



DEPARTMENT OF THE AIR FORCE

AIR FORCE CIVIL ENGINEER CENTER
INSTALLATION RESTORATION PROGRAM
NIAGARA FALLS AIR RESERVE STATION

AFCEC/CZOE
2405 Franklin Drive
Niagara Falls, NY 14304-5063

April 30, 2025

MEMO TO: Distribution

Re: Transmittal of Final 2023 Annual Comprehensive Sampling Monitoring Report, Niagara Falls Air Reserve Station, New York

Seres-Arcadis SB JV, LLC is pleased to present our Final 2023 Annual Comprehensive Sampling Monitoring Report for Niagara Falls ARS, New York, Northeast Group ORC.

Sincerely,

A handwritten signature in black ink, appearing to read "Lindsay Mairs", is positioned below the "Sincerely," text.

LINDSAY MAIRS
Remedial Project Manager

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Final 2023 Annual Comprehensive Sampling/ Monitoring Report

**Installation-Wide Groundwater Monitoring Program
Niagara Falls Air Reserve Station, New York**

**Northeast Group Optimized Remediation Contract
Contract W912DR-19-D-0009
Task Order W912DR-20-F-0483**

April 2025

Final 2023 Annual Comprehensive Sampling/ Monitoring Report

Installation-Wide Groundwater Monitoring Program
Niagara Falls Air Reserve Station, New York
Northeast Group Optimized Remediation Contract
Contract W912DR-19-D-0009
Task Order W912DR-20-F-0483

April 2025

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Acronyms and Abbreviations

µg/L	Micrograms per liter
AFCEC	Air Force Civil Engineer Center
amsl	Above mean sea level
ALS	ALS Environmental Laboratory
BOMARC	Boeing Michigan Aeronautical Research Center
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CMI	Corrective Measure Implementation
COC	Contaminant of concern
CVOC	Chlorinated volatile organic compound
DCE	Dichloroethene
DoD	Department of Defense
EA	EA Engineering, P.C., and Its Affiliate EA Science and Technology
E&E	Ecology & Environment, Inc.
EPA	U.S. Environmental Protection Agency
ERD	Enhanced reductive dechlorination
EZVI	Emulsified vegetable oil and zero valent iron mixture
GPS	Groundwater protection standard
GWTS	Groundwater treatment system
HRC	Hydrogen release compound
IRP	Installation Restoration Program
IWGP	Installation-Wide Groundwater Monitoring Program
MCL	Maximum Contaminant Level
MS	Matrix spike
MSD	Matrix spike duplicate
MW	Monitoring well
NFARS	Niagara Falls Air Reserve Station
NYSDEC	New York State Department of Environmental Conservation
ORC	Optimized Remediation Contract
PDB	Passive diffusion bag

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POTW	Publicly owned treatment works
ppb	Parts per billion
PW	Pumping well
PZ	Piezometer
QA	Quality Assurance
QC	Quality control
RA	Remedial Action
RCRA	Resource Conservation and Recovery Act
RPP	Rigid porous polyethylene
RSL	Regional Screening Level
RW	Recovery well
S-A JV	Seres-Arcadis Small Business Joint Venture LLC
SC	Site Closure
SMP	Site Management Plan
SWMU	Solid waste management unit
SW	Surface water
TCE	Trichloroethene
UST	Underground storage tank
VC	Vinyl chloride
VOC	Volatile organic compound

1 Introduction

The United States Department of the Air Force, Air Force Civil Engineer Center (AFCEC) and the United States Army Corps of Engineers has retained the SERES-Arcadis Small Business Joint Venture LLC (S-A JV) to perform installation-wide groundwater monitoring in support of the Northeast Group Optimized Remediation Contract (ORC) at the Niagara Falls Air Reserve Station (NFARS) in Niagara Falls, New York under Contract Number W912DR-19-D-0009, Task Order W912DR-20-F-0483. The work related to the installation-wide groundwater monitoring program (IWGP) is conducted under the United States Department of Defense (DoD) Installation Restoration Program (IRP) and in compliance with the requirements of a 2016 New York State Department of Environmental Conservation (NYSDEC) Order on Consent and Administrative Settlement (Site No. 932106, Index No. R9-20150902-65). This 2023 Annual Comprehensive Sampling/Monitoring Summary Report was prepared to provide IWGP monitoring results, data evaluation, and recommendations associated with the Spring and Fall 2023 sampling/monitoring events performed at NFARS. In addition, although not part of the IWGP, this report also presents the results of the three performance monitoring events performed in 2023 to evaluate the effectiveness of remedial injections performed at certain sites (i.e., Sites 5 and 10) in November 2022.

1.1 Background

NFARS is located in Niagara County, New York, approximately 15 miles north of the City of Buffalo and 4 miles east of the City of Niagara Falls (Figure 1-1). The base covers approximately 631 acres in the towns of Wheatfield and Niagara, New York. The environmental setting for NFARS, including physiography, climate, land use, hydrology, and geology is described in previous reports provided in the Administrative Record, including: the Stratigraphy Assessment (Ecology & Environment, Inc. [E&E] 1999); the Focused Resource Conservation and Recovery Act Facility Investigation, and Interim Corrective Measures Study (E&E 2000); and the Site Management Plan (SMP) prepared by EA Science and Technology (EA 2021).

1.2 Installation Restoration Program

The DoD developed the IRP to ensure compliance with hazardous waste regulations, identify and evaluate environmental contamination, and associated public health hazards at DoD facilities resulting from past operations and waste handling/disposal. IRP studies at Air Force installations were initially developed and implemented in a four-phase program. That four-phase approach was later changed to a three-phase program to ensure consistency with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) response action process. Environmental studies conducted at NFARS have followed the three-phase approach outlined in the National Contingency Plan.

The objective of the IRP is to provide a methodical and logical approach to the identification, quantification, and development of feasible remedies for environmental problems including public health hazards caused by the use or disposal of hazardous material at United States Air Force installations. The Air Force's ultimate objective for IRP remediation sites is to achieve Unlimited Use/Unrestricted Exposure status leading to Site Closure (SC).

AFCEC is responsible for implementation of the IRP. As the host unit at NFARS, the 914th Air Refueling Wing Mission Support Group/Civil Engineering-Environmental is responsible for administering remediation under the IRP, including remediation of contamination resulting from tenant organization activities, specifically those of the New York Air National Guard.

1.2.1 IRP Site Status

As indicated in the SMP (EA 2021), 13 Solid Waste Management Units (SWMUs) are managed at the Site under the 2016 Consent Order. These 13 SWMUs include the following:

- Site 1 – Building 600 Jet Fuel No. 4 (JP-4) Pipeline Leak
- Site 2 – JP-4 Tank C
- Site 3 – Landfill
- Site 4 – BX MOGAS Tank Leak
- Site 5 – Former Boeing/Michigan Aeronautical Research Center Missile Site
- Site 6 – JP-4 Tank A
- Site 7 – JP-4 Tank Truck Spill
- Site 8 – Former Building 202 Drum Storage Yard
- Site 9 – Fire Training Area No. 3
- Site 10 – Former Fire Training Area No. 1
- Site 11 – Fire Training Area No. 2
- Site 12 – Building 850 Drum Storage Yard
- Site 13 – 4,000-gallon Underground Storage Tank (UST)

Monitoring is currently only performed at Sites 3, 5, 10, and 13 under the IRP IWGP and in accordance with the requirements of the Work Plan for the IWGP (Appendix D of the SMP). As noted in Section 1.2.2, a final sampling event will be required at Site 8 to demonstrate achievement of the criteria necessary for Site Closure.

1.2.2 Prior Remedial Actions

Prior to 2012, corrective actions were performed at certain IRP sites to prevent offsite migration of contaminants of concern (COCs). EA conducted Remedial Actions (RAs) consisting of in-situ injections to treat COCs in groundwater through enhanced reductive dechlorination (ERD) and in-situ chemical reduction at Sites 3, 5, 7, 8, 10 and 13 between August and September 2015 and Sites 5, 8, 10, and 13 in June 2018 (EA 2017 and EA 2020). Based on the overall improvement of groundwater quality at certain sites following the 2015 and 2018 RAs, the 2018 and 2019 Annual Comprehensive Sampling/Monitoring Reports (EA 2019 and EA 2020, respectively), both of which were approved by NYSDEC, presented several recommendations including the following:

- Site 7 was removed from the IWGP in June 2018 based on the achievement of alternate termination criteria specified in Section 5.1.2 of the SMP (EA 2021). Separately from the IWGP, a separate investigation to determine the potential presence of perfluorooctanoic acid and perfluorooctane sulfonic acid is currently being conducted at Site 7 under the CERCLA process.
- Site 8 was removed from the IWGP prior to the Fall 2020 sampling/monitoring event based on the achievement of alternate termination criteria at monitoring well MW8-1 or termination of groundwater monitoring criteria at monitoring well MW8-10D. However, NYSDEC subsequently indicated that an additional sampling event will be required at Site prior to achieving Site Closure. The scope of that sampling event will be discussed with NYSDEC. Further, an investigation to determine the potential presence of 1,4-dioxane was conducted separately by the S-A JV at Site 8 in July 2022. 1,4-dioxane was detected in only one of three

monitoring wells sampled at Site 8 (MW8-4D) at a concentration of 0.65 micrograms per liter (µg/L), which is greater than the NYSDEC human health guidance value of 0.35 µg/L and the United States Environmental Protection Agency (EPA) risk-based regional screening level (RSL) of 0.46 µg/L for tap water, but less than NYSDOH's maximum contaminant level (MCL) of 1 µg/L for public drinking water. As a result, that well was resampled in February 2024 to confirm the presence of 1,4-dioxane in that well at a concentration greater than the NYSDOH human health guidance value of 0.35 µg/L and the EPA risk-based RSL of 0.46 µg/L for tap water. 1,4-dioxane was detected at a concentration of 0.57 µg/L, which was also greater than the NYSDEC human health guidance value of 0.35 µg/L and the EPA risk-based RSL of 0.46 µg/L for tap water, but remained less than the NYSDOH MCL of 1 µg/L. AFCEC is currently evaluating next steps related to these sampling results.

- The pumping wells at Sites 10 and 13 and the groundwater treatment system at Site 10 (which had been shut down prior to the 2015 and 2018 RAs) will remain off.

Evaluations of the annual monitoring data and recommendations to further modify the sampling network and/or sampling frequency (if any) based on those evaluations continue to be presented in the Annual Comprehensive Sampling/Monitoring Reports.

1.3 Installation-Wide Groundwater Program Monitoring

As indicated in Section 5 of the SMP (EA 2021), certain wells and piezometers at Sites 3, 5, 10, and 13 are subject to monitoring for volatile organic compounds (VOCs) under the IWGP until approval is received from NYSDEC to cease monitoring based on the achievement of either of two sets of criteria (which are further described in this section): Termination of Groundwater Monitoring Criteria or Alternate Termination Criteria. To evaluate achievement of either set of criteria, the groundwater analytical results for detected compounds at each Site are compared to Groundwater Protection Standards (GPS) derived from NYSDEC Class GA Groundwater Standards, as set forth in New York Code of Rules and Regulations Part 703, Surface Water and Groundwater Quality Standards and Groundwater Effluent Limitations and Division of Water, Technical and Operational Guidance Series (1.1.1) Ambient Water Quality Standards and Guidance Values (NYSDEC 1998). Table 1-1 lists the COCs which have exceeded the GPS at one or more SWMUs at NFARS. There are no drinking water wells at the installation or in the surrounding neighborhoods as local municipalities supply drinking water. Additional details regarding the criteria used to eliminate wells and/or piezometers from the IWGP are provided below. It should be noted that NYSDEC has required the removal of the Alternate Termination Criteria in comments to the 2020 and 2021 Annual Comprehensive Sampling/Monitoring Reports. Accordingly, the S-A JV is in the process of preparing an update to the SMP that will eliminate the Alternate Termination Criteria; however, text describing those criteria is retained herein until the updated SMP is approved by NYSDEC.

1.3.1 Termination of Groundwater Monitoring Criteria

The basis for determining whether sampling at a particular well or piezometer may be terminated under the IWGP is specified in Section 5.1.2 of the SMP (EA, 2021) and is determined using the following methodology:

1. GPS are achieved at the well or piezometer for four consecutive quarterly sampling events or another frequency as approved by NYSDEC; or
2. The well or piezometer has achieved Alternative Termination Criteria as defined in the following section; or
3. Other criteria acceptable by NYSDEC.

1.3.2 Alternative Termination Criteria

As also specified in Section 5.1.2 of the SMP (EA, 2021), groundwater monitoring may still be discontinued at a well or piezometer if the GPS are not achieved for four consecutive quarterly sampling events, if the following criteria are satisfied:

1. The chemical concentration of hazardous waste constituents in the well or piezometer indicate achievement of a "Zero Slope Condition" (as defined below); and
2. The total concentration of organics in the well or piezometer is no greater than 100 parts per billion (ppb), and no single organic compound concentration exceeds 50 ppb for a minimum of four consecutive quarterly sampling events or another frequency approved by NYSDEC; and
3. NFARS submits, and the NYSDEC approves an analysis, which indicates that the residual groundwater contamination would not result in an unacceptable risk to human health and the environment.
4. In the event that remedial systems with pumping wells are restarted, then termination criteria for the pumping well will be developed in coordination with NYSDEC and incorporated into a revised version of the SMP.

The determination of a zero-slope condition shall be made on a location-by-location basis using the following procedures:

- The sum concentration of hazardous waste constituents from the equivalent of the eight sampling events will be plotted versus time.
- If the curve which best fits these data points is linear, then a straight line using a least squares regression model will be fitted to the data and the slope of the fitted curve will be computed and designated as the estimated slope.
- If the data fits a non-linear form, then an exponential curve using a least square regression model will be fitted to the data. The estimated slope will be the first derivative of the curve at a value of time half-way between the data from the last two sampling points.

The estimated slope shall be deemed zero if:

- The slope of the line/curve is less than or equal to zero (i.e., the concentration is declining or stable) or the yearly decrease of the total concentration of hazardous waste constituents is less than the average overall precision of analytical methods used. NFARS and NYSDEC will develop a methodology of calculating the average overall precision prior to implementation of Termination Monitoring.
- In addition, the spatial and temporal distributions of the concentrations of compounds will be assessed to provide additional information regarding trends.

2 Summary of 2023 Investigation Activities

This section describes the field investigation tasks performed in 2023 under the IWGP at NFARS, as well as the performance monitoring activities performed in 2023 under the Final Remedial Injection Work Plan (S-A JV 2022). Specifically, the following activities were performed during the Spring and Fall 2023 sampling/monitoring events and the three performance monitoring events performed in March/April, June, and October/November 2023:

IWGP Monitoring Events

- Inspections were performed, and groundwater and surface water elevations were collected at the required monitoring wells, piezometers, and surface water monitoring locations on 12 and 13 June 2023 (Spring 2023 IWGP event) and on 10 and 11 October 2023 (Fall 2023 IWGP event).
- Passive diffusion bags (PDBs) were deployed at the applicable background monitoring well (Site 8) and all but one of the required IWGP monitoring wells and piezometers within Sites 3, 5, 10, and 13 on 13 and 14 June 2023 (Spring 2023 IWGP event). The PDB for piezometer PZ3-6D (which was not found due to vegetative overgrowth during the gauging event) was deployed on 27 June 2023. PDBs were deployed at the applicable background monitoring well (Site 1) and the required IWGP monitoring wells and piezometers at Sites 3, 5, 10, and 13 on 10 and 11 October 2023 (Fall 2023 IWGP event). PDB retrieval and groundwater/surface water sample collection activities were performed on 27 June and 1 August 2023 (Spring 2023 event) and on 2 November 2023 (Fall 2023 event).
- Minor repairs (e.g., missing bolts, locks, lids/caps) identified during well and piezometer gauging were completed during the Spring and Fall 2023 sampling/monitoring events. The need for major repairs to any wells or piezometers were not identified during those events.

Performance Monitoring Events

- Three performance monitoring events were performed at Sites 5 and 10 in March, June, and November 2023. These events involved sampling for VOCs (using PDBs), as well as methane, ethane, ethene, and total organic carbon (TOC) using rigid porous polyethylene (RPP) samplers. The June and October/November 2023 performance monitoring events were performed concurrently with the Spring and Fall 2023 IWGP monitoring events; therefore, only one set of PDBs were deployed during those events for sampling of VOCs.
- For the March/April, June and October/November 2023 performance monitoring events, PDBs and RPP samplers were deployed in the required monitoring wells on 23 March, 13 and 14 June, and 10 and 11 October 2023. PDB and RPP retrieval was performed on 11 April, 27 June (Spring 2023 event), and on 2 November 2023 (Fall 2023 event).

The remainder of this section provides additional details associated with the field activities performed during the Spring and Fall 2023 sampling/monitoring events and the three performance monitoring events performed in March/April, June, and October/November 2023. Unless otherwise noted, all field activities were performed in accordance with the SMP (EA 2021).

2.1 Groundwater and Surface Water Elevation Measurements

The monitoring network under the IWGP consists of 123 monitoring/pumping/recovery wells and piezometers and nine surface water measurement locations. The groundwater and surface water elevation measurement locations are listed in Table 2-1 and illustrated on Figure 2-1. Groundwater and surface water elevations are measured at each location twice a year (i.e., during the spring and fall monitoring events).

Water level gauging activities typically occur across two days during each event; however, water levels at each site are collected on a single day to provide accurate data for the development of the overburden and bedrock groundwater contour maps for Sites 3, 5, 10, and 13 that are included in each Annual Comprehensive Sampling/Monitoring Report. While the monitoring network includes one core hole and 13 monitoring wells located within Site 8, groundwater contours are not currently developed for that site as it was removed from the IWGP prior to the Fall 2020 sampling/monitoring event. Further, as agreed with NYSDEC, the collection of surface water and groundwater elevations at Site 8 will be discontinued starting with the Spring 2024 monitoring event until such time that groundwater sampling is resumed at Site 8 to confirm that groundwater at Site 8 achieves the GPS, leading to Site Closure. In the interim, the core hole and monitoring wells at Site 8 are inspected annually and maintained until Site Closure is achieved at Site 8 (similar to the monitoring wells at Site 7).

Static water levels were measured at 119 wells and piezometers and nine surface water locations on 12 and 13 June 2023 for the Spring 2023 monitoring event (Tables A-1 and A-2 [Appendix A]). Water levels were not measured at the following locations during this event: monitoring wells MW13-6 and MW13-6D (wells could not be located/excavation activities were noted in the area) and piezometers PZ3-6D (piezometer could not be located during gauging event as area was overgrown) and PZ13-1 (piezometer was dry). SA J-V personnel were subsequently able to locate PZ3-6D during PDB deployment on 27 June 2023. Similarly, water levels were measured at 120 wells and piezometers and eight surface water locations on 10 and 11 October 2023 for the Fall 2023 monitoring event (Tables A-1 and A-2 [Appendix A]). Water levels were not measured at the following locations during this event: monitoring wells MW13-6 and MW13-6D (wells could not be located/excavation activities were noted in the area), PZ13-1 (piezometer was dry), and surface water location SW10-6 (measurement location was dry). In addition, although not used for groundwater contour development, static water levels were measured at nine wells during the March/April 2023 performance monitoring event (Table A-3).

Water level measurements were collected at each well, piezometer, or surface water location using an electronic water level indicator with an accuracy of 0.01 foot (ft). Water levels were referenced to a previously established reference point at each well, piezometer, and surface water location. Precipitation data for the measurement period were obtained from Weather Underground (www.wunderground.com) for Niagara Falls, New York (Station KIAG, Weather Underground 2023) to supplement the groundwater elevation data. The precipitation data are presented in Appendix B.

Finally, the Air Force implemented a military construction (MILCON) project to install a hydrant fueling system at NFARS beginning in Spring 2022 and continuing through 2023. That project included excavation and dewatering activities (as needed) in the vicinity of Sites 5 and 13. Following the Spring 2024 sampling/monitoring event, monitoring wells MW13-6 and MW13-6D (which were not located during the Spring and Fall 2023 monitoring

event due to the ongoing construction activities) were located using global positioning system equipment as part of the MILCON project activities.

2.2 Groundwater Sampling

Two groundwater sampling events (Spring and Fall 2023) were performed at Sites 3, 5, 10, and 13 under the IWGP in 2023. In addition, three performance monitoring groundwater sampling events were performed at Sites 5 and 10 in 2023 to evaluate the effectiveness of the remedial injections performed in November 2022 at those sites. The June and October/November 2023 performance monitoring events were performed concurrently with the Spring and Fall 2023 IWGP monitoring events. Additional details regarding these monitoring events are provided in the following subsections.

2.2.1 IWGP Monitoring Events

A total of 22 IWGP wells and piezometers were sampled during the Spring 2023 sampling event, including: six locations at Site 3; six locations at Site 5; five locations at Site 10; four locations at Site 13; and one background location at Site 8. PDB deployment was performed on 13 June 2023, with retrieval and sample collection performed on 27 June 2023 for the Spring 2023 sampling event. In addition, a PDB was deployed in piezometer PZ3-6D on 27 June 2023, as that piezometer could not be located during the Spring 2023 gauging event. Retrieval of that PDB was performed on 1 August 2023. A total of 19 IWGP wells and piezometers were sampled during the Fall 2023 sampling event, including: six locations at Site 5; eight locations at Site 10; four locations at Site 13; and one background location at Site 1. PDB deployment was performed on 10 October 2023, with retrieval and sample collection on 2 November 2023. Table 2-2 presents a summary of the wells and piezometers sampled, sample analyses, and field quality assurance/quality control (QA/QC) samples collected during the Spring and Fall 2023 sampling events. The well and piezometer locations are shown on Figure 2-1.

As previously indicated, groundwater samples for the IWGP monitoring events were collected using PDB samplers. Prior to PDB deployment, depth-to-water was measured at each well and piezometer to ensure there was sufficient water to deploy the PDB. Each PDB was then attached to a dedicated stainless-steel wire suspension apparatus and lowered to the midpoint of the screened interval. If there was insufficient water to reach the midpoint of the screened interval, the PDB was suspended at a lower elevation to ensure that it remained fully saturated throughout the deployment period. The PDBs were left undisturbed for a minimum two-week equilibrium period. At the time of retrieval, the water level in each well and piezometer was re-measured to ensure the PDB had remained submerged throughout the deployment period. Next, the PDBs were retrieved using the dedicated cables, the laboratory-supplied glassware was filled with water from the PDBs, and the samples were submitted to the analytical laboratory for analysis of VOCs.

2.2.2 Remedial Injection Performance Monitoring Events

A total of nine wells were sampled during the March/April, June, and October/November 2023 performance monitoring events, including: four locations at Site 5; and five locations at Site 10. As previously indicated, the June and October/November 2023 performance monitoring events were performed concurrently with the Spring and Fall 2023 IWGP monitoring events. Accordingly, PDB and RPP deployment, retrieval, and sample collection for those events was performed on the dates noted in Section 2.2.1. For the March/April performance monitoring

event, PDB deployment was performed on 23 March 2023, with retrieval and sample collection on 11 April 2023. Table 2-2 presents a summary of the wells sampled, sample analyses, and field QA/QC samples collected during the performance monitoring events. The well locations are shown on Figure 2-1.

As previously indicated, groundwater samples for the performance monitoring events were collected using PDB and RPP samplers. When the performance monitoring events were performed concurrently with the IWGP monitoring events (i.e., the June and October/November monitoring events), only one set of PDBs were deployed. Prior to PDB and RPP sampler deployment, depth-to-water was measured at each well and piezometer to ensure there was sufficient water to deploy the PDB and RPP samplers. Each PDB and RPP sampler was then attached to a dedicated stainless-steel wire suspension apparatus and lowered to the midpoint of the screened interval. If there was insufficient water to reach the midpoint of the screened interval, the PDB and RPP sampler was suspended at a lower elevation to ensure that it remained fully saturated throughout the deployment period. The PDB and RPP samplers were left undisturbed for a minimum two-week equilibrium period. At the time of retrieval, the water level in each well and piezometer was re-measured to ensure the PDB and RPP samplers had remained submerged throughout the deployment period. Next, the PDB and RPP samplers were retrieved using the dedicated cables, and samples were collected and submitted for analysis of VOCs, ethane, ethene, methane and TOC.

2.3 Surface Water Sampling

Surface water samples were collected at eight locations during the Spring and Fall 2023 sampling events. Table 2-3 presents a summary of the surface water sampling locations, sample analyses, and field QA/QC samples collected during these sampling events and the surface water sampling locations are shown on Figure 2-1. Surface water quality parameters were also collected at each sampling location during each sampling event and are summarized in Table A-2 (Appendix A).

The surface water samples were collected using the dip method of filling the sample containers directly from the creek, except for the samples collected at location SW99-10. At location SW99-10, a polyethylene bailer was lowered into the creek to collect the surface water samples due to the height of the sampling platform above the water.

2.4 Quality Assurance/Quality Control Sampling

In general, QA/QC sampling is performed at a frequency of one sample per 20 field samples collected per matrix (e.g., groundwater, surface water, etc.). Based on the number of samples collected during the March/April 2023 Performance Monitoring event (nine groundwater samples), the QA/QC samples for that event should have included one field duplicate and one matrix spike/matrix spike duplicates (MS/MSD) sample. Similarly, based on the number of samples collected during the Spring 2023 sampling event (22 groundwater samples and eight surface water samples), the QA/QC samples for that event should have included two groundwater field duplicates, two groundwater MS/MSD samples, one surface water field duplicate and one surface water MS/MSD sample. Finally, based on the number of samples collected during the Fall 2023 sampling event (19 groundwater samples and eight surface water samples), the QA/QC samples should have included one groundwater field duplicate, one groundwater MS/MSD sample, one surface water field duplicate, and one surface water MS/MSD sample.

The QA/QC samples collected during the March/April 2023 Performance Monitoring sampling event included one field duplicate sample (MW5-5D) and one MS/MSD sample (RW5-1), as indicated in Table 2-2. The QA/QC samples collected during the Spring 2023 IWGP sampling event included two groundwater field duplicate samples (MW5-5D and RW5-2) and two groundwater MS/MSD samples (RW5-1 and RW5-2), as indicated in Table 2-2, as well as one surface water field duplicate sample and one surface water MS/MSD sample (SW3-2), as indicated in Table 2-3. The QA/QC samples collected during the Fall 2023 IWGP sampling event included one groundwater field duplicate (RW5-1) and one groundwater MS/MSD sample (RW5-1), as indicated in Table 2-2, as well as one surface water field duplicate sample and one surface water MS/MSD sample (SW3-3), as indicated in Table 2-3. Finally, trip blanks were also shipped with the field samples during each sampling event at a frequency of one trip blank per cooler. One cooler and one trip blank was shipped for the March/April Performance Monitoring event, as well as the Spring and Fall 2023 IWGP sampling events.

The laboratory QA/QC procedures were consistent with the associated requirements described in SW-846, Third Edition, (all promulgated updates) (EPA 1997) and the SMP (EA 2021). All laboratory analytical data were reviewed for compliance with precision, accuracy, representativeness, completeness, and comparability parameters using the guidelines and practices published in the EPA Contract Laboratory Program, National Functional Guidelines for Superfund Organic Methods Data Review (EPA 2008). A complete QA/QC summary is included in the data usability summary report and data validation reports provided in Appendix C. As noted therein, there were no significant QA/QC concerns and minor issues were address by adding validation qualifiers where necessary. Overall, the data were determined to meet the project requirements and completeness goals, and all results are considered valid and useable.

2.5 Analytical Methods and Sample Handling

Each field sample was collected in laboratory-approved containers and submitted to ALS Environmental Laboratory (ALS), a DoD-certified laboratory. All groundwater and surface water samples were collected in accordance with the field documentation, chain-of-custody, sample identification, custody, and labeling procedures specified in the SMP (EA 2021). All samples collected were submitted to ALS for analysis of VOCs by EPA Method 8260C. In addition, the Performance Monitoring samples collected at Sites 5 and 10 were submitted to ALS for analysis of ethane, ethene, and methane by Method RSK-175 and TOC by EPA Method 9060A.

For each of the sites, the groundwater analytical results for detected compounds were compared to the GPS for program analytes, which were derived from NYSDEC Class GA Groundwater Standards, as set forth in New York Code of Rules and Regulations Part 703, Surface Water and Groundwater Quality Standards and Groundwater Effluent Limitations and Division of Water, Technical and Operational Guidance Series (1.1.1) Ambient Water Quality Standards and Guidance Values. The sample data associated with the Spring and Fall 2023 sampling events are described Sections 3 through 6 and the associated analytical laboratory reports, data validation reports, and data usability summary report are provided in Appendix C.

2.6 Decontamination and Investigative Derived Waste

Non-dedicated sampling tools (e.g., water level indicators) were decontaminated before and after use in accordance with the procedures in the SMP (EA 2021). Dedicated equipment (e.g., PDB harnesses and

disposable bailers) did not require decontamination. No investigative-derived wastewater was generated during the sampling events and all personnel protective equipment (e.g., gloves) and general trash were disposed of offsite as non-regulated solid waste.

2.7 Inspections and Maintenance

Inspections of existing IRP groundwater monitoring/recovery/pumping wells and piezometers were performed on 12 and 13 June 2023 (Spring 2023 monitoring event), as well as on 10 and 11 November 2023 (Fall 2023 monitoring event). The purpose of these inspections was to document the physical condition of the each well/piezometer and to identify maintenance actions required to keep the wells/piezometers operational.

The well/piezometer inspections included the following:

- Inspection of well/piezometer identification marking and painting, protective casing lock, protective casing cover, monitoring well riser, concrete drainage pad, and guard posts.
- Inspection of each well/piezometer casing annulus for the presence of accumulated water.

The results of the inspections were documented on the well inspection checklists provided in Appendix D. The necessity for well/piezometer maintenance was determined by a review of the inspection results. Minor items identified during the inspection (e.g., missing or damaged well labels, bolts, well caps, locks, etc.) were addressed during the subject sampling/monitoring event. Wells/piezometers noted as missing equipment (i.e., PDB harnesses) were only addressed if the well/piezometer was subject to sampling during the current sampling/monitoring event; all other wells/piezometers will be addressed only if the wells/piezometers are added to the IWGP. More significant well/piezometer repairs (e.g., protective covers and concrete pads) that require a driller, will be addressed during a future mobilization, as necessary.

Finally, the Site 3 landfill cap is subject to inspection on an annual basis. As necessary, maintenance activities are performed to address damage to the cap noted during the annual inspection and/or in response to any reported damage throughout the year.

2.8 System Inspections and Discharge Monitoring

Prior to 2015, monitoring of the groundwater effluent from the pumping wells at Sites 10 and 13 were typically conducted during the fourth week of each month under the NFARS Industrial Waste Discharge Permit 15-16 issued by the Niagara County Sewer District No. 1 (2016). The pumping systems at Sites 10 and 13 and the groundwater treatment system (GWTS) at Site 10 were taken offline in 2015 in preparation for the implementation of the RAs at those sites. Groundwater extraction for the pumping systems at Sites 10 and 13 and effluent monitoring of the GWTS at Site 10 was subsequently discontinued in June 2018 (with approval from NYSDEC) as it was determined that the systems were no longer needed to remove chlorinated volatile organic compound (CVOC) mass following the implementation of the RAs at those sites. Accordingly, no extracted groundwater or treatment system effluent was discharged to the Niagara County Sewer System in 2023. Finally, operation and maintenance inspections of the Site 10 and Site 13 pumping wells and at the GWTS treatment trailer at Site 10 were discontinued in June 2018 (again, with approval from NYSDEC).

3 Site 3 (LF008) – Landfill

Site 3 is a 9.4-acre inactive landfill located in the eastern portion of NFARS. Landfill operations began in 1952 in a former wetland area along Cayuga Creek and resulted in the placement of 8 to 10 feet of fill materials, including solid and potentially hazardous wastes. Two acres of the landfill were subsequently excavated, filled, and sporadically burned. After burning practices ceased in 1966, waste was buried in trenches in the southern portion of the landfill. The remainder of the landfill consists of regraded soil fill that contains small amounts of construction debris. In 1969, landfilling operations ceased, the landfill was capped with 6 inches to several feet of soil and the landfill was closed. Site 3 was subsequently identified as a SWMU in 1983. Site activities conducted since that time were focused on addressing groundwater CVOC contamination associated with the landfill. However, as noted in Appendix D: (1) approximately 50 trees were removed from Site 3 between 18 and 20 December 2023; (2) no soil was disturbed during the tree removal activities; and (3) the tree stumps were subsequently removed and the disturbed areas were restored with topsoil and grass seed between 14 and 16 May 2024.

In 1996, three vertical pumping wells were installed in shallow bedrock, discharging to the publicly owned treatment works (POTW). A groundwater collection trench measuring 150 feet in length and excavated in bedrock was subsequently installed in 1999. Two of the pumping wells were abandoned following installation of the groundwater collection trench and the third pumping well was shut down in 2011. In September 2015, a treatment curtain consisting of a mixture of emulsified vegetable oil and zero valent iron (EZVI) was placed in the groundwater collection trench. Site 3 was removed from the Niagara County Sewer Discharge Permit in May 2016.

The existing IWGP monitoring/sampling network at Site 3 consists of 32 wells/piezometers (including 13 screened in the overburden, 17 screened in the shallow bedrock, and 2 screened in the deep bedrock) and three surface water monitoring and/or sampling locations (Figure 3-1). The current scope of elevation monitoring under the IWGP involves the semi-annual collection of groundwater elevations from all 32 wells/piezometers in the network and the collection of surface water elevations at two of three locations (SW3-2 and SW3-3 only) at Site 3. The current sampling scope at Site 3 under the IWGP involves annual sampling of six shallow bedrock wells/piezometers (i.e., MW3-3DA, MW3-4DA, PW3-3A, PZ3-6D, PZ3-7D, and PZ3-8D) and semi-annual sampling of three surface water locations (SW3-2, SW3-3, and SW3-15).

3.1 2023 Field Activities

Groundwater elevations were measured at 31 wells/piezometers and surface water elevations were measured at two locations on 12 June 2023 (Spring monitoring event). No elevation measurement was recorded at piezometers PZ3-6D during that event, as this piezometer could not be located on that date. PDBs were deployed in one inactive pumping well (PW3-3A) and four shallow bedrock monitoring wells/piezometers (MW3-3DA, MW3-4DA, PZ3-7D, and PZ3-8D) on 13 June 2023. Piezometer PZ3-6D was subsequently located on 27 June 2023 (during retrieval of the PDBs from the other Site 3 wells/piezometers) and a PDB was deployed in that piezometer. PDB retrieval and sample collection was performed at locations MW3-3DA, MW3-4DA, PW3-3A, PZ3-7D, and PZ3-8D on 27 June 2023 and at location PZ3-6D on 1 August 2023. Surface water grab samples were also collected at locations SW3-2, SW3-3, and SW3-15 on 27 June 2023. All groundwater and surface water samples were submitted to ALS for analysis of VOCs.

Similarly, groundwater elevations were measured at 32 wells/piezometers and surface water elevations were measured at two locations on 11 October 2023 (Fall monitoring event). PDBs were not deployed during the Fall 2023 IWGP sampling event as Site 3 wells/piezometers are only sampled annually during spring events. However, surface water grab samples were collected at locations SW3-2, SW3-3, and SW3-15 on 2 November 2023 and submitted to ALS for analysis of VOCs.

3.2 Groundwater and Surface Water Data

3.2.1 Groundwater Elevations and Flow Direction

The groundwater elevation data collected on 12 June 2023 (Spring event) and 11 October 2023 (Fall event) were used to develop groundwater contours for the overburden and bedrock water bearing units. The monitoring/sampling locations, water level elevations and associated contours are presented on Figures 3-2 (overburden) and 3-4 (shallow bedrock) for the Spring 2023 monitoring event and Figures 3-3 (overburden) and 3-5 (shallow bedrock) for the Fall 2023 monitoring event. Additional information regarding the groundwater contours and flow gradients are presented in the following sections.

3.2.1.1 Overburden Groundwater and Surface Water

A potentiometric high point appears to be present in the northwest portion of Site 3 in the vicinity of well MW3-1A. Historical reporting indicates that overburden groundwater flows across Site 3 to the southeast toward Cayuga Creek; however, overburden groundwater in the northern portion of Site 3 flows toward the drainage ditch that flows to the east, before turning south and emptying into Cayuga Creek. The overburden adjacent to Cayuga Creek was previously noted as periodically unsaturated during dry periods as the overburden is only three to six feet thick in this area. Finally, historical reporting indicated that the portion of Cayuga Creek located adjacent to Site 3 fluctuates between losing and gaining conditions throughout the year.

The Spring 2023 overburden groundwater elevations and contours are presented on Figure 3-2 and the Fall 2023 overburden groundwater elevations and contours are presented on Figure 3-3. Consistent with historical observations, the overburden contours for both events indicate that groundwater flow at Site 3 is predominantly to the southeast toward Cayuga Creek. The average overburden horizontal gradient was approximately 1.5 percent for the Spring 2023 event and approximately 1.7 percent for the Fall 2023 event, which are consistent with historic measurements.

Finally, the surface water elevations at location SW3-2 were compared to the groundwater elevations at nearby piezometer PZ3-5 and the surface water elevations at location SW3-3 were compared to the groundwater elevations at nearby well MW3-7 to determine if the portion of Cayuga Creek adjacent to Site 3 was in a gaining or losing condition during the Spring and Fall 2023 monitoring events. The surface water elevation at location SW3-2 was approximately 1.9 feet lower than the groundwater elevation at piezometer PZ3-5 and the surface water elevation at location SW3-3 was approximately 1.0 feet higher than the groundwater elevation at well MW3-7, indicating that the portion of Cayuga Creek adjacent to Site 3 was in a losing condition during the Spring 2023 event. Similarly, the surface water elevation at location SW3-2 was approximately 1.5 feet higher than the groundwater elevation at piezometer PZ3-5 and the surface water elevation at location SW3-3 was approximately

1.0 feet higher than the groundwater elevation at well MW3-7, indicating that the portion of Cayuga Creek adjacent to Site 3 was in a losing condition during the Fall 2023 event.

3.2.1.2 Bedrock Groundwater

Similar to overburden groundwater, a potentiometric high point appears to be present in the northwest portion of Site 3 in the vicinity of well MW3-6D. Historical reporting indicates that bedrock groundwater predominantly flows across Site 3 to the southeast toward Cayuga Creek; however, groundwater northwest of well MW3-6D flows to the north/northwest toward the drainage ditch that flows to the east, before turning south and emptying into Cayuga Creek. Historical reporting also noted localized variations due to fractured bedrock. One such historical variation is a localized depression observed in the vicinity of the groundwater collection trench, which is likely attributable to the increased permeability of the trench materials (as opposed to groundwater extraction which has been discontinued). Finally, bedrock groundwater east of the creek appears to flow west toward the creek.

Previous annual reports have also indicated that a potential hydraulic connection exists between Cayuga Creek and the shallow-bedrock zone, which is substantiated by the presence of bedrock outcroppings and the relatively thin veneer of sediment present at certain locations along the creek. However, multiple dye tracer tests performed at Site 3 were unable to trace a groundwater connection between wells/piezometers located on the west and east sides of the creek (E&E 2007).

The Spring 2023 bedrock groundwater elevations and contours are presented on Figure 3-4 and the Fall 2023 bedrock groundwater elevations and contours are presented on Figure 3-5. Consistent with prior events, the groundwater elevations appear to be the highest in the vicinity of monitoring well MW3-6D in the northwest portion of the Site. Bedrock groundwater north of this well appears to flow north toward the drainage ditch, while groundwater east and south of this well predominantly flows toward the southeast. The magnitude of the shallow bedrock horizontal gradient was very low (less than 1.0 percent) during both events, which is consistent with historical observations. A groundwater contour map was not prepared for deep bedrock groundwater as there are only two deep bedrock monitoring wells located within Site 3. However, a comparison of the groundwater elevations in monitoring well MW3-8E (590.89 feet above mean sea level [amsl] in Spring 2023 and 590.52 feet amsl in Fall 2023) and monitoring well MW3-1E (590.2 feet amsl in Spring 2023 and 589.89 feet amsl in Fall 2023) indicates that deep bedrock groundwater flows from northwest to southeast between these two wells.

3.2.1.3 Vertical Gradients

Historical documentation indicates that the vertical gradients are variable between upward and downward depending on seasonal fluctuations, zone (i.e., overburden, shallow, or deep bedrock), and proximity to Cayuga Creek. Prior documentation also noted that the vertical gradients were typically upward near Cayuga Creek and downward or variable west of the groundwater collection trench. As noted in prior reports, the presence of artesian shallow bedrock monitoring wells/piezometers east of Cayuga Creek indicates upward flow potential near the creek, which is consistent with observations west of the creek. Accordingly, groundwater elevations were compared at three adjacent wells (one screened in each interval) at two different locations within Site 3 to evaluate the vertical gradients east and west of the groundwater collection trench during the Spring and Fall 2023 events, as further described below.

