AECOM

Prepared for:
Superfund Standby Program
NYSDEC
625 Broadway
Albany, New York 12233

Prepared by:
AECOM USA, Inc.
Latham, New York
March 2024

Groundwater Monitoring Report
September 2022 Sampling Event
Northeast Alloys and Metals, Utica, NY
Site No. 633045
Work Assignment No. D009803-21

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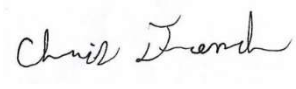

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1.0 Introduction

AECOM USA, Inc. (AECOM) conducted a groundwater sampling event on September 27-30, 2022 at the Northeast Alloys and Metals Site (the "Site") in Utica, Oneida County, New York (**Figure 1**). Monitoring activities were conducted in accordance with the approved scope of work for Work Assignment No. D009803-21 with the New York State Department of Environmental Conservation (NYSDEC). This report presents the results of the monitoring event and relevant historical data.

1.1 Site Description

The 3.9-acre Site, located at 2145 Dwyer Avenue in the City of Utica, New York (**Figure 2**), was a former metal fabrication/recycling facility. The primary contaminants of concern (COCs) are trichloroethene (TCE) and cis-1,2-dichlorothene (cis-1,2-DCE). A groundwater collection and treatment (GCT) system, installed in 2001, was in operation at the north end of the Site until December 10, 2020 as a result of an NYSDEC directive to turn the system off. The GCT system consists of a groundwater collection trench that discharges to a vault where groundwater is aerated to treat chlorinated volatile organic compounds (CVOCs). Prior to system shutdown, an average of approximately 200,000 gallons of shallow groundwater were treated monthly and discharged under permit to the Oneida County sanitary sewer system. The system remains off except for being run for short periods of time to process purged groundwater and decontamination water as necessary. Treated water volumes are submitted via reporting to the NYSDEC and Oneida County Sewer District.

1.2 Site Background

Per the Record of Decision (ROD), the facility was historically used for electronics manufacturing (1950s), as a machine shop (1960s), and as a commercial laundry (1970s) prior to operation as a metals recycling facility between 1986 and 1991. In 1989, an underground fuel oil storage tank was removed from the southwestern portion of the courtyard and the initial presence of CVOC contamination at the Site was reported. Subsequent investigations resulted in the detection of CVOCs in soil and groundwater. TCE and cis-1,2-DCE were identified as COCs, although other VOCs were reported at lower levels. Later interviews reportedly alleged that a drum of TCE had been pierced in the courtyard by a forklift and had discharged to a storm drain. The Site was added to the NYSDEC Registry of Inactive Hazardous Waste Disposal Sites as a Class 2 site (Site No. 633045) following an environmental investigation in 1994. The remedial investigation/feasibility study (RI/FS) was completed in 1997 and the ROD was issued in March 1998.

The selected remedy for the Site included: 1) installation of a groundwater collection and treatment system that discharges into the local publicly-owned treatment works (POTW), 2) installation of a soil vapor extraction (SVE) system at recovery wells RW-1 and RW-2, 3) excavation of contaminated soil in the east gate area in the vicinity of MW-9 to meet soil cleanup objectives, 4) implementation of restrictions on groundwater use until groundwater standards are attained, and 5) implementation of a site-wide operation, monitoring, and maintenance program to ensure that the remedial program is effective and that the remedial action goals are obtained.

Operation of the GCT system commenced in March 2001. An operation, monitoring, and maintenance (OM&M) program is in place for the Site. AECOM has performed groundwater sampling events since May 2005 to monitor the effectiveness of the remedy selected in the ROD.

According to the OM&M Manual (October 2001, prepared by URS Corporation), the results of the pre-design investigation (PDI) led to a ROD modification with respect to the proposed SVE system. Wells RW-1, RW-2 and RW-3 were installed between 1997 and 1999. The PDI results reportedly indicated that there was insufficient vadose zone contamination in the vicinity of the recovery wells to successfully operate an SVE system.

In 2008, AECOM completed additional investigations at the Site to evaluate potential data gaps with respect to building areas that were previously inaccessible but had been demolished by new owners. The investigation identified soil impacts on-site and beneath the former building slabs that were significantly higher than soil cleanup objectives. Additional overburden and bedrock monitoring wells were installed. Soil vapor monitoring was completed, which led to installation of a sub-slab depressurization system at the site building.

In 2011, AECOM evaluated the cost and feasibility of potential supplemental remedial alternatives, including excavation and in-situ chemical oxidation (ISCO). NYSDEC elected to pursue ISCO as a potential alternative to remediate the persistent contaminant mass. In July 2013, four new monitoring wells (MW-15, MW-16, MW-17, and MW-18) were installed in the source area to better gauge the success of the technology. These wells, along with several others, were sampled to represent baseline water quality prior to injection. Baseline results at the new wells exhibited the highest reported concentrations of VOCs to date. These results supported the conclusion that despite the low concentrations in groundwater collected in the GCT system, contaminant source material which is not attenuating remains on-site.

In early 2014, two consecutive full-scale rounds of ISCO injection of sodium permanganate were executed at the Site. Chemical was injected at depths of 2 to 12 feet below ground surface (bgs) at an average rate of 3 gallons per minute. Overall, the low permeability and heterogeneity of site soils restricted delivery of the chemical and limited contact in some zones. Four post-injection groundwater monitoring events and one soil sampling event occurred between August 2014 and September 2015. Groundwater samples were collected using passive diffusion bags (PDBs). The results of the monitoring, which were documented in a Remedial Action Progress Report (March 2016), indicated that ISCO injections failed to reduce VOC concentrations in soil, but were successful at reducing VOC concentrations in groundwater. Laboratory results indicated that rebound did eventually occur in some wells. The greatest overall reductions occurred in the new source area wells; however, contaminant concentrations remain significantly elevated above groundwater standards.

2.0 Sampling

2.1 Sample Locations and Field Observations

Groundwater monitoring, which includes measuring and recording groundwater elevation measurements and water quality parameters, has been conducted on a periodic basis for on-site wells (**Figure 2**) since 2005, with newer wells added to the sampling program as they have been installed. Wells were visually inspected and the overall conditions of the wells were acceptable. It is recommended that minor modifications (e.g., lock and J-Plug replacement) be completed during routine OM&M site visits when necessary.

Prior to sampling each well, depth-to-groundwater and depth-to-bottom measurements were taken using a water level indicator. The indicator was decontaminated with a Liquinox® and spring water rinse and sprayed with distilled water before each use. Depth-to-groundwater measurements were utilized to calculate groundwater elevations (**Table 1**) and to generate a groundwater contour map for the Site (**Figure 3**). **Table 1** also contains construction details for the on-site wells.

2.2 Groundwater Sampling Methodology

Wells were purged with a peristaltic pump, dedicated high-density polyethylene (HDPE) tubing and dedicated silicone tubing using low-flow techniques until the field parameters stabilized, or with a dedicated, per- and polyfluorinated alkyl substance (PFAS)-free polyethylene bailer. Water quality field parameters including temperature, conductivity, specific conductivity, dissolved oxygen (DO), oxidation-reduction potential (ORP), pH, turbidity, color, and odor were measured and recorded on the Monitoring Well Purging/Sampling Forms (**Appendix A**).

All purge water was processed through the GCT system.

All twenty wells sampled for VOCs were also sampled for emerging contaminants. During the previous sampling event in December 2018, only five wells (MW-1, MW-5, MW-12, MW-15, and MW-18) were sampled for 1,4-dioxane and PFAS. The field sampling team followed NYSDEC and AECOM protocols for the collection of samples in order to prevent cross-contamination by PFAS-containing materials during sampling.

All VOC samples were collected in laboratory-supplied bottles (40 milliliter vials preserved with hydrochloric acid) and shipped to Pace/Con-Test Analytical Laboratory in East Longmeadow, Massachusetts for analysis of VOCs via United States Environmental Protection Agency (US EPA) Method 624.1. Additional samples were submitted to the laboratory for 1,4-dioxane analysis via US EPA Method 8270D SIM and for analysis of the 21-analyte PFAS list via US EPA Method 537 (modified). All samples were packed in coolers with ice and shipped under standard chain-of-custody procedures.

3.0 Summary of Analytical Results

3.1 Volatile Organic Compounds

A cumulative summary of the analytical VOC data from the groundwater sampling events conducted between May 2005 and September 2022 is presented as **Table 2**. Results are compared to the New York State Ambient Water Quality Standards (AWQS) and Guidance Values (GV) for groundwater. Analytes detected and reported above the applicable AWQS or GV are presented in bold font in a shaded cell. Copies of the laboratory reports are included in **Appendix B**.

Table 2 was utilized to detect any notable trends in concentrations of VOCs in the on-site monitoring wells. Previous investigations indicated that the primary COCs for this Site are TCE and cis-1,2-DCE, although other VOCs are present at the Site. **Figure 4** depicts the VOC analytical results from the most recent sampling event.

VOC contaminant concentrations reported for the September 2022 sampling event indicate that:

- Ten of the twenty monitoring wells sampled were reported to contain at least one detectable concentration of a VOC: MW-3, MW-5, MW-6, MW-9, MW-11, MW-14, MW-15, MW-16, MW-17 and MW-18.

- Laboratory results from eight of the wells (MW-5, MW-6, MW-9, MW-14, MW-15, MW-16, MW-17 and MW-18) indicated exceedances of the AWQS and/or GV.

- VOCs were not detected in the groundwater samples collected from BR-1, BR-2, BR-3, MW-1, MW-4, MW-7R, MW-8, MW-10, MW-12, or MW-13.

VOCs have never been detected in BR-1, BR-3 or MW-1 since their installation, according to all available data (i.e., May 2005 to present).

VOCs had only previously been detected in MW-3 during the September 2017 sampling event (a detection of acetone). During the September 2022 sampling event, three VOCs were detected in MW-3, none of which were above the AWQS or GV (chlorobenzene, 1,2-dichlorobenzene, and toluene).

In December 2018, BR-2 and MW-4 contained their first VOC detections since being installed in 2008 and 2005, respectively, although there were no exceedances in either well. Both wells contained 1.5 micrograms per liter (µg/L) of total VOCs, consisting of cis-1,2-DCE and TCE. In June 2021 and September 2022, no VOC detections were observed at either BR-2 or MW-4.

MW-5 contained 113 µg/L of total VOCs during the September 2022 sampling event, with three analytes (1,1-dichloroethane [1,1-DCA], cis-1,2-DCE, and TCE exceeding the AWQS/GV. In June 2021, the groundwater sample contained 74.7 µg/L of total VOCs with three analytes (1,1-DCA, cis-1,2-DCE, and vinyl chloride) exceeding the AWQS/GV.

Groundwater collected from MW-6 during the September 2022 sampling event contained 92.5 µg/L of total VOCs, with two analytes (1,1-DCA and cis-1,2-DCE) exceeding the AWQS/GV. Sampling during

the prior event in June 2021 reported 262 µg/L of total VOCs, with four analytes (1,1-DCA, cis-1,2-DCE, 1,1,1-TCA, and vinyl chloride) exceeding the AWQS/GV.

Two analytes (cis-1,2-DCE and TCE) exceeded their AWQS/GV in the sample collected from MW-9, which contained 25.2 µg/L of total VOCs. The prior event reported 25.4 µg/L of total VOCs, with the same two analytes exceeding the AWQS/GV.

MW-11 contained trace concentrations of TCE (0.41 µg/L). MW-12 and MW-13 contained no concentrations of VOCs. These wells have generally contained no or low-level detections in recent years.

Groundwater collected from MW-14 during the September 2022 sampling event contained 344 µg/L of total VOCs, with seven analytes (benzene, chlorobenzene, 1,2-dichlorobenzene, ethylbenzene, toluene, m&p-xylenes, and o-xylene) exceeding their respective AWQS/GVs. In June 2021, the groundwater sample contained 237 µg/L of total VOCs, with five analytes (benzene, chlorobenzene, ethylbenzene, toluene, and total xylenes) exceeding the AWQS/GV. Note that these contaminants are distinct from the cis-1,2-DCE, TCE and related CVOCs that are the contaminants of concern for most of the Site.

MW-15 contained 1,660 µg/L of total VOCs during the September 2022 sampling event, with four analytes (cis-1,2-DCE, 1,1,1-TCA, TCE, and vinyl chloride) exceeding the AWQS/GV. In June 2021, the groundwater sample contained 1,990 µg/L of total VOCs, with six analytes (1,1-DCA, 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, TCE, and vinyl chloride) exceeding the AWQS/GV.

Groundwater collected from MW-16 during the September 2022 sampling event contained 5,560 µg/L of total VOCs, with ten analytes (benzene, 1,1-DCA, 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, toluene, TCE, vinyl chloride, m&p-xylenes, and o-xylene) exceeding the AWQS/GV. In June 2021, the groundwater sample contained 4,780 µg/L of total VOCs, with seven analytes (1,1-DCA, 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, 1,1,1-TCA, TCE, and vinyl chloride) exceeding the AWQS/GV.

MW-17 contained 153,000 µg/L of total VOCs during the September 2022 sampling event, with four analytes (1,1-DCE, cis-1,2-DCE, TCE, and vinyl chloride) exceeding the AWQS/GV. In June 2021, the groundwater sample contained 146,000 µg/L of total VOCs, with five analytes (1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, TCE, and vinyl chloride) exceeding the AWQS/GV.

Groundwater collected from MW-18 during the September 2022 sampling event contained 291 µg/L of total VOCs, with two analytes (cis-1,2-DCE and vinyl chloride) exceeding the AWQS/GV. In June 2021, the groundwater sample contained 285 µg/L of total VOCs, with the same two analytes exceeding the AWQS/GV.

3.2 Emerging Contaminants

Table 3 presents the laboratory results for 1,4-dioxane and PFAS compounds. Results are compared to the AWQ GVs established by the NYSDEC, where applicable. Reported concentrations are shown in bold font, and exceedances of the AWQ GVs are shaded. **Figure 5** displays the analytical results for emerging contaminants in the wells sampled. The Category A laboratory reports and data usability summary reports (DUSRs) for the emerging contaminants data are provided in **Appendix B**.

Of the twenty wells evaluated for 1,4-dioxane, five wells (MW-5, MW-6, MW-15, MW-16, and MW-17) reported a concentration greater than or equal to the 0.35 µg/L AWQ GV, with 5.4 µg/L in MW-5, 9.3 µg/L in MW-6, 2.8 µg/L in MW-15, 1.9 µg/L in MW-16, and 0.49 µg/L in MW-17. Six wells contained

1,4-dioxane detected at concentrations below the AWQ GV: MW-3, MW-7R, MW-10, MW-12, MW-14, and MW-18.

PFAS concentrations reported for the September 2022 sampling event indicate that:

- Seventeen of the twenty monitoring wells sampled contained at least one detectable PFAS.
- Laboratory results from four of the wells (MW-5, MW-6, MW-17, and MW-18) indicated exceedances of the AWQ GVs for Perfluorooctanoic acid (PFOA), which is 6.7 nanograms per liter (ng/L), and/or Perfluorooctanesulfonic acid (PFOS), which is 2.7 ng/L.
- None of the individual PFAS detections were significantly elevated (greater than 40 ng/L).

Of the twenty wells sampled for PFAS in September 2022:

- BR-1, BR-3, and MW-8 did not contain PFAS at concentrations exceeding the reporting limits. During the June 2021 sampling event eleven analytes were detected in BR-1, including PFOA (3.2 ng/L) and PFOS (0.60 J ng/L), while BR-3 contained a detectable concentration of one analyte (6:2 Fluorotelomer sulfonic acid) and MW-8 contained eleven analytes including PFOA (0.58 J ng/L) and PFOS (0.97 J ng/L).
- Well BR-2 contained a detectable concentration of only one analyte (Perfluorobutanoic acid [PFBA]), while in June 2021 six analytes including PFOS (at a concentration of 0.41 J ng/L) were reported. Similarly, MW-1 contained a low concentration of one analyte (Perfluorobutanesulfonic acid [PFBS]), while in June 2021 two PFAS (PFBS and PFBA) were detected in the well.
- Monitoring well MW-3 contained four analytes, including PFOA at a concentration of 1.8 J ng/L. This is an increase from the June 2021 event in which PFOA was not detected in MW-3, but five compounds including PFOS (0.40 J ng/L) were reported at low levels.
- The sample collected from MW-4 exhibited both PFOA (0.81 J ng/L) and PFOS (1.6 J ng/L). In June 2021, MW-4 contained 2.8 ng/L of PFOA, 0.77 J ng/L of PFOS, and seven other PFAS analytes.
- MW-5 contained PFOS above the NYSDEC AWQ GV with a concentration of 5.8 ng/L, while PFOA was detected at a concentration of 5.0 ng/L. Seven other PFAS analytes were also reported. This was an increase relative to the June 2021 event, in which seven analytes including PFOA (2.1 ng/L) and PFOS (0.50 J ng/L) were detected in the well.
- Well MW-6 contained PFOS slightly above the NYSDEC AWQ GV, with a concentration of 2.8 ng/L. Eight other PFAS analytes were detected, including PFOA (6.2 ng/L), which was slightly below the AWQ GV for the compound. This was an increase in comparison to the June 2021 sampling event, in which groundwater collected from MW-6 contained eight analytes, including PFOA (5.5 ng/L) and PFOS (1.3 J ng/L).
- The sample collected from monitoring well MW-7R consisted of detectable concentrations of five PFAS analytes, including PFOA (1.0 J ng/L) and PFOS (2.3 ng/L), which is slightly below the AWQ GV for the compound. This was an increase relative to the June 2021 sampling event in which MW-7R contained five analytes, four of which were the same as in September 2022. A PFOA concentration of 0.55 J ng/L was found in the June 2021 MW-7R sample, while PFOS was reported at a concentration of 1.0 J ng/L.

- Monitoring well MW-9 contained four analytes, including PFOA at a concentration of 2.5 ng/L. This is slightly higher than the results of the June 2021 sampling event in which six analytes were detected, including PFOA (1.0 J ng/L) and PFOS (0.58 J ng/L).

- The sample collected from MW-10 contained detectable concentrations of five analytes, including PFOA (1.4 J ng/L). This is similar to the June 2021 event, where the sample collected from MW-10 was comprised of 1.3 J ng/L of PFOA, 0.87 J ng/L of PFOS, and seven other PFAS analytes.

- Well MW-11 contained detections of PFOA (0.72 J ng/L) and two other PFAS analytes. In June 2021, the MW-11 groundwater sample contained 0.30 J ng/L of PFOS as well as PFBA.

- The sample collected from monitoring well MW-12 consisted of detectable concentrations of six PFAS analytes, including PFOA (2.8 J ng/L) and PFOS (1.5 J ng/L), both of which were below their respective AWQ GVs. These results were similar to the June 2021 sampling event in which MW-12 contained concentrations of PFOA and PFOS of 2.2 ng/L and 1.1 J ng/L, respectively. Seven additional analytes, four of which were the same as in September 2022, were also detected in June 2021.

- Well MW-13 contained detections of PFOA (1.8 J ng/L) and four other PFAS analytes. In June 2021, the MW-13 groundwater sample contained 1.9 J ng/L of PFOA, 1.7 J ng/L of PFOS, and four other PFAS analytes.

- The sample collected from monitoring well MW-14 contained detections of PFOA (6.4 ng/L), Perfluoropentanoic acid (PFPeA) (38 ng/L), and four other PFAS analytes. In June 2021, the MW-14 groundwater sample contained PFOA (4.6 ng/L) and PFOS (0.67 J ng/L), as well as five other PFAS analytes. PFPeA was non-detect in the sample.

- Monitoring well MW-15 contained detectable concentrations of five analytes, including PFOA (1.6 J ng/L). This is similar to the June 2021 event, where the sample collected from MW-15 was comprised of 1.1 J ng/L of PFOA, 0.31 J ng/L of PFOS, and five other PFAS analytes.

- MW-16 contained detectable concentrations of six analytes, including PFOA (1.6 J ng/L) and PFOS (1.5 J ng/L). These results were similar to the June 2021 sampling event, in which PFOA and PFOS were found at concentrations of 1.3 J ng/L and 1.1 J ng/L, respectively, along with five other PFAS analytes.

- Well MW-17 contained PFOA and PFOS above their NYSDEC AWQ GVs, with concentrations of 7.5 ng/L and 31 ng/L, respectively. Seven other PFAS analytes were also detected. PFOA and PFOS concentrations increased in comparison to the June 2021 sampling event, in which groundwater collected from MW-17 contained PFOA (5.5 ng/L), PFOS (20 ng/L), and eight other PFAS analytes. PFOS was reported above the AWQ GV of 2.7 ng/L in the June 2021 sample.

- The groundwater sample collected from monitoring well MW-18 contained PFOS above the NYSDEC AWQ GV, with a concentration of 12 ng/L. Seven other PFAS analytes were detected, including PFOA (5.1 ng/L), which was below the AWQ GV for the compound. The PFOA and PFOS concentrations were similar to those reported during the June 2021 sampling event, when MW-18 contained ten analytes, including PFOA (5.2 ng/L, below the AWQ GV) and PFOS (14 ng/L, above the AWQ GV).

4.0 Conclusions

The following conclusions are based on the September 2022 groundwater monitoring event and an understanding of overall Site conditions:

- Total dissolved-phase VOC concentrations decreased slightly in four Site monitoring wells when compared to the June 2021 sampling event: MW-6, MW-9, MW-11, and MW-15. On the other hand, concentrations in six wells (MW-3, MW-5, MW-14, MW-16, MW-17, and MW-18) increased between 2021 and 2022. VOCs were not detected in the groundwater samples collected from ten wells (BR-1, BR-2, BR-3, MW-1, MW-4, MW-7R, MW-8, MW-10, MW-12, and MW-13) during either event.

- In December 2018, VOCs were detected for the first time in monitoring wells BR-2 and MW-4; however, both contained concentrations below the AWQS/GV for the detected compounds. During the June 2021 and September 2022 events, no VOCs were detected in these two wells.

- Groundwater samples from the newest monitoring wells (MW-15 through MW-18), installed in the source area in 2013 in advance of the injection program, contained the highest reported VOC concentrations at the Site. One of the wells (MW-15) contained reduced concentrations in September 2022 when compared to the 2021 sampling event. Total VOC concentrations were an improvement over pre-injection results in all of these wells except for MW-16; however, groundwater quality remains significantly impacted in these two portions of the Site.

- MW-14 exhibited the highest concentration of VOCs (344 µg/L) among the historical monitoring wells installed during the RI, while MW-17 contained the highest concentration of VOCs (153,000 µg/L) among the newer wells. Concentrations of VOCs at MW-17 remain lower than pre-injection levels; however groundwater in MW-14 has, after an initial drop immediately following injections, slowly climbed to or surpassed pre-injection levels.

- In September 2022, all wells that were sampled for VOCs were also sampled for emerging contaminants, specifically 1,4-dioxane and PFAS. In the historical wells, MW-6 contained the highest 1,4-dioxane concentration (9.3 µg/L), while MW-14 had the highest concentration of total PFAS at 65.6 ng/L, including 6.4 ng/L of PFOA. Within the newer monitoring wells, MW-15 exhibited the highest 1,4-dioxane concentration with 2.8 µg/L, while MW-17 contained the highest total PFAS concentration (63.7 ng/L), including 7.5 ng/L of PFOA and 31 ng/L of PFOS, both of which are above their NYSDEC AWQ GVs.

- With limited data points, it can be difficult to pinpoint why certain wells show improvement between sampling events while others do not. Increases could be related to rebounding after injection substrates become ineffective, mobilization and redistribution of contaminant mass as a result of the injection process, differences in hydrogeologic and weather conditions between sampling events, etc. Wells installed in 2013 prior to the 2014 injection program were intentionally placed in zones of source material and contain groundwater that passes through highly impacted heterogeneous soil; therefore, some variability can be expected from event to event. Additionally, to some degree, variability in data sets from significantly impacted wells could be affected by differences in sample dilution methods.

- Soil and groundwater impacts persist at the Site at high levels, which demonstrates an overall lack of natural attenuation. Based on the fairly low concentrations of VOCs reported in the GCT system influent between installation and system shutdown in 2020, this contaminant mass is not readily migrating. The mass appears to be confined to the source areas, aided by the low permeability of Site soils and the presence of overlying impervious surfaces.

5.0 Planned Activities and Recommendations

Groundwater monitoring should continue on a five-quarter basis (i.e., every 15 months) in order to document the concentrations of VOCs and emerging contaminants in the groundwater at the Site.

Minor repairs or modifications to the monitoring well network will be addressed during routine OM&M site visits as necessary.

A membrane interface probe investigation is planned for spring 2024 as an initial step toward additional remedial action at the Site and a potential ROD Amendment.

Tables

Table 1
Monitoring Well Details and Groundwater Elevations
Northeast Alloys and Metals Site
Site No. 633045
Utica, New York

Monitoring Well ID	Coordinates		Well Details				September 27, 2022	
	NAD83 Northing	NAD83 Easting	Well Diameter & Construction	Installation Date	Top of Casing Elevation	MPE (ft. amsl)	Depth-to-Groundwater (ft. below MPE)	Groundwater Elevation (ft. amsl)
BR-1	1129751.5343	1193769.2041	2" PVC	9/25/2008	434.27	433.98	13.2	420.78
BR-2	1129685.1948	1193884.0210	2" PVC	9/26/2008	432.20	432.05	9.35	422.70
BR-3	1129457.9890	1193502.1229	2" PVC	9/26/2008	439.05	438.74	8.09	430.65
MW-1	1129398.4727	1193649.9991	2" PVC	8/22/1989	438.84	438.75	9.01	429.74
MW-3	1129627.5648	1193796.1151	2" PVC	8/22/1989	433.94	433.85	9.8	424.05
MW-4	1129493.7668	1193811.7344	2" PVC	8/23/1989	430.75	430.49	1.85	428.64
MW-5	1129516.5034	1193697.7638	2" PVC	1/19/1993	432.11	431.54	3.02	428.52
MW-6	1129500.0868	1193720.5677	2" PVC	1/19/1993	432.08	431.96	3.2	428.76
MW-7R	1129455.3624	1193505.7054	2" PVC	6/12/2013	439.25	438.90	10.4	428.50
MW-8	1129279.5278	1193791.3563	2" PVC	2/12/1997	435.38	435.33	6.9	428.43
MW-9	1129465.2940	1193982.8086	2" PVC	8/7/1997	432.86	432.34	8.15	424.19
MW-10	1129513.3190	1194012.1169	2" PVC	8/9/1997	431.34	430.46	NM	NA
MW-11	1129555.0950	1193787.0401	2" PVC	4/5/1999	433.78	433.60	6.35	427.25
MW-12	1129747.7725	1193742.2722	2" PVC	4/6/1999	433.71	432.97	11.5	421.47
MW-13	1129665.1895	1193790.4688	2" PVC	8/26/2008	432.60	432.44	8.08	424.36
MW-14	1129671.4939	1193738.0248	2" PVC	8/27/2008	432.87	432.70	9.35	423.35
MW-15	1129597.7784	1193742.3768	2" PVC	6/13/2013	434.06	433.80	7.4	426.40
MW-16	1129617.6417	1193737.8144	2" PVC	6/11/2013	434.90	434.60	6.74	427.86
MW-17	1129467.4712	1193667.7635	2" PVC	6/13/2013	435.16	434.92	6.10	428.82
MW-18	1129486.0719	1193689.0916	2" PVC	6/12/2013	432.50	432.26	3.30	428.96
TR 1	1129632.6114	1193802.5344	8" PVC	1/1/2000	433.85	433.81	NM	NA
TR 2	1129610.0118	1193813.7348	8" PVC	1/1/2000	434.13	434.00	NM	NA
TR 3	1129563.0223	1193837.0730	8" PVC	1/1/2000	434.42	433.60	NM	NA

Notes:
BR - Bedrock Well
MW - Monitoring Well
TR - Trench Well
NAD83 - North American Datum of 1983
MPE - Measuring point elevation; measured at the top of the polyvinyl chloride
ft. - feet
amsl - above mean sea level
NM - Not measured
NA - Not available

Table 2
Groundwater Analytical Results -
Volatile Organic Compounds
Northeast Alloys and Metals Site
Site No. 633045
Utica, New York

Sample ID		BR-1									BR-2								BR-3								MW-1								
Sampling Date		Oct-08	Oct-11	Jul-13	Sep-15	Sep-17	Dec-18	Jun-21	Sep-22	Sep-22	Oct-08	Oct-11	Jul-13	Sep-15	Sep-17	Dec-18	Jun-21	Sep-22	Oct-08	Oct-11	Jul-13	Sep-15	Sep-17	Dec-18	Jun-21	Sep-22	May-05	Oct-05	Oct-11	Jul-13	Sep-15	Sep-17	Dec-18	Jun-21	Sep-22
Analyte (µg/L)	**AWQS+GV***									Dup																								
Acetone	50 (GV)	U	NR	NR	NR	U	NR	NR	NR	NR	U	NR	NR	NR	U	NR	NR	NR	U	NR	NR	NR	U	NR	NR	NR	U	U	NR	NR	NR	U	NR	NR	NR
Acrolein	5	NR	U	U	U	NR	NR	U	NR	NR	NR	U	U	U	NR	NR	U	NR	NR	U	U	U	NR	NR	U	NR	NR	NR	U	U	U	NR	NR	U	NR
Acrylonitrile	5	NR	U	U	U	NR	NR	U	NR	NR	NR	U	U	U	NR	NR	U	NR	NR	U	U	U	NR	NR	U	NR	NR	NR	U	U	U	NR	NR	U	NR
Benzene	1	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Bromochloromethane	5	U	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Bromodichloromethane	50	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	NR	NR	U	U	U	U	U	U	U
Bromoform	50	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	NR	NR	U	U	U	U	U	U	U
Bromomethane	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	NR	NR	U	U	U	U	U	U	U
2-Butanone	NA	U	NR	NR	NR	U	NR	NR	NR	NR	U	NR	NR	NR	U	NR	NR	NR	U	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR
tert-Butyl Alcohol	NA	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Carbon disulfide	60 (GV)	U	NR	NR	NR	U	NR	NR	NR	NR	U	NR	NR	NR	U	NR	NR	NR	U	NR	NR	NR	U	NR	NR	NR	U	U	NR	NR	NR	U	NR	NR	NR
Carbon tetrachloride	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Chlorobenzene	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	NR	NR	U	U	U	U	U	U	U
Chloroethane	5	U	U	U	U	U	U	NR	U	U	U	U	U	U	U	U	NR	U	U	U	U	U	U	NR	U	U	U	U	U	U	U	U	NR	U
2-Chloroethyl vinyl ether	NA	NR	U	U	U	NR	NR	U	NR	NR	NR	U	U	U	NR	NR	U	NR	NR	U	U	U	NR	NR	U	NR	NR	NR	U	U	U	NR	NR	U	NR
Chloroform	7	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	NR	NR	U	U	U	U	U	U	U
Chloromethane	NA	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	NR	NR	U	U	U	U	U	U	U
Cyclohexane	NA	U	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Dibromochloromethane	50	U	U	U	U	U	U	U	NR	NR	U	U	U	U	U	U	U	NR	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	NR
1,2-Dibromo-3-chloropropane	0.04	U	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-Dibromoethane	5	U	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-Dichlorobenzene	3	U	U	U	U	U	U	NR	U	U	U	U	U	U	U	U	NR	U	U	U	U	U	U	NR	U	NR	NR	NR	U	U	U	U	NR	U
1,3-Dichlorobenzene	3	U	U	U	U	U	U	NR	U	U	U	U	U	U	U	U	NR	U	U	U	U	U	U	NR	U	NR	NR	NR	U	U	U	U	NR	U
1,4-Dichlorobenzene	3	U	U	U	U	U	U	NR	U	U	U	U	U	U	U	U	NR	U	U	U	U	U	U	NR	U	NR	NR	NR	U	U	U	U	NR	U
Dichlorodifluoromethane	5	U	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,1-Dichloroethane	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
1,2-Dichloroethane	0.6	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
1,1-Dichloroethene	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
cis-1,2-Dichloroethene	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	**0.37 J**	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
trans-1,2-Dichloroethene	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
1,2-Dichloropropane	1	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	NR	NR	U	U	U	U	U	U	U
cis-1,3-Dichloropropene	0.4	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	NR	NR	U	U	U	U	U	U	U
trans-1,3-Dichloropropene	0.4	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	NR	NR	U	U	U	U	U	U	U
Diethyl Ether	NA	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,4-Dioxane	NA	U	NR	NR	NR	NR	NR	U	U	U	U	NR	NR	NR	NR	NR	U	U	U	NR	NR	NR	NR	NR	U	U	NR	NR	NR	NR	NR	NR	NR	U	U
Ethylbenzene	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	NR	NR	U	U	U	U	U	U	U
Ethyl Chloride	NA	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	U	NR
2-Hexanone	50	U	NR	NR	NR	U	NR	NR	NR	NR	U	NR	NR	NR	U	NR	NR	NR	U	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR
Isopropylbenzene	5	U	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Methyl Acetate	NA	U	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Methylcyclohexane	NA	U	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Methylene chloride	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
4-Methyl-2-pentanone	NA	U	NR	NR	NR	U	NR	NR	NR	NR	U	NR	NR	NR	U	NR	NR	NR	U	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR
Methyl tert-butyl Ether	10	U	NR	NR	NR	U	U	NR	U	U	U	NR	NR	NR	U	U	NR	U	U	NR	NR	NR	U	U	NR	U	NR	NR	NR	NR	NR	U	U	NR	U
Styrene	5	U	NR	NR	NR	U	NR	NR	NR	NR	U	NR	NR	NR	U	NR	NR	NR	U	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR
1,1,2,2-Tetrachloroethane	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	NR	NR	U	U	U	U	U	U	U
Tetrachloroethene	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	NR	NR	U	U	U	U	U	U	U
Toluene	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
1,2,3-Trichlorobenzene	5	U	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2,4-Trichlorobenzene	5	U	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,1,1-Trichloroethane	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
1,1,2-Trichloroethane	1	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Trichloroethene	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	**1.1**	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Trichlorofluoromethane	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	NR	NR	U	U	U	U	NR	U	
1,1,2-Trichlorotrifluoroethane	5	U	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Vinyl chloride	2	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
m&p-Xylenes	10	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	NR	NR	U	U	U	U	U	U	U
o-Xylene	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	NR	NR	U	U	U	U	U	U	U
Total VOCs:		0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Notes:
All data presented in micrograms per liter (µg/L).
Volatile Organic Compounds (VOCs) analysis by EPA Method 624.
AWQS - New York State Ambient Water Quality Standards (TOGs 1.1.1); GV - guidance value.
U - Analyte included in the analysis, but not detected at or above the Method Detection Limit (MDL).
J - Detected above the MDL but below the Reporting Limit (RL); therefore, result is an estimated concentration.
D - Data reported from a dilution.
NA - No standard or guidance value exists for the analyte.
NR - Not reported.
BOLD font indicates compound concentrations detected at or above the detection limit.
BOLD font in shaded cell indicates exceedances of AWQS or GV.
Columns separated with a double line indicate pre- and post-sodium injection sampling events.

Table 2
Groundwater Analytical Results -
Volatile Organic Compounds
Northeast Alloys and Metals Site
Site No. 633045
Utica, New York

Sample ID		MW-3											MW-4									MW-5												
Sampling Date		May-05	Oct-05	Aug-07	Oct-08	Oct-11	Jul-13	Sep-15	Sep-17	Dec-18	Jun-21	Sep-22	May-05	Oct-05	Aug-07	Oct-11	Jul-13	Sep-15	Dec-18	Jun-21	Sep-22	May-05	Oct-05	Aug-07	Oct-08	Oct-11	Jul-13	Aug-14	Mar-15	Jun-15	Sep-15	Sep-17	Dec-18	Jun-21	Sep-22
Analyte (µg/L)	AWQS+GV*																																	
Acetone	50 (GV)	**5.1 J**	**68**	U	U	NR	NR	NR	**17.8**	NR	NR	NR	U	U	U	NR	NR	NR	NR	NR	NR	U	U	U	U	NR	NR	NR	NR	NR	NR	U	NR	NR	NR
Acrolein	5	NR	NR	NR	NR	U	U	U	NR	NR	U	NR	NR	NR	NR	U	U	U	NR	U	NR	NR	NR	NR	NR	U	U	U	U	U	U	U	NR	NR	U	NR
Acrylonitrile	5	NR	NR	NR	NR	U	U	U	NR	NR	U	NR	NR	NR	NR	U	U	U	NR	U	NR	NR	NR	NR	U	U	U	U	U	U	U	U	NR	NR	U	NR
Benzene	1	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Bromochloromethane	5	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Bromodichloromethane	50	NR	NR	NR	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	U	U
Bromoform	50	NR	NR	NR	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	U	U
Bromomethane	5	NR	NR	NR	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	U	U
2-Butanone	NA	NR	NR	NR	U	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR
tert-Butyl Alcohol	NA	U	U	U	NR	NR	NR	NR	NR	NR	NR	NR	U	U	U	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Carbon disulfide	60 (GV)	U	U	U	U	NR	NR	NR	U	NR	NR	NR	U	U	U	NR	NR	NR	NR	NR	NR	U	U	U	U	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR
Carbon tetrachloride	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Chlorobenzene	5	NR	NR	NR	U	U	U	U	U	U	U	**0.200 J**	NR	NR	NR	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	U	U
Chloroethane	5	U	U	U	U	U	U	U	U	U	NR	U	U	U	U	U	U	U	U	NR	U	U	U	U	U	U	U	U	U	U	U	U	U	U	NR	U
2-Chloroethyl vinyl ether	NA	NR	NR	NR	NR	U	U	U	NR	NR	U	NR	NR	NR	NR	U	U	U	NR	U	NR	NR	NR	NR	NR	U	U	U	U	U	U	U	NR	NR	U	NR
Chloroform	7	NR	NR	NR	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	U	U
Chloromethane	NA	NR	NR	NR	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	U	U
Cyclohexane	NA	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Dibromochloromethane	50	NR	NR	NR	U	U	U	U	U	U	U	NR	NR	NR	NR	U	U	U	U	U	NR	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	U	U	NR
1,2-Dibromo-3-chloropropane	0.04	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-Dibromoethane	5	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-Dichlorobenzene	3	NR	NR	NR	U	U	U	U	U	U	NR	**0.280 J**	NR	NR	NR	U	U	U	U	NR	U	NR	NR	NR	U	U	U	U	U	U	U	U	U	NR	U
1,3-Dichlorobenzene	3	NR	NR	NR	U	U	U	U	U	U	NR	U	NR	NR	NR	U	U	U	U	NR	U	NR	NR	NR	U	U	U	U	U	U	U	U	U	NR	U
1,4-Dichlorobenzene	3	NR	NR	NR	U	U	U	U	U	U	NR	U	NR	NR	NR	U	U	U	U	NR	U	NR	NR	NR	U	U	U	U	U	U	U	U	U	NR	U
Dichlorodifluoromethane	5	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,1-Dichloroethane	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	**8.3**	**1 J**	U	**1.7 J**	**4.7 JD**	**17 JD**	**12 JD**	**18 JD**	**2.5 J**	**7.4 D**	**19**	**8.6**	**24.4**
1,2-Dichloroethane	0.6	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
1,1-Dichloroethene	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	**0.59**	**0.34 J**	**0.990 J**
cis-1,2-Dichloroethene	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	**0.29 J**	U	U	**5.5**	**44**	**5**	**11**	**10**	U	**510 D**	**240 D**	**410 D**	**41**	**101 D**	**60**	**53**	**60.7**
trans-1,2-Dichloroethene	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	**0.42 J**	**0.52 J**	**0.500 J**
1,2-Dichloropropane	1	NR	NR	NR	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	U	U
cis-1,3-Dichloropropene	0.4	NR	NR	NR	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	U	U
trans-1,3-Dichloropropene	0.4	NR	NR	NR	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	U	U
Diethyl Ether	NA	U	U	U	NR	NR	NR	NR	NR	NR	NR	NR	U	U	U	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,4-Dioxane	NA	NR	NR	NR	U	NR	NR	NR	NR	NR	U	**0.12 J**	NR	NR	NR	NR	NR	NR	NR	U	U	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	**1.1**	**5.4**
Ethylbenzene	5	NR	NR	NR	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	U	U
Ethyl Chloride	NA	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	U	U	U	U	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	U	NR
2-Hexanone	50	NR	NR	NR	U	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	U	NR	NR	NR
Isopropylbenzene	5	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Methyl Acetate	NA	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Methylcyclohexane	NA	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Methylene chloride	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
4-Methyl-2-pentanone	NA	NR	NR	NR	U	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR
Methyl tert-butyl Ether	10	NR	NR	NR	U	NR	NR	NR	U	U	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	U	U	NR	U
Styrene	5	NR	NR	NR	U	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR
1,1,2,2-Tetrachloroethane	5	NR	NR	NR	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	U	U
Tetrachloroethene	5	NR	NR	NR	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	U	U
Toluene	5	U	U	U	U	U	U	U	U	U	U	**0.580 J**	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
1,2,3-Trichlorobenzene	5	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR
1,2,4-Trichlorobenzene	5	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR
1,1,1-Trichloroethane	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	**1.4 J**	**0.3 J**	U	U	U	**4.1 JD**	U	U	U	U	**0.42 J**	**0.63 J**	**2.21**
1,1,2-Trichloroethane	1	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Trichloroethene	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	**1.2**	U	U	U	**5.1**	**0.3 J**	U	**2.9 J**	**34 D**	U	**8.1 JD**	**23 JD**	**8.2**	**16.2 D**	**9.6**	**1.6**	**24.1**
Trichlorofluoromethane	5	NR	NR	NR	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	U	U
1,1,2-Trichlorotrifluoroethane	5	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Vinyl chloride	2	U	**0.6 J**	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	**3.9 J**	**1 J**	U	U	**2.2 JD**	**140 D**	**55 D**	**65 D**	**7.6**	**11.2 D**	**21**	**10**	U
m&p-Xylenes	10	NR	NR	NR	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	U	U
o-Xylene	5	NR	NR	NR	U	U	U	U	U	U		U	NR	NR	NR	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	U	U
Total VOCs:		5.1	68.6	0	0	0	0	17.8	0	0	1.06	0	0	0	0	0	0	1.49	0	0	5.5	62.7	7.6	11	14.6	40.9	671	315	516	59.3	136	111	74.7	113

Notes:
All data presented in micrograms per liter (µg/L).
Volatile Organic Compounds (VOCs) analysis by EPA Method 624.
AWQS - New York State Ambient Water Quality Standards (TOGs 1.1.1); GV - guidance value.
U - Analyte included in the analysis, but not detected at or above the Method Detection Limit (MDL).
J - Detected above the MDL but below the Reporting Limit (RL); therefore, result is an estimated concentration.
D - Data reported from a dilution.
NA - No standard or guidance value exists for the analyte.
NR - Not reported.
BOLD font indicates compound concentrations detected at or above the detection limit.
BOLD font in shaded cell indicates exceedances of AWQS or GV.
Columns separated with a double line indicate pre- and post-sodium injection sampling events.

Table 2
Groundwater Analytical Results -
Volatile Organic Compounds
Northeast Alloys and Metals Site
Site No. 633045
Utica, New York

Sample ID		MW-6														MW-7		MW-7R										MW-8									
Sampling Date		May-05	Oct-05	Aug-07	Oct-08	Oct-11	Jul-13	Aug-14	Mar-15	Jun-15	Sep-15	Sep-17	Dec-18	Jun-21	Sep-22	Oct-05	Aug-07	Jul-13	Aug-14	Mar-15	Jun-15	Jun-15	Sep-15	Sep-17	Dec-18	Jun-21	Sep-22	May-05	Oct-05	Aug-07	Oct-11	Jul-13	Sep-15	Sep-17	Dec-18	Jun-21	Sep-22
Analyte (µg/L)	**AWQS+GV***																	Dup																			
Acetone	50 (GV)	U	U	U	U	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	U	U	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	U	U	U	NR	NR	NR	U	NR	NR	NR
Acrolein	5	NR	NR	NR	NR	U	U	U	U	U	U	NR	NR	U	NR	NR	NR	U	U	U	U	U	U	NR	NR	U	NR	NR	NR	NR	U	U	U	NR	NR	U	NR
Acrylonitrile	5	NR	NR	NR	NR	U	U	U	U	U	U	NR	NR	U	NR	NR	NR	U	U	U	U	U	U	NR	NR	U	NR	NR	NR	NR	U	U	U	NR	NR	U	NR
Benzene	1	U	U	**0.4 J**	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Bromochloromethane	5	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Bromodichloromethane	50	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	U	NR	NR	U	U	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	U
Bromoform	50	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	U	NR	NR	U	U	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	U
Bromomethane	5	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	U	NR	NR	U	U	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	U
2-Butanone	NA	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR
tert-Butyl Alcohol	NA	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR
Carbon disulfide	60 (GV)	U	U	U	U	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	U	U	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	U	U	U	NR	NR	NR	U	NR	NR	NR
Carbon tetrachloride	5	**25**	U	U	U	U	U	U	NR	NR	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Chlorobenzene	5	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	U	NR	NR	U	U	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	U
Chloroethane	5	**40**	**36**	**25 JD**	**19**	U	U	U	U	U	U	U	**4.3**	NR	U	U	U	U	U	U	U	U	U	U	U	NR	U	U	U	U	U	U	U	U	U	NR	U
2-Chloroethyl vinyl ether	NA	NR	NR	NR	NR	U	U	U	U	U	U	NR	NR	U	NR	NR	NR	U	U	U	U	U	U	NR	NR	U	NR	NR	NR	NR	U	U	U	NR	NR	U	NR
Chloroform	7	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	U	NR	NR	U	U	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	U
Chloromethane	NA	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	U	NR	NR	U	U	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	U
Cyclohexane	NA	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Dibromochloromethane	50	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	U	U	U	NR	NR	NR	NR	U	U	U	U	U	U	NR
1,2-Dibromo-3-chloropropane	0.04	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-Dibromoethane	5	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-Dichlorobenzene	3	NR	NR	NR	U	U	U	U	U	U	U	U	U	NR	U	NR	NR	U	U	U	U	U	U	U	U	NR	U	NR	NR	NR	U	U	U	U	U	NR	U
1,3-Dichlorobenzene	3	NR	NR	NR	U	U	U	U	U	U	U	U	U	NR	U	NR	NR	U	U	U	U	U	U	U	U	NR	U	NR	NR	NR	U	U	U	U	U	NR	U
1,4-Dichlorobenzene	3	NR	NR	NR	U	U	U	U	U	U	U	U	U	NR	U	NR	NR	U	U	U	U	U	U	U	U	NR	U	NR	NR	NR	U	U	U	U	U	NR	U
Dichlorodifluoromethane	5	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,1-Dichloroethane	5	U	**950 D**	**450 D**	**490 JD**	**370 D**	**520 D**	**390 D**	**370 D**	**420 D**	**300 D**	**272 D**	**170**	**78**	**54.7**	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
1,2-Dichloroethane	0.6	**0.83 J**	U	**0.4 J**	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
1,1-Dichloroethene	5	**44**	**67**	**28 JD**	**33**	**38**	U	U	U	U	U	U	U	**0.70 J**	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
cis-1,2-Dichloroethene	5	**3,300 D**	**7200 D**	**4100 D**	**4200 D**	**4900 D**	**2,400 D**	**90 D**	**31 D**	**44 JD**	**94 D**	**119 D**	**79**	**42**	**31.2**	U	U	**3.6 J**	U	U	U	U	U	U	U	U	U	U	**1.2 J**	**0.8 J**	U	U	U	U	U	U	U	U
trans-1,2-Dichloroethene	5	**9.8**	**27**	**15**	**28**	**29**	U	U	U	U	U	U	U	**1.0**	**0.500 J**	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
1,2-Dichloropropane	1	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	U	NR	NR	U	U	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	U
cis-1,3-Dichloropropene	0.4	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	U	NR	NR	U	U	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	U
trans-1,3-Dichloropropene	0.4	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	U	NR	NR	U	U	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	U
Diethyl Ether	NA	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR
1,4-Dioxane	NA	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	**6.6**	**9.3**	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	**0.32**	NR	NR	NR	NR	NR	NR	NR	NR	U	U
Ethylbenzene	5	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	U	NR	NR	U	U	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	U
Ethyl Chloride	NA	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR
2-Hexanone	50	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR
Isopropylbenzene	5	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Methyl Acetate	NA	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Methylcyclohexane	NA	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Methylene chloride	5	U	U	**0.3 J**	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
4-Methyl-2-pentanone	NA	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR
Methyl tert-butyl Ether	10	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	U	U	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	U	U	NR	U	NR	NR	NR	NR	NR	NR	U	U	NR	U
Styrene	5	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR
1,1,2,2-Tetrachloroethane	5	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	U	NR	NR	U	U	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	U
Tetrachloroethene	5	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	U	NR	NR	U	U	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	U
Toluene	5	**0.93 J**	**1.6 J**	**0.5 J**	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
1,2,3-Trichlorobenzene	5	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2,4-Trichlorobenzene	5	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,1,1-Trichloroethane	5	**170 JD**	**250 D**	**82 D**	**37**	**15**	**84 JD**	**43 JD**	**33 D**	**34 JD**	**42 D**	**24.4 D**	**16**	**8.7**	**4.68**	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
1,1,2-Trichloroethane	1	U	**1.7 J**	**0.6 J**	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Trichloroethene	5	**360 JD**	**640 D**	**210 D**	**120**	**130**	U	U	U	U	U	**3 JD**	U	**1.9**	**1.41 J**	U	U	**6.6**	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Trichlorofluoromethane	5	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	U	NR	NR	U	U	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	U
1,1,2-Trichlorotrifluoroethane	5	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Vinyl chloride	2	**190 JD**	**360D**	**240 D**	**710 D**	**600 D**	**520 D**	**910 D**	**230 D**	**790 D**	**800 D**	**480 D**	**390**	**130**	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
m&p-Xylenes	10	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	U	NR	NR	U	U	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	U
o-Xylene	5	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	U	NR	NR	U	U	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	U
Total VOCs:		4140	9530	5150	5640	6080	3520	1430	664	1288	1240	898	659	262	92.5	0	0	10.2	0	0	0	0	0	0	0	0	0	0	1.2	0.8	0	0	0	0	0	0	0

Notes:
All data presented in micrograms per liter (µg/L).
Volatile Organic Compounds (VOCs) analysis by EPA Method 624.
AWQS - New York State Ambient Water Quality Standards (TOGs 1.1.1); GV - guidance value.
U - Analyte included in the analysis, but not detected at or above the Method Detection Limit (MDL).
J - Detected above the MDL but below the Reporting Limit (RL); therefore, result is an estimated concentration.
D - Data reported from a dilution.
NA - No standard or guidance value exists for the analyte.
NR - Not reported.
BOLD font indicates compound concentrations detected at or above the detection limit.
BOLD font in shaded cell indicates exceedances of AWQS or GV.
Columns separated with a double line indicate pre- and post-sodium injection sampling events.

Table 2
Groundwater Analytical Results -
Volatile Organic Compounds
Northeast Alloys and Metals Site
Site No. 633045
Utica, New York

Sample ID		MW-9															MW-10										MW-11									
Sampling Date		May-05	Oct-05	Aug-07	Oct-11	Jul-13	Aug-14	Aug-14	Mar-15	Mar-15	Jun-15	Sep-15	Sep-17	Dec-18	Jun-21	Sep-22	May-05	Oct-05	Aug-07	Oct-11	Jul-13	Sep-15	Sep-17	Dec-18	Jun-21	Sep-22	May-05	Oct-05	Aug-07	Oct-11	Jul-13	Sep-15	Sep-17	Dec-18	Jun-21	Sep-22
Analyte (µg/L)	AWQS+GV*							Dup		Dup																									
Acetone	50 (GV)	U	U	U	NR	NR	NR	NR	NR	NR	NR	NR	**3.3 J**	NR	NR	NR	U	U	U	NR	NR	NR	U	NR	NR	NR	U	U	U	NR	NR	NR	U	NR	NR	NR
Acrolein	5	NR	NR	NR	U	U	U	U	U	U	U	U	NR	NR	U	NR	NR	NR	NR	U	U	U	NR	NR	U	NR	NR	NR	NR	U	U	U	NR	NR	U	NR
Acrylonitrile	5	NR	NR	NR	U	U	U	U	U	U	U	U	NR	NR	U	NR	NR	NR	NR	U	U	U	NR	NR	U	NR	NR	NR	NR	U	U	U	NR	NR	U	NR
Benzene	1	U	U	U	U	U	U	U	U	U	U	U	U	U	U	**0.280 J**	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Bromochloromethane	5	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Bromodichloromethane	50	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	NR	NR	NR	NR	U	U	U	U	U	U	U
Bromoform	50	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	U	U
Bromomethane	5	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	U	U
2-Butanone	NA	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR
tert-Butyl Alcohol	NA	**19**	U	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	U	U	U	NR	NR	NR	NR	NR	NR	NR
Carbon disulfide	60 (GV)	U	U	U	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	U	U	U	NR	NR	NR	U	NR	NR	NR	**0.3 J**	U	U	NR	NR	NR	U	NR	NR	NR
Carbon tetrachloride	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Chlorobenzene	5	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	NR	NR	NR	NR	U	U	U	U	U	U	U
Chloroethane	5	U	U	U	U	U	U	U	U	U	U	U	U	U	NR	U	U	U	U	U	U	U	U	U	NR	U	U	U	U	U	U	U	U	U	NR	U
2-Chloroethyl vinyl ether	NA	NR	NR	NR	U	U	U	U	U	U	U	U	NR	NR	U	NR	NR	NR	NR	U	U	U	NR	NR	U	NR	NR	NR	NR	U	U	U	NR	NR	U	NR
Chloroform	7	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	U
Chloromethane	NA	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	U
Cyclohexane	NA	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Dibromochloromethane	50	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	U	NR	NR	NR	NR	U	U	U	U	U	U	NR	NR	NR	NR	U	U	U	U	U	U	NR
1,2-Dibromo-3-chloropropane	0.04	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-Dibromoethane	5	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-Dichlorobenzene	3	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	NR	U	NR	NR	NR	U	U	U	U	U	NR	U	NR	NR	NR	U	U	U	U	U	NR	U
1,3-Dichlorobenzene	3	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	NR	U	NR	NR	NR	U	U	U	U	U	NR	U	NR	NR	NR	U	U	U	U	U	NR	U
1,4-Dichlorobenzene	3	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	NR	U	NR	NR	NR	U	U	U	U	U	NR	U	NR	NR	NR	U	U	U	U	U	NR	U
Dichlorodifluoromethane	5	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,1-Dichloroethane	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
1,2-Dichloroethane	0.6	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
1,1-Dichloroethene	5	**0.3 J**	**0.3 J**	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
cis-1,2-Dichloroethene	5	**32**	**34 D**	**21 D**	**34**	**16**	**18**	**18**	**3.1 J**	**2.9 J**	**24**	**7.5**	**7**	**13**	**9.4**	**11.0**	**0.78 J**	U	U	U	U	U	U	U	U	U	**0.3 J**	U	**0.4 J**	U	U	U	U	**0.46 J**	U	U
trans-1,2-Dichloroethene	5	**4**	**3.1**	**8.8**	**3.3 J**	U	**1.3 J**	**1.1 J**	U	U	**1.6 J**	U	**0.8 J**	**0.88**	**0.71 J**	**0.720 J**	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
1,2-Dichloropropane	1	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	U
cis-1,3-Dichloropropene	0.4	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	U
trans-1,3-Dichloropropene	0.4	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	U
Diethyl Ether	NA	U	U	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	U	U	U	NR	NR	NR	NR	NR	NR	NR
1,4-Dioxane	NA	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	U	NR	NR	NR	NR	NR	NR	NR	NR	**0.36**	**0.26**	NR	NR	NR	NR	NR	NR	NR	NR	U	U
Ethylbenzene	5	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	U
Ethyl Chloride	NA	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR
2-Hexanone	50	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR
Isopropylbenzene	5	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Methyl Acetate	NA	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Methylcyclohexane	NA	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Methylene chloride	5	U	**0.4 J**	**0.3 J**	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
4-Methyl-2-pentanone	NA	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR
Methyl tert-butyl Ether	10	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	U	NR	U	NR	NR	NR	NR	NR	NR	U	U	NR	U	NR	NR	NR	NR	NR	NR	NR	U	U	NR	U
Styrene	5	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR
1,1,2,2-Tetrachloroethane	5	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	U
Tetrachloroethene	5	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	U
Toluene	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
1,2,3-Trichlorobenzene	5	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2,4-Trichlorobenzene	5	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,1,1-Trichloroethane	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
1,1,2-Trichloroethane	1	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Trichloroethene	5	**6.6**	**2.2**	**7**	**21**	**82**	**14**	**14**	**2.8 J**	**3 J**	**28**	**2 J**	**3.4**	**58**	**14**	**13.2**	U	U	U	U	U	U	U	U	U	U	**1.4**	**1.3**	**0.9 J**	**0.97 J**	**1.5 J**	U	**1.4**	**1.9**	**0.60 J**	**0.410 J**
Trichlorofluoromethane	5	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	U
1,1,2-Trichlorotrifluoroethane	5	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Vinyl chloride	2	**10**	**15**	**8.5**	**4.8 J**	**1.4 J**	**8.4**	**9.2**	**1.5 J**	**1.4 J**	**3.2 J**	**3.6 J**	**3.8**	**2.0**	**1.3**	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
m&p-Xylenes	10	NR	NR	NR	U	U	U	U	NR	NR	NR	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	U
o-Xylene	5	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	U
Total VOCs:		71.9	55	45.6	63.1	99.4	41.7	42.3	7.4	7.3	56.8	13.1	18.3	73.9	25.4	25.2	0.78	0	0	0	0	0	0	0	0	0	2	1.3	1.3	0.97	1.5	0	1.4	2.36	0.6	0.41

Notes:
All data presented in micrograms per liter (µg/L).
Volatile Organic Compounds (VOCs) analysis by EPA Method 624.
AWQS - New York State Ambient Water Quality Standards (TOGs 1.1.1); GV - guidance value.
U - Analyte included in the analysis, but not detected at or above the Method Detection Limit (MDL).
J - Detected above the MDL but below the Reporting Limit (RL); therefore, result is an estimated concentration.
D - Data reported from a dilution.
NA - No standard or guidance value exists for the analyte.
NR - Not reported.
BOLD font indicates compound concentrations detected at or above the detection limit.
BOLD font in shaded cell indicates exceedances of AWQS or GV.
Columns separated with a double line indicate pre- and post-sodium injection sampling events.

Table 2
Groundwater Analytical Results -
Volatile Organic Compounds
Northeast Alloys and Metals Site
Site No. 633045
Utica, New York

Sample ID		MW-12										MW-13								MW-14								MW-15								
Sampling Date		May-05	Oct-05	Aug-07	Oct-11	Jul-13	Sep-15	Sep-17	Dec-18	Jun-21	Sep-22	Oct-08	Oct-11	Jul-13	Sep-15	Sep-17	Dec-18	Jun-21	Sep-22	Oct-08	Oct-11	Jul-13	Sep-15	Sep-17	Dec-18	Jun-21	Sep-22	Jul-13	Aug-14	Mar-15	Jun-15	Sep-15	Sep-17	Dec-18	Jun-21	Sep-22
Analyte (µg/L)	**AWQS+GV***																																			
Acetone	50 (GV)	U	U	**5.7**	NR	NR	NR	U	NR	NR	NR	U	NR	NR	NR	**1.6 J**	NR	NR	NR	**21**	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR
Acrolein	5	NR	NR	NR	U	U	U	NR	NR	U	NR	NR	U	U	U	NR	NR	U	NR	NR	U	U	U	NR	NR	U	NR	U	U	U	U	U	NR	NR	U	NR
Acrylonitrile	5	NR	NR	NR	U	U	U	NR	NR	U	NR	NR	U	U	U	NR	NR	U	NR	NR	U	U	U	NR	NR	U	NR	U	U	U	U	U	NR	NR	U	NR
Benzene	1	**0.8 J**	**1.0**	**1.0**	**1.1 J**	U	U	**0.9 J**	**1.0**	U	U	U	**0.61 J**	U	U	U	U	U	U	**7.5**	**6.6**	**8**	**2 J**	**6.2 D**	**12**	**6.2**	**9.44**	U	U	U	U	U	U	U	U	U
Bromochloromethane	5	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Bromodichloromethane	50	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Bromoform	50	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Bromomethane	5	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
2-Butanone	NA	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	U	NR	NR	NR	U	NR	NR	NR	U	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR
tert-Butyl Alcohol	NA	**16**	U	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Carbon disulfide	60 (GV)	U	U	U	NR	NR	NR	U	NR	NR	NR	U	NR	NR	NR	U	NR	NR	NR	U	NR	NR	NR	**3.6 JD**	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR
Carbon tetrachloride	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Chlorobenzene	5	NR	NR	NR	U	U	U	U	U	U	U	U	**1.7 J**	U	U	**0.5 J**	**0.29 J**	U	U	U	**3.2 J**	**13**	U	**6 D**	**6.7 J**	**17**	**20.5**	U	U	U	U	U	U	U	U	U
Chloroethane	5	U	U	U	U	U	U	U	U	NR	U	U	U	U	U	U	U	NR	U	U	U	U	U	U	U	NR	U	U	U	U	U	U	U	NR	U
2-Chloroethyl vinyl ether	NA	NR	NR	NR	U	U	U	NR	NR	U	NR	NR	U	U	U	NR	NR	U	NR	NR	U	U	U	NR	NR	U	NR	U	U	U	U	U	NR	NR	U	NR
Chloroform	7	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	**0.3 J**	U	U	U
Chloromethane	NA	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Cyclohexane	NA	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Dibromochloromethane	50	NR	NR	NR	U	U	U	U	U	U	NR	U	U	U	U	U	U	U	NR	U	U	U	U	U	U	U	NR	U	U	U	U	U	U	U	U	NR
1,2-Dibromo-3-chloropropane	0.04	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-Dibromoethane	5	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-Dichlorobenzene	3	NR	NR	NR	U	U	U	U	U	NR	U	U	**2.7 J**	U	**2 J**	**1.1**	**0.45 J**	NR	U	**6.1**	**4.1 J**	**7**	**1.4 J**	**6.4 D**	**11**	NR	**7.84 J**	U	U	U	U	U	U	U	NR	U
1,3-Dichlorobenzene	3	NR	NR	NR	U	U	U	U	U	NR	U	U	U	U	U	U	U	NR	U	U	U	U	U	U	U	NR	U	U	U	U	U	U	U	NR	U
1,4-Dichlorobenzene	3	NR	NR	NR	U	U	U	U	U	NR	U	U	U	U	U	U	U	NR	U	U	U	U	U	U	U	NR	**0.600 J**	U	U	U	U	U	U	NR	U
Dichlorodifluoromethane	5	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,1-Dichloroethane	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	**12.9**	**4.4**	**5.4**	**3.70 J**
1,2-Dichloroethane	0.6	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
1,1-Dichloroethene	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	**40 J**	**20.8**	**4.8**	**6.8**	U
cis-1,2-Dichloroethene	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	**1.96 J**	**5,900 D**	**3,100 D**	**2,300 D**	**1,200 D**	**4,400 D**	**1,640 D**	**480**	**870**	**446**
trans-1,2-Dichloroethene	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	**19.2**	**3.5**	**5.3**	**2.20 J**
1,2-Dichloropropane	1	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
cis-1,3-Dichloropropene	0.4	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
trans-1,3-Dichloropropene	0.4	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Diethyl Ether	NA	**4.1**	**5.6**	**5.2**	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,4-Dioxane	NA	NR	NR	NR	NR	NR	NR	NR	NR	**0.019 J**	**0.32**	U	NR	NR	NR	NR	NR	U	U	U	NR	NR	NR	NR	NR	**0.088 J**	NR	NR	NR	NR	NR	NR	NR	**0.92**	**2.8**
Ethylbenzene	5	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	**22**	**16**	**21**	**4.4 J**	**12.2 D**	**25**	**19**	**27.1**	U	U	U	U	U	U	U	U	U
Ethyl Chloride	NA	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	U	NR
2-Hexanone	50	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	U	NR	NR	NR	U	NR	NR	NR	U	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR
Isopropylbenzene	5	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	**13**	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Methyl Acetate	NA	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	**22**	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Methylcyclohexane	NA	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Methylene chloride	5	U	**0.5 JB**	**0.3 J**	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
4-Methyl-2-pentanone	NA	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	U	NR	NR	NR	U	NR	NR	NR	U	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR
Methyl tert-butyl Ether	10	NR	NR	NR	NR	NR	NR	U	U	NR	U	U	NR	NR	NR	U	U	NR	U	U	NR	NR	NR	U	U	NR	U	NR	NR	NR	NR	NR	U	U	NR	U
Styrene	5	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	U	NR	NR	NR	U	NR	NR	NR	U	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR
1,1,2,2-Tetrachloroethane	5	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Tetrachloroethene	5	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	**0.8 J**	U	U	U	U	U	U	U	U	U
Toluene	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	**17**	**9.8**	**14**	**2.2 J**	**6 D**	**13**	**5.0**	**8.76**	U	U	U	U	U	U	U	U	U
1,2,3-Trichlorobenzene	5	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2,4-Trichlorobenzene	5	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,1,1-Trichloroethane	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	NR	U	**3.8**	**5.8**	**2.6 J**	**6.40 J**
1,1,2-Trichloroethane	1	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Trichloroethene	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	**2.40 J**	**6,800 D**	**5,500 D**	**4,600 D**	**2,800 D**	**7,300 D**	**5,090 D**	**1,200**	**1,000**	**1,140**
Trichlorofluoromethane	5	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
1,1,2-Trichlorotrifluoroethane	5	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Vinyl chloride	2	**1**	**0.5J**	**0.3 J**	**0.59 J**	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	**210 D**	**140 JD**	**72 JD**	U	**230 JD**	**139 D**	**56**	**100**	**57.7**
m&p-Xylenes	10	NR	NR	NR	U	U	U	U	U	U	U	U	**3.2 J**	U	U	U	U	U	U	**110**	**110**	**130**	**32**	**102 D**	**160**	**190**	**175**	U	U	U	U	U	U	U	U	U
o-Xylene	5	NR	NR	NR	U	U	U	U	U		U	U	**0.95 J**	U	U	U	U	U	U	**87**	**68**	**51**	**18**	**59.6 D**	**100**		**90.6**	U	U	U	U	U	U	U	U	U
Total VOCs:		21.9	7.6	12.5	1.69	0	0	0.9	1	0	0	0	9.16	0	2	3.2	0.74	0	0	306	218	244	60	202	328	237	344	12900	8740	6970	4000	12000	6930	1750	1990	1660

Notes:
All data presented in micrograms per liter (µg/L).
Volatile Organic Compounds (VOCs) analysis by EPA Method 624.
AWQS - New York State Ambient Water Quality Standards (TOGs 1.1.1); GV - guidance value.
U - Analyte included in the analysis, but not detected at or above the Method Detection Limit (MDL).
J - Detected above the MDL but below the Reporting Limit (RL); therefore, result is an estimated concentration.
D - Data reported from a dilution.
NA - No standard or guidance value exists for the analyte.
NR - Not reported.
BOLD font indicates compound concentrations detected at or above the detection limit.
BOLD font in shaded cell indicates exceedances of AWQS or GV.
Columns separated with a double line indicate pre- and post-sodium injection sampling events.

Table 2
Groundwater Analytical Results -
Volatile Organic Compounds
Northeast Alloys and Metals Site
Site No. 633045
Utica, New York

Sample ID		MW-16									MW-17									MW-18								
Sampling Date		Jul-13	Aug-14	Mar-15	Jun-15	Sep-15	Sep-17	Dec-18	Jun-21	Sep-22	Jul-13	Aug-14	Mar-15	Jun-15	Sep-15	Sep-17	Dec-18	Jun-21	Sep-22	Jul-13	Aug-14	Mar-15	Jun-15	Sep-15	Sep-17	Dec-18	Jun-21	Sep-22
Analyte (µg/L)	AWQS+GV*																											
Acetone	50 (GV)	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR
Acrolein	5	U	U	U	U	U	NR	NR	U	NR	U	U	U	U	U	NR	NR	U	NR	U	U	U	U	U	NR	NR	U	NR
Acrylonitrile	5	U	U	U	U	U	NR	NR	U	NR	U	U	U	U	U	NR	NR	U	NR	U	U	U	U	U	NR	NR	U	NR
Benzene	1	U	U	U	U	U	U	U	U	**15.0 J**	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Bromochloromethane	5	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Bromodichloromethane	50	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Bromoform	50	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Bromomethane	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
2-Butanone	NA	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR
tert-Butyl Alcohol	NA	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Carbon disulfide	60 (GV)	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR
Carbon tetrachloride	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Chlorobenzene	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Chloroethane	5	U	U	U	U	U	U	U	NR	U	U	U	U	U	U	U	U	NR	U	U	U	U	U	U	U	U	NR	U
2-Chloroethyl vinyl ether	NA	U	U	U	U	U	NR	NR	U	NR	U	U	U	U	U	NR	NR	U	NR	U	U	U	U	U	NR	NR	U	NR
Chloroform	7	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Chloromethane	NA	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Cyclohexane	NA	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Dibromochloromethane	50	U	U	U	U	U	U	U	U	NR	U	U	U	U	U	U	U	U	NR	U	U	U	U	U	U	U	U	NR
1,2-Dibromo-3-chloropropane	0.04	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-Dibromoethane	5	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-Dichlorobenzene	3	U	U	U	U	U	U	U	NR	U	U	U	U	U	U	U	U	NR	U	U	U	U	U	U	U	U	NR	U
1,3-Dichlorobenzene	3	U	U	U	U	U	U	U	NR	U	U	U	U	U	U	U	U	NR	U	U	U	U	U	U	U	U	NR	U
1,4-Dichlorobenzene	3	U	U	U	U	U	U	U	NR	U	U	U	U	U	U	U	U	NR	U	U	U	U	U	U	U	U	NR	U
Dichlorodifluoromethane	5	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,1-Dichloroethane	5	U	U	**12 JD**	**9.1 JD**	U	**6.6 JD**	**7.9 J**	**14**	**12.0 J**	U	**26,000 D**	U	U	U	U	U	U	U	U	U	U	U	U	**4 JD**	**3.1**	**3.0**	**3.08 J**
1,2-Dichloroethane	0.6	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
1,1-Dichloroethene	5	U	U	U	**6.4 JD**	**13 JD**	U	**11**	**26**	**26.0 J**	U	U	U	**430 JD**	U	**830 D**	**620**	**520**	**500 J**	U	U	U	U	**8 JD**	U	**0.90**	**1.1**	**1.10 J**
cis-1,2-Dichloroethene	5	**3,000 D**	**4,300 D**	**1,500 D**	**1,300 D**	**2,200 D**	**430 D**	**1,400**	**3,500**	**3,340**	**120,000 D**	**100,000 D**	**64,000 D**	**72,000 D**	**70,000 D**	**115,000 D**	**85,000**	**73,000**	**74,400**	**7,700 D**	**2,700 D**	**3,800 D**	**5,700 D**	**1,600 D**	**118 D**	**150**	**180**	**142**
trans-1,2-Dichloroethene	5	U	U	U	U	U	U	U	**17**	**13.0 J**	U	U	U	U	U	**235 JD**	**150 J**	**180 J**	U	U	**16 JD**	U	**37 JD**	**12 JD**	U	**1.2**	**1.1**	**0.820 J**
1,2-Dichloropropane	1	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
cis-1,3-Dichloropropene	0.4	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
trans-1,3-Dichloropropene	0.4	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Diethyl Ether	NA	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,4-Dioxane	NA	NR	NR	NR	NR	NR	NR	NR	**1.0**	**1.9**	NR	NR	NR	NR	NR	NR	NR	U	**0.49**	NR	NR	NR	NR	NR	NR	**0.074 J**	**0.14 J**
Ethylbenzene	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Ethyl Chloride	NA	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	U	NR
2-Hexanone	50	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR
Isopropylbenzene	5	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Methyl Acetate	NA	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Methylcyclohexane	NA	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Methylene chloride	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
4-Methyl-2-pentanone	NA	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR
Methyl tert-butyl Ether	10	NR	NR	NR	NR	NR	U	U	NR	U	NR	NR	NR	NR	NR	U	U	NR	U	NR	NR	NR	NR	NR	U	U	NR	U
Styrene	5	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR
1,1,2,2-Tetrachloroethane	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Tetrachloroethene	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Toluene	5	U	U	U	U	U	U	U	U	**30.0 J**	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
1,2,3-Trichlorobenzene	5	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2,4-Trichlorobenzene	5	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,1,1-Trichloroethane	5	U	U	U	U	U	U	U	**5.8 J**	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
1,1,2-Trichloroethane	1	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Trichloroethene	5	**1,200 D**	**32 JD**	**100 D**	**65 D**	**980 D**	**213 D**	**1,100**	**950**	**1,760**	**130,000 D**	**50,000 D**	**34,000 D**	**43,000 D**	**47,000 D**	**96,700 D**	**88,000**	**70,000**	**75,100**	**790 D**	U	U	U	U	U	**0.55**	**2.4**	**4.34**
Trichlorofluoromethane	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
1,1,2-Trichlorotrifluoroethane	5	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Vinyl chloride	2	**130 D**	**190 JD**	**490 D**	**340 D**	**330 D**	**179 D**	**130**	**270**	**322**	**3,300 JD**	**1,800 JD**	**2,500 JD**	**2,800 JD**	**2,300 JD**	**5,030 D**	**2,800**	**2,000**	**2,740**	**790 D**	**400 D**	**2,900 D**	**3,300 D**	**1,400 D**	**277 D**	**170**	**97**	**140**
m&p-Xylenes	10	U	U	U	U	U	U	U	U	**29.0 J**	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
o-Xylene	5	U	U	U	U	U	U	U		**13.0 J**	U	U	U	U	U	U	U		U	U	U	U	U	U	U			U
Total VOCs:		4330	4520	2100	1720	3520	829	2650	4780	5560	253000	178000	101000	118000	119000	218000	177000	146000	153000	9280	3120	6700	9040	3020	395	326	285	291

Notes:
All data presented in micrograms per liter (µg/L).
Volatile Organic Compounds (VOCs) analysis by EPA Method 624.
AWQS - New York State Ambient Water Quality Standards (TOGs 1.1.1); GV - guidance value.
U - Analyte included in the analysis, but not detected at or above the Method Detection Limit (MDL).
J - Detected above the MDL but below the Reporting Limit (RL); therefore, result is an estimated concentration.
D - Data reported from a dilution.
NA - No standard or guidance value exists for the analyte.
NR - Not reported.
BOLD font indicates compound concentrations detected at or above the detection limit.
BOLD font in shaded cell indicates exceedances of AWQS or GV.
Columns separated with a double line indicate pre- and post-sodium injection sampling events.

Table 3
Groundwater Analytical Results – Emerging Contaminants
Northeast Alloys and Metals Site
Site No. 633045
Utica, New York

Analyte	NYSDOH MCL[1]	Monitoring Well/Sample ID																		
		BR-1				BR-2		BR-3		MW-1			MW-3		MW-4		MW-5			
		6/23/2021	6/23/2021	9/27/2022	9/27/2022	6/23/2021	9/29/2022	6/21/2021	9/28/2022	12/12/2018	6/22/2021	9/29/2022	6/22/2021	9/27/2022	6/23/2021	9/28/2022	12/12/2018	12/12/2018	6/23/2021	9/29/2022
Semivolatile Organic Compounds (µg/L)			DUP		DUP													DUP		
1,4-Dioxane	0.35	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.12 J**	ND	ND	**4.0**	**4.0**	**1.1**	**5.4**
Fluorinated Alkyl Substances (ng/L)																				
Perfluorooctanoic acid (PFOA)	6.7	**3.2**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**1.8 J**	**2.8**	**0.81 J**	**9.6 J**	**94 J**	**2.1**	**5.0**
Perfluorooctanesulfonic acid (PFOS)	2.7	**0.60 J**	ND	ND	ND	**0.41 J**	ND	ND	ND	ND	ND	ND	**0.40 J**	ND	**0.77 J**	**1.6 J**	**10 J**	**21 J**	**0.50 J**	**5.8**
Perfluorobutanoic acid (PFBA)	--	**7.2**	ND	ND	ND	**2.1 J**	**0.91 J**	ND	ND	ND	**1.2 J**	ND	**1.2 J**	**1.3 J**	**7.6**	ND	ND	**12 J**	**1.7 J**	**1.1 J**
Perfluoropentanoic acid (PFPeA)	--	**0.76 J**	ND	ND	ND	ND	ND	ND	ND	**2.5 J**	ND	ND	ND	ND	**2.4**	ND	ND	**47 J**	**1.1 J**	**0.57 J**
Perfluorohexanoic acid (PFHxA)	--	**1.7 J**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**1.9 J**	ND	ND	**45 J**	ND	**0.51 J**
Perfluoroheptanoic acid (PFHpA)	--	**0.86 J**	ND	ND	ND	**0.24 J**	ND	ND	ND	ND	ND	ND	**0.26 J I**	**2.0 J**	**2.0**	ND	ND	**18 J**	**0.29 J**	**0.83 J**
Perfluorononanoic acid (PFNA)	--	**0.37 J**	ND	ND	ND	**0.28 J**	ND	ND	ND	ND	ND	ND	ND	**0.59 J**	**0.30 J**	ND	ND	**4.1 J**	ND	**0.85 J**
Perfluorodecanoic acid (PFDA)	--	**0.88 J**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoroundecanoic acid (PFUnA)	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorododecanoic acid (PFDoA)	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorotridecanoic acid (PFTriA)	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorotetradecanoic acid (PFTeA)	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorobutanesulfonic acid (PFBS)	--	**2.8**	ND	ND	ND	**0.29 J**	ND	ND	ND	ND	**0.31 J**	**0.54 J**	**0.32 J I**	ND	**1.2 J**	ND	**3.1 J**	**13 J**	**0.38 J**	**1.6 J**
Perfluorohexanesulfonic acid (PFHxS)	--	**0.38 J**	ND	ND	ND	**0.34 J**	ND	ND	ND	ND	ND	ND	**0.30 J**	ND	**0.66 J**	ND	**2.7 J**	**10 J**	**0.47 J**	**1.2 J**
Perfluoroheptanesulfonic acid (PFHpS)	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorodecanesulfonic acid (PFDS)	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorooctane sulfonamide (FOSA)	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-Methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-Ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	--	**12**	**2.6 J**	ND	ND	ND	ND	**1.2 J**	ND	ND	ND	ND	ND	ND	ND	ND	**6.6 J**	ND	ND	ND
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

[1] New York State Department of Health (NYSDOH) Maximum Contaminant Level (MCL)

µg/L - micrograms per liter

ng/L - nanograms per liter

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NS - Not sampled

Detected concentrations are in bold font.

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I - Value is EMPC (estimated maximum possible concentration).

*+ - LCS and/or LCSD is outside acceptance limits, high biased.

AECOM

Table 3
Groundwater Analytical Results – Emerging Contaminants
Northeast Alloys and Metals Site
Site No. 633045
Utica, New York

Analyte	NYSDOH MCL[1]	Monitoring Well/Sample ID																		
		MW-6		MW-7R		MW-8		MW-9		MW-10		MW-11		MW-12			MW-13		MW-14	
		6/23/2021	9/29/2022	6/22/2021	9/28/2022	6/22/2021	9/29/2022	6/22/2021	9/28/2022	6/22/2021	9/28/2022	6/23/2021	9/28/2022	12/12/2018	6/23/2021	9/27/2022	6/22/2021	9/27/2022	6/24/2021	9/29/2022
Semivolatile Organic Compounds (µg/L)																				
1,4-Dioxane	0.35	**6.6**	**9.3**	ND	**0.32**	ND	ND	ND	ND	**0.36**	**0.26**	ND	ND	ND	**0.019 J**	**0.32**	ND	ND	ND	**0.088 J**
Fluorinated Alkyl Substances (ng/L)																				
Perfluorooctanoic acid (PFOA)	6.7	**5.5**	**6.2**	**0.55 J**	**1.0 J**	**0.58 J**	ND	**1.0 J**	**2.5**	**1.3 J**	**1.4 J**	ND	**0.72 J**	**3.1**	**2.2**	**2.8 J**	**1.9 J**	**1.8 J**	**4.6**	**6.4**
Perfluorooctanesulfonic acid (PFOS)	2.7	**1.3 J**	**2.8**	**1.0 J**	**2.3**	**0.97 J**	ND	**0.58 J**	ND	**0.87 J**	ND	**0.30 J**	ND	ND	**1.1 J**	**1.5 J**	**1.7 J I**	ND	**0.67 J I**	ND
Perfluorobutanoic acid (PFBA)	--	**3.7 J**	**2.1 J**	**1.7 J**	**1.2 J**	**3.7 J**	ND	**2.5 J**	ND	**1.3 J**	**8.2 J**	**1.2 J**	**1.4 J**	**3.3**	**8.4**	**1.6 J**	ND	**1.5 J**	**7.0**	**14 J**
Perfluoropentanoic acid (PFPeA)	--	**1.2 J**	**0.85 J**	ND	**0.40 J**	**0.54 J**	ND	ND	ND	**0.99 J**	ND	ND	ND	ND	**1.2 J**	ND	ND	ND	ND	**38**
Perfluorohexanoic acid (PFHxA)	--	**1.5 J**	**1.0 J**	ND	ND	**0.75 J**	ND	ND	**0.57 J**	**0.83 J**	ND	ND	ND	ND	**1.7 J**	**3.9 J**	ND	**2.2 J+**	ND	**3.3 J**
Perfluoroheptanoic acid (PFHpA)	--	**0.91 J**	**1.0 J**	**0.26 J I**	ND	**0.73 J**	ND	**0.37 J**	**0.55 J**	**0.65 J**	ND	ND	ND	ND	**0.86 J**	**1.1 J**	**0.51 J I**	**2.0 J**	**0.74 J I**	**1.0 J**
Perfluorononanoic acid (PFNA)	--	ND	**0.37 J**	ND	ND	**0.69 J**	ND	ND	ND	ND	ND	ND	ND	ND	**0.38 J**	ND	**0.42 J**	**0.91 J**	**0.28 J**	ND
Perfluorodecanoic acid (PFDA)	--	ND	ND	ND	ND	**0.48 J**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoroundecanoic acid (PFUnA)	--	ND	ND	ND	ND	**0.45 J*+**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorododecanoic acid (PFDoA)	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorotridecanoic acid (PFTriA)	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorotetradecanoic acid (PFTeA)	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorobutanesulfonic acid (PFBS)	--	**0.85 J**	**4.0 J**	**0.37 J**	**0.41 J**	**0.30 J**	ND	**0.41 J**	**1.7 J**	**0.62 J I**	**0.66 J**	ND	**0.56 J**	**3.6**	**0.80 J**	**4.4 J**	**0.77 J I**	ND	**0.46 J**	**2.9**
Perfluorohexanesulfonic acid (PFHxS)	--	**0.52 J**	**0.64 J**	ND	ND	**0.32 J**	ND	**0.40 J**	ND	**0.60 J**	**0.49 J**	ND	ND	**4.8**	**0.46 J**	ND	**0.65 J**	ND	**0.86 J**	ND
Perfluoroheptanesulfonic acid (PFHpS)	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorodecanesulfonic acid (PFDS)	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorooctane sulfonamide (FOSA)	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-Methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-Ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	--	ND	ND	ND	ND	ND	ND	ND	ND	**13**	**0.80 J**	ND	ND	**5.6**	ND	ND	ND	ND	ND	ND
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

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µg/L - micrograms per liter

ng/L - nanograms per liter

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Detected concentrations are in bold font.

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Table 3
Groundwater Analytical Results – Emerging Contaminants
Northeast Alloys and Metals Site
Site No. 633045
Utica, New York

Analyte	NYSDOH MCL[1]	Monitoring Well/Sample ID															
		MW-15			MW-16		MW-17		MW-18			Field Blank			Equipment Blank		
		12/12/2018	6/24/2021	9/29/2022	6/24/2021	9/29/2022	6/24/2021	9/30/2022	12/12/2018	6/23/2021	9/30/2022	12/12/2018	6/23/2021	9/30/2022	12/12/2018	6/23/2021	9/30/2022
Semivolatile Organic Compounds (µg/L)																	
1,4-Dioxane	0.35	**0.56**	**0.92**	**2.8**	**1.0**	**1.9**	ND	**0.49**	ND	**0.074 J**	**0.14 J**	NS	ND	**0.095 J**	NS	NS	NS
Fluorinated Alkyl Substances (ng/L)																	
Perfluorooctanoic acid (PFOA)	6.7	**2.6**	**1.1 J**	**1.6 J**	**1.3 J**	**1.6 J**	**5.5**	**7.5**	**79**	**5.2**	**5.1**	ND	ND	ND	ND	ND	ND
Perfluorooctanesulfonic acid (PFOS)	2.7	ND	**0.31 J**	ND	**1.1 J**	**1.5 J**	**20**	**31**	**20**	**14**	**12**	ND	ND	ND	ND	ND	ND
Perfluorobutanoic acid (PFBA)	--	ND	**3.3 J**	**3.0**	**3.2 J**	**1.6 J**	**14**	**4.6 J**	**2.9**	**11**	**7.1 J**	ND	ND	ND	ND	ND	ND
Perfluoropentanoic acid (PFPeA)	--	ND	**0.48 J**	**0.76 J**	**0.75 J**	**0.80 J**	**1.5 J**	ND	**9.8 J**	**0.81 J**	ND	ND	ND	ND	ND	ND	ND
Perfluorohexanoic acid (PFHxA)	--	**2.6**	**0.64 J**	**0.78 J**	**0.70 J**	**0.82 J**	**2.8**	**3.3 J**	**11**	**2.5 I**	ND	ND	ND	ND	ND	ND	ND
Perfluoroheptanoic acid (PFHpA)	--	ND	**0.48 J**	**0.55 J**	**0.45 J**	**0.45 J**	**1.5 J**	**1.3 J**	**12**	**1.2 J**	**1.4 J**	ND	ND	ND	ND	ND	ND
Perfluorononanoic acid (PFNA)	--	ND	ND	ND	**0.41 J I**	ND	**0.88 J**	**1.0 J**	**4.4 J**	**1.2 J I**	**0.99 J**	ND	ND	ND	ND	ND	ND
Perfluorodecanoic acid (PFDA)	--	ND	ND	ND	ND	ND	**0.31 J**	ND	ND	**0.37 J**	ND	ND	ND	ND	ND	ND	ND
Perfluoroundecanoic acid (PFUnA)	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorododecanoic acid (PFDoA)	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorotridecanoic acid (PFTriA)	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorotetradecanoic acid (PFTeA)	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorobutanesulfonic acid (PFBS)	--	ND	ND	ND	ND	ND	**0.49 J**	**13 J**	**11**	**1.1 J**	**14 J**	ND	ND	ND	ND	ND	ND
Perfluorohexanesulfonic acid (PFHxS)	--	ND	ND	ND	ND	ND	**0.72 J**	**1.0 J**	**5.4**	**1.2 J**	**0.87 J**	ND	ND	ND	ND	ND	ND
Perfluoroheptanesulfonic acid (PFHpS)	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	**1.3 J**	ND	ND	ND	ND	ND	ND
Perfluorodecanesulfonic acid (PFDS)	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorooctane sulfonamide (FOSA)	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-Methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-Ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	--	ND	ND	ND	ND	ND	ND	**0.97 J**	ND	ND	ND	ND	ND	ND	ND	ND	ND
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	--	**110**	**1.1 J**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

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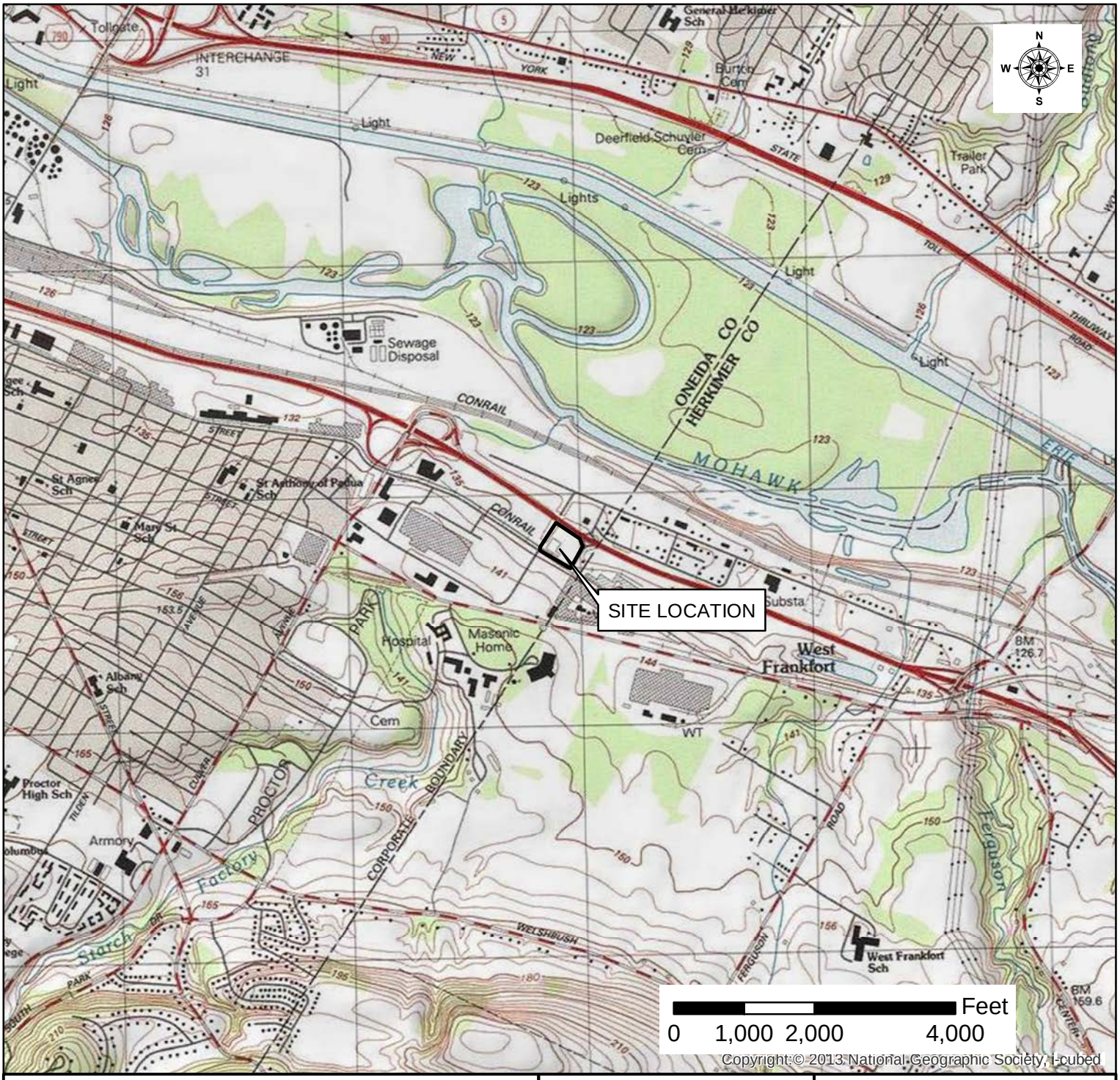
AECOM

Figures



Source: ArcGIS USA_Topo Maps

AECOM

40 British American Blvd.
Latham, NY 12110
T: (518) 951-2200
F: (518) 951-2300

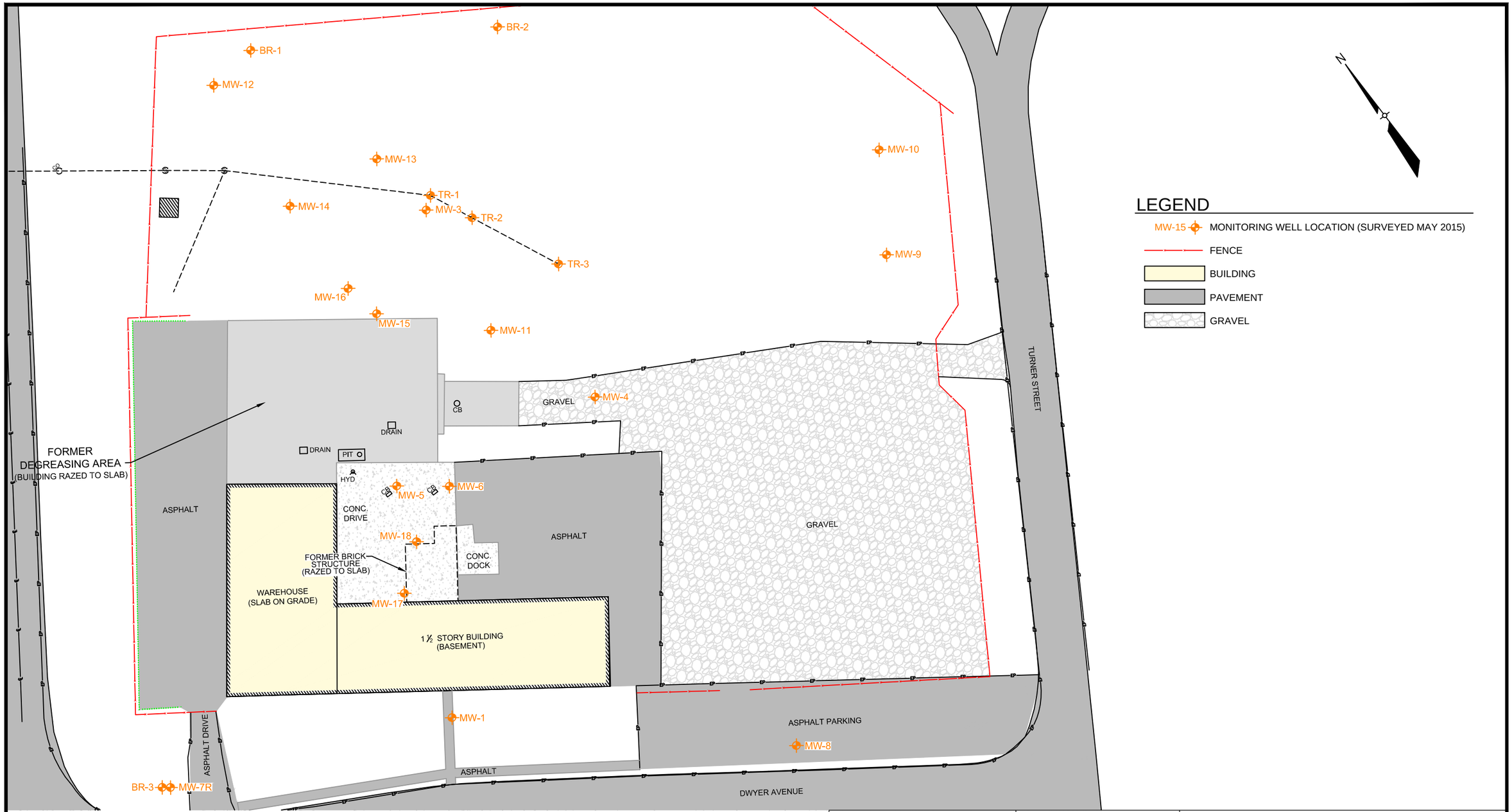
FIGURE 1

SITE LOCATION MAP

NORTHEAST ALLOYS AND METALS SITE
2145 DWYER AVENUE
UTICA, NEW YORK

June 2020

60284002



PLAN

0 25 50

SCALE (FEET)

PROJ. NO:	60284002
DATE:	05/16/2019
DRAWN:	MS
APPROVED:	LMM

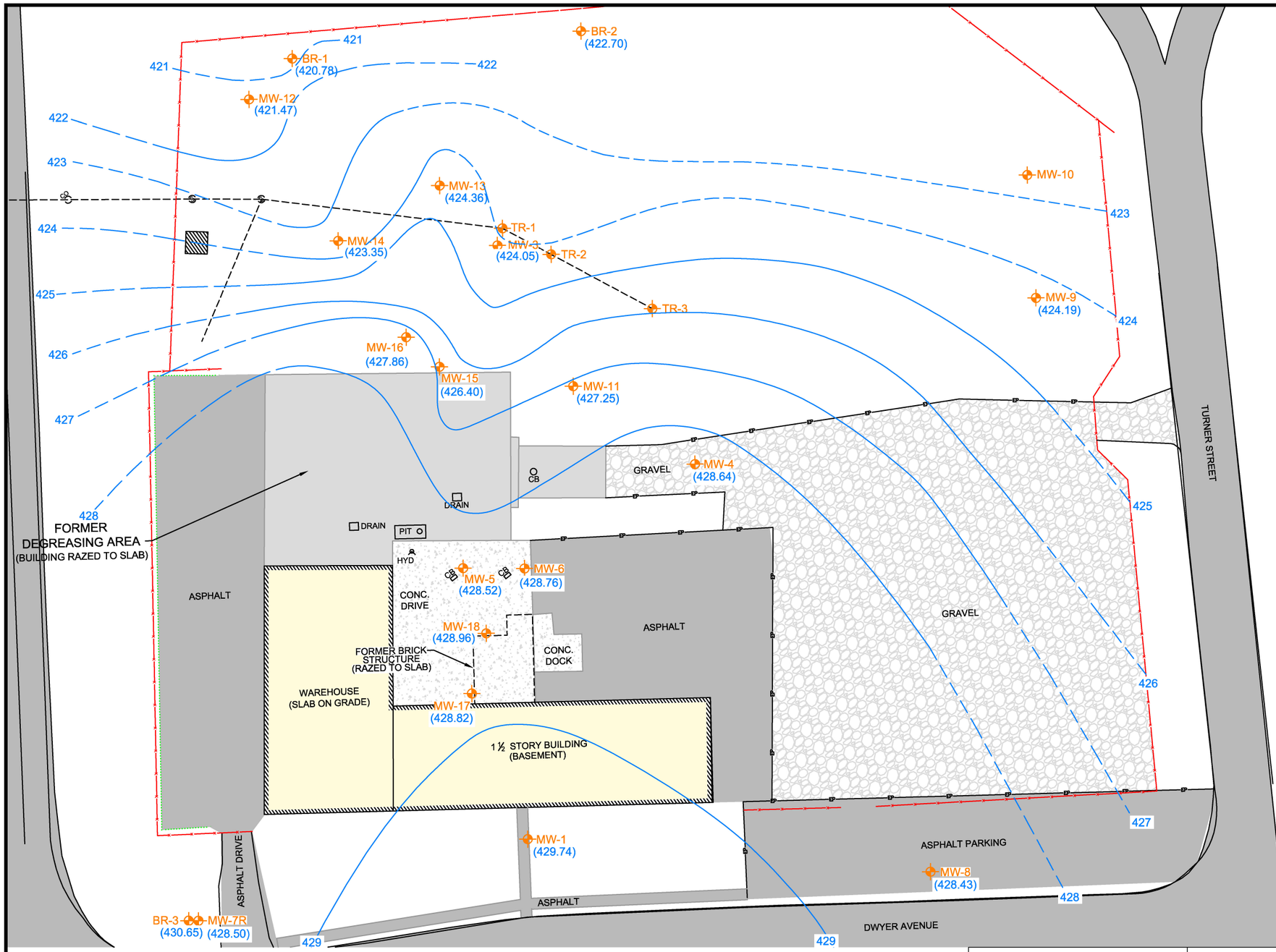
SHEET TITLE: SITE PLAN AND MONITORING WELL LOCATIONS

PROJECT:
NORTHEAST ALLOYS AND METALS SITE
NYSDEC SITE 633045
CITY OF UTICA
ONEIDA COUNTY, NEW YORK

Drawing Reference:
1) Drawing based on Bryant Associates Engineers • Surveyors • Construction Managers, 108 W. Jefferson St., Suite 400, Syracuse, NY; 2014.
2) A field survey performed by Earthtech/AECOM, October 7, 2008.
3) Surveyed Well Locations performed by AECOM, May 2015.

