L	0.014	0.050	0.10	0.10	1.00	U		11/22/19 19:57	RLD	EPA 8260C
1,1,2-Trichloroethane	<0.10	ug/L	0.019	0.10	0.20	0.20	1.00	U		11/22/19 19:57	RLD	EPA 8260C
1,1-Dichloroethane	<0.050	ug/L	0.015	0.050	0.10	0.10	1.00	U		11/22/19 19:57	RLD	EPA 8260C
1,1-Dichloroethene	<0.10	ug/L	0.040	0.10	0.20	0.20	1.00	U		11/22/19 19:57	RLD	EPA 8260C
1,2,3-Trichloropropane	<0.10	ug/L	0.070	0.10	0.20	0.20	1.00	U		11/22/19 19:57	RLD	EPA 8260C
1,2-Dibromo-3-chloropropane	<0.10	ug/L	0.070	0.10	0.20	0.20	1.00	U		11/22/19 19:57	RLD	EPA 8260C
1,2-Dibromoethane	<0.10	ug/L	0.040	0.10	0.20	0.20	1.00	U		11/22/19 19:57	RLD	EPA 8260C
1,2-Dichlorobenzene	<0.050	ug/L	0.022	0.050	0.10	0.10	1.00	U		11/22/19 19:57	RLD	EPA 8260C
1,2-Dichloroethane	<0.050	ug/L	0.024	0.050	0.10	0.10	1.00	U		11/22/19 19:57	RLD	EPA 8260C
1,2-Dichloropropane	<0.050	ug/L	0.024	0.050	0.10	0.10	1.00	U		11/22/19 19:57	RLD	EPA 8260C
1,4-Dichloro-2-butene	<0.10	ug/L	0.060	0.10	0.20	0.20	1.00	U		11/22/19 19:57	RLD	EPA 8260C
1,4-Dichlorobenzene	<0.050	ug/L	0.017	0.050	0.10	0.10	1.00	U		11/22/19 19:57	RLD	EPA 8260C
2-Butanone	<1.0	ug/L	0.50	1.0	2.0	2.0	1.00	U		11/22/19 19:57	RLD	EPA 8260C
2-Hexanone	<1.0	ug/L	0.30	1.0	2.0	2.0	1.00	U		11/22/19 19:57	RLD	EPA 8260C
4-Methyl-2-pentanone	<0.50	ug/L	0.22	0.50	1.0	1.0	1.00	U		11/22/19 19:57	RLD	EPA 8260C
Acetone	<1.0	ug/L	0.80	1.0	2.0	2.0	1.00	U		11/22/19 19:57	RLD	EPA 8260C
Acrylonitrile	<0.50	ug/L	0.16	0.50	1.0	1.0	1.00	U		11/22/19 19:57	RLD	EPA 8260C
Benzene	<0.050	ug/L	0.019	0.050	0.10	0.10	1.00	U		11/22/19 19:57	RLD	EPA 8260C
Bromochloromethane	<0.10	ug/L	0.040	0.10	0.20	0.20	1.00	U		11/22/19 19:57	RLD	EPA 8260C
Bromodichloromethane	<0.050	ug/L	0.028	0.050	0.10	0.10	1.00	U		11/22/19 19:57	RLD	EPA 8260C
Bromoform	<0.050	ug/L	0.030	0.050	0.20	0.20	1.00	U		11/22/19 19:57	RLD	EPA 8260C
Bromomethane	<0.10	ug/L	0.060	0.10	0.20	0.20	1.00	U Z,Y		11/22/19 19:57	RLD	EPA 8260C
Carbon disulfide	***0.021***	ug/L	0.014	0.040	0.20	0.20	1.00	J		11/22/19 19:57	RLD	EPA 8260C
Carbon tetrachloride	<0.050	ug/L	0.029	0.050	0.10	0.10	1.00	U		11/22/19 19:57	RLD	EPA 8260C
Chlorobenzene	<0.050	ug/L	0.015	0.050	0.10	0.10	1.00	U		11/22/19 19:57	RLD	EPA 8260C
Chloroethane	<0.050	ug/L	0.023	0.050	0.20	0.20	1.00	U		11/22/19 19:57	RLD	EPA 8260C

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB#: 358091 Sample Description: PAALF-PW19-111319 Client Sample #: Sampled: 11/13/2019 1655

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Chloroform	<0.050	ug/L	0.023	0.050	0.10	0.10	1.00	U		11/22/19 19:57	RLD	EPA 8260C
Chloromethane	***0.031***	ug/L	0.030	0.050	0.10	0.10	1.00	J		11/22/19 19:57	RLD	EPA 8260C
cis-1,2-Dichloroethene	<0.050	ug/L	0.027	0.050	0.10	0.10	1.00	U		11/22/19 19:57	RLD	EPA 8260C
cis-1,3-Dichloropropene	<0.050	ug/L	0.020	0.050	0.10	0.10	1.00	U		11/22/19 19:57	RLD	EPA 8260C
Dibromochloromethane	<0.050	ug/L	0.030	0.050	0.10	0.10	1.00	U		11/22/19 19:57	RLD	EPA 8260C
Dibromomethane	<0.050	ug/L	0.030	0.050	0.10	0.10	1.00	U		11/22/19 19:57	RLD	EPA 8260C
Ethylbenzene	***0.018***	ug/L	0.016	0.050	0.10	0.10	1.00	J		11/22/19 19:57	RLD	EPA 8260C
Iodomethane	<0.40	ug/L	0.20	0.40	0.80	0.80	1.00	U Q,Y		11/22/19 19:57	RLD	EPA 8260C
m & p-Xylene	***0.078***	ug/L	0.030	0.10	0.20	0.20	1.00	J		11/22/19 19:57	RLD	EPA 8260C
Methyl tert-butyl ether	<0.050	ug/L	0.017	0.050	0.10	0.10	1.00	U		11/22/19 19:57	RLD	EPA 8260C
Methylene chloride	<0.10	ug/L	0.030	0.10	0.40	0.40	1.00	U Z,Q		11/22/19 19:57	RLD	EPA 8260C
o-Xylene	***0.023***	ug/L	0.017	0.050	0.10	0.10	1.00	J		11/22/19 19:57	RLD	EPA 8260C
Styrene	<0.020	ug/L	0.011	0.020	0.10	0.10	1.00	U		11/22/19 19:57	RLD	EPA 8260C
Tetrachloroethene	<0.050	ug/L	0.023	0.050	0.10	0.10	1.00	U		11/22/19 19:57	RLD	EPA 8260C
Toluene	<0.050	ug/L	0.017	0.050	0.10	0.10	1.00	U		11/22/19 19:57	RLD	EPA 8260C
trans-1,2-Dichloroethene	<0.050	ug/L	0.029	0.050	0.10	0.10	1.00	U		11/22/19 19:57	RLD	EPA 8260C
trans-1,3-Dichloropropene	<0.050	ug/L	0.030	0.050	0.20	0.20	1.00	U		11/22/19 19:57	RLD	EPA 8260C
Trichloroethene	<0.050	ug/L	0.025	0.050	0.10	0.10	1.00	U		11/22/19 19:57	RLD	EPA 8260C
Trichlorofluoromethane	<0.050	ug/L	0.029	0.050	0.20	0.20	1.00	U		11/22/19 19:57	RLD	EPA 8260C
Vinyl Acetate	<1.0	ug/L	0.40	1.0	2.0	2.0	1.00	U		11/22/19 19:57	RLD	EPA 8260C
Vinyl chloride	<0.020	ug/L	0.013	0.020	0.10	0.10	1.00	U		11/22/19 19:57	RLD	EPA 8260C
1,2 Dichloroethane-d4	92	% Recovery	81			118	1.00			11/22/19 19:57	RLD	EPA 8260C
Bromofluorobenzene	95	% Recovery	85			114	1.00			11/22/19 19:57	RLD	EPA 8260C
d8-Toluene	101	% Recovery	89			112	1.00			11/22/19 19:57	RLD	EPA 8260C
Dibromofluoromethane	101	% Recovery	80			119	1.00			11/22/19 19:57	RLD	EPA 8260C

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB#: 358092 Sample Description: PAALF-PW19-111319F Client Sample #: Sampled: 11/13/2019 1655

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method	
Metals Results													
Dissolved Arsenic	***1.1***	ug/L	0.80	2.0	4.0	4.0	1.00	J	11/22/2019 11:15	11/23/19 16:26	MDS	EPA 7010	^
Dissolved Thallium	<0.80	ug/L	0.26	0.80	1.6	1.6	1.00	U	11/20/2019 09:20	11/21/19 12:30	MDS	EPA 7010	^
Dissolved Antimony	<3.0	ug/L	1.0	3.0	6.0	6.0	1.00	U	11/18/2019 09:30	11/19/19 12:15	MDS	EPA 7010	^
Dissolved Aluminum	***9.1***	ug/L	6.0	18	36	36	1.00	J B	11/15/2019 12:16	11/20/19 18:06	NAH	EPA 6010C	
Dissolved Barium	***90.3***	ug/L	0.29	0.90	1.8	1.8	1.00		11/15/2019 12:16	11/20/19 18:06	NAH	EPA 6010C	
Dissolved Beryllium	<0.30	ug/L	0.10	0.30	0.60	0.60	1.00	U	11/15/2019 12:16	11/20/19 18:06	NAH	EPA 6010C	
Dissolved Cadmium	<1.0	ug/L	0.30	1.0	2.0	2.0	1.00	U	11/15/2019 12:16	11/20/19 18:06	NAH	EPA 6010C	
Dissolved Calcium	***114000***	ug/L	17	50	100	100	1.00		11/15/2019 12:16	11/20/19 18:06	NAH	EPA 6010C	
Dissolved Chromium	***1.2***	ug/L	0.60	2.0	4.0	4.0	1.00	J	11/15/2019 12:16	11/20/19 18:06	NAH	EPA 6010C	
Dissolved Cobalt	<2.0	ug/L	0.70	2.0	4.0	4.0	1.00	U	11/15/2019 12:16	11/20/19 18:06	NAH	EPA 6010C	
Dissolved Copper	***8.7***	ug/L	1.2	3.5	7.0	7.0	1.00		11/15/2019 12:16	11/20/19 18:06	NAH	EPA 6010C	
Dissolved Iron	<50	ug/L	16	50	100	100	1.00	U	11/15/2019 12:16	11/20/19 18:06	NAH	EPA 6010C	
Dissolved Lead	<2.0	ug/L	1.4	2.0	4.0	4.0	1.00	U	11/15/2019 12:16	11/20/19 18:06	NAH	EPA 6010C	
Dissolved Magnesium	***154000***	ug/L	6.0	20	40	40	1.00		11/15/2019 12:16	11/20/19 18:06	NAH	EPA 6010C	
Dissolved Manganese	***5.9***	ug/L	0.70	2.0	4.0	4.0	1.00		11/15/2019 12:16	11/20/19 18:06	NAH	EPA 6010C	
Dissolved Nickel	***11.3***	ug/L	1.0	3.0	6.0	6.0	1.00		11/15/2019 12:16	11/20/19 18:06	NAH	EPA 6010C	
Dissolved Selenium	<6.5	ug/L	2.2	6.5	13	13	1.00	U	11/15/2019 12:16	11/20/19 18:06	NAH	EPA 6010C	
Dissolved Silver	<2.0	ug/L	0.70	2.0	4.0	4.0	1.00	U	11/15/2019 12:16	11/20/19 18:06	NAH	EPA 6010C	
Dissolved Vanadium	***2.9***	ug/L	0.80	2.5	5.0	5.0	1.00	J	11/15/2019 12:16	11/20/19 18:06	NAH	EPA 6010C	
Dissolved Zinc	***4.5***	ug/L	1.6	5.0	10	10	1.00	J B	11/15/2019 12:16	11/20/19 18:06	NAH	EPA 6010C	
Dissolved Potassium	***24900***	ug/L	90	250	500	500	1.00		11/15/2019 12:16	11/21/19 17:56	MDS	EPA 6010C	
Dissolved Mercury	<0.060	ug/L	0.030	0.060	0.12	0.12	1.00	U	11/21/2019 11:12	11/22/19 15:52	MDS	EPA 7470A	
Dissolved Sodium	<300	ug/L	100	300	600	600	1.00	U	11/15/2019 12:16	11/21/19 17:56	MDS	EPA 6010C	

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB#: 358093 Sample Description: PAALF-PW19-111319RB Client Sample #: Sampled: 11/13/2019 1710

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method	
Inorganic Results													
Conductivity	***67.3***	uS/cm	1	1	1	1	1.00			11/14/19 13:05	CLB	EPA 9050A	
pH	***5.62***	S.U.	0.1	0.1	0.1	0.1	1.00			11/14/19 14:05	GMJ	EPA 9040C	^
Ammonia Nitrogen	<0.10	mg/L	0.022	0.10	0.20	0.20	1.00	U		11/20/19 14:57	SRW	EPA 350.1	^
Alkalinity	<15	mg/L	6.0	15	30	30	1.00	U		11/18/19 16:26	SRW	EPA 310.2	^
COD	<35	mg/L	15	35	75	75	1.00	U	11/19/2019 10:35	11/19/19 14:44	GMJ	EPA 410.4	^
Total Dissolved Solids	***73***	mg/L	10	10	10	10	1.00			11/15/19 13:45	CLB	SM 2540C	
Chloride	<1.5	mg/L	1.0	1.5	3.0	3.0	1.00	U		11/14/19 20:44	TMG	EPA 9056A	
Nitrate Nitrogen	<0.20	mg/L	0.12	0.20	0.40	0.40	1.00	U		11/14/19 20:44	TMG	EPA 9056A	
Nitrite Nitrogen	<0.30	mg/L	0.14	0.30	0.60	0.60	1.00	U		11/14/19 20:44	TMG	EPA 9056A	
Sulfate	<1.5	mg/L	0.80	1.5	3.0	3.0	1.00	U		11/14/19 20:44	TMG	EPA 9056A	
Metals Results													
Turbidity	<1.0	NTU	1.0	1.0	1.0	1.0	1.00	U		11/14/19 15:00	NAH	EPA 180.1	
Total Antimony	<3.0	ug/L	1.0	3.0	6.0	6.0	1.00	U	11/18/2019 09:30	11/19/19 13:31	MDS	EPA 7010	^
Total Arsenic	<2.0	ug/L	0.80	2.0	4.0	4.0	1.00	U	11/22/2019 11:15	11/25/19 12:31	MDS	EPA 7010	^
Total Thallium	<0.80	ug/L	0.26	0.80	1.6	1.6	1.00	U	11/20/2019 09:20	11/21/19 13:38	MDS	EPA 7010	^
Total Hardness	<0.21	mg/L	0.067	0.21	0.41	0.41	1.00	U	11/14/2019 12:16	11/20/19 13:59	NAH	SM2340B/6010C	
Total Potassium	<250	ug/L	90	250	500	500	1.00	U	11/14/2019 12:16	11/21/19 17:20	MDS	EPA 6010C	
Total Sodium	<300	ug/L	100	300	600	600	1.00	U	11/14/2019 12:16	11/21/19 17:20	MDS	EPA 6010C	
Total Aluminum	<18	ug/L	6.0	18	36	36	1.00	U	11/14/2019 12:16	11/20/19 13:59	NAH	EPA 6010C	
Total Barium	<0.90	ug/L	0.29	0.90	1.8	1.8	1.00	U	11/14/2019 12:16	11/20/19 13:59	NAH	EPA 6010C	
Total Beryllium	<0.30	ug/L	0.10	0.30	0.60	0.60	1.00	U	11/14/2019 12:16	11/20/19 13:59	NAH	EPA 6010C	
Total Cadmium	<1.0	ug/L	0.30	1.0	2.0	2.0	1.00	U	11/14/2019 12:16	11/20/19 13:59	NAH	EPA 6010C	
Total Calcium	<50	ug/L	17	50	100	100	1.00	U	11/14/2019 12:16	11/20/19 13:59	NAH	EPA 6010C	
Total Chromium	<2.0	ug/L	0.60	2.0	4.0	4.0	1.00	U	11/14/2019 12:16	11/20/19 13:59	NAH	EPA 6010C	
Total Cobalt	<2.0	ug/L	0.70	2.0	4.0	4.0	1.00	U	11/14/2019 12:16	11/20/19 13:59	NAH	EPA 6010C	
Total Copper	<3.5	ug/L	1.2	3.5	7.0	7.0	1.00	U	11/14/2019 12:16	11/20/19 13:59	NAH	EPA 6010C	

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB#: 358093 Sample Description: PAALF-PW19-111319RB Client Sample #: Sampled: 11/13/2019 1710

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Total Iron	<50	ug/L	16	50	100	100	1.00	U B	11/14/2019 12:16	11/20/19 13:59	NAH	EPA 6010C
Total Lead	<2.0	ug/L	1.4	2.0	4.0	4.0	1.00	U	11/14/2019 12:16	11/20/19 13:59	NAH	EPA 6010C
Total Magnesium	***7.2***	ug/L	6.0	20	40	40	1.00	J	11/14/2019 12:16	11/20/19 13:59	NAH	EPA 6010C
Total Manganese	<2.0	ug/L	0.70	2.0	4.0	4.0	1.00	U	11/14/2019 12:16	11/20/19 13:59	NAH	EPA 6010C
Total Nickel	<3.0	ug/L	1.0	3.0	6.0	6.0	1.00	U	11/14/2019 12:16	11/20/19 13:59	NAH	EPA 6010C
Total Selenium	<6.5	ug/L	2.2	6.5	13	13	1.00	U	11/14/2019 12:16	11/20/19 13:59	NAH	EPA 6010C
Total Silver	<2.0	ug/L	0.70	2.0	4.0	4.0	1.00	U	11/14/2019 12:16	11/20/19 13:59	NAH	EPA 6010C
Total Vanadium	<2.5	ug/L	0.80	2.5	5.0	5.0	1.00	U	11/14/2019 12:16	11/20/19 13:59	NAH	EPA 6010C
Total Zinc	***2.2***	ug/L	1.6	5.0	10	10	1.00	J B	11/14/2019 12:16	11/20/19 13:59	NAH	EPA 6010C
Total Mercury	<0.060	ug/L	0.030	0.060	0.12	0.12	1.00	U	11/21/2019 12:10	11/22/19 13:22	MDS	EPA 7470A
Organic Results												
1,1,1,2-Tetrachloroethane	<0.10	ug/L	0.018	0.10	0.20	0.20	1.00	U		11/22/19 20:25	RLD	EPA 8260C
1,1,1-Trichloroethane	<0.050	ug/L	0.018	0.050	0.10	0.10	1.00	U		11/22/19 20:25	RLD	EPA 8260C
1,1,2,2-Tetrachloroethane	<0.050	ug/L	0.014	0.050	0.10	0.10	1.00	U		11/22/19 20:25	RLD	EPA 8260C
1,1,2-Trichloroethane	<0.10	ug/L	0.019	0.10	0.20	0.20	1.00	U		11/22/19 20:25	RLD	EPA 8260C
1,1-Dichloroethane	<0.050	ug/L	0.015	0.050	0.10	0.10	1.00	U		11/22/19 20:25	RLD	EPA 8260C
1,1-Dichloroethene	<0.10	ug/L	0.040	0.10	0.20	0.20	1.00	U		11/22/19 20:25	RLD	EPA 8260C
1,2,3-Trichloropropane	<0.10	ug/L	0.070	0.10	0.20	0.20	1.00	U		11/22/19 20:25	RLD	EPA 8260C
1,2-Dibromo-3-chloropropane	<0.10	ug/L	0.070	0.10	0.20	0.20	1.00	U		11/22/19 20:25	RLD	EPA 8260C
1,2-Dibromoethane	<0.10	ug/L	0.040	0.10	0.20	0.20	1.00	U		11/22/19 20:25	RLD	EPA 8260C
1,2-Dichlorobenzene	<0.050	ug/L	0.022	0.050	0.10	0.10	1.00	U		11/22/19 20:25	RLD	EPA 8260C
1,2-Dichloroethane	<0.050	ug/L	0.024	0.050	0.10	0.10	1.00	U		11/22/19 20:25	RLD	EPA 8260C
1,2-Dichloropropane	<0.050	ug/L	0.024	0.050	0.10	0.10	1.00	U		11/22/19 20:25	RLD	EPA 8260C
1,4-Dichloro-2-butene	<0.10	ug/L	0.060	0.10	0.20	0.20	1.00	U		11/22/19 20:25	RLD	EPA 8260C
1,4-Dichlorobenzene	<0.050	ug/L	0.017	0.050	0.10	0.10	1.00	U		11/22/19 20:25	RLD	EPA 8260C
2-Butanone	<1.0	ug/L	0.50	1.0	2.0	2.0	1.00	U		11/22/19 20:25	RLD	EPA 8260C
2-Hexanone	<1.0	ug/L	0.30	1.0	2.0	2.0	1.00	U		11/22/19 20:25	RLD	EPA 8260C

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB#: 358093 Sample Description: PAALF-PW19-111319RB Client Sample #: Sampled: 11/13/2019 1710

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
4-Methyl-2-pentanone	<0.50	ug/L	0.22	0.50	1.0	1.0	1.00	U		11/22/19 20:25	RLD	EPA 8260C
Acetone	***4.7***	ug/L	0.80	1.0	2.0	2.0	1.00			11/22/19 20:25	RLD	EPA 8260C
Acrylonitrile	<0.50	ug/L	0.16	0.50	1.0	1.0	1.00	U		11/22/19 20:25	RLD	EPA 8260C
Benzene	***0.022***	ug/L	0.019	0.050	0.10	0.10	1.00	J		11/22/19 20:25	RLD	EPA 8260C
Bromochloromethane	<0.10	ug/L	0.040	0.10	0.20	0.20	1.00	U		11/22/19 20:25	RLD	EPA 8260C
Bromodichloromethane	<0.050	ug/L	0.028	0.050	0.10	0.10	1.00	U		11/22/19 20:25	RLD	EPA 8260C
Bromoform	<0.050	ug/L	0.030	0.050	0.20	0.20	1.00	U		11/22/19 20:25	RLD	EPA 8260C
Bromomethane	<0.10	ug/L	0.060	0.10	0.20	0.20	1.00	U Z,Y		11/22/19 20:25	RLD	EPA 8260C
Carbon disulfide	<0.040	ug/L	0.014	0.040	0.20	0.20	1.00	U		11/22/19 20:25	RLD	EPA 8260C
Carbon tetrachloride	<0.050	ug/L	0.029	0.050	0.10	0.10	1.00	U		11/22/19 20:25	RLD	EPA 8260C
Chlorobenzene	<0.050	ug/L	0.015	0.050	0.10	0.10	1.00	U		11/22/19 20:25	RLD	EPA 8260C
Chloroethane	<0.050	ug/L	0.023	0.050	0.20	0.20	1.00	U		11/22/19 20:25	RLD	EPA 8260C
Chloroform	<0.050	ug/L	0.023	0.050	0.10	0.10	1.00	U		11/22/19 20:25	RLD	EPA 8260C
Chloromethane	<0.050	ug/L	0.030	0.050	0.10	0.10	1.00	U		11/22/19 20:25	RLD	EPA 8260C
cis-1,2-Dichloroethene	<0.050	ug/L	0.027	0.050	0.10	0.10	1.00	U		11/22/19 20:25	RLD	EPA 8260C
cis-1,3-Dichloropropene	<0.050	ug/L	0.020	0.050	0.10	0.10	1.00	U		11/22/19 20:25	RLD	EPA 8260C
Dibromochloromethane	<0.050	ug/L	0.030	0.050	0.10	0.10	1.00	U		11/22/19 20:25	RLD	EPA 8260C
Dibromomethane	<0.050	ug/L	0.030	0.050	0.10	0.10	1.00	U		11/22/19 20:25	RLD	EPA 8260C
Ethylbenzene	***0.29***	ug/L	0.016	0.050	0.10	0.10	1.00			11/22/19 20:25	RLD	EPA 8260C
Iodomethane	<0.40	ug/L	0.20	0.40	0.80	0.80	1.00	U Q,Y		11/22/19 20:25	RLD	EPA 8260C
m & p-Xylene	***1.2***	ug/L	0.030	0.10	0.20	0.20	1.00			11/22/19 20:25	RLD	EPA 8260C
Methyl tert-butyl ether	<0.050	ug/L	0.017	0.050	0.10	0.10	1.00	U		11/22/19 20:25	RLD	EPA 8260C
Methylene chloride	<0.10	ug/L	0.030	0.10	0.40	0.40	1.00	U Z,Q		11/22/19 20:25	RLD	EPA 8260C
o-Xylene	***0.31***	ug/L	0.017	0.050	0.10	0.10	1.00			11/22/19 20:25	RLD	EPA 8260C
Styrene	***0.45***	ug/L	0.011	0.020	0.10	0.10	1.00			11/22/19 20:25	RLD	EPA 8260C
Tetrachloroethene	<0.050	ug/L	0.023	0.050	0.10	0.10	1.00	U		11/22/19 20:25	RLD	EPA 8260C
Toluene	***0.58***	ug/L	0.017	0.050	0.10	0.10	1.00			11/22/19 20:25	RLD	EPA 8260C
trans-1,2-Dichloroethene	<0.050	ug/L	0.029	0.050	0.10	0.10	1.00	U		11/22/19 20:25	RLD	EPA 8260C

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB#: 358093 Sample Description: PAALF-PW19-111319RB Client Sample #: Sampled: 11/13/2019 1710

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
trans-1,3-Dichloropropene	<0.050	ug/L	0.030	0.050	0.20	0.20	1.00	U		11/22/19 20:25	RLD	EPA 8260C
Trichloroethene	<0.050	ug/L	0.025	0.050	0.10	0.10	1.00	U		11/22/19 20:25	RLD	EPA 8260C
Trichlorofluoromethane	<0.050	ug/L	0.029	0.050	0.20	0.20	1.00	U		11/22/19 20:25	RLD	EPA 8260C
Vinyl Acetate	<1.0	ug/L	0.40	1.0	2.0	2.0	1.00	U		11/22/19 20:25	RLD	EPA 8260C
Vinyl chloride	<0.020	ug/L	0.013	0.020	0.10	0.10	1.00	U		11/22/19 20:25	RLD	EPA 8260C
1,2 Dichloroethane-d4	104	% Recovery	81			118	1.00			11/22/19 20:25	RLD	EPA 8260C
Bromofluorobenzene	98	% Recovery	85			114	1.00			11/22/19 20:25	RLD	EPA 8260C
d8-Toluene	101	% Recovery	89			112	1.00			11/22/19 20:25	RLD	EPA 8260C
Dibromofluoromethane	101	% Recovery	80			119	1.00			11/22/19 20:25	RLD	EPA 8260C

CT LAB#: 358094 Sample Description: PAALF-PW11-111319FRB Client Sample #: Sampled: 11/13/2019 1710

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method	
Metals Results													
Dissolved Arsenic	<2.0	ug/L	0.80	2.0	4.0	4.0	1.00	U	11/22/2019 11:15	11/23/19 16:32	MDS	EPA 7010	^
Dissolved Thallium	<0.80	ug/L	0.26	0.80	1.6	1.6	1.00	U	11/20/2019 09:20	11/21/19 12:36	MDS	EPA 7010	^
Dissolved Antimony	<3.0	ug/L	1.0	3.0	6.0	6.0	1.00	U	11/18/2019 09:30	11/19/19 12:19	MDS	EPA 7010	^
Dissolved Aluminum	***9.5***	ug/L	6.0	18	36	36	1.00	J B	11/15/2019 12:16	11/20/19 18:13	NAH	EPA 6010C	
Dissolved Barium	<0.90	ug/L	0.29	0.90	1.8	1.8	1.00	U	11/15/2019 12:16	11/20/19 18:13	NAH	EPA 6010C	
Dissolved Beryllium	<0.30	ug/L	0.10	0.30	0.60	0.60	1.00	U	11/15/2019 12:16	11/20/19 18:13	NAH	EPA 6010C	
Dissolved Cadmium	<1.0	ug/L	0.30	1.0	2.0	2.0	1.00	U	11/15/2019 12:16	11/20/19 18:13	NAH	EPA 6010C	
Dissolved Calcium	***106***	ug/L	17	50	100	100	1.00	B	11/15/2019 12:16	11/20/19 18:13	NAH	EPA 6010C	
Dissolved Chromium	<2.0	ug/L	0.60	2.0	4.0	4.0	1.00	U	11/15/2019 12:16	11/20/19 18:13	NAH	EPA 6010C	
Dissolved Cobalt	<2.0	ug/L	0.70	2.0	4.0	4.0	1.00	U	11/15/2019 12:16	11/20/19 18:13	NAH	EPA 6010C	
Dissolved Copper	***1.7***	ug/L	1.2	3.5	7.0	7.0	1.00	J	11/15/2019 12:16	11/20/19 18:13	NAH	EPA 6010C	
Dissolved Iron	<50	ug/L	16	50	100	100	1.00	U	11/15/2019 12:16	11/20/19 18:13	NAH	EPA 6010C	

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB#: 358094 Sample Description: PAALF-PW11-111319FRB Client Sample #: Sampled: 11/13/2019 1710

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Dissolved Lead	<2.0	ug/L	1.4	2.0	4.0	4.0	1.00	U	11/15/2019 12:16	11/20/19 18:13	NAH	EPA 6010C
Dissolved Magnesium	***46.7***	ug/L	6.0	20	40	40	1.00		11/15/2019 12:16	11/20/19 18:13	NAH	EPA 6010C
Dissolved Manganese	***0.84***	ug/L	0.70	2.0	4.0	4.0	1.00	J	11/15/2019 12:16	11/20/19 18:13	NAH	EPA 6010C
Dissolved Nickel	<3.0	ug/L	1.0	3.0	6.0	6.0	1.00	U	11/15/2019 12:16	11/20/19 18:13	NAH	EPA 6010C
Dissolved Selenium	<6.5	ug/L	2.2	6.5	13	13	1.00	U	11/15/2019 12:16	11/20/19 18:13	NAH	EPA 6010C
Dissolved Silver	<2.0	ug/L	0.70	2.0	4.0	4.0	1.00	U	11/15/2019 12:16	11/20/19 18:13	NAH	EPA 6010C
Dissolved Vanadium	<2.5	ug/L	0.80	2.5	5.0	5.0	1.00	U	11/15/2019 12:16	11/20/19 18:13	NAH	EPA 6010C
Dissolved Zinc	***4.2***	ug/L	1.6	5.0	10	10	1.00	J B	11/15/2019 12:16	11/20/19 18:13	NAH	EPA 6010C
Dissolved Potassium	<250	ug/L	90	250	500	500	1.00	U	11/15/2019 12:16	11/21/19 17:59	MDS	EPA 6010C
Dissolved Mercury	<0.060	ug/L	0.030	0.060	0.12	0.12	1.00	U	11/21/2019 11:12	11/22/19 15:54	MDS	EPA 7470A
Dissolved Sodium	***190***	ug/L	100	300	600	600	1.00	J	11/15/2019 12:16	11/21/19 17:59	MDS	EPA 6010C

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

Notes:

^ Indicates the laboratory is NELAP accredited for this analyte by the indicated matrix and method. DL (detection limit), LOD (limit of detection), loq (limit of quantitation) as defined by most recent DOD QSM version.