Groundwater elevations were compared for overburden well PZ3-3, shallow bedrock well PZ3-3D, and deep bedrock monitoring MW3-1E, which are located between the groundwater collection trench and Cayuga Creek.

The Spring 2023 groundwater elevations for these wells were as follows: overburden well PZ3-3 (587.44); shallow bedrock well PZ3-3D (587.49 feet amsl); and deep bedrock well MW3-1E (590.20 feet amsl). The Fall 2023 groundwater elevations at those same wells were as follows: overburden well PZ3-3 (586.66 feet amsl); shallow bedrock well PZ3-3D (588.01 feet amsl); and deep bedrock well MW3-1E (589.89 feet amsl). A review of those data indicates that the groundwater elevation in the deep bedrock well was higher than the groundwater elevation in the shallow bedrock well, which in turn was higher than the groundwater elevation in the overburden well during both events. Therefore, it was concluded that an upward gradient was present in this portion of Site 3 during the Spring and Fall 2023 events, which is consistent with historical documentation.

Groundwater elevations were also compared for overburden well MW3-8, shallow bedrock well MW3-8D, and deep bedrock monitoring MW3-8E, which are located in the northwest portion of Site 3. The Spring 2023 groundwater elevations for these wells were as follows: overburden well MW3-8 (595.96); shallow bedrock well MW3-8D (590.99 feet amsl); and deep bedrock well MW3-8E (590.89 feet amsl). The Fall 2023 groundwater elevations at those same wells were as follows: overburden well MW3-8 (595.55 feet amsl); shallow bedrock well MW3-8D (590.54 feet amsl); and deep bedrock well MW3-8E (590.52 feet amsl). A review of those data indicates that the groundwater elevation in the overburden well was higher than the groundwater elevation in the shallow bedrock well, which in turn was higher than the groundwater elevation in the deep bedrock well during both events. Therefore, it was concluded that a downward gradient was present in this portion of Site 3 during the Spring and Fall 2023 events, which is consistent with historical documentation.

3.2.2 Groundwater Analytical Results

Groundwater samples were collected from six wells/piezometers located within Site 3 (MW3-3DA, MW3-4DA, PW3-3A, PZ3-6D, PZ3-7D, and PZ3-8D) during the Spring 2023 sampling event and submitted for analysis of VOCs. (As noted above, the Site 3 wells/piezometers are not sampled during the fall sampling events.) The groundwater analytical data associated with these samples are presented in Table 3-1 and on Figure 3-6. The laboratory analytical data reports and associated data validation and usability reports are provided in Appendix C.

A review of the data presented in Table 3-1 and on Figure 3-6 indicates the following VOCs were detected during the Spring 2023 sampling event:

- Acetone was detected in one well and three piezometers (MW3-3DA, PZ3-6D, PZ3-7D, and PZ3-8D) at concentrations ranging from 3.3 µg/L (estimated) to 6.3 µg/L, which are all less than the GPS of 50 µg/L.
- Cis-1,2-dichloroethene (cis-1,2-DCE) was detected in three wells and two piezometers (MW3-3DA, MW3-4DA, PW3-3A, PZ3-6D, and PZ3-7D) at concentrations ranging from 2.2 µg/L to 7.3 µg/L. Further, this constituent was detected in one well and one piezometer (PW3-3A and PZ3-7D) at concentrations greater than the GPS of 5 µg/L (ranging from 5.1 µg/L to 7.3 µg/L). The maximum concentration was detected in piezometer PZ3-7D.
- Trichloroethene (TCE) was detected in one well (PW3-3A) at a concentration of 0.78 µg/L (estimated), which is less than the GPS of 5 µg/L.
- Vinyl Chloride (VC) was detected in three wells and two piezometers (MW3-3DA, MW3-4DA, PW3-3A, PZ3-6D, and PZ3-7D) at concentrations ranging from 0.47 µg/L (estimated) to 4 µg/L. Further, this constituent was detected in one well and one piezometer (PW3-3A and PZ3-7D) at concentrations greater than the GPS of 2 µg/L (ranging from 2.7 µg/L to 4 µg/L). The maximum concentration was detected in well PW3-3A.

3.2.3 Surface Water Analytical Results

Surface water samples were collected at three locations within Site 3 (SW3-2, SW3-3, and SW3-15) during the Spring and Fall 2023 sampling events to determine whether site-related COCs have entered Cayuga Creek. The surface water analytical data for Site 3 are presented in Table 3-2 and the sampling locations are illustrated on Figures 3-6 (Spring 2023 event) and 3-7 (Fall 2023 event). Readings of pH, temperature, and conductivity were recorded at the time of sample collection and those data are presented in Table A-2 (Appendix A). The laboratory analytical data reports, and associated data validation and data usability reports are provided in Appendix C.

A review of the data presented in Table 3-2 and on Figures 3-6 and 3-7 indicates that the following two VOCs were detected during at least one of the 2023 sampling events:

- Acetone was detected at one location (SW3-15) during the Spring 2023 sampling event at an estimated concentration of 3.3 µg/L. Acetone was detected at all three locations during the Fall 2023 sampling event at estimated concentrations ranging from 3.2 µg/L (with a sample duplicate of 3.4 µg/L) to 3.8 µg/L.
- Chloroform was detected at one location (SW3-2) during the Spring 2023 sampling event at an estimated concentration of 0.36 µg/L (with a sample duplicate of 0.36 µg/L). However, this constituent was not detected at any location during the Fall 2023 sampling event.

3.3 Data Evaluation and Recommendations

The data from the Spring 2023 sampling event were combined with the data from the seven previous sampling events for each of the Site 3 IWGP wells/piezometers (i.e., MW3-3DA, MW3-4DA, PW3-3A, PZ3-6D, PZ3-7D, and PZ3-8D) to evaluate data trends and develop appropriate recommendations. A review of the data tables and trend graphs included in Appendix E indicates the following:

- The total VOC concentrations for the June 2023 event continued to be within the range of detected concentrations over the prior seven sampling events in each of the Site 3 wells/piezometers, except for piezometers PZ3-6D and PZ3-8D where the total VOC concentrations of 9.36 µg/L and 4.7 µg/L observed during the Spring 2023 event represents the highest concentrations observed over the last eight monitoring events. However, the total VOC concentrations were largely (for piezometer PZ3-6D) or entirely (for piezometer PZ3-8D) attributed to acetone, which is a common laboratory contaminant. Further, no individual constituents were detected in either well at concentrations greater than the applicable GPS.
- Except for TCE in well PW3-3A in June 2019 and June 2022, cis-1,2-DCE and VC were the only VOCs detected at concentrations greater than the GPS in Site 3 groundwater over the last eight sampling events. Further, individual constituents were detected at concentrations greater than the corresponding GPS during only one of the last eight sampling events at PZ3-6D (June 2018) and none of the last eight sampling events at PZ3-8D (with no individual constituent exceeding the corresponding GPS since October 2016).
- While groundwater concentrations in well PW3-3A indicate some variability over time, the total VOC concentration trends appear to be stable or declining in five of the six wells/piezometers within Site 3. While the trend in piezometer PZ3-8A appears to be increasing, the total VOC concentrations in that piezometer remain less than 5 µg/L, with no individual constituents detected at concentrations greater than the corresponding GPS. Further, long-term data trends suggest that attenuation continues to occur based on

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stable or decreasing cis-1,2-DCE concentrations, combined with consistent detections of VC, which is a daughter compound of cis-1,2-DCE formed through reductive dechlorination.

- Although cis-1,2-DCE and VC persist in shallow bedrock groundwater both west and east of Cayuga Creek, surface water sampling continues to indicate that these constituents are not impacting surface water quality in Cayuga Creek within Site 3.

The following recommendations are made based on the data evaluation provided above:

- Continue annual sampling at six wells/piezometers within Site 3, including: MW3-3DA, MW3-4DA, PW3-3A, PZ6-6D, PZ3-7D and PZ3-8D.
- Continue semi-annual sampling at three surface water sampling locations within Site 3, including: SW3-2, SW3-3, and SW3-15.

4 Site 5 (DS004) – Former BOMARC Missile Site

Site 5 was the primary launching site for Boeing Michigan Aeronautical Research Center (BOMARC) surface-to-air missiles. The missiles were positioned at launcher pits equipped with adjacent launcher shelters. When the missiles were decommissioned, the walls, roof, and associated machinery of the launcher shelters were pushed into the launcher pits and buried with soil. Site 5 currently includes vehicle maintenance buildings and a petroleum, oil, and lubricant storage area for JP-8 jet fuel.

Investigations at Site 5 were initiated after discovery of CVOC contamination in soil near former missile Shelter F-5 and continued when CVOC contamination was also observed in downgradient groundwater near former missile Shelter F-6. Potential risk to human health or the environment was subsequently evaluated and dismissed due to an incomplete exposure pathway. A Resource Conservation and Recovery Act (RCRA) investigation was subsequently conducted that included subsurface soil and groundwater sampling near the former missile shelters and additional groundwater monitoring well installations within the plume of impacted groundwater. The underground sumps of several former launcher pits in the source area were excavated and sampled, and the system formerly used to drain water from the missile launcher sumps was surveyed, sampled, and video-inspected to determine if it was acting as a contaminant migration pathway.

In response to the prior investigations, in-situ bioremediation (injection of a hydrogen release compound [HRC] into the subsurface) was performed as a corrective measure for the Air Force Reserve Center, with the initial injection performed in 2001. Additional injections were performed in 2002 and 2006, followed by long-term groundwater monitoring. Prior reports noted that TCE concentrations decreased by several orders of magnitude, and to non-detect in many instances, following the HRC injections in 2001, 2002, and 2006. The injections were effective in reducing CVOC concentrations (particularly TCE) in groundwater, but complete dechlorination of cis-1,2-DCE and VC did not occur. As a result, EZVI injections were conducted in September 2015 and June 2018 and ABC-Olé injections were conducted in November 2022 to address the CVOC concentrations remaining in the overburden and shallow bedrock groundwater. Performance monitoring of the 2015 and 2018 EZVI injections indicated that the injections were effective in reducing CVOC concentrations at Site 5. Only, three of the four performance monitoring events for the 2022 ABC-Olé injections were completed in 2023; however, the data from those first three performance monitoring events indicate that the November 2022 remedial injections were also effective in reducing CVOC concentrations in Site 5 groundwater.

The existing IWGP monitoring/sampling network at Site 5 consists of 23 wells (including 10 screened in the overburden, 12 screened in the shallow bedrock, and 1 screened in the deep bedrock) (Figure 4-1). The current scope of elevation monitoring under the IWGP involves the semi-annual collection of groundwater elevations from all 23 wells in the network, while the current sampling scope under the IWGP involves semi-annual sampling of four overburden wells (MW5-6, RW5-1, RW5-2, and RW5-4) and two shallow bedrock wells (MW5-1DA and MW5-5D) at Site 5. Finally, the performance monitoring activities for the November 2022 ABC-Olé injections involved quarterly sampling of two overburden wells (RW5-1 and RW5-2) and two shallow bedrock wells (MW5-1DA and MW5-5D).

4.1 2023 Field Activities

Three performance monitoring events were performed at Site 5 in March/April, June, and October/November 2023 to evaluate the effectiveness of the remedial injections completed in November 2022 (the fourth and final performance monitoring event was performed in February 2024). The June and October/November 2023 performance monitoring events were performed concurrently with the Spring and Fall 2023 IWGP monitoring/sampling events (which are further described below). For the April 2023 performance monitoring event, PDB and RPP samplers were deployed in four wells (MW5-1DA, MW5-5D, RW5-1, and RW5-2) on 23 March 2023. PDB and RPP sampler retrieval and sample collection was performed on 11 April 2023, with all collected samples submitted to ALS for analysis of VOCs, ethane, ethene, methane, and TOC.

For the Spring and Fall 2023 combined IWGP/performance monitoring events, groundwater elevations were measured at all 23 wells on 12 June 2023 (Spring event) and 10 October 2023 (Fall event). PDBs were deployed in six wells (MW5-1DA, MW5-5D, MW5-6, RW5-1, RW5-2, and RW5-4) and RPP samplers were deployed in four wells (MW5-1DA, MW5-5D, RW5-1, and RW5-2) on 13 June 2023 (Spring event) and 10 October 2023 (Fall event). PDB and RPP sampler retrieval and sample collection was performed on 27 June 2023 (Spring event) and on 2 November 2023 (Fall event). Samples were collected from each well and submitted to ALS for analysis of VOCs. In addition, samples were collected from wells MW5-1DA, MW5-5D, RW5-1, and RW5-2 and submitted to ALS for analysis of ethane, ethene, methane, and TOC.

4.2 Groundwater Data

4.2.1 Groundwater Elevations and Flow Direction

The groundwater elevation data collected on 12 June 2023 (Spring event) and 10 October 2023 (Fall event) were used to develop groundwater contours for the overburden and bedrock water bearing units. The monitoring/sampling locations, water level elevations and associated contours are presented on Figures 4-2 (overburden) and 4-4 (shallow bedrock) for the Spring 2023 monitoring event and Figures 4-3 (overburden) and 4-5 (shallow bedrock) for the Fall 2023 monitoring event. Additional information regarding the groundwater contours and flow gradients are presented in the following sections.

4.2.1.1 Overburden Groundwater

Historically, the predominant direction of overburden groundwater flow at Site 5 is to the south/southwest; however, localized radial flow components (primarily to the west) were also observed during previous monitoring events. The localized variability is believed to be a result of the various surface (e.g., paved parking area, drainage swales, and grassy areas) and subsurface features (e.g., buried launch pads and storm drains) which result in different infiltration rates following precipitation events. Also, the variability of historical overburden groundwater flow directions may also be due to the relatively low magnitude of the horizontal gradient at the site.

The Spring 2023 overburden groundwater elevations and contours are presented on Figure 4-2 and the Fall 2023 overburden groundwater elevations and contours are presented on Figure 4-3. The overburden groundwater contour map for the Spring and Fall 2023 events indicate that the groundwater flow was toward the south/southwest in the central portion of the site, while groundwater flow was toward the west/southwest in the

western portion of the site. The average overburden horizontal gradients were 1.2 percent and 1.0 percent for the Spring and Fall 2023 events, respectively. Both calculated horizontal gradients were consistent with historical measurements.

Finally, as previously indicated, the Air Force implemented a MILCON project involving the installation of a hydrant fueling system beginning in Spring 2022 and continuing through 2023. That project included excavation and dewatering activities in the vicinity of Site 5. A review of the overburden groundwater contours prior to and during that MILCON project indicates that the construction activities did not appear to have a significant impact on the overburden groundwater flow directions at Site 5.

4.2.1.2 Bedrock Groundwater

As with overburden groundwater, historical data indicate that shallow bedrock groundwater predominantly flows toward the south/southwest at Site 5. However, the magnitude of the horizontal flow gradient at Site 5 has historically been very low (i.e., less than one percent).

The Spring 2023 bedrock groundwater elevations and contours are presented on Figure 4-4 and the Fall 2023 bedrock groundwater elevations and contours are presented on Figure 4-5. The shallow bedrock groundwater flow direction was predominantly to the southwest during the Spring and Fall 2023 events. Consistent with prior measurements, the magnitude of the shallow bedrock horizontal gradient was less than 1.0 percent during the Spring and Fall 2023 events. Finally, a deep bedrock groundwater contour map was not prepared as well MW5-1E is the only deep bedrock monitoring well within Site 5.

4.2.1.3 Vertical Gradients

Historical observations indicate that a downward vertical gradient is present from overburden to shallow bedrock to deep bedrock at Site 5. Groundwater elevations were compared at three adjacent wells (one screened in each interval) to evaluate the vertical gradients at Site 5 during the Spring and Fall 2023 events. Specifically, groundwater elevations were compared for overburden well MW5-6, shallow bedrock well MW5-5D, and deep bedrock monitoring MW5-1E. The Spring 2023 groundwater elevations for these wells were as follows: overburden well MW5-6 (587.49 feet amsl); shallow bedrock well MW5-5D (585.83 feet amsl); and deep bedrock well MW5-1E (582.78 feet amsl). The Fall 2023 groundwater elevations at those same wells were as follows: MW5-6 (587.49 feet amsl); shallow bedrock well MW5-5D (576.91 feet amsl); and deep bedrock well MW5-1E (583.20 feet amsl). A review of those data indicates that the groundwater elevation in the overburden well was higher than the groundwater elevation in the shallow bedrock well, which in turn was higher than the groundwater elevation in the deep bedrock well during the Spring 2023 event. While the groundwater elevation in shallow bedrock well MW5-5D was lower than the groundwater elevation in deep bedrock well MW5-1E during the Fall 2023 event, that result is considered anomalous as the groundwater elevations in nearby shallow bedrock wells CH5-1, CH5-2, and CH5-3, were all higher than 586 feet amsl. Therefore, it was concluded that a downward gradient was present at Site 5 during the Spring and Fall 2023 events, which is consistent with historical documentation.

4.2.2 IWGP Groundwater Analytical Results

Groundwater samples were collected from six wells located within Site 5 (MW5-1DA, MW5-5D, MW5-6, RW5-1, RW5-2, and RW5-4) during the Spring and Fall 2023 IWGP sampling events and submitted for analysis of VOCs. The groundwater analytical data associated with these samples are presented in Table 4-1 and on Figures 4-6 (Spring 2023 event) and 4-7 (Fall 2023 event). The laboratory analytical data reports, and associated data usability and data validation reports are provided in Appendix C.

A review of the data presented in Table 4-1 and on Figures 4-6 and 4-7 indicates the following eight VOCs were detected during at least one of the 2023 sampling events:

- 2-Butanone (MEK) was not detected in any wells during the Spring 2023 sampling event. However, this constituent was detected in one well (MW5-5D) during the Fall 2023 sampling event at an estimated concentration of 2.5 µg/L, which is less than the GPS of 50 µg/L.
- Acetone was detected in all six wells during the Spring 2023 sampling event at estimated concentrations ranging from 3.6 µg/L and 5.4 µg/L (with a sample duplicate of 4.5 µg/L). This constituent was also detected in all six wells during the Fall 2023 sampling event at concentrations ranging from 2.5 µg/L (estimated) to 12.7 µg/L (with a parent sample result of 11.2 µg/L). The detected results for both sampling events were all less than the GPS of 50 µg/L.
- Chloroethane was detected in one well (RW5-1) during the Spring 2023 sampling event at a concentration of 5.6 µg/L, which is greater than the GPS of 5 µg/L. This constituent was not detected in any wells during the Fall 2023 sampling event.
- Cis-1,2-DCE was detected in all six wells during the Spring 2023 sampling event at concentrations ranging from 0.39 µg/L (estimated) to 4.0 µg/L (with a sample duplicate of 3.9 µg/L), which are all less than the GPS of 5 µg/L. This constituent was also detected in all six wells during the Fall 2023 sampling event at concentrations ranging from 0.37 µg/L (estimated) to 88.1 µg/L. Further, this constituent was detected in two wells (MW5-1DA and MW5-5D) at concentrations greater than the GPS of 5 µg/L (ranging from 7.2 µg/L to 88.1 µg/L). The maximum concentration was detected in well MW5-1DA.
- Toluene was detected in five wells (MW5-5D, MW5-6, RW5-1, RW5-2, and RW5-4) during the Spring 2023 sampling event at concentrations ranging from 0.65 µg/L (estimated) to 6.3 µg/L. This constituent was also detected in the four wells during the Fall 2023 sampling event at concentrations ranging from 0.5 µg/L (estimated) to 11.7 µg/L (with a sample duplicate of 11.4 µg/L). However, this constituent was detected at a concentration greater than the GPS of 5 µg/L in only one well (RW5-1) during the Spring 2023 sampling event (6.3 µg/L) and Fall 2023 sampling event (11.7 µg/L [with a sample duplicate of 11.4 µg/L]).
- Trans-1,2-dichloroethene (trans-1,2-DCE) was detected in two wells (MW5-5D and RW5-1) during the Spring 2023 sampling event at estimated concentrations ranging from 0.42 µg/L (with a parent sample of 0.47 µg/L) to 0.47 µg/L, which are both less than the GPS of 5 µg/L. This constituent was also detected in four wells (MW5-1DA, MW5-5D, MW5-6 and RW5-1) during the Fall 2023 sampling event at estimated concentrations ranging from 0.36 µg/L (estimated, with a sample duplicate of 0.38 µg/L [estimated]) to 1.3 µg/L, which are all less than the GPS of 5 µg/L.
- TCE was detected in three wells (MW5-5D, MW5-6, and RW5-1) during the Spring 2023 sampling event at concentrations ranging from 1 µg/L to 1.7 µg/L (with a sample duplicate of 1.6 µg/L), which are all less than the GPS of 5 µg/L. This constituent was also detected in the same three wells during the Fall 2023 sampling

event at concentrations ranging from 0.67 µg/L (estimated, with a parent sample of 0.76 µg/L [estimated]) to 1.8 µg/L, which are all less than the GPS of 5 µg/L.

- VC was detected in five wells (MW5-5D, MW5-6, RW5-1, RW5-2, and RW5-4) during the Spring 2023 sampling event at concentrations ranging from 0.38 µg/L (estimated) to 7.1 µg/L (with a sample duplicate of 6.7 µg/L). However, this constituent was detected in only one well (MW5-5D) at a concentration greater than the GPS of 2 µg/L (7.1 µg/L, with a sample duplicate of 6.7 µg/L). This constituent was also detected in four wells (MW5-1DA, MW5-5D, MW5-6, and RW5-1) during the Fall 2023 sampling event at concentrations ranging from 0.72 µg/L (estimated) to 10.6 µg/L. Further, this constituent was detected in two wells (MW5-1DA and MW5-5D) at concentrations greater than the GPS of 2 µg/L (ranging from 8.1 µg/L to 10.6 µg/L). The maximum concentration was detected in well MW5-5D.

4.2.3 Remedial Injection Performance Monitoring Analytical Results

As previously noted, three performance monitoring events were performed at Site 5 in March/April, June, and October/November 2023 to evaluate the effectiveness of the remedial injections completed in November 2022 (the fourth and final performance monitoring event was performed in February 2024). The June and October/November 2023 performance monitoring events were performed concurrently with the Spring and Fall 2023 IWGP monitoring/sampling events. Groundwater samples were collected from four wells (MW5-1DA, MW5-5D, RW5-1, and RW5-2) during each event for analysis of VOCs, gases, and TOC. The groundwater analytical data associated with these samples are presented in Table 4-2 and on Figure 4-8. The laboratory analytical data reports, and associated data usability and data validation reports are provided in Appendix C.

A review of the data presented in Table 4-2 and on Figure 4-8 indicates the following:

- Total VOC concentrations in well MW5-1DA were less than 5 µg/L in the April and June 2023 events; however, cis-1,2-DCE and VC were both detected at concentrations greater than the corresponding GPS during the November 2023 event. (Total VOC concentrations returned to less than 5 µg/L during the February 2024 performance monitoring event.)
- Total molar CVOCs in wells MW5-5D, RW5-1, and RW5-2 have declined by 88%, 80%, and 97% when compared to baseline conditions. These wells have demonstrated sustained, decreasing constituent concentrations since the remedial injections.
 - Ethene and/or ethane have been detected in wells MW5-5D, RW5-1, and RW5-2 during at least one monitoring event, indicating that the microbes required for complete dechlorination are present and active in site groundwater.
 - TOC initially increased at these three wells following the remedial injections but have begun to return to background levels (all less than 10 mg/L in February 2024). Methane remains at concentrations greater than 5 mg/L at wells RW5-1 and RW5-2 but has declined in well MW5-5D.

4.3 Data Evaluation and Recommendations

The data from the 2023 performance monitoring and IWGP sampling events were combined with the data from the five (MW5-1DA, MW5-5D, RW5-1, and RW5-2) or six (MW5-6 and RW5-4) previous sampling events to

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evaluate data trends and develop appropriate recommendations. A review of the data tables and trend graphs presented in Appendix E, indicates the following:

- Total VOC concentrations in 2023 were within the range of detected concentrations over the prior sampling events in each of the Site 5 wells, except for wells MW5-1DA and RW5-4.
 - The total VOC concentration of 107.13 at well MW5-1DA in November 2023 represents the highest concentration at that well over the last eight sampling events (the previous highest concentration was 71.3 µg/L in July 2021). This total VOC concentration was largely attributed to cis-1,2-DCE at a concentration of 88.1 µg/L.
 - The total VOC concentrations of 12.67 µg/L at well RW5-4 in November 2023 represents the highest concentration at that well over the last eight sampling events (the previous highest concentration was 9.39 µg/L in November 2021). However, the total VOC concentration was largely attributed to acetone, which is a common laboratory contaminant. Further, no individual constituents were detected at concentrations greater than the applicable GPS.
- Cis-1,2-DCE and VC were detected most frequently at concentrations greater than the corresponding GPS in Site 5 groundwater over the last eight sampling events. Trans-1,2-DCE was also detected at concentrations greater than the corresponding GPS in four of the last eight sampling events at well MW5-5D. Toluene was also detected at concentrations greater than the corresponding GPS in seven of the last eight sampling events at well RW5-1. Other constituents were sporadically detected in various wells at concentrations greater than their corresponding GPS over the last eight sampling events. The presence of cis-1,2-DCE and VC is indicative of attenuation of CVOCs (including by reductive dichlorination) following the remedial injection events.
- Individual constituents were detected at concentrations greater than the corresponding GPS during only one of the last eight sampling events at well MW5-6 (acetone in July 2021) and none of the last eight sampling events at well RW5-4.
- Although the trend graphs indicate some variability in the total VOC concentrations in several wells, the total VOC concentration trends appear to be stable or declining in four of the six wells (MW5-5D, MW5-6, RW5-1, and RW5-2). The total VOC trend in bedrock well MW5-5D continues to indicate an overall decreasing trend in total VOC concentrations following the 2018 EZVI injection. The total VOC concentration in this well has decreased over 99% from approximately 7,980 µg/L in October 2016 to approximately 34.2 µg/L in November 2023. Finally, while the total VOC concentration trend appears to be increasing in RW5-4, all detected constituents remain at concentrations less than the GPS (with no individual constituent exceeding the corresponding GPS since October 2018).
- A review of the first three rounds of performance monitoring groundwater data indicate that the November 2022 remedial injections were effective in reducing CVOC concentrations in Site 5 groundwater.
- A review of the groundwater data collected prior to and following the MILCON project performed in the vicinity of Site 5 indicates that those construction activities did not appear to have a significant impact on the overburden groundwater flow directions, contours, and/or constituent concentrations at Site 5.

The following recommendations are made based on the data evaluation provided above:

- Continue semi-annual sampling at wells MW5-1DA, MW5-5D, MW5-6, RW5-1, RW5-2, and RW5-4.

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- Per Table 2-2 of the Remedial Injection Work Plan, the fourth and final quarterly performance monitoring event will be performed at wells MW5-1DA, MW5-5D, RW5-1, and RW5-2 in February 2024, with the collected samples submitted for analysis of VOCs, dissolved gases, and total organic carbon to complete the evaluation of the effectiveness of the remedial injections. The results of that monitoring event will be evaluated along with the data from the Spring and Fall 2024 IWGP sampling events to determine if an additional injection event is recommended for groundwater to achieve the GPS at Site 5.

5 Site 10 (FT005) – Former Fire Training Area No. 1

Historical operations at the Site 10 fire-training area included the burning of waste oil, solvents, and jet fuel as part of fire-training exercises between 1955 and 1963. The former burn pit used for these activities measured approximately 100 feet in diameter. This site is currently unused and covered with thick grass and weeds. The ground surface slopes to the south toward Cayuga Creek.

An Interim Corrective Measure Implementation (CMI) was completed in 1996 to address site impacts. The CMI used six-phase soil heating within the source area to heat groundwater and collect and treat soil vapors and condensate. A second CMI was initiated in June 1998, which included groundwater extraction from an overburden groundwater collection trench. Extracted groundwater was initially pumped directly to the POTW for treatment. The CMI was modified in 2002 to include a vertical pumping well near the source area as a secondary means of controlling groundwater migration and to remove residual contaminant mass. An onsite GWTS was added so that groundwater extracted from Site 10 could be treated for VOCs using an air stripper system prior to discharging to the POTW. The GWTS remained in operation until September 2015, when it was taken offline in preparation for the first EZVI injection in September 2015. A second injection of EZVI was conducted in June 2018 to address remaining CVOC contamination in groundwater. The GWTS has remained offline since the first EZVI injection as the system is no longer needed to remove CVOC mass.

The existing IWGP monitoring/sampling network at Site 10 consists of 26 wells and one piezometer (including 11 screened in the overburden, 11 screened in the shallow bedrock, and 5 screened in the deep bedrock) and four surface water monitoring and/or sampling locations (Figure 5-1). Also, two surface water monitoring and/or sampling locations located downstream of Site 10 (SW99-10 and SW99-14, see Figure 1-1) are included when discussing the Site 10 monitoring network. The current scope of elevation monitoring under the IWGP involves the semi-annual collection of groundwater elevations from all 26 wells and one piezometer in the network and the collection of surface water elevations at three of four locations (SW10-5, SW10-6, and SW10-7) within Site 10 and both locations downstream of Site 10 (SW99-10 and SW99-14). The current sampling scope at Site 10 under the IWGP involves annual sampling of two overburden wells and one piezometer (MW10-3, MW10-7, PZ10-7) each spring, annual sampling of five shallow bedrock wells (MW10-1DA, MW10-3D, MW10-4D, MW10-9D, and MW10-10D) and one deep bedrock well (MW10-4E) each fall, and semi-annual sampling of one overburden pumping well (PW10-1) and one shallow bedrock pumping well (PW10-2). Finally, surface water samples are collected semi-annually from four locations within Site 10 (SW10-5, SW10-6, SW10-7, and SW10-8) and one location downstream of Site 10 (SW99-10).

5.1 2023 Field Activities

Three performance monitoring events were performed at Site 10 in March/April, June, and October/November 2023 to evaluate the effectiveness of the remedial injections completed in November 2022 (the fourth and final performance monitoring event was performed in February 2024). The June and October/November 2023 performance monitoring events were performed concurrently with the Spring and Fall 2023 IWGP monitoring/sampling events (which are further described below). For the April 2023 performance monitoring event, PDB and RPP samplers were deployed in five wells (MW10-1DA, MW10-7, MW10-10D, MW10-11D, and PW10-1) on 23 March 2023. PDB and RPP sampler retrieval and sample collection was performed on 11 April 2023, with all collected samples submitted to ALS for analysis of VOCs, ethane, ethene, methane, and TOC.

For the Spring 2023 combined IWGP/performance monitoring event, groundwater elevations were measured at all 23 wells on 12 June 2023. PDBs were deployed in four wells and one piezometer (MW10-3, MW10-7, PW10-1, PW10-2, and PZ10-7) on 13 June 2023 to satisfy the requirements of the IWGP sampling event. RPP samplers were also deployed in wells MW10-7 and PW10-1 and PDBs and RPP samplers were deployed in wells MW10-1DA, MW10-10D, and MW10-11D on 13 June 2023 to satisfy the requirements of the performance monitoring event. The PDB and RPP samplers were retrieved on 27 June 2023. Surface water grab samples were also collected at locations SW10-5, SW10-6, SW10-7, SW10-8, and at downstream location SW99-10 on 27 June 2023. Samples collected from each groundwater and surface water sampling location were submitted to ALS for analysis of VOCs. Additional samples were collected from wells MW10-1DA, MW10-7, MW10-10D, MW10-11D, and PW10-1 and submitted to ALS for analysis of ethane, ethene, methane, and TOC.

For the Fall 2023 combined IWGP/performance monitoring event, groundwater elevations were measured at all 23 wells on 10 October 2023 (Fall event). PDBs were deployed in eight wells (MW10-1DA, MW10-3D, MW10-4D, MW10-4E, MW10-9D, MW10-10D, PW10-1, and PW10-2) on 10 October 2023 to satisfy the requirements of the IWGP sampling event. RPP samplers were also deployed in wells MW10-1DA, MW10-10D, and PW10-1 and PDBs and RPP samplers were deployed in wells MW10-7 and MW10-11D to satisfy the requirements of the performance monitoring event. The PDB and RPP samplers were retrieved on 2 November 2023. Surface water grab samples were also collected at locations SW10-5, SW10-6, SW10-7, SW10-8, and at downstream location SW99-10 on 2 November 2023. Samples collected from each groundwater and surface water sampling location were submitted to ALS for analysis of VOCs. Additional samples were collected from wells MW10-1DA, MW10-7, MW10-10D, MW10-11D, and PW10-1 and submitted to ALS for analysis of ethane, ethene, methane, and TOC.

5.2 Groundwater and Surface Water Data

5.2.1 Groundwater Elevations and Flow Direction

The groundwater elevation data collected on 12 June 2023 (Spring event) and 10 October 2023 (Fall event) were used to develop groundwater contours for the overburden and bedrock water bearing units. The monitoring/sampling locations, water level elevations and associated contours are presented on Figures 5-2 (overburden), 5-4 (shallow bedrock), and 5-6 (deep bedrock) for the Spring 2023 monitoring event and Figures 5-3 (overburden), 5-5 (shallow bedrock) and 5-7 (deep bedrock) for the Fall 2023 monitoring event. Additional information regarding the groundwater contours and flow gradients are presented in the following sections.

5.2.1.1 Overburden Groundwater and Surface Water

Historically, the direction for overburden groundwater flow at Site 10 is predominantly south toward Cayuga Creek; however, overburden groundwater on the western portion of the Site has been noted as flowing west toward the drainage ditch during prior monitoring events. The magnitude of the horizontal hydraulic gradient at Site 10 has exhibited localized variability ranging from 0.5 to 2.6 percent, especially in the vicinity of pumping well PW10-1 and the groundwater collection trench when the GWTP was operational.

The Spring 2023 overburden groundwater elevations and contours are presented on Figure 5-2 and the Fall 2023 overburden groundwater elevations and contours are presented on Figure 5-3. The overburden contours for both events indicate groundwater flow is predominantly south/southeast toward Cayuga Creek. Consistent with prior

measurements, the average overburden horizontal gradient was approximately 1.7 percent during the Spring 2023 event but was less than 1.7 percent during the Fall 2023 event.

Finally, comparisons of the surface water elevations at location SW10-5 to the groundwater elevations at nearby well MW10-3 and the surface water elevations at locations SW10-6 and/or SW10-7 to the groundwater elevations at nearby piezometer PZ10-7 were performed to determine if the surface water bodies adjacent to Site 10 were in gaining or losing conditions during the Spring and Fall 2023 monitoring events. The surface water elevation at location SW10-5 was approximately 0.2 feet lower than the groundwater elevation at well MW10-3 and the surface water elevation at location SW10-6 was approximately 4.9 feet lower than the groundwater elevation at piezometer PZ10-7, indicating a gaining condition for the drainage ditch during the Spring 2023 event. However, the surface water elevation at locations SW10-7 was approximately 1.7 feet higher than the groundwater elevation at piezometer PZ10-7, indicating a losing condition for Cayuga Creek during the Spring 2023 event. The surface water elevation at location SW10-5 was approximately 0.7 feet higher than the groundwater elevation at well MW10-3 and the surface water elevation at location SW10-7 was approximately 2.3 feet higher than the groundwater elevation at piezometer PZ10-7, indicated a losing condition for both the drainage ditch and Cayuga Creek during the Fall 2023 event.

5.2.1.2 Bedrock Groundwater

Bedrock groundwater flow at Site 10 has historically been to the south/southeast, consistent with regional groundwater flow. Historical observations have also indicated that the average horizontal gradient across the site was also noted as locally variable and increasing with proximity to well MW10-10D.

The Spring 2023 shallow bedrock groundwater elevations and contours are presented on Figure 5-4 and the Fall 2023 shallow bedrock groundwater elevations and contours are presented on Figure 5-5. Shallow bedrock groundwater elevations at Site 10 were highest in well MW10-10D during the Spring and Fall 2023 monitoring events, with radial groundwater flow away from this well. However, consistent with historical observations, the predominant direction of shallow bedrock groundwater flow was to the south/southeast during both monitoring events. The average shallow bedrock horizontal gradient was approximately 6.0 percent during both the Spring and Fall 2023 events.

Finally, the screened intervals for the five deep bedrock wells located within Site 10 (MW10-1EA, MW10-2E, MW10-3E, MW10-4E, and MW10-1F) are sufficiently similar to enable development of the deep bedrock groundwater contour maps presented on Figure 5-6 (Spring 2023 event) and Figure 5-7 (Fall 2023 event). The deep bedrock groundwater contours indicate that the groundwater flow in this unit is predominantly to the south/southwest during both monitoring events. The magnitude of the deep bedrock horizontal gradient was very low (less than 1.0 percent) during both events.

5.2.1.3 Vertical Gradients

Historical documentation has indicated seasonal and localized variability for the vertical gradients at Site 10. Accordingly, groundwater elevations were compared at three adjacent wells (one screened in each interval) at three separate locations within Site 10 to evaluate the vertical gradients north and south of the groundwater collection trench during the Spring and Fall 2023 events, as further described below.

Groundwater elevations in the west-central portion of Site 10 were compared for overburden well MW10-2, shallow bedrock well MW10-1DA, and deep bedrock monitoring MW10-1EA, which are located northwest of the groundwater collection trench. The Spring 2023 groundwater elevations for these wells were as follows: overburden well MW10-2 (585.08); shallow bedrock well MW10-1DA (583.53 feet amsl); and deep bedrock well MW10-1EA (582.50 feet amsl). The Fall 2023 groundwater elevations at those same wells were as follows: overburden well MW10-2 (584.82 feet amsl); shallow bedrock well MW10-1DA (579.71 feet amsl); and deep bedrock well MW10-1EA (582.58 feet amsl). A review of those data indicates that the groundwater elevation in the overburden well was higher than the groundwater elevation in the shallow bedrock well, which in turn was higher than the groundwater elevation in the deep bedrock well during the Spring 2023 event. While the groundwater elevation in shallow bedrock well MW10-1DA was lower than the groundwater elevation in deep bedrock well during the Fall 2023 event, that result is considered anomalous as the groundwater elevations in nearby shallow bedrock wells MW10-4D and PW10-1, were both higher than 582 feet amsl. Therefore, it was concluded that a downward gradient was present in this portion of Site 10 during the Spring and Fall 2023 events.

Groundwater elevations were also compared for overburden well MW10-6, shallow bedrock well MW10-4D, and deep bedrock monitoring MW10-4E, which are located north of the groundwater collection trench. The Spring 2023 groundwater elevations for these wells were as follows: overburden well MW10-6 (582.59 feet amsl), shallow bedrock well MW10-4D (583.40 feet amsl), and deep bedrock well MW10-4E (582.84 feet amsl). The Fall 2023 groundwater elevations at those same wells were as follows: overburden well MW10-6 (580.94 feet amsl), shallow bedrock monitoring well MW10-4D (582.05 feet amsl), and deep bedrock monitoring well MW10-4E (582.95 feet amsl). While the groundwater elevation in the deep bedrock well was lower than the groundwater elevation in the shallow bedrock well during the Spring 2023 event, both bedrock groundwater elevations were higher than the groundwater elevation in the overburden well, indicating an overall upward gradient from bedrock to overburden. Similarly, the groundwater elevation in the deep bedrock well was higher than the groundwater elevation in the shallow bedrock well, which in turn was higher than the groundwater elevation in the overburden well during the Fall 2023 event. Therefore, it was concluded that an upward gradient was present in this portion of Site 10 during the Spring and Fall 2023 events.

Finally, groundwater elevations were compared for overburden piezometer PZ10-7, shallow bedrock well MW10-9D, and deep bedrock monitoring MW10-2E, which are located south of the groundwater collection trench. The Spring 2023 groundwater elevations for these wells were as follows: overburden piezometer PZ10-7 (581.58); shallow bedrock well MW10-9D (582.04 feet amsl); and deep bedrock well MW10-2E (581.59 feet amsl). The Fall 2023 groundwater elevations at those same wells were as follows: overburden piezometer PZ10-7 (581.17 feet amsl); shallow bedrock well MW10-9D (581.85 feet amsl); and deep bedrock well MW10-2E (581.73 feet amsl). While the groundwater elevation in the deep bedrock well was lower than the groundwater elevation in the shallow bedrock well during both events, both bedrock groundwater elevations were higher than the groundwater elevation in the overburden piezometer, indicating an overall upward gradient from bedrock to overburden in this portion of Site 10 during the Spring and Fall 2023 events.