FIGURE 2

L:\Group\earth\Latham NY Work\NE Alloys\60135721_027 Site Plan_Dec2018.dwg, 5/16/2019 2:02:03 PM, Splawnm



LEGEND

- MW-15 — MONITORING WELL LOCATION (SURVEYED MAY 2015)
- FENCE
- BUILDING
- PAVEMENT
- GRAVEL
- 425 — APPROXIMATE GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)
- 427.25 — GROUNDWATER ELEVATION

NOTES

1. CONTOUR INTERVAL = 1 FOOT.
2. GROUNDWATER ELEVATION GAUGED 09/27/2022.

PLAN

0 25 50

SCALE (FEET)

PROJ. NO:	60284002
DATE:	01/16/2023
DRAWN:	CLS
APPROVED:	LMM

DEPARTMENT OF ENVIRONMENTAL CONSERVATION - NEW YORK STATE

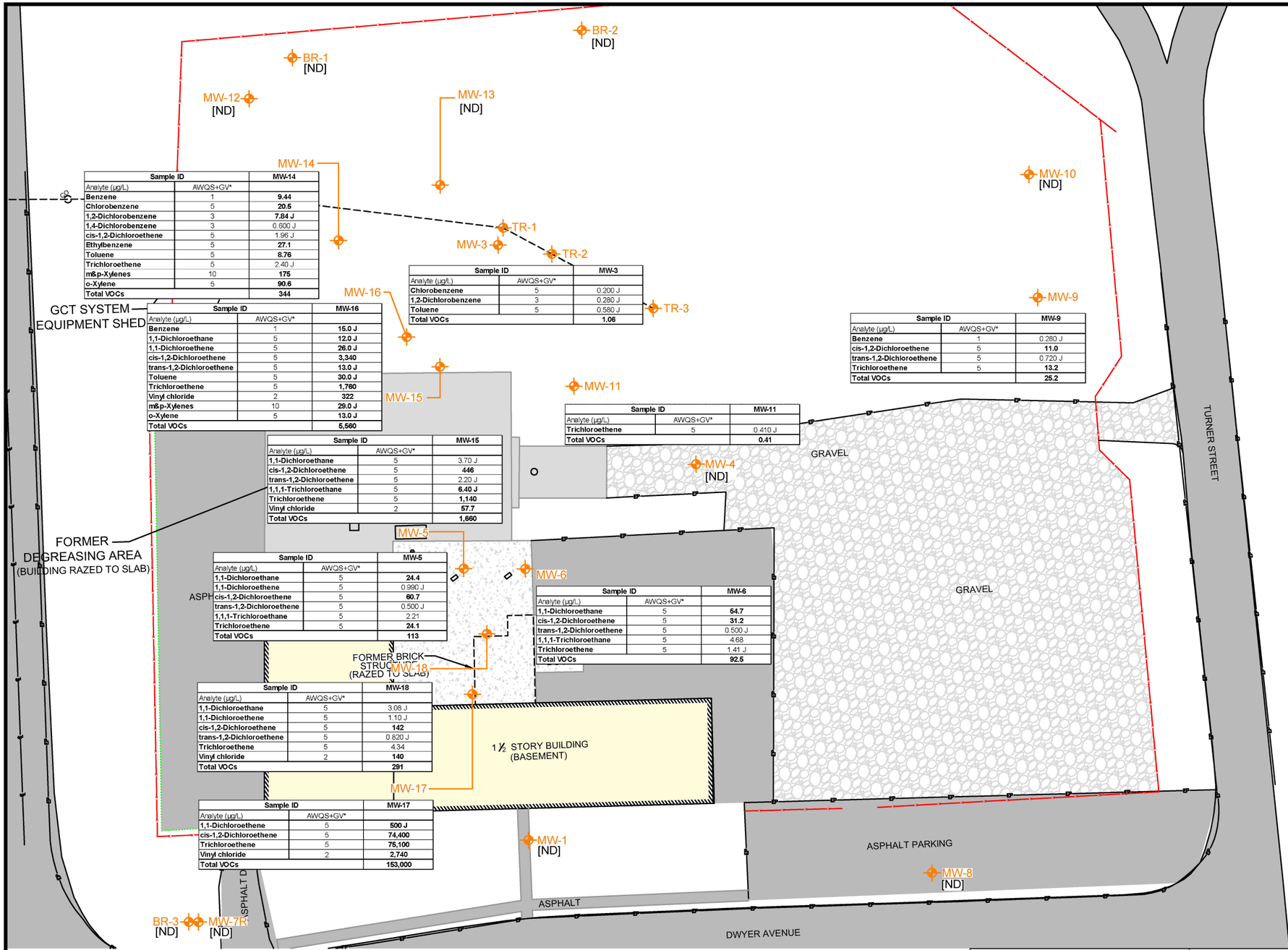
AECOM

SHEET TITLE: SHALLOW MONITORING WELL GROUNDWATER CONTOUR MAP

PROJECT:
NORTHEAST ALLOYS AND METALS SITE
NYSDEC SITE 633045
CITY OF UTICA
ONEIDA COUNTY, NEW YORK

Drawing Reference:
1) Drawing based on Bryant Associates Engineers • Surveyors • Construction Managers, 108 W. Jefferson St., Suite 400, Syracuse, NY; 2014.
2) A field survey performed by Earthtech/AECOM, October 7, 2008.
3) Surveyed Well Locations performed by AECOM, May 2015.

FIGURE 3



Sample ID		MW-14
Analyte (µg/L)	AWQS+GV*	
Benzene	1	**9.44**
Chlorobenzene	5	**20.5**
1,2-Dichlorobenzene	3	**7.84 J**
1,4-Dichlorobenzene	3	0.600 J
cis-1,2-Dichloroethene	5	1.96 J
Ethylbenzene	5	**27.1**
Toluene	5	**8.76**
Trichloroethene	5	2.40 J
m&p-Xylenes	10	**175**
o-Xylene	5	**90.6**
Total VOCs		**344**

Sample ID		MW-3
Analyte (µg/L)	AWQS+GV*	
Chlorobenzene	5	0.200 J
1,2-Dichlorobenzene	3	0.280 J
Toluene	5	0.580 J
Total VOCs		**1.06**

Sample ID		MW-16
Analyte (µg/L)	AWQS+GV*	
Benzene	1	**15.0 J**
1,1-Dichloroethane	5	**12.0 J**
1,1-Dichloroethene	5	**26.0 J**
cis-1,2-Dichloroethene	5	**3,340**
trans-1,2-Dichloroethene	5	**13.0 J**
Toluene	5	**30.0 J**
Trichloroethene	5	**1,760**
Vinyl chloride	2	**322**
m&p-Xylenes	10	**29.0 J**
o-Xylene	5	**13.0 J**
Total VOCs		**5,560**

Sample ID		MW-9
Analyte (µg/L)	AWQS+GV*	
Benzene	1	0.280 J
cis-1,2-Dichloroethene	5	**11.0**
trans-1,2-Dichloroethene	5	0.720 J
Trichloroethene	5	**13.2**
Total VOCs		**25.2**

Sample ID		MW-11
Analyte (µg/L)	AWQS+GV*	
Trichloroethene	5	0.410 J
Total VOCs		**0.41**

Sample ID		MW-15
Analyte (µg/L)	AWQS+GV*	
1,1-Dichloroethane	5	3.70 J
cis-1,2-Dichloroethene	5	**446**
trans-1,2-Dichloroethene	5	2.20 J
1,1,1-Trichloroethane	5	**6.40 J**
Trichloroethene	5	**1,140**
Vinyl chloride	2	**57.7**
Total VOCs		**1,660**

Sample ID		MW-5
Analyte (µg/L)	AWQS+GV*	
1,1-Dichloroethane	5	**24.4**
1,1-Dichloroethene	5	0.990 J
cis-1,2-Dichloroethene	5	**60.7**
trans-1,2-Dichloroethene	5	0.500 J
1,1,1-Trichloroethane	5	2.21
Trichloroethene	5	**24.1**
Total VOCs		**113**

Sample ID		MW-6
Analyte (µg/L)	AWQS+GV*	
1,1-Dichloroethane	5	**54.7**
cis-1,2-Dichloroethene	5	**31.2**
trans-1,2-Dichloroethene	5	0.500 J
1,1,1-Trichloroethane	5	4.68
Trichloroethene	5	1.41 J
Total VOCs		**92.5**

Sample ID		MW-18
Analyte (µg/L)	AWQS+GV*	
1,1-Dichloroethane	5	3.08 J
1,1-Dichloroethene	5	1.10 J
cis-1,2-Dichloroethene	5	**142**
trans-1,2-Dichloroethene	5	0.820 J
Trichloroethene	5	4.34
Vinyl chloride	2	**140**
Total VOCs		**291**

Sample ID		MW-17
Analyte (µg/L)	AWQS+GV*	
1,1-Dichloroethene	5	**500 J**
cis-1,2-Dichloroethene	5	**74,400**
Trichloroethene	5	**75,100**
Vinyl chloride	2	**2,740**
Total VOCs		**153,000**

LEGEND

- MW-15 — MONITORING WELL LOCATION (SURVEYED MAY 2015)
- FENCE
- BUILDING
- PAVEMENT
- GRAVEL

NOTES

1. [ND] = NO ANALYTES DETECTED GREATER THAN METHOD DETECTION LIMITS.
2. **BOLD** FONT INDICATES EXCEEDANCES OF AMBIENT WATER QUALITY STANDARDS AND/OR GUIDANCE VALUES.
3. J = DETECTED BUT BELOW THE REPORTING LIMIT (LOWEST CALIBRATION STANDARD); THEREFORE, RESULT IS AN ESTIMATED CONCENTRATION.
4. AWQS+GV* = NEW YORK STATE AMBIENT QUALITY STANDARDS (TOGs 1.1.1) AND GUIDANCE VALUE.

PLAN

0 25 50

SCALE (FEET)

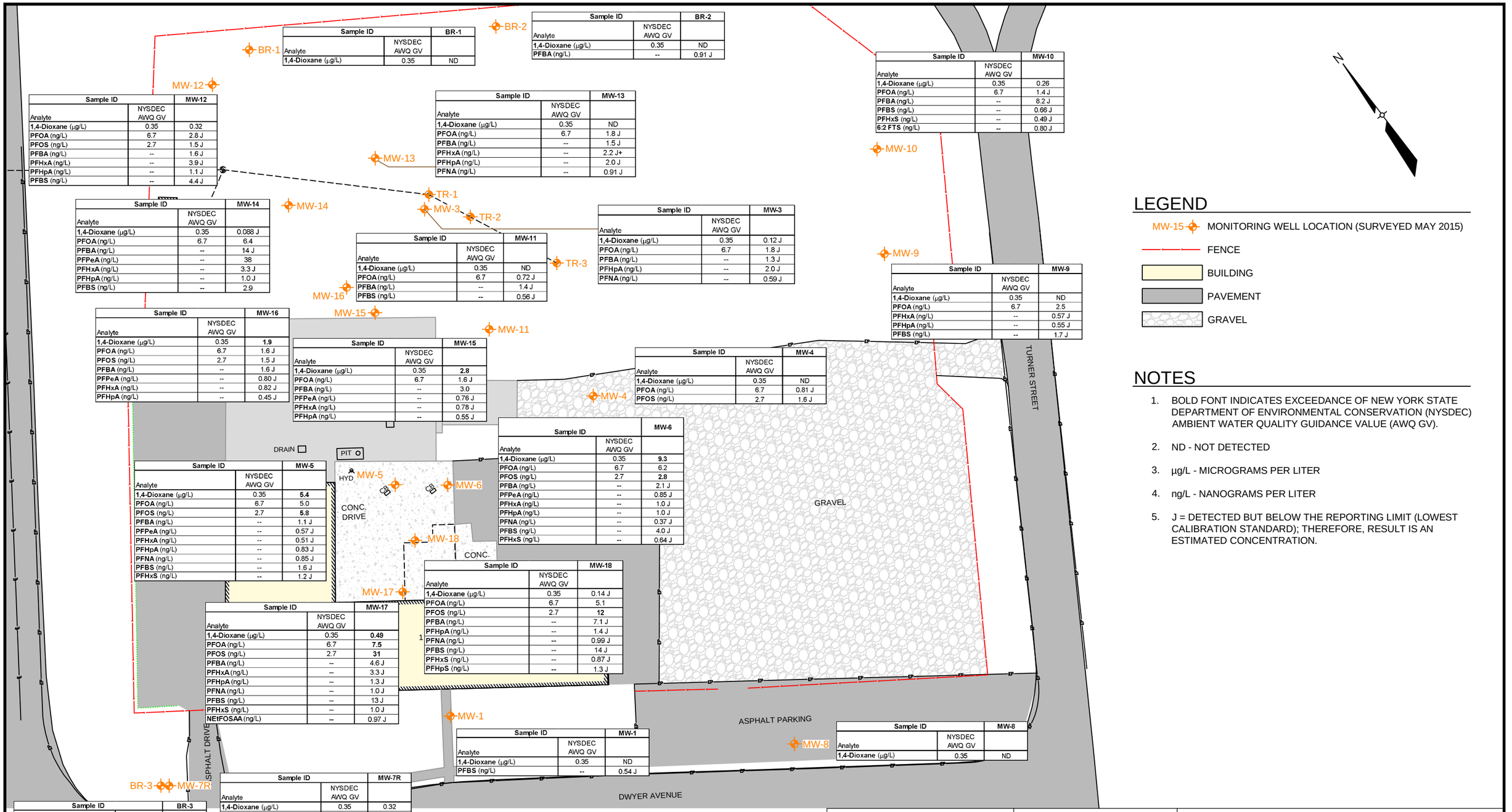
PROJ. NO:	60284002
DATE:	02/13/2024
DRAWN:	MS
APPROVED:	LMM

SHEET TITLE: TOTAL VOCs IN GROUNDWATER SEPTEMBER 27-30, 2022

PROJECT:
NORTHEAST ALLOYS AND METALS SITE
NYSDEC SITE 633045
CITY OF UTICA
ONEIDA COUNTY, NEW YORK

Drawing Reference:
1) Drawing based on Bryant Associates Engineers • Surveyors • Construction Managers, 108 W. Jefferson St., Suite 400, Syracuse, NY, 2014.
2) A field survey performed by Earthtech/AECOM, October 7, 2008.
3) Surveyed Well Locations performed by AECOM, May 2015.

FIGURE 4



Sample ID		BR-1
Analyte	NYSDEC AWQ GV	
1,4-Dioxane (µg/L)	0.35	ND

Sample ID		BR-2
Analyte	NYSDEC AWQ GV	
1,4-Dioxane (µg/L)	0.35	ND
PFBA (ng/L)	--	0.91 J

Sample ID		MW-12
Analyte	NYSDEC AWQ GV	
1,4-Dioxane (µg/L)	0.35	0.32
PFOA (ng/L)	6.7	2.8 J
PFOS (ng/L)	2.7	1.5 J
PFBA (ng/L)	--	1.6 J
PFHxA (ng/L)	--	3.9 J
PFHpA (ng/L)	--	1.1 J
PFBS (ng/L)	--	4.4 J

Sample ID		MW-13
Analyte	NYSDEC AWQ GV	
1,4-Dioxane (µg/L)	0.35	ND
PFOA (ng/L)	6.7	1.8 J
PFBA (ng/L)	--	1.5 J
PFHxA (ng/L)	--	2.2 J+
PFHpA (ng/L)	--	2.0 J
PFNA (ng/L)	--	0.91 J

Sample ID		MW-10
Analyte	NYSDEC AWQ GV	
1,4-Dioxane (µg/L)	0.35	0.26
PFOA (ng/L)	6.7	1.4 J
PFBA (ng/L)	--	8.2 J
PFBS (ng/L)	--	0.66 J
PFHxS (ng/L)	--	0.49 J
6:2 FTS (ng/L)	--	0.80 J

Sample ID		MW-14
Analyte	NYSDEC AWQ GV	
1,4-Dioxane (µg/L)	0.35	0.088 J
PFOA (ng/L)	6.7	6.4
PFBA (ng/L)	--	14 J
PFPeA (ng/L)	--	38
PFHxA (ng/L)	--	3.3 J
PFHpA (ng/L)	--	1.0 J
PFBS (ng/L)	--	2.9

Sample ID		MW-11
Analyte	NYSDEC AWQ GV	
1,4-Dioxane (µg/L)	0.35	ND
PFOA (ng/L)	6.7	0.72 J
PFBA (ng/L)	--	1.4 J
PFBS (ng/L)	--	0.56 J

Sample ID		MW-3
Analyte	NYSDEC AWQ GV	
1,4-Dioxane (µg/L)	0.35	0.12 J
PFOA (ng/L)	6.7	1.8 J
PFBA (ng/L)	--	1.3 J
PFHpA (ng/L)	--	2.0 J
PFNA (ng/L)	--	0.59 J

Sample ID		MW-9
Analyte	NYSDEC AWQ GV	
1,4-Dioxane (µg/L)	0.35	ND
PFOA (ng/L)	6.7	2.5
PFHxA (ng/L)	--	0.57 J
PFHpA (ng/L)	--	0.55 J
PFBS (ng/L)	--	1.7 J

Sample ID		MW-16
Analyte	NYSDEC AWQ GV	
1,4-Dioxane (µg/L)	0.35	**1.9**
PFOA (ng/L)	6.7	1.6 J
PFOS (ng/L)	2.7	1.5 J
PFBA (ng/L)	--	1.6 J
PFPeA (ng/L)	--	0.80 J
PFHxA (ng/L)	--	0.82 J
PFHpA (ng/L)	--	0.45 J

Sample ID		MW-15
Analyte	NYSDEC AWQ GV	
1,4-Dioxane (µg/L)	0.35	**2.8**
PFOA (ng/L)	6.7	1.6 J
PFBA (ng/L)	--	3.0
PFPeA (ng/L)	--	0.76 J
PFHxA (ng/L)	--	0.78 J
PFHpA (ng/L)	--	0.55 J

Sample ID		MW-4
Analyte	NYSDEC AWQ GV	
1,4-Dioxane (µg/L)	0.35	ND
PFOA (ng/L)	6.7	0.81 J
PFOS (ng/L)	2.7	1.6 J

Sample ID		MW-6
Analyte	NYSDEC AWQ GV	
1,4-Dioxane (µg/L)	0.35	**9.3**
PFOA (ng/L)	6.7	6.2
PFOS (ng/L)	2.7	**2.8**
PFBA (ng/L)	--	2.1 J
PFPeA (ng/L)	--	0.85 J
PFHxA (ng/L)	--	1.0 J
PFHpA (ng/L)	--	1.0 J
PFNA (ng/L)	--	0.37 J
PFBS (ng/L)	--	4.0 J
PFHxS (ng/L)	--	0.64 J

Sample ID		MW-5
Analyte	NYSDEC AWQ GV	
1,4-Dioxane (µg/L)	0.35	**5.4**
PFOA (ng/L)	6.7	5.0
PFOS (ng/L)	2.7	**5.8**
PFBA (ng/L)	--	1.1 J
PFPeA (ng/L)	--	0.57 J
PFHxA (ng/L)	--	0.51 J
PFHpA (ng/L)	--	0.83 J
PFNA (ng/L)	--	0.85 J
PFBS (ng/L)	--	1.6 J
PFHxS (ng/L)	--	1.2 J

Sample ID		MW-18
Analyte	NYSDEC AWQ GV	
1,4-Dioxane (µg/L)	0.35	0.14 J
PFOA (ng/L)	6.7	5.1
PFOS (ng/L)	2.7	**12**
PFBA (ng/L)	--	7.1 J
PFHpA (ng/L)	--	1.4 J
PFNA (ng/L)	--	0.99 J
PFBS (ng/L)	--	14 J
PFHxS (ng/L)	--	0.87 J
PFHpS (ng/L)	--	1.3 J

Sample ID		MW-17
Analyte	NYSDEC AWQ GV	
1,4-Dioxane (µg/L)	0.35	**0.49**
PFOA (ng/L)	6.7	**7.5**
PFOS (ng/L)	2.7	**31**
PFBA (ng/L)	--	4.6 J
PFHxA (ng/L)	--	3.3 J
PFHpA (ng/L)	--	1.3 J
PFNA (ng/L)	--	1.0 J
PFBS (ng/L)	--	13 J
PFHxS (ng/L)	--	1.0 J
NEtFOSAA (ng/L)	--	0.97 J

Sample ID		MW-1
Analyte	NYSDEC AWQ GV	
1,4-Dioxane (µg/L)	0.35	ND
PFBS (ng/L)	--	0.54 J

Sample ID		MW-8
Analyte	NYSDEC AWQ GV	
1,4-Dioxane (µg/L)	0.35	ND

Sample ID		MW-7R
Analyte	NYSDEC AWQ GV	
1,4-Dioxane (µg/L)	0.35	0.32
PFOA (ng/L)	6.7	1.0 J
PFOS (ng/L)	2.7	2.3
PFBA (ng/L)	--	1.2 J
PFPeA (ng/L)	--	0.40 J
PFBS (ng/L)	--	0.41 J

Sample ID		BR-3
Analyte	NYSDEC AWQ GV	
1,4-Dioxane (µg/L)	0.35	ND

LEGEND

- MW-15 — MONITORING WELL LOCATION (SURVEYED MAY 2015)
- FENCE
- BUILDING
- PAVEMENT
- GRAVEL

NOTES

1. BOLD FONT INDICATES EXCEEDANCE OF NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION (NYSDEC) AMBIENT WATER QUALITY GUIDANCE VALUE (AWQ GV).
2. ND - NOT DETECTED
3. µg/L - MICROGRAMS PER LITER
4. ng/L - NANOGRAMS PER LITER
5. J = DETECTED BUT BELOW THE REPORTING LIMIT (LOWEST CALIBRATION STANDARD); THEREFORE, RESULT IS AN ESTIMATED CONCENTRATION.

PLAN

0 25 50

SCALE (FEET)

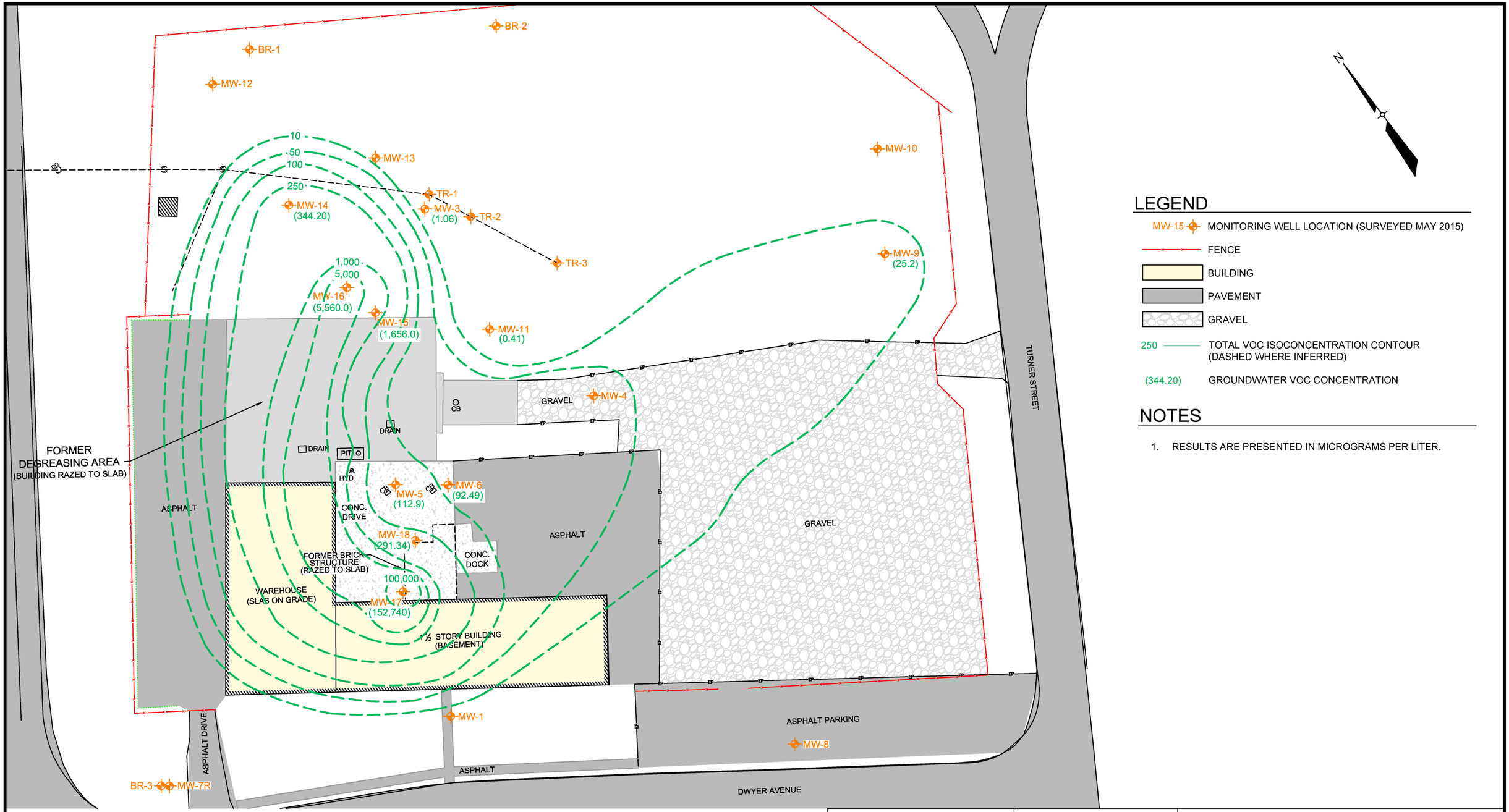
PROJ. NO: 60284002
DATE: 03/14/2024
DRAWN: MS
APPROVED: LMM

SHEET TITLE: EMERGING CONTAMINANTS IN GROUNDWATER - SEPTEMBER 27-30, 2022

PROJECT:
NORTHEAST ALLOYS AND METALS SITE
NYSDEC SITE 633045
CITY OF UTICA
ONEIDA COUNTY, NEW YORK

Drawing Reference:
1) Drawing based on Bryant Associates Engineers • Surveyors • Construction Managers, 108 W. Jefferson St., Suite 400, Syracuse, NY, 2014.
2) A field survey performed by EarthtechAECOM, October 7, 2008.
3) Surveyed Well Locations performed by AECOM, May 2015.

FIGURE 5



LEGEND

- MW-15 — MONITORING WELL LOCATION (SURVEYED MAY 2015)
- FENCE
- BUILDING
- PAVEMENT
- GRAVEL
- 250 — TOTAL VOC ISOCONCENTRATION CONTOUR (DASHED WHERE INFERRED)
- (344.20) — GROUNDWATER VOC CONCENTRATION

NOTES

1. RESULTS ARE PRESENTED IN MICROGRAMS PER LITER.

PLAN

0 25 50

SCALE (FEET)

PROJ. NO:	60284002
DATE:	01/26/2023
DRAWN:	CLS
APPROVED:	LMM

SHEET TITLE: TOTAL VOC ISOCONCENTRATIONS SEPTEMBER 2022

PROJECT:
NORTHEAST ALLOYS AND METALS SITE
NYSDEC SITE 633045
CITY OF UTICA
ONEIDA COUNTY, NEW YORK

Drawing Reference:
1) Drawing based on Bryant Associates Engineers • Surveyors • Construction Managers, 108 W. Jefferson St., Suite 400, Syracuse, NY; 2014.
2) A field survey performed by Earthtech/AECOM, October 7, 2008.
3) Surveyed Well Locations performed by AECOM, May 2015.

FIGURE 6

Appendix A

Monitoring Well Purging/Sampling Forms

Monitoring Well Purging/Sampling Form (Low-Flow Sampling)

Project Name and Number: NE Alloys

Monitoring Well Number: BR-1 Date: 9/27/22

Samplers: Joe Brown

Sample Number: BR-1 QA/QC Collected? MS/MSD Dup

Purging / Sampling Method: Peristaltic

1. L = Total Well Depth:	48.85	feet
2. D = Riser Diameter (I.D.):	.163	feet
3. W = Static Depth to Water (TOC):	13.2 ~~13.20~~	feet
4. C = Column of Water in Casing:	35.65	feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48)		gal
6. D2 = Pump Setting Depth (ft):		feet
7. C2 = Column of water in Pump/Tubing (ft):		feet
8. Tubing Volume = C2(0.005737088)		gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 5600 Start 09:52

Parameter	Units	Readings							
Time	24 hr	09:57	10:02	10:07	10:12	10:17	10:22	10:27	10:32
Water Level (0.33)	feet	13.38'	13.45'	13.48'	13.5'	13.53'	13.55'	13.56	13.54
Volume Purged	gal	.5	.8	1.0	1.25	1.75	2.5	2.75	3.00
Flow Rate	mL / min	300	300	300	300	300	300	300	300
Turbidity (+/- 10%)	NTU	1.57	0.00	0.00	0.02	0.25	0.99	0.00	0.02
Dissolved Oxygen (+/- 10%)	%	3.0	1.6	4.3	1.9	1.7	1.2	1.5	2.0
Dissolved Oxygen (+/- 10%)	mg/L	.29	0.19	0.47	.19	.18	.14	0.16	0.22
Eh / ORP (+/- 10)	MeV	-103.9	-116.4	-126	-135.0	-142.3	-148.5	-153.0	-156.4
Specific Conductivity	mS/cm[c]								
Conductivity (+/- 3%)	mS/cm	.714	738	735	718	733	722	723	717
pH (+/- 0.1)	pH unit	7.37	7.37	7.37	7.38	7.39	7.41	7.41	7.43
Temp (+/- 0.5)	C	12.1	12.1	12.1	12.0	11.9	11.9	12.0	12.2
Color	Visual	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear
Odor	Olfactory	N/A	NA	NA	NA	NA	NA	NA	NA

Comments:

YSI 5600

Tub. 60060

Gauge 5217

Sample 10:40

MS/MSD Dup

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form (Low-Flow Sampling)

Project Name and Number: NE Alloys

Monitoring Well Number: BR-2 Date: 9/29

Samplers: Elizabeth Nozinski

Sample Number: _____ QA/QC Collected? _____

Purging / Sampling Method: Peristaltic

1. L = Total Well Depth:	43.47	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	9.35	feet
4. C = Column of Water in Casing:		feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48)		gal
6. D2 = Pump Setting Depth (ft):		feet
7. C2 = Column of water in Pump/Tubing (ft):		feet
8. Tubing Volume = C2(0.005737088)		gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

12:35

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 6971

Parameter	Units	Readings					
Time	24 hr	12:40	12:45	12:50	12:55	1300	1305
Water Level (0.33)	feet	11.0	11.55	11.88	12.05	12.2	12.35
Volume Purged	gal	1.5	1	1.5	2.0	2.5	3.0
Flow Rate	mL / min	300	300	300	300	300	300
Turbidity (+/- 10%)	NTU	5.25	9.47	38.1	94.4	99.7	95.7
Dissolved Oxygen (+/- 10%)	%	3.8	2.6	2.5	2.1	2.0	3.0
Dissolved Oxygen (+/- 10%)	mg/L	0.37	0.28	0.27	0.22	0.21	0.32
Eh / ORP (+/- 10)	MeV	-77.1	-81.7	-84.5	-86.7	-88.6	-89.4
Specific Conductivity	mS/cm[c]						
Conductivity (+/- 3%)	mS/cm	1386	1384	1384	1384	1382	1382
pH (+/- 0.1)	pH unit	6.83	6.82	6.82	6.82	6.82	6.82
Temp (+/- 0.5)	C	12.6	12.5	12.4	12.4	12.3	12.3
Color	Visual	Clear	Clear	Clear	~~Clear~~	~~Cloudy~~	Slightly cloudy
Odor	Olfactory	Sulfur (not strong)	Sulfur	Sulfur	Sulfur Slightly cloudy	Sulfur	Sulfur

Comments:

YSI 6791
Turbidity 7309
Water level 6166
Pump 7018

Sample time 1310

* Three consecutive readings within range indicates stabilization of that parameter.

Pg 1 of 1

Monitoring Well Purging / Sampling Form

Project Name and Number: NE Alloys

Monitoring Well Number: BR-3 Date: 9/28

Samplers: JB

Sample Number: BR-3 QA/QC Collected? None

Purging / Sampling Method: Peri

1. L = Well Depth:	35.09	feet
2. D = Riser Diameter (I.D.):	0.163	feet
3. W = Depth to Water:	8.09	feet
4. C = Column of Water in Well:		feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48)		gal
6. 3(V) = Target Purge Volume		gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 5600 13:15

Parameter	Units	Readings							
Time	24 hr	1320	1325	1330	1335	1340	1345	1350	1355
Water Level (0.33)	feet	8.14	8.16	8.16	8.16	8.17	8.17	8.17	8.17
Volume Purged	gal	.2	.5	.7	1	1.2	1.6	2	2.3
Flow Rate	mL/min	250	250	250	250	250	250	250	250
Turbidity (+/- 10%)	NTU	21.8	23.0	17.7	16.5	11.5	14.1	12.8	18.0
Dissolved Oxygen (+/- 10%)	%	1.1	1.8	2.1	2.5	1.9	1.9	1.8	1.6
Dissolved Oxygen (+/- 10%)	mg/L	0.11	0.18	0.21	0.24	0.19	0.19	0.18	0.16
Eh / ORP (+/- 10)	MeV	-223.4	-244.6	-266	-274.2	-280.6	-283.7	-286.7	-289.2
Specific Conductivity (+/- 3%)	mS/cm[c]								
Conductivity (+/- 3%)	mS/cm	2223	2226	2213	2249	2247	2246	2240	2244
pH (+/- 0.1)	pH unit	7.14	7.16	7.14	7.14	7.14	7.15	7.15	7.15
Temp (+/- 0.5)	C°	14.6	14.4	14.2	14.2	14.1	14.1	14.2	14.2
Color	Visual	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear
Odor	Olfactory	NA	Eggs	NA	NA	NA	NA	NA	NA

Comments:

YSI 5600

Turb 600LCD

Monitoring Well Purging/Sampling Form (Low-Flow Sampling)

Project Name and Number: _____

Monitoring Well Number: _____ Date: 9/28/22

Samplers: JB

Sample Number: BR-3 QA/QC Collected? None

Purging / Sampling Method: Peristaltic

1. L = Total Well Depth:	_____	feet
2. D = Riser Diameter (I.D.):	_____	feet
3. W = Static Depth to Water (TOC):	_____	feet
4. C = Column of Water in Casing:	_____	feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$	_____	gal
6. D2 = Pump Setting Depth (ft):	_____	feet
7. C2 = Column of water in Pump/Tubing (ft):	_____	feet
8. Tubing Volume = C2(0.005737088)	_____	gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 6600 Start 13:15

Parameter	Units	Readings						
Time	24 hr	1400	1405	1410	1415	1420	1425	1430
Water Level (0.33)	feet	8.17	8.17	8.17	8.17	8.17	8.17	8.17
Volume Purged	gal	2.7	3	3.2	3.75	4	4.26	4.5
Flow Rate	mL / min	250	250	250	100	250	250	250
Turbidity (+/- 10%)	NTU	13.9	11.6	23.9	28.2	30.9	34.3	37.7
Dissolved Oxygen (+/- 10%)	%	1.4	1.4	1.8	2.0	1.6	1.5	1.2
Dissolved Oxygen (+/- 10%)	mg/L	0.15	0.14	0.18	0.20	0.16	0.15	0.13
Eh / ORP (+/- 10)	MeV	-290.9	-292.7	-291.7	-291.3	-295.4	-297.9	-299.7
Specific Conductivity	mS/cm[c]							
Conductivity (+/- 3%)	mS/cm	2240	2235	2238	2234	2220	2222	2215
pH (+/- 0.1)	pH unit	7.15	7.16	7.18	7.18	7.18	7.17	7.17
Temp (+/- 0.5)	C	14.1	14.3	14.8	15.0	14.3	14.3	14.2
Color	Visual	Clear	Clear	Clear	Clear	Clear	Clear	Clear
Odor	Olfactory	NA	NA	NA	NA	NA	NA	NA

↑ Battery Dying

↑ Changed

Comments:

Turb 6060

Sample 14:34

* Three consecutive readings within range indicates stabilization of that parameter.

Pg 1 of 2

Monitoring Well Purging/Sampling Form (Low-Flow Sampling)

Project Name and Number: NE Alloys

Monitoring Well Number: MW-1 Date: 9/29/20

Samplers: JB

Sample Number: MW-1 QA/QC Collected? None

Purging / Sampling Method: Peristaltic

1. L = Total Well Depth:	22.9	feet
2. D = Riser Diameter (I.D.):	0.163	feet
3. W = Static Depth to Water (TOC):	9.01	feet
4. C = Column of Water in Casing:		feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48)		gal
6. D2 = Pump Setting Depth (ft):		feet
7. C2 = Column of water in Pump/Tubing (ft):		feet
8. Tubing Volume = C2(0.005737088)		gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI Start 09:55

Parameter	Units	Readings						
Time	24 hr	1000	1005	1010	1015	1020	1025	1030
Water Level (0.33)	feet	9.37	9.51	9.58	9.63	9.7	9.73	9.75
Volume Purged	gal	.5	.75	1.1	1.5	2	2.3	2.5
Flow Rate	mL / min	250	250	250	250	250	250	250
Turbidity (+/- 10%)	NTU	3.85	4.15	4.57	7.02	2.80	0.62	0.51
Dissolved Oxygen (+/- 10%)	%	11.3	9.7	9.8	9.9	13.7	17.6	19.6
Dissolved Oxygen (+/- 10%)	mg/L	1.15	0.98	0.99	0.98	1.36	1.74	1.98
Eh / ORP (+/- 10)	MeV	33.8	35.3	36.1	17.2	32.2	49.7	57.2
Specific Conductivity	mS/cm[c]							
Conductivity (+/- 3%)	mS/cm	1072	1057	1053	1130	1052	1030	1018
pH (+/- 0.1)	pH unit	6.99	6.99	7.02	7.02	7.03	7.07	7.07
Temp (+/- 0.5)	C	14.5	14.6	14.7	14.8	15.1	15.3	15.3
Color	Visual	Clear	Clear	Clear	Clear	Clear	Clear	Clear
Odor	Olfactory	NA	NA	NA	NA	NA	NA	NA

Comments:

YSI 5600

Turb 6060

Gauge 5017

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging / Sampling Form

Project Name and Number: NF Alloys

Monitoring Well Number: MW-1 Date: 9/29

Samplers: JTB

Sample Number: MW-1 QA/QC Collected? None

Purging / Sampling Method: Peristaltic low flow

1. L = Well Depth:	22.9	feet
2. D = Riser Diameter (I.D.):	0.163	feet
3. W = Depth to Water:	9.01	feet
4. C = Column of Water in Well:		feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48)		gal
6. 3(V) = Target Purge Volume		gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI Start 09:55

Parameter	Units	Readings						
Time	24 hr	1035	1040					
Water Level (0.33)	feet	9.78	9.8					
Volume Purged	gal	2.75	3.1					
Flow Rate	mL/min	250	250					
Turbidity (+/- 10%)	NTU	0.02	1.34					
Dissolved Oxygen (+/- 10%)	%	19.4	18.7					
Dissolved Oxygen (+/- 10%)	mg/L	1.93	1.85					
Eh / ORP (+/- 10)	MeV	61.2	61.9					
Specific Conductivity (+/- 3%)	mS/cm^c							
Conductivity (+/- 3%)	mS/cm	1007	1026					
pH (+/- 0.1)	pH unit	7.08	7.06					
Temp (+/- 0.5)	C°	15.4	15.4					
Color	Visual	Clear	Clear					
Odor	Olfactory	NA	NA					

Comments:

YSI 5600

Turb 6060

Gauge 5017

Sample 1045

Monitoring Well Purging/Sampling Form (Low-Flow Sampling)

Project Name and Number: NE Alloys

Monitoring Well Number: MW-3 Date: 9/27/22

Samplers: JB

Sample Number: MW-3 QA/QC Collected? None

Purging / Sampling Method: Peristaltic

1. L = Total Well Depth:	22.01	feet
2. D = Riser Diameter (I.D.):	0.163	feet
3. W = Static Depth to Water (TOC):	9.8	feet
4. C = Column of Water in Casing:		feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48)		gal
6. D2 = Pump Setting Depth (ft):		feet
7. C2 = Column of water in Pump/Tubing (ft):		feet
8. Tubing Volume = C2(0.005737088)		gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 5600 12:40 Start

Parameter	Units	Readings							
Time	24 hr	12:45	12:50	12:55	13:00	13:05	1310	13:15	13:20
Water Level (0.33)	feet	11.55	14.2	15.85	16.98	17.75	18.16	18.57	19.0
Volume Purged	gal	.5	1	1.25	1.5	1.75	2	2.25	2.5
Flow Rate	mL / min	350	350	275	275	200	200	200	200
Turbidity (+/- 10%)	NTU	18.0	26.2	44.3	66.7	52.4	42.7	39.9	49.9
Dissolved Oxygen (+/- 10%)	%	4.2	2.0	1.5	1.3	2.6	5.9	5.8	7.9
Dissolved Oxygen (+/- 10%)	mg/L	0.44	0.21	0.15	0.13	0.26	0.59	0.58	0.80
Eh / ORP (+/- 10)	MeV	-93.2	-106.1	-108.6	-101.3	-83.4	-72.8	-64.9	-61.4
Specific Conductivity	mS/cm[c]								
Conductivity (+/- 3%)	mS/cm	1089	1078	1063	1049	1037	1012	980	945
pH (+/- 0.1)	pH unit	6.76	6.75	6.77	6.78	6.80	6.83	6.85	6.89
Temp (+/- 0.5)	C	13.6	14.2	14.6	14.7	14.9	14.7	14.6	14.3
Color	Visual	Cloudy	Cloudy	Cloudy	Cloudy	Cloudy	Cloudy	Cloudy	Clear
Odor	Olfactory	NA	NA	NA	NA	NA	NA	NA	NA

Comments:

YSI 5600

Turb. 60060

Gauge 5017

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging / Sampling Form

Project Name and Number: NE Alloys

Monitoring Well Number: MW-3 Date: 9/27/02

Samplers: JB

Sample Number: MW-3 QA/QC Collected? None

Purging / Sampling Method: Peristaltic

1. L = Well Depth: _____ feet
2. D = Riser Diameter (I.D.): _____ feet
3. W = Depth to Water: _____ feet
4. C = Column of Water in Well: _____ feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$ _____ gal
6. 3(V) = Target Purge Volume _____ gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using Peristaltic YSI

Parameter	Units	Readings							
Time	24 hr	13:25	13:30	1335	1340	1345	1350	1355	1400
Water Level (0.33)	feet	19.41	19.63	19.75	19.79	19.88	19.97	20.05	20.11
Volume Purged	gal	2.75	3	3.25	3.5	3.75	4	4.25	4.5
Flow Rate	mL/min	200	175	175	175	175	175	175	175
Turbidity (+/- 10%)	NTU	39.4	18.2	10.0	8.60	8.42	5.06	5.24	3.20
Dissolved Oxygen (+/- 10%)	%	10.8	14.1	18.7	19.4	20.5	23.3	25.3	25.5
Dissolved Oxygen (+/- 10%)	mg/L	1.08	1.43	1.92	1.95	2.14	2.40	2.60	2.63
Eh / ORP (+/- 10)	MeV	-54.5	-46.4	-41.7	-41.9	-38.0	-34.2	-30.9	-32.5
Specific Conductivity (+/- 3%)	mS/cm[c]	[redacted]							
Conductivity (+/- 3%)	mS/cm	918	900	894	891	891	890	891	895
pH (+/- 0.1)	pH unit	6.92	6.93	6.94	6.94	6.95	6.93	6.90	6.90
Temp (+/- 0.5)	C°	14.3	14.6	14.5	14.5	14.4	14.0	13.8	13.9
Color	Visual	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear
Odor	Olfactory	NA	NA	NA	NA	NA	NA	NA	NA

Comments:

YSI 5600
Turb 60060
Gauge 5217

Monitoring Well Purging / Sampling Form

Project Name and Number:

Monitoring Well Number: MW-3 Date: 9/27/22

Samplers: JB

Sample Number: MW-3 QA/QC Collected? None

Purging / Sampling Method: Peristaltic

1. L = Well Depth:		feet
2. D = Riser Diameter (I.D.):		feet
3. W = Depth to Water:		feet
4. C = Column of Water in Well:		feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48)		gal
6. 3(V) = Target Purge Volume		gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 5600

Parameter	Units	Readings						
Time	24 hr	14:05	14:10					
Water Level (0.33)	feet	20.17	20.20					
Volume Purged	gal	4.7	4.8					
Flow Rate	mL/min	175	175					
Turbidity (+/- 10%)	NTU	4.16	3.81					
Dissolved Oxygen (+/- 10%)	%	27.2	28.1					
Dissolved Oxygen (+/- 10%)	mg/L	2.85	2.93					
Eh / ORP (+/- 10)	MeV	-27.5	-25.0					
Specific Conductivity (+/- 3%)	mS/cm^c							
Conductivity (+/- 3%)	mS/cm	884	881					
pH (+/- 0.1)	pH unit	6.91	6.90					
Temp (+/- 0.5)	C°	13.7	13.6					
Color	Visual	Clear	Clear					
Odor	Olfactory	NA	NA					

Comments:

YSI 5600
Turb 66060
Gauge 5217

Sampled 14:12

Monitoring Well Purging / Sampling Form

Project Name and Number: NF Alloys

Monitoring Well Number: MW-4 Date: 9/28/22

Samplers: JB

Sample Number: MW-4 QA/QC Collected? None

Purging / Sampling Method: Peristaltic

1. L = Well Depth:	17.23	feet
2. D = Riser Diameter (I.D.):	0.163	feet
3. W = Depth to Water:	1.85	feet
4. C = Column of Water in Well:		feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48)		gal
6. 3(V) = Target Purge Volume		gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 5600 Start 09:30

Parameter	Units	Readings						
Time	24 hr	09:35	09:40	09:45	09:50			
Water Level (0.33)	feet	2.61	2.92	2.98	3.04			
Volume Purged	gal	.25	.5	.7	.9			
Flow Rate	mL/min	275	275	200	200			
Turbidity (+/- 10%)	NTU	602.9	44.0	39.60	39.8			
Dissolved Oxygen (+/- 10%)	%	43.3	44.8	41.9	39.2			
Dissolved Oxygen (+/- 10%)	mg/L	4.31	4.36	4.04	3.80			
Eh / ORP (+/- 10)	MeV	61.1	72.4	79.0	85.4			
Specific Conductivity (+/- 3%)	mS/cm[c]							
Conductivity (+/- 3%)	mS/cm	516.8	490.3	491.2	469.2			
pH (+/- 0.1)	pH unit	7.10	7.09	7.11	7.11			
Temp (+/- 0.5)	C°	16.2	16.5	16.7	16.7			
Color	Visual	Yellow	Yellow	Clear	Clear			
Odor	Olfactory	NA	NA	NA	NA			

Comments:

YSI 5600
Turb 6060
Gauge 5217

Sample 09:53

Monitoring Well Purging/Sampling Form (Low-Flow Sampling)

Project Name and Number: NE Alloys

Monitoring Well Number: MW 5 Date: 9/29

Samplers: JB

Sample Number: MW 5 QA/QC Collected? None

Purging / Sampling Method: Peri

1. L = Total Well Depth: 18.96 feet
2. D = Riser Diameter (I.D.): 0.163 feet
3. W = Static Depth to Water (TOC): 3.09 feet
4. C = Column of Water in Casing: _____ feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48) _____ gal
6. D2 = Pump Setting Depth (ft): _____ feet
7. C2 = Column of water in Pump/Tubing (ft): _____ feet
8. Tubing Volume = C2(0.005737088) _____ gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 5600 16:20

Parameter	Units	Readings						
Time	24 hr	16:25	16:30	16:35	16:40	16:45	16:50	16:55
Water Level (0.33)	feet	3.95	4.13	4.15	4.17	4.21	4.34	4.52
Volume Purged	gal	0.5	.7	1.1	1.25	1.5	1.75	2
Flow Rate	mL / min	200	200	200	200	200	200	200
Turbidity (+/- 10%)	NTU	232	166	114	87.9	61.4	47.6	39.3
Dissolved Oxygen (+/- 10%)	%	5.0	2.5	1.9	1.8	1.1	0.8	1.7
Dissolved Oxygen (+/- 10%)	mg/L	0.49	0.23	0.18	0.17	0.11	0.07	0.16
Eh / ORP (+/- 10)	MeV	-144.1	-187.5	-211.6	-228.1	-236.9	-240.0	-248.4
Specific Conductivity	mS/cm[c]							
Conductivity (+/- 3%)	mS/cm	1405	1405	1405	1399	1386	1367	1319
pH (+/- 0.1)	pH unit	6.97	6.98	6.99	6.94	6.97	6.96	6.95
Temp (+/- 0.5)	C	17.8	18.0	18.2	18.3	18.1	18.0	18.2
Color	Visual	Cloudy	Cloudy	Cloudy	Cloudy	Cloudy	Cloudy	Cloudy
Odor	Olfactory	NAJ	NAJ	NA	NA	NA	NA	NA

Comments:

Turb 6060
Gauge 5217

* Three consecutive readings within range indicates stabilization of that parameter.

Pg 2 of 3

Monitoring Well Purging / Sampling Form

Project Name and Number: NE Alloy

Monitoring Well Number: MW-5 Date: 9/29/20

Samplers: JB

Sample Number: MW-5 QA/QC Collected? None

Purging / Sampling Method: Peri

1. L = Well Depth:	18.96	feet
2. D = Riser Diameter (I.D.):	0.163	feet
3. W = Depth to Water:	3.00	feet
4. C = Column of Water in Well:		feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48)		gal
6. 3(V) = Target Purge Volume		gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 5600 16:20

Parameter	Units	Readings						
Time	24 hr	1700	1705	1710	1715	1720	1725	1730
Water Level (0.33)	feet	4.59	4.61	4.65	4.66	4.70	4.77	4.78
Volume Purged	gal	2	2.25	2.5	2.75	3	3.25	3.5
Flow Rate	mL/min	200	200	200	200	200	200	200
Turbidity (+/- 10%)	NTU	37.1	32.3	30.3	30.0	26.7	16.7	13.5
Dissolved Oxygen (+/- 10%)	%	1.9	1.7	1.4	1.2	1.7	1.2	1.3
Dissolved Oxygen (+/- 10%)	mg/L	0.17	0.15	0.13	0.13	0.16	0.12	0.13
Eh / ORP (+/- 10)	MeV	-248.0	-242.7	-238.2	-230.1	-222.7	-215.4	-209.8
Specific Conductivity (+/- 3%)	mS/cm^c							
Conductivity (+/- 3%)	mS/cm	1188	1013	934	890	854	844	862
pH (+/- 0.1)	pH unit	6.92	6.89	6.88	6.86	6.85	6.85	6.87
Temp (+/- 0.5)	C°	18.2	18.1	18.0	18.0	17.8	17.9	17.9
Color	Visual	Clear/tan	Clear	Clear	Clear	Clear	Clear	Clear
Odor	Olfactory	N/A	NA	NA	NA	NA	NA	NA

Comments:

5600 YSI
6060 Turb
5217 Gauge

Monitoring Well Purging/Sampling Form (Low-Flow Sampling)

Project Name and Number: _____

Monitoring Well Number: MW5 Date: _____

Samplers: _____

Sample Number: MW5 QA/QC Collected? _____

Purging / Sampling Method: _____

1. L = Total Well Depth:	_____	feet
2. D = Riser Diameter (I.D.):	_____	feet
3. W = Static Depth to Water (TOC):	_____	feet
4. C = Column of Water in Casing:	_____	feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$	_____	gal
6. D2 = Pump Setting Depth (ft):	_____	feet
7. C2 = Column of water in Pump/Tubing (ft):	_____	feet
8. Tubing Volume = C2(0.005737088)	_____	gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 16:20 Start

Parameter	Units	Readings						
Time	24 hr	1735	1740	1745				
Water Level (0.33)	feet	4.83	4.87	4.88				
Volume Purged	gal	3.75	4	4.25				
Flow Rate	mL / min	200	200	200				
Turbidity (+/- 10%)	NTU	8.23	8.79	9.86				
Dissolved Oxygen (+/- 10%)	%	0.9	1.0	1.0				
Dissolved Oxygen (+/- 10%)	mg/L	0.09	0.10	0.10				
Eh / ORP (+/- 10)	MeV	-204.2	-198.3	-193.3				
Specific Conductivity	mS/cm[c]							
Conductivity (+/- 3%)	mS/cm	885	879	902				
pH (+/- 0.1)	pH unit	6.87	6.89	6.91				
Temp (+/- 0.5)	C	17.9	17.9	17.9				
Color	Visual	Clear	Clear	Clear				
Odor	Olfactory	NA	NA	NA				

Comments:

5600
6060
5217

Sample 1750

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form (Low-Flow Sampling)

Project Name and Number: NE Alleys

Monitoring Well Number: MW-6 Date: 9/29

Samplers: Elizabeth Nezvek

Sample Number: _____ QA/QC Collected? _____

Purging / Sampling Method: Peristaltic

1. L = Total Well Depth:	23.1	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Static Depth to Water (TOC):	3.2	feet
4. C = Column of Water in Casing:		feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$		gal
6. D2 = Pump Setting Depth (ft):		feet
7. C2 = Column of water in Pump/Tubing (ft):		feet
8. Tubing Volume = C2(0.005737088)		gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

4:30

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 6971

Parameter	Units	Readings						
Time	24 hr	4:35	4:40	4:45	4:50	4:55	5:00	5:05
Water Level (0.33)	feet	4.13	4.35	4.5	4.65	4.7	4.8	4.85
Volume Purged	gal	0.5	1	1.5	2	2.5	3	3.5
Flow Rate	mL / min	300	300	300	300	300	300	300
Turbidity (+/- 10%)	NTU	62.3	49.8	32.9	27.0	23.5	15.0	6.18
Dissolved Oxygen (+/- 10%)	%	11.9	2.9	2.3	2.1	2.3	2.2	2.0
Dissolved Oxygen (+/- 10%)	mg/L	1.16	0.29	0.21	0.20	0.22	0.21	0.19
Eh / ORP (+/- 10)	MeV	-123.9	-127.3	-115.7	-111.6	-114.6	-115.6	-114.7
Specific Conductivity	mS/cm[c]							
Conductivity (+/- 3%)	mS/cm	963	957	885	814	673	616	632
pH (+/- 0.1)	pH unit	7.05	6.99	6.92	6.90	6.93	6.92	6.90
Temp (+/- 0.5)	C	16.5	17.0	17.3	17.7	17.9	17.9	18.0
Color	Visual	clear	clear	clear	clear	clear	clear	clear
Odor	Olfactory	none	none	none	none	none	none	none

Comments:

YSI 6971
turb. 7309
pump 70188
WLM 61166

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging / Sampling Form

Project Name and Number: NE Alloys

Monitoring Well Number: MW-6 Date: 9/29/22

Samplers: Elizabeth Nonk

Sample Number: _____ QA/QC Collected? _____

Purging / Sampling Method: Peristaltic

1. L = Well Depth: _____ feet
2. D = Riser Diameter (I.D.): _____ feet
3. W = Depth to Water: _____ feet
4. C = Column of Water in Well: _____ feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48) _____ gal
6. 3(V) = Target Purge Volume _____ gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 6971

Parameter	Units	Readings							
Time	24 hr	5:10	5:15	5:20	5:25	5:30	5:35	5:40	5:45
Water Level (0.33)	feet	4.9	4.95	4.9	4.9	4.85	4.9	4.88	4.85
Volume Purged	gal	4	5.5	5	5.5	6	6.5	7	7.5
Flow Rate	mL/min	300	300	300	300	300	300	300	300
Turbidity (+/- 10%)	NTU	0.61	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Dissolved Oxygen (+/- 10%)	%	1.9	1.4	1.2	1.2	1.2	1.2	1.2	1.0
Dissolved Oxygen (+/- 10%)	mg/L	0.16	0.13	0.11	0.12	0.11	0.11	0.12	0.10
Eh / ORP (+/- 10)	MeV	-111.6	-108.8	-107.0	-105.6	-104.7	-104.0	-103.6	-103.5
Specific Conductivity (+/- 3%)	mS/cm[c]								
Conductivity (+/- 3%)	mS/cm	691	733	772	811	840	869	890	907
pH (+/- 0.1)	pH unit	6.87	6.86	6.85	6.84	6.84	6.84	6.83	6.83
Temp (+/- 0.5)	C°	18.0	18.0	18.0	17.9	17.9	17.9	17.9	17.9
Color	Visual	clear	clear	clear	clear	clear	clear	clear	clear
Odor	Olfactory	none	none	none	none	none	none	none	none

Comments:

sample time
5:52

page 2 of 2

Monitoring Well Purging / Sampling Form

Project Name and Number: NE Alloys

Monitoring Well Number: MW-7R Date: 9/28/22

Samplers: Elizabeth Nemeth

Sample Number: _____ QA/QC Collected? _____

Purging / Sampling Method: Peristaltic

1. L = Well Depth:	15.38	feet
2. D = Riser Diameter (I.D.):	.163	feet
3. W = Depth to Water:	10.41	feet
4. C = Column of Water in Well:		feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48)		gal
6. 3(V) = Target Purge Volume		gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

1:24

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 6791

Parameter	Units	Readings						
Time	24 hr	1:29	1:34	1:39	1:44	1:49	1:54	1659
Water Level (0.33)	feet	10.9	11.45	11.15	11.2	11.25	11.3	10.95
Volume Purged	gal	0.5	1	1.5	2	2.5	3	3.5
Flow Rate	mL/min	275	275	275	275	275	275	275
Turbidity (+/- 10%)	NTU	11.9	2.62	0.02	0.94	0.02	0.02	0.02
Dissolved Oxygen (+/- 10%)	%	4.7	3.8	2.6	2.2	2.4	4.9	2.9
Dissolved Oxygen (+/- 10%)	mg/L	0.44	0.36	0.24	0.20	0.22	0.49	0.27
Eh / ORP (+/- 10)	MeV	-49.9	-55.6	-60.4	-61.8	-61.9	-60.9	-62.1
Specific Conductivity (+/- 3%)	mS/cm^c							
Conductivity (+/- 3%)	mS/cm	7020	5004	5171	4860	4836	4531	4610
pH (+/- 0.1)	pH unit	6.90	6.89	6.89	6.89	6.89	6.91	6.91
Temp (+/- 0.5)	C°	17.4	17.8	17.7	17.8	17.8	17.8	17.8
Color	Visual	clear	clear	clear	clear	clear	clear	clear
Odor	Olfactory	none	none	none	none	none	none	none

Comments:

YSI 6791
Pump 7018
turbidity 7309
water level meter 61166

Monitoring Well Purging/Sampling Form (Low-Flow Sampling)

Project Name and Number: NE Alloys

Monitoring Well Number: MW-7R Date: 9/28/22

Samplers: Elizabeth Nowicki

Sample Number: _____ QA/QC Collected? _____

Purging / Sampling Method: Peristaltic

1. L = Total Well Depth: _____ feet
2. D = Riser Diameter (I.D.): _____ feet
3. W = Static Depth to Water (TOC): _____ feet
4. C = Column of Water in Casing: _____ feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$ _____ gal
6. D2 = Pump Setting Depth (ft): _____ feet
7. C2 = Column of water in Pump/Tubing (ft): _____ feet
8. Tubing Volume = C2(0.005737088) _____ gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 6791

Parameter	Units	Readings						
Time	24 hr	7:04	7:09	7:14	7:19			
Water Level (0.33)	feet	11.0	10.85	10.8	10.55			
Volume Purged	gal	3.75	4.00	4.25	4.5			
Flow Rate	mL / min	275	275	275	275			
Turbidity (+/- 10%)	NTU	3.48	1.60	0.87	1.03			
Dissolved Oxygen (+/- 10%)	%	2.7	2.8	2.5	2.5			
Dissolved Oxygen (+/- 10%)	mg/L	0.25	0.25	0.25	0.23			
Eh / ORP (+/- 10)	MeV	-60.2	-60.3	-60.3	-60.1			
Specific Conductivity	mS/cm[c]							
Conductivity (+/- 3%)	mS/cm	4860	4660	4600	4644			
pH (+/- 0.1)	pH unit	6.91	6.92	6.92	6.92			
Temp (+/- 0.5)	C	17.7	17.8	18.0	18.2			
Color	Visual	clear	clear	clear	clear			
Odor	Olfactory	none	none	none	lime			

Comments:

YSI 6791

pump 7018

turbidity 7309

water level meter 6166

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging / Sampling Form

Project Name and Number: NE Alloys

Monitoring Well Number: MW-8 Date: 9/29/22

Samplers: Elizabeth Nezuck

Sample Number: _____ QA/QC Collected? _____

Purging / Sampling Method: Peristaltic

1. L = Well Depth:	13.57	feet
2. D = Riser Diameter (I.D.):	.163	feet
3. W = Depth to Water:	6.9	feet
4. C = Column of Water in Well:		feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48)		gal
6. 3(V) = Target Purge Volume		gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

~~9:50~~ 9:51

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 6971

Parameter	Units	Readings						
Time	24 hr	9:56	10:01	10:06	10:11	10:16	10:21	10:26
Water Level (0.33)	feet	~~6.89~~	9.05	9.15	9.31	9.45	9.55	9.7
Volume Purged	gal	~~.5~~	1	1.5	2.0	2.5	3.0	3.5
Flow Rate	mL/min	300	300	300	300	300	300	300
Turbidity (+/- 10%)	NTU	6.07	5.19	2.36	2.51	3.56	1.50	1.99
Dissolved Oxygen (+/- 10%)	%	29.0	16.9	14.7	13.2	12.3	13.0	14.7
Dissolved Oxygen (+/- 10%)	mg/L	2.7	1.59	1.37	1.25	1.16	1.23	1.36
Eh / ORP (+/- 10)	MeV	45.0	11.9	-6.4	-15.2	-27.7	-28.4	-32.1
Specific Conductivity (+/- 3%)	mS/cm[c]							
Conductivity (+/- 3%)	mS/cm	100.00	127.7	130.4	156.2	144.0	148.0	151.6
pH (+/- 0.1)	pH unit	7.77	7.68	7.66	7.62	7.64	7.60	7.59
Temp (+/- 0.5)	C°	18.4	18.2	18.2	17.8	18.1	18.1	18.1
Color	Visual	clear	clear	clear	clear	clear	clear	clear
Odor	Olfactory	none	none	none	none	none	none	none

Comments:

YSI 6971
Turbidity 7309
Waterlevelmeter 61669
pump 7018

page 1 of 3

Monitoring Well Purging/Sampling Form (Low-Flow Sampling)

Project Name and Number: _____

Monitoring Well Number: MW-8 Date: 9/29/22

Samplers: _____

Sample Number: _____ QA/QC Collected? _____

Purging / Sampling Method: _____

1. L = Total Well Depth: _____ feet
2. D = Riser Diameter (I.D.): _____ feet
3. W = Static Depth to Water (TOC): _____ feet
4. C = Column of Water in Casing: _____ feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$ _____ gal
6. D2 = Pump Setting Depth (ft): _____ feet
7. C2 = Column of water in Pump/Tubing (ft): _____ feet
8. Tubing Volume = C2(0.005737088) _____ gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using _____

Parameter	Units	Readings						
Time	24 hr	10:31	10:36	10:41	10:46	10:51	10:56	11:01
Water Level (0.33)	feet	9.8	9.89	9.85	9.85	8.95	8.97	8.97
Volume Purged	gal	4	4.5	4.75	5.0	5.5	6.0	6.25
Flow Rate	mL / min	300	300	300	300	300	300	300
Turbidity (+/- 10%)	NTU	3.47	4.14	1.63	0.07	0.07	6.02	1.59
Dissolved Oxygen (+/- 10%)	%	13.3	12.7	10.1	5.7	3.2	2.4	1.9
Dissolved Oxygen (+/- 10%)	mg/L	1.23	1.20	0.96	0.55	0.29	0.23	0.16
Eh / ORP (+/- 10)	MeV	-34.4	-36.9	-39.7	-47.2	-57.1	-69.9	-56.2
Specific Conductivity	mS/cm[c]							
Conductivity (+/- 3%)	mS/cm	157.7	162.8	176.8	194.6	177.1	191.2	190.3
pH (+/- 0.1)	pH unit	7.58	7.58	7.59	7.64	7.76	7.73	7.65
Temp (+/- 0.5)	C	18.0	18.0	18.0	17.9	17.7	17.9	18.1
Color	Visual	clear	clear	clear	clear	clear	clear	clear
Odor	Olfactory	none	none	none	none	none	none	none

Comments:

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging / Sampling Form

Project Name and Number: _____

Monitoring Well Number: MW-8 Date: 9/29/22

Samplers: _____

Sample Number: _____ QA/QC Collected? _____

Purging / Sampling Method: _____

1. L = Well Depth: _____ feet
2. D = Riser Diameter (I.D.): _____ feet
3. W = Depth to Water: _____ feet
4. C = Column of Water in Well: _____ feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$ _____ gal
6. 3(V) = Target Purge Volume _____ gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using _____

Parameter	Units	Readings							
Time	24 hr	11:06	11:11	11:16	11:21	11:26	11:31	11:36	11:41
Water Level (0.33)	feet	9.41	9.65	9.85	9.95	9.95	10.0	10.0	10.05
Volume Purged	gal	6.5	7	7.5	8.0	8.5	9	9.5	9.75
Flow Rate	mL/min	300	300	300	300	300	300	300	300
Turbidity (+/- 10%)	NTU	7.79	2.13	0.68	1.29	1.01	2.11	1.42	0.78
Dissolved Oxygen (+/- 10%)	%	12.5	13.3	13.5	12.9	10.8	10.2	9.5	9.0
Dissolved Oxygen (+/- 10%)	mg/L	1.22	1.26	1.26	1.22	1.01	0.96	0.90	0.85
Eh / ORP (+/- 10)	MeV	-41.8	-38.6	-39.5	-40.7	-44.8	-48.5	-49.7	-51.0
Specific Conductivity (+/- 3%)	mS/cm[c]						8.		
Conductivity (+/- 3%)	mS/cm	172.9	178.5	196.8	202.1	220.1	231.2	237.2	243.1
pH (+/- 0.1)	pH unit	7.56	7.54	7.53	7.54	7.55	7.57	7.57	7.57
Temp (+/- 0.5)	C°	18.1	18.2	18.2	18.1	18.1	18.1	18.1	18.1
Color	Visual	clear	clear	clear	clear	clear	clear	clear	clear
Odor	Olfactory	none	none	none	none	none	none	none	none

Comments:

page 3 of 3

sample time 11:45

Pg 1 of 3

Monitoring Well Purging / Sampling Form

Project Name and Number: NE Alloys

Monitoring Well Number: MW-9 Date: 9/28/22

Samplers: JB

Sample Number: MW-9 QA/QC Collected? None

Purging / Sampling Method: Peristaltic Low flow

1. L = Well Depth:	15.84	feet
2. D = Riser Diameter (I.D.):	6.163	feet
3. W = Depth to Water:	8.15	feet
4. C = Column of Water in Well:		feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48)		gal
6. 3(V) = Target Purge Volume		gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI Start 10:50

Parameter	Units	Readings						
Time	24 hr	10:55	1100	1105	1110	1115	1120	1125
Water Level (0.33)	feet	8.15	8.15	8.15	8.160	8.160	8.17	8.17
Volume Purged	gal	.25	.4	.6	.8	1	1.2	1.45
Flow Rate	mL/min	250	250	250	250	250	250	250
Turbidity (+/- 10%)	NTU	403	294	62.8	36.3	30.9	0.5	3.33
Dissolved Oxygen (+/- 10%)	%	1.0	0.9	0.8	0.7	0.7	0.7	0.6
Dissolved Oxygen (+/- 10%)	mg/L	0.09	0.09	0.08	0.07	0.07	0.07	0.06
Eh / ORP (+/- 10)	MeV	-77.5	-98.2	-123.8	-121.7	-119.8	-115.1	-115.1
Specific Conductivity (+/- 3%)	mS/cm[c]							
Conductivity (+/- 3%)	mS/cm	714	717	719	720	720	722	722
pH (+/- 0.1)	pH unit	6.89	6.97	7.10	7.08	7.06	7.05	7.05
Temp (+/- 0.5)	C°	15.9	16.1	16.3	16.2	16.1	16.0	16.0
Color	Visual	Brown	Brown	Clear	Clear	Clear	Clear	Clear
Odor	Olfactory	NA	NA	NA	NA	NA	NA	NA

Comments:

YSI 5600

Turb 6060

Gauge 5217

Pg 2 of 3

Monitoring Well Purging / Sampling Form

Project Name and Number: NE Alloys

Monitoring Well Number: MW-9 Date: 9/28/22

Samplers:

Sample Number: MW-9 QA/QC Collected? None

Purging / Sampling Method: Peristaltic

1. L = Well Depth:		feet
2. D = Riser Diameter (I.D.):		feet
3. W = Depth to Water:		feet
4. C = Column of Water in Well:		feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48)		gal
6. 3(V) = Target Purge Volume		gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI Start 10:50

Parameter	Units	Readings							
Time	24 hr	1130	1135	1140	1145	11:50	11:55	1200	1205
Water Level (0.33)	feet	8.17	8.17	8.17	8.17	8.17	8.18	8.18	8.18
Volume Purged	gal	2.0	2.5	3	3.5	4	4.2	4.5	4.7
Flow Rate	mL/min	250	250	250	250	250	250	250	250
Turbidity (+/- 10%)	NTU	8.55	7.51	5.86	12.0	9.49	6.21	4.26	5.62
Dissolved Oxygen (+/- 10%)	%	0.6	0.6	1.4	0.8	0.9	0.6	0.6	0.7
Dissolved Oxygen (+/- 10%)	mg/L	0.06	0.06	0.14	0.08	0.09	0.06	0.06	0.07
Eh / ORP (+/- 10)	MeV	-111.4	-112.4	-101.4	-100.2	-108.9	-110.8	-110.2	-105.5
Specific Conductivity (+/- 3%)	mS/cm[c]								
Conductivity (+/- 3%)	mS/cm	721	720	727	726	728	727	730	728
pH (+/- 0.1)	pH unit	7.04	7.04	7.01	7.00	7.04	7.06	7.05	7.04
Temp (+/- 0.5)	C°	16.0	16.0	16.0	16.1	16.2	16.2	16.2	16.4
Color	Visual	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear
Odor	Olfactory	NA	NA	NA	NA	NA	NA	NA	NA

Comments:

YSI 5600

Turb 6060

Cond 5217

1145 - Tubing knocked further in Casing Turbidity spike

Monitoring Well Purging/Sampling Form (Low-Flow Sampling)

Project Name and Number: NE Alloys

Monitoring Well Number: MW-9 Date: 9/28

Samplers: JB

Sample Number: MW-9 QA/QC Collected? NO

Purging / Sampling Method: Peristaltic

1. L = Total Well Depth:		feet
2. D = Riser Diameter (I.D.):		feet
3. W = Static Depth to Water (TOC):		feet
4. C = Column of Water in Casing:		feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$		gal
6. D2 = Pump Setting Depth (ft):		feet
7. C2 = Column of water in Pump/Tubing (ft):		feet
8. Tubing Volume = C2(0.005737088)		gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 6000

Parameter	Units	Readings						
Time	24 hr	1210	1215	1220	1225	1230		
Water Level (0.33)	feet	8.18	8.10	8.18	8.18	8.18		
Volume Purged	gal	5	5.25	5.75	6	6.3		
Flow Rate	mL / min	250	250	250	250	250		
Turbidity (+/- 10%)	NTU	4.38	5.21	2.91	2.53	2.74		
Dissolved Oxygen (+/- 10%)	%	0.8	2.4	1.2	0.9	0.9		
Dissolved Oxygen (+/- 10%)	mg/L	0.07	0.22	0.12	0.09	0.09		
Eh / ORP (+/- 10)	MeV	-108.8	-107.2	-107.5	-105.5	-104.3		
Specific Conductivity	mS/cm[c]							
Conductivity (+/- 3%)	mS/cm	730	731	732	732	730		
pH (+/- 0.1)	pH unit	7.05	7.06	7.05	7.04	7.03		
Temp (+/- 0.5)	C	16.4	16.2	16.1	16.1	16.3		
Color	Visual	Clear	Clear	Clear	Clear	Clear		
Odor	Olfactory	NA	NA	NA	NA	NA		

Sample 12:30

Comments:

Turb 6000

Gauge 5 7/8"

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging / Sampling Form

Project Name and Number: NEAlloys

Monitoring Well Number: MW-10 Date: 9/28/22

Samplers: Elizabeth Neznek

Sample Number: _____ QA/QC Collected? _____

Purging / Sampling Method: Peristaltic

1. L = Well Depth:	18.87	feet
2. D = Riser Diameter (I.D.):	_____	feet
3. W = Depth to Water:	_____	feet
4. C = Column of Water in Well:	_____	feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48)	_____	gal
6. 3(V) = Target Purge Volume	_____	gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

10:54

Water Quality Readings Collected Using YSI 6791

Parameter	Units	Readings						
Time	24 hr	10:54	11:04	11:09	11:14	11:19	11:24	11:29
Water Level (0.33)	feet	6.35	6.39	6.35	6.4	6.35	6.35	6.3
Volume Purged	gal	.25	.5	.75	1.0	1.25	1.5	2
Flow Rate	mL/min	300	300	300	300	300	300	300
Turbidity (+/- 10%)	NTU	5.96	8.84	5.29	3.66	0.99	0.02	0.02
Dissolved Oxygen (+/- 10%)	%	3.3	2.5	2.6	3.4	3.6	4.3	4.0
Dissolved Oxygen (+/- 10%)	mg/L	0.32	0.24	0.26	0.34	1.35	0.43	0.39
Eh / ORP (+/- 10)	MeV	-124.7	-126.2	-123.6	-112.9	-105.8	-104.1	-106.7
Specific Conductivity (+/- 3%)	mS/cm[c]							
Conductivity (+/- 3%)	mS/cm	711	714	717	707	704	705	708
pH (+/- 0.1)	pH unit	7.15	7.14	7.13	7.06	7.04	7.03	7.04
Temp (+/- 0.5)	C°	16.5	16.5	16.3	16.8	16.6	16.4	16.3
Color	Visual	clear	clear	clear	clear	clear	clear	clear
Odor	Olfactory	none	none	none	none	none	none	none

Comments:

YSI 6791
pump 7018
turbidity 7309
WLM Collect

Monitoring Well Purging / Sampling Form

Project Name and Number: _____

Monitoring Well Number: MW-10 Date: 9/26/22

Samplers: E Nemeth

Sample Number: _____ QA/QC Collected? _____

Purging / Sampling Method: _____

1. L = Well Depth:	_____	feet
2. D = Riser Diameter (I.D.):	_____	feet
3. W = Depth to Water:	_____	feet
4. C = Column of Water in Well:	_____	feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$	_____	gal
6. 3(V) = Target Purge Volume	_____	gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 6771

Parameter	Units	Readings						
Time	24 hr	11:34	11:39					
Water Level (0.33)	feet	9.25	10.75					
Volume Purged	gal	2.5	3.0					
Flow Rate	mL/min	300	300					
Turbidity (+/- 10%)	NTU	0.02	0.02					
Dissolved Oxygen (+/- 10%)	%	3.6	3.4					
Dissolved Oxygen (+/- 10%)	mg/L	0.30	0.33					
Eh / ORP (+/- 10)	MeV	-107.9	-107.3					
Specific Conductivity (+/- 3%)	mS/cm[c]							
Conductivity (+/- 3%)	mS/cm	703	699					
pH (+/- 0.1)	pH unit	7.06	7.04					
Temp (+/- 0.5)	C°	16.4	16.4					
Color	Visual	clear	clear					
Odor	Olfactory	none	none					

Comments:

Pg 2 of 2

Monitoring Well Purging/Sampling Form (Low-Flow Sampling)

Project Name and Number: NE Alloys

Monitoring Well Number: MW-11 Date: 9/28

Samplers: Elizabeth Nemek

Sample Number: _____ QA/QC Collected? _____

Purging / Sampling Method: Peristaltic

1. L = Total Well Depth:	20.33	feet
2. D = Riser Diameter (I.D.):	.163	feet
3. W = Static Depth to Water (TOC):	6.35	feet
4. C = Column of Water in Casing:		feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$		gal
6. D2 = Pump Setting Depth (ft):		feet
7. C2 = Column of water in Pump/Tubing (ft):		feet
8. Tubing Volume = C2(0.005737088)		gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

9:33

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 6791

Parameter	Units	Readings						
Time	24 hr	9:38	9:43	9:48	9:53			
Water Level (0.33)	feet	7.54	7.83	7.99	6.03			
Volume Purged	gal	.25	0.50	0.75	1			
Flow Rate	mL / min	275	275	275	275			
Turbidity (+/- 10%)	NTU	0.02	0.02	0.02				
Dissolved Oxygen (+/- 10%)	%	7.3	3.9	2.8	3.0			
Dissolved Oxygen (+/- 10%)	mg/L	0.72	0.39	0.28	0.28			
Eh / ORP (+/- 10)	MeV	103.9	98.5	95.2	93.0			
Specific Conductivity	mS/cm[c]							
Conductivity (+/- 3%)	mS/cm	856	849	845	844			
pH (+/- 0.1)	pH unit	6.46	6.44	6.44	6.43			
Temp (+/- 0.5)	C	15.9	16.3	16.4	16.5			
Color	Visual	clear	clear	clear	clear			
Odor	Olfactory	none	none	none	none			

Comments:

WLM 6166
Turbidity 7309
YSI 6791
Pump 7018

sample time 10:00

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging/Sampling Form (Low-Flow Sampling)

Project Name and Number: NE Alloys

Monitoring Well Number: MW-12 Date: 9/27/22

Samplers: Elizabeth Neznek

Sample Number: MW-12 QA/QC Collected? _____

Purging / Sampling Method: Peristaltic

1. L = Total Well Depth:	22.05	feet
2. D = Riser Diameter (I.D.):	.163	feet
3. W = Static Depth to Water (TOC):	11.5	feet
4. C = Column of Water in Casing:		feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48)		gal
6. D2 = Pump Setting Depth (ft):		feet
7. C2 = Column of water in Pump/Tubing (ft):		feet
8. Tubing Volume = C2(0.005737088)		gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

10:52

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 6791

Parameter	Units	Readings						
Time	24 hr	10:57	11:02	11:07	11:12	11:17	11:22	11:27
Water Level (0.33)	feet	12.25	12.33	12.33	12.33	12.2	12.1	12.0
Volume Purged	gal	1	1.5	2	2.25	2.5	2.75	2.75
Flow Rate	mL / min	300	300	300	300	300	300	300
Turbidity (+/- 10%)	NTU	9.27	9.99	7.23	5.15	5.43	6.99	11.6
Dissolved Oxygen (+/- 10%)	%	7.8	2.7	3.4	1.9	1.6	1.6	4.7
Dissolved Oxygen (+/- 10%)	mg/L	0.78	0.27	0.34	0.19	0.16	0.16	0.47
Eh / ORP (+/- 10)	MeV	-164.2	-167.0	-166.4	-168.4	-167.8	-169.1	-166.3
Specific Conductivity	mS/cm[c]							
Conductivity (+/- 3%)	mS/cm	973	973	977	972	974	974	970
pH (+/- 0.1)	pH unit	7.31	7.31	7.31	7.32	7.32	7.32	7.31
Temp (+/- 0.5)	C	14.4	14.4	14.4	14.4	14.6	14.6	14.6
Color	Visual	Light brown	clear	clear	clear	clear	clear	clear
Odor	Olfactory	No	No	no	no	no	no	no

Comments:

YSI 6791 pump 7018

Turbidity ~~7309~~ bad

11:50 Sample

* Three consecutive readings within range indicates stabilization of that parameter.

PZ

Monitoring Well Purging/Sampling Form (Low-Flow Sampling)

Project Name and Number: _____

Monitoring Well Number: MW-12 Date: _____

Samplers: _____

Sample Number: _____ QA/QC Collected? _____

Purging / Sampling Method: _____

1. L = Total Well Depth:	_____	feet
2. D = Riser Diameter (I.D.):	_____	feet
3. W = Static Depth to Water (TOC):	_____	feet
4. C = Column of Water in Casing:	_____	feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$	_____	gal
6. D2 = Pump Setting Depth (ft):	_____	feet
7. C2 = Column of water in Pump/Tubing (ft):	_____	feet
8. Tubing Volume = C2(0.005737088)	_____	gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using _____

Parameter	Units	Readings						
Time	24 hr	11:32	11:37	11:42				
Water Level (0.33)	feet	12.05	12.00	12.0				
Volume Purged	gal	2.75	3					
Flow Rate	mL / min	300	300	300				
Turbidity (+/- 10%)	NTU	9.77	10.7	9.51				
Dissolved Oxygen (+/- 10%)	%	1.8	1.7	1.5				
Dissolved Oxygen (+/- 10%)	mg/L	0.18	0.17	0.15				
Eh / ORP (+/- 10)	MeV	-165.7	-165.1	-164.2				
Specific Conductivity	mS/cm[c]							
Conductivity (+/- 3%)	mS/cm	970	968	970				
pH (+/- 0.1)	pH unit	7.32	7.32	7.32				
Temp (+/- 0.5)	C	14.7	14.8	14.9				
Color	Visual	clear	clear	clear				
Odor	Olfactory	no	no	no				

Comments:

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging / Sampling Form

Project Name and Number: NE Alloys

Monitoring Well Number: MW-13 Date: 9/27/22

Samplers: Elizabeth Nezuck

Sample Number: _____ QA/QC Collected? _____

Purging / Sampling Method: Peristaltic

1. L = Well Depth:	20.91	feet
2. D = Riser Diameter (I.D.):	0.163	feet
3. W = Depth to Water:	~~8.08~~	feet
4. C = Column of Water in Well:		feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48)		gal
6. 3(V) = Target Purge Volume		gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

1:26

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 6791

Parameter	Units	Readings						
Time	24 hr	1:31	1:36	1:41	1:46	1:51	1:56	2:01
Water Level (0.33)	feet	10.5	11.5	12.3	13	13.3	13.6	13.9
Volume Purged	gal	0.5	1	1.5	2	2.25	2.5	3
Flow Rate	mL/min	325	325	325	325	325	325	325
Turbidity (+/- 10%)	NTU	9.11	6.28	1.57	0.27	0.02	0.02	0.02
Dissolved Oxygen (+/- 10%)	%	8.3	8.3	9.8	12.2	17.7	19.6	19.4
Dissolved Oxygen (+/- 10%)	mg/L	0.83	0.83	0.98	1.22	1.72	2.00	2.02
Eh / ORP (+/- 10)	MeV	-143.2	-143.2	-141.1	-130.0	-117.1	-112.3	-105.6
Specific Conductivity (+/- 3%)	mS/cm°							
Conductivity (+/- 3%)	mS/cm	630.6	530.6	610.1	614.9	628	635	642
pH (+/- 0.1)	pH unit	6.79	6.79	6.65	6.66	6.67	6.68	6.67
Temp (+/- 0.5)	C°	15.2	15.2	15.0	14.8	14.6	14.7	14.6
Color	Visual	clear w/ brown	clear w/ brown	clear w/ brown	clear w/ b	clear w/ b	clear w/ b	clear w/ b
Odor	Olfactory	none	none	none	none	none	none	none

Comments:

Visual: clear w/ brown specs, slight sheen

turbidity 7309 YSI 6791

WLM Geeke pump 7018

Page 1 of 2

Sample time 2:20

Monitoring Well Purging/Sampling Form (Low-Flow Sampling)

Project Name and Number: NE Alloys

Monitoring Well Number: MW-13 Date: 9/27/22

Samplers: Elizabeth Nezneke

Sample Number: _____ QA/QC Collected? _____

Purging / Sampling Method: Peristaltic

1. L = Total Well Depth:	_____	feet
2. D = Riser Diameter (I.D.):	_____	feet
3. W = Static Depth to Water (TOC):	_____	feet
4. C = Column of Water in Casing:	_____	feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$	_____	gal
6. D2 = Pump Setting Depth (ft):	_____	feet
7. C2 = Column of water in Pump/Tubing (ft):	_____	feet
8. Tubing Volume = C2(0.005737088)	_____	gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using _____

Parameter	Units	Readings						
Time	24 hr	2:00	2:11					
Water Level (0.33)	feet	14	14.1					
Volume Purged	gal	3.5	4					
Flow Rate	mL / min	325	325					
Turbidity (+/- 10%)	NTU	0.02	0.02					
Dissolved Oxygen (+/- 10%)	%	21.4	20.5					
Dissolved Oxygen (+/- 10%)	mg/L	2.13	2.11					
Eh / ORP (+/- 10)	MeV	-101.4	-99.5					
Specific Conductivity	mS/cm[c]							
Conductivity (+/- 3%)	mS/cm	0.64	0.51					
pH (+/- 0.1)	pH unit	6.68	6.67					
Temp (+/- 0.5)	C	14.5	14.5					
Color	Visual	clear w/ brown	clear w/ brown					
Odor	Olfactory	none	none					

Comments:

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging / Sampling Form

Project Name and Number: NE Alloys

Monitoring Well Number: MW-14 Date: 9/29

Samplers: JB

Sample Number: MW-14 QA/QC Collected? None

Purging / Sampling Method: Peristaltic

1. L = Well Depth:	21.35	feet
2. D = Riser Diameter (I.D.):	0.163	feet
3. W = Depth to Water:	9.35	feet
4. C = Column of Water in Well:		feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48)		gal
6. 3(V) = Target Purge Volume		gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI Start 15:06

Parameter	Units	Readings						15:38
Time	24 hr	15:10	15:15	1520	1525	1530	1535	~~1540~~
Water Level (0.33)	feet	9.54	9.89	10.00	10.15	10.23	10.26	10.27
Volume Purged	gal	0.5	0.7	1	1.25	1.5	1.75	2
Flow Rate	mL/min	200	200	200	200	200	200	200
Turbidity (+/- 10%)	NTU	25.8	22.4	35.7	30.1	25.1	27.2	26.0
Dissolved Oxygen (+/- 10%)	%	12.2	11.6	11.2	10.3	11.1	10.7	11.3
Dissolved Oxygen (+/- 10%)	mg/L	1.24	1.18	1.13	1.04	1.10	1.07	1.14
Eh / ORP (+/- 10)	MeV	-169.7	-211.1	-253.5	-284.6	-307.5	-317.9	-321.9
Specific Conductivity (+/- 3%)	mS/cm[c]							
Conductivity (+/- 3%)	mS/cm	504.2	503.0	495.5	479.5	452.4	442.6	433.3
pH (+/- 0.1)	pH unit	9.26	9.16	9.13	9.12	9.11	9.06	9.07
Temp (+/- 0.5)	C°	14.7	14.8	14.8	15.0	15.1	15.5	15.5
Color	Visual	Clear	Clear	Clear	Clear	Clear	Clear	Clear
Odor	Olfactory	NA	NA	NA	NA	NA	NA	NA

Comments:

YSI S600

Turb 6060

Gauge 5217

Sample 15:38

Monitoring Well Purging/Sampling Form (Low-Flow Sampling)

Project Name and Number: NF Alloys

Monitoring Well Number: MW-15 Date: 9/28

Samplers: JB

Sample Number: MW-15 QA/QC Collected? None

Purging / Sampling Method: Peri

1. L = Total Well Depth: 15.74 feet
2. D = Riser Diameter (I.D.): 0.163 feet
3. W = Static Depth to Water (TOC): 7.4 feet
4. C = Column of Water in Casing: _____ feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$ _____ gal
6. D2 = Pump Setting Depth (ft): _____ feet
7. C2 = Column of water in Pump/Tubing (ft): _____ feet
8. Tubing Volume = C2(0.005737088) _____ gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI

12:32 Start

Parameter	Units	Readings							
Time	24 hr	12:35	12:40	12:45	12:50	1255	13:00	1305	1310
Water Level (0.33)	feet	8.28	8.55	9.10	9.51	9.74	9.94	10.18	10.39
Volume Purged	gal	.25	.5	.75	1	1.2	1.6	2	2.4
Flow Rate	mL / min	250	250	250	250	200	200	200	
Turbidity (+/- 10%)	NTU	784	51.3	31.9	22.6	19.9	23.5	24.8	26.4 30.8
Dissolved Oxygen (+/- 10%)	%	40.3	39.0	45.8	39.2	29.7	25.7	[illegible]	23.1
Dissolved Oxygen (+/- 10%)	mg/L	4.01	3.80	4.46	3.84	2.87	2.50	2.60	2.28
Eh / ORP (+/- 10)	MeV	41.7	49.2	47.6	41.3	32.3	27.3	31.8	26.8
Specific Conductivity	mS/cm[c]								
Conductivity (+/- 3%)	mS/cm	700	678	685	680	6816	6888	692	690
pH (+/- 0.1)	pH unit	7.03	6.89	6.96	7.00	7.02	7.02	6.99	6.99
Temp (+/- 0.5)	C	15.5	15.7	16.0	16.3	16.4	16.4	16.3	16.1
Color	Visual	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear
Odor	Olfactory	NA	NA	NA	NA	NA	NA	NA	NA

Comments:

YSI 5600

Turb 6000

Gage 5217

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging / Sampling Form

Project Name and Number: NE Alloys

Monitoring Well Number: MW15 Date: 9/29

Samplers: JB

Sample Number: MW15 QA/QC Collected?

Purging / Sampling Method: Peristaltic

1. L = Well Depth:	15.74	feet
2. D = Riser Diameter (I.D.):		feet
3. W = Depth to Water:	7.4	feet
4. C = Column of Water in Well:		feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48)		gal
6. 3(V) = Target Purge Volume		gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI Start 12:30

Parameter	Units	Readings						
Time	24 hr	1315	1320	1325	1330	1335	1340	1345
Water Level (0.33)	feet	10.6	10.81	11.05	11.24	11.38	11.55	11.65
Volume Purged	gal	2.6	3.0	3.4	3.75	4	4.2	4.5
Flow Rate	mL/min	200	200	200	200	200	200	200
Turbidity (+/- 10%)	NTU	34.1	32.8	32.1	31.1	36.3	38.0	39.0
Dissolved Oxygen (+/- 10%)	%	20.9	18.6	15.5	13.1	13.4	10.8	9.3
Dissolved Oxygen (+/- 10%)	mg/L	2.05	1.83	1.52	1.29	1.31	1.07	0.93
Eh / ORP (+/- 10)	MeV	23.0	20.8	16.0	11.1	3.8	3.0	-0.8
Specific Conductivity (+/- 3%)	mS/cm[c]	~~688~~						
Conductivity (+/- 3%)	mS/cm	689	685	680	673	668	668	663
pH (+/- 0.1)	pH unit	7.00	7.00	6.99	6.99	6.98	6.98	6.97
Temp (+/- 0.5)	C°	16.0	16.0	16.0	15.9	15.7	15.6	15.7
Color	Visual	Clear	Clear	Clear	Clear	Clear	Clear	Clear
Odor	Olfactory	NA	NA	NA	NA	NA	NA	NA

Comments:

YSI 5600

Turb 6060

Gauge 5217

Monitoring Well Purging/Sampling Form (Low-Flow Sampling)

Project Name and Number: NE Alleys

Monitoring Well Number: MW-15 Date: 9/29

Samplers:

Sample Number: MW-15 QA/QC Collected? None

Purging / Sampling Method: Peri

1. L = Total Well Depth: 15.74 feet
2. D = Riser Diameter (I.D.): feet
3. W = Static Depth to Water (TOC): 7.4 feet
4. C = Column of Water in Casing: feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$ gal
6. D2 = Pump Setting Depth (ft): feet
7. C2 = Column of water in Pump/Tubing (ft): feet
8. Tubing Volume = C2(0.005737088) gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI Start 12:32

Parameter	Units	Readings							
Time	24 hr	1350	1355	1400	1405	1410	1415	1420	1425
Water Level (0.33)	feet	4.75	12.04	12.17	12.3	12.43	12.54	12.64	12.73
Volume Purged	gal	11.84	4.8	5	5.2	5.5	5.75	6	6.4
Flow Rate	mL / min	200	200	200	200	200	200	200	200
Turbidity (+/- 10%)	NTU	40.0	41.1	42.0	40.0	34.9	28.6	28.9	29.6
Dissolved Oxygen (+/- 10%)	%	7.8	6.2	6.2	5.4	4.7	4.3	3.7	3.4
Dissolved Oxygen (+/- 10%)	mg/L	0.75	0.62	0.62	0.53	0.47	0.41	0.37	0.34
Eh / ORP (+/- 10)	MeV	-8.8	-18.8	-22.6	-33.5	-42.4	-48.9	-54.9	-59.5
Specific Conductivity	mS/cm[c]								
Conductivity (+/- 3%)	mS/cm	1662	1654	1652	1651	648	6460	647	645
pH (+/- 0.1)	pH unit	6.97	6.96	6.96	7.02	7.02	7.02	7.02	7.02
Temp (+/- 0.5)	C	15.5	15.6	15.6	15.7	15.6	15.5	15.5	15.5
Color	Visual	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear
Odor	Olfactory	NA	NA	NA	NA	NA	NA	NA	NA

Comments:

YSI 5600
Turb 6060
Gauge 5217

Sample 14:30

* Three consecutive readings within range indicates stabilization of that parameter.