All samples were received intact and properly preserved unless otherwise noted. The results reported relate only to the samples tested. This report shall not be reproduced, except in full, without written approval of this laboratory. The Chain of Custody is attached.

This report has been specifically prepared to satisfy project or program requirements. These results are in compliance with NELAC requirements for the parameters where accreditation is required or available, unless noted in the case narrative.

Submitted by: Eric T. Korthals
Project Manager
608-356-2760

QC Qualifiers

Code	Description
B	Analyte detected in the associated Method Blank.
C	Toxicity present in BOD sample.
D	Diluted Out.
E	Safe, No Total Coliform detected.
F	Unsafe, Total Coliform detected, no E. Coli detected.
G	Unsafe, Total Coliform detected and E. Coli detected.
H	Holding time exceeded.
I	Incubator temperature was outside acceptance limits during test period.
J	Estimated value.
L	Significant peaks were detected outside the chromatographic window.
M	Matrix spike and/or Matrix Spike Duplicate recovery outside acceptance limits.
N	Insufficient BOD oxygen depletion.
O	Complete BOD oxygen depletion.
P	Concentration of analyte differs more than 40% between primary and confirmation analysis.
Q	Laboratory Control Sample outside acceptance limits.
R	See Narrative at end of report.
S	Surrogate standard recovery outside acceptance limits due to apparent matrix effects.
T	Sample received with improper preservation or temperature.
U	Analyte concentration was below detection limit.
V	Raised Quantitation or Reporting Limit due to limited sample amount or dilution for matrix background interference.
W	Sample amount received was below program minimum.
X	Analyte exceeded calibration range.
Y	Replicate/Duplicate precision outside acceptance limits.
Z	Specified calibration criteria was not met.

Current CT Laboratories Certifications

Wisconsin (WDNR) Chemistry ID# 157066030
Wisconsin (DATCP) Bacteriology ID# 289
Louisiana NELAP (primary) ID# ACC20190002
Illinois NELAP Lab ID# 200073
Kansas NELAP Lab ID# E-10368
Virginia NELAP Lab ID# 460203
Maryland Lab ID# 344
ISO/IEC 17025-2005 A2LA Cert # 3806.01
DoD-ELAP A2LA 3806.01
GA EPD Stipulation ID ACC20190002

QC SUMMARY REPORT

ECC **Project Name: PHILLIPS ARMY RUBBLE LF**

SDG #: 0 **Folder #: 149603** **Project #: 5406**

Duplicate

Analytical Run #:	166616	Analysis Date:	11/14/2019	Prep Batch #:		Matrix:	GROUND WATER
CTLab #:	359645	Analysis Time:	21:44	Prep Date/Time:		Method:	SW9056A
Parent Sample #:	358093	Analyst:	TMG	Prep Analyst:			

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Chloride	1.00	mg/L	<1.00	U			3.0	0	10
Nitrate Nitrogen	0.120	mg/L	<0.120	U			0.40	0	10
Nitrite Nitrogen	0.140	mg/L	<0.140	U			0.60	0	10
Sulfate	0.800	mg/L	<0.800	U			3.0	0	10

Lab Control Spike Water

Analytical Run #:	166616	Analysis Date:	11/14/2019	Prep Batch #:		Matrix:	LIQUID
CTLab #:	359650	Analysis Time:	13:00	Prep Date/Time:		Method:	SW9056A
Parent Sample #:		Analyst:	TMG	Prep Analyst:			

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Chloride	14.51	mg/L			15.00	97	87 --- 111		
Nitrate Nitrogen	3.485	mg/L			3.500	100	88 --- 111		
Nitrite Nitrogen	3.471	mg/L			3.500	99	87 --- 111		
Sulfate	24.99	mg/L			25.00	100	87 --- 112		

Method Blank Water

Analytical Run #:	166616	Analysis Date:	11/14/2019	Prep Batch #:		Matrix:	LIQUID
CTLab #:	359649	Analysis Time:	13:20	Prep Date/Time:		Method:	SW9056A
Parent Sample #:		Analyst:	TMG	Prep Analyst:			

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Chloride	1.0	mg/L		U	0		1.5		
Nitrate Nitrogen	0.12	mg/L		U	0		0.20		
Nitrite Nitrogen	0.14	mg/L		U	0		0.30		
Sulfate	0.8	mg/L		U	0		1.5		

Matrix Spike Duplicate Water

Analytical Run #:	166616	Analysis Date:	11/20/2019	Prep Batch #:		Matrix:	GROUND WATER
CTLab #:	360372	Analysis Time:	11:44	Prep Date/Time:		Method:	SW9056A
Parent Sample #:	360371	Analyst:	TMG	Prep Analyst:			

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Chloride	7.67	mg/L	BDL		8.00	96	87 --- 111	4	15
Nitrate Nitrogen	2.08	mg/L	BDL		2.00	104	88 --- 111	4	15
Nitrite Nitrogen	2.12	mg/L	BDL		2.00	106	87 --- 111	2	15
Sulfate	8.06	mg/L	BDL		8.00	101	87 --- 112	4	15

Matrix Spike Water

Analytical Run #:	166616	Analysis Date:	11/20/2019	Prep Batch #:		Matrix:	GROUND WATER
CTLab #:	360371	Analysis Time:	11:24	Prep Date/Time:		Method:	SW9056A
Parent Sample #:	358093	Analyst:	TMG	Prep Analyst:			

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Chloride	7.99	mg/L	BDL		8.00	100	87 --- 111		15
Nitrate Nitrogen	2.17	mg/L	BDL		2.00	108	88 --- 111		15
Nitrite Nitrogen	2.17	mg/L	BDL		2.00	108	87 --- 111		15
Sulfate	8.39	mg/L	BDL		8.00	105	87 --- 112		15

Lab Control Spike Water

Analytical Run #:	166628	Analysis Date:	11/14/2019	Prep Batch #:		Matrix:	LIQUID
CTLab #:	358632	Analysis Time:	13:05	Prep Date/Time:		Method:	
Parent Sample #:		Analyst:	CLB	Prep Analyst:			

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Conductivity	997	uS/cm			998	100	97 --- 102		

Method Blank Water

Analytical Run #:	166628	Analysis Date:	11/14/2019	Prep Batch #:		Matrix:	LIQUID
CTLab #:	358633	Analysis Time:	13:05	Prep Date/Time:		Method:	
Parent Sample #:		Analyst:	CLB	Prep Analyst:			

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Conductivity	1	uS/cm		U	0		1		

Lab Control Spike Water

Analytical Run #:	166705	Analysis Date:	11/18/2019	Prep Batch #:		Matrix:	LIQUID
CTLab #:	359184	Analysis Time:	16:11	Prep Date/Time:		Method:	E310.2
Parent Sample #:		Analyst:	SRW	Prep Analyst:			

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Alkalinity	363.0	mg/L			375.0	97	90 --- 110		

Method Blank Water

Analytical Run #:	166705	Analysis Date:	11/18/2019	Prep Batch #:		Matrix:	LIQUID
CTLab #:	359185	Analysis Time:	16:12	Prep Date/Time:		Method:	E310.2
Parent Sample #:		Analyst:	SRW	Prep Analyst:			

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Alkalinity	6	mg/L		U	0		15		

Lab Control Spike Water

Analytical Run #:	166775	Analysis Date:	11/19/2019	Prep Batch #:	74612	Matrix:	LIQUID
CTLab #:	360096	Analysis Time:	14:44	Prep Date/Time:	11/19/2019 10:35	Method:	E410.4
Parent Sample #:		Analyst:	GMJ	Prep Analyst:	GMJ		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
COD	404.2	mg/L			400.0	101	90 --- 110		

Method Blank Water

Analytical Run #:	166775	Analysis Date:	11/19/2019	Prep Batch #:	74612	Matrix:	LIQUID
CTLab #:	360095	Analysis Time:	14:44	Prep Date/Time:	11/19/2019 10:35	Method:	E410.4
Parent Sample #:		Analyst:	GMJ	Prep Analyst:	GMJ		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Total COD	15	mg/L		U	0		35		

Duplicate

Analytical Run #:	166810	Analysis Date:	11/20/2019	Prep Batch #:		Matrix:	GROUND WATER
CTLab #:	360902	Analysis Time:	14:51	Prep Date/Time:		Method:	E350.1
Parent Sample #:	358087	Analyst:	DC	Prep Analyst:			

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Ammonia Nitrogen	0.0220	mg/L	<0.0220	U				0	20

Lab Control Spike Water

Analytical Run #:	166810	Analysis Date:	11/20/2019	Prep Batch #:		Matrix:	LIQUID
CTLab #:	360564	Analysis Time:	14:40	Prep Date/Time:		Method:	E350.1
Parent Sample #:		Analyst:	SRW	Prep Analyst:			

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Ammonia Nitrogen	1.21	mg/L			1.25	97	90 --- 110		

Method Blank Water

Analytical Run #:	166810	Analysis Date:	11/20/2019	Prep Batch #:		Matrix:	LIQUID
CTLab #:	360565	Analysis Time:	14:41	Prep Date/Time:		Method:	E350.1
Parent Sample #:		Analyst:	SRW	Prep Analyst:			

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Ammonia Nitrogen	0.022	mg/L		U	0		0.10		

Matrix Spike Duplicate Water

Analytical Run #:	166810	Analysis Date:	11/20/2019	Prep Batch #:		Matrix:	GROUND WATER
CTLab #:	360904	Analysis Time:	14:53	Prep Date/Time:		Method:	E350.1
Parent Sample #:	360903	Analyst:	DC	Prep Analyst:			

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Ammonia Nitrogen	1.18	mg/L	BDL		1.25	94	80 --- 120	4	20

Matrix Spike Water

Analytical Run #:	166810	Analysis Date:	11/20/2019	Prep Batch #:		Matrix:	GROUND WATER
CTLab #:	360903	Analysis Time:	14:52	Prep Date/Time:		Method:	E350.1
Parent Sample #:	358087	Analyst:	DC	Prep Analyst:			

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Ammonia Nitrogen	1.13	mg/L	BDL		1.25	90	80 --- 120		20

Duplicate

Analytical Run #:	166656	Analysis Date:	11/20/2019	Prep Batch #:	74526	Matrix:	GROUND WATER
CTLab #:	358366	Analysis Time:	12:48	Prep Date/Time:	11/14/2019 12:16	Method:	SW6010
Parent Sample #:	358081	Analyst:	NAH	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Total Aluminum	24.4	ug/L	17.7				36	32	20
Total Barium	54.3	ug/L	56.5				1.80	4	20
Total Beryllium	0.100	ug/L	0.12	U			0.60	200	20
Total Cadmium	0.300	ug/L	<0.300	U			2.0	0	20
Total Calcium	13600	ug/L	14300				100	5	20
Total Chromium	0.600	ug/L	<0.600	U			4.0	0	20
Total Cobalt	17.4	ug/L	18.0				4.0	3	20
Total Copper	1.20	ug/L	1.4	U			7.0	200	20
Total Iron	216	ug/L	189				100	13	20
Total Lead	1.40	ug/L	<1.40	U			4.0	0	20
Total Magnesium	10100	ug/L	10500				40	4	20
Total Manganese	603	ug/L	632				4.0	5	20
Total Nickel	9.9	ug/L	10.2				6.0	3	20
Total Selenium	2.20	ug/L	<2.20	U			13.0	0	20
Total Silver	0.700	ug/L	<0.700	U			4.0	0	20
Total Vanadium	0.800	ug/L	<0.800	U			5.0	0	20
Total Zinc	19.2	ug/L	19.3				10.0	1	20

Lab Control Spike Water

Analytical Run #:	166656	Analysis Date:	11/20/2019	Prep Batch #:	74526	Matrix:	LIQUID
CTLab #:	358365	Analysis Time:	12:21	Prep Date/Time:	11/14/2019 12:16	Method:	SW6010
Parent Sample #:		Analyst:	NAH	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Total Aluminum	758.0	ug/L			800.0	95	86 --- 115		
Total Barium	782.0	ug/L			800.0	98	88 --- 113		
Total Beryllium	20.00	ug/L			20.00	100	89 --- 112		
Total Cadmium	18.70	ug/L			20.00	94	88 --- 113		
Total Calcium	180000	ug/L			200000	90	87 --- 113		
Total Chromium	78.90	ug/L			80.00	99	90 --- 113		
Total Cobalt	197.0	ug/L			200.0	98	89 --- 114		
Total Copper	109.0	ug/L			100.0	109	86 --- 114		
Total Iron	363.0	ug/L			400.0	91	87 --- 115		
Total Lead	192.0	ug/L			200.0	96	86 --- 113		
Total Magnesium	98200	ug/L			100000	98	85 --- 113		
Total Manganese	202.0	ug/L			200.0	101	90 --- 114		
Total Nickel	202.0	ug/L			200.0	101	88 --- 113		
Total Selenium	826.0	ug/L			800.0	103	83 --- 114		
Total Silver	19.40	ug/L			20.00	97	84 --- 115		
Total Vanadium	217.0	ug/L			200.0	108	90 --- 111		
Total Zinc	208.0	ug/L			200.0	104	87 --- 115		

Method Blank Water

Analytical Run #:	166656	Analysis Date:	11/20/2019	Prep Batch #:	74526	Matrix:	LIQUID
CTLab #:	358364	Analysis Time:	12:28	Prep Date/Time:	11/14/2019 12:16	Method:	SW6010
Parent Sample #:		Analyst:	NAH	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Total Aluminum	6	ug/L		U	0		18		
Total Barium	0.29	ug/L		U	0		0.90		
Total Beryllium	0.10	ug/L		U	0		0.30		
Total Cadmium	0.3	ug/L		U	0		1.0		
Total Calcium	17	ug/L		U	0		50		
Total Chromium	0.6	ug/L		U	0		2.0		
Total Cobalt	0.7	ug/L		U	0		2.0		
Total Copper	1.2	ug/L		U	0		3.5		
Total Iron	22.10	ug/L			0		50		
Total Lead	1.4	ug/L		U	0		2.0		
Total Magnesium	6	ug/L		U	0		20		
Total Manganese	0.7	ug/L		U	0		2.0		
Total Nickel	1.0	ug/L		U	0		3.0		
Total Selenium	2.2	ug/L		U	0		6.5		
Total Silver	0.7	ug/L		U	0		2.0		
Total Vanadium	0.8	ug/L		U	0		2.5		
Total Zinc	2.73	ug/L			0		5.0		

Matrix Spike Duplicate Water

Analytical Run #:	166656	Analysis Date:	11/20/2019	Prep Batch #:	74526	Matrix:	GROUND WATER
CTLab #:	358368	Analysis Time:	13:01	Prep Date/Time:	11/14/2019 12:16	Method:	SW6010
Parent Sample #:	358367	Analyst:	NAH	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Total Aluminum	769	ug/L	17.7		800	94	86 --- 115	1	20
Total Barium	830	ug/L	56.5		800	97	88 --- 113	1	20
Total Beryllium	19.9	ug/L	0.12		20.0	99	89 --- 112	2	20
Total Cadmium	18.9	ug/L	BDL		20.0	94	88 --- 113	2	20
Total Calcium	191000	ug/L	14300		200000	88	87 --- 113	2	20
Total Chromium	77.5	ug/L	BDL		80.0	97	90 --- 113	4	20
Total Cobalt	214	ug/L	18.0		200	98	89 --- 114	1	20
Total Copper	138	ug/L	1.4		100	137	86 --- 114	1	20
Total Iron	534	ug/L	189		400	86	87 --- 115	2	20
Total Lead	190	ug/L	BDL		200	95	86 --- 113	1	20
Total Magnesium	108000	ug/L	10500		100000	98	85 --- 113	1	20
Total Manganese	791	ug/L	632		200	80	90 --- 114	1	20
Total Nickel	210	ug/L	10.2		200	100	88 --- 113	1	20
Total Selenium	836	ug/L	BDL		800	104	83 --- 114	1	20
Total Silver	19.3	ug/L	BDL		20.0	96	84 --- 115	4	20
Total Vanadium	216	ug/L	BDL		200	108	90 --- 111	1	20
Total Zinc	226	ug/L	19.3		200	103	87 --- 115	0	20

Matrix Spike Water

Analytical Run #:	166656	Analysis Date:	11/20/2019	Prep Batch #:	74526	Matrix:	GROUND WATER
CTLab #:	358367	Analysis Time:	12:55	Prep Date/Time:	11/14/2019 12:16	Method:	SW6010
Parent Sample #:	358081	Analyst:	NAH	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Total Aluminum	775	ug/L	17.7		800	95	86 --- 115		
Total Barium	839	ug/L	56.5		800	98	88 --- 113		
Total Beryllium	20.4	ug/L	0.12		20.0	101	89 --- 112		
Total Cadmium	19.2	ug/L	BDL		20.0	96	88 --- 113		
Total Calcium	195000	ug/L	14300		200000	90	87 --- 113		
Total Chromium	80.7	ug/L	BDL		80.0	101	90 --- 113		
Total Cobalt	216	ug/L	18.0		200	99	89 --- 114		
Total Copper	139	ug/L	1.4		100	138	86 --- 114		
Total Iron	522	ug/L	189		400	83	87 --- 115		
Total Lead	191	ug/L	BDL		200	96	86 --- 113		
Total Magnesium	109000	ug/L	10500		100000	98	85 --- 113		
Total Manganese	800	ug/L	632		200	84	90 --- 114		
Total Nickel	213	ug/L	10.2		200	101	88 --- 113		
Total Selenium	842	ug/L	BDL		800	105	83 --- 114		
Total Silver	18.5	ug/L	BDL		20.0	92	84 --- 115		
Total Vanadium	218	ug/L	BDL		200	109	90 --- 111		
Total Zinc	227	ug/L	19.3		200	104	87 --- 115		

Duplicate

Analytical Run #:	166657	Analysis Date:	11/20/2019	Prep Batch #:	74524	Matrix:	GROUND WATER
CTLab #:	358356	Analysis Time:	17:03	Prep Date/Time:	11/15/2019 12:16	Method:	SW6010
Parent Sample #:	358082	Analyst:	NAH	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Dissolved Aluminum	32.1	ug/L	17.0				36	62	20
Dissolved Barium	57.7	ug/L	57.9				1.80	0	20
Dissolved Beryllium	0.100	ug/L	<0.100	U			0.60	0	20
Dissolved Cadmium	0.300	ug/L	<0.300	U			2.0	0	20
Dissolved Calcium	14100	ug/L	14000				100	1	20
Dissolved Chromium	0.600	ug/L	<0.600	U			4.0	0	20
Dissolved Cobalt	16.8	ug/L	16.5				4.0	2	20
Dissolved Copper	2.0	ug/L	2.4				7.0	18	20
Dissolved Iron	151	ug/L	154				100	2	20
Dissolved Lead	1.40	ug/L	1.5	U			4.0	200	20
Dissolved Magnesium	10400	ug/L	10000				40	4	20
Dissolved Manganese	634	ug/L	622				4.0	2	20
Dissolved Nickel	10.1	ug/L	9.6				6.0	5	20
Dissolved Selenium	2.20	ug/L	<2.20	U			13.0	0	20
Dissolved Silver	0.700	ug/L	<0.700	U			4.0	0	20
Dissolved Vanadium	0.800	ug/L	<0.800	U			5.0	0	20
Dissolved Zinc	19.9	ug/L	25.5				10.0	25	20

Lab Control Spike Water

Analytical Run #:	166657	Analysis Date:	11/20/2019	Prep Batch #:	74524	Matrix:	LIQUID
CTLab #:	358355	Analysis Time:	16:37	Prep Date/Time:	11/15/2019 12:16	Method:	SW6010
Parent Sample #:		Analyst:	NAH	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Dissolved Aluminum	777.0	ug/L			800.0	97	86 --- 115		20
Dissolved Barium	796.0	ug/L			800.0	100	88 --- 113		20
Dissolved Beryllium	20.30	ug/L			20.00	102	89 --- 112		20
Dissolved Cadmium	19.00	ug/L			20.00	95	88 --- 113		20
Dissolved Calcium	180000	ug/L			200000	90	87 --- 113		20
Dissolved Chromium	77.50	ug/L			80.00	97	90 --- 113		20
Dissolved Cobalt	197.0	ug/L			200.0	98	89 --- 114		20
Dissolved Copper	107.0	ug/L			100.0	107	86 --- 114		20
Dissolved Iron	352.0	ug/L			400.0	88	87 --- 115		20
Dissolved Lead	185.0	ug/L			200.0	92	86 --- 113		20
Dissolved Magnesium	97400	ug/L			100000	97	85 --- 113		20
Dissolved Manganese	208.0	ug/L			200.0	104	90 --- 114		20
Dissolved Nickel	204.0	ug/L			200.0	102	88 --- 113		20
Dissolved Selenium	830.0	ug/L			800.0	104	83 --- 114		20
Dissolved Silver	18.90	ug/L			20.00	94	84 --- 115		20
Dissolved Vanadium	219.0	ug/L			200.0	110	90 --- 111		20
Dissolved Zinc	210.0	ug/L			200.0	105	87 --- 115		20

Method Blank Water

Analytical Run #:	166657	Analysis Date:	11/20/2019	Prep Batch #:	74524	Matrix:	LIQUID
CTLab #:	358354	Analysis Time:	16:43	Prep Date/Time:	11/15/2019 12:16	Method:	SW6010
Parent Sample #:		Analyst:	NAH	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Dissolved Aluminum	6.25	ug/L			0		18		
Dissolved Barium	0.29	ug/L		U	0		0.90		
Dissolved Beryllium	0.10	ug/L		U	0		0.30		
Dissolved Cadmium	0.3	ug/L		U	0		1.0		
Dissolved Calcium	17.60	ug/L			0		50		
Dissolved Chromium	0.6	ug/L		U	0		2.0		
Dissolved Cobalt	0.7	ug/L		U	0		2.0		
Dissolved Copper	1.2	ug/L		U	0		3.5		
Dissolved Iron	16	ug/L		U	0		50		
Dissolved Lead	1.4	ug/L		U	0		2.0		
Dissolved Magnesium	6	ug/L		U	0		20		
Dissolved Manganese	0.7	ug/L		U	0		2.0		
Dissolved Nickel	1.0	ug/L		U	0		3.0		
Dissolved Selenium	2.2	ug/L		U	0		6.5		
Dissolved Silver	0.7	ug/L		U	0		2.0		
Dissolved Vanadium	0.8	ug/L		U	0		2.5		
Dissolved Zinc	2.88	ug/L			0		5.0		

Matrix Spike Duplicate Water

Analytical Run #:	166657	Analysis Date:	11/20/2019	Prep Batch #:	74524	Matrix:	GROUND WATER
CTLab #:	358358	Analysis Time:	17:16	Prep Date/Time:	11/15/2019 12:16	Method:	SW6010
Parent Sample #:	358357	Analyst:	NAH	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Dissolved Aluminum	775	ug/L	17.0		800	95	86 --- 115	1	20
Dissolved Barium	851	ug/L	57.9		800	99	88 --- 113	1	20
Dissolved Beryllium	20.5	ug/L	BDL		20.0	102	89 --- 112	0	20
Dissolved Cadmium	18.8	ug/L	BDL		20.0	94	88 --- 113	1	20
Dissolved Calcium	192000	ug/L	14000		200000	89	87 --- 113	0	20
Dissolved Chromium	77.4	ug/L	BDL		80.0	97	90 --- 113	1	20
Dissolved Cobalt	210	ug/L	16.5		200	97	89 --- 114	1	20
Dissolved Copper	144	ug/L	2.4		100	142	86 --- 114	2	20
Dissolved Iron	480	ug/L	154		400	82	87 --- 115	1	20
Dissolved Lead	181	ug/L	1.5		200	90	86 --- 113	1	20
Dissolved Magnesium	106000	ug/L	10000		100000	96	85 --- 113	1	20
Dissolved Manganese	839	ug/L	622		200	108	90 --- 114	6	20
Dissolved Nickel	212	ug/L	9.6		200	101	88 --- 113	1	20
Dissolved Selenium	811	ug/L	BDL		800	101	83 --- 114	0	20
Dissolved Silver	19.0	ug/L	BDL		20.0	95	84 --- 115	1	20
Dissolved Vanadium	218	ug/L	BDL		200	109	90 --- 111	1	20
Dissolved Zinc	226	ug/L	25.5		200	100	87 --- 115	1	20

Matrix Spike Water

Analytical Run #:	166657	Analysis Date:	11/20/2019	Prep Batch #:	74524	Matrix:	GROUND WATER
CTLab #:	358357	Analysis Time:	17:09	Prep Date/Time:	11/15/2019 12:16	Method:	SW6010
Parent Sample #:	358082	Analyst:	NAH	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Dissolved Aluminum	768	ug/L	17.0		800	94	86 --- 115		
Dissolved Barium	844	ug/L	57.9		800	98	88 --- 113		
Dissolved Beryllium	20.4	ug/L	BDL		20.0	102	89 --- 112		
Dissolved Cadmium	18.7	ug/L	BDL		20.0	94	88 --- 113		
Dissolved Calcium	192000	ug/L	14000		200000	89	87 --- 113		
Dissolved Chromium	76.8	ug/L	BDL		80.0	96	90 --- 113		
Dissolved Cobalt	208	ug/L	16.5		200	96	89 --- 114		
Dissolved Copper	141	ug/L	2.4		100	139	86 --- 114		
Dissolved Iron	473	ug/L	154		400	80	87 --- 115		
Dissolved Lead	180	ug/L	1.5		200	89	86 --- 113		
Dissolved Magnesium	105000	ug/L	10000		100000	95	85 --- 113		
Dissolved Manganese	794	ug/L	622		200	86	90 --- 114		
Dissolved Nickel	209	ug/L	9.6		200	100	88 --- 113		
Dissolved Selenium	811	ug/L	BDL		800	101	83 --- 114		
Dissolved Silver	18.9	ug/L	BDL		20.0	94	84 --- 115		
Dissolved Vanadium	216	ug/L	BDL		200	108	90 --- 111		
Dissolved Zinc	224	ug/L	25.5		200	99	87 --- 115		

Duplicate

Analytical Run #:	166658	Analysis Date:	11/21/2019	Prep Batch #:	74526	Matrix:	GROUND WATER
CTLab #:	358366	Analysis Time:	16:52	Prep Date/Time:	11/14/2019 12:16	Method:	SW6010
Parent Sample #:	358081	Analyst:	MDS	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Total Potassium	2040	ug/L	2100				0.500	3	20

Duplicate

Analytical Run #:	166658	Analysis Date:	11/21/2019	Prep Batch #:	74526	Matrix:	GROUND WATER
CTLab #:	368016	Analysis Time:	16:52	Prep Date/Time:	11/14/2019 12:16	Method:	SW6010
Parent Sample #:	358081	Analyst:	MDS	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Total Sodium	47800	ug/L	49700				0.600	4	20