5.2.2 IWGP Groundwater Analytical Results

Groundwater samples were collected from two overburden wells and one overburden piezometer (MW10-3, MW10-7, and PZ10-7) and two pumping wells (PW10-1 and PW10-2) during the Spring 2023 sampling event. Alternatively, groundwater samples were collected from six shallow bedrock wells (MW10-1DA, MW10-3D, MW10-4D, MW10-4E, MW10-9D, and MW10-10D) and two pumping wells (PW10-1 and PW10-2) during the Fall

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2023 sampling event. The samples collected during both events were submitted for analysis of VOCs. The groundwater analytical data associated with these samples are presented in Table 5-1 and on Figures 5-8 (Spring 2023 event) and 5-9 (Fall 2023 event). The laboratory analytical data reports, and associated data usability and data validation reports are provided in Appendix C.

A review of the data presented in Table 5-1 and on Figures 5-8 and 5-9 indicates the following seven VOCs were detected during at least one of the 2023 sampling events:

- 2-Butanone (MEK) was detected in one well (MW10-7) during the Fall 2023 sampling event at a concentration of 8.5 µg/L, which is less than the GPS of 50 µg/L. This constituent was not detected in any well during the Fall 2023 sampling event.
- Acetone was detected in four wells and one piezometer (MW10-3, MW10-7, PW10-1, PW10-2, and PZ10-7) during the Spring 2023 sampling event at concentrations ranging from 3.5 µg/L (estimated) to 21 µg/L, which are all less than the GPS of 50 µg/L. This constituent was also detected in seven wells (MW10-1DA, MW10-3D, MW10-4D, MW10-4E, MW10-9D, PW10-1, PW10-2) during the Fall 2023 sampling event at concentrations ranging from 9.3 µg/L to 13.5 µg/L, which are all less than the GPS of 50 µg/L.
- Benzene was detected two wells (MW10-7 and PW10-2) during the Spring 2023 sampling event at concentrations ranging from 0.37 µg/L (estimated) to 2.4 µg/L. The concentration in well PW10-2 (2.4 µg/L) is greater than the GPS of 1 µg/L. This constituent was also detected in three wells (MW10-1DA, MW10-4D, and PW10-2) during the Fall 2023 sampling event at concentrations ranging from 0.45 µg/L (estimated) to 3.1 µg/L. Further, this constituent was detected in two wells (MW10-1DA and PW10-2) at concentrations greater than the GPS of 1 µg/L (ranging from 1.6 µg/L to 3.1 µg/L). The maximum concentration was detected in well MW10-1DA.
- Cis-1,2-DCE was detected in two wells (MW10-7 and PW10-1) during the Spring 2023 sampling event at concentrations ranging from 1.1 µg/L to 28.9 µg/L. The concentration in well MW10-7 (28.9 µg/L) is greater than the GPS of 5 µg/L. This constituent was also detected in six wells (MW10-1DA, MW10-4D, MW10-4E, MW10-9D, MW10-10D, and PW10-1) during the Fall 2023 sampling event at concentrations ranging from 0.68 µg/L (estimated) to 141 µg/L. Further, this constituent was detected in two wells (MW10-4E and MW10-10D) at concentrations greater than the GPS of 5 µg/L (ranging from 7.4 µg/L to 141 µg/L). The maximum concentration was detected in well MW10-10D.
- Toluene was detected in two wells (MW10-7 and PW10-2) during the Spring 2023 sampling event at concentrations of 0.68 µg/L (estimated) to 1.1 µg/L, which are both less than the GPS of 5 µg/L. This constituent was also detected in one well (PW10-2) during the Fall 2023 sampling event at an estimated concentration of 0.49 µg/L, which is less than the GPS of 5 µg/L.
- Trans-1,2-DCE was detected in one well (MW10-7) during the Spring 2023 sampling event at an estimated concentration of 0.43 µg/L, which is less than the GPS of 5 µg/L. This constituent was also detected in one well (MW10-1DA) during the Fall 2023 sampling event at an estimated concentration of 0.37 µg/L, which is less than the GPS of 5 µg/L.
- VC was detected in four wells (MW10-3, MW10-7, PW10-1, and PW10-2) during the Spring 2023 sampling event at concentrations ranging from 0.35 µg/L (estimated) to 20 µg/L. However, the detected concentration in only one well (MW10-7) was greater than the GPS of 2 µg/L (20 µg/L). This constituent was also detected in four wells (MW10-1DA, MW10-4D, MW10-9D, and PW10-2) during the Fall 2023 sampling event at concentrations ranging from 0.61 µg/L (estimated) to 12.3 µg/L. Further, this constituent was detected in three

wells (MW10-1DA, MW10-4D, and MW10-9D) at concentrations greater than the GPS of 2 µg/L (ranging from 3.5 µg/L to 12.3 µg/L). The maximum concentration was detected in well MW10-9D.

5.2.3 Remedial Injection Performance Monitoring Analytical Results

As previously noted, three performance monitoring events were performed at Site 10 in March/April, June, and October/November 2023 to evaluate the effectiveness of the remedial injections completed in November 2022 (the fourth and final performance monitoring event was performed in February 2024). The June and October/November 2023 performance monitoring events were performed concurrently with the Spring and Fall 2023 IWGP monitoring/sampling events. Groundwater samples were collected from five wells (MW10-1DA, MW10-7, MW10-10D, MW10-11D, and PW10-1) during each event for analysis of VOCs, gases, and TOC. VOC samples were inadvertently omitted from wells MW10-1DA, MW10-10D, and MW10-11D during the June 2023 sampling event. The groundwater analytical data associated with these samples are presented in Table 5-2 and on Figure 5-10. The laboratory analytical data reports, and associated data usability and data validation reports are provided in Appendix C.

A review of the data presented in Table 5-2 and on Figure 5-10 indicates the following:

- VOCs were not detected at concentrations greater than the GPS in wells MW10-11D and PW10-1 during the performance monitoring events.
- Total molar CVOCs in wells MW10-1DA, MW10-7, and MW10-10D have declined by 85%, 94%, and 82% when compared to baseline conditions. These wells have demonstrated sustained, decreasing constituent concentrations since the remedial injections.
 - Ethene and/or ethane have been detected in wells MW10-1DA, MW10-7, and MW10-10D, indicating that the microbes required for complete dechlorination are present and active in site groundwater
 - TOC remains elevated at MW10-7 (68.9 mg/L) and MW10-10D (2,260 mg/L). TOC was never elevated at MW10-1DA (which is located farther from the injection points). Methane is greater than 7 mg/L at MW10-1DA, MW10-7, and MW10-10D, indicating that highly reducing conditions are present throughout the injection zones.
 - Overall, these results show a very good ERD response. While some exceedances remain at well MW10-10D, concentrations are far below baseline and are continuing to decline.

5.2.4 Surface Water Analytical Results

Surface water samples were collected at four locations within Site 10 (SW10-5, SW10-6, SW10-7, and SW10-8) during the Spring and Fall 2023 sampling events to determine whether site-related COCs have entered Cayuga Creek either directly or via the drainage ditch on the west side of the Site. Surface water samples were also collected at one location downstream of Site 10 (SW99-10) during the Spring and Fall 2023 sampling events. The surface water analytical data for Site 10 are presented in Table 5-3 and the sampling locations are illustrated on Figures 5-8 (Spring 2023) and 5-9 (Fall 2023). Readings of pH, temperature, and conductivity were recorded at the time of sample collection and those data are presented in Table A-2 (Appendix A). The laboratory analytical data reports, and associated data usability and data validation reports are provided in Appendix C.

A review of the data presented in Table 5-3 and on Figures 5-8 and 5-9 indicates that the following four VOCs were detected during at least one of the 2023 sampling events:

- 2-Hexanone (MBK) was not detected at any location during the Spring 2023 sampling event. However, this constituent was detected at one location (SW99-10) during the Fall 2023 sampling event at an estimated concentration of 1.9 µg/L.
- Acetone was detected in three locations (SW10-5, SW10-6, SW10-7) during the Spring 2023 sampling event at concentrations ranging from 3.8 µg/L (estimated) to 5.1 µg/L. Further, this constituent was detected at two locations (SW10-7 and SW10-8) during the Fall 2023 sampling event at concentrations ranging from 4.2 µg/L (estimated) and 5.3 µg/L.
- Chloroform was not detected at any location during the Spring 2023 sampling event. However, this constituent was detected at one location (SW10-5) during the Fall 2023 sampling event at an estimated concentration of 0.87 µg/L.
- Iodomethane was not detected at any location during the Spring 2023 sampling event. However, this constituent was detected at one location (SW10-7) during the Fall 2023 sampling event at an estimated concentration of 2.2 µg/L.

5.3 Data Evaluation and Recommendations

The data from the 2023 performance monitoring and IWGP sampling events were combined with the data from the five (MW10-7 and PW10-1), six (MW10-1DA, MW10-10D, and PW10-2), or seven (MW10-3, MW10-3D, MW10-4D, MW10-4E, MW10-9D, and PZ10-7) previous sampling events to evaluate data trends and develop appropriate recommendations. A review of the data tables and trend graphs presented in Appendix E, indicates the following:

- Total VOC concentrations at Site 10 were within the range of detected concentrations over the prior five to seven sampling events in nine wells and one piezometer (MW10-1DA, MW10-3, MW10-4D, MW10-4E, MW10-7, MW10-9D, MW10-10D, PW10-1, PW10-2, and PZ10-7). The total VOC concentrations in 2023 for well MW10-3D were greater than the prior seven sampling events; however, no individual constituents exceeded the corresponding GPS in November 2023 (or over last seven sampling events).
- No VOCs were detected at concentrations greater than the GPS at wells MW10-3 and MW10-3D or piezometer PZ10-7 during any of the last eight sampling events. The last constituent exceedance at well MW10-3 was in October 2015, while no constituent exceedances have been observed in well MW10-3D since November 2012 or piezometer PZ10-7 since June 2013. Further, vinyl chloride is the only constituent detected at concentrations greater than the corresponding GPS in well PW10-1 (three of last eight events, with the last exceedance in June 2022).
- Cis-1,2-DCE and VC were the two VOCs detected most frequently at concentrations greater than the corresponding GPS in Site 10 groundwater over the last eight sampling events. However, certain other constituents were also frequently detected at concentrations greater than the corresponding GPS in certain wells (i.e., benzene in well MW10-1DA; and toluene, trans-1,2-DCE and TCE in well MW10-10D). The presence of cis-1,2-DCE and VC is indicative of attenuation of CVOCs (including by reductive dichlorination) following the remedial injection events.

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- Wells MW10-7 and MW10-10D continue to demonstrate the highest total VOC concentrations. As noted in Section 5.2.3, the total VOC concentrations in these wells has been substantially reduced following the November 2022 remedial injection activities at Site 10.
- Benzene, toluene, ethylbenzene, and total xylenes (primarily benzene) were detected in Site 10 groundwater (most notably in wells MW10-1DA, MW10-10D, and PW10-2); however, these detections represent a small contribution to the total VOC concentrations. Further, benzene groundwater concentrations in well MW10-10D have declined over time from a high of 570 µg/L in 1998 to non-detect levels since the Fall 2020 monitoring event. The presence of petroleum hydrocarbons and chlorinated solvents is consistent with the former use of Site 10 as a fire training area.
- Although the trend graphs indicate some variability, the total VOC concentrations appear to be stable or declining in seven Site 10 wells (MW10-1DA, MW10-3, MW10-4D, MW10-4E, MW10-7, MW10-10D, and PW10-1). The total VOC concentrations are trending higher in three wells (MW10-3D, MW10-9D, and PW10-2) and one piezometer (PZ10-7); however, as previously noted, all detected constituents in well MW10-3D and piezometer PZ10-7 remain at concentrations less than the GPS over the last eight sampling events. In addition, the November 2023 total VOC concentration was lower than the November 2022 total VOC concentration in well MW10-9D. Finally, benzene was the only constituent detected at a concentration greater than the GPS of 1 µg/L (only 1.6 µg/L) in well PW10-2 in November 2023.
- The 2023 surface water data for locations SW10-5, SW10-6, SW10-7, SW10-8, and downstream location SW99-10 indicate that the CVOCs observed in wells located within Site 10 are not impacting the surface water bodies adjacent to Site 10. Further, acetone and iodomethane (Fall 2023 event) were the only constituents detected at location SW10-7 (the furthest downstream sampling location at Site 10) during the Spring or Fall 2023 sampling events and only 2-hexanone was detected at location SW99-10 (downstream of Site 10) during the Fall 2023 sampling event.
- As noted in prior reports, the groundwater trend data has shown that the remedial injections performed to date have been successful in mitigating the high CVOC concentrations in the former fire training area, which also mitigates the risk of CVOCs in groundwater discharging to surface water. As a result, it was previously concluded that the pumping systems are no longer needed to remove CVOC mass from the former source area or to mitigate the risk associated with groundwater containing VOCs at concentrations greater than the GPS discharging to Cayuga Creek.
- A review of the first three rounds of performance monitoring groundwater data indicate that the November 2022 remedial injections were effective in reducing CVOC concentrations in Site 10 groundwater.

The following recommendations are made based on the data evaluation provided above:

- It is recommended that the pumping systems in PW10-1 and PW10-2 and the GWTS remain off as an additional remedial injection was performed at Site 10 following the Fall 2022 sampling/monitoring event.
- Maintain the sampling locations and frequencies specified in the SMP (EA, 2021). Specifically, annual sampling will be performed in the Spring at wells MW10-3, MW10-7 and PZ10-7, annual sampling will be performed in the Fall at wells MW10-1DA, MW10-3D, MW10-4D, MW10-4E, MW10-9D, and MW10-10D, and semi-annual sampling will be performed at wells PW10-1 and PW10-2.
- Continue semi-annual sampling at four surface water sampling locations within Site 10 and one surface water sampling location downstream of Site 10, including: SW10-5, SW10-6, SW10-7, SW10-8, and SW99-10.

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- Per Table 2-2 of the Remedial Injection Work Plan, the fourth and final quarterly performance monitoring event will be performed at wells MW10-1DA, MW10-7, MW10-10D, MW10-11D, and PW10-1 in February 2024, with the collected samples submitted for analysis of VOCs, dissolved gases, and total organic carbon to complete the evaluation of the effectiveness of the remedial injections. The results of that monitoring event will be evaluated along with the data from the Spring and Fall 2024 IWGP sampling events to determine if an additional injection event is recommended for groundwater to achieve the GPS at Site 10.

6 Site 13 (ST010) – 4,000 Gallon UST

Site 13 was a former UST that was located near the southeast corner of Building 904 (Figure 6-1). The storage tank was originally used to store gasoline, but was also used to store general shop wastes, including solvents, oils, and automotive fluids between 1971 and 1986. In 1986, the UST was emptied and removed. Subsequent groundwater monitoring performed at the Site indicated that contaminant migration had occurred. As a result, a RCRA Facility Investigation and Corrective Measures Study were completed. A CMI was subsequently performed in 1998 to reduce contaminant concentrations in groundwater and prevent further vertical or offsite migration. That CMI included a groundwater extraction system consisting of two shallow bedrock pumping wells that discharged directly to the sanitary sewer. In response to decreasing CVOC concentrations, pump operation was modified to a 3-month on/3-month off cycle in 2004. As CVOC concentrations continued to decrease under “steady state” pumping conditions to below the alternative termination criteria specified in the SMP (EA 2021), groundwater extraction was suspended at one of the pumping wells (PW13-4D) on 11 February 2015. In August 2015, an injection of EZVI was conducted at the site to address remaining CVOC contamination in groundwater. Groundwater extraction was suspended at the other pumping well (PW13-1) to implement another EZVI RA in 2018. Groundwater COC concentrations have decreased significantly across the Site following these RAs. There is no surface water at Site 13; therefore, discharge of groundwater impacts to surface water is not a concern at this site, which further reduces the risk to human health and the environment posed by groundwater at Site 13.

The existing IWGP monitoring/sampling network at Site 13 consists of 21 wells/piezometers, including eight screened in the overburden, 12 screened in the shallow bedrock, and one screened in the deep bedrock (Figure 6-1). The current scope of elevation monitoring under the IWGP involves the semi-annual collection of groundwater elevations from all 21 wells/piezometers in the network, while the current sampling scope under the IWGP involves semi-annual sampling of four shallow bedrock wells (MW13-4D, MW13-5D, PW13-1, and PW13-4D) at Site 13.

6.1 2023 Field Activities

Groundwater elevations were measured at 18 wells/piezometers on 12 June 2023 (Spring event) and 11 October 2023 (Fall event). Elevation measurements were not recorded at monitoring wells MW13-6 and MW13-6D (inaccessible due to construction) and piezometer PZ13-1 (piezometer was dry) during the Spring and Fall 2023 monitoring event. As previously noted, monitoring wells MW13-6 and MW13-6D were subsequently located following the Spring 2024 sampling/monitoring event using global positioning system equipment as part of the MILCON project to install a hydrant fueling system in the vicinity of Site 13. PDBs were deployed in four shallow bedrock wells (MW13-4D, MW13-5D, PW13-1, and PW13-4D) on 13 June 2023 (Spring event) and 10 October 2023 (Fall event). PDB retrieval and sample collection was performed on 27 June 2023 (Spring event) and 2 November 2023 (Fall event), with all collected samples submitted to ALS for analysis of VOCs.

6.2 Groundwater Data

6.2.1 Groundwater Elevations and Flow Direction

The groundwater elevation data collected on 12 June 2023 (Spring event) and 11 October 2023 (Fall event) were used to develop groundwater contours for the overburden and bedrock water bearing units. The monitoring/sampling locations, water level elevations and associated contours are presented on Figures 6-2 (overburden) and 6-4 (shallow bedrock) for the Spring 2023 monitoring event and Figures 6-3 (overburden) and 6-5 (shallow bedrock) for the Fall 2023 monitoring event. Additional information regarding the groundwater contours and flow gradients are presented in the following sections.

6.2.1.1 Overburden Groundwater

Historically, overburden groundwater at Site 13 generally flows toward the east, with seasonal variations between northeasterly and southeasterly flow. The magnitude of the horizontal gradient historically varied at Site 13 and was observed to be relatively steep on the west side of the site and less steep on the east side when the pumping wells were in operation. A more gradual horizontal gradient was noted at Site 13 following the suspension of pumping well operations.

The Spring 2023 overburden groundwater elevations and contours are presented on Figure 6-2 and the Fall 2023 overburden groundwater elevations and contours are presented on Figure 6-3. The groundwater contours indicate that groundwater flow is to the northeast during the Spring and Fall 2023 monitoring events. The average overburden horizontal gradient was approximately 1.0 percent during the Spring 2023 event and approximately 1.1 percent during the Fall 2023 event.

Finally, as previously indicated, the Air Force implemented a MILCON project involving the installation of a hydrant fueling system beginning in Spring 2022 and continuing through 2023. That project included excavation and dewatering activities in the vicinity of Site 13. A review of the overburden groundwater contours prior to and during that MILCON project indicates that the construction activities did not appear to have a significant impact on the overburden groundwater flow directions at Site 13.

6.2.1.2 Bedrock Groundwater

Bedrock groundwater flow at Site 13 was historically variable due to a variety of influences, including existing buildings, pavement, seasonal fluctuations in the water table, and operation of the two shallow bedrock pumping wells (PW13-1 and PW13-4D). The average horizontal gradient across the site varied greatly when the pumping wells were in operation. Following the suspension of pumping well operations, the previously observed cones of depression are no longer present, shallow bedrock groundwater flow is predominantly toward the east, and the horizontal gradient is low in magnitude.

The Spring 2023 bedrock groundwater elevations and contours are presented on Figure 6-4 and the Fall 2023 bedrock groundwater elevations and contours are presented on Figure 6-5. The groundwater contours indicate that groundwater flow was predominantly to the east during both monitoring events. The average shallow bedrock horizontal gradient was less than 1.0 percent during both the Spring and Fall 2023 events, which are

both consistent with previous measurements. Finally, a deep bedrock groundwater contour map was not prepared as MW13-1E is the only deep bedrock monitoring well located within Site 13.

6.2.1.3 Vertical Gradients

Historical documentation indicates that a downward gradient from overburden to shallow bedrock to deep bedrock is present at Site 13. Groundwater elevations were compared at three adjacent wells (one screened in each interval) to evaluate the vertical gradients at Site 13 during the Spring and Fall 2023 events. Specifically, groundwater elevations were compared for overburden well MW13-3, shallow bedrock well MW13-5D, and deep bedrock monitoring MW13-1E. The Spring 2023 groundwater elevations for these wells were as follows: overburden well MW13-3 (590.63 feet amsl), shallow bedrock well MW13-5D (589.54 feet amsl), and deep bedrock well MW13-1E (582.28 feet amsl). The Fall 2023 groundwater elevations in the same wells were as follows: MW13-3 (590.39 feet amsl), MW13-5D (589.48 feet amsl), and MW13-1E (581.74 feet amsl). A review of those data indicates that the groundwater elevation in the overburden well was higher than the groundwater elevation in the shallow bedrock well, which in turn was higher than the groundwater elevation in the deep bedrock well during both events. Therefore, it was concluded that a downward gradient was present at Site 13 during the Spring and Fall 2023 events, which is consistent with historical documentation.

6.2.2 Groundwater Analytical Results

Groundwater samples were collected from four wells located within Site 13 (MW13-4D, MW13-5D, PW13-1, and PW13-4D) during the Spring and Fall 2023 sampling/events and submitted for analysis of VOCs. The groundwater analytical data associated with these samples are presented in Table 6-1 and on Figures 6-6 (Spring 2023 event) and 6-7 (Fall 2023 event). The laboratory analytical data reports, and associated data usability and data validation reports are provided in Appendix C.

A review of the data presented in Table 6-1 and on Figures 6-6 and 6-7 indicates the following four VOCs were detected during at least one of the 2023 sampling events:

- Acetone was detected in three wells (MW13-4D, MW13-5D and PW13-4D) during the Spring 2023 sampling event at estimated concentrations ranging from 4.3 µg/L to 4.9 µg/L, which are all less than the GPS of 50 µg/L. This constituent was detected in all four wells during the Fall 2023 sampling event at concentrations ranging from 10 µg/L to 13.8 µg/L, which are all less than the GPS of 50 µg/L.
- Benzene was not detected in any wells during the Spring 2023 sampling event. However, this constituent was detected in one well (PW13-1) during the Fall 2023 sampling event at an estimated concentration of 0.39 µg/L, which is less than the GPS of 1 µg/L.
- Cis-1,2-DCE was detected in all four wells during the Spring 2023 sampling event at concentrations ranging from 3.6 µg/L to 14 µg/L. Further, this constituent was detected in two wells (MW13-4D and MW13-5D) at concentrations greater than the GPS of 5 µg/L (ranging from 6.2 µg/L to 14 µg/L). The maximum concentration was detected in well MW13-5D. This constituent was also detected in all four wells during the Fall 2023 sampling event at concentrations ranging from 0.55 µg/L (estimated) to 12.3 µg/L. Further, this constituent was detected in two wells (MW13-4D and MW13-5D) at concentrations greater than the GPS of 5 µg/L (ranging from 6.3 µg/L to 12.3 µg/L). The maximum concentration was detected in well MW13-5D.

- VC was detected in all four wells during the Spring 2023 sampling event at concentrations ranging from 0.34 µg/L (estimated) to 3.9 µg/L. However, this constituent was detected in only one well (MW13-4D) at a concentration greater than the GPS of 2 µg/L (3.9 µg/L). Further, this constituent was detected in two wells (MW13-4D and MW13-5D) during the Fall 2023 sampling event at concentrations ranging from 1.4 µg/L to 4.8 µg/L. This constituent was detected in only one well (MW13-4D) at a concentration greater than the GPS of 2 µg/L (4.8 µg/L)

6.3 Data Evaluation and Recommendations

The data from the Spring and Fall 2023 sampling events were combined with the data from the six previous sampling events for each of the Site 13 IWGP wells (i.e., MW13-4D, MW13-5D, PW13-1, and P13-4D) to evaluate data trends and develop appropriate recommendations. A review of the data tables and trend graphs included in Appendix E indicates the following:

- Total VOC concentrations in 2023 were within the range of detected concentrations over the prior six sampling events in wells MW13-5D and PW13-1. While the November 2023 total VOC concentration in well MW13-4D (23.7 µg/L) was greater than observed during the prior seven sampling events, that result was largely attributed to acetone (12.6 µg/L), which is a common laboratory contaminant. Finally, although the total VOC concentrations during the Spring 2023 event (9.74 µg/L) and Fall 2023 event (10.55 µg/L) were greater than the prior six sampling events, no individual VOCs were detected at concentrations greater than the corresponding GPS.
- Cis-1,2-DCE and VC are the only two VOCs detected at concentrations greater than the corresponding GPS in Site 13 groundwater over the last eight sampling events. Further, cis-1,2-DCE was the only constituent detected at concentrations greater than the GPS in well PW13-4D (only two of the last eight sampling events). Similarly, cis-1,2-DCE and VC were detected in only three of the last eight sampling events in well PW13-1.
- While the trend graphs indicate variability in certain wells at Site 13, the total VOC concentrations appear to be stable or declining in wells MW13-4D, MW13-5D, and PW13-1. The total VOC concentrations appear to be trending higher for well PW13-4D; however, no individual VOCs were detected at concentrations greater than the corresponding GPS during the Spring and Fall 2023 sampling events.
- A review of the groundwater data collected prior to and following the MILCON project performed in the vicinity of Site 13 indicates that those construction activities did not appear to have a significant impact on the overburden groundwater flow directions, contours, and/or constituent concentrations at Site 13.

The following recommendation is made based on the data evaluation provided above:

- Maintain the current semi-annual sampling frequency for wells MW13-4D, MW13-5D, PW13-1, and PW13-4D.

7 Background Wells - Site 1 (ST011) and Site 8 (DS002)

Annual sampling of background wells is required under the SMP (EA 2021). Accordingly, samples were collected from shallow bedrock monitoring wells MW8-11D during the Spring 2023 sampling event and MW1-1DA during the Fall 2023 sampling event (see Figure 2-1 for locations). These wells are maintained for groundwater level measurements and sampling as needed until the active IRP sites are closed. Overburden and deep bedrock background wells are no longer sampled.

PDB retrieval and sample collection was performed at well MW8-11D on 27 June 2023 (Spring event) and well MW1-1DA on 2 November 2023 (Fall event). The groundwater analytical data presented in Table 7-1 indicate that acetone was the only constituent detected in well MW8-11D during the Spring 2023 event at a concentration of 5 µg/L, which is less than the GPS of 50 µg/L. Similarly, acetone was the only constituent detected in well MW1-1DA during the Fall 2023 event at a concentration of 11.5 µg/L, which is less than the GPS of 50 µg/L. The laboratory analytical data reports, and associated data usability and data validation reports are provided in Appendix C.

8 Engineering and Institutional Controls Certification

Section 3 of the SMP (EA 2021) provides the Engineering and Institutional Controls Plan for NFARS. As indicated therein, an installation-wide engineering control consisting of secured perimeter fencing exists and controlled entry points exists at NFARS. Section 3.2 of that document also lists the site-specific engineering controls at the following Sites:

- Site 2 – Additional fencing, locked gate, and personnel training regarding nature of contamination present at the Site.
- Site 3 – Landfill cover system and groundwater treatment curtain/collection trench.
- Site 5 – Additional fencing, locked gate, and personnel training regarding nature of contamination present at the Site.
- Site 6 – Additional fencing, locked gate, and personnel training regarding nature of contamination present at the Site.
- Site 7 – Additional fencing, locked gate, and personnel training regarding nature of contamination present at the Site.
- Site 10 – Groundwater treatment trailer, additional fencing, locked gate, and personnel training regarding nature of contamination present at the Site.
- Site 13 – Additional fencing, locked gate, and personnel training regarding nature of contamination present at the Site.

The Air Force is responsible for inspecting and maintaining the installation fencing, as well as the additional fencing, locked gates, and providing personnel training as needed for the above-referenced sites. The Air Force is also responsible for inspecting and maintaining (as necessary) any active engineering controls present at the installation. As noted in Section 3, two pumping wells previously installed at Site 3 were abandoned following the installation of the treatment curtain/collection trench and a third pumping well was shut down in 2011. Similarly, the groundwater treatment system at Site 10 was shut down in 2015, as described in Section 6. Therefore, the only active engineering control that requires inspection is the landfill cover system. Information regarding the inspection of the landfill cover system is provided in Section 2.7.

Section 3.3 of the SMP (EA 2021) specifies the following institutional controls for NFARS:

- Compliance with an Environmental Easement/Notice (to be included in a future version of the SMP) to: (1) implement, maintain and monitor engineering control systems; (2) prevent future exposure to remaining contamination by controlling disturbances of the subsurface contamination; and (3) limit the use and development of the site to commercial and restricted residential uses only.
- Compliance with existing Installation-Wide Dig Permit program managed by the 914th Airlift Wing Mission Support Group/Civil Engineering-Environmental.
- Review of dig permits for all intrusive work completed at NFARS for potential interactions with sites.
- Operation and maintenance for all engineering controls specified in the SMP.
- Annual inspection of engineering controls at NFARS.

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- Groundwater monitoring as specified in the SMP.
- Reporting of data and information pertinent to site management as specified in the SMP.

Section 3.3 of the SMP (EA 2021) also specifies the following site restrictions for NFARS:

- The land within NFARS may only be subject to commercial/industrial use, as long as the long-term engineering controls and institutional controls specified in the SMP are employed.
- The land within NFARS may not be used for a higher level of use, such as unrestricted residential use without additional remediation and amendment of an Environmental Easement/Notice, as approved by the NYSDEC.
- All future activities at NFARS that will potentially disturb remaining contaminated material must be conducted in accordance with the requirements specified in the SMP.
- The use of the groundwater for a source of potable or process water is restricted without treatment rendering it safe for the intended use.

Per Section 3.3 of the SMP (EA 2021), the following certification is provided in accordance with NYSDEC DER-10, Chapter 6.3(d):

For each engineering or institutional control identified for the site, I certify that each of the following statements are true:

(a) controls employed at the Installation are unchanged from the previous certification or any changes to the controls were approved by the NYSDEC;

(b) nothing has occurred at the site that impairs the ability of the controls to protect public health and environment;

(c) nothing has occurred at the site that would constitute a violation or failure to comply with the SMP;

(d) access to the site will continue to be provided to NYSDEC to evaluate the continued maintenance of any and all controls.



Lindsay Mairs
Remedial Program Manager

April 28, 2025

Date

9 References

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- Weather Underground. 2023. Weather Station History for Niagara/Wheatfield, New York, Station KIAG, Web page URL: Weather Underground

Tables

Table 1-1
Contaminants of Concern Detected at Concentrations that Historically Exceeded
Groundwater Protection Standards at NFARS SWMUs
2023 Annual Comprehensive Sampling/Monitoring Report
Installation Wide Groundwater Monitoring Program
Niagara Falls Air Reserve Station, New York

Parameter ^(a,b)	CAS No.	Groundwater Protection Standard (ug/L)
1,1,-Dichloroethene	75-35-4	5
2-Butanone (Methyl Ethyl Ketone)	78-93-3	50
2-Hexanone (Methyl N-Butyl Ketone)	591-78-6	50
Acetone	67-64-1	50
Benzene	71-43-2	1
Carbon Tetrachloride	56-23-5	5
Chloroethane	75-00-3	5
Chloroform	67-66-3	7
Cis-1,2-Dichloroethene	156-59-2	5
Ethylbenzene	100-41-4	5
Iodomethane	74-88-4	5
Toluene	108-88-3	5
Trans-1,2-Dichloroethene	156-60-5	5
Trichloroethene	79-01-6	5
Vinyl Chloride	75-01-6	2
Xylenes (total)	1330-20-7	5

Abbreviations:

CAS = Chemical Abstracts Service

No. = Number

µg/L = Microgram(s) per liter

Notes:

(a) 1,4-dioxane has been detected in one monitoring well (MW8-4D) at a concentration greater than the NYSDEC human health guidance value of 0.35 ppb. However, that result was less than the NYSDOH maximum contaminant level of 1 ppb, which would be the determining factor if Site 8 were proposed for Unlimited Use/Unrestricted Exposure status and if groundwater were to be used for potable water. Such use is not envisioned or proposed and an institutional control has been established at NFARS restricting the use of groundwater as a source of potable or process water without treatment rendering it safe for the intended use.

(b) PFAS compounds are being investigated under a CERCLA Remedial Investigation that is being performed separately from the monitoring/sampling activities performed under the IWGP and summarized in this report. Certain PFAS compounds have been detected at concentrations above the GPS at or near IRP Sites 2, 6, 7, 9, and 12.

Table 2-1

Summary of Groundwater and Surface Water Elevation Measurement Locations
2023 Annual Comprehensive Sampling/Monitoring Report
Installation Wide Groundwater Monitoring Program
Niagara Falls Air Reserve Station, New York



Measurement Locations					
Wells/Piezometers	PZ3-1D	MW5-4	MW8-4D	MW10-10D	PZ13-1
Former Site 1	PZ3-2	MW5-4D	MW8-5A	MW10-11	PZ13-1D
MW1-1DA	PZ3-2D	MW5-5A	MW8-8	MW10-11D	PZ13-2
MW1-7A	PZ3-3	MW5-5D	MW8-10D	MW10-12	PZ13-2D
Former Site 2	PZ3-3D	MW5-6	MW8-11	MW10-12D	PZ13-3D
MPL2-1A	PZ3-4	MW5-6D	MW8-11D	MW10-13	PZ13-4
MW2-1DA	PZ3-4D	MW5-7	MW8-11E	MW10-13D	PZ13-4D
Site 3	PZ3-5	MW5-7D	Site 10	PW10-1	Surface Water
MW3-1A	PZ3-5D	MW5-8	MW10-1DA	PW10-2	Site 3
MW3-1DA	PZ3-6	MW5-8D	MW10-1EA	PZ10-7	SW3-2
MW3-1E	PZ3-6D	RW5-1	MW10-1F	Site 13	SW3-3
MW3-2	PZ3-7D	RW5-2	MW10-2	MW13-1	Site 8
MW3-2DA	PZ3-8D	RW5-3	MW10-2E	MW13-1D	SW8-8
MW3-3A	PZ3-9	RW5-4	MW10-3	MW13-1E	SW8-9
MW3-3DA	PZ3-9D	Former Site 6	MW10-3D	MW13-2D	Site 10
MW3-4DA	Site 5	MPL6-2A	MW10-3E	MW13-3	SW10-5
MW3-5D	CH5-01	MPL6-3	MW10-4	MW13-3D	SW10-6
MW3-6A	CH5-02	Site 8	MW10-4D	MW13-4	SW10-7
MW3-6D	CH5-03	CH8-01	MW10-4E	MW13-4D	Downstream
MW3-7	CH5-04	MW8-1	MW10-5D	MW13-5A	SW99-10
MW3-8	MW5-1A	MW8-1E	MW10-6	MW13-5D	SW99-14
MW3-8D	MW5-1DA	MW8-2D	MW10-7	MW13-6	
MW3-8E	MW5-1E	MW8-3	MW10-8	MW13-6D	
PW3-3A	MW5-2D	MW8-3DA	MW10-8D	PW13-1	
PZ3-1	MW5-3D	MW8-4A	MW10-9D	PW13-4D	

Abbreviations:

CH = Core hole

MW = Monitoring well

PW = Pumping well

PZ = Piezometer

RW = Short-term recovery well

SW = Surface water

Table 2-2
Summary of Groundwater Sampling Locations – Spring and Fall 2023
2023 Annual Comprehensive Sampling/Monitoring Report
Installation Wide Groundwater Monitoring Program
Niagara Falls Air Reserve Station, New York

Well ID	IWGP Sampling Frequency	IWGP Sample Analyses ^(a)	Performance Monitoring Sampling Frequency	Performance Monitoring Sample Analyses ^(a)	Field QC Samples ^(b)
Background Well					
MW1-1DA	Annual (Fall)	VOCs	--	--	--
MW8-11D	Annual (Spring)		--	--	--
Site 3					
MW-3-3DA	Annual (Spring)	VOCs	--	--	--
MW3-4DA			--	--	--
PW3-3A			--	--	--
PZ3-6D			--	--	--
PZ3-7D			--	--	--
PZ3-8D			--	--	--
Site 5					
MW5-1DA	Semi-Annual	VOCs	Quarterly	VOCs, Gases, TOC	--
MW5-5D					Field Duplicate (April PM Event, Spring IWGP Event)
MW5-6			--	--	--
RW5-1			Quarterly	VOCs, Gases, TOC	Field Duplicate (Fall IWGP Event); MS/MSD (April PM Event, Spring IWGP Event, Fall IWGP Event)
RW5-2					Field Duplicate & MS/MSD (Spring IWGP Event)
RW5-4			--	--	--
Site 10					
MW10-1DA	Annual - Fall	VOCs	Quarterly	VOCs, Gases, TOC	--
MW10-3	Annual - Spring		--	--	--
MW10-3D	Annual - Fall		--	--	--
MW10-4D			--	--	--
MW10-4E			--	--	--
MW10-7	Annual - Spring		Quarterly	VOCs, Gases, TOC	--
MW10-9D	Annual - Fall		--	--	--
MW10-10D			Quarterly	VOCs, Gases, TOC	--
MW10-11D	--				
PW10-1	Semi-Annual	VOCs			--
PW10-2			--		
PZ10-7			Annual - Spring	--	
Site 13					
MW13-4D	Semi-Annual	VOCs	--	--	--
MW13-5D			--	--	--
PW13-1			--	--	--
PW13-4D			--	--	--

Notes/Abbreviations:

(a) Field parameter (including temperature, pH, dissolved oxygen, oxidation reduction potential, turbidity, and conductivity) were also measured at the time of sample collection.

(b) A trip blank was also shipped with the field samples.

Gases = Ethane, ethene, methane (RSK-175)

IWGP = Installation-Wide Groundwater Program

PM = Performance Monitoring

TOC = Total Organic Carbon (U.S. Environmental Protection Agency [USEPA] Method 9060A)

VOC = Volatile organic compound (USEPA Method 8260C)

MS/MSD = Matrix spike/matrix spike duplicate

Table 2-3
Summary of Surface Water Sampling Locations - Spring and Fall 2023
2023 Annual Comprehensive Sampling/Monitoring Report
Installation Wide Groundwater Monitoring Program
Niagara Falls Air Reserve Station, New York

Location	Description	Reference Point	Sample Analysis ^(a)	Field QA/QC Samples ^(b)
SW3-2	Cayuga Creek as it enters the base, upstream of Site 3	Nail in wooden railroad tie	VOCs ^(b)	Field Duplicate & MS/MSD (Spring IWGP Event)
SW3-3	Cayuga Creek near gravel road crossing, downstream of Site 3	East end of west gate (top edge of the bottom rail of gate over creek)	VOCs ^(b)	Field Duplicate & MS/MSD (Fall IWGP Event)
SW3-15	Cayuga Creek Adjacent to well ID PZ3-4	Top of small rock outcrop	VOCs ^(b)	--
SW10-5	Drainage ditch upstream of fire-training pit	Top of concrete junction box	VOCs ^(b)	--
SW10-6	Drainage ditch downstream of fire-training pit at Site 10	Top of pipe	VOCs ^(b)	--
SW10-7	Cayuga Creek downstream of Site 10 and confluence with drainage ditch	Top of south culvert pipe and cut	VOCs ^(b)	--
SW10-8	Cayuga Creek upstream of Site 10.	Top of berm at level surface	VOCs ^(b)	--
SW99-10	Cayuga Creek near taxiway A2 just before it flows off base	Top of concrete culvert	VOCs ^(b)	--

Notes/Abbreviations:

(a) Field parameter (including temperature, pH, dissolved oxygen, oxidation reduction potential, turbidity, and conductivity) were also measured at the time of sample collection.

(b) A trip blank was also shipped with the field samples.