Monitoring Well Purging / Sampling Form

Project Name and Number: NE Alleys

Monitoring Well Number: MW-16 Date: 9/29/22

Samplers: Elizabeth Neznk

Sample Number: _____ QA/QC Collected? _____

Purging / Sampling Method: Peristaltic

1. L = Well Depth:	15.11	feet
2. D = Riser Diameter (I.D.):	0.17	feet
3. W = Depth to Water:	6.74	feet
4. C = Column of Water in Well:		feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48)		gal
6. 3(V) = Target Purge Volume		gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

2:21

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI 6971

Parameter	Units	Readings							
Time	24 hr	2:26	2:31	2:36	2:41	2:46	2:51	2:56	3:01
Water Level (0.33)	feet	6.94	7.20	7.48	7.72	7.98	8.20	8.40	8.6
Volume Purged	gal	.5	1	1.5	2.0	2.25	2.5	2.75	3.0
Flow Rate	mL/min	275	300	300	300	300	300	300	300
Turbidity (+/- 10%)	NTU	84.4	72.3	36.0	29.0	26.2	22.6	21.3	23.2
Dissolved Oxygen (+/- 10%)	%	4.4	3.3	2.7	2.5	2.4	4.4	3.0	2.9
Dissolved Oxygen (+/- 10%)	mg/L	0.44	0.33	0.27	0.25	0.24	0.44	0.30	0.29
Eh / ORP (+/- 10)	MeV	-37.8	-42.1	-45.5	-50.4	-51.3	-52.2	-52.6	-54.3
Specific Conductivity (+/- 3%)	mS/cm[c]								
Conductivity (+/- 3%)	mS/cm	699	696	702	706	710	712	715	715
pH (+/- 0.1)	pH unit	6.77	6.77	6.76	6.76	6.76	6.76	6.76	6.76
Temp (+/- 0.5)	C°	14.2	14.4	14.7	14.7	14.8	14.7	14.7	14.7
Color	Visual	yellowish	yellowish	slightly yellow	clear	clear	clear	clear	clear
Odor	Olfactory	none	none	none	none	none	none	none	none

dead battery

new battery

new turbidity meter 00600

Comments:

YSI 6971
Turbidity 7309
water level 6166
pump 7046

sample time 3:13

Monitoring Well Purging/Sampling Form (Low-Flow Sampling)

Project Name and Number: NE Alloys

Monitoring Well Number: MW-17 Date: 9-30-22

Samplers: JB

Sample Number: MW-17 QA/QC Collected? No

Purging / Sampling Method: low-flow w/ peri pump

1. L = Total Well Depth:	15.85	feet
2. D = Riser Diameter (I.D.):	2	~~feet~~ inch
3. W = Static Depth to Water (TOC):	6.10	feet
4. C = Column of Water in Casing:		feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48)		gal
6. D2 = Pump Setting Depth (ft):		feet
7. C2 = Column of water in Pump/Tubing (ft):		feet
8. Tubing Volume = C2(0.005737088)		gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using Pump (7013) YSI (5600) TB (6060)

Parameter	Units	Readings						
Time	24 hr	10:05	10:10	10:15	10:20	10:25	10:30	10:35
Water Level (0.33)	feet	6.65	6.80	6.88	6.93	6.97	6.99	7.03
Volume Purged	gal	0.75	1.6	0.9	1.2	1.5	1.7	1.9
Flow Rate	mL / min	225	225	225	225	225	224	226
Turbidity (+/- 10%)	NTU	62.9	35.0	30.5	30.3	27.4	23.9	15.4
Dissolved Oxygen (+/- 10%)	%	3.5	2.4	1.1	1.7	1.4	1.2	1.8
Dissolved Oxygen (+/- 10%)	mg/L	.35	.24	.11	.17	.17	.12	.18
Eh / ORP (+/- 10)	MeV	-75.2	-119.6	-127.7	-145.2	-160.9	-175.8	-200.2
Specific Conductivity	mS/cm[c]	944	946	945	955	973	1010	1064
Conductivity (+/- 3%)	mS/cm							
pH (+/- 0.1) ✓	pH unit	7.13	7.12	7.13	7.12	7.13	7.10	7.09
Temp (+/- 0.5) ✓	C	15.1	15.4	15.3	15.2	15.4	15.1	15.2
Color	Visual	Clear	"	"	"	"	"	
Odor	Olfactory	None	"	"	"	"	"	

Comments: Start Purge 10:00. Flow rate: 225
Stop purge at 11:00
Sampled at 11:10 by JB

* Three consecutive readings within range indicates stabilization of that parameter.

PZ

Monitoring Well Purging/Sampling Form (Low-Flow Sampling)

Project Name and Number: _____

Monitoring Well Number: MW-17 Date: _____

Samplers: _____

Sample Number: _____ QA/QC Collected? _____

Purging / Sampling Method: _____

1. L = Total Well Depth:	_____	feet
2. D = Riser Diameter (I.D.):	_____	feet
3. W = Static Depth to Water (TOC):	_____	feet
4. C = Column of Water in Casing:	_____	feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$	_____	gal
6. D2 = Pump Setting Depth (ft):	_____	feet
7. C2 = Column of water in Pump/Tubing (ft):	_____	feet
8. Tubing Volume = C2(0.005737088)	_____	gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using _____

Parameter	Units	Readings						
Time	24 hr	10:40	10:45	10:50	10:55	11:00		
Water Level (0.33)	feet	7.03	7.05	7.05	7.02	7.06		
Volume Purged	gal	2.1	2.3	2.5	2.7	2.9		
Flow Rate	mL / min	225	225	225	225	225		
Turbidity (+/- 10%) ✓	NTU	16.00	11.40	9.80	9.16	8.43		
Dissolved Oxygen (+/- 10%) ✓	%	1.3	0.2	0.5	0.5	0.5		
Dissolved Oxygen (+/- 10%) ✓	mg/L	0.13	0.03	0.05	0.05	0.05		
Eh / ORP (+/- 10) ✓	MeV	-213.1	-216.6	-223.7	-223.1	-224.7		
Specific Conductivity ✓	mS/cm[c]	1083	1104	1111	1130	1137		
Conductivity (+/- 3%)	mS/cm							
pH (+/- 0.1) ✓	pH unit	7.09	7.07	7.06	7.06	7.05		
Temp (+/- 0.5) ✓	C	15.1	15.1	15.1	15.1	15.1		
Color	Visual	"	"	"				
Odor	Olfactory	"	"	"				

Comments: Start Purge at 10:00
Stop purge at 11:00
Sampled at 11:10 by JB

* Three consecutive readings within range indicates stabilization of that parameter.

P1

Monitoring Well Purging / Sampling Form

Project Name and Number:

Monitoring Well Number: MW-18 Date: 9-30-22

Samplers: Joe Brown

Sample Number: MW-18 QA/QC Collected? No

Purging / Sampling Method: low-flow w/ geo pump

1. L = Well Depth:	10.3	feet
2. D = Riser Diameter (I.D.):	2"	~~feet~~ inches
3. W = Depth to Water:	3.30	feet
4. C = Column of Water in Well:		feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48)		gal
6. 3(V) = Target Purge Volume		gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using Geopump (7282), YSI (6791) TB meters (7309)

Parameter	Units	10:02	10:07	Readings				
Time	24 hr	~~9:59~~	10:07	10:12	10:17	10:22	10:27	10:32
Water Level (0.33)	feet	4.38	4.66	4.85	4.98	4.93	4.93	4.93
Volume Purged	gal	~~0.2~~	~~0.6~~	~~0.9~~	1.2	1.4	1.6	1.8
Flow Rate	mL/min	250	250	250	250	200	200	200
Turbidity (+/- 10%)	NTU	39.1	22.2	10.1	48.2	13.9	6.10	8.01
Dissolved Oxygen (+/- 10%)	%	~~4.8~~ 4.71	3.0	2.4	1.8	2.1	2.4	1.68
Dissolved Oxygen (+/- 10%)	mg/L	~~4.72~~	.39	.24	.18	.21	.24	.17
Eh / ORP (+/- 10)	MeV	-141.2	-133.3	-136.3	-136.4	-132.8	-130.6	-129.3
Specific Conductivity (+/- 3%) ✓	mS/cm^c	620	605	598	599	594	601	598
Conductivity (+/- 3%)	mS/cm							
pH (+/- 0.1) ✓	pH unit	7.33	7.31	7.30	7.30	7.28	7.28	7.26
Temp (+/- 0.5) ✓	C°	17.3	17.4	17.5	17.5	17.5	17.6	17.6
Color	Visual	clear	"	"	"	"	"	"
Odor	Olfactory	none	"	"	"	"	"	"

Comments: Start purge at 9:57 - flow rate at 250ml/min
changed flow rate to 200 ml/min at 10:18
End Purge at 10:32
Sampled at 11:00 by JB

PZ

Monitoring Well Purging / Sampling Form

Project Name and Number: _____

Monitoring Well Number: MW-18 Date: _____

Samplers: _____

Sample Number: _____ QA/QC Collected? _____

Purging / Sampling Method: _____

1. L = Well Depth: _____ feet
2. D = Riser Diameter (I.D.): _____ feet
3. W = Depth to Water: _____ feet
4. C = Column of Water in Well: _____ feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$ _____ gal
6. 3(V) = Target Purge Volume _____ gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using _____

Parameter	Units	Readings						
Time	24 hr	10:37	10:42	10:47	10:52	10:57		
Water Level (0.33)	feet	4.90	4.56	4.61	4.59			
Volume Purged	gal	2.0	2.2	2.4	2.6			
Flow Rate	mL/min	200	200	200	200			
Turbidity (+/- 10%) ✓	NTU	9.66	9.14	9.8	10.6			
Dissolved Oxygen (+/- 10%)	%	0.28	2.2	1.8	1.8			
Dissolved Oxygen (+/- 10%)	mg/L	0.13	0.20	0.18	0.16			
Eh / ORP (+/- 10) ✓	MeV	-128.6	-126.5	-127.0	-126.1			
Specific Conductivity (+/- 3%) ✓	mS/cm[c]	602	601	606	609			
Conductivity (+/- 3%)	mS/cm							
pH (+/- 0.1) ✓	pH unit	7.27	7.25	7.27	7.26			
Temp (+/- 0.5) ✓	C°	17.5	17.3	17.4	17.4			
Color	Visual							
Odor	Olfactory							

Comments: End purge at 10:52
Sampled at 11:00 by JB

Appendix B

Laboratory Reports and Data Usability Summary Reports

con-test®
A Pace Analytical® Laboratory

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

January 18, 2023

Lindsay Mitchell
NYDEC_AECOM Environment - Latham, NY
40 British American Blvd.
Latham, NY 12110

Project Location: Northeast Alloys & Metals
Client Job Number:
Project Number: 633045
Laboratory Work Order Number: 22I1801

Enclosed are results of analyses for samples as received by the laboratory on September 28, 2022. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kyle K. Stuckey
Project Manager

Table of Contents

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

NYDEC_AECOM Environment - Latham, NY
40 British American Blvd.
Latham, NY 12110
ATTN: Lindsay Mitchell

REPORT DATE: 1/18/2023

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 633045

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 22I1801

The results of analyses performed on the following samples submitted to CON-TEST, a Pace Analytical Laboratory, are found in this report.

PROJECT LOCATION: Northeast Alloys & Metals

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
BR-1	22I1801-01	Ground Water		624.1	
				SOP-454 PFAS	
				SW-846 8270E	
MW-12	22I1801-02	Ground Water		624.1	
				SOP-454 PFAS	
				SW-846 8270E	
MW-3	22I1801-03	Ground Water		624.1	
				SOP-454 PFAS	
				SW-846 8270E	
MW-13	22I1801-04	Ground Water		624.1	
				SOP-454 PFAS	
				SW-846 8270E	
TB1	22I1801-05	Ground Water		624.1	
DUP	22I1801-06	Ground Water		624.1	
				SOP-454 PFAS	
				SW-846 8270E	

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

REVISED 01-18-23: cis-1,2-DCE added per the COC

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

624.1

Qualifications:

PR-06

pH of sample (pH 3) is outside of method specified preservation criteria.

Analyte & Samples(s) Qualified:

22I1801-03[MW-3], 22I1801-04[MW-13]

SOP-454 PFAS

Qualifications:

PF-17

Extracted Internal Standard recovery is outside of control limits. Data is not significantly affected since associated analyte is not detected and bias is on the high side.

Analyte & Samples(s) Qualified:

M2-6:2FTS
22I1801-02[MW-12], 22I1801-03[MW-3], 22I1801-04[MW-13]

M2-8:2FTS
22I1801-02[MW-12], 22I1801-03[MW-3], 22I1801-04[MW-13]

M3HFPO-DA
S078182-CCV2

PF-20

Quantifying ion signal to noise ratio is <10. Detection is suspect.

Analyte & Samples(s) Qualified:

Perfluorobutanesulfonic acid (PFBS)
22I1801-02[MW-12]

Perfluorobutanoic acid (PFBA)
22I1801-02[MW-12]

Perfluoroheptanoic acid (PFHpA)
22I1801-02[MW-12], 22I1801-04[MW-13]

Perfluorohexanoic acid (PFHxA)
22I1801-02[MW-12]

Perfluorooctanesulfonic acid (PFOS)
22I1801-02[MW-12]

Perfluorooctanoic acid (PFOA)
22I1801-03[MW-3]

PF-23

Qualifier ion ratio <50% of associated calibration. Detection is suspect.

Analyte & Samples(s) Qualified:

Perfluorobutanesulfonic acid (PFBS)
22I1801-02[MW-12]

Perfluoroheptanoic acid (PFHpA)
22I1801-03[MW-3]

Perfluorohexanoic acid (PFHxA)
22I1801-02[MW-12]

Perfluorooctanesulfonic acid (PFOS)
22I1801-02[MW-12]

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

S-29

Extracted Internal Standard is outside of control limits.

Analyte & Samples(s) Qualified:

D3-NMeFOSAA
22I1801-03[MW-3], 22I1801-04[MW-13]

D5-NEtFOSAA
22I1801-03[MW-3]

M2PFTA
22I1801-03[MW-3]

M3HFPO-DA
22I1801-04[MW-13]

M5PFPeA
22I1801-03[MW-3], 22I1801-04[MW-13]

M8FOSA
22I1801-02[MW-12], 22I1801-03[MW-3], 22I1801-04[MW-13]

MPFBA
22I1801-02[MW-12], 22I1801-03[MW-3], 22I1801-04[MW-13]

MPFDoA
22I1801-03[MW-3]

V-05

Continuing calibration verification (CCV) did not meet method specifications and was biased on the low side for this compound.

Analyte & Samples(s) Qualified:

11Cl-PF3OUdS (F53B Major)
S077830-CCV1, S078133-CCV1

Perfluorooctanesulfonic acid (PFOS)
S078133-CCV1

V-06

Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side for this compound.

Analyte & Samples(s) Qualified:

6:2 Fluorotelomersulfonic acid (6:2FTS A)
S077830-CCV1

The results of analyses reported only relate to samples submitted to Con-Test, a Pace Analytical Laboratory, for testing.
I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Lisa A. Worthington
Technical Representative

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A Pace Analytical® Laboratory

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Northeast Alloys & Metals | Sample Description: | Work Order: 22I1801

Date Received: 9/28/2022

Field Sample #: BR-1 | Sampled: 9/27/2022 10:40

Sample ID: 22I1801-01

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Benzene	<0.200	1.00	0.200	µg/L	1		624.1	10/6/22	10/6/22 17:42	MFF
Bromodichloromethane	<0.180	2.00	0.180	µg/L	1		624.1	10/6/22	10/6/22 17:42	MFF
Bromoform	<0.383	2.00	0.383	µg/L	1		624.1	10/6/22	10/6/22 17:42	MFF
Bromomethane	<1.54	2.00	1.54	µg/L	1		624.1	10/6/22	10/6/22 17:42	MFF
Carbon Tetrachloride	<0.165	2.00	0.165	µg/L	1		624.1	10/6/22	10/6/22 17:42	MFF
Chlorobenzene	<0.105	2.00	0.105	µg/L	1		624.1	10/6/22	10/6/22 17:42	MFF
Chlorodibromomethane	<0.222	2.00	0.222	µg/L	1		624.1	10/6/22	10/6/22 17:42	MFF
Chloroethane	<0.320	2.00	0.320	µg/L	1		624.1	10/6/22	10/6/22 17:42	MFF
Chloroform	<0.168	2.00	0.168	µg/L	1		624.1	10/6/22	10/6/22 17:42	MFF
Chloromethane	<0.522	2.00	0.522	µg/L	1		624.1	10/6/22	10/6/22 17:42	MFF
1,2-Dichlorobenzene	<0.122	2.00	0.122	µg/L	1		624.1	10/6/22	10/6/22 17:42	MFF
1,3-Dichlorobenzene	<0.118	2.00	0.118	µg/L	1		624.1	10/6/22	10/6/22 17:42	MFF
1,4-Dichlorobenzene	<0.130	2.00	0.130	µg/L	1		624.1	10/6/22	10/6/22 17:42	MFF
1,2-Dichloroethane	<0.308	2.00	0.308	µg/L	1		624.1	10/6/22	10/6/22 17:42	MFF
cis-1,2-Dichloroethylene	<0.147	1.00	0.147	µg/L	1		624.1	10/6/22	10/6/22 17:42	MFF
1,1-Dichloroethane	<0.142	2.00	0.142	µg/L	1		624.1	10/6/22	10/6/22 17:42	MFF
1,1-Dichloroethylene	<0.141	2.00	0.141	µg/L	1		624.1	10/6/22	10/6/22 17:42	MFF
trans-1,2-Dichloroethylene	<0.169	2.00	0.169	µg/L	1		624.1	10/6/22	10/6/22 17:42	MFF
1,2-Dichloropropane	<0.181	2.00	0.181	µg/L	1		624.1	10/6/22	10/6/22 17:42	MFF
cis-1,3-Dichloropropene	<0.158	2.00	0.158	µg/L	1		624.1	10/6/22	10/6/22 17:42	MFF
trans-1,3-Dichloropropene	<0.168	2.00	0.168	µg/L	1		624.1	10/6/22	10/6/22 17:42	MFF
Ethylbenzene	<0.215	2.00	0.215	µg/L	1		624.1	10/6/22	10/6/22 17:42	MFF
Methyl tert-Butyl Ether (MTBE)	<0.172	2.00	0.172	µg/L	1		624.1	10/6/22	10/6/22 17:42	MFF
Methylene Chloride	<0.235	5.00	0.235	µg/L	1		624.1	10/6/22	10/6/22 17:42	MFF
1,1,2,2-Tetrachloroethane	<0.127	2.00	0.127	µg/L	1		624.1	10/6/22	10/6/22 17:42	MFF
Tetrachloroethylene	<0.187	2.00	0.187	µg/L	1		624.1	10/6/22	10/6/22 17:42	MFF
Toluene	<0.224	1.00	0.224	µg/L	1		624.1	10/6/22	10/6/22 17:42	MFF
1,1,1-Trichloroethane	<0.169	2.00	0.169	µg/L	1		624.1	10/6/22	10/6/22 17:42	MFF
1,1,2-Trichloroethane	<0.183	2.00	0.183	µg/L	1		624.1	10/6/22	10/6/22 17:42	MFF
Trichloroethylene	<0.189	2.00	0.189	µg/L	1		624.1	10/6/22	10/6/22 17:42	MFF
Trichlorofluoromethane (Freon 11)	<0.176	2.00	0.176	µg/L	1		624.1	10/6/22	10/6/22 17:42	MFF
Vinyl Chloride	<0.208	2.00	0.208	µg/L	1		624.1	10/6/22	10/6/22 17:42	MFF
m+p Xylene	<0.459	2.00	0.459	µg/L	1		624.1	10/6/22	10/6/22 17:42	MFF
o-Xylene	<0.230	1.00	0.230	µg/L	1		624.1	10/6/22	10/6/22 17:42	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	101	70-130		10/6/22 17:42
Toluene-d8	87.6	70-130		10/6/22 17:42
4-Bromofluorobenzene	96.7	70-130		10/6/22 17:42

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Northeast Alloys & Metals | Sample Description: | Work Order: 22I1801

Date Received: 9/28/2022

Field Sample #: BR-1 | Sampled: 9/27/2022 10:40

Sample ID: 22I1801-01

Sample Matrix: Ground Water

1,4-Dioxane by isotope dilution GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
1,4-Dioxane	ND	0.20	0.033	µg/L	1		SW-846 8270E	10/4/22	10/10/22 12:47	SPF

Surrogates	% Recovery	Recovery Limits	Flag/Qual		
1,4-Dioxane-d8	24.5	15-110		10/10/22 12:47	

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Project Location: Northeast Alloys & Metals | Sample Description: | Work Order: 22I1801

Date Received: 9/28/2022

Field Sample #: BR-1 | Sampled: 9/27/2022 10:40

Sample ID: 22I1801-01

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	ND	2.1	0.76	ng/L	1		SOP-454 PFAS	10/6/22	10/15/22 16:14	DRL
Perfluorobutanesulfonic acid (PFBS)	ND	2.1	0.29	ng/L	1		SOP-454 PFAS	10/6/22	10/15/22 16:14	DRL
Perfluoropentanoic acid (PFPeA)	ND	2.1	0.40	ng/L	1		SOP-454 PFAS	10/6/22	10/15/22 16:14	DRL
Perfluorohexanoic acid (PFHxA)	ND	2.1	0.40	ng/L	1		SOP-454 PFAS	10/6/22	10/15/22 16:14	DRL
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.1	0.62	ng/L	1		SOP-454 PFAS	10/6/22	10/15/22 16:14	DRL
Perfluorodecanoic acid (PFDA)	ND	2.1	0.50	ng/L	1		SOP-454 PFAS	10/6/22	10/15/22 16:14	DRL
Perfluorododecanoic acid (PFDoA)	ND	2.1	0.45	ng/L	1		SOP-454 PFAS	10/6/22	10/15/22 16:14	DRL
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.1	0.96	ng/L	1		SOP-454 PFAS	10/6/22	10/15/22 16:14	DRL
N-EtFOSAA (NEtFOSAA)	ND	2.1	0.65	ng/L	1		SOP-454 PFAS	10/6/22	10/15/22 16:14	DRL
N-MeFOSAA (NMeFOSAA)	ND	2.1	0.78	ng/L	1		SOP-454 PFAS	10/6/22	10/15/22 16:14	DRL
Perfluorotetradecanoic acid (PFTA)	ND	2.1	0.38	ng/L	1		SOP-454 PFAS	10/6/22	10/15/22 16:14	DRL
Perfluorotridecanoic acid (PFTrDA)	ND	2.1	0.28	ng/L	1		SOP-454 PFAS	10/6/22	10/15/22 16:14	DRL
Perfluorodecanesulfonic acid (PFDS)	ND	2.1	0.33	ng/L	1		SOP-454 PFAS	10/6/22	10/15/22 16:14	DRL
Perfluorooctanesulfonamide (FOSA)	ND	2.1	0.43	ng/L	1		SOP-454 PFAS	10/6/22	10/15/22 16:14	DRL
Perfluorohexanesulfonic acid (PFHxS)	ND	2.1	0.35	ng/L	1		SOP-454 PFAS	10/6/22	10/15/22 16:14	DRL
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	2.1	0.38	ng/L	1		SOP-454 PFAS	10/6/22	10/15/22 16:14	DRL
Perfluoroundecanoic acid (PFUnA)	ND	2.1	0.38	ng/L	1		SOP-454 PFAS	10/6/22	10/15/22 16:14	DRL
Perfluoroheptanoic acid (PFHpA)	ND	2.1	0.35	ng/L	1		SOP-454 PFAS	10/6/22	10/15/22 16:14	DRL
Perfluorooctanoic acid (PFOA)	ND	2.1	0.70	ng/L	1		SOP-454 PFAS	10/6/22	10/15/22 16:14	DRL
Perfluorooctanesulfonic acid (PFOS)	ND	2.1	0.62	ng/L	1		SOP-454 PFAS	10/6/22	10/15/22 16:14	DRL
Perfluorononanoic acid (PFNA)	ND	2.1	0.36	ng/L	1		SOP-454 PFAS	10/6/22	10/15/22 16:14	DRL

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Northeast Alloys & Metals | Sample Description: | Work Order: 22I1801

Date Received: 9/28/2022

Field Sample #: MW-12 | Sampled: 9/27/2022 11:50

Sample ID: 22I1801-02

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Benzene	<0.200	1.00	0.200	µg/L	1		624.1	10/6/22	10/6/22 18:06	MFF
Bromodichloromethane	<0.180	2.00	0.180	µg/L	1		624.1	10/6/22	10/6/22 18:06	MFF
Bromoform	<0.383	2.00	0.383	µg/L	1		624.1	10/6/22	10/6/22 18:06	MFF
Bromomethane	<1.54	2.00	1.54	µg/L	1		624.1	10/6/22	10/6/22 18:06	MFF
Carbon Tetrachloride	<0.165	2.00	0.165	µg/L	1		624.1	10/6/22	10/6/22 18:06	MFF
Chlorobenzene	<0.105	2.00	0.105	µg/L	1		624.1	10/6/22	10/6/22 18:06	MFF
Chlorodibromomethane	<0.222	2.00	0.222	µg/L	1		624.1	10/6/22	10/6/22 18:06	MFF
Chloroethane	<0.320	2.00	0.320	µg/L	1		624.1	10/6/22	10/6/22 18:06	MFF
Chloroform	<0.168	2.00	0.168	µg/L	1		624.1	10/6/22	10/6/22 18:06	MFF
Chloromethane	<0.522	2.00	0.522	µg/L	1		624.1	10/6/22	10/6/22 18:06	MFF
1,2-Dichlorobenzene	<0.122	2.00	0.122	µg/L	1		624.1	10/6/22	10/6/22 18:06	MFF
1,3-Dichlorobenzene	<0.118	2.00	0.118	µg/L	1		624.1	10/6/22	10/6/22 18:06	MFF
1,4-Dichlorobenzene	<0.130	2.00	0.130	µg/L	1		624.1	10/6/22	10/6/22 18:06	MFF
1,2-Dichloroethane	<0.308	2.00	0.308	µg/L	1		624.1	10/6/22	10/6/22 18:06	MFF
cis-1,2-Dichloroethylene	<0.147	1.00	0.147	µg/L	1		624.1	10/6/22	10/6/22 18:06	MFF
1,1-Dichloroethane	<0.142	2.00	0.142	µg/L	1		624.1	10/6/22	10/6/22 18:06	MFF
1,1-Dichloroethylene	<0.141	2.00	0.141	µg/L	1		624.1	10/6/22	10/6/22 18:06	MFF
trans-1,2-Dichloroethylene	<0.169	2.00	0.169	µg/L	1		624.1	10/6/22	10/6/22 18:06	MFF
1,2-Dichloropropane	<0.181	2.00	0.181	µg/L	1		624.1	10/6/22	10/6/22 18:06	MFF
cis-1,3-Dichloropropene	<0.158	2.00	0.158	µg/L	1		624.1	10/6/22	10/6/22 18:06	MFF
trans-1,3-Dichloropropene	<0.168	2.00	0.168	µg/L	1		624.1	10/6/22	10/6/22 18:06	MFF
Ethylbenzene	<0.215	2.00	0.215	µg/L	1		624.1	10/6/22	10/6/22 18:06	MFF
Methyl tert-Butyl Ether (MTBE)	<0.172	2.00	0.172	µg/L	1		624.1	10/6/22	10/6/22 18:06	MFF
Methylene Chloride	<0.235	5.00	0.235	µg/L	1		624.1	10/6/22	10/6/22 18:06	MFF
1,1,2,2-Tetrachloroethane	<0.127	2.00	0.127	µg/L	1		624.1	10/6/22	10/6/22 18:06	MFF
Tetrachloroethylene	<0.187	2.00	0.187	µg/L	1		624.1	10/6/22	10/6/22 18:06	MFF
Toluene	<0.224	1.00	0.224	µg/L	1		624.1	10/6/22	10/6/22 18:06	MFF
1,1,1-Trichloroethane	<0.169	2.00	0.169	µg/L	1		624.1	10/6/22	10/6/22 18:06	MFF
1,1,2-Trichloroethane	<0.183	2.00	0.183	µg/L	1		624.1	10/6/22	10/6/22 18:06	MFF
Trichloroethylene	<0.189	2.00	0.189	µg/L	1		624.1	10/6/22	10/6/22 18:06	MFF
Trichlorofluoromethane (Freon 11)	<0.176	2.00	0.176	µg/L	1		624.1	10/6/22	10/6/22 18:06	MFF
Vinyl Chloride	<0.208	2.00	0.208	µg/L	1		624.1	10/6/22	10/6/22 18:06	MFF
m+p Xylene	<0.459	2.00	0.459	µg/L	1		624.1	10/6/22	10/6/22 18:06	MFF
o-Xylene	<0.230	1.00	0.230	µg/L	1		624.1	10/6/22	10/6/22 18:06	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	102	70-130		10/6/22 18:06
Toluene-d8	87.9	70-130		10/6/22 18:06
4-Bromofluorobenzene	97.3	70-130		10/6/22 18:06

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Northeast Alloys & Metals | Sample Description: | Work Order: 22I1801

Date Received: 9/28/2022

Field Sample #: MW-12 | Sampled: 9/27/2022 11:50

Sample ID: 22I1801-02

Sample Matrix: Ground Water

1,4-Dioxane by isotope dilution GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
1,4-Dioxane	0.32	0.22	0.036	µg/L	1		SW-846 8270E	10/4/22	10/10/22 13:07	SPF

Surrogates	% Recovery	Recovery Limits	Flag/Qual		
1,4-Dioxane-d8	24.8	15-110			10/10/22 13:07

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Project Location: Northeast Alloys & Metals | Sample Description: | Work Order: 22I1801

Date Received: 9/28/2022

Field Sample #: MW-12 | Sampled: 9/27/2022 11:50

Sample ID: 22I1801-02

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	1.6	2.1	0.77	ng/L	1	PF-20, J	SOP-454 PFAS	10/6/22	10/15/22 16:21	DRL
Perfluorobutanesulfonic acid (PFBS)	4.4	2.1	0.29	ng/L	1	PF-20, PF-23	SOP-454 PFAS	10/6/22	10/15/22 16:21	DRL
Perfluoropentanoic acid (PFPeA)	ND	2.1	0.41	ng/L	1		SOP-454 PFAS	10/6/22	10/15/22 16:21	DRL
Perfluorohexanoic acid (PFHxA)	3.9	2.1	0.40	ng/L	1	PF-20, PF-23	SOP-454 PFAS	10/6/22	10/15/22 16:21	DRL
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.1	0.63	ng/L	1		SOP-454 PFAS	10/6/22	10/15/22 16:21	DRL
Perfluorodecanoic acid (PFDA)	ND	2.1	0.51	ng/L	1		SOP-454 PFAS	10/6/22	10/15/22 16:21	DRL
Perfluorododecanoic acid (PFDoA)	ND	2.1	0.46	ng/L	1		SOP-454 PFAS	10/6/22	10/15/22 16:21	DRL
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.1	0.97	ng/L	1		SOP-454 PFAS	10/6/22	10/15/22 16:21	DRL
N-EtFOSAA (NEtFOSAA)	ND	2.1	0.65	ng/L	1		SOP-454 PFAS	10/6/22	10/15/22 16:21	DRL
N-MeFOSAA (NMeFOSAA)	ND	2.1	0.79	ng/L	1		SOP-454 PFAS	10/6/22	10/15/22 16:21	DRL
Perfluorotetradecanoic acid (PFTA)	ND	2.1	0.38	ng/L	1		SOP-454 PFAS	10/6/22	10/15/22 16:21	DRL
Perfluorotridecanoic acid (PFTrDA)	ND	2.1	0.29	ng/L	1		SOP-454 PFAS	10/6/22	10/15/22 16:21	DRL
Perfluorodecanesulfonic acid (PFDS)	ND	2.1	0.34	ng/L	1		SOP-454 PFAS	10/6/22	10/15/22 16:21	DRL
Perfluorooctanesulfonamide (FOSA)	ND	2.1	0.44	ng/L	1		SOP-454 PFAS	10/6/22	10/15/22 16:21	DRL
Perfluorohexanesulfonic acid (PFHxS)	ND	2.1	0.35	ng/L	1		SOP-454 PFAS	10/6/22	10/15/22 16:21	DRL
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	2.1	0.38	ng/L	1		SOP-454 PFAS	10/6/22	10/15/22 16:21	DRL
Perfluoroundecanoic acid (PFUnA)	ND	2.1	0.38	ng/L	1		SOP-454 PFAS	10/6/22	10/15/22 16:21	DRL
Perfluoroheptanoic acid (PFHpA)	1.1	2.1	0.36	ng/L	1	PF-20, J	SOP-454 PFAS	10/6/22	10/15/22 16:21	DRL
Perfluorooctanoic acid (PFOA)	2.8	2.1	0.71	ng/L	1		SOP-454 PFAS	10/6/22	10/15/22 16:21	DRL
Perfluorooctanesulfonic acid (PFOS)	1.5	2.1	0.62	ng/L	1	PF-20, PF-23, J	SOP-454 PFAS	10/6/22	10/15/22 16:21	DRL
Perfluorononanoic acid (PFNA)	ND	2.1	0.36	ng/L	1		SOP-454 PFAS	10/6/22	10/15/22 16:21	DRL

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Project Location: Northeast Alloys & Metals | Sample Description: | Work Order: 22I1801

Date Received: 9/28/2022

Field Sample #: MW-3 | Sampled: 9/27/2022 14:12

Sample ID: 22I1801-03

Sample Matrix: Ground Water

Sample Flags: PR-06

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Benzene	<0.200	1.00	0.200	µg/L	1		624.1	10/6/22	10/6/22 18:30	MFF
Bromodichloromethane	<0.180	2.00	0.180	µg/L	1		624.1	10/6/22	10/6/22 18:30	MFF
Bromoform	<0.383	2.00	0.383	µg/L	1		624.1	10/6/22	10/6/22 18:30	MFF
Bromomethane	<1.54	2.00	1.54	µg/L	1		624.1	10/6/22	10/6/22 18:30	MFF
Carbon Tetrachloride	<0.165	2.00	0.165	µg/L	1		624.1	10/6/22	10/6/22 18:30	MFF
Chlorobenzene	0.200	2.00	0.105	µg/L	1	J	624.1	10/6/22	10/6/22 18:30	MFF
Chlorodibromomethane	<0.222	2.00	0.222	µg/L	1		624.1	10/6/22	10/6/22 18:30	MFF
Chloroethane	<0.320	2.00	0.320	µg/L	1		624.1	10/6/22	10/6/22 18:30	MFF
Chloroform	<0.168	2.00	0.168	µg/L	1		624.1	10/6/22	10/6/22 18:30	MFF
Chloromethane	<0.522	2.00	0.522	µg/L	1		624.1	10/6/22	10/6/22 18:30	MFF
1,2-Dichlorobenzene	0.280	2.00	0.122	µg/L	1	J	624.1	10/6/22	10/6/22 18:30	MFF
1,3-Dichlorobenzene	<0.118	2.00	0.118	µg/L	1		624.1	10/6/22	10/6/22 18:30	MFF
1,4-Dichlorobenzene	<0.130	2.00	0.130	µg/L	1		624.1	10/6/22	10/6/22 18:30	MFF
1,2-Dichloroethane	<0.308	2.00	0.308	µg/L	1		624.1	10/6/22	10/6/22 18:30	MFF
cis-1,2-Dichloroethylene	<0.147	1.00	0.147	µg/L	1		624.1	10/6/22	10/6/22 18:30	MFF
1,1-Dichloroethane	<0.142	2.00	0.142	µg/L	1		624.1	10/6/22	10/6/22 18:30	MFF
1,1-Dichloroethylene	<0.141	2.00	0.141	µg/L	1		624.1	10/6/22	10/6/22 18:30	MFF
trans-1,2-Dichloroethylene	<0.169	2.00	0.169	µg/L	1		624.1	10/6/22	10/6/22 18:30	MFF
1,2-Dichloropropane	<0.181	2.00	0.181	µg/L	1		624.1	10/6/22	10/6/22 18:30	MFF
cis-1,3-Dichloropropene	<0.158	2.00	0.158	µg/L	1		624.1	10/6/22	10/6/22 18:30	MFF
trans-1,3-Dichloropropene	<0.168	2.00	0.168	µg/L	1		624.1	10/6/22	10/6/22 18:30	MFF
Ethylbenzene	<0.215	2.00	0.215	µg/L	1		624.1	10/6/22	10/6/22 18:30	MFF
Methyl tert-Butyl Ether (MTBE)	<0.172	2.00	0.172	µg/L	1		624.1	10/6/22	10/6/22 18:30	MFF
Methylene Chloride	<0.235	5.00	0.235	µg/L	1		624.1	10/6/22	10/6/22 18:30	MFF
1,1,2,2-Tetrachloroethane	<0.127	2.00	0.127	µg/L	1		624.1	10/6/22	10/6/22 18:30	MFF
Tetrachloroethylene	<0.187	2.00	0.187	µg/L	1		624.1	10/6/22	10/6/22 18:30	MFF
Toluene	0.580	1.00	0.224	µg/L	1	J	624.1	10/6/22	10/6/22 18:30	MFF
1,1,1-Trichloroethane	<0.169	2.00	0.169	µg/L	1		624.1	10/6/22	10/6/22 18:30	MFF
1,1,2-Trichloroethane	<0.183	2.00	0.183	µg/L	1		624.1	10/6/22	10/6/22 18:30	MFF
Trichloroethylene	<0.189	2.00	0.189	µg/L	1		624.1	10/6/22	10/6/22 18:30	MFF
Trichlorofluoromethane (Freon 11)	<0.176	2.00	0.176	µg/L	1		624.1	10/6/22	10/6/22 18:30	MFF
Vinyl Chloride	<0.208	2.00	0.208	µg/L	1		624.1	10/6/22	10/6/22 18:30	MFF
m+p Xylene	<0.459	2.00	0.459	µg/L	1		624.1	10/6/22	10/6/22 18:30	MFF
o-Xylene	<0.230	1.00	0.230	µg/L	1		624.1	10/6/22	10/6/22 18:30	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	103	70-130		10/6/22 18:30
Toluene-d8	98.7	70-130		10/6/22 18:30
4-Bromofluorobenzene	95.2	70-130		10/6/22 18:30

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Northeast Alloys & Metals | Sample Description: | Work Order: 22I1801

Date Received: 9/28/2022

Field Sample #: MW-3 | Sampled: 9/27/2022 14:12

Sample ID: 22I1801-03

Sample Matrix: Ground Water

1,4-Dioxane by isotope dilution GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
1,4-Dioxane	0.12	0.20	0.033	µg/L	1	J	SW-846 8270E	10/4/22	10/10/22 13:26	SPF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,4-Dioxane-d8	26.6	15-110		10/10/22 13:26

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Project Location: Northeast Alloys & Metals | Sample Description: | Work Order: 22I1801

Date Received: 9/28/2022

Field Sample #: MW-3 | Sampled: 9/27/2022 14:12

Sample ID: 22I1801-03

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	1.3	2.0	0.76	ng/L	1	J	SOP-454 PFAS	10/7/22	10/11/22 10:33	DRL
Perfluorobutanesulfonic acid (PFBS)	ND	2.0	0.29	ng/L	1		SOP-454 PFAS	10/7/22	10/11/22 10:33	DRL
Perfluoropentanoic acid (PFPeA)	ND	2.0	0.40	ng/L	1		SOP-454 PFAS	10/7/22	10/11/22 10:33	DRL
Perfluorohexanoic acid (PFHxA)	1.9	2.0	0.39	ng/L	1	J	SOP-454 PFAS	10/7/22	10/11/22 10:33	DRL
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0	0.62	ng/L	1		SOP-454 PFAS	10/7/22	10/11/22 10:33	DRL
Perfluorodecanoic acid (PFDA)	ND	2.0	0.50	ng/L	1		SOP-454 PFAS	10/7/22	10/11/22 10:33	DRL
Perfluorododecanoic acid (PFDoA)	ND	2.0	0.45	ng/L	1		SOP-454 PFAS	10/7/22	10/11/22 10:33	DRL
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	0.95	ng/L	1		SOP-454 PFAS	10/7/22	10/11/22 10:33	DRL
N-EtFOSAA (NEtFOSAA)	ND	2.0	0.64	ng/L	1		SOP-454 PFAS	10/7/22	10/11/22 10:33	DRL
N-MeFOSAA (NMeFOSAA)	ND	2.0	0.77	ng/L	1		SOP-454 PFAS	10/7/22	10/11/22 10:33	DRL
Perfluorotetradecanoic acid (PFTA)	ND	2.0	0.37	ng/L	1		SOP-454 PFAS	10/7/22	10/11/22 10:33	DRL
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	0.28	ng/L	1		SOP-454 PFAS	10/7/22	10/11/22 10:33	DRL
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	0.33	ng/L	1		SOP-454 PFAS	10/7/22	10/11/22 10:33	DRL
Perfluorooctanesulfonamide (FOSA)	ND	2.0	0.43	ng/L	1		SOP-454 PFAS	10/7/22	10/11/22 10:33	DRL
Perfluorohexanesulfonic acid (PFHxS)	ND	2.0	0.34	ng/L	1		SOP-454 PFAS	10/7/22	10/11/22 10:33	DRL
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	2.0	0.37	ng/L	1		SOP-454 PFAS	10/7/22	10/11/22 10:33	DRL
Perfluoroundecanoic acid (PFUnA)	ND	2.0	0.37	ng/L	1		SOP-454 PFAS	10/7/22	10/11/22 10:33	DRL
Perfluoroheptanoic acid (PFHpA)	2.0	2.0	0.35	ng/L	1	PF-23, J	SOP-454 PFAS	10/7/22	10/11/22 10:33	DRL
Perfluorooctanoic acid (PFOA)	1.8	2.0	0.69	ng/L	1	PF-20, J	SOP-454 PFAS	10/7/22	10/11/22 10:33	DRL
Perfluorooctanesulfonic acid (PFOS)	ND	2.0	0.61	ng/L	1		SOP-454 PFAS	10/7/22	10/11/22 10:33	DRL
Perfluorononanoic acid (PFNA)	0.59	2.0	0.35	ng/L	1	J	SOP-454 PFAS	10/7/22	10/11/22 10:33	DRL

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Northeast Alloys & Metals | Sample Description: | Work Order: 22I1801

Date Received: 9/28/2022

Field Sample #: MW-13 | Sampled: 9/27/2022 14:20

Sample ID: 22I1801-04

Sample Matrix: Ground Water

Sample Flags: PR-06

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Benzene	<0.200	1.00	0.200	µg/L	1		624.1	10/6/22	10/6/22 18:54	MFF
Bromodichloromethane	<0.180	2.00	0.180	µg/L	1		624.1	10/6/22	10/6/22 18:54	MFF
Bromoform	<0.383	2.00	0.383	µg/L	1		624.1	10/6/22	10/6/22 18:54	MFF
Bromomethane	<1.54	2.00	1.54	µg/L	1		624.1	10/6/22	10/6/22 18:54	MFF
Carbon Tetrachloride	<0.165	2.00	0.165	µg/L	1		624.1	10/6/22	10/6/22 18:54	MFF
Chlorobenzene	<0.105	2.00	0.105	µg/L	1		624.1	10/6/22	10/6/22 18:54	MFF
Chlorodibromomethane	<0.222	2.00	0.222	µg/L	1		624.1	10/6/22	10/6/22 18:54	MFF
Chloroethane	<0.320	2.00	0.320	µg/L	1		624.1	10/6/22	10/6/22 18:54	MFF
Chloroform	<0.168	2.00	0.168	µg/L	1		624.1	10/6/22	10/6/22 18:54	MFF
Chloromethane	<0.522	2.00	0.522	µg/L	1		624.1	10/6/22	10/6/22 18:54	MFF
1,2-Dichlorobenzene	<0.122	2.00	0.122	µg/L	1		624.1	10/6/22	10/6/22 18:54	MFF
1,3-Dichlorobenzene	<0.118	2.00	0.118	µg/L	1		624.1	10/6/22	10/6/22 18:54	MFF
1,4-Dichlorobenzene	<0.130	2.00	0.130	µg/L	1		624.1	10/6/22	10/6/22 18:54	MFF
1,2-Dichloroethane	<0.308	2.00	0.308	µg/L	1		624.1	10/6/22	10/6/22 18:54	MFF
cis-1,2-Dichloroethylene	<0.147	1.00	0.147	µg/L	1		624.1	10/6/22	10/6/22 18:54	MFF
1,1-Dichloroethane	<0.142	2.00	0.142	µg/L	1		624.1	10/6/22	10/6/22 18:54	MFF
1,1-Dichloroethylene	<0.141	2.00	0.141	µg/L	1		624.1	10/6/22	10/6/22 18:54	MFF
trans-1,2-Dichloroethylene	<0.169	2.00	0.169	µg/L	1		624.1	10/6/22	10/6/22 18:54	MFF
1,2-Dichloropropane	<0.181	2.00	0.181	µg/L	1		624.1	10/6/22	10/6/22 18:54	MFF
cis-1,3-Dichloropropene	<0.158	2.00	0.158	µg/L	1		624.1	10/6/22	10/6/22 18:54	MFF
trans-1,3-Dichloropropene	<0.168	2.00	0.168	µg/L	1		624.1	10/6/22	10/6/22 18:54	MFF
Ethylbenzene	<0.215	2.00	0.215	µg/L	1		624.1	10/6/22	10/6/22 18:54	MFF
Methyl tert-Butyl Ether (MTBE)	<0.172	2.00	0.172	µg/L	1		624.1	10/6/22	10/6/22 18:54	MFF
Methylene Chloride	<0.235	5.00	0.235	µg/L	1		624.1	10/6/22	10/6/22 18:54	MFF
1,1,2,2-Tetrachloroethane	<0.127	2.00	0.127	µg/L	1		624.1	10/6/22	10/6/22 18:54	MFF
Tetrachloroethylene	<0.187	2.00	0.187	µg/L	1		624.1	10/6/22	10/6/22 18:54	MFF
Toluene	<0.224	1.00	0.224	µg/L	1		624.1	10/6/22	10/6/22 18:54	MFF
1,1,1-Trichloroethane	<0.169	2.00	0.169	µg/L	1		624.1	10/6/22	10/6/22 18:54	MFF
1,1,2-Trichloroethane	<0.183	2.00	0.183	µg/L	1		624.1	10/6/22	10/6/22 18:54	MFF
Trichloroethylene	<0.189	2.00	0.189	µg/L	1		624.1	10/6/22	10/6/22 18:54	MFF
Trichlorofluoromethane (Freon 11)	<0.176	2.00	0.176	µg/L	1		624.1	10/6/22	10/6/22 18:54	MFF
Vinyl Chloride	<0.208	2.00	0.208	µg/L	1		624.1	10/6/22	10/6/22 18:54	MFF
m+p Xylene	<0.459	2.00	0.459	µg/L	1		624.1	10/6/22	10/6/22 18:54	MFF
o-Xylene	<0.230	1.00	0.230	µg/L	1		624.1	10/6/22	10/6/22 18:54	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	103	70-130		10/6/22 18:54
Toluene-d8	99.6	70-130		10/6/22 18:54
4-Bromofluorobenzene	99.2	70-130		10/6/22 18:54

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Northeast Alloys & Metals | Sample Description: | Work Order: 22I1801

Date Received: 9/28/2022

Field Sample #: MW-13 | Sampled: 9/27/2022 14:20

Sample ID: 22I1801-04

Sample Matrix: Ground Water

1,4-Dioxane by isotope dilution GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
1,4-Dioxane	ND	0.20	0.033	µg/L	1		SW-846 8270E	10/4/22	10/10/22 13:46	SPF

Surrogates	% Recovery	Recovery Limits	Flag/Qual		
1,4-Dioxane-d8	26.5	15-110		10/10/22 13:46	

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Project Location: Northeast Alloys & Metals | Sample Description: | Work Order: 22I1801

Date Received: 9/28/2022

Field Sample #: MW-13 | Sampled: 9/27/2022 14:20

Sample ID: 22I1801-04

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	1.5	2.1	0.79	ng/L	1	J	SOP-454 PFAS	10/7/22	10/11/22 10:40	DRL
Perfluorobutanesulfonic acid (PFBS)	ND	2.1	0.30	ng/L	1		SOP-454 PFAS	10/7/22	10/11/22 10:40	DRL
Perfluoropentanoic acid (PFPeA)	ND	2.1	0.42	ng/L	1		SOP-454 PFAS	10/7/22	10/11/22 10:40	DRL
Perfluorohexanoic acid (PFHxA)	2.2	2.1	0.41	ng/L	1		SOP-454 PFAS	10/7/22	10/11/22 10:40	DRL
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.1	0.65	ng/L	1		SOP-454 PFAS	10/7/22	10/11/22 10:40	DRL
Perfluorodecanoic acid (PFDA)	ND	2.1	0.52	ng/L	1		SOP-454 PFAS	10/7/22	10/11/22 10:40	DRL
Perfluorododecanoic acid (PFDoA)	ND	2.1	0.47	ng/L	1		SOP-454 PFAS	10/7/22	10/11/22 10:40	DRL
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.1	1.0	ng/L	1		SOP-454 PFAS	10/7/22	10/11/22 10:40	DRL
N-EtFOSAA (NEtFOSAA)	ND	2.1	0.67	ng/L	1		SOP-454 PFAS	10/7/22	10/11/22 10:40	DRL
N-MeFOSAA (NMeFOSAA)	ND	2.1	0.81	ng/L	1		SOP-454 PFAS	10/7/22	10/11/22 10:40	DRL
Perfluorotetradecanoic acid (PFTA)	ND	2.1	0.39	ng/L	1		SOP-454 PFAS	10/7/22	10/11/22 10:40	DRL
Perfluorotridecanoic acid (PFTrDA)	ND	2.1	0.29	ng/L	1		SOP-454 PFAS	10/7/22	10/11/22 10:40	DRL
Perfluorodecanesulfonic acid (PFDS)	ND	2.1	0.35	ng/L	1		SOP-454 PFAS	10/7/22	10/11/22 10:40	DRL
Perfluorooctanesulfonamide (FOSA)	ND	2.1	0.45	ng/L	1		SOP-454 PFAS	10/7/22	10/11/22 10:40	DRL
Perfluorohexanesulfonic acid (PFHxS)	ND	2.1	0.36	ng/L	1		SOP-454 PFAS	10/7/22	10/11/22 10:40	DRL
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	2.1	0.39	ng/L	1		SOP-454 PFAS	10/7/22	10/11/22 10:40	DRL
Perfluoroundecanoic acid (PFUnA)	ND	2.1	0.39	ng/L	1		SOP-454 PFAS	10/7/22	10/11/22 10:40	DRL
Perfluoroheptanoic acid (PFHpA)	2.0	2.1	0.37	ng/L	1	PF-20, J	SOP-454 PFAS	10/7/22	10/11/22 10:40	DRL
Perfluorooctanoic acid (PFOA)	1.8	2.1	0.73	ng/L	1	J	SOP-454 PFAS	10/7/22	10/11/22 10:40	DRL
Perfluorooctanesulfonic acid (PFOS)	ND	2.1	0.64	ng/L	1		SOP-454 PFAS	10/7/22	10/11/22 10:40	DRL
Perfluorononanoic acid (PFNA)	0.91	2.1	0.37	ng/L	1	J	SOP-454 PFAS	10/7/22	10/11/22 10:40	DRL

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Project Location: Northeast Alloys & Metals | Sample Description: | Work Order: 22I1801

Date Received: 9/28/2022

Field Sample #: TB1 | Sampled: 9/27/2022 14:50

Sample ID: 22I1801-05

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Benzene	<0.200	1.00	0.200	µg/L	1		624.1	10/6/22	10/6/22 15:42	MFF
Bromodichloromethane	<0.180	2.00	0.180	µg/L	1		624.1	10/6/22	10/6/22 15:42	MFF
Bromoform	<0.383	2.00	0.383	µg/L	1		624.1	10/6/22	10/6/22 15:42	MFF
Bromomethane	<1.54	2.00	1.54	µg/L	1		624.1	10/6/22	10/6/22 15:42	MFF
Carbon Tetrachloride	<0.165	2.00	0.165	µg/L	1		624.1	10/6/22	10/6/22 15:42	MFF
Chlorobenzene	<0.105	2.00	0.105	µg/L	1		624.1	10/6/22	10/6/22 15:42	MFF
Chlorodibromomethane	<0.222	2.00	0.222	µg/L	1		624.1	10/6/22	10/6/22 15:42	MFF
Chloroethane	<0.320	2.00	0.320	µg/L	1		624.1	10/6/22	10/6/22 15:42	MFF
Chloroform	0.540	2.00	0.168	µg/L	1	J	624.1	10/6/22	10/6/22 15:42	MFF
Chloromethane	<0.522	2.00	0.522	µg/L	1		624.1	10/6/22	10/6/22 15:42	MFF
1,2-Dichlorobenzene	<0.122	2.00	0.122	µg/L	1		624.1	10/6/22	10/6/22 15:42	MFF
1,3-Dichlorobenzene	<0.118	2.00	0.118	µg/L	1		624.1	10/6/22	10/6/22 15:42	MFF
1,4-Dichlorobenzene	<0.130	2.00	0.130	µg/L	1		624.1	10/6/22	10/6/22 15:42	MFF
1,2-Dichloroethane	<0.308	2.00	0.308	µg/L	1		624.1	10/6/22	10/6/22 15:42	MFF
cis-1,2-Dichloroethylene	<0.147	1.00	0.147	µg/L	1		624.1	10/6/22	10/6/22 15:42	MFF
1,1-Dichloroethane	<0.142	2.00	0.142	µg/L	1		624.1	10/6/22	10/6/22 15:42	MFF
1,1-Dichloroethylene	<0.141	2.00	0.141	µg/L	1		624.1	10/6/22	10/6/22 15:42	MFF
trans-1,2-Dichloroethylene	<0.169	2.00	0.169	µg/L	1		624.1	10/6/22	10/6/22 15:42	MFF
1,2-Dichloropropane	<0.181	2.00	0.181	µg/L	1		624.1	10/6/22	10/6/22 15:42	MFF
cis-1,3-Dichloropropene	<0.158	2.00	0.158	µg/L	1		624.1	10/6/22	10/6/22 15:42	MFF
trans-1,3-Dichloropropene	<0.168	2.00	0.168	µg/L	1		624.1	10/6/22	10/6/22 15:42	MFF
Ethylbenzene	<0.215	2.00	0.215	µg/L	1		624.1	10/6/22	10/6/22 15:42	MFF
Methyl tert-Butyl Ether (MTBE)	<0.172	2.00	0.172	µg/L	1		624.1	10/6/22	10/6/22 15:42	MFF
Methylene Chloride	<0.235	5.00	0.235	µg/L	1		624.1	10/6/22	10/6/22 15:42	MFF
1,1,2,2-Tetrachloroethane	<0.127	2.00	0.127	µg/L	1		624.1	10/6/22	10/6/22 15:42	MFF
Tetrachloroethylene	<0.187	2.00	0.187	µg/L	1		624.1	10/6/22	10/6/22 15:42	MFF
Toluene	<0.224	1.00	0.224	µg/L	1		624.1	10/6/22	10/6/22 15:42	MFF
1,1,1-Trichloroethane	<0.169	2.00	0.169	µg/L	1		624.1	10/6/22	10/6/22 15:42	MFF
1,1,2-Trichloroethane	<0.183	2.00	0.183	µg/L	1		624.1	10/6/22	10/6/22 15:42	MFF
Trichloroethylene	<0.189	2.00	0.189	µg/L	1		624.1	10/6/22	10/6/22 15:42	MFF
Trichlorofluoromethane (Freon 11)	<0.176	2.00	0.176	µg/L	1		624.1	10/6/22	10/6/22 15:42	MFF
Vinyl Chloride	<0.208	2.00	0.208	µg/L	1		624.1	10/6/22	10/6/22 15:42	MFF
m+p Xylene	<0.459	2.00	0.459	µg/L	1		624.1	10/6/22	10/6/22 15:42	MFF
o-Xylene	<0.230	1.00	0.230	µg/L	1		624.1	10/6/22	10/6/22 15:42	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	91.4	70-130		10/6/22 15:42
Toluene-d8	97.6	70-130		10/6/22 15:42
4-Bromofluorobenzene	96.4	70-130		10/6/22 15:42

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Project Location: Northeast Alloys & Metals | Sample Description: | Work Order: 22I1801

Date Received: 9/28/2022

Field Sample #: DUP | Sampled: 9/27/2022 00:00

Sample ID: 22I1801-06

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Benzene	<0.200	1.00	0.200	µg/L	1		624.1	10/6/22	10/6/22 19:18	MFF
Bromodichloromethane	<0.180	2.00	0.180	µg/L	1		624.1	10/6/22	10/6/22 19:18	MFF
Bromoform	<0.383	2.00	0.383	µg/L	1		624.1	10/6/22	10/6/22 19:18	MFF
Bromomethane	<1.54	2.00	1.54	µg/L	1		624.1	10/6/22	10/6/22 19:18	MFF
Carbon Tetrachloride	<0.165	2.00	0.165	µg/L	1		624.1	10/6/22	10/6/22 19:18	MFF
Chlorobenzene	<0.105	2.00	0.105	µg/L	1		624.1	10/6/22	10/6/22 19:18	MFF
Chlorodibromomethane	<0.222	2.00	0.222	µg/L	1		624.1	10/6/22	10/6/22 19:18	MFF
Chloroethane	<0.320	2.00	0.320	µg/L	1		624.1	10/6/22	10/6/22 19:18	MFF
Chloroform	<0.168	2.00	0.168	µg/L	1		624.1	10/6/22	10/6/22 19:18	MFF
Chloromethane	<0.522	2.00	0.522	µg/L	1		624.1	10/6/22	10/6/22 19:18	MFF
1,2-Dichlorobenzene	<0.122	2.00	0.122	µg/L	1		624.1	10/6/22	10/6/22 19:18	MFF
1,3-Dichlorobenzene	<0.118	2.00	0.118	µg/L	1		624.1	10/6/22	10/6/22 19:18	MFF
1,4-Dichlorobenzene	<0.130	2.00	0.130	µg/L	1		624.1	10/6/22	10/6/22 19:18	MFF
1,2-Dichloroethane	<0.308	2.00	0.308	µg/L	1		624.1	10/6/22	10/6/22 19:18	MFF
cis-1,2-Dichloroethylene	<0.147	1.00	0.147	µg/L	1		624.1	10/6/22	10/6/22 19:18	MFF
1,1-Dichloroethane	<0.142	2.00	0.142	µg/L	1		624.1	10/6/22	10/6/22 19:18	MFF
1,1-Dichloroethylene	<0.141	2.00	0.141	µg/L	1		624.1	10/6/22	10/6/22 19:18	MFF
trans-1,2-Dichloroethylene	<0.169	2.00	0.169	µg/L	1		624.1	10/6/22	10/6/22 19:18	MFF
1,2-Dichloropropane	<0.181	2.00	0.181	µg/L	1		624.1	10/6/22	10/6/22 19:18	MFF
cis-1,3-Dichloropropene	<0.158	2.00	0.158	µg/L	1		624.1	10/6/22	10/6/22 19:18	MFF
trans-1,3-Dichloropropene	<0.168	2.00	0.168	µg/L	1		624.1	10/6/22	10/6/22 19:18	MFF
Ethylbenzene	<0.215	2.00	0.215	µg/L	1		624.1	10/6/22	10/6/22 19:18	MFF
Methyl tert-Butyl Ether (MTBE)	<0.172	2.00	0.172	µg/L	1		624.1	10/6/22	10/6/22 19:18	MFF
Methylene Chloride	<0.235	5.00	0.235	µg/L	1		624.1	10/6/22	10/6/22 19:18	MFF
1,1,2,2-Tetrachloroethane	<0.127	2.00	0.127	µg/L	1		624.1	10/6/22	10/6/22 19:18	MFF
Tetrachloroethylene	<0.187	2.00	0.187	µg/L	1		624.1	10/6/22	10/6/22 19:18	MFF
Toluene	<0.224	1.00	0.224	µg/L	1		624.1	10/6/22	10/6/22 19:18	MFF
1,1,1-Trichloroethane	<0.169	2.00	0.169	µg/L	1		624.1	10/6/22	10/6/22 19:18	MFF
1,1,2-Trichloroethane	<0.183	2.00	0.183	µg/L	1		624.1	10/6/22	10/6/22 19:18	MFF
Trichloroethylene	<0.189	2.00	0.189	µg/L	1		624.1	10/6/22	10/6/22 19:18	MFF
Trichlorofluoromethane (Freon 11)	<0.176	2.00	0.176	µg/L	1		624.1	10/6/22	10/6/22 19:18	MFF
Vinyl Chloride	<0.208	2.00	0.208	µg/L	1		624.1	10/6/22	10/6/22 19:18	MFF
m+p Xylene	<0.459	2.00	0.459	µg/L	1		624.1	10/6/22	10/6/22 19:18	MFF
o-Xylene	<0.230	1.00	0.230	µg/L	1		624.1	10/6/22	10/6/22 19:18	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	105	70-130		10/6/22 19:18
Toluene-d8	100	70-130		10/6/22 19:18
4-Bromofluorobenzene	96.4	70-130		10/6/22 19:18

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Project Location: Northeast Alloys & Metals | Sample Description: | Work Order: 22I1801

Date Received: 9/28/2022

Field Sample #: DUP | Sampled: 9/27/2022 00:00

Sample ID: 22I1801-06

Sample Matrix: Ground Water

1,4-Dioxane by isotope dilution GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
1,4-Dioxane	ND	0.20	0.033	µg/L	1		SW-846 8270E	10/4/22	10/10/22 14:06	SPF

Surrogates	% Recovery	Recovery Limits	Flag/Qual		
1,4-Dioxane-d8	24.1	15-110		10/10/22 14:06	

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Project Location: Northeast Alloys & Metals | Sample Description: | Work Order: 22I1801

Date Received: 9/28/2022

Field Sample #: DUP | Sampled: 9/27/2022 00:00

Sample ID: 22I1801-06

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	ND	2.0	0.75	ng/L	1		SOP-454 PFAS	10/6/22	10/15/22 16:28	DRL
Perfluorobutanesulfonic acid (PFBS)	ND	2.0	0.28	ng/L	1		SOP-454 PFAS	10/6/22	10/15/22 16:28	DRL
Perfluoropentanoic acid (PFPeA)	ND	2.0	0.39	ng/L	1		SOP-454 PFAS	10/6/22	10/15/22 16:28	DRL
Perfluorohexanoic acid (PFHxA)	ND	2.0	0.39	ng/L	1		SOP-454 PFAS	10/6/22	10/15/22 16:28	DRL
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0	0.61	ng/L	1		SOP-454 PFAS	10/6/22	10/15/22 16:28	DRL
Perfluorodecanoic acid (PFDA)	ND	2.0	0.49	ng/L	1		SOP-454 PFAS	10/6/22	10/15/22 16:28	DRL
Perfluorododecanoic acid (PFDoA)	ND	2.0	0.44	ng/L	1		SOP-454 PFAS	10/6/22	10/15/22 16:28	DRL
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	0.94	ng/L	1		SOP-454 PFAS	10/6/22	10/15/22 16:28	DRL
N-EtFOSAA (NEtFOSAA)	ND	2.0	0.63	ng/L	1		SOP-454 PFAS	10/6/22	10/15/22 16:28	DRL
N-MeFOSAA (NMeFOSAA)	ND	2.0	0.76	ng/L	1		SOP-454 PFAS	10/6/22	10/15/22 16:28	DRL
Perfluorotetradecanoic acid (PFTA)	ND	2.0	0.37	ng/L	1		SOP-454 PFAS	10/6/22	10/15/22 16:28	DRL
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	0.28	ng/L	1		SOP-454 PFAS	10/6/22	10/15/22 16:28	DRL
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	0.33	ng/L	1		SOP-454 PFAS	10/6/22	10/15/22 16:28	DRL
Perfluorooctanesulfonamide (FOSA)	ND	2.0	0.42	ng/L	1		SOP-454 PFAS	10/6/22	10/15/22 16:28	DRL
Perfluorohexanesulfonic acid (PFHxS)	ND	2.0	0.34	ng/L	1		SOP-454 PFAS	10/6/22	10/15/22 16:28	DRL
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	2.0	0.37	ng/L	1		SOP-454 PFAS	10/6/22	10/15/22 16:28	DRL
Perfluoroundecanoic acid (PFUnA)	ND	2.0	0.37	ng/L	1		SOP-454 PFAS	10/6/22	10/15/22 16:28	DRL
Perfluoroheptanoic acid (PFHpA)	ND	2.0	0.35	ng/L	1		SOP-454 PFAS	10/6/22	10/15/22 16:28	DRL
Perfluorooctanoic acid (PFOA)	ND	2.0	0.68	ng/L	1		SOP-454 PFAS	10/6/22	10/15/22 16:28	DRL
Perfluorooctanesulfonic acid (PFOS)	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	10/6/22	10/15/22 16:28	DRL
Perfluorononanoic acid (PFNA)	ND	2.0	0.35	ng/L	1		SOP-454 PFAS	10/6/22	10/15/22 16:28	DRL

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Sample Extraction Data

Prep Method: SW-846 5030B **Analytical Method: 624.1**

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
22I1801-01 [BR-1]	B318981	5	5.00	10/06/22
22I1801-02 [MW-12]	B318981	5	5.00	10/06/22
22I1801-03 [MW-3]	B318981	5	5.00	10/06/22
22I1801-04 [MW-13]	B318981	5	5.00	10/06/22
22I1801-05 [TB1]	B318981	5	5.00	10/06/22
22I1801-06 [DUP]	B318981	5	5.00	10/06/22

Prep Method: SOP 454-PFAAS **Analytical Method: SOP-454 PFAS**

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
22I1801-01 [BR-1]	B318472	244	1.00	10/06/22
22I1801-02 [MW-12]	B318472	242	1.00	10/06/22
22I1801-06 [DUP]	B318472	249	1.00	10/06/22

Prep Method: SOP 454-PFAAS **Analytical Method: SOP-454 PFAS**

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
22I1801-03 [MW-3]	B318818	246	1.00	10/07/22
22I1801-04 [MW-13]	B318818	235	1.00	10/07/22

Prep Method: SW-846 3510C **Analytical Method: SW-846 8270E**

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
22I1801-01 [BR-1]	B318736	990	1.00	10/04/22
22I1801-02 [MW-12]	B318736	900	1.00	10/04/22
22I1801-03 [MW-3]	B318736	990	1.00	10/04/22
22I1801-04 [MW-13]	B318736	980	1.00	10/04/22
22I1801-06 [DUP]	B318736	1000	1.00	10/04/22

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B318981 - SW-846 5030B										
Blank (B318981-BLK1)				Prepared & Analyzed: 10/06/22						
Benzene	ND	1.00	µg/L							
Bromodichloromethane	ND	2.00	µg/L							
Bromoform	ND	2.00	µg/L							
Bromomethane	ND	2.00	µg/L							
Carbon Tetrachloride	ND	2.00	µg/L							
Chlorobenzene	ND	2.00	µg/L							
Chlorodibromomethane	ND	2.00	µg/L							
Chloroethane	ND	2.00	µg/L							
Chloroform	ND	2.00	µg/L							
Chloromethane	ND	2.00	µg/L							
1,2-Dichlorobenzene	ND	2.00	µg/L							
1,3-Dichlorobenzene	ND	2.00	µg/L							
1,4-Dichlorobenzene	ND	2.00	µg/L							
1,2-Dichloroethane	ND	2.00	µg/L							
cis-1,2-Dichloroethylene	ND	1.00	µg/L							
1,1-Dichloroethane	ND	2.00	µg/L							
1,1-Dichloroethylene	ND	2.00	µg/L							
trans-1,2-Dichloroethylene	ND	2.00	µg/L							
1,2-Dichloropropane	ND	2.00	µg/L							
cis-1,3-Dichloropropene	ND	2.00	µg/L							
trans-1,3-Dichloropropene	ND	2.00	µg/L							
Ethylbenzene	ND	2.00	µg/L							
Methyl tert-Butyl Ether (MTBE)	ND	2.00	µg/L							
Methylene Chloride	ND	5.00	µg/L							
1,1,2,2-Tetrachloroethane	ND	2.00	µg/L							
Tetrachloroethylene	ND	2.00	µg/L							
Toluene	ND	1.00	µg/L							
1,1,1-Trichloroethane	ND	2.00	µg/L							
1,1,2-Trichloroethane	ND	2.00	µg/L							
Trichloroethylene	ND	2.00	µg/L							
Trichlorofluoromethane (Freon 11)	ND	2.00	µg/L							
Vinyl Chloride	ND	2.00	µg/L							
m+p Xylene	ND	2.00	µg/L							
o-Xylene	ND	1.00	µg/L							
Surrogate: 1,2-Dichloroethane-d4	*25.7*		µg/L	25.0		103	70-130			
Surrogate: Toluene-d8	*24.8*		µg/L	25.0		99.2	70-130			
Surrogate: 4-Bromofluorobenzene	*23.8*		µg/L	25.0		95.1	70-130			
LCS (B318981-BS1)				Prepared & Analyzed: 10/06/22						
Benzene	23	1.00	µg/L	20.0		115	65-135			
Bromodichloromethane	22	2.00	µg/L	20.0		112	65-135			
Bromoform	18	2.00	µg/L	20.0		87.8	70-130			
Bromomethane	11	2.00	µg/L	20.0		53.6	15-185			
Carbon Tetrachloride	22	2.00	µg/L	20.0		110	70-130			
Chlorobenzene	22	2.00	µg/L	20.0		110	65-135			
Chlorodibromomethane	20	2.00	µg/L	20.0		101	70-135			
Chloroethane	15	2.00	µg/L	20.0		74.3	40-160			
Chloroform	22	2.00	µg/L	20.0		112	70-135			
Chloromethane	13	2.00	µg/L	20.0		63.2	20-205			
1,2-Dichlorobenzene	23	2.00	µg/L	20.0		116	65-135			
1,3-Dichlorobenzene	23	2.00	µg/L	20.0		113	70-130			
1,4-Dichlorobenzene	22	2.00	µg/L	20.0		108	65-135			

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B318981 - SW-846 5030B										
LCS (B318981-BS1)				Prepared & Analyzed: 10/06/22						
1,2-Dichloroethane	20	2.00	µg/L	20.0		101	70-130			
cis-1,2-Dichloroethylene	23	1.00	µg/L	20.0		116	70-130			
1,1-Dichloroethane	23	2.00	µg/L	20.0		114	70-130			
1,1-Dichloroethylene	18	2.00	µg/L	20.0		89.0	50-150			
trans-1,2-Dichloroethylene	18	2.00	µg/L	20.0		88.6	70-130			
1,2-Dichloropropane	24	2.00	µg/L	20.0		119	35-165			
cis-1,3-Dichloropropene	22	2.00	µg/L	20.0		112	25-175			
trans-1,3-Dichloropropene	23	2.00	µg/L	20.0		116	50-150			
Ethylbenzene	23	2.00	µg/L	20.0		115	60-140			
Methyl tert-Butyl Ether (MTBE)	17	2.00	µg/L	20.0		87.2	70-130			
Methylene Chloride	18	5.00	µg/L	20.0		88.5	60-140			
1,1,2,2-Tetrachloroethane	19	2.00	µg/L	20.0		94.0	60-140			
Tetrachloroethylene	23	2.00	µg/L	20.0		113	70-130			
Toluene	22	1.00	µg/L	20.0		112	70-130			
1,1,1-Trichloroethane	22	2.00	µg/L	20.0		110	70-130			
1,1,2-Trichloroethane	22	2.00	µg/L	20.0		109	70-130			
Trichloroethylene	22	2.00	µg/L	20.0		112	65-135			
Trichlorofluoromethane (Freon 11)	18	2.00	µg/L	20.0		92.4	50-150			
Vinyl Chloride	17	2.00	µg/L	20.0		87.4	5-195			
m+p Xylene	44	2.00	µg/L	40.0		109	70-130			
o-Xylene	22	1.00	µg/L	20.0		111	70-130			
Surrogate: 1,2-Dichloroethane-d4	*24.6*		µg/L	25.0		98.6	70-130			
Surrogate: Toluene-d8	*25.8*		µg/L	25.0		103	70-130			
Surrogate: 4-Bromofluorobenzene	*23.9*		µg/L	25.0		95.7	70-130			
Matrix Spike (B318981-MS1)	**Source: 22I1801-01**			Prepared & Analyzed: 10/06/22						
Benzene	23	1.00	µg/L	20.0	ND	117	37-151			
Bromodichloromethane	23	2.00	µg/L	20.0	ND	116	35-155			
Bromoform	16	2.00	µg/L	20.0	ND	81.2	45-169			
Bromomethane	11	2.00	µg/L	20.0	ND	53.8	20-242			
Carbon Tetrachloride	23	2.00	µg/L	20.0	ND	114	70-140			
Chlorobenzene	21	2.00	µg/L	20.0	ND	106	37-160			
Chlorodibromomethane	21	2.00	µg/L	20.0	ND	103	53-149			
Chloroethane	11	2.00	µg/L	20.0	ND	53.1	14-230			
Chloroform	24	2.00	µg/L	20.0	ND	118	51-138			
Chloromethane	20	2.00	µg/L	20.0	ND	98.8	20-273			
1,2-Dichlorobenzene	22	2.00	µg/L	20.0	ND	108	18-190			
1,3-Dichlorobenzene	21	2.00	µg/L	20.0	ND	107	59-156			
1,4-Dichlorobenzene	20	2.00	µg/L	20.0	ND	100	18-190			
1,2-Dichloroethane	20	2.00	µg/L	20.0	ND	102	49-155			
cis-1,2-Dichloroethylene	23	1.00	µg/L	20.0	ND	114	70-130			
1,1-Dichloroethane	23	2.00	µg/L	20.0	ND	116	59-155			
1,1-Dichloroethylene	18	2.00	µg/L	20.0	ND	91.8	20-234			
trans-1,2-Dichloroethylene	18	2.00	µg/L	20.0	ND	90.4	54-156			
1,2-Dichloropropane	23	2.00	µg/L	20.0	ND	117	20-210			
cis-1,3-Dichloropropene	17	2.00	µg/L	20.0	ND	83.2	20-227			
trans-1,3-Dichloropropene	20	2.00	µg/L	20.0	ND	102	17-183			
Ethylbenzene	22	2.00	µg/L	20.0	ND	110	37-162			
Methyl tert-Butyl Ether (MTBE)	18	2.00	µg/L	20.0	ND	91.4	70-130			
Methylene Chloride	19	5.00	µg/L	20.0	ND	95.8	20-221			
1,1,2,2-Tetrachloroethane	18	2.00	µg/L	20.0	ND	89.0	46-157			
Tetrachloroethylene	21	2.00	µg/L	20.0	ND	103	64-148			

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B318981 - SW-846 5030B										
Matrix Spike (B318981-MS1)	**Source: 22I1801-01**			Prepared & Analyzed: 10/06/22						
Toluene	22	1.00	µg/L	20.0	ND	110	47-150			
1,1,1-Trichloroethane	22	2.00	µg/L	20.0	ND	112	52-162			
1,1,2-Trichloroethane	23	2.00	µg/L	20.0	ND	113	52-150			
Trichloroethylene	22	2.00	µg/L	20.0	ND	108	70-157			
Trichlorofluoromethane (Freon 11)	19	2.00	µg/L	20.0	ND	94.0	17-181			
Vinyl Chloride	18	2.00	µg/L	20.0	ND	91.6	20-251			
m+p Xylene	42	2.00	µg/L	40.0	ND	105	70-130			
o-Xylene	19	1.00	µg/L	20.0	ND	95.2	70-130			
Surrogate: 1,2-Dichloroethane-d4	*26.0*		µg/L	25.0		104	70-130			
Surrogate: Toluene-d8	*25.7*		µg/L	25.0		103	70-130			
Surrogate: 4-Bromofluorobenzene	*21.1*		µg/L	25.0		84.3	70-130			
Matrix Spike Dup (B318981-MSD1)	**Source: 22I1801-01**			Prepared: 10/06/22 Analyzed: 10/07/22						
Benzene	21	1.00	µg/L	20.0	ND	107	37-151	9.18	61	
Bromodichloromethane	21	2.00	µg/L	20.0	ND	105	35-155	9.67	56	
Bromoform	20	2.00	µg/L	20.0	ND	98.6	45-169	19.2	42	
Bromomethane	14	2.00	µg/L	20.0	ND	72.4	20-242	29.4	61	
Carbon Tetrachloride	20	2.00	µg/L	20.0	ND	101	70-140	12.7	41	
Chlorobenzene	23	2.00	µg/L	20.0	ND	114	37-160	7.09	53	
Chlorodibromomethane	20	2.00	µg/L	20.0	ND	98.6	53-149	4.51	50	
Chloroethane	20	2.00	µg/L	20.0	ND	102	14-230	63.1	78	
Chloroform	20	2.00	µg/L	20.0	ND	101	51-138	14.7	54	
Chloromethane	18	2.00	µg/L	20.0	ND	92.2	20-273	6.86	60	
1,2-Dichlorobenzene	22	2.00	µg/L	20.0	ND	108	18-190	0.185	57	
1,3-Dichlorobenzene	22	2.00	µg/L	20.0	ND	109	59-156	1.62	43	
1,4-Dichlorobenzene	21	2.00	µg/L	20.0	ND	104	18-190	3.43	57	
1,2-Dichloroethane	19	2.00	µg/L	20.0	ND	93.0	49-155	8.74	49	
cis-1,2-Dichloroethylene	20	1.00	µg/L	20.0	ND	101	70-130	12.2	30	
1,1-Dichloroethane	25	2.00	µg/L	20.0	ND	125	59-155	7.18	40	
1,1-Dichloroethylene	20	2.00	µg/L	20.0	ND	98.2	20-234	6.79	32	
trans-1,2-Dichloroethylene	20	2.00	µg/L	20.0	ND	98.8	54-156	8.93	45	
1,2-Dichloropropane	23	2.00	µg/L	20.0	ND	113	20-210	3.26	55	
cis-1,3-Dichloropropene	18	2.00	µg/L	20.0	ND	91.2	20-227	9.12	58	
trans-1,3-Dichloropropene	20	2.00	µg/L	20.0	ND	102	17-183	0.883	86	
Ethylbenzene	23	2.00	µg/L	20.0	ND	113	37-162	1.93	63	
Methyl tert-Butyl Ether (MTBE)	20	2.00	µg/L	20.0	ND	100	70-130	9.34	20	
Methylene Chloride	21	5.00	µg/L	20.0	ND	106	20-221	9.88	28	
1,1,2,2-Tetrachloroethane	20	2.00	µg/L	20.0	ND	101	46-157	13.0	61	
Tetrachloroethylene	21	2.00	µg/L	20.0	ND	107	64-148	3.47	39	
Toluene	22	1.00	µg/L	20.0	ND	109	47-150	1.41	41	
1,1,1-Trichloroethane	20	2.00	µg/L	20.0	ND	101	52-162	11.2	36	
1,1,2-Trichloroethane	21	2.00	µg/L	20.0	ND	107	52-150	5.06	45	
Trichloroethylene	21	2.00	µg/L	20.0	ND	103	70-157	4.65	48	
Trichlorofluoromethane (Freon 11)	20	2.00	µg/L	20.0	ND	100	17-181	6.29	84	
Vinyl Chloride	19	2.00	µg/L	20.0	ND	95.2	20-251	3.80	66	
m+p Xylene	44	2.00	µg/L	40.0	ND	109	70-130	3.88	20	
o-Xylene	22	1.00	µg/L	20.0	ND	112	70-130	15.9	20	
Surrogate: 1,2-Dichloroethane-d4	*22.6*		µg/L	25.0		90.2	70-130			
Surrogate: Toluene-d8	*25.2*		µg/L	25.0		101	70-130			
Surrogate: 4-Bromofluorobenzene	*25.2*		µg/L	25.0		101	70-130			

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QUALITY CONTROL

1,4-Dioxane by isotope dilution GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B318736 - SW-846 3510C										
Blank (B318736-BLK1)				Prepared: 10/04/22 Analyzed: 10/06/22						
1,4-Dioxane	ND	0.20	µg/L							
Surrogate: 1,4-Dioxane-d8	*3.33*		µg/L	10.0		33.3	15-110			
LCS (B318736-BS1)				Prepared: 10/04/22 Analyzed: 10/06/22						
1,4-Dioxane	12.3	0.20	µg/L	10.0		123	40-140			
Surrogate: 1,4-Dioxane-d8	*2.40*		µg/L	10.0		24.0	15-110			
LCS Dup (B318736-BSD1)				Prepared: 10/04/22 Analyzed: 10/06/22						
1,4-Dioxane	12.5	0.20	µg/L	10.0		125	40-140	1.30	30	
Surrogate: 1,4-Dioxane-d8	*2.75*		µg/L	10.0		27.5	15-110			
Matrix Spike (B318736-MS2)		**Source: 22I1801-01**		Prepared: 10/04/22 Analyzed: 10/10/22						
1,4-Dioxane	13.9	0.21	µg/L	10.3	ND	135	40-140			
Surrogate: 1,4-Dioxane-d8	*2.51*		µg/L	10.3		24.3	15-110			
Matrix Spike Dup (B318736-MSD2)		**Source: 22I1801-01**		Prepared: 10/04/22 Analyzed: 10/10/22						
1,4-Dioxane	13.8	0.21	µg/L	10.3	ND	133	40-140	1.01	20	
Surrogate: 1,4-Dioxane-d8	*2.82*		µg/L	10.3		27.4	15-110			

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QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B318472 - SOP 454-PFAAS										
Blank (B318472-BLK1)				Prepared: 10/06/22 Analyzed: 10/13/22						
Perfluorobutanoic acid (PFBA)	ND	1.8	ng/L							
Perfluorobutanesulfonic acid (PFBS)	ND	1.8	ng/L							
Perfluoropentanoic acid (PFPeA)	ND	1.8	ng/L							
Perfluorohexanoic acid (PFHxA)	ND	1.8	ng/L							
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	1.8	ng/L							
Perfluorodecanoic acid (PFDA)	ND	1.8	ng/L							
Perfluorododecanoic acid (PFDoA)	ND	1.8	ng/L							
Perfluoroheptanesulfonic acid (PFHpS)	ND	1.8	ng/L							
N-EtFOSAA (NEtFOSAA)	ND	1.8	ng/L							
N-MeFOSAA (NMeFOSAA)	ND	1.8	ng/L							
Perfluorotetradecanoic acid (PFTA)	ND	1.8	ng/L							
Perfluorotridecanoic acid (PFTrDA)	ND	1.8	ng/L							
Perfluorodecanesulfonic acid (PFDS)	ND	1.8	ng/L							
Perfluorooctanesulfonamide (FOSA)	ND	1.8	ng/L							
Perfluorohexanesulfonic acid (PFHxS)	ND	1.8	ng/L							
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	1.8	ng/L							
Perfluoroundecanoic acid (PFUnA)	ND	1.8	ng/L							
Perfluoroheptanoic acid (PFHpA)	ND	1.8	ng/L							
Perfluorooctanoic acid (PFOA)	ND	1.8	ng/L							
Perfluorooctanesulfonic acid (PFOS)	ND	1.8	ng/L							
Perfluorononanoic acid (PFNA)	ND	1.8	ng/L							
LCS (B318472-BS1)				Prepared: 10/06/22 Analyzed: 10/13/22						
Perfluorobutanoic acid (PFBA)	8.44	1.8	ng/L	9.17		92.0	73-129			
Perfluorobutanesulfonic acid (PFBS)	7.35	1.8	ng/L	8.12		90.6	72-130			
Perfluoropentanoic acid (PFPeA)	8.00	1.8	ng/L	9.17		87.3	72-129			
Perfluorohexanoic acid (PFHxA)	7.87	1.8	ng/L	9.17		85.8	72-129			
8:2 Fluorotelomersulfonic acid (8:2FTS A)	7.89	1.8	ng/L	8.80		89.7	67-138			
Perfluorodecanoic acid (PFDA)	9.16	1.8	ng/L	9.17		99.9	71-129			
Perfluorododecanoic acid (PFDoA)	8.08	1.8	ng/L	9.17		88.1	72-134			
Perfluoroheptanesulfonic acid (PFHpS)	7.57	1.8	ng/L	8.76		86.4	69-134			
N-EtFOSAA (NEtFOSAA)	9.13	1.8	ng/L	9.17		99.6	61-135			
N-MeFOSAA (NMeFOSAA)	8.96	1.8	ng/L	9.17		97.7	65-136			
Perfluorotetradecanoic acid (PFTA)	8.40	1.8	ng/L	9.17		91.6	71-132			
Perfluorotridecanoic acid (PFTrDA)	8.67	1.8	ng/L	9.17		94.6	65-144			
Perfluorodecanesulfonic acid (PFDS)	6.52	1.8	ng/L	8.85		73.6	53-142			
Perfluorooctanesulfonamide (FOSA)	8.54	1.8	ng/L	9.17		93.1	67-137			
Perfluorohexanesulfonic acid (PFHxS)	7.04	1.8	ng/L	8.39		83.9	68-131			
6:2 Fluorotelomersulfonic acid (6:2FTS A)	7.78	1.8	ng/L	8.71		89.3	64-140			
Perfluoroundecanoic acid (PFUnA)	8.42	1.8	ng/L	9.17		91.8	69-133			
Perfluoroheptanoic acid (PFHpA)	8.33	1.8	ng/L	9.17		90.9	72-130			
Perfluorooctanoic acid (PFOA)	9.30	1.8	ng/L	9.17		101	71-133			
Perfluorooctanesulfonic acid (PFOS)	7.45	1.8	ng/L	8.48		87.8	65-140			
Perfluorononanoic acid (PFNA)	8.80	1.8	ng/L	9.17		95.9	69-130			

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QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B318472 - SOP 454-PFAAS										
Matrix Spike (B318472-MS1)	**Source: 22I1801-01**			Prepared: 10/06/22 Analyzed: 10/13/22						
Perfluorobutanoic acid (PFBA)	8.22	2.0	ng/L	10.1	ND	81.3	73-129			
Perfluorobutanesulfonic acid (PFBS)	8.41	2.0	ng/L	8.95	ND	94.0	72-130			
Perfluoropentanoic acid (PFPeA)	9.09	2.0	ng/L	10.1	ND	90.0	72-129			
Perfluorohexanoic acid (PFHxA)	8.97	2.0	ng/L	10.1	ND	88.8	72-129			
8:2 Fluorotelomersulfonic acid (8:2FTS A)	8.83	2.0	ng/L	9.70	ND	91.0	67-138			
Perfluorodecanoic acid (PFDA)	10.1	2.0	ng/L	10.1	ND	99.7	71-129			
Perfluorododecanoic acid (PFDoA)	9.65	2.0	ng/L	10.1	ND	95.5	72-134			
Perfluoroheptanesulfonic acid (PFHpS)	8.07	2.0	ng/L	9.65	ND	83.6	69-134			
N-EtFOSAA (NEtFOSAA)	10.5	2.0	ng/L	10.1	ND	104	61-135			
N-MeFOSAA (NMeFOSAA)	11.5	2.0	ng/L	10.1	ND	114	65-136			
Perfluorotetradecanoic acid (PFTA)	9.64	2.0	ng/L	10.1	ND	95.4	71-132			
Perfluorotridecanoic acid (PFTrDA)	9.78	2.0	ng/L	10.1	ND	96.8	65-144			
Perfluorodecanesulfonic acid (PFDS)	7.42	2.0	ng/L	9.75	ND	76.0	53-142			
Perfluorooctanesulfonamide (FOSA)	9.87	2.0	ng/L	10.1	ND	97.6	67-137			
Perfluorohexanesulfonic acid (PFHxS)	8.49	2.0	ng/L	9.25	ND	91.8	68-131			
6:2 Fluorotelomersulfonic acid (6:2FTS A)	8.52	2.0	ng/L	9.60	ND	88.7	64-140			
Perfluoroundecanoic acid (PFUnA)	10.6	2.0	ng/L	10.1	ND	105	69-133			
Perfluoroheptanoic acid (PFHpA)	9.57	2.0	ng/L	10.1	ND	94.7	72-130			
Perfluorooctanoic acid (PFOA)	9.87	2.0	ng/L	10.1	ND	97.6	71-133			
Perfluorooctanesulfonic acid (PFOS)	9.11	2.0	ng/L	9.35	ND	97.4	65-140			
Perfluorononanoic acid (PFNA)	10.7	2.0	ng/L	10.1	ND	106	69-130			
Matrix Spike Dup (B318472-MSD1)	**Source: 22I1801-01**			Prepared: 10/06/22 Analyzed: 10/13/22						
Perfluorobutanoic acid (PFBA)	8.90	2.1	ng/L	10.5	ND	84.8	73-129	8.02	30	
Perfluorobutanesulfonic acid (PFBS)	9.34	2.1	ng/L	9.29	ND	101	72-130	10.4	30	
Perfluoropentanoic acid (PFPeA)	10.2	2.1	ng/L	10.5	ND	97.3	72-129	11.6	30	
Perfluorohexanoic acid (PFHxA)	9.56	2.1	ng/L	10.5	ND	91.1	72-129	6.37	30	
8:2 Fluorotelomersulfonic acid (8:2FTS A)	10.6	2.1	ng/L	10.1	ND	105	67-138	18.4	30	
Perfluorodecanoic acid (PFDA)	10.8	2.1	ng/L	10.5	ND	103	71-129	7.20	30	
Perfluorododecanoic acid (PFDoA)	10.0	2.1	ng/L	10.5	ND	95.6	72-134	3.90	30	
Perfluoroheptanesulfonic acid (PFHpS)	8.70	2.1	ng/L	10.0	ND	86.8	69-134	7.51	30	
N-EtFOSAA (NEtFOSAA)	11.8	2.1	ng/L	10.5	ND	112	61-135	11.7	30	
N-MeFOSAA (NMeFOSAA)	11.2	2.1	ng/L	10.5	ND	107	65-136	3.10	30	
Perfluorotetradecanoic acid (PFTA)	10.1	2.1	ng/L	10.5	ND	96.2	71-132	4.61	30	
Perfluorotridecanoic acid (PFTrDA)	9.89	2.1	ng/L	10.5	ND	94.2	65-144	1.07	30	
Perfluorodecanesulfonic acid (PFDS)	8.63	2.1	ng/L	10.1	ND	85.3	53-142	15.2	30	
Perfluorooctanesulfonamide (FOSA)	10.4	2.1	ng/L	10.5	ND	99.5	67-137	5.66	30	
Perfluorohexanesulfonic acid (PFHxS)	8.98	2.1	ng/L	9.60	ND	93.6	68-131	5.61	30	
6:2 Fluorotelomersulfonic acid (6:2FTS A)	9.63	2.1	ng/L	9.97	ND	96.6	64-140	12.2	30	
Perfluoroundecanoic acid (PFUnA)	10.4	2.1	ng/L	10.5	ND	99.3	69-133	1.73	30	
Perfluoroheptanoic acid (PFHpA)	10.7	2.1	ng/L	10.5	ND	102	72-130	11.2	30	
Perfluorooctanoic acid (PFOA)	11.1	2.1	ng/L	10.5	ND	106	71-133	11.9	30	
Perfluorooctanesulfonic acid (PFOS)	9.26	2.1	ng/L	9.71	ND	95.4	65-140	1.71	30	
Perfluorononanoic acid (PFNA)	10.7	2.1	ng/L	10.5	ND	102	69-130	0.0747	30	

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QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B318818 - SOP 454-PFAAS										
Blank (B318818-BLK1)				Prepared: 10/07/22 Analyzed: 10/11/22						
Perfluorobutanoic acid (PFBA)	ND	1.8	ng/L							
Perfluorobutanesulfonic acid (PFBS)	ND	1.8	ng/L							
Perfluoropentanoic acid (PFPeA)	ND	1.8	ng/L							
Perfluorohexanoic acid (PFHxA)	ND	1.8	ng/L							
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	1.8	ng/L							
Perfluorodecanoic acid (PFDA)	ND	1.8	ng/L							
Perfluorododecanoic acid (PFDoA)	ND	1.8	ng/L							
Perfluoroheptanesulfonic acid (PFHpS)	ND	1.8	ng/L							
N-EtFOSAA (NEtFOSAA)	ND	1.8	ng/L							
N-MeFOSAA (NMeFOSAA)	ND	1.8	ng/L							
Perfluorotetradecanoic acid (PFTA)	ND	1.8	ng/L							
Perfluorotridecanoic acid (PFTrDA)	ND	1.8	ng/L							
Perfluorodecanesulfonic acid (PFDS)	ND	1.8	ng/L							
Perfluorooctanesulfonamide (FOSA)	ND	1.8	ng/L							
Perfluorohexanesulfonic acid (PFHxS)	ND	1.8	ng/L							
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	1.8	ng/L							
Perfluoroundecanoic acid (PFUnA)	ND	1.8	ng/L							
Perfluoroheptanoic acid (PFHpA)	ND	1.8	ng/L							
Perfluorooctanoic acid (PFOA)	ND	1.8	ng/L							
Perfluorooctanesulfonic acid (PFOS)	ND	1.8	ng/L							
Perfluorononanoic acid (PFNA)	ND	1.8	ng/L							
LCS (B318818-BS1)				Prepared: 10/07/22 Analyzed: 10/11/22						
Perfluorobutanoic acid (PFBA)	8.98	1.8	ng/L	8.79		102	73-129			
Perfluorobutanesulfonic acid (PFBS)	7.66	1.8	ng/L	7.78		98.5	72-130			
Perfluoropentanoic acid (PFPeA)	8.62	1.8	ng/L	8.79		98.1	72-129			
Perfluorohexanoic acid (PFHxA)	8.56	1.8	ng/L	8.79		97.3	72-129			
8:2 Fluorotelomersulfonic acid (8:2FTS A)	8.48	1.8	ng/L	8.44		100	67-138			
Perfluorodecanoic acid (PFDA)	9.27	1.8	ng/L	8.79		105	71-129			
Perfluorododecanoic acid (PFDoA)	8.56	1.8	ng/L	8.79		97.4	72-134			
Perfluoroheptanesulfonic acid (PFHpS)	8.09	1.8	ng/L	8.40		96.4	69-134			
N-EtFOSAA (NEtFOSAA)	10.6	1.8	ng/L	8.79		120	61-135			
N-MeFOSAA (NMeFOSAA)	10.3	1.8	ng/L	8.79		117	65-136			
Perfluorotetradecanoic acid (PFTA)	8.39	1.8	ng/L	8.79		95.4	71-132			
Perfluorotridecanoic acid (PFTrDA)	8.74	1.8	ng/L	8.79		99.4	65-144			
Perfluorodecanesulfonic acid (PFDS)	7.42	1.8	ng/L	8.48		87.5	53-142			
Perfluorooctanesulfonamide (FOSA)	9.19	1.8	ng/L	8.79		105	67-137			
Perfluorohexanesulfonic acid (PFHxS)	7.91	1.8	ng/L	8.04		98.3	68-131			
6:2 Fluorotelomersulfonic acid (6:2FTS A)	8.45	1.8	ng/L	8.35		101	64-140			
Perfluoroundecanoic acid (PFUnA)	9.98	1.8	ng/L	8.79		114	69-133			
Perfluoroheptanoic acid (PFHpA)	9.09	1.8	ng/L	8.79		103	72-130			
Perfluorooctanoic acid (PFOA)	9.37	1.8	ng/L	8.79		107	71-133			
Perfluorooctanesulfonic acid (PFOS)	7.88	1.8	ng/L	8.13		96.9	65-140			
Perfluorononanoic acid (PFNA)	9.18	1.8	ng/L	8.79		104	69-130			

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FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
ND	Not Detected
RL	Reporting Limit is at the level of quantitation (LOQ)
DL	Detection Limit is the lower limit of detection determined by the MDL study
MCL	Maximum Contaminant Level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.
J	Detected but below the Reporting Limit (lowest calibration standard); therefore, result is an estimated concentration (CLP J-Flag).
PF-17	Extracted Internal Standard recovery is outside of control limits. Data is not significantly affected since associated analyte is not detected and bias is on the high side.
PF-20	Quantifying ion signal to noise ratio is <10. Detection is suspect.
PF-23	Qualifier ion ratio <50% of associated calibration. Detection is suspect.
PR-06	pH of sample (pH 3) is outside of method specified preservation criteria.
S-29	Extracted Internal Standard is outside of control limits.
V-05	Continuing calibration verification (CCV) did not meet method specifications and was biased on the low side for this compound.
V-06	Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side for this compound.