Lab Control Spike Water

Analytical Run #:	166658	Analysis Date:	11/21/2019	Prep Batch #:	74526	Matrix:	LIQUID
CTLab #:	358365	Analysis Time:	16:41	Prep Date/Time:	11/14/2019 12:16	Method:	SW6010
Parent Sample #:		Analyst:	MDS	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Total Potassium	91500	ug/L			100000	92	86 --- 114		

Lab Control Spike Water

Analytical Run #:	166658	Analysis Date:	11/21/2019	Prep Batch #:	74526	Matrix:	LIQUID
CTLab #:	368014	Analysis Time:	16:41	Prep Date/Time:	11/14/2019 12:16	Method:	SW6010
Parent Sample #:		Analyst:	MDS	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Total Sodium	89300	ug/L			100000	89	87 --- 115		

Method Blank Water

Analytical Run #:	166658	Analysis Date:	11/21/2019	Prep Batch #:	74526	Matrix:	LIQUID
CTLab #:	358364	Analysis Time:	16:43	Prep Date/Time:	11/14/2019 12:16	Method:	SW6010
Parent Sample #:		Analyst:	MDS	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Total Potassium	90	ug/L		U	0		250		

Method Blank Water

Analytical Run #:	166658	Analysis Date:	11/21/2019	Prep Batch #:	74526	Matrix:	LIQUID
CTLab #:	368013	Analysis Time:	16:43	Prep Date/Time:	11/14/2019 12:16	Method:	SW6010
Parent Sample #:		Analyst:	MDS	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Total Sodium	100	ug/L		U	0		300		

Matrix Spike Duplicate Water

Analytical Run #:	166658	Analysis Date:	11/21/2019	Prep Batch #:	74526	Matrix:	GROUND WATER
CTLab #:	358368	Analysis Time:	16:57	Prep Date/Time:	11/14/2019 12:16	Method:	SW6010
Parent Sample #:	358367	Analyst:	MDS	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Total Potassium	92600	ug/L	2100		100000	90	86 --- 114	1	20

Matrix Spike Duplicate Water

Analytical Run #:	166658	Analysis Date:	11/21/2019	Prep Batch #:	74526	Matrix:	GROUND WATER
CTLab #:	368017	Analysis Time:	16:57	Prep Date/Time:	11/14/2019 12:16	Method:	SW6010
Parent Sample #:	368015	Analyst:	MDS	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Total Sodium	138000	ug/L	49700		100000	88	87 --- 115	1	20

Matrix Spike Water

Analytical Run #:	166658	Analysis Date:	11/21/2019	Prep Batch #:	74526	Matrix:	GROUND WATER
CTLab #:	358367	Analysis Time:	16:55	Prep Date/Time:	11/14/2019 12:16	Method:	SW6010
Parent Sample #:	358081	Analyst:	MDS	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Total Potassium	93400	ug/L	2100		100000	91	86 --- 114		

Matrix Spike Water

Analytical Run #:	166658	Analysis Date:	11/21/2019	Prep Batch #:	74526	Matrix:	GROUND WATER
CTLab #:	368015	Analysis Time:	16:55	Prep Date/Time:	11/14/2019 12:16	Method:	SW6010
Parent Sample #:	358081	Analyst:	MDS	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Total Sodium	137000	ug/L	49700		100000	87	87 --- 115		

Duplicate

Analytical Run #:	166659	Analysis Date:	11/21/2019	Prep Batch #:	74524	Matrix:	GROUND WATER
CTLab #:	358356	Analysis Time:	17:39	Prep Date/Time:	11/15/2019 12:16	Method:	SW6010
Parent Sample #:	358082	Analyst:	MDS	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Dissolved Potassium	2130	ug/L	2120				0.50	0	20

Duplicate

Analytical Run #:	166659	Analysis Date:	11/21/2019	Prep Batch #:	74524	Matrix:	GROUND WATER
CTLab #:	368006	Analysis Time:	17:39	Prep Date/Time:	11/15/2019 12:16	Method:	SW6010
Parent Sample #:	358082	Analyst:	MDS	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Dissolved Sodium	48400	ug/L	46900				0.60	3	20

Lab Control Spike Water

Analytical Run #:	166659	Analysis Date:	11/21/2019	Prep Batch #:	74524	Matrix:	LIQUID
CTLab #:	358355	Analysis Time:	17:22	Prep Date/Time:	11/15/2019 12:16	Method:	SW6010
Parent Sample #:		Analyst:	MDS	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Dissolved Potassium	90800	ug/L			100000	91	86 --- 114		20

Lab Control Spike Water

Analytical Run #:	166659	Analysis Date:	11/21/2019	Prep Batch #:	74524	Matrix:	LIQUID
CTLab #:	368004	Analysis Time:	17:22	Prep Date/Time:	11/15/2019 12:16	Method:	SW6010
Parent Sample #:		Analyst:	MDS	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Dissolved Sodium	88200	ug/L			100000	88	87 --- 115		20

Method Blank Water

Analytical Run #:	166659	Analysis Date:	11/21/2019	Prep Batch #:	74524	Matrix:	LIQUID
CTLab #:	358354	Analysis Time:	17:25	Prep Date/Time:	11/15/2019 12:16	Method:	SW6010
Parent Sample #:		Analyst:	MDS	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Dissolved Potassium	90	ug/L		U	0		250		

Matrix Spike Duplicate Water

Analytical Run #:	166659	Analysis Date:	11/21/2019	Prep Batch #:	74524	Matrix:	GROUND WATER
CTLab #:	358358	Analysis Time:	17:45	Prep Date/Time:	11/15/2019 12:16	Method:	SW6010
Parent Sample #:	358357	Analyst:	MDS	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Dissolved Potassium	92300	ug/L	2120		100000	90	86 --- 114	0	20

Matrix Spike Duplicate Water

Analytical Run #:	166659	Analysis Date:	11/21/2019	Prep Batch #:	74524	Matrix:	GROUND WATER
CTLab #:	368007	Analysis Time:	17:45	Prep Date/Time:	11/15/2019 12:16	Method:	SW6010
Parent Sample #:	368005	Analyst:	MDS	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Dissolved Sodium	136000	ug/L	46900		100000	89	87 --- 115	2	20

Matrix Spike Water

Analytical Run #:	166659	Analysis Date:	11/21/2019	Prep Batch #:	74524	Matrix:	GROUND WATER
CTLab #:	358357	Analysis Time:	17:42	Prep Date/Time:	11/15/2019 12:16	Method:	SW6010
Parent Sample #:	358082	Analyst:	MDS	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Dissolved Potassium	92100	ug/L	2120		100000	90	86 --- 114		

Matrix Spike Water

Analytical Run #:	166659	Analysis Date:	11/21/2019	Prep Batch #:	74524	Matrix:	GROUND WATER
CTLab #:	368005	Analysis Time:	17:42	Prep Date/Time:	11/15/2019 12:16	Method:	SW6010
Parent Sample #:	358082	Analyst:	MDS	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Dissolved Sodium	133000	ug/L	46900		100000	86	87 --- 115		

Duplicate

Analytical Run #:	166682	Analysis Date:	11/20/2019	Prep Batch #:	74523	Matrix:	GROUND WATER
CTLab #:	358351	Analysis Time:	12:48	Prep Date/Time:	11/14/2019 12:16	Method:	SW6010
Parent Sample #:	358081	Analyst:	NAH	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Calcium	13.6	mg/L	14				100	3	20
Magnesium	10.1	mg/L	11				40	9	20

Lab Control Spike Water

Analytical Run #:	166682	Analysis Date:	11/20/2019	Prep Batch #:	74523	Matrix:	LIQUID
CTLab #:	358350	Analysis Time:	12:21	Prep Date/Time:	11/14/2019 12:16	Method:	SW6010
Parent Sample #:		Analyst:	NAH	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Calcium	180.0	mg/L			200.0	90	87 --- 113		
Magnesium	98.20	mg/L			100.0	98	85 --- 113		

Method Blank Water

Analytical Run #:	166682	Analysis Date:	11/20/2019	Prep Batch #:	74523	Matrix:	LIQUID
CTLab #:	358349	Analysis Time:	12:28	Prep Date/Time:	11/14/2019 12:16	Method:	SW6010
Parent Sample #:		Analyst:	NAH	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Calcium	0.017	mg/L		U	0		0.050		
Magnesium	0.006	mg/L		U	0		0.020		

Matrix Spike Duplicate Water

Analytical Run #:	166682	Analysis Date:	11/20/2019	Prep Batch #:	74523	Matrix:	GROUND WATER
CTLab #:	358353	Analysis Time:	13:01	Prep Date/Time:	11/14/2019 12:16	Method:	SW6010
Parent Sample #:	358352	Analyst:	NAH	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Calcium	191	mg/L	14		200	88	87 --- 113	2	20
Magnesium	108	mg/L	11		100	97	85 --- 113	1	20

Matrix Spike Water

Analytical Run #:	166682	Analysis Date:	11/20/2019	Prep Batch #:	74523	Matrix:	GROUND WATER
CTLab #:	358352	Analysis Time:	12:55	Prep Date/Time:	11/14/2019 12:16	Method:	SW6010
Parent Sample #:	358081	Analyst:	NAH	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Calcium	195	mg/L	14		200	90	87 --- 113		
Magnesium	109	mg/L	11		100	98	85 --- 113		

Lab Control Spike Water

Analytical Run #:	166737	Analysis Date:	11/19/2019	Prep Batch #:	74528	Matrix:	LIQUID
CTLab #:	358411	Analysis Time:	11:03	Prep Date/Time:	11/18/2019 09:30	Method:	SW7010
Parent Sample #:		Analyst:	MDS	Prep Analyst:	MDS		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Dissolved Antimony	15.35	ug/L			15.00	102	80 --- 120		

Method Blank Water

Analytical Run #:	166737	Analysis Date:	11/19/2019	Prep Batch #:	74528	Matrix:	LIQUID
CTLab #:	358410	Analysis Time:	11:08	Prep Date/Time:	11/18/2019 09:30	Method:	SW7010
Parent Sample #:		Analyst:	MDS	Prep Analyst:	MDS		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Dissolved Antimony	1.0	ug/L		U	0		2.0		

Duplicate

Analytical Run #:	166738	Analysis Date:	11/19/2019	Prep Batch #:	74529	Matrix:	GROUND WATER
CTLab #:	358419	Analysis Time:	13:02	Prep Date/Time:	11/18/2019 09:30	Method:	SW7010
Parent Sample #:	358085	Analyst:	MDS	Prep Analyst:	MDS		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Total Antimony	1.00	ug/L	<1.00	U			6.0	0	20

Lab Control Spike Water

Analytical Run #:	166738	Analysis Date:	11/19/2019	Prep Batch #:	74529	Matrix:	LIQUID
CTLab #:	358417	Analysis Time:	11:03	Prep Date/Time:	11/18/2019 09:30	Method:	SW7010
Parent Sample #:		Analyst:	MDS	Prep Analyst:	MDS		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Total Antimony	15.35	ug/L			15.00	102	80 --- 120		

Method Blank Water

Analytical Run #:	166738	Analysis Date:	11/19/2019	Prep Batch #:	74529	Matrix:	LIQUID
CTLab #:	358416	Analysis Time:	11:08	Prep Date/Time:	11/18/2019 09:30	Method:	SW7010
Parent Sample #:		Analyst:	MDS	Prep Analyst:	MDS		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Total Antimony	1.0	ug/L		U	0		2.0		

Matrix Spike Duplicate Water

Analytical Run #:	166738	Analysis Date:	11/19/2019	Prep Batch #:	74529	Matrix:	GROUND WATER
CTLab #:	358421	Analysis Time:	13:12	Prep Date/Time:	11/18/2019 09:30	Method:	SW7010
Parent Sample #:	358420	Analyst:	MDS	Prep Analyst:	MDS		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Total Antimony	13.9	ug/L	BDL		15.0	93	80 --- 120	0	20

Matrix Spike Water

Analytical Run #:	166738	Analysis Date:	11/19/2019	Prep Batch #:	74529	Matrix:	GROUND WATER
CTLab #:	358420	Analysis Time:	13:07	Prep Date/Time:	11/18/2019 09:30	Method:	SW7010
Parent Sample #:	358085	Analyst:	MDS	Prep Analyst:	MDS		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Total Antimony	14.0	ug/L	BDL		15.0	93	80 --- 120		

Duplicate

Analytical Run #:	166817	Analysis Date:	11/21/2019	Prep Batch #:	74533	Matrix:	GROUND WATER
CTLab #:	358439	Analysis Time:	11:52	Prep Date/Time:	11/20/2019 09:20	Method:	SW7010
Parent Sample #:	358088	Analyst:	MDS	Prep Analyst:	MDS		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Dissolved Thallium	0.260	ug/L	<0.260	U			1.60	0	20

Lab Control Spike Water

Analytical Run #:	166817	Analysis Date:	11/21/2019	Prep Batch #:	74533	Matrix:	LIQUID
CTLab #:	358438	Analysis Time:	10:58	Prep Date/Time:	11/20/2019 09:20	Method:	SW7010
Parent Sample #:		Analyst:	MDS	Prep Analyst:	MDS		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Dissolved Thallium	14.08	ug/L			15.00	94	80 --- 120		

Method Blank Water

Analytical Run #:	166817	Analysis Date:	11/21/2019	Prep Batch #:	74533	Matrix:	LIQUID
CTLab #:	358437	Analysis Time:	11:04	Prep Date/Time:	11/20/2019 09:20	Method:	SW7010
Parent Sample #:		Analyst:	MDS	Prep Analyst:	MDS		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Dissolved Thallium	0.26	ug/L		U	0		0.80		

Matrix Spike Duplicate Water

Analytical Run #:	166817	Analysis Date:	11/21/2019	Prep Batch #:	74533	Matrix:	GROUND WATER
CTLab #:	358441	Analysis Time:	12:18	Prep Date/Time:	11/20/2019 09:20	Method:	SW7010
Parent Sample #:	358440	Analyst:	MDS	Prep Analyst:	MDS		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Dissolved Thallium	12.2	ug/L	BDL		15.0	81	80 --- 120	3	20

Matrix Spike Water

Analytical Run #:	166817	Analysis Date:	11/21/2019	Prep Batch #:	74533	Matrix:	GROUND WATER
CTLab #:	358440	Analysis Time:	12:12	Prep Date/Time:	11/20/2019 09:20	Method:	SW7010
Parent Sample #:	358088	Analyst:	MDS	Prep Analyst:	MDS		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Dissolved Thallium	12.6	ug/L	BDL		15.0	84	80 --- 120		

Duplicate

Analytical Run #:	166818	Analysis Date:	11/21/2019	Prep Batch #:	74534	Matrix:	GROUND WATER
CTLab #:	358445	Analysis Time:	13:56	Prep Date/Time:	11/20/2019 09:20	Method:	SW7010
Parent Sample #:	358093	Analyst:	MDS	Prep Analyst:	MDS		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Total Thallium	0.260	ug/L	<0.260	U			1.60	0	20

Lab Control Spike Water

Analytical Run #:	166818	Analysis Date:	11/21/2019	Prep Batch #:	74534	Matrix:	LIQUID
CTLab #:	358443	Analysis Time:	10:58	Prep Date/Time:	11/20/2019 09:20	Method:	SW7010
Parent Sample #:		Analyst:	MDS	Prep Analyst:	MDS		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Total Thallium	14.08	ug/L			15.00	94	80 --- 120		

Method Blank Water

Analytical Run #:	166818	Analysis Date:	11/21/2019	Prep Batch #:	74534	Matrix:	LIQUID
CTLab #:	358442	Analysis Time:	11:04	Prep Date/Time:	11/20/2019 09:20	Method:	SW7010
Parent Sample #:		Analyst:	MDS	Prep Analyst:	MDS		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Total Thallium	0.26	ug/L		U	0		0.80		

Matrix Spike Duplicate Water

Analytical Run #:	166818	Analysis Date:	11/21/2019	Prep Batch #:	74534	Matrix:	GROUND WATER
CTLab #:	358447	Analysis Time:	14:08	Prep Date/Time:	11/20/2019 09:20	Method:	SW7010
Parent Sample #:	358446	Analyst:	MDS	Prep Analyst:	MDS		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Total Thallium	13.2	ug/L	BDL		15.0	88	80 --- 120	1	20

Matrix Spike Water

Analytical Run #:	166818	Analysis Date:	11/21/2019	Prep Batch #:	74534	Matrix:	GROUND WATER
CTLab #:	358446	Analysis Time:	14:02	Prep Date/Time:	11/20/2019 09:20	Method:	SW7010
Parent Sample #:	358093	Analyst:	MDS	Prep Analyst:	MDS		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Total Thallium	13.2	ug/L	BDL		15.0	88	80 --- 120		

Lab Control Spike Water

Analytical Run #:	166907	Analysis Date:	11/22/2019	Prep Batch #:	74548	Matrix:	LIQUID
CTLab #:	358871	Analysis Time:	10:57	Prep Date/Time:	11/21/2019 12:10	Method:	SW7470A
Parent Sample #:		Analyst:	MDS	Prep Analyst:	BMM		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Total Mercury	1.91	ug/L			2.00	96	82 --- 119		

Method Blank Water

Analytical Run #:	166907	Analysis Date:	11/22/2019	Prep Batch #:	74548	Matrix:	LIQUID
CTLab #:	358870	Analysis Time:	11:01	Prep Date/Time:	11/21/2019 12:10	Method:	SW7470A
Parent Sample #:		Analyst:	MDS	Prep Analyst:	BMM		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Total Mercury	0.03	ug/L		U	0		0.06		

Lab Control Spike Water

Analytical Run #:	166915	Analysis Date:	11/22/2019	Prep Batch #:	74542	Matrix:	LIQUID
CTLab #:	358852	Analysis Time:	15:11	Prep Date/Time:	11/21/2019 11:12	Method:	SW7470A
Parent Sample #:		Analyst:	MDS	Prep Analyst:	BMM		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Dissolved Mercury	1.73	ug/L			2.00	86	82 --- 119		

Method Blank Water

Analytical Run #:	166915	Analysis Date:	11/22/2019	Prep Batch #:	74542	Matrix:	LIQUID
CTLab #:	358851	Analysis Time:	15:15	Prep Date/Time:	11/21/2019 11:12	Method:	SW7470A
Parent Sample #:		Analyst:	MDS	Prep Analyst:	BMM		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Dissolved Mercury	0.03	ug/L		U	0		0.06		

Duplicate

Analytical Run #:	166952	Analysis Date:	11/23/2019	Prep Batch #:	74530	Matrix:	GROUND WATER
CTLab #:	358424	Analysis Time:	16:50	Prep Date/Time:	11/22/2019 11:15	Method:	SW7010
Parent Sample #:	358094	Analyst:	MDS	Prep Analyst:	MDS		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Dissolved Arsenic	0.800	ug/L	<0.800	U			4.0	0	20

Lab Control Spike Water

Analytical Run #:	166952	Analysis Date:	11/23/2019	Prep Batch #:	74530	Matrix:	LIQUID
CTLab #:	358423	Analysis Time:	14:02	Prep Date/Time:	11/22/2019 11:15	Method:	SW7010
Parent Sample #:		Analyst:	MDS	Prep Analyst:	MDS		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Dissolved Arsenic	14.68	ug/L			15.00	98	80 --- 120		

Method Blank Water

Analytical Run #:	166952	Analysis Date:	11/23/2019	Prep Batch #:	74530	Matrix:	LIQUID
CTLab #:	358422	Analysis Time:	14:08	Prep Date/Time:	11/22/2019 11:15	Method:	SW7010
Parent Sample #:		Analyst:	MDS	Prep Analyst:	MDS		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Dissolved Arsenic	0.8	ug/L		U	0		2.0		

Matrix Spike Duplicate Water

Analytical Run #:	166952	Analysis Date:	11/23/2019	Prep Batch #:	74530	Matrix:	GROUND WATER
CTLab #:	358426	Analysis Time:	17:02	Prep Date/Time:	11/22/2019 11:15	Method:	SW7010
Parent Sample #:	358425	Analyst:	MDS	Prep Analyst:	MDS		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Dissolved Arsenic	13.1	ug/L	BDL		15.0	87	80 --- 120	4	20

Matrix Spike Water

Analytical Run #:	166952	Analysis Date:	11/23/2019	Prep Batch #:	74530	Matrix:	GROUND WATER
CTLab #:	358425	Analysis Time:	16:56	Prep Date/Time:	11/22/2019 11:15	Method:	SW7010
Parent Sample #:	358094	Analyst:	MDS	Prep Analyst:	MDS		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Dissolved Arsenic	13.6	ug/L	BDL		15.0	91	80 --- 120		

Duplicate

Analytical Run #:	166953	Analysis Date:	11/25/2019	Prep Batch #:	74531	Matrix:	GROUND WATER
CTLab #:	358430	Analysis Time:	12:07	Prep Date/Time:	11/22/2019 11:15	Method:	SW7010
Parent Sample #:	358089	Analyst:	MDS	Prep Analyst:	MDS		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Total Arsenic	1.4	ug/L	<0.800				4.0	200	20

Lab Control Spike Water

Analytical Run #:	166953	Analysis Date:	11/23/2019	Prep Batch #:	74531	Matrix:	LIQUID
CTLab #:	358428	Analysis Time:	17:20	Prep Date/Time:	11/22/2019 11:15	Method:	SW7010
Parent Sample #:		Analyst:	MDS	Prep Analyst:	MDS		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Total Arsenic	13.99	ug/L			15.00	93	80 --- 120		

Method Blank Water

Analytical Run #:	166953	Analysis Date:	11/23/2019	Prep Batch #:	74531	Matrix:	LIQUID
CTLab #:	358427	Analysis Time:	17:26	Prep Date/Time:	11/22/2019 11:15	Method:	SW7010
Parent Sample #:		Analyst:	MDS	Prep Analyst:	MDS		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Total Arsenic	0.8	ug/L		U	0		2.0		

Matrix Spike Duplicate Water

Analytical Run #:	166953	Analysis Date:	11/25/2019	Prep Batch #:	74531	Matrix:	GROUND WATER
CTLab #:	358432	Analysis Time:	12:19	Prep Date/Time:	11/22/2019 11:15	Method:	SW7010
Parent Sample #:	358431	Analyst:	MDS	Prep Analyst:	MDS		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Total Arsenic	15.9	ug/L	BDL		15.0	106	80 --- 120	1	20

Matrix Spike Water

Analytical Run #:	166953	Analysis Date:	11/25/2019	Prep Batch #:	74531	Matrix:	GROUND WATER
CTLab #:	358431	Analysis Time:	12:13	Prep Date/Time:	11/22/2019 11:15	Method:	SW7010
Parent Sample #:	358089	Analyst:	MDS	Prep Analyst:	MDS		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Total Arsenic	15.8	ug/L	BDL		15.0	105	80 --- 120		

Lab Control Spike Duplicate Water

Analytical Run #:	166752	Analysis Date:	11/23/2019	Prep Batch #:		Matrix:	LIQUID
CTLab #:	362294	Analysis Time:	00:11	Prep Date/Time:		Method:	SW8260C
Parent Sample #:	362146	Analyst:	RLD	Prep Analyst:			

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	4.24	ug/L			4.00	106	78 --- 124	11	20
1,1,1-Trichloroethane	4.56	ug/L			4.00	114	74 --- 131	12	20
1,1,2,2-Tetrachloroethane	4.22	ug/L			4.00	106	71 --- 121	6	20
1,1,2-Trichloroethane	4.44	ug/L			4.00	111	80 --- 119	2	20
1,1-Dichloroethane	4.27	ug/L			4.00	107	77 --- 125	9	20
1,1-Dichloroethene	4.70	ug/L			4.00	118	71 --- 131	2	20
1,2,3-Trichloropropane	3.77	ug/L			4.00	94	73 --- 122	6	20
1,2-Dibromo-3-chloropropane	4.00	ug/L			4.00	100	62 --- 128	6	20
1,2-Dibromoethane	4.39	ug/L			4.00	110	77 --- 121	3	20
1,2-Dichlorobenzene	4.19	ug/L			4.00	105	80 --- 119	10	20
1,2-Dichloroethane	4.41	ug/L			4.00	110	73 --- 128	3	20
1,2-Dichloropropane	4.51	ug/L			4.00	113	78 --- 122	3	20
1,4-Dichloro-2-butene	3.26	ug/L			4.00	82	43 --- 146	4	20
1,4-Dichlorobenzene	4.20	ug/L			4.00	105	79 --- 118	10	20
2-Butanone	41.9	ug/L			40.0	105	56 --- 143	4	20
2-Hexanone	38.7	ug/L			40.0	97	57 --- 139	6	20
4-Methyl-2-pentanone	43.4	ug/L			40.0	108	67 --- 130	4	20
Acetone	44.6	ug/L			40.0	112	39 --- 160	3	20
Acrylonitrile	20.6	ug/L			20.0	103	63 --- 135	1	20
Benzene	4.32	ug/L			4.00	108	79 --- 120	5	20
Bromochloromethane	4.56	ug/L			4.00	114	78 --- 123	0	20
Bromodichloromethane	4.42	ug/L			4.00	110	79 --- 125	4	20
Bromoform	3.82	ug/L			4.00	96	66 --- 130	8	20
Bromomethane	3.58	ug/L			4.00	90	53 --- 141	32	20
Carbon disulfide	9.25	ug/L			8.00	116	64 --- 133	1	20
Carbon tetrachloride	4.61	ug/L			4.00	115	72 --- 136	11	20
Chlorobenzene	4.43	ug/L			4.00	111	82 --- 118	9	20
Chloroethane	4.38	ug/L			4.00	110	60 --- 138	7	20
Chloroform	4.31	ug/L			4.00	108	79 --- 124	8	20
Chloromethane	4.29	ug/L			4.00	107	50 --- 139	5	20
cis-1,2-Dichloroethene	4.48	ug/L			4.00	112	78 --- 123	12	20
cis-1,3-Dichloropropene	4.09	ug/L			4.00	102	75 --- 124	12	20
Dibromochloromethane	4.14	ug/L			4.00	104	74 --- 126	7	20
Dibromomethane	4.49	ug/L			4.00	112	79 --- 123	3	20
Ethylbenzene	4.35	ug/L			4.00	109	79 --- 121	4	20
Iodomethane	5.17	ug/L			8.00	65	69 --- 131	47	20
m & p-Xylene	8.80	ug/L			8.00	110	80 --- 121	5	20
Methyl tert-butyl ether	4.31	ug/L			4.00	108	71 --- 124	3	20
Methylene chloride	2.32	ug/L			4.00	58	74 --- 124	7	20
o-Xylene	4.37	ug/L			4.00	109	78 --- 122	7	20
Styrene	4.59	ug/L			4.00	115	78 --- 123	16	20
Tetrachloroethene	4.63	ug/L			4.00	116	74 --- 129	6	20
Toluene	4.13	ug/L			4.00	103	80 --- 121	9	20

Lab Control Spike Duplicate Water

Analytical Run #:	166752	Analysis Date:	11/23/2019	Prep Batch #:		Matrix:	LIQUID
CTLab #:	362294	Analysis Time:	00:11	Prep Date/Time:		Method:	SW8260C
Parent Sample #:	362146	Analyst:	RLD	Prep Analyst:			

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
trans-1,2-Dichloroethene	4.50	ug/L			4.00	112	75 --- 124	8	20
trans-1,3-Dichloropropene	4.16	ug/L			4.00	104	73 --- 127	9	20
Trichloroethene	4.46	ug/L			4.00	112	79 --- 123	8	20
Trichlorofluoromethane	4.53	ug/L			4.00	113	65 --- 141	1	20
Vinyl Acetate	38.3	ug/L			40.0	96	54 --- 146	5	20
Vinyl chloride	4.62	ug/L			4.00	116	58 --- 137	5	20

Lab Control Spike Water

Analytical Run #:	166752	Analysis Date:	11/22/2019	Prep Batch #:		Matrix:	LIQUID
CTLab #:	362146	Analysis Time:	13:49	Prep Date/Time:		Method:	SW8260C
Parent Sample #:		Analyst:	RLD	Prep Analyst:			