QA/QC = Quality assurance/quality control

VOC = Volatile organic compound (U.S. Environmental Protection Agency Method 8260C)

MS/MSD = Matrix spike/matrix spike duplicate

Table 3-1
Site 3 - Summary of Detected Groundwater Analytical Data
2023 Annual Comprehensive Sampling/Monitoring Report
Installation Wide Groundwater Monitoring Program
Niagara Falls Air Reserve Station, New York



Analyte	Screening Criteria ^(a)	Location ID Sample Name Sample Date Parent Sample	MW3-3DA MW3-3DA-20230627 6/27/2023	MW3-4DA MW3-4DA-20230627 6/27/2023	PW3-3A PW3-3A-20230627 6/27/2023	PZ3-6D PZ3-6D-20230801 8/1/2023
Volatile Organic Compounds Detected by Method 8260C (µg/L)^(b)						
Acetone	50	ug/l	3.3 J	< 5.0 U	< 5.0 U	6.3
cis-1,2-Dichloroethene	5	ug/l	3.5	4.4	5.1	2.2
Trichloroethene	5	ug/l	< 1.0 U	< 1.0 U	0.78 J	< 1.0 U
Vinyl chloride	2	ug/l	0.47 J	1.9	4.0	0.86 J

Analyte	Screening Criteria ^(a)	Location ID Sample Name Sample Date Parent Sample	PZ3-7D PZ3-7D-20230627 6/27/2023	PZ3-8D PZ3-8D-20230627 6/27/2023
Volatile Organic Compounds Detected by Method 8260C (µg/L)^(b)				
Acetone	50	ug/l	3.3 J	4.7 J
cis-1,2-Dichloroethene	5	ug/l	7.3	< 1.0 U
Trichloroethene	5	ug/l	< 1.0 U	< 1.0 U
Vinyl chloride	2	ug/l	2.7	< 1.0 U

Notes:

(a) New York State Department of Environmental Conservation, Technical and Operational Guidance Series Memorandum #1.1.1: Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, 1998 (with updates), Class GA Groundwater Standards and Guidance Values.

(b) Only compounds with at least one detect are presented; bold results indicate a detected value, shaded results exceed the screening criterion.

µg/L = Microgram(s) per liter

MW = Monitoring well

PW = Pumping well

PZ = Piezometer

J = Compound detected, estimated concentration

U = Compound was not detected

Table 3-2

Site 3 - Summary of Detected Surface Water Analytical Data
 2023 Annual Comprehensive Sampling/Monitoring Report
 Installation Wide Groundwater Monitoring Program
 Niagara Falls Air Reserve Station, New York



Analyte	Location ID Sample Name Sample Date Parent Sample	SW3-2 SW3-2-20230627 6/27/2023	SW3-2 DUP-03-20230627 6/27/2023 SW3-2-20230627	SW3-2 SW3-2-20231102 11/2/2023	SW3-3 SW3-3-20230627 6/27/2023	SW3-3 SW3-3-20231102 11/2/2023
Volatile Organic Compounds Detected by Method 8260C (µg/L)^(a)						
Acetone	µg/L	< 5.0 U	< 5.0 U	3.8 J	< 5.0 U	3.2 J
Chloroform	µg/L	0.36 J	0.36 J	< 1.0 U	< 1.0 U	< 1.0 U

Analyte	Location ID Sample Name Sample Date	SW3-3-20231102 DUP-02-20231102 11/2/2023 SW3-3-20231102	SW3-15 SW3-15-20230627 6/27/2023	SW3-15 SW3-15-20231102 11/2/2023
Volatile Organic Compounds Detected by Method 8260C (µg/L)^(a)				
Acetone	µg/L	3.4 J	3.3 J	3.7 J
Chloroform	µg/L	< 1.0 U	< 1.0 U	< 1.0 U

Notes:

(a) Only compounds with at least one detect are presented; bold results indicate a detected value.

µg/L = Microgram(s) per liter

SW = Surface water

J = Compound detected, estimated concentration

U = Compound was not detected

Table 4-1
Site 5 - Summary of Detected IWGP Groundwater Analytical Data
2023 Annual Comprehensive Sampling/Monitoring Report
Installation Wide Groundwater Monitoring Program
Niagara Falls Air Reserve Station, New York

Analyte	Screening Criteria ^(a)	Location ID Sample Name Sample Date Parent Sample	MW5-1DA MW5-1DA-20230627 6/27/2023	MW5-1DA MW5-1DA-20231102 11/2/2023	MW5-5D MW5-5D-20230627 6/27/2023	MW5-5D DUP-02-20230627 6/27/2023 MW5-5D-20230627	MW5-5D MW5-5D-20231102 11/2/2023	MW5-6 MW5-6-20230627 6/27/2023	MW5-6 MW5-6-20231102 11/2/2023
Volatile Organic Compounds Detected by Method 8260C^(b)									
2-Butanone (MEK)	50	ug/l	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	2.5 J	< 5.0 U	< 5.0 U
Acetone	50	ug/l	3.6 J	10.3	4.5 J	4.0 J	10.8	4.1 J	10.7
Chloroethane	5	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
cis-1,2-Dichloroethene	5	ug/l	0.74 J	88.1	4.0	3.9	7.2	1.9	3.4
Toluene	5	ug/l	< 1.0 U	< 1.0 U	0.65 J	0.65 J	< 1.0 U	2.7	4.5
trans-1,2-Dichloroethene	5	ug/l	< 1.0 U	0.43 J	0.47 J	0.42 J	1.3	< 1.0 U	0.38 J
Trichloroethene	5	ug/l	< 1.0 U	< 1.0 U	1.7	1.6	1.8	1.2	1.6
Vinyl chloride	2	ug/l	< 1.0 U	8.3	7.1	6.7	10.6	1.9	0.72 J

Analyte	Screening Criteria ^(a)	Location ID Sample Name Sample Date Parent Sample	RW5-1 RW5-1-20230627 6/27/2023	RW5-1 RW5-1-20231102 11/2/2023	RW5-1 DUP-01-20231102 11/2/2023 RW5-1-20231102	RW5-2 RW5-2-20230627 6/27/2023	RW5-2 DUP-01-20230627 6/27/2023 RW5-2-20230627	RW5-2 RW5-2-20231102 11/2/2023	RW5-4 RW5-4-20230627 6/27/2023	RW5-4 RW5-4-20231102 11/2/2023
Volatile Organic Compounds Detected by Method 8260C^(b)										
2-Butanone (MEK)	50	ug/l	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U
Acetone	50	ug/l	4.1 J	11.2	12.7	5.4	4.5 J	8.9	3.9 J	11.8
Chloroethane	5	ug/l	5.6	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
cis-1,2-Dichloroethene	5	ug/l	1.6	1	1.1	1.7	1.5	0.74 J	0.39 J	0.37 J
Toluene	5	ug/l	6.3	11.7	11.4	0.74 J	0.76 J	0.88 J	0.65 J	0.50 J
trans-1,2-Dichloroethene	5	ug/l	0.47 J	0.36 J	0.38 J	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Trichloroethene	5	ug/l	1.0	0.76 J	0.67 J	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Vinyl chloride	2	ug/l	1.3 J+	0.94 J	1.0	0.83 J+	0.78 J	< 1.0 U	0.38 J	< 1.0 U

Notes:

(a) New York State Department of Environmental Conservation, Technical and Operational Guidance Series Memorandum #1.1.1: Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, 1998 (with updates), Class GA Groundwater Standards and Guidance Values.

(b) Only compounds with at least one detect are presented; bold results indicate a detected value, shaded results exceed the screening criterion.

µg/L = Microgram(s) per liter

MW = Monitoring well

RW = Recovery well

J = Compound detected, estimated concentration

J+ = Compound detected, estimated concentration that may be biased high

U = Compound was not detected

Table 4-2

Site 5 - Remedial Injection Performance Monitoring Data
 2023 Annual Comprehensive Sampling/Monitoring Report
 Installation Wide Groundwater Monitoring Program
 Niagara Falls Air Reserve Station, New York

Analyte	Screening Criteria ^(a)	Location ID Sample Name Sample Date Parent Sample	MW5-1DA MW5-1DA-20230411 4/11/2023	MW5-1DA MW5-1DA-20230627 6/27/2023	MW5-1DA MW5-1DA-20231102 11/2/2023	MW5-5D MW5-5D-20230411 4/11/2023	MW5-5D DUP-01-20230411 4/11/2023 MW5-5D-20230627	MW5-5D MW5-5D-20230627 6/27/2023	MW5-5D DUP-02-20230627 6/27/2023 MW5-5D-20230627
Volatile Organic Compounds Detected by Method 8260C^(b)									
2-Butanone (MEK)	50	ug/l	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U
Acetone	50	ug/l	< 5.0 U	3.6 J	10.3	6.8	5.2	4.5 J	4.0 J
Chloroethane	5	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
cis-1,2-Dichloroethene	5	ug/l	< 1.0 U	0.74 J	88.1	3.8	4.7	4.0	3.9
Toluene	5	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	0.65 J	0.65 J
trans-1,2-Dichloroethene	5	ug/l	< 1.0 U	< 1.0 U	0.43 J	0.34 J	0.47 J	0.47 J	0.42 J
Trichloroethene	5	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	1.4	1.6	1.7	1.6
Vinyl chloride	2	ug/l	< 1.0 U	< 1.0 U	8.3	3.1	4.3	7.1	6.7
Gases Detected by Method RSK-175									
Ethane	NS	ug/l	< 5.2 UJ	< 5.2 UJ	< 5.2 UJ	7.6 J	5.1 J	41.9 J	12.1 J
Ethene	NS	ug/l	< 7.1 UJ	< 7.1 UJ	< 7.1 UJ	3.5 J	< 7.1 UJ	38.1 J	16.5 J
Methane	NS	ug/l	< 2.6 UJ	< 2.6 UJ	11.1 J	678 J	463 J	5270 J	1570 J
Total Organic Carbon Detected by Method 9060A									
Total Organic Carbon	NS	mg/l	5.7	6.9	6.6	5.1	6.6	105	109

Analyte	Screening Criteria ^(a)	Location ID Sample Name Sample Date Parent Sample	MW5-5D MW5-5D-20231102 11/2/2023	MW5-5D DUP-03-20231102 11/2/2023 MW5-5D-20231102	RW5-1 RW5-1-20230411 4/11/2023	RW5-1 RW5-1-20230627 6/27/2023	RW5-1 RW5-1-20231102 11/2/2023	RW5-1 DUP-01-20231102 11/2/2023 RW5-1-20231102	RW5-2 RW5-2-20230411 4/11/2023
Volatile Organic Compounds Detected by Method 8260C^(b)									
2-Butanone (MEK)	50	ug/l	2.5 J	NC	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U
Acetone	50	ug/l	10.8	NC	< 5.0 U	4.1 J	11.2	12.7	7.3
Chloroethane	5	ug/l	< 1.0 U	NC	5.8	5.6	< 1.0 U	< 1.0 U	< 1.0 U
cis-1,2-Dichloroethene	5	ug/l	7.2	NC	2.6	1.6	1	1.1	2.4
Toluene	5	ug/l	< 1.0 U	NC	5.6	6.3	11.7	11.4	< 1.0 U
trans-1,2-Dichloroethene	5	ug/l	1.3	NC	0.56 J	0.47 J	0.36 J	0.38 J	< 1.0 U
Trichloroethene	5	ug/l	1.8	NC	0.82 J	1.0	0.76 J	0.67 J	< 1.0 U
Vinyl chloride	2	ug/l	10.6	NC	3.9	1.3 J+	0.94 J	1.0	3
Gases Detected by Method RSK-175									
Ethane	NS	ug/l	21.3 J	8.0 J	5.3 J	2.0 J	18.7 J	NC	7.4 J
Ethene	NS	ug/l	8.2 J	8.7 J	< 7.1 UJ	< 7.1 UJ	< 7.1 UJ	NC	< 7.1 UJ
Methane	NS	ug/l	8010 J	4390 J	8330 J	9050 J	8720 J	NC	5420 J
Total Organic Carbon Detected by Method 9060A									
Total Organic Carbon	NS	mg/l	40.3	42.6	217	159	24.7 J-	NC	31.9

Table 4-2

Site 5 - Remedial Injection Performance Monitoring Data
 2023 Annual Comprehensive Sampling/Monitoring Report
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Analyte	Screening Criteria ^(a)	Location ID Sample Name Sample Date Parent Sample	RW5-2 RW5-2-20230627 6/27/2023	RW5-2 DUP-01-20230627 6/27/2023 RW5-2-20230627	RW5-2 RW5-2-20231102 11/2/2023
Volatile Organic Compounds Detected by Method 8260C^(b)					
2-Butanone (MEK)	50	ug/l	< 5.0 U	< 5.0 U	< 5.0 U
Acetone	50	ug/l	5.4	4.5 J	8.9
Chloroethane	5	ug/l	< 1.0 U	< 1.0 U	< 1.0 U
cis-1,2-Dichloroethene	5	ug/l	1.7	1.5	0.74 J
Toluene	5	ug/l	0.74 J	0.76 J	0.88 J
trans-1,2-Dichloroethene	5	ug/l	< 1.0 U	< 1.0 U	< 1.0 U
Trichloroethene	5	ug/l	< 1.0 U	< 1.0 U	< 1.0 U
Vinyl chloride	2	ug/l	0.83 J+	0.78 J	< 1.0 U
Gases Detected by Method RSK-175					
Ethane	NS	ug/l	4.5 J	NC	9.0 J
Ethene	NS	ug/l	< 7.1 UJ	NC	< 7.1 UJ
Methane	NS	ug/l	6350 J	NC	6390 J
Total Organic Carbon Detected by Method 9060A					
Total Organic Carbon	NS	mg/l	137	NC	42.4

Notes:

(a) New York State Department of Environmental Conservation, Technical and Operational Guidance Series Memorandum #1.1.1: Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, 1998 (with updates), Class GA Groundwater Standards and Guidance Values.

(b) Only compounds with at least one detect are presented; bold results indicate a detected value, shaded results exceed the screening criterion.

µg/L = Microgram(s) per liter

MW = Monitoring well

NC = Sample not collected and submitted for this analysis

NS = No Standards

RW = Recovery well

J = Compound detected, estimated concentration

J+ = Compound detected, estimated concentration that may be biased high

U = Compound was not detected

Table 5-1

Site 10 - Summary of Detected Groundwater Analytical Data
 2023 Annual Comprehensive Sampling/Monitoring Report
 Installation-Wide Groundwater Monitoring Program
 Niagara Falls Air Reserve Station, New York



Analyte	Screening Criteria ^(a)	Location ID Sample Name Sample Date	MW10-1DA MW10-1DA-20230411 4/11/2023	MW10-1DA MW10-1DA-20231102 11/2/2023	MW10-3 MW10-3-20230627 6/27/2023	MW10-3D MW10-3D-20231102 11/2/2023	MW10-4D MW10-4D-20231102 11/2/2023	MW10-4E MW10-4E-20231102 11/2/2023
Volatile Organic Compounds Detected by Method 8260C (µg/L)^(b)								
2-Butanone (MEK)	50	ug/l	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U
Acetone	50	ug/l	< 5.0 U	9.3	4.2 J	13.4	10.5	12.9
Benzene	1	ug/l	2.7	3.1	< 1.0 U	< 1.0 U	0.45 J	< 1.0 U
cis-1,2-Dichloroethene	5	ug/l	0.48 J	1.3	< 1.0 U	< 1.0 U	0.68 J	7.4
Iodomethane	50	ug/l	< 1.0 UJ	< 1.0 U	< 1.0 U	< 1.0 UJ	< 1.0 U	< 1.0 UJ
Toluene	5	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
trans-1,2-Dichloroethene	5	ug/l	< 1.0 U	0.37 J	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Trichloroethene	5	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Vinyl chloride	2	ug/l	1.7	3.8	0.35 J	< 1.0 U	3.5	< 1.0 U

Analyte	Screening Criteria ^(a)	Location ID Sample Name Sample Date	MW10-7 MW10-7-20230411 4/11/2023	MW10-7 MW10-7-20230627 6/27/2023	MW10-7 MW10-7-20231102 11/2/2023	MW10-9D MW10-9D-20231102 11/2/2023	MW10-10D MW10-10D-20230411 4/11/2023	MW10-10D MW10-10D-20231102 11/2/2023
Volatile Organic Compounds Detected by Method 8260C (µg/L)^(b)								
2-Butanone (MEK)	50	ug/l	< 5.0 U	8.5	< 5.0 U	< 5.0 U	< 500 U	< 500 U
Acetone	50	ug/l	< 5.0 U	21.0	13.3	11.9	< 500 U	< 500 U
Benzene	1	ug/l	< 1.0 U	0.37 J	< 1.0 U	< 1.0 U	< 100 U	< 100 U
cis-1,2-Dichloroethene	5	ug/l	30.7	28.9	1.7	4.1	171	141
Iodomethane	50	ug/l	< 1.0 U	< 1.0 U	< 1.0 UJ	< 1.0 UJ	< 100 U	< 100 U
Toluene	5	ug/l	< 1.0 U	1.1	< 1.0 U	< 1.0 U	< 100 U	< 100 U
trans-1,2-Dichloroethene	5	ug/l	0.52 J	0.43 J	0.49 J	< 1.0 U	< 100 U	< 100 U
Trichloroethene	5	ug/l	3.5	< 1.0 U	1.7	< 1.0 U	< 100 U	< 100 U
Vinyl chloride	2	ug/l	3.9	20.0	4.3	12.3	< 100 U	< 100 U

Table 5-1

Site 10 - Summary of Detected Groundwater Analytical Data
 2023 Annual Comprehensive Sampling/Monitoring Report
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Analyte	Screening Criteria ^(a)	Location ID Sample Name Sample Date	MW10-11D MW10-11D-20230411 4/11/2023	MW10-11D MW10-11D-20231102 11/2/2023	PW10-1 PW10-1-20230411 4/11/2023	PW10-1 PW10-1-20230627 6/27/2023	PW10-1 PW10-1-20231102 11/2/2023	PW10-2 PW10-2-20230627 6/27/2023
Volatile Organic Compounds Detected by Method 8260C (µg/L)^(b)								
2-Butanone (MEK)	50	ug/l	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U
Acetone	50	ug/l	3.2 J	3.5 J	3.2 J	3.5 J	13.5	4.4 J
Benzene	1	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	2.4
cis-1,2-Dichloroethene	5	ug/l	< 1.0 U	< 1.0 U	1.5	1.1	0.77 J	< 1.0 U
Iodomethane	50	ug/l	< 1.0 U	2.4 J-	< 1.0 U	< 1.0 U	< 1.0 UJ	< 1.0 U
Toluene	5	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	0.68 J
trans-1,2-Dichloroethene	5	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Trichloroethene	5	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Vinyl chloride	2	ug/l	< 1.0 U	< 1.0 U	0.38 J	0.75 J	0.61 J	0.50 J

Analyte	Screening Criteria ^(a)	Location ID Sample Name Sample Date	PW10-2 PW10-2-20231102 11/2/2023	PZ10-7 PZ10-7-20230627 6/27/2023
Volatile Organic Compounds Detected by Method 8260C (µg/L)^(b)				
2-Butanone (MEK)	50	ug/l	< 5.0 U	< 5.0 U
Acetone	50	ug/l	10.4	6.2
Benzene	1	ug/l	1.6	< 1.0 U
cis-1,2-Dichloroethene	5	ug/l	< 1.0 U	< 1.0 U
Iodomethane	50	ug/l	< 1.0 U	< 1.0 U
Toluene	5	ug/l	0.49 J	< 1.0 U
trans-1,2-Dichloroethene	5	ug/l	< 1.0 U	< 1.0 U
Trichloroethene	5	ug/l	< 1.0 U	< 1.0 U
Vinyl chloride	2	ug/l	< 1.0 U	< 1.0 U

Notes:

(a) New York State Department of Environmental Conservation, Technical and Operational Guidance Series Memorandum #1.1.1: Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, 1998 (with updates), Class GA Groundwater Standards and Guidance Values.

(b) Only compounds with at least one detect are presented; bold results indicate a detected value, shaded results exceed the screening criterion.

µg/L = Microgram(s) per liter

MW = Monitoring well

PW = Pumping well

PZ = Piezometer

J = Compound detected, estimated concentration

J- = Compound detected, estimated concentration that may be biased low

U = Compound was not detected

Table 5-2

Site 10 - Remedial Injection Performance Monitoring Data
 2023 Annual Comprehensive Sampling/Monitoring Report
 Installation-Wide Groundwater Monitoring Program
 Niagara Falls Air Reserve Station, New York

Analyte	Screening Criteria ^(a)	Location ID Sample Name Sample Date	MW10-1DA MW10-1DA-20230411 4/11/2023	MW10-1DA MW10-1DA-20230627 6/27/2023	MW10-1DA MW10-1DA-20231102 11/2/2023	MW10-7 MW10-7-20230411 4/11/2023	MW10-7 MW10-7-20230627 6/27/2023	MW10-7 MW10-7-20231102 11/2/2023
Volatile Organic Compounds Detected by Method 8260C (µg/L)^(b)								
2-Butanone (MEK)	50	ug/l	< 5.0 U	NC	< 5.0 U	< 5.0 U	8.5	< 5.0 U
Acetone	50	ug/l	< 5.0 U	NC	9.3	< 5.0 U	21.0	13.3
Benzene	1	ug/l	2.7	NC	3.1	< 1.0 U	0.37 J	< 1.0 U
cis-1,2-Dichloroethene	5	ug/l	0.48 J	NC	1.3	30.7	28.9	1.7
Iodomethane	50	ug/l	< 1.0 UJ	NC	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 UJ
Toluene	5	ug/l	< 1.0 U	NC	< 1.0 U	< 1.0 U	1.1	< 1.0 U
trans-1,2-Dichloroethene	5	ug/l	< 1.0 U	NC	0.37 J	0.52 J	0.43 J	0.49 J
Trichloroethene	5	ug/l	< 1.0 U	NC	< 1.0 U	3.5	< 1.0 U	1.7
Vinyl chloride	2	ug/l	1.7	NC	3.8	3.9	20.0	4.3
Gases Detected by Method RSK-175								
Ethane	NS	ug/l	48.5 J	57.5 J	67.9 J	< 5.2 UJ	< 5.2 UJ	< 5.2 UJ
Ethene	NS	ug/l	< 7.1 UJ	< 7.1 UJ	< 7.1 UJ	< 7.1 UJ	< 7.1 UJ	8.1 J
Methane	NS	ug/l	7770 J	8370 J	10600 J	454 J	5250 J	8840 J
Total Organic Carbon Detected by Method 9060A								
Total Organic Carbon	NS	mg/l	9.5	10.2	12.4	303	126	146

Analyte	Screening Criteria ^(a)	Location ID Sample Name Sample Date	MW10-10D MW10-10D-20230411 4/11/2023	MW10-10D MW10-10D-20230627 6/27/2023	MW10-10D MW10-10D-20231102 11/2/2023	MW10-11D MW10-11D-20230411 4/11/2023	MW10-11D MW10-11D-20230627 6/27/2023	MW10-11D MW10-11D-20231102 11/2/2023
Volatile Organic Compounds Detected by Method 8260C (µg/L)^(b)								
2-Butanone (MEK)	50	ug/l	< 500 U	NC	< 500 U	< 5.0 U	NC	< 5.0 U
Acetone	50	ug/l	< 500 U	NC	< 500 U	3.2 J	NC	3.5 J
Benzene	1	ug/l	< 100 U	NC	< 100 U	< 1.0 U	NC	< 1.0 U
cis-1,2-Dichloroethene	5	ug/l	171	NC	141	< 1.0 U	NC	< 1.0 U
Iodomethane	50	ug/l	< 100 U	NC	< 100 U	< 1.0 U	NC	2.4 J-
Toluene	5	ug/l	< 100 U	NC	< 100 U	< 1.0 U	NC	< 1.0 U
trans-1,2-Dichloroethene	5	ug/l	< 100 U	NC	< 100 U	< 1.0 U	NC	< 1.0 U
Trichloroethene	5	ug/l	< 100 U	NC	< 100 U	< 1.0 U	NC	< 1.0 U
Vinyl chloride	2	ug/l	< 100 U	NC	< 100 U	< 1.0 U	NC	< 1.0 U
Gases Detected by Method RSK-175								
Ethane	NS	ug/l	11.8 J	26.5 J	11.9 J	< 5.2 UJ	< 5.2 UJ	10.5 J
Ethene	NS	ug/l	9.2 J	13.1 J	10 J	< 7.1 UJ	< 7.1 UJ	< 7.1 UJ
Methane	NS	ug/l	10000 J	9900 J	8240 J	< 2.6 UJ	246 J	2360 J
Total Organic Carbon Detected by Method 9060A								
Total Organic Carbon	NS	mg/l	8140	5880	3660	11.7	12.5	18.1

Table 5-2
Site 10 - Remedial Injection Performance Monitoring Data
2023 Annual Comprehensive Sampling/Monitoring Report
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Niagara Falls Air Reserve Station, New York

Analyte	Screening Criteria ^(a)	Location ID Sample Name Sample Date	PW10-1 PW10-1-20230411 4/11/2023	PW10-1 PW10-1-20230627 6/27/2023	PW10-1 PW10-1-20231102 11/2/2023
Volatile Organic Compounds Detected by Method 8260C (µg/L)^(b)					
2-Butanone (MEK)	50	ug/l	< 5.0 U	< 5.0 U	< 5.0 U
Acetone	50	ug/l	3.2 J	3.5 J	13.5
Benzene	1	ug/l	< 1.0 U	< 1.0 U	< 1.0 U
cis-1,2-Dichloroethene	5	ug/l	1.5	1.1	0.77 J
Iodomethane	50	ug/l	< 1.0 U	< 1.0 U	< 1.0 UJ
Toluene	5	ug/l	< 1.0 U	< 1.0 U	< 1.0 U
trans-1,2-Dichloroethene	5	ug/l	< 1.0 U	< 1.0 U	< 1.0 U
Trichloroethene	5	ug/l	< 1.0 U	< 1.0 U	< 1.0 U
Vinyl chloride	2	ug/l	0.38 J	0.75 J	0.61 J
Gases Detected by Method RSK-175					
Ethane	NS	ug/l	< 5.2 UJ	< 5.2 UJ	< 5.2 UJ
Ethene	NS	ug/l	< 7.1 UJ	< 7.1 UJ	< 7.1 UJ
Methane	NS	ug/l	5.5 J	22.7 J	197 J
Total Organic Carbon Detected by Method 9060A					
Total Organic Carbon	NS	mg/l	6.3	5.5	6.1

Notes:

(a) New York State Department of Environmental Conservation, Technical and Operational Guidance Series Memorandum #1.1.1: Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, 1998 (with updates), Class GA Groundwater Standards and Guidance Values.

(b) Only compounds with at least one detect are presented; bold results indicate a detected value, shaded results exceed the screening criterion.

µg/L = Microgram(s) per liter

MW = Monitoring well

NC = Sample not collected and submitted for this analysis

NS = No Standards

PW = Pumping well

PZ = Piezometer

J = Compound detected, estimated concentration

J- = Compound detected, estimated concentration that may be biased low

U = Compound was not detected

Table 5-3
Site 10 - Summary of Detected Surface Water Analytical Data
2023 Annual Comprehensive Sampling/Monitoring Report
Installation Wide Groundwater Monitoring Program
Niagara Falls Air Reserve Station, New York

Analyte	Location ID Sample Name Sample Date Parent Sample	SW10-5 SW10-5-20230627 6/27/2023	SW10-5 SW10-5-20231102 11/2/2023	SW10-6 SW10-6-20230627 6/27/2023	SW10-6 SW10-6-20231102 11/2/2023	SW10-7 SW10-7-20230627 6/27/2023
Volatile Organic Compounds Detected by Method 8260C (µg/L)^(b)						
Acetone	ug/l	5.1	< 5.0 U	4.0 J	< 5.0 U	3.8 J
Chloroform	ug/l	< 1.0 U	0.87 J	< 1.0 U	< 1.0 U	< 1.0 U
Iodomethane	ug/l	< 1.0 U	< 1.0 UJ	< 1.0 U	< 1.0 UJ	< 1.0 U
2-Hexanone (MBK)	ug/l	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U

Analyte	Location ID Sample Name Sample Date Parent Sample	SW10-7 SW10-7-20231102 11/2/2023	SW10-8 SW10-8-20230627 6/27/2023	SW10-8 SW10-8-20231102 11/2/2023	SW99-10 SW99-10-20230627 6/27/2023	SW99-10 SW99-10-20231102 11/2/2023
Volatile Organic Compounds Detected by Method 8260C (µg/L)^(b)						
Acetone	µg/L	5.3	< 5.0 U	4.2 J	< 5.0 U	< 5.0 U
Chloroform	µg/L	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Iodomethane	µg/L	2.2 J-	< 1.0 U	< 1.0 UJ	< 1.0 U	< 1.0 UJ
2-Hexanone (MBK)	µg/L	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	1.9 J

Notes:

(a) Location SW99-10 is downgradient of Site 10 at the installation boundary
(b) Only compounds with at least one detect are presented; bold results indicate a detected value.
µg/L = Microgram(s) per liter
SW = Surface water
J = Compound detected, estimated concentration
J- = Compound detected, estimated concentration that may be biased low
U = Compound was not detected

Table 6-1
Site 13 - Summary of Detected Groundwater Analytical Data
2023 Annual Comprehensive Sampling/Monitoring Report
Installation Wide Groundwater Monitoring Program
Niagara Falls Air Reserve Station, New York



Analyte	Screening Criteria ^(a)	Location ID Sample Name Sample Date Parent Sample	MW13-4D MW13-4D-20230627 6/27/2023	MW13-4D MW13-4D-20231102 11/2/2023	MW13-5D MW13-5D-20230627 6/27/2023	MW13-5D MW13-5D-20231102 11/2/2023
Volatile Organic Compounds Detected by Method 8260C (µg/L)^(b)						
Acetone	50	ug/l	4.3 J	12.6	4.9 J	13.8
Benzene	1	ug/l	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
cis-1,2-Dichloroethene	5	ug/l	6.2	6.3	14	12.3
Vinyl chloride	2	ug/l	3.9	4.8	0.58 J	1.4

Analyte	Screening Criteria ^(a)	Location ID Sample Name Sample Date Parent Sample	PW13-1 PW13-1-20230627 6/27/2023	PW13-1 PW13-1-20231102 11/2/2023	PW13-4D PW13-4D-20230627 6/27/2023	PW13-4D PW13-4D-20231102 11/2/2023
Volatile Organic Compounds Detected by Method 8260C (µg/L)^(b)						
Acetone	50	ug/l	< 5.0 U	12.7	4.4 J	10
Benzene	1	ug/l	< 1.0 U	0.39 J	< 1.0 U	< 1.0 U
cis-1,2-Dichloroethene	5	ug/l	3.6	1.5	5.0	0.55 J
Vinyl chloride	2	ug/l	0.58 J	< 1.0 U	0.34 J	< 1.0 U

Notes:

and Guidance Values and Groundwater Effluent Limitations, 1998 (with updates), Class GA Groundwater Standards and Guidance Values.

(b) Only compounds with at least one detect are presented; bold results indicate a detected value, shaded results exceed the screening criterion.

µg/L = Microgram(s) per liter

MW = Monitoring well

PW = Pumping well

J = Compound detected, estimated concentration

U = Compound was not detected

Table 7-1
Summary of Background Detected Groundwater Analytical Data
2023 Annual Comprehensive Sampling/Monitoring Report
Installation Wide Groundwater Monitoring Program
Niagara Falls Air Reserve Station, New York



Analyte	Screening Criteria ^(a)	Location ID Sample Name Sample Date	MW1-1DA MW1-1DA-20231102 11/2/2023	MW8-11D MW8-11D-20230627 6/27/2023
Volatile Organic Compounds Detected by Method 8260C (µg/L)^(b)				
Acetone	50	ug/l	11.5	5

Notes:

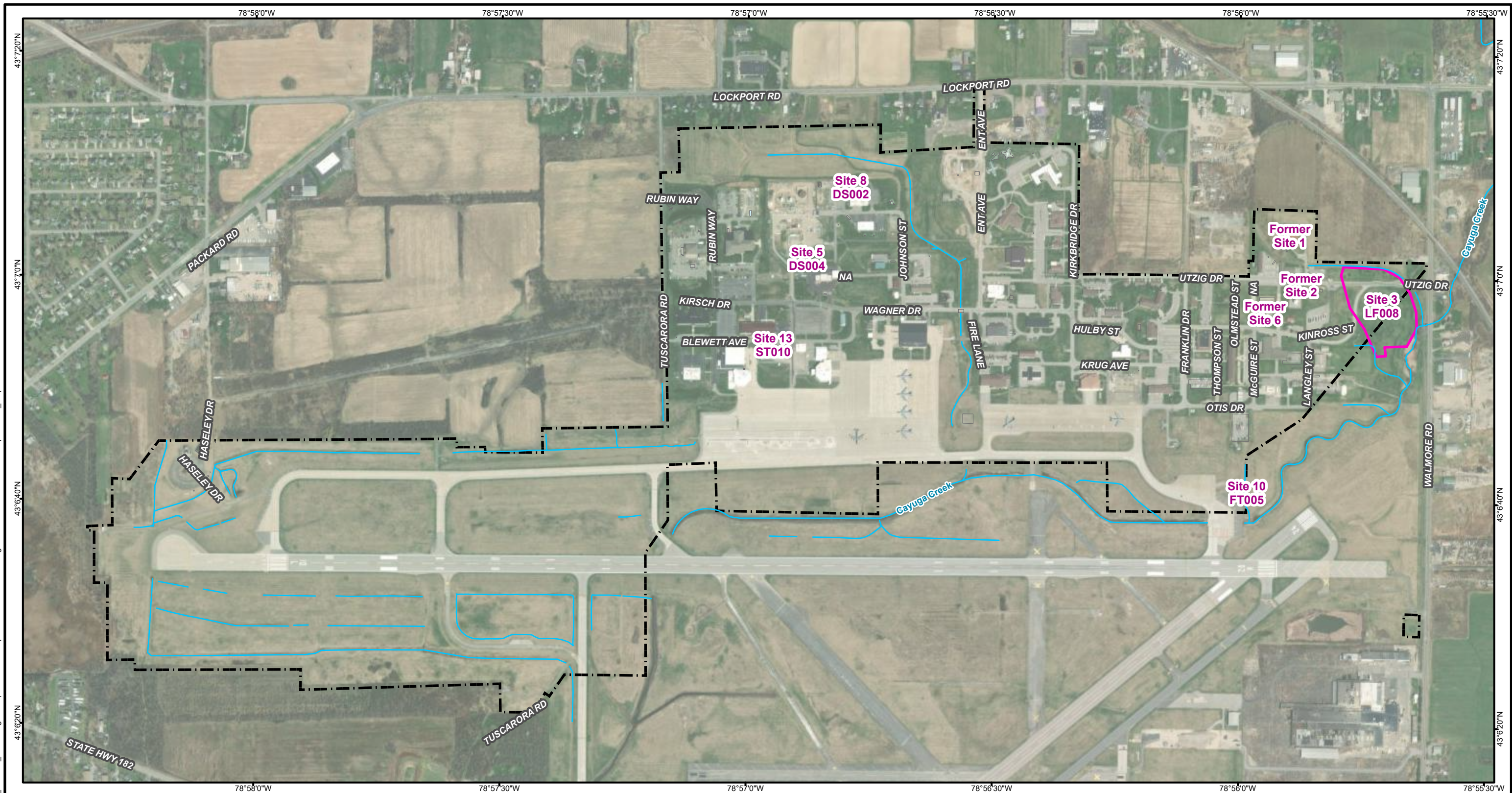
(a) New York State Department of Environmental Conservation, Technical and Operational Guidance Series Memorandum #1.1.1: Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, 1998 (with updates), Class GA Groundwater Standards and Guidance Values.

(b) Only compounds with at least one detect are presented; bold results indicate a detected value, shaded results exceed the screening criterion.