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INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
BR-1 (22I1801-01)			Lab File ID: 22I1801-01.d			Analyzed: 10/15/22 16:14			
M8FOSA	212191.6	3.988567	300,123.00	3.988567	71	50 - 150	0.0000	+/-0.50	
M2PFTA	777531.8	4.297266	1,156,689.00	4.297266	67	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	45807.84	3.78685	56,826.00	3.786867	81	50 - 150	0.0000	+/-0.50	
MPFBA	378149.4	1.058467	495,568.00	1.058467	76	50 - 150	0.0000	+/-0.50	
M6PFDA	501407.8	3.787383	666,899.00	3.787383	75	50 - 150	0.0000	+/-0.50	
M3PFBS	105272.8	1.8701	141,469.00	1.8701	74	50 - 150	0.0000	+/-0.50	
M7PFUnA	510073.8	3.93005	698,875.00	3.92205	73	50 - 150	0.0080	+/-0.50	
M2-6:2FTS	36821.57	3.4293	52,654.00	3.4293	70	50 - 150	0.0000	+/-0.50	
M5PFPeA	326521.7	1.690017	449,778.00	1.690017	73	50 - 150	0.0000	+/-0.50	
M5PFHxA	642255.4	2.531267	880,647.00	2.531267	73	50 - 150	0.0000	+/-0.50	
M3PFHxS	93739.52	3.193817	123,649.00	3.193817	76	50 - 150	0.0000	+/-0.50	
M4PFHpA	742328.2	3.154633	1,007,275.00	3.154633	74	50 - 150	0.0000	+/-0.50	
M8PFOA	682501.4	3.445833	952,372.00	3.437833	72	50 - 150	0.0080	+/-0.50	
M8PFOS	84887.49	3.636183	115,598.00	3.636183	73	50 - 150	0.0000	+/-0.50	
M9PFNA	522539.6	3.637217	704,677.00	3.629233	74	50 - 150	0.0080	+/-0.50	
MPFDoA	502021.3	4.056667	688,249.00	4.056667	73	50 - 150	0.0000	+/-0.50	
D5-NEtFOSAA	128475.7	3.929517	189,208.00	3.929517	68	50 - 150	0.0000	+/-0.50	
D3-NMeFOSAA	149001	3.85765	223,650.00	3.85765	67	50 - 150	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	622731	10.461	620,074.00	10.465	100	50 - 200	-0.0040	+/-0.50	
Pentafluorobenzene	170225	4.199	179,464.00	4.196	95	50 - 200	0.0030	+/-0.50	
1,4-Difluorobenzene	264040	4.916	280,237.00	4.918	94	50 - 200	-0.0020	+/-0.50	
Chlorobenzene-d5	111662	7.752	140,327.00	7.749	80	50 - 200	0.0030	+/-0.50	
1,4-Dichlorobenzene-d4	107935	10.05	128,896.00	10.047	84	50 - 200	0.0030	+/-0.50	

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INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
MW-12 (22I1801-02)			Lab File ID: 22I1801-02.d			Analyzed: 10/15/22 16:21			
M8FOSA	97998.72	3.988567	300,123.00	3.988567	33	50 - 150	0.0000	+/-0.50	*
M2PFTA	722932	4.297266	1,156,689.00	4.297266	63	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	192071.1	3.7789	56,826.00	3.786867	338	50 - 150	-0.0080	+/-0.50	*
MPFBA	161437.9	1.050167	495,568.00	1.058467	33	50 - 150	-0.0083	+/-0.50	*
M6PFDA	453043.7	3.779417	666,899.00	3.787383	68	50 - 150	-0.0080	+/-0.50	
M3PFBS	100214.3	1.84525	141,469.00	1.8701	71	50 - 150	-0.0249	+/-0.50	
M7PFUnA	534678.2	3.92205	698,875.00	3.92205	77	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	187445.5	3.4205	52,654.00	3.4293	356	50 - 150	-0.0088	+/-0.50	*
M5PFPeA	226921.7	1.6652	449,778.00	1.690017	50	50 - 150	-0.0248	+/-0.50	
M5PFHxA	568210.6	2.506633	880,647.00	2.531267	65	50 - 150	-0.0246	+/-0.50	
M3PFHxS	90427.42	3.185733	123,649.00	3.193817	73	50 - 150	-0.0081	+/-0.50	
M4PFHpA	656762.9	3.14655	1,007,275.00	3.154633	65	50 - 150	-0.0081	+/-0.50	
M8PFOA	638904	3.437833	952,372.00	3.437833	67	50 - 150	0.0000	+/-0.50	
M8PFOS	85730.81	3.6282	115,598.00	3.636183	74	50 - 150	-0.0080	+/-0.50	
M9PFNA	481606.3	3.629233	704,677.00	3.629233	68	50 - 150	0.0000	+/-0.50	
MPFDoA	545717.9	4.056684	688,249.00	4.056667	79	50 - 150	0.0000	+/-0.50	
D5-NEtFOSAA	138080.6	3.929533	189,208.00	3.929517	73	50 - 150	0.0000	+/-0.50	
D3-NMeFOSAA	144863.1	3.857667	223,650.00	3.85765	65	50 - 150	0.0000	+/-0.50	
Pentafluorobenzene	172323	4.196	179,464.00	4.196	96	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	661804	10.461	620,074.00	10.465	107	50 - 200	-0.0040	+/-0.50	
1,4-Difluorobenzene	266157	4.919	280,237.00	4.918	95	50 - 200	0.0010	+/-0.50	
Chlorobenzene-d5	114664	7.749	140,327.00	7.749	82	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	107652	10.05	128,896.00	10.047	84	50 - 200	0.0030	+/-0.50	

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INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
MW-3 (22I1801-03)			Lab File ID: 22I1801-03.d			Analyzed: 10/11/22 10:33			
M8FOSA	43658.86	3.980583	324,078.00	3.980583	13	50 - 150	0.0000	+/-0.50	*
M2PFTA	234835.3	4.30535	1,187,242.00	4.32155	20	50 - 150	-0.0162	+/-0.50	*
M2-8:2FTS	182479.6	3.786867	95,542.00	3.8028	191	50 - 150	-0.0159	+/-0.50	*
MPFBA	92250.08	1.050167	427,709.00	1.0834	22	50 - 150	-0.0332	+/-0.50	*
M6PFDA	445678.2	3.787383	694,172.00	3.803317	64	50 - 150	-0.0159	+/-0.50	
M3PFBS	102986	1.828667	127,074.00	1.90325	81	50 - 150	-0.0746	+/-0.50	
M7PFUnA	418366.7	3.922067	764,024.00	3.946033	55	50 - 150	-0.0240	+/-0.50	
M2-6:2FTS	203148.5	3.4205	110,207.00	3.453267	184	50 - 150	-0.0328	+/-0.50	*
M5PFPeA	175100.5	1.656917	381,708.00	1.7231	46	50 - 150	-0.0662	+/-0.50	*
M5PFHxA	549745.7	2.482	806,227.00	2.572333	68	50 - 150	-0.0903	+/-0.50	
M3PFHxS	96957.53	3.177667	130,990.00	3.218333	74	50 - 150	-0.0407	+/-0.50	
M4PFHpA	629862.6	3.138483	1,012,440.00	3.178867	62	50 - 150	-0.0404	+/-0.50	
M8PFOA	646334.5	3.42985	1,003,644.00	3.461933	64	50 - 150	-0.0321	+/-0.50	
M8PFOS	85630.95	3.6282	116,514.00	3.65215	73	50 - 150	-0.0239	+/-0.50	
M9PFNA	492094.1	3.629233	782,180.00	3.6532	63	50 - 150	-0.0240	+/-0.50	
MPFDoA	298861.5	4.064667	777,274.00	4.08065	38	50 - 150	-0.0160	+/-0.50	*
D5-NEtFOSAA	92465.6	3.929533	219,147.00	3.9535	42	50 - 150	-0.0240	+/-0.50	*
D3-NMeFOSAA	109741.4	3.857667	276,042.00	3.88175	40	50 - 150	-0.0241	+/-0.50	*
1,4-Dichlorobenzene-d4	647348	10.461	620,074.00	10.465	104	50 - 200	-0.0040	+/-0.50	
Pentafluorobenzene	167888	4.196	179,464.00	4.196	94	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	265094	4.916	280,237.00	4.918	95	50 - 200	-0.0020	+/-0.50	
Chlorobenzene-d5	111655	7.752	140,327.00	7.749	80	50 - 200	0.0030	+/-0.50	
1,4-Dichlorobenzene-d4	108951	10.047	128,896.00	10.047	85	50 - 200	0.0000	+/-0.50	

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INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
MW-13 (22I1801-04)			Lab File ID: 22I1801-04.d			Analyzed: 10/11/22 10:40			
M8FOSA	80051.37	3.980583	324,078.00	3.980583	25	50 - 150	0.0000	+/-0.50	*
M2-4:2FTS	242220.4	2.4064	230,386.00	2.4886	105	50 - 150	-0.0822	+/-0.50	
M2PFTA	681106.1	4.30535	1,187,242.00	4.32155	57	50 - 150	-0.0162	+/-0.50	
M2-8:2FTS	187341.5	3.786867	95,542.00	3.8028	196	50 - 150	-0.0159	+/-0.50	*
MPFBA	100670.3	1.050167	427,709.00	1.0834	24	50 - 150	-0.0332	+/-0.50	*
M3HFPO-DA	42910.15	2.732917	91,690.00	2.822933	47	50 - 150	-0.0900	+/-0.50	*
M6PFDA	467495.1	3.787383	694,172.00	3.803317	67	50 - 150	-0.0159	+/-0.50	
M3PFBS	93901.62	1.828667	127,074.00	1.90325	74	50 - 150	-0.0746	+/-0.50	
M7PFUnA	504707	3.922067	764,024.00	3.946033	66	50 - 150	-0.0240	+/-0.50	
M2-6:2FTS	193280.8	3.4205	110,207.00	3.453267	175	50 - 150	-0.0328	+/-0.50	*
M5PFPeA	168430.3	1.656917	381,708.00	1.7231	44	50 - 150	-0.0662	+/-0.50	*
M5PFHxA	518253.5	2.482	806,227.00	2.572333	64	50 - 150	-0.0903	+/-0.50	
M3PFHxS	90888.32	3.177667	130,990.00	3.218333	69	50 - 150	-0.0407	+/-0.50	
M4PFHpA	585508.3	3.138483	1,012,440.00	3.178867	58	50 - 150	-0.0404	+/-0.50	
M8PFOA	611759.1	3.42985	1,003,644.00	3.461933	61	50 - 150	-0.0321	+/-0.50	
M8PFOS	82938.83	3.6282	116,514.00	3.65215	71	50 - 150	-0.0239	+/-0.50	
M9PFNA	491980.7	3.629233	782,180.00	3.6532	63	50 - 150	-0.0240	+/-0.50	
MPFDoA	472719	4.064667	777,274.00	4.08065	61	50 - 150	-0.0160	+/-0.50	
D5-NEtFOSAA	126457.9	3.929533	219,147.00	3.9535	58	50 - 150	-0.0240	+/-0.50	
D3-NMeFOSAA	130637.3	3.857667	276,042.00	3.88175	47	50 - 150	-0.0241	+/-0.50	*
Pentafluorobenzene	173655	4.196	179,464.00	4.196	97	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	629436	10.461	620,074.00	10.465	102	50 - 200	-0.0040	+/-0.50	
1,4-Difluorobenzene	271578	4.916	280,237.00	4.918	97	50 - 200	-0.0020	+/-0.50	
Chlorobenzene-d5	114854	7.752	140,327.00	7.749	82	50 - 200	0.0030	+/-0.50	
1,4-Dichlorobenzene-d4	109716	10.047	128,896.00	10.047	85	50 - 200	0.0000	+/-0.50	
TB1 (22I1801-05)			Lab File ID: C22V27921.D			Analyzed: 10/06/22 15:42			
Pentafluorobenzene	161943	4.199	179,464.00	4.196	90	50 - 200	0.0030	+/-0.50	
1,4-Difluorobenzene	242570	4.918	280,237.00	4.918	87	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	114987	7.752	140,327.00	7.749	82	50 - 200	0.0030	+/-0.50	
1,4-Dichlorobenzene-d4	107897	10.05	128,896.00	10.047	84	50 - 200	0.0030	+/-0.50	

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INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
DUP (22I1801-06)			Lab File ID: 22I1801-06.d			Analyzed: 10/15/22 16:28			
M8FOSA	212689.7	3.988567	300,123.00	3.988567	71	50 - 150	0.0000	+/-0.50	
M2PFTA	773700.8	4.297266	1,156,689.00	4.297266	67	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	46164.07	3.78685	56,826.00	3.786867	81	50 - 150	0.0000	+/-0.50	
MPFBA	385196.8	1.058467	495,568.00	1.058467	78	50 - 150	0.0000	+/-0.50	
M6PFDA	491960.8	3.787383	666,899.00	3.787383	74	50 - 150	0.0000	+/-0.50	
M3PFBS	106895.4	1.8701	141,469.00	1.8701	76	50 - 150	0.0000	+/-0.50	
M7PFUnA	536833.8	3.92205	698,875.00	3.92205	77	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	39085.45	3.4293	52,654.00	3.4293	74	50 - 150	0.0000	+/-0.50	
M5PFPeA	334630.5	1.690017	449,778.00	1.690017	74	50 - 150	0.0000	+/-0.50	
M5PFHxA	645047.6	2.531267	880,647.00	2.531267	73	50 - 150	0.0000	+/-0.50	
M3PFHxS	93769.61	3.193817	123,649.00	3.193817	76	50 - 150	0.0000	+/-0.50	
M4PFHpA	740271.5	3.154633	1,007,275.00	3.154633	73	50 - 150	0.0000	+/-0.50	
M8PFOA	721804.4	3.445833	952,372.00	3.437833	76	50 - 150	0.0080	+/-0.50	
M8PFOS	82033.23	3.636183	115,598.00	3.636183	71	50 - 150	0.0000	+/-0.50	
M9PFNA	523332.5	3.637217	704,677.00	3.629233	74	50 - 150	0.0080	+/-0.50	
MPFDoA	492076	4.056667	688,249.00	4.056667	71	50 - 150	0.0000	+/-0.50	
D5-NEtFOSAA	141441.9	3.929517	189,208.00	3.929517	75	50 - 150	0.0000	+/-0.50	
D3-NMeFOSAA	154560.8	3.85765	223,650.00	3.85765	69	50 - 150	0.0000	+/-0.50	
Pentafluorobenzene	171375	4.199	179,464.00	4.196	95	50 - 200	0.0030	+/-0.50	
1,4-Dichlorobenzene-d4	631501	10.461	620,074.00	10.465	102	50 - 200	-0.0040	+/-0.50	
1,4-Difluorobenzene	266104	4.916	280,237.00	4.918	95	50 - 200	-0.0020	+/-0.50	
Chlorobenzene-d5	131055	7.752	140,327.00	7.749	93	50 - 200	0.0030	+/-0.50	
1,4-Dichlorobenzene-d4	113872	10.047	128,896.00	10.047	88	50 - 200	0.0000	+/-0.50	

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INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Blank (B318472-BLK1)			Lab File ID: B318472-BLK1.d			Analyzed: 10/13/22 16:01			
M8FOSA	207186.2	3.988567	317,461.00	3.988567	65	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	210088.2	2.463967	252,512.00	2.463967	83	50 - 150	0.0000	+/-0.50	
M2PFTA	966926.7	4.30535	1,257,150.00	4.313416	77	50 - 150	-0.0081	+/-0.50	
M2-8:2FTS	66694.42	3.794833	95,990.00	3.794833	69	50 - 150	0.0000	+/-0.50	
MPFBA	374992.2	1.066783	417,643.00	1.066783	90	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	92185.84	2.798383	86,479.00	2.806567	107	50 - 150	-0.0082	+/-0.50	
M6PFDA	576761.3	3.79535	734,787.00	3.79535	78	50 - 150	0.0000	+/-0.50	
M3PFBS	108170.7	1.878383	120,655.00	1.878383	90	50 - 150	0.0000	+/-0.50	
M7PFUnA	602501.6	3.93005	761,631.00	3.938033	79	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS	81050.51	3.4373	120,232.00	3.4373	67	50 - 150	0.0000	+/-0.50	
M5PFPeA	334211.6	1.698283	379,486.00	1.706567	88	50 - 150	-0.0083	+/-0.50	
M5PFHxA	705884.1	2.5477	811,369.00	2.5477	87	50 - 150	0.0000	+/-0.50	
M3PFHxS	110181.7	3.201883	125,669.00	3.201883	88	50 - 150	0.0000	+/-0.50	
M4PFHpA	895197.9	3.1627	1,017,177.00	3.1627	88	50 - 150	0.0000	+/-0.50	
M8PFOA	854513.1	3.445833	1,017,599.00	3.453817	84	50 - 150	-0.0080	+/-0.50	
M8PFOS	95671.86	3.644167	115,890.00	3.644167	83	50 - 150	0.0000	+/-0.50	
M9PFNA	625728.1	3.637217	795,644.00	3.6452	79	50 - 150	-0.0080	+/-0.50	
MPFDoA	578155.6	4.064667	814,945.00	4.072667	71	50 - 150	-0.0080	+/-0.50	
D5-NEtFOSAA	162659.8	3.937517	206,866.00	3.945517	79	50 - 150	-0.0080	+/-0.50	
D3-NMeFOSAA	197522.2	3.865617	244,907.00	3.865617	81	50 - 150	0.0000	+/-0.50	

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INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LCS (B318472-BS1)			Lab File ID: B318472-BS1.d			Analyzed: 10/13/22 15:54			
M8FOSA	209148.5	3.988567	317,461.00	3.988567	66	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	206859.7	2.463967	252,512.00	2.463967	82	50 - 150	0.0000	+/-0.50	
M2PFTA	859771.2	4.313416	1,257,150.00	4.313416	68	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	67981.32	3.794833	95,990.00	3.794833	71	50 - 150	0.0000	+/-0.50	
MPFBA	376807	1.066783	417,643.00	1.066783	90	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	86936.13	2.798383	86,479.00	2.806567	101	50 - 150	-0.0082	+/-0.50	
M6PFDA	539625	3.79535	734,787.00	3.79535	73	50 - 150	0.0000	+/-0.50	
M3PFBS	109932	1.878383	120,655.00	1.878383	91	50 - 150	0.0000	+/-0.50	
M7PFUnA	579116.9	3.938033	761,631.00	3.938033	76	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	81759.05	3.4373	120,232.00	3.4373	68	50 - 150	0.0000	+/-0.50	
M5PFPeA	336747.9	1.698283	379,486.00	1.706567	89	50 - 150	-0.0083	+/-0.50	
M5PFHxA	705909	2.5477	811,369.00	2.5477	87	50 - 150	0.0000	+/-0.50	
M3PFHxS	107581.5	3.201883	125,669.00	3.201883	86	50 - 150	0.0000	+/-0.50	
M4PFHpA	868246.1	3.170783	1,017,177.00	3.1627	85	50 - 150	0.0081	+/-0.50	
M8PFOA	804962.6	3.445833	1,017,599.00	3.453817	79	50 - 150	-0.0080	+/-0.50	
M8PFOS	88859.23	3.644167	115,890.00	3.644167	77	50 - 150	0.0000	+/-0.50	
M9PFNA	598678.3	3.6452	795,644.00	3.6452	75	50 - 150	0.0000	+/-0.50	
MPFDoA	529618.4	4.07265	814,945.00	4.072667	65	50 - 150	0.0000	+/-0.50	
D5-NEtFOSAA	161112	3.945517	206,866.00	3.945517	78	50 - 150	0.0000	+/-0.50	
D3-NMeFOSAA	190748	3.865617	244,907.00	3.865617	78	50 - 150	0.0000	+/-0.50	

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INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Matrix Spike (B318472-MS1)			Lab File ID: B318472-MS1.d			Analyzed: 10/13/22 16:09			
M8FOSA	218723.1	3.988567	317,461.00	3.988567	69	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	165130.2	2.463967	252,512.00	2.463967	65	50 - 150	0.0000	+/-0.50	
M2PFTA	859909.5	4.30535	1,257,150.00	4.313416	68	50 - 150	-0.0081	+/-0.50	
M2-8:2FTS	58890.98	3.794833	95,990.00	3.794833	61	50 - 150	0.0000	+/-0.50	
MPFBA	330222	1.058467	417,643.00	1.066783	79	50 - 150	-0.0083	+/-0.50	
M3HFPO-DA	97530.06	2.798383	86,479.00	2.806567	113	50 - 150	-0.0082	+/-0.50	
M6PFDA	521001.8	3.79535	734,787.00	3.79535	71	50 - 150	0.0000	+/-0.50	
M3PFBS	101699.4	1.878383	120,655.00	1.878383	84	50 - 150	0.0000	+/-0.50	
M7PFUnA	555036.1	3.93005	761,631.00	3.938033	73	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS	68215.28	3.4373	120,232.00	3.4373	57	50 - 150	0.0000	+/-0.50	
M5PFPeA	317127.1	1.698283	379,486.00	1.706567	84	50 - 150	-0.0083	+/-0.50	
M5PFHxA	654856.4	2.5477	811,369.00	2.5477	81	50 - 150	0.0000	+/-0.50	
M3PFHxS	94639.02	3.201883	125,669.00	3.201883	75	50 - 150	0.0000	+/-0.50	
M4PFHpA	808499.1	3.1627	1,017,177.00	3.1627	79	50 - 150	0.0000	+/-0.50	
M8PFOA	769297.7	3.445833	1,017,599.00	3.453817	76	50 - 150	-0.0080	+/-0.50	
M8PFOS	82387.91	3.644167	115,890.00	3.644167	71	50 - 150	0.0000	+/-0.50	
M9PFNA	557666.4	3.637217	795,644.00	3.6452	70	50 - 150	-0.0080	+/-0.50	
MPFDoA	541144.5	4.064667	814,945.00	4.072667	66	50 - 150	-0.0080	+/-0.50	
D5-NEtFOSAA	161361.2	3.937517	206,866.00	3.945517	78	50 - 150	-0.0080	+/-0.50	
D3-NMeFOSAA	177734.8	3.865617	244,907.00	3.865617	73	50 - 150	0.0000	+/-0.50	

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INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Matrix Spike Dup (B318472-MSD1)			Lab File ID: B318472-MSD1.d			Analyzed: 10/13/22 16:16			
M8FOSA	210561	3.988567	317,461.00	3.988567	66	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	156701.8	2.463967	252,512.00	2.463967	62	50 - 150	0.0000	+/-0.50	
M2PFTA	920318.4	4.30535	1,257,150.00	4.313416	73	50 - 150	-0.0081	+/-0.50	
M2-8:2FTS	63816.27	3.794833	95,990.00	3.794833	66	50 - 150	0.0000	+/-0.50	
MPFBA	311185.3	1.058467	417,643.00	1.066783	75	50 - 150	-0.0083	+/-0.50	
M3HFPO-DA	85843.54	2.798383	86,479.00	2.806567	99	50 - 150	-0.0082	+/-0.50	
M6PFDA	511788.8	3.787383	734,787.00	3.79535	70	50 - 150	-0.0080	+/-0.50	
M3PFBS	100770.9	1.878383	120,655.00	1.878383	84	50 - 150	0.0000	+/-0.50	
M7PFUnA	595579.1	3.93005	761,631.00	3.938033	78	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS	61624.92	3.4373	120,232.00	3.4373	51	50 - 150	0.0000	+/-0.50	
M5PFPeA	306080.2	1.698283	379,486.00	1.706567	81	50 - 150	-0.0083	+/-0.50	
M5PFHxA	648936.4	2.5477	811,369.00	2.5477	80	50 - 150	0.0000	+/-0.50	
M3PFHxS	97998.13	3.201883	125,669.00	3.201883	78	50 - 150	0.0000	+/-0.50	
M4PFHpA	776823.5	3.1627	1,017,177.00	3.1627	76	50 - 150	0.0000	+/-0.50	
M8PFOA	750926.4	3.445833	1,017,599.00	3.453817	74	50 - 150	-0.0080	+/-0.50	
M8PFOS	87593.64	3.636183	115,890.00	3.644167	76	50 - 150	-0.0080	+/-0.50	
M9PFNA	582282.3	3.637217	795,644.00	3.6452	73	50 - 150	-0.0080	+/-0.50	
MPFDoA	562727.1	4.064667	814,945.00	4.072667	69	50 - 150	-0.0080	+/-0.50	
D5-NEtFOSAA	157591.3	3.937517	206,866.00	3.945517	76	50 - 150	-0.0080	+/-0.50	
D3-NMeFOSAA	198256.1	3.865617	244,907.00	3.865617	81	50 - 150	0.0000	+/-0.50	
Blank (B318736-BLK1)			Lab File ID: F22S279017.D			Analyzed: 10/06/22 19:28			
1,4-Dichlorobenzene-d4	555859	10.458	624,118.00	10.461	89	50 - 200	-0.0030	+/-0.50	
LCS (B318736-BS1)			Lab File ID: F22S279018.D			Analyzed: 10/06/22 19:48			
1,4-Dichlorobenzene-d4	598622	10.461	624,118.00	10.461	96	50 - 200	0.0000	+/-0.50	
LCS Dup (B318736-BSD1)			Lab File ID: F22S279019.D			Analyzed: 10/06/22 20:07			
1,4-Dichlorobenzene-d4	584492	10.458	624,118.00	10.461	94	50 - 200	-0.0030	+/-0.50	
Matrix Spike (B318736-MS2)			Lab File ID: F22S283013.D			Analyzed: 10/10/22 12:08			
1,4-Dichlorobenzene-d4	645557	10.461	620,074.00	10.465	104	50 - 200	-0.0040	+/-0.50	
Matrix Spike Dup (B318736-MSD2)			Lab File ID: F22S283014.D			Analyzed: 10/10/22 12:28			
1,4-Dichlorobenzene-d4	640076	10.461	620,074.00	10.465	103	50 - 200	-0.0040	+/-0.50	

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INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Blank (B318818-BLK1)			Lab File ID: B318818-BLK1.d			Analyzed: 10/11/22 09:14			
M8FOSA	212316.8	3.980567	324,078.00	3.980583	66	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	191468.3	2.4886	230,386.00	2.4886	83	50 - 150	0.0000	+/-0.50	
M2PFTA	924429.6	4.32155	1,187,242.00	4.32155	78	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	87624.5	3.8028	95,542.00	3.8028	92	50 - 150	0.0000	+/-0.50	
MPFBA	392625.7	1.0834	427,709.00	1.0834	92	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	76626.27	2.822933	91,690.00	2.822933	84	50 - 150	0.0000	+/-0.50	
M6PFDA	637981.9	3.803317	694,172.00	3.803317	92	50 - 150	0.0000	+/-0.50	
M3PFBS	113458.1	1.894967	127,074.00	1.90325	89	50 - 150	-0.0083	+/-0.50	
M7PFUnA	601155.2	3.946033	764,024.00	3.946033	79	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	100133.1	3.445283	110,207.00	3.453267	91	50 - 150	-0.0080	+/-0.50	
M5PFPeA	343739	1.714833	381,708.00	1.7231	90	50 - 150	-0.0083	+/-0.50	
M5PFHxA	741526.8	2.572333	806,227.00	2.572333	92	50 - 150	0.0000	+/-0.50	
M3PFHxS	114171.5	3.218333	130,990.00	3.218333	87	50 - 150	0.0000	+/-0.50	
M4PFHpA	916737.6	3.178867	1,012,440.00	3.178867	91	50 - 150	0.0000	+/-0.50	
M8PFOA	850364.9	3.461933	1,003,644.00	3.461933	85	50 - 150	0.0000	+/-0.50	
M8PFOS	101250.4	3.65215	116,514.00	3.65215	87	50 - 150	0.0000	+/-0.50	
M9PFNA	696416.9	3.653183	782,180.00	3.6532	89	50 - 150	0.0000	+/-0.50	
MPFDoA	562236.4	4.08065	777,274.00	4.08065	72	50 - 150	0.0000	+/-0.50	
D5-NEtFOSAA	155991.1	3.9535	219,147.00	3.9535	71	50 - 150	0.0000	+/-0.50	
D3-NMeFOSAA	196252.3	3.88175	276,042.00	3.88175	71	50 - 150	0.0000	+/-0.50	

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INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LCS (B318818-BS1)			Lab File ID: B318818-BS1.d			Analyzed: 10/11/22 09:07			
M8FOSA	228887.8	3.980567	324,078.00	3.980583	71	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	197582.2	2.4886	230,386.00	2.4886	86	50 - 150	0.0000	+/-0.50	
M2PFTA	1032642	4.32155	1,187,242.00	4.32155	87	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	106290.1	3.8028	95,542.00	3.8028	111	50 - 150	0.0000	+/-0.50	
MPFBA	405213.6	1.0834	427,709.00	1.0834	95	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	83809.83	2.822933	91,690.00	2.822933	91	50 - 150	0.0000	+/-0.50	
M6PFDA	690820.4	3.803317	694,172.00	3.803317	100	50 - 150	0.0000	+/-0.50	
M3PFBS	119153.7	1.90325	127,074.00	1.90325	94	50 - 150	0.0000	+/-0.50	
M7PFUnA	637308.1	3.946033	764,024.00	3.946033	83	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	110068.8	3.453267	110,207.00	3.453267	100	50 - 150	0.0000	+/-0.50	
M5PFPeA	355363.6	1.7231	381,708.00	1.7231	93	50 - 150	0.0000	+/-0.50	
M5PFHxA	762908.4	2.572333	806,227.00	2.572333	95	50 - 150	0.0000	+/-0.50	
M3PFHxS	115690.6	3.218333	130,990.00	3.218333	88	50 - 150	0.0000	+/-0.50	
M4PFHpA	957971.3	3.178867	1,012,440.00	3.178867	95	50 - 150	0.0000	+/-0.50	
M8PFOA	913962.8	3.461933	1,003,644.00	3.461933	91	50 - 150	0.0000	+/-0.50	
M8PFOS	105812.7	3.65215	116,514.00	3.65215	91	50 - 150	0.0000	+/-0.50	
M9PFNA	720686.3	3.653183	782,180.00	3.6532	92	50 - 150	0.0000	+/-0.50	
MPFDoA	638326.1	4.08065	777,274.00	4.08065	82	50 - 150	0.0000	+/-0.50	
D5-NEtFOSAA	172715.6	3.9535	219,147.00	3.9535	79	50 - 150	0.0000	+/-0.50	
D3-NMeFOSAA	222921.8	3.88175	276,042.00	3.88175	81	50 - 150	0.0000	+/-0.50	
Blank (B318981-BLK1)			Lab File ID: C22V27919.D			Analyzed: 10/06/22 14:54			
Pentafluorobenzene	175140	4.199	179,464.00	4.196	98	50 - 200	0.0030	+/-0.50	
1,4-Difluorobenzene	276478	4.919	280,237.00	4.918	99	50 - 200	0.0010	+/-0.50	
Chlorobenzene-d5	132993	7.752	140,327.00	7.749	95	50 - 200	0.0030	+/-0.50	
1,4-Dichlorobenzene-d4	113858	10.05	128,896.00	10.047	88	50 - 200	0.0030	+/-0.50	
LCS (B318981-BS1)			Lab File ID: C22V27915.D			Analyzed: 10/06/22 13:18			
Pentafluorobenzene	186824	4.196	179,464.00	4.196	104	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	283299	4.919	280,237.00	4.918	101	50 - 200	0.0010	+/-0.50	
Chlorobenzene-d5	141878	7.752	140,327.00	7.749	101	50 - 200	0.0030	+/-0.50	
1,4-Dichlorobenzene-d4	126240	10.044	128,896.00	10.047	98	50 - 200	-0.0030	+/-0.50	
Matrix Spike (B318981-MS1)			Lab File ID: C22V27941.D			Analyzed: 10/06/22 23:42			
Pentafluorobenzene	174929	4.196	179,464.00	4.196	97	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	273460	4.916	280,237.00	4.918	98	50 - 200	-0.0020	+/-0.50	
Chlorobenzene-d5	136959	7.752	140,327.00	7.749	98	50 - 200	0.0030	+/-0.50	
1,4-Dichlorobenzene-d4	119680	10.044	128,896.00	10.047	93	50 - 200	-0.0030	+/-0.50	

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INTERNAL STANDARD AREA AND RT SUMMARY

624.1

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Matrix Spike Dup (B318981-MSD1)			Lab File ID: C22V27942.D			Analyzed: 10/07/22 00:06			
Pentafluorobenzene	166176	4.199	179,464.00	4.196	93	50 - 200	0.0030	+/-0.50	
1,4-Difluorobenzene	245019	4.916	280,237.00	4.918	87	50 - 200	-0.0020	+/-0.50	
Chlorobenzene-d5	116641	7.752	140,327.00	7.749	83	50 - 200	0.0030	+/-0.50	
1,4-Dichlorobenzene-d4	118242	10.047	128,896.00	10.047	92	50 - 200	0.0000	+/-0.50	

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
624.1 in Water	
Benzene	CT,NY,MA,NH,RI,NC,ME,VA
Bromodichloromethane	CT,NY,MA,NH,RI,NC,ME,VA
Bromoform	CT,NY,MA,NH,RI,NC,ME,VA
Bromomethane	CT,NY,MA,NH,RI,NC,ME,VA
Carbon Tetrachloride	CT,NY,MA,NH,RI,NC,ME,VA
Chlorobenzene	CT,NY,MA,NH,RI,NC,ME,VA
Chlorodibromomethane	CT,NY,MA,NH,RI,NC,ME,VA
Chloroethane	CT,NY,MA,NH,RI,NC,ME,VA
Chloroform	CT,NY,MA,NH,RI,NC,ME,VA
Chloromethane	CT,NY,MA,NH,RI,NC,ME,VA
1,2-Dichlorobenzene	CT,NY,MA,NH,RI,NC,ME,VA
1,3-Dichlorobenzene	CT,NY,MA,NH,RI,NC,ME,VA
1,4-Dichlorobenzene	CT,NY,MA,NH,RI,NC,ME,VA
1,2-Dichloroethane	CT,NY,MA,NH,RI,NC,ME,VA
cis-1,2-Dichloroethylene	NY,MA
1,1-Dichloroethane	CT,NY,MA,NH,RI,NC,ME,VA
1,1-Dichloroethylene	CT,NY,MA,NH,RI,NC,ME,VA
trans-1,2-Dichloroethylene	CT,NY,MA,NH,RI,NC,ME,VA
1,2-Dichloropropane	CT,NY,MA,NH,RI,NC,ME,VA
cis-1,3-Dichloropropene	CT,NY,MA,NH,RI,NC,ME,VA
1,4-Dioxane	MA
trans-1,3-Dichloropropene	CT,NY,MA,NH,RI,NC,ME,VA
Ethylbenzene	CT,NY,MA,NH,RI,NC,ME,VA
Methyl tert-Butyl Ether (MTBE)	NY,MA,NH,NC
Methylene Chloride	CT,NY,MA,NH,RI,NC,ME,VA
1,1,2,2-Tetrachloroethane	CT,NY,MA,NH,RI,NC,ME,VA
Tetrachloroethylene	CT,NY,MA,NH,RI,NC,ME,VA
Toluene	CT,NY,MA,NH,RI,NC,ME,VA
1,1,1-Trichloroethane	CT,NY,MA,NH,RI,NC,ME,VA
1,1,2-Trichloroethane	CT,NY,MA,NH,RI,NC,ME,VA
Trichloroethylene	CT,NY,MA,NH,RI,NC,ME,VA
Trichlorofluoromethane (Freon 11)	CT,NY,MA,NH,RI,NC,ME,VA
Vinyl Chloride	CT,NY,MA,NH,RI,NC,ME,VA
m+p Xylene	CT,NY,MA,NH,RI,NC
o-Xylene	CT,NY,MA,NH,RI,NC
SOP-454 PFAS in Water	
Perfluorobutanoic acid (PFBA)	NH-P
Perfluorobutanesulfonic acid (PFBS)	NH-P
Perfluoropentanoic acid (PFPeA)	NH-P
Perfluorohexanoic acid (PFHxA)	NH-P
8:2 Fluorotelomersulfonic acid (8:2FTS A)	NH-P
Perfluorodecanoic acid (PFDA)	NH-P
Perfluorododecanoic acid (PFDoA)	NH-P
Perfluoroheptanesulfonic acid (PFHpS)	NH-P
N-EtFOSAA (NEtFOSAA)	NH-P
N-MeFOSAA (NMeFOSAA)	NH-P

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SOP-454 PFAS in Water	
Perfluorotetradecanoic acid (PFTA)	NH-P
Perfluorotridecanoic acid (PFTrDA)	NH-P
Perfluorodecanesulfonic acid (PFDS)	NH-P
Perfluorooctanesulfonamide (FOSA)	NH-P
Perfluorohexanesulfonic acid (PFHxS)	NH-P
6:2 Fluorotelomersulfonic acid (6:2FTS A)	NH-P
Perfluoroundecanoic acid (PFUnA)	NH-P
Perfluoroheptanoic acid (PFHpA)	NH-P
Perfluorooctanoic acid (PFOA)	NH-P
Perfluorooctanesulfonic acid (PFOS)	NH-P
Perfluorononanoic acid (PFNA)	NH-P
SW-846 8270E in Water	
1,4-Dioxane	NY,NH

Con-Test, a Pace Environmental Laboratory, operates under the following certifications and accreditations:

Code	Description	Number	Expires
MA	Massachusetts DEP	M-MA100	06/30/2023
CT	Connecticut Department of Public Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2023
NH	New Hampshire Environmental Lab	2516 NELAP	02/5/2023
RI	Rhode Island Department of Health	LAO00373	12/30/2023
NC	North Carolina Div. of Water Quality	652	12/31/2023
ME	State of Maine	MA00100	06/9/2023
VA	Commonwealth of Virginia	460217	12/14/2023
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2023

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevent fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here: 22D180

ALL SHADED AREAS are for LAB USE ONLY

Company: AECOM Technical Services Inc	Billing Information:
Address: 40 British American Blvd	
Report To: Lindsay Mitchell	Email To: lindsay.mitchell@aecom.com
Copy To:	Site Collection Info/Address:
Customer Project Name/Number: Northeast Alloys & Metals #633045	State: County/City: Time Zone Collected: [ ] PT [ ] MT [ ] CT [ ] ET
Phone: 518 453 2203 Email:	Site/Facility ID #: Compliance Monitoring? [ ] Yes [ ] No
Collected By (print): Joe Brown	Purchase Order #: Quote #: DW PWS ID #: DW Location Code:
Collected By (signature):	Turnaround Date Required: 1-2 wks Immediately Packed on Ice: [ ] Yes [ ] No
Sample Disposal: [ ] Dispose as appropriate [ ] Return [ ] Archive: [ ] Hold:	Rush: [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [ ] 5 Day (Expedite Charges Apply) Field Filtered (if applicable): [ ] Yes [ ] No Analysis:

Container Preservative Type **: 8 U U 8

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

Lab Project Manager:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	Analyses: 624.1 VOC	537.1 PFAS	1,4 Dioxane SIM (Bassett)	624.1 VOC	Lab Profile/Line:
BR-1	GW	Grab	9/27	10:40				6	2	2	2		1
MW-12	GW	Grab	9/27	11:50				6	2	2	2		2
MS	GW	Grab	9/27	10:40				6	2	2	2		1
MSD	GW	Grab	9/27	10:40				6	2	2	2		1
TRIP BLANK MW-3	GW	Grab	9/27	14:10				6	2	2	2		3
MW-13	GW	Grab	9/27	14:20									4
TB1	GW	—	9/27	14:50				2				2	5
DUP	GW	Grab	—	—				6	2	2	2		6

Lab Sample Receipt Checklist:

Custody Seals Present/Intact	Y	N	NA
Custody Signatures Present	Y	N	NA
Collector Signature Present	Y	N	NA
Bottles Intact	Y	N	NA
Correct Bottles	Y	N	NA
Sufficient Volume	Y	N	NA
Samples Received on Ice	Y	N	NA
VOA - Headspace Acceptable	Y	N	NA
USDA Regulated Soils	Y	N	NA
Samples in Holding Time	Y	N	NA
Residual Chlorine Present	Y	N	NA
Cl Strips:			
Sample pH Acceptable	Y	N	NA
pH Strips:			
Sulfide Present	Y	N	NA
Lead Acetate Strips:			

LAB USE ONLY:
Lab Sample # / Comments:

Customer Remarks / Special Conditions / Possible Hazards:
BR-1 MS, MSD Category B/NYSDEC
HCl added to four bottles 4-file EDD
Trip Blank custody seals all broken from lab

Type of Ice Used: Wet Blue Dry None

Packing Material Used:

Radchem sample(s) screened (<500 cpm): Y N NA

SHORT HOLDS PRESENT (<72 hours): Y N N/A

Lab Tracking #: 2691079

Samples received via: FEDEX UPS Client Courier Pace Courier

Lab Sample Temperature Info:
Temp Blank Received: Y N NA
Therm ID#: 3
Cooler 1 Temp Upon Receipt: ____oC
Cooler 1 Therm Corr. Factor: ____oC
Cooler 1 Corrected Temp: ____oC
Comments: 3.0, 4.2, 5.5

Trip Blank Received: Y N NA
HCl MeOH TSP Other

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
	9/28/22 916	PACE	9/28/22 916
PACE	9/28/22 1430		9/28/22 1430
PACE	9/28/22 1740		9/28/22 1740
	9/28/22 1700		9/28/22 1700

MTJL LAB USE ONLY
Table #:
Acctnum:
Template:
Prelogin:
PM:
PB:

Non Conformance(s): YES / NO

Page: ____ of: ____

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

January 18, 2023

Lindsay Mitchell
NYDEC_AECOM Environment - Latham, NY
40 British American Blvd.
Latham, NY 12110

Project Location: Northeast Alloys & Metals
Client Job Number:
Project Number: 633045
Laboratory Work Order Number: 22I1906

Enclosed are results of analyses for samples as received by the laboratory on September 29, 2022. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kyle K. Stuckey
Project Manager

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

NYDEC_AECOM Environment - Latham, NY
40 British American Blvd.
Latham, NY 12110
ATTN: Lindsay Mitchell

REPORT DATE: 1/18/2023

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 633045

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 22I1906

The results of analyses performed on the following samples submitted to CON-TEST, a Pace Analytical Laboratory, are found in this report.

PROJECT LOCATION: Northeast Alloys & Metals

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
MW-4	22I1906-01	Ground Water		624.1	
				SOP-454 PFAS	
				SW-846 8270E	
MW-11	22I1906-02	Ground Water		624.1	
				SOP-454 PFAS	
				SW-846 8270E	
MW-10	22I1906-03	Ground Water		624.1	
				SOP-454 PFAS	
				SW-846 8270E	
MW-9	22I1906-04	Ground Water		624.1	
				SOP-454 PFAS	
				SW-846 8270E	
MW-7R	22I1906-05	Ground Water		624.1	
				SOP-454 PFAS	
				SW-846 8270E	
BR-3	22I1906-06	Ground Water		624.1	
				SOP-454 PFAS	
				SW-846 8270E	
TB2	22I1906-07	Ground Water		624.1	

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CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

REVISED 01-18-23: cis-1,2-DCE added per the COC

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624.1

Qualifications:

PR-06

pH of sample (pH 3) is outside of method specified preservation criteria.

Analyte & Samples(s) Qualified:

22I1906-02[MW-11], 22I1906-03[MW-10], 22I1906-05[MW-7R]

SOP-454 PFAS

Qualifications:

PF-17

Extracted Internal Standard recovery is outside of control limits. Data is not significantly affected since associated analyte is not detected and bias is on the high side.

Analyte & Samples(s) Qualified:

M2-6:2FTS
22I1906-04[MW-9]

M2-8:2FTS
22I1906-04[MW-9]

PF-20

Quantifying ion signal to noise ratio is <10. Detection is suspect.

Analyte & Samples(s) Qualified:

Perfluorobutanesulfonic acid (PFBS)
22I1906-05[MW-7R]

Perfluorobutanoic acid (PFBA)
22I1906-03[MW-10]

Perfluorohexanesulfonic acid (PFHxS)
22I1906-03[MW-10]

Perfluorohexanoic acid (PFHxA)
22I1906-04[MW-9]

Perfluorooctanoic acid (PFOA)
22I1906-03[MW-10]

Perfluoropentanoic acid (PFPeA)
22I1906-05[MW-7R]

PF-21

Qualifying ion signal to noise ratio is <3. Detection is suspect.

Analyte & Samples(s) Qualified:

Perfluorobutanesulfonic acid (PFBS)
22I1906-04[MW-9]

Perfluorohexanesulfonic acid (PFHxS)
22I1906-03[MW-10]

PF-22

Qualifier ion ratio >150% of associated calibration. Detection is suspect.

Analyte & Samples(s) Qualified:

6:2 Fluorotelomersulfonic acid (6:2FTS A)
22I1906-03[MW-10]

PF-23

Qualifier ion ratio <50% of associated calibration. Detection is suspect.

Analyte & Samples(s) Qualified:

Perfluorobutanesulfonic acid (PFBS)
22I1906-03[MW-10], 22I1906-04[MW-9]

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S-29

Extracted Internal Standard is outside of control limits.

Analyte & Samples(s) Qualified:

M2PFTA
22I1906-03[MW-10]

MPFBA
22I1906-03[MW-10], 22I1906-04[MW-9]

The results of analyses reported only relate to samples submitted to Con-Test, a Pace Analytical Laboratory, for testing.
I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Lisa A. Worthington
Technical Representative

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Northeast Alloys & Metals | Sample Description: | Work Order: 22I1906

Date Received: 9/29/2022

Field Sample #: MW-4 | Sampled: 9/28/2022 09:53

Sample ID: 22I1906-01

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Benzene	<0.200	1.00	0.200	µg/L	1		624.1	10/6/22	10/6/22 19:42	MFF
Bromodichloromethane	<0.180	2.00	0.180	µg/L	1		624.1	10/6/22	10/6/22 19:42	MFF
Bromoform	<0.383	2.00	0.383	µg/L	1		624.1	10/6/22	10/6/22 19:42	MFF
Bromomethane	<1.54	2.00	1.54	µg/L	1		624.1	10/6/22	10/6/22 19:42	MFF
Carbon Tetrachloride	<0.165	2.00	0.165	µg/L	1		624.1	10/6/22	10/6/22 19:42	MFF
Chlorobenzene	<0.105	2.00	0.105	µg/L	1		624.1	10/6/22	10/6/22 19:42	MFF
Chlorodibromomethane	<0.222	2.00	0.222	µg/L	1		624.1	10/6/22	10/6/22 19:42	MFF
Chloroethane	<0.320	2.00	0.320	µg/L	1		624.1	10/6/22	10/6/22 19:42	MFF
Chloroform	<0.168	2.00	0.168	µg/L	1		624.1	10/6/22	10/6/22 19:42	MFF
Chloromethane	<0.522	2.00	0.522	µg/L	1		624.1	10/6/22	10/6/22 19:42	MFF
1,2-Dichlorobenzene	<0.122	2.00	0.122	µg/L	1		624.1	10/6/22	10/6/22 19:42	MFF
1,3-Dichlorobenzene	<0.118	2.00	0.118	µg/L	1		624.1	10/6/22	10/6/22 19:42	MFF
1,4-Dichlorobenzene	<0.130	2.00	0.130	µg/L	1		624.1	10/6/22	10/6/22 19:42	MFF
1,2-Dichloroethane	<0.308	2.00	0.308	µg/L	1		624.1	10/6/22	10/6/22 19:42	MFF
cis-1,2-Dichloroethylene	<0.147	1.00	0.147	µg/L	1		624.1	10/6/22	10/6/22 19:42	MFF
1,1-Dichloroethane	<0.142	2.00	0.142	µg/L	1		624.1	10/6/22	10/6/22 19:42	MFF
1,1-Dichloroethylene	<0.141	2.00	0.141	µg/L	1		624.1	10/6/22	10/6/22 19:42	MFF
trans-1,2-Dichloroethylene	<0.169	2.00	0.169	µg/L	1		624.1	10/6/22	10/6/22 19:42	MFF
1,2-Dichloropropane	<0.181	2.00	0.181	µg/L	1		624.1	10/6/22	10/6/22 19:42	MFF
cis-1,3-Dichloropropene	<0.158	2.00	0.158	µg/L	1		624.1	10/6/22	10/6/22 19:42	MFF
trans-1,3-Dichloropropene	<0.168	2.00	0.168	µg/L	1		624.1	10/6/22	10/6/22 19:42	MFF
Ethylbenzene	<0.215	2.00	0.215	µg/L	1		624.1	10/6/22	10/6/22 19:42	MFF
Methyl tert-Butyl Ether (MTBE)	<0.172	2.00	0.172	µg/L	1		624.1	10/6/22	10/6/22 19:42	MFF
Methylene Chloride	<0.235	5.00	0.235	µg/L	1		624.1	10/6/22	10/6/22 19:42	MFF
1,1,2,2-Tetrachloroethane	<0.127	2.00	0.127	µg/L	1		624.1	10/6/22	10/6/22 19:42	MFF
Tetrachloroethylene	<0.187	2.00	0.187	µg/L	1		624.1	10/6/22	10/6/22 19:42	MFF
Toluene	<0.224	1.00	0.224	µg/L	1		624.1	10/6/22	10/6/22 19:42	MFF
1,1,1-Trichloroethane	<0.169	2.00	0.169	µg/L	1		624.1	10/6/22	10/6/22 19:42	MFF
1,1,2-Trichloroethane	<0.183	2.00	0.183	µg/L	1		624.1	10/6/22	10/6/22 19:42	MFF
Trichloroethylene	<0.189	2.00	0.189	µg/L	1		624.1	10/6/22	10/6/22 19:42	MFF
Trichlorofluoromethane (Freon 11)	<0.176	2.00	0.176	µg/L	1		624.1	10/6/22	10/6/22 19:42	MFF
Vinyl Chloride	<0.208	2.00	0.208	µg/L	1		624.1	10/6/22	10/6/22 19:42	MFF
m+p Xylene	<0.459	2.00	0.459	µg/L	1		624.1	10/6/22	10/6/22 19:42	MFF
o-Xylene	<0.230	1.00	0.230	µg/L	1		624.1	10/6/22	10/6/22 19:42	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	92.4	70-130		10/6/22 19:42
Toluene-d8	97.4	70-130		10/6/22 19:42
4-Bromofluorobenzene	97.6	70-130		10/6/22 19:42

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Project Location: Northeast Alloys & Metals | Sample Description: | Work Order: 22I1906

Date Received: 9/29/2022

Field Sample #: MW-4 | Sampled: 9/28/2022 09:53

Sample ID: 22I1906-01

Sample Matrix: Ground Water

1,4-Dioxane by isotope dilution GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
1,4-Dioxane	ND	0.21	0.034	µg/L	1		SW-846 8270E	10/5/22	10/10/22 22:24	SPF

Surrogates	% Recovery	Recovery Limits	Flag/Qual		
1,4-Dioxane-d8	24.8	15-110		10/10/22 22:24	

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Project Location: Northeast Alloys & Metals | Sample Description: | Work Order: 22I1906

Date Received: 9/29/2022

Field Sample #: MW-4 | Sampled: 9/28/2022 09:53

Sample ID: 22I1906-01

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	ND	2.0	0.73	ng/L	1		SOP-454 PFAS	10/13/22	10/19/22 13:33	DRL
Perfluorobutanesulfonic acid (PFBS)	ND	2.0	0.28	ng/L	1		SOP-454 PFAS	10/13/22	10/19/22 13:33	DRL
Perfluoropentanoic acid (PFPeA)	ND	2.0	0.38	ng/L	1		SOP-454 PFAS	10/13/22	10/19/22 13:33	DRL
Perfluorohexanoic acid (PFHxA)	ND	2.0	0.38	ng/L	1		SOP-454 PFAS	10/13/22	10/19/22 13:33	DRL
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	10/13/22	10/19/22 13:33	DRL
Perfluorodecanoic acid (PFDA)	ND	2.0	0.48	ng/L	1		SOP-454 PFAS	10/13/22	10/19/22 13:33	DRL
Perfluorododecanoic acid (PFDoA)	ND	2.0	0.43	ng/L	1		SOP-454 PFAS	10/13/22	10/19/22 13:33	DRL
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	0.92	ng/L	1		SOP-454 PFAS	10/13/22	10/19/22 13:33	DRL
N-EtFOSAA (NEtFOSAA)	ND	2.0	0.62	ng/L	1		SOP-454 PFAS	10/13/22	10/19/22 13:33	DRL
N-MeFOSAA (NMeFOSAA)	ND	2.0	0.74	ng/L	1		SOP-454 PFAS	10/13/22	10/19/22 13:33	DRL
Perfluorotetradecanoic acid (PFTA)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	10/13/22	10/19/22 13:33	DRL
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	0.27	ng/L	1		SOP-454 PFAS	10/13/22	10/19/22 13:33	DRL
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	0.32	ng/L	1		SOP-454 PFAS	10/13/22	10/19/22 13:33	DRL
Perfluorooctanesulfonamide (FOSA)	ND	2.0	0.41	ng/L	1		SOP-454 PFAS	10/13/22	10/19/22 13:33	DRL
Perfluorohexanesulfonic acid (PFHxS)	ND	2.0	0.33	ng/L	1		SOP-454 PFAS	10/13/22	10/19/22 13:33	DRL
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	10/13/22	10/19/22 13:33	DRL
Perfluoroundecanoic acid (PFUnA)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	10/13/22	10/19/22 13:33	DRL
Perfluoroheptanoic acid (PFHpA)	ND	2.0	0.34	ng/L	1		SOP-454 PFAS	10/13/22	10/19/22 13:33	DRL
Perfluorooctanoic acid (PFOA)	0.81	2.0	0.67	ng/L	1	J	SOP-454 PFAS	10/13/22	10/19/22 13:33	DRL
Perfluorooctanesulfonic acid (PFOS)	1.6	2.0	0.59	ng/L	1	J	SOP-454 PFAS	10/13/22	10/19/22 13:33	DRL
Perfluorononanoic acid (PFNA)	ND	2.0	0.34	ng/L	1		SOP-454 PFAS	10/13/22	10/19/22 13:33	DRL

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Project Location: Northeast Alloys & Metals | Sample Description: | Work Order: 22I1906

Date Received: 9/29/2022

Field Sample #: MW-11 | Sampled: 9/28/2022 10:00

Sample ID: 22I1906-02

Sample Matrix: Ground Water

Sample Flags: PR-06

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Benzene	<0.200	1.00	0.200	µg/L	1		624.1	10/6/22	10/6/22 20:06	MFF
Bromodichloromethane	<0.180	2.00	0.180	µg/L	1		624.1	10/6/22	10/6/22 20:06	MFF
Bromoform	<0.383	2.00	0.383	µg/L	1		624.1	10/6/22	10/6/22 20:06	MFF
Bromomethane	<1.54	2.00	1.54	µg/L	1		624.1	10/6/22	10/6/22 20:06	MFF
Carbon Tetrachloride	<0.165	2.00	0.165	µg/L	1		624.1	10/6/22	10/6/22 20:06	MFF
Chlorobenzene	<0.105	2.00	0.105	µg/L	1		624.1	10/6/22	10/6/22 20:06	MFF
Chlorodibromomethane	<0.222	2.00	0.222	µg/L	1		624.1	10/6/22	10/6/22 20:06	MFF
Chloroethane	<0.320	2.00	0.320	µg/L	1		624.1	10/6/22	10/6/22 20:06	MFF
Chloroform	<0.168	2.00	0.168	µg/L	1		624.1	10/6/22	10/6/22 20:06	MFF
Chloromethane	<0.522	2.00	0.522	µg/L	1		624.1	10/6/22	10/6/22 20:06	MFF
1,2-Dichlorobenzene	<0.122	2.00	0.122	µg/L	1		624.1	10/6/22	10/6/22 20:06	MFF
1,3-Dichlorobenzene	<0.118	2.00	0.118	µg/L	1		624.1	10/6/22	10/6/22 20:06	MFF
1,4-Dichlorobenzene	<0.130	2.00	0.130	µg/L	1		624.1	10/6/22	10/6/22 20:06	MFF
1,2-Dichloroethane	<0.308	2.00	0.308	µg/L	1		624.1	10/6/22	10/6/22 20:06	MFF
cis-1,2-Dichloroethylene	<0.147	1.00	0.147	µg/L	1		624.1	10/6/22	10/6/22 20:06	MFF
1,1-Dichloroethane	<0.142	2.00	0.142	µg/L	1		624.1	10/6/22	10/6/22 20:06	MFF
1,1-Dichloroethylene	<0.141	2.00	0.141	µg/L	1		624.1	10/6/22	10/6/22 20:06	MFF
trans-1,2-Dichloroethylene	<0.169	2.00	0.169	µg/L	1		624.1	10/6/22	10/6/22 20:06	MFF
1,2-Dichloropropane	<0.181	2.00	0.181	µg/L	1		624.1	10/6/22	10/6/22 20:06	MFF
cis-1,3-Dichloropropene	<0.158	2.00	0.158	µg/L	1		624.1	10/6/22	10/6/22 20:06	MFF
trans-1,3-Dichloropropene	<0.168	2.00	0.168	µg/L	1		624.1	10/6/22	10/6/22 20:06	MFF
Ethylbenzene	<0.215	2.00	0.215	µg/L	1		624.1	10/6/22	10/6/22 20:06	MFF
Methyl tert-Butyl Ether (MTBE)	<0.172	2.00	0.172	µg/L	1		624.1	10/6/22	10/6/22 20:06	MFF
Methylene Chloride	<0.235	5.00	0.235	µg/L	1		624.1	10/6/22	10/6/22 20:06	MFF
1,1,2,2-Tetrachloroethane	<0.127	2.00	0.127	µg/L	1		624.1	10/6/22	10/6/22 20:06	MFF
Tetrachloroethylene	<0.187	2.00	0.187	µg/L	1		624.1	10/6/22	10/6/22 20:06	MFF
Toluene	<0.224	1.00	0.224	µg/L	1		624.1	10/6/22	10/6/22 20:06	MFF
1,1,1-Trichloroethane	<0.169	2.00	0.169	µg/L	1		624.1	10/6/22	10/6/22 20:06	MFF
1,1,2-Trichloroethane	<0.183	2.00	0.183	µg/L	1		624.1	10/6/22	10/6/22 20:06	MFF
Trichloroethylene	0.410	2.00	0.189	µg/L	1	J	624.1	10/6/22	10/6/22 20:06	MFF
Trichlorofluoromethane (Freon 11)	<0.176	2.00	0.176	µg/L	1		624.1	10/6/22	10/6/22 20:06	MFF
Vinyl Chloride	<0.208	2.00	0.208	µg/L	1		624.1	10/6/22	10/6/22 20:06	MFF
m+p Xylene	<0.459	2.00	0.459	µg/L	1		624.1	10/6/22	10/6/22 20:06	MFF
o-Xylene	<0.230	1.00	0.230	µg/L	1		624.1	10/6/22	10/6/22 20:06	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	101	70-130		10/6/22 20:06
Toluene-d8	98.8	70-130		10/6/22 20:06
4-Bromofluorobenzene	96.9	70-130		10/6/22 20:06

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Northeast Alloys & Metals | Sample Description: | Work Order: 22I1906

Date Received: 9/29/2022

Field Sample #: MW-11 | Sampled: 9/28/2022 10:00

Sample ID: 22I1906-02

Sample Matrix: Ground Water

1,4-Dioxane by isotope dilution GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
1,4-Dioxane	ND	0.22	0.037	µg/L	1		SW-846 8270E	10/5/22	10/10/22 22:44	SPF

Surrogates	% Recovery	Recovery Limits	Flag/Qual		
1,4-Dioxane-d8	28.8	15-110		10/10/22 22:44	

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Northeast Alloys & Metals | Sample Description: | Work Order: 22I1906

Date Received: 9/29/2022

Field Sample #: MW-11 | Sampled: 9/28/2022 10:00

Sample ID: 22I1906-02

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	1.4	2.0	0.75	ng/L	1	J	SOP-454 PFAS	10/13/22	10/19/22 13:48	DRL
Perfluorobutanesulfonic acid (PFBS)	0.56	2.0	0.28	ng/L	1	J	SOP-454 PFAS	10/13/22	10/19/22 13:48	DRL
Perfluoropentanoic acid (PFPeA)	ND	2.0	0.39	ng/L	1		SOP-454 PFAS	10/13/22	10/19/22 13:48	DRL
Perfluorohexanoic acid (PFHxA)	ND	2.0	0.39	ng/L	1		SOP-454 PFAS	10/13/22	10/19/22 13:48	DRL
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0	0.61	ng/L	1		SOP-454 PFAS	10/13/22	10/19/22 13:48	DRL
Perfluorodecanoic acid (PFDA)	ND	2.0	0.49	ng/L	1		SOP-454 PFAS	10/13/22	10/19/22 13:48	DRL
Perfluorododecanoic acid (PFDoA)	ND	2.0	0.44	ng/L	1		SOP-454 PFAS	10/13/22	10/19/22 13:48	DRL
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	0.94	ng/L	1		SOP-454 PFAS	10/13/22	10/19/22 13:48	DRL
N-EtFOSAA (NEtFOSAA)	ND	2.0	0.63	ng/L	1		SOP-454 PFAS	10/13/22	10/19/22 13:48	DRL
N-MeFOSAA (NMeFOSAA)	ND	2.0	0.76	ng/L	1		SOP-454 PFAS	10/13/22	10/19/22 13:48	DRL
Perfluorotetradecanoic acid (PFTA)	ND	2.0	0.37	ng/L	1		SOP-454 PFAS	10/13/22	10/19/22 13:48	DRL
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	0.28	ng/L	1		SOP-454 PFAS	10/13/22	10/19/22 13:48	DRL
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	0.33	ng/L	1		SOP-454 PFAS	10/13/22	10/19/22 13:48	DRL
Perfluorooctanesulfonamide (FOSA)	ND	2.0	0.42	ng/L	1		SOP-454 PFAS	10/13/22	10/19/22 13:48	DRL
Perfluorohexanesulfonic acid (PFHxS)	ND	2.0	0.34	ng/L	1		SOP-454 PFAS	10/13/22	10/19/22 13:48	DRL
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	2.0	0.37	ng/L	1		SOP-454 PFAS	10/13/22	10/19/22 13:48	DRL
Perfluoroundecanoic acid (PFUnA)	ND	2.0	0.37	ng/L	1		SOP-454 PFAS	10/13/22	10/19/22 13:48	DRL
Perfluoroheptanoic acid (PFHpA)	ND	2.0	0.35	ng/L	1		SOP-454 PFAS	10/13/22	10/19/22 13:48	DRL
Perfluorooctanoic acid (PFOA)	0.72	2.0	0.68	ng/L	1	J	SOP-454 PFAS	10/13/22	10/19/22 13:48	DRL
Perfluorooctanesulfonic acid (PFOS)	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	10/13/22	10/19/22 13:48	DRL
Perfluorononanoic acid (PFNA)	ND	2.0	0.35	ng/L	1		SOP-454 PFAS	10/13/22	10/19/22 13:48	DRL

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Northeast Alloys & Metals | Sample Description: | Work Order: 22I1906

Date Received: 9/29/2022

Field Sample #: MW-10 | Sampled: 9/28/2022 11:50

Sample ID: 22I1906-03

Sample Matrix: Ground Water

Sample Flags: PR-06

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Benzene	<0.200	1.00	0.200	µg/L	1		624.1	10/6/22	10/6/22 20:30	MFF
Bromodichloromethane	<0.180	2.00	0.180	µg/L	1		624.1	10/6/22	10/6/22 20:30	MFF
Bromoform	<0.383	2.00	0.383	µg/L	1		624.1	10/6/22	10/6/22 20:30	MFF
Bromomethane	<1.54	2.00	1.54	µg/L	1		624.1	10/6/22	10/6/22 20:30	MFF
Carbon Tetrachloride	<0.165	2.00	0.165	µg/L	1		624.1	10/6/22	10/6/22 20:30	MFF
Chlorobenzene	<0.105	2.00	0.105	µg/L	1		624.1	10/6/22	10/6/22 20:30	MFF
Chlorodibromomethane	<0.222	2.00	0.222	µg/L	1		624.1	10/6/22	10/6/22 20:30	MFF
Chloroethane	<0.320	2.00	0.320	µg/L	1		624.1	10/6/22	10/6/22 20:30	MFF
Chloroform	<0.168	2.00	0.168	µg/L	1		624.1	10/6/22	10/6/22 20:30	MFF
Chloromethane	<0.522	2.00	0.522	µg/L	1		624.1	10/6/22	10/6/22 20:30	MFF
1,2-Dichlorobenzene	<0.122	2.00	0.122	µg/L	1		624.1	10/6/22	10/6/22 20:30	MFF
1,3-Dichlorobenzene	<0.118	2.00	0.118	µg/L	1		624.1	10/6/22	10/6/22 20:30	MFF
1,4-Dichlorobenzene	<0.130	2.00	0.130	µg/L	1		624.1	10/6/22	10/6/22 20:30	MFF
1,2-Dichloroethane	<0.308	2.00	0.308	µg/L	1		624.1	10/6/22	10/6/22 20:30	MFF
cis-1,2-Dichloroethylene	<0.147	1.00	0.147	µg/L	1		624.1	10/6/22	10/6/22 20:30	MFF
1,1-Dichloroethane	<0.142	2.00	0.142	µg/L	1		624.1	10/6/22	10/6/22 20:30	MFF
1,1-Dichloroethylene	<0.141	2.00	0.141	µg/L	1		624.1	10/6/22	10/6/22 20:30	MFF
trans-1,2-Dichloroethylene	<0.169	2.00	0.169	µg/L	1		624.1	10/6/22	10/6/22 20:30	MFF
1,2-Dichloropropane	<0.181	2.00	0.181	µg/L	1		624.1	10/6/22	10/6/22 20:30	MFF
cis-1,3-Dichloropropene	<0.158	2.00	0.158	µg/L	1		624.1	10/6/22	10/6/22 20:30	MFF
trans-1,3-Dichloropropene	<0.168	2.00	0.168	µg/L	1		624.1	10/6/22	10/6/22 20:30	MFF
Ethylbenzene	<0.215	2.00	0.215	µg/L	1		624.1	10/6/22	10/6/22 20:30	MFF
Methyl tert-Butyl Ether (MTBE)	<0.172	2.00	0.172	µg/L	1		624.1	10/6/22	10/6/22 20:30	MFF
Methylene Chloride	<0.235	5.00	0.235	µg/L	1		624.1	10/6/22	10/6/22 20:30	MFF
1,1,2,2-Tetrachloroethane	<0.127	2.00	0.127	µg/L	1		624.1	10/6/22	10/6/22 20:30	MFF
Tetrachloroethylene	<0.187	2.00	0.187	µg/L	1		624.1	10/6/22	10/6/22 20:30	MFF
Toluene	<0.224	1.00	0.224	µg/L	1		624.1	10/6/22	10/6/22 20:30	MFF
1,1,1-Trichloroethane	<0.169	2.00	0.169	µg/L	1		624.1	10/6/22	10/6/22 20:30	MFF
1,1,2-Trichloroethane	<0.183	2.00	0.183	µg/L	1		624.1	10/6/22	10/6/22 20:30	MFF
Trichloroethylene	<0.189	2.00	0.189	µg/L	1		624.1	10/6/22	10/6/22 20:30	MFF
Trichlorofluoromethane (Freon 11)	<0.176	2.00	0.176	µg/L	1		624.1	10/6/22	10/6/22 20:30	MFF
Vinyl Chloride	<0.208	2.00	0.208	µg/L	1		624.1	10/6/22	10/6/22 20:30	MFF
m+p Xylene	<0.459	2.00	0.459	µg/L	1		624.1	10/6/22	10/6/22 20:30	MFF
o-Xylene	<0.230	1.00	0.230	µg/L	1		624.1	10/6/22	10/6/22 20:30	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	103	70-130		10/6/22 20:30
Toluene-d8	87.2	70-130		10/6/22 20:30
4-Bromofluorobenzene	97.2	70-130		10/6/22 20:30

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Northeast Alloys & Metals | Sample Description: | Work Order: 22I1906

Date Received: 9/29/2022

Field Sample #: MW-10 | Sampled: 9/28/2022 11:50

Sample ID: 22I1906-03

Sample Matrix: Ground Water

1,4-Dioxane by isotope dilution GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
1,4-Dioxane	0.26	0.22	0.035	µg/L	1		SW-846 8270E	10/5/22	10/10/22 23:05	SPF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,4-Dioxane-d8	23.5	15-110		10/10/22 23:05

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Northeast Alloys & Metals | Sample Description: | Work Order: 22I1906

Date Received: 9/29/2022

Field Sample #: MW-10 | Sampled: 9/28/2022 11:50

Sample ID: 22I1906-03

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	8.2	2.0	0.76	ng/L	1	PF-20	SOP-454 PFAS	10/17/22	10/19/22 22:39	DRL
Perfluorobutanesulfonic acid (PFBS)	0.66	2.0	0.29	ng/L	1	PF-23, J	SOP-454 PFAS	10/17/22	10/19/22 22:39	DRL
Perfluoropentanoic acid (PFPeA)	ND	2.0	0.40	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 22:39	DRL
Perfluorohexanoic acid (PFHxA)	ND	2.0	0.40	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 22:39	DRL
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0	0.62	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 22:39	DRL
Perfluorodecanoic acid (PFDA)	ND	2.0	0.50	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 22:39	DRL
Perfluorododecanoic acid (PFDoA)	ND	2.0	0.45	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 22:39	DRL
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	0.96	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 22:39	DRL
N-EtFOSAA (NEtFOSAA)	ND	2.0	0.65	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 22:39	DRL
N-MeFOSAA (NMeFOSAA)	ND	2.0	0.78	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 22:39	DRL
Perfluorotetradecanoic acid (PFTA)	ND	2.0	0.38	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 22:39	DRL
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	0.28	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 22:39	DRL
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	0.33	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 22:39	DRL
Perfluorooctanesulfonamide (FOSA)	ND	2.0	0.43	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 22:39	DRL
Perfluorohexanesulfonic acid (PFHxS)	0.49	2.0	0.35	ng/L	1	PF-20, PF-21, J	SOP-454 PFAS	10/17/22	10/19/22 22:39	DRL
6:2 Fluorotelomersulfonic acid (6:2FTS A)	0.80	2.0	0.37	ng/L	1	PF-22, J	SOP-454 PFAS	10/17/22	10/19/22 22:39	DRL
Perfluoroundecanoic acid (PFUnA)	ND	2.0	0.38	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 22:39	DRL
Perfluoroheptanoic acid (PFHpA)	ND	2.0	0.35	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 22:39	DRL
Perfluorooctanoic acid (PFOA)	1.4	2.0	0.70	ng/L	1	PF-20, J	SOP-454 PFAS	10/17/22	10/19/22 22:39	DRL
Perfluorooctanesulfonic acid (PFOS)	ND	2.0	0.62	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 22:39	DRL
Perfluorononanoic acid (PFNA)	ND	2.0	0.35	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 22:39	DRL

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Northeast Alloys & Metals | Sample Description: | Work Order: 22I1906

Date Received: 9/29/2022

Field Sample #: MW-9 | Sampled: 9/28/2022 12:32

Sample ID: 22I1906-04

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Benzene	0.280	1.00	0.200	µg/L	1	J	624.1	10/6/22	10/6/22 20:54	MFF
Bromodichloromethane	<0.180	2.00	0.180	µg/L	1		624.1	10/6/22	10/6/22 20:54	MFF
Bromoform	<0.383	2.00	0.383	µg/L	1		624.1	10/6/22	10/6/22 20:54	MFF
Bromomethane	<1.54	2.00	1.54	µg/L	1		624.1	10/6/22	10/6/22 20:54	MFF
Carbon Tetrachloride	<0.165	2.00	0.165	µg/L	1		624.1	10/6/22	10/6/22 20:54	MFF
Chlorobenzene	<0.105	2.00	0.105	µg/L	1		624.1	10/6/22	10/6/22 20:54	MFF
Chlorodibromomethane	<0.222	2.00	0.222	µg/L	1		624.1	10/6/22	10/6/22 20:54	MFF
Chloroethane	<0.320	2.00	0.320	µg/L	1		624.1	10/6/22	10/6/22 20:54	MFF
Chloroform	<0.168	2.00	0.168	µg/L	1		624.1	10/6/22	10/6/22 20:54	MFF
Chloromethane	<0.522	2.00	0.522	µg/L	1		624.1	10/6/22	10/6/22 20:54	MFF
1,2-Dichlorobenzene	<0.122	2.00	0.122	µg/L	1		624.1	10/6/22	10/6/22 20:54	MFF
1,3-Dichlorobenzene	<0.118	2.00	0.118	µg/L	1		624.1	10/6/22	10/6/22 20:54	MFF
1,4-Dichlorobenzene	<0.130	2.00	0.130	µg/L	1		624.1	10/6/22	10/6/22 20:54	MFF
1,2-Dichloroethane	<0.308	2.00	0.308	µg/L	1		624.1	10/6/22	10/6/22 20:54	MFF
cis-1,2-Dichloroethylene	11.0	1.00	0.147	µg/L	1		624.1	10/6/22	10/6/22 20:54	MFF
1,1-Dichloroethane	<0.142	2.00	0.142	µg/L	1		624.1	10/6/22	10/6/22 20:54	MFF
1,1-Dichloroethylene	<0.141	2.00	0.141	µg/L	1		624.1	10/6/22	10/6/22 20:54	MFF
trans-1,2-Dichloroethylene	0.720	2.00	0.169	µg/L	1	J	624.1	10/6/22	10/6/22 20:54	MFF
1,2-Dichloropropane	<0.181	2.00	0.181	µg/L	1		624.1	10/6/22	10/6/22 20:54	MFF
cis-1,3-Dichloropropene	<0.158	2.00	0.158	µg/L	1		624.1	10/6/22	10/6/22 20:54	MFF
trans-1,3-Dichloropropene	<0.168	2.00	0.168	µg/L	1		624.1	10/6/22	10/6/22 20:54	MFF
Ethylbenzene	<0.215	2.00	0.215	µg/L	1		624.1	10/6/22	10/6/22 20:54	MFF
Methyl tert-Butyl Ether (MTBE)	<0.172	2.00	0.172	µg/L	1		624.1	10/6/22	10/6/22 20:54	MFF
Methylene Chloride	<0.235	5.00	0.235	µg/L	1		624.1	10/6/22	10/6/22 20:54	MFF
1,1,2,2-Tetrachloroethane	<0.127	2.00	0.127	µg/L	1		624.1	10/6/22	10/6/22 20:54	MFF
Tetrachloroethylene	<0.187	2.00	0.187	µg/L	1		624.1	10/6/22	10/6/22 20:54	MFF
Toluene	<0.224	1.00	0.224	µg/L	1		624.1	10/6/22	10/6/22 20:54	MFF
1,1,1-Trichloroethane	<0.169	2.00	0.169	µg/L	1		624.1	10/6/22	10/6/22 20:54	MFF
1,1,2-Trichloroethane	<0.183	2.00	0.183	µg/L	1		624.1	10/6/22	10/6/22 20:54	MFF
Trichloroethylene	13.2	2.00	0.189	µg/L	1		624.1	10/6/22	10/6/22 20:54	MFF
Trichlorofluoromethane (Freon 11)	<0.176	2.00	0.176	µg/L	1		624.1	10/6/22	10/6/22 20:54	MFF
Vinyl Chloride	<0.208	2.00	0.208	µg/L	1		624.1	10/6/22	10/6/22 20:54	MFF
m+p Xylene	<0.459	2.00	0.459	µg/L	1		624.1	10/6/22	10/6/22 20:54	MFF
o-Xylene	<0.230	1.00	0.230	µg/L	1		624.1	10/6/22	10/6/22 20:54	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	101	70-130		10/6/22 20:54
Toluene-d8	99.9	70-130		10/6/22 20:54
4-Bromofluorobenzene	97.2	70-130		10/6/22 20:54

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Northeast Alloys & Metals | Sample Description: | Work Order: 22I1906

Date Received: 9/29/2022

Field Sample #: MW-9 | Sampled: 9/28/2022 12:32

Sample ID: 22I1906-04

Sample Matrix: Ground Water

1,4-Dioxane by isotope dilution GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
1,4-Dioxane	ND	0.21	0.034	µg/L	1		SW-846 8270E	10/5/22	10/10/22 23:25	SPF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,4-Dioxane-d8	25.7	15-110		10/10/22 23:25

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Project Location: Northeast Alloys & Metals | Sample Description: | Work Order: 22I1906

Date Received: 9/29/2022

Field Sample #: MW-9 | Sampled: 9/28/2022 12:32

Sample ID: 22I1906-04

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	ND	2.0	0.76	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 22:46	DRL
Perfluorobutanesulfonic acid (PFBS)	1.7	2.0	0.29	ng/L	1	PF-21, PF-23, J	SOP-454 PFAS	10/17/22	10/19/22 22:46	DRL
Perfluoropentanoic acid (PFPeA)	ND	2.0	0.40	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 22:46	DRL
Perfluorohexanoic acid (PFHxA)	0.57	2.0	0.39	ng/L	1	PF-20, J	SOP-454 PFAS	10/17/22	10/19/22 22:46	DRL
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0	0.62	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 22:46	DRL
Perfluorodecanoic acid (PFDA)	ND	2.0	0.50	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 22:46	DRL
Perfluorododecanoic acid (PFDoA)	ND	2.0	0.45	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 22:46	DRL
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	0.95	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 22:46	DRL
N-EtFOSAA (NEtFOSAA)	ND	2.0	0.64	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 22:46	DRL
N-MeFOSAA (NMeFOSAA)	ND	2.0	0.77	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 22:46	DRL
Perfluorotetradecanoic acid (PFTA)	ND	2.0	0.37	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 22:46	DRL
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	0.28	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 22:46	DRL
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	0.33	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 22:46	DRL
Perfluorooctanesulfonamide (FOSA)	ND	2.0	0.43	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 22:46	DRL
Perfluorohexanesulfonic acid (PFHxS)	ND	2.0	0.34	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 22:46	DRL
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	2.0	0.37	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 22:46	DRL
Perfluoroundecanoic acid (PFUnA)	ND	2.0	0.37	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 22:46	DRL
Perfluoroheptanoic acid (PFHpA)	0.55	2.0	0.35	ng/L	1	J	SOP-454 PFAS	10/17/22	10/19/22 22:46	DRL
Perfluorooctanoic acid (PFOA)	2.5	2.0	0.69	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 22:46	DRL
Perfluorooctanesulfonic acid (PFOS)	ND	2.0	0.61	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 22:46	DRL
Perfluorononanoic acid (PFNA)	ND	2.0	0.35	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 22:46	DRL

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Northeast Alloys & Metals | Sample Description: | Work Order: 22I1906

Date Received: 9/29/2022

Field Sample #: MW-7R | Sampled: 9/28/2022 14:26

Sample ID: 22I1906-05

Sample Matrix: Ground Water

Sample Flags: PR-06

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Benzene	<0.200	1.00	0.200	µg/L	1		624.1	10/6/22	10/6/22 21:18	MFF
Bromodichloromethane	<0.180	2.00	0.180	µg/L	1		624.1	10/6/22	10/6/22 21:18	MFF
Bromoform	<0.383	2.00	0.383	µg/L	1		624.1	10/6/22	10/6/22 21:18	MFF
Bromomethane	<1.54	2.00	1.54	µg/L	1		624.1	10/6/22	10/6/22 21:18	MFF
Carbon Tetrachloride	<0.165	2.00	0.165	µg/L	1		624.1	10/6/22	10/6/22 21:18	MFF
Chlorobenzene	<0.105	2.00	0.105	µg/L	1		624.1	10/6/22	10/6/22 21:18	MFF
Chlorodibromomethane	<0.222	2.00	0.222	µg/L	1		624.1	10/6/22	10/6/22 21:18	MFF
Chloroethane	<0.320	2.00	0.320	µg/L	1		624.1	10/6/22	10/6/22 21:18	MFF
Chloroform	<0.168	2.00	0.168	µg/L	1		624.1	10/6/22	10/6/22 21:18	MFF
Chloromethane	<0.522	2.00	0.522	µg/L	1		624.1	10/6/22	10/6/22 21:18	MFF
1,2-Dichlorobenzene	<0.122	2.00	0.122	µg/L	1		624.1	10/6/22	10/6/22 21:18	MFF
1,3-Dichlorobenzene	<0.118	2.00	0.118	µg/L	1		624.1	10/6/22	10/6/22 21:18	MFF
1,4-Dichlorobenzene	<0.130	2.00	0.130	µg/L	1		624.1	10/6/22	10/6/22 21:18	MFF
1,2-Dichloroethane	<0.308	2.00	0.308	µg/L	1		624.1	10/6/22	10/6/22 21:18	MFF
cis-1,2-Dichloroethylene	<0.147	1.00	0.147	µg/L	1		624.1	10/6/22	10/6/22 21:18	MFF
1,1-Dichloroethane	<0.142	2.00	0.142	µg/L	1		624.1	10/6/22	10/6/22 21:18	MFF
1,1-Dichloroethylene	<0.141	2.00	0.141	µg/L	1		624.1	10/6/22	10/6/22 21:18	MFF
trans-1,2-Dichloroethylene	<0.169	2.00	0.169	µg/L	1		624.1	10/6/22	10/6/22 21:18	MFF
1,2-Dichloropropane	<0.181	2.00	0.181	µg/L	1		624.1	10/6/22	10/6/22 21:18	MFF
cis-1,3-Dichloropropene	<0.158	2.00	0.158	µg/L	1		624.1	10/6/22	10/6/22 21:18	MFF
trans-1,3-Dichloropropene	<0.168	2.00	0.168	µg/L	1		624.1	10/6/22	10/6/22 21:18	MFF
Ethylbenzene	<0.215	2.00	0.215	µg/L	1		624.1	10/6/22	10/6/22 21:18	MFF
Methyl tert-Butyl Ether (MTBE)	<0.172	2.00	0.172	µg/L	1		624.1	10/6/22	10/6/22 21:18	MFF
Methylene Chloride	<0.235	5.00	0.235	µg/L	1		624.1	10/6/22	10/6/22 21:18	MFF
1,1,2,2-Tetrachloroethane	<0.127	2.00	0.127	µg/L	1		624.1	10/6/22	10/6/22 21:18	MFF
Tetrachloroethylene	<0.187	2.00	0.187	µg/L	1		624.1	10/6/22	10/6/22 21:18	MFF
Toluene	<0.224	1.00	0.224	µg/L	1		624.1	10/6/22	10/6/22 21:18	MFF
1,1,1-Trichloroethane	<0.169	2.00	0.169	µg/L	1		624.1	10/6/22	10/6/22 21:18	MFF
1,1,2-Trichloroethane	<0.183	2.00	0.183	µg/L	1		624.1	10/6/22	10/6/22 21:18	MFF
Trichloroethylene	<0.189	2.00	0.189	µg/L	1		624.1	10/6/22	10/6/22 21:18	MFF
Trichlorofluoromethane (Freon 11)	<0.176	2.00	0.176	µg/L	1		624.1	10/6/22	10/6/22 21:18	MFF
Vinyl Chloride	<0.208	2.00	0.208	µg/L	1		624.1	10/6/22	10/6/22 21:18	MFF
m+p Xylene	<0.459	2.00	0.459	µg/L	1		624.1	10/6/22	10/6/22 21:18	MFF
o-Xylene	<0.230	1.00	0.230	µg/L	1		624.1	10/6/22	10/6/22 21:18	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	102	70-130		10/6/22 21:18
Toluene-d8	88.7	70-130		10/6/22 21:18
4-Bromofluorobenzene	93.6	70-130		10/6/22 21:18

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Northeast Alloys & Metals | Sample Description: | Work Order: 22I1906

Date Received: 9/29/2022

Field Sample #: MW-7R | Sampled: 9/28/2022 14:26

Sample ID: 22I1906-05

Sample Matrix: Ground Water

1,4-Dioxane by isotope dilution GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
1,4-Dioxane	0.32	0.20	0.033	µg/L	1		SW-846 8270E	10/5/22	10/10/22 23:46	SPF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,4-Dioxane-d8	27.0	15-110		10/10/22 23:46

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Project Location: Northeast Alloys & Metals | Sample Description: | Work Order: 22I1906

Date Received: 9/29/2022

Field Sample #: MW-7R | Sampled: 9/28/2022 14:26

Sample ID: 22I1906-05

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	1.2	1.9	0.71	ng/L	1	J	SOP-454 PFAS	10/17/22	10/19/22 22:54	DRL
Perfluorobutanesulfonic acid (PFBS)	0.41	1.9	0.27	ng/L	1	PF-20, J	SOP-454 PFAS	10/17/22	10/19/22 22:54	DRL
Perfluoropentanoic acid (PFPeA)	0.40	1.9	0.38	ng/L	1	PF-20, J	SOP-454 PFAS	10/17/22	10/19/22 22:54	DRL
Perfluorohexanoic acid (PFHxA)	ND	1.9	0.37	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 22:54	DRL
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	1.9	0.58	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 22:54	DRL
Perfluorodecanoic acid (PFDA)	ND	1.9	0.47	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 22:54	DRL
Perfluorododecanoic acid (PFDoA)	ND	1.9	0.42	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 22:54	DRL
Perfluoroheptanesulfonic acid (PFHpS)	ND	1.9	0.90	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 22:54	DRL
N-EtFOSAA (NEtFOSAA)	ND	1.9	0.60	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 22:54	DRL
N-MeFOSAA (NMeFOSAA)	ND	1.9	0.73	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 22:54	DRL
Perfluorotetradecanoic acid (PFTA)	ND	1.9	0.35	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 22:54	DRL
Perfluorotridecanoic acid (PFTrDA)	ND	1.9	0.27	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 22:54	DRL
Perfluorodecanesulfonic acid (PFDS)	ND	1.9	0.31	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 22:54	DRL
Perfluorooctanesulfonamide (FOSA)	ND	1.9	0.40	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 22:54	DRL
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9	0.32	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 22:54	DRL
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	1.9	0.35	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 22:54	DRL
Perfluoroundecanoic acid (PFUnA)	ND	1.9	0.35	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 22:54	DRL
Perfluoroheptanoic acid (PFHpA)	ND	1.9	0.33	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 22:54	DRL
Perfluorooctanoic acid (PFOA)	1.0	1.9	0.65	ng/L	1	J	SOP-454 PFAS	10/17/22	10/19/22 22:54	DRL
Perfluorooctanesulfonic acid (PFOS)	2.3	1.9	0.58	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 22:54	DRL
Perfluorononanoic acid (PFNA)	ND	1.9	0.33	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 22:54	DRL

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Project Location: Northeast Alloys & Metals | Sample Description: | Work Order: 22I1906

Date Received: 9/29/2022

Field Sample #: BR-3 | Sampled: 9/28/2022 14:34

Sample ID: 22I1906-06

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Benzene	<0.200	1.00	0.200	µg/L	1		624.1	10/6/22	10/6/22 21:42	MFF
Bromodichloromethane	<0.180	2.00	0.180	µg/L	1		624.1	10/6/22	10/6/22 21:42	MFF
Bromoform	<0.383	2.00	0.383	µg/L	1		624.1	10/6/22	10/6/22 21:42	MFF
Bromomethane	<1.54	2.00	1.54	µg/L	1		624.1	10/6/22	10/6/22 21:42	MFF
Carbon Tetrachloride	<0.165	2.00	0.165	µg/L	1		624.1	10/6/22	10/6/22 21:42	MFF
Chlorobenzene	<0.105	2.00	0.105	µg/L	1		624.1	10/6/22	10/6/22 21:42	MFF
Chlorodibromomethane	<0.222	2.00	0.222	µg/L	1		624.1	10/6/22	10/6/22 21:42	MFF
Chloroethane	<0.320	2.00	0.320	µg/L	1		624.1	10/6/22	10/6/22 21:42	MFF
Chloroform	<0.168	2.00	0.168	µg/L	1		624.1	10/6/22	10/6/22 21:42	MFF
Chloromethane	<0.522	2.00	0.522	µg/L	1		624.1	10/6/22	10/6/22 21:42	MFF
1,2-Dichlorobenzene	<0.122	2.00	0.122	µg/L	1		624.1	10/6/22	10/6/22 21:42	MFF
1,3-Dichlorobenzene	<0.118	2.00	0.118	µg/L	1		624.1	10/6/22	10/6/22 21:42	MFF
1,4-Dichlorobenzene	<0.130	2.00	0.130	µg/L	1		624.1	10/6/22	10/6/22 21:42	MFF
1,2-Dichloroethane	<0.308	2.00	0.308	µg/L	1		624.1	10/6/22	10/6/22 21:42	MFF
cis-1,2-Dichloroethylene	<0.147	1.00	0.147	µg/L	1		624.1	10/6/22	10/6/22 21:42	MFF
1,1-Dichloroethane	<0.142	2.00	0.142	µg/L	1		624.1	10/6/22	10/6/22 21:42	MFF
1,1-Dichloroethylene	<0.141	2.00	0.141	µg/L	1		624.1	10/6/22	10/6/22 21:42	MFF
trans-1,2-Dichloroethylene	<0.169	2.00	0.169	µg/L	1		624.1	10/6/22	10/6/22 21:42	MFF
1,2-Dichloropropane	<0.181	2.00	0.181	µg/L	1		624.1	10/6/22	10/6/22 21:42	MFF
cis-1,3-Dichloropropene	<0.158	2.00	0.158	µg/L	1		624.1	10/6/22	10/6/22 21:42	MFF
trans-1,3-Dichloropropene	<0.168	2.00	0.168	µg/L	1		624.1	10/6/22	10/6/22 21:42	MFF
Ethylbenzene	<0.215	2.00	0.215	µg/L	1		624.1	10/6/22	10/6/22 21:42	MFF
Methyl tert-Butyl Ether (MTBE)	<0.172	2.00	0.172	µg/L	1		624.1	10/6/22	10/6/22 21:42	MFF
Methylene Chloride	<0.235	5.00	0.235	µg/L	1		624.1	10/6/22	10/6/22 21:42	MFF
1,1,2,2-Tetrachloroethane	<0.127	2.00	0.127	µg/L	1		624.1	10/6/22	10/6/22 21:42	MFF
Tetrachloroethylene	<0.187	2.00	0.187	µg/L	1		624.1	10/6/22	10/6/22 21:42	MFF
Toluene	<0.224	1.00	0.224	µg/L	1		624.1	10/6/22	10/6/22 21:42	MFF
1,1,1-Trichloroethane	<0.169	2.00	0.169	µg/L	1		624.1	10/6/22	10/6/22 21:42	MFF
1,1,2-Trichloroethane	<0.183	2.00	0.183	µg/L	1		624.1	10/6/22	10/6/22 21:42	MFF
Trichloroethylene	<0.189	2.00	0.189	µg/L	1		624.1	10/6/22	10/6/22 21:42	MFF
Trichlorofluoromethane (Freon 11)	<0.176	2.00	0.176	µg/L	1		624.1	10/6/22	10/6/22 21:42	MFF
Vinyl Chloride	<0.208	2.00	0.208	µg/L	1		624.1	10/6/22	10/6/22 21:42	MFF
m+p Xylene	<0.459	2.00	0.459	µg/L	1		624.1	10/6/22	10/6/22 21:42	MFF
o-Xylene	<0.230	1.00	0.230	µg/L	1		624.1	10/6/22	10/6/22 21:42	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	102	70-130		10/6/22 21:42
Toluene-d8	99.0	70-130		10/6/22 21:42
4-Bromofluorobenzene	98.6	70-130		10/6/22 21:42

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Project Location: Northeast Alloys & Metals | Sample Description: | Work Order: 22I1906

Date Received: 9/29/2022

Field Sample #: BR-3 | Sampled: 9/28/2022 14:34

Sample ID: 22I1906-06

Sample Matrix: Ground Water

1,4-Dioxane by isotope dilution GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
1,4-Dioxane	ND	0.21	0.034	µg/L	1		SW-846 8270E	10/5/22	10/11/22 0:06	SPF

Surrogates	% Recovery	Recovery Limits	Flag/Qual		
1,4-Dioxane-d8	26.2	15-110		10/11/22 0:06	

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Project Location: Northeast Alloys & Metals | Sample Description: | Work Order: 22I1906

Date Received: 9/29/2022

Field Sample #: BR-3 | Sampled: 9/28/2022 14:34

Sample ID: 22I1906-06

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	ND	1.8	0.68	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:01	DRL
Perfluorobutanesulfonic acid (PFBS)	ND	1.8	0.26	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:01	DRL
Perfluoropentanoic acid (PFPeA)	ND	1.8	0.36	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:01	DRL
Perfluorohexanoic acid (PFHxA)	ND	1.8	0.35	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:01	DRL
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	1.8	0.56	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:01	DRL
Perfluorodecanoic acid (PFDA)	ND	1.8	0.45	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:01	DRL
Perfluorododecanoic acid (PFDoA)	ND	1.8	0.41	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:01	DRL
Perfluoroheptanesulfonic acid (PFHpS)	ND	1.8	0.86	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:01	DRL
N-EtFOSAA (NEtFOSAA)	ND	1.8	0.58	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:01	DRL
N-MeFOSAA (NMeFOSAA)	ND	1.8	0.70	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:01	DRL
Perfluorotetradecanoic acid (PFTA)	ND	1.8	0.34	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:01	DRL
Perfluorotridecanoic acid (PFTrDA)	ND	1.8	0.25	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:01	DRL
Perfluorodecanesulfonic acid (PFDS)	ND	1.8	0.30	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:01	DRL
Perfluorooctanesulfonamide (FOSA)	ND	1.8	0.39	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:01	DRL
Perfluorohexanesulfonic acid (PFHxS)	ND	1.8	0.31	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:01	DRL
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	1.8	0.34	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:01	DRL
Perfluoroundecanoic acid (PFUnA)	ND	1.8	0.34	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:01	DRL
Perfluoroheptanoic acid (PFHpA)	ND	1.8	0.32	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:01	DRL
Perfluorooctanoic acid (PFOA)	ND	1.8	0.63	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:01	DRL
Perfluorooctanesulfonic acid (PFOS)	ND	1.8	0.55	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:01	DRL
Perfluorononanoic acid (PFNA)	ND	1.8	0.32	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:01	DRL