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	4.72	ug/L			4.00	118	78 --- 124		20
1,1,1-Trichloroethane	4.04	ug/L			4.00	101	74 --- 131		20
1,1,2,2-Tetrachloroethane	4.48	ug/L			4.00	112	71 --- 121		20
1,1,2-Trichloroethane	4.51	ug/L			4.00	113	80 --- 119		20
1,1-Dichloroethane	4.68	ug/L			4.00	117	77 --- 125		20
1,1-Dichloroethene	4.62	ug/L			4.00	116	71 --- 131		20
1,2,3-Trichloropropane	4.02	ug/L			4.00	100	73 --- 122		20
1,2-Dibromo-3-chloropropane	4.25	ug/L			4.00	106	62 --- 128		20
1,2-Dibromoethane	4.54	ug/L			4.00	114	77 --- 121		20
1,2-Dichlorobenzene	4.61	ug/L			4.00	115	80 --- 119		20
1,2-Dichloroethane	4.53	ug/L			4.00	113	73 --- 128		20
1,2-Dichloropropane	4.63	ug/L			4.00	116	78 --- 122		20
1,4-Dichloro-2-butene	3.38	ug/L			4.00	84	43 --- 146		20
1,4-Dichlorobenzene	4.62	ug/L			4.00	116	79 --- 118		20
2-Butanone	43.6	ug/L			40.0	109	56 --- 143		20
2-Hexanone	41.0	ug/L			40.0	102	57 --- 139		20
4-Methyl-2-pentanone	45.0	ug/L			40.0	112	67 --- 130		20
Acetone	46.0	ug/L			40.0	115	39 --- 160		20
Acrylonitrile	20.9	ug/L			20.0	104	63 --- 135		20
Benzene	4.53	ug/L			4.00	113	79 --- 120		20
Bromochloromethane	4.55	ug/L			4.00	114	78 --- 123		20
Bromodichloromethane	4.58	ug/L			4.00	114	79 --- 125		20
Bromoform	4.14	ug/L			4.00	104	66 --- 130		20
Bromomethane	4.93	ug/L			4.00	123	53 --- 141		20
Carbon disulfide	9.15	ug/L			8.00	114	64 --- 133		20
Carbon tetrachloride	4.11	ug/L			4.00	103	72 --- 136		20
Chlorobenzene	4.03	ug/L			4.00	101	82 --- 118		20
Chloroethane	4.68	ug/L			4.00	117	60 --- 138		20
Chloroform	4.67	ug/L			4.00	117	79 --- 124		20
Chloromethane	4.50	ug/L			4.00	112	50 --- 139		20
cis-1,2-Dichloroethene	3.96	ug/L			4.00	99	78 --- 123		20
cis-1,3-Dichloropropene	4.61	ug/L			4.00	115	75 --- 124		20
Dibromochloromethane	4.44	ug/L			4.00	111	74 --- 126		20
Dibromomethane	4.62	ug/L			4.00	116	79 --- 123		20
Ethylbenzene	4.17	ug/L			4.00	104	79 --- 121		20
Iodomethane	8.35	ug/L			8.00	104	69 --- 131		20
m & p-Xylene	8.36	ug/L			8.00	104	80 --- 121		20
Methyl tert-butyl ether	4.46	ug/L			4.00	112	71 --- 124		20
Methylene chloride	2.48	ug/L			4.00	62	74 --- 124		20
o-Xylene	4.08	ug/L			4.00	102	78 --- 122		20
Styrene	3.91	ug/L			4.00	98	78 --- 123		20
Tetrachloroethene	4.34	ug/L			4.00	108	74 --- 129		20
Toluene	4.53	ug/L			4.00	113	80 --- 121		20

Lab Control Spike Water

Analytical Run #:	166752	Analysis Date:	11/22/2019	Prep Batch #:		Matrix:	LIQUID
CTLab #:	362146	Analysis Time:	13:49	Prep Date/Time:		Method:	SW8260C
Parent Sample #:		Analyst:	RLD	Prep Analyst:			

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
trans-1,2-Dichloroethene	4.16	ug/L			4.00	104	75 --- 124		20
trans-1,3-Dichloropropene	4.54	ug/L			4.00	114	73 --- 127		20
Trichloroethene	4.12	ug/L			4.00	103	79 --- 123		20
Trichlorofluoromethane	4.58	ug/L			4.00	114	65 --- 141		20
Vinyl Acetate	40.4	ug/L			40.0	101	54 --- 146		20
Vinyl chloride	4.38	ug/L			4.00	110	58 --- 137		20

Method Blank Water

Analytical Run #:	166752	Analysis Date:	11/22/2019	Prep Batch #:		Matrix:	LIQUID
CTLab #:	362194	Analysis Time:	15:15	Prep Date/Time:		Method:	SW8260C
Parent Sample #:		Analyst:	RLD	Prep Analyst:			

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	0.018	ug/L		U	0		0.100		
1,1,1-Trichloroethane	0.018	ug/L		U	0		0.050		
1,1,2,2-Tetrachloroethane	0.014	ug/L		U	0		0.050		
1,1,2-Trichloroethane	0.019	ug/L		U	0		0.100		
1,1-Dichloroethane	0.015	ug/L		U	0		0.050		
1,1-Dichloroethene	0.04	ug/L		U	0		0.10		
1,2,3-Trichloropropane	0.07	ug/L		U	0		0.10		
1,2-Dibromo-3-chloropropane	0.07	ug/L		U	0		0.10		
1,2-Dibromoethane	0.04	ug/L		U	0		0.10		
1,2-Dichlorobenzene	0.022	ug/L		U	0		0.050		
1,2-Dichloroethane	0.024	ug/L		U	0		0.050		
1,2-Dichloropropane	0.024	ug/L		U	0		0.050		
1,4-Dichloro-2-butene	0.06	ug/L		U	0		0.10		
1,4-Dichlorobenzene	0.017	ug/L		U	0		0.050		
2-Butanone	0.5	ug/L		U	0		1.0		
2-Hexanone	0.3	ug/L		U	0		1.0		
4-Methyl-2-pentanone	0.22	ug/L		U	0		0.50		
Acetone	0.8	ug/L		U	0		1.0		
Acrylonitrile	0.16	ug/L		U	0		0.50		
Benzene	0.019	ug/L		U	0		0.050		
Bromochloromethane	0.04	ug/L		U	0		0.10		
Bromodichloromethane	0.028	ug/L		U	0		0.050		
Bromoform	0.03	ug/L		U	0		0.10		
Bromomethane	0.06	ug/L		U	0		0.10		
Carbon disulfide	0.014	ug/L		U	0		0.10		
Carbon tetrachloride	0.029	ug/L		U	0		0.050		
Chlorobenzene	0.015	ug/L		U	0		0.050		
Chloroethane	0.023	ug/L		U	0		0.100		
Chloroform	0.023	ug/L		U	0		0.050		
Chloromethane	0.03	ug/L		U	0		0.05		
cis-1,2-Dichloroethene	0.027	ug/L		U	0		0.050		
cis-1,3-Dichloropropene	0.020	ug/L		U	0		0.050		
Dibromochloromethane	0.03	ug/L		U	0		0.05		
Dibromomethane	0.03	ug/L		U	0		0.05		
Ethylbenzene	0.016	ug/L		U	0		0.050		
Iodomethane	0.246	ug/L			0		0.40		
m & p-Xylene	0.03	ug/L		U	0		0.10		
Methyl tert-butyl ether	0.017	ug/L		U	0		0.050		
Methylene chloride	0.03	ug/L		U	0		0.20		
o-Xylene	0.017	ug/L		U	0		0.050		
Styrene	0.011	ug/L		U	0		0.050		
Tetrachloroethene	0.023	ug/L		U	0		0.050		
Toluene	0.017	ug/L		U	0		0.050		

Method Blank Water

Analytical Run #:	166752	Analysis Date:	11/22/2019	Prep Batch #:		Matrix:	LIQUID
CTLab #:	362194	Analysis Time:	15:15	Prep Date/Time:		Method:	SW8260C
Parent Sample #:		Analyst:	RLD	Prep Analyst:			

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
trans-1,2-Dichloroethene	0.029	ug/L		U	0		0.050		
trans-1,3-Dichloropropene	0.03	ug/L		U	0		0.10		
Trichloroethene	0.025	ug/L		U	0		0.050		
Trichlorofluoromethane	0.029	ug/L		U	0		0.100		
Vinyl Acetate	0.4	ug/L		U	0		1.0		
Vinyl chloride	0.019	ug/L		U	0		0.050		

CT LABORATORIES
delivering more than data from your environmental analyses

Sample Condition Report

Folder #: 149603
Client: ECC

Print Date / Time: 11/14/2019 11:27
Received Date / Time / By: 11/14/2019 11:27 DJL

Project Name: PHILLIPS ARMY RUBBLE LF
Project Phase:

Log-In Date / Time / By: 11/14/2019 10:00 JLS
Project #: 5406 PM: ETK

Coolers: 5018
Custody Seals Present : **Y**

Temperature: 2.1 C On Ice: **Y**
COC Present:? **Y** Complete? **Y**

Seal Intact? **Y**
Ship Method: UPS
Adequate Packaging: **Y**

Numbers: DATED AND SIGNED
Tracking Number: 1Z11R4831394518945
Temp Blank Enclosed? **Y**

Notes: SAMPLES REC'D IN GOOD CONDITION ON ICE
1 CUSTODY SEAL PRESENT AND INTACT, DATED 11-13-19 AND SIGNED

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
358080 PAALF-TB-1111319				
	VOA AA	1	/	VOC
	Total # of Containers of Type	(***VOA AA***) = **1**		
358080 PAALF-TB-1111319				
	VOA HCL	1	/	VOC
	Total # of Containers of Type	(***VOA HCL***) = **1**		

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
358081 PAALF-PW11-111319				
	UNPRES PL	1	/	ALK,Anions,CND,pH,TDS,TURB
	Total # of Containers of Type	(***UNPRES PL***) = **1**		
358081 PAALF-PW11-111319				
	HNO3	1	Y /	AS,HG,HRD,ICP,K,SB,TL
	Total # of Containers of Type	(***HNO3***) = **1**		
358081 PAALF-PW11-111319				
	H2SO4 PL	1	Y /	COD,NH3N
	Total # of Containers of Type	(***H2SO4 PL***) = **1**		
358081 PAALF-PW11-111319				
	VOA HCL	1	/	VOC
	VOA HCL	1	/	VOC
	VOA HCL	1	/	VOC
	Total # of Containers of Type	(***VOA HCL***) = **3**		

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
358082 PAALF-PW11-111319F				
	HNO3	1	Y /	AS,HG,ICP,K,SB,TL
	Total # of Containers of Type	(***HNO3***) = **1**		

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
358085 PAALF-PW12-111319				
	UNPRES PL	1	/	ALK,Anions,CND,pH,TDS,TURB
	Total # of Containers of Type	(***UNPRES PL***) = **1**		
358085 PAALF-PW12-111319				
	HNO3	1	Y /	AS,HG,HRD,ICP,K,SB,TL

Total # of Containers of Type (*HNO3*) = 1

358085 PAALF-PW12-111319

H2SO4 PL	1	Y	/	COD,NH3N

Total # of Containers of Type (*H2SO4 PL*) = 1

358085 PAALF-PW12-111319

VOA HCL	1		/	VOC
VOA HCL	1		/	VOC
VOA HCL	1		/	VOC

Total # of Containers of Type (*VOA HCL*) = 3

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests

358086 PAALF-PW12-111319F

HNO3	1	Y	/	AS,HG,ICP,K,SB,TL

Total # of Containers of Type (*HNO3*) = 1

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests

358087 PAALF-PW17-111319

UNPRES PL	1		/	ALK,Anions,CND,pH,TDS,TURB

Total # of Containers of Type (*UNPRES PL*) = 1

358087 PAALF-PW17-111319

HNO3	1	Y	/	AS,HG,HRD,ICP,K,SB,TL

Total # of Containers of Type (*HNO3*) = 1

358087 PAALF-PW17-111319

H2SO4 PL	1	Y	/	COD,NH3N

Total # of Containers of Type (*H2SO4 PL*) = 1

358087 PAALF-PW17-111319

VOA HCL	1		/	VOC
VOA HCL	1		/	VOC
VOA HCL	1		/	VOC

Total # of Containers of Type (*VOA HCL*) = 3

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests

358088 PAALF-PW17-111319F

HNO3	1	Y	/	AS,HG,ICP,K,SB,TL

Total # of Containers of Type (*HNO3*) = 1

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests

358089 PAALF-PW17-111319DUP

UNPRES PL	1		/	ALK,Anions,CND,pH,TDS,TURB

Total # of Containers of Type (*UNPRES PL*) = 1

358089 PAALF-PW17-111319DUP

HNO3	1	Y	/	AS,HG,HRD,ICP,K,SB,TL

Total # of Containers of Type (*HNO3*) = 1

358089 PAALF-PW17-111319DUP

H2SO4 PL	1	Y	/	COD,NH3N

Total # of Containers of Type (*H2SO4 PL*) = 1

358089 PAALF-PW17-111319DUP

VOA HCL	1		/	VOC
VOA HCL	1		/	VOC
VOA HCL	1		/	VOC

Total # of Containers of Type (*VOA HCL*) = 3

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests

358090 PAALF-PW17-111319FDUP

HNO3	1	Y	/	AS,HG,ICP,K,SB,TL

Total # of Containers of Type (*HNO3*) = 1

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
358091 PAALF-PW19-111319				
	UNPRES PL	1	/	ALK,Anions,CND,pH,TDS,TURB
	Total # of Containers of Type (*UNPRES PL*) = 1			
358091 PAALF-PW19-111319				
	HNO3	1	Y /	AS,HG,HRD,ICP,K,SB,TL
	Total # of Containers of Type (*HNO3*) = 1			
358091 PAALF-PW19-111319				
	H2SO4 PL	1	Y /	COD,NH3N
	Total # of Containers of Type (*H2SO4 PL*) = 1			
358091 PAALF-PW19-111319				
	VOA HCL	1	/	VOC
	VOA HCL	1	/	VOC
	VOA HCL	1	/	VOC
	Total # of Containers of Type (*VOA HCL*) = 3			

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
358092 PAALF-PW19-111319F				
	HNO3	1	Y /	AS,HG,ICP,K,SB,TL
	Total # of Containers of Type (*HNO3*) = 1			

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
358093 PAALF-PW19-111319RB				
	UNPRES PL	1	/	ALK,Anions,CND,pH,TDS,TURB
	Total # of Containers of Type (*UNPRES PL*) = 1			
358093 PAALF-PW19-111319RB				
	HNO3	1	Y /	AS,HG,HRD,ICP,K,SB,TL
	Total # of Containers of Type (*HNO3*) = 1			
358093 PAALF-PW19-111319RB				
	H2SO4 PL	1	Y /	COD,NH3N
	Total # of Containers of Type (*H2SO4 PL*) = 1			
358093 PAALF-PW19-111319RB				
	VOA HCL	1	/	VOC
	VOA HCL	1	/	VOC
	VOA HCL	1	/	VOC
	Total # of Containers of Type (*VOA HCL*) = 3			

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
358094 PAALF-PW11-111319FRB				
	HNO3	1	Y /	AS,HG,ICP,K,SB,TL
	Total # of Containers of Type (*HNO3*) = 1			

Condition Code	*Condition Description*
1	Sample Received OK

149603

Rev. 02/2017

Folder #: 149603
Company: ECC
Project: RUBBLE LF
Logged By: JLS PM: ET

Company: ECC
Project Contact: Jennifer Schaefer
Telephone: 410-671-2970
Project Name: PAALF Semi-Annual GW Sampling Event – November 2019
Project #: 5406
Location: APG, MD
Sampled By: G. Carmichael, C. Bigelow, H. Cavanagh

ange Court, Baraboo, WI 53913
-356-2760 Fax 608-356-2766
www.ctlaboratories.com

RCRA SDWA NPDES
Solid Waste Other _____
PO: 5406

Report To:
EMAIL: JSchaefer@ecc.net
Company: ECC
Address: 1304 Governor Ct. Ste. 101 Abingdon, MD 21009

Invoice To:*
EMAIL:
Company:
Address: SAME

*Party listed is responsible for payment of invoice as per CT Laboratories' terms and conditions

Client Special Instructions

Matrix:
GW – groundwater SW - surface water WW - wastewater DW - drinking water
S - soil/sediment SL - sludge A - air M - misc/waste

Turnaround Time: Normal RUSH*
Date Needed: _____
Rush analysis requires prior CT Laboratories' approval
Surcharges:
24 hr 200%
2-3 days 100%
4-9 days 50%

ANALYSES REQUESTED

Collection Date	Collection Time	Matrix	Grab/ Comp	Sample #	Sample ID Description	Filtered? Y/N	VOCs (8260C)	Total Metals (6010C, 7470C)	Dissolved Metals (6010C, 7470C)	Hardness (410.4)	Anions [Nitrate, Nitrite, Sulfate, Chloride] (9056A)	Alkalinity (310.2)	Specific Conductance (9050A)	pH (9040C)	Turbidity (180.1)	Total Dissolved Solids (2540C)	Ammonia (350.1)	Chemical Oxygen Demand (2340B)			Total # Containers	Designated MS/MSD	CT Lab ID # (Lab use only)
							Fill in Spaces with Bottles per Test																
11/13/19	9:00	W			PAALF-TB-111319	N	2														2		358080
	12:25	GW			PAALF-PW11-111319	N	3	1		1	1	1	1	1	1	1	1	1			6		358081
	12:25				PAALF-PW11-111319f	Y			1												1		358082
	14:12				PAALF-PW12-111319	N	3	1		1	1	1	1	1	1	1	1	1			6		358085
	14:12				PAALF-PW12-111319f	Y			1												1		358086
	16:50				PAALF-PW17-111319		3	1		1	1	1	1	1	1	1	1	1			6		358087
	16:50				PAALF-PW17-111319f	Y			1												1		358088
	16:50				PAALF-PW17-111319dup		3	1		1	1	1	1	1	1	1	1	1			6		358089
	16:50				PAALF-PW17-111319fdup	Y			1												1		358090
	16:55				PAALF-PW19-111319		3	1		1	1	1	1	1	1	1	1	1			6		358091
	16:55				PAALF-PW19-111319f	Y			1												1		358092
	17:10	W			PAALF-PW19-111319RB		3	1		1	1	1	1	1	1	1	1	1			6		358093

Relinquished By:	Date/Time	Received By:	Date/Time
H. Cavanagh	11/13/19 18:00		11/14/19 1127
Received by:	Date/Time	Received for Laboratory by:	Date/Time
			11/14/13 10.00

Lab Use Only
Ice Present Yes No
Temp 2.1 IR Gun 24
Cooler # 5018

Rev. 02/2017

CHAIN OF CUSTODY

Company: ECC
Project Contact: Jennifer Schaefer
Telephone: 410-671-2970
Project Name: PAALF Semi-Annual GW Sampling Event – November 2019
Project #: 5406
Location: APG, MD
Sampled By: G. Gronichael, C. Bigelow, H. Cavanagh

CT LABORATORIES

1230 Lange Court, Baraboo, WI 53913
608-356-2760 Fax 608-356-2766
www.ctlaboratories.com

Lab Use Only
Place Header Sticker Here

Program:
QSM RCRA SDWA NPDES
Solid Waste Other _____

PO: 5406

Report To:
EMAIL: JSchaefer@ecc.net
Company: ECC
Address: 1304 Governor Ct. Ste. 101 Abingdon, MD 21009

Invoice To:*
EMAIL:
Company:
Address: SAME

*Party listed is responsible for payment of invoice as per CT Laboratories' terms and conditions

Client Special Instructions

Matrix:
GW – groundwater SW - surface water WW - wastewater DW - drinking water
S - soil/sediment SL - sludge A - air M - misc/waste

Turnaround Time: Normal RUSH*
Date Needed: _____
Rush analysis requires prior CT Laboratories' approval
Surcharges:
24 hr 200%
2-3 days 100%
4-9 days 50%

ANALYSES REQUESTED

Collection Date	Collection Time	Matrix	Grab/ Comp	Sample #	Sample ID Description	Filtered? Y/N	VOCs (8260C)	Total Metals (6010C, 7470C)	Dissolved Metals (6010C, 7470C)	Hardness (410.4)	Anions [Nitrate, Nitrite, Sulfate, Chloride] (9056A)	Alkalinity (310.2)	Specific Conductance (9050A)	pH (9040C)	Turbidity (180.1)	Total Dissolved Solids (2540C)	Ammonia (350.1)	Chemical Oxygen Demand (2340B)			Total # Containers	Designated MS/MSD	CT Lab ID # (Lab use only)
11/13/19	17:10	W			PAALF-PW19-111319-FRB	Y			1												1		388094

Fill in Spaces with Bottles per Test

Relinquished By:	Date/Time	Received By:	Date/Time
H. Cavanagh	11/13/19 18:00	[signature]	11/14/19 1027
Received by:	Date/Time	Received for Laboratory by:	Date/Time
		[signature]	11/14/19 10:00

Lab Use Only
Ice Present Yes No
Temp 2.1 IR Gun 24
Cooler # 5018

UPS Internet Shipping: View/Print Label

1. **Ensure there are no other shipping or tracking labels attached to your package.** Select the Print button on the print dialog box that appears. Note: If your browser does not support this function select Print from the File menu to print the label.

2. **Fold the printed label at the solid line below.** Place the label in a UPS Shipping Pouch. If you do not have a pouch, affix the folded label using clear plastic shipping tape over the entire label.

3. **GETTING YOUR SHIPMENT TO UPS**
   Customers with a Daily Pickup
   Your driver will pickup your shipment(s) as usual.

   Customers without a Daily Pickup
   Take your package to any location of The UPS Store®, UPS Access Point(TM) location, UPS Drop Box, UPS Customer Center, Staples® or Authorized Shipping Outlet

CUSTODY SEAL
DATE 11-13-19
SIGNATURE ECC

QEC
Quality Environmental Containers
800-255-3950 • www.qeconsa.com

BEL AIR ,MD 21015
BEL AIR ,MD 21014

Ice Present Yes No #24
Temperature 2.1
Initials BC
Date 11/14/19 Time 10:00
Cooler # 3018

FOLD HERE

ECC
410-671-2970
ECC
1304 GOVERNOR COURT
ABINGDON MD 21009

57 LBS 1 OF 1

SHIP TO:
SAMPLE RECEIVING
608-356-2760
CT LABORATORIES
1230 LANGE COURT
BARABOO WI 53913-3109

WI 539 0-10

UPS NEXT DAY AIR SAVER 1P
TRACKING #: 1Z 11R 483 13 9451 8945

BILLING: F/C BILL RECEIVER

US 21.3.48. WNTNV50 20.0A 10/2019

December 18, 2019

CT LABORATORIES
delivering more than data from your environmental analyses

1230 Lange Court • Baraboo, WI 53913 • 608-356-2760
www.ctlaboratories.com

ANALYTICAL SUMMARY REPORT

This report at a minimum contains the following information:

Analytical Report of Test Results
Description of QC Qualifiers
Chain of Custody (copy)
Quality Control Summary (if applicable)
Case Narrative (if applicable)
Correspondence with Client (if applicable)

This report has been specifically prepared to satisfy project or program requirements. These results are in compliance with NELAC requirements for parameters where accreditation is required or available, unless otherwise noted in the case narrative.

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

ANALYTICAL SAMPLE DATA

ECC
JEN SCHAEFER
1304 GOVERNOR CT
SUITE 101
ABINGDON, MD 21009

Project Name: PAALF
Project Phase: RUBBLE LF
Project #: 5406
Folder #: 150412
Purchase Order #: 5406
Contract #: 3321

Arrival Temperature: 4.1
Report Date: 12/20/2019
Date Received: 12/19/2019
Reprint Date: 12/20/2019

CT LAB#: 371569 Sample Description: PAALF-TB-121819 Client Sample #: Sampled: 12/18/2019 1000

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Organic Results												
Vinyl chloride	<0.020	ug/L	0.013	0.020	0.10	0.10	1.00	U		12/20/19 09:53	RLD	EPA 8260C
1,2 Dichloroethane-d4	98	% Recovery	81			118	1.00			12/20/19 09:53	RLD	EPA 8260C
Bromofluorobenzene	99	% Recovery	85			114	1.00			12/20/19 09:53	RLD	EPA 8260C
d8-Toluene	100	% Recovery	89			112	1.00			12/20/19 09:53	RLD	EPA 8260C
Dibromofluoromethane	101	% Recovery	80			119	1.00			12/20/19 09:53	RLD	EPA 8260C

CT LAB#: 371570 Sample Description: PAALF-PW12-121819 Client Sample #: Sampled: 12/18/2019 1230

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Organic Results												
Vinyl chloride	***1.9***	ug/L	0.013	0.020	0.10	0.10	1.00			12/20/19 10:22	RLD	EPA 8260C
1,2 Dichloroethane-d4	97	% Recovery	81			118	1.00			12/20/19 10:22	RLD	EPA 8260C
Bromofluorobenzene	97	% Recovery	85			114	1.00			12/20/19 10:22	RLD	EPA 8260C
d8-Toluene	98	% Recovery	89			112	1.00			12/20/19 10:22	RLD	EPA 8260C

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB#: 371570 Sample Description: PAALF-PW12-121819 Client Sample #: Sampled: 12/18/2019 1230

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Dibromofluoromethane	99	% Recovery	80			119	1.00			12/20/19 10:22	RLD	EPA 8260C

CT LAB#: 371571 Sample Description: PAALF-PW12-121819DUP Client Sample #: Sampled: 12/18/2019 0000

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Organic Results												
Vinyl chloride	***2.2***	ug/L	0.013	0.020	0.10	0.10	1.00			12/20/19 10:51	RLD	EPA 8260C
1,2 Dichloroethane-d4	96	% Recovery	81			118	1.00			12/20/19 10:51	RLD	EPA 8260C
Bromofluorobenzene	100	% Recovery	85			114	1.00			12/20/19 10:51	RLD	EPA 8260C
d8-Toluene	99	% Recovery	89			112	1.00			12/20/19 10:51	RLD	EPA 8260C
Dibromofluoromethane	99	% Recovery	80			119	1.00			12/20/19 10:51	RLD	EPA 8260C

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

Notes:

^ Indicates the laboratory is NELAP accredited for this analyte by the indicated matrix and method. DL (detection limit), LOD (limit of detection), loq (limit of quantitation) as defined by most recent DOD QSM version.

All samples were received intact and properly preserved unless otherwise noted. The results reported relate only to the samples tested. This report shall not be reproduced, except in full, without written approval of this laboratory. The Chain of Custody is attached.

This report has been specifically prepared to satisfy project or program requirements. These results are in compliance with NELAC requirements for the parameters where accreditation is required or available, unless noted in the case narrative.

Submitted by: Eric T. Korthals
Project Manager
608-356-2760

QC Qualifiers

Code	Description
B	Analyte detected in the associated Method Blank.
C	Toxicity present in BOD sample.
D	Diluted Out.
E	Safe, No Total Coliform detected.
F	Unsafe, Total Coliform detected, no E. Coli detected.
G	Unsafe, Total Coliform detected and E. Coli detected.
H	Holding time exceeded.
I	Incubator temperature was outside acceptance limits during test period.
J	Estimated value.
L	Significant peaks were detected outside the chromatographic window.
M	Matrix spike and/or Matrix Spike Duplicate recovery outside acceptance limits.
N	Insufficient BOD oxygen depletion.
O	Complete BOD oxygen depletion.
P	Concentration of analyte differs more than 40% between primary and confirmation analysis.
Q	Laboratory Control Sample outside acceptance limits.
R	See Narrative at end of report.
S	Surrogate standard recovery outside acceptance limits due to apparent matrix effects.
T	Sample received with improper preservation or temperature.
U	Analyte concentration was below detection limit.
V	Raised Quantitation or Reporting Limit due to limited sample amount or dilution for matrix background interference.
W	Sample amount received was below program minimum.
X	Analyte exceeded calibration range.
Y	Replicate/Duplicate precision outside acceptance limits.
Z	Specified calibration criteria was not met.