µg/L = Microgram(s) per liter

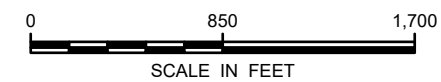
MW = Monitoring well

Figures



Legend

- Approximate Extent of Former Landfill
- Installation Boundary



NIAGARA FALLS AIR RESERVE STATION
NEW YORK

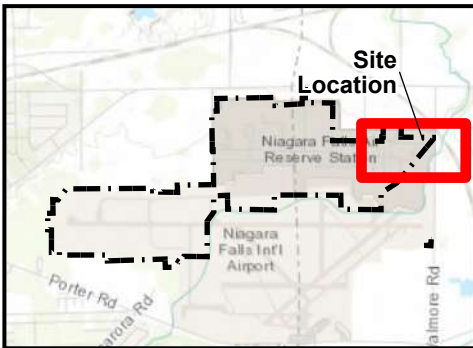
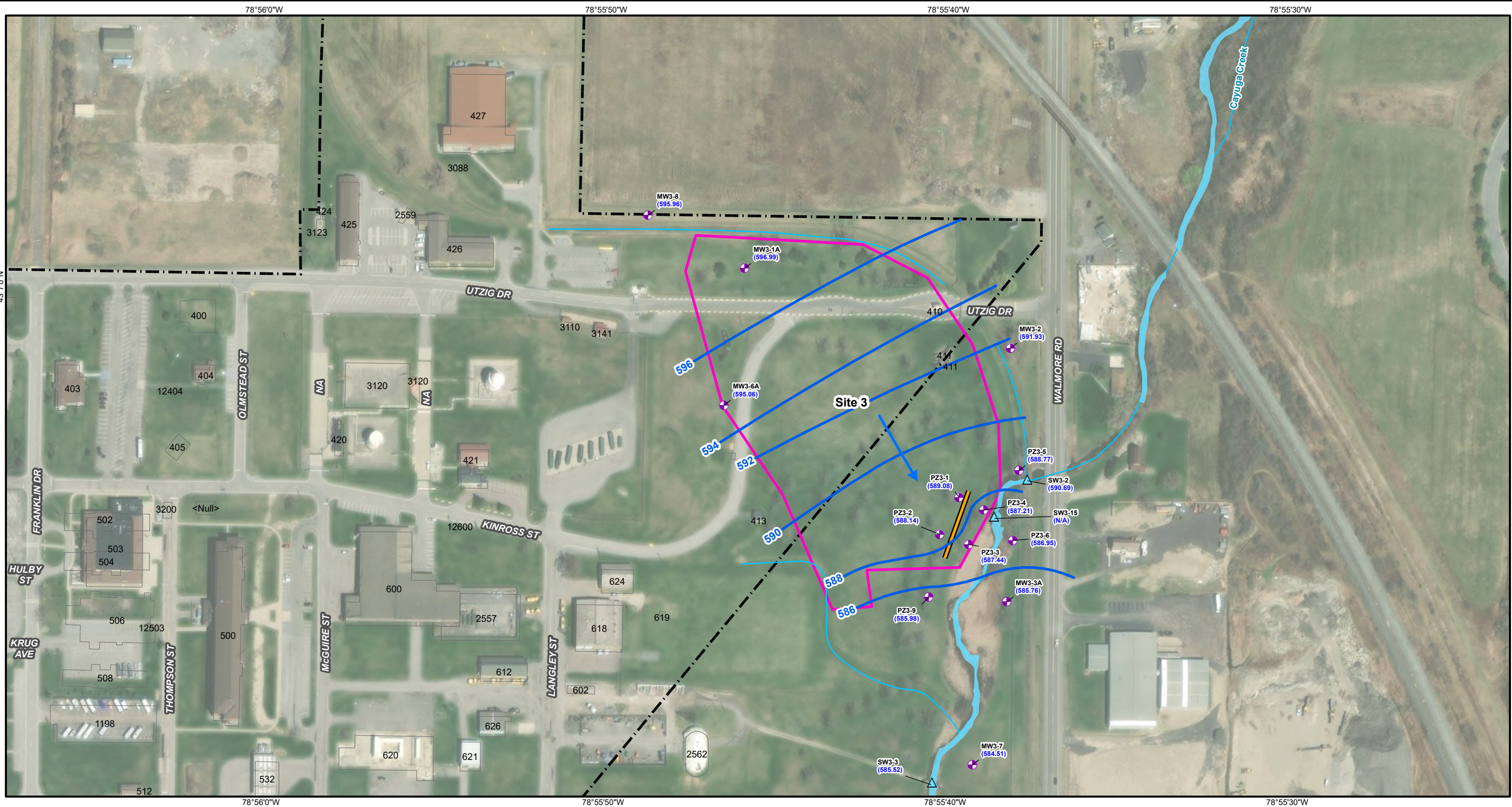
2023 Annual Report

SITE MAP



FIGURE
1-1

DIV/GRP: ENV/MDV DB: gogir0216 LD: PIC: PM: TM: PROJECT: JBMDL (30028493.00001) PATH: T:\ENV\NE_ORC\Niagara\Reports\Annual Report\2023\ArcGIS Pro\Niagara Falls ARS 2023 Annual Report Site3_5.aprx DATE: 1/9/2025 4:53 PM



Legend

- Overburden well/Piezometer
- Surface Water Sample
- (591.93) Groundwater Elevation
- Groundwater Contour
- Groundwater Flow Direction
- Groundwater Collection Trench
- Approximate Extent of Former Landfill
- Installation Boundary

Notes:
1. N/A = Not applicable; a water level measurement is not collected at this location



0 170 340
SCALE IN FEET

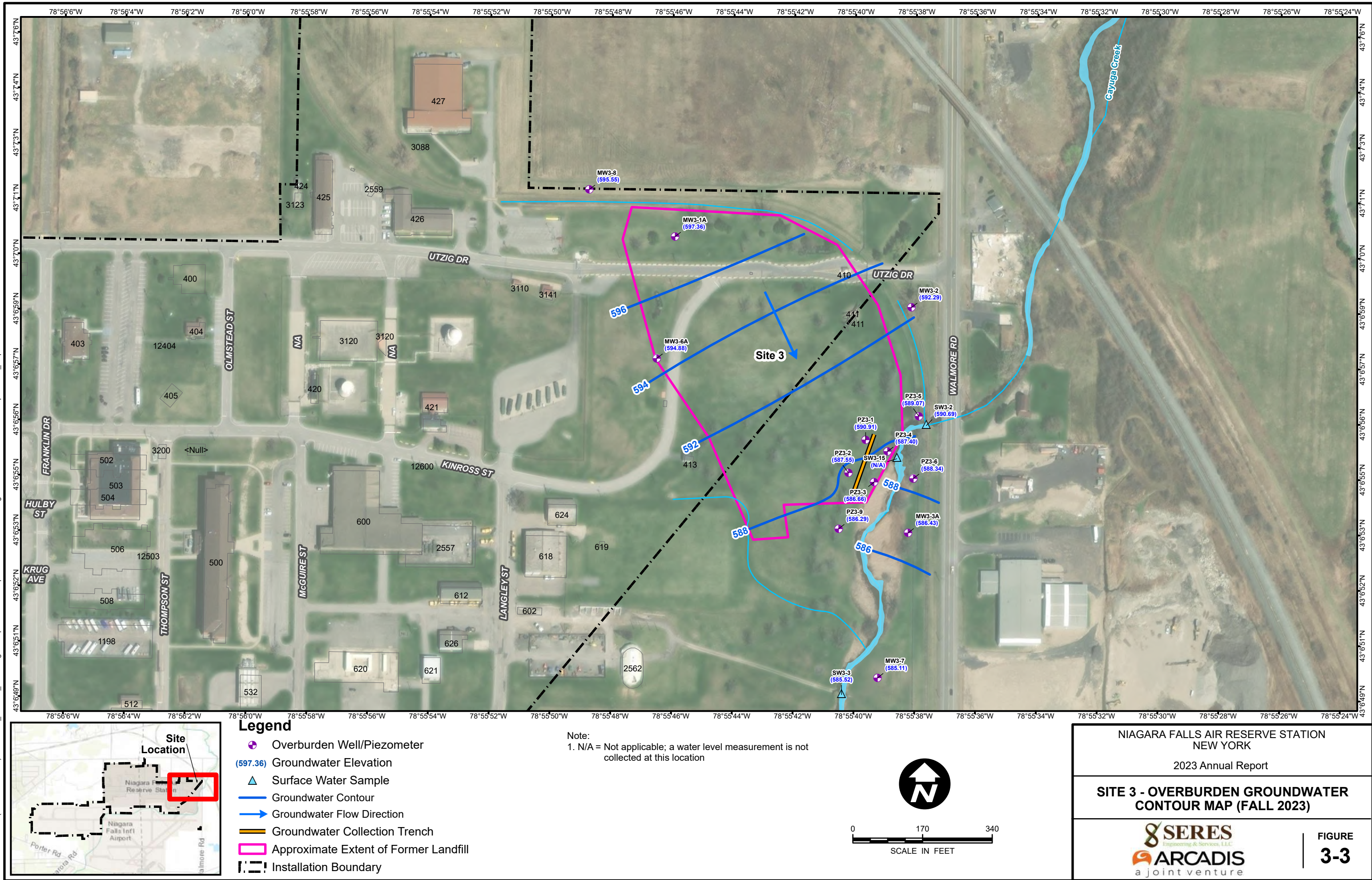
NIAGARA FALLS AIR RESERVE STATION
NEW YORK
2023 Annual Report

SITE 3 - OVERBURDEN GROUNDWATER CONTOUR MAP (SPRING 2023)

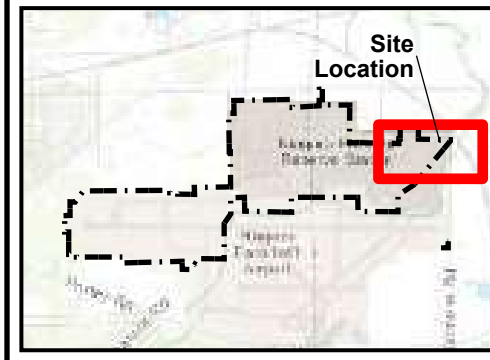
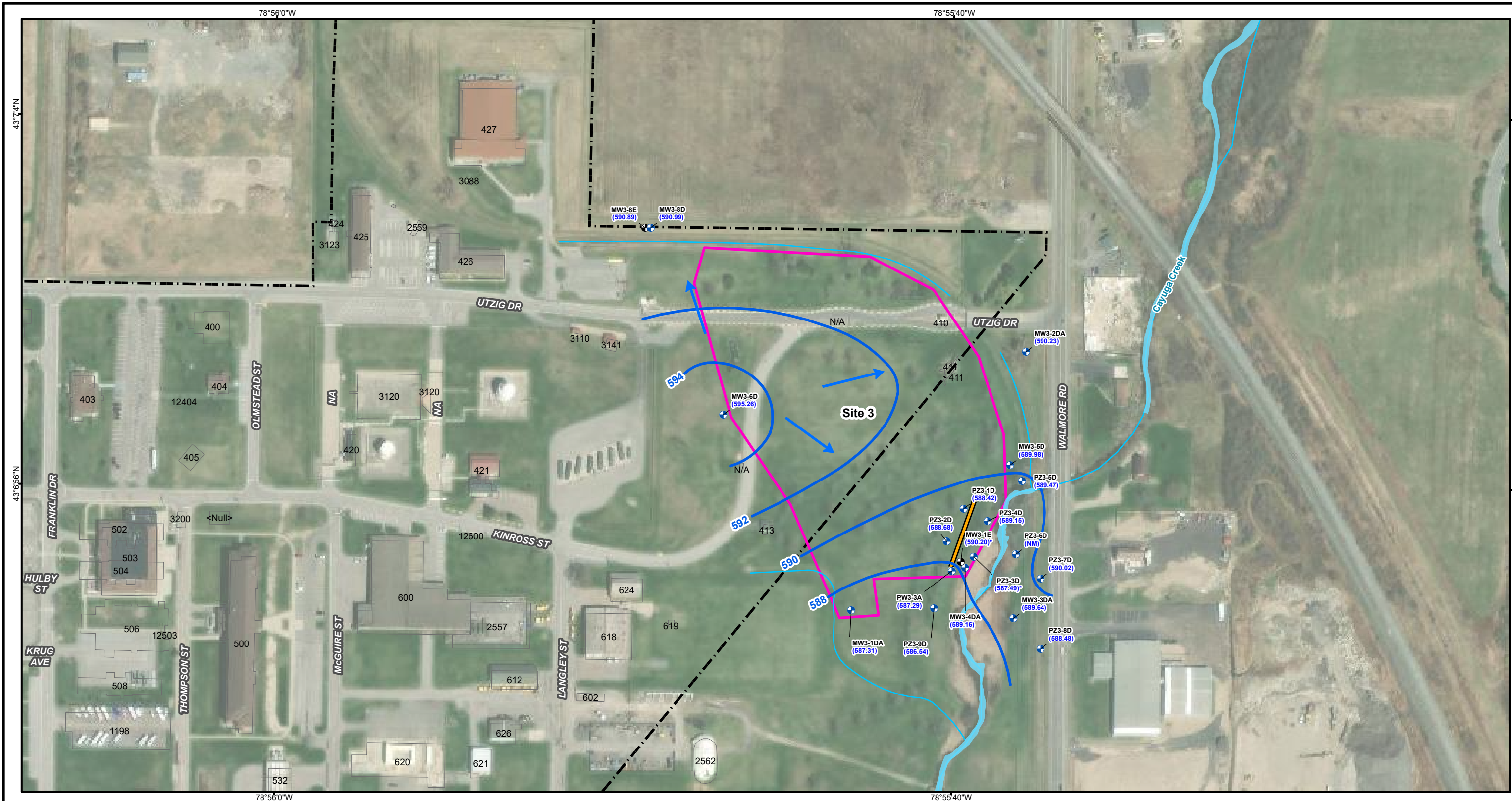


FIGURE
3-2

DIV/GROUP: ENV/IMDV DB: gogoi0216 LD: PIC: PM: TM: DATE: 1/9/2025 6:09 PM
PROJECT: JBMDL (30028498.00001) PATH: T: ENV\NE_ORC\Niagara\Reports\Annual Report\2023\AcGIS Pro\Niagara Falls ARS 2023 Annual Report Site3_5.aprx

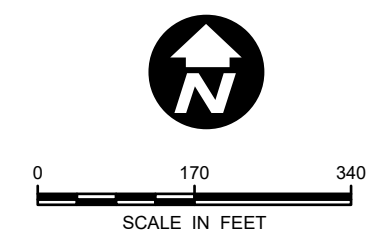


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PROJECT: JBMDL (30028498.00001) PATH: T1 ENVYNE_ORC\Niagara\Reports\Annual Report\2023\AcGIS Pro\Niagara Falls ARS 2023 Annual Report Site3_5.aprx



- Legend**
- Shallow Bedrock Well/Piezometer
 - Deep Bedrock Well
 - (590.89) Groundwater Elevation
 - Groundwater Contour
 - Groundwater Flow Direction
 - Groundwater Collection Trench
 - Approximate Extent of Former Landfill
 - Installation Boundary

Notes:
1. NM = Not measured; standing water present at ground surface.
2. * = Elevation not used to develop groundwater contours.

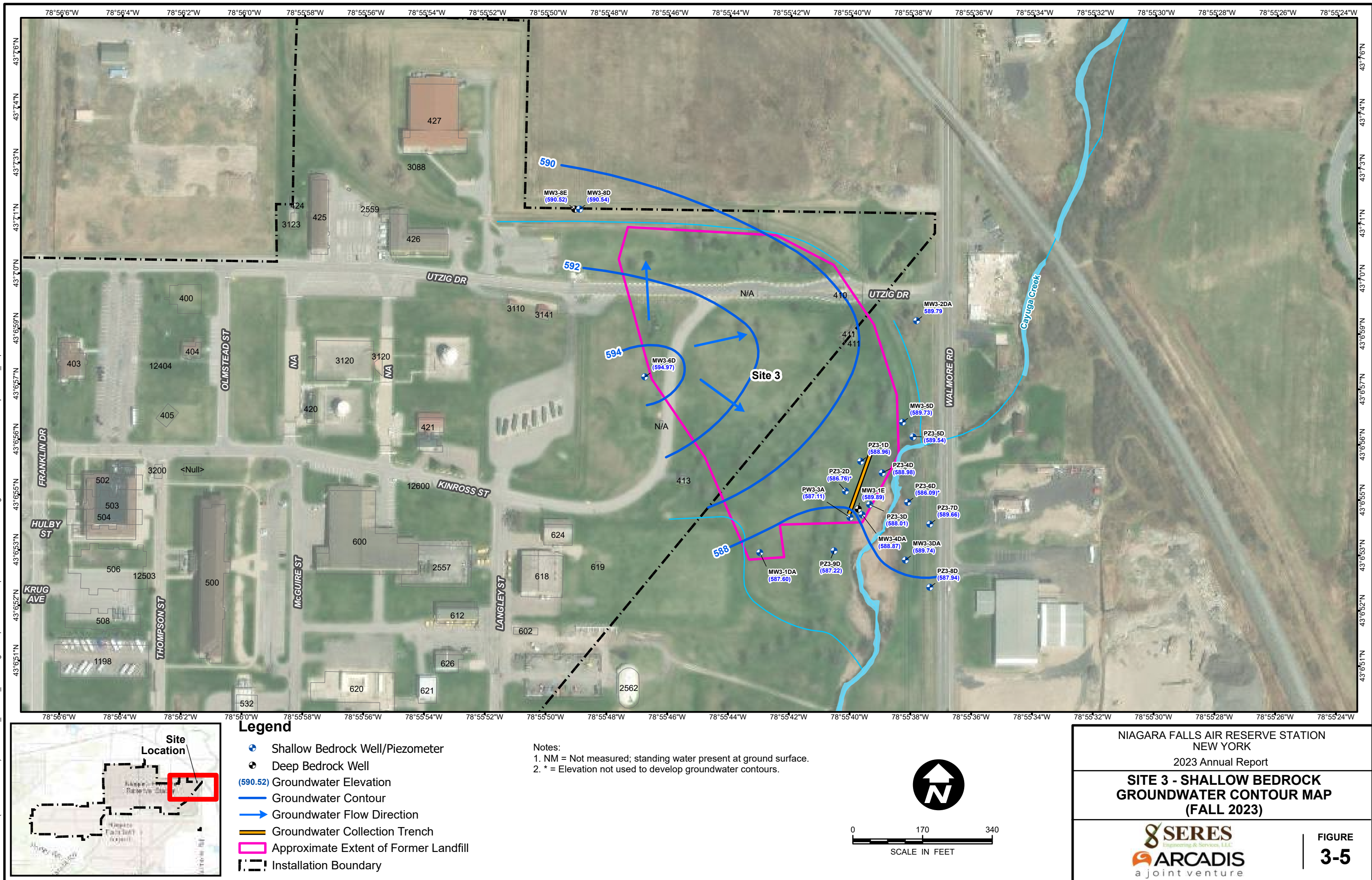


NIAGARA FALLS AIR RESERVE STATION
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**SITE 3 - SHALLOW BEDROCK
GROUNDWATER CONTOUR MAP
(SPRING 2023)**

FIGURE
3-4

DIV/GROUP: ENV/IMDV DB: cv00949 LD: PIC: PM: TM: DATE: 1/16/2025 1:37 PM
PROJECT: JBMDL (30028498.00001) PATH: T1 ENVYNE_ORC\Niagara\Reports\Annual Report\2023\AcGIS Pro\Niagara Falls ARS 2023 Annual Report Site3_5.aprx



NIAGARA FALLS AIR RESERVE STATION
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2023 Annual Report

**SITE 3 - SHALLOW BEDROCK
GROUNDWATER CONTOUR MAP
(FALL 2023)**



FIGURE
3-5

Figure 3-8 – Site 3 – Long-Term Trend Data

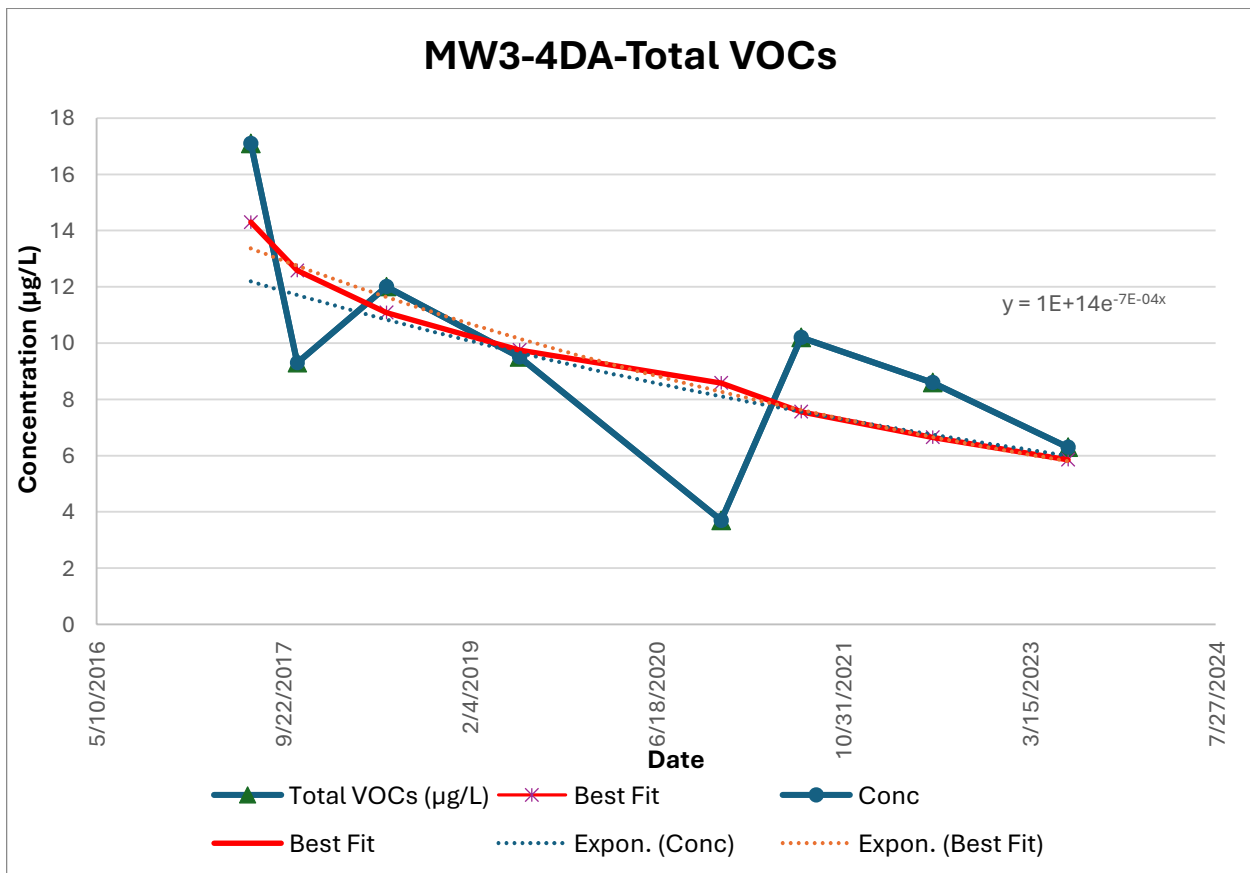
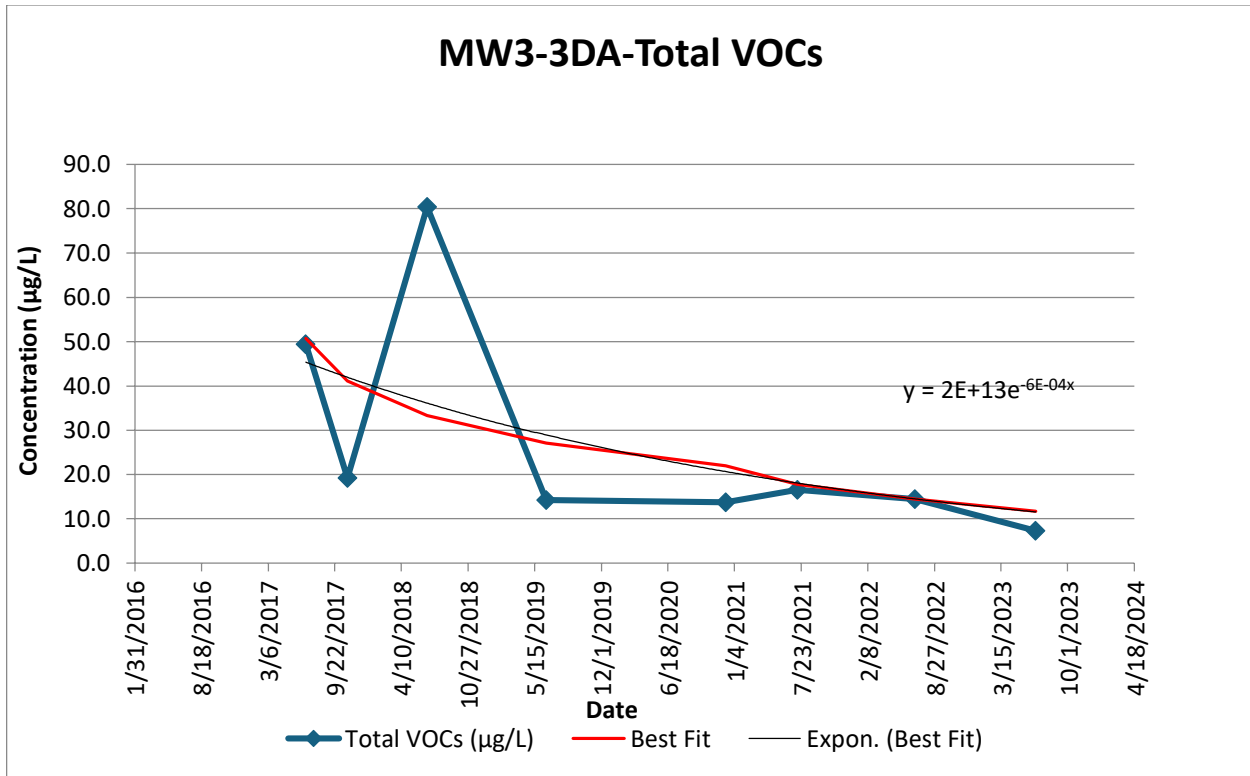


Figure 3-8 – Site 3 – Long-Term Trend Data

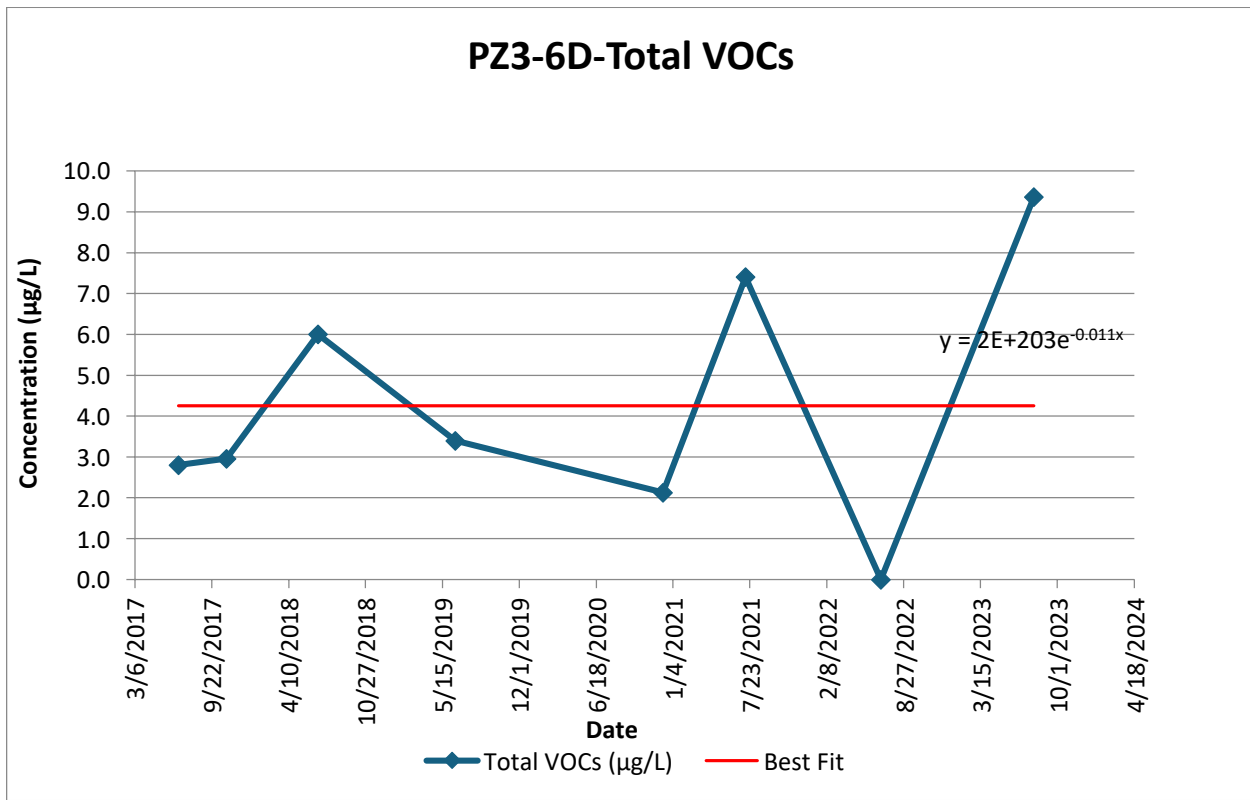
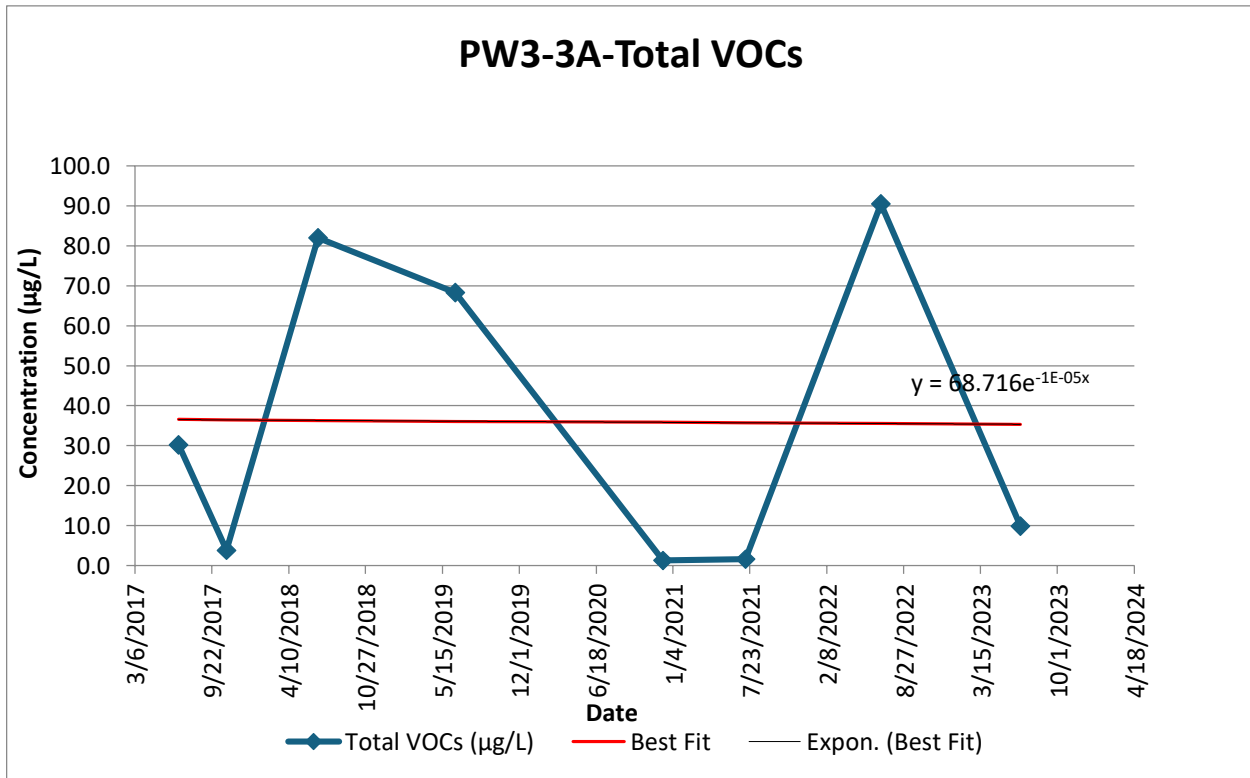
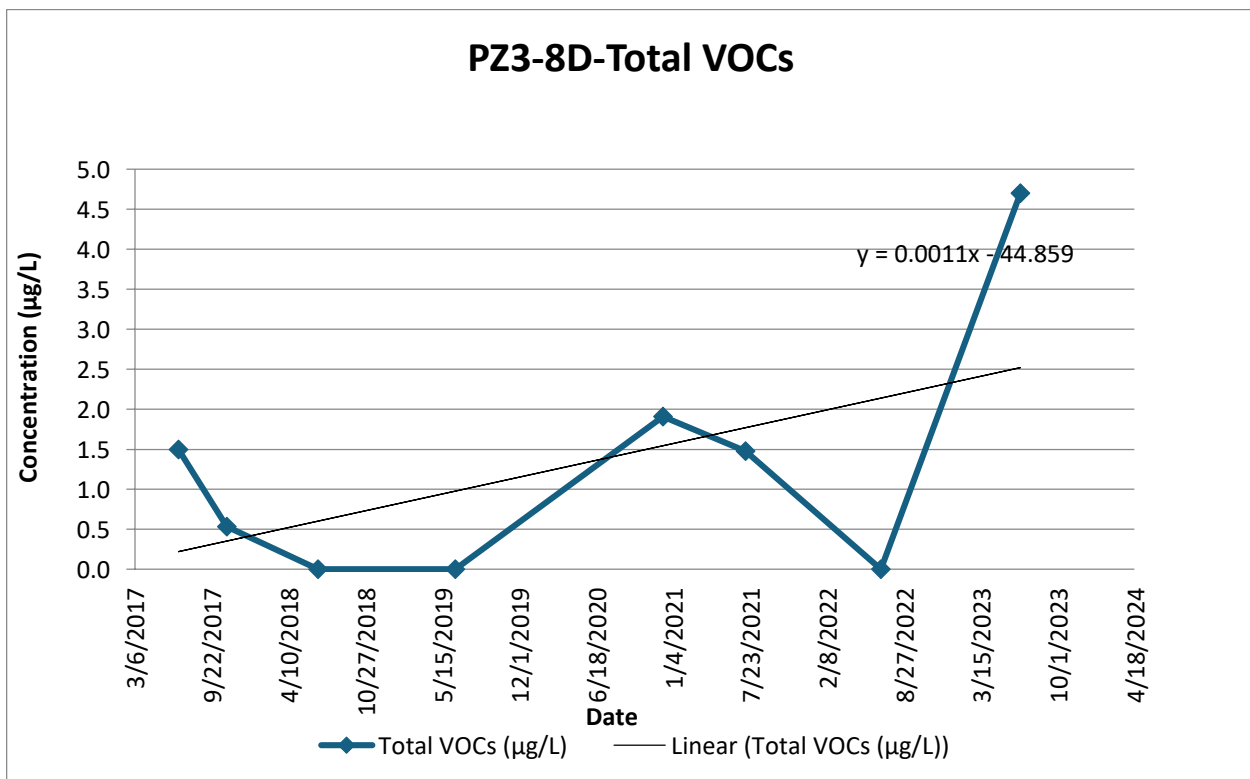
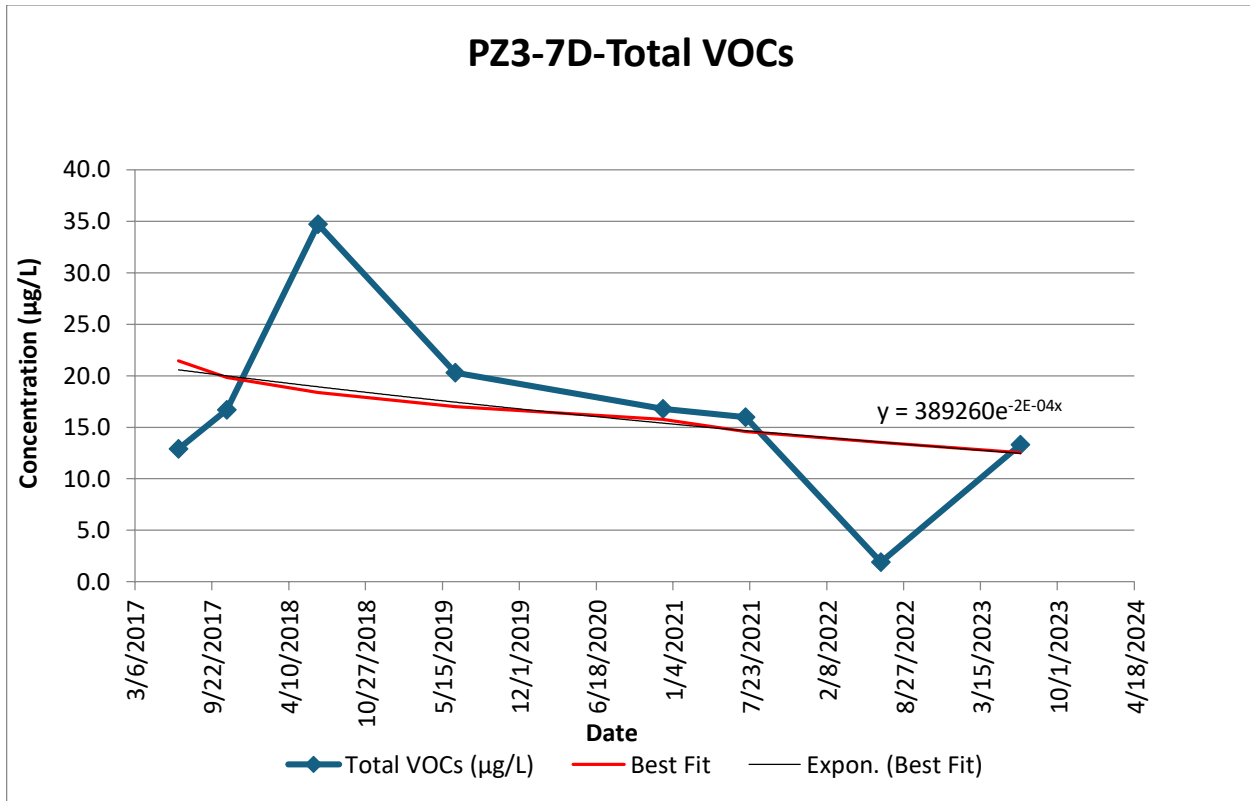
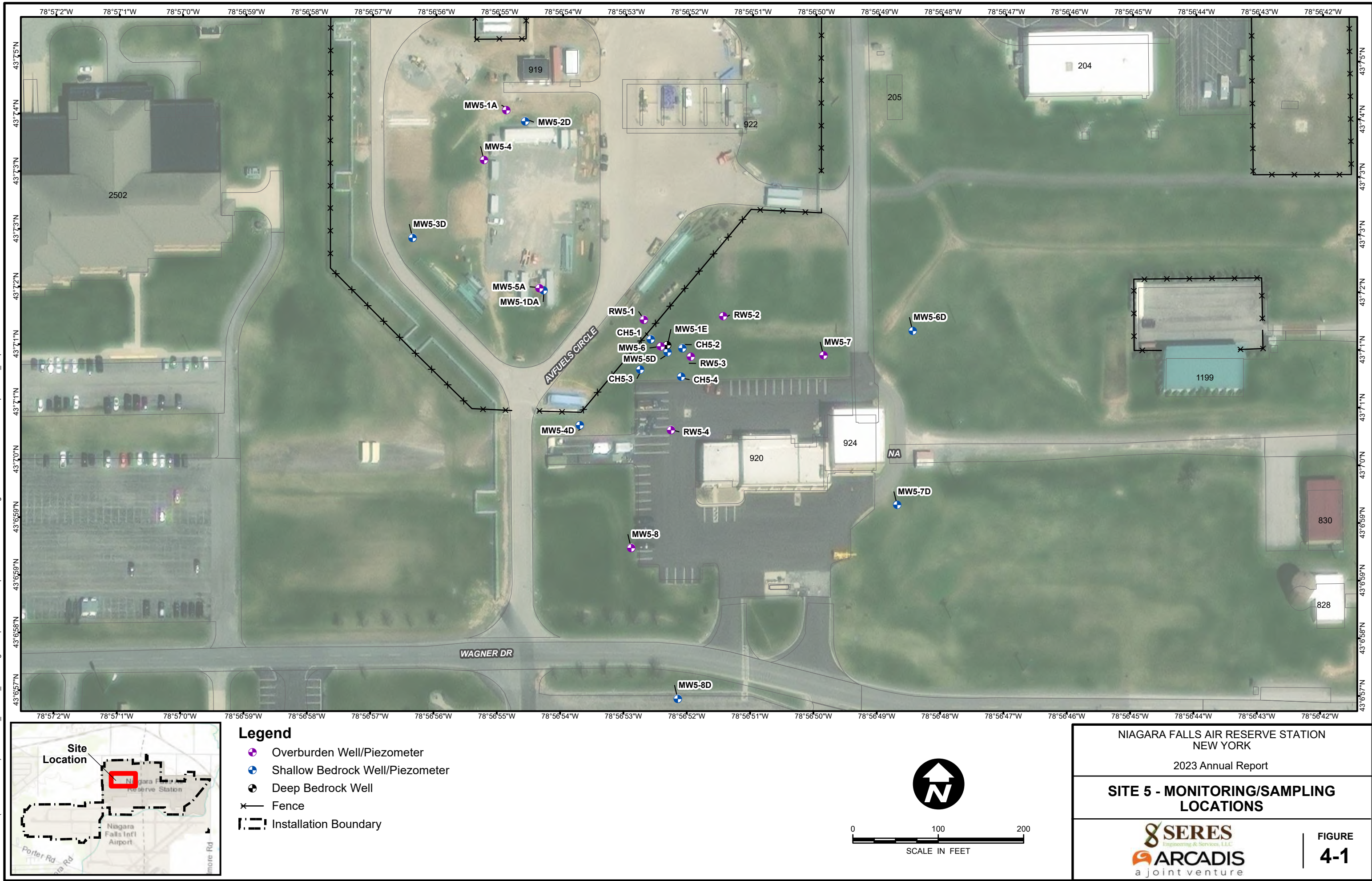


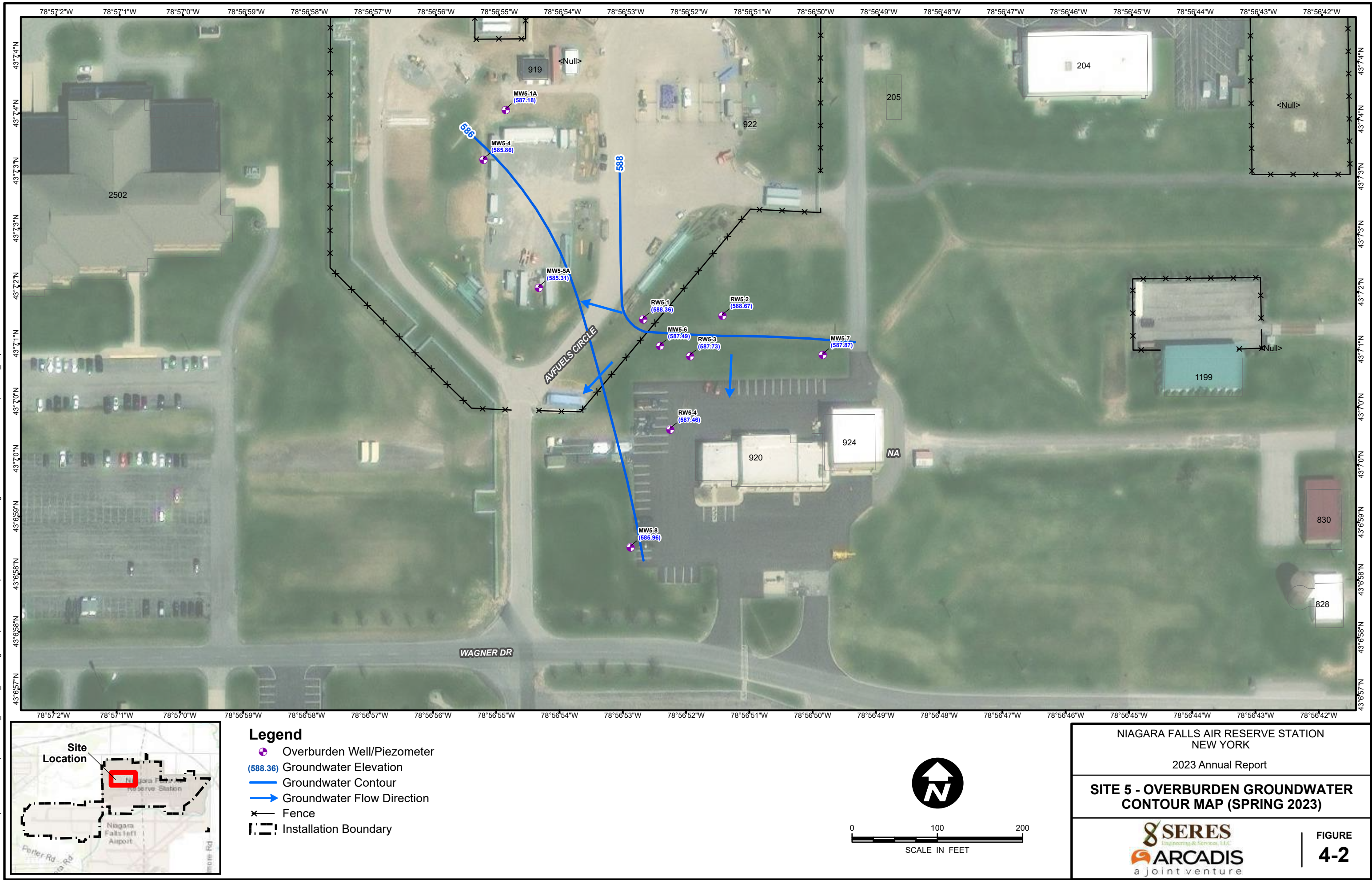
Figure 3-8 – Site 3 – Long-Term Trend Data