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Project Location: Northeast Alloys & Metals | Sample Description: | Work Order: 22I1906

Date Received: 9/29/2022

Field Sample #: TB2 | Sampled: 9/28/2022 00:00

Sample ID: 22I1906-07

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Benzene	<0.200	1.00	0.200	µg/L	1		624.1	10/6/22	10/6/22 16:30	MFF
Bromodichloromethane	<0.180	2.00	0.180	µg/L	1		624.1	10/6/22	10/6/22 16:30	MFF
Bromoform	<0.383	2.00	0.383	µg/L	1		624.1	10/6/22	10/6/22 16:30	MFF
Bromomethane	<1.54	2.00	1.54	µg/L	1		624.1	10/6/22	10/6/22 16:30	MFF
Carbon Tetrachloride	<0.165	2.00	0.165	µg/L	1		624.1	10/6/22	10/6/22 16:30	MFF
Chlorobenzene	<0.105	2.00	0.105	µg/L	1		624.1	10/6/22	10/6/22 16:30	MFF
Chlorodibromomethane	<0.222	2.00	0.222	µg/L	1		624.1	10/6/22	10/6/22 16:30	MFF
Chloroethane	<0.320	2.00	0.320	µg/L	1		624.1	10/6/22	10/6/22 16:30	MFF
Chloroform	0.540	2.00	0.168	µg/L	1	J	624.1	10/6/22	10/6/22 16:30	MFF
Chloromethane	<0.522	2.00	0.522	µg/L	1		624.1	10/6/22	10/6/22 16:30	MFF
1,2-Dichlorobenzene	<0.122	2.00	0.122	µg/L	1		624.1	10/6/22	10/6/22 16:30	MFF
1,3-Dichlorobenzene	<0.118	2.00	0.118	µg/L	1		624.1	10/6/22	10/6/22 16:30	MFF
1,4-Dichlorobenzene	<0.130	2.00	0.130	µg/L	1		624.1	10/6/22	10/6/22 16:30	MFF
1,2-Dichloroethane	<0.308	2.00	0.308	µg/L	1		624.1	10/6/22	10/6/22 16:30	MFF
cis-1,2-Dichloroethylene	<0.147	1.00	0.147	µg/L	1		624.1	10/6/22	10/6/22 16:30	MFF
1,1-Dichloroethane	<0.142	2.00	0.142	µg/L	1		624.1	10/6/22	10/6/22 16:30	MFF
1,1-Dichloroethylene	<0.141	2.00	0.141	µg/L	1		624.1	10/6/22	10/6/22 16:30	MFF
trans-1,2-Dichloroethylene	<0.169	2.00	0.169	µg/L	1		624.1	10/6/22	10/6/22 16:30	MFF
1,2-Dichloropropane	<0.181	2.00	0.181	µg/L	1		624.1	10/6/22	10/6/22 16:30	MFF
cis-1,3-Dichloropropene	<0.158	2.00	0.158	µg/L	1		624.1	10/6/22	10/6/22 16:30	MFF
trans-1,3-Dichloropropene	<0.168	2.00	0.168	µg/L	1		624.1	10/6/22	10/6/22 16:30	MFF
Ethylbenzene	<0.215	2.00	0.215	µg/L	1		624.1	10/6/22	10/6/22 16:30	MFF
Methyl tert-Butyl Ether (MTBE)	<0.172	2.00	0.172	µg/L	1		624.1	10/6/22	10/6/22 16:30	MFF
Methylene Chloride	<0.235	5.00	0.235	µg/L	1		624.1	10/6/22	10/6/22 16:30	MFF
1,1,2,2-Tetrachloroethane	<0.127	2.00	0.127	µg/L	1		624.1	10/6/22	10/6/22 16:30	MFF
Tetrachloroethylene	<0.187	2.00	0.187	µg/L	1		624.1	10/6/22	10/6/22 16:30	MFF
Toluene	<0.224	1.00	0.224	µg/L	1		624.1	10/6/22	10/6/22 16:30	MFF
1,1,1-Trichloroethane	<0.169	2.00	0.169	µg/L	1		624.1	10/6/22	10/6/22 16:30	MFF
1,1,2-Trichloroethane	<0.183	2.00	0.183	µg/L	1		624.1	10/6/22	10/6/22 16:30	MFF
Trichloroethylene	<0.189	2.00	0.189	µg/L	1		624.1	10/6/22	10/6/22 16:30	MFF
Trichlorofluoromethane (Freon 11)	<0.176	2.00	0.176	µg/L	1		624.1	10/6/22	10/6/22 16:30	MFF
Vinyl Chloride	<0.208	2.00	0.208	µg/L	1		624.1	10/6/22	10/6/22 16:30	MFF
m+p Xylene	<0.459	2.00	0.459	µg/L	1		624.1	10/6/22	10/6/22 16:30	MFF
o-Xylene	<0.230	1.00	0.230	µg/L	1		624.1	10/6/22	10/6/22 16:30	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	90.2	70-130		10/6/22 16:30
Toluene-d8	98.1	70-130		10/6/22 16:30
4-Bromofluorobenzene	97.3	70-130		10/6/22 16:30

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Sample Extraction Data

Prep Method: SW-846 5030B **Analytical Method: 624.1**

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
22I1906-01 [MW-4]	B318981	5	5.00	10/06/22
22I1906-02 [MW-11]	B318981	5	5.00	10/06/22
22I1906-03 [MW-10]	B318981	5	5.00	10/06/22
22I1906-04 [MW-9]	B318981	5	5.00	10/06/22
22I1906-05 [MW-7R]	B318981	5	5.00	10/06/22
22I1906-06 [BR-3]	B318981	5	5.00	10/06/22
22I1906-07 [TB2]	B318981	5	5.00	10/06/22

Prep Method: SOP 454-PFAAS **Analytical Method: SOP-454 PFAS**

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
22I1906-01 [MW-4]	B318820	256	1.00	10/13/22
22I1906-02 [MW-11]	B318820	250	1.00	10/13/22

Prep Method: SOP 454-PFAAS **Analytical Method: SOP-454 PFAS**

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
22I1906-03 [MW-10]	B319210	244	1.00	10/17/22
22I1906-04 [MW-9]	B319210	246	1.00	10/17/22
22I1906-05 [MW-7R]	B319210	261	1.00	10/17/22
22I1906-06 [BR-3]	B319210	272	1.00	10/17/22

Prep Method: SW-846 3510C **Analytical Method: SW-846 8270E**

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
22I1906-01 [MW-4]	B318837	960	1.00	10/05/22
22I1906-02 [MW-11]	B318837	890	1.00	10/05/22
22I1906-03 [MW-10]	B318837	930	1.00	10/05/22
22I1906-04 [MW-9]	B318837	950	1.00	10/05/22
22I1906-05 [MW-7R]	B318837	1000	1.00	10/05/22
22I1906-06 [BR-3]	B318837	970	1.00	10/05/22

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B318981 - SW-846 5030B										
Blank (B318981-BLK1)				Prepared & Analyzed: 10/06/22						
Benzene	ND	1.00	µg/L							
Bromodichloromethane	ND	2.00	µg/L							
Bromoform	ND	2.00	µg/L							
Bromomethane	ND	2.00	µg/L							
Carbon Tetrachloride	ND	2.00	µg/L							
Chlorobenzene	ND	2.00	µg/L							
Chlorodibromomethane	ND	2.00	µg/L							
Chloroethane	ND	2.00	µg/L							
Chloroform	ND	2.00	µg/L							
Chloromethane	ND	2.00	µg/L							
1,2-Dichlorobenzene	ND	2.00	µg/L							
1,3-Dichlorobenzene	ND	2.00	µg/L							
1,4-Dichlorobenzene	ND	2.00	µg/L							
1,2-Dichloroethane	ND	2.00	µg/L							
cis-1,2-Dichloroethylene	ND	1.00	µg/L							
1,1-Dichloroethane	ND	2.00	µg/L							
1,1-Dichloroethylene	ND	2.00	µg/L							
trans-1,2-Dichloroethylene	ND	2.00	µg/L							
1,2-Dichloropropane	ND	2.00	µg/L							
cis-1,3-Dichloropropene	ND	2.00	µg/L							
trans-1,3-Dichloropropene	ND	2.00	µg/L							
Ethylbenzene	ND	2.00	µg/L							
Methyl tert-Butyl Ether (MTBE)	ND	2.00	µg/L							
Methylene Chloride	ND	5.00	µg/L							
1,1,2,2-Tetrachloroethane	ND	2.00	µg/L							
Tetrachloroethylene	ND	2.00	µg/L							
Toluene	ND	1.00	µg/L							
1,1,1-Trichloroethane	ND	2.00	µg/L							
1,1,2-Trichloroethane	ND	2.00	µg/L							
Trichloroethylene	ND	2.00	µg/L							
Trichlorofluoromethane (Freon 11)	ND	2.00	µg/L							
Vinyl Chloride	ND	2.00	µg/L							
m+p Xylene	ND	2.00	µg/L							
o-Xylene	ND	1.00	µg/L							
Surrogate: 1,2-Dichloroethane-d4	*25.7*		µg/L	25.0		103	70-130			
Surrogate: Toluene-d8	*24.8*		µg/L	25.0		99.2	70-130			
Surrogate: 4-Bromofluorobenzene	*23.8*		µg/L	25.0		95.1	70-130			
LCS (B318981-BS1)				Prepared & Analyzed: 10/06/22						
Benzene	23	1.00	µg/L	20.0		115	65-135			
Bromodichloromethane	22	2.00	µg/L	20.0		112	65-135			
Bromoform	18	2.00	µg/L	20.0		87.8	70-130			
Bromomethane	11	2.00	µg/L	20.0		53.6	15-185			
Carbon Tetrachloride	22	2.00	µg/L	20.0		110	70-130			
Chlorobenzene	22	2.00	µg/L	20.0		110	65-135			
Chlorodibromomethane	20	2.00	µg/L	20.0		101	70-135			
Chloroethane	15	2.00	µg/L	20.0		74.3	40-160			
Chloroform	22	2.00	µg/L	20.0		112	70-135			
Chloromethane	13	2.00	µg/L	20.0		63.2	20-205			
1,2-Dichlorobenzene	23	2.00	µg/L	20.0		116	65-135			
1,3-Dichlorobenzene	23	2.00	µg/L	20.0		113	70-130			
1,4-Dichlorobenzene	22	2.00	µg/L	20.0		108	65-135			

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B318981 - SW-846 5030B										
LCS (B318981-BS1)				Prepared & Analyzed: 10/06/22						
1,2-Dichloroethane	20	2.00	µg/L	20.0		101	70-130			
cis-1,2-Dichloroethylene	23	1.00	µg/L	20.0		116	70-130			
1,1-Dichloroethane	23	2.00	µg/L	20.0		114	70-130			
1,1-Dichloroethylene	18	2.00	µg/L	20.0		89.0	50-150			
trans-1,2-Dichloroethylene	18	2.00	µg/L	20.0		88.6	70-130			
1,2-Dichloropropane	24	2.00	µg/L	20.0		119	35-165			
cis-1,3-Dichloropropene	22	2.00	µg/L	20.0		112	25-175			
trans-1,3-Dichloropropene	23	2.00	µg/L	20.0		116	50-150			
Ethylbenzene	23	2.00	µg/L	20.0		115	60-140			
Methyl tert-Butyl Ether (MTBE)	17	2.00	µg/L	20.0		87.2	70-130			
Methylene Chloride	18	5.00	µg/L	20.0		88.5	60-140			
1,1,2,2-Tetrachloroethane	19	2.00	µg/L	20.0		94.0	60-140			
Tetrachloroethylene	23	2.00	µg/L	20.0		113	70-130			
Toluene	22	1.00	µg/L	20.0		112	70-130			
1,1,1-Trichloroethane	22	2.00	µg/L	20.0		110	70-130			
1,1,2-Trichloroethane	22	2.00	µg/L	20.0		109	70-130			
Trichloroethylene	22	2.00	µg/L	20.0		112	65-135			
Trichlorofluoromethane (Freon 11)	18	2.00	µg/L	20.0		92.4	50-150			
Vinyl Chloride	17	2.00	µg/L	20.0		87.4	5-195			
m+p Xylene	44	2.00	µg/L	40.0		109	70-130			
o-Xylene	22	1.00	µg/L	20.0		111	70-130			
Surrogate: 1,2-Dichloroethane-d4	*24.6*		µg/L	25.0		98.6	70-130			
Surrogate: Toluene-d8	*25.8*		µg/L	25.0		103	70-130			
Surrogate: 4-Bromofluorobenzene	*23.9*		µg/L	25.0		95.7	70-130			

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QUALITY CONTROL

1,4-Dioxane by isotope dilution GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B318837 - SW-846 3510C										
Blank (B318837-BLK1)				Prepared: 10/05/22 Analyzed: 10/10/22						
1,4-Dioxane	ND	0.20	µg/L							
Surrogate: 1,4-Dioxane-d8	*3.22*		µg/L	10.0		32.2	15-110			
LCS (B318837-BS1)				Prepared: 10/05/22 Analyzed: 10/10/22						
1,4-Dioxane	12.6	0.20	µg/L	10.0		126	40-140			
Surrogate: 1,4-Dioxane-d8	*2.73*		µg/L	10.0		27.3	15-110			
LCS Dup (B318837-BSD1)				Prepared: 10/05/22 Analyzed: 10/10/22						
1,4-Dioxane	12.8	0.20	µg/L	10.0		128	40-140	1.59	30	
Surrogate: 1,4-Dioxane-d8	*3.10*		µg/L	10.0		31.0	15-110			

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QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B318820 - SOP 454-PFAAS										
Blank (B318820-BLK1)				Prepared: 10/13/22 Analyzed: 10/19/22						
Perfluorobutanoic acid (PFBA)	ND	1.8	ng/L							
Perfluorobutanesulfonic acid (PFBS)	ND	1.8	ng/L							
Perfluoropentanoic acid (PFPeA)	ND	1.8	ng/L							
Perfluorohexanoic acid (PFHxA)	ND	1.8	ng/L							
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	1.8	ng/L							
Perfluorodecanoic acid (PFDA)	ND	1.8	ng/L							
Perfluorododecanoic acid (PFDoA)	ND	1.8	ng/L							
Perfluoroheptanesulfonic acid (PFHpS)	ND	1.8	ng/L							
N-EtFOSAA (NEtFOSAA)	ND	1.8	ng/L							
N-MeFOSAA (NMeFOSAA)	ND	1.8	ng/L							
Perfluorotetradecanoic acid (PFTA)	ND	1.8	ng/L							
Perfluorotridecanoic acid (PFTrDA)	ND	1.8	ng/L							
Perfluorodecanesulfonic acid (PFDS)	ND	1.8	ng/L							
Perfluorooctanesulfonamide (FOSA)	ND	1.8	ng/L							
Perfluorohexanesulfonic acid (PFHxS)	ND	1.8	ng/L							
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	1.8	ng/L							
Perfluoroundecanoic acid (PFUnA)	ND	1.8	ng/L							
Perfluoroheptanoic acid (PFHpA)	ND	1.8	ng/L							
Perfluorooctanoic acid (PFOA)	ND	1.8	ng/L							
Perfluorooctanesulfonic acid (PFOS)	ND	1.8	ng/L							
Perfluorononanoic acid (PFNA)	ND	1.8	ng/L							
LCS (B318820-BS1)				Prepared: 10/13/22 Analyzed: 10/19/22						
Perfluorobutanoic acid (PFBA)	7.92	1.8	ng/L	8.76		90.4	73-129			
Perfluorobutanesulfonic acid (PFBS)	6.86	1.8	ng/L	7.76		88.4	72-130			
Perfluoropentanoic acid (PFPeA)	7.73	1.8	ng/L	8.76		88.2	72-129			
Perfluorohexanoic acid (PFHxA)	7.76	1.8	ng/L	8.76		88.6	72-129			
8:2 Fluorotelomersulfonic acid (8:2FTS A)	6.83	1.8	ng/L	8.41		81.2	67-138			
Perfluorodecanoic acid (PFDA)	7.97	1.8	ng/L	8.76		91.0	71-129			
Perfluorododecanoic acid (PFDoA)	7.37	1.8	ng/L	8.76		84.1	72-134			
Perfluoroheptanesulfonic acid (PFHpS)	6.85	1.8	ng/L	8.37		81.8	69-134			
N-EtFOSAA (NEtFOSAA)	8.41	1.8	ng/L	8.76		96.0	61-135			
N-MeFOSAA (NMeFOSAA)	8.96	1.8	ng/L	8.76		102	65-136			
Perfluorotetradecanoic acid (PFTA)	8.17	1.8	ng/L	8.76		93.2	71-132			
Perfluorotridecanoic acid (PFTrDA)	8.46	1.8	ng/L	8.76		96.5	65-144			
Perfluorodecanesulfonic acid (PFDS)	6.85	1.8	ng/L	8.46		81.0	53-142			
Perfluorooctanesulfonamide (FOSA)	8.08	1.8	ng/L	8.76		92.3	67-137			
Perfluorohexanesulfonic acid (PFHxS)	7.29	1.8	ng/L	8.02		90.9	68-131			
6:2 Fluorotelomersulfonic acid (6:2FTS A)	7.45	1.8	ng/L	8.33		89.4	64-140			
Perfluoroundecanoic acid (PFUnA)	8.32	1.8	ng/L	8.76		94.9	69-133			
Perfluoroheptanoic acid (PFHpA)	7.52	1.8	ng/L	8.76		85.8	72-130			
Perfluorooctanoic acid (PFOA)	8.34	1.8	ng/L	8.76		95.1	71-133			
Perfluorooctanesulfonic acid (PFOS)	6.51	1.8	ng/L	8.11		80.3	65-140			
Perfluorononanoic acid (PFNA)	8.42	1.8	ng/L	8.76		96.0	69-130			

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QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B319210 - SOP 454-PFAAS										
Blank (B319210-BLK1)				Prepared: 10/17/22 Analyzed: 10/19/22						
Perfluorobutanoic acid (PFBA)	ND	1.8	ng/L							
Perfluorobutanesulfonic acid (PFBS)	ND	1.8	ng/L							
Perfluoropentanoic acid (PFPeA)	ND	1.8	ng/L							
Perfluorohexanoic acid (PFHxA)	ND	1.8	ng/L							
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	1.8	ng/L							
Perfluorodecanoic acid (PFDA)	ND	1.8	ng/L							
Perfluorododecanoic acid (PFDoA)	ND	1.8	ng/L							
Perfluoroheptanesulfonic acid (PFHpS)	ND	1.8	ng/L							
N-EtFOSAA (NEtFOSAA)	ND	1.8	ng/L							
N-MeFOSAA (NMeFOSAA)	ND	1.8	ng/L							
Perfluorotetradecanoic acid (PFTA)	ND	1.8	ng/L							
Perfluorotridecanoic acid (PFTrDA)	ND	1.8	ng/L							
Perfluorodecanesulfonic acid (PFDS)	ND	1.8	ng/L							
Perfluorooctanesulfonamide (FOSA)	ND	1.8	ng/L							
Perfluorohexanesulfonic acid (PFHxS)	ND	1.8	ng/L							
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	1.8	ng/L							
Perfluoroundecanoic acid (PFUnA)	ND	1.8	ng/L							
Perfluoroheptanoic acid (PFHpA)	ND	1.8	ng/L							
Perfluorooctanoic acid (PFOA)	ND	1.8	ng/L							
Perfluorooctanesulfonic acid (PFOS)	ND	1.8	ng/L							
Perfluorononanoic acid (PFNA)	ND	1.8	ng/L							
LCS (B319210-BS1)				Prepared: 10/17/22 Analyzed: 10/19/22						
Perfluorobutanoic acid (PFBA)	9.22	1.8	ng/L	9.01		102	73-129			
Perfluorobutanesulfonic acid (PFBS)	7.83	1.8	ng/L	7.97		98.2	72-130			
Perfluoropentanoic acid (PFPeA)	8.97	1.8	ng/L	9.01		99.6	72-129			
Perfluorohexanoic acid (PFHxA)	9.02	1.8	ng/L	9.01		100	72-129			
8:2 Fluorotelomersulfonic acid (8:2FTS A)	8.86	1.8	ng/L	8.65		102	67-138			
Perfluorodecanoic acid (PFDA)	9.34	1.8	ng/L	9.01		104	71-129			
Perfluorododecanoic acid (PFDoA)	8.32	1.8	ng/L	9.01		92.3	72-134			
Perfluoroheptanesulfonic acid (PFHpS)	8.67	1.8	ng/L	8.60		101	69-134			
N-EtFOSAA (NEtFOSAA)	10.3	1.8	ng/L	9.01		115	61-135			
N-MeFOSAA (NMeFOSAA)	11.5	1.8	ng/L	9.01		128	65-136			
Perfluorotetradecanoic acid (PFTA)	8.87	1.8	ng/L	9.01		98.5	71-132			
Perfluorotridecanoic acid (PFTrDA)	9.69	1.8	ng/L	9.01		108	65-144			
Perfluorodecanesulfonic acid (PFDS)	7.44	1.8	ng/L	8.69		85.6	53-142			
Perfluorooctanesulfonamide (FOSA)	9.63	1.8	ng/L	9.01		107	67-137			
Perfluorohexanesulfonic acid (PFHxS)	7.85	1.8	ng/L	8.24		95.3	68-131			
6:2 Fluorotelomersulfonic acid (6:2FTS A)	8.60	1.8	ng/L	8.56		100	64-140			
Perfluoroundecanoic acid (PFUnA)	9.44	1.8	ng/L	9.01		105	69-133			
Perfluoroheptanoic acid (PFHpA)	9.17	1.8	ng/L	9.01		102	72-130			
Perfluorooctanoic acid (PFOA)	9.41	1.8	ng/L	9.01		104	71-133			
Perfluorooctanesulfonic acid (PFOS)	7.63	1.8	ng/L	8.33		91.6	65-140			
Perfluorononanoic acid (PFNA)	9.84	1.8	ng/L	9.01		109	69-130			

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FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
ND	Not Detected
RL	Reporting Limit is at the level of quantitation (LOQ)
DL	Detection Limit is the lower limit of detection determined by the MDL study
MCL	Maximum Contaminant Level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.
J	Detected but below the Reporting Limit (lowest calibration standard); therefore, result is an estimated concentration (CLP J-Flag).
PF-17	Extracted Internal Standard recovery is outside of control limits. Data is not significantly affected since associated analyte is not detected and bias is on the high side.
PF-20	Quantifying ion signal to noise ratio is <10. Detection is suspect.
PF-21	Qualifying ion signal to noise ratio is <3. Detection is suspect.
PF-22	Qualifier ion ratio >150% of associated calibration. Detection is suspect.
PF-23	Qualifier ion ratio <50% of associated calibration. Detection is suspect.
PR-06	pH of sample (pH 3) is outside of method specified preservation criteria.
S-29	Extracted Internal Standard is outside of control limits.

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INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
MW-4 (22I1906-01)			Lab File ID: 22I1906-01.d			Analyzed: 10/19/22 13:33			
M8FOSA	240366.6	3.996567	316,483.00	3.996567	76	50 - 150	0.0000	+/-0.50	
M2PFTA	667015.2	4.297266	1,136,787.00	4.30535	59	50 - 150	-0.0081	+/-0.50	
M2-8:2FTS	110667.8	3.786867	93,577.00	3.786867	118	50 - 150	0.0000	+/-0.50	
MPFBA	332541.7	1.058467	513,802.00	1.058467	65	50 - 150	0.0000	+/-0.50	
M6PFDA	562257.3	3.787383	726,878.00	3.787383	77	50 - 150	0.0000	+/-0.50	
M3PFBS	102050.2	1.8701	137,884.00	1.8701	74	50 - 150	0.0000	+/-0.50	
M7PFUnA	553611	3.93005	730,410.00	3.93005	76	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	120722.8	3.429317	95,556.00	3.429317	126	50 - 150	0.0000	+/-0.50	
M5PFPeA	334117	1.690017	446,469.00	1.690017	75	50 - 150	0.0000	+/-0.50	
M5PFHxA	681677.9	2.539483	877,736.00	2.539483	78	50 - 150	0.0000	+/-0.50	
M3PFHxS	98474.2	3.201883	129,976.00	3.201883	76	50 - 150	0.0000	+/-0.50	
M4PFHpA	812759.6	3.1627	1,002,853.00	3.1627	81	50 - 150	0.0000	+/-0.50	
M8PFOA	793011.3	3.445833	998,644.00	3.445833	79	50 - 150	0.0000	+/-0.50	
M8PFOS	89182.8	3.636183	119,339.00	3.636183	75	50 - 150	0.0000	+/-0.50	
M9PFNA	602659.7	3.637217	778,322.00	3.637217	77	50 - 150	0.0000	+/-0.50	
MPFDoA	463657.5	4.064667	687,804.00	4.064667	67	50 - 150	0.0000	+/-0.50	
D5-NEtFOSAA	158732.5	3.937517	205,524.00	3.937517	77	50 - 150	0.0000	+/-0.50	
D3-NMeFOSAA	191708.3	3.857667	234,971.00	3.865617	82	50 - 150	-0.0079	+/-0.50	
1,4-Dichlorobenzene-d4	599535	10.465	654,873.00	10.465	92	50 - 200	0.0000	+/-0.50	
Pentafluorobenzene	157620	4.196	179,464.00	4.196	88	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	240630	4.919	280,237.00	4.918	86	50 - 200	0.0010	+/-0.50	
Chlorobenzene-d5	114768	7.755	140,327.00	7.749	82	50 - 200	0.0060	+/-0.50	
1,4-Dichlorobenzene-d4	109272	10.05	128,896.00	10.047	85	50 - 200	0.0030	+/-0.50	

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INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
MW-11 (22I1906-02)			Lab File ID: 22I1906-02.d			Analyzed: 10/19/22 13:48			
M8FOSA	192153.4	3.996567	316,483.00	3.996567	61	50 - 150	0.0000	+/-0.50	
M2PFTA	576540.8	4.297266	1,136,787.00	4.30535	51	50 - 150	-0.0081	+/-0.50	
M2-8:2FTS	87744.05	3.786867	93,577.00	3.786867	94	50 - 150	0.0000	+/-0.50	
MPFBA	262884	1.058467	513,802.00	1.058467	51	50 - 150	0.0000	+/-0.50	
M6PFDA	481963	3.787383	726,878.00	3.787383	66	50 - 150	0.0000	+/-0.50	
M3PFBS	90299.3	1.861817	137,884.00	1.8701	65	50 - 150	-0.0083	+/-0.50	
M7PFUnA	452531.6	3.93005	730,410.00	3.93005	62	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	105418.5	3.429317	95,556.00	3.429317	110	50 - 150	0.0000	+/-0.50	
M5PFPeA	284894.8	1.690017	446,469.00	1.690017	64	50 - 150	0.0000	+/-0.50	
M5PFHxA	597465.1	2.539483	877,736.00	2.539483	68	50 - 150	0.0000	+/-0.50	
M3PFHxS	86185.26	3.201883	129,976.00	3.201883	66	50 - 150	0.0000	+/-0.50	
M4PFHpA	701222.5	3.1627	1,002,853.00	3.1627	70	50 - 150	0.0000	+/-0.50	
M8PFOA	695407.8	3.445833	998,644.00	3.445833	70	50 - 150	0.0000	+/-0.50	
M8PFOS	78593.73	3.636183	119,339.00	3.636183	66	50 - 150	0.0000	+/-0.50	
M9PFNA	543636.4	3.637217	778,322.00	3.637217	70	50 - 150	0.0000	+/-0.50	
MPFDoA	372547.7	4.064667	687,804.00	4.064667	54	50 - 150	0.0000	+/-0.50	
D5-NEtFOSAA	135752.6	3.937517	205,524.00	3.937517	66	50 - 150	0.0000	+/-0.50	
D3-NMeFOSAA	164784.9	3.857667	234,971.00	3.857667	70	50 - 150	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	634678	10.465	654,873.00	10.465	97	50 - 200	0.0000	+/-0.50	
Pentafluorobenzene	174422	4.196	179,464.00	4.196	97	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	272806	4.916	280,237.00	4.918	97	50 - 200	-0.0020	+/-0.50	
Chlorobenzene-d5	132801	7.749	140,327.00	7.749	95	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	105166	10.05	128,896.00	10.047	82	50 - 200	0.0030	+/-0.50	

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INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
MW-10 (22I1906-03)			Lab File ID: 22I1906-03.d			Analyzed: 10/19/22 22:39			
M8FOSA	203586.4	3.996567	316,483.00	3.996567	64	50 - 150	0.0000	+/-0.50	
M2PFTA	560081.4	4.297266	1,136,787.00	4.297266	49	50 - 150	0.0000	+/-0.50	*
M2-8:2FTS	124951.2	3.7789	93,577.00	3.7789	134	50 - 150	0.0000	+/-0.50	
MPFBA	201956.8	1.050167	513,802.00	1.058467	39	50 - 150	-0.0083	+/-0.50	*
M6PFDA	460112.7	3.779417	726,878.00	3.779417	63	50 - 150	0.0000	+/-0.50	
M3PFBS	93476.01	1.853533	137,884.00	1.861817	68	50 - 150	-0.0083	+/-0.50	
M7PFUnA	487397.9	3.92205	730,410.00	3.92205	67	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	129705.8	3.4205	95,556.00	3.429317	136	50 - 150	-0.0088	+/-0.50	
M5PFPeA	274022	1.681733	446,469.00	1.681733	61	50 - 150	0.0000	+/-0.50	
M5PFHxA	588782.1	2.523067	877,736.00	2.531283	67	50 - 150	-0.0082	+/-0.50	
M3PFHxS	84869.46	3.193817	129,976.00	3.193817	65	50 - 150	0.0000	+/-0.50	
M4PFHpA	691243.9	3.154633	1,002,853.00	3.154633	69	50 - 150	0.0000	+/-0.50	
M8PFOA	702178.6	3.437833	998,644.00	3.437833	70	50 - 150	0.0000	+/-0.50	
M8PFOS	74842.35	3.6282	119,339.00	3.6282	63	50 - 150	0.0000	+/-0.50	
M9PFNA	524002.4	3.629233	778,322.00	3.629233	67	50 - 150	0.0000	+/-0.50	
MPFDoA	414106.3	4.056667	687,804.00	4.056667	60	50 - 150	0.0000	+/-0.50	
D5-NEtFOSAA	152937.1	3.929533	205,524.00	3.929517	74	50 - 150	0.0000	+/-0.50	
D3-NMeFOSAA	168011.3	3.8497	234,971.00	3.857667	72	50 - 150	-0.0080	+/-0.50	
Pentafluorobenzene	170279	4.199	179,464.00	4.196	95	50 - 200	0.0030	+/-0.50	
1,4-Dichlorobenzene-d4	648824	10.465	654,873.00	10.465	99	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	266852	4.919	280,237.00	4.918	95	50 - 200	0.0010	+/-0.50	
Chlorobenzene-d5	113110	7.752	140,327.00	7.749	81	50 - 200	0.0030	+/-0.50	
1,4-Dichlorobenzene-d4	108009	10.047	128,896.00	10.047	84	50 - 200	0.0000	+/-0.50	

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INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
MW-9 (22I1906-04)			Lab File ID: 22I1906-04.d			Analyzed: 10/19/22 22:46			
M8FOSA	213684.1	3.996567	316,483.00	3.996567	68	50 - 150	0.0000	+/-0.50	
M2PFTA	668033.2	4.297266	1,136,787.00	4.297266	59	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	148330.2	3.7789	93,577.00	3.7789	159	50 - 150	0.0000	+/-0.50	*
MPFBA	234341.8	1.058467	513,802.00	1.058467	46	50 - 150	0.0000	+/-0.50	*
M6PFDA	464612.4	3.779417	726,878.00	3.779417	64	50 - 150	0.0000	+/-0.50	
M3PFBS	94235.02	1.853533	137,884.00	1.861817	68	50 - 150	-0.0083	+/-0.50	
M7PFUnA	497957.7	3.92205	730,410.00	3.92205	68	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	150787.1	3.429317	95,556.00	3.429317	158	50 - 150	0.0000	+/-0.50	*
M5PFPeA	276111.4	1.68175	446,469.00	1.681733	62	50 - 150	0.0000	+/-0.50	
M5PFHxA	613753.2	2.523067	877,736.00	2.531283	70	50 - 150	-0.0082	+/-0.50	
M3PFHxS	85852.11	3.193817	129,976.00	3.193817	66	50 - 150	0.0000	+/-0.50	
M4PFHpA	713833.3	3.154633	1,002,853.00	3.154633	71	50 - 150	0.0000	+/-0.50	
M8PFOA	700257.8	3.437833	998,644.00	3.437833	70	50 - 150	0.0000	+/-0.50	
M8PFOS	78591.02	3.6282	119,339.00	3.6282	66	50 - 150	0.0000	+/-0.50	
M9PFNA	522967.9	3.629233	778,322.00	3.629233	67	50 - 150	0.0000	+/-0.50	
MPFDoA	453302.5	4.056684	687,804.00	4.056667	66	50 - 150	0.0000	+/-0.50	
D5-NEtFOSAA	159145.1	3.929533	205,524.00	3.929517	77	50 - 150	0.0000	+/-0.50	
D3-NMeFOSAA	183727.6	3.857667	234,971.00	3.857667	78	50 - 150	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	611582	10.465	654,873.00	10.465	93	50 - 200	0.0000	+/-0.50	
Pentafluorobenzene	169709	4.196	179,464.00	4.196	95	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	233515	4.919	280,237.00	4.918	83	50 - 200	0.0010	+/-0.50	
Chlorobenzene-d5	112435	7.752	140,327.00	7.749	80	50 - 200	0.0030	+/-0.50	
1,4-Dichlorobenzene-d4	104192	10.047	128,896.00	10.047	81	50 - 200	0.0000	+/-0.50	

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INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
MW-7R (22I1906-05)			Lab File ID: 22I1906-05.d			Analyzed: 10/19/22 22:54			
M8FOSA	191409	3.996567	316,483.00	3.996567	60	50 - 150	0.0000	+/-0.50	
M2PFTA	569177.1	4.297266	1,136,787.00	4.297266	50	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	74356.09	3.7789	93,577.00	3.7789	79	50 - 150	0.0000	+/-0.50	
MPFBA	317884.7	1.058467	513,802.00	1.058467	62	50 - 150	0.0000	+/-0.50	
M6PFDA	461943.8	3.779417	726,878.00	3.779417	64	50 - 150	0.0000	+/-0.50	
M3PFBS	101637.8	1.861817	137,884.00	1.861817	74	50 - 150	0.0000	+/-0.50	
M7PFUnA	458033.7	3.92205	730,410.00	3.92205	63	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	70466.78	3.429317	95,556.00	3.429317	74	50 - 150	0.0000	+/-0.50	
M5PFPeA	317509.1	1.690017	446,469.00	1.681733	71	50 - 150	0.0083	+/-0.50	
M5PFHxA	639273.9	2.531283	877,736.00	2.531283	73	50 - 150	0.0000	+/-0.50	
M3PFHxS	93231.01	3.193817	129,976.00	3.193817	72	50 - 150	0.0000	+/-0.50	
M4PFHpA	725381.7	3.154633	1,002,853.00	3.154633	72	50 - 150	0.0000	+/-0.50	
M8PFOA	726301.5	3.437833	998,644.00	3.437833	73	50 - 150	0.0000	+/-0.50	
M8PFOS	78397.2	3.6282	119,339.00	3.6282	66	50 - 150	0.0000	+/-0.50	
M9PFNA	539268.8	3.629233	778,322.00	3.629233	69	50 - 150	0.0000	+/-0.50	
MPFDoA	383019.4	4.056667	687,804.00	4.056667	56	50 - 150	0.0000	+/-0.50	
D5-NEtFOSAA	133501.5	3.929517	205,524.00	3.929517	65	50 - 150	0.0000	+/-0.50	
D3-NMeFOSAA	156473	3.857667	234,971.00	3.857667	67	50 - 150	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	651636	10.465	654,873.00	10.465	100	50 - 200	0.0000	+/-0.50	
Pentafluorobenzene	176344	4.196	179,464.00	4.196	98	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	271541	4.918	280,237.00	4.918	97	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	115094	7.752	140,327.00	7.749	82	50 - 200	0.0030	+/-0.50	
1,4-Dichlorobenzene-d4	107538	10.047	128,896.00	10.047	83	50 - 200	0.0000	+/-0.50	

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INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
BR-3 (22I1906-06)			Lab File ID: 22I1906-06.d			Analyzed: 10/19/22 23:01			
M8FOSA	207031	3.996567	316,483.00	3.996567	65	50 - 150	0.0000	+/-0.50	
M2PFTA	694469.6	4.297266	1,136,787.00	4.297266	61	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	64323.14	3.778883	93,577.00	3.7789	69	50 - 150	0.0000	+/-0.50	
MPFBA	393401.9	1.058467	513,802.00	1.058467	77	50 - 150	0.0000	+/-0.50	
M6PFDA	481361.5	3.779417	726,878.00	3.779417	66	50 - 150	0.0000	+/-0.50	
M3PFBS	102973	1.861817	137,884.00	1.861817	75	50 - 150	0.0000	+/-0.50	
M7PFUnA	493845.7	3.92205	730,410.00	3.92205	68	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	57886.54	3.4293	95,556.00	3.429317	61	50 - 150	0.0000	+/-0.50	
M5PFPeA	327402.2	1.690017	446,469.00	1.681733	73	50 - 150	0.0083	+/-0.50	
M5PFHxA	635321.8	2.531267	877,736.00	2.531283	72	50 - 150	0.0000	+/-0.50	
M3PFHxS	91120.47	3.193817	129,976.00	3.193817	70	50 - 150	0.0000	+/-0.50	
M4PFHpA	742009.5	3.154633	1,002,853.00	3.154633	74	50 - 150	0.0000	+/-0.50	
M8PFOA	711765.3	3.437833	998,644.00	3.437833	71	50 - 150	0.0000	+/-0.50	
M8PFOS	82736.45	3.6282	119,339.00	3.6282	69	50 - 150	0.0000	+/-0.50	
M9PFNA	529715.2	3.629233	778,322.00	3.629233	68	50 - 150	0.0000	+/-0.50	
MPFDoA	431052.7	4.056667	687,804.00	4.056667	63	50 - 150	0.0000	+/-0.50	
D5-NEtFOSAA	136362.9	3.929517	205,524.00	3.929517	66	50 - 150	0.0000	+/-0.50	
D3-NMeFOSAA	151621.3	3.85765	234,971.00	3.857667	65	50 - 150	0.0000	+/-0.50	
Pentafluorobenzene	172474	4.196	179,464.00	4.196	96	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	634751	10.465	654,873.00	10.465	97	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	268430	4.919	280,237.00	4.918	96	50 - 200	0.0010	+/-0.50	
Chlorobenzene-d5	111804	7.755	140,327.00	7.749	80	50 - 200	0.0060	+/-0.50	
1,4-Dichlorobenzene-d4	105460	10.047	128,896.00	10.047	82	50 - 200	0.0000	+/-0.50	
TB2 (22I1906-07)			Lab File ID: C22V27923.D			Analyzed: 10/06/22 16:30			
Pentafluorobenzene	161674	4.199	179,464.00	4.196	90	50 - 200	0.0030	+/-0.50	
1,4-Difluorobenzene	242807	4.918	280,237.00	4.918	87	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	116022	7.755	140,327.00	7.749	83	50 - 200	0.0060	+/-0.50	
1,4-Dichlorobenzene-d4	107681	10.05	128,896.00	10.047	84	50 - 200	0.0030	+/-0.50	

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INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Blank (B318820-BLK1)			Lab File ID: B318820-BLK1.d			Analyzed: 10/19/22 12:07			
M8FOSA	216268.2	3.996567	316,483.00	3.996567	68	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	198448.2	2.45575	210,645.00	2.45575	94	50 - 150	0.0000	+/-0.50	
M2PFTA	872406.3	4.30535	1,136,787.00	4.30535	77	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	84328.24	3.78685	93,577.00	3.786867	90	50 - 150	0.0000	+/-0.50	
MPFBA	458415	1.058467	513,802.00	1.058467	89	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	112404.3	2.7902	105,449.00	2.7902	107	50 - 150	0.0000	+/-0.50	
M6PFDA	631751.6	3.787383	726,878.00	3.787383	87	50 - 150	0.0000	+/-0.50	
M3PFBS	121529	1.8701	137,884.00	1.8701	88	50 - 150	0.0000	+/-0.50	
M7PFUnA	593744.4	3.93005	730,410.00	3.93005	81	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	80022.23	3.4293	95,556.00	3.429317	84	50 - 150	0.0000	+/-0.50	
M5PFPeA	388145.8	1.690017	446,469.00	1.690017	87	50 - 150	0.0000	+/-0.50	
M5PFHxA	759436.9	2.539483	877,736.00	2.539483	87	50 - 150	0.0000	+/-0.50	
M3PFHxS	116585.9	3.201883	129,976.00	3.201883	90	50 - 150	0.0000	+/-0.50	
M4PFHpA	884978	3.1627	1,002,853.00	3.1627	88	50 - 150	0.0000	+/-0.50	
M8PFOA	908215.1	3.445833	998,644.00	3.445833	91	50 - 150	0.0000	+/-0.50	
M8PFOS	104816.7	3.636183	119,339.00	3.636183	88	50 - 150	0.0000	+/-0.50	
M9PFNA	670572.6	3.637217	778,322.00	3.637217	86	50 - 150	0.0000	+/-0.50	
MPFDoA	549758.9	4.064667	687,804.00	4.064667	80	50 - 150	0.0000	+/-0.50	
D5-NEtFOSAA	150675.3	3.937517	205,524.00	3.937517	73	50 - 150	0.0000	+/-0.50	
D3-NMeFOSAA	182709.6	3.85765	234,971.00	3.865617	78	50 - 150	-0.0080	+/-0.50	

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INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LCS (B318820-BS1)			Lab File ID: B318820-BS1.d			Analyzed: 10/19/22 12:00			
M8FOSA	261140.8	3.996567	316,483.00	3.996567	83	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	219667.3	2.45575	210,645.00	2.45575	104	50 - 150	0.0000	+/-0.50	
M2PFTA	834434.5	4.30535	1,136,787.00	4.30535	73	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	99612.6	3.786867	93,577.00	3.786867	106	50 - 150	0.0000	+/-0.50	
MPFBA	527744.1	1.058467	513,802.00	1.058467	103	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	136757.3	2.7902	105,449.00	2.7902	130	50 - 150	0.0000	+/-0.50	
M6PFDA	686733.5	3.787383	726,878.00	3.787383	94	50 - 150	0.0000	+/-0.50	
M3PFBS	136335.3	1.8701	137,884.00	1.8701	99	50 - 150	0.0000	+/-0.50	
M7PFUnA	654501.9	3.93005	730,410.00	3.93005	90	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	92956.88	3.429317	95,556.00	3.429317	97	50 - 150	0.0000	+/-0.50	
M5PFPeA	443253.3	1.690017	446,469.00	1.690017	99	50 - 150	0.0000	+/-0.50	
M5PFHxA	849845.4	2.539483	877,736.00	2.539483	97	50 - 150	0.0000	+/-0.50	
M3PFHxS	127512.5	3.201883	129,976.00	3.201883	98	50 - 150	0.0000	+/-0.50	
M4PFHpA	1040513	3.1627	1,002,853.00	3.1627	104	50 - 150	0.0000	+/-0.50	
M8PFOA	984409.5	3.445833	998,644.00	3.445833	99	50 - 150	0.0000	+/-0.50	
M8PFOS	120795.9	3.636183	119,339.00	3.636183	101	50 - 150	0.0000	+/-0.50	
M9PFNA	745196.3	3.637217	778,322.00	3.637217	96	50 - 150	0.0000	+/-0.50	
MPFDoA	546063.6	4.064667	687,804.00	4.064667	79	50 - 150	0.0000	+/-0.50	
D5-NEtFOSAA	174282.3	3.937517	205,524.00	3.937517	85	50 - 150	0.0000	+/-0.50	
D3-NMeFOSAA	217044	3.865617	234,971.00	3.865617	92	50 - 150	0.0000	+/-0.50	
Blank (B318837-BLK1)			Lab File ID: F22S283030.D			Analyzed: 10/10/22 17:43			
1,4-Dichlorobenzene-d4	505651	10.478	620,074.00	10.465	82	50 - 200	0.0130	+/-0.50	
LCS (B318837-BS1)			Lab File ID: F22S283031.D			Analyzed: 10/10/22 18:02			
1,4-Dichlorobenzene-d4	525501	10.468	620,074.00	10.465	85	50 - 200	0.0030	+/-0.50	
LCS Dup (B318837-BSD1)			Lab File ID: F22S283032.D			Analyzed: 10/10/22 18:23			
1,4-Dichlorobenzene-d4	537545	10.468	620,074.00	10.465	87	50 - 200	0.0030	+/-0.50	
Blank (B318981-BLK1)			Lab File ID: C22V27919.D			Analyzed: 10/06/22 14:54			
Pentafluorobenzene	175140	4.199	179,464.00	4.196	98	50 - 200	0.0030	+/-0.50	
1,4-Difluorobenzene	276478	4.919	280,237.00	4.918	99	50 - 200	0.0010	+/-0.50	
Chlorobenzene-d5	132993	7.752	140,327.00	7.749	95	50 - 200	0.0030	+/-0.50	
1,4-Dichlorobenzene-d4	113858	10.05	128,896.00	10.047	88	50 - 200	0.0030	+/-0.50	
LCS (B318981-BS1)			Lab File ID: C22V27915.D			Analyzed: 10/06/22 13:18			
Pentafluorobenzene	186824	4.196	179,464.00	4.196	104	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	283299	4.919	280,237.00	4.918	101	50 - 200	0.0010	+/-0.50	
Chlorobenzene-d5	141878	7.752	140,327.00	7.749	101	50 - 200	0.0030	+/-0.50	
1,4-Dichlorobenzene-d4	126240	10.044	128,896.00	10.047	98	50 - 200	-0.0030	+/-0.50	

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INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Blank (B319210-BLK1)			Lab File ID: B319210-BLK1.d			Analyzed: 10/19/22 22:18			
M8FOSA	202785	3.996567	316,483.00	3.996567	64	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	155976.2	2.447533	210,645.00	2.44755	74	50 - 150	0.0000	+/-0.50	
M2PFTA	637475.8	4.297266	1,136,787.00	4.297266	56	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	66663.59	3.778883	93,577.00	3.7789	71	50 - 150	0.0000	+/-0.50	
MPFBA	427907.7	1.058467	513,802.00	1.058467	83	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	123046.1	2.782017	105,449.00	2.782017	117	50 - 150	0.0000	+/-0.50	
M6PFDA	519756.9	3.779417	726,878.00	3.779417	72	50 - 150	0.0000	+/-0.50	
M3PFBS	111504.9	1.861817	137,884.00	1.861817	81	50 - 150	0.0000	+/-0.50	
M7PFUnA	487886.1	3.92205	730,410.00	3.92205	67	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	61383.4	3.4293	95,556.00	3.429317	64	50 - 150	0.0000	+/-0.50	
M5PFPeA	358236.3	1.681733	446,469.00	1.681733	80	50 - 150	0.0000	+/-0.50	
M5PFHxA	700090.9	2.531267	877,736.00	2.531283	80	50 - 150	0.0000	+/-0.50	
M3PFHxS	101266.3	3.193817	129,976.00	3.193817	78	50 - 150	0.0000	+/-0.50	
M4PFHpA	803527.9	3.154633	1,002,853.00	3.154633	80	50 - 150	0.0000	+/-0.50	
M8PFOA	818108.7	3.437833	998,644.00	3.437833	82	50 - 150	0.0000	+/-0.50	
M8PFOS	94833.8	3.6282	119,339.00	3.6282	79	50 - 150	0.0000	+/-0.50	
M9PFNA	608241.1	3.629233	778,322.00	3.629233	78	50 - 150	0.0000	+/-0.50	
MPFDoA	420939.4	4.056667	687,804.00	4.056667	61	50 - 150	0.0000	+/-0.50	
D5-NEtFOSAA	126496	3.929517	205,524.00	3.929517	62	50 - 150	0.0000	+/-0.50	
D3-NMeFOSAA	163469.4	3.85765	234,971.00	3.857667	70	50 - 150	0.0000	+/-0.50	

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INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LCS (B319210-BS1)			Lab File ID: B319210-BS1.d			Analyzed: 10/19/22 22:10			
M8FOSA	195752.5	3.996567	316,483.00	3.996567	62	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	148305.5	2.447533	210,645.00	2.44755	70	50 - 150	0.0000	+/-0.50	
M2PFTA	685467.6	4.297266	1,136,787.00	4.297266	60	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	65831.51	3.778883	93,577.00	3.7789	70	50 - 150	0.0000	+/-0.50	
MPFBA	403791.3	1.058467	513,802.00	1.058467	79	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	76799.11	2.782017	105,449.00	2.782017	73	50 - 150	0.0000	+/-0.50	
M6PFDA	487348	3.779417	726,878.00	3.779417	67	50 - 150	0.0000	+/-0.50	
M3PFBS	105340.2	1.861817	137,884.00	1.861817	76	50 - 150	0.0000	+/-0.50	
M7PFUnA	477122.6	3.92205	730,410.00	3.92205	65	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	60721.92	3.429317	95,556.00	3.429317	64	50 - 150	0.0000	+/-0.50	
M5PFPeA	339750.2	1.681733	446,469.00	1.681733	76	50 - 150	0.0000	+/-0.50	
M5PFHxA	662182.2	2.523067	877,736.00	2.531283	75	50 - 150	-0.0082	+/-0.50	
M3PFHxS	97020.39	3.193817	129,976.00	3.193817	75	50 - 150	0.0000	+/-0.50	
M4PFHpA	747047.3	3.154633	1,002,853.00	3.154633	74	50 - 150	0.0000	+/-0.50	
M8PFOA	767527.6	3.437833	998,644.00	3.437833	77	50 - 150	0.0000	+/-0.50	
M8PFOS	86153.2	3.6282	119,339.00	3.6282	72	50 - 150	0.0000	+/-0.50	
M9PFNA	554842.9	3.629233	778,322.00	3.629233	71	50 - 150	0.0000	+/-0.50	
MPFDoA	433963.4	4.056667	687,804.00	4.056667	63	50 - 150	0.0000	+/-0.50	
D5-NEtFOSAA	125655.7	3.929517	205,524.00	3.929517	61	50 - 150	0.0000	+/-0.50	
D3-NMeFOSAA	149020.7	3.857667	234,971.00	3.857667	63	50 - 150	0.0000	+/-0.50	

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
624.1 in Water	
Benzene	CT,NY,MA,NH,RI,NC,ME,VA
Bromodichloromethane	CT,NY,MA,NH,RI,NC,ME,VA
Bromoform	CT,NY,MA,NH,RI,NC,ME,VA
Bromomethane	CT,NY,MA,NH,RI,NC,ME,VA
Carbon Tetrachloride	CT,NY,MA,NH,RI,NC,ME,VA
Chlorobenzene	CT,NY,MA,NH,RI,NC,ME,VA
Chlorodibromomethane	CT,NY,MA,NH,RI,NC,ME,VA
Chloroethane	CT,NY,MA,NH,RI,NC,ME,VA
Chloroform	CT,NY,MA,NH,RI,NC,ME,VA
Chloromethane	CT,NY,MA,NH,RI,NC,ME,VA
1,2-Dichlorobenzene	CT,NY,MA,NH,RI,NC,ME,VA
1,3-Dichlorobenzene	CT,NY,MA,NH,RI,NC,ME,VA
1,4-Dichlorobenzene	CT,NY,MA,NH,RI,NC,ME,VA
1,2-Dichloroethane	CT,NY,MA,NH,RI,NC,ME,VA
cis-1,2-Dichloroethylene	NY,MA
1,1-Dichloroethane	CT,NY,MA,NH,RI,NC,ME,VA
1,1-Dichloroethylene	CT,NY,MA,NH,RI,NC,ME,VA
trans-1,2-Dichloroethylene	CT,NY,MA,NH,RI,NC,ME,VA
1,2-Dichloropropane	CT,NY,MA,NH,RI,NC,ME,VA
cis-1,3-Dichloropropene	CT,NY,MA,NH,RI,NC,ME,VA
1,4-Dioxane	MA
trans-1,3-Dichloropropene	CT,NY,MA,NH,RI,NC,ME,VA
Ethylbenzene	CT,NY,MA,NH,RI,NC,ME,VA
Methyl tert-Butyl Ether (MTBE)	NY,MA,NH,NC
Methylene Chloride	CT,NY,MA,NH,RI,NC,ME,VA
1,1,2,2-Tetrachloroethane	CT,NY,MA,NH,RI,NC,ME,VA
Tetrachloroethylene	CT,NY,MA,NH,RI,NC,ME,VA
Toluene	CT,NY,MA,NH,RI,NC,ME,VA
1,1,1-Trichloroethane	CT,NY,MA,NH,RI,NC,ME,VA
1,1,2-Trichloroethane	CT,NY,MA,NH,RI,NC,ME,VA
Trichloroethylene	CT,NY,MA,NH,RI,NC,ME,VA
Trichlorofluoromethane (Freon 11)	CT,NY,MA,NH,RI,NC,ME,VA
Vinyl Chloride	CT,NY,MA,NH,RI,NC,ME,VA
m+p Xylene	CT,NY,MA,NH,RI,NC
o-Xylene	CT,NY,MA,NH,RI,NC
SOP-454 PFAS in Water	
Perfluorobutanoic acid (PFBA)	NH-P
Perfluorobutanesulfonic acid (PFBS)	NH-P
Perfluoropentanoic acid (PFPeA)	NH-P
Perfluorohexanoic acid (PFHxA)	NH-P
8:2 Fluorotelomersulfonic acid (8:2FTS A)	NH-P
Perfluorodecanoic acid (PFDA)	NH-P
Perfluorododecanoic acid (PFDoA)	NH-P
Perfluoroheptanesulfonic acid (PFHpS)	NH-P
N-EtFOSAA (NEtFOSAA)	NH-P
N-MeFOSAA (NMeFOSAA)	NH-P

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SOP-454 PFAS in Water	
Perfluorotetradecanoic acid (PFTA)	NH-P
Perfluorotridecanoic acid (PFTrDA)	NH-P
Perfluorodecanesulfonic acid (PFDS)	NH-P
Perfluorooctanesulfonamide (FOSA)	NH-P
Perfluorohexanesulfonic acid (PFHxS)	NH-P
6:2 Fluorotelomersulfonic acid (6:2FTS A)	NH-P
Perfluoroundecanoic acid (PFUnA)	NH-P
Perfluoroheptanoic acid (PFHpA)	NH-P
Perfluorooctanoic acid (PFOA)	NH-P
Perfluorooctanesulfonic acid (PFOS)	NH-P
Perfluorononanoic acid (PFNA)	NH-P
SW-846 8270E in Water	
1,4-Dioxane	NY,NH

Con-Test, a Pace Environmental Laboratory, operates under the following certifications and accreditations:

Code	Description	Number	Expires
MA	Massachusetts DEP	M-MA100	06/30/2023
CT	Connecticut Department of Public Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2023
NH	New Hampshire Environmental Lab	2516 NELAP	02/5/2023
RI	Rhode Island Department of Health	LAO00373	12/30/2023
NC	North Carolina Div. of Water Quality	652	12/31/2023
ME	State of Maine	MA00100	06/9/2023
VA	Commonwealth of Virginia	460217	12/14/2023
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2023

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical®

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevent fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here: 22I1906

ALL SHADED AREAS are for LAB USE ONLY

Company: AECOM	Billing Information:
Address: 40 British American Blvd	
Report To: Lindsay Mitchell	Email To: Lindsay.mitchell@aecom.com
Copy To:	Site Collection Info/Address:
Customer Project Name/Number: Northeast Alloys & Metals #633345	State: County/City: Time Zone Collected: [ ]PT [ ]MT [ ]CT [ ]ET
Phone: 518 423 2503 Email:	Site/Facility ID #: Compliance Monitoring? [ ] Yes [ ] No
Collected By (print): Joe Braun	Purchase Order #: Quote #: DW PWS ID #: DW Location Code:
Collected By (signature):	Turnaround Date Required: 1-2 weeks Immediately Packed on Ice: [ ] Yes [ ] No
Sample Disposal: [ ] Dispose as appropriate [ ] Return [ ] Archive: [ ] Hold:	Rush: [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [ ] 5 Day (Expedite Charges Apply) Field Filtered (if applicable): [ ] Yes [ ] No Analysis:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Container Preservative Type **: 8 U U

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

Lab Project Manager:

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	Analyses: 624.1 VOC	537.1 PFAS	1,4 Dioxane SIM (8270sim)	Lab Profile/Line
MW-4	GW	Grab	9/28	09:53				6	2	2	2	1
MW-11	GW	Grab	9/28	10:00				6	2	2	2	2
MW-10	GW	Grab	9/28	11:50				6	2	2	2	3
MW-9	GW	Grab	9/28	12:32				6	2	2	2	4
MW-7R	GW	Grab	9/28	14:20				6	2	2	2	5
BR-3	GW	Grab	9/28	14:54				6	2	2	2	6
TB2	GW	—	—	—				2	2			7

Lab Sample Receipt Checklist:

Custody Seals Present/Intact	Y N NA
Custody Signatures Present	Y N NA
Collector Signature Present	Y N NA
Bottles Intact	Y N NA
Correct Bottles	Y N NA
Sufficient Volume	Y N NA
Samples Received on Ice	Y N NA
VOA - Headspace Acceptable	Y N NA
USDA Regulated Soils	Y N NA
Samples in Holding Time	Y N NA
Residual Chlorine Present	Y N NA
Cl Strips:	
Sample pH Acceptable	Y N NA
pH Strips:	
Sulfide Present	Y N NA
Lead Acetate Strips:	

LAB USE ONLY: Lab Sample # / Comments: PFAS not received

Customer Remarks / Special Conditions / Possible Hazards: Category B/NYSDEC 4-file EDD HCl added to VOC in field

Type of Ice Used: (Wet) Blue Dry None

Packing Material Used:

Radchem sample(s) screened (<500 cpm): Y N NA

SHORT HOLDS PRESENT (<72 hours): Y (N) N/A

Lab Tracking #: 2691077

Samples received via: FEDEX UPS Client Courier (Pace Courier)

Lab Sample Temperature Info:
Temp Blank Received: Y N NA
Therm ID#:
Cooler 1 Temp Upon Receipt: ____oC
Cooler 1 Therm Corr. Factor: ____oC
Cooler 1 Corrected Temp: ____oC
Comments:

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
	9/29/22 9:23	PACE	9/29/22 9:23
PACE	9/29/22 14:30	PACE	9/29/22 N30
PACE	9/29/22		9-29-22

MTJL LAB USE ONLY
Table #:
Acctnum:
Template:
Prelogin:
PM:
PB:

Trip Blank Received: Y N NA
HCl MeOH TSP Other

Non Conformance(s): YES / NO

Page: ____ of: ____

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

January 18, 2023

Lindsay Mitchell
NYDEC_AECOM Environment - Latham, NY
40 British American Blvd.
Latham, NY 12110

Project Location: Utica, NY
Client Job Number:
Project Number: 633045
Laboratory Work Order Number: 22I2023

Enclosed are results of analyses for samples as received by the laboratory on September 30, 2022. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kyle K. Stuckey
Project Manager

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NYDEC_AECOM Environment - Latham, NY
40 British American Blvd.
Latham, NY 12110
ATTN: Lindsay Mitchell

REPORT DATE: 1/18/2023

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 633045

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 22I2023

The results of analyses performed on the following samples submitted to CON-TEST, a Pace Analytical Laboratory, are found in this report.

PROJECT LOCATION: Utica, NY

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
EB-1	22I2023-01	Ground Water		SOP-454 PFAS	
FB-1	22I2023-02	Ground Water		SOP-454 PFAS	
				SW-846 8270E	
MW-18	22I2023-03	Ground Water		624.1	
				SOP-454 PFAS	
				SW-846 8270E	
MW-17	22I2023-04	Ground Water		624.1	
				SOP-454 PFAS	
				SW-846 8270E	
TB4	22I2023-05	Ground Water		624.1	

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CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

REVISED 01-18-23: cis-1,2-DCE added per the COC

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624.1

Qualifications:

RL-11

Elevated reporting limit due to high concentration of target compounds.

Analyte & Samples(s) Qualified:

22I2023-03[MW-18], 22I2023-04[MW-17]

SOP-454 PFAS

Qualifications:

PF-17

Extracted Internal Standard recovery is outside of control limits. Data is not significantly affected since associated analyte is not detected and bias is on the high side.

Analyte & Samples(s) Qualified:

M2-6:2FTS
22I2023-03[MW-18], 22I2023-04[MW-17]

M2-8:2FTS
22I2023-03[MW-18], 22I2023-04[MW-17]

PF-20

Quantifying ion signal to noise ratio is <10. Detection is suspect.

Analyte & Samples(s) Qualified:

Perfluorobutanoic acid (PFBA)
22I2023-03[MW-18], 22I2023-04[MW-17]

Perfluoroheptanesulfonic acid (PFHpS)
22I2023-03[MW-18]

Perfluoroheptanoic acid (PFHpA)
22I2023-04[MW-17]

Perfluorohexanesulfonic acid (PFHxS)
22I2023-03[MW-18], 22I2023-04[MW-17]

Perfluorohexanoic acid (PFHxA)
22I2023-04[MW-17]

Perfluorononanoic acid (PFNA)
22I2023-03[MW-18], 22I2023-04[MW-17]

PF-21

Qualifying ion signal to noise ratio is <3. Detection is suspect.

Analyte & Samples(s) Qualified:

Perfluorobutanesulfonic acid (PFBS)
22I2023-03[MW-18]

Perfluoroheptanesulfonic acid (PFHpS)
22I2023-03[MW-18]

PF-23

Qualifier ion ratio <50% of associated calibration. Detection is suspect.

Analyte & Samples(s) Qualified:

Perfluorobutanesulfonic acid (PFBS)
22I2023-03[MW-18], 22I2023-04[MW-17]

S-29

Extracted Internal Standard is outside of control limits.

Analyte & Samples(s) Qualified:

M5PFPeA
22I2023-03[MW-18]

MPFBA
22I2023-03[MW-18], 22I2023-04[MW-17]

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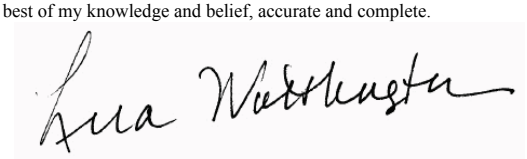
The results of analyses reported only relate to samples submitted to Con-Test, a Pace Analytical Laboratory, for testing.
I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.



Lisa A. Worthington
Technical Representative

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Utica, NY | Sample Description: | Work Order: 22I2023

Date Received: 9/30/2022

Field Sample #: EB-1 | Sampled: 9/30/2022 09:30

Sample ID: 22I2023-01

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	ND	1.9	0.72	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:37	DRL
Perfluorobutanesulfonic acid (PFBS)	ND	1.9	0.27	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:37	DRL
Perfluoropentanoic acid (PFPeA)	ND	1.9	0.38	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:37	DRL
Perfluorohexanoic acid (PFHxA)	ND	1.9	0.37	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:37	DRL
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	1.9	0.59	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:37	DRL
Perfluorodecanoic acid (PFDA)	ND	1.9	0.47	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:37	DRL
Perfluorododecanoic acid (PFDoA)	ND	1.9	0.43	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:37	DRL
Perfluoroheptanesulfonic acid (PFHpS)	ND	1.9	0.91	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:37	DRL
N-EtFOSAA (NEtFOSAA)	ND	1.9	0.61	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:37	DRL
N-MeFOSAA (NMeFOSAA)	ND	1.9	0.73	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:37	DRL
Perfluorotetradecanoic acid (PFTA)	ND	1.9	0.35	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:37	DRL
Perfluorotridecanoic acid (PFTrDA)	ND	1.9	0.27	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:37	DRL
Perfluorodecanesulfonic acid (PFDS)	ND	1.9	0.31	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:37	DRL
Perfluorooctanesulfonamide (FOSA)	ND	1.9	0.41	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:37	DRL
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9	0.33	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:37	DRL
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	1.9	0.35	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:37	DRL
Perfluoroundecanoic acid (PFUnA)	ND	1.9	0.36	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:37	DRL
Perfluoroheptanoic acid (PFHpA)	ND	1.9	0.33	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:37	DRL
Perfluorooctanoic acid (PFOA)	ND	1.9	0.66	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:37	DRL
Perfluorooctanesulfonic acid (PFOS)	ND	1.9	0.58	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:37	DRL
Perfluorononanoic acid (PFNA)	ND	1.9	0.33	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:37	DRL

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Project Location: Utica, NY | Sample Description: | Work Order: 22I2023

Date Received: 9/30/2022

Field Sample #: FB-1 | Sampled: 9/30/2022 09:35

Sample ID: 22I2023-02

Sample Matrix: Ground Water

1,4-Dioxane by isotope dilution GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
1,4-Dioxane	0.095	0.20	0.032	µg/L	1	J	SW-846 8270E	10/7/22	10/10/22 16:24	SPF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,4-Dioxane-d8	22.2	15-110		10/10/22 16:24

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Project Location: Utica, NY | Sample Description: | Work Order: 22I2023

Date Received: 9/30/2022

Field Sample #: FB-1 | Sampled: 9/30/2022 09:35

Sample ID: 22I2023-02

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	ND	1.8	0.68	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:44	DRL
Perfluorobutanesulfonic acid (PFBS)	ND	1.8	0.26	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:44	DRL
Perfluoropentanoic acid (PFPeA)	ND	1.8	0.36	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:44	DRL
Perfluorohexanoic acid (PFHxA)	ND	1.8	0.35	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:44	DRL
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	1.8	0.56	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:44	DRL
Perfluorodecanoic acid (PFDA)	ND	1.8	0.45	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:44	DRL
Perfluorododecanoic acid (PFDoA)	ND	1.8	0.41	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:44	DRL
Perfluoroheptanesulfonic acid (PFHpS)	ND	1.8	0.86	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:44	DRL
N-EtFOSAA (NEtFOSAA)	ND	1.8	0.58	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:44	DRL
N-MeFOSAA (NMeFOSAA)	ND	1.8	0.70	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:44	DRL
Perfluorotetradecanoic acid (PFTA)	ND	1.8	0.34	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:44	DRL
Perfluorotridecanoic acid (PFTrDA)	ND	1.8	0.25	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:44	DRL
Perfluorodecanesulfonic acid (PFDS)	ND	1.8	0.30	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:44	DRL
Perfluorooctanesulfonamide (FOSA)	ND	1.8	0.39	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:44	DRL
Perfluorohexanesulfonic acid (PFHxS)	ND	1.8	0.31	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:44	DRL
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	1.8	0.34	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:44	DRL
Perfluoroundecanoic acid (PFUnA)	ND	1.8	0.34	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:44	DRL
Perfluoroheptanoic acid (PFHpA)	ND	1.8	0.32	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:44	DRL
Perfluorooctanoic acid (PFOA)	ND	1.8	0.63	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:44	DRL
Perfluorooctanesulfonic acid (PFOS)	ND	1.8	0.55	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:44	DRL
Perfluorononanoic acid (PFNA)	ND	1.8	0.32	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:44	DRL

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Project Location: Utica, NY | Sample Description: | Work Order: 22I2023

Date Received: 9/30/2022

Field Sample #: MW-18 | Sampled: 9/30/2022 11:00

Sample ID: 22I2023-03

Sample Matrix: Ground Water

Sample Flags: RL-11

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Benzene	<0.400	2.00	0.400	µg/L	2		624.1	10/6/22	10/6/22 22:06	MFF
Bromodichloromethane	<0.361	4.00	0.361	µg/L	2		624.1	10/6/22	10/6/22 22:06	MFF
Bromoform	<0.766	4.00	0.766	µg/L	2		624.1	10/6/22	10/6/22 22:06	MFF
Bromomethane	<3.08	4.00	3.08	µg/L	2		624.1	10/6/22	10/6/22 22:06	MFF
Carbon Tetrachloride	<0.330	4.00	0.330	µg/L	2		624.1	10/6/22	10/6/22 22:06	MFF
Chlorobenzene	<0.211	4.00	0.211	µg/L	2		624.1	10/6/22	10/6/22 22:06	MFF
Chlorodibromomethane	<0.445	4.00	0.445	µg/L	2		624.1	10/6/22	10/6/22 22:06	MFF
Chloroethane	<0.641	4.00	0.641	µg/L	2		624.1	10/6/22	10/6/22 22:06	MFF
Chloroform	<0.335	4.00	0.335	µg/L	2		624.1	10/6/22	10/6/22 22:06	MFF
Chloromethane	<1.04	4.00	1.04	µg/L	2		624.1	10/6/22	10/6/22 22:06	MFF
1,2-Dichlorobenzene	<0.244	4.00	0.244	µg/L	2		624.1	10/6/22	10/6/22 22:06	MFF
1,3-Dichlorobenzene	<0.236	4.00	0.236	µg/L	2		624.1	10/6/22	10/6/22 22:06	MFF
1,4-Dichlorobenzene	<0.261	4.00	0.261	µg/L	2		624.1	10/6/22	10/6/22 22:06	MFF
1,2-Dichloroethane	<0.616	4.00	0.616	µg/L	2		624.1	10/6/22	10/6/22 22:06	MFF
cis-1,2-Dichloroethylene	142	2.00	0.293	µg/L	2		624.1	10/6/22	10/6/22 22:06	MFF
1,1-Dichloroethane	3.08	4.00	0.283	µg/L	2	J	624.1	10/6/22	10/6/22 22:06	MFF
1,1-Dichloroethylene	1.10	4.00	0.283	µg/L	2	J	624.1	10/6/22	10/6/22 22:06	MFF
trans-1,2-Dichloroethylene	0.820	4.00	0.337	µg/L	2	J	624.1	10/6/22	10/6/22 22:06	MFF
1,2-Dichloropropane	<0.362	4.00	0.362	µg/L	2		624.1	10/6/22	10/6/22 22:06	MFF
cis-1,3-Dichloropropene	<0.316	4.00	0.316	µg/L	2		624.1	10/6/22	10/6/22 22:06	MFF
trans-1,3-Dichloropropene	<0.336	4.00	0.336	µg/L	2		624.1	10/6/22	10/6/22 22:06	MFF
Ethylbenzene	<0.430	4.00	0.430	µg/L	2		624.1	10/6/22	10/6/22 22:06	MFF
Methyl tert-Butyl Ether (MTBE)	<0.344	4.00	0.344	µg/L	2		624.1	10/6/22	10/6/22 22:06	MFF
Methylene Chloride	<0.470	10.0	0.470	µg/L	2		624.1	10/6/22	10/6/22 22:06	MFF
1,1,2,2-Tetrachloroethane	<0.253	4.00	0.253	µg/L	2		624.1	10/6/22	10/6/22 22:06	MFF
Tetrachloroethylene	<0.374	4.00	0.374	µg/L	2		624.1	10/6/22	10/6/22 22:06	MFF
Toluene	<0.448	2.00	0.448	µg/L	2		624.1	10/6/22	10/6/22 22:06	MFF
1,1,1-Trichloroethane	<0.338	4.00	0.338	µg/L	2		624.1	10/6/22	10/6/22 22:06	MFF
1,1,2-Trichloroethane	<0.365	4.00	0.365	µg/L	2		624.1	10/6/22	10/6/22 22:06	MFF
Trichloroethylene	4.34	4.00	0.379	µg/L	2		624.1	10/6/22	10/6/22 22:06	MFF
Trichlorofluoromethane (Freon 11)	<0.352	4.00	0.352	µg/L	2		624.1	10/6/22	10/6/22 22:06	MFF
Vinyl Chloride	140	4.00	0.415	µg/L	2		624.1	10/6/22	10/6/22 22:06	MFF
m+p Xylene	<0.918	4.00	0.918	µg/L	2		624.1	10/6/22	10/6/22 22:06	MFF
o-Xylene	<0.459	2.00	0.459	µg/L	2		624.1	10/6/22	10/6/22 22:06	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	103	70-130		10/6/22 22:06
Toluene-d8	88.2	70-130		10/6/22 22:06
4-Bromofluorobenzene	95.1	70-130		10/6/22 22:06

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Project Location: Utica, NY | Sample Description: | Work Order: 22I2023

Date Received: 9/30/2022

Field Sample #: MW-18 | Sampled: 9/30/2022 11:00

Sample ID: 22I2023-03

Sample Matrix: Ground Water

1,4-Dioxane by isotope dilution GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
1,4-Dioxane	0.14	0.22	0.035	µg/L	1	J	SW-846 8270E	10/7/22	10/10/22 16:43	SPF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,4-Dioxane-d8	26.4	15-110		10/10/22 16:43

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Project Location: Utica, NY | Sample Description: | Work Order: 22I2023

Date Received: 9/30/2022

Field Sample #: MW-18 | Sampled: 9/30/2022 11:00

Sample ID: 22I2023-03

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	7.1	2.1	0.79	ng/L	1	PF-20	SOP-454 PFAS	10/17/22	10/19/22 23:59	DRL
Perfluorobutanesulfonic acid (PFBS)	14	2.1	0.30	ng/L	1	PF-21, PF-23	SOP-454 PFAS	10/17/22	10/19/22 23:59	DRL
Perfluoropentanoic acid (PFPeA)	ND	2.1	0.41	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:59	DRL
Perfluorohexanoic acid (PFHxA)	ND	2.1	0.41	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:59	DRL
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.1	0.64	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:59	DRL
Perfluorodecanoic acid (PFDA)	ND	2.1	0.52	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:59	DRL
Perfluorododecanoic acid (PFDoA)	ND	2.1	0.47	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:59	DRL
Perfluoroheptanesulfonic acid (PFHpS)	1.3	2.1	0.99	ng/L	1	PF-20, PF-21, J	SOP-454 PFAS	10/17/22	10/19/22 23:59	DRL
N-EtFOSAA (NEtFOSAA)	ND	2.1	0.67	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:59	DRL
N-MeFOSAA (NMeFOSAA)	ND	2.1	0.80	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:59	DRL
Perfluorotetradecanoic acid (PFTA)	ND	2.1	0.39	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:59	DRL
Perfluorotridecanoic acid (PFTrDA)	ND	2.1	0.29	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:59	DRL
Perfluorodecanesulfonic acid (PFDS)	ND	2.1	0.34	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:59	DRL
Perfluorooctanesulfonamide (FOSA)	ND	2.1	0.44	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:59	DRL
Perfluorohexanesulfonic acid (PFHxS)	0.87	2.1	0.36	ng/L	1	PF-20, J	SOP-454 PFAS	10/17/22	10/19/22 23:59	DRL
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	2.1	0.39	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:59	DRL
Perfluoroundecanoic acid (PFUnA)	ND	2.1	0.39	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:59	DRL
Perfluoroheptanoic acid (PFHpA)	1.4	2.1	0.36	ng/L	1	J	SOP-454 PFAS	10/17/22	10/19/22 23:59	DRL
Perfluorooctanoic acid (PFOA)	5.1	2.1	0.72	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:59	DRL
Perfluorooctanesulfonic acid (PFOS)	12	2.1	0.64	ng/L	1		SOP-454 PFAS	10/17/22	10/19/22 23:59	DRL
Perfluorononanoic acid (PFNA)	0.99	2.1	0.37	ng/L	1	PF-20, J	SOP-454 PFAS	10/17/22	10/19/22 23:59	DRL

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Utica, NY | Sample Description: | Work Order: 22I2023

Date Received: 9/30/2022

Field Sample #: MW-17 | Sampled: 9/30/2022 11:10

Sample ID: 22I2023-04

Sample Matrix: Ground Water

Sample Flags: RL-11

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Benzene	<200	1000	200	µg/L	1000		624.1	10/6/22	10/6/22 22:30	MFF
Bromodichloromethane	<180	2000	180	µg/L	1000		624.1	10/6/22	10/6/22 22:30	MFF
Bromoform	<383	2000	383	µg/L	1000		624.1	10/6/22	10/6/22 22:30	MFF
Bromomethane	<1540	2000	1540	µg/L	1000		624.1	10/6/22	10/6/22 22:30	MFF
Carbon Tetrachloride	<165	2000	165	µg/L	1000		624.1	10/6/22	10/6/22 22:30	MFF
Chlorobenzene	<105	2000	105	µg/L	1000		624.1	10/6/22	10/6/22 22:30	MFF
Chlorodibromomethane	<222	2000	222	µg/L	1000		624.1	10/6/22	10/6/22 22:30	MFF
Chloroethane	<320	2000	320	µg/L	1000		624.1	10/6/22	10/6/22 22:30	MFF
Chloroform	<168	2000	168	µg/L	1000		624.1	10/6/22	10/6/22 22:30	MFF
Chloromethane	<522	2000	522	µg/L	1000		624.1	10/6/22	10/6/22 22:30	MFF
1,2-Dichlorobenzene	<122	2000	122	µg/L	1000		624.1	10/6/22	10/6/22 22:30	MFF
1,3-Dichlorobenzene	<118	2000	118	µg/L	1000		624.1	10/6/22	10/6/22 22:30	MFF
1,4-Dichlorobenzene	<130	2000	130	µg/L	1000		624.1	10/6/22	10/6/22 22:30	MFF
1,2-Dichloroethane	<308	2000	308	µg/L	1000		624.1	10/6/22	10/6/22 22:30	MFF
cis-1,2-Dichloroethylene	74400	1000	147	µg/L	1000		624.1	10/6/22	10/6/22 22:30	MFF
1,1-Dichloroethane	<142	2000	142	µg/L	1000		624.1	10/6/22	10/6/22 22:30	MFF
1,1-Dichloroethylene	500	2000	141	µg/L	1000	J	624.1	10/6/22	10/6/22 22:30	MFF
trans-1,2-Dichloroethylene	<169	2000	169	µg/L	1000		624.1	10/6/22	10/6/22 22:30	MFF
1,2-Dichloropropane	<181	2000	181	µg/L	1000		624.1	10/6/22	10/6/22 22:30	MFF
cis-1,3-Dichloropropene	<158	2000	158	µg/L	1000		624.1	10/6/22	10/6/22 22:30	MFF
trans-1,3-Dichloropropene	<168	2000	168	µg/L	1000		624.1	10/6/22	10/6/22 22:30	MFF
Ethylbenzene	<215	2000	215	µg/L	1000		624.1	10/6/22	10/6/22 22:30	MFF
Methyl tert-Butyl Ether (MTBE)	<172	2000	172	µg/L	1000		624.1	10/6/22	10/6/22 22:30	MFF
Methylene Chloride	<235	5000	235	µg/L	1000		624.1	10/6/22	10/6/22 22:30	MFF
1,1,2,2-Tetrachloroethane	<127	2000	127	µg/L	1000		624.1	10/6/22	10/6/22 22:30	MFF
Tetrachloroethylene	<187	2000	187	µg/L	1000		624.1	10/6/22	10/6/22 22:30	MFF
Toluene	<224	1000	224	µg/L	1000		624.1	10/6/22	10/6/22 22:30	MFF
1,1,1-Trichloroethane	<169	2000	169	µg/L	1000		624.1	10/6/22	10/6/22 22:30	MFF
1,1,2-Trichloroethane	<183	2000	183	µg/L	1000		624.1	10/6/22	10/6/22 22:30	MFF
Trichloroethylene	75100	2000	189	µg/L	1000		624.1	10/6/22	10/6/22 22:30	MFF
Trichlorofluoromethane (Freon 11)	<176	2000	176	µg/L	1000		624.1	10/6/22	10/6/22 22:30	MFF
Vinyl Chloride	2740	2000	208	µg/L	1000		624.1	10/6/22	10/6/22 22:30	MFF
m+p Xylene	<459	2000	459	µg/L	1000		624.1	10/6/22	10/6/22 22:30	MFF
o-Xylene	<230	1000	230	µg/L	1000		624.1	10/6/22	10/6/22 22:30	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	103	70-130		10/6/22 22:30
Toluene-d8	99.5	70-130		10/6/22 22:30
4-Bromofluorobenzene	84.8	70-130		10/6/22 22:30

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Project Location: Utica, NY | Sample Description: | Work Order: 22I2023

Date Received: 9/30/2022

Field Sample #: MW-17 | Sampled: 9/30/2022 11:10

Sample ID: 22I2023-04

Sample Matrix: Ground Water

1,4-Dioxane by isotope dilution GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
1,4-Dioxane	0.49	0.21	0.035	µg/L	1		SW-846 8270E	10/7/22	10/10/22 17:03	SPF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,4-Dioxane-d8	25.2	15-110		10/10/22 17:03

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Project Location: Utica, NY | Sample Description: | Work Order: 22I2023

Date Received: 9/30/2022

Field Sample #: MW-17 | Sampled: 9/30/2022 11:10

Sample ID: 22I2023-04

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	4.6	2.0	0.73	ng/L	1	PF-20	SOP-454 PFAS	10/17/22	10/20/22 0:06	DRL
Perfluorobutanesulfonic acid (PFBS)	13	2.0	0.28	ng/L	1	PF-23	SOP-454 PFAS	10/17/22	10/20/22 0:06	DRL
Perfluoropentanoic acid (PFPeA)	ND	2.0	0.39	ng/L	1		SOP-454 PFAS	10/17/22	10/20/22 0:06	DRL
Perfluorohexanoic acid (PFHxA)	3.3	2.0	0.38	ng/L	1	PF-20	SOP-454 PFAS	10/17/22	10/20/22 0:06	DRL
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	10/17/22	10/20/22 0:06	DRL
Perfluorodecanoic acid (PFDA)	ND	2.0	0.48	ng/L	1		SOP-454 PFAS	10/17/22	10/20/22 0:06	DRL
Perfluorododecanoic acid (PFDoA)	ND	2.0	0.43	ng/L	1		SOP-454 PFAS	10/17/22	10/20/22 0:06	DRL
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	0.92	ng/L	1		SOP-454 PFAS	10/17/22	10/20/22 0:06	DRL
N-EtFOSAA (NEtFOSAA)	0.97	2.0	0.62	ng/L	1	J	SOP-454 PFAS	10/17/22	10/20/22 0:06	DRL
N-MeFOSAA (NMeFOSAA)	ND	2.0	0.75	ng/L	1		SOP-454 PFAS	10/17/22	10/20/22 0:06	DRL
Perfluorotetradecanoic acid (PFTA)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	10/17/22	10/20/22 0:06	DRL
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	0.27	ng/L	1		SOP-454 PFAS	10/17/22	10/20/22 0:06	DRL
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	0.32	ng/L	1		SOP-454 PFAS	10/17/22	10/20/22 0:06	DRL
Perfluorooctanesulfonamide (FOSA)	ND	2.0	0.41	ng/L	1		SOP-454 PFAS	10/17/22	10/20/22 0:06	DRL
Perfluorohexanesulfonic acid (PFHxS)	1.0	2.0	0.33	ng/L	1	PF-20, J	SOP-454 PFAS	10/17/22	10/20/22 0:06	DRL
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	10/17/22	10/20/22 0:06	DRL
Perfluoroundecanoic acid (PFUnA)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	10/17/22	10/20/22 0:06	DRL
Perfluoroheptanoic acid (PFHpA)	1.3	2.0	0.34	ng/L	1	PF-20, J	SOP-454 PFAS	10/17/22	10/20/22 0:06	DRL
Perfluorooctanoic acid (PFOA)	7.5	2.0	0.67	ng/L	1		SOP-454 PFAS	10/17/22	10/20/22 0:06	DRL
Perfluorooctanesulfonic acid (PFOS)	31	2.0	0.59	ng/L	1		SOP-454 PFAS	10/17/22	10/20/22 0:06	DRL
Perfluorononanoic acid (PFNA)	1.0	2.0	0.34	ng/L	1	PF-20, J	SOP-454 PFAS	10/17/22	10/20/22 0:06	DRL

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Project Location: Utica, NY | Sample Description: | Work Order: 22I2023

Date Received: 9/30/2022

Field Sample #: TB4 | Sampled: 9/30/2022 00:00

Sample ID: 22I2023-05

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Benzene	<0.200	1.00	0.200	µg/L	1		624.1	10/6/22	10/6/22 16:06	MFF
Bromodichloromethane	<0.180	2.00	0.180	µg/L	1		624.1	10/6/22	10/6/22 16:06	MFF
Bromoform	<0.383	2.00	0.383	µg/L	1		624.1	10/6/22	10/6/22 16:06	MFF
Bromomethane	<1.54	2.00	1.54	µg/L	1		624.1	10/6/22	10/6/22 16:06	MFF
Carbon Tetrachloride	<0.165	2.00	0.165	µg/L	1		624.1	10/6/22	10/6/22 16:06	MFF
Chlorobenzene	<0.105	2.00	0.105	µg/L	1		624.1	10/6/22	10/6/22 16:06	MFF
Chlorodibromomethane	<0.222	2.00	0.222	µg/L	1		624.1	10/6/22	10/6/22 16:06	MFF
Chloroethane	<0.320	2.00	0.320	µg/L	1		624.1	10/6/22	10/6/22 16:06	MFF
Chloroform	0.240	2.00	0.168	µg/L	1	J	624.1	10/6/22	10/6/22 16:06	MFF
Chloromethane	<0.522	2.00	0.522	µg/L	1		624.1	10/6/22	10/6/22 16:06	MFF
1,2-Dichlorobenzene	<0.122	2.00	0.122	µg/L	1		624.1	10/6/22	10/6/22 16:06	MFF
1,3-Dichlorobenzene	<0.118	2.00	0.118	µg/L	1		624.1	10/6/22	10/6/22 16:06	MFF
1,4-Dichlorobenzene	<0.130	2.00	0.130	µg/L	1		624.1	10/6/22	10/6/22 16:06	MFF
1,2-Dichloroethane	<0.308	2.00	0.308	µg/L	1		624.1	10/6/22	10/6/22 16:06	MFF
cis-1,2-Dichloroethylene	<0.147	1.00	0.147	µg/L	1		624.1	10/6/22	10/6/22 16:06	MFF
1,1-Dichloroethane	<0.142	2.00	0.142	µg/L	1		624.1	10/6/22	10/6/22 16:06	MFF
1,1-Dichloroethylene	<0.141	2.00	0.141	µg/L	1		624.1	10/6/22	10/6/22 16:06	MFF
trans-1,2-Dichloroethylene	<0.169	2.00	0.169	µg/L	1		624.1	10/6/22	10/6/22 16:06	MFF
1,2-Dichloropropane	<0.181	2.00	0.181	µg/L	1		624.1	10/6/22	10/6/22 16:06	MFF
cis-1,3-Dichloropropene	<0.158	2.00	0.158	µg/L	1		624.1	10/6/22	10/6/22 16:06	MFF
trans-1,3-Dichloropropene	<0.168	2.00	0.168	µg/L	1		624.1	10/6/22	10/6/22 16:06	MFF
Ethylbenzene	<0.215	2.00	0.215	µg/L	1		624.1	10/6/22	10/6/22 16:06	MFF
Methyl tert-Butyl Ether (MTBE)	<0.172	2.00	0.172	µg/L	1		624.1	10/6/22	10/6/22 16:06	MFF
Methylene Chloride	<0.235	5.00	0.235	µg/L	1		624.1	10/6/22	10/6/22 16:06	MFF
1,1,2,2-Tetrachloroethane	<0.127	2.00	0.127	µg/L	1		624.1	10/6/22	10/6/22 16:06	MFF
Tetrachloroethylene	<0.187	2.00	0.187	µg/L	1		624.1	10/6/22	10/6/22 16:06	MFF
Toluene	<0.224	1.00	0.224	µg/L	1		624.1	10/6/22	10/6/22 16:06	MFF
1,1,1-Trichloroethane	<0.169	2.00	0.169	µg/L	1		624.1	10/6/22	10/6/22 16:06	MFF
1,1,2-Trichloroethane	<0.183	2.00	0.183	µg/L	1		624.1	10/6/22	10/6/22 16:06	MFF
Trichloroethylene	<0.189	2.00	0.189	µg/L	1		624.1	10/6/22	10/6/22 16:06	MFF
Trichlorofluoromethane (Freon 11)	<0.176	2.00	0.176	µg/L	1		624.1	10/6/22	10/6/22 16:06	MFF
Vinyl Chloride	<0.208	2.00	0.208	µg/L	1		624.1	10/6/22	10/6/22 16:06	MFF
m+p Xylene	<0.459	2.00	0.459	µg/L	1		624.1	10/6/22	10/6/22 16:06	MFF
o-Xylene	<0.230	1.00	0.230	µg/L	1		624.1	10/6/22	10/6/22 16:06	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	91.6	70-130		10/6/22 16:06
Toluene-d8	98.4	70-130		10/6/22 16:06
4-Bromofluorobenzene	94.6	70-130		10/6/22 16:06

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Sample Extraction Data

Prep Method: SW-846 5030B **Analytical Method: 624.1**

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
22I2023-03 [MW-18]	B318981	2.5	5.00	10/06/22
22I2023-04 [MW-17]	B318981	0.005	5.00	10/06/22
22I2023-05 [TB4]	B318981	5	5.00	10/06/22

Prep Method: SOP 454-PFAAS **Analytical Method: SOP-454 PFAS**

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
22I2023-01 [EB-1]	B319210	259	1.00	10/17/22
22I2023-02 [FB-1]	B319210	272	1.00	10/17/22
22I2023-03 [MW-18]	B319210	237	1.00	10/17/22
22I2023-04 [MW-17]	B319210	255	1.00	10/17/22

Prep Method: SW-846 3510C **Analytical Method: SW-846 8270E**

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
22I2023-02 [FB-1]	B319124	1020	1.00	10/07/22
22I2023-03 [MW-18]	B319124	930	1.00	10/07/22
22I2023-04 [MW-17]	B319124	940	1.00	10/07/22

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B318981 - SW-846 5030B										
Blank (B318981-BLK1)				Prepared & Analyzed: 10/06/22						
Benzene	ND	1.00	µg/L							
Bromodichloromethane	ND	2.00	µg/L							
Bromoform	ND	2.00	µg/L							
Bromomethane	ND	2.00	µg/L							
Carbon Tetrachloride	ND	2.00	µg/L							
Chlorobenzene	ND	2.00	µg/L							
Chlorodibromomethane	ND	2.00	µg/L							
Chloroethane	ND	2.00	µg/L							
Chloroform	ND	2.00	µg/L							
Chloromethane	ND	2.00	µg/L							
1,2-Dichlorobenzene	ND	2.00	µg/L							
1,3-Dichlorobenzene	ND	2.00	µg/L							
1,4-Dichlorobenzene	ND	2.00	µg/L							
1,2-Dichloroethane	ND	2.00	µg/L							
cis-1,2-Dichloroethylene	ND	1.00	µg/L							
1,1-Dichloroethane	ND	2.00	µg/L							
1,1-Dichloroethylene	ND	2.00	µg/L							
trans-1,2-Dichloroethylene	ND	2.00	µg/L							
1,2-Dichloropropane	ND	2.00	µg/L							
cis-1,3-Dichloropropene	ND	2.00	µg/L							
trans-1,3-Dichloropropene	ND	2.00	µg/L							
Ethylbenzene	ND	2.00	µg/L							
Methyl tert-Butyl Ether (MTBE)	ND	2.00	µg/L							
Methylene Chloride	ND	5.00	µg/L							
1,1,2,2-Tetrachloroethane	ND	2.00	µg/L							
Tetrachloroethylene	ND	2.00	µg/L							
Toluene	ND	1.00	µg/L							
1,1,1-Trichloroethane	ND	2.00	µg/L							
1,1,2-Trichloroethane	ND	2.00	µg/L							
Trichloroethylene	ND	2.00	µg/L							
Trichlorofluoromethane (Freon 11)	ND	2.00	µg/L							
Vinyl Chloride	ND	2.00	µg/L							
m+p Xylene	ND	2.00	µg/L							
o-Xylene	ND	1.00	µg/L							
Surrogate: 1,2-Dichloroethane-d4	*25.7*		µg/L	25.0		103	70-130			
Surrogate: Toluene-d8	*24.8*		µg/L	25.0		99.2	70-130			
Surrogate: 4-Bromofluorobenzene	*23.8*		µg/L	25.0		95.1	70-130			
LCS (B318981-BS1)				Prepared & Analyzed: 10/06/22						
Benzene	23	1.00	µg/L	20.0		115	65-135			
Bromodichloromethane	22	2.00	µg/L	20.0		112	65-135			
Bromoform	18	2.00	µg/L	20.0		87.8	70-130			
Bromomethane	11	2.00	µg/L	20.0		53.6	15-185			
Carbon Tetrachloride	22	2.00	µg/L	20.0		110	70-130			
Chlorobenzene	22	2.00	µg/L	20.0		110	65-135			
Chlorodibromomethane	20	2.00	µg/L	20.0		101	70-135			
Chloroethane	15	2.00	µg/L	20.0		74.3	40-160			
Chloroform	22	2.00	µg/L	20.0		112	70-135			
Chloromethane	13	2.00	µg/L	20.0		63.2	20-205			
1,2-Dichlorobenzene	23	2.00	µg/L	20.0		116	65-135			
1,3-Dichlorobenzene	23	2.00	µg/L	20.0		113	70-130			
1,4-Dichlorobenzene	22	2.00	µg/L	20.0		108	65-135			

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B318981 - SW-846 5030B										
LCS (B318981-BS1)				Prepared & Analyzed: 10/06/22						
1,2-Dichloroethane	20	2.00	µg/L	20.0		101	70-130			
cis-1,2-Dichloroethylene	23	1.00	µg/L	20.0		116	70-130			
1,1-Dichloroethane	23	2.00	µg/L	20.0		114	70-130			
1,1-Dichloroethylene	18	2.00	µg/L	20.0		89.0	50-150			
trans-1,2-Dichloroethylene	18	2.00	µg/L	20.0		88.6	70-130			
1,2-Dichloropropane	24	2.00	µg/L	20.0		119	35-165			
cis-1,3-Dichloropropene	22	2.00	µg/L	20.0		112	25-175			
trans-1,3-Dichloropropene	23	2.00	µg/L	20.0		116	50-150			
Ethylbenzene	23	2.00	µg/L	20.0		115	60-140			
Methyl tert-Butyl Ether (MTBE)	17	2.00	µg/L	20.0		87.2	70-130			
Methylene Chloride	18	5.00	µg/L	20.0		88.5	60-140			
1,1,2,2-Tetrachloroethane	19	2.00	µg/L	20.0		94.0	60-140			
Tetrachloroethylene	23	2.00	µg/L	20.0		113	70-130			
Toluene	22	1.00	µg/L	20.0		112	70-130			
1,1,1-Trichloroethane	22	2.00	µg/L	20.0		110	70-130			
1,1,2-Trichloroethane	22	2.00	µg/L	20.0		109	70-130			
Trichloroethylene	22	2.00	µg/L	20.0		112	65-135			
Trichlorofluoromethane (Freon 11)	18	2.00	µg/L	20.0		92.4	50-150			
Vinyl Chloride	17	2.00	µg/L	20.0		87.4	5-195			
m+p Xylene	44	2.00	µg/L	40.0		109	70-130			
o-Xylene	22	1.00	µg/L	20.0		111	70-130			
Surrogate: 1,2-Dichloroethane-d4	*24.6*		µg/L	25.0		98.6	70-130			
Surrogate: Toluene-d8	*25.8*		µg/L	25.0		103	70-130			
Surrogate: 4-Bromofluorobenzene	*23.9*		µg/L	25.0		95.7	70-130			

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QUALITY CONTROL

1,4-Dioxane by isotope dilution GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B319124 - SW-846 3510C										
Blank (B319124-BLK1)				Prepared: 10/07/22 Analyzed: 10/10/22						
1,4-Dioxane	0.070	0.20	µg/L							J
Surrogate: 1,4-Dioxane-d8	*2.47*		µg/L	10.0		24.7	15-110			
LCS (B319124-BS1)				Prepared: 10/07/22 Analyzed: 10/10/22						
1,4-Dioxane	13.0	0.20	µg/L	10.0		130	40-140			
Surrogate: 1,4-Dioxane-d8	*2.76*		µg/L	10.0		27.6	15-110			
LCS Dup (B319124-BSD1)				Prepared: 10/07/22 Analyzed: 10/10/22						
1,4-Dioxane	13.4	0.20	µg/L	10.0		134	40-140	3.01	30	
Surrogate: 1,4-Dioxane-d8	*2.55*		µg/L	10.0		25.5	15-110			

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QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B319210 - SOP 454-PFAAS										
Blank (B319210-BLK1)				Prepared: 10/17/22 Analyzed: 10/19/22						
Perfluorobutanoic acid (PFBA)	ND	1.8	ng/L							
Perfluorobutanesulfonic acid (PFBS)	ND	1.8	ng/L							
Perfluoropentanoic acid (PFPeA)	ND	1.8	ng/L							
Perfluorohexanoic acid (PFHxA)	ND	1.8	ng/L							
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	1.8	ng/L							
Perfluorodecanoic acid (PFDA)	ND	1.8	ng/L							
Perfluorododecanoic acid (PFDoA)	ND	1.8	ng/L							
Perfluoroheptanesulfonic acid (PFHpS)	ND	1.8	ng/L							
N-EtFOSAA (NEtFOSAA)	ND	1.8	ng/L							
N-MeFOSAA (NMeFOSAA)	ND	1.8	ng/L							
Perfluorotetradecanoic acid (PFTA)	ND	1.8	ng/L							
Perfluorotridecanoic acid (PFTrDA)	ND	1.8	ng/L							
Perfluorodecanesulfonic acid (PFDS)	ND	1.8	ng/L							
Perfluorooctanesulfonamide (FOSA)	ND	1.8	ng/L							
Perfluorohexanesulfonic acid (PFHxS)	ND	1.8	ng/L							
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	1.8	ng/L							
Perfluoroundecanoic acid (PFUnA)	ND	1.8	ng/L							
Perfluoroheptanoic acid (PFHpA)	ND	1.8	ng/L							
Perfluorooctanoic acid (PFOA)	ND	1.8	ng/L							
Perfluorooctanesulfonic acid (PFOS)	ND	1.8	ng/L							
Perfluorononanoic acid (PFNA)	ND	1.8	ng/L							
LCS (B319210-BS1)				Prepared: 10/17/22 Analyzed: 10/19/22						
Perfluorobutanoic acid (PFBA)	9.22	1.8	ng/L	9.01		102	73-129			
Perfluorobutanesulfonic acid (PFBS)	7.83	1.8	ng/L	7.97		98.2	72-130			
Perfluoropentanoic acid (PFPeA)	8.97	1.8	ng/L	9.01		99.6	72-129			
Perfluorohexanoic acid (PFHxA)	9.02	1.8	ng/L	9.01		100	72-129			
8:2 Fluorotelomersulfonic acid (8:2FTS A)	8.86	1.8	ng/L	8.65		102	67-138			
Perfluorodecanoic acid (PFDA)	9.34	1.8	ng/L	9.01		104	71-129			
Perfluorododecanoic acid (PFDoA)	8.32	1.8	ng/L	9.01		92.3	72-134			
Perfluoroheptanesulfonic acid (PFHpS)	8.67	1.8	ng/L	8.60		101	69-134			
N-EtFOSAA (NEtFOSAA)	10.3	1.8	ng/L	9.01		115	61-135			
N-MeFOSAA (NMeFOSAA)	11.5	1.8	ng/L	9.01		128	65-136			
Perfluorotetradecanoic acid (PFTA)	8.87	1.8	ng/L	9.01		98.5	71-132			
Perfluorotridecanoic acid (PFTrDA)	9.69	1.8	ng/L	9.01		108	65-144			
Perfluorodecanesulfonic acid (PFDS)	7.44	1.8	ng/L	8.69		85.6	53-142			
Perfluorooctanesulfonamide (FOSA)	9.63	1.8	ng/L	9.01		107	67-137			
Perfluorohexanesulfonic acid (PFHxS)	7.85	1.8	ng/L	8.24		95.3	68-131			
6:2 Fluorotelomersulfonic acid (6:2FTS A)	8.60	1.8	ng/L	8.56		100	64-140			
Perfluoroundecanoic acid (PFUnA)	9.44	1.8	ng/L	9.01		105	69-133			
Perfluoroheptanoic acid (PFHpA)	9.17	1.8	ng/L	9.01		102	72-130			
Perfluorooctanoic acid (PFOA)	9.41	1.8	ng/L	9.01		104	71-133			
Perfluorooctanesulfonic acid (PFOS)	7.63	1.8	ng/L	8.33		91.6	65-140			
Perfluorononanoic acid (PFNA)	9.84	1.8	ng/L	9.01		109	69-130			

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FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
ND	Not Detected
RL	Reporting Limit is at the level of quantitation (LOQ)
DL	Detection Limit is the lower limit of detection determined by the MDL study
MCL	Maximum Contaminant Level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.
J	Detected but below the Reporting Limit (lowest calibration standard); therefore, result is an estimated concentration (CLP J-Flag).
PF-17	Extracted Internal Standard recovery is outside of control limits. Data is not significantly affected since associated analyte is not detected and bias is on the high side.
PF-20	Quantifying ion signal to noise ratio is <10. Detection is suspect.
PF-21	Qualifying ion signal to noise ratio is <3. Detection is suspect.
PF-23	Qualifier ion ratio <50% of associated calibration. Detection is suspect.
RL-11	Elevated reporting limit due to high concentration of target compounds.
S-29	Extracted Internal Standard is outside of control limits.