Current CT Laboratories Certifications

Wisconsin (WDNR) Chemistry ID# 157066030
Wisconsin (DATCP) Bacteriology ID# 289
Louisiana NELAP (primary) ID# ACC20190002
Illinois NELAP Lab ID# 200073
Kansas NELAP Lab ID# E-10368
Virginia NELAP Lab ID# 460203
Maryland Lab ID# 344
ISO/IEC 17025-2005 A2LA Cert # 3806.01
DoD-ELAP A2LA 3806.01
GA EPD Stipulation ID ACC20190002

CT LABORATORIES
delivering more than data from your environmental analyses

1230 Lange Court • Baraboo, WI 53913 • 608-356-2760
www.ctlaboratories.com

QC SUMMARY REPORT

ECC **Project Name: PAALF**

SDG #: 150412 **Folder #: 150412** **Project #: 5406**

Lab Control Spike Duplicate Water

Analytical Run #:	167692	Analysis Date:	12/20/2019	Prep Batch #:		Matrix:	LIQUID
CTLab #:	372970	Analysis Time:	11:49	Prep Date/Time:		Method:	SW8260C
Parent Sample #:	372637	Analyst:	RLD	Prep Analyst:			

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Vinyl chloride	4.80	ug/L			4.00	120	58 --- 137	3	20

Lab Control Spike Water

Analytical Run #:	167692	Analysis Date:	12/20/2019	Prep Batch #:		Matrix:	LIQUID
CTLab #:	372637	Analysis Time:	07:58	Prep Date/Time:		Method:	SW8260C
Parent Sample #:		Analyst:	RLD	Prep Analyst:			

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Vinyl chloride	4.66	ug/L			4.00	116	58 --- 137		20

Method Blank Water

Analytical Run #:	167692	Analysis Date:	12/20/2019	Prep Batch #:		Matrix:	LIQUID
CTLab #:	372820	Analysis Time:	09:24	Prep Date/Time:		Method:	SW8260C
Parent Sample #:		Analyst:	RLD	Prep Analyst:			

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Vinyl chloride	0.019	ug/L		U	0		0.050		

CT LABORATORIES
delivering more than data from your environmental analyses

Sample Condition Report

Folder #: 150412
Client: ECC

Print Date / Time: 12/19/2019 11:11
Received Date / Time / By: 12/19/2019 11:05 DJL

Project Name: PAALF
Project Phase: RUBBLE LF

Log-In Date / Time / By: 12/19/2019 11:11 JLS
Project #: 5406 PM: ETK

Coolers: 5991
Custody Seals Present : **Y**

Temperature: 4.1 C On Ice: **Y**
COC Present:? **Y** Complete? **Y**

Seal Intact? **Y**
Ship Method: UPS
Adequate Packaging: **Y**

Numbers: DATED AND SIGNED
Tracking Number: 1Z11R4831394571815
Temp Blank Enclosed? **Y**

Notes: SAMPLES REC'D IN GOOD CONDITION ON ICE
1 CUSTODY SEAL PRESENT AND INTACT, DATED 12/18/19 AND SIGNED

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
371569 PAALF-TB-121819				
	VOA HCL	1	/	VOC
	VOA HCL	1	/	VOC
	Total # of Containers of Type	(***VOA HCL***) =	**2**	
Sample ID / Description	**Container Type**	**Cond. Code**	**pH OK?/Filtered?**	**Tests**
371570 PAALF-PW12-121819				
	VOA HCL	1	/	VOC
	VOA HCL	1	/	VOC
	VOA HCL	1	/	VOC
	Total # of Containers of Type	(***VOA HCL***) =	**3**	
Sample ID / Description	**Container Type**	**Cond. Code**	**pH OK?/Filtered?**	**Tests**
371571 PAALF-PW12-121819DUP				
	VOA HCL	1	/	VOC
	VOA HCL	1	/	VOC
	VOA HCL	1	/	VOC
	Total # of Containers of Type	(***VOA HCL***) =	**3**	

Condition Code	*Condition Description*
1	Sample Received OK

150412

Rev. 02/2017 CHA

Page 1 of 1

Folder #: 150412
Company: ECC
Project: RUBBLE LF
Logged By: JLS PM: ET

Company: ECC
Project Contact: Jennifer Scharfer
Telephone: 410-671-2970
Project Name: PAALF GW Sampling Event – December 2019
Project #: 5406
Location: APG, MD
Sampled By: G. Carmichael, C. Bigelow

CT LABO

Place H

Court, Baraboo, WI 53913
-2760 Fax 608-356-2766
www.ctlaboratories.com

SDWA NPDES
Solid Waste Other _____

PO # 5406

Report To:
EMAIL: JScharfer@ecc.net
Company: ECC
Address: 1304 Governor Ct. Ste. 101 Abingdon, MD 21009

Invoice To:*
EMAIL:
Company: SAME
Address:

*Party listed is responsible for payment of invoice as per CT Laboratories' terms and conditions

Client Special Instructions

Matrix:
GW – groundwater SW - surface water WW - wastewater DW - drinking water
S - soil/sediment SL - sludge A - air M - misc/waste

ANALYSES REQUESTED

Turnaround Time
Normal (RUSH*)
Date Needed: 12/23/19
Rush analysis requires prior CT Laboratories' approval
Surcharges:
24 hr 200%
2-3 days 100%
4-9 days 50%

Collection Date	Collection Time	Matrix	Grab/ Comp	Sample #	Sample ID Description	Filtered? Y/N	Vinyl chloride (8260C)	Total # Containers	Designated MS/MSD	CT Lab ID # (Lab use only)
12/18/19	1000				PAALF-TB-121819	N	2			371569
↓	1230	GW	Grab		PAALF-PW12-121819	↓	3			371570
↓	00:00	GW	Grab		PAALF-PW12-121819dup	↓	3			371571

Fill in Spaces with Bottles per Test

Relinquished By:	Date/Time	Received By:	Date/Time
Grace Carmichael	12/18/19 1600		12/19/19 1111
Received by:	Date/Time	Received for Laboratory by:	Date/Time
			12/19/19 11:05

Lab Use Only
Ice Present Yes No
Temp 4.1 IR Gun 27
Cooler # 5991

UPS Internet Shipping: View/Print Label

1. **Ensure there are no other shipping or tracking labels attached to your package.** Select the Print button on the [illegible] If your browser does not support this function select Print from the File menu to

CUSTODY SEAL
2. DATE 12/18/19
3. SIGNATURE ECC

QEC
Quality Environmental Containers
800-255-3950 • www.qecusa.com

Your driver will pickup your shipment(s) as usual.

Customers without a Daily Pickup

Take your package to any location of The UPS Store®, UPS Access Point(TM) location, UPS Drop Box, UPS Customer Center, Staples® or Authorized Shipping Outlet near you. Items sent via UPS Return Services(SM) (including via Ground) are also accepted at Drop Boxes. To find the location nearest you, please visit the 'Find Locations' Quick link at ups.com.

Schedule a same day or future day Pickup to have a UPS driver pickup all of your Internet Shipping packages. Hand the package to any UPS driver in your area.

UPS Access Point™
BATEMINCE, LLC DBA POSTMAN PLU
3438 EMMORTON RD
ABINGDON ,MD 21009

UPS Access Point™
THE UPS STORE
2206 OLD EMMORTON RD
BEL AIR ,MD 21015

UPS Access Point™
MICHAELS STORE # 8814
640 MARKETPLACE DR
BEL AIR ,MD 21014

Ice Present Yes No
Temperature 4.1
Initials DL
Date 12/19/19 Time 11:05
Cooler # 5991

FOLD HERE

ECC
410-671-2970
ECC
1304 GOVERNOR COURT
ABINGDON MD 21009

8 LBS 1 OF 1

SHIP TO:
SAMPLE RECEIVING
608-356-2760
CT LABORATORIES
1230 LANGE COURT
BARABOO WI 53913-3109

WI 539 0-10

UPS NEXT DAY AIR SAVER 1P
TRACKING #: 1Z 11R 483 13 9457 1815

BILLING: F/C BILL RECEIVER

US 21.5.48. WNNV50 20.0A 10/2019

APPENDIX G

Historical Groundwater Monitoring Results

PW-11, Downgradient, Summary of Data Since March 1999

Parameters	MCL	Units	Mar. 1999	Sep. 1999	Mar. 2000	Sep. 2000	Feb. 2001	Aug. 2001	Feb. 2002	Aug. 2002	Mar. 2003	Aug. 2003	Mar. 2004	Sep. 2004	Mar. 2005	Sep. 2005	Mar. 2006	Sep. 2006	Mar. 2007	Sep. 2007	Apr. 2008	Oct. 2008	Feb. 2009	Oct. 2009
Metals*																								
Aluminum	200 (s)	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	6	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	10	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.55	ND	0.68	0.69	1.1	0.66	ND	0.63	ND	0.78	2.4
Barium	2,000	µg/L	202	260	198	204	200	180	130	120	102	139	115	164	140	133	112	119	99.3	91.4	59.5	93.9	99.2	68.4
Beryllium	4	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.2	0.18	0.22	0.19	0.18	0.2	0.23	0.21	0.18
Calcium	---	µg/L	NA	17,700	15,100	15,900	18,000	17,000	15,000	13,000	12,800	13,400	14,400	15,100	14,000	13,500	13,700	12,800	12,800	12,500	12,500	13,500	16,000	15,100
Cadmium	5	µg/L	0.4	ND	ND	0.221	ND	ND	ND	ND	0.2	ND	0.23	0.24	ND	0.29	0.26	0.24	0.31	0.3	0.2	0.25	0.23	0.19
Chromium	100	µg/L	0.74	ND	ND	2.8	ND	ND	ND	ND	ND	0.22	ND	ND	3.7	ND	ND	ND	ND	ND	ND	ND	0.82	1
Cobalt	----	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	12.2	12.3	13.5	13.9	15.6	15.2	14.3	20.7	18.8
Copper	1,300	µg/L	NA	ND	ND	1.85	ND	ND	ND	10	1.4	ND	ND	ND	ND	0.44	0.6	0.66	0.88	2.6	0.76	1.9	4	0.71
Iron	300 (s)	µg/L	NA	507	908	2,050	2,500	2,600	3,700	3,100	76	2,590	553	399	210	357	406	246	187	145	641	214	492	2,300
Lead	15	µg/L	ND	ND	ND	ND	ND	ND	5	ND	ND	1.3	ND	0.48	ND	0.19	ND	ND	ND	1.2	ND	0.30 J	0.52	ND
Potassium	---	µg/L	NA	3,510	2,990	3,300	ND	ND	ND	ND	3,430	3,100	2,860	2,990	2,900	NA	NA	NA	NA	NA	NA	NA	NA	2,690
Magnesium	---	µg/L	NA	10,700	9,380	9,630	11,000	9,800	8,600	7,500	7,830	7,910	8,280	8,610	8,700	NA	NA	NA	NA	NA	NA	NA	NA	9,320
Manganese	50 (s)	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	340	320	350	323	345	330	377	447	468
Mercury	2	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.2	ND	0.11	0.21	0.23	0.16	0.28	0.2	0.1	0.092	0.079
Nickel	100	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	10.8	8.3	NA	NA	12	10.2	10.6	10.1	11.3	12.1	11.6	11	12	13.5
Selenium	50	µg/L	NA	ND	ND	ND	ND	ND	ND	ND	1.9	2.5	ND	3.1	ND	2	2	2.4	2.6	ND	0.92	1.4 J	1.2	ND
Silver	100 (s)	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	ND	ND	ND	ND	ND	ND	ND	0.21	ND	ND
Sodium	20,000 (g)	µg/L	NA	55,200	51,000	53,400	66,000	59,000	58,000	51,000	42,500	36,700	47,800	69,200	63,000	NA	NA	NA	NA	NA	NA	NA	NA	61,600
Thallium	2	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	0.09	ND	ND	ND	ND	ND	ND	ND
Vanadium	----	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	5,000 (s)	µg/L	29.5	35.6	28.9	25.6	30	40	60	40	32.5	17.4	25.4	23.6	24	19.7	20.9	22.8	24.3	90.6	21.1	25.3	28.9	23.9
Wet Chemistry																								
Alkalinity	----	mg/L	21.1	19.4	22.9	26.5	32	33	30	24	25	22	22	26	36.6	21	21	7.7	26	21	24	34	35	42
Ammonia	----	mg/L	NA	0.121	ND	0.232	ND	ND	ND	ND	0.02	0.24	0.11	0.13	ND	ND	0.11	ND	ND	ND	ND	ND	0.31	ND
Chemical Oxygen Demand	----	mg/L	21.7	15	11.4	ND	ND	ND	20	11	9.9	ND	ND	0	ND	ND	9.9	ND	ND	ND	ND	ND	9.1	8.6
Chloride	250 (s)	mg/L	87.5	79.5	90.1	92.8	110	98	86	78	69	55	76	89	84	63	90	71	60	66	51	56	56	59
Nitrate (N)	10	mg/L	0.208	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.14	0.11	0.14	0.11	0.15	0.08	0.13	0.13	NA
Nitrate/Nitrite	10	mg/L	NA	0.076	0.061	0.128	0.05	0.08	0.05	0.1	ND	0.23	0.23	0.19	ND	NA	NA	NA	NA	NA	NA	NA	ND	ND
pH	6.5-8.5(s)	--	NA	4.99	5.18	5.03	5.12	5.33	5.21	5.21	4.7	5.2	5.3	4.9	6.12	4.8	4.8	5.6	4.9	4.8	5	5.2	5	5.4
Specific Conductivity	----	µmho/cm	353	487	513	481	570	340	400	410	400	320	410	490	550	360	470	430	460	430	460	440	490	480
Conductivity	---	µmho	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate	250	mg/L	NA	47.9	43.8	58.1	56	51	0.47	54	27	6.6	41	57	55	60	35	37	58	64	75	64	75	69
Total Dissolved Solids	500 (s)	mg/L	NA	244	277	302	320	300	280	260	210	270	270	280	308	260	260	260	240	130	250	28	300	280
Total Hardness	----	mg/L	63.8	70.6	81.6	83.7	88	82	72	67	64	120	71	100	75.24	78	75	66	64	68	73	67	80	88
Total Organic Carbon	----	mg/L	NA	1.7	1.98	4.62	ND	0.9	9.9	8.6	5.1	7.1	3.1	4.3	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Halides	----	mg/L	NA	18.8	46	ND	70	72	44	32	33	19	37	0.1	52.3	NA	NA	NA	NA	NA	NA	NA	NA	NA
Turbidity	----	ntu	NA	1.45	16.1	2.36	4.4	10	51	10	3.2	ND	ND	ND	1	0.9	ND	ND	0.2	0.7	0.2	0.7	5.9	8.6
Volatile Organic Compounds																								
1,1,1,2-Tetrachloroethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	200	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	7	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloropropene	---	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene	---	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichloropropane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3- Chloropropane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	600	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	----	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND

PW-11, Downgradient, Summary of Data Since March 1999

Parameters	MCL	Units	Mar. 1999	Sep. 1999	Mar. 2000	Sep. 2000	Feb. 2001	Aug. 2001	Feb. 2002	Aug. 2002	Mar. 2003	Aug. 2003	Mar. 2004	Sep. 2004	Mar. 2005	Sep. 2005	Mar. 2006	Sep. 2006	Mar. 2007	Sep. 2007	Apr. 2008	Oct. 2008	Feb. 2009	Oct. 2009
1,4-Dichlorobenzene	75	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.15	ND	ND	ND
2-Butanone	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Hexanone	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	3.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.8	ND	ND	ND
Acrylonitrile	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	5	µg/L	ND	ND	ND	0.57	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.18	ND	ND	ND
Bromochloromethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	100	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.29	ND	0.3	ND	ND	0.28	ND	ND	ND
Chlorodibromomethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.53	ND	ND	ND	ND	ND	ND
cis-1,2 Dichloroethene	70	µg/L	ND	ND	ND	0.72	ND	ND	ND	ND	ND	1.1	ND	ND	ND	0.48	0.3	ND	ND	ND	0.61	ND	ND	ND
cis-1,3-Dichloropropene	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromomethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichloromethane	5	µg/L	ND	ND	ND	1.96	ND	ND	ND	ND	ND	4.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Benzene	700	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl Iodide	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	100	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
tert-butyl methyl ether (MTBE)	----	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND
Tetrachloroethene	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	1,000	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2- butene	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trans 1-2 dichloroethene	100	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.5	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.97	2.3	0.75	0.31	0.58	ND	ND	0.32	ND	ND	ND
Vinyl Acetate	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	2	µg/L	ND	ND	ND	0.79	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.86	ND	ND	ND
Xylenes	10,000	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

Red Shaded area denotes concentration greater than the primary MCL

Yellow shaded area denotes concentration greater than the secondary MCL or Guidance Levels which are non-enforceable

MCL = Maximum Contaminant Level; Analytes detected in groundwater were compared to primary or secondary MCLs for drinking water supplies from https://www.epa.gov/ground-water-and-drinking-water/national-primary-drinking-water-regulations and https://www.epa.gov/dwstandardsregulations/ secondary-drinking-water-standards-guidance-nuisance-chemicals (USEPA, 2019)

-- = No regulatory limit

(s) = secondary MCL

(g)= guidance level

ND= Non-Detect

NA= Not Analyzed

NAD = No Available Data

B = Analyte was detected in method blank

D = Diluted Out

J = Estimated Value > MDL but < RL

N = Insufficient BOD oxygen depletion

*Total metals, except for 2010 analyses which were for dissolved metals

µg/L = microgram per liter

pCi/L = picocuries per liter

mg/L = milligram per liter

µmho/cm = umho/cm = micro mho per centimeter

PW-11, Downgradient, Summary of Data Since March 1999

Parameters	MCL	Units	Apr. 2010	Oct. 2010	Apr. 2011	Oct. 2011	Oct. 2012	Oct. 2013	Oct. 2015	May 2015	Jan. 2015	Apr. 2015	Oct. 2016	Oct. 2018	Apr. 2019	Nov. 2019
Metals*																
Aluminum	200 (s)	µg/L	24.8 JB	NA	NA	NA	NA	NA	NA	NA	17.9	62	ND	31.9 J	25.1	17.7 J
Antimony	6	µg/L	2.14	NA	ND	ND	ND	ND	2.7	ND	ND	ND	ND	ND	3.7	ND
Arsenic	10	µg/L	1.23 J	0.6 J	0.46 J	1.1	1.2 J	ND	4.13 B	ND	ND	ND	ND	ND	ND	ND
Barium	2,000	µg/L	85	99	71.5	79.7	67.6	49.6	65.2	62.6	34	43.5	31	41.9 B	32.7	56.5
Beryllium	4	µg/L	0.225 B	NA	0.11 J	0.2 J	0.14 J	ND	0.174 B	ND	0.34	ND	ND	0.13 J	ND	0.12J
Calcium	---	µg/L	16,500	14,000	15,500	13,900	13,300	11,400	0.183 B	ND	9,060	11,800	8,900	11,700	10,000	14,300
Cadmium	5	µg/L	0.148 J	ND	0.12 J	ND	ND	ND	1,3300	15,700	0.38	0.37	ND	0.34 J	0.57 J	ND
Chromium	100	µg/L	ND	2.4 J	0.92 J	1.1 J	1.1 J	ND	0.752 B	ND	0.62	ND	ND	0.76 J	ND	ND
Cobalt	----	µg/L	13.7	NA	11	12.1	14.7	15	16.3	22.7	25	25.1	21.1	23.2	26.3	18
Copper	1,300	µg/L	1.9 J	2.9 J	0.69 J	0.85 J	0.48 J	ND	6.2 B	ND	ND	2.5	ND	2.4 J	ND	1.4 J
Iron	300 (s)	µg/L	1,760	440	561	1120	2600	1290	473	262	98.7	175	456	227	284	189
Lead	15	µg/L	0.138 J	ND	0.25 J	0.24 J	0.27 J	3.8	1.7	ND	ND	ND	ND	1.9 J	ND	ND
Potassium	---	µg/L	2,420	2,900	2,660	2,550	2,310	2,060	8,440	9,840	2,010	1,970	1,880	2,220	1,470	2,100
Magnesium	---	µg/L	9,100	9,300	9,090	8,700	9,220	6,620	449	521	5,900	6,760	6,160	8,320	7,260	10,500
Manganese	50 (s)	µg/L	422 B	NA	397	408	448	358	0.149 B	ND	327	356	331	504	356	632
Mercury	2	µg/L	0.091 JB	0.03 J	0.15 JN	0.1 JN	0.1 J	ND	16.5	18.7	3.5	0.64	0.098	ND	1	0.35
Nickel	100	µg/L	8.77	NA	9.5	9.1	9.4 J	11.5	2420	2710	14.9	15.7	9.7	12.3	15.2	10.2
Selenium	50	µg/L	1.17 J	4.3 J	2.3 J	2.5 J	2 J	ND	1.5 B	ND	5.4	3	ND	2.9 JB	ND	ND
Silver	100 (s)	µg/L	ND	NA	ND	0.093 J	ND	ND	ND	ND	1.4	0.98	ND	ND	ND	ND
Sodium	20,000 (g)	µg/L	59,300 B	65,000	64,700	54,800	63,900	60,500	59,500	73,500	63,200	62,100	62,500	61,800	57,600	49,700
Thallium	2	µg/L	ND	NA	ND	0.047 J	0.058 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	----	µg/L	0.932 J	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	5,000 (s)	µg/L	18	20 J	30.8	23.6 N	23.9 N	98.1	32.9	70.7	29.2	44.5	24.8	44.2	26.3	19.3
Wet Chemistry																
Alkalinity	----	mg/L	40	46	40	43	42	44.1	44	49.5	42	44	43	61	40	56
Ammonia	----	mg/L	0.176	ND	0.092 J	0.282	0.389 J	ND	0.0936 J	ND	ND	ND	ND	ND	ND	ND
Chemical Oxygen Demand	----	mg/L	6.6	15	11.2	ND	18.5	ND	8.00 J	ND	16	24	77	ND	24	ND
Chloride	250 (s)	mg/L	71.7	70.4 D	82.4	68 D	62 D	58.9	62.3	61.9	58	57	55	47	44	54
Nitrate (N)	10	mg/L	NA	NA	NA	NA	NA	0.0676	ND	ND	0.21	0.15	0.28	0.61	ND	ND
Nitrate/Nitrite	10	mg/L	ND	0.055	0.671	0.32	ND	ND	NA	NA	NA	NA	NA	NAD	NA	ND
pH	6.5-8.5(s)	--	5.32	5.17	4.91	4.54	4.69	5.44	5.07	5.64	NA	NA	5.66	5.632	5.36	6.10
Specific Conductivity	----	µmho/cm	500	483	477	NA	NA	NA	NA	NA	NA	NA	NA	NAD	NA	490
Conductivity	---	µmho	NA	NA	NA	448	429	493	477	431	456	474	470	456	454	ND
Sulfate	250	mg/L	65.7	66 D	87	72	66 D	71.9	73.3	75.7	82	83	89	82	95	73
Total Dissolved Solids	500 (s)	mg/L	270	277	293	255	257	247	246	253	220	210	270	240	220	250
Total Hardness	----	mg/L	88.2	88.2	79	70.45	71.26	55.7	68	79.7	47	NA	48	63	55	79
Total Organic Carbon	----	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NAD	NA	ND
Total Organic Halides	----	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NAD	NA	ND
Turbidity	----	ntu	10.1	ND	1.7	0.78 J	ND	2.06	2.13	1.89	1.1	NA	1.7	1.2	2.9	1
Volatile Organic Compounds																
1,1,1,2-Tetrachloroethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	200	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	7	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.74 J
1,1-Dichloropropene	---	µg/L	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichlorobenzene	---	µg/L	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3- Chloropropane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	600	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.32
1,2-Dichloroethane	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	----	µg/L	ND	ND	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND

PW-11, Downgradient, Summary of Data Since March 1999

Parameters	MCL	Units	Apr. 2010	Oct. 2010	Apr. 2011	Oct. 2011	Oct. 2012	Oct. 2013	Oct. 2015	May 2015	Jan. 2015	Apr. 2015	Oct. 2016	Oct. 2018	Apr. 2019	Nov. 2019
1,4-Dichlorobenzene	75	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.7
2-Butanone	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Hexanone	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acrylonitrile	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	5	µg/L	ND	ND	ND	ND	ND	ND	.240 J	ND	ND	ND	ND	ND	ND	0.24
Bromochloromethane	----	µg/L	ND	ND	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	----	µg/L	ND	ND	ND	ND	ND	ND	.510 J	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	100	µg/L	ND	ND	ND	ND	ND	0.170 J	.400 J	ND	ND	ND	ND	ND	ND	13
Chlorodibromomethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2 Dichloroethene	70	µg/L	ND	ND	ND	ND	ND	0.250 J	ND	ND	ND	ND	ND	ND	ND	0.51
cis-1,3-Dichloropropene	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromomethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichloromethane	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Benzene	700	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.023 J
Methyl Iodide	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.7	ND	ND	ND
Styrene	100	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
tert-butyl methyl ether (MTBE)	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	1,000	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.024 J
trans-1,3-Dichloropropene	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2- butene	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trans 1-2 dichloroethene	100	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.28
Trichlorofluoromethane	----	µg/L	ND	ND	ND	1.3	ND	1.61	1.2	1.12	4.1	4.3	2.6	0.47 J	1.3	1.4
Vinyl Acetate	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.4 J
Vinyl Chloride	2	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.51
Xylenes	10,000	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.115

Notes:

Red Shaded area denotes concentration greater than the primary MCL

Yellow shaded area denotes concentration greater than the secondary MCL or Guidance Levels which are non-enforceable

MCL = Maximum Contaminant Level; Analytes detected in groundwater were compared to primary or secondary MCLs for drinking water supplies from https://www.epa.gov/ground-water-and-drinking-water/national-primary-drinking-water-regulations and https://www.epa.gov/dwstandardsregulations/ secondary-drinking-water-standards-guidance-nuisance-chemicals (USEPA, 2019)

-- = No regulatory limit

(s) = secondary MCL

(g)= guidance level

ND= Non-Detect

NA= Not Analyzed

NAD = No Available Data

B = Analyte was detected in method blank

D = Diluted Out

J = Estimated Value > MDL but < RL

N = Insufficient BOD oxygen depletion

*Total metals, except for 2010 analyses which were for dissolved metals

µg/L = microgram per liter

pCi/L = picocuries per liter

mg/L = milligram per liter

µmho/cm = umho/cm = micro mho per centimeter

PW-12, Downgradient, Summary of Data Since March 1999

Parameters	MCL	Units	Mar. 1999	Sep. 1999	Mar. 2000	Sep. 2000	Feb. 2001	Aug. 2001	Feb. 2002	Aug. 2002	Mar. 2003	Aug. 2003	Mar. 2004	Sep. 2004	Sep. 2004	Mar. 2005	Sep. 2005	Mar. 2006	Sep. 2006	Mar. 2007	Sep. 2007	Apr. 2008	Oct. 2008	Feb. 2009
Metals*																								
Aluminum	200 (s)	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	6	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	0.98	ND	0.12	ND	ND
Arsenic	10	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	5.9		ND	1.8	ND	ND	0.74	0.5	0.88	0.28	ND	0.69	ND	0.27
Barium	2,000	µg/L	114	148	112	110	140	120	130	170	57.7	104	12.1	139	180	150	140	150	143	136	159	155	164	140
Beryllium	4	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.15	0.13	0.14	0.078	0.14	0.17	0.2	0.21
Calcium	---	µg/L	NA	13,000	9,480	10,200	12,000	12,000	12,000	12,000	13,100	10,000	5,750	13,300	14,200	13,000	13,300	14,300	13,600	15,100	14,900	15,200	15,700	14,900
Cadmium	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	30.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	100	µg/L	ND	ND	ND	0.572	ND	ND	ND	ND	1.6	0.24	0.33	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.45 J	0.47
Cobalt	----	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.25	0.18	0.18	0.2	ND	0.28	0.95	1.6
Copper	1,300	µg/L	NA	ND	ND	1.75	ND	ND	10	30	1.8	1.3	2.3	ND	ND	ND	0.52	ND	0.58	0.76	1.3	0.79	0.69 J	0.96
Iron	300 (s)	µg/L	NA	31,400	15,500	23,900	6,600	13,000	11,000	65,000	1,570	15,400	54.4	31,000	32,300	31,000	31,700	32,400	32,600	24,500	34,900	32,900	35,400	24,000
Lead	15	µg/L	ND	ND	ND	ND	ND	ND	ND	12	ND	ND	ND	0.12	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.11
Potassium	---	µg/L	NA	1,080	891	964	ND	ND	ND	ND	2,010	1,370	1,990	1,040	1,170	1,100	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	---	µg/L	NA	7,220	5,430	5,750	6,600	6,300	6,300	8,200	4,750	5,040	1,590	7,060	7,670	7,400	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	50 (s)	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	760	760	768	790	849	892	872	840
Mercury	2	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.023	ND	0.088	ND	0.07
Nickel	100	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	15.7	4.7	NA	NA	NA	18	0.79	3.4	0.68	0.69	0.53	0.81	1.8	2.4
Selenium	50	µg/L	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.34	ND	ND	0.62	1.3	0.91	1	ND	ND	0.30 J	ND
Silver	100 (s)	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	20,000 (g)	µg/L	NA	26,300	19,600	20,000	21,000	22,000	20,000	20,000	23,300	19,700	7,300	24,000	26,300	25,000	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	2	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	0.11	ND	ND	ND	ND	ND
Vanadium	----	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	0.77 J	ND
Zinc	5,000 (s)	µg/L	9.1	23.1	33.6	3.61	ND	50	20	40	21.7	7.3	3.3	12.2	1.9	ND	ND	ND	3.8	3.9	4.9	3.4	5.8	6.8
Wet Chemistry																								
Alkalinity	----	mg/L	ND	9.3	ND	ND	ND	4	ND	9	6	1	ND	ND	NA	2.2	ND	6	16	13	13	ND	22	ND
Ammonia	----	mg/L	NA	1.06	0.986	1.35	0.8	0.4	0.4	1.1	0.27	0.9	ND	1.4	NA	1.1	1.2	1.5	1.6	1.2	1.2	1.1	1.2	1.4
Chemical Oxygen Demand	----	mg/L	13	5	6.82	14.9	20	14	ND	11	5.1	9	5	0	NA	ND	ND	9.9	14	ND	ND	ND	ND	ND
Chloride	250 (s)	mg/L	48.5	54	45.7	49.3	53	52	58	60	50	45	25	57	NA	61	63	75	60	54	54	64	78	74
Nitrate (N)	10	mg/L	0.073	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA
Nitrate/Nitrite	10	mg/L	NA	ND	ND	ND	ND	0.08	0.14	0.08	0.37	0.16	0.37	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	ND
pH	6.5-8.5(s)	--	NA	5.61	5.29	5.3	3.84	5.64	5.39	5.75	5	5.6	5.6	5.2	NA	5.99	5.2	5.2	5.2	3.9	3.9	5.2	5.6	3.8
Specific Conductivity	----	µmho/cm	312	336	305	346	360	250	260	330	260	250	100	410	NA	400	350	410	400	470	470	420	460	590
Conductivity	---	µmho	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate	250	mg/L	NA	47.2	49.4	53.3	44	34	0.33	60	37	130	15	63	NA	54	110	33	41	110	110	79	86	92
Total Dissolved Solids	500 (s)	mg/L	NA	191	198	120	180	200	200	220	160	170	61	190	NA	196	180	210	240	220	220	220	310	250
Total Hardness	----	mg/L	760	118	54.4	55.8	57	56	56	100	58	84	19	100	NA	71.28	84	79	130	80	80	84	79	74
Total Organic Carbon	----	mg/L	NA	ND	1.14	ND	ND	1	2.1	3.6	2.2	2.4	3.2	3.2	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Halides	----	mg/L	NA	ND	12.5	ND	ND	31	10	49	ND	ND	ND	ND	NA	30.7	NA	NA	NA	NA	NA	NA	NA	NA
Turbidity	----	ntu	NA	92.5	27.4	282	58	31	42	550	53	59	13	35	NA	13	47	61	43	84	84	14	18	86
Volatile Organic Compounds																								
1,1,1,2-Tetrachloroethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	200	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	7	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloropropene	---	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene	---	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichloropropane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3- Chloropropane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	600	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	----	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND