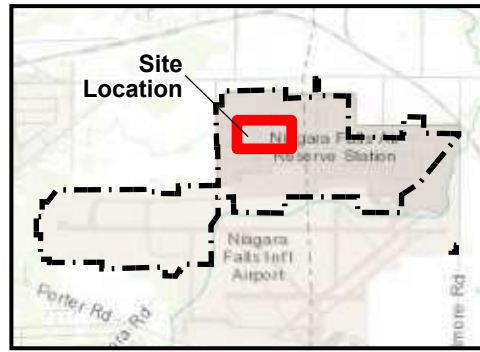
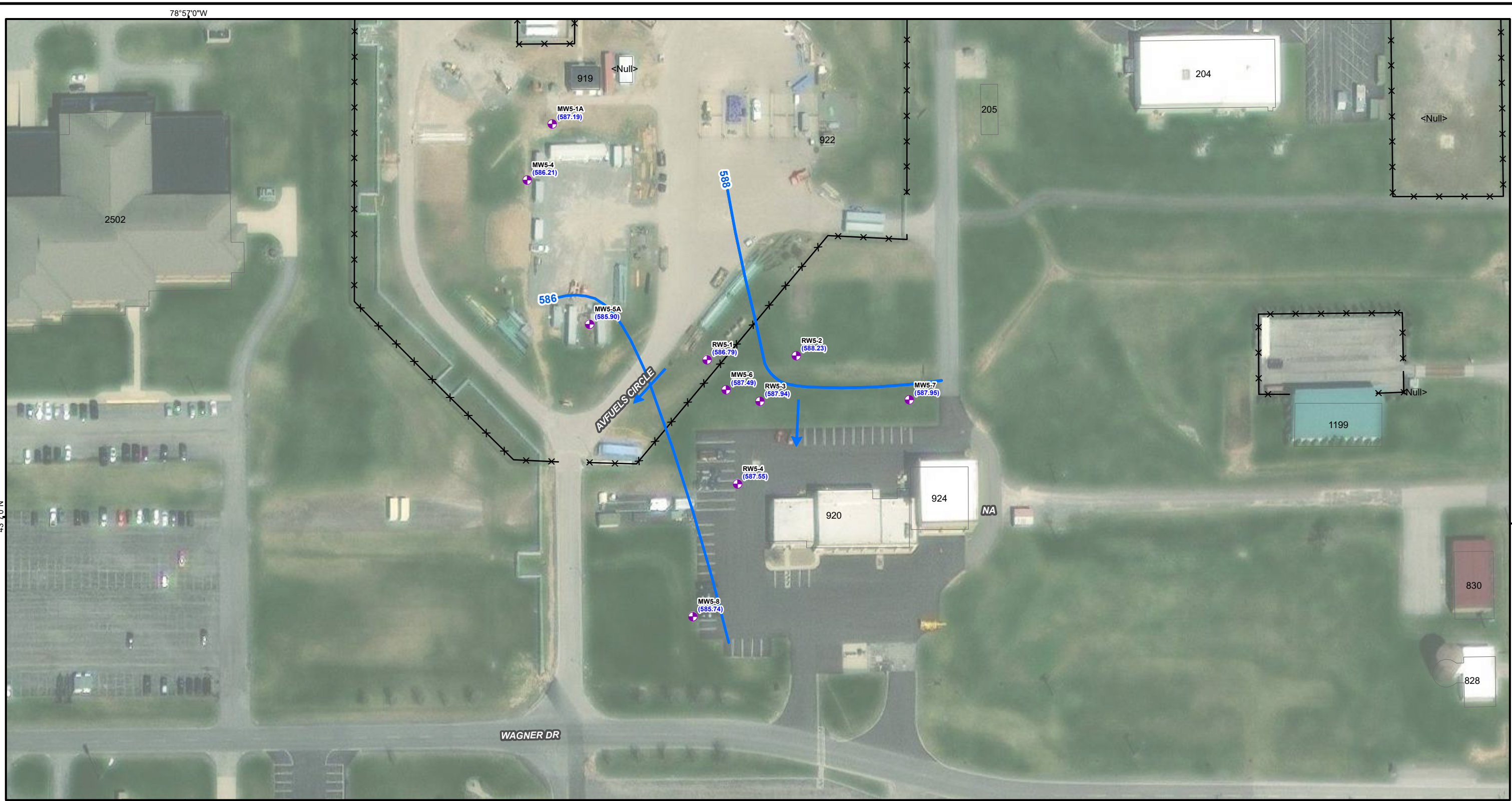
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DIV/GROUP: ENV/IMDV DB: cv00949 LD: PIC: PM: TM: PROJECT: JBMDL (30028498.00001) PATH: T1: ENV\NE_ORC\Niagara\Reports\Annual Report\2023\AcGIS Pro\Niagara Falls ARS 2023 Annual Report Site3_5.aprx DATE: 7/9/2024 5:19 PM

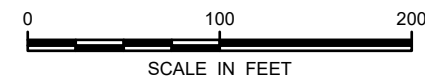


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Legend

- Overburden Well/Piezometer
- (586.21) Groundwater Elevation
- Groundwater Contour
- Groundwater Flow Direction
- × Fence
- - - Installation Boundary



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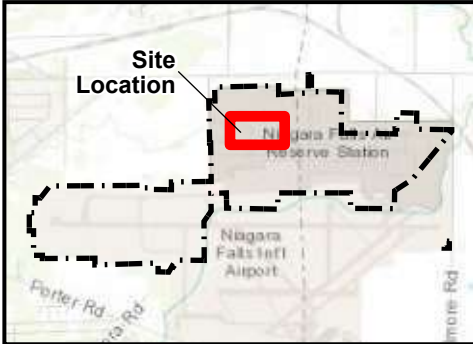
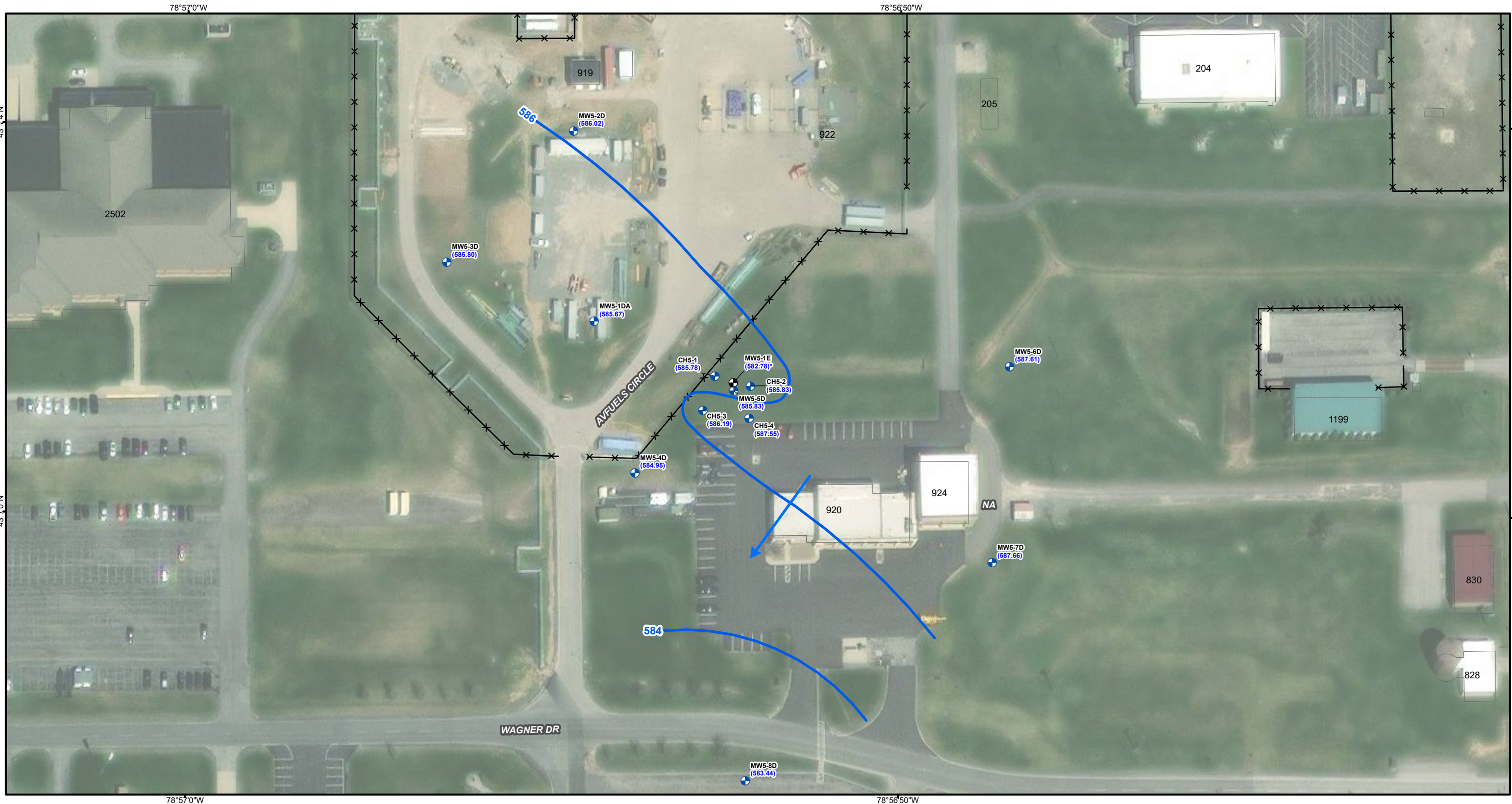
2023 Annual Report

SITE 5 - OVERBURDEN GROUNDWATER CONTOUR MAP (FALL 2023)



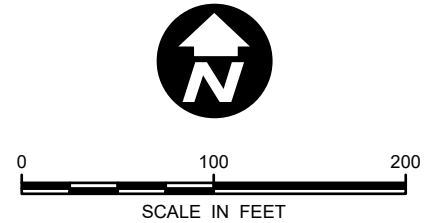
FIGURE
4-3

DIV/GROUP: ENV/IMDV DB: cv00949 LD: PIC: PM: TM: PROJECT: JBMDL (30028498.00001) PATH: T1 ENVNE_ORC\Niagara\Reports\Annual Report\2023\AcGIS Pro\Niagara Falls ARS 2023 Annual Report Site3_5.aprx DATE: 7/8/2024 12:54 AM



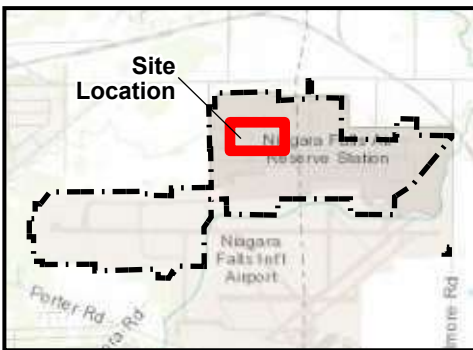
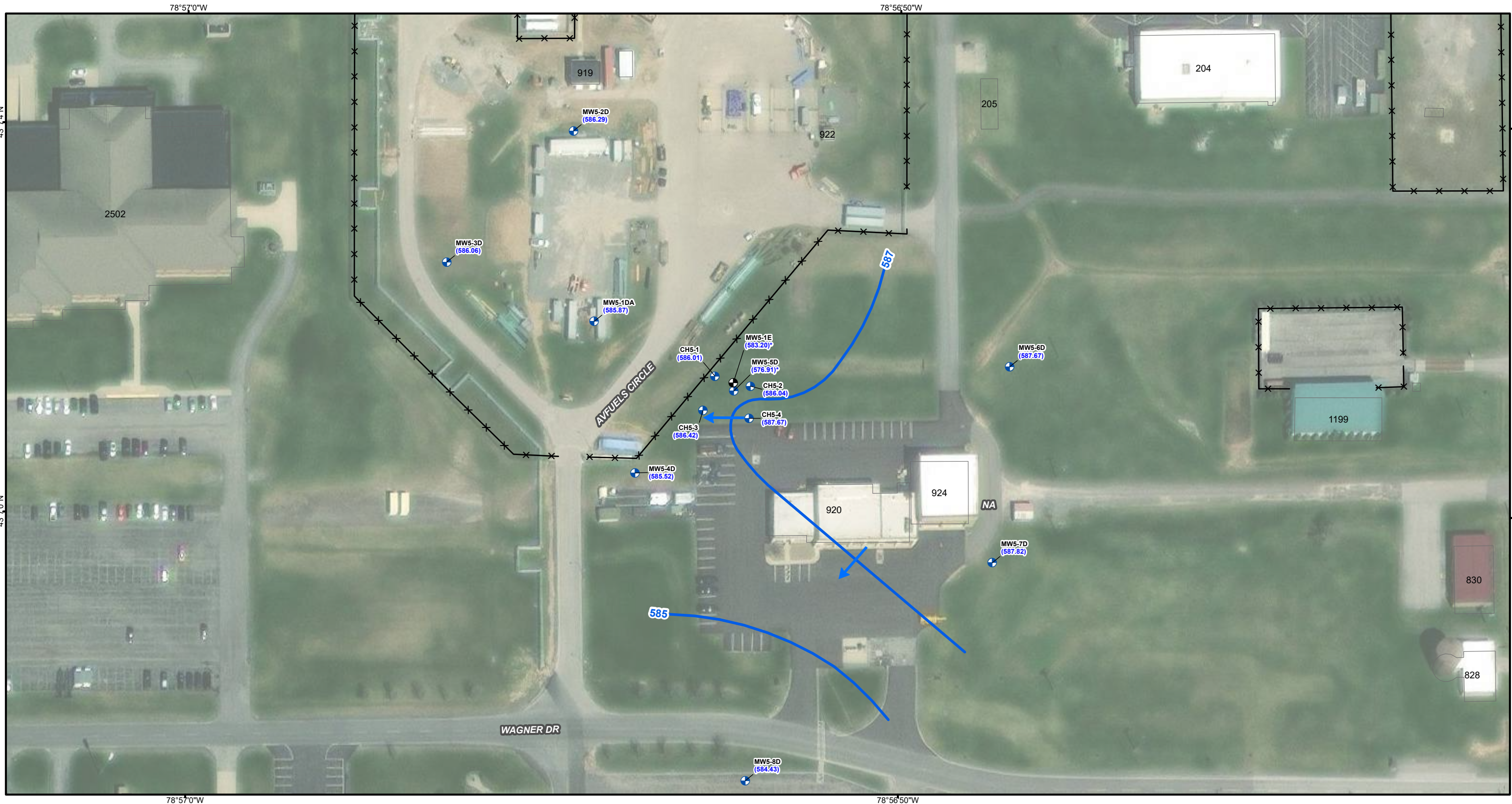
- Legend**
- Shallow Bedrock Well/Piezometer
 - ⊕ Deep Bedrock Well
 - (586.02) Groundwater Elevation
 - Groundwater Contour
 - Groundwater Flow Direction
 - × × Fence
 - - - Installation Boundary

Note:
1. * = Elevation not used to develop groundwater contours.



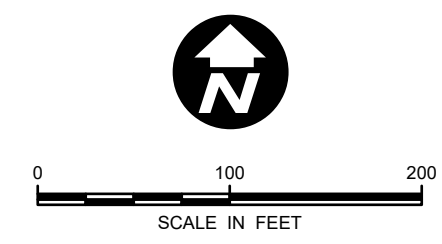
NIAGARA FALLS AIR RESERVE STATION NEW YORK 2023 Annual Report	
SITE 5 - SHALLOW BEDROCK GROUNDWATER CONTOUR MAP (SPRING 2023)	
 	FIGURE 4-4

DIV/GROUP: ENV/IMDV DB: cv00949 LD: PIC: PM: TM: PROJECT: JBMDL (30028498.00001) PATH: T1 ENVNE_ORC\Niagara\Reports\Annual Report\2023\AcGIS Pro\Niagara Falls ARS 2023 Annual Report Site3_5.aprx DATE: 7/9/2024 5:33 PM

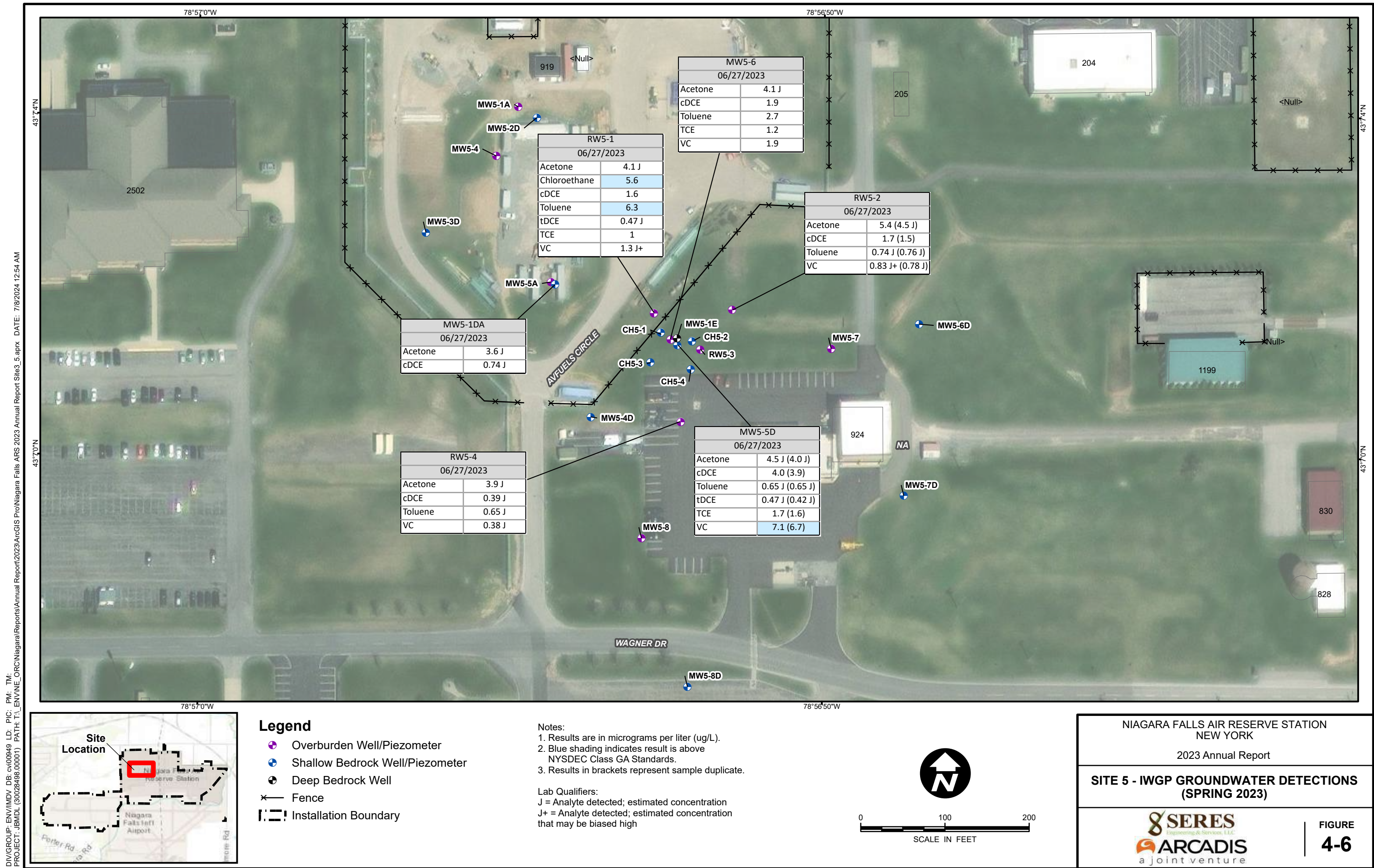


- Legend**
- Shallow Bedrock Well/Piezometer
 - Deep Bedrock Well
 - (586.29) Groundwater Elevation
 - Groundwater Contour
 - Groundwater Flow Direction
 - Fence
 - Installation Boundary

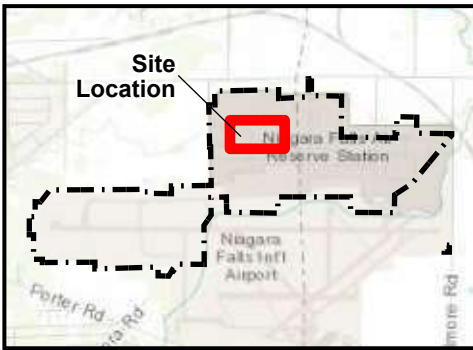
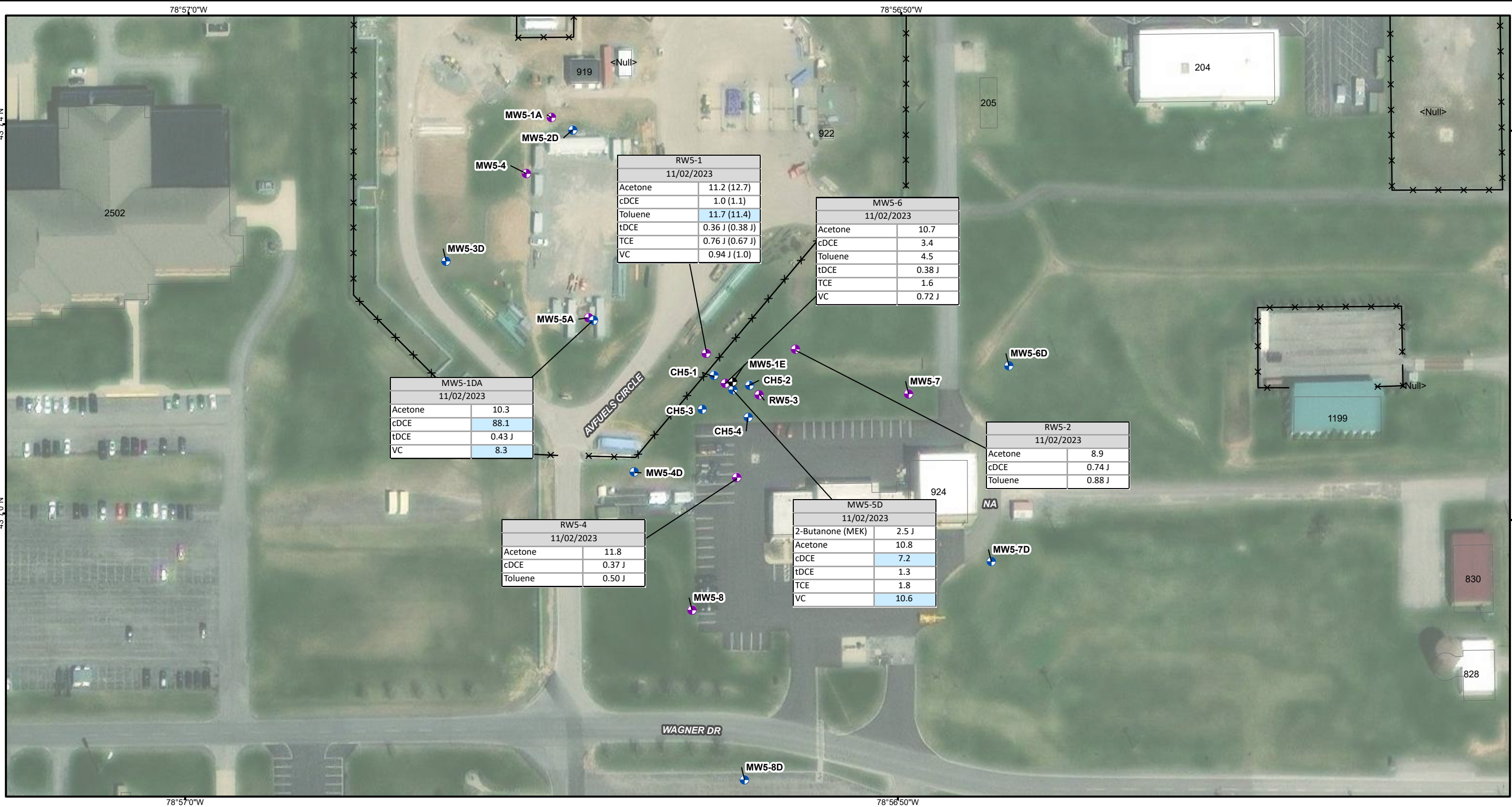
Note:
1. * = Elevation not used to develop groundwater contours.



NIAGARA FALLS AIR RESERVE STATION NEW YORK 2023 Annual Report	
SITE 5 - SHALLOW BEDROCK GROUNDWATER CONTOUR MAP (FALL 2023)	
 	FIGURE 4-5



DIV/GROUP: ENV/IMDV DB: cv00949 LD: PIC: PM: TM: PROJECT: JBMDL (30028498.00001) PATH: T1 ENVNE_ORC\Niagara\Reports\Annual Report\2023\AcGIS Pro\Niagara Falls ARS 2023 Annual Report Site3_5.aprx DATE: 7/18/2024 12:54 AM



Legend

- Overburden Well/Piezometer
- Shallow Bedrock Well/Piezometer
- Deep Bedrock Well
- Fence
- Installation Boundary

- Notes:
- Results are in micrograms per liter (ug/L).
 - Blue shading indicates result is above NYSDEC Class GA Standards.
 - Results in brackets represent sample duplicate.

Lab Qualifier:
J = Analyte detected; estimated concentration



0 100 200
SCALE IN FEET

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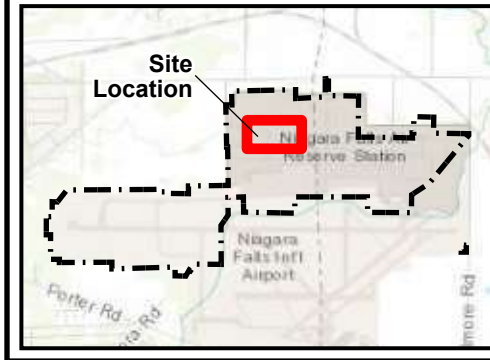
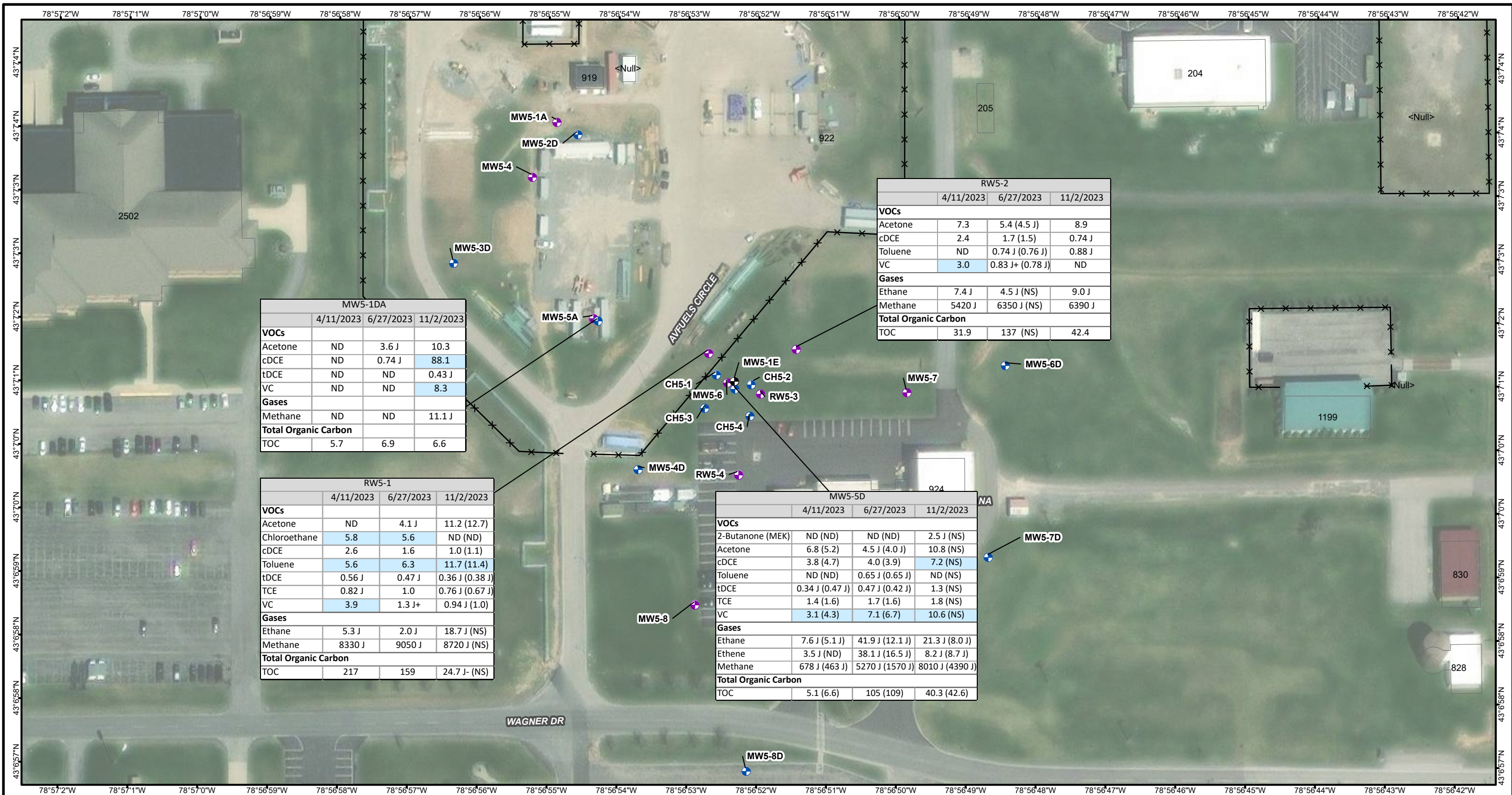
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SITE 5 - IWGP GROUNDWATER DETECTIONS (FALL 2023)



FIGURE
4-7

DIV/GROUP: ENV/IMDV DB: cv00949 LD: PIC: PM: TM: PROJECT: JBMDL (30028498.00001) PATH: T1: ENVNE_ORC\Niagara\Reports\Annual Report\2023\AcGIS Pro\Niagara Falls ARS 2023 Annual Report Site3_5.aprx DATE: 7/10/2024 7:37 PM



Legend

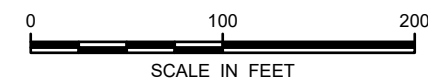
- Overburden Well/Piezometer
- Shallow Bedrock Well/Piezometer
- Deep Bedrock Well
- Fence
- Installation Boundary

Notes:

- Results are in micrograms per liter (ug/L).
- Blue shading indicates result is above NYSDEC Class GA Standards.
- Results in brackets represent sample duplicate.
- ND = Non-detect
- NS = Not Sampled; Sample not submitted for analysis of this constituent

Lab Qualifiers:

- J – Analyte detected; estimated concentration
J+ – Analyte detected; estimated concentration that may be biased high



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**SITE 5 - REMEDIAL INJECTION PERFORMANCE
MONITORING GROUNDWATER DETECTIONS**



FIGURE

4-8

Figure 4-9 – Site 5 – Long-Term Trend Data

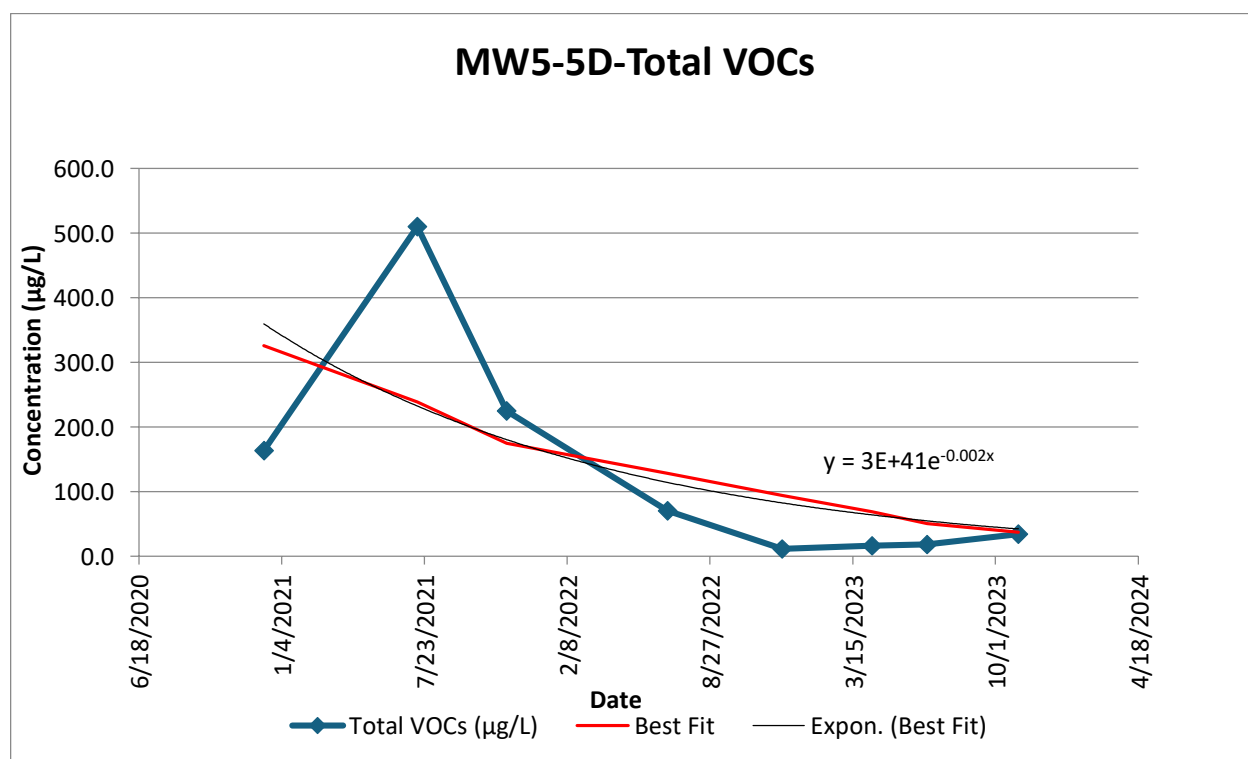
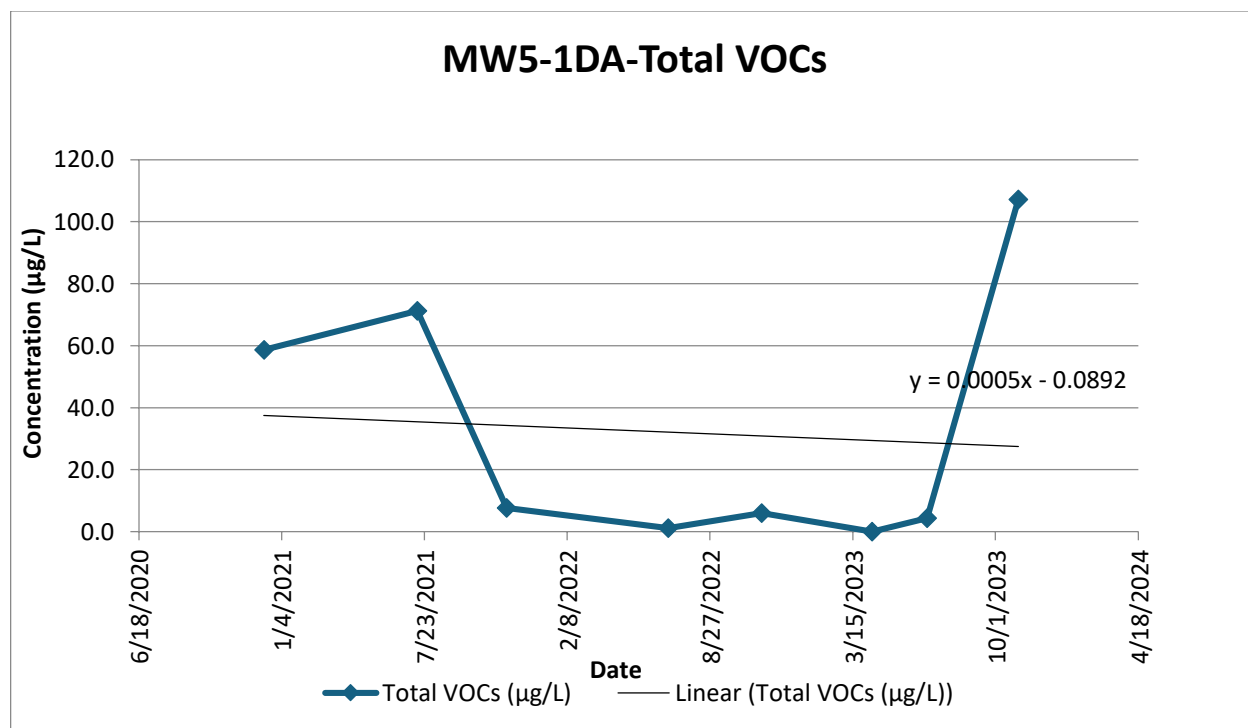