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INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
EB-1 (22I2023-01)			Lab File ID: 22I2023-01.d			Analyzed: 10/19/22 23:37			
M8FOSA	202642.1	3.996567	316,483.00	3.996567	64	50 - 150	0.0000	+/-0.50	
M2PFTA	632656.8	4.297266	1,136,787.00	4.297266	56	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	65221.63	3.778883	93,577.00	3.7789	70	50 - 150	0.0000	+/-0.50	
MPFBA	410524.1	1.058467	513,802.00	1.058467	80	50 - 150	0.0000	+/-0.50	
M6PFDA	496373	3.779417	726,878.00	3.779417	68	50 - 150	0.0000	+/-0.50	
M3PFBS	108979.6	1.861817	137,884.00	1.861817	79	50 - 150	0.0000	+/-0.50	
M7PFUnA	516559.8	3.92205	730,410.00	3.92205	71	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	53001.19	3.4293	95,556.00	3.429317	55	50 - 150	0.0000	+/-0.50	
M5PFPeA	352416.9	1.690017	446,469.00	1.681733	79	50 - 150	0.0083	+/-0.50	
M5PFHxA	658648.1	2.531267	877,736.00	2.531283	75	50 - 150	0.0000	+/-0.50	
M3PFHxS	94441.23	3.193817	129,976.00	3.193817	73	50 - 150	0.0000	+/-0.50	
M4PFHpA	768802.1	3.154633	1,002,853.00	3.154633	77	50 - 150	0.0000	+/-0.50	
M8PFOA	761397.2	3.437833	998,644.00	3.437833	76	50 - 150	0.0000	+/-0.50	
M8PFOS	88248.8	3.6282	119,339.00	3.6282	74	50 - 150	0.0000	+/-0.50	
M9PFNA	567432.1	3.629233	778,322.00	3.629233	73	50 - 150	0.0000	+/-0.50	
MPFDoA	434564.5	4.056667	687,804.00	4.056667	63	50 - 150	0.0000	+/-0.50	
D5-NEtFOSAA	136407.7	3.929517	205,524.00	3.929517	66	50 - 150	0.0000	+/-0.50	
D3-NMeFOSAA	150282.8	3.85765	234,971.00	3.857667	64	50 - 150	0.0000	+/-0.50	
FB-1 (22I2023-02)			Lab File ID: 22I2023-02.d			Analyzed: 10/19/22 23:44			
M8FOSA	188858.2	3.996567	316,483.00	3.996567	60	50 - 150	0.0000	+/-0.50	
M2PFTA	626349.9	4.297266	1,136,787.00	4.297266	55	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	61078.78	3.778883	93,577.00	3.7789	65	50 - 150	0.0000	+/-0.50	
MPFBA	389977.4	1.058467	513,802.00	1.058467	76	50 - 150	0.0000	+/-0.50	
M6PFDA	474285.2	3.779417	726,878.00	3.779417	65	50 - 150	0.0000	+/-0.50	
M3PFBS	101437.2	1.861817	137,884.00	1.861817	74	50 - 150	0.0000	+/-0.50	
M7PFUnA	446049.6	3.92205	730,410.00	3.92205	61	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	56426.67	3.4293	95,556.00	3.429317	59	50 - 150	0.0000	+/-0.50	
M5PFPeA	325499.9	1.681733	446,469.00	1.681733	73	50 - 150	0.0000	+/-0.50	
M5PFHxA	629175.4	2.531267	877,736.00	2.531283	72	50 - 150	0.0000	+/-0.50	
M3PFHxS	89798.04	3.193817	129,976.00	3.193817	69	50 - 150	0.0000	+/-0.50	
M4PFHpA	719500.6	3.154633	1,002,853.00	3.154633	72	50 - 150	0.0000	+/-0.50	
M8PFOA	738939.4	3.437833	998,644.00	3.437833	74	50 - 150	0.0000	+/-0.50	
M8PFOS	82421.17	3.6282	119,339.00	3.6282	69	50 - 150	0.0000	+/-0.50	
M9PFNA	549011.2	3.629233	778,322.00	3.629233	71	50 - 150	0.0000	+/-0.50	
MPFDoA	388710.2	4.056667	687,804.00	4.056667	57	50 - 150	0.0000	+/-0.50	
D5-NEtFOSAA	120618.8	3.929517	205,524.00	3.929517	59	50 - 150	0.0000	+/-0.50	
D3-NMeFOSAA	149337.3	3.85765	234,971.00	3.857667	64	50 - 150	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	637408	10.461	620,074.00	10.465	103	50 - 200	-0.0040	+/-0.50	

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INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
MW-18 (22I2023-03)			Lab File ID: 22I2023-03.d			Analyzed: 10/19/22 23:59			
M8FOSA	176918.3	3.996567	316,483.00	3.996567	56	50 - 150	0.0000	+/-0.50	
M2PFTA	607769.3	4.297283	1,136,787.00	4.297266	53	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	179664.3	3.7789	93,577.00	3.778883	192	50 - 150	0.0000	+/-0.50	*
MPFBA	133002.5	1.04185	513,802.00	1.058467	26	50 - 150	-0.0166	+/-0.50	*
M6PFDA	383655.4	3.779417	726,878.00	3.779417	53	50 - 150	0.0000	+/-0.50	
M3PFBS	90684.27	1.828667	137,884.00	1.861817	66	50 - 150	-0.0332	+/-0.50	
M7PFUnA	457180.4	3.922067	730,410.00	3.92205	63	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	158788.8	3.41245	95,556.00	3.429317	166	50 - 150	-0.0169	+/-0.50	*
M5PFPeA	205765.7	1.656917	446,469.00	1.681733	46	50 - 150	-0.0248	+/-0.50	*
M5PFHxA	527219.1	2.482	877,736.00	2.523067	60	50 - 150	-0.0411	+/-0.50	
M3PFHxS	88669.98	3.177667	129,976.00	3.193817	68	50 - 150	-0.0162	+/-0.50	
M4PFHpA	556045.4	3.138483	1,002,853.00	3.154633	55	50 - 150	-0.0162	+/-0.50	
M8PFOA	549179.6	3.42985	998,644.00	3.437833	55	50 - 150	-0.0080	+/-0.50	
M8PFOS	83492.59	3.6282	119,339.00	3.6282	70	50 - 150	0.0000	+/-0.50	
M9PFNA	418261.9	3.62125	778,322.00	3.629233	54	50 - 150	-0.0080	+/-0.50	
MPFDoA	408976.6	4.056684	687,804.00	4.056667	59	50 - 150	0.0000	+/-0.50	
D5-NEtFOSAA	123450.3	3.929533	205,524.00	3.929517	60	50 - 150	0.0000	+/-0.50	
D3-NMeFOSAA	126405.7	3.8497	234,971.00	3.857667	54	50 - 150	-0.0080	+/-0.50	
1,4-Dichlorobenzene-d4	638992	10.461	620,074.00	10.465	103	50 - 200	-0.0040	+/-0.50	
Pentafluorobenzene	168567	4.196	179,464.00	4.196	94	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	265369	4.919	280,237.00	4.918	95	50 - 200	0.0010	+/-0.50	
Chlorobenzene-d5	113544	7.752	140,327.00	7.749	81	50 - 200	0.0030	+/-0.50	
1,4-Dichlorobenzene-d4	107568	10.05	128,896.00	10.047	83	50 - 200	0.0030	+/-0.50	

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INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
MW-17 (22I2023-04)			Lab File ID: 22I2023-04.d			Analyzed: 10/20/22 00:06			
M8FOSA	200442.7	3.996567	316,483.00	3.996567	63	50 - 150	0.0000	+/-0.50	
M2PFTA	675096.1	4.297283	1,136,787.00	4.297266	59	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	164852.8	3.7789	93,577.00	3.778883	176	50 - 150	0.0000	+/-0.50	*
MPFBA	138012.8	1.050167	513,802.00	1.058467	27	50 - 150	-0.0083	+/-0.50	*
M6PFDA	436141.8	3.779417	726,878.00	3.779417	60	50 - 150	0.0000	+/-0.50	
M3PFBS	91394.27	1.828667	137,884.00	1.861817	66	50 - 150	-0.0332	+/-0.50	
M7PFUnA	498521.3	3.922067	730,410.00	3.92205	68	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	168435.5	3.4205	95,556.00	3.429317	176	50 - 150	-0.0088	+/-0.50	*
M5PFPeA	230805.8	1.656917	446,469.00	1.681733	52	50 - 150	-0.0248	+/-0.50	
M5PFHxA	535918.3	2.498433	877,736.00	2.523067	61	50 - 150	-0.0246	+/-0.50	
M3PFHxS	82706.73	3.185733	129,976.00	3.193817	64	50 - 150	-0.0081	+/-0.50	
M4PFHpA	603708	3.138483	1,002,853.00	3.154633	60	50 - 150	-0.0162	+/-0.50	
M8PFOA	597899.8	3.42985	998,644.00	3.437833	60	50 - 150	-0.0080	+/-0.50	
M8PFOS	72329.7	3.6282	119,339.00	3.6282	61	50 - 150	0.0000	+/-0.50	
M9PFNA	458625.5	3.629233	778,322.00	3.629233	59	50 - 150	0.0000	+/-0.50	
MPFDoA	443811.6	4.056684	687,804.00	4.056667	65	50 - 150	0.0000	+/-0.50	
D5-NEtFOSAA	159265.5	3.929533	205,524.00	3.929517	77	50 - 150	0.0000	+/-0.50	
D3-NMeFOSAA	174162.5	3.8497	234,971.00	3.857667	74	50 - 150	-0.0080	+/-0.50	
1,4-Dichlorobenzene-d4	647963	10.461	620,074.00	10.465	104	50 - 200	-0.0040	+/-0.50	
Pentafluorobenzene	172440	4.199	179,464.00	4.196	96	50 - 200	0.0030	+/-0.50	
1,4-Difluorobenzene	273712	4.919	280,237.00	4.918	98	50 - 200	0.0010	+/-0.50	
Chlorobenzene-d5	129716	7.752	140,327.00	7.749	92	50 - 200	0.0030	+/-0.50	
1,4-Dichlorobenzene-d4	106781	10.05	128,896.00	10.047	83	50 - 200	0.0030	+/-0.50	
TB4 (22I2023-05)			Lab File ID: C22V27922.D			Analyzed: 10/06/22 16:06			
Pentafluorobenzene	166950	4.196	179,464.00	4.196	93	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	252245	4.919	280,237.00	4.918	90	50 - 200	0.0010	+/-0.50	
Chlorobenzene-d5	121704	7.752	140,327.00	7.749	87	50 - 200	0.0030	+/-0.50	
1,4-Dichlorobenzene-d4	113883	10.047	128,896.00	10.047	88	50 - 200	0.0000	+/-0.50	
Blank (B318981-BLK1)			Lab File ID: C22V27919.D			Analyzed: 10/06/22 14:54			
Pentafluorobenzene	175140	4.199	179,464.00	4.196	98	50 - 200	0.0030	+/-0.50	
1,4-Difluorobenzene	276478	4.919	280,237.00	4.918	99	50 - 200	0.0010	+/-0.50	
Chlorobenzene-d5	132993	7.752	140,327.00	7.749	95	50 - 200	0.0030	+/-0.50	
1,4-Dichlorobenzene-d4	113858	10.05	128,896.00	10.047	88	50 - 200	0.0030	+/-0.50	
LCS (B318981-BS1)			Lab File ID: C22V27915.D			Analyzed: 10/06/22 13:18			
Pentafluorobenzene	186824	4.196	179,464.00	4.196	104	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	283299	4.919	280,237.00	4.918	101	50 - 200	0.0010	+/-0.50	
Chlorobenzene-d5	141878	7.752	140,327.00	7.749	101	50 - 200	0.0030	+/-0.50	
1,4-Dichlorobenzene-d4	126240	10.044	128,896.00	10.047	98	50 - 200	-0.0030	+/-0.50	

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INTERNAL STANDARD AREA AND RT SUMMARY

SW-846 8270E

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Blank (B319124-BLK1)			Lab File ID: F22S283005.D			Analyzed: 10/10/22 09:28			
1,4-Dichlorobenzene-d4	617546	10.465	620,074.00	10.465	100	50 - 200	0.0000	+/-0.50	
LCS (B319124-BS1)			Lab File ID: F22S283006.D			Analyzed: 10/10/22 09:48			
1,4-Dichlorobenzene-d4	627549	10.461	620,074.00	10.465	101	50 - 200	-0.0040	+/-0.50	
LCS Dup (B319124-BSD1)			Lab File ID: F22S283007.D			Analyzed: 10/10/22 10:08			
1,4-Dichlorobenzene-d4	657274	10.461	620,074.00	10.465	106	50 - 200	-0.0040	+/-0.50	
Blank (B319210-BLK1)			Lab File ID: B319210-BLK1.d			Analyzed: 10/19/22 22:18			
M8FOSA	202785	3.996567	316,483.00	3.996567	64	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	155976.2	2.447533	210,645.00	2.44755	74	50 - 150	0.0000	+/-0.50	
M2PFTA	637475.8	4.297266	1,136,787.00	4.297266	56	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	66663.59	3.778883	93,577.00	3.7789	71	50 - 150	0.0000	+/-0.50	
MPFBA	427907.7	1.058467	513,802.00	1.058467	83	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	123046.1	2.782017	105,449.00	2.782017	117	50 - 150	0.0000	+/-0.50	
M6PFDA	519756.9	3.779417	726,878.00	3.779417	72	50 - 150	0.0000	+/-0.50	
M3PFBS	111504.9	1.861817	137,884.00	1.861817	81	50 - 150	0.0000	+/-0.50	
M7PFUnA	487886.1	3.92205	730,410.00	3.92205	67	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	61383.4	3.4293	95,556.00	3.429317	64	50 - 150	0.0000	+/-0.50	
M5PFPeA	358236.3	1.681733	446,469.00	1.681733	80	50 - 150	0.0000	+/-0.50	
M5PFHxA	700090.9	2.531267	877,736.00	2.531283	80	50 - 150	0.0000	+/-0.50	
M3PFHxS	101266.3	3.193817	129,976.00	3.193817	78	50 - 150	0.0000	+/-0.50	
M4PFHpA	803527.9	3.154633	1,002,853.00	3.154633	80	50 - 150	0.0000	+/-0.50	
M8PFOA	818108.7	3.437833	998,644.00	3.437833	82	50 - 150	0.0000	+/-0.50	
M8PFOS	94833.8	3.6282	119,339.00	3.6282	79	50 - 150	0.0000	+/-0.50	
M9PFNA	608241.1	3.629233	778,322.00	3.629233	78	50 - 150	0.0000	+/-0.50	
MPFDoA	420939.4	4.056667	687,804.00	4.056667	61	50 - 150	0.0000	+/-0.50	
D5-NEtFOSAA	126496	3.929517	205,524.00	3.929517	62	50 - 150	0.0000	+/-0.50	
D3-NMeFOSAA	163469.4	3.85765	234,971.00	3.857667	70	50 - 150	0.0000	+/-0.50	

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INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LCS (B319210-BS1)			Lab File ID: B319210-BS1.d			Analyzed: 10/19/22 22:10			
M8FOSA	195752.5	3.996567	316,483.00	3.996567	62	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	148305.5	2.447533	210,645.00	2.44755	70	50 - 150	0.0000	+/-0.50	
M2PFTA	685467.6	4.297266	1,136,787.00	4.297266	60	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	65831.51	3.778883	93,577.00	3.7789	70	50 - 150	0.0000	+/-0.50	
MPFBA	403791.3	1.058467	513,802.00	1.058467	79	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	76799.11	2.782017	105,449.00	2.782017	73	50 - 150	0.0000	+/-0.50	
M6PFDA	487348	3.779417	726,878.00	3.779417	67	50 - 150	0.0000	+/-0.50	
M3PFBS	105340.2	1.861817	137,884.00	1.861817	76	50 - 150	0.0000	+/-0.50	
M7PFUnA	477122.6	3.92205	730,410.00	3.92205	65	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	60721.92	3.429317	95,556.00	3.429317	64	50 - 150	0.0000	+/-0.50	
M5PFPeA	339750.2	1.681733	446,469.00	1.681733	76	50 - 150	0.0000	+/-0.50	
M5PFHxA	662182.2	2.523067	877,736.00	2.531283	75	50 - 150	-0.0082	+/-0.50	
M3PFHxS	97020.39	3.193817	129,976.00	3.193817	75	50 - 150	0.0000	+/-0.50	
M4PFHpA	747047.3	3.154633	1,002,853.00	3.154633	74	50 - 150	0.0000	+/-0.50	
M8PFOA	767527.6	3.437833	998,644.00	3.437833	77	50 - 150	0.0000	+/-0.50	
M8PFOS	86153.2	3.6282	119,339.00	3.6282	72	50 - 150	0.0000	+/-0.50	
M9PFNA	554842.9	3.629233	778,322.00	3.629233	71	50 - 150	0.0000	+/-0.50	
MPFDoA	433963.4	4.056667	687,804.00	4.056667	63	50 - 150	0.0000	+/-0.50	
D5-NEtFOSAA	125655.7	3.929517	205,524.00	3.929517	61	50 - 150	0.0000	+/-0.50	
D3-NMeFOSAA	149020.7	3.857667	234,971.00	3.857667	63	50 - 150	0.0000	+/-0.50	

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
624.1 in Water	
Benzene	CT,NY,MA,NH,RI,NC,ME,VA
Bromodichloromethane	CT,NY,MA,NH,RI,NC,ME,VA
Bromoform	CT,NY,MA,NH,RI,NC,ME,VA
Bromomethane	CT,NY,MA,NH,RI,NC,ME,VA
Carbon Tetrachloride	CT,NY,MA,NH,RI,NC,ME,VA
Chlorobenzene	CT,NY,MA,NH,RI,NC,ME,VA
Chlorodibromomethane	CT,NY,MA,NH,RI,NC,ME,VA
Chloroethane	CT,NY,MA,NH,RI,NC,ME,VA
Chloroform	CT,NY,MA,NH,RI,NC,ME,VA
Chloromethane	CT,NY,MA,NH,RI,NC,ME,VA
1,2-Dichlorobenzene	CT,NY,MA,NH,RI,NC,ME,VA
1,3-Dichlorobenzene	CT,NY,MA,NH,RI,NC,ME,VA
1,4-Dichlorobenzene	CT,NY,MA,NH,RI,NC,ME,VA
1,2-Dichloroethane	CT,NY,MA,NH,RI,NC,ME,VA
cis-1,2-Dichloroethylene	NY,MA
1,1-Dichloroethane	CT,NY,MA,NH,RI,NC,ME,VA
1,1-Dichloroethylene	CT,NY,MA,NH,RI,NC,ME,VA
trans-1,2-Dichloroethylene	CT,NY,MA,NH,RI,NC,ME,VA
1,2-Dichloropropane	CT,NY,MA,NH,RI,NC,ME,VA
cis-1,3-Dichloropropene	CT,NY,MA,NH,RI,NC,ME,VA
1,4-Dioxane	MA
trans-1,3-Dichloropropene	CT,NY,MA,NH,RI,NC,ME,VA
Ethylbenzene	CT,NY,MA,NH,RI,NC,ME,VA
Methyl tert-Butyl Ether (MTBE)	NY,MA,NH,NC
Methylene Chloride	CT,NY,MA,NH,RI,NC,ME,VA
1,1,2,2-Tetrachloroethane	CT,NY,MA,NH,RI,NC,ME,VA
Tetrachloroethylene	CT,NY,MA,NH,RI,NC,ME,VA
Toluene	CT,NY,MA,NH,RI,NC,ME,VA
1,1,1-Trichloroethane	CT,NY,MA,NH,RI,NC,ME,VA
1,1,2-Trichloroethane	CT,NY,MA,NH,RI,NC,ME,VA
Trichloroethylene	CT,NY,MA,NH,RI,NC,ME,VA
Trichlorofluoromethane (Freon 11)	CT,NY,MA,NH,RI,NC,ME,VA
Vinyl Chloride	CT,NY,MA,NH,RI,NC,ME,VA
m+p Xylene	CT,NY,MA,NH,RI,NC
o-Xylene	CT,NY,MA,NH,RI,NC
SOP-454 PFAS in Water	
Perfluorobutanoic acid (PFBA)	NH-P
Perfluorobutanesulfonic acid (PFBS)	NH-P
Perfluoropentanoic acid (PFPeA)	NH-P
Perfluorohexanoic acid (PFHxA)	NH-P
8:2 Fluorotelomersulfonic acid (8:2FTS A)	NH-P
Perfluorodecanoic acid (PFDA)	NH-P
Perfluorododecanoic acid (PFDoA)	NH-P
Perfluoroheptanesulfonic acid (PFHpS)	NH-P
N-EtFOSAA (NEtFOSAA)	NH-P
N-MeFOSAA (NMeFOSAA)	NH-P

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SOP-454 PFAS in Water	
Perfluorotetradecanoic acid (PFTA)	NH-P
Perfluorotridecanoic acid (PFTrDA)	NH-P
Perfluorodecanesulfonic acid (PFDS)	NH-P
Perfluorooctanesulfonamide (FOSA)	NH-P
Perfluorohexanesulfonic acid (PFHxS)	NH-P
6:2 Fluorotelomersulfonic acid (6:2FTS A)	NH-P
Perfluoroundecanoic acid (PFUnA)	NH-P
Perfluoroheptanoic acid (PFHpA)	NH-P
Perfluorooctanoic acid (PFOA)	NH-P
Perfluorooctanesulfonic acid (PFOS)	NH-P
Perfluorononanoic acid (PFNA)	NH-P
SW-846 8270E in Water	
1,4-Dioxane	NY,NH

Con-Test, a Pace Environmental Laboratory, operates under the following certifications and accreditations:

Code	Description	Number	Expires
MA	Massachusetts DEP	M-MA100	06/30/2023
CT	Connecticut Department of Public Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2023
NH	New Hampshire Environmental Lab	2516 NELAP	02/5/2023
RI	Rhode Island Department of Health	LAO00373	12/30/2023
NC	North Carolina Div. of Water Quality	652	12/31/2023
ME	State of Maine	MA00100	06/9/2023
VA	Commonwealth of Virginia	460217	12/14/2023
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2023

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1800 Elm Street SE
Minneapolis, MN 55414

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9/30/2022

CHAIN OF CUSTODY RECORD (New York)

Contact: https://www.pacelabs.com/contact-us/contact-environmental-sciences/

Company Name:	NYSDEC
Address:	625 Broadway Albany NY
Phone:	518 4
Project Name:	Northeast Alloys & Metals # 633345
Project Location:	Utica NY (2145 Dwyer Ave)
Project Number:	
Project Manager:	Payson Long, P.E.
Pace Analytical Quote Name/Number	
Invoice Recipient:	
Sampled By:	Joe Braun Envirospec

Requested Turnaround Time
7-Day ☐ 10-Day ☐
Due Date: 1-2 weeks

Rush Approval Required
1-Day ☐ 3-Day ☐
2-Day ☐ 4-Day ☐

Data Delivery
Format: PDF ☐ EXCEL ☐
Other: Cat B/NYSDEC 4-file EDD
CLP Like Data Pkg Required: ☐
Email To: payson.long@dec.ny.gov
Fax To #:

Pace Analytical Work Order#	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	Composite	Grab	[1]Matrix Code	Conc Code	624.1 VOC	PFAS Isotope (21 Comp)	1,4 Dioxane SIM	
1	EB-1	9/30/22 9:30			X	GW			X		
2	FB-1	9/30/22 9:35			X	GW			X	X	
3	MW-18	9/30 11:00			X	GW		X	X	X	
4	MW-17	9/30 11:10			X	GW		X	X	X	
5	TB 4	—			X	GW		X			

ANALYSIS REQUESTED

# of Containers	2	2
[2] Preservation Code	O	O
[3] Container Code	P	A

Dissolved Metals Samples
☐ Field Filtered
☐ Lab to Filter

Orthophosphate Samples
☐ Field Filtered
☐ Lab to Filter

Comments: PFAS Isotope (21 Compound)
Cat B/NYSDEC 4-file EDD
HCl added to VOC in Field

Please use the following codes to indicate possible sample concentration within the **Conc Code** column above:
H - High; M - Medium; L - Low; C - Clean; U - Unknown

[1] **Matrix Codes:**
GW = Ground Water
WW = Waste Water
DW = Drinking Water
A = Air
S = Soil
SL = Sludge
SOL = Solid
O = Other (please define)

[2] **Preservation Codes:**
I = Iced
H = HCL
M = Methanol
N = Nitric Acid
S = Sulfuric Acid
B = Sodium Bisulfate
X = Sodium Hydroxide
T = Sodium Thiosulfate
O = Other (please define) Unpreserved

[3] **Container Codes:**
A = Amber Glass
G = Glass
P = Plastic
ST = Sterile
V = Vial
S = Summa Canister
T = Tedlar Bag
O = Other (please define)

	Date/Time:
Relinquished by: (signature)	9/30 13:45
Received by: (signature) ROOE	9/30/22 1345
Relinquished by: (signature) ROOE	9/30/22 1615
Received by: (signature)	9/30/22 1615
Relinquished by: (signature)	9/30/22 1740
Received by: (signature) 5.9	9/30/22 1740

Program & Regulatory Information
☐ AWQ STDS ☐ NY TOGS
☐ NYC Sewer Discharge ☐ NY CP-51
☐ Part 360 GW (Landfill)
☐ NY Restricted Use
☐ NY Unrestricted Use
☐ NY Part 375
Other:

Deliverables
☐ Enhanced Data Package
☒ NYSDEC EQuIS EDD
☐ EQuIS (Standard) EDD
☐ NY Regulatory EDD
☐ NY Regs Hits-Only EDD
Other:
NELAC and AIHA-LAP, LLC Accredited

Project Entity
☐ Government ☐ Municipality ☐ MWRA ☐ WRTA
☐ Federal ☐ 21 J ☐ School
☐ City ☐ Brownfield ☐ MBTA

Other
☐ Chromatogram
☐ AIHA-LAP,LLC

PCB ONLY
☐ Soxhlet
☐ Non Soxhlet

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F: 413-525-6405
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Pace PEOPLE ADVANCING SCIENCE

Doc# 277 Rev 6 July 2022

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client NYDEC

Received By [signature] Date 9/30/22 Time 1740

How were the samples received? In Cooler T No Cooler ____ On Ice T No Ice ____
Direct From Sample ____ Ambient ____ Melted Ice ____

Were samples within Tempurature? Within 2-6°C T By Gun # 3 Actual Temp - 5.9
By Blank # ____ Actual Temp - ____

Was Custody Seal In tact? n/a Were Samples Tampered with? n/a

Was COC Relinquished ? T Does Chain Agree With Samples? T

Are there broken/leaking/loose caps on any samples? F

Is COC in ink/ Legible? T Were samples received within holding time? ____

Did COC include all pertinent Information? Client? T Analysis? T Sampler Name? ____
Project? T ID's? T Collection Dates/Times? ____

Are Sample labels filled out and legible? T

Are there Lab to Filters? F Who was notified? ____

Are there Rushes? F Who was notified? ____

Are there Short Holds? F Who was notified? ____

Samples are received within holding time? T Is there enough Volume? T

Is there Headspace where applicable? F MS/MSD? F

Proper Media/Containers Used? T splitting samples require F

Were trip blanks receive T On COC? T

Do All Samples Have the proper pH? n/a Acid ____ Base ____

Vials	#	Containers:	#		#	#	
Unp-		1 Liter Amb.	6	1 Liter Plastic		16 oz Amb.	
HCL-		500 mL Amb.		500 mL Plastic		8oz Amb/Clear	
Meoh-		250 mL Amb.		250 mL Plastic	8	4oz Amb/Clear	
Bisulfate-		Col./Bacteria		Flashpoint		2oz Amb/Clear	
DI-		Other Plastic		Other Glass		Encore	
Thiosulfate-	6	SOC Kit		Plastic Bag		Frozen:	
Sulfuric-		Perchlorate		Ziplock			

Unused Media

Vials	#	Containers:	#		#	#	
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.	
HCL-		500 mL Amb.		500 mL Plastic		8oz Amb/Clear	
Meoh-		250 mL Amb.		250 mL Plastic		4oz Amb/Clear	
Bisulfate-		Col./Bacteria		Flashpoint		2oz Amb/Clear	
DI-		Other Plastic		Other Glass		Encore	
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:	
Sulfuric-		Perchlorate		Ziplock			

Comments:

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January 18, 2023

Lindsay Mitchell
NYDEC_AECOM Environment - Latham, NY
40 British American Blvd.
Latham, NY 12110

Project Location: Utica, NY
Client Job Number:
Project Number: 633045
Laboratory Work Order Number: 22I2024

Enclosed are results of analyses for samples as received by the laboratory on September 30, 2022. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kyle K. Stuckey
Project Manager

Table of Contents

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

NYDEC_AECOM Environment - Latham, NY
40 British American Blvd.
Latham, NY 12110
ATTN: Lindsay Mitchell

REPORT DATE: 1/18/2023

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 633045

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 22I2024

The results of analyses performed on the following samples submitted to CON-TEST, a Pace Analytical Laboratory, are found in this report.

PROJECT LOCATION: Utica, NY

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
MW-1	22I2024-01	Ground Water		624.1	
				SOP-454 PFAS	
				SW-846 8270E	
MW-8	22I2024-02	Ground Water		624.1	
				SOP-454 PFAS	
				SW-846 8270E	
BR-2	22I2024-03	Ground Water		624.1	
				SOP-454 PFAS	
				SW-846 8270E	
MW-15	22I2024-04	Ground Water		624.1	
				SOP-454 PFAS	
				SW-846 8270E	
MW-16	22I2024-05	Ground Water		624.1	
				SOP-454 PFAS	
				SW-846 8270E	
MW-14	22I2024-06	Ground Water		624.1	
				SOP-454 PFAS	
				SW-846 8270E	
MW-5	22I2024-07	Ground Water		624.1	
				SOP-454 PFAS	
				SW-846 8270E	
MW-6	22I2024-08	Ground Water		624.1	
				SOP-454 PFAS	
				SW-846 8270E	
TB3	22I2024-09	Ground Water		624.1	

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CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

REVISED 01-18-23: cis-1,2-DCE added per the COC

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624.1

Qualifications:

PR-07

pH of sample (pH 4) is outside of method specified preservation criteria.

Analyte & Samples(s) Qualified:

22I2024-03[BR-2]

RL-11

Elevated reporting limit due to high concentration of target compounds.

Analyte & Samples(s) Qualified:

22I2024-04[MW-15], 22I2024-05[MW-16], 22I2024-06[MW-14]

SOP-454 PFAS

Qualifications:

L-01

Laboratory fortified blank/laboratory control sample recovery outside of control limits. Data validation is not affected since all results are "not detected" for all samples in this batch for this compound and bias is on the high side.

Analyte & Samples(s) Qualified:

N-EtFOSAA (NEtFOSAA)
B320010-BS1

L-02

Laboratory fortified blank/laboratory control sample recovery and duplicate recoveries outside of control limits. Data validation is not affected since all results are "not detected" for associated samples in this batch and bias is on the high side.

Analyte & Samples(s) Qualified:

N-MeFOSAA (NMeFOSAA)
B320010-BS1, B320010-BSD1

PF-20

Quantifying ion signal to noise ratio is <10. Detection is suspect.

Analyte & Samples(s) Qualified:

Perfluorobutanesulfonic acid (PFBS)
22I2024-07[MW-5], 22I2024-08[MW-6]

Perfluorobutanoic acid (PFBA)
22I2024-05[MW-16], 22I2024-06[MW-14], 22I2024-07[MW-5], 22I2024-08[MW-6]

Perfluoroheptanoic acid (PFHpA)
22I2024-06[MW-14]

Perfluorohexanoic acid (PFHxA)
22I2024-06[MW-14], 22I2024-08[MW-6]

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S-29

Extracted Internal Standard is outside of control limits.

Analyte & Samples(s) Qualified:

D3-NMeFOSAA
22I2024-06[MW-14]

D5-NEtFOSAA
22I2024-06[MW-14]

M2PFTA
22I2024-02[MW-8], 22I2024-06[MW-14], 22I2024-07[MW-5], 22I2024-08[MW-6]

M6PFDA
22I2024-06[MW-14]

M7PFUnA
22I2024-06[MW-14]

M8FOSA
22I2024-02[MW-8], 22I2024-05[MW-16], 22I2024-06[MW-14], 22I2024-07[MW-5], 22I2024-08[MW-6]

M9PFNA
22I2024-06[MW-14]

MPFBA
22I2024-06[MW-14]

MPFDoA
22I2024-02[MW-8], 22I2024-06[MW-14]

The results of analyses reported only relate to samples submitted to Con-Test, a Pace Analytical Laboratory, for testing.
I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Lisa A. Worthington
Technical Representative

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Project Location: Utica, NY | Sample Description: | Work Order: 22I2024

Date Received: 9/30/2022

Field Sample #: MW-1 | Sampled: 9/29/2022 10:45

Sample ID: 22I2024-01

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Benzene	<0.200	1.00	0.200	µg/L	1		624.1	10/7/22	10/8/22 12:39	MFF
Bromodichloromethane	<0.180	2.00	0.180	µg/L	1		624.1	10/7/22	10/8/22 12:39	MFF
Bromoform	<0.383	2.00	0.383	µg/L	1		624.1	10/7/22	10/8/22 12:39	MFF
Bromomethane	<1.54	2.00	1.54	µg/L	1		624.1	10/7/22	10/8/22 12:39	MFF
Carbon Tetrachloride	<0.165	2.00	0.165	µg/L	1		624.1	10/7/22	10/8/22 12:39	MFF
Chlorobenzene	<0.105	2.00	0.105	µg/L	1		624.1	10/7/22	10/8/22 12:39	MFF
Chlorodibromomethane	<0.222	2.00	0.222	µg/L	1		624.1	10/7/22	10/8/22 12:39	MFF
Chloroethane	<0.320	2.00	0.320	µg/L	1		624.1	10/7/22	10/8/22 12:39	MFF
Chloroform	<0.168	2.00	0.168	µg/L	1		624.1	10/7/22	10/8/22 12:39	MFF
Chloromethane	<0.522	2.00	0.522	µg/L	1		624.1	10/7/22	10/8/22 12:39	MFF
1,2-Dichlorobenzene	<0.122	2.00	0.122	µg/L	1		624.1	10/7/22	10/8/22 12:39	MFF
1,3-Dichlorobenzene	<0.118	2.00	0.118	µg/L	1		624.1	10/7/22	10/8/22 12:39	MFF
1,4-Dichlorobenzene	<0.130	2.00	0.130	µg/L	1		624.1	10/7/22	10/8/22 12:39	MFF
1,2-Dichloroethane	<0.308	2.00	0.308	µg/L	1		624.1	10/7/22	10/8/22 12:39	MFF
cis-1,2-Dichloroethylene	<0.147	1.00	0.147	µg/L	1		624.1	10/7/22	10/8/22 12:39	MFF
1,1-Dichloroethane	<0.142	2.00	0.142	µg/L	1		624.1	10/7/22	10/8/22 12:39	MFF
1,1-Dichloroethylene	<0.141	2.00	0.141	µg/L	1		624.1	10/7/22	10/8/22 12:39	MFF
trans-1,2-Dichloroethylene	<0.169	2.00	0.169	µg/L	1		624.1	10/7/22	10/8/22 12:39	MFF
1,2-Dichloropropane	<0.181	2.00	0.181	µg/L	1		624.1	10/7/22	10/8/22 12:39	MFF
cis-1,3-Dichloropropene	<0.158	2.00	0.158	µg/L	1		624.1	10/7/22	10/8/22 12:39	MFF
trans-1,3-Dichloropropene	<0.168	2.00	0.168	µg/L	1		624.1	10/7/22	10/8/22 12:39	MFF
Ethylbenzene	<0.215	2.00	0.215	µg/L	1		624.1	10/7/22	10/8/22 12:39	MFF
Methyl tert-Butyl Ether (MTBE)	<0.172	2.00	0.172	µg/L	1		624.1	10/7/22	10/8/22 12:39	MFF
Methylene Chloride	<0.235	5.00	0.235	µg/L	1		624.1	10/7/22	10/8/22 12:39	MFF
1,1,2,2-Tetrachloroethane	<0.127	2.00	0.127	µg/L	1		624.1	10/7/22	10/8/22 12:39	MFF
Tetrachloroethylene	<0.187	2.00	0.187	µg/L	1		624.1	10/7/22	10/8/22 12:39	MFF
Toluene	<0.224	1.00	0.224	µg/L	1		624.1	10/7/22	10/8/22 12:39	MFF
1,1,1-Trichloroethane	<0.169	2.00	0.169	µg/L	1		624.1	10/7/22	10/8/22 12:39	MFF
1,1,2-Trichloroethane	<0.183	2.00	0.183	µg/L	1		624.1	10/7/22	10/8/22 12:39	MFF
Trichloroethylene	<0.189	2.00	0.189	µg/L	1		624.1	10/7/22	10/8/22 12:39	MFF
Trichlorofluoromethane (Freon 11)	<0.176	2.00	0.176	µg/L	1		624.1	10/7/22	10/8/22 12:39	MFF
Vinyl Chloride	<0.208	2.00	0.208	µg/L	1		624.1	10/7/22	10/8/22 12:39	MFF
m+p Xylene	<0.459	2.00	0.459	µg/L	1		624.1	10/7/22	10/8/22 12:39	MFF
o-Xylene	<0.230	1.00	0.230	µg/L	1		624.1	10/7/22	10/8/22 12:39	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	100	70-130		10/8/22 12:39
Toluene-d8	99.7	70-130		10/8/22 12:39
4-Bromofluorobenzene	102	70-130		10/8/22 12:39

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Utica, NY | Sample Description: | Work Order: 22I2024

Date Received: 9/30/2022

Field Sample #: MW-1 | Sampled: 9/29/2022 10:45

Sample ID: 22I2024-01

Sample Matrix: Ground Water

1,4-Dioxane by isotope dilution GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
1,4-Dioxane	ND	0.20	0.033	µg/L	1		SW-846 8270E	10/6/22	10/11/22 5:35	SPF

Surrogates	% Recovery	Recovery Limits	Flag/Qual		
1,4-Dioxane-d8	25.1	15-110		10/11/22 5:35	

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Project Location: Utica, NY | Sample Description: | Work Order: 22I2024

Date Received: 9/30/2022

Field Sample #: MW-1 | Sampled: 9/29/2022 10:45

Sample ID: 22I2024-01

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	ND	2.0	0.73	ng/L	1		SOP-454 PFAS	10/15/22	10/21/22 10:47	DRL
Perfluorobutanesulfonic acid (PFBS)	0.54	2.0	0.28	ng/L	1	J	SOP-454 PFAS	10/15/22	10/21/22 10:47	DRL
Perfluoropentanoic acid (PFPeA)	ND	2.0	0.39	ng/L	1		SOP-454 PFAS	10/15/22	10/21/22 10:47	DRL
Perfluorohexanoic acid (PFHxA)	ND	2.0	0.38	ng/L	1		SOP-454 PFAS	10/15/22	10/21/22 10:47	DRL
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	10/15/22	10/21/22 10:47	DRL
Perfluorodecanoic acid (PFDA)	ND	2.0	0.48	ng/L	1		SOP-454 PFAS	10/15/22	10/21/22 10:47	DRL
Perfluorododecanoic acid (PFDoA)	ND	2.0	0.43	ng/L	1		SOP-454 PFAS	10/15/22	10/21/22 10:47	DRL
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	0.92	ng/L	1		SOP-454 PFAS	10/15/22	10/21/22 10:47	DRL
N-EtFOSAA (NEtFOSAA)	ND	2.0	0.62	ng/L	1		SOP-454 PFAS	10/15/22	10/21/22 10:47	DRL
N-MeFOSAA (NMeFOSAA)	ND	2.0	0.75	ng/L	1		SOP-454 PFAS	10/15/22	10/21/22 10:47	DRL
Perfluorotetradecanoic acid (PFTA)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	10/15/22	10/21/22 10:47	DRL
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	0.27	ng/L	1		SOP-454 PFAS	10/15/22	10/21/22 10:47	DRL
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	0.32	ng/L	1		SOP-454 PFAS	10/15/22	10/21/22 10:47	DRL
Perfluorooctanesulfonamide (FOSA)	ND	2.0	0.41	ng/L	1		SOP-454 PFAS	10/15/22	10/21/22 10:47	DRL
Perfluorohexanesulfonic acid (PFHxS)	ND	2.0	0.33	ng/L	1		SOP-454 PFAS	10/15/22	10/21/22 10:47	DRL
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	10/15/22	10/21/22 10:47	DRL
Perfluoroundecanoic acid (PFUnA)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	10/15/22	10/21/22 10:47	DRL
Perfluoroheptanoic acid (PFHpA)	ND	2.0	0.34	ng/L	1		SOP-454 PFAS	10/15/22	10/21/22 10:47	DRL
Perfluorooctanoic acid (PFOA)	ND	2.0	0.67	ng/L	1		SOP-454 PFAS	10/15/22	10/21/22 10:47	DRL
Perfluorooctanesulfonic acid (PFOS)	ND	2.0	0.59	ng/L	1		SOP-454 PFAS	10/15/22	10/21/22 10:47	DRL
Perfluorononanoic acid (PFNA)	ND	2.0	0.34	ng/L	1		SOP-454 PFAS	10/15/22	10/21/22 10:47	DRL

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Project Location: Utica, NY | Sample Description: | Work Order: 22I2024

Date Received: 9/30/2022

Field Sample #: MW-8 | Sampled: 9/29/2022 11:45

Sample ID: 22I2024-02

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Benzene	<0.200	1.00	0.200	µg/L	1		624.1	10/7/22	10/8/22 13:03	MFF
Bromodichloromethane	<0.180	2.00	0.180	µg/L	1		624.1	10/7/22	10/8/22 13:03	MFF
Bromoform	<0.383	2.00	0.383	µg/L	1		624.1	10/7/22	10/8/22 13:03	MFF
Bromomethane	<1.54	2.00	1.54	µg/L	1		624.1	10/7/22	10/8/22 13:03	MFF
Carbon Tetrachloride	<0.165	2.00	0.165	µg/L	1		624.1	10/7/22	10/8/22 13:03	MFF
Chlorobenzene	<0.105	2.00	0.105	µg/L	1		624.1	10/7/22	10/8/22 13:03	MFF
Chlorodibromomethane	<0.222	2.00	0.222	µg/L	1		624.1	10/7/22	10/8/22 13:03	MFF
Chloroethane	<0.320	2.00	0.320	µg/L	1		624.1	10/7/22	10/8/22 13:03	MFF
Chloroform	<0.168	2.00	0.168	µg/L	1		624.1	10/7/22	10/8/22 13:03	MFF
Chloromethane	<0.522	2.00	0.522	µg/L	1		624.1	10/7/22	10/8/22 13:03	MFF
1,2-Dichlorobenzene	<0.122	2.00	0.122	µg/L	1		624.1	10/7/22	10/8/22 13:03	MFF
1,3-Dichlorobenzene	<0.118	2.00	0.118	µg/L	1		624.1	10/7/22	10/8/22 13:03	MFF
1,4-Dichlorobenzene	<0.130	2.00	0.130	µg/L	1		624.1	10/7/22	10/8/22 13:03	MFF
1,2-Dichloroethane	<0.308	2.00	0.308	µg/L	1		624.1	10/7/22	10/8/22 13:03	MFF
cis-1,2-Dichloroethylene	<0.147	1.00	0.147	µg/L	1		624.1	10/7/22	10/8/22 13:03	MFF
1,1-Dichloroethane	<0.142	2.00	0.142	µg/L	1		624.1	10/7/22	10/8/22 13:03	MFF
1,1-Dichloroethylene	<0.141	2.00	0.141	µg/L	1		624.1	10/7/22	10/8/22 13:03	MFF
trans-1,2-Dichloroethylene	<0.169	2.00	0.169	µg/L	1		624.1	10/7/22	10/8/22 13:03	MFF
1,2-Dichloropropane	<0.181	2.00	0.181	µg/L	1		624.1	10/7/22	10/8/22 13:03	MFF
cis-1,3-Dichloropropene	<0.158	2.00	0.158	µg/L	1		624.1	10/7/22	10/8/22 13:03	MFF
trans-1,3-Dichloropropene	<0.168	2.00	0.168	µg/L	1		624.1	10/7/22	10/8/22 13:03	MFF
Ethylbenzene	<0.215	2.00	0.215	µg/L	1		624.1	10/7/22	10/8/22 13:03	MFF
Methyl tert-Butyl Ether (MTBE)	<0.172	2.00	0.172	µg/L	1		624.1	10/7/22	10/8/22 13:03	MFF
Methylene Chloride	<0.235	5.00	0.235	µg/L	1		624.1	10/7/22	10/8/22 13:03	MFF
1,1,2,2-Tetrachloroethane	<0.127	2.00	0.127	µg/L	1		624.1	10/7/22	10/8/22 13:03	MFF
Tetrachloroethylene	<0.187	2.00	0.187	µg/L	1		624.1	10/7/22	10/8/22 13:03	MFF
Toluene	<0.224	1.00	0.224	µg/L	1		624.1	10/7/22	10/8/22 13:03	MFF
1,1,1-Trichloroethane	<0.169	2.00	0.169	µg/L	1		624.1	10/7/22	10/8/22 13:03	MFF
1,1,2-Trichloroethane	<0.183	2.00	0.183	µg/L	1		624.1	10/7/22	10/8/22 13:03	MFF
Trichloroethylene	<0.189	2.00	0.189	µg/L	1		624.1	10/7/22	10/8/22 13:03	MFF
Trichlorofluoromethane (Freon 11)	<0.176	2.00	0.176	µg/L	1		624.1	10/7/22	10/8/22 13:03	MFF
Vinyl Chloride	<0.208	2.00	0.208	µg/L	1		624.1	10/7/22	10/8/22 13:03	MFF
m+p Xylene	<0.459	2.00	0.459	µg/L	1		624.1	10/7/22	10/8/22 13:03	MFF
o-Xylene	<0.230	1.00	0.230	µg/L	1		624.1	10/7/22	10/8/22 13:03	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	101	70-130		10/8/22 13:03
Toluene-d8	99.4	70-130		10/8/22 13:03
4-Bromofluorobenzene	98.8	70-130		10/8/22 13:03

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Project Location: Utica, NY | Sample Description: | Work Order: 22I2024

Date Received: 9/30/2022

Field Sample #: MW-8 | Sampled: 9/29/2022 11:45

Sample ID: 22I2024-02

Sample Matrix: Ground Water

1,4-Dioxane by isotope dilution GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
1,4-Dioxane	ND	0.21	0.034	µg/L	1		SW-846 8270E	10/6/22	10/11/22 5:55	SPF

Surrogates	% Recovery	Recovery Limits	Flag/Qual		
1,4-Dioxane-d8	32.0	15-110		10/11/22 5:55	

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Project Location: Utica, NY | Sample Description: | Work Order: 22I2024

Date Received: 9/30/2022

Field Sample #: MW-8 | Sampled: 9/29/2022 11:45

Sample ID: 22I2024-02

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	ND	1.9	0.72	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:04	DRL
Perfluorobutanesulfonic acid (PFBS)	ND	1.9	0.27	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:04	DRL
Perfluoropentanoic acid (PFPeA)	ND	1.9	0.38	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:04	DRL
Perfluorohexanoic acid (PFHxA)	ND	1.9	0.37	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:04	DRL
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	1.9	0.59	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:04	DRL
Perfluorodecanoic acid (PFDA)	ND	1.9	0.47	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:04	DRL
Perfluorododecanoic acid (PFDoA)	ND	1.9	0.43	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:04	DRL
Perfluoroheptanesulfonic acid (PFHpS)	ND	1.9	0.91	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:04	DRL
N-EtFOSAA (NEtFOSAA)	ND	1.9	0.61	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:04	DRL
N-MeFOSAA (NMeFOSAA)	ND	1.9	0.74	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:04	DRL
Perfluorotetradecanoic acid (PFTA)	ND	1.9	0.35	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:04	DRL
Perfluorotridecanoic acid (PFTrDA)	ND	1.9	0.27	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:04	DRL
Perfluorodecanesulfonic acid (PFDS)	ND	1.9	0.32	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:04	DRL
Perfluorooctanesulfonamide (FOSA)	ND	1.9	0.41	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:04	DRL
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9	0.33	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:04	DRL
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	1.9	0.35	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:04	DRL
Perfluoroundecanoic acid (PFUnA)	ND	1.9	0.36	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:04	DRL
Perfluoroheptanoic acid (PFHpA)	ND	1.9	0.33	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:04	DRL
Perfluorooctanoic acid (PFOA)	ND	1.9	0.66	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:04	DRL
Perfluorooctanesulfonic acid (PFOS)	ND	1.9	0.58	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:04	DRL
Perfluorononanoic acid (PFNA)	ND	1.9	0.33	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:04	DRL

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Project Location: Utica, NY | Sample Description: | Work Order: 22I2024

Date Received: 9/30/2022

Field Sample #: BR-2 | Sampled: 9/29/2022 13:10

Sample ID: 22I2024-03

Sample Matrix: Ground Water

Sample Flags: PR-07

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Benzene	<0.200	1.00	0.200	µg/L	1		624.1	10/7/22	10/8/22 13:27	MFF
Bromodichloromethane	<0.180	2.00	0.180	µg/L	1		624.1	10/7/22	10/8/22 13:27	MFF
Bromoform	<0.383	2.00	0.383	µg/L	1		624.1	10/7/22	10/8/22 13:27	MFF
Bromomethane	<1.54	2.00	1.54	µg/L	1		624.1	10/7/22	10/8/22 13:27	MFF
Carbon Tetrachloride	<0.165	2.00	0.165	µg/L	1		624.1	10/7/22	10/8/22 13:27	MFF
Chlorobenzene	<0.105	2.00	0.105	µg/L	1		624.1	10/7/22	10/8/22 13:27	MFF
Chlorodibromomethane	<0.222	2.00	0.222	µg/L	1		624.1	10/7/22	10/8/22 13:27	MFF
Chloroethane	<0.320	2.00	0.320	µg/L	1		624.1	10/7/22	10/8/22 13:27	MFF
Chloroform	<0.168	2.00	0.168	µg/L	1		624.1	10/7/22	10/8/22 13:27	MFF
Chloromethane	<0.522	2.00	0.522	µg/L	1		624.1	10/7/22	10/8/22 13:27	MFF
1,2-Dichlorobenzene	<0.122	2.00	0.122	µg/L	1		624.1	10/7/22	10/8/22 13:27	MFF
1,3-Dichlorobenzene	<0.118	2.00	0.118	µg/L	1		624.1	10/7/22	10/8/22 13:27	MFF
1,4-Dichlorobenzene	<0.130	2.00	0.130	µg/L	1		624.1	10/7/22	10/8/22 13:27	MFF
1,2-Dichloroethane	<0.308	2.00	0.308	µg/L	1		624.1	10/7/22	10/8/22 13:27	MFF
cis-1,2-Dichloroethylene	<0.147	1.00	0.147	µg/L	1		624.1	10/7/22	10/8/22 13:27	MFF
1,1-Dichloroethane	<0.142	2.00	0.142	µg/L	1		624.1	10/7/22	10/8/22 13:27	MFF
1,1-Dichloroethylene	<0.141	2.00	0.141	µg/L	1		624.1	10/7/22	10/8/22 13:27	MFF
trans-1,2-Dichloroethylene	<0.169	2.00	0.169	µg/L	1		624.1	10/7/22	10/8/22 13:27	MFF
1,2-Dichloropropane	<0.181	2.00	0.181	µg/L	1		624.1	10/7/22	10/8/22 13:27	MFF
cis-1,3-Dichloropropene	<0.158	2.00	0.158	µg/L	1		624.1	10/7/22	10/8/22 13:27	MFF
trans-1,3-Dichloropropene	<0.168	2.00	0.168	µg/L	1		624.1	10/7/22	10/8/22 13:27	MFF
Ethylbenzene	<0.215	2.00	0.215	µg/L	1		624.1	10/7/22	10/8/22 13:27	MFF
Methyl tert-Butyl Ether (MTBE)	<0.172	2.00	0.172	µg/L	1		624.1	10/7/22	10/8/22 13:27	MFF
Methylene Chloride	<0.235	5.00	0.235	µg/L	1		624.1	10/7/22	10/8/22 13:27	MFF
1,1,2,2-Tetrachloroethane	<0.127	2.00	0.127	µg/L	1		624.1	10/7/22	10/8/22 13:27	MFF
Tetrachloroethylene	<0.187	2.00	0.187	µg/L	1		624.1	10/7/22	10/8/22 13:27	MFF
Toluene	<0.224	1.00	0.224	µg/L	1		624.1	10/7/22	10/8/22 13:27	MFF
1,1,1-Trichloroethane	<0.169	2.00	0.169	µg/L	1		624.1	10/7/22	10/8/22 13:27	MFF
1,1,2-Trichloroethane	<0.183	2.00	0.183	µg/L	1		624.1	10/7/22	10/8/22 13:27	MFF
Trichloroethylene	<0.189	2.00	0.189	µg/L	1		624.1	10/7/22	10/8/22 13:27	MFF
Trichlorofluoromethane (Freon 11)	<0.176	2.00	0.176	µg/L	1		624.1	10/7/22	10/8/22 13:27	MFF
Vinyl Chloride	<0.208	2.00	0.208	µg/L	1		624.1	10/7/22	10/8/22 13:27	MFF
m+p Xylene	<0.459	2.00	0.459	µg/L	1		624.1	10/7/22	10/8/22 13:27	MFF
o-Xylene	<0.230	1.00	0.230	µg/L	1		624.1	10/7/22	10/8/22 13:27	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	100	70-130		10/8/22 13:27
Toluene-d8	98.2	70-130		10/8/22 13:27
4-Bromofluorobenzene	99.4	70-130		10/8/22 13:27

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Project Location: Utica, NY | Sample Description: | Work Order: 22I2024

Date Received: 9/30/2022

Field Sample #: BR-2 | Sampled: 9/29/2022 13:10

Sample ID: 22I2024-03

Sample Matrix: Ground Water

1,4-Dioxane by isotope dilution GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
1,4-Dioxane	ND	0.20	0.033	µg/L	1		SW-846 8270E	10/6/22	10/11/22 6:16	SPF

Surrogates	% Recovery	Recovery Limits	Flag/Qual		
1,4-Dioxane-d8	30.9	15-110		10/11/22 6:16	

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Project Location: Utica, NY | Sample Description: | Work Order: 22I2024

Date Received: 9/30/2022

Field Sample #: BR-2 | Sampled: 9/29/2022 13:10

Sample ID: 22I2024-03

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	0.91	1.9	0.69	ng/L	1	J	SOP-454 PFAS	10/19/22	10/24/22 16:11	DRL
Perfluorobutanesulfonic acid (PFBS)	ND	1.9	0.26	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:11	DRL
Perfluoropentanoic acid (PFPeA)	ND	1.9	0.36	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:11	DRL
Perfluorohexanoic acid (PFHxA)	ND	1.9	0.36	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:11	DRL
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	1.9	0.56	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:11	DRL
Perfluorodecanoic acid (PFDA)	ND	1.9	0.45	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:11	DRL
Perfluorododecanoic acid (PFDoA)	ND	1.9	0.41	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:11	DRL
Perfluoroheptanesulfonic acid (PFHpS)	ND	1.9	0.87	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:11	DRL
N-EtFOSAA (NEtFOSAA)	ND	1.9	0.58	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:11	DRL
N-MeFOSAA (NMeFOSAA)	ND	1.9	0.70	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:11	DRL
Perfluorotetradecanoic acid (PFTA)	ND	1.9	0.34	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:11	DRL
Perfluorotridecanoic acid (PFTrDA)	ND	1.9	0.26	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:11	DRL
Perfluorodecanesulfonic acid (PFDS)	ND	1.9	0.30	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:11	DRL
Perfluorooctanesulfonamide (FOSA)	ND	1.9	0.39	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:11	DRL
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9	0.31	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:11	DRL
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	1.9	0.34	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:11	DRL
Perfluoroundecanoic acid (PFUnA)	ND	1.9	0.34	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:11	DRL
Perfluoroheptanoic acid (PFHpA)	ND	1.9	0.32	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:11	DRL
Perfluorooctanoic acid (PFOA)	ND	1.9	0.63	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:11	DRL
Perfluorooctanesulfonic acid (PFOS)	ND	1.9	0.56	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:11	DRL
Perfluorononanoic acid (PFNA)	ND	1.9	0.32	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:11	DRL

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Project Location: Utica, NY | Sample Description: | Work Order: 22I2024

Date Received: 9/30/2022

Field Sample #: MW-15 | Sampled: 9/29/2022 14:30

Sample ID: 22I2024-04

Sample Matrix: Ground Water

Sample Flags: RL-11

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Benzene	<2.00	10.0	2.00	µg/L	10		624.1	10/7/22	10/8/22 14:39	MFF
Bromodichloromethane	<1.80	20.0	1.80	µg/L	10		624.1	10/7/22	10/8/22 14:39	MFF
Bromoform	<3.83	20.0	3.83	µg/L	10		624.1	10/7/22	10/8/22 14:39	MFF
Bromomethane	<15.4	20.0	15.4	µg/L	10		624.1	10/7/22	10/8/22 14:39	MFF
Carbon Tetrachloride	<1.65	20.0	1.65	µg/L	10		624.1	10/7/22	10/8/22 14:39	MFF
Chlorobenzene	<1.05	20.0	1.05	µg/L	10		624.1	10/7/22	10/8/22 14:39	MFF
Chlorodibromomethane	<2.22	20.0	2.22	µg/L	10		624.1	10/7/22	10/8/22 14:39	MFF
Chloroethane	<3.20	20.0	3.20	µg/L	10		624.1	10/7/22	10/8/22 14:39	MFF
Chloroform	<1.68	20.0	1.68	µg/L	10		624.1	10/7/22	10/8/22 14:39	MFF
Chloromethane	<5.22	20.0	5.22	µg/L	10		624.1	10/7/22	10/8/22 14:39	MFF
1,2-Dichlorobenzene	<1.22	20.0	1.22	µg/L	10		624.1	10/7/22	10/8/22 14:39	MFF
1,3-Dichlorobenzene	<1.18	20.0	1.18	µg/L	10		624.1	10/7/22	10/8/22 14:39	MFF
1,4-Dichlorobenzene	<1.30	20.0	1.30	µg/L	10		624.1	10/7/22	10/8/22 14:39	MFF
1,2-Dichloroethane	<3.08	20.0	3.08	µg/L	10		624.1	10/7/22	10/8/22 14:39	MFF
cis-1,2-Dichloroethylene	446	10.0	1.47	µg/L	10		624.1	10/7/22	10/8/22 14:39	MFF
1,1-Dichloroethane	3.70	20.0	1.42	µg/L	10	J	624.1	10/7/22	10/8/22 14:39	MFF
1,1-Dichloroethylene	<1.41	20.0	1.41	µg/L	10		624.1	10/7/22	10/8/22 14:39	MFF
trans-1,2-Dichloroethylene	2.20	20.0	1.69	µg/L	10	J	624.1	10/7/22	10/8/22 14:39	MFF
1,2-Dichloropropane	<1.81	20.0	1.81	µg/L	10		624.1	10/7/22	10/8/22 14:39	MFF
cis-1,3-Dichloropropene	<1.58	20.0	1.58	µg/L	10		624.1	10/7/22	10/8/22 14:39	MFF
trans-1,3-Dichloropropene	<1.68	20.0	1.68	µg/L	10		624.1	10/7/22	10/8/22 14:39	MFF
Ethylbenzene	<2.15	20.0	2.15	µg/L	10		624.1	10/7/22	10/8/22 14:39	MFF
Methyl tert-Butyl Ether (MTBE)	<1.72	20.0	1.72	µg/L	10		624.1	10/7/22	10/8/22 14:39	MFF
Methylene Chloride	<2.35	50.0	2.35	µg/L	10		624.1	10/7/22	10/8/22 14:39	MFF
1,1,2,2-Tetrachloroethane	<1.27	20.0	1.27	µg/L	10		624.1	10/7/22	10/8/22 14:39	MFF
Tetrachloroethylene	<1.87	20.0	1.87	µg/L	10		624.1	10/7/22	10/8/22 14:39	MFF
Toluene	<2.24	10.0	2.24	µg/L	10		624.1	10/7/22	10/8/22 14:39	MFF
1,1,1-Trichloroethane	6.40	20.0	1.69	µg/L	10	J	624.1	10/7/22	10/8/22 14:39	MFF
1,1,2-Trichloroethane	<1.83	20.0	1.83	µg/L	10		624.1	10/7/22	10/8/22 14:39	MFF
Trichloroethylene	1140	20.0	1.89	µg/L	10		624.1	10/7/22	10/8/22 14:39	MFF
Trichlorofluoromethane (Freon 11)	<1.76	20.0	1.76	µg/L	10		624.1	10/7/22	10/8/22 14:39	MFF
Vinyl Chloride	57.7	20.0	2.08	µg/L	10		624.1	10/7/22	10/8/22 14:39	MFF
m+p Xylene	<4.59	20.0	4.59	µg/L	10		624.1	10/7/22	10/8/22 14:39	MFF
o-Xylene	<2.30	10.0	2.30	µg/L	10		624.1	10/7/22	10/8/22 14:39	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	104	70-130		10/8/22 14:39
Toluene-d8	97.8	70-130		10/8/22 14:39
4-Bromofluorobenzene	101	70-130		10/8/22 14:39

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Project Location: Utica, NY | Sample Description: | Work Order: 22I2024

Date Received: 9/30/2022

Field Sample #: MW-15 | Sampled: 9/29/2022 14:30

Sample ID: 22I2024-04

Sample Matrix: Ground Water

1,4-Dioxane by isotope dilution GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
1,4-Dioxane	2.8	0.20	0.033	µg/L	1		SW-846 8270E	10/6/22	10/11/22 6:36	SPF

Surrogates	% Recovery	Recovery Limits	Flag/Qual		
1,4-Dioxane-d8	27.3	15-110		10/11/22 6:36	

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Project Location: Utica, NY | Sample Description: | Work Order: 22I2024

Date Received: 9/30/2022

Field Sample #: MW-15 | Sampled: 9/29/2022 14:30

Sample ID: 22I2024-04

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	3.0	2.0	0.73	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:18	DRL
Perfluorobutanesulfonic acid (PFBS)	ND	2.0	0.28	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:18	DRL
Perfluoropentanoic acid (PFPeA)	0.76	2.0	0.39	ng/L	1	J	SOP-454 PFAS	10/19/22	10/24/22 16:18	DRL
Perfluorohexanoic acid (PFHxA)	0.78	2.0	0.38	ng/L	1	J	SOP-454 PFAS	10/19/22	10/24/22 16:18	DRL
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:18	DRL
Perfluorodecanoic acid (PFDA)	ND	2.0	0.48	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:18	DRL
Perfluorododecanoic acid (PFDoA)	ND	2.0	0.43	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:18	DRL
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	0.92	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:18	DRL
N-EtFOSAA (NEtFOSAA)	ND	2.0	0.62	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:18	DRL
N-MeFOSAA (NMeFOSAA)	ND	2.0	0.75	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:18	DRL
Perfluorotetradecanoic acid (PFTA)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:18	DRL
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	0.27	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:18	DRL
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	0.32	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:18	DRL
Perfluorooctanesulfonamide (FOSA)	ND	2.0	0.41	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:18	DRL
Perfluorohexanesulfonic acid (PFHxS)	ND	2.0	0.33	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:18	DRL
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:18	DRL
Perfluoroundecanoic acid (PFUnA)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:18	DRL
Perfluoroheptanoic acid (PFHpA)	0.55	2.0	0.34	ng/L	1	J	SOP-454 PFAS	10/19/22	10/24/22 16:18	DRL
Perfluorooctanoic acid (PFOA)	1.6	2.0	0.67	ng/L	1	J	SOP-454 PFAS	10/19/22	10/24/22 16:18	DRL
Perfluorooctanesulfonic acid (PFOS)	ND	2.0	0.59	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:18	DRL
Perfluorononanoic acid (PFNA)	ND	2.0	0.34	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:18	DRL

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Project Location: Utica, NY | Sample Description: | Work Order: 22I2024

Date Received: 9/30/2022

Field Sample #: MW-16 | Sampled: 9/29/2022 15:13

Sample ID: 22I2024-05

Sample Matrix: Ground Water

Sample Flags: RL-11

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Benzene	15.0	50.0	9.99	µg/L	50	J	624.1	10/7/22	10/8/22 15:04	MFF
Bromodichloromethane	<9.02	100	9.02	µg/L	50		624.1	10/7/22	10/8/22 15:04	MFF
Bromoform	<19.2	100	19.2	µg/L	50		624.1	10/7/22	10/8/22 15:04	MFF
Bromomethane	<76.9	100	76.9	µg/L	50		624.1	10/7/22	10/8/22 15:04	MFF
Carbon Tetrachloride	<8.25	100	8.25	µg/L	50		624.1	10/7/22	10/8/22 15:04	MFF
Chlorobenzene	<5.26	100	5.26	µg/L	50		624.1	10/7/22	10/8/22 15:04	MFF
Chlorodibromomethane	<11.1	100	11.1	µg/L	50		624.1	10/7/22	10/8/22 15:04	MFF
Chloroethane	<16.0	100	16.0	µg/L	50		624.1	10/7/22	10/8/22 15:04	MFF
Chloroform	<8.38	100	8.38	µg/L	50		624.1	10/7/22	10/8/22 15:04	MFF
Chloromethane	<26.1	100	26.1	µg/L	50		624.1	10/7/22	10/8/22 15:04	MFF
1,2-Dichlorobenzene	<6.09	100	6.09	µg/L	50		624.1	10/7/22	10/8/22 15:04	MFF
1,3-Dichlorobenzene	<5.91	100	5.91	µg/L	50		624.1	10/7/22	10/8/22 15:04	MFF
1,4-Dichlorobenzene	<6.51	100	6.51	µg/L	50		624.1	10/7/22	10/8/22 15:04	MFF
1,2-Dichloroethane	<15.4	100	15.4	µg/L	50		624.1	10/7/22	10/8/22 15:04	MFF
cis-1,2-Dichloroethylene	3340	50.0	7.34	µg/L	50		624.1	10/7/22	10/8/22 15:04	MFF
1,1-Dichloroethane	12.0	100	7.08	µg/L	50	J	624.1	10/7/22	10/8/22 15:04	MFF
1,1-Dichloroethylene	26.0	100	7.07	µg/L	50	J	624.1	10/7/22	10/8/22 15:04	MFF
trans-1,2-Dichloroethylene	13.0	100	8.43	µg/L	50	J	624.1	10/7/22	10/8/22 15:04	MFF
1,2-Dichloropropane	<9.05	100	9.05	µg/L	50		624.1	10/7/22	10/8/22 15:04	MFF
cis-1,3-Dichloropropene	<7.91	100	7.91	µg/L	50		624.1	10/7/22	10/8/22 15:04	MFF
trans-1,3-Dichloropropene	<8.40	100	8.40	µg/L	50		624.1	10/7/22	10/8/22 15:04	MFF
Ethylbenzene	<10.7	100	10.7	µg/L	50		624.1	10/7/22	10/8/22 15:04	MFF
Methyl tert-Butyl Ether (MTBE)	<8.61	100	8.61	µg/L	50		624.1	10/7/22	10/8/22 15:04	MFF
Methylene Chloride	<11.7	250	11.7	µg/L	50		624.1	10/7/22	10/8/22 15:04	MFF
1,1,2,2-Tetrachloroethane	<6.34	100	6.34	µg/L	50		624.1	10/7/22	10/8/22 15:04	MFF
Tetrachloroethylene	<9.35	100	9.35	µg/L	50		624.1	10/7/22	10/8/22 15:04	MFF
Toluene	30.0	50.0	11.2	µg/L	50	J	624.1	10/7/22	10/8/22 15:04	MFF
1,1,1-Trichloroethane	<8.45	100	8.45	µg/L	50		624.1	10/7/22	10/8/22 15:04	MFF
1,1,2-Trichloroethane	<9.13	100	9.13	µg/L	50		624.1	10/7/22	10/8/22 15:04	MFF
Trichloroethylene	1760	100	9.47	µg/L	50		624.1	10/7/22	10/8/22 15:04	MFF
Trichlorofluoromethane (Freon 11)	<8.79	100	8.79	µg/L	50		624.1	10/7/22	10/8/22 15:04	MFF
Vinyl Chloride	322	100	10.4	µg/L	50		624.1	10/7/22	10/8/22 15:04	MFF
m+p Xylene	29.0	100	22.9	µg/L	50	J	624.1	10/7/22	10/8/22 15:04	MFF
o-Xylene	13.0	50.0	11.5	µg/L	50	J	624.1	10/7/22	10/8/22 15:04	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	102	70-130		10/8/22 15:04
Toluene-d8	97.1	70-130		10/8/22 15:04
4-Bromofluorobenzene	101	70-130		10/8/22 15:04

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Project Location: Utica, NY | Sample Description: | Work Order: 22I2024

Date Received: 9/30/2022

Field Sample #: MW-16 | Sampled: 9/29/2022 15:13

Sample ID: 22I2024-05

Sample Matrix: Ground Water

1,4-Dioxane by isotope dilution GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
1,4-Dioxane	1.9	0.20	0.032	µg/L	1		SW-846 8270E	10/6/22	10/11/22 6:57	SPF

Surrogates	% Recovery	Recovery Limits	Flag/Qual		
1,4-Dioxane-d8	25.3	15-110		10/11/22 6:57	

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Project Location: Utica, NY | Sample Description: | Work Order: 22I2024

Date Received: 9/30/2022

Field Sample #: MW-16 | Sampled: 9/29/2022 15:13

Sample ID: 22I2024-05

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	1.6	2.0	0.73	ng/L	1	PF-20, J	SOP-454 PFAS	10/19/22	10/24/22 16:26	DRL
Perfluorobutanesulfonic acid (PFBS)	ND	2.0	0.28	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:26	DRL
Perfluoropentanoic acid (PFPeA)	0.80	2.0	0.39	ng/L	1	J	SOP-454 PFAS	10/19/22	10/24/22 16:26	DRL
Perfluorohexanoic acid (PFHxA)	0.82	2.0	0.38	ng/L	1	J	SOP-454 PFAS	10/19/22	10/24/22 16:26	DRL
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:26	DRL
Perfluorodecanoic acid (PFDA)	ND	2.0	0.48	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:26	DRL
Perfluorododecanoic acid (PFDoA)	ND	2.0	0.43	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:26	DRL
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	0.92	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:26	DRL
N-EtFOSAA (NEtFOSAA)	ND	2.0	0.62	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:26	DRL
N-MeFOSAA (NMeFOSAA)	ND	2.0	0.75	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:26	DRL
Perfluorotetradecanoic acid (PFTA)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:26	DRL
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	0.27	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:26	DRL
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	0.32	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:26	DRL
Perfluorooctanesulfonamide (FOSA)	ND	2.0	0.41	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:26	DRL
Perfluorohexanesulfonic acid (PFHxS)	ND	2.0	0.33	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:26	DRL
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:26	DRL
Perfluoroundecanoic acid (PFUnA)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:26	DRL
Perfluoroheptanoic acid (PFHpA)	0.45	2.0	0.34	ng/L	1	J	SOP-454 PFAS	10/19/22	10/24/22 16:26	DRL
Perfluorooctanoic acid (PFOA)	1.6	2.0	0.67	ng/L	1	J	SOP-454 PFAS	10/19/22	10/24/22 16:26	DRL
Perfluorooctanesulfonic acid (PFOS)	1.5	2.0	0.59	ng/L	1	J	SOP-454 PFAS	10/19/22	10/24/22 16:26	DRL
Perfluorononanoic acid (PFNA)	ND	2.0	0.34	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:26	DRL

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Project Location: Utica, NY | Sample Description: | Work Order: 22I2024

Date Received: 9/30/2022

Field Sample #: MW-14 | Sampled: 9/29/2022 15:38

Sample ID: 22I2024-06

Sample Matrix: Ground Water

Sample Flags: RL-11

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Benzene	9.44	4.00	0.799	µg/L	4		624.1	10/7/22	10/8/22 15:28	MFF
Bromodichloromethane	<0.722	8.00	0.722	µg/L	4		624.1	10/7/22	10/8/22 15:28	MFF
Bromoform	<1.53	8.00	1.53	µg/L	4		624.1	10/7/22	10/8/22 15:28	MFF
Bromomethane	<6.15	8.00	6.15	µg/L	4		624.1	10/7/22	10/8/22 15:28	MFF
Carbon Tetrachloride	<0.660	8.00	0.660	µg/L	4		624.1	10/7/22	10/8/22 15:28	MFF
Chlorobenzene	20.5	8.00	0.421	µg/L	4		624.1	10/7/22	10/8/22 15:28	MFF
Chlorodibromomethane	<0.890	8.00	0.890	µg/L	4		624.1	10/7/22	10/8/22 15:28	MFF
Chloroethane	<1.28	8.00	1.28	µg/L	4		624.1	10/7/22	10/8/22 15:28	MFF
Chloroform	<0.670	8.00	0.670	µg/L	4		624.1	10/7/22	10/8/22 15:28	MFF
Chloromethane	<2.09	8.00	2.09	µg/L	4		624.1	10/7/22	10/8/22 15:28	MFF
1,2-Dichlorobenzene	7.84	8.00	0.487	µg/L	4	J	624.1	10/7/22	10/8/22 15:28	MFF
1,3-Dichlorobenzene	<0.473	8.00	0.473	µg/L	4		624.1	10/7/22	10/8/22 15:28	MFF
1,4-Dichlorobenzene	0.600	8.00	0.521	µg/L	4	J	624.1	10/7/22	10/8/22 15:28	MFF
1,2-Dichloroethane	<1.23	8.00	1.23	µg/L	4		624.1	10/7/22	10/8/22 15:28	MFF
cis-1,2-Dichloroethylene	1.96	4.00	0.587	µg/L	4	J	624.1	10/7/22	10/8/22 15:28	MFF
1,1-Dichloroethane	<0.566	8.00	0.566	µg/L	4		624.1	10/7/22	10/8/22 15:28	MFF
1,1-Dichloroethylene	<0.566	8.00	0.566	µg/L	4		624.1	10/7/22	10/8/22 15:28	MFF
trans-1,2-Dichloroethylene	<0.674	8.00	0.674	µg/L	4		624.1	10/7/22	10/8/22 15:28	MFF
1,2-Dichloropropane	<0.724	8.00	0.724	µg/L	4		624.1	10/7/22	10/8/22 15:28	MFF
cis-1,3-Dichloropropene	<0.633	8.00	0.633	µg/L	4		624.1	10/7/22	10/8/22 15:28	MFF
trans-1,3-Dichloropropene	<0.672	8.00	0.672	µg/L	4		624.1	10/7/22	10/8/22 15:28	MFF
Ethylbenzene	27.1	8.00	0.860	µg/L	4		624.1	10/7/22	10/8/22 15:28	MFF
Methyl tert-Butyl Ether (MTBE)	<0.689	8.00	0.689	µg/L	4		624.1	10/7/22	10/8/22 15:28	MFF
Methylene Chloride	<0.939	20.0	0.939	µg/L	4		624.1	10/7/22	10/8/22 15:28	MFF
1,1,2,2-Tetrachloroethane	<0.507	8.00	0.507	µg/L	4		624.1	10/7/22	10/8/22 15:28	MFF
Tetrachloroethylene	<0.748	8.00	0.748	µg/L	4		624.1	10/7/22	10/8/22 15:28	MFF
Toluene	8.76	4.00	0.897	µg/L	4		624.1	10/7/22	10/8/22 15:28	MFF
1,1,1-Trichloroethane	<0.676	8.00	0.676	µg/L	4		624.1	10/7/22	10/8/22 15:28	MFF
1,1,2-Trichloroethane	<0.730	8.00	0.730	µg/L	4		624.1	10/7/22	10/8/22 15:28	MFF
Trichloroethylene	2.40	8.00	0.758	µg/L	4	J	624.1	10/7/22	10/8/22 15:28	MFF
Trichlorofluoromethane (Freon 11)	<0.703	8.00	0.703	µg/L	4		624.1	10/7/22	10/8/22 15:28	MFF
Vinyl Chloride	<0.830	8.00	0.830	µg/L	4		624.1	10/7/22	10/8/22 15:28	MFF
m+p Xylene	175	8.00	1.84	µg/L	4		624.1	10/7/22	10/8/22 15:28	MFF
o-Xylene	90.6	4.00	0.919	µg/L	4		624.1	10/7/22	10/8/22 15:28	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	99.4	70-130		10/8/22 15:28
Toluene-d8	98.4	70-130		10/8/22 15:28
4-Bromofluorobenzene	102	70-130		10/8/22 15:28

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Project Location: Utica, NY | Sample Description: | Work Order: 22I2024

Date Received: 9/30/2022

Field Sample #: MW-14 | Sampled: 9/29/2022 15:38

Sample ID: 22I2024-06

Sample Matrix: Ground Water

1,4-Dioxane by isotope dilution GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
1,4-Dioxane	0.088	0.21	0.034	µg/L	1	J	SW-846 8270E	10/6/22	10/11/22 7:17	SPF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,4-Dioxane-d8	22.5	15-110		10/11/22 7:17

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Project Location: Utica, NY | Sample Description: | Work Order: 22I2024

Date Received: 9/30/2022

Field Sample #: MW-14 | Sampled: 9/29/2022 15:38

Sample ID: 22I2024-06

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	14	1.9	0.71	ng/L	1	PF-20	SOP-454 PFAS	10/19/22	10/24/22 16:33	DRL
Perfluorobutanesulfonic acid (PFBS)	2.9	1.9	0.27	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:33	DRL
Perfluoropentanoic acid (PFPeA)	38	1.9	0.38	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:33	DRL
Perfluorohexanoic acid (PFHxA)	3.3	1.9	0.37	ng/L	1	PF-20	SOP-454 PFAS	10/19/22	10/24/22 16:33	DRL
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	1.9	0.58	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:33	DRL
Perfluorodecanoic acid (PFDA)	ND	1.9	0.47	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:33	DRL
Perfluorododecanoic acid (PFDoA)	ND	1.9	0.42	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:33	DRL
Perfluoroheptanesulfonic acid (PFHpS)	ND	1.9	0.90	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:33	DRL
N-EtFOSAA (NEtFOSAA)	ND	1.9	0.60	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:33	DRL
N-MeFOSAA (NMeFOSAA)	ND	1.9	0.73	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:33	DRL
Perfluorotetradecanoic acid (PFTA)	ND	1.9	0.35	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:33	DRL
Perfluorotridecanoic acid (PFTrDA)	ND	1.9	0.26	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:33	DRL
Perfluorodecanesulfonic acid (PFDS)	ND	1.9	0.31	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:33	DRL
Perfluorooctanesulfonamide (FOSA)	ND	1.9	0.40	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:33	DRL
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9	0.32	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:33	DRL
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	1.9	0.35	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:33	DRL
Perfluoroundecanoic acid (PFUnA)	ND	1.9	0.35	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:33	DRL
Perfluoroheptanoic acid (PFHpA)	1.0	1.9	0.33	ng/L	1	PF-20, J	SOP-454 PFAS	10/19/22	10/24/22 16:33	DRL
Perfluorooctanoic acid (PFOA)	6.4	1.9	0.65	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:33	DRL
Perfluorooctanesulfonic acid (PFOS)	ND	1.9	0.58	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:33	DRL
Perfluorononanoic acid (PFNA)	ND	1.9	0.33	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:33	DRL

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Project Location: Utica, NY | Sample Description: | Work Order: 22I2024

Date Received: 9/30/2022

Field Sample #: MW-5 | Sampled: 9/29/2022 17:50

Sample ID: 22I2024-07

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Benzene	<0.200	1.00	0.200	µg/L	1		624.1	10/7/22	10/8/22 13:51	MFF
Bromodichloromethane	<0.180	2.00	0.180	µg/L	1		624.1	10/7/22	10/8/22 13:51	MFF
Bromoform	<0.383	2.00	0.383	µg/L	1		624.1	10/7/22	10/8/22 13:51	MFF
Bromomethane	<1.54	2.00	1.54	µg/L	1		624.1	10/7/22	10/8/22 13:51	MFF
Carbon Tetrachloride	<0.165	2.00	0.165	µg/L	1		624.1	10/7/22	10/8/22 13:51	MFF
Chlorobenzene	<0.105	2.00	0.105	µg/L	1		624.1	10/7/22	10/8/22 13:51	MFF
Chlorodibromomethane	<0.222	2.00	0.222	µg/L	1		624.1	10/7/22	10/8/22 13:51	MFF
Chloroethane	<0.320	2.00	0.320	µg/L	1		624.1	10/7/22	10/8/22 13:51	MFF
Chloroform	<0.168	2.00	0.168	µg/L	1		624.1	10/7/22	10/8/22 13:51	MFF
Chloromethane	<0.522	2.00	0.522	µg/L	1		624.1	10/7/22	10/8/22 13:51	MFF
1,2-Dichlorobenzene	<0.122	2.00	0.122	µg/L	1		624.1	10/7/22	10/8/22 13:51	MFF
1,3-Dichlorobenzene	<0.118	2.00	0.118	µg/L	1		624.1	10/7/22	10/8/22 13:51	MFF
1,4-Dichlorobenzene	<0.130	2.00	0.130	µg/L	1		624.1	10/7/22	10/8/22 13:51	MFF
1,2-Dichloroethane	<0.308	2.00	0.308	µg/L	1		624.1	10/7/22	10/8/22 13:51	MFF
cis-1,2-Dichloroethylene	60.7	1.00	0.147	µg/L	1		624.1	10/7/22	10/8/22 13:51	MFF
1,1-Dichloroethane	24.4	2.00	0.142	µg/L	1		624.1	10/7/22	10/8/22 13:51	MFF
1,1-Dichloroethylene	0.990	2.00	0.141	µg/L	1	J	624.1	10/7/22	10/8/22 13:51	MFF
trans-1,2-Dichloroethylene	0.500	2.00	0.169	µg/L	1	J	624.1	10/7/22	10/8/22 13:51	MFF
1,2-Dichloropropane	<0.181	2.00	0.181	µg/L	1		624.1	10/7/22	10/8/22 13:51	MFF
cis-1,3-Dichloropropene	<0.158	2.00	0.158	µg/L	1		624.1	10/7/22	10/8/22 13:51	MFF
trans-1,3-Dichloropropene	<0.168	2.00	0.168	µg/L	1		624.1	10/7/22	10/8/22 13:51	MFF
Ethylbenzene	<0.215	2.00	0.215	µg/L	1		624.1	10/7/22	10/8/22 13:51	MFF
Methyl tert-Butyl Ether (MTBE)	<0.172	2.00	0.172	µg/L	1		624.1	10/7/22	10/8/22 13:51	MFF
Methylene Chloride	<0.235	5.00	0.235	µg/L	1		624.1	10/7/22	10/8/22 13:51	MFF
1,1,2,2-Tetrachloroethane	<0.127	2.00	0.127	µg/L	1		624.1	10/7/22	10/8/22 13:51	MFF
Tetrachloroethylene	<0.187	2.00	0.187	µg/L	1		624.1	10/7/22	10/8/22 13:51	MFF
Toluene	<0.224	1.00	0.224	µg/L	1		624.1	10/7/22	10/8/22 13:51	MFF
1,1,1-Trichloroethane	2.21	2.00	0.169	µg/L	1		624.1	10/7/22	10/8/22 13:51	MFF
1,1,2-Trichloroethane	<0.183	2.00	0.183	µg/L	1		624.1	10/7/22	10/8/22 13:51	MFF
Trichloroethylene	24.1	2.00	0.189	µg/L	1		624.1	10/7/22	10/8/22 13:51	MFF
Trichlorofluoromethane (Freon 11)	<0.176	2.00	0.176	µg/L	1		624.1	10/7/22	10/8/22 13:51	MFF
Vinyl Chloride	<0.208	2.00	0.208	µg/L	1		624.1	10/7/22	10/8/22 13:51	MFF
m+p Xylene	<0.459	2.00	0.459	µg/L	1		624.1	10/7/22	10/8/22 13:51	MFF
o-Xylene	<0.230	1.00	0.230	µg/L	1		624.1	10/7/22	10/8/22 13:51	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	102	70-130		10/8/22 13:51
Toluene-d8	99.0	70-130		10/8/22 13:51
4-Bromofluorobenzene	101	70-130		10/8/22 13:51

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Project Location: Utica, NY | Sample Description: | Work Order: 22I2024

Date Received: 9/30/2022

Field Sample #: MW-5 | Sampled: 9/29/2022 17:50

Sample ID: 22I2024-07

Sample Matrix: Ground Water

1,4-Dioxane by isotope dilution GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
1,4-Dioxane	5.4	0.21	0.034	µg/L	1		SW-846 8270E	10/6/22	10/11/22 7:37	SPF

Surrogates	% Recovery	Recovery Limits	Flag/Qual		
1,4-Dioxane-d8	25.1	15-110		10/11/22 7:37	

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Project Location: Utica, NY | Sample Description: | Work Order: 22I2024

Date Received: 9/30/2022

Field Sample #: MW-5 | Sampled: 9/29/2022 17:50

Sample ID: 22I2024-07

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	1.1	2.0	0.73	ng/L	1	PF-20, J	SOP-454 PFAS	10/19/22	10/24/22 16:40	DRL
Perfluorobutanesulfonic acid (PFBS)	1.6	2.0	0.28	ng/L	1	PF-20, J	SOP-454 PFAS	10/19/22	10/24/22 16:40	DRL
Perfluoropentanoic acid (PFPeA)	0.57	2.0	0.38	ng/L	1	J	SOP-454 PFAS	10/19/22	10/24/22 16:40	DRL
Perfluorohexanoic acid (PFHxA)	0.51	2.0	0.38	ng/L	1	J	SOP-454 PFAS	10/19/22	10/24/22 16:40	DRL
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:40	DRL
Perfluorodecanoic acid (PFDA)	ND	2.0	0.48	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:40	DRL
Perfluorododecanoic acid (PFDoA)	ND	2.0	0.43	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:40	DRL
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	0.92	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:40	DRL
N-EtFOSAA (NEtFOSAA)	ND	2.0	0.62	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:40	DRL
N-MeFOSAA (NMeFOSAA)	ND	2.0	0.74	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:40	DRL
Perfluorotetradecanoic acid (PFTA)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:40	DRL
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	0.27	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:40	DRL
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	0.32	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:40	DRL
Perfluorooctanesulfonamide (FOSA)	ND	2.0	0.41	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:40	DRL
Perfluorohexanesulfonic acid (PFHxS)	1.2	2.0	0.33	ng/L	1	J	SOP-454 PFAS	10/19/22	10/24/22 16:40	DRL
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:40	DRL
Perfluoroundecanoic acid (PFUnA)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:40	DRL
Perfluoroheptanoic acid (PFHpA)	0.83	2.0	0.34	ng/L	1	J	SOP-454 PFAS	10/19/22	10/24/22 16:40	DRL
Perfluorooctanoic acid (PFOA)	5.0	2.0	0.67	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:40	DRL
Perfluorooctanesulfonic acid (PFOS)	5.8	2.0	0.59	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:40	DRL
Perfluorononanoic acid (PFNA)	0.85	2.0	0.34	ng/L	1	J	SOP-454 PFAS	10/19/22	10/24/22 16:40	DRL

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Utica, NY | Sample Description: | Work Order: 22I2024

Date Received: 9/30/2022

Field Sample #: MW-6 | Sampled: 9/29/2022 17:52

Sample ID: 22I2024-08

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Benzene	<0.200	1.00	0.200	µg/L	1		624.1	10/7/22	10/8/22 14:15	MFF
Bromodichloromethane	<0.180	2.00	0.180	µg/L	1		624.1	10/7/22	10/8/22 14:15	MFF
Bromoform	<0.383	2.00	0.383	µg/L	1		624.1	10/7/22	10/8/22 14:15	MFF
Bromomethane	<1.54	2.00	1.54	µg/L	1		624.1	10/7/22	10/8/22 14:15	MFF
Carbon Tetrachloride	<0.165	2.00	0.165	µg/L	1		624.1	10/7/22	10/8/22 14:15	MFF
Chlorobenzene	<0.105	2.00	0.105	µg/L	1		624.1	10/7/22	10/8/22 14:15	MFF
Chlorodibromomethane	<0.222	2.00	0.222	µg/L	1		624.1	10/7/22	10/8/22 14:15	MFF
Chloroethane	<0.320	2.00	0.320	µg/L	1		624.1	10/7/22	10/8/22 14:15	MFF
Chloroform	<0.168	2.00	0.168	µg/L	1		624.1	10/7/22	10/8/22 14:15	MFF
Chloromethane	<0.522	2.00	0.522	µg/L	1		624.1	10/7/22	10/8/22 14:15	MFF
1,2-Dichlorobenzene	<0.122	2.00	0.122	µg/L	1		624.1	10/7/22	10/8/22 14:15	MFF
1,3-Dichlorobenzene	<0.118	2.00	0.118	µg/L	1		624.1	10/7/22	10/8/22 14:15	MFF
1,4-Dichlorobenzene	<0.130	2.00	0.130	µg/L	1		624.1	10/7/22	10/8/22 14:15	MFF
1,2-Dichloroethane	<0.308	2.00	0.308	µg/L	1		624.1	10/7/22	10/8/22 14:15	MFF
cis-1,2-Dichloroethylene	31.2	1.00	0.147	µg/L	1		624.1	10/7/22	10/8/22 14:15	MFF
1,1-Dichloroethane	54.7	2.00	0.142	µg/L	1		624.1	10/7/22	10/8/22 14:15	MFF
1,1-Dichloroethylene	<0.141	2.00	0.141	µg/L	1		624.1	10/7/22	10/8/22 14:15	MFF
trans-1,2-Dichloroethylene	0.500	2.00	0.169	µg/L	1	J	624.1	10/7/22	10/8/22 14:15	MFF
1,2-Dichloropropane	<0.181	2.00	0.181	µg/L	1		624.1	10/7/22	10/8/22 14:15	MFF
cis-1,3-Dichloropropene	<0.158	2.00	0.158	µg/L	1		624.1	10/7/22	10/8/22 14:15	MFF
trans-1,3-Dichloropropene	<0.168	2.00	0.168	µg/L	1		624.1	10/7/22	10/8/22 14:15	MFF
Ethylbenzene	<0.215	2.00	0.215	µg/L	1		624.1	10/7/22	10/8/22 14:15	MFF
Methyl tert-Butyl Ether (MTBE)	<0.172	2.00	0.172	µg/L	1		624.1	10/7/22	10/8/22 14:15	MFF
Methylene Chloride	<0.235	5.00	0.235	µg/L	1		624.1	10/7/22	10/8/22 14:15	MFF
1,1,2,2-Tetrachloroethane	<0.127	2.00	0.127	µg/L	1		624.1	10/7/22	10/8/22 14:15	MFF
Tetrachloroethylene	<0.187	2.00	0.187	µg/L	1		624.1	10/7/22	10/8/22 14:15	MFF
Toluene	<0.224	1.00	0.224	µg/L	1		624.1	10/7/22	10/8/22 14:15	MFF
1,1,1-Trichloroethane	4.68	2.00	0.169	µg/L	1		624.1	10/7/22	10/8/22 14:15	MFF
1,1,2-Trichloroethane	<0.183	2.00	0.183	µg/L	1		624.1	10/7/22	10/8/22 14:15	MFF
Trichloroethylene	1.41	2.00	0.189	µg/L	1	J	624.1	10/7/22	10/8/22 14:15	MFF
Trichlorofluoromethane (Freon 11)	<0.176	2.00	0.176	µg/L	1		624.1	10/7/22	10/8/22 14:15	MFF
Vinyl Chloride	<0.208	2.00	0.208	µg/L	1		624.1	10/7/22	10/8/22 14:15	MFF
m+p Xylene	<0.459	2.00	0.459	µg/L	1		624.1	10/7/22	10/8/22 14:15	MFF
o-Xylene	<0.230	1.00	0.230	µg/L	1		624.1	10/7/22	10/8/22 14:15	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	101	70-130		10/8/22 14:15
Toluene-d8	98.3	70-130		10/8/22 14:15
4-Bromofluorobenzene	99.1	70-130		10/8/22 14:15