PW-12, Downgradient, Summary of Data Since March 1999

Parameters	MCL	Units	Mar. 1999	Sep. 1999	Mar. 2000	Sep. 2000	Feb. 2001	Aug. 2001	Feb. 2002	Aug. 2002	Mar. 2003	Aug. 2003	Mar. 2004	Sep. 2004	Sep. 2004	Mar. 2005	Sep. 2005	Mar. 2006	Sep. 2006	Mar. 2007	Sep. 2007	Apr. 2008	Oct. 2008	Feb. 2009
1,4-Dichlorobenzene	75	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Hexanone	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	5.2	ND	ND	ND	NA	ND	ND	ND	7.7	8.8	22	2.3	ND	ND
Acrylonitrile	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromochloromethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	100	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorodibromomethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2 Dichloroethene	70	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	0.99	0.72	0.98	1.2	ND	2.1	1.9	1.8
cis-1,3-Dichloropropene	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromomethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichloromethane	5	µg/L	ND	ND	ND	1.43	ND	ND	ND	ND	ND	3.4	3.9	ND	NA	ND	ND	ND	ND	6.3	ND	ND	ND	ND
Ethyl Benzene	700	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl Iodide	----	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND
Styrene	100	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
tert-butyl methyl ether (MTBE)	----	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND
Tetrachloroethene	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	0.25	ND	ND	ND	ND	ND	ND	ND
Toluene	1,000	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	0.34	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2- butene	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trans 1-2 dichloroethene	100	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	5	µg/L	1.4	1.9	ND	1.54	ND	ND	ND	ND	ND	ND	ND	1.4	NA	1.6	2.4	1.9	2	2.9	1.7	3.2	2.4	2.4
Trichlorofluoromethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Acetate	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	2	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	0.85	ND	ND	ND	ND	1.6	1.3	ND
Xylenes	10,000	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

Red Shaded area denotes concentration greater than the primary MCL

Yellow shaded area denotes concentration greater than the secondary MCL or Guidance Levels which are non-enforceable

MCL = Maximum Contaminant Level; Analytes detected in groundwater were compared to primary or secondary MCLs for drinking water supplies from https://www.epa.gov/ground-water-and-drinking-water/national-primary-drinking-water-regulations and https://www.epa.gov/dwstandardsregulations/ secondary-drinking-water-standards-guidance-nuisance-chemicals (USEPA, 2019)

-- = No regulatory limit

(s) = secondary MCL

(g)= guidance level

ND= Non-Detect

NA= Not Analyzed

NAD = No Available Data

B = Analyte was detected in method blank

D = Diluted Out

J = Estimated Value > MDL but < RL

N = Insufficient BOD oxygen depletion

*Total metals, except for 2010 analyses which were for dissolved metals

µg/L = microgram per liter

pCi/L = picocuries per liter

mg/L = milligram per liter

µmho/cm = umho/cm = micro mho per centimeter

PW-12, Downgradient, Summary of Data Since March 1999

Parameters	MCL	Units	Oct. 2009	Apr. 2010	Oct. 2010	Apr. 2011	Oct. 2011	Oct. 2012	Oct. 2013	Oct. 2014	May 2015	Jan. 2016	Apr. 2016	Oct. 2016	Oct. 2018	Apr. 2019	Nov. 2019	Dec. 2019 R	Dec. 2019 R (Dup)
Metals*																			
Aluminum	200 (s)	µg/L	NA	ND	NA	NA	NA	NA	NA	NA	NA	13.8	50.9	ND	85.9	150	65.5	NA	NA
Antimony	6	µg/L	ND	ND	NA	ND	0.33 J	ND	ND	1.30 B	ND	ND	ND	2	ND	ND	ND	NA	NA
Arsenic	10	µg/L	1.1	ND	ND	0.24 J	0.35 J	ND	ND	0.651 B	ND	7.7	ND	ND	ND	ND	ND	NA	NA
Barium	2,000	µg/L	144	132	100	142	141	133	69.5	241	147	68.5	116	88.5	50.3 B	147	142	NA	NA
Beryllium	4	µg/L	0.23	0.12 B	NA	0.081 J	0.13 J	ND	ND	0.479 B	ND	1.5	ND	ND	1.8	ND	0.29 J	NA	NA
Calcium	---	µg/L	14,100	18,000	14,000	15,000	14,800	16,700	14,700	ND	ND	17,400	18,900	17,200	19,700	19,000	19,000	NA	NA
Cadmium	5	µg/L	0.031	ND	ND	ND	ND	ND	ND	17,800	18,500	ND	ND	0.36	ND	ND	ND	NA	NA
Chromium	100	µg/L	ND	ND	ND	1.2 J	1 J	0.78 J	ND	0.405 B	ND	1.8	ND	ND	1.2 J	ND	ND	NA	NA
Cobalt	----	µg/L	0.45	0.137 J	NA	0.18 J	0.4 J	0.91 J	ND	0.292 B	ND	ND	ND	ND	0.8 J	ND	ND	NA	NA
Copper	1,300	µg/L	0.8	2.07 J	1.4 J	0.89 J	1 J	0.29 J	ND	3.00 B	ND	ND	ND	ND	ND	ND	1.4 J	NA	NA
Iron	300 (s)	µg/L	30,400	25,400	17,000	54,200	36,800	28,900	27,500	57,000	53,000	2,130	8,170	23,400	5,590	97,700	49,900	NA	NA
Lead	15	µg/L	ND	0.126 J	ND	0.39 J	0.29 J	0.11 J	8.4	0.717 B	ND	ND	ND	ND	4	7.4	2 J	NA	NA
Potassium	---	µg/L	1,060	938	2,000	1,040	1,070	1140	959	ND	ND	1,500	1,080	1,710	2,750	1,010	952	NA	NA
Magnesium	---	µg/L	7,730	8,680	4,900	8,610	8,370	10,100	8,110	9,460	10,200	8,280	9,300	9,250	9,780	11,300	11,700	NA	NA
Manganese	50 (s)	µg/L	804	792 B	NA	881	868	946	849	1,020	1,080	820	1,040	966	847	1,140	1,190	NA	NA
Mercury	2	µg/L	0.04	0.084 JB	0.029 J	ND	0.1 JN	0.1 J	ND	0.037 B	ND	ND	ND	ND	ND	0.064	ND	NA	NA
Nickel	100	µg/L	0.86	1.1 J	NA	1.1	0.74 J	0.98 J	ND	4.00 B	ND	1.3	ND	ND	2.9 J	ND	ND	NA	NA
Selenium	50	µg/L	ND	ND	ND	0.95 J	1.3 J	1.5 J	ND	1,090	1140	2.2	12.9	ND	8.8 JB	ND	ND	NA	NA
Silver	100 (s)	µg/L	0.83	ND	NA	0.043 J	0.098 J	ND	ND	ND	ND	1.8	ND	ND	ND	ND	3.9	NA	NA
Sodium	20,000 (g)	µg/L	26,300	26,500 B	20,000	29,000	27,300	32,300	26,400	28,600	32,000	NA	31,800	279,000	23,600	24,200	27,600	NA	NA
Thallium	2	µg/L	ND	ND	NA	0.35 J	0.099 J	ND	ND	ND	ND	ND	ND	ND	ND	19.5	ND	NA	NA
Vanadium	----	µg/L	ND	ND	NA	ND	ND	ND	ND	1.10 B	ND	ND	ND	ND	ND	2.1	ND	NA	NA
Zinc	5,000 (s)	µg/L	2.8	3.28 J	ND	15.9	6.2 N	11.1 N	103	32.9 B	14.5	2.8	2.1	5.1	26.6	<5.0	2.1 J	NA	NA
Wet Chemistry																			
Alkalinity	----	mg/L	ND	ND	15	ND	ND	ND	ND	24.2	ND	8.8	33	8.8	8.5 J	27	19 J	NA	NA
Ammonia	----	mg/L	1	1.38	0.656	1.4	1.02	1.28	1.61	1.73	1.42	1.3	1.4	2.9	0.91	1.3	1.4	NA	NA
Chemical Oxygen Demand	----	mg/L	5.5	ND	11	ND	7.41	15.5	ND	5.00 J	ND	ND	15	140	ND	27	18 J	NA	NA
Chloride	250 (s)	mg/L	55	71.8	31.5 D	71.9	74 D	80 D	77.3	84.6	83.3	75	88	90	63	92	94	NA	NA
Nitrate (N)	10	mg/L	NA	NA	NA	NA	NA	NA	0.0574	ND	ND	0.49	0.14	0.91	NAD	ND	ND	NA	NA
Nitrate/Nitrite	10	mg/L	0.095	ND	0.21	ND	ND	--	ND	NA	NA	NA	NA	NA	NAD	NA	ND	NA	NA
pH	6.5-8.5(s)	--	5.5	5.01	5.73	3.15	5.04	4.69	3.93	5.01	3.17	NA	NA	4.41	3.96 X	3.54	5.74	NA	NA
Specific Conductivity	----	µmho/cm	410	460	246	588	NA	NA	NA	NA	NA	NA	NA	NA	NAD	NA	606	NA	NA
Conductivity	---	µmho	NA	NA	NA	NA	546	489	594	662	505	NA	658	506	445	674	ND	NA	NA
Sulfate	250	mg/L	70	79.4	47 D	84	100 D	72 D	97.7	96.6	95.2	60	94	79	73	97	110	NA	NA
Total Dissolved Solids	500 (s)	mg/L	240	250	150	244	334	258	252	230	ND	150	210	260	220	180	310	NA	NA
Total Hardness	----	mg/L	82	90.2	84.3	71	71.32	8.33	70.1	83.4	88.4	78	NA	81	89	94	96	NA	NA
Total Organic Carbon	----	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NAD	NA	ND	NA	NA
Total Organic Halides	----	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NAD	NA	ND	NA	NA
Turbidity	----	ntu	10	23.7	15.2	160	6.3	57	46.7	107	49.2	8	NA	95	6.9	96	3.9	NA	NA
Volatile Organic Compounds																			
1,1,1,2-Tetrachloroethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA
1,1,1-Trichloroethane	200	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA
1,1,2,2-Tetrachloroethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA
1,1,2-Trichloroethane	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA
1,1-Dichloroethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA
1,1-Dichloroethene	7	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.086 J	NA	NA
1,1-Dichloropropene	---	µg/L	NA	ND	ND	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	NA	NA
1,2,3-Trichlorobenzene	---	µg/L	NA	ND	ND	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	NA	NA
1,2,3-Trichloropropane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA
1,2-Dibromo-3- Chloropropane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA
1,2-Dibromoethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA
1,2-Dichlorobenzene	600	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA
1,2-Dichloroethane	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.078 J	NA	NA

PW-12, Downgradient, Summary of Data Since March 1999

Parameters	MCL	Units	Oct. 2009	Apr. 2010	Oct. 2010	Apr. 2011	Oct. 2011	Oct. 2012	Oct. 2013	Oct. 2014	May 2015	Jan. 2016	Apr. 2016	Oct. 2016	Oct. 2018	Apr. 2019	Nov. 2019	Dec. 2019 R	Dec. 2019 R (Dup)
1,2-Dichloropropane	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA
1,3-Dichlorobenzene	----	µg/L	ND	ND	ND	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	NA	NA
1,4-Dichlorobenzene	75	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA
2-Butanone	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA
2-Hexanone	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA
4-Methyl-2-Pentanone	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA
Acetone	----	µg/L	ND	ND	ND	ND	1.2 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA
Acrylonitrile	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA
Benzene	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.026 J	NA	NA
Bromochloromethane	----	µg/L	ND	ND	ND	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA
Bromodichloromethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA
Bromoform	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA
Bromomethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA
Carbon Disulfide	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.037 J	NA	NA
Carbon Tetrachloride	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA
Chlorobenzene	100	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA
Chlorodibromomethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA
Chloroethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA
Chloroform	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA
Chloromethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	0.400 JB	ND	ND	ND	ND	ND	ND	ND	NA	NA
cis-1,2 Dichloroethene	70	µg/L	1.2	1.93 J	0.79 J	1.9	1.6	1.5	ND	3.24	2.53	1.1	3.1	1.7	0.46 J	2.8	4.4	NA	NA
cis-1,3-Dichloropropene	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA
Dibromomethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.50 J	ND	ND	NA	NA
Dichloromethane	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA
Ethyl Benzene	700	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.028 J	NA	NA
Methyl Iodide	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.8 JYQB	ND	ND	NA	NA
Styrene	100	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.014 J	NA	NA
tert-butyl methyl ether (MTBE)	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA
Tetrachloroethene	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA
Toluene	1,000	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.027	NA	NA
trans-1,3-Dichloropropene	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA
trans-1,4-Dichloro-2- butene	----	µg/L	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA
Trans 1-2 dichloroethene	100	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA
Trichloroethene	5	µg/L	1.6	2.21 J	0.91 J	2.2	ND	1.5	1.97	5.21	3.03	1.5	3.5	1.9	0.96 J	3.3	3.8	NA	NA
Trichlorofluoromethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA
Vinyl Acetate	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA
Vinyl Chloride	2	µg/L	0.71	ND	ND	1.6	0.9 J	ND	0.900J	1.83	ND	0.31	1.4	0.91	ND	2	2.4	1.9	2.2
Xylenes	10,000	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.19	NA	NA

Notes:

Red Shaded area denotes concentration greater than the primary MCL

Yellow shaded area denotes concentration greater than the secondary MCL or Guidance Levels which are non-enforceable

MCL = Maximum Contaminant Level; Analytes detected in groundwater were compared to primary or secondary MCLs for drinking water supplies from https://www.epa.gov/ground-water-and-drinking-water/national-primary-drinking-water-regulations and https://www.epa.gov/dwstandardsregulations/ secondary-drinking-water-standards-guidance-nuisance-chemicals (USEPA, 2019)

-- = No regulatory limit

(s) = secondary MCL

(g)= guidance level

ND= Non-Detect

NA= Not Analyzed

NAD = No Available Data

B = Analyte was detected in method blank

D = Diluted Out

J = Estimated Value > MDL but < RL

N = Insufficient BOD oxygen depletion

Q = Laboratory control samples outside acceptance limits

X = Analyte exceeded calibration range.

Y = Replicate/Duplicate precision outside acceptance limits

*Total metals, except for 2010 analyses which were for dissolved metals

µg/L = microgram per liter

pCi/L = picocuries per liter

mg/L = milligram per liter

µmho/cm = umho/cm = micro mho per centimeter

R = Resampled for vinyl chloride to verify detection in monitoring well exceeded MCL.

Dup = Duplicate quality control sample

PW-16, Upgradient, Summary of Data Since March 1999

Parameters	MCL	Units	Mar. 1999	Sep. 1999	Mar. 2000	Sep. 2000	Feb. 2001	Aug. 2001	Feb. 2002	Aug. 2002	Mar. 2003	Aug. 2003	Mar. 2004	Sep. 2004	Mar. 2005	Sep. 2005	Mar. 2006	Sep. 2006	Mar. 2007	Sep. 2007	Apr. 2008	Oct. 2008	Feb. 2009	Oct. 2009
Metals*																								
Aluminum	200 (s)	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	6	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	0.24	ND	ND	ND	ND	ND
Arsenic	10	µg/L	ND	ND	9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.45	ND	ND	ND	ND	0.21	ND
Barium	2,000	µg/L	26.9	35.2	28.9	29.3	ND	ND	ND	ND	32.2	35	38	42.6	44	45.3	44.1	10.9	44.3	42.6	52.6	50.3	48.5	45.1
Beryllium	4	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.049	0.032	0.044	0.035	0.13	0.065	0.059 J	0.062	0.073
Calcium	---	µg/L	NA	3,550	3,020	3,090	3,900	4,400	3,800	3,400	4,050	4,130	5,110	5,430	5,100	5,610	5,600	4,660	5,260	5,400	5,990	5,580	5,490	4,660
Cadmium	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.079	ND	0.039	0.065	ND	0.047	0.075 J	0.055	ND
Chromium	100	µg/L	ND	ND	ND	1.04	ND	ND	ND	ND	ND	0.55	0.31	ND	ND	ND	ND	ND	0.3	ND	ND	ND	0.57	ND
Cobalt	----	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.36	0.77	0.28	2	0.92	1.8	5.3	1.5	5.5
Copper	1,300	µg/L	NA	ND	ND	1.29	ND	ND	ND	ND	1.5	2.7	2.5	1.4	ND	1.3	3.3	1	7.1	80.1	3.6	10.4	2	ND
Iron	300 (s)	µg/L	NA	ND	ND	55.2	150	40	180	140	9.9	13.8	ND	15.1	ND	ND	8.5	9.4	17.3	34.9	ND	ND	6.4	ND
Lead	15	µg/L	ND	ND	ND	ND	ND	ND	ND	8	ND	1.2	0.87	0.14	ND	ND	0.37	ND	0.8	2	ND	0.40 J	0.16	ND
Potassium	---	µg/L	NA	1,280	1,130	1,330	ND	ND	ND	ND	1,420	1,440	1,390	1,390	1,400	NA	NA	NA	NA	NA	NA	NA	NA	1,420
Magnesium	---	µg/L	NA	2,700	2,370	2,290	2,700	2,900	2,600	2,200	2,950	3,200	3,770	3,870	3,800	NA	NA	NA	NA	NA	NA	NA	NA	3,400
Manganese	50 (s)	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	125	98.8	97.2	123	154	117	105	82.9	64
Mercury	2	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.035	0.025	0.037	ND	0.052	0.07
Nickel	100	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2	1.2	1.4	2.1	1.8	2.7	2.4	1.9	4.2
Selenium	50	µg/L	NA	ND	ND	ND	ND	ND	ND	ND	3.4	2.5	ND	0.87	ND	ND	0.39	ND	ND	1.2	ND	ND	ND	ND
Silver	100 (s)	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	0.014	ND	ND	ND	ND	ND	ND	ND
Sodium	20,000 (g)	µg/L	NA	8,680	6,240	6,310	5,400	6,600	6,200	5,600	8,080	7,370	7,660	8,010	8,000	NA	NA	NA	NA	NA	NA	NA	NA	7,980
Thallium	2	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	0.15	ND
Vanadium	----	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	0.37	ND	ND	ND	ND	ND
Zinc	5,000 (s)	µg/L	8.7	ND	ND	6.48	ND	20	ND	ND	12	5.1	7	5.3	ND	5.6	ND	11.9	8.8	19	10.3	9.4	8.2	5.1
Wet Chemistry																								
Alkalinity	----	mg/L	4	5.5	6.24	3.92	7	3	ND	9	8.6	8	7	7.6	12.24	7.7	8.3	3.8	5	7.3	5	6.7	4	5.9
Ammonia	----	mg/L	NA	ND	ND	ND	ND	ND	ND	0.2	0.02	0.09	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chemical Oxygen Demand	----	mg/L	ND	ND	ND	ND	ND	ND	ND	ND	9.9	ND	ND	0	24	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloride	250 (s)	mg/L	12.5	14.3	13.6	14.8	15	13	19	17	16	16	17	16	17	17	17	16	15	18	18	18	20	16
Nitrate (N)	10	mg/L	0.798	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.2	3.4	3.2	3.4	3.4	NA	NA	NA	NA
Nitrate/Nitrite	10	mg/L	NA	1.45	1.82	1.55	2.4	4.9	2.7	1.8	0.81	2.3	3.2	4.2	4.3	NA	NA	NA	NA	NA	4.3	4	4	3.4
pH	6.5-8.5(s)	--	NA	5.28	5.34	5.4	5.6	5.56	6.27	6.07	4.9	5.4	5.3	5.6	6.65	5	5	5.4	5.1	5	5	5.4	5.1	5.6
Specific Conductivity	----	µmho/cm	81	83.3	93.8	79.1	91	61	73	76	970	95	110	110	110	160	120	120	120	120	120	130	130	120
Conductivity	---	µmho	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate	250	mg/L	NA	1.5	1.1	ND	ND	ND	ND	ND	6.5	1.3	ND	1.7	1.2	0.66	0.61	0.9	0.6	1.6	0.6	2.1	0.76	0.48
Total Dissolved Solids	500 (s)	mg/L	NA	62	86	66	57	96	15	71	58	89	68	76	87	73	ND	78	70	78	37	170	68	94
Total Hardness	----	mg/L	21.3	20	21.8	9.3	21	23	20	24	24	24	28	28	31.68	33	30	31	30	27	46	31	32	39
Total Organic Carbon	----	mg/L	NA	ND	ND	2.76	2	ND	1.5	ND	2.2	1.4	ND	4.9	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Halides	----	mg/L	NA	ND	ND	ND	ND	ND	5	26	24	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA
Turbidity	----	ntu	NA	3.58	ND	1.6	4.6	1.3	2.8	4	7.7	ND	ND	ND	1.5	0.7	0.2	1.1	ND	0.6	0.3	1	5.5	9.2
Volatile Organic Compounds																								
1,1,1,2-Tetrachloroethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	200	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	1.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	7	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloropropene	---	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene	---	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichloropropane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3- Chloropropane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	600	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	----	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND

PW-16, Upgradient, Summary of Data Since March 1999

Parameters	MCL	Units	Mar. 1999	Sep. 1999	Mar. 2000	Sep. 2000	Feb. 2001	Aug. 2001	Feb. 2002	Aug. 2002	Mar. 2003	Aug. 2003	Mar. 2004	Sep. 2004	Mar. 2005	Sep. 2005	Mar. 2006	Sep. 2006	Mar. 2007	Sep. 2007	Apr. 2008	Oct. 2008	Feb. 2009	Oct. 2009
1,4-Dichlorobenzene	75	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Hexanone	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	3.6	ND	ND	ND	ND	ND	ND	11	ND	ND	ND	ND	ND	ND
Acrylonitrile	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromochloromethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.8	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	100	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorodibromomethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2 Dichloroethene	70	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromomethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichloromethane	5	µg/L	ND	ND	ND	25	ND	ND	ND	ND	ND	2.7	3.3	ND	ND	ND	ND	ND	2.2	ND	2.2	ND	ND	ND
Ethyl Benzene	700	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl Iodide	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	100	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
tert-butyl methyl ether (MTBE)	----	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND
Tetrachloroethene	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	1,000	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.37	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2- butene	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trans 1-2 dichloroethene	100	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Acetate	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	2	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes	10,000	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

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NAD = No Available Data

B = Analyte was detected in method blank

D = Diluted Out

J = Estimated Value > MDL but < RL

N = Insufficient BOD oxygen depletion

*Total metals, except for 2010 analyses which were for dissolved metals

µg/L = microgram per liter

pCi/L = picocuries per liter

mg/L = milligram per liter

µmho/cm = umho/cm = micro mho per centimeter

PW-16, Upgradient, Summary of Data Since March 1999

Parameters	MCL	Units	Apr. 2010	Oct. 2010	Apr. 2011	Oct. 2011	Oct. 2012	Oct. 2013	Oct. 2014	May 2015	Nov. 2015	Apr. 2016	Oct. 2016	Oct. 2018	Apr. 2019	Nov. 2019
Metals*																
Aluminum	200 (s)	µg/L	23.2 JB	NA	NA	NA	NA	NA	NA	NA	ND	32,50	142	2,150	4100	19.9 J
Antimony	6	µg/L	ND	NA	ND	ND	0.47 J	ND	1.40 B	ND	ND	ND	ND	ND	2.6	ND
Arsenic	10	µg/L	ND	ND	ND	ND	0.54 J	ND	ND	ND	323	ND	ND	ND	ND	ND
Barium	2,000	µg/L	44	34	31.7	29.8	28	36.6	44.9	54.3	1.2	61	98.1	64.4 B	91.4	57.3
Beryllium	4	µg/L	0.0645	NA	ND	ND	0.11 J	ND	ND	ND	17,700	ND	ND	0.19 J	0.18	ND
Calcium	---	µg/L	5,280	4,700	3,680	3,770	4,030	4,020	5,970	7,380	0.5	1,650	98,000	3,220	4,140	7.790
Cadmium	5	µg/L	0.0525 J	ND	ND	ND	0.2 J	ND	0.977 B	ND	11.1	0.35	ND	0.45 J	<1.0	ND
Chromium	100	µg/L	ND	ND	1.7 J	3.4	1.4 J	ND	4.90 B	ND	5.8	7.1	ND	4.4	9.4	ND
Cobalt	----	µg/L	0.12 J	NA	0.75 J	1.8	1.4 J	ND	7.10 B	ND	16.8	4.1	ND	2.6 J	4.7	3 J
Copper	1,300	µg/L	2.28 J	ND	0.54 J	1.4 J	0.56 J	ND	ND	ND	6,000	5.8	4.3	25.2	16.4	1.8 J
Iron	300 (s)	µg/L	3.86 J	ND	137	168 J	31.6 J	3,490	869	97.5	5,600	4,670	320	3,410 M	8,620	82 J
Lead	15	µg/L	0.12 J	ND	0.26 J	0.59 J	0.69 J	4.8	1.90 B	ND	234	ND	ND	ND	4.6	ND
Potassium	---	µg/L	1,300	1,500	1,190	1,100	950	1,160	ND	ND	0.88	1,520	3,250	1,390	1,790	1,680
Magnesium	---	µg/L	3,690	2,600	2,720	3,050	3,620	3,230	4,920	6,070	7.2	2,160	32,900	2,150	2,740	6,740
Manganese	50 (s)	µg/L	59.4 B	NA	73.6	139	236	372	751	901	2,720	64.7	126	45.2	83	1,900
Mercury	2	µg/L	0.089 JB	ND	ND	0.11 JN	ND	ND	0.034 B	ND	0.89	0.038	ND	ND	0.2	ND
Nickel	100	µg/L	1.36 J	NA	1.5	2.7	1.4 J	ND	6.30 B	ND	34,000	4.9	3	4.3 J	7.9	2.4 J
Selenium	50	µg/L	ND	ND	0.7 J	0.68 J	2.2 J	ND	1270	1,510	7.8	ND	8.3	2.8 JB	ND	ND
Silver	100 (s)	µg/L	0.284	NA	ND	0.052 J	0.04 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	20,000 (g)	µg/L	7,700 B	7,600	7,250	6,570	6,860	6,230	8,930	12,400	3.8	2,810	6,880	5,140	2,600	17,000
Thallium	2	µg/L	ND	NA	ND	0.037 J	1	ND	ND	ND	7.4	ND	ND	ND	ND	ND
Vanadium	----	µg/L	ND	NA	ND	ND	NA	ND	ND	ND	37.6	5.7	2.3	3.6 J	7.8	ND
Zinc	5,000 (s)	µg/L	5.28	ND	16.4	8.3 N	14 N	72.3	52.4	ND	ND	20	3.3	17.3	21.6	8.5 J
Wet Chemistry																
Alkalinity	----	mg/L	6	5	6.9	16	18	21.4	39.6	30.3	ND	9.9	420	ND	6.8	34
Ammonia	----	mg/L	ND	ND	0.071 J	0.07	0.056 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chemical Oxygen Demand	----	mg/L	ND	ND	3.94 J	ND	4.61 J	ND	ND	ND	20	ND	ND	28 J	32	32 J
Chloride	250 (s)	mg/L	17.1	11.7 D	10.9	11	11 D	10.8	15.9	22.3	64	4	6.3	5.2	2.6	40
Nitrate (N)	10	mg/L	NA	NA	NA	NA	NA	0.839	0.72	0.664	ND	2.9	0.23	2.6	2.9	0.57
Nitrate/Nitrite	10	mg/L	3.2	2.1 D	1.32	1.36	0.99	ND	NA	NA	NA	NA	NA		NA	ND
pH	6.5-8.5(s)	--	5.3	5.31	5.02	4.6	4.67	5.78	5.41	5.05	NA	NA	7.56	5.94	5.5	6.01
Specific Conductivity	----	µmho/cm	116	84.3	89.4	NA	NA	NA	NA	NA	NA	NA	NA		NA	237
Conductivity	---	µmho	NA	NA	NA	84.9	86.5	115.6	142.7	138.8	3.2	58.2	769	63.7	63.5	ND
Sulfate	250	mg/L	1.05	ND	2.43 J	4.6	2.6 D	2.88	3.3	4.34	ND	1.7	59	2.9 J	3.4	10
Total Dissolved Solids	500 (s)	mg/L	78	56	57	26	42	81	80	71	ND	10	470	51	43	110
Total Hardness	----	mg/L	31.4	35.3	20	21.97	24.96	23.3	35.2	43.4	314	NA	NA	17	22	46
Total Organic Carbon	----	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	9	NA	NA		NA	ND
Total Organic Halides	----	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	510	NA	NA		NA	ND
Turbidity	----	ntu	ND	4.9	11	7.5	4.5	38.1	14.8	0.836	63	NA	5.1	170	130	1.2
Volatile Organic Compounds																
1,1,1,2-Tetrachloroethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	160	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	200	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	7	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.13 J
1,1-Dichloropropene	---	µg/L	ND	ND	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND
1,2,3-Trichlorobenzene	---	µg/L	ND	ND	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3- Chloropropane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	600	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

PW-16, Upgradient, Summary of Data Since March 1999

Parameters	MCL	Units	Apr. 2010	Oct. 2010	Apr. 2011	Oct. 2011	Oct. 2012	Oct. 2013	Oct. 2014	May 2015	Nov. 2015	Apr. 2016	Oct. 2016	Oct. 2018	Apr. 2019	Nov. 2019
1,2-Dichloropropane	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	75	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.2
2-Butanone	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Hexanone	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acrylonitrile	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.071 J
Bromochloromethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	100	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.07 J
Chlorodibromomethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.034 J
cis-1,2 Dichloroethene	70	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.6
cis-1,3-Dichloropropene	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromomethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichloromethane	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Benzene	700	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.016 J
Methyl Iodide	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.5	2.9 JYQB	ND	ND
Styrene	100	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
tert-butyl methyl ether (MTBE)	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	1,000	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.021 J
trans-1,3-Dichloropropene	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2- butene	----	µg/L	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trans 1-2 dichloroethene	100	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.12
Trichloroethene	5	µg/L	ND	ND	1.2	2.6	3.3	3.36	9.82	8.72	ND	ND	ND	ND	ND	6.9
Trichlorofluoromethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Acetate	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	2	µg/L	ND	ND	ND	ND	ND	ND	2.14	ND	ND	ND	ND	ND	ND	2.9
Xylenes	10,000	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.127

Notes:

Red Shaded area denotes concentration greater than the primary MCL

Yellow shaded area denotes concentration greater than the secondary MCL or Guidance Levels which are non-enforceable

MCL = Maximum Contaminant Level; Analytes detected in groundwater were compared to primary or secondary MCLs for drinking water supplies from https://www.epa.gov/ground-water-and-drinking-water/national-primary-drinking-water-regulations and https://www.epa.gov/dwstandardsregulations/ secondary-drinking-water-standards-guidance-nuisance-chemicals (USEPA, 2019)

-- = No regulatory limit

(s) = secondary MCL

(g)= guidance level

ND= Non-Detect

NA= Not Analyzed

NAD = No Available Data

B = Analyte was detected in method blank

D = Diluted Out

J = Estimated Value > MDL but < RL

N = Insufficient BOD oxygen depletion

Q = Laboratory control samples outside acceptance limits

X = Analyte exceeded calibration range.