Figure 4-9 – Site 5 – Long-Term Trend Data

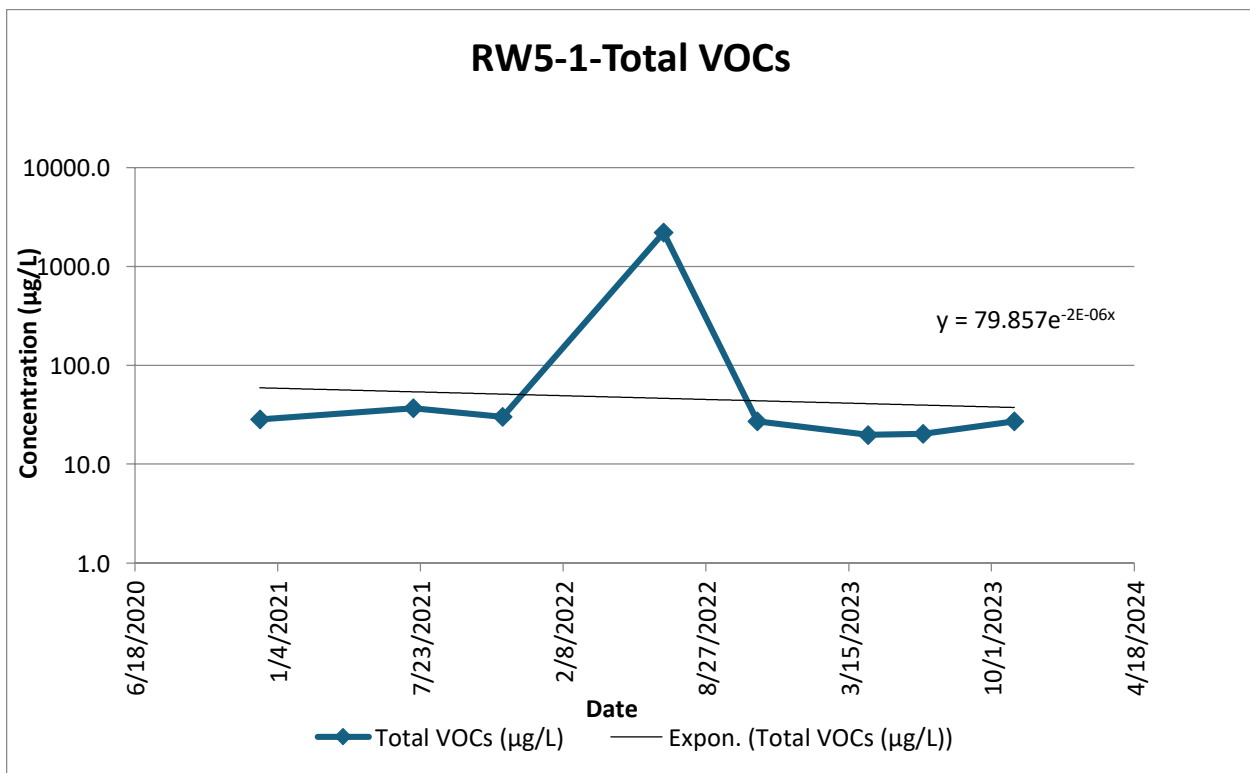
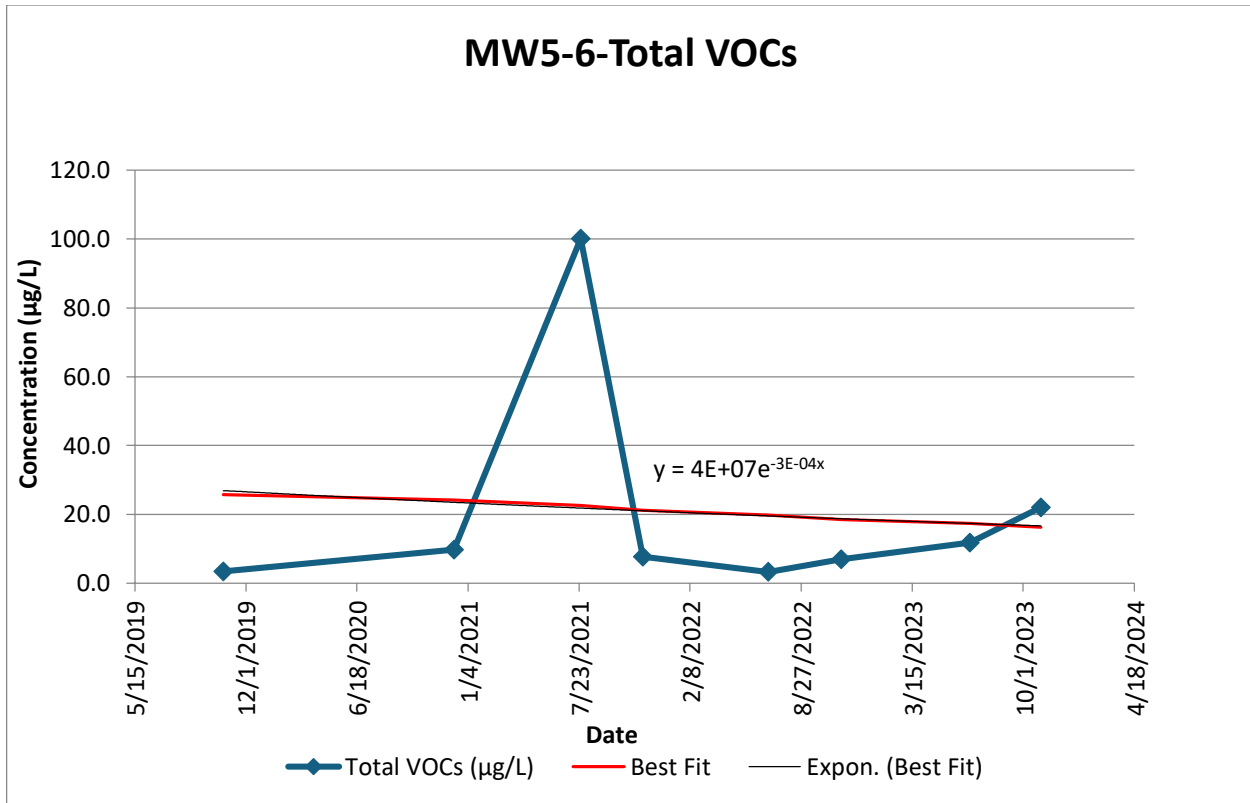
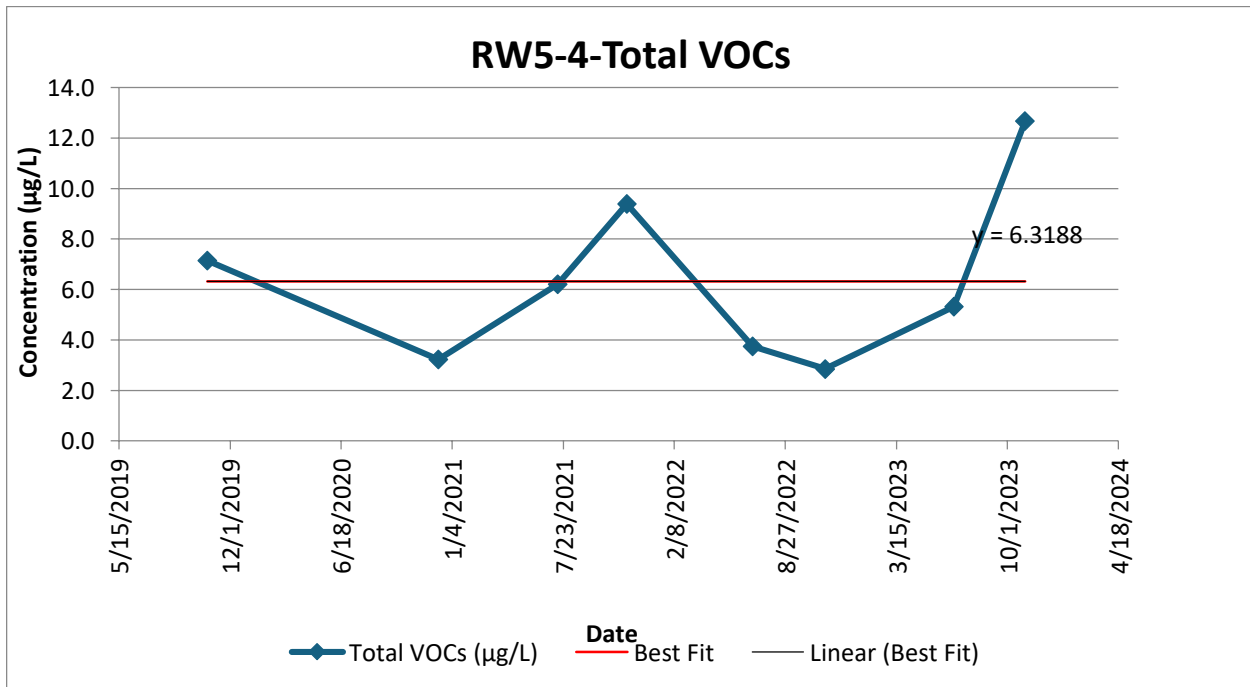
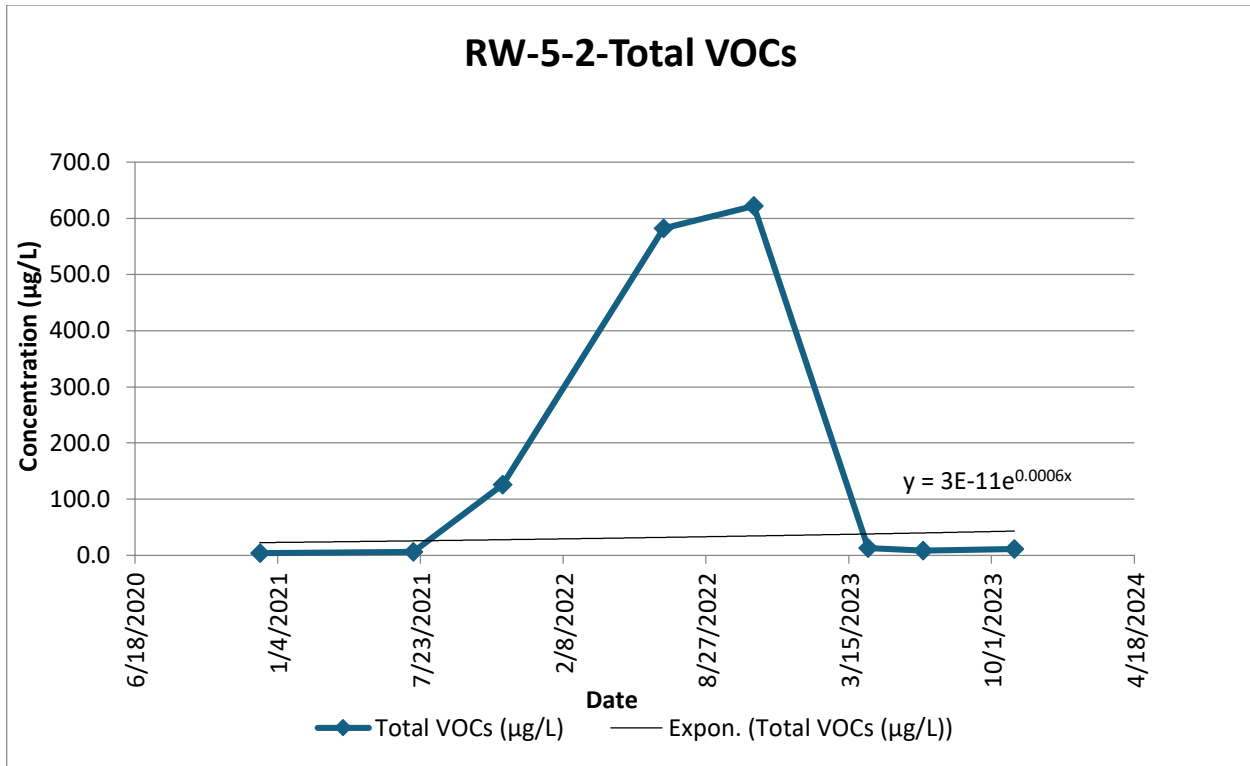
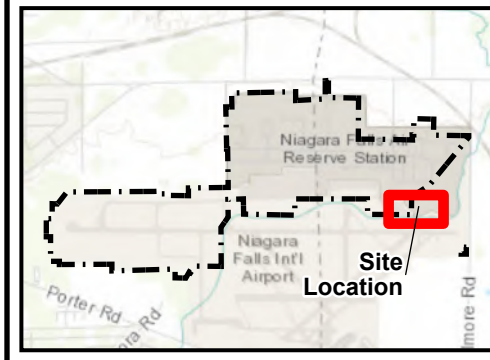


Figure 4-9 – Site 5 – Long-Term Trend Data

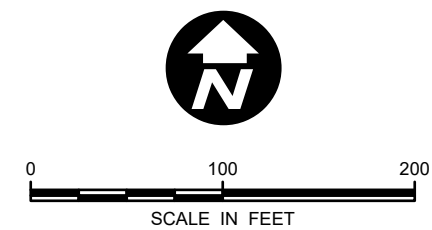


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PROJECT: JBMDL (30028498.00001) PATH: T:\ENV\NE_ORC\Niagara\Reports\Annual Report\2023\AcGIS Pro\Niagara Falls ARS 2023 Annual Report Site 10_13.aprx



Legend

- Overburden Well/Piezometer
- Shallow Bedrock Well/Piezometer
- Deep Bedrock Well
- Surface Water Sample
- Drainage Ditch
- Groundwater Collection Trench
- Installation Boundary



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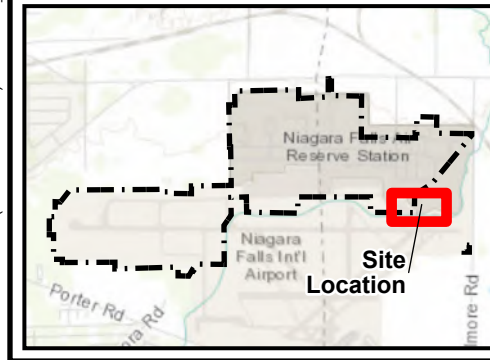
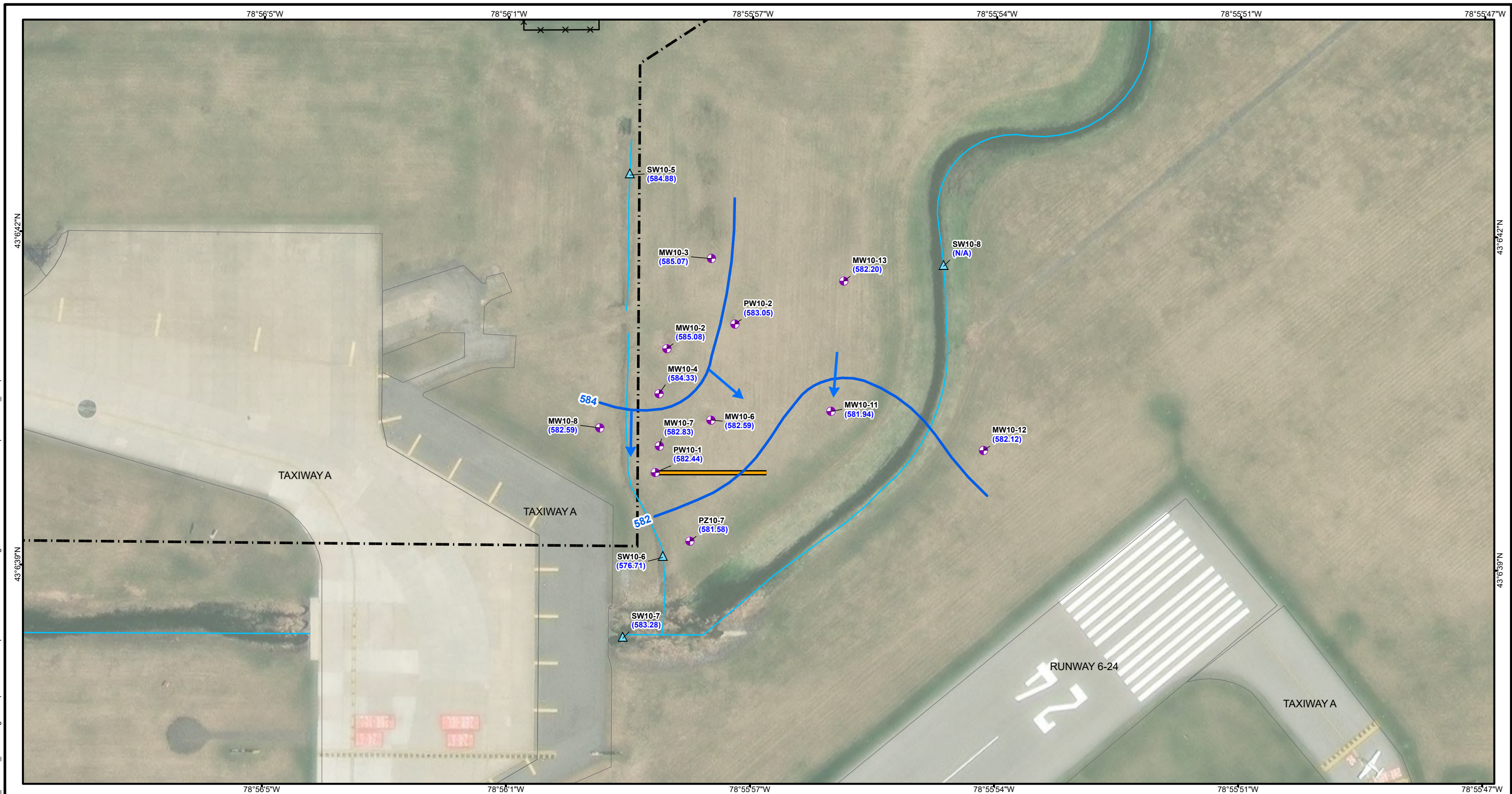
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SITE 10 - MONITORING/SAMPLING LOCATIONS



FIGURE
5-1

DIV/GROUP: ENV/IMDV DB: gogoi0216 LD: PIC: PM: TM: PROJECT: JBMIDL (30028498.00001) PATH: T:_ENVNE_ORC\Niagara\Reports\Annual Report\2023\AcGIS Pro\Niagara Falls ARS 2023 Annual Report Site 10_13.aprx DATE: 1/9/2025 4:40 PM

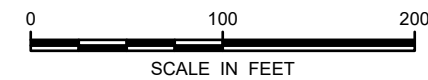


Legend

- Overburden Well/Piezometer
- Surface Water Sample
- (582.59) Groundwater Elevation
- Groundwater Contour
- Groundwater Flow Direction
- Drainage Ditch/Cayuga Creek

- Groundwater Collection Trench
- Installation Boundary

Note:
1.N/A = Not applicable; a water level measurement is not collected at this location



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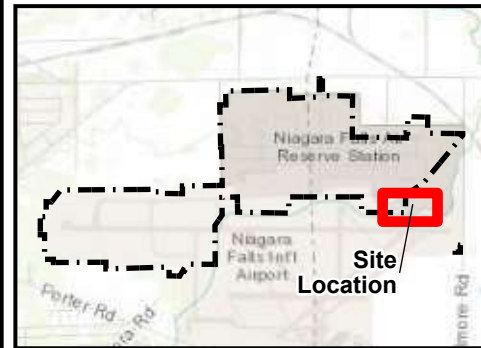
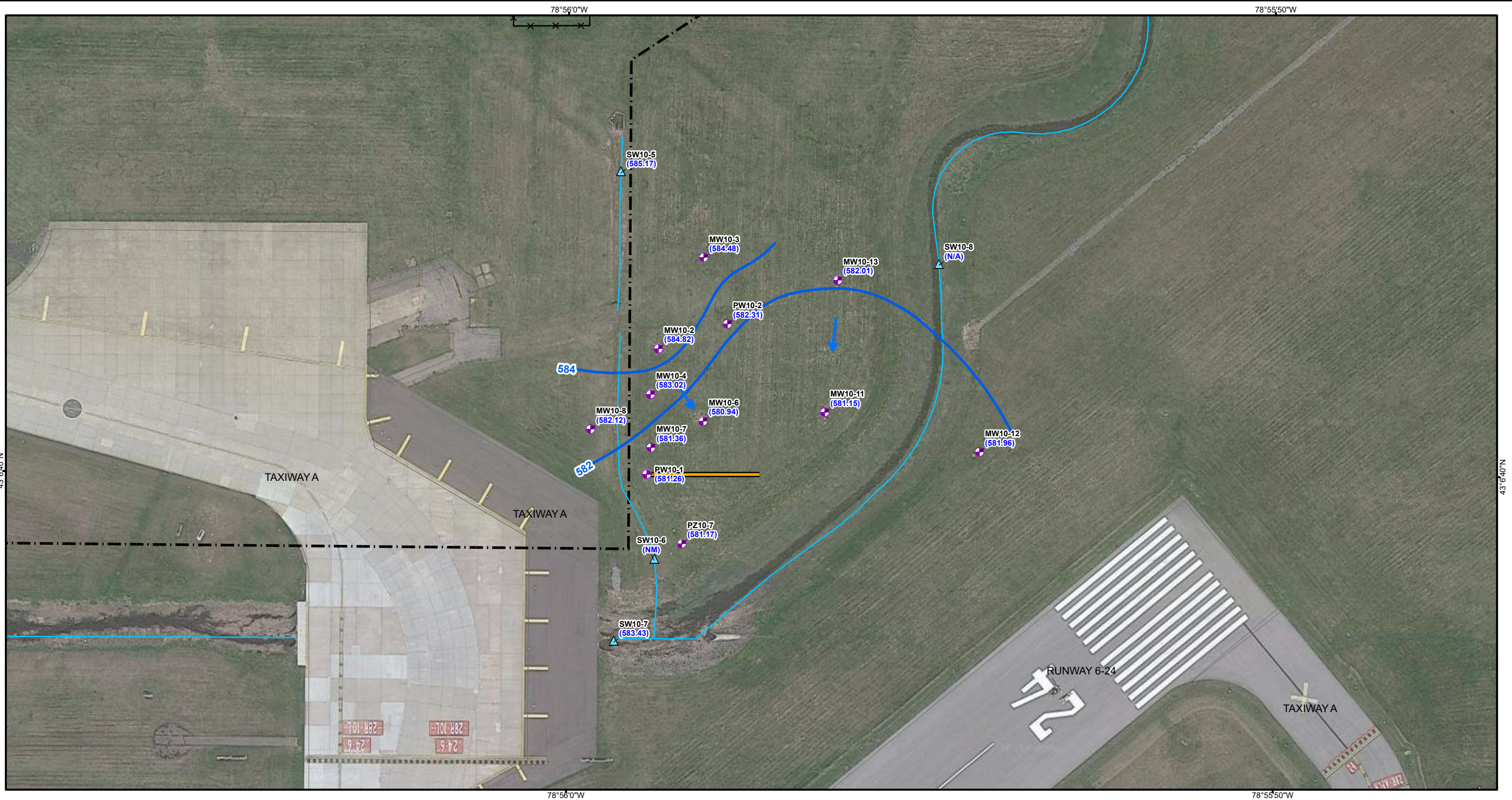
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SITE 10 - OVERBURDEN GROUNDWATER CONTOUR MAP (SPRING 2023)



FIGURE
5-2

DIV/GROUP: ENV/IMDV DB: cv00949 LD: PIC: PM: TM: PROJECT: JBMDL (30028498.00001) PATH: T1 ENVNE_ORC\Niagara\Reports\Annual Report\2023\AcGIS Pro\Niagara Falls ARS 2023 Annual Report Site 10_13.aprx DATE: 7/9/2024 6:00 PM



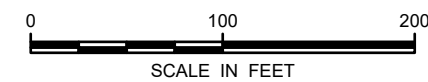
Legend

- Overburden well/Piezometer
- Surface Water Sample
- (581.26) Groundwater Elevation
- Groundwater Contour
- Groundwater Flow Direction
- Drainage Ditch/Cayuga Creek
- Groundwater Collection Trench

Installation Boundary

Notes:

1. N/A = Not applicable; a water level measurement is not collected at this location
2. NM = Not measured; measurement location was dry



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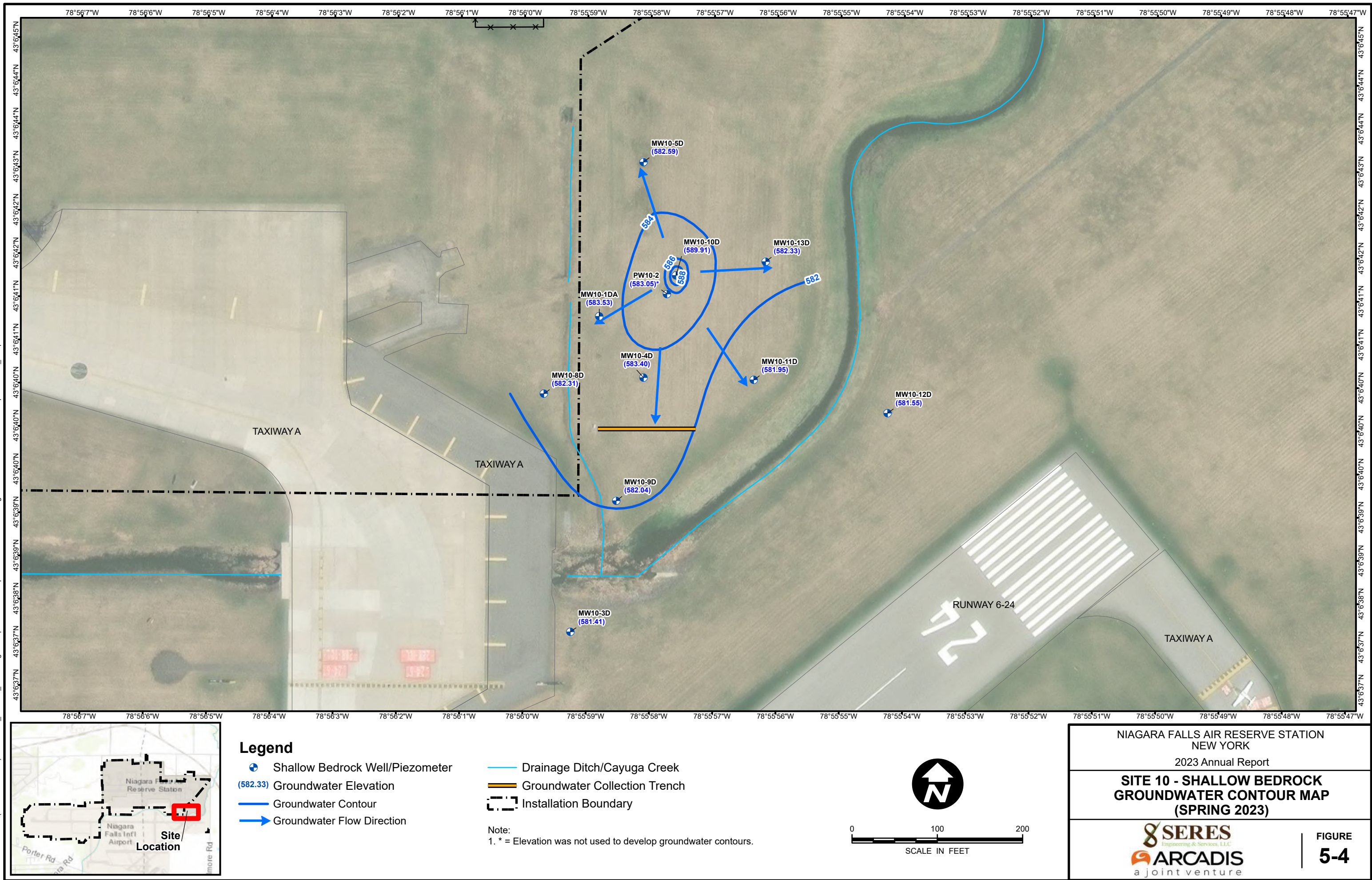
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**SITE 10 - OVERBURDEN GROUNDWATER
CONTOUR MAP (FALL 2023)**

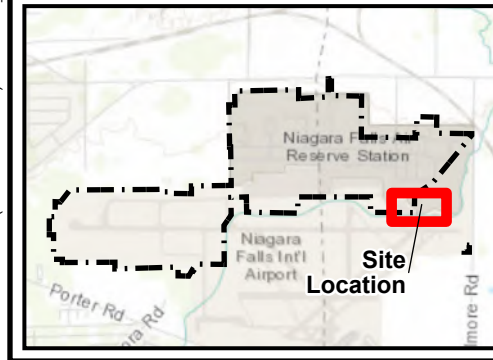
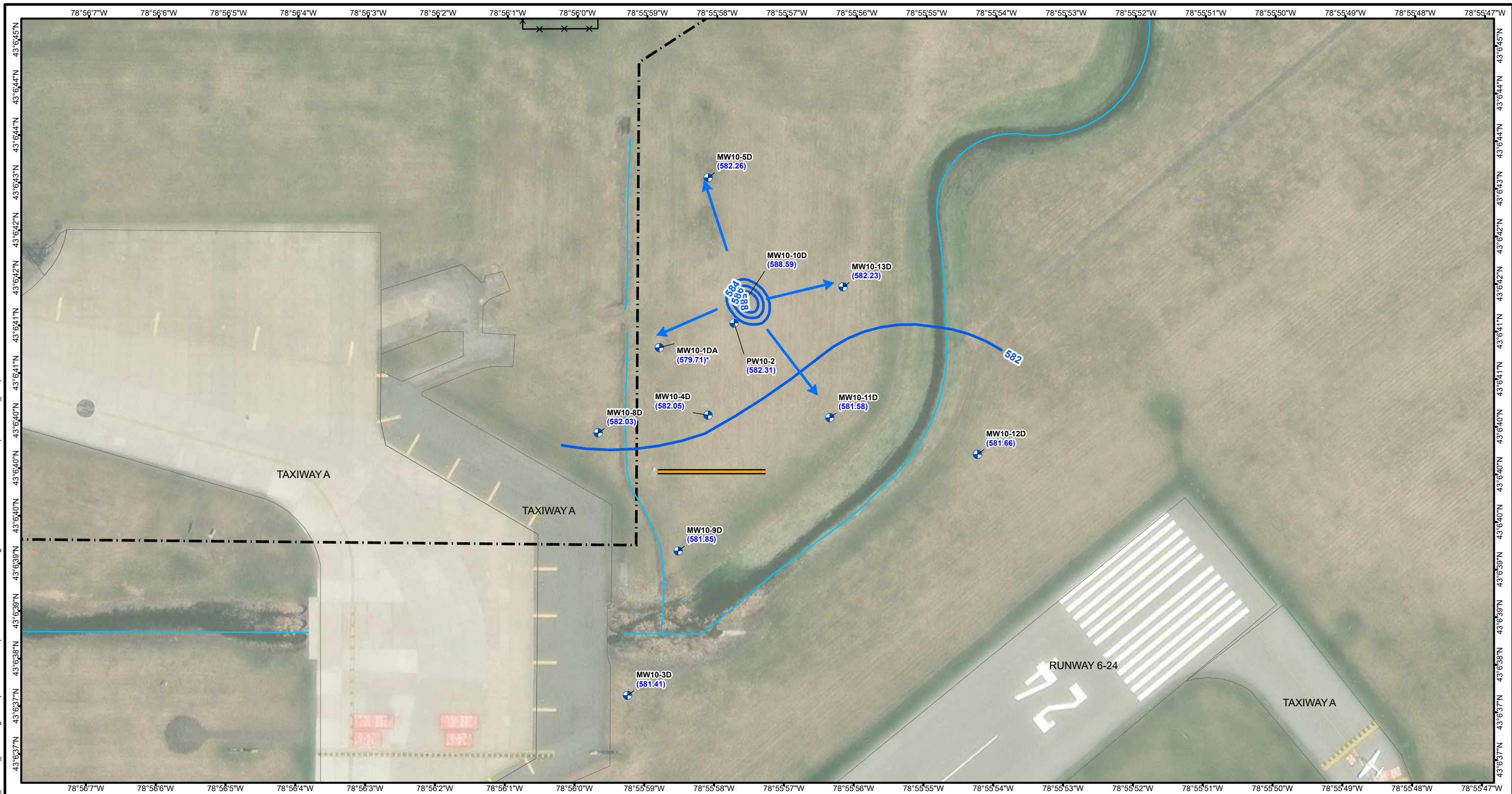


FIGURE
5-3

DIV/GROUP: ENV/IMDV DB: gogoi0216 LD: PIC: PM: TM: 19/2025 4:40 PM
PROJECT: JBMDL (30028498.00001) PATH: T:\EN\NE_ORC\Niagara\Reports\Annual Report\2023\AcGIS Pro\Niagara Falls ARS 2023 Annual Report Site 10_13.aprx DATE: 19/2025 4:40 PM



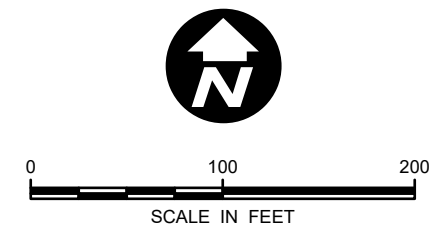
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PROJECT: JBMDL (30028498.00001) PATH: T:\EN\NE_ORC\Niagara\Reports\Annual Report\2023\AcGIS Pro\Niagara Falls ARS 2023 Annual Report Site 10_13.aprx



Legend

- Shallow Bedrock Well/Piezometer
- (579.71) Groundwater Elevation
- Groundwater Contour
- Groundwater Flow Direction
- Drainage Ditch/Cayuga Creek
- Groundwater Collection Trench
- Installation Boundary

Notes:
1. * = Elevation not used to develop groundwater contours.



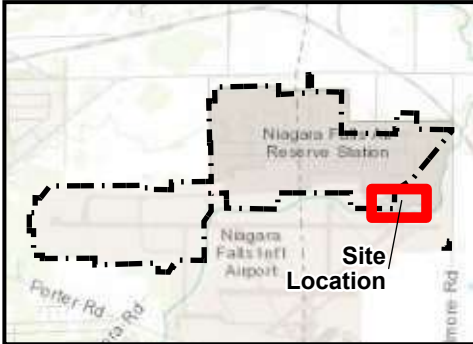
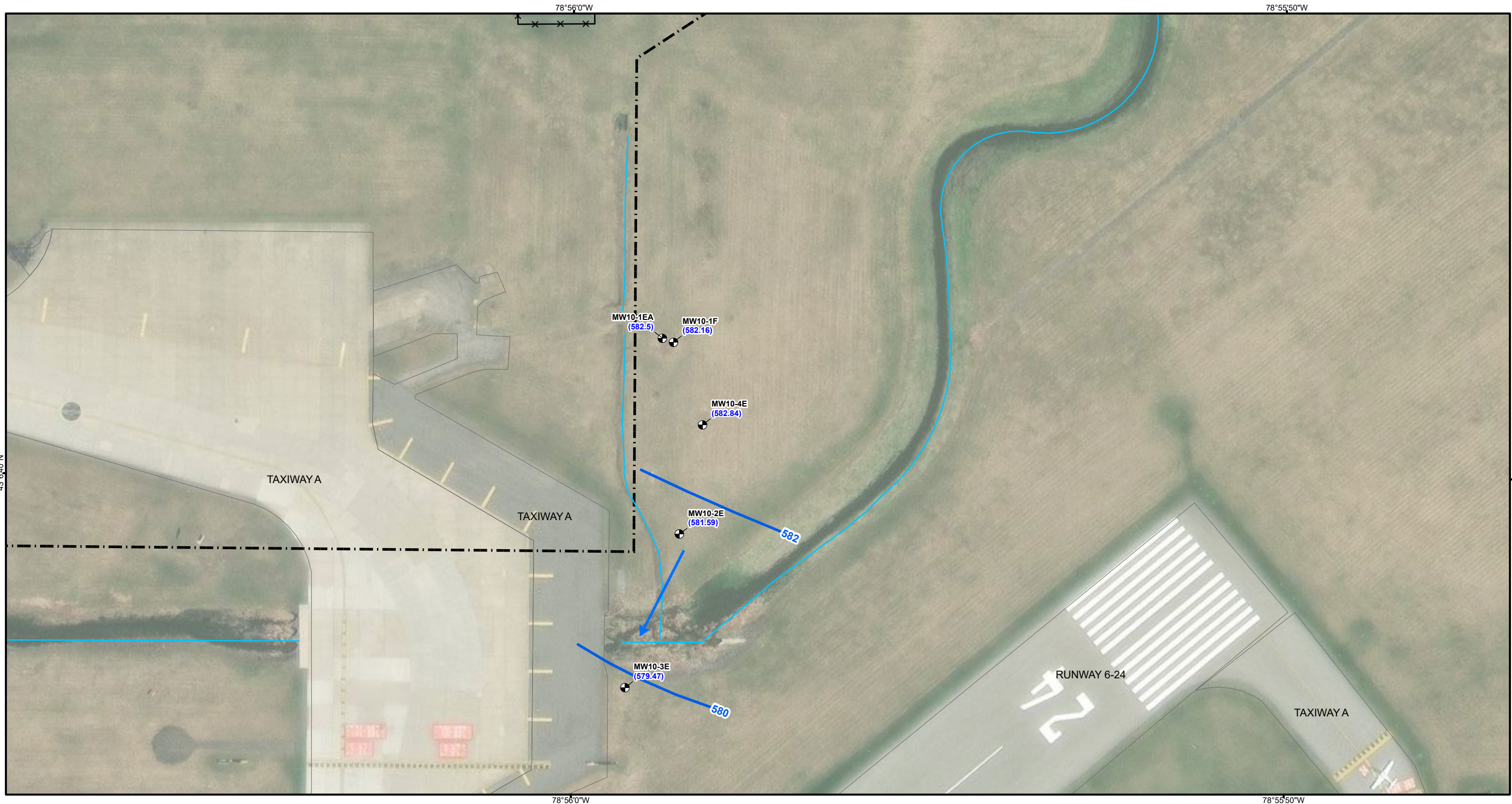
NIAGARA FALLS AIR RESERVE STATION
NEW YORK
2023 Annual Report

SITE 10 - SHALLOW BEDROCK GROUNDWATER CONTOUR MAP (FALL 2023)

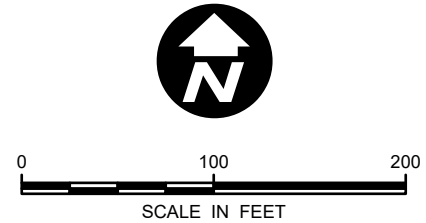


FIGURE
5-5

DIV/GROUP: ENV/IMDV DB: cv00949 LD: PIC: PM: TM: PROJECT: JBMDL (30028498.00001) PATH: T1 ENVNE_ORC\Niagara\Reports\Annual Report\2023\AcGIS Pro\Niagara Falls ARS 2023 Annual Report Site 10_13.aprx DATE: 7/9/2024 6:15 PM

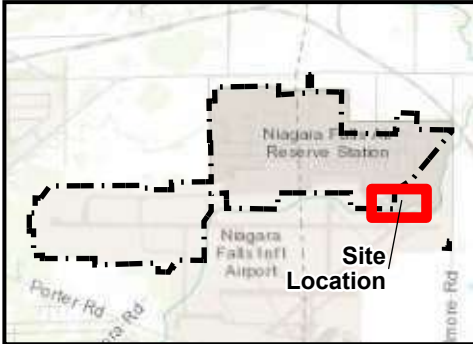
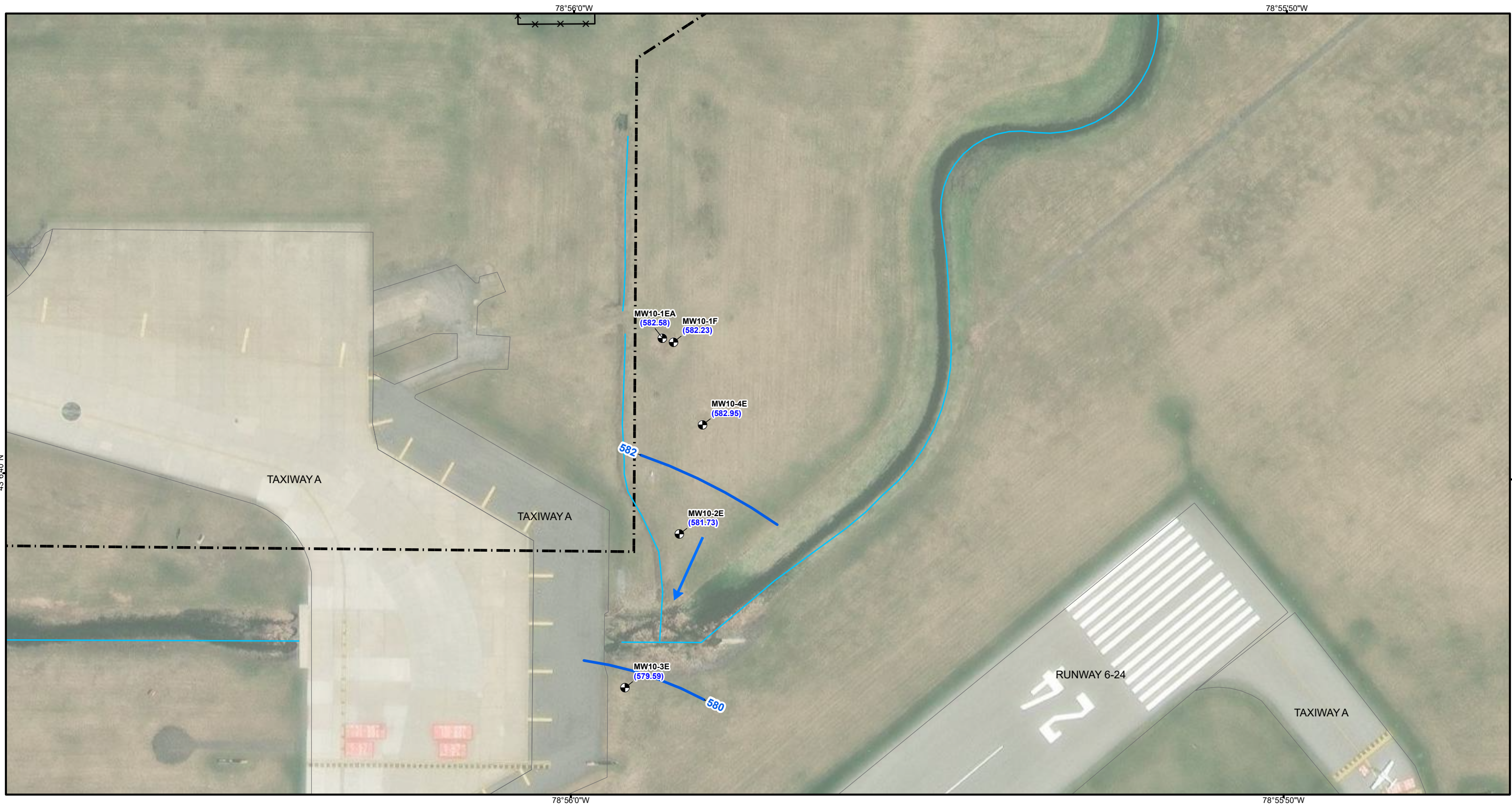


- Legend**
- Deep Bedrock Well
 - (582.84) Groundwater Elevation
 - Groundwater Contour
 - Groundwater Flow Direction
 - Drainage Ditch/Cayuga Creek
 - Installation Boundary

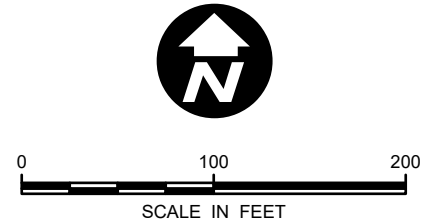


NIAGARA FALLS AIR RESERVE STATION NEW YORK 2023 Annual Report	
SITE 10 - DEEP BEDROCK GROUNDWATER CONTOUR MAP (SPRING 2023)	
 SERES Engineering & Services, LLC ARCADIS a joint venture	FIGURE 5-6