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Project Location: Utica, NY | Sample Description: | Work Order: 22I2024

Date Received: 9/30/2022

Field Sample #: MW-6 | Sampled: 9/29/2022 17:52

Sample ID: 22I2024-08

Sample Matrix: Ground Water

1,4-Dioxane by isotope dilution GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
1,4-Dioxane	9.3	0.20	0.032	µg/L	1		SW-846 8270E	10/6/22	10/11/22 7:58	SPF

Surrogates	% Recovery	Recovery Limits	Flag/Qual		
1,4-Dioxane-d8	21.0	15-110		10/11/22 7:58	

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Project Location: Utica, NY | Sample Description: | Work Order: 22I2024

Date Received: 9/30/2022

Field Sample #: MW-6 | Sampled: 9/29/2022 17:52

Sample ID: 22I2024-08

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	2.1	2.0	0.74	ng/L	1	PF-20	SOP-454 PFAS	10/19/22	10/24/22 16:47	DRL
Perfluorobutanesulfonic acid (PFBS)	4.0	2.0	0.28	ng/L	1	PF-20	SOP-454 PFAS	10/19/22	10/24/22 16:47	DRL
Perfluoropentanoic acid (PFPeA)	0.85	2.0	0.39	ng/L	1	J	SOP-454 PFAS	10/19/22	10/24/22 16:47	DRL
Perfluorohexanoic acid (PFHxA)	1.0	2.0	0.38	ng/L	1	PF-20, J	SOP-454 PFAS	10/19/22	10/24/22 16:47	DRL
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0	0.61	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:47	DRL
Perfluorodecanoic acid (PFDA)	ND	2.0	0.49	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:47	DRL
Perfluorododecanoic acid (PFDoA)	ND	2.0	0.44	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:47	DRL
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	0.94	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:47	DRL
N-EtFOSAA (NEtFOSAA)	ND	2.0	0.63	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:47	DRL
N-MeFOSAA (NMeFOSAA)	ND	2.0	0.76	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:47	DRL
Perfluorotetradecanoic acid (PFTA)	ND	2.0	0.37	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:47	DRL
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	0.28	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:47	DRL
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	0.32	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:47	DRL
Perfluorooctanesulfonamide (FOSA)	ND	2.0	0.42	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:47	DRL
Perfluorohexanesulfonic acid (PFHxS)	0.64	2.0	0.34	ng/L	1	J	SOP-454 PFAS	10/19/22	10/24/22 16:47	DRL
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:47	DRL
Perfluoroundecanoic acid (PFUnA)	ND	2.0	0.37	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:47	DRL
Perfluoroheptanoic acid (PFHpA)	1.0	2.0	0.34	ng/L	1	J	SOP-454 PFAS	10/19/22	10/24/22 16:47	DRL
Perfluorooctanoic acid (PFOA)	6.2	2.0	0.68	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:47	DRL
Perfluorooctanesulfonic acid (PFOS)	2.8	2.0	0.60	ng/L	1		SOP-454 PFAS	10/19/22	10/24/22 16:47	DRL
Perfluorononanoic acid (PFNA)	0.37	2.0	0.34	ng/L	1	J	SOP-454 PFAS	10/19/22	10/24/22 16:47	DRL

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Project Location: Utica, NY | Sample Description: | Work Order: 22I2024

Date Received: 9/30/2022

Field Sample #: TB3 | Sampled: 9/29/2022 00:00

Sample ID: 22I2024-09

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Benzene	<0.200	1.00	0.200	µg/L	1		624.1	10/7/22	10/8/22 12:15	MFF
Bromodichloromethane	<0.180	2.00	0.180	µg/L	1		624.1	10/7/22	10/8/22 12:15	MFF
Bromoform	<0.383	2.00	0.383	µg/L	1		624.1	10/7/22	10/8/22 12:15	MFF
Bromomethane	<1.54	2.00	1.54	µg/L	1		624.1	10/7/22	10/8/22 12:15	MFF
Carbon Tetrachloride	<0.165	2.00	0.165	µg/L	1		624.1	10/7/22	10/8/22 12:15	MFF
Chlorobenzene	<0.105	2.00	0.105	µg/L	1		624.1	10/7/22	10/8/22 12:15	MFF
Chlorodibromomethane	<0.222	2.00	0.222	µg/L	1		624.1	10/7/22	10/8/22 12:15	MFF
Chloroethane	<0.320	2.00	0.320	µg/L	1		624.1	10/7/22	10/8/22 12:15	MFF
Chloroform	0.620	2.00	0.168	µg/L	1	J	624.1	10/7/22	10/8/22 12:15	MFF
Chloromethane	<0.522	2.00	0.522	µg/L	1		624.1	10/7/22	10/8/22 12:15	MFF
1,2-Dichlorobenzene	<0.122	2.00	0.122	µg/L	1		624.1	10/7/22	10/8/22 12:15	MFF
1,3-Dichlorobenzene	<0.118	2.00	0.118	µg/L	1		624.1	10/7/22	10/8/22 12:15	MFF
1,4-Dichlorobenzene	<0.130	2.00	0.130	µg/L	1		624.1	10/7/22	10/8/22 12:15	MFF
1,2-Dichloroethane	<0.308	2.00	0.308	µg/L	1		624.1	10/7/22	10/8/22 12:15	MFF
cis-1,2-Dichloroethylene	<0.147	1.00	0.147	µg/L	1		624.1	10/7/22	10/8/22 12:15	MFF
1,1-Dichloroethane	<0.142	2.00	0.142	µg/L	1		624.1	10/7/22	10/8/22 12:15	MFF
1,1-Dichloroethylene	<0.141	2.00	0.141	µg/L	1		624.1	10/7/22	10/8/22 12:15	MFF
trans-1,2-Dichloroethylene	<0.169	2.00	0.169	µg/L	1		624.1	10/7/22	10/8/22 12:15	MFF
1,2-Dichloropropane	<0.181	2.00	0.181	µg/L	1		624.1	10/7/22	10/8/22 12:15	MFF
cis-1,3-Dichloropropene	<0.158	2.00	0.158	µg/L	1		624.1	10/7/22	10/8/22 12:15	MFF
trans-1,3-Dichloropropene	<0.168	2.00	0.168	µg/L	1		624.1	10/7/22	10/8/22 12:15	MFF
Ethylbenzene	<0.215	2.00	0.215	µg/L	1		624.1	10/7/22	10/8/22 12:15	MFF
Methyl tert-Butyl Ether (MTBE)	<0.172	2.00	0.172	µg/L	1		624.1	10/7/22	10/8/22 12:15	MFF
Methylene Chloride	<0.235	5.00	0.235	µg/L	1		624.1	10/7/22	10/8/22 12:15	MFF
1,1,2,2-Tetrachloroethane	<0.127	2.00	0.127	µg/L	1		624.1	10/7/22	10/8/22 12:15	MFF
Tetrachloroethylene	<0.187	2.00	0.187	µg/L	1		624.1	10/7/22	10/8/22 12:15	MFF
Toluene	<0.224	1.00	0.224	µg/L	1		624.1	10/7/22	10/8/22 12:15	MFF
1,1,1-Trichloroethane	<0.169	2.00	0.169	µg/L	1		624.1	10/7/22	10/8/22 12:15	MFF
1,1,2-Trichloroethane	<0.183	2.00	0.183	µg/L	1		624.1	10/7/22	10/8/22 12:15	MFF
Trichloroethylene	<0.189	2.00	0.189	µg/L	1		624.1	10/7/22	10/8/22 12:15	MFF
Trichlorofluoromethane (Freon 11)	<0.176	2.00	0.176	µg/L	1		624.1	10/7/22	10/8/22 12:15	MFF
Vinyl Chloride	<0.208	2.00	0.208	µg/L	1		624.1	10/7/22	10/8/22 12:15	MFF
m+p Xylene	<0.459	2.00	0.459	µg/L	1		624.1	10/7/22	10/8/22 12:15	MFF
o-Xylene	<0.230	1.00	0.230	µg/L	1		624.1	10/7/22	10/8/22 12:15	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	100	70-130		10/8/22 12:15
Toluene-d8	98.8	70-130		10/8/22 12:15
4-Bromofluorobenzene	101	70-130		10/8/22 12:15

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Sample Extraction Data

Prep Method: SW-846 5030B **Analytical Method: 624.1**

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
22I2024-01 [MW-1]	B319128	5	5.00	10/07/22
22I2024-02 [MW-8]	B319128	5	5.00	10/07/22
22I2024-03 [BR-2]	B319128	5	5.00	10/07/22
22I2024-04 [MW-15]	B319128	0.5	5.00	10/07/22
22I2024-05 [MW-16]	B319128	0.1	5.00	10/07/22
22I2024-06 [MW-14]	B319128	1.25	5.00	10/07/22
22I2024-07 [MW-5]	B319128	5	5.00	10/07/22
22I2024-08 [MW-6]	B319128	5	5.00	10/07/22
22I2024-09 [TB3]	B319128	5	5.00	10/07/22

Prep Method: SOP 454-PFAAS **Analytical Method: SOP-454 PFAS**

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
22I2024-01 [MW-1]	B320010	255	1.00	10/15/22

Prep Method: SOP 454-PFAAS **Analytical Method: SOP-454 PFAS**

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
22I2024-02 [MW-8]	B320106	259	1.00	10/19/22
22I2024-03 [BR-2]	B320106	270	1.00	10/19/22
22I2024-04 [MW-15]	B320106	254	1.00	10/19/22
22I2024-05 [MW-16]	B320106	254	1.00	10/19/22
22I2024-06 [MW-14]	B320106	261	1.00	10/19/22
22I2024-07 [MW-5]	B320106	256	1.00	10/19/22
22I2024-08 [MW-6]	B320106	251	1.00	10/19/22

Prep Method: SW-846 3510C **Analytical Method: SW-846 8270E**

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
22I2024-01 [MW-1]	B318984	980	1.00	10/06/22
22I2024-02 [MW-8]	B318984	970	1.00	10/06/22
22I2024-03 [BR-2]	B318984	980	1.00	10/06/22
22I2024-04 [MW-15]	B318984	980	1.00	10/06/22
22I2024-05 [MW-16]	B318984	1010	1.00	10/06/22
22I2024-06 [MW-14]	B318984	955	1.00	10/06/22
22I2024-07 [MW-5]	B318984	955	1.00	10/06/22
22I2024-08 [MW-6]	B318984	1020	1.00	10/06/22

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B319128 - SW-846 5030B										
Blank (B319128-BLK1)				Prepared: 10/07/22 Analyzed: 10/08/22						
Benzene	ND	1.00	µg/L							
Bromodichloromethane	ND	2.00	µg/L							
Bromoform	ND	2.00	µg/L							
Bromomethane	ND	2.00	µg/L							
Carbon Tetrachloride	ND	2.00	µg/L							
Chlorobenzene	ND	2.00	µg/L							
Chlorodibromomethane	ND	2.00	µg/L							
Chloroethane	ND	2.00	µg/L							
Chloroform	ND	2.00	µg/L							
Chloromethane	ND	2.00	µg/L							
1,2-Dichlorobenzene	ND	2.00	µg/L							
1,3-Dichlorobenzene	ND	2.00	µg/L							
1,4-Dichlorobenzene	ND	2.00	µg/L							
1,2-Dichloroethane	ND	2.00	µg/L							
cis-1,2-Dichloroethylene	ND	1.00	µg/L							
1,1-Dichloroethane	ND	2.00	µg/L							
1,1-Dichloroethylene	ND	2.00	µg/L							
trans-1,2-Dichloroethylene	ND	2.00	µg/L							
1,2-Dichloropropane	ND	2.00	µg/L							
cis-1,3-Dichloropropene	ND	2.00	µg/L							
trans-1,3-Dichloropropene	ND	2.00	µg/L							
Ethylbenzene	ND	2.00	µg/L							
Methyl tert-Butyl Ether (MTBE)	ND	2.00	µg/L							
Methylene Chloride	ND	5.00	µg/L							
1,1,2,2-Tetrachloroethane	ND	2.00	µg/L							
Tetrachloroethylene	ND	2.00	µg/L							
Toluene	ND	1.00	µg/L							
1,1,1-Trichloroethane	ND	2.00	µg/L							
1,1,2-Trichloroethane	ND	2.00	µg/L							
Trichloroethylene	ND	2.00	µg/L							
Trichlorofluoromethane (Freon 11)	ND	2.00	µg/L							
Vinyl Chloride	ND	2.00	µg/L							
m+p Xylene	ND	2.00	µg/L							
o-Xylene	ND	1.00	µg/L							
Surrogate: 1,2-Dichloroethane-d4	*24.6*		µg/L	25.0		98.3	70-130			
Surrogate: Toluene-d8	*24.8*		µg/L	25.0		99.2	70-130			
Surrogate: 4-Bromofluorobenzene	*25.0*		µg/L	25.0		100	70-130			
LCS (B319128-BS1)				Prepared: 10/07/22 Analyzed: 10/08/22						
Benzene	21	1.00	µg/L	20.0		107	65-135			
Bromodichloromethane	22	2.00	µg/L	20.0		112	65-135			
Bromoform	20	2.00	µg/L	20.0		99.0	70-130			
Bromomethane	12	2.00	µg/L	20.0		59.6	15-185			
Carbon Tetrachloride	22	2.00	µg/L	20.0		112	70-130			
Chlorobenzene	23	2.00	µg/L	20.0		115	65-135			
Chlorodibromomethane	21	2.00	µg/L	20.0		106	70-135			
Chloroethane	15	2.00	µg/L	20.0		74.6	40-160			
Chloroform	22	2.00	µg/L	20.0		112	70-135			
Chloromethane	9.2	2.00	µg/L	20.0		46.0	20-205			
1,2-Dichlorobenzene	23	2.00	µg/L	20.0		114	65-135			
1,3-Dichlorobenzene	23	2.00	µg/L	20.0		113	70-130			
1,4-Dichlorobenzene	21	2.00	µg/L	20.0		107	65-135			

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B319128 - SW-846 5030B										
LCS (B319128-BS1)				Prepared: 10/07/22 Analyzed: 10/08/22						
1,2-Dichloroethane	20	2.00	µg/L	20.0		102	70-130			
cis-1,2-Dichloroethylene	20	1.00	µg/L	20.0		98.9	70-130			
1,1-Dichloroethane	21	2.00	µg/L	20.0		103	70-130			
1,1-Dichloroethylene	19	2.00	µg/L	20.0		94.7	50-150			
trans-1,2-Dichloroethylene	17	2.00	µg/L	20.0		85.8	70-130			
1,2-Dichloropropane	20	2.00	µg/L	20.0		102	35-165			
cis-1,3-Dichloropropene	20	2.00	µg/L	20.0		102	25-175			
trans-1,3-Dichloropropene	22	2.00	µg/L	20.0		109	50-150			
Ethylbenzene	24	2.00	µg/L	20.0		119	60-140			
Methyl tert-Butyl Ether (MTBE)	19	2.00	µg/L	20.0		97.2	70-130			
Methylene Chloride	17	5.00	µg/L	20.0		85.8	60-140			
1,1,2,2-Tetrachloroethane	15	2.00	µg/L	20.0		74.2	60-140			
Tetrachloroethylene	23	2.00	µg/L	20.0		113	70-130			
Toluene	22	1.00	µg/L	20.0		110	70-130			
1,1,1-Trichloroethane	22	2.00	µg/L	20.0		112	70-130			
1,1,2-Trichloroethane	22	2.00	µg/L	20.0		112	70-130			
Trichloroethylene	27	2.00	µg/L	20.0		134	65-135			
Trichlorofluoromethane (Freon 11)	21	2.00	µg/L	20.0		103	50-150			
Vinyl Chloride	14	2.00	µg/L	20.0		71.3	5-195			
m+p Xylene	46	2.00	µg/L	40.0		116	70-130			
o-Xylene	24	1.00	µg/L	20.0		118	70-130			
Surrogate: 1,2-Dichloroethane-d4	*24.7*		µg/L	25.0		98.7	70-130			
Surrogate: Toluene-d8	*24.8*		µg/L	25.0		99.3	70-130			
Surrogate: 4-Bromofluorobenzene	*25.7*		µg/L	25.0		103	70-130			

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QUALITY CONTROL

1,4-Dioxane by isotope dilution GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B318984 - SW-846 3510C										
Blank (B318984-BLK1)				Prepared: 10/06/22 Analyzed: 10/11/22						
1,4-Dioxane	ND	0.20	µg/L							
Surrogate: 1,4-Dioxane-d8	*2.48*		µg/L	10.0		24.8	15-110			
LCS (B318984-BS1)				Prepared: 10/06/22 Analyzed: 10/11/22						
1,4-Dioxane	12.4	0.20	µg/L	10.0		124	40-140			
Surrogate: 1,4-Dioxane-d8	*2.10*		µg/L	10.0		21.0	15-110			
LCS Dup (B318984-BSD1)				Prepared: 10/06/22 Analyzed: 10/11/22						
1,4-Dioxane	13.0	0.20	µg/L	10.0		130	40-140	5.28	30	
Surrogate: 1,4-Dioxane-d8	*2.55*		µg/L	10.0		25.5	15-110			

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QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes
Batch B320010 - SOP 454-PFAAS											
Blank (B320010-BLK1)				Prepared: 10/15/22 Analyzed: 10/21/22							
Perfluorobutanoic acid (PFBA)	ND	1.9	ng/L								
Perfluorobutanesulfonic acid (PFBS)	ND	1.9	ng/L								
Perfluoropentanoic acid (PFPeA)	ND	1.9	ng/L								
Perfluorohexanoic acid (PFHxA)	ND	1.9	ng/L								
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	1.9	ng/L								
Perfluorodecanoic acid (PFDA)	ND	1.9	ng/L								
Perfluorododecanoic acid (PFDoA)	ND	1.9	ng/L								
Perfluoroheptanesulfonic acid (PFHpS)	ND	1.9	ng/L								
N-EtFOSAA (NEtFOSAA)	ND	1.9	ng/L								
N-MeFOSAA (NMeFOSAA)	ND	1.9	ng/L								
Perfluorotetradecanoic acid (PFTA)	ND	1.9	ng/L								
Perfluorotridecanoic acid (PFTrDA)	ND	1.9	ng/L								
Perfluorodecanesulfonic acid (PFDS)	ND	1.9	ng/L								
Perfluorooctanesulfonamide (FOSA)	ND	1.9	ng/L								
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9	ng/L								
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	1.9	ng/L								
Perfluoroundecanoic acid (PFUnA)	ND	1.9	ng/L								
Perfluoroheptanoic acid (PFHpA)	ND	1.9	ng/L								
Perfluorooctanoic acid (PFOA)	ND	1.9	ng/L								
Perfluorooctanesulfonic acid (PFOS)	ND	1.9	ng/L								
Perfluorononanoic acid (PFNA)	ND	1.9	ng/L								
LCS (B320010-BS1)				Prepared: 10/15/22 Analyzed: 10/21/22							
Perfluorobutanoic acid (PFBA)	12.1	2.0	ng/L	9.81		124		73-129			
Perfluorobutanesulfonic acid (PFBS)	10.5	2.0	ng/L	8.68		121		72-130			
Perfluoropentanoic acid (PFPeA)	11.7	2.0	ng/L	9.81		120		72-129			
Perfluorohexanoic acid (PFHxA)	12.0	2.0	ng/L	9.81		123		72-129			
8:2 Fluorotelomersulfonic acid (8:2FTS A)	11.9	2.0	ng/L	9.42		126		67-138			
Perfluorodecanoic acid (PFDA)	12.5	2.0	ng/L	9.81		128		71-129			
Perfluorododecanoic acid (PFDoA)	11.9	2.0	ng/L	9.81		121		72-134			
Perfluoroheptanesulfonic acid (PFHpS)	11.5	2.0	ng/L	9.37		123		69-134			
N-EtFOSAA (NEtFOSAA)	13.4	2.0	ng/L	9.81		**137**	*	61-135			L-01
N-MeFOSAA (NMeFOSAA)	15.0	2.0	ng/L	9.81		**153**	*	65-136			L-02
Perfluorotetradecanoic acid (PFTA)	12.1	2.0	ng/L	9.81		123		71-132			
Perfluorotridecanoic acid (PFTrDA)	12.7	2.0	ng/L	9.81		130		65-144			
Perfluorodecanesulfonic acid (PFDS)	11.3	2.0	ng/L	9.47		119		53-142			
Perfluorooctanesulfonamide (FOSA)	12.4	2.0	ng/L	9.81		126		67-137			
Perfluorohexanesulfonic acid (PFHxS)	10.6	2.0	ng/L	8.98		118		68-131			
6:2 Fluorotelomersulfonic acid (6:2FTS A)	11.9	2.0	ng/L	9.32		127		64-140			
Perfluoroundecanoic acid (PFUnA)	12.3	2.0	ng/L	9.81		125		69-133			
Perfluoroheptanoic acid (PFHpA)	11.3	2.0	ng/L	9.81		115		72-130			
Perfluorooctanoic acid (PFOA)	12.8	2.0	ng/L	9.81		130		71-133			
Perfluorooctanesulfonic acid (PFOS)	10.1	2.0	ng/L	9.07		111		65-140			
Perfluorononanoic acid (PFNA)	12.7	2.0	ng/L	9.81		129		69-130			

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QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes
Batch B320010 - SOP 454-PFAAS											
LCS Dup (B320010-BSD1)				Prepared: 10/15/22 Analyzed: 10/21/22							
Perfluorobutanoic acid (PFBA)	11.2	1.9	ng/L	9.59		117		73-129	7.93	30	
Perfluorobutanesulfonic acid (PFBS)	9.51	1.9	ng/L	8.49		112		72-130	10.3	30	
Perfluoropentanoic acid (PFPeA)	10.9	1.9	ng/L	9.59		114		72-129	7.42	30	
Perfluorohexanoic acid (PFHxA)	10.9	1.9	ng/L	9.59		114		72-129	9.56	30	
8:2 Fluorotelomersulfonic acid (8:2FTS A)	10.4	1.9	ng/L	9.21		113		67-138	13.7	30	
Perfluorodecanoic acid (PFDA)	11.2	1.9	ng/L	9.59		117		71-129	10.8	30	
Perfluorododecanoic acid (PFDoA)	10.7	1.9	ng/L	9.59		112		72-134	10.3	30	
Perfluoroheptanesulfonic acid (PFHpS)	10.8	1.9	ng/L	9.16		118		69-134	6.73	30	
N-EtFOSAA (NEtFOSAA)	12.2	1.9	ng/L	9.59		127		61-135	9.99	30	
N-MeFOSAA (NMeFOSAA)	13.7	1.9	ng/L	9.59		**143**	*	65-136	9.45	30	L-02
Perfluorotetradecanoic acid (PFTA)	11.4	1.9	ng/L	9.59		119		71-132	5.69	30	
Perfluorotridecanoic acid (PFTrDA)	11.8	1.9	ng/L	9.59		123		65-144	7.95	30	
Perfluorodecanesulfonic acid (PFDS)	10.5	1.9	ng/L	9.26		114		53-142	7.15	30	
Perfluorooctanesulfonamide (FOSA)	11.6	1.9	ng/L	9.59		121		67-137	6.09	30	
Perfluorohexanesulfonic acid (PFHxS)	9.68	1.9	ng/L	8.78		110		68-131	9.40	30	
6:2 Fluorotelomersulfonic acid (6:2FTS A)	10.9	1.9	ng/L	9.11		119		64-140	8.80	30	
Perfluoroundecanoic acid (PFUnA)	12.1	1.9	ng/L	9.59		126		69-133	1.34	30	
Perfluoroheptanoic acid (PFHpA)	10.7	1.9	ng/L	9.59		111		72-130	5.84	30	
Perfluorooctanoic acid (PFOA)	11.2	1.9	ng/L	9.59		117		71-133	12.7	30	
Perfluorooctanesulfonic acid (PFOS)	9.73	1.9	ng/L	8.88		110		65-140	3.55	30	
Perfluorononanoic acid (PFNA)	12.0	1.9	ng/L	9.59		125		69-130	5.37	30	
Batch B320106 - SOP 454-PFAAS											
Blank (B320106-BLK1)				Prepared: 10/19/22 Analyzed: 10/24/22							
Perfluorobutanoic acid (PFBA)	ND	1.9	ng/L								
Perfluorobutanesulfonic acid (PFBS)	ND	1.9	ng/L								
Perfluoropentanoic acid (PFPeA)	ND	1.9	ng/L								
Perfluorohexanoic acid (PFHxA)	ND	1.9	ng/L								
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	1.9	ng/L								
Perfluorodecanoic acid (PFDA)	ND	1.9	ng/L								
Perfluorododecanoic acid (PFDoA)	ND	1.9	ng/L								
Perfluoroheptanesulfonic acid (PFHpS)	ND	1.9	ng/L								
N-EtFOSAA (NEtFOSAA)	ND	1.9	ng/L								
N-MeFOSAA (NMeFOSAA)	ND	1.9	ng/L								
Perfluorotetradecanoic acid (PFTA)	ND	1.9	ng/L								
Perfluorotridecanoic acid (PFTrDA)	ND	1.9	ng/L								
Perfluorodecanesulfonic acid (PFDS)	ND	1.9	ng/L								
Perfluorooctanesulfonamide (FOSA)	ND	1.9	ng/L								
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9	ng/L								
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	1.9	ng/L								
Perfluoroundecanoic acid (PFUnA)	ND	1.9	ng/L								
Perfluoroheptanoic acid (PFHpA)	ND	1.9	ng/L								
Perfluorooctanoic acid (PFOA)	ND	1.9	ng/L								
Perfluorooctanesulfonic acid (PFOS)	ND	1.9	ng/L								
Perfluorononanoic acid (PFNA)	ND	1.9	ng/L								

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QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B320106 - SOP 454-PFAAS										
LCS (B320106-BS1)				Prepared: 10/19/22 Analyzed: 10/24/22						
Perfluorobutanoic acid (PFBA)	9.79	1.9	ng/L	9.66		101	73-129			
Perfluorobutanesulfonic acid (PFBS)	8.41	1.9	ng/L	8.55		98.4	72-130			
Perfluoropentanoic acid (PFPeA)	9.25	1.9	ng/L	9.66		95.8	72-129			
Perfluorohexanoic acid (PFHxA)	9.68	1.9	ng/L	9.66		100	72-129			
8:2 Fluorotelomersulfonic acid (8:2FTS A)	8.99	1.9	ng/L	9.27		97.0	67-138			
Perfluorodecanoic acid (PFDA)	9.62	1.9	ng/L	9.66		99.6	71-129			
Perfluorododecanoic acid (PFDoA)	8.72	1.9	ng/L	9.66		90.3	72-134			
Perfluoroheptanesulfonic acid (PFHpS)	8.86	1.9	ng/L	9.23		96.0	69-134			
N-EtFOSAA (NEtFOSAA)	11.0	1.9	ng/L	9.66		114	61-135			
N-MeFOSAA (NMeFOSAA)	11.8	1.9	ng/L	9.66		122	65-136			
Perfluorotetradecanoic acid (PFTA)	9.75	1.9	ng/L	9.66		101	71-132			
Perfluorotridecanoic acid (PFTrDA)	9.79	1.9	ng/L	9.66		101	65-144			
Perfluorodecanesulfonic acid (PFDS)	9.56	1.9	ng/L	9.32		103	53-142			
Perfluorooctanesulfonamide (FOSA)	9.61	1.9	ng/L	9.66		99.5	67-137			
Perfluorohexanesulfonic acid (PFHxS)	8.56	1.9	ng/L	8.84		96.8	68-131			
6:2 Fluorotelomersulfonic acid (6:2FTS A)	9.65	1.9	ng/L	9.18		105	64-140			
Perfluoroundecanoic acid (PFUnA)	9.78	1.9	ng/L	9.66		101	69-133			
Perfluoroheptanoic acid (PFHpA)	9.09	1.9	ng/L	9.66		94.1	72-130			
Perfluorooctanoic acid (PFOA)	9.85	1.9	ng/L	9.66		102	71-133			
Perfluorooctanesulfonic acid (PFOS)	7.83	1.9	ng/L	8.94		87.6	65-140			
Perfluorononanoic acid (PFNA)	10.1	1.9	ng/L	9.66		105	69-130			
LCS Dup (B320106-BSD1)				Prepared: 10/19/22 Analyzed: 10/24/22						
Perfluorobutanoic acid (PFBA)	9.70	1.9	ng/L	9.45		103	73-129	0.911	30	
Perfluorobutanesulfonic acid (PFBS)	8.53	1.9	ng/L	8.37		102	72-130	1.41	30	
Perfluoropentanoic acid (PFPeA)	9.26	1.9	ng/L	9.45		97.9	72-129	0.0599	30	
Perfluorohexanoic acid (PFHxA)	9.64	1.9	ng/L	9.45		102	72-129	0.427	30	
8:2 Fluorotelomersulfonic acid (8:2FTS A)	8.40	1.9	ng/L	9.07		92.6	67-138	6.78	30	
Perfluorodecanoic acid (PFDA)	9.26	1.9	ng/L	9.45		98.0	71-129	3.88	30	
Perfluorododecanoic acid (PFDoA)	8.84	1.9	ng/L	9.45		93.5	72-134	1.33	30	
Perfluoroheptanesulfonic acid (PFHpS)	8.04	1.9	ng/L	9.03		89.1	69-134	9.64	30	
N-EtFOSAA (NEtFOSAA)	10.3	1.9	ng/L	9.45		109	61-135	7.10	30	
N-MeFOSAA (NMeFOSAA)	10.6	1.9	ng/L	9.45		112	65-136	10.9	30	
Perfluorotetradecanoic acid (PFTA)	9.91	1.9	ng/L	9.45		105	71-132	1.69	30	
Perfluorotridecanoic acid (PFTrDA)	10.2	1.9	ng/L	9.45		107	65-144	3.66	30	
Perfluorodecanesulfonic acid (PFDS)	9.33	1.9	ng/L	9.12		102	53-142	2.48	30	
Perfluorooctanesulfonamide (FOSA)	10.0	1.9	ng/L	9.45		106	67-137	4.25	30	
Perfluorohexanesulfonic acid (PFHxS)	8.29	1.9	ng/L	8.65		95.8	68-131	3.20	30	
6:2 Fluorotelomersulfonic acid (6:2FTS A)	9.19	1.9	ng/L	8.98		102	64-140	4.87	30	
Perfluoroundecanoic acid (PFUnA)	9.76	1.9	ng/L	9.45		103	69-133	0.229	30	
Perfluoroheptanoic acid (PFHpA)	9.34	1.9	ng/L	9.45		98.9	72-130	2.76	30	
Perfluorooctanoic acid (PFOA)	10.1	1.9	ng/L	9.45		106	71-133	2.05	30	
Perfluorooctanesulfonic acid (PFOS)	8.02	1.9	ng/L	8.74		91.8	65-140	2.48	30	
Perfluorononanoic acid (PFNA)	10.1	1.9	ng/L	9.45		107	69-130	0.121	30	

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FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
ND	Not Detected
RL	Reporting Limit is at the level of quantitation (LOQ)
DL	Detection Limit is the lower limit of detection determined by the MDL study
MCL	Maximum Contaminant Level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.
J	Detected but below the Reporting Limit (lowest calibration standard); therefore, result is an estimated concentration (CLP J-Flag).
L-01	Laboratory fortified blank/laboratory control sample recovery outside of control limits. Data validation is not affected since all results are "not detected" for all samples in this batch for this compound and bias is on the high side.
L-02	Laboratory fortified blank/laboratory control sample recovery and duplicate recoveries outside of control limits. Data validation is not affected since all results are "not detected" for associated samples in this batch and bias is on the high side.
PF-20	Quantifying ion signal to noise ratio is <10. Detection is suspect.
PR-07	pH of sample (pH 4) is outside of method specified preservation criteria.
RL-11	Elevated reporting limit due to high concentration of target compounds.
S-29	Extracted Internal Standard is outside of control limits.

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INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
MW-1 (22I2024-01)			Lab File ID: 22I2024-01.d			Analyzed: 10/21/22 10:47			
M8FOSA	193628.3	3.996567	282,306.00	3.988567	69	50 - 150	0.0080	+/-0.50	
M2PFTA	578617	4.313416	977,858.00	4.313416	59	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	81296.31	3.794833	102,550.00	3.794833	79	50 - 150	0.0000	+/-0.50	
MPFBA	341527.6	1.075083	398,313.00	1.066783	86	50 - 150	0.0083	+/-0.50	
M6PFDA	479583.9	3.79535	618,275.00	3.803317	78	50 - 150	-0.0080	+/-0.50	
M3PFBS	95400.34	1.894967	108,447.00	1.894967	88	50 - 150	0.0000	+/-0.50	
M7PFUnA	477106.4	3.93805	633,311.00	3.946033	75	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS	72634.2	3.445283	92,888.00	3.445283	78	50 - 150	0.0000	+/-0.50	
M5PFPeA	300725.5	1.714833	344,341.00	1.714833	87	50 - 150	0.0000	+/-0.50	
M5PFHxA	594971.2	2.572333	700,449.00	2.572333	85	50 - 150	0.0000	+/-0.50	
M3PFHxS	88857.83	3.218333	110,109.00	3.218333	81	50 - 150	0.0000	+/-0.50	
M4PFHpA	703590.6	3.178867	854,159.00	3.178867	82	50 - 150	0.0000	+/-0.50	
M8PFOA	695346.3	3.461933	865,487.00	3.453817	80	50 - 150	0.0081	+/-0.50	
M8PFOS	79995.15	3.65215	97,557.00	3.65215	82	50 - 150	0.0000	+/-0.50	
M9PFNA	527931.2	3.6452	660,252.00	3.6452	80	50 - 150	0.0000	+/-0.50	
MPFDoA	431898.6	4.072667	601,433.00	4.08065	72	50 - 150	-0.0080	+/-0.50	
D5-NEtFOSAA	134969.3	3.945517	174,332.00	3.945517	77	50 - 150	0.0000	+/-0.50	
D3-NMeFOSAA	167248.5	3.873767	211,909.00	3.873767	79	50 - 150	0.0000	+/-0.50	
Pentafluorobenzene	208599	4.196	214,827.00	4.196	97	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	692244	10.465	654,873.00	10.465	106	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	312568	4.918	322,794.00	4.919	97	50 - 200	-0.0010	+/-0.50	
Chlorobenzene-d5	150038	7.752	156,970.00	7.749	96	50 - 200	0.0030	+/-0.50	
1,4-Dichlorobenzene-d4	136583	10.047	153,598.00	10.044	89	50 - 200	0.0030	+/-0.50	

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INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
MW-8 (22I2024-02)			Lab File ID: 22I2024-02.d			Analyzed: 10/24/22 16:04			
M8FOSA	89408.53	3.996567	294,428.00	3.996567	30	50 - 150	0.0000	+/-0.50	*
M2PFTA	105949.5	4.3378	1,047,879.00	4.3378	10	50 - 150	0.0000	+/-0.50	*
M2-8:2FTS	113627.8	3.810767	119,025.00	3.818733	95	50 - 150	-0.0080	+/-0.50	
MPFBA	299382.7	1.0834	421,013.00	1.0834	71	50 - 150	0.0000	+/-0.50	
M6PFDA	410596.6	3.811283	639,853.00	3.81925	64	50 - 150	-0.0080	+/-0.50	
M3PFBS	89986.61	1.919817	114,304.00	1.919817	79	50 - 150	0.0000	+/-0.50	
M7PFUnA	417101.1	3.954033	683,794.00	3.962017	61	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS	123265.9	3.461417	137,106.00	3.461417	90	50 - 150	0.0000	+/-0.50	
M5PFPeA	283557.3	1.741133	367,134.00	1.741117	77	50 - 150	0.0000	+/-0.50	
M5PFHxA	557386.2	2.605183	720,538.00	2.605183	77	50 - 150	0.0000	+/-0.50	
M3PFHxS	85254.31	3.2345	111,239.00	3.2345	77	50 - 150	0.0000	+/-0.50	
M4PFHpA	662493.3	3.195017	872,357.00	3.195017	76	50 - 150	0.0000	+/-0.50	
M8PFOA	657206.5	3.469933	912,378.00	3.4779	72	50 - 150	-0.0080	+/-0.50	
M8PFOS	70594.95	3.66015	107,682.00	3.66015	66	50 - 150	0.0000	+/-0.50	
M9PFNA	471319	3.661183	697,856.00	3.661183	68	50 - 150	0.0000	+/-0.50	
MPFDoA	284276.3	4.09665	650,521.00	4.09665	44	50 - 150	0.0000	+/-0.50	*
D5-NEtFOSAA	155183	3.9615	193,839.00	3.9695	80	50 - 150	-0.0080	+/-0.50	
D3-NMeFOSAA	183075.1	3.889733	219,267.00	3.889733	83	50 - 150	0.0000	+/-0.50	
Pentafluorobenzene	205731	4.196	214,827.00	4.196	96	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	689301	10.465	654,873.00	10.465	105	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	312759	4.919	322,794.00	4.919	97	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	149242	7.752	156,970.00	7.749	95	50 - 200	0.0030	+/-0.50	
1,4-Dichlorobenzene-d4	133947	10.047	153,598.00	10.044	87	50 - 200	0.0030	+/-0.50	

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INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
BR-2 (22I2024-03)			Lab File ID: 22I2024-03.d			Analyzed: 10/24/22 16:11			
M8FOSA	210644.1	3.996567	294,428.00	3.996567	72	50 - 150	0.0000	+/-0.50	
M2PFTA	725047.8	4.329683	1,047,879.00	4.3378	69	50 - 150	-0.0081	+/-0.50	
M2-8:2FTS	60822.57	3.818733	119,025.00	3.818733	51	50 - 150	0.0000	+/-0.50	
MPFBA	321313.3	1.0834	421,013.00	1.0834	76	50 - 150	0.0000	+/-0.50	
M6PFDA	444651.3	3.81925	639,853.00	3.81925	69	50 - 150	0.0000	+/-0.50	
M3PFBS	94232.76	1.919817	114,304.00	1.919817	82	50 - 150	0.0000	+/-0.50	
M7PFUnA	527216.3	3.962017	683,794.00	3.962017	77	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	79680.15	3.461417	137,106.00	3.461417	58	50 - 150	0.0000	+/-0.50	
M5PFPeA	301679	1.741117	367,134.00	1.741117	82	50 - 150	0.0000	+/-0.50	
M5PFHxA	607226	2.605183	720,538.00	2.605183	84	50 - 150	0.0000	+/-0.50	
M3PFHxS	88288	3.2345	111,239.00	3.2345	79	50 - 150	0.0000	+/-0.50	
M4PFHpA	717354.1	3.195017	872,357.00	3.195017	82	50 - 150	0.0000	+/-0.50	
M8PFOA	699254.8	3.469917	912,378.00	3.4779	77	50 - 150	-0.0080	+/-0.50	
M8PFOS	86160.2	3.66015	107,682.00	3.66015	80	50 - 150	0.0000	+/-0.50	
M9PFNA	548205.3	3.661183	697,856.00	3.661183	79	50 - 150	0.0000	+/-0.50	
MPFDoA	487909.4	4.09665	650,521.00	4.09665	75	50 - 150	0.0000	+/-0.50	
D5-NEtFOSAA	149256.7	3.9695	193,839.00	3.9695	77	50 - 150	0.0000	+/-0.50	
D3-NMeFOSAA	173552.3	3.889733	219,267.00	3.889733	79	50 - 150	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	665160	10.465	654,873.00	10.465	102	50 - 200	0.0000	+/-0.50	
Pentafluorobenzene	205592	4.196	214,827.00	4.196	96	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	312016	4.916	322,794.00	4.919	97	50 - 200	-0.0030	+/-0.50	
Chlorobenzene-d5	148350	7.752	156,970.00	7.749	95	50 - 200	0.0030	+/-0.50	
1,4-Dichlorobenzene-d4	138609	10.047	153,598.00	10.044	90	50 - 200	0.0030	+/-0.50	

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INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
MW-15 (22I2024-04)			Lab File ID: 22I2024-04.d			Analyzed: 10/24/22 16:18			
M8FOSA	184349.7	3.996567	294,428.00	3.996567	63	50 - 150	0.0000	+/-0.50	
M2PFTA	748229.2	4.329683	1,047,879.00	4.3378	71	50 - 150	-0.0081	+/-0.50	
M2-8:2FTS	102332.6	3.810767	119,025.00	3.818733	86	50 - 150	-0.0080	+/-0.50	
MPFBA	306791.8	1.0834	421,013.00	1.0834	73	50 - 150	0.0000	+/-0.50	
M6PFDA	508808.9	3.811283	639,853.00	3.81925	80	50 - 150	-0.0080	+/-0.50	
M3PFBS	91950.69	1.919817	114,304.00	1.919817	80	50 - 150	0.0000	+/-0.50	
M7PFUnA	561578.7	3.954033	683,794.00	3.962017	82	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS	97557.3	3.461417	137,106.00	3.461417	71	50 - 150	0.0000	+/-0.50	
M5PFPeA	295337.1	1.741117	367,134.00	1.741117	80	50 - 150	0.0000	+/-0.50	
M5PFHxA	585818.9	2.605183	720,538.00	2.605183	81	50 - 150	0.0000	+/-0.50	
M3PFHxS	92550.23	3.226417	111,239.00	3.2345	83	50 - 150	-0.0081	+/-0.50	
M4PFHpA	722849.1	3.195017	872,357.00	3.195017	83	50 - 150	0.0000	+/-0.50	
M8PFOA	732509.6	3.469917	912,378.00	3.4779	80	50 - 150	-0.0080	+/-0.50	
M8PFOS	84926.42	3.66015	107,682.00	3.66015	79	50 - 150	0.0000	+/-0.50	
M9PFNA	565169.2	3.661183	697,856.00	3.661183	81	50 - 150	0.0000	+/-0.50	
MPFDoA	502758.9	4.09665	650,521.00	4.09665	77	50 - 150	0.0000	+/-0.50	
D5-NEtFOSAA	165871.6	3.9615	193,839.00	3.9695	86	50 - 150	-0.0080	+/-0.50	
D3-NMeFOSAA	199168.4	3.889733	219,267.00	3.889733	91	50 - 150	0.0000	+/-0.50	
Pentafluorobenzene	202958	4.196	214,827.00	4.196	94	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	660640	10.468	654,873.00	10.465	101	50 - 200	0.0030	+/-0.50	
1,4-Difluorobenzene	309870	4.919	322,794.00	4.919	96	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	147253	7.749	156,970.00	7.749	94	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	137411	10.047	153,598.00	10.044	89	50 - 200	0.0030	+/-0.50	

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INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
MW-16 (22I2024-05)			Lab File ID: 22I2024-05.d			Analyzed: 10/24/22 16:26			
M8FOSA	142833.1	3.996567	294,428.00	3.996567	49	50 - 150	0.0000	+/-0.50	*
M2PFTA	562409.9	4.329683	1,047,879.00	4.3378	54	50 - 150	-0.0081	+/-0.50	
M2-8:2FTS	116468	3.810767	119,025.00	3.818733	98	50 - 150	-0.0080	+/-0.50	
MPFBA	288613.3	1.0834	421,013.00	1.0834	69	50 - 150	0.0000	+/-0.50	
M6PFDA	482493.6	3.811283	639,853.00	3.81925	75	50 - 150	-0.0080	+/-0.50	
M3PFBS	86309.65	1.919817	114,304.00	1.919817	76	50 - 150	0.0000	+/-0.50	
M7PFUnA	540322.8	3.954033	683,794.00	3.962017	79	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS	124768.7	3.461417	137,106.00	3.461417	91	50 - 150	0.0000	+/-0.50	
M5PFPeA	275406.7	1.731383	367,134.00	1.741117	75	50 - 150	-0.0097	+/-0.50	
M5PFHxA	559094	2.596983	720,538.00	2.605183	78	50 - 150	-0.0082	+/-0.50	
M3PFHxS	87318.97	3.226417	111,239.00	3.2345	78	50 - 150	-0.0081	+/-0.50	
M4PFHpA	694066.4	3.195017	872,357.00	3.195017	80	50 - 150	0.0000	+/-0.50	
M8PFOA	673296.4	3.469917	912,378.00	3.4779	74	50 - 150	-0.0080	+/-0.50	
M8PFOS	84068.37	3.66015	107,682.00	3.66015	78	50 - 150	0.0000	+/-0.50	
M9PFNA	524289.7	3.661183	697,856.00	3.661183	75	50 - 150	0.0000	+/-0.50	
MPFDoA	458415.1	4.09665	650,521.00	4.09665	70	50 - 150	0.0000	+/-0.50	
D5-NEtFOSAA	167489.3	3.9615	193,839.00	3.9695	86	50 - 150	-0.0080	+/-0.50	
D3-NMeFOSAA	194385.2	3.889733	219,267.00	3.889733	89	50 - 150	0.0000	+/-0.50	
Pentafluorobenzene	198791	4.196	214,827.00	4.196	93	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	686174	10.465	654,873.00	10.465	105	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	307144	4.916	322,794.00	4.919	95	50 - 200	-0.0030	+/-0.50	
Chlorobenzene-d5	145928	7.749	156,970.00	7.749	93	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	138527	10.047	153,598.00	10.044	90	50 - 200	0.0030	+/-0.50	

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INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
MW-14 (22I2024-06)			Lab File ID: 22I2024-06.d			Analyzed: 10/24/22 16:33			
M8FOSA	78451.75	3.996567	294,428.00	3.996567	27	50 - 150	0.0000	+/-0.50	*
M2PFTA	181206	4.329683	1,047,879.00	4.3378	17	50 - 150	-0.0081	+/-0.50	*
M2-8:2FTS	155421.8	3.810767	119,025.00	3.818733	131	50 - 150	-0.0080	+/-0.50	
MPFBA	123915.2	1.050167	421,013.00	1.0834	29	50 - 150	-0.0332	+/-0.50	*
M6PFDA	310015	3.803317	639,853.00	3.81925	48	50 - 150	-0.0159	+/-0.50	*
M3PFBS	74850.96	1.8701	114,304.00	1.919817	65	50 - 150	-0.0497	+/-0.50	
M7PFUnA	334585.5	3.954033	683,794.00	3.962017	49	50 - 150	-0.0080	+/-0.50	*
M2-6:2FTS	173131.8	3.445283	137,106.00	3.461417	126	50 - 150	-0.0161	+/-0.50	
M5PFPeA	209508.4	1.698283	367,134.00	1.741117	57	50 - 150	-0.0428	+/-0.50	
M5PFHxA	454377.8	2.564133	720,538.00	2.605183	63	50 - 150	-0.0410	+/-0.50	
M3PFHxS	71361.53	3.21025	111,239.00	3.2345	64	50 - 150	-0.0243	+/-0.50	
M4PFHpA	505071.3	3.178867	872,357.00	3.195017	58	50 - 150	-0.0162	+/-0.50	
M8PFOA	468255.8	3.46195	912,378.00	3.4779	51	50 - 150	-0.0160	+/-0.50	
M8PFOS	66844.77	3.652167	107,682.00	3.66015	62	50 - 150	-0.0080	+/-0.50	
M9PFNA	323367.3	3.6532	697,856.00	3.661183	46	50 - 150	-0.0080	+/-0.50	*
MPFDoA	296590.8	4.08865	650,521.00	4.09665	46	50 - 150	-0.0080	+/-0.50	*
D5-NEtFOSAA	93463.45	3.9615	193,839.00	3.9695	48	50 - 150	-0.0080	+/-0.50	*
D3-NMeFOSAA	97736.73	3.881767	219,267.00	3.889733	45	50 - 150	-0.0080	+/-0.50	*
1,4-Dichlorobenzene-d4	616196	10.472	654,873.00	10.465	94	50 - 200	0.0070	+/-0.50	
Pentafluorobenzene	207341	4.196	214,827.00	4.196	97	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	313762	4.916	322,794.00	4.919	97	50 - 200	-0.0030	+/-0.50	
Chlorobenzene-d5	154193	7.752	156,970.00	7.749	98	50 - 200	0.0030	+/-0.50	
1,4-Dichlorobenzene-d4	154620	10.044	153,598.00	10.044	101	50 - 200	0.0000	+/-0.50	

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INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
MW-5 (22I2024-07)			Lab File ID: 22I2024-07.d			Analyzed: 10/24/22 16:40			
M8FOSA	117480.9	3.996567	294,428.00	3.996567	40	50 - 150	0.0000	+/-0.50	*
M2PFTA	336022.1	4.329683	1,047,879.00	4.3378	32	50 - 150	-0.0081	+/-0.50	*
M2-8:2FTS	135657	3.810767	119,025.00	3.818733	114	50 - 150	-0.0080	+/-0.50	
MPFBA	297680.8	1.0834	421,013.00	1.0834	71	50 - 150	0.0000	+/-0.50	
M6PFDA	462075.5	3.811283	639,853.00	3.81925	72	50 - 150	-0.0080	+/-0.50	
M3PFBS	89815.45	1.911533	114,304.00	1.919817	79	50 - 150	-0.0083	+/-0.50	
M7PFUnA	506874.8	3.954033	683,794.00	3.962017	74	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS	142871	3.461417	137,106.00	3.461417	104	50 - 150	0.0000	+/-0.50	
M5PFPeA	288363.2	1.731383	367,134.00	1.741117	79	50 - 150	-0.0097	+/-0.50	
M5PFHxA	561762.4	2.596983	720,538.00	2.605183	78	50 - 150	-0.0082	+/-0.50	
M3PFHxS	89411.09	3.226417	111,239.00	3.2345	80	50 - 150	-0.0081	+/-0.50	
M4PFHpA	694732.4	3.195017	872,357.00	3.195017	80	50 - 150	0.0000	+/-0.50	
M8PFOA	683044.8	3.469917	912,378.00	3.4779	75	50 - 150	-0.0080	+/-0.50	
M8PFOS	77451.42	3.66015	107,682.00	3.66015	72	50 - 150	0.0000	+/-0.50	
M9PFNA	528789.1	3.661183	697,856.00	3.661183	76	50 - 150	0.0000	+/-0.50	
MPFDoA	413201.5	4.08865	650,521.00	4.09665	64	50 - 150	-0.0080	+/-0.50	
D5-NEtFOSAA	181336.9	3.9615	193,839.00	3.9695	94	50 - 150	-0.0080	+/-0.50	
D3-NMeFOSAA	204278.5	3.889733	219,267.00	3.889733	93	50 - 150	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	657952	10.468	654,873.00	10.465	100	50 - 200	0.0030	+/-0.50	
Pentafluorobenzene	199663	4.196	214,827.00	4.196	93	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	303892	4.919	322,794.00	4.919	94	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	144183	7.752	156,970.00	7.749	92	50 - 200	0.0030	+/-0.50	
1,4-Dichlorobenzene-d4	136706	10.047	153,598.00	10.044	89	50 - 200	0.0030	+/-0.50	

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INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
MW-6 (22I2024-08)			Lab File ID: 22I2024-08.d			Analyzed: 10/24/22 16:47			
M8FOSA	97366.07	3.996567	294,428.00	3.996567	33	50 - 150	0.0000	+/-0.50	*
M2PFTA	500361	4.329683	1,047,879.00	4.3378	48	50 - 150	-0.0081	+/-0.50	*
M2-8:2FTS	121778.4	3.810767	119,025.00	3.818733	102	50 - 150	-0.0080	+/-0.50	
MPFBA	271582.7	1.0834	421,013.00	1.0834	65	50 - 150	0.0000	+/-0.50	
M6PFDA	442799	3.811283	639,853.00	3.81925	69	50 - 150	-0.0080	+/-0.50	
M3PFBS	81351.13	1.911533	114,304.00	1.919817	71	50 - 150	-0.0083	+/-0.50	
M7PFUnA	485382.7	3.954033	683,794.00	3.962017	71	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS	130984.9	3.453267	137,106.00	3.461417	96	50 - 150	-0.0082	+/-0.50	
M5PFPeA	261610.5	1.731383	367,134.00	1.741117	71	50 - 150	-0.0097	+/-0.50	
M5PFHxA	528547.5	2.588767	720,538.00	2.605183	73	50 - 150	-0.0164	+/-0.50	
M3PFHxS	80809.84	3.226417	111,239.00	3.2345	73	50 - 150	-0.0081	+/-0.50	
M4PFHpA	681518.5	3.186933	872,357.00	3.195017	78	50 - 150	-0.0081	+/-0.50	
M8PFOA	669011.6	3.469917	912,378.00	3.4779	73	50 - 150	-0.0080	+/-0.50	
M8PFOS	74167.9	3.66015	107,682.00	3.66015	69	50 - 150	0.0000	+/-0.50	
M9PFNA	505761.2	3.661183	697,856.00	3.661183	72	50 - 150	0.0000	+/-0.50	
MPFDoA	405746.6	4.08865	650,521.00	4.09665	62	50 - 150	-0.0080	+/-0.50	
D5-NEtFOSAA	161996.2	3.9615	193,839.00	3.9695	84	50 - 150	-0.0080	+/-0.50	
D3-NMeFOSAA	193039.1	3.88175	219,267.00	3.889733	88	50 - 150	-0.0080	+/-0.50	
Pentafluorobenzene	203848	4.199	214,827.00	4.196	95	50 - 200	0.0030	+/-0.50	
1,4-Dichlorobenzene-d4	670071	10.468	654,873.00	10.465	102	50 - 200	0.0030	+/-0.50	
1,4-Difluorobenzene	310410	4.918	322,794.00	4.919	96	50 - 200	-0.0010	+/-0.50	
Chlorobenzene-d5	147119	7.752	156,970.00	7.749	94	50 - 200	0.0030	+/-0.50	
1,4-Dichlorobenzene-d4	135506	10.047	153,598.00	10.044	88	50 - 200	0.0030	+/-0.50	
TB3 (22I2024-09)			Lab File ID: C22V28073.D			Analyzed: 10/08/22 12:15			
Pentafluorobenzene	206158	4.196	214,827.00	4.196	96	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	312271	4.916	322,794.00	4.919	97	50 - 200	-0.0030	+/-0.50	
Chlorobenzene-d5	148930	7.749	156,970.00	7.749	95	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	139058	10.047	153,598.00	10.044	91	50 - 200	0.0030	+/-0.50	
Blank (B318984-BLK1)			Lab File ID: F22S283050.D			Analyzed: 10/11/22 00:27			
1,4-Dichlorobenzene-d4	634183	10.465	654,873.00	10.465	97	50 - 200	0.0000	+/-0.50	
LCS (B318984-BS1)			Lab File ID: F22S283051.D			Analyzed: 10/11/22 00:48			
1,4-Dichlorobenzene-d4	644666	10.465	654,873.00	10.465	98	50 - 200	0.0000	+/-0.50	
LCS Dup (B318984-BSD1)			Lab File ID: F22S283052.D			Analyzed: 10/11/22 01:08			
1,4-Dichlorobenzene-d4	646087	10.465	654,873.00	10.465	99	50 - 200	0.0000	+/-0.50	

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INTERNAL STANDARD AREA AND RT SUMMARY

624.1

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Blank (B319128-BLK1)			Lab File ID: C22V28072.D			Analyzed: 10/08/22 11:51			
Pentafluorobenzene	206739	4.199	214,827.00	4.196	96	50 - 200	0.0030	+/-0.50	
1,4-Difluorobenzene	313530	4.919	322,794.00	4.919	97	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	149536	7.752	156,970.00	7.749	95	50 - 200	0.0030	+/-0.50	
1,4-Dichlorobenzene-d4	136931	10.047	153,598.00	10.044	89	50 - 200	0.0030	+/-0.50	
LCS (B319128-BS1)			Lab File ID: C22V28068.D			Analyzed: 10/08/22 10:15			
Pentafluorobenzene	214231	4.196	214,827.00	4.196	100	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	324045	4.916	322,794.00	4.919	100	50 - 200	-0.0030	+/-0.50	
Chlorobenzene-d5	155348	7.752	156,970.00	7.749	99	50 - 200	0.0030	+/-0.50	
1,4-Dichlorobenzene-d4	158028	10.044	153,598.00	10.044	103	50 - 200	0.0000	+/-0.50	
Blank (B320010-BLK1)			Lab File ID: B320010-BLK1.d			Analyzed: 10/21/22 10:03			
M8FOSA	162138.7	3.996567	282,306.00	3.988567	57	50 - 150	0.0080	+/-0.50	
M2-4:2FTS	162459.6	2.4886	192,864.00	2.4886	84	50 - 150	0.0000	+/-0.50	
M2PFTA	626853.4	4.313416	977,858.00	4.313416	64	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	86721.24	3.794833	102,550.00	3.794833	85	50 - 150	0.0000	+/-0.50	
MPFBA	347143.8	1.066783	398,313.00	1.066783	87	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	95079.45	2.81475	95,084.00	2.822933	100	50 - 150	-0.0082	+/-0.50	
M6PFDA	462959.8	3.79535	618,275.00	3.803317	75	50 - 150	-0.0080	+/-0.50	
M3PFBS	88449.48	1.894967	108,447.00	1.894967	82	50 - 150	0.0000	+/-0.50	
M7PFUnA	450249.5	3.946033	633,311.00	3.946033	71	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	74215.4	3.445283	92,888.00	3.445283	80	50 - 150	0.0000	+/-0.50	
M5PFPeA	286863.8	1.706567	344,341.00	1.714833	83	50 - 150	-0.0083	+/-0.50	
M5PFHxA	564510.8	2.572333	700,449.00	2.572333	81	50 - 150	0.0000	+/-0.50	
M3PFHxS	84449.92	3.218333	110,109.00	3.218333	77	50 - 150	0.0000	+/-0.50	
M4PFHpA	672191.4	3.178867	854,159.00	3.178867	79	50 - 150	0.0000	+/-0.50	
M8PFOA	698271.1	3.453817	865,487.00	3.453817	81	50 - 150	0.0000	+/-0.50	
M8PFOS	75019.27	3.65215	97,557.00	3.65215	77	50 - 150	0.0000	+/-0.50	
M9PFNA	506825.9	3.6452	660,252.00	3.6452	77	50 - 150	0.0000	+/-0.50	
MPFDoA	391029.1	4.08065	601,433.00	4.08065	65	50 - 150	0.0000	+/-0.50	
D5-NEtFOSAA	107897.4	3.945517	174,332.00	3.945517	62	50 - 150	0.0000	+/-0.50	
D3-NMeFOSAA	144449.5	3.873767	211,909.00	3.873767	68	50 - 150	0.0000	+/-0.50	

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INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LCS (B320010-BS1)			Lab File ID: B320010-BS1.d			Analyzed: 10/21/22 09:49			
M8FOSA	165692.6	3.996567	282,306.00	3.988567	59	50 - 150	0.0080	+/-0.50	
M2-4:2FTS	156870.5	2.4804	192,864.00	2.4886	81	50 - 150	-0.0082	+/-0.50	
M2PFTA	634394.3	4.313416	977,858.00	4.313416	65	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	100511.7	3.794833	102,550.00	3.794833	98	50 - 150	0.0000	+/-0.50	
MPFBA	325113.8	1.066783	398,313.00	1.066783	82	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	82307.45	2.81475	95,084.00	2.822933	87	50 - 150	-0.0082	+/-0.50	
M6PFDA	440015.5	3.79535	618,275.00	3.803317	71	50 - 150	-0.0080	+/-0.50	
M3PFBS	82599.97	1.894967	108,447.00	1.894967	76	50 - 150	0.0000	+/-0.50	
M7PFUnA	444528.3	3.93805	633,311.00	3.946033	70	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS	71686.65	3.445283	92,888.00	3.445283	77	50 - 150	0.0000	+/-0.50	
M5PFPeA	270157.6	1.714833	344,341.00	1.714833	78	50 - 150	0.0000	+/-0.50	
M5PFHxA	527944.1	2.572333	700,449.00	2.572333	75	50 - 150	0.0000	+/-0.50	
M3PFHxS	81739.41	3.21025	110,109.00	3.218333	74	50 - 150	-0.0081	+/-0.50	
M4PFHpA	653627.8	3.178867	854,159.00	3.178867	77	50 - 150	0.0000	+/-0.50	
M8PFOA	658803.8	3.453817	865,487.00	3.453817	76	50 - 150	0.0000	+/-0.50	
M8PFOS	72232.82	3.65215	97,557.00	3.65215	74	50 - 150	0.0000	+/-0.50	
M9PFNA	486987	3.6452	660,252.00	3.6452	74	50 - 150	0.0000	+/-0.50	
MPFDoA	394912.2	4.08065	601,433.00	4.08065	66	50 - 150	0.0000	+/-0.50	
D5-NEtFOSAA	118400.2	3.945517	174,332.00	3.945517	68	50 - 150	0.0000	+/-0.50	
D3-NMeFOSAA	148780.4	3.873767	211,909.00	3.873767	70	50 - 150	0.0000	+/-0.50	

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INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LCS Dup (B320010-BSD1)			Lab File ID: B320010-BSD1.d			Analyzed: 10/21/22 09:56			
M8FOSA	153817.2	3.996567	282,306.00	3.988567	54	50 - 150	0.0080	+/-0.50	
M2-4:2FTS	150370.3	2.4804	192,864.00	2.4886	78	50 - 150	-0.0082	+/-0.50	
M2PFTA	570577.5	4.313416	977,858.00	4.313416	58	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	84330.84	3.794833	102,550.00	3.794833	82	50 - 150	0.0000	+/-0.50	
MPFBA	314237.9	1.066783	398,313.00	1.066783	79	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	76452.63	2.81475	95,084.00	2.822933	80	50 - 150	-0.0082	+/-0.50	
M6PFDA	428307.5	3.79535	618,275.00	3.803317	69	50 - 150	-0.0080	+/-0.50	
M3PFBS	80006.26	1.886667	108,447.00	1.894967	74	50 - 150	-0.0083	+/-0.50	
M7PFUnA	403541.2	3.93805	633,311.00	3.946033	64	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS	66499.85	3.445283	92,888.00	3.445283	72	50 - 150	0.0000	+/-0.50	
M5PFPeA	256726.7	1.706567	344,341.00	1.714833	75	50 - 150	-0.0083	+/-0.50	
M5PFHxA	505513	2.564117	700,449.00	2.572333	72	50 - 150	-0.0082	+/-0.50	
M3PFHxS	80345.81	3.21025	110,109.00	3.218333	73	50 - 150	-0.0081	+/-0.50	
M4PFHpA	610577.2	3.178867	854,159.00	3.178867	71	50 - 150	0.0000	+/-0.50	
M8PFOA	635961.8	3.453817	865,487.00	3.453817	73	50 - 150	0.0000	+/-0.50	
M8PFOS	69289.8	3.644167	97,557.00	3.65215	71	50 - 150	-0.0080	+/-0.50	
M9PFNA	470484.9	3.6452	660,252.00	3.6452	71	50 - 150	0.0000	+/-0.50	
MPFDoA	364428.6	4.072667	601,433.00	4.08065	61	50 - 150	-0.0080	+/-0.50	
D5-NEtFOSAA	103922	3.945517	174,332.00	3.945517	60	50 - 150	0.0000	+/-0.50	
D3-NMeFOSAA	129897.1	3.873767	211,909.00	3.873767	61	50 - 150	0.0000	+/-0.50	

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INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Blank (B320106-BLK1)			Lab File ID: B320106-BLK1.d			Analyzed: 10/24/22 15:57			
M8FOSA	187509.3	3.996567	294,428.00	3.996567	64	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	189733.5	2.52145	255,582.00	2.52145	74	50 - 150	0.0000	+/-0.50	
M2PFTA	663705.4	4.3378	1,047,879.00	4.3378	63	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	85992.73	3.810767	119,025.00	3.818733	72	50 - 150	-0.0080	+/-0.50	
MPFBA	367865.9	1.0834	421,013.00	1.0834	87	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	60389.77	2.855667	84,260.00	2.847483	72	50 - 150	0.0082	+/-0.50	
M6PFDA	480953.3	3.811283	639,853.00	3.81925	75	50 - 150	-0.0080	+/-0.50	
M3PFBS	97690.28	1.919817	114,304.00	1.919817	85	50 - 150	0.0000	+/-0.50	
M7PFUnA	517194.1	3.962017	683,794.00	3.962017	76	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	87485.4	3.4614	137,106.00	3.461417	64	50 - 150	0.0000	+/-0.50	
M5PFPeA	307958.4	1.741117	367,134.00	1.741117	84	50 - 150	0.0000	+/-0.50	
M5PFHxA	608040.1	2.605183	720,538.00	2.605183	84	50 - 150	0.0000	+/-0.50	
M3PFHxS	91293.63	3.2345	111,239.00	3.2345	82	50 - 150	0.0000	+/-0.50	
M4PFHpA	711949.7	3.195017	872,357.00	3.195017	82	50 - 150	0.0000	+/-0.50	
M8PFOA	707211.7	3.469917	912,378.00	3.4779	78	50 - 150	-0.0080	+/-0.50	
M8PFOS	83304.22	3.660133	107,682.00	3.66015	77	50 - 150	0.0000	+/-0.50	
M9PFNA	556081.4	3.661183	697,856.00	3.661183	80	50 - 150	0.0000	+/-0.50	
MPFDoA	448788.8	4.096633	650,521.00	4.09665	69	50 - 150	0.0000	+/-0.50	
D5-NEtFOSAA	138911.1	3.969483	193,839.00	3.9695	72	50 - 150	0.0000	+/-0.50	
D3-NMeFOSAA	177634.4	3.889733	219,267.00	3.889733	81	50 - 150	0.0000	+/-0.50	

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INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LCS (B320106-BS1)			Lab File ID: B320106-BS1.d			Analyzed: 10/24/22 15:42			
M8FOSA	183797.8	3.996567	294,428.00	3.996567	62	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	170095.9	2.52145	255,582.00	2.52145	67	50 - 150	0.0000	+/-0.50	
M2PFTA	734975.6	4.3378	1,047,879.00	4.3378	70	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	88871.02	3.810767	119,025.00	3.818733	75	50 - 150	-0.0080	+/-0.50	
MPFBA	334689.2	1.0834	421,013.00	1.0834	79	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	59710.64	2.847483	84,260.00	2.847483	71	50 - 150	0.0000	+/-0.50	
M6PFDA	476933.6	3.811283	639,853.00	3.81925	75	50 - 150	-0.0080	+/-0.50	
M3PFBS	91576.7	1.919817	114,304.00	1.919817	80	50 - 150	0.0000	+/-0.50	
M7PFUnA	481193.3	3.962017	683,794.00	3.962017	70	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	80734.3	3.461417	137,106.00	3.461417	59	50 - 150	0.0000	+/-0.50	
M5PFPeA	291249.9	1.741117	367,134.00	1.741117	79	50 - 150	0.0000	+/-0.50	
M5PFHxA	562440.6	2.605183	720,538.00	2.605183	78	50 - 150	0.0000	+/-0.50	
M3PFHxS	84831.49	3.2345	111,239.00	3.2345	76	50 - 150	0.0000	+/-0.50	
M4PFHpA	692204.6	3.195017	872,357.00	3.195017	79	50 - 150	0.0000	+/-0.50	
M8PFOA	688563.5	3.469917	912,378.00	3.4779	75	50 - 150	-0.0080	+/-0.50	
M8PFOS	82260.83	3.660133	107,682.00	3.66015	76	50 - 150	0.0000	+/-0.50	
M9PFNA	515000.5	3.661183	697,856.00	3.661183	74	50 - 150	0.0000	+/-0.50	
MPFDoA	484085.8	4.096633	650,521.00	4.09665	74	50 - 150	0.0000	+/-0.50	
D5-NEtFOSAA	140428.3	3.9695	193,839.00	3.9695	72	50 - 150	0.0000	+/-0.50	
D3-NMeFOSAA	167145.6	3.889733	219,267.00	3.889733	76	50 - 150	0.0000	+/-0.50	

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INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LCS Dup (B320106-BSD1)			Lab File ID: B320106-BSD1.d			Analyzed: 10/24/22 15:50			
M8FOSA	192080.5	3.996567	294,428.00	3.996567	65	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	193162.5	2.52145	255,582.00	2.52145	76	50 - 150	0.0000	+/-0.50	
M2PFTA	804035.1	4.3378	1,047,879.00	4.3378	77	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	96456.68	3.818733	119,025.00	3.818733	81	50 - 150	0.0000	+/-0.50	
MPFBA	363399.8	1.0834	421,013.00	1.0834	86	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	68150.29	2.847483	84,260.00	2.847483	81	50 - 150	0.0000	+/-0.50	
M6PFDA	540509.2	3.811283	639,853.00	3.81925	84	50 - 150	-0.0080	+/-0.50	
M3PFBS	99276.5	1.919817	114,304.00	1.919817	87	50 - 150	0.0000	+/-0.50	
M7PFUnA	527103.9	3.962017	683,794.00	3.962017	77	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	92841.03	3.461417	137,106.00	3.461417	68	50 - 150	0.0000	+/-0.50	
M5PFPeA	313760.3	1.731383	367,134.00	1.741117	85	50 - 150	-0.0097	+/-0.50	
M5PFHxA	609622.1	2.605183	720,538.00	2.605183	85	50 - 150	0.0000	+/-0.50	
M3PFHxS	98455.98	3.2345	111,239.00	3.2345	89	50 - 150	0.0000	+/-0.50	
M4PFHpA	733898.4	3.195017	872,357.00	3.195017	84	50 - 150	0.0000	+/-0.50	
M8PFOA	734283.1	3.469917	912,378.00	3.4779	80	50 - 150	-0.0080	+/-0.50	
M8PFOS	86093.88	3.66015	107,682.00	3.66015	80	50 - 150	0.0000	+/-0.50	
M9PFNA	560212.6	3.661183	697,856.00	3.661183	80	50 - 150	0.0000	+/-0.50	
MPFDoA	511638.2	4.09665	650,521.00	4.09665	79	50 - 150	0.0000	+/-0.50	
D5-NEtFOSAA	153991.2	3.9695	193,839.00	3.9695	79	50 - 150	0.0000	+/-0.50	
D3-NMeFOSAA	191827	3.889733	219,267.00	3.889733	87	50 - 150	0.0000	+/-0.50	

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
624.1 in Water	
Benzene	CT,NY,MA,NH,RI,NC,ME,VA
Bromodichloromethane	CT,NY,MA,NH,RI,NC,ME,VA
Bromoform	CT,NY,MA,NH,RI,NC,ME,VA
Bromomethane	CT,NY,MA,NH,RI,NC,ME,VA
Carbon Tetrachloride	CT,NY,MA,NH,RI,NC,ME,VA
Chlorobenzene	CT,NY,MA,NH,RI,NC,ME,VA
Chlorodibromomethane	CT,NY,MA,NH,RI,NC,ME,VA
Chloroethane	CT,NY,MA,NH,RI,NC,ME,VA
Chloroform	CT,NY,MA,NH,RI,NC,ME,VA
Chloromethane	CT,NY,MA,NH,RI,NC,ME,VA
1,2-Dichlorobenzene	CT,NY,MA,NH,RI,NC,ME,VA
1,3-Dichlorobenzene	CT,NY,MA,NH,RI,NC,ME,VA
1,4-Dichlorobenzene	CT,NY,MA,NH,RI,NC,ME,VA
1,2-Dichloroethane	CT,NY,MA,NH,RI,NC,ME,VA
cis-1,2-Dichloroethylene	NY,MA
1,1-Dichloroethane	CT,NY,MA,NH,RI,NC,ME,VA
1,1-Dichloroethylene	CT,NY,MA,NH,RI,NC,ME,VA
trans-1,2-Dichloroethylene	CT,NY,MA,NH,RI,NC,ME,VA
1,2-Dichloropropane	CT,NY,MA,NH,RI,NC,ME,VA
cis-1,3-Dichloropropene	CT,NY,MA,NH,RI,NC,ME,VA
1,4-Dioxane	MA
trans-1,3-Dichloropropene	CT,NY,MA,NH,RI,NC,ME,VA
Ethylbenzene	CT,NY,MA,NH,RI,NC,ME,VA
Methyl tert-Butyl Ether (MTBE)	NY,MA,NH,NC
Methylene Chloride	CT,NY,MA,NH,RI,NC,ME,VA
1,1,2,2-Tetrachloroethane	CT,NY,MA,NH,RI,NC,ME,VA
Tetrachloroethylene	CT,NY,MA,NH,RI,NC,ME,VA
Toluene	CT,NY,MA,NH,RI,NC,ME,VA
1,1,1-Trichloroethane	CT,NY,MA,NH,RI,NC,ME,VA
1,1,2-Trichloroethane	CT,NY,MA,NH,RI,NC,ME,VA
Trichloroethylene	CT,NY,MA,NH,RI,NC,ME,VA
Trichlorofluoromethane (Freon 11)	CT,NY,MA,NH,RI,NC,ME,VA
Vinyl Chloride	CT,NY,MA,NH,RI,NC,ME,VA
m+p Xylene	CT,NY,MA,NH,RI,NC
o-Xylene	CT,NY,MA,NH,RI,NC
SOP-454 PFAS in Water	
Perfluorobutanoic acid (PFBA)	NH-P
Perfluorobutanesulfonic acid (PFBS)	NH-P
Perfluoropentanoic acid (PFPeA)	NH-P
Perfluorohexanoic acid (PFHxA)	NH-P
8:2 Fluorotelomersulfonic acid (8:2FTS A)	NH-P
Perfluorodecanoic acid (PFDA)	NH-P
Perfluorododecanoic acid (PFDoA)	NH-P
Perfluoroheptanesulfonic acid (PFHpS)	NH-P
N-EtFOSAA (NEtFOSAA)	NH-P
N-MeFOSAA (NMeFOSAA)	NH-P

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SOP-454 PFAS in Water	
Perfluorotetradecanoic acid (PFTA)	NH-P
Perfluorotridecanoic acid (PFTrDA)	NH-P
Perfluorodecanesulfonic acid (PFDS)	NH-P
Perfluorooctanesulfonamide (FOSA)	NH-P
Perfluorohexanesulfonic acid (PFHxS)	NH-P
6:2 Fluorotelomersulfonic acid (6:2FTS A)	NH-P
Perfluoroundecanoic acid (PFUnA)	NH-P
Perfluoroheptanoic acid (PFHpA)	NH-P
Perfluorooctanoic acid (PFOA)	NH-P
Perfluorooctanesulfonic acid (PFOS)	NH-P
Perfluorononanoic acid (PFNA)	NH-P
SW-846 8270E in Water	
1,4-Dioxane	NY,NH

Con-Test, a Pace Environmental Laboratory, operates under the following certifications and accreditations:

Code	Description	Number	Expires
MA	Massachusetts DEP	M-MA100	06/30/2023
CT	Connecticut Department of Public Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2023
NH	New Hampshire Environmental Lab	2516 NELAP	02/5/2023
RI	Rhode Island Department of Health	LAO00373	12/30/2023
NC	North Carolina Div. of Water Quality	652	12/31/2023
ME	State of Maine	MA00100	06/9/2023
VA	Commonwealth of Virginia	460217	12/14/2023
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2023

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevent fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here: 22I2024

ALL SHADED AREAS are for LAB USE ONLY

Company: NYSDEC	Billing Information:
Address: 625 Broadway Albany NY	
Report To: Payson Long, P.E	Email To: payson.long@dec.ny.gov
Copy To:	Site Collection Info/Address:
Customer Project Name/Number: Northeast Alloys & Metals #633045	State: / County/City: / Time Zone Collected: [ ] PT [ ] MT [ ] CT [ ] ET
Phone: 518 402 8813 Email:	Site/Facility ID #: 633045 / Compliance Monitoring? [ ] Yes [ ] No
Collected By (print): Joe Brown	Purchase Order #: Quote #: / DW PWS ID #: DW Location Code:
Collected By (signature):	Turnaround Date Required: 1-2 weeks / Immediately Packed on Ice: [ ] Yes [ ] No
Sample Disposal: [ ] Dispose as appropriate [ ] Return [ ] Archive: [ ] Hold:	Rush: [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [ ] 5 Day (Expedite Charges Apply) / Field Filtered (if applicable): [ ] Yes [ ] No Analysis:

Container Preservative Type **: 8 U U

Lab Project Manager:

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	Analyses: 624.1 VOC	Analyses: PFAS (21 Compound list)	Analyses: 1,4 Dioxane SIM	Lab Profile/Line:
MW-1	GW	Grab	9/29	10:45				6	2	2	2	1
MW-8	GW	Grab	9/29	11:45				6	2	2	2	2
BR-2	GW	Grab	9/29	13:10				6	2	2	2	3
MW-15	GW	Grab	9/29	14:30				6	2	2	2	4
MW-16	GW	Grab	9/29	15:13				6	2	2	2	5
MW-14	GW	Grab	9/29	15:38				6	2	2	2	6
MW-5	GW	Grab	9/29	17:5[illegible]				6	2	2	2	7
MW-6	GW	Grab	9/29	17:52				6	2	2	2	8
TB3	GW	—	—	—				2	2			9

Lab Sample Receipt Checklist:

Custody Seals Present/Intact	Y	N	NA
Custody Signatures Present	Y	N	NA
Collector Signature Present	Y	N	NA
Bottles Intact	Y	N	NA
Correct Bottles	Y	N	NA
Sufficient Volume	Y	N	NA
Samples Received on Ice	Y	N	NA
VOA - Headspace Acceptable	Y	N	NA
USDA Regulated Soils	Y	N	NA
Samples in Holding Time	Y	N	NA
Residual Chlorine Present	Y	N	NA
Cl Strips:			
Sample pH Acceptable	Y	N	NA
pH Strips:			
Sulfide Present	Y	N	NA
Lead Acetate Strips:			

LAB USE ONLY: Lab Sample # / Comments:

Customer Remarks / Special Conditions / Possible Hazards: PFAS Isotope (21 Compound) Category B/NYSDEC 4file EDD HCl added to VOC in Field

Type of Ice Used: Wet Blue Dry None

Packing Material Used:

Radchem sample(s) screened (<500 cpm): Y N NA

SHORT HOLDS PRESENT (<72 hours): Y (N) N/A

Lab Tracking #: 2691078

Samples received via: FEDEX UPS Client Courier (Pace Courier)

Lab Sample Temperature Info:
Temp Blank Received: Y N NA
Therm ID#:
Cooler 1 Temp Upon Receipt: ____oC
Cooler 1 Therm Corr. Factor: ____oC
Cooler 1 Corrected Temp: ____oC
Comments: 2.130

Trip Blank Received: Y N NA
HCL MeOH TSP Other

	Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
1		9/30/22 943	PACE	9/30/22 943
2	PACE	9/30/22 143	PACE	9/30/22 1430
3	PACE	9/30/22 1611		9/30/22 1611
		9/30/22 1740		

MTJL LAB USE ONLY
Table #:
Acctnum:
Template:
Prelogin:
PM:
PB:

Non Conformance(s): YES / NO

Page: ____ of: ____

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VALIDATA
Chemical Services, Inc.
2159 Wynnton Pointe, Duluth, GA 30097
(770) 232-0130
(770) 232-5082 (Fax)
www.datavalidator.com

DATA USABILITY SUMMARY REPORT

COMPANY:	AECOM Technical Services Northeast, Inc.
PROJECT NAME:	North East Alloy and Metals #663045
CONTRACTED LAB:	Pace Analytical Services – New England
ANALYTICAL METHOD(S):	SW 846 Method 8270E SIM and EPA Method 537 Modified SOP-454 PFAS
VALIDATION GUIDELINES:	*USEPA Region II data validation SOP (SVOC HW-22 Rev.5), USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review,* **2008**; *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review,***2010**; NYDEC *Guidelines for Sampling and Analysis of PFAS,* January 2020, Professional Judgment
SAMPLE MATRIX:	Ground Water
TYPES OF ANALYSES:	1,4-dioxane, Per and Polyfluoroalkyl Substances (PFAS)
DATA REVIEWER(S):	Cathi Lesher
SDG NUMBER:	22I1801
SAMPLING DATE(S):	September 27, 2022

SAMPLES:

Client Sample ID	Laboratory ID	1,4-dioxane	PFAS
BR-1	22I1801-01	X	X
BR-1MS	22I1801-01MS	X	X
BR-1MSD	22I1801-01MSD	X	X
MW-12	22I1801-02	X	X
MW-3	22I1801-03	X	X
MW-13	22I1801-04	X	X
DUP	22I1801-06	X	X

Suffix Codes: DL= DILUTION, MS = MATRIX SPIKE,
MSD = MATRIX SPIKE DUPLICATE, RE = REANALYSIS

Qualifier	Definition
U	The analyte was not detected and was reported as less than the LOD or as defined by the customer. The LOD has been adjusted for any dilution or concentration of the sample.
J	The reported result was an estimated value with an unknown bias.
J+	The result was an estimated quantity, but the result may be biased high.
J-	The result was an estimated quantity, but the result may be biased low.
N	The analysis indicates the presence of an analyte for which there was presumptive evidence to make a "tentative identification."
NJ	The analyte has been “tentatively identified” or “presumptively” as present and the associated numerical value was the estimated concentration in the sample.
UJ	The analyte was not detected and was reported as less than the LOD or as defined by the customer. However, the associated numerical value is approximate.
X	The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project quality control criteria. The presence or absence of the analyte cannot be substantiated by the data provided. Acceptance or rejection of the data should be decided by the project team (which should include a project chemist), but exclusion of the data is recommended.

DATA USABILITY SUMMARY REPORT

Pace Analytical Services – New England – 22I1801

1,4-DIOXANE

SUMMARY

I.) General:

The analyses for 1,4-dioxane were performed per SW846 Method 8270E SIM.

II.) Overall Assessment of Data:

All laboratory data were acceptable without qualifications.

II.) Holding Times:

All Holding Time criteria were met. No data qualification was necessary.

IV.) GC/MS Tuning:

All GC/MS Tuning criteria were met. No data qualification was necessary.

V.) Calibration:

Initial Calibration:

All Initial Calibration criteria were met. No data qualification was necessary.

Initial Calibration Verification:

All Initial Calibration Verification criteria were met. No data qualification was necessary.

Continuing Calibration:

All Continuing Calibration criteria were met. No data qualification was necessary.

VI.) Blanks:

Method Blanks:

There were no detections in the associated method blank. No data qualification was necessary.

Equipment Blanks:

There was no equipment blank issued with the samples in this SDG. No evaluation was made.

Field Blanks:

There was no associated field blank submitted for this SDG. No data qualification was necessary.

VII.) Surrogate Recoveries:

All Surrogate Recovery criteria were met. No data qualification was necessary.

VIII.) Laboratory Control Samples (LCS):

One LCS was analyzed by the laboratory for this SDG. All criteria were met. No data qualification was necessary.

IX.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

MS / MSD analyses were performed using sample AW-6 120320. All criteria were met. No data qualification was necessary.

X.) Field Duplicates:

One set of field duplicate samples (BR-1/DUP) was identified as part of this SDG. There was no calculable result. No evaluation was made.

XI.) TCL Compound Identification:

All TCL Compound Identification criteria were met. No data qualification was necessary.

XII.) Internal Standards Performance (ISTD):

All ISTD area count criteria were met. No data qualification was necessary.

XIII.) Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL):

All CRQL criteria were met. No data qualification was necessary.

PERFLOROALKYL SUBSTANCES (PFAS)

SUMMARY

I.) General:

The analyses for Perfluoroalkyl Substances were performed by Liquid Chromatography Tandem Mass Spectrometry (LC/MS/MS) per EPA Method 537 Modified/SOP-454 PFAS.

II.) Overall Assessment of Data:

All laboratory data were acceptable with qualifications.

MAJOR ISSUES

There were no major problems for this fraction of the SDG.

MINOR ISSUES

I.) Laboratory Data Package:

The required documentation was present and complete. The laboratory presented a complete and accurate case narrative in the data package. The data package contains results for all samples and method types listed on the COC.

II.) Sample Receipt, Preservation, and Holding Times:

The samples were received intact with proper COC documentation and signatures. The samples were received within the method temperature requirements. The samples were extracted and analyzed within the method hold times.

III.) Initial Calibration (ICAL) and Initial Calibration Verification (ICV):

All Initial Calibration and Initial Calibration Verification criteria were met. No data qualification was necessary.

IV.) Continuing Calibration (CCV):

All Continuing Calibration Verification criteria were met. No data qualification was necessary.

V.) Blanks:

Blank results were evaluated based on guidelines in the following table:

Blank Result	Sample Result	Qualification
Any detection	< Reporting Limit	Qualify as ND at reporting limit
Any detection	>Reporting Limit and >10x the blank result	No qualification
>Reporting Limit	>Reporting limit and <10x blank result	J+ biased high

Instrument Blank (IB):

PFHxA (2.8ng/L) were detected in the instrument blank below the RL. The following qualifications were made.

Client Sample ID	**Lab Sample ID**	**Qualification**
MW-12	22I1801-02	J+ *
MW-3	22I1801-03	U at Reporting Limit
MW-13	22I1801-04	J+

* This result is qualified J due to Ion Ratio and Signal to Noise Ratio QC failure.

Method Blank (MB):

All method blanks were free from contamination. No data qualification was necessary.

Field Blank (FB):

There were no field blanks identified in the SDG. No data qualification was necessary.

Equipment Blank (EB):

There were no equipment blanks issued with the samples in this SDG. No data qualification was necessary.

VI.) Matrix Spike / Matrix Spike Duplicate (MS/MSD):

MS / MSD analysis was performed on SDG sample BR-1. All recovery and RPD criteria were met. No qualification was necessary.

VII.) Laboratory Control Samples (LCS/LCSD):

All LCS/LCSD recovery and RPD criteria were met. No data qualification was necessary.

VIII.) Field Duplicates:

One set of field duplicate samples (BR-1/DUP) was identified as part of this SDG. There were no calculable results. No evaluation was made.

IX.) Extracted Internal Standards (EIS):

EIS recoveries (%R) were outside the 50%-150% criteria. Below are the associated analytes:

Client ID	Lab ID	EIS	Associated Analytes	Qualification
MW-12	22I1801-02	M8FOSA	FOSA	UJ
		M2-8:2FTS	8:2FTS	UJ
		MPFBA	PFBA	J
		M2-6:2FTS	6:2FTS	UJ
MW-3	22I1801-03	M8FOSA	FOSA	UJ
		M2PFTA	PFTA	UJ
			PFTrDA	UJ
		M2-8:2FTS	8:2FTS	UJ
		MPFBA	PFBA	J
		M2-6:2FTS	6:2FTS	UJ
		M5PFPeA	PFPeA	UJ
MW-13	22I1801-04	M8FOSA	FOSA	UJ
		M2-8:2FTS	8:2FTS	UJ
		MPFBA	PFBA	J
		M2-6:2FTS	6:2FTS	UJ
		M5PFPeA	PFPeA	UJ
		D3-NMeFOSAA	N-MeFOSAA	UJ

X.) Ion Transitions/Signal to Noise:

The following Ion Ratios (IR) and Signal to Noise Ratios (SN) were not within the laboratory limits.

Client ID	Lab ID	IR or SN	Analytes	Qualification
MW-12	22I1801-02	SN	PFBS PFBA PFHpA PFHxA PFOS PFOA	J J J J J J
MW-12	22I1801-02	IR	PFBS PFHpA PFHxA PFOS	J J J J

XI.) Reporting limits (RLs):

All Reporting Limits were acceptable. No data qualification was necessary.

Sample results that were greater than or equal to the MDL but less than the RL were qualified as estimated (J) by the laboratory. These qualifiers were confirmed by the validator.

XII.) Instrument Performance criteria:

All Instrument Performance criteria were met. No data qualification was necessary.

XIII.) Sample and QC Calculation Verification:

All Sample and QC Calculation Verification criteria were met. No discrepancies were noted.