Y = Replicate/Duplicate precision outside acceptance limits

*Total metals, except for 2010 analyses which were for dissolved metals

µg/L = microgram per liter

pCi/L = picocuries per liter

mg/L = milligram per liter

µmho/cm = umho/cm = micro mho per centimeter

PW-17, Upgradient, Summary of Data Since March 1999

Parameters	MCL	Units	Mar. 1999	Sep. 1999	Mar. 2000	Sep. 2000	Feb. 2001	Aug. 2001	Feb. 2002	Aug. 2002	Mar. 2003	Aug. 2003	Mar. 2004	Sep. 2004	Mar. 2005	Sep. 2005	Mar. 2006	Sep. 2006	Mar. 2007	Sep. 2007	Apr. 2008	Oct. 2008	Feb. 2009	Oct. 2009
Metals*																								
Aluminum	200 (s)	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	6	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.34	0.36	0.81	0.43	ND	0.3	0.62	0.49	ND
Arsenic	10	µg/L	ND	ND	ND	4.3	ND	ND	ND	6	1	ND	ND	2.1	ND	0.097	1.1	1.3	0.8	ND	0.82	1.2 J	0.3	ND
Barium	2,000	µg/L	130	199	210	215	150	160	90	110	64.2	137	75.1	108	5	77.3	70.4	140	72.9	83.3	102	105	97.8	129
Beryllium	4	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
Calcium	---	µg/L	NA	111,000	166,000	163,000	110,000	130,000	79,000	78,000	63,600	92,600	103,000	73,600	67,000	45,700	84,000	159,000	85,800	53,900	127,000	98,700	149,000	138,000
Cadmium	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.065	ND	0.075	ND	ND	ND	0.040 J	ND	ND
Chromium	100	µg/L	0.97	ND	ND	1.12	ND	ND	20	ND	1	0.6	ND	ND	ND	ND	ND	ND	ND	0.88	ND	0.48 J	0.36	0.34
Cobalt	----	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.56	0.55	0.074	0.069	0.8	ND	0.37 J	ND	ND
Copper	1,300	µg/L	NA	10.9	26.6	9.82	20	ND	30	ND	7.5	8.4	6.9	3	4.9	2.7	3.5	6.7	3.7	3.6	4.6	4.6	2.5	3.8
Iron	300 (s)	µg/L	NA	1,090	ND	179	310	1,500	1,000	2,800	14.1	124	39.7	50.8	67	16.9	11.6	18	33.9	24.7	ND	ND	78.8	ND
Lead	15	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.9	ND	0.14	ND	ND	ND	ND	0.44	ND	ND	ND	0.048	1.1
Potassium	---	µg/L	NA	69,300	78,400	117,000	63,000	65,000	56,000	43,000	26,000	25,600	13,100	14,400	6,300	NA	NA	NA	NA	NA	NA	NA	NA	4,720
Magnesium	---	µg/L	NA	73,400	112,000	115,000	82,000	88,000	60,000	50,000	40,500	49,700	51,200	30,000	32,000	NA	NA	NA	NA	NA	NA	NA	NA	55,800
Manganese	50 (s)	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	222	38.4	8.4	12.2	93.4	0.99	49.2	ND	ND
Mercury	2	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.027	ND	0.067	0.028 J	0.045 J	ND
Nickel	100	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	11.6	5.1	9.2	3.4	5.7	7	4.5	4.1	5.1
Selenium	50	µg/L	NA	5	ND	1.5	ND	ND	ND	ND	1.9	1.6	5.1	1	ND	0.77	0.82	1.2	2.4	1.1	ND	10.6	ND	ND
Silver	100 (s)	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	0.017	ND	ND	ND	ND	ND	0.13	ND
Sodium	20,000 (g)	µg/L	NA	23,500	14,600	16,200	7,000	16,000	9,700	13,000	4,250	7,540	5,110	13,800	4,100	NA	NA	NA	NA	NA	NA	NA	NA	16,000
Thallium	2	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.071	ND	ND	ND	ND	ND	ND	0.16	ND
Vanadium	----	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.1	1.4	3.1	1.7	0.56	1.6	2.7 J	1.4	ND
Zinc	5,000 (s)	µg/L	6	24.7	ND	12.6	ND	10	30	ND	3.9	4.4	3.3	6.5	ND	7.3	ND	6.8	5.6	9.3	5.5	2.9 J	ND	1.8
Wet Chemistry																								
Alkalinity	----	mg/L	503	502	1,040	941	670	670	410	440	350	640	360	280	253.9	170	310	580	300	280	480	330	490	490
Ammonia	----	mg/L	NA	0.334	ND	0.372	ND	ND	ND	ND	0.05	0.13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chemical Oxygen Demand	----	mg/L	130	113	102	184	120	100	92	57	31	47	28	28	47	8.9	ND	44	15	ND	33	18	28	25
Chloride	250 (s)	mg/L	ND	31.9	22.4	23.9	15	22	25	40	4	14	7.3	18	7.5	27	10	8.2	18	21	9.4	18	16	3.8
Nitrate (N)	10	mg/L	4.18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.33	0.069	0.096	0.66	0.28	NA	NA	NA	NA
Nitrate/Nitrite	10	mg/L	NA	3.32	0.133	2.35	3.8	ND	0.06	ND	1.2	0.07	1.8	0.22	0.11	NA	NA	NA	NA	NA	0.093	0.12	1.6	0.13
pH	6.5-8.5(s)	--	NA	6.82	7.29	7.29	7.8	7.29	7.55	7	7.1	7	7.1	7	7.05	6.1	6.8	7	6.8	6.3	6.8	7	7	6.9
Specific Conductivity	----	µmho/cm	94.5	1,200	1,820	1,740	1,400	890	790	880	560	820	850	590	560	370	63	120	760	620	890	810	1,200	1,100
Conductivity	---	µmho	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate	250	mg/L	NA	49.7	41.7	54.2	63	31	100	16	36	28	42	25	28	12	29	80	66	16	53	96	150	59
Total Dissolved Solids	500 (s)	mg/L	NA	777	1,300	1,170	890	940	650	560	400	570	470	390	320	230	300	800	420	450	600	78	750	640
Total Hardness	----	mg/L	456	588	1,040	158	620	680	440	430	320	480	460	310	304.92	220	370	660	390	220	570	420	700	650
Total Organic Carbon	----	mg/L	NA	39.2	61.6	78	42	34	34	12	9.5	17	13	13	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Halides	----	mg/L	NA	221	11	521	35	57	53	38	ND	10	ND	ND	23.2	NA	NA	NA	NA	NA	NA	NA	NA	NA
Turbidity	----	ntu	NA	2.05	ND	30.3	5.9	3.6	4	4	1.3	2	1.3	ND	0.5	0.3	0.1	0.5	0.5	0.4	0.4	0.7	4.2	ND
Volatile Organic Compounds																								
1,1,1,2-Tetrachloroethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	200	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	7	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloropropene	---	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene	---	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichloropropane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3- Chloropropane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	600	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	----	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND

PW-17, Upgradient, Summary of Data Since March 1999

Parameters	MCL	Units	Mar. 1999	Sep. 1999	Mar. 2000	Sep. 2000	Feb. 2001	Aug. 2001	Feb. 2002	Aug. 2002	Mar. 2003	Aug. 2003	Mar. 2004	Sep. 2004	Mar. 2005	Sep. 2005	Mar. 2006	Sep. 2006	Mar. 2007	Sep. 2007	Apr. 2008	Oct. 2008	Feb. 2009	Oct. 2009
1,4-Dichlorobenzene	75	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.3	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	----	µg/L	ND	ND	ND	114	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Hexanone	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	----	µg/L	ND	ND	ND	5.81	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acrylonitrile	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromochloromethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	100	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorodibromomethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2 Dichloroethene	70	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.4	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromomethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichloromethane	5	µg/L	ND	ND	ND	75.2	ND	ND	ND	ND	ND	3.5	3.6	ND	ND	0.47	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Benzene	700	µg/L	ND	ND	ND	4.42	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl Iodide	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	100	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
tert-butyl methyl ether (MTBE)	----	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND
Tetrachloroethene	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	1,000	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2- butene	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trans 1-2 dichloroethene	100	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.44	ND	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Acetate	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	2	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes	10,000	µg/L	ND	ND	ND	14.44	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

Red Shaded area denotes concentration greater than the primary MCL

Yellow shaded area denotes concentration greater than the secondary MCL or Guidance Levels which are non-enforceable

MCL = Maximum Contaminant Level; Analytes detected in groundwater were compared to primary or secondary MCLs for drinking water supplies from https://www.epa.gov/ground-water-and-drinking-water/national-primary-drinking-water-regulations and https://www.epa.gov/dwstandardsregulations/ secondary-drinking-water-standards-guidance-nuisance-chemicals (USEPA, 2019)

-- = No regulatory limit

(s) = secondary MCL

(g)= guidance level

ND= Non-Detect

NA= Not Analyzed

NAD = No Available Data

B = Analyte was detected in method blank

D = Diluted Out

J = Estimated Value > MDL but < RL

N = Insufficient BOD oxygen depletion

*Total metals, except for 2010 analyses which were for dissolved metals

µg/L = microgram per liter

pCi/L = picocuries per liter

mg/L = milligram per liter

µmho/cm = umho/cm = micro mho per centimeter

PW-17, Upgradient, Summary of Data Since March 1999

Parameters	MCL	Units	Apr. 2010	Oct. 2010	Oct. 2010 (dup)	Apr. 2011	Oct. 2011 (dup)	Oct. 2012	Oct. 2013	Oct. 2014	May 2015	Oct. 2016	Oct. 2018	Apr. 2019	Nov. 2019	Nov. 2019 (dup)
Metals*																
Aluminum	200 (s)	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	5390	244	427	36.7	41.7
Antimony	6	µg/L	ND	NA	NA	0.42 J	0.56 J	ND	ND	1.60 B	ND	ND	ND	ND	ND	ND
Arsenic	10	µg/L	ND	1.2 J	1.2 J	1.9	2.2	ND	ND	1.20 B	ND	ND	ND	ND	ND	ND
Barium	2,000	µg/L	34.9	110	110	138	172	ND	84.1	123	101	317	97.8 B	93.4	78.9	76
Beryllium	4	µg/L	0.43	NA	NA	ND	ND	ND	ND	ND	ND	0.38	ND	ND	ND	ND
Calcium	---	µg/L	2,470 N	120,000	110,000	130,000	120,000	ND	90,000	129,000	124,000	26,300	13,300	99,900	52,700	51,900
Cadmium	5	µg/L	0.065 J	ND	ND	0.15 J	0.12 J	ND	ND	ND	ND	0.72	0.51 J	ND	ND	ND
Chromium	100	µg/L	ND	4.2 J	2.6 J	1.7 J	1.7 J	1.6 J	ND	9.87 B	ND	15.6	1.5 J	ND	ND	ND
Cobalt	----	µg/L	4.1	NA	NA	3.3	2.9	ND	ND	0.435 B	ND	15.5	ND	1.3	1.7 J	1.5 J
Copper	1,300	µg/L	1.2 J	12	12	6.4	6.9	0.2 J	ND	4.20 B	ND	22.3	1.7 J	5.7	2.2 J	ND
Iron	300 (s)	µg/L	8.3	ND	ND	1,420	1,300	ND	349	591	481	11,500	292	811	953	813
Lead	15	µg/L	0.2 J	0.4 J	0.38 J	1.5	1.2	0.088 J	ND	0.827 B	ND	7.9	ND	2.6	ND	ND
Potassium	---	µg/L	NA	3,000	3,100	3,200	6,010	ND	3,590	ND	ND	2,290	5,120	2,560	3,520	3,400
Magnesium	---	µg/L	NA	39,000	41,000	49,800	44,800	2.8 J	29,000	40,400	36,100	2,250	57,800	39,500	20,700	20,500
Manganese	50 (s)	µg/L	20.3	NA	NA	647	620	2.8 J	118	57.8	28	188	91.2	427	895	781
Mercury	2	µg/L	0.081 J	0.044 J	0.016 J	ND	0.09 JN	ND	ND	ND	ND	0.14	ND	0.15	ND	ND
Nickel	100	µg/L	5.4	NA	NA	22.5	22.2	0.68 J	ND	5 B	ND	7.9	4.8 J	9.3	9.4	8.5
Selenium	50	µg/L	ND	ND	ND	0.57 J	2.2 J	ND	4.8	4	ND	ND	4.6 JB	ND	ND	ND
Silver	100 (s)	µg/L	ND	NA	NA	0.082 J	0.071 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	20,000 (g)	µg/L	NA	9,000	9,200	14,500	12,900	11.5 J	6,450	7,470	6,610	3,320	55,700	20,400	20,700	21,400
Thallium	2	µg/L	ND	NA	NA	0.29 J	0.098 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	----	µg/L	ND	NA	NA	2.8 J	1.8 J	NA	ND	2.8	ND	9.1	2.9 J	2.1	ND	ND
Zinc	5,000 (s)	µg/L	18.2	10 J	11 J	27.9	22 N	13.3 N	20.7	7	ND	73.7	8.2 J	10.3	9.3 J	9.2 J
Wet Chemistry																
Alkalinity	----	mg/L	4	372	371	510	480	330	329	466	381	47	730	420	220	220
Ammonia	----	mg/L	ND	ND	ND	0.08 J	0.109	0.389 J	ND	ND	ND	ND	ND	ND	ND	0.026 J
Chemical Oxygen Demand	----	mg/L	ND	28	30	20.1	21.4	34.4	35.3	12	10	94	ND	22	ND	ND
Chloride	250 (s)	mg/L	5.5	6.73 D	6.58 D	9	11	4.8 D	5.87	4.53	4.74	13	5.1 M	14	32	31
Nitrate (N)	10	mg/L	NA	NA	NA	NA	NA	NA	0.0818	ND	0.235	3.5	0.42	0.21	0.36 J	0.38 J
Nitrate/Nitrite	10	mg/L	0.54	0.065	0.065	ND	0.52	ND	ND	NA	NA	NA		NA	ND	ND
pH	6.5-8.5(s)	--	5.3	7.14	7.16	6.75	4.55	4.64	7.56	7.54	6.53	6.45	7.6	7.34	6.81	6.82
Specific Conductivity	----	µmho/cm	70	796	795	931	NA	NA	NA	NA	NA			NA	581	576
Conductivity	---	µmho	NA	NA	NA	NA	892	604	756	550	676	125	1,200	876	ND	ND
Sulfate	250	mg/L	12	81.1 D	86.9 D	86	36	35 D	36.4	56.7	47.1	3.1	93 M	58	24	26
Total Dissolved Solids	500 (s)	mg/L	31	518	513	617	567	378	406	539	486	100	730	420	280	290
Total Hardness	----	mg/L	20	529 D	539 D	550	484.04	0.012 J	344	489	458	76	570	410	220	210
Total Organic Carbon	----	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	ND	ND
Total Organic Halides	----	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	ND	ND
Turbidity	----	ntu	11	ND	ND	17	13	290	3.72	8.49	2.9	280	6.5	15	4.8	4.8
Volatile Organic Compounds																
1,1,1,2-Tetrachloroethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	200	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.031 J	ND
1,1-Dichloroethene	7	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.028 J
1,1-Dichloropropene	---	µg/L	NA	1.15 J	ND	ND	ND	NA	NA	NA	NA	NA	ND	ND	ND	ND
1,2,3-Trichlorobenzene	---	µg/L	NA	ND	ND	ND	ND	NA	NA	NA	NA	NA	ND	ND	ND	ND
1,2,3-Trichloropropane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3- Chloropropane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

PW-17, Upgradient, Summary of Data Since March 1999

Parameters	MCL	Units	Apr. 2010	Oct. 2010	Oct. 2010 (dup)	Apr. 2011	Oct. 2011 (dup)	Oct. 2012	Oct. 2013	Oct. 2014	May 2015	Oct. 2016	Oct. 2018	Apr. 2019	Nov. 2019	Nov. 2019 (dup)
1,2-Dibromoethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	600	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.072 J	0.092 J
1,3-Dichlorobenzene	----	µg/L	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	ND	ND	ND	ND
1,4-Dichlorobenzene	75	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.34	0.34
2-Butanone	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Hexanone	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acrylonitrile	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.2	0.2
Bromochloromethane	----	µg/L	ND	ND	ND	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	100	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.39	0.39
Chlorodibromomethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.029 J	0.031 J
Chloromethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2 Dichloroethene	70	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.11	0.099 J
cis-1,3-Dichloropropene	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromomethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichloromethane	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Benzene	700	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.016 J	ND
Methyl Iodide	----	µg/L	ND	ND	NA	ND	ND	ND	ND	ND	ND	2.1	3 JYQB	ND	ND	ND
Styrene	100	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
tert-butyl methyl ether (MTBE)	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	1,000	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.019 J
trans-1,3-Dichloropropene	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2- butene	----	µg/L	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trans 1-2 dichloroethene	100	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Acetate	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	2	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.044 J	0.046 J
Xylenes	10,000	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.088	0.065 J

Notes:

Red Shaded area denotes concentration greater than the primary MCL

Yellow shaded area denotes concentration greater than the secondary MCL or Guidance Levels which are non-enforceable

MCL = Maximum Contaminant Level; Analytes detected in groundwater were compared to primary or secondary MCLs for drinking water supplies from https://www.epa.gov/ground-water-and-drinking-water/national-primary-drinking-water-regulations and https://www.epa.gov/dwstandardsregulations/ secondary-drinking-water-standards-guidance-nuisance-chemicals (USEPA, 2019)

-- = No regulatory limit

(s) = secondary MCL

(g)= guidance level

ND= Non-Detect

NA= Not Analyzed

NAD = No Available Data

B = Analyte was detected in method blank

D = Diluted Out

J = Estimated Value > MDL but < RL

N = Insufficient BOD oxygen depletion

Q = Laboratory control samples outside acceptance limits

X = Analyte exceeded calibration range.

Y = Replicate/Duplicate precision outside acceptance limits

*Total metals, except for 2010 analyses which were for dissolved metals

µg/L = microgram per liter

pCi/L = picocuries per liter

mg/L = milligram per liter

µmho/cm = umho/cm = micro mho per centimeter

PW-19, Downgradient, Summary of Data Since March 1999

Parameters	MCL	Units	Mar. 1999	Sep. 1999	Mar. 2000	Sep. 2000	Feb. 2001	Aug. 2001	Feb. 2002	Aug. 2002	Mar. 2003	Aug. 2003	Mar. 2004	Sep. 2004	Mar. 2005	Sep. 2005	Mar. 2006	Sept. 2006	Mar. 2007	Sep. 2007	Apr. 2008	Oct. 2008	Feb. 2009	Oct. 2009
Metals*																								
Aluminum	200 (s)	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	6	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	1.2	ND	ND	ND	ND	ND	0.066	ND
Arsenic	10	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.3	0.39	ND	ND	ND	0.53	4.2	2.7	ND
Barium	2,000	µg/L	15.2	18.9	11.7	11.9	ND	ND	ND	ND	12.7	19.8	16.5	17.1	15	16.2	13.3	14	16.6	23	29.3	227	160	113
Beryllium	4	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.052	0.036	0.046	0.022	ND	0.041	0.15	0.13	ND
Calcium	---	µg/L	NA	10,400	7,850	7,470	21,000	22,000	15,000	18,000	11,600	16,000	16,200	17,600	19,000	13,800	18,500	15,400	16,100	16,600	38,300	201,000	151,000	84,000
Cadmium	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	0.14	ND	ND	ND	ND	0.048	ND	ND	0.1	ND	ND	0.15 J	0.16	ND
Chromium	100	µg/L	3.3	ND	ND	1.63	ND	ND	40	ND	1.3	1.4	0.81	ND	ND	ND	ND	0.36	0.36	6	ND	ND	0.63	12
Cobalt	----	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4	2.7	4.9	3.1	2.3	13.4	35.2	36	8.9
Copper	1,300	µg/L	NA	5.1	ND	1.75	ND	ND	40	ND	3.2	3.5	1	1.2	ND	1.2	1.1	1.9	0.96	3.1	1.9	15.9	1.3	1.7
Iron	300 (s)	µg/L	NA	ND	ND	ND	50	780	1,400	770	ND	ND	137	7.2	68	ND	5.6	37	14.6	447	ND	ND	77.3	57.1
Lead	15	µg/L	ND	ND	ND	ND	ND	ND	6	ND	3.1	0.78	ND	0.14	ND	0.24	0.18	ND	0.85	1.2	ND	ND	ND	1.2
Potassium	---	µg/L	NA	650	ND	145	ND	ND	ND	ND	187	197	241	209	210	NA	NA	NA	NA	NA	NA	NA	NA	4,060
Magnesium	---	µg/L	NA	15,900	13,200	12,800	31,000	33,000	22,000	26,000	19,100	25,500	25,300	26,900	32,000	NA	NA	NA	NA	NA	NA	NA	NA	113,000
Manganese	50 (s)	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	8.7	13.9	13.7	10.3	32.7	24.5	133	120	1.2
Mercury	2	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.094	ND	0.048 J	ND
Nickel	100	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	14.6	7	13.6	9.3	15.5	21.1	71	72.9	45.6
Selenium	50	µg/L	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.45	ND	ND	0.45	ND	ND	1.2	1.1	18.2	10.4	ND
Silver	100 (s)	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	0.19	ND	ND	ND	ND	0.082 J	0.082 J	ND
Sodium	20,000 (g)	µg/L	NA	67,600	50,800	57,400	38,000	27,000	38,000	22,000	47,500	52,700	45,400	41,400	36,000	NA	NA	NA	NA	NA	NA	NA	NA	235,000
Thallium	2	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	0.11	ND	0.11	ND	ND	ND	ND	ND
Vanadium	----	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	1.1	0.82	0.46	0.74	ND	ND	ND	ND
Zinc	5,000 (s)	µg/L	24.5	23	ND	8.68	ND	30	50	ND	15.9	12.6	11.4	6.6	ND	6.4	ND	13.4	7.1	13.8	9.2	21.8	23.3	9
Wet Chemistry																								
Alkalinity	----	mg/L	39.1	52.8	68.6	58.8	150	160	94	140	84	110	110	140	130.2	120	140	6.7	120	140	130	110	100	210
Ammonia	----	mg/L	NA	0.109	ND	ND	ND	ND	ND	ND	0.04	0.04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chemical Oxygen Demand	----	mg/L	13	5	6.82	ND	49	24	27	ND	7.6	6.7	ND	ND	33	ND	9.9	9.2	ND	ND	5	15	26	18
Chloride	250 (s)	mg/L	4.5	5.23	4	2.87	4	3	5	5	3.5	50	16	10	10	5	6.3	3.5	4	2.6	55	1,100	900	550
Nitrate (N)	10	mg/L	0.413	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.4	0.18	0.3	0.32	0.24	NA	NA	NA	NA
Nitrate/Nitrite	10	mg/L	NA	0.302	0.367	0.358	0.35	0.77	0.28	0.13	0.86	0.57	0.48	0.54	0.18	NA	NA	NA	NA	NA	0.08	0.67	ND	0.37
pH	6.5-8.5(s)	--	NA	5.76	6.04	5.97	6.65	6.53	6.09	6.37	6	6.1	6.2	6.1	6.74	5	6	5.8	6.2	5.9	6.2	6.2	6.1	6.9
Specific Conductivity	----	µmho/cm	473	486	464	353	540	300	340	390	410	490	450	440	575	18	370	410	400	380	640	4,400	3,500	2,300
Conductivity	---	µmho	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate	250	mg/L	NA	157	142	152	120	85	110	110	130	110	110	92	62	59	71	58	79	58	120	120	110	68
Total Dissolved Solids	500 (s)	mg/L	NA	241	320	210	330	270	290	280	280	350	290	160	275	240	240	280	240	350	410	3,100	2,000	1,200
Total Hardness	----	mg/L	122	82.3	81.6	353	180	190	130	170	110	140	150	150	170.28	140	160	140	130	140	310	1,600	1,200	660
Total Organic Carbon	----	mg/L	NA	1.7	1.06	4.17	2	1.2	4.8	ND	1.3	1.1	2.5	3.2	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Halides	----	mg/L	NA	10.2	19.7	10.8	12	13	9	19	ND	ND	ND	ND	22.35	NA	NA	NA	NA	NA	NA	NA	NA	NA
Turbidity	----	ntu	NA	1.3	0.72	3.22	2.8	17	25	21	ND	2.4	1.8	1.8	2.4	7.8	0.6	2.5	3.1	30	1.6	3.2	5.9	ND
Volatile Organic Compounds																								
1,1,1,2-Tetrachloroethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	200	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	----	µg/L	ND	ND	ND	11.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	7	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloropropene	---	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene	---	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichloropropane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3- Chloropropane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	600	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	----	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND

PW-19, Downgradient, Summary of Data Since March 1999

Parameters	MCL	Units	Mar. 1999	Sep. 1999	Mar. 2000	Sep. 2000	Feb. 2001	Aug. 2001	Feb. 2002	Aug. 2002	Mar. 2003	Aug. 2003	Mar. 2004	Sep. 2004	Mar. 2005	Sep. 2005	Mar. 2006	Sept. 2006	Mar. 2007	Sep. 2007	Apr. 2008	Oct. 2008	Feb. 2009	Oct. 2009
1,4-Dichlorobenzene	75	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Hexanone	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	27	4	ND	4	ND	ND	ND
Acrylonitrile	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromochloromethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	4.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	100	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorodibromomethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.86	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2 Dichloroethene	70	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromomethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichloromethane	5	µg/L	ND	ND	ND	25.8	ND	ND	ND	ND	ND	3.1	13	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Benzene	700	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl Iodide	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	100	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
tert-butyl methyl ether (MTBE)	----	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND
Tetrachloroethene	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	1,000	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.43	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2- butene	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trans 1-2 dichloroethene	100	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	5	µg/L	ND	ND	ND	1.47	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Acetate	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	2	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes	10,000	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

Red Shaded area denotes concentration greater than the primary MCL

Yellow shaded area denotes concentration greater than the secondary MCL or Guidance Levels which are non-enforceable

MCL = Maximum Contaminant Level; Analytes detected in groundwater were compared to primary or secondary MCLs for drinking water supplies from https://www.epa.gov/ground-water-and-drinking-water/national-primary-drinking-water-regulations and https://www.epa.gov/dwstandardsregulations/ secondary-drinking-water-standards-guidance-nuisance-chemicals (USEPA, 2019)

-- = No regulatory limit

(s) = secondary MCL

(g)= guidance level

ND= Non-Detect

NA= Not Analyzed

NAD = No Available Data

B = Analyte was detected in method blank

D = Diluted Out

J = Estimated Value > MDL but < RL

N = Insufficient BOD oxygen depletion

*Total metals, except for 2010 analyses which were for dissolved metals

µg/L = microgram per liter

pCi/L = picocuries per liter

mg/L = milligram per liter

µmho/cm = umho/cm = micro mho per centimeter

PW-19, Downgradient, Summary of Data Since March 1999

Parameters	MCL	Units	Apr. 2010	Oct. 2010	Apr. 2011	Oct. 2011	Oct. 2011 (dup)	Oct. 2012	Oct. 2013	Oct. 2014	May 2015	Nov. 2015	Nov. 2015 (dup)	Apr. 2016	Apr. 2016 (dup)	Oct. 2016	Oct. 2018	Apr. 2019	Nov. 2019
Metals*																			
Aluminum	200 (s)	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	13.3	97.1	121	400	58.1	56	20.3 J
Antimony	6	µg/L	ND	NA	ND	0.26 J	0.22 J	0.23 J	ND	0.758 B	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	10	µg/L	2.1 J	2.3	1.1	1.3	1.5	3	ND	1.10 B	ND	273	288	ND	ND	ND	4.3 J	ND	1.7 J
Barium	2,000	µg/L	71.4	99	113	89.5	89.6	282	144	223	17.1	ND	ND	99.7	103	111	187 B	74.8	87.6
Beryllium	4	µg/L	0.049 J	NA	ND	ND	ND	ND	ND	ND	ND	227,000	236,000	ND	ND	ND	ND	ND	ND
Calcium	---	µg/L	80,400	67,000	76,100	57,200	57,300	211,000 D	110,000	163,000	159,000	ND	ND	108,000	111,000	107,000	164,000	91,000	111,000
Cadmium	5	µg/L	ND	ND	0.11 J	ND	ND	ND	ND	0.326 B	ND	1.4	2.2	ND	ND	ND	0.76 J	ND	ND
Chromium	100	µg/L	ND	3.4 J	1.2 J	2.8	3.4	3 J	ND	ND	ND	19.2	15	3.5	2.6	ND	2.3 J	ND	0.96 J
Cobalt	----	µg/L	9	NA	25.5	15.9	15.6	8.8 J	12.6	5.10 B	17.5	3.1	3.1	8	11.1	119	17.6	ND	ND
Copper	1,300	µg/L	2.5 J*	20	2 J	3.1	3	3.7 J	ND	9.40 B	ND	ND	58.9	ND	ND	4.2	2.7 J	2.8	8.1
Iron	300 (s)	µg/L	97.1	ND	390	235	287	789	341	57.2	29.8	273,000	274,000	78.6	91.6	496	329	89.8	23.6 J
Lead	15	µg/L	0.097 J	1.1	0.51 J	0.43 J	0.47 J	0.38 J	4.5	0.969 B	ND	126	106	ND	ND	ND	3.2 J	ND	ND
Potassium	---	µg/L	NA	5,700	2,930	4,560	4,840	NA	12,800	ND	ND	0.043	0.035	9,890	9,830	17,800	52,500	22,100	24.700
Magnesium	---	µg/L	NA	78,000	105,000	80,500	77,500	249,000 D	137,000	177,000	195,000	41.9	45.4	140,000	140,000	170,000	287,000	120,000	153,000
Manganese	50 (s)	µg/L	18.2	NA	81.3	177	168	54.3	60.3	25.3	759	22,200	22,500	52.8	70.8	595	3,300	344	7.2
Mercury	2	µg/L	0.076 J	0.036 J	ND	0.08 JN	0.1 JN	ND	ND	ND	ND	ND	1.2	ND	ND	ND	ND	0.14	ND
Nickel	100	µg/L	39.1	NA	52.7	29.7	30.5	42.1	29	25.7	56.6	655,000	667,000	60.8	63.2	51.4	16.2	7	10.5
Selenium	50	µg/L	9.7	11	7.5	4.9 J	5.9	16.3 J	ND	ND	ND	ND	ND	ND	ND	ND	4.6 J,B	ND	ND
Silver	100 (s)	µg/L	ND	NA	ND	0.041 J	ND	ND	ND	ND	ND	ND	ND	0.77	0.77	ND	ND	ND	ND
Sodium	20,000 (g)	µg/L	NA	260,000	240,000	239,000 D	240,000 D	564,000 D	434,000	667,000	541,000	3.4	ND	401,000	3,860,000	540,000	90,400	505,000	ND
Thallium	2	µg/L	ND	NA	ND	0.088 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	6.1 J	ND	ND
Vanadium	----	µg/L	ND	NA	ND	ND	ND	NA	ND	1.70 B	ND	17.6	16.7	ND	1.1	1.2	3.8 J	2.9	2.5 J
Zinc	5,000 (s)	µg/L	15.3	15 J	28.2	11.5 N	13.2 N	18.5 N	45.5	19.5	26.4	230	230	25.5	26.6	13	8.4 J	1.6	4.7 J
Wet Chemistry																			
Alkalinity	----	mg/L	140	210	140	230	220	230	221	290	179	ND	ND	160	160	230	440	320	270
Ammonia	----	mg/L	ND	ND	0.089 J	0.09	0.058	0.196 J	ND	ND	ND	ND	ND	ND	ND	ND	0.034 J	ND	ND
Chemical Oxygen Demand	----	mg/L	7.6	52	14.5	19.4	14.4	37.4	25.3	38	21	52	49	24	37	40	83	51	260
Chloride	250 (s)	mg/L	590	465 D	880	540 D	540 D	1,500 D	1,150	1,600	1,720	1,900	1,900	1,100	1,100	1,400	2,000	980	1300
Nitrate (N)	10	mg/L	NA	NA	NA	NA	NA	NA	0.232	0.112	ND	ND	ND	0.3	0.29	0.16	ND	ND	ND
Nitrate/Nitrite	10	mg/L	0.6	0.5	0.247	0.3	0.29	0.5	ND	NA	NA	ND	NA	NA	NA	NA		NA	ND
pH	6.5-8.5(s)	--	6.2	6.55	6.07	6.17	5.97	6.36	6.52	7	6	ND	NA	NA	NA	6.9	7.23	7.42	7.43
Specific Conductivity	----	µmho/cm	2,200	2,220	2530	NA	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA		NA	4,780
Conductivity	---	µmho	NA	NA	NA	2160	2180	5030	3970	4.58 J	4.52	0.24	0.23	3,960	3,940	5,010	7.74	3,880	ND
Sulfate	250 (s)	mg/L	74	69.2 D	85	66	68	430 D	248	341	353	ND	ND	200	200	260	350	150	270
Total Dissolved Solids	500 (s)	mg/L	1,400	1,140	1,560	1,250	1,250	3,710	1,910	2,830	3,420	ND	ND	2,000	2,100	2,900	4,200	2,500	2,500
Total Hardness	----	mg/L	680	549 D	280 D	474.05	462.5	1549.06	839	1140	1200	6890	6940	NA	NA	970	1600	720	910
Total Organic Carbon	----	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	380	390	NA	NA	NA		NA	ND
Total Organic Halides	----	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	3500	3500	NA	NA	NA		NA	ND
Turbidity	----	ntu	0.8	4.7	4.1	3.8	3.8	5.2	6.36	0.722	4.82	1700	1600	NA	NA	7	3.1	3.1	1
Volatile Organic Compounds																			
1,1,1,2-Tetrachloroethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	200	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	7	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloropropene	---	µg/L	NA	ND	ND	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichlorobenzene	---	µg/L	NA	ND	ND	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3- Chloropropane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	600	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

PW-19, Downgradient, Summary of Data Since March 1999

Parameters	MCL	Units	Apr. 2010	Oct. 2010	Apr. 2011	Oct. 2011	Oct. 2011 (dup)	Oct. 2012	Oct. 2013	Oct. 2014	May 2015	Nov. 2015	Nov. 2015 (dup)	Apr. 2016	Apr. 2016 (dup)	Oct. 2016	Oct. 2018	Apr. 2019	Nov. 2019
1,2-Dichloropropane	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	----	µg/L	ND	ND	ND	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	75	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Hexanone	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acrylonitrile	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromochloromethane	----	µg/L	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.021 J
Carbon Tetrachloride	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	100	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorodibromomethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.031 J
cis-1,2 Dichloroethene	70	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromomethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichloromethane	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Benzene	700	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.018
Methyl Iodide	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2	2.9 JYQB	ND	ND
Styrene	100	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
tert-butyl methyl ether (MTBE)	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	1,000	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2- butene	----	µg/L	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trans 1-2 dichloroethene	100	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Acetate	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	2	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes	10,000	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.101

Notes:

Red Shaded area denotes concentration greater than the primary MCL

Yellow shaded area denotes concentration greater than the secondary MCL or Guidance Levels which are non-enforceable

MCL = Maximum Contaminant Level; Analytes detected in groundwater were compared to primary or secondary MCLs for drinking water supplies from https://www.epa.gov/ground-water-and-drinking-water/national-primary-drinking-water-regulations and https://www.epa.gov/dwstandardsregulations/ secondary-drinking-water-standards-guidance-nuisance-chemicals (USEPA, 2019)

-- = No regulatory limit

(s) = secondary MCL

(g)= guidance level

ND= Non-Detect

NA= Not Analyzed

NAD = No Available Data

B = Analyte was detected in method blank

D = Diluted Out

J = Estimated Value > MDL but < RL

N = Insufficient BOD oxygen depletion

Q = Laboratory control samples outside acceptance limits

X = Analyte exceeded calibration range.

Y = Replicate/Duplicate precision outside acceptance limits

*Total metals, except for 2010 analyses which were for dissolved metals

µg/L = microgram per liter

pCi/L = picocuries per liter

mg/L = milligram per liter

µmho/cm = umho/cm = micro mho per centimeter

PW-20, Upgradient, Summary of Data Since March 1999

Parameters	MCL	Units	Mar. 1999	Sep. 1999	Mar. 2000	Sep. 2000	Feb. 2001	Aug. 2001	Feb. 2002	Aug. 2002	Mar. 2003	Aug. 2003	Mar. 2004	Sep. 2004	Mar. 2005	Sep. 2005	Mar. 2006	Sep. 2006	Mar. 2007	Sep. 2007	Apr. 2008	Oct. 2008	Feb. 2009	Oct. 2009
Metals*																								
Aluminum	200 (s)	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	6	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	10	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium	2,000	µg/L	44.1	65	58.8	75.1	90	110	120	120	73.2	37.2	32.6	34.9	39	72.3	83.6	146	41.9	46	51.9	45.7	41.1	45.2
Beryllium	4	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.066	0.063	0.089	0.026	ND	0.032	0.028 J	0.024	0.038
Calcium	---	µg/L	NA	4,500	4,870	6,520	7,600	10,000	13,000	13,000	8,190	5,170	5,980	7,230	7,400	11,800	10,600	31,600	10,600	10,200	13,900	9,900	8,560	9,420
Cadmium	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	0.25	ND	ND	ND	ND	0.14	0.074	0.16	0.043	ND	0.026	0.046 J	0.04	0.042
Chromium	100	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	1	1	0.3	ND	ND	ND	0.2	0.25	0.35	0.92	ND	ND	1.2	1.1
Cobalt	----	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.3	4	9.4	3.1	5	2.3	1	5.1	3
Copper	1,300	µg/L	NA	ND	ND	0.86	ND	ND	ND	ND	4.8	1.4	4.6	3.5	2.9	5.5	7	3	4.4	8.8	1.9	1.9	3.9	0.65
Iron	300 (s)	µg/L	NA	ND	127	109	110	80	220	7,600	20.4	89.7	ND	17.1	34	8.2	14.4	9.1	15.4	29.1	ND	ND	33.3	ND
Lead	15	µg/L	ND	ND	ND	ND	ND	ND	8	10	5.8	ND	ND	0.66	ND	0.49	0.61	0.43	0.51	ND	ND	ND	0.35	ND
Potassium	---	µg/L	NA	1610	1660	2080	ND	ND	ND	ND	2,220	1,530	1,610	1,430	1,600	NA	NA	NA	NA	NA	NA	NA	NA	1,180
Magnesium	---	µg/L	NA	4,200	4,520	6,150	7,000	9,800	11,000	11,000	6,570	4,240	5,350	6,800	7,300	NA	NA	NA	NA	NA	NA	NA	NA	8,580
Manganese	50 (s)	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	116	200	465	97	81.4	93.3	49.1	58.3	50.9
Mercury	2	µg/L	ND	1.8	ND	0.126	1	0.7	1	2.6	0.27	ND	ND	ND	ND	0.54	0.23	0.33	0.07	0.038	0.14	0.085 J	0.038 J	0.52
Nickel	100	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.5	4	7.5	2.5	3.5	3.2	1.9	3.6	1.9
Selenium	50	µg/L	NA	ND	ND	ND	ND	ND	ND	ND	0.84	ND	ND	0.68	ND	0.67	2.1	2.1	1.1	ND	1.2	1.2 J	2	ND
Silver	100 (s)	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.017	1	ND	ND	ND	0.045	0.060 J	ND	0.83
Sodium	20,000 (g)	µg/L	NA	11,500	15,600	13,400	16,000	14,000	18,000	21,000	14,500	4,970	5,010	5,180	5,800	NA	NA	NA	NA	NA	NA	NA	NA	20,400
Thallium	2	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.23	ND	ND	ND	ND	ND	ND	0.16	ND
Vanadium	----	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.69	ND	0.85	0.43	ND	ND	ND	ND	ND
Zinc	5,000 (s)	µg/L	12.6	ND	ND	6.16	ND	10	40	10	16.4	5.1	9.4	5.5	ND	9.3	ND	13.1	5.9	10.4	7.2	4.6 J	6.8	2
Wet Chemistry																								
Alkalinity	----	mg/L	6	11.1	14.6	7.84	19	12	22	30	15	13	18	10	30.4	6.5	4.6	ND	12	23	21	25	25	26
Ammonia	----	mg/L	NA	ND	ND	ND	ND	ND	ND	0.3	0.08	0.04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chemical Oxygen Demand	----	mg/L	ND	ND	9.09	ND	ND	11	ND	ND	5.1	ND	ND	ND	29	ND	22	28	9	ND	ND	ND	7.2	9.8
Chloride	250 (s)	mg/L	17.5	18.5	19.6	28.2	23	28	36	38	19	5.3	8.9	17	24	58	86	59	21	22	40	36	25	40
Nitrate (N)	10	mg/L	0.334	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.22	0.2	0.34	0.22	0.45	NA	NA	NA	NA
Nitrate/Nitrite	10	mg/L	NA	0.103	0.205	0.128	0.25	1	0.1	0.15	0.41	0.26	0.36	0.5	0.24	NA	NA	NA	NA	NA	0.22	0.16	0.14	0.39
pH	6.5-8.5(s)	--	NA	5.14	5.2	5.25	5.29	5.35	5.35	5.99	5.1	5.3	5.3	5.4	6.02	5.1	4.9	5	5.7	5.1	5.2	5.6	5.3	5.4
Specific Conductivity	----	µmho/cm	104	116	157	171	200	150	260	290	170	91	120	140	198	220	270	720	290	260	340	250	230	270
Conductivity	---	µmho	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate	250	mg/L	NA	9.7	15.6	24	24	33	55	64	30	24	18	15	7.7	20	48	140	72	28	73	42	40	24
Total Dissolved Solids	500 (s)	mg/L	NA	80	126	72	110	160	200	220	100	88	71	100	68	140	140	470	150	190	200	190	160	110
Total Hardness	----	mg/L	30.4	23.5	36.3	40.9	48	66	80	100	53	31	33	45	51.48	84	85	240	72	100	96	72	61	84
Total Organic Carbon	----	mg/L	NA	ND	4.21	1.51	ND	ND	7.2	ND	ND	ND	ND	1	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Halides	----	mg/L	NA	ND	18.4	ND	17	24	27	49	14	ND	ND	ND	14.95	NA	NA	NA	NA	NA	NA	NA	NA	NA
Turbidity	----	ntu	NA	0.59	1.81	ND	3.7	0.7	2.1	60	5.2	ND	ND	ND	1.4	1.2	0.1	0.4	2.1	2.2	0.8	0.10 J	1.1	ND
Volatile Organic Compounds																								
1,1,1,2-Tetrachloroethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	200	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	----	µg/L	ND	ND	ND	5.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	7	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloropropene	---	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene	---	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichloropropane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3- Chloropropane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	600	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	----	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND

PW-20, Upgradient, Summary of Data Since March 1999

Parameters	MCL	Units	Mar. 1999	Sep. 1999	Mar. 2000	Sep. 2000	Feb. 2001	Aug. 2001	Feb. 2002	Aug. 2002	Mar. 2003	Aug. 2003	Mar. 2004	Sep. 2004	Mar. 2005	Sep. 2005	Mar. 2006	Sep. 2006	Mar. 2007	Sep. 2007	Apr. 2008	Oct. 2008	Feb. 2009	Oct. 2009
1,4-Dichlorobenzene	75	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Hexanone	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	2.6	ND	6	ND	ND	ND	ND	40	ND	2.6	ND	ND	ND	ND
Acrylonitrile	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromochloromethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.7	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	100	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorodibromomethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2 Dichloroethene	70	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromomethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichloromethane	5	µg/L	ND	ND	ND	26.2	ND	ND	ND	ND	ND	2.5	12	ND	ND	1.8	ND	ND	2.7	ND	2.7	ND	ND	ND
Ethyl Benzene	700	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl Iodide	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	100	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
tert-butyl methyl ether (MTBE)	----	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND
Tetrachloroethene	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	1,000	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2- butene	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trans 1-2 dichloroethene	100	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	5	µg/L	ND	ND	ND	0.91	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Acetate	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	2	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes	10,000	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

Red Shaded area denotes concentration greater than the primary MCL

Yellow shaded area denotes concentration greater than the secondary MCL of Guidance Levels which are non-enforceable

MCL = Maximum Contaminant Level

-- = No regulatory limit

(s) = secondary MCL

(g)= guidance level

ND= Non-Detect

NA= Not Analyzed

NAD = ???

B = Analyte was detected in method blank

D = ???

J = Estimated Value > MDL but < RL

N = ???

*Total metals, except for 2010 analyses which were for dissolved metals

** Was resampled for asbestos due to an anomalous detection

PW-20, Upgradient, Summary of Data Since March 1999

Parameters	MCL	Units	Apr. 2010	Oct. 2010	Apr. 2011	Oct. 2011	Oct. 2012	Oct. 2012 (dup)	Oct. 2013	Oct. 2013 (dup)	Oct. 2014	Oct 2014 (dup)	May 2015	May 2015 (dup)	Nov. 2015	Apr. 2016	Oct. 2016	Oct. 2018	Apr. 2019	Nov. 2019
Metals*																				
Aluminum	200 (s)	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	49.4	18.3	22.8 J	28.8	14.2 J
Antimony	6	µg/L	ND	NA	ND	ND	ND	ND	ND	ND	1.30 B	1.20 B	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	10	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	100	ND	ND	ND	ND	ND
Barium	2,000	µg/L	40.5	53	44.7	46.8	57.1	54.8	43.6	43.9	65.8	68.7	66.1	62.6	0.19	139	106	60.5 B	40.1	55
Beryllium	4	µg/L	0.031 J	NA	ND	0.23 J	ND	ND	ND	ND	ND	ND	ND	ND	13,500	ND	ND	ND	ND	ND
Calcium	---	µg/L	14,800	11,000	12,000	11900	9280	8220	6380	6370	7650	7910	10900	10700	ND	19400	13300	33900	12,400	15,100
Cadmium	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.63 B	ND	ND	0.98	ND	ND	0.36 J	ND	ND
Chromium	100	µg/L	ND	2.6 J	4.2	2 J	2.3 J	1 J	ND	ND	1.80 B	2.0 B	ND	ND	0.86	2.2	ND	0.66	ND	ND
Cobalt	----	µg/L	0.97 J	NA	0.7 J	0.57 J	1.2 J	1 J	ND	ND	5.60 B	5.70 B	ND	ND	ND	2.1	1.6	ND	ND	ND
Copper	1,300	µg/L	3.2 *	4.2 J	0.52 J	298	0.91 J	0.41 J	ND	ND	ND	ND	ND	ND	ND	ND	1.3	ND	2.4	ND
Iron	300 (s)	µg/L	55.8	230	171	69.6 J	217	69.8 J	78.2	69.1	709	889	ND	ND	11,900	38.2	1,130	33.6 J	60.5	16.9
Lead	15	µg/L	0.25 J	ND	0.24 J	5.8	0.59 J	0.28 J	4.7	4.7	1.70 B	1.90 B	ND	ND	81.3	ND	ND	1.9 J	<2.0	ND
Potassium	---	µg/L	NA	1,900	1,630	1,600	1,380	1,380	1,330	1,380	ND	ND	ND	ND	1.6	2,750	2,100	5,460	1,470	2,050
Magnesium	---	µg/L	NA	9,700	9,290	9,270	7,420	7,300	4,920	5,050	6,340	6,550	8,270	8,220	4.2	15,100	10,400	26,300	9,330	10,100
Manganese	50 (s)	µg/L	46.8	NA	30.2	24.7	53.4	52.1	37	37.1	80.5	88.5	42.3	40.6	2,330	115	108	20.7	19.6	21.5
Mercury	2	µg/L	0.18 J	0.044 J	ND	0.07 JN	ND	ND	ND	ND	0.143 B	0.147 B	0.315	0.295	1.1	0.67	0.47	ND	0.15	0.052 J
Nickel	100	µg/L	2.2 J	NA	3.4	1.7	2.6 J	1.9 J	ND	ND	4.20 B	4.20 B	ND	ND	28500	4.6	ND	1.5 J	ND	1.1 J
Selenium	50	µg/L	2.3 J	ND	1.1 J	1.2 J	1.2 J	0.89 J	ND	ND	0.710 B	2	2	ND	ND	ND	ND	3.7 JB	ND	2.9 J
Silver	100 (s)	µg/L	ND	NA	ND	0.076 J	ND	ND	ND	ND	ND	ND	ND	ND	10.7	0.84	ND	ND	ND	ND
Sodium	20,000 (g)	µg/L	NA	23,000	19,400	20,000	19,000	18,800	19,200	19,300	21,600	22,600	27,700	27,700	ND	45,300	35,000	24,300	16,000	23,000
Thallium	2	µg/L	ND	NA	ND	0.11 J	0.3 J	0.031 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	----	µg/L	ND	NA	ND	ND	NA	NA	ND	ND	ND	ND	ND	ND	4.1	ND	ND	ND	ND	ND
Zinc	5,000 (s)	µg/L	3.7 J	5.1 J	8	25.3 N	14.4 N	14.2 N	95.5	91	37.8	44.7	27.1	19.3	17	5.8	7.7	6.3 J	3	4 J
Wet Chemistry																				
Alkalinity	----	mg/L	28	31	28	31	19	19	20.6	20.2	28.6	33	23.2	23	ND	34	25	170	26	42
Ammonia	----	mg/L	ND	ND	0.064 J	0.09	0.044 J	0.047 J	ND	ND	0.137 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chemical Oxygen Demand	----	mg/L	11	15	9.5	3.43 J	15.5	14.5	ND	ND	ND	ND	ND	ND	ND	27	ND	30 J	29	ND
Chloride	250 (s)	mg/L	29	21.6 D	39.9	31 D	45 D	46 D	33.9	33	49.8	50.9	37.2	37.6	75	99	85	15	25	38
Nitrate (N)	10	mg/L	NA	NA	NA	NA	NA	NA	0.254	0.246	0.162	0.163	0.39	0.337	ND	0.69	0.6	1.3	0.72	0.36 J
Nitrate/Nitrite	10	mg/L	0.67	0.54	0.307	0.76	0.21	0.22	ND	ND	NA	NA	NA	NA	NA	NA	NA		NA	ND
pH	6.5-8.5(s)	--	5.4	5.57	5.45	4.99	4.71	5.18	5.64	5.66	5.63	5.52	5.47	5.56	NA	NA	5.64	6.41	5.91	6.24
Specific Conductivity	----	µmho/cm	320	267	256	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	340
Conductivity	---	µmho	NA	NA	NA	255	200	201	222.5	220.1	308	312	251.5	255.3	0.47	517	398	526	256	ND
Sulfate	250	mg/L	68	46.9 D	41	46	8 D	8.1 D	15.2	15.5	13.4	13.5	43.3	42.8	ND	53	30	95 M	40	44
Total Dissolved Solids	500 (s)	mg/L	180	139	161	151	94	100	110	110	113	105	161	158	ND	210	230	290	41	170
Total Hardness	----	mg/L	82	78.4	71	67.85	53.75	50.59	36.2	36.7	45.2	46.7	61.3	60.5	418	NA	76	190	69	79
Total Organic Carbon	----	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	28	NA	NA		NA	ND
Total Organic Halides	----	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	270	NA	NA		NA	ND
Turbidity	----	ntu	0.1 J	1.6	1.9	0.27 J	1.4	0	0.554	0.68	1.47	2.18	1.29	1.65	81	NA	1	ND	1.2	1
Volatile Organic Compounds																				
1,1,1,2-Tetrachloroethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	200	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	7	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloropropene	---	µg/L	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichlorobenzene	---	µg/L	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3- Chloropropane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	600	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

PW-20, Upgradient, Summary of Data Since March 1999

Parameters	MCL	Units	Apr. 2010	Oct. 2010	Apr. 2011	Oct. 2011	Oct. 2012	Oct. 2012 (dup)	Oct. 2013	Oct. 2013 (dup)	Oct. 2014	Oct 2014 (dup)	May 2015	May 2015 (dup)	Nov. 2015	Apr. 2016	Oct. 2016	Oct. 2018	Apr. 2019	Nov. 2019
1,3-Dichlorobenzene	----	µg/L	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	75	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Hexanone	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acrylonitrile	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromochloromethane	----	µg/L	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	100	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorodibromomethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2 Dichloroethene	70	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromomethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichloromethane	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Benzene	700	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl Iodide	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	100	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
tert-butyl methyl ether (MTBE)	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	1,000	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2- butene	----	µg/L	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trans 1-2 dichloroethene	100	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Acetate	----	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	2	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes	10,000	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.059 J

Notes:

Red Shaded area denotes concentration greater than the primary MCL

Yellow shaded area denotes concentration greater than the secondary MCL or Guidance Levels which are non-enforceable

MCL = Maximum Contaminant Level; Analytes detected in groundwater were compared to primary or secondary MCLs for drinking water supplies from https://www.epa.gov/ground-water-and-drinking-water/national-primary-drinking-water-regulations and https://www.epa.gov/dwstandardsregulations/ secondary-drinking-water-standards-guidance-nuisance-chemicals (USEPA, 2019)

-- = No regulatory limit

(s) = secondary MCL

(g)= guidance level

ND= Non-Detect

NA= Not Analyzed

NAD = No Available Data

B = Analyte was detected in method blank

D = Diluted Out

J = Estimated Value > MDL but < RL

N = Insufficient BOD oxygen depletion

Q = Laboratory control samples outside acceptance limits

X = Analyte exceeded calibration range.

Y = Replicate/Duplicate precision outside acceptance limits

*Total metals, except for 2010 analyses which were for dissolved metals

µg/L = microgram per liter

pCi/L = picocuries per liter

mg/L = milligram per liter

µmho/cm = umho/cm = micro mho per centimeter