DIV/GROUP: ENV/IMDV DB: cv00949 LD: PIC: PM: TM: PROJECT: JBMDL (30028498.00001) PATH: T1 ENVNE_ORCNiagaraReports\Annual Report\2023\AcGIS Pro\Niagara Falls ARS 2023 Annual Report Site 10_13.aprx DATE: 6/19/2024 5:27 PM

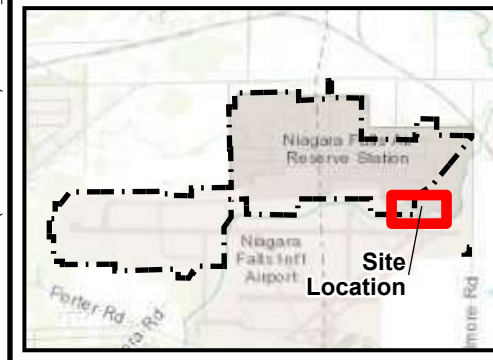
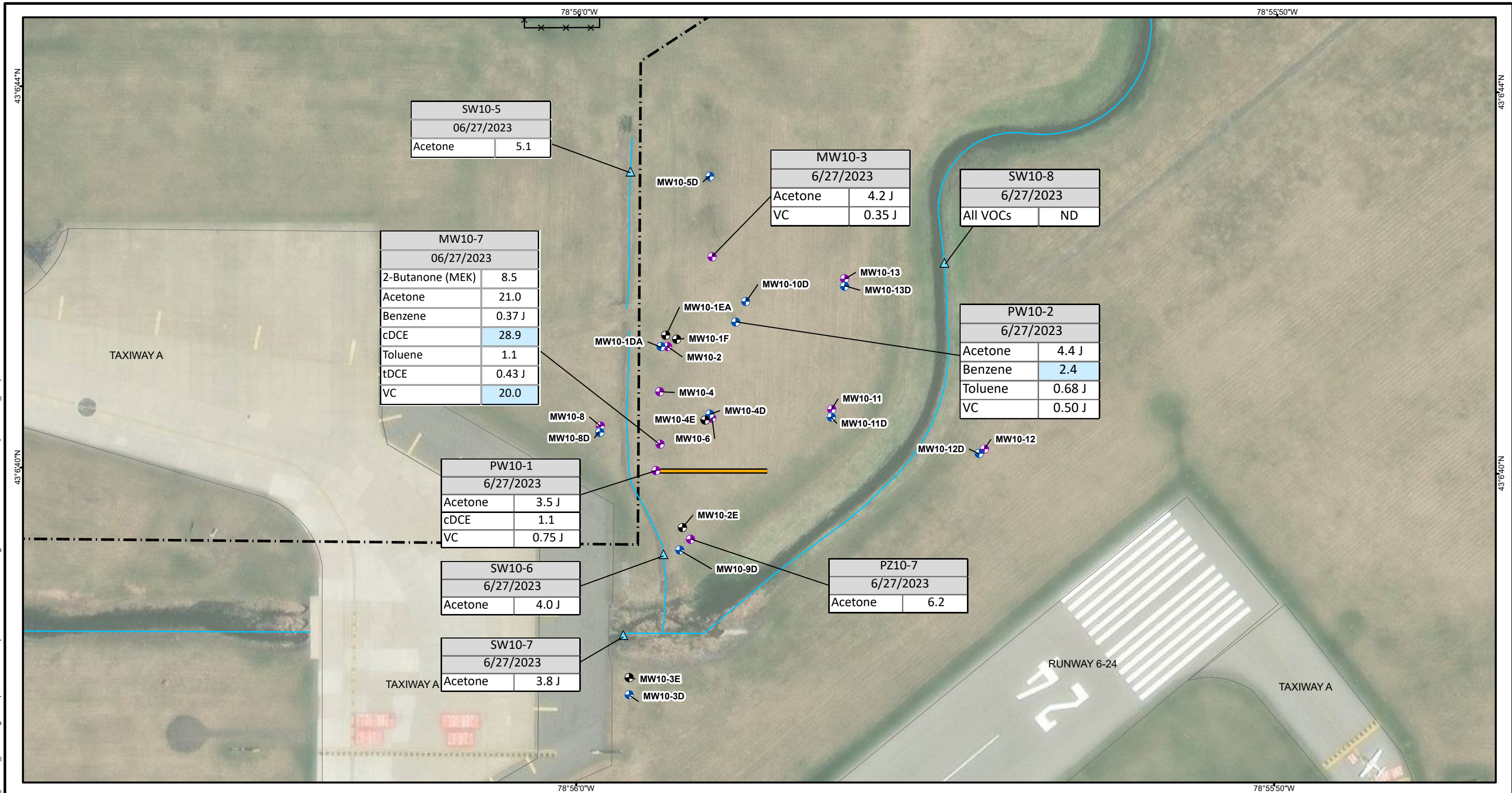


- Legend**
- Deep Bedrock Well
 - (582.95) Groundwater Elevation
 - Groundwater Contour
 - ➔ Groundwater Flow Direction
 - Drainage Ditch/Cayuga Creek
 - Installation Boundary



NIAGARA FALLS AIR RESERVE STATION NEW YORK 2023 Annual Report	
SITE 10 - DEEP BEDROCK GROUNDWATER CONTOUR MAP (FALL 2023)	
SERES Engineering & Services, LLC ARCADIS a joint venture	FIGURE 5-7

DIV/GROUP: ENV/IMDV DB: cv00949 LD: PIC: PM: TM: PROJECT: JBMDL (30028498.00001) PATH: T1 ENVNE_ORC\Niagara\Reports\Annual Report\2023\AcGIS Pro\Niagara Falls ARS 2023 Annual Report Site 10_13.aprx DATE: 7/8/2024 3:18 PM

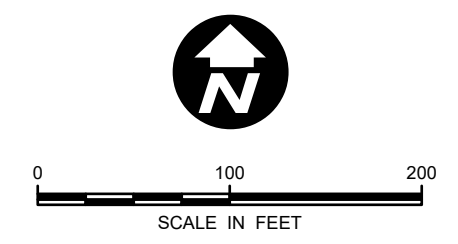


Legend

- Overburden Well/Piezometer
- Shallow Bedrock Well/Piezometer
- Deep Bedrock Well
- Surface Water Sample
- Drainage Ditch/Cayuga Creek
- Groundwater Collection Trench
- Installation Boundary

Notes:
1. Results are in micrograms per liter (ug/L).
2. Blue shading indicates result is above NYSDCE Class GA Standards.
3. ND = Non-detect

Lab Qualifier:
J = Compound detected, estimated concentration



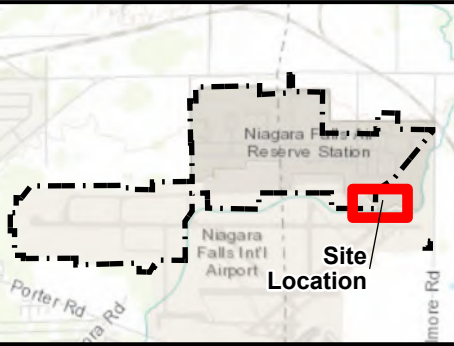
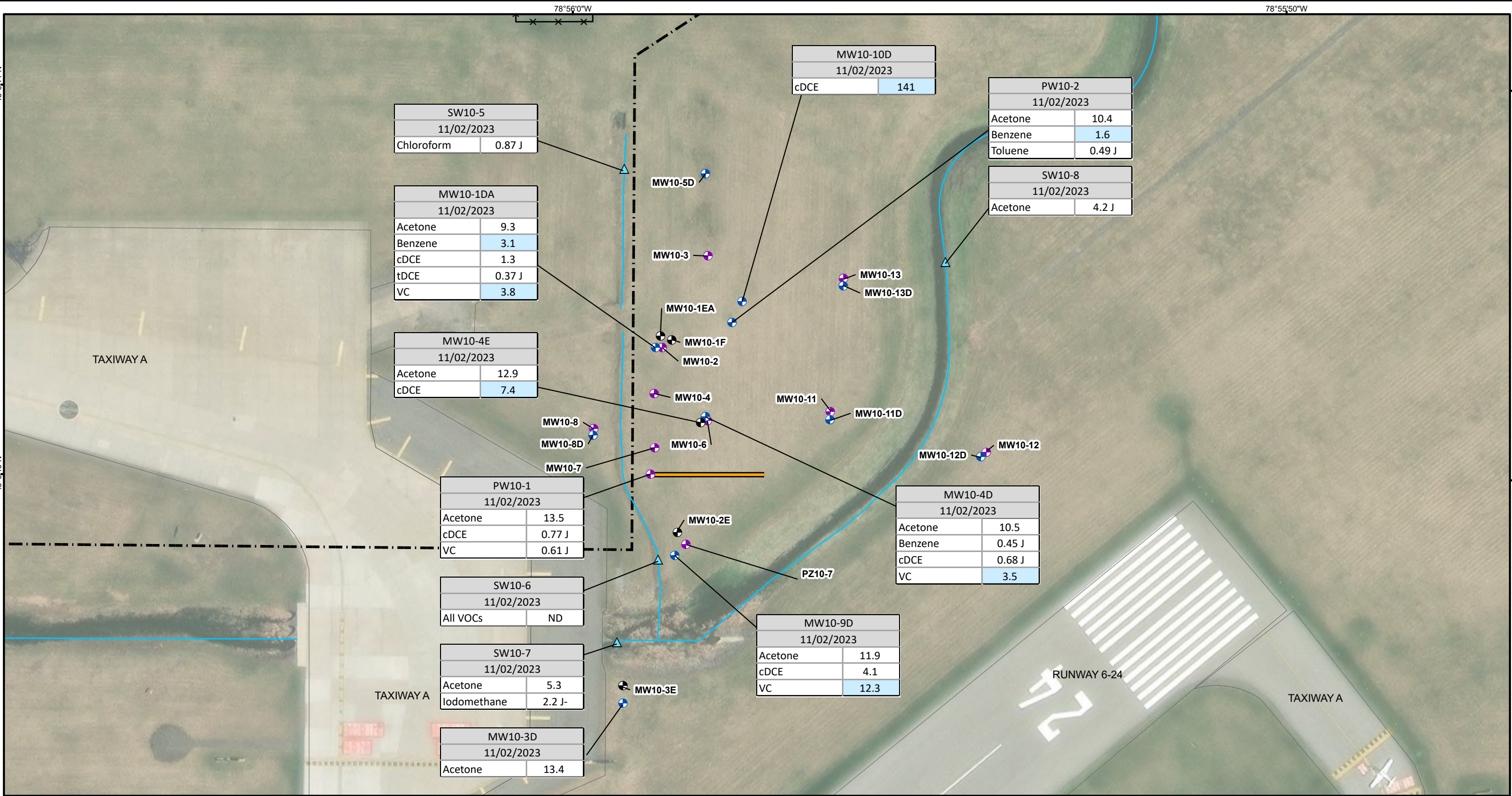
NIAGARA FALLS AIR RESERVE STATION
NEW YORK

2023 Annual Report

SITE 10 - IWGP GROUNDWATER AND
SURFACE WATER DETECTIONS (SPRING 2023)

a joint venture

FIGURE
5-8

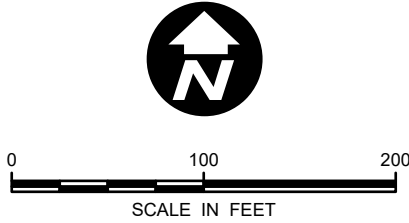


Legend

- Overburden Well/Piezometer
- Shallow Bedrock Well/Piezometer
- Deep Bedrock Well
- Surface Water Sample
- Drainage Ditch/Cayuga Creek
- Groundwater Collection Trench
- Installation Boundary

Notes:
1. Results are in micrograms per liter (ug/L).
2. Blue shading indicates result is above NYSDEC Class GA Standards.
3. ND = Non-detect

Lab Qualifiers:
J = Compound detected, estimated concentration that may be biased low
J- = Compound detected, estimated concentration that may be biased low



NIAGARA FALLS AIR RESERVE STATION
NEW YORK

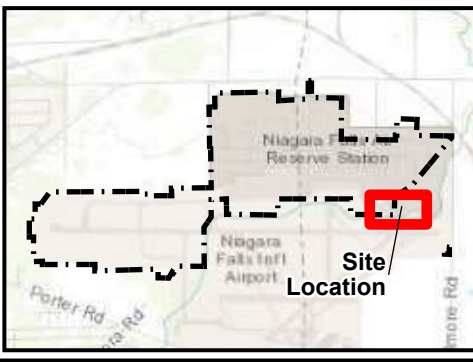
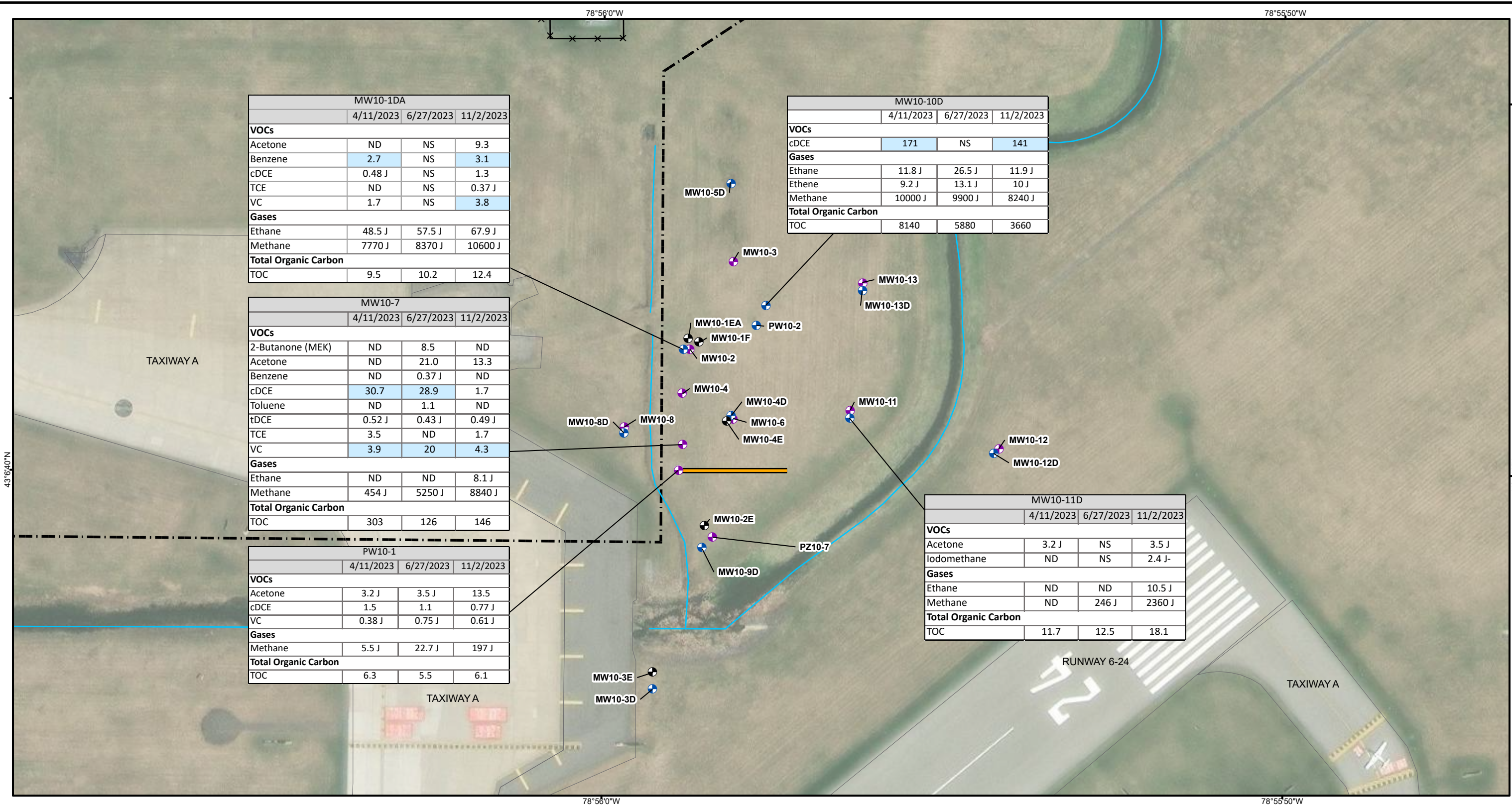
2023 Annual Report

SITE 10 - IWGP GROUNDWATER AND SURFACE
WATER DETECTIONS (FALL 2023)

a joint venture

FIGURE
5-9

DIV/GROUP: ENV/IMDV DB: cv00949 LD: PIC: PM: TM: PROJECT: JBMDL (30028498.00001) PATH: T1 ENVNE_ORC\Niagara\Reports\Annual Report\2023\AcGIS Pro\Niagara Falls ARS 2023 Annual Report Site 10_13.aprx DATE: 7/8/2024 4:27 AM



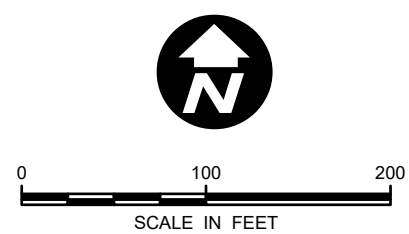
Legend

- Overburden Well/Piezometer
- Shallow Bedrock Well/Piezometer
- Deep Bedrock Well
- Drainage Ditch/Cayuga Creek
- Groundwater Collection Trench
- Installation Boundary

Notes:

- Results are in micrograms per liter (ug/L).
- Blue shading indicates result is above NYSDEC Class GA Standards.
- ND = Non-detect.
- NS = Not Sampled; Sample not submitted for analysis of this constituent.

Lab Qualifiers:
J = Compound detected; estimated concentration



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**SITE 10 – REMEDIAL INJECTION PERFORMANCE
MONITORING GROUNDWATER DETECTIONS**

a joint venture

**FIGURE
5-10**

Figure 5-11 – Site 10 – Long-Term Trend Data

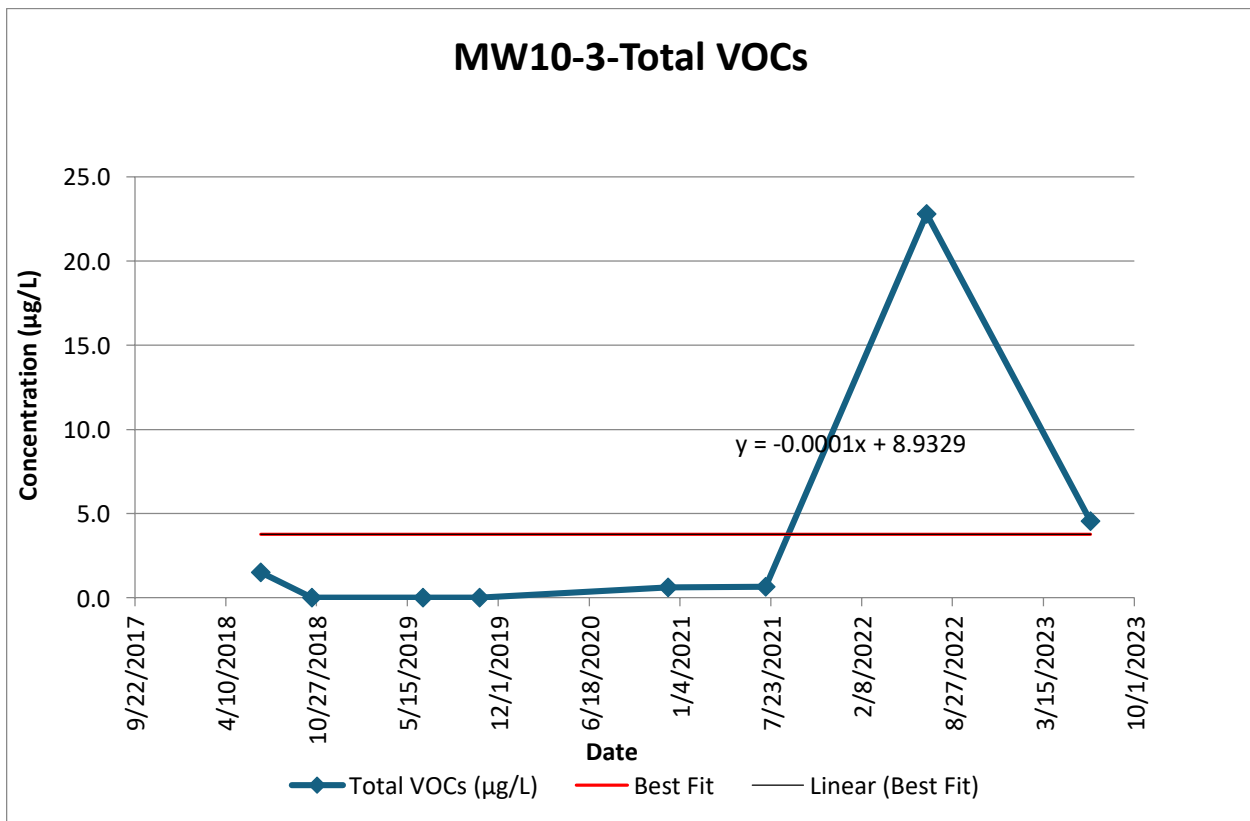
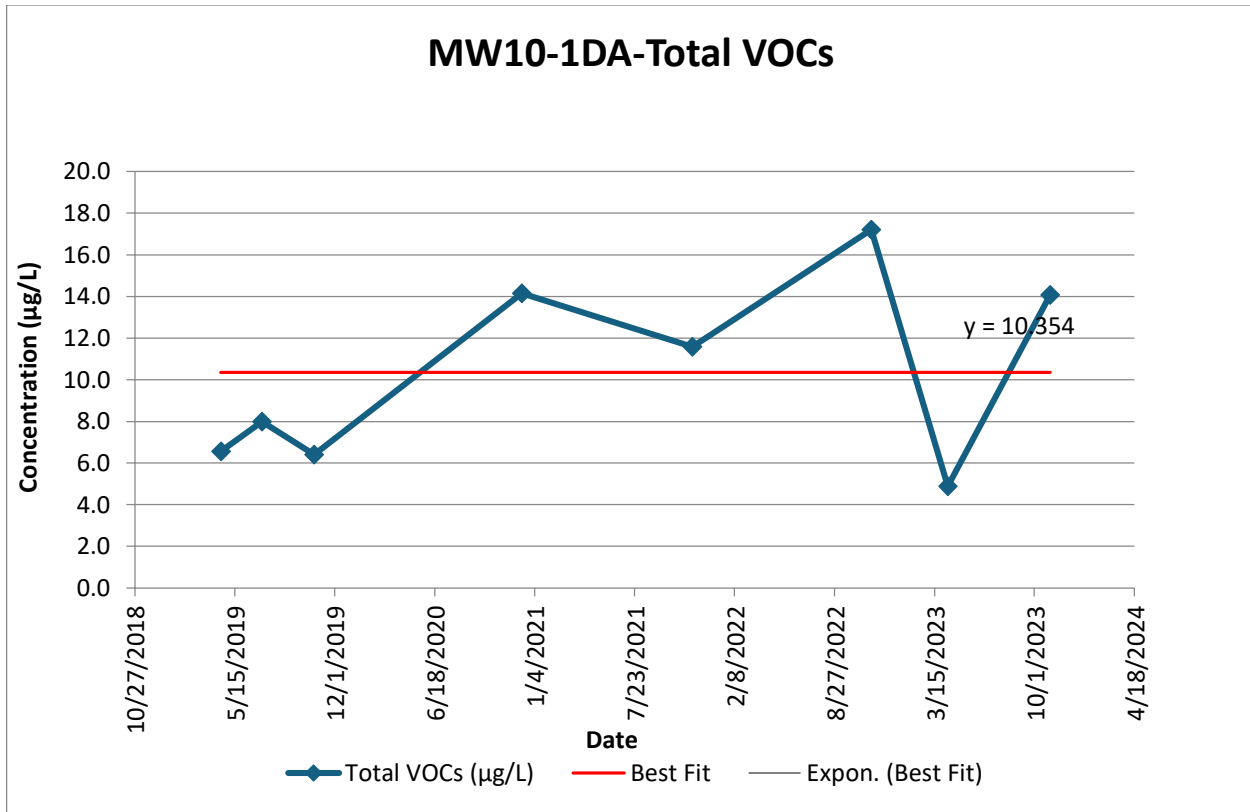


Figure 5-11 – Site 10 – Long-Term Trend Data

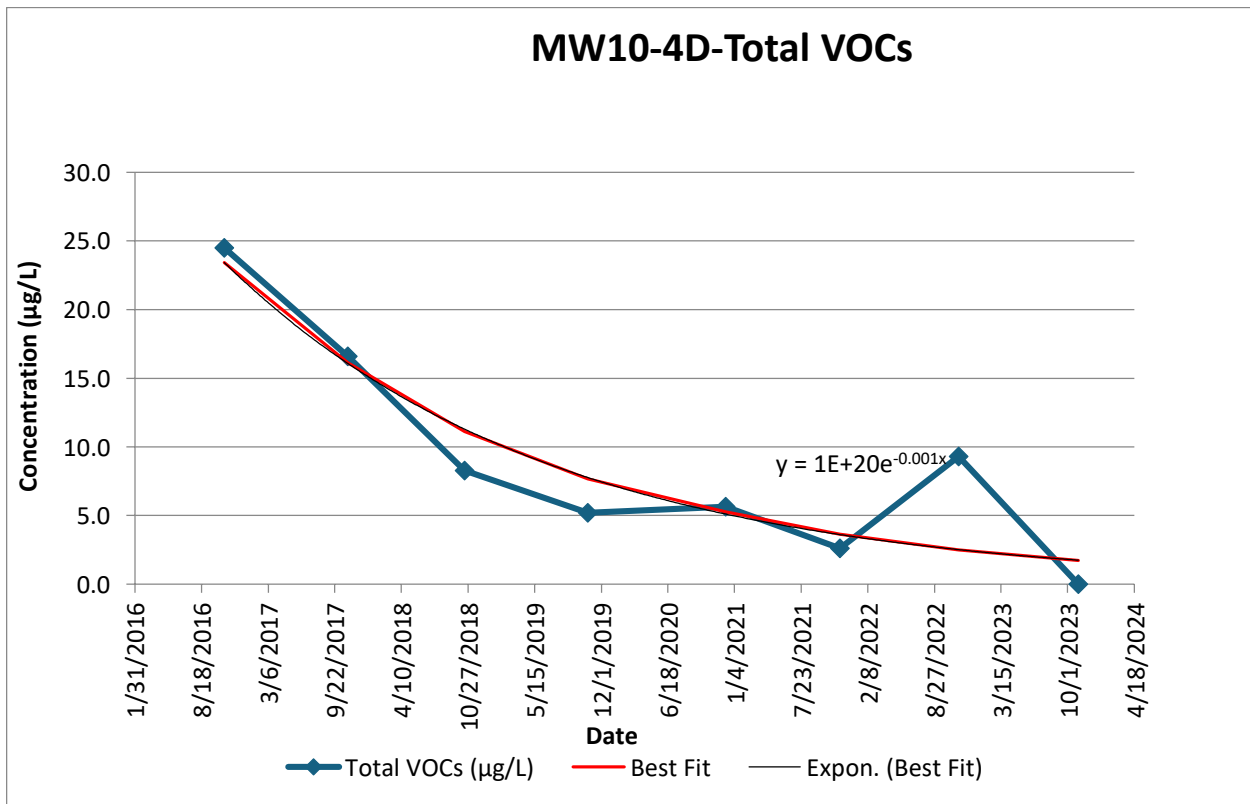
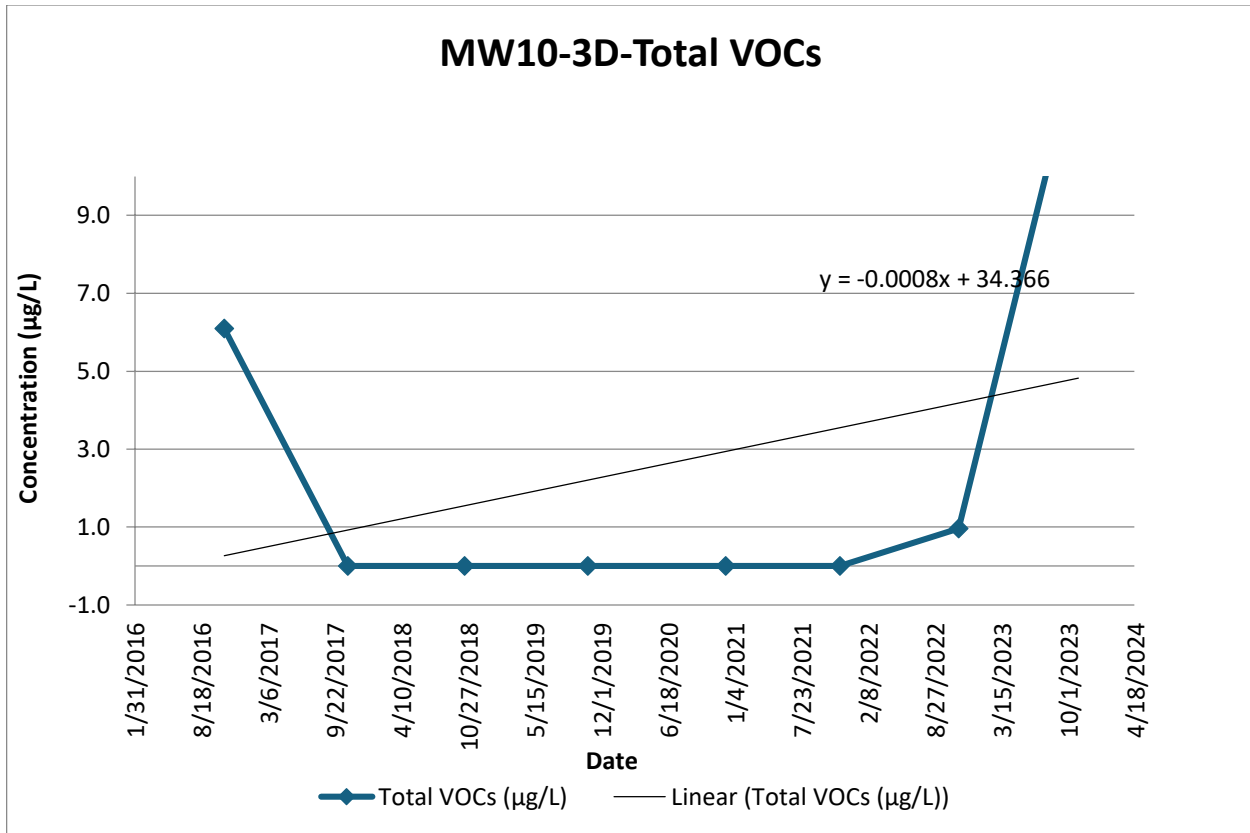


Figure 5-11 – Site 10 – Long-Term Trend Data

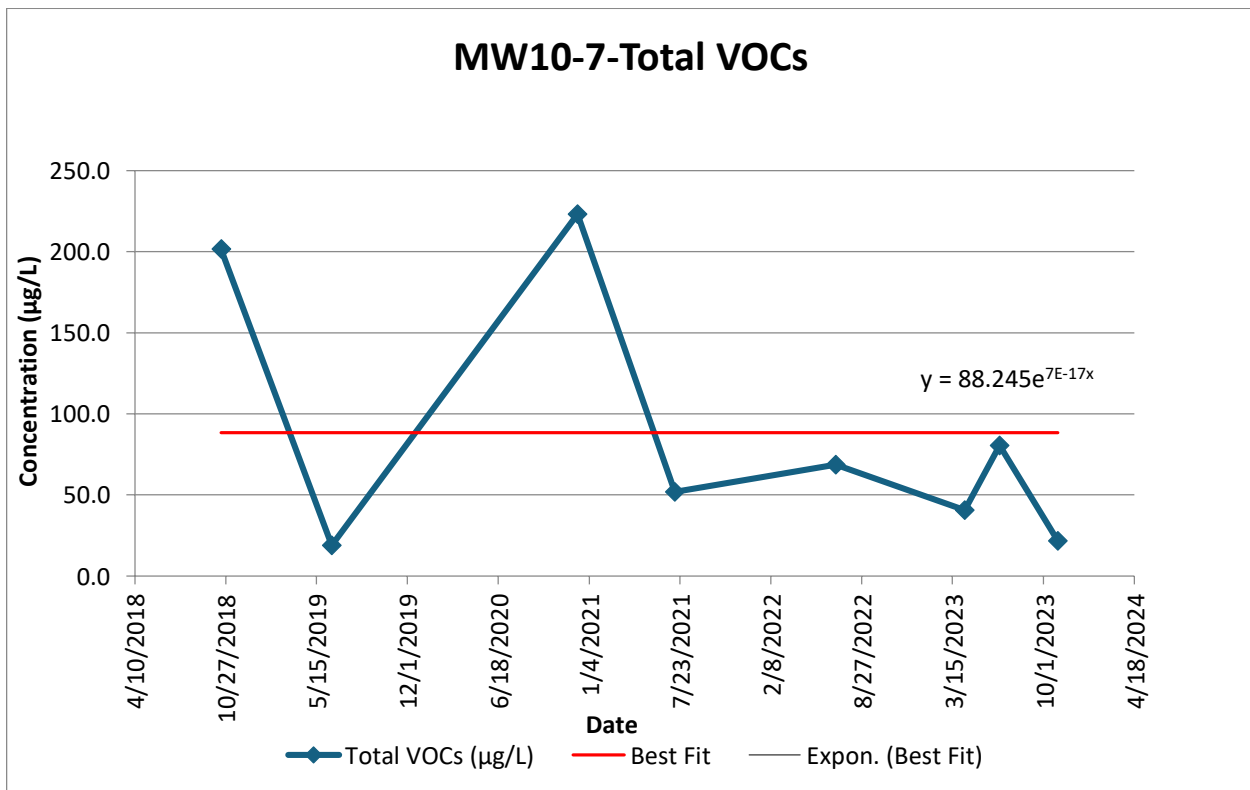
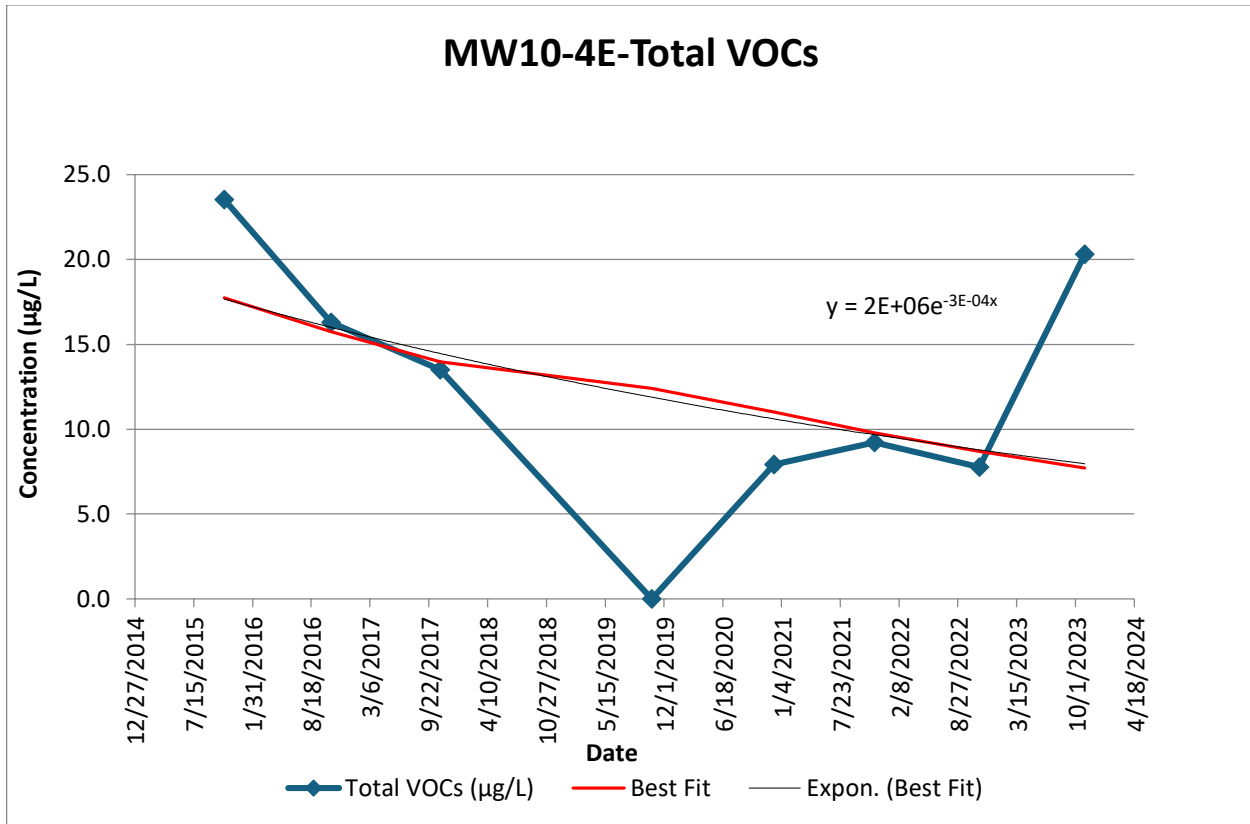


Figure 5-11 – Site 10 – Long-Term Trend Data

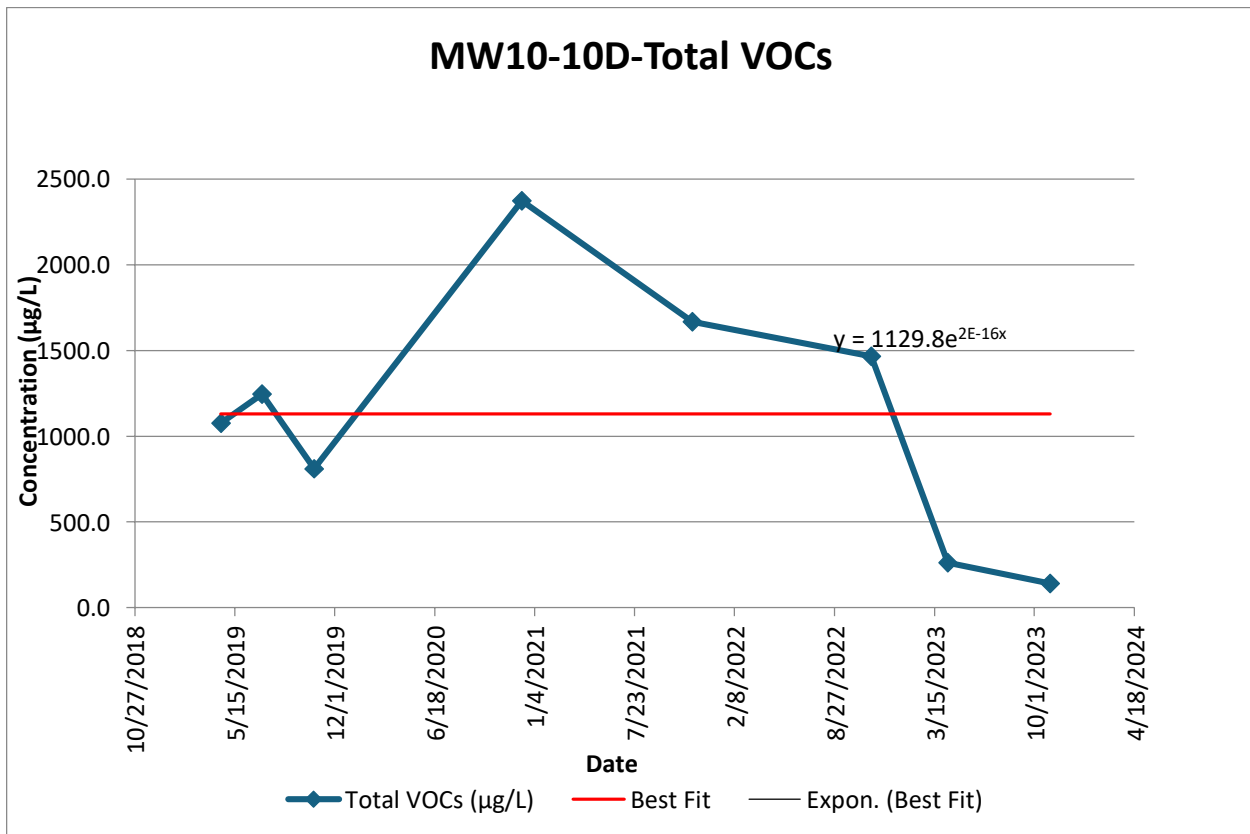