Attachment A

Sample Result Forms (FORM Is) Corrected for Validation Qualifiers

1 - FORM I
ANALYSIS DATA SHEET

BR-1

Laboratory:	Pace New England			Work Order:	22I1801
Client:	NYDEC_AECOM Environment - Lat			Project:	Northeast Alloys & Metals Site - CO
Matrix:	Ground Water	Laboratory ID:	22I1801-01	File ID:	F22S283015.D
Sampled:	09/27/22 10:40	Prepared:	10/04/22 07:54	Analyzed:	10/10/22 12:47
Solids:		Preparation:	SW-846 3510C	Dilution:	1
Initial/Final:	990 mL / 1 mL				
Batch:	B318736	Sequence:	S077841	Calibration:	2200697
Instrument:	GCMSSV6				

CAS NO.	COMPOUND	CONC. (µg/L)	MDL	RL	Q
123-91-1	1,4-Dioxane		0.033	0.20	

CWL 8/19/23

1 - FORM I
ANALYSIS DATA SHEET

MW-12

Laboratory:	Pace New England			Work Order:	22I1801
Client:	NYDEC_AECOM Environment - Lat			Project:	Northeast Alloys & Metals Site - CO
Matrix:	Ground Water	Laboratory ID:	22I1801-02	File ID:	F22S283016.D
Sampled:	09/27/22 11:50	Prepared:	10/04/22 07:54	Analyzed:	10/10/22 13:07
Solids:		Preparation:	SW-846 3510C	Dilution:	1
Initial/Final:	900 mL / 1 mL				
Batch:	B318736	Sequence:	S077841	Calibration:	2200697
Instrument:	GCMSSV6				

CAS NO.	COMPOUND	CONC. (µg/L)	MDL	RL	Q
123-91-1	1,4-Dioxane	0.32	0.036	0.22	

CWL 8/19/23

1 - FORM I
ANALYSIS DATA SHEET

MW-3

Laboratory:	Pace New England			Work Order:	22I1801
Client:	NYDEC_AECOM Environment - Lat			Project:	Northeast Alloys & Metals Site - CO
Matrix:	Ground Water	Laboratory ID:	22I1801-03	File ID:	F22S283017.D
Sampled:	09/27/22 14:12	Prepared:	10/04/22 07:54	Analyzed:	10/10/22 13:26
Solids:		Preparation:	SW-846 3510C	Dilution:	1
Initial/Final:	990 mL / 1 mL				
Batch:	B318736	Sequence:	S077841	Calibration:	2200697
Instrument:	GCMSSV6				

CAS NO.	COMPOUND	CONC. (µg/L)	MDL	RL	Q
123-91-1	1,4-Dioxane	0.12	0.033	0.20	J

CWL 8/19/23

1 - FORM I
ANALYSIS DATA SHEET

MW-13

Laboratory:	Pace New England			Work Order:	22I1801
Client:	NYDEC_AECOM Environment - Lat			Project:	Northeast Alloys & Metals Site - CO
Matrix:	Ground Water	Laboratory ID:	22I1801-04	File ID:	F22S283018.D
Sampled:	09/27/22 14:20	Prepared:	10/04/22 07:54	Analyzed:	10/10/22 13:46
Solids:		Preparation:	SW-846 3510C	Dilution:	1
Initial/Final:	980 mL / 1 mL				
Batch:	B318736	Sequence:	S077841	Calibration:	2200697
Instrument:	GCMSSV6				

CAS NO.	COMPOUND	CONC. (µg/L)	MDL	RL	Q
123-91-1	1,4-Dioxane		0.033	0.20	

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1 - FORM I
ANALYSIS DATA SHEET

DUP

Laboratory:	Pace New England			Work Order:	22I1801
Client:	NYDEC_AECOM Environment - Lat			Project:	Northeast Alloys & Metals Site - CO
Matrix:	Ground Water	Laboratory ID:	22I1801-06	File ID:	F22S283019.D
Sampled:	09/27/22 00:00	Prepared:	10/04/22 07:54	Analyzed:	10/10/22 14:06
Solids:		Preparation:	SW-846 3510C	Dilution:	1
Initial/Final:	1000 mL / 1 mL				
Batch:	B318736	Sequence:	S077841	Calibration:	2200697
Instrument:	GCMSSV6				

CAS NO.	COMPOUND	CONC. (µg/L)	MDL	RL	Q
123-91-1	1,4-Dioxane		0.033	0.20	

CWL 8/19/23

1 - FORM I
ANALYSIS DATA SHEET

BR-1

Laboratory:	Pace New England			Work Order:	22I1801
Client:	NYDEC_AECOM Environment - Lat			Project:	Northeast Alloys & Metals Site - CO
Matrix:	Ground Water	Laboratory ID:	22I1801-01	File ID:	22I1801-01.d
Sampled:	09/27/22 10:40	Prepared:	10/06/22 19:17	Analyzed:	10/15/22 16:14
Solids:		Preparation:	SOP 454-PFAAS	Dilution:	1
Initial/Final:	243.66 mL / 1 mL				
Batch:	B318472	Sequence:	S078182	Calibration:	2200764
Instrument:	QQQ4				

CAS NO.	COMPOUND	CONC. (ng/L)	MDL	RL	Q
375-22-4	Perfluorobutanoic acid (PFBA)		0.76	2.1	
375-73-5	Perfluorobutanesulfonic acid (PFBS)		0.29	2.1	
2706-90-3	Perfluoropentanoic acid (PFPeA)		0.40	2.1	
307-24-4	Perfluorohexanoic acid (PFHxA)		0.40	2.1	
39108-34-4	8:2 Fluorotelomersulfonic acid (8:2FTS A)		0.62	2.1	
335-76-2	Perfluorodecanoic acid (PFDA)		0.50	2.1	
307-55-1	Perfluorododecanoic acid (PFDoA)		0.45	2.1	
375-92-8	Perfluoroheptanesulfonic acid (PFHpS)		0.96	2.1	
2991-50-6	N-EtFOSAA		0.65	2.1	
2355-31-9	N-MeFOSAA		0.78	2.1	
376-06-7	Perfluorotetradecanoic acid (PFTA)		0.38	2.1	
72629-94-8	Perfluorotridecanoic acid (PFTrDA)		0.28	2.1	
335-77-3	Perfluorodecanesulfonic acid (PFDS)		0.33	2.1	
754-91-6	Perfluorooctanesulfonamide (FOSA)		0.43	2.1	
355-46-4	Perfluorohexanesulfonic acid (PFHxS)		0.35	2.1	
27619-97-2	6:2 Fluorotelomersulfonic acid (6:2FTS A)		0.38	2.1	
2058-94-8	Perfluoroundecanoic acid (PFUnA)		0.38	2.1	
375-85-9	Perfluoroheptanoic acid (PFHpA)		0.35	2.1	
335-67-1	Perfluorooctanoic acid (PFOA)		0.70	2.1	
1763-23-1	Perfluorooctanesulfonic acid (PFOS)		0.62	2.1	
375-95-1	Perfluorononanoic acid (PFNA)		0.36	2.1	

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1 - FORM I
ANALYSIS DATA SHEET

MW-12

Laboratory:	Pace New England			Work Order:	22I1801
Client:	NYDEC_AECOM Environment - Lat			Project:	Northeast Alloys & Metals Site - CO
Matrix:	Ground Water	Laboratory ID:	22I1801-02	File ID:	22I1801-02.d
Sampled:	09/27/22 11:50	Prepared:	10/06/22 19:17	Analyzed:	10/15/22 16:21
Solids:		Preparation:	SOP 454-PFAAS	Dilution:	1
Initial/Final:	241.53 mL / 1 mL				
Batch:	B318472	Sequence:	S078182	Calibration:	2200764
				Instrument:	QQQ4

CAS NO.	COMPOUND	CONC. (ng/L)	MDL	RL	Q
375-22-4	Perfluorobutanoic acid (PFBA)	1.6	0.77	2.1	PF-20, J J
375-73-5	Perfluorobutanesulfonic acid (PFBS)	4.4	0.29	2.1	PF-20, PF-23 J
2706-90-3	Perfluoropentanoic acid (PFPeA)		0.41	2.1	
307-24-4	Perfluorohexanoic acid (PFHxA)	3.9	0.40	2.1	PF-20, PF-23 J
39108-34-4	8:2 Fluorotelomersulfonic acid (8:2FTS A)		0.63	2.1	UJ
335-76-2	Perfluorodecanoic acid (PFDA)		0.51	2.1	
307-55-1	Perfluorododecanoic acid (PFDoA)		0.46	2.1	
375-92-8	Perfluoroheptanesulfonic acid (PFHpS)		0.97	2.1	
2991-50-6	N-EtFOSAA		0.65	2.1	
2355-31-9	N-MeFOSAA		0.79	2.1	
376-06-7	Perfluorotetradecanoic acid (PFTA)		0.38	2.1	
72629-94-8	Perfluorotridecanoic acid (PFTrDA)		0.29	2.1	
335-77-3	Perfluorodecanesulfonic acid (PFDS)		0.34	2.1	UJ
754-91-6	Perfluorooctanesulfonamide (FOSA)		0.44	2.1	
355-46-4	Perfluorohexanesulfonic acid (PFHxS)		0.35	2.1	
27619-97-2	6:2 Fluorotelomersulfonic acid (6:2FTS A)		0.38	2.1	UJ
2058-94-8	Perfluoroundecanoic acid (PFUnA)		0.38	2.1	
375-85-9	Perfluoroheptanoic acid (PFHpA)	1.1	0.36	2.1	PF-20, J J
335-67-1	Perfluorooctanoic acid (PFOA)	2.8	0.71	2.1	J
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	1.5	0.62	2.1	PF-20, PF-23, J J
375-95-1	Perfluorononanoic acid (PFNA)		0.36	2.1	

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1 - FORM I
ANALYSIS DATA SHEET

MW-3

Laboratory:	Pace New England			Work Order:	22I1801
Client:	NYDEC_AECOM Environment - Lat			Project:	Northeast Alloys & Metals Site - CO
Matrix:	Ground Water	Laboratory ID:	22I1801-03	File ID:	22I1801-03.d
Sampled:	09/27/22 14:12	Prepared:	10/07/22 18:30	Analyzed:	10/11/22 10:33
Solids:		Preparation:	SOP 454-PFAAS	Dilution:	1
Initial/Final:	246.15 mL / 1 mL				
Batch:	B318818	Sequence:	S077830	Calibration:	2200693	Instrument:	QQQ4

CAS NO.	COMPOUND	CONC. (ng/L)	MDL	RL	Q
375-22-4	Perfluorobutanoic acid (PFBA)	1.3	0.76	2.0	J J
375-73-5	Perfluorobutanesulfonic acid (PFBS)		0.29	2.0	
2706-90-3	Perfluoropentanoic acid (PFPeA)		0.40	2.0	UJ
307-24-4	Perfluorohexanoic acid (PFHxA)	~~1.9~~	0.39	2.0	~~J~~ U
39108-34-4	8:2 Fluorotelomersulfonic acid (8:2FTS A)		0.62	2.0	
335-76-2	Perfluorodecanoic acid (PFDA)		0.50	2.0	
307-55-1	Perfluorododecanoic acid (PFDoA)		0.45	2.0	
375-92-8	Perfluoroheptanesulfonic acid (PFHpS)		0.95	2.0	
2991-50-6	N-EtFOSAA		0.64	2.0	
2355-31-9	N-MeFOSAA		0.77	2.0	
376-06-7	Perfluorotetradecanoic acid (PFTA)		0.37	2.0	UJ
72629-94-8	Perfluorotridecanoic acid (PFTrDA)		0.28	2.0	UJ
335-77-3	Perfluorodecanesulfonic acid (PFDS)		0.33	2.0	
754-91-6	Perfluorooctanesulfonamide (FOSA)		0.43	2.0	UJ
355-46-4	Perfluorohexanesulfonic acid (PFHxS)		0.34	2.0	
27619-97-2	6:2 Fluorotelomersulfonic acid (6:2FTS A)		0.37	2.0	UJ
2058-94-8	Perfluoroundecanoic acid (PFUnA)		0.37	2.0	
375-85-9	Perfluoroheptanoic acid (PFHpA)	2.0	0.35	2.0	PF-23, J
335-67-1	Perfluorooctanoic acid (PFOA)	1.8	0.69	2.0	PF-20, J
1763-23-1	Perfluorooctanesulfonic acid (PFOS)		0.61	2.0	
375-95-1	Perfluorononanoic acid (PFNA)	0.59	0.35	2.0	J

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1 - FORM I
ANALYSIS DATA SHEET

MW-13

Laboratory:	Pace New England			Work Order:	22I1801
Client:	NYDEC_AECOM Environment - Lat			Project:	Northeast Alloys & Metals Site - CO
Matrix:	Ground Water	Laboratory ID:	22I1801-04	File ID:	22I1801-04.d
Sampled:	09/27/22 14:20	Prepared:	10/07/22 18:30	Analyzed:	10/11/22 10:40
Solids:		Preparation:	SOP 454-PFAAS	Dilution:	1
Initial/Final:	235.09 mL / 1 mL				
Batch:	B318818	Sequence:	S077830	Calibration:	2200693
				Instrument:	QQQ4

CAS NO.	COMPOUND	CONC. (ng/L)	MDL	RL	Q
375-22-4	Perfluorobutanoic acid (PFBA)	1.5	0.79	2.1	J J
375-73-5	Perfluorobutanesulfonic acid (PFBS)		0.30	2.1	
2706-90-3	Perfluoropentanoic acid (PFPeA)		0.42	2.1	UJ
307-24-4	Perfluorohexanoic acid (PFHxA)	2.2	0.41	2.1	J+
39108-34-4	8:2 Fluorotelomersulfonic acid (8:2FTS A)		0.65	2.1	UJ
335-76-2	Perfluorodecanoic acid (PFDA)		0.52	2.1	
307-55-1	Perfluorododecanoic acid (PFDoA)		0.47	2.1	
375-92-8	Perfluoroheptanesulfonic acid (PFHpS)		1.0	2.1	
2991-50-6	N-EtFOSAA		0.67	2.1	
2355-31-9	N-MeFOSAA		0.81	2.1	UJ
376-06-7	Perfluorotetradecanoic acid (PFTA)		0.39	2.1	
72629-94-8	Perfluorotridecanoic acid (PFTrDA)		0.29	2.1	
335-77-3	Perfluorodecanesulfonic acid (PFDS)		0.35	2.1	
754-91-6	Perfluorooctanesulfonamide (FOSA)		0.45	2.1	UJ
355-46-4	Perfluorohexanesulfonic acid (PFHxS)		0.36	2.1	
27619-97-2	6:2 Fluorotelomersulfonic acid (6:2FTS A)		0.39	2.1	UJ
2058-94-8	Perfluoroundecanoic acid (PFUnA)		0.39	2.1	
375-85-9	Perfluoroheptanoic acid (PFHpA)	2.0	0.37	2.1	PF-20, J
335-67-1	Perfluorooctanoic acid (PFOA)	1.8	0.73	2.1	J
1763-23-1	Perfluorooctanesulfonic acid (PFOS)		0.64	2.1	
375-95-1	Perfluorononanoic acid (PFNA)	0.91	0.37	2.1	J

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1 - FORM I
ANALYSIS DATA SHEET

DUP

Laboratory:	Pace New England			Work Order:	22I1801
Client:	NYDEC_AECOM Environment - Lat			Project:	Northeast Alloys & Metals Site - CO
Matrix:	Ground Water	Laboratory ID:	22I1801-06	File ID:	22I1801-06.d
Sampled:	09/27/22 00:00	Prepared:	10/06/22 19:17	Analyzed:	10/15/22 16:28
Solids:		Preparation:	SOP 454-PFAAS	Dilution:	1
Initial/Final:	249.17 mL / 1 mL				
Batch:	B318472	Sequence:	S078182	Calibration:	2200764
Instrument:	QQQ4				

CAS NO.	COMPOUND	CONC. (ng/L)	MDL	RL	Q
375-22-4	Perfluorobutanoic acid (PFBA)		0.75	2.0	
375-73-5	Perfluorobutanesulfonic acid (PFBS)		0.28	2.0	
2706-90-3	Perfluoropentanoic acid (PFPeA)		0.39	2.0	
307-24-4	Perfluorohexanoic acid (PFHxA)		0.39	2.0	
39108-34-4	8:2 Fluorotelomersulfonic acid (8:2FTS A)		0.61	2.0	
335-76-2	Perfluorodecanoic acid (PFDA)		0.49	2.0	
307-55-1	Perfluorododecanoic acid (PFDoA)		0.44	2.0	
375-92-8	Perfluoroheptanesulfonic acid (PFHpS)		0.94	2.0	
2991-50-6	N-EtFOSAA		0.63	2.0	
2355-31-9	N-MeFOSAA		0.76	2.0	
376-06-7	Perfluorotetradecanoic acid (PFTA)		0.37	2.0	
72629-94-8	Perfluorotridecanoic acid (PFTrDA)		0.28	2.0	
335-77-3	Perfluorodecanesulfonic acid (PFDS)		0.33	2.0	
754-91-6	Perfluorooctanesulfonamide (FOSA)		0.42	2.0	
355-46-4	Perfluorohexanesulfonic acid (PFHxS)		0.34	2.0	
27619-97-2	6:2 Fluorotelomersulfonic acid (6:2FTS A)		0.37	2.0	
2058-94-8	Perfluoroundecanoic acid (PFUnA)		0.37	2.0	
375-85-9	Perfluoroheptanoic acid (PFHpA)		0.35	2.0	
335-67-1	Perfluorooctanoic acid (PFOA)		0.68	2.0	
1763-23-1	Perfluorooctanesulfonic acid (PFOS)		0.60	2.0	
375-95-1	Perfluorononanoic acid (PFNA)		0.35	2.0	

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VALIDATA

Chemical Services, Inc.

2159 Wynnton Pointe, Duluth, GA 30097

(770) 232-0130
(770) 232-5082 (Fax)
www.datavalidator.com

DATA USABILITY SUMMARY REPORT

COMPANY:	AECOM Technical Services Northeast, Inc.
PROJECT NAME:	North East Alloy and Metals #663045
CONTRACTED LAB:	Pace Analytical Services – New England
ANALYTICAL METHOD(S):	SW 846 Method 8270E SIM and EPA Method 537 Modified SOP-454 PFAS
VALIDATION GUIDELINES:	*USEPA Region II data validation SOP (SVOC HW-22 Rev.5), USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review,* **2008**; *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review,***2010**; NYDEC *Guidelines for Sampling and Analysis of PFAS,* January 2020, Professional Judgment
SAMPLE MATRIX:	Ground Water
TYPES OF ANALYSES:	1,4-dioxane, Per and Polyfluoroalkyl Substances (PFAS)
DATA REVIEWER(S):	Cathi Lesher
SDG NUMBER:	22I1906
SAMPLING DATE(S):	September 28, 2022

SAMPLES:

Client Sample ID	Laboratory ID	1,4-dioxane	PFAS
MW-4	22I1906-01	X	X
MW-11	22I1906-02	X	X
MW-10	22I1906-03	X	X
MW-9	22I1906-04	X	X
MW-7R	22I1906-05	X	X
BR-3	22I1906-06	X	X

Suffix Codes: DL= DILUTION, MS = MATRIX SPIKE,
MSD = MATRIX SPIKE DUPLICATE, RE = REANALYSIS

Qualifier	Definition
U	The analyte was not detected and was reported as less than the LOD or as defined by the customer. The LOD has been adjusted for any dilution or concentration of the sample.
J	The reported result was an estimated value with an unknown bias.
J+	The result was an estimated quantity, but the result may be biased high.
J-	The result was an estimated quantity, but the result may be biased low.
N	The analysis indicates the presence of an analyte for which there was presumptive evidence to make a "tentative identification."
NJ	The analyte has been “tentatively identified” or “presumptively” as present and the associated numerical value was the estimated concentration in the sample.
UJ	The analyte was not detected and was reported as less than the LOD or as defined by the customer. However, the associated numerical value is approximate.
X	The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project quality control criteria. The presence or absence of the analyte cannot be substantiated by the data provided. Acceptance or rejection of the data should be decided by the project team (which should include a project chemist), but exclusion of the data is recommended.

DATA USABILITY SUMMARY REPORT

Pace Analytical Services – New England – 22I1906

1,4-DIOXANE

SUMMARY

I.) General:

The analyses for 1,4-dioxane were performed per SW846 Method 8270E SIM.

II.) Overall Assessment of Data:

All laboratory data were acceptable without qualifications.

II.) Holding Times:

All Holding Time criteria were met. No data qualification was necessary.

IV.) GC/MS Tuning:

All GC/MS Tuning criteria were met. No data qualification was necessary.

V.) Calibration:

Initial Calibration:

All Initial Calibration criteria were met. No data qualification was necessary.

Initial Calibration Verification:

All Initial Calibration Verification criteria were met. No data qualification was necessary.

Continuing Calibration:

All Continuing Calibration criteria were met. No data qualification was necessary.

VI.) Blanks:

Method Blanks:

There were no detections in the associated method blank. No data qualification was necessary.

Equipment Blanks:

There was no equipment blank issued with the samples in this SDG. No evaluation was made.

Field Blanks:

There was no associated field blank submitted for this SDG. No data qualification was necessary.

VII.) Surrogate Recoveries:

All Surrogate Recovery criteria were met. No data qualification was necessary.

VIII.) Laboratory Control Samples (LCS):

One LCS was analyzed by the laboratory for this SDG. All criteria were met. No data qualification was necessary.

IX.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

There were no MS/MSD analyses performed on any sample from this SDG. No evaluation was made.

X.) Field Duplicates:

There were no field duplicates identified for any sample in this SDG. No evaluation was made.

XI.) TCL Compound Identification:

All TCL Compound Identification criteria were met. No data qualification was necessary.

XII.) Internal Standards Performance (ISTD):

All ISTD area count criteria were met. No data qualification was necessary.

XIII.) Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL):

All CRQL criteria were met. No data qualification was necessary.

PERFLOROALKYL SUBSTANCES (PFAS)

SUMMARY

I.) General:

The analyses for Perfluoroalkyl Substances were performed by Liquid Chromatography Tandem Mass Spectrometry (LC/MS/MS) per EPA Method 537 Modified/SOP-454 PFAS.

II.) Overall Assessment of Data:

All laboratory data were acceptable with qualifications.

MAJOR ISSUES

There were no major problems for this fraction of the SDG.

MINOR ISSUES

I.) Laboratory Data Package:

The required documentation was present and complete. The laboratory presented a complete and accurate case narrative in the data package. The data package contains results for all samples and method types listed on the COC.

II.) Sample Receipt, Preservation, and Holding Times:

The samples were received intact with proper COC documentation and signatures. The samples were received within the method temperature requirements. The samples were extracted and analyzed within the method hold times.

III.) Initial Calibration (ICAL) and Initial Calibration Verification (ICV):

All Initial Calibration and Initial Calibration Verification criteria were met. No data qualification was necessary.

IV.) Continuing Calibration (CCV):

All Continuing Calibration Verification criteria were met. No data qualification was necessary.

V.) Blanks:

Blank results were evaluated based on guidelines in the following table:

Blank Result	Sample Result	Qualification
Any detection	< Reporting Limit	Qualify as ND at reporting limit
Any detection	>Reporting Limit and >10x the blank result	No qualification
>Reporting Limit	>Reporting limit and <10x blank result	J+ biased high

Instrument Blank (IB):

All instrument blanks were free from contamination. No data qualification was made.

Method Blank (MB):

All method blanks were free from contamination. No data qualification was necessary.

Field Blank (FB):

There were no field blanks identified in the SDG. No data qualification was needed.

Equipment Blank (EB):

There were no equipment blanks issued with the samples in this SDG. No data qualification was

necessary.

VI.) Matrix Spike / Matrix Spike Duplicate (MS/MSD):

There were no MS/MSD analyses performed on any sample from this SDG. No evaluation was made.

VII.) Laboratory Control Samples (LCS/LCSD):

All LCS/LCSD recovery and RPD criteria were met. No data qualification was necessary.

VIII.) Field Duplicates:

There were no field duplicate samples issued with the samples in this SDG. No evaluation was made.

IX.) Extracted Internal Standards (EIS):

EIS recoveries (%R) were outside the 50%-150% criteria. Below are the associated analytes:

Client ID	Lab ID	EIS	Associated Analytes	Qualification
MW-10	22I1906-03	M2PFTA	PFTA	UJ
			PFTrDA	UJ
		MPFBA	PFBA	J
MW-9	22I1906-04	M2-8:2FTS	8:2FTS	UJ
		MPFBA	PFBA	UJ
		M2-6:2FTS	6:2FTS	UJ

X.) Ion Transitions/Signal to Noise:

The following Ion Ratios (IR) and Signal to Noise Ratios (SN) were not within the laboratory limits.

Client ID	Lab ID	IR or SN	Analytes	Qualification
MW-10	22I1906-03	SN	PFBA	J
			PFHxS	J
			PFOA	J
MW-10	22I1906-03	IR	6:2FTS	J
			PFBS	J
MW-9	22I1906-04	IR	PFHxA	J
MW-7R	22I1906-05	SN	PFBS	J
			PFPeA	J

XI.) Reporting limits (RLs):

All Reporting Limits were acceptable. No data qualification was necessary.

Sample results that were greater than or equal to the MDL but less than the RL were qualified as estimated (J) by the laboratory. These qualifiers were confirmed by the validator.

XII.) Instrument Performance criteria:

All Instrument Performance criteria were met. No data qualification was necessary.

XIII.) Sample and QC Calculation Verification:

All Sample and QC Calculation Verification criteria were met. No discrepancies were noted.

Attachment A

Sample Result Forms (FORM Is) Corrected for Validation Qualifiers

1 - FORM I
ANALYSIS DATA SHEET

MW-4

Laboratory:	Pace New England			Work Order:	22I1906
Client:	NYDEC_AECOM Environment - Lat			Project:	Northeast Alloys & Metals Site - CO
Matrix:	Ground Water	Laboratory ID:	22I1906-01	File ID:	F22S283044.D
Sampled:	09/28/22 09:53	Prepared:	10/05/22 07:17	Analyzed:	10/10/22 22:24
Solids:		Preparation:	SW-846 3510C	Dilution:	1
Initial/Final:	960 mL / 1 mL				
Batch:	B318837	Sequence:	S077885	Calibration:	2200697
				Instrument:	GCMSSV6

CAS NO.	COMPOUND	CONC. (µg/L)	MDL	RL	Q
123-91-1	1,4-Dioxane		0.034	0.21	

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ANALYSIS DATA SHEET

MW-11

Laboratory:	Pace New England			Work Order:	22I1906
Client:	NYDEC_AECOM Environment - Lat			Project:	Northeast Alloys & Metals Site - CO
Matrix:	Ground Water	Laboratory ID:	22I1906-02	File ID:	F22S283045.D
Sampled:	09/28/22 10:00	Prepared:	10/05/22 07:17	Analyzed:	10/10/22 22:44
Solids:		Preparation:	SW-846 3510C	Dilution:	1
Initial/Final:	890 mL / 1 mL				
Batch:	B318837	Sequence:	S077885	Calibration:	2200697
Instrument:	GCMSSV6				

CAS NO.	COMPOUND	CONC. (µg/L)	MDL	RL	Q
123-91-1	1,4-Dioxane		0.037	0.22	

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1 - FORM I
ANALYSIS DATA SHEET

MW-10

Laboratory:	Pace New England			Work Order:	22I1906
Client:	NYDEC_AECOM Environment - Lat			Project:	Northeast Alloys & Metals Site - CO
Matrix:	Ground Water	Laboratory ID:	22I1906-03	File ID:	F22S283046.D
Sampled:	09/28/22 11:50	Prepared:	10/05/22 07:17	Analyzed:	10/10/22 23:05
Solids:		Preparation:	SW-846 3510C	Dilution:	1
Initial/Final:	930 mL / 1 mL				
Batch:	B318837	Sequence:	S077885	Calibration:	2200697
Instrument:	GCMSSV6				

CAS NO.	COMPOUND	CONC. (µg/L)	MDL	RL	Q
123-91-1	1,4-Dioxane	0.26	0.035	0.22	

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1 - FORM I
ANALYSIS DATA SHEET

MW-9

Laboratory:	Pace New England			Work Order:	22I1906
Client:	NYDEC_AECOM Environment - Lat			Project:	Northeast Alloys & Metals Site - CO
Matrix:	Ground Water	Laboratory ID:	22I1906-04	File ID:	F22S283047.D
Sampled:	09/28/22 12:32	Prepared:	10/05/22 07:17	Analyzed:	10/10/22 23:25
Solids:		Preparation:	SW-846 3510C	Dilution:	1
Initial/Final:	950 mL / 1 mL				
Batch:	B318837	Sequence:	S077885	Calibration:	2200697
Instrument:	GCMSSV6				

CAS NO.	COMPOUND	CONC. (µg/L)	MDL	RL	Q
123-91-1	1,4-Dioxane		0.034	0.21	

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1 - FORM I
ANALYSIS DATA SHEET

MW-7R

Laboratory:	Pace New England			Work Order:	22I1906
Client:	NYDEC_AECOM Environment - Lat			Project:	Northeast Alloys & Metals Site - CO
Matrix:	Ground Water	Laboratory ID:	22I1906-05	File ID:	F22S283048.D
Sampled:	09/28/22 14:26	Prepared:	10/05/22 07:17	Analyzed:	10/10/22 23:46
Solids:		Preparation:	SW-846 3510C	Dilution:	1
Initial/Final:	1000 mL / 1 mL				
Batch:	B318837	Sequence:	S077885	Calibration:	2200697
Instrument:	GCMSSV6				

CAS NO.	COMPOUND	CONC. (µg/L)	MDL	RL	Q
123-91-1	1,4-Dioxane	0.32	0.033	0.20	

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1 - FORM I
ANALYSIS DATA SHEET

BR-3

Laboratory:	Pace New England			Work Order:	22I1906
Client:	NYDEC_AECOM Environment - Lat			Project:	Northeast Alloys & Metals Site - CO
Matrix:	Ground Water	Laboratory ID:	22I1906-06	File ID:	F22S283049.D
Sampled:	09/28/22 14:34	Prepared:	10/05/22 07:17	Analyzed:	10/11/22 00:06
Solids:		Preparation:	SW-846 3510C	Dilution:	1
Initial/Final:	970 mL / 1 mL				
Batch:	B318837	Sequence:	S077885	Calibration:	2200697
Instrument:	GCMSSV6				

CAS NO.	COMPOUND	CONC. (µg/L)	MDL	RL	Q
123-91-1	1,4-Dioxane		0.034	0.21	

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1 - FORM I
ANALYSIS DATA SHEET

MW-4

Laboratory:	Pace New England			Work Order:	22I1906
Client:	NYDEC_AECOM Environment - Lat			Project:	Northeast Alloys & Metals Site - CO
Matrix:	Ground Water	Laboratory ID:	22I1906-01	File ID:	22I1906-01.d
Sampled:	09/28/22 09:53	Prepared:	10/13/22 18:35	Analyzed:	10/19/22 13:33
Solids:		Preparation:	SOP 454-PFAAS	Dilution:	1
Initial/Final:	255.73 mL / 1 mL				
Batch:	B318820	Sequence:	S078368	Calibration:	2200776
Instrument:	QQQ4				

CAS NO.	COMPOUND	CONC. (ng/L)	MDL	RL	Q
375-22-4	Perfluorobutanoic acid (PFBA)		0.73	2.0	
375-73-5	Perfluorobutanesulfonic acid (PFBS)		0.28	2.0	
2706-90-3	Perfluoropentanoic acid (PFPeA)		0.38	2.0	
307-24-4	Perfluorohexanoic acid (PFHxA)		0.38	2.0	
39108-34-4	8:2 Fluorotelomersulfonic acid (8:2FTS A)		0.60	2.0	
335-76-2	Perfluorodecanoic acid (PFDA)		0.48	2.0	
307-55-1	Perfluorododecanoic acid (PFDoA)		0.43	2.0	
375-92-8	Perfluoroheptanesulfonic acid (PFHpS)		0.92	2.0	
2991-50-6	N-EtFOSAA		0.62	2.0	
2355-31-9	N-MeFOSAA		0.74	2.0	
376-06-7	Perfluorotetradecanoic acid (PFTA)		0.36	2.0	
72629-94-8	Perfluorotridecanoic acid (PFTrDA)		0.27	2.0	
335-77-3	Perfluorodecanesulfonic acid (PFDS)		0.32	2.0	
754-91-6	Perfluorooctanesulfonamide (FOSA)		0.41	2.0	
355-46-4	Perfluorohexanesulfonic acid (PFHxS)		0.33	2.0	
27619-97-2	6:2 Fluorotelomersulfonic acid (6:2FTS A)		0.36	2.0	
2058-94-8	Perfluoroundecanoic acid (PFUnA)		0.36	2.0	
375-85-9	Perfluoroheptanoic acid (PFHpA)		0.34	2.0	
335-67-1	Perfluorooctanoic acid (PFOA)	0.81	0.67	2.0	J
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	1.6	0.59	2.0	J
375-95-1	Perfluorononanoic acid (PFNA)		0.34	2.0	

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1 - FORM I
ANALYSIS DATA SHEET

MW-11

Laboratory:	Pace New England			Work Order:	22I1906
Client:	NYDEC_AECOM Environment - Lat			Project:	Northeast Alloys & Metals Site - CO
Matrix:	Ground Water	Laboratory ID:	22I1906-02	File ID:	22I1906-02.d
Sampled:	09/28/22 10:00	Prepared:	10/13/22 18:35	Analyzed:	10/19/22 13:48
Solids:		Preparation:	SOP 454-PFAAS	Dilution:	1
Initial/Final:	249.86 mL / 1 mL				
Batch:	B318820	Sequence:	S078368	Calibration:	2200776
				Instrument:	QQQ4

CAS NO.	COMPOUND	CONC. (ng/L)	MDL	RL	Q
375-22-4	Perfluorobutanoic acid (PFBA)	1.4	0.75	2.0	J
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.56	0.28	2.0	J
2706-90-3	Perfluoropentanoic acid (PFPeA)		0.39	2.0	
307-24-4	Perfluorohexanoic acid (PFHxA)		0.39	2.0	
39108-34-4	8:2 Fluorotelomersulfonic acid (8:2FTS A)		0.61	2.0	
335-76-2	Perfluorodecanoic acid (PFDA)		0.49	2.0	
307-55-1	Perfluorododecanoic acid (PFDoA)		0.44	2.0	
375-92-8	Perfluoroheptanesulfonic acid (PFHpS)		0.94	2.0	
2991-50-6	N-EtFOSAA		0.63	2.0	
2355-31-9	N-MeFOSAA		0.76	2.0	
376-06-7	Perfluorotetradecanoic acid (PFTA)		0.37	2.0	
72629-94-8	Perfluorotridecanoic acid (PFTrDA)		0.28	2.0	
335-77-3	Perfluorodecanesulfonic acid (PFDS)		0.33	2.0	
754-91-6	Perfluorooctanesulfonamide (FOSA)		0.42	2.0	
355-46-4	Perfluorohexanesulfonic acid (PFHxS)		0.34	2.0	
27619-97-2	6:2 Fluorotelomersulfonic acid (6:2FTS A)		0.37	2.0	
2058-94-8	Perfluoroundecanoic acid (PFUnA)		0.37	2.0	
375-85-9	Perfluoroheptanoic acid (PFHpA)		0.35	2.0	
335-67-1	Perfluorooctanoic acid (PFOA)	0.72	0.68	2.0	J
1763-23-1	Perfluorooctanesulfonic acid (PFOS)		0.60	2.0	
375-95-1	Perfluorononanoic acid (PFNA)		0.35	2.0	

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1 - FORM I
ANALYSIS DATA SHEET

MW-10

Laboratory:	Pace New England			Work Order:	22I1906
Client:	NYDEC_AECOM Environment - Lat			Project:	Northeast Alloys & Metals Site - CO
Matrix:	Ground Water	Laboratory ID:	22I1906-03	File ID:	22I1906-03.d
Sampled:	09/28/22 11:50	Prepared:	10/17/22 15:48	Analyzed:	10/19/22 22:39
Solids:		Preparation:	SOP 454-PFAAS	Dilution:	1
Initial/Final:	244.03 mL / 1 mL				
Batch:	B319210	Sequence:	S078397	Calibration:	2200776	Instrument:	QQQ4

CAS NO.	COMPOUND	CONC. (ng/L)	MDL	RL	Q
375-22-4	Perfluorobutanoic acid (PFBA)	8.2	0.76	2.0	PF-20 J
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.66	0.29	2.0	PF-23, J J
2706-90-3	Perfluoropentanoic acid (PFPeA)		0.40	2.0	
307-24-4	Perfluorohexanoic acid (PFHxA)		0.40	2.0	
39108-34-4	8:2 Fluorotelomersulfonic acid (8:2FTS A)		0.62	2.0	
335-76-2	Perfluorodecanoic acid (PFDA)		0.50	2.0	
307-55-1	Perfluorododecanoic acid (PFDoA)		0.45	2.0	
375-92-8	Perfluoroheptanesulfonic acid (PFHpS)		0.96	2.0	
2991-50-6	N-EtFOSAA		0.65	2.0	
2355-31-9	N-MeFOSAA		0.78	2.0	
376-06-7	Perfluorotetradecanoic acid (PFTA)		0.38	2.0	UJ
72629-94-8	Perfluorotridecanoic acid (PFTrDA)		0.28	2.0	UJ
335-77-3	Perfluorodecanesulfonic acid (PFDS)		0.33	2.0	
754-91-6	Perfluorooctanesulfonamide (FOSA)		0.43	2.0	
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.49	0.35	2.0	PF-20, PF-21, J J
27619-97-2	6:2 Fluorotelomersulfonic acid (6:2FTS A)	0.80	0.37	2.0	PF-22, J J
2058-94-8	Perfluoroundecanoic acid (PFUnA)		0.38	2.0	
375-85-9	Perfluoroheptanoic acid (PFHpA)		0.35	2.0	
335-67-1	Perfluorooctanoic acid (PFOA)	1.4	0.70	2.0	PF-20, J J
1763-23-1	Perfluorooctanesulfonic acid (PFOS)		0.62	2.0	
375-95-1	Perfluorononanoic acid (PFNA)		0.35	2.0	

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1 - FORM I
ANALYSIS DATA SHEET

MW-9

Laboratory:	Pace New England			Work Order:	22I1906
Client:	NYDEC_AECOM Environment - Lat			Project:	Northeast Alloys & Metals Site - CO
Matrix:	Ground Water	Laboratory ID:	22I1906-04	File ID:	22I1906-04.d
Sampled:	09/28/22 12:32	Prepared:	10/17/22 15:48	Analyzed:	10/19/22 22:46
Solids:		Preparation:	SOP 454-PFAAS	Dilution:	1
Initial/Final:	246.09 mL / 1 mL				
Batch:	B319210	Sequence:	S078397	Calibration:	2200776	Instrument:	QQQ4

CAS NO.	COMPOUND	CONC. (ng/L)	MDL	RL	Q
375-22-4	Perfluorobutanoic acid (PFBA)		0.76	2.0	J
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1.7	0.29	2.0	PF-21, PF-23, J
2706-90-3	Perfluoropentanoic acid (PFPeA)		0.40	2.0	
307-24-4	Perfluorohexanoic acid (PFHxA)	0.57	0.39	2.0	PF-20, J J
39108-34-4	8:2 Fluorotelomersulfonic acid (8:2FTS A)		0.62	2.0	J
335-76-2	Perfluorodecanoic acid (PFDA)		0.50	2.0	
307-55-1	Perfluorododecanoic acid (PFDoA)		0.45	2.0	
375-92-8	Perfluoroheptanesulfonic acid (PFHpS)		0.95	2.0	
2991-50-6	N-EtFOSAA		0.64	2.0	
2355-31-9	N-MeFOSAA		0.77	2.0	
376-06-7	Perfluorotetradecanoic acid (PFTA)		0.37	2.0	
72629-94-8	Perfluorotridecanoic acid (PFTrDA)		0.28	2.0	
335-77-3	Perfluorodecanesulfonic acid (PFDS)		0.33	2.0	
754-91-6	Perfluorooctanesulfonamide (FOSA)		0.43	2.0	
355-46-4	Perfluorohexanesulfonic acid (PFHxS)		0.34	2.0	
27619-97-2	6:2 Fluorotelomersulfonic acid (6:2FTS A)		0.37	2.0	J
2058-94-8	Perfluoroundecanoic acid (PFUnA)		0.37	2.0	
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.55	0.35	2.0	J
335-67-1	Perfluorooctanoic acid (PFOA)	2.5	0.69	2.0	
1763-23-1	Perfluorooctanesulfonic acid (PFOS)		0.61	2.0	
375-95-1	Perfluorononanoic acid (PFNA)		0.35	2.0	

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1 - FORM I
ANALYSIS DATA SHEET

MW-7R

Laboratory:	Pace New England			Work Order:	22I1906
Client:	NYDEC_AECOM Environment - Lat			Project:	Northeast Alloys & Metals Site - CO
Matrix:	Ground Water	Laboratory ID:	22I1906-05	File ID:	22I1906-05.d
Sampled:	09/28/22 14:26	Prepared:	10/17/22 15:48	Analyzed:	10/19/22 22:54
Solids:		Preparation:	SOP 454-PFAAS	Dilution:	1
Initial/Final:	261.04 mL / 1 mL				
Batch:	B319210	Sequence:	S078397	Calibration:	2200776
Instrument:	QQQ4				

CAS NO.	COMPOUND	CONC. (ng/L)	MDL	RL	Q
375-22-4	Perfluorobutanoic acid (PFBA)	1.2	0.71	1.9	J
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.41	0.27	1.9	PF-20, J J
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.40	0.38	1.9	PF-20, J J
307-24-4	Perfluorohexanoic acid (PFHxA)		0.37	1.9	
39108-34-4	8:2 Fluorotelomersulfonic acid (8:2FTS A)		0.58	1.9	
335-76-2	Perfluorodecanoic acid (PFDA)		0.47	1.9	
307-55-1	Perfluorododecanoic acid (PFDoA)		0.42	1.9	
375-92-8	Perfluoroheptanesulfonic acid (PFHpS)		0.90	1.9	
2991-50-6	N-EtFOSAA		0.60	1.9	
2355-31-9	N-MeFOSAA		0.73	1.9	
376-06-7	Perfluorotetradecanoic acid (PFTA)		0.35	1.9	
72629-94-8	Perfluorotridecanoic acid (PFTrDA)		0.27	1.9	
335-77-3	Perfluorodecanesulfonic acid (PFDS)		0.31	1.9	
754-91-6	Perfluorooctanesulfonamide (FOSA)		0.40	1.9	
355-46-4	Perfluorohexanesulfonic acid (PFHxS)		0.32	1.9	
27619-97-2	6:2 Fluorotelomersulfonic acid (6:2FTS A)		0.35	1.9	
2058-94-8	Perfluoroundecanoic acid (PFUnA)		0.35	1.9	
375-85-9	Perfluoroheptanoic acid (PFHpA)		0.33	1.9	
335-67-1	Perfluorooctanoic acid (PFOA)	1.0	0.65	1.9	J
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	2.3	0.58	1.9	
375-95-1	Perfluorononanoic acid (PFNA)		0.33	1.9	

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1 - FORM I
ANALYSIS DATA SHEET

BR-3

Laboratory:	Pace New England			Work Order:	22I1906
Client:	NYDEC_AECOM Environment - Lat			Project:	Northeast Alloys & Metals Site - CO
Matrix:	Ground Water	Laboratory ID:	22I1906-06	File ID:	22I1906-06.d
Sampled:	09/28/22 14:34	Prepared:	10/17/22 15:48	Analyzed:	10/19/22 23:01
Solids:		Preparation:	SOP 454-PFAAS	Dilution:	1
Initial/Final:	272.2 mL / 1 mL				
Batch:	B319210	Sequence:	S078397	Calibration:	2200776
Instrument:	QQQ4				

CAS NO.	COMPOUND	CONC. (ng/L)	MDL	RL	Q
375-22-4	Perfluorobutanoic acid (PFBA)		0.68	1.8	
375-73-5	Perfluorobutanesulfonic acid (PFBS)		0.26	1.8	
2706-90-3	Perfluoropentanoic acid (PFPeA)		0.36	1.8	
307-24-4	Perfluorohexanoic acid (PFHxA)		0.35	1.8	
39108-34-4	8:2 Fluorotelomersulfonic acid (8:2FTS A)		0.56	1.8	
335-76-2	Perfluorodecanoic acid (PFDA)		0.45	1.8	
307-55-1	Perfluorododecanoic acid (PFDoA)		0.41	1.8	
375-92-8	Perfluoroheptanesulfonic acid (PFHpS)		0.86	1.8	
2991-50-6	N-EtFOSAA		0.58	1.8	
2355-31-9	N-MeFOSAA		0.70	1.8	
376-06-7	Perfluorotetradecanoic acid (PFTA)		0.34	1.8	
72629-94-8	Perfluorotridecanoic acid (PFTrDA)		0.25	1.8	
335-77-3	Perfluorodecanesulfonic acid (PFDS)		0.30	1.8	
754-91-6	Perfluorooctanesulfonamide (FOSA)		0.39	1.8	
355-46-4	Perfluorohexanesulfonic acid (PFHxS)		0.31	1.8	
27619-97-2	6:2 Fluorotelomersulfonic acid (6:2FTS A)		0.34	1.8	
2058-94-8	Perfluoroundecanoic acid (PFUnA)		0.34	1.8	
375-85-9	Perfluoroheptanoic acid (PFHpA)		0.32	1.8	
335-67-1	Perfluorooctanoic acid (PFOA)		0.63	1.8	
1763-23-1	Perfluorooctanesulfonic acid (PFOS)		0.55	1.8	
375-95-1	Perfluorononanoic acid (PFNA)		0.32	1.8	

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VALIDATA
Chemical Services, Inc.
2159 Wynnton Pointe, Duluth, GA 30097
(770) 232-0130
(770) 232-5082 (Fax)
www.datavalidator.com

DATA USABILITY SUMMARY REPORT

COMPANY:	AECOM Technical Services Northeast, Inc.
PROJECT NAME:	North East Alloy and Metals #663045
CONTRACTED LAB:	Pace Analytical Services – New England
ANALYTICAL METHOD(S):	SW 846 Method 8270E SIM and EPA Method 537 Modified SOP-454 PFAS
VALIDATION GUIDELINES:	*USEPA Region II data validation SOP (SVOC HW-22 Rev.5), USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review,* **2008**; *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review,***2010**; NYDEC *Guidelines for Sampling and Analysis of PFAS,* January 2020, Professional Judgment
SAMPLE MATRIX:	Ground Water and Water
TYPES OF ANALYSES:	1,4-dioxane, Per and Polyfluoroalkyl Substances (PFAS)
DATA REVIEWER(S):	Cathi Lesher
SDG NUMBER:	22I2023
SAMPLING DATE(S):	September 30, 2022

SAMPLES:

Client Sample ID	Laboratory ID	1,4-dioxane	PFAS
EB-1	22I2023-01		X
FB-1	22I2023-02	X	X
MW-18	22I2023-03	X	X
MW-17	22I2023-04	X	X

Suffix Codes: DL= DILUTION, MS = MATRIX SPIKE,
MSD = MATRIX SPIKE DUPLICATE, RE = REANALYSIS

Qualifier	Definition
U	The analyte was not detected and was reported as less than the LOD or as defined by the customer. The LOD has been adjusted for any dilution or concentration of the sample.
J	The reported result was an estimated value with an unknown bias.
J+	The result was an estimated quantity, but the result may be biased high.
J-	The result was an estimated quantity, but the result may be biased low.
N	The analysis indicates the presence of an analyte for which there was presumptive evidence to make a "tentative identification."
NJ	The analyte has been “tentatively identified” or “presumptively” as present and the associated numerical value was the estimated concentration in the sample.
UJ	The analyte was not detected and was reported as less than the LOD or as defined by the customer. However, the associated numerical value is approximate.
X	The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project quality control criteria. The presence or absence of the analyte cannot be substantiated by the data provided. Acceptance or rejection of the data should be decided by the project team (which should include a project chemist), but exclusion of the data is recommended.

DATA USABILITY SUMMARY REPORT

Pace Analytical Services – New England – 22I2023

1,4-DIOXANE

SUMMARY

I.) General:

The analyses for 1,4-dioxane were performed per SW846 Method 8270E SIM.

II.) Overall Assessment of Data:

All laboratory data were acceptable without qualifications.

II.) Holding Times:

All Holding Time criteria were met. No data qualification was necessary.

IV.) GC/MS Tuning:

All GC/MS Tuning criteria were met. No data qualification was necessary.

V.) Calibration:

Initial Calibration:

All Initial Calibration criteria were met. No data qualification was necessary.

Initial Calibration Verification:

All Initial Calibration Verification criteria were met. No data qualification was necessary.

Continuing Calibration:

All Continuing Calibration criteria were met. No data qualification was necessary.

VI.) Blanks:

Method Blanks:

There were no detections in the associated method blank. No data qualification was necessary.

Equipment Blanks:

There was no equipment blank issued with the samples in this SDG. No evaluation was made.

Field Blanks:

There was no associated field blank submitted for this SDG. No data qualification was necessary.

VII.) Surrogate Recoveries:

All Surrogate Recovery criteria were met. No data qualification was necessary.

VIII.) Laboratory Control Samples (LCS):

One LCS was analyzed by the laboratory for this SDG. All criteria were met. No data qualification was necessary.

IX.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

There were no MS/MSD analyses performed on any sample from this SDG. No evaluation was made.

X.) Field Duplicates:

There were no field duplicates identified for any sample in this SDG. No evaluation was made.

XI.) TCL Compound Identification:

All TCL Compound Identification criteria were met. No data qualification was necessary.

XII.) Internal Standards Performance (ISTD):

All ISTD area count criteria were met. No data qualification was necessary.

XIII.) Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL):

All CRQL criteria were met. No data qualification was necessary.

PERFLOROALKYL SUBSTANCES (PFAS)

SUMMARY

I.) General:

The analyses for Perfluoroalkyl Substances were performed by Liquid Chromatography Tandem Mass Spectrometry (LC/MS/MS) per EPA Method 537 Modified/SOP-454 PFAS.

II.) Overall Assessment of Data:

All laboratory data were acceptable with qualifications.

MAJOR ISSUES

There were no major problems for this fraction of the SDG.

MINOR ISSUES

I.) Laboratory Data Package:

The required documentation was present and complete. The laboratory presented a complete and accurate case narrative in the data package. The data package contains results for all samples and method types listed on the COC.

II.) Sample Receipt, Preservation, and Holding Times:

The samples were received intact with proper COC documentation and signatures. The samples were received within the method temperature requirements. The samples were extracted and analyzed within the method hold times.

III.) Initial Calibration (ICAL) and Initial Calibration Verification (ICV):

All Initial Calibration and Initial Calibration Verification criteria were met. No data qualification was necessary.

IV.) Continuing Calibration (CCV):

All Continuing Calibration Verification criteria were met. No data qualification was necessary.

V.) Blanks:

Blank results were evaluated based on guidelines in the following table:

Blank Result	Sample Result	Qualification
Any detection	< Reporting Limit	Qualify as ND at reporting limit
Any detection	>Reporting Limit and >10x the blank result	No qualification
>Reporting Limit	>Reporting limit and <10x blank result	J+ biased high

Instrument Blank (IB):

All instrument blanks were free from contamination. No data qualification was made.

Method Blank (MB):

All method blanks were free from contamination. No data qualification was necessary.

Field Blank (FB):

Field blank, FB-1, was free from contamination. No data qualification was needed.

Equipment Blank (EB):

Equipment blank, EB-1, was free from contamination. No data qualification was necessary.

VI.) Matrix Spike / Matrix Spike Duplicate (MS/MSD):

There were no MS/MSD analyses performed on any sample from this SDG. No evaluation was made.

VII.) Laboratory Control Samples (LCS/LCSD):

All LCS/LCSD recovery and RPD criteria were met. No data qualification was necessary.

VIII.) Field Duplicates:

There were no field duplicate samples issued with the samples in this SDG. No evaluation was made.

IX.) Extracted Internal Standards (EIS):

EIS recoveries (%R) were outside the 50%-150% criteria. Below are the associated analytes:

Client ID	Lab ID	EIS	Associated Analytes	Qualification
MW-18	22I2023-03	M2-8:2FTS	8:2FTS	UJ
		MPFBA	PFBA	J
		M2-6:2FTS	6:2FTS	UJ
		M5PFPeA	PFPeA	UJ
MW-17	22I2023-04	M2-8:2FTS	8:2FTS	UJ
		MPFBA	PFBA	J
		M2-6:2FTS	6:2FTS	UJ

X.) Ion Transitions/Signal to Noise:

The following Ion Ratios (IR) and Signal to Noise Ratios (SN) were not within the laboratory limits.

Client ID	Lab ID	IR or SN	Analytes	Qualification
MW-18	22I2023-03	SN	PFBA	J
			PFHpS	J
			PFHxS	J
			PFNA	J
			PFBS	J
MW-17	22I2023-04	SN	PFBA	J
			PFHpA	J
			PFHxS	J
			PFHxA	J
			PFNA	J
MW-18	22I2023-03	IR	PFBS	J
MW-17	22I2023-04	IR	PFBS	J

XI.) Reporting limits (RLs):

All Reporting Limits were acceptable. No data qualification was necessary.

Sample results that were greater than or equal to the MDL but less than the RL were qualified as estimated (J) by the laboratory. These qualifiers were confirmed by the validator.

XII.) Instrument Performance criteria:

All Instrument Performance criteria were met. No data qualification was necessary.

XIII.) Sample and QC Calculation Verification:

All Sample and QC Calculation Verification criteria were met. No discrepancies were noted.

Attachment A

Sample Result Forms (FORM Is) Corrected for Validation Qualifiers

1 - FORM I
ANALYSIS DATA SHEET

FB-1

Laboratory:	Pace New England			Work Order:	22I2023
Client:	NYDEC_AECOM Environment - Lat			Project:	Northeast Alloys & Metals Site - CO
Matrix:	Ground Water	Laboratory ID:	22I2023-02	File ID:	F22S283026.D
Sampled:	09/30/22 09:35	Prepared:	10/07/22 07:59	Analyzed:	10/10/22 16:24
Solids:		Preparation:	SW-846 3510C	Dilution:	1
Initial/Final:	1020 mL / 1 mL				
Batch:	B319124	Sequence:	S077841	Calibration:	2200697
Instrument:	GCMSSV6				

CAS NO.	COMPOUND	CONC. (µg/L)	MDL	RL	Q
123-91-1	1,4-Dioxane	0.095	0.032	0.20	J

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1 - FORM I
ANALYSIS DATA SHEET

MW-18

Laboratory:	Pace New England			Work Order:	22I2023
Client:	NYDEC_AECOM Environment - Lat			Project:	Northeast Alloys & Metals Site - CO
Matrix:	Ground Water	Laboratory ID:	22I2023-03	File ID:	F22S283027.D
Sampled:	09/30/22 11:00	Prepared:	10/07/22 07:59	Analyzed:	10/10/22 16:43
Solids:		Preparation:	SW-846 3510C	Dilution:	1
Initial/Final:	930 mL / 1 mL				
Batch:	B319124	Sequence:	S077841	Calibration:	2200697
				Instrument:	GCMSSV6

CAS NO.	COMPOUND	CONC. (µg/L)	MDL	RL	Q
123-91-1	1,4-Dioxane	0.14	0.035	0.22	J

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1 - FORM I
ANALYSIS DATA SHEET

MW-17

Laboratory:	Pace New England			Work Order:	22I2023
Client:	NYDEC_AECOM Environment - Lat			Project:	Northeast Alloys & Metals Site - CO
Matrix:	Ground Water	Laboratory ID:	22I2023-04	File ID:	F22S283028.D
Sampled:	09/30/22 11:10	Prepared:	10/07/22 07:59	Analyzed:	10/10/22 17:03
Solids:		Preparation:	SW-846 3510C	Dilution:	1
Initial/Final:	940 mL / 1 mL				
Batch:	B319124	Sequence:	S077841	Calibration:	2200697
Instrument:	GCMSSV6				

CAS NO.	COMPOUND	CONC. (µg/L)	MDL	RL	Q
123-91-1	1,4-Dioxane	0.49	0.035	0.21	

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1 - FORM I
ANALYSIS DATA SHEET

EB-1

Laboratory:	Pace New England			Work Order:	22I2023
Client:	NYDEC_AECOM Environment - Lat			Project:	Northeast Alloys & Metals Site - CO
Matrix:	Ground Water	Laboratory ID:	22I2023-01	File ID:	22I2023-01.d
Sampled:	09/30/22 09:30	Prepared:	10/17/22 15:48	Analyzed:	10/19/22 23:37
Solids:		Preparation:	SOP 454-PFAAS	Dilution:	1
Initial/Final:	258.93 mL / 1 mL				
Batch:	B319210	Sequence:	S078397	Calibration:	2200776
Instrument:	QQQ4				

CAS NO.	COMPOUND	CONC. (ng/L)	MDL	RL	Q
375-22-4	Perfluorobutanoic acid (PFBA)		0.72	1.9	
375-73-5	Perfluorobutanesulfonic acid (PFBS)		0.27	1.9	
2706-90-3	Perfluoropentanoic acid (PFPeA)		0.38	1.9	
307-24-4	Perfluorohexanoic acid (PFHxA)		0.37	1.9	
39108-34-4	8:2 Fluorotelomersulfonic acid (8:2FTS A)		0.59	1.9	
335-76-2	Perfluorodecanoic acid (PFDA)		0.47	1.9	
307-55-1	Perfluorododecanoic acid (PFDoA)		0.43	1.9	
375-92-8	Perfluoroheptanesulfonic acid (PFHpS)		0.91	1.9	
2991-50-6	N-EtFOSAA		0.61	1.9	
2355-31-9	N-MeFOSAA		0.73	1.9	
376-06-7	Perfluorotetradecanoic acid (PFTA)		0.35	1.9	
72629-94-8	Perfluorotridecanoic acid (PFTrDA)		0.27	1.9	
335-77-3	Perfluorodecanesulfonic acid (PFDS)		0.31	1.9	
754-91-6	Perfluorooctanesulfonamide (FOSA)		0.41	1.9	
355-46-4	Perfluorohexanesulfonic acid (PFHxS)		0.33	1.9	
27619-97-2	6:2 Fluorotelomersulfonic acid (6:2FTS A)		0.35	1.9	
2058-94-8	Perfluoroundecanoic acid (PFUnA)		0.36	1.9	
375-85-9	Perfluoroheptanoic acid (PFHpA)		0.33	1.9	
335-67-1	Perfluorooctanoic acid (PFOA)		0.66	1.9	
1763-23-1	Perfluorooctanesulfonic acid (PFOS)		0.58	1.9	
375-95-1	Perfluorononanoic acid (PFNA)		0.33	1.9	

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1 - FORM I
ANALYSIS DATA SHEET

FB-1

Laboratory:	Pace New England			Work Order:	22I2023
Client:	NYDEC_AECOM Environment - Lat			Project:	Northeast Alloys & Metals Site - CO
Matrix:	Ground Water	Laboratory ID:	22I2023-02	File ID:	22I2023-02.d
Sampled:	09/30/22 09:35	Prepared:	10/17/22 15:48	Analyzed:	10/19/22 23:44
Solids:		Preparation:	SOP 454-PFAAS	Dilution:	1
Initial/Final:	272.38 mL / 1 mL				
Batch:	B319210	Sequence:	S078397	Calibration:	2200776
Instrument:	QQQ4				

CAS NO.	COMPOUND	CONC. (ng/L)	MDL	RL	Q
375-22-4	Perfluorobutanoic acid (PFBA)		0.68	1.8	
375-73-5	Perfluorobutanesulfonic acid (PFBS)		0.26	1.8	
2706-90-3	Perfluoropentanoic acid (PFPeA)		0.36	1.8	
307-24-4	Perfluorohexanoic acid (PFHxA)		0.35	1.8	
39108-34-4	8:2 Fluorotelomersulfonic acid (8:2FTS A)		0.56	1.8	
335-76-2	Perfluorodecanoic acid (PFDA)		0.45	1.8	
307-55-1	Perfluorododecanoic acid (PFDoA)		0.41	1.8	
375-92-8	Perfluoroheptanesulfonic acid (PFHpS)		0.86	1.8	
2991-50-6	N-EtFOSAA		0.58	1.8	
2355-31-9	N-MeFOSAA		0.70	1.8	
376-06-7	Perfluorotetradecanoic acid (PFTA)		0.34	1.8	
72629-94-8	Perfluorotridecanoic acid (PFTrDA)		0.25	1.8	
335-77-3	Perfluorodecanesulfonic acid (PFDS)		0.30	1.8	
754-91-6	Perfluorooctanesulfonamide (FOSA)		0.39	1.8	
355-46-4	Perfluorohexanesulfonic acid (PFHxS)		0.31	1.8	
27619-97-2	6:2 Fluorotelomersulfonic acid (6:2FTS A)		0.34	1.8	
2058-94-8	Perfluoroundecanoic acid (PFUnA)		0.34	1.8	
375-85-9	Perfluoroheptanoic acid (PFHpA)		0.32	1.8	
335-67-1	Perfluorooctanoic acid (PFOA)		0.63	1.8	
1763-23-1	Perfluorooctanesulfonic acid (PFOS)		0.55	1.8	
375-95-1	Perfluorononanoic acid (PFNA)		0.32	1.8	

CWL 8/19/23

1 - FORM I
ANALYSIS DATA SHEET

MW-18

Laboratory:	Pace New England			Work Order:	22I2023
Client:	NYDEC_AECOM Environment - Lat			Project:	Northeast Alloys & Metals Site - CO
Matrix:	Ground Water	Laboratory ID:	22I2023-03	File ID:	22I2023-03.d
Sampled:	09/30/22 11:00	Prepared:	10/17/22 15:48	Analyzed:	10/19/22 23:59
Solids:		Preparation:	SOP 454-PFAAS	Dilution:	1
Initial/Final:	236.78 mL / 1 mL				
Batch:	B319210	Sequence:	S078397	Calibration:	2200776	Instrument:	QQQ4

CAS NO.	COMPOUND	CONC. (ng/L)	MDL	RL	Q
375-22-4	Perfluorobutanoic acid (PFBA)	7.1	0.79	2.1	PF-20 J
375-73-5	Perfluorobutanesulfonic acid (PFBS)	14	0.30	2.1	PF-21, PF-23 J
2706-90-3	Perfluoropentanoic acid (PFPeA)		0.41	2.1	UJ
307-24-4	Perfluorohexanoic acid (PFHxA)		0.41	2.1	
39108-34-4	8:2 Fluorotelomersulfonic acid (8:2FTS A)		0.64	2.1	UJ
335-76-2	Perfluorodecanoic acid (PFDA)		0.52	2.1	
307-55-1	Perfluorododecanoic acid (PFDoA)		0.47	2.1	
375-92-8	Perfluoroheptanesulfonic acid (PFHpS)	1.3	0.99	2.1	PF-20, PF-21, J J
2991-50-6	N-EtFOSAA		0.67	2.1	
2355-31-9	N-MeFOSAA		0.80	2.1	
376-06-7	Perfluorotetradecanoic acid (PFTA)		0.39	2.1	
72629-94-8	Perfluorotridecanoic acid (PFTrDA)		0.29	2.1	
335-77-3	Perfluorodecanesulfonic acid (PFDS)		0.34	2.1	
754-91-6	Perfluorooctanesulfonamide (FOSA)		0.44	2.1	
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.87	0.36	2.1	PF-20, J J
27619-97-2	6:2 Fluorotelomersulfonic acid (6:2FTS A)		0.39	2.1	UJ
2058-94-8	Perfluoroundecanoic acid (PFUnA)		0.39	2.1	
375-85-9	Perfluoroheptanoic acid (PFHpA)	1.4	0.36	2.1	J
335-67-1	Perfluorooctanoic acid (PFOA)	5.1	0.72	2.1	
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	12	0.64	2.1	
375-95-1	Perfluorononanoic acid (PFNA)	0.99	0.37	2.1	PF-20, J J

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1 - FORM I
ANALYSIS DATA SHEET

MW-17

Laboratory:	Pace New England			Work Order:	22I2023
Client:	NYDEC_AECOM Environment - Lat			Project:	Northeast Alloys & Metals Site - CO
Matrix:	Ground Water	Laboratory ID:	22I2023-04	File ID:	22I2023-04.d
Sampled:	09/30/22 11:10	Prepared:	10/17/22 15:48	Analyzed:	10/20/22 00:06
Solids:		Preparation:	SOP 454-PFAAS	Dilution:	1
Initial/Final:	255.03 mL / 1 mL				
Batch:	B319210	Sequence:	S078397	Calibration:	2200776
Instrument:	QQQ4				

CAS NO.	COMPOUND	CONC. (ng/L)	MDL	RL	Q
375-22-4	Perfluorobutanoic acid (PFBA)	4.6	0.73	2.0	PF-20 J
375-73-5	Perfluorobutanesulfonic acid (PFBS)	13	0.28	2.0	PF-23 J
2706-90-3	Perfluoropentanoic acid (PFPeA)		0.39	2.0	
307-24-4	Perfluorohexanoic acid (PFHxA)	3.3	0.38	2.0	PF-20 J
39108-34-4	8:2 Fluorotelomersulfonic acid (8:2FTS A)		0.60	2.0	UJ
335-76-2	Perfluorodecanoic acid (PFDA)		0.48	2.0	
307-55-1	Perfluorododecanoic acid (PFDoA)		0.43	2.0	
375-92-8	Perfluoroheptanesulfonic acid (PFHpS)		0.92	2.0	
2991-50-6	N-EtFOSAA	0.97	0.62	2.0	J
2355-31-9	N-MeFOSAA		0.75	2.0	
376-06-7	Perfluorotetradecanoic acid (PFTA)		0.36	2.0	
72629-94-8	Perfluorotridecanoic acid (PFTrDA)		0.27	2.0	
335-77-3	Perfluorodecanesulfonic acid (PFDS)		0.32	2.0	
754-91-6	Perfluorooctanesulfonamide (FOSA)		0.41	2.0	
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	1.0	0.33	2.0	PF-20, J J
27619-97-2	6:2 Fluorotelomersulfonic acid (6:2FTS A)		0.36	2.0	UJ
2058-94-8	Perfluoroundecanoic acid (PFUnA)		0.36	2.0	
375-85-9	Perfluoroheptanoic acid (PFHpA)	1.3	0.34	2.0	PF-20, J J
335-67-1	Perfluorooctanoic acid (PFOA)	7.5	0.67	2.0	
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	31	0.59	2.0	
375-95-1	Perfluorononanoic acid (PFNA)	1.0	0.34	2.0	PF-20, J J

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VALIDATA

Chemical Services, Inc.

2159 Wynnton Pointe, Duluth, GA 30097

(770) 232-0130
(770) 232-5082 (Fax)
www.datavalidator.com

DATA USABILITY SUMMARY REPORT

COMPANY:	AECOM Technical Services Northeast, Inc.
PROJECT NAME:	North East Alloy and Metals #663045
CONTRACTED LAB:	Pace Analytical Services – New England
ANALYTICAL METHOD(S):	SW 846 Method 8270E SIM and EPA Method 537 Modified SOP-454 PFAS
VALIDATION GUIDELINES:	*USEPA Region II data validation SOP (SVOC HW-22 Rev.5), USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review,* **2008**; *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review,***2010**; NYDEC *Guidelines for Sampling and Analysis of PFAS,* January 2020, Professional Judgment
SAMPLE MATRIX:	Ground Water and Water
TYPES OF ANALYSES:	1,4-dioxane, Per and Polyfluoroalkyl Substances (PFAS)
DATA REVIEWER(S):	Cathi Lesher
SDG NUMBER:	22I2024
SAMPLING DATE(S):	September 29, 2022

SAMPLES:

Client Sample ID	Laboratory ID	1,4-dioxane	PFAS
MW-1	22I2024-01	X	X
MW-8	22I2024-02	X	X
BR-2	22I2024-03	X	X
MW-15	22I2024-04	X	X
MW-16	22I2024-05	X	X
MW-14	22I2024-06	X	X
MW-5	22I2024-07	X	X
MW-6	22I2024-08	X	X

Suffix Codes: DL= DILUTION, MS = MATRIX SPIKE,
MSD = MATRIX SPIKE DUPLICATE, RE = REANALYSIS

Qualifier	Definition
U	The analyte was not detected and was reported as less than the LOD or as defined by the customer. The LOD has been adjusted for any dilution or concentration of the sample.
J	The reported result was an estimated value with an unknown bias.
J+	The result was an estimated quantity, but the result may be biased high.
J-	The result was an estimated quantity, but the result may be biased low.
N	The analysis indicates the presence of an analyte for which there was presumptive evidence to make a "tentative identification."
NJ	The analyte has been “tentatively identified” or “presumptively” as present and the associated numerical value was the estimated concentration in the sample.
UJ	The analyte was not detected and was reported as less than the LOD or as defined by the customer. However, the associated numerical value is approximate.
X	The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project quality control criteria. The presence or absence of the analyte cannot be substantiated by the data provided. Acceptance or rejection of the data should be decided by the project team (which should include a project chemist), but exclusion of the data is recommended.

DATA USABILITY SUMMARY REPORT

Pace Analytical Services – New England – 22I2024

1,4-DIOXANE

SUMMARY

I.) General:

The analyses for 1,4-dioxane were performed per SW846 Method 8270E SIM.

II.) Overall Assessment of Data:

All laboratory data were acceptable without qualifications.

II.) Holding Times:

All Holding Time criteria were met. No data qualification was necessary.

IV.) GC/MS Tuning:

All GC/MS Tuning criteria were met. No data qualification was necessary.

V.) Calibration:

Initial Calibration:

All Initial Calibration criteria were met. No data qualification was necessary.

Initial Calibration Verification:

All Initial Calibration Verification criteria were met. No data qualification was necessary.

Continuing Calibration:

All Continuing Calibration criteria were met. No data qualification was necessary.

VI.) Blanks:

Method Blanks:

There were no detections in the associated method blank. No data qualification was necessary.

Equipment Blanks:

There was no equipment blank issued with the samples in this SDG. No evaluation was made.

Field Blanks:

There was no associated field blank submitted for this SDG. No data qualification was necessary.

VII.) Surrogate Recoveries:

All Surrogate Recovery criteria were met. No data qualification was necessary.

VIII.) Laboratory Control Samples (LCS):

One LCS was analyzed by the laboratory for this SDG. All criteria were met. No data qualification was necessary.

IX.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

There were no MS/MSD analyses performed on any sample from this SDG. No evaluation was made.

X.) Field Duplicates:

There were no field duplicates identified for any sample in this SDG. No evaluation was made.

XI.) TCL Compound Identification:

All TCL Compound Identification criteria were met. No data qualification was necessary.

XII.) Internal Standards Performance (ISTD):

All ISTD area count criteria were met. No data qualification was necessary.

XIII.) Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL):

All CRQL criteria were met. No data qualification was necessary.

PERFLOROALKYL SUBSTANCES (PFAS)

SUMMARY

I.) General:

The analyses for Perfluoroalkyl Substances were performed by Liquid Chromatography Tandem Mass Spectrometry (LC/MS/MS) per EPA Method 537 Modified/SOP-454 PFAS.

II.) Overall Assessment of Data:

All laboratory data were acceptable with qualifications.

MAJOR ISSUES

There were no major problems for this fraction of the SDG.

MINOR ISSUES

I.) Laboratory Data Package:

The required documentation was present and complete. The laboratory presented a complete and accurate case narrative in the data package. The data package contains results for all samples and method types listed on the COC.

II.) Sample Receipt, Preservation, and Holding Times:

The samples were received intact with proper COC documentation and signatures. The samples were received within the method temperature requirements. The samples were extracted and analyzed within the method hold times.

III.) Initial Calibration (ICAL) and Initial Calibration Verification (ICV):

All Initial Calibration and Initial Calibration Verification criteria were met. No data qualification was necessary.

IV.) Continuing Calibration (CCV):

All Continuing Calibration Verification criteria were met. No data qualification was necessary.

V.) Blanks:

Blank results were evaluated based on guidelines in the following table:

Blank Result	Sample Result	Qualification
Any detection	< Reporting Limit	Qualify as ND at reporting limit
Any detection	>Reporting Limit and >10x the blank result	No qualification
>Reporting Limit	>Reporting limit and <10x blank result	J+ biased high

Instrument Blank (IB):

All instrument blanks were free from contamination. No data qualification was made.

Method Blank (MB):

All method blanks were free from contamination. No data qualification was necessary.

Field Blank (FB):

There were no field blanks issued with the samples in the SDG. No evaluation was made.

Equipment Blank (EB):

There were no equipment blanks issued with the samples in the SDG. No evaluation was made.

VI.) Matrix Spike / Matrix Spike Duplicate (MS/MSD):

There were no MS/MSD analyses performed on any sample from this SDG. No evaluation was made.

VII.) Laboratory Control Samples (LCS/LCSD):

All LCS/LCSD recovery and RPD criteria were met, with the following exception, for batch B320010 NEtFOSAA and NMeFOSAA reported recoveries outside the 70-130% limits.

Client ID	Lab ID	Analytes	Qualification
MW-1	22I2024-01	NEtFOSAA	UJ
		NMeFOSAA	UJ

VIII.) Field Duplicates:

There were no field duplicate samples issued with the samples in this SDG. No evaluation was made.

IX.) Extracted Internal Standards (EIS):

EIS recoveries (%R) were outside the 50%-150% criteria. Below are the associated analytes:

Client ID	Lab ID	EIS	Associated Analytes	Qualification
MW-8	22I2024-02	M8FOSA	FOSA	UJ
BR-2		M2PFTA	PFTA	UJ
			PFTrDA	UJ
		MPFDoA	PFDoA	UJ
MW-16	22I2024-05	M8FOSA	FOSA	UJ
MW-14	22I2024-06	M8FOSA	FOSA	UJ
		M2PFTA	PFTA	UJ
			PFTrDA	UJ
		MPFBA	PFBA	J
		M6PFDA	PFDA	UJ
		M7PFUnA	PFUnA	UJ
		M9PFNA	PFNA	UJ
		MPFDoA	PFDoA	UJ
		D5-NEtFOSAA	NEtFOSAA	UJ
		D3-NMeFOSAA	NMeFOSAA	UJ

X.) Ion Transitions/Signal to Noise:

The following Ion Ratios (IR) and Signal to Noise Ratios (SN) were not within the laboratory limits.

Client ID	Lab ID	IR or SN	Analytes	Qualification
MW-16	22I2024-05	SN	PFBA	J
MW-14	22I2024-06	SN	PFBA	J
			PFHpA	J
			PFHxA	J

Client ID	Lab ID	IR or SN	Analytes	Qualification
MW-5	22I2024-07	SN	PFBA PFBS	J J
MW-6	22I2024-08	SN	PFBA PFBS PFHxA	J J J

XI.) Reporting limits (RLs):

All Reporting Limits were acceptable. No data qualification was necessary.

Sample results that were greater than or equal to the MDL but less than the RL were qualified as estimated (J) by the laboratory. These qualifiers were confirmed by the validator.

XII.) Instrument Performance criteria:

All Instrument Performance criteria were met. No data qualification was necessary.

XIII.) Sample and QC Calculation Verification:

All Sample and QC Calculation Verification criteria were met. No discrepancies were noted.

Attachment A

Sample Result Forms (FORM Is) Corrected for Validation Qualifiers

1 - FORM I
ANALYSIS DATA SHEET

MW-1

Laboratory:	Pace New England			Work Order:	22I2024
Client:	NYDEC_AECOM Environment - Lat			Project:	Northeast Alloys & Metals Site - CO
Matrix:	Ground Water	Laboratory ID:	22I2024-01	File ID:	F22S283065.D
Sampled:	09/29/22 10:45	Prepared:	10/06/22 07:31	Analyzed:	10/11/22 05:35
Solids:		Preparation:	SW-846 3510C	Dilution:	1
Initial/Final:	980 mL / 1 mL				
Batch:	B318984	Sequence:	S077885	Calibration:	2200697
Instrument:	GCMSSV6				

CAS NO.	COMPOUND	CONC. (µg/L)	MDL	RL	Q
123-91-1	1,4-Dioxane		0.033	0.20	

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1 - FORM I
ANALYSIS DATA SHEET

MW-8

Laboratory:	Pace New England			Work Order:	22I2024
Client:	NYDEC_AECOM Environment - Lat			Project:	Northeast Alloys & Metals Site - CO
Matrix:	Ground Water	Laboratory ID:	22I2024-02	File ID:	F22S283066.D
Sampled:	09/29/22 11:45	Prepared:	10/06/22 07:31	Analyzed:	10/11/22 05:55
Solids:		Preparation:	SW-846 3510C	Dilution:	1
Initial/Final:	970 mL / 1 mL				
Batch:	B318984	Sequence:	S077885	Calibration:	2200697
Instrument:	GCMSSV6				

CAS NO.	COMPOUND	CONC. (µg/L)	MDL	RL	Q
123-91-1	1,4-Dioxane		0.034	0.21	

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1 - FORM I
ANALYSIS DATA SHEET

BR-2

Laboratory:	Pace New England			Work Order:	22I2024
Client:	NYDEC_AECOM Environment - Lat			Project:	Northeast Alloys & Metals Site - CO
Matrix:	Ground Water	Laboratory ID:	22I2024-03	File ID:	F22S283067.D
Sampled:	09/29/22 13:10	Prepared:	10/06/22 07:31	Analyzed:	10/11/22 06:16
Solids:		Preparation:	SW-846 3510C	Dilution:	1
Initial/Final:	980 mL / 1 mL				
Batch:	B318984	Sequence:	S077885	Calibration:	2200697
Instrument:	GCMSSV6				

CAS NO.	COMPOUND	CONC. (µg/L)	MDL	RL	Q
123-91-1	1,4-Dioxane		0.033	0.20	

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1 - FORM I
ANALYSIS DATA SHEET

MW-15

Laboratory:	Pace New England			Work Order:	22I2024
Client:	NYDEC_AECOM Environment - Lat			Project:	Northeast Alloys & Metals Site - CO
Matrix:	Ground Water	Laboratory ID:	22I2024-04	File ID:	F22S283068.D
Sampled:	09/29/22 14:30	Prepared:	10/06/22 07:31	Analyzed:	10/11/22 06:36
Solids:		Preparation:	SW-846 3510C	Dilution:	1
Initial/Final:	980 mL / 1 mL				
Batch:	B318984	Sequence:	S077885	Calibration:	2200697
Instrument:	GCMSSV6				

CAS NO.	COMPOUND	CONC. (µg/L)	MDL	RL	Q
123-91-1	1,4-Dioxane	2.8	0.033	0.20	

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ANALYSIS DATA SHEET

MW-16

Laboratory:	Pace New England			Work Order:	22I2024
Client:	NYDEC_AECOM Environment - Lat			Project:	Northeast Alloys & Metals Site - CO
Matrix:	Ground Water	Laboratory ID:	22I2024-05	File ID:	F22S283069.D
Sampled:	09/29/22 15:13	Prepared:	10/06/22 07:31	Analyzed:	10/11/22 06:57
Solids:		Preparation:	SW-846 3510C	Dilution:	1
Initial/Final:	1010 mL / 1 mL				
Batch:	B318984	Sequence:	S077885	Calibration:	2200697
Instrument:	GCMSSV6				

CAS NO.	COMPOUND	CONC. (µg/L)	MDL	RL	Q
123-91-1	1,4-Dioxane	1.9	0.032	0.20	

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ANALYSIS DATA SHEET

MW-14

Laboratory:	Pace New England			Work Order:	22I2024
Client:	NYDEC_AECOM Environment - Lat			Project:	Northeast Alloys & Metals Site - CO
Matrix:	Ground Water	Laboratory ID:	22I2024-06	File ID:	F22S283070.D
Sampled:	09/29/22 15:38	Prepared:	10/06/22 07:31	Analyzed:	10/11/22 07:17
Solids:		Preparation:	SW-846 3510C	Dilution:	1
Initial/Final:	955 mL / 1 mL				
Batch:	B318984	Sequence:	S077885	Calibration:	2200697
Instrument:	GCMSSV6				

CAS NO.	COMPOUND	CONC. (µg/L)	MDL	RL	Q
123-91-1	1,4-Dioxane	0.088	0.034	0.21	J

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MW-5

Laboratory:	Pace New England			Work Order:	22I2024
Client:	NYDEC_AECOM Environment - Lat			Project:	Northeast Alloys & Metals Site - CO
Matrix:	Ground Water	Laboratory ID:	22I2024-07	File ID:	F22S283071.D
Sampled:	09/29/22 17:50	Prepared:	10/06/22 07:31	Analyzed:	10/11/22 07:37
Solids:		Preparation:	SW-846 3510C	Dilution:	1
Initial/Final:	955 mL / 1 mL				
Batch:	B318984	Sequence:	S077885	Calibration:	2200697
Instrument:	GCMSSV6				

CAS NO.	COMPOUND	CONC. (µg/L)	MDL	RL	Q
123-91-1	1,4-Dioxane	5.4	0.034	0.21	

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ANALYSIS DATA SHEET

MW-6

Laboratory:	Pace New England			Work Order:	22I2024
Client:	NYDEC_AECOM Environment - Lat			Project:	Northeast Alloys & Metals Site - CO
Matrix:	Ground Water	Laboratory ID:	22I2024-08	File ID:	F22S283072.D
Sampled:	09/29/22 17:52	Prepared:	10/06/22 07:31	Analyzed:	10/11/22 07:58
Solids:		Preparation:	SW-846 3510C	Dilution:	1
Initial/Final:	1020 mL / 1 mL				
Batch:	B318984	Sequence:	S077885	Calibration:	2200697
Instrument:	GCMSSV6				

CAS NO.	COMPOUND	CONC. (µg/L)	MDL	RL	Q
123-91-1	1,4-Dioxane	9.3	0.032	0.20	

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ANALYSIS DATA SHEET

MW-1

Laboratory:	Pace New England			Work Order:	22I2024
Client:	NYDEC_AECOM Environment - Lat			Project:	Northeast Alloys & Metals Site - CO
Matrix:	Ground Water	Laboratory ID:	22I2024-01	File ID:	22I2024-01.d
Sampled:	09/29/22 10:45	Prepared:	10/15/22 10:17	Analyzed:	10/21/22 10:47
Solids:		Preparation:	SOP 454-PFAAS	Dilution:	1
Initial/Final:	254.55 mL / 1 mL				
Batch:	B320010	Sequence:	S078469	Calibration:	2200776
Instrument:	QQQ4				

CAS NO.	COMPOUND	CONC. (ng/L)	MDL	RL	Q
375-22-4	Perfluorobutanoic acid (PFBA)		0.73	2.0	
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.54	0.28	2.0	J
2706-90-3	Perfluoropentanoic acid (PFPeA)		0.39	2.0	
307-24-4	Perfluorohexanoic acid (PFHxA)		0.38	2.0	
39108-34-4	8:2 Fluorotelomersulfonic acid (8:2FTS A)		0.60	2.0	
335-76-2	Perfluorodecanoic acid (PFDA)		0.48	2.0	
307-55-1	Perfluorododecanoic acid (PFDoA)		0.43	2.0	
375-92-8	Perfluoroheptanesulfonic acid (PFHpS)		0.92	2.0	
2991-50-6	N-EtFOSAA		0.62	2.0	UJ
2355-31-9	N-MeFOSAA		0.75	2.0	UJ
376-06-7	Perfluorotetradecanoic acid (PFTA)		0.36	2.0	
72629-94-8	Perfluorotridecanoic acid (PFTrDA)		0.27	2.0	
335-77-3	Perfluorodecanesulfonic acid (PFDS)		0.32	2.0	
754-91-6	Perfluorooctanesulfonamide (FOSA)		0.41	2.0	
355-46-4	Perfluorohexanesulfonic acid (PFHxS)		0.33	2.0	
27619-97-2	6:2 Fluorotelomersulfonic acid (6:2FTS A)		0.36	2.0	
2058-94-8	Perfluoroundecanoic acid (PFUnA)		0.36	2.0	
375-85-9	Perfluoroheptanoic acid (PFHpA)		0.34	2.0	
335-67-1	Perfluorooctanoic acid (PFOA)		0.67	2.0	
1763-23-1	Perfluorooctanesulfonic acid (PFOS)		0.59	2.0	
375-95-1	Perfluorononanoic acid (PFNA)		0.34	2.0	

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ANALYSIS DATA SHEET

MW-8

Laboratory:	Pace New England			Work Order:	22I2024
Client:	NYDEC_AECOM Environment - Lat			Project:	Northeast Alloys & Metals Site - CO
Matrix:	Ground Water	Laboratory ID:	22I2024-02	File ID:	22I2024-02.d
Sampled:	09/29/22 11:45	Prepared:	10/19/22 10:13	Analyzed:	10/24/22 16:04
Solids:		Preparation:	SOP 454-PFAAS	Dilution:	1
Initial/Final:	258.52 mL / 1 mL				
Batch:	B320106	Sequence:	S078544	Calibration:	2200776
Instrument:	QQQ4				

CAS NO.	COMPOUND	CONC. (ng/L)	MDL	RL	Q
375-22-4	Perfluorobutanoic acid (PFBA)		0.72	1.9	
375-73-5	Perfluorobutanesulfonic acid (PFBS)		0.27	1.9	
2706-90-3	Perfluoropentanoic acid (PFPeA)		0.38	1.9	
307-24-4	Perfluorohexanoic acid (PFHxA)		0.37	1.9	
39108-34-4	8:2 Fluorotelomersulfonic acid (8:2FTS A)		0.59	1.9	
335-76-2	Perfluorodecanoic acid (PFDA)		0.47	1.9	
307-55-1	Perfluorododecanoic acid (PFDoA)		0.43	1.9	UJ
375-92-8	Perfluoroheptanesulfonic acid (PFHpS)		0.91	1.9	
2991-50-6	N-EtFOSAA		0.61	1.9	
2355-31-9	N-MeFOSAA		0.74	1.9	
376-06-7	Perfluorotetradecanoic acid (PFTA)		0.35	1.9	UJ
72629-94-8	Perfluorotridecanoic acid (PFTrDA)		0.27	1.9	UJ
335-77-3	Perfluorodecanesulfonic acid (PFDS)		0.32	1.9	
754-91-6	Perfluorooctanesulfonamide (FOSA)		0.41	1.9	UJ
355-46-4	Perfluorohexanesulfonic acid (PFHxS)		0.33	1.9	
27619-97-2	6:2 Fluorotelomersulfonic acid (6:2FTS A)		0.35	1.9	
2058-94-8	Perfluoroundecanoic acid (PFUnA)		0.36	1.9	
375-85-9	Perfluoroheptanoic acid (PFHpA)		0.33	1.9	
335-67-1	Perfluorooctanoic acid (PFOA)		0.66	1.9	
1763-23-1	Perfluorooctanesulfonic acid (PFOS)		0.58	1.9	
375-95-1	Perfluorononanoic acid (PFNA)		0.33	1.9	

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1 - FORM I
ANALYSIS DATA SHEET

BR-2

Laboratory:	Pace New England			Work Order:	22I2024
Client:	NYDEC_AECOM Environment - Lat			Project:	Northeast Alloys & Metals Site - CO
Matrix:	Ground Water	Laboratory ID:	22I2024-03	File ID:	22I2024-03.d
Sampled:	09/29/22 13:10	Prepared:	10/19/22 10:13	Analyzed:	10/24/22 16:11
Solids:		Preparation:	SOP 454-PFAAS	Dilution:	1
Initial/Final:	270.2 mL / 1 mL				
Batch:	B320106	Sequence:	S078544	Calibration:	2200776
Instrument:	QQQ4				

CAS NO.	COMPOUND	CONC. (ng/L)	MDL	RL	Q
375-22-4	Perfluorobutanoic acid (PFBA)	0.91	0.69	1.9	J
375-73-5	Perfluorobutanesulfonic acid (PFBS)		0.26	1.9	
2706-90-3	Perfluoropentanoic acid (PFPeA)		0.36	1.9	
307-24-4	Perfluorohexanoic acid (PFHxA)		0.36	1.9	
39108-34-4	8:2 Fluorotelomersulfonic acid (8:2FTS A)		0.56	1.9	
335-76-2	Perfluorodecanoic acid (PFDA)		0.45	1.9	
307-55-1	Perfluorododecanoic acid (PFDoA)		0.41	1.9	
375-92-8	Perfluoroheptanesulfonic acid (PFHpS)		0.87	1.9	
2991-50-6	N-EtFOSAA		0.58	1.9	
2355-31-9	N-MeFOSAA		0.70	1.9	
376-06-7	Perfluorotetradecanoic acid (PFTA)		0.34	1.9	
72629-94-8	Perfluorotridecanoic acid (PFTrDA)		0.26	1.9	
335-77-3	Perfluorodecanesulfonic acid (PFDS)		0.30	1.9	
754-91-6	Perfluorooctanesulfonamide (FOSA)		0.39	1.9	
355-46-4	Perfluorohexanesulfonic acid (PFHxS)		0.31	1.9	
27619-97-2	6:2 Fluorotelomersulfonic acid (6:2FTS A)		0.34	1.9	
2058-94-8	Perfluoroundecanoic acid (PFUnA)		0.34	1.9	
375-85-9	Perfluoroheptanoic acid (PFHpA)		0.32	1.9	
335-67-1	Perfluorooctanoic acid (PFOA)		0.63	1.9	
1763-23-1	Perfluorooctanesulfonic acid (PFOS)		0.56	1.9	
375-95-1	Perfluorononanoic acid (PFNA)		0.32	1.9	

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1 - FORM I
ANALYSIS DATA SHEET

MW-15

Laboratory:	Pace New England			Work Order:	22I2024
Client:	NYDEC_AECOM Environment - Lat			Project:	Northeast Alloys & Metals Site - CO
Matrix:	Ground Water	Laboratory ID:	22I2024-04	File ID:	22I2024-04.d
Sampled:	09/29/22 14:30	Prepared:	10/19/22 10:13	Analyzed:	10/24/22 16:18
Solids:		Preparation:	SOP 454-PFAAS	Dilution:	1
Initial/Final:	254.1 mL / 1 mL				
Batch:	B320106	Sequence:	S078544	Calibration:	2200776
Instrument:	QQQ4				

CAS NO.	COMPOUND	CONC. (ng/L)	MDL	RL	Q
375-22-4	Perfluorobutanoic acid (PFBA)	3.0	0.73	2.0	
375-73-5	Perfluorobutanesulfonic acid (PFBS)		0.28	2.0	
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.76	0.39	2.0	J
307-24-4	Perfluorohexanoic acid (PFHxA)	0.78	0.38	2.0	J
39108-34-4	8:2 Fluorotelomersulfonic acid (8:2FTS A)		0.60	2.0	
335-76-2	Perfluorodecanoic acid (PFDA)		0.48	2.0	
307-55-1	Perfluorododecanoic acid (PFDoA)		0.43	2.0	
375-92-8	Perfluoroheptanesulfonic acid (PFHpS)		0.92	2.0	
2991-50-6	N-EtFOSAA		0.62	2.0	
2355-31-9	N-MeFOSAA		0.75	2.0	
376-06-7	Perfluorotetradecanoic acid (PFTA)		0.36	2.0	
72629-94-8	Perfluorotridecanoic acid (PFTrDA)		0.27	2.0	
335-77-3	Perfluorodecanesulfonic acid (PFDS)		0.32	2.0	
754-91-6	Perfluorooctanesulfonamide (FOSA)		0.41	2.0	
355-46-4	Perfluorohexanesulfonic acid (PFHxS)		0.33	2.0	
27619-97-2	6:2 Fluorotelomersulfonic acid (6:2FTS A)		0.36	2.0	
2058-94-8	Perfluoroundecanoic acid (PFUnA)		0.36	2.0	
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.55	0.34	2.0	J
335-67-1	Perfluorooctanoic acid (PFOA)	1.6	0.67	2.0	J
1763-23-1	Perfluorooctanesulfonic acid (PFOS)		0.59	2.0	
375-95-1	Perfluorononanoic acid (PFNA)		0.34	2.0	

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ANALYSIS DATA SHEET

MW-16

Laboratory:	Pace New England			Work Order:	22I2024
Client:	NYDEC_AECOM Environment - Lat			Project:	Northeast Alloys & Metals Site - CO
Matrix:	Ground Water	Laboratory ID:	22I2024-05	File ID:	22I2024-05.d
Sampled:	09/29/22 15:13	Prepared:	10/19/22 10:13	Analyzed:	10/24/22 16:26
Solids:		Preparation:	SOP 454-PFAAS	Dilution:	1
Initial/Final:	254.44 mL / 1 mL				
Batch:	B320106	Sequence:	S078544	Calibration:	2200776	Instrument:	QQQ4

CAS NO.	COMPOUND	CONC. (ng/L)	MDL	RL	Q
375-22-4	Perfluorobutanoic acid (PFBA)	1.6	0.73	2.0	PF-20, J J
375-73-5	Perfluorobutanesulfonic acid (PFBS)		0.28	2.0	
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.80	0.39	2.0	J
307-24-4	Perfluorohexanoic acid (PFHxA)	0.82	0.38	2.0	J
39108-34-4	8:2 Fluorotelomersulfonic acid (8:2FTS A)		0.60	2.0	
335-76-2	Perfluorodecanoic acid (PFDA)		0.48	2.0	
307-55-1	Perfluorododecanoic acid (PFDoA)		0.43	2.0	
375-92-8	Perfluoroheptanesulfonic acid (PFHpS)		0.92	2.0	
2991-50-6	N-EtFOSAA		0.62	2.0	
2355-31-9	N-MeFOSAA		0.75	2.0	
376-06-7	Perfluorotetradecanoic acid (PFTA)		0.36	2.0	
72629-94-8	Perfluorotridecanoic acid (PFTrDA)		0.27	2.0	
335-77-3	Perfluorodecanesulfonic acid (PFDS)		0.32	2.0	
754-91-6	Perfluorooctanesulfonamide (FOSA)		0.41	2.0	UJ
355-46-4	Perfluorohexanesulfonic acid (PFHxS)		0.33	2.0	
27619-97-2	6:2 Fluorotelomersulfonic acid (6:2FTS A)		0.36	2.0	
2058-94-8	Perfluoroundecanoic acid (PFUnA)		0.36	2.0	
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.45	0.34	2.0	J
335-67-1	Perfluorooctanoic acid (PFOA)	1.6	0.67	2.0	J
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	1.5	0.59	2.0	J
375-95-1	Perfluorononanoic acid (PFNA)		0.34	2.0	

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ANALYSIS DATA SHEET

MW-14

Laboratory:	Pace New England			Work Order:	22I2024
Client:	NYDEC_AECOM Environment - Lat			Project:	Northeast Alloys & Metals Site - CO
Matrix:	Ground Water	Laboratory ID:	22I2024-06	File ID:	22I2024-06.d
Sampled:	09/29/22 15:38	Prepared:	10/19/22 10:13	Analyzed:	10/24/22 16:33
Solids:		Preparation:	SOP 454-PFAAS	Dilution:	1
Initial/Final:	261.44 mL / 1 mL				
Batch:	B320106	Sequence:	S078544	Calibration:	2200776	Instrument:	QQQ4

CAS NO.	COMPOUND	CONC. (ng/L)	MDL	RL	Q	
375-22-4	Perfluorobutanoic acid (PFBA)	14	0.71	1.9	PF-20	J
375-73-5	Perfluorobutanesulfonic acid (PFBS)	2.9	0.27	1.9		
2706-90-3	Perfluoropentanoic acid (PFPeA)	38	0.38	1.9		
307-24-4	Perfluorohexanoic acid (PFHxA)	3.3	0.37	1.9	PF-20	J
39108-34-4	8:2 Fluorotelomersulfonic acid (8:2FTS A)		0.58	1.9		
335-76-2	Perfluorodecanoic acid (PFDA)		0.47	1.9	UJ	
307-55-1	Perfluorododecanoic acid (PFDoA)		0.42	1.9		
375-92-8	Perfluoroheptanesulfonic acid (PFHpS)		0.90	1.9		
2991-50-6	N-EtFOSAA		0.60	1.9	UJ	
2355-31-9	N-MeFOSAA		0.73	1.9	UJ	
376-06-7	Perfluorotetradecanoic acid (PFTA)		0.35	1.9	UJ	
72629-94-8	Perfluorotridecanoic acid (PFTrDA)		0.26	1.9	UJ	
335-77-3	Perfluorodecanesulfonic acid (PFDS)		0.31	1.9		
754-91-6	Perfluorooctanesulfonamide (FOSA)		0.40	1.9	UJ	
355-46-4	Perfluorohexanesulfonic acid (PFHxS)		0.32	1.9		
27619-97-2	6:2 Fluorotelomersulfonic acid (6:2FTS A)		0.35	1.9		
2058-94-8	Perfluoroundecanoic acid (PFUnA)		0.35	1.9	UJ	
375-85-9	Perfluoroheptanoic acid (PFHpA)	1.0	0.33	1.9	PF-20, J	J
335-67-1	Perfluorooctanoic acid (PFOA)	6.4	0.65	1.9		
1763-23-1	Perfluorooctanesulfonic acid (PFOS)		0.58	1.9		
375-95-1	Perfluorononanoic acid (PFNA)		0.33	1.9	UJ	

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1 - FORM I
ANALYSIS DATA SHEET

MW-5

Laboratory:	Pace New England			Work Order:	22I2024
Client:	NYDEC_AECOM Environment - Lat			Project:	Northeast Alloys & Metals Site - CO
Matrix:	Ground Water	Laboratory ID:	22I2024-07	File ID:	22I2024-07.d
Sampled:	09/29/22 17:50	Prepared:	10/19/22 10:13	Analyzed:	10/24/22 16:40
Solids:		Preparation:	SOP 454-PFAAS	Dilution:	1
Initial/Final:	255.85 mL / 1 mL				
Batch:	B320106	Sequence:	S078544	Calibration:	2200776	Instrument:	QQQ4

CAS NO.	COMPOUND	CONC. (ng/L)	MDL	RL	Q
375-22-4	Perfluorobutanoic acid (PFBA)	1.1	0.73	2.0	PF-20, J J
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1.6	0.28	2.0	PF-20, J J
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.57	0.38	2.0	J
307-24-4	Perfluorohexanoic acid (PFHxA)	0.51	0.38	2.0	J
39108-34-4	8:2 Fluorotelomersulfonic acid (8:2FTS A)		0.60	2.0	
335-76-2	Perfluorodecanoic acid (PFDA)		0.48	2.0	
307-55-1	Perfluorododecanoic acid (PFDoA)		0.43	2.0	
375-92-8	Perfluoroheptanesulfonic acid (PFHpS)		0.92	2.0	
2991-50-6	N-EtFOSAA		0.62	2.0	
2355-31-9	N-MeFOSAA		0.74	2.0	
376-06-7	Perfluorotetradecanoic acid (PFTA)		0.36	2.0	
72629-94-8	Perfluorotridecanoic acid (PFTrDA)		0.27	2.0	
335-77-3	Perfluorodecanesulfonic acid (PFDS)		0.32	2.0	
754-91-6	Perfluorooctanesulfonamide (FOSA)		0.41	2.0	
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	1.2	0.33	2.0	J
27619-97-2	6:2 Fluorotelomersulfonic acid (6:2FTS A)		0.36	2.0	
2058-94-8	Perfluoroundecanoic acid (PFUnA)		0.36	2.0	
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.83	0.34	2.0	J
335-67-1	Perfluorooctanoic acid (PFOA)	5.0	0.67	2.0	
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	5.8	0.59	2.0	
375-95-1	Perfluorononanoic acid (PFNA)	0.85	0.34	2.0	J

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1 - FORM I
ANALYSIS DATA SHEET

MW-6

Laboratory:	Pace New England			Work Order:	22I2024
Client:	NYDEC_AECOM Environment - Lat			Project:	Northeast Alloys & Metals Site - CO
Matrix:	Ground Water	Laboratory ID:	22I2024-08	File ID:	22I2024-08.d
Sampled:	09/29/22 17:52	Prepared:	10/19/22 10:13	Analyzed:	10/24/22 16:47
Solids:		Preparation:	SOP 454-PFAAS	Dilution:	1
Initial/Final:	251.27 mL / 1 mL				
Batch:	B320106	Sequence:	S078544	Calibration:	2200776
Instrument:	QQQ4				

CAS NO.	COMPOUND	CONC. (ng/L)	MDL	RL	Q
375-22-4	Perfluorobutanoic acid (PFBA)	2.1	0.74	2.0	PF-20 J
375-73-5	Perfluorobutanesulfonic acid (PFBS)	4.0	0.28	2.0	PF-20 J
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.85	0.39	2.0	J
307-24-4	Perfluorohexanoic acid (PFHxA)	1.0	0.38	2.0	PF-20, J J
39108-34-4	8:2 Fluorotelomersulfonic acid (8:2FTS A)		0.61	2.0	
335-76-2	Perfluorodecanoic acid (PFDA)		0.49	2.0	
307-55-1	Perfluorododecanoic acid (PFDoA)		0.44	2.0	
375-92-8	Perfluoroheptanesulfonic acid (PFHpS)		0.94	2.0	
2991-50-6	N-EtFOSAA		0.63	2.0	
2355-31-9	N-MeFOSAA		0.76	2.0	
376-06-7	Perfluorotetradecanoic acid (PFTA)		0.37	2.0	
72629-94-8	Perfluorotridecanoic acid (PFTrDA)		0.28	2.0	
335-77-3	Perfluorodecanesulfonic acid (PFDS)		0.32	2.0	
754-91-6	Perfluorooctanesulfonamide (FOSA)		0.42	2.0	
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.64	0.34	2.0	J
27619-97-2	6:2 Fluorotelomersulfonic acid (6:2FTS A)		0.36	2.0	
2058-94-8	Perfluoroundecanoic acid (PFUnA)		0.37	2.0	
375-85-9	Perfluoroheptanoic acid (PFHpA)	1.0	0.34	2.0	J
335-67-1	Perfluorooctanoic acid (PFOA)	6.2	0.68	2.0	
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	2.8	0.60	2.0	
375-95-1	Perfluorononanoic acid (PFNA)	0.37	0.34	2.0	J

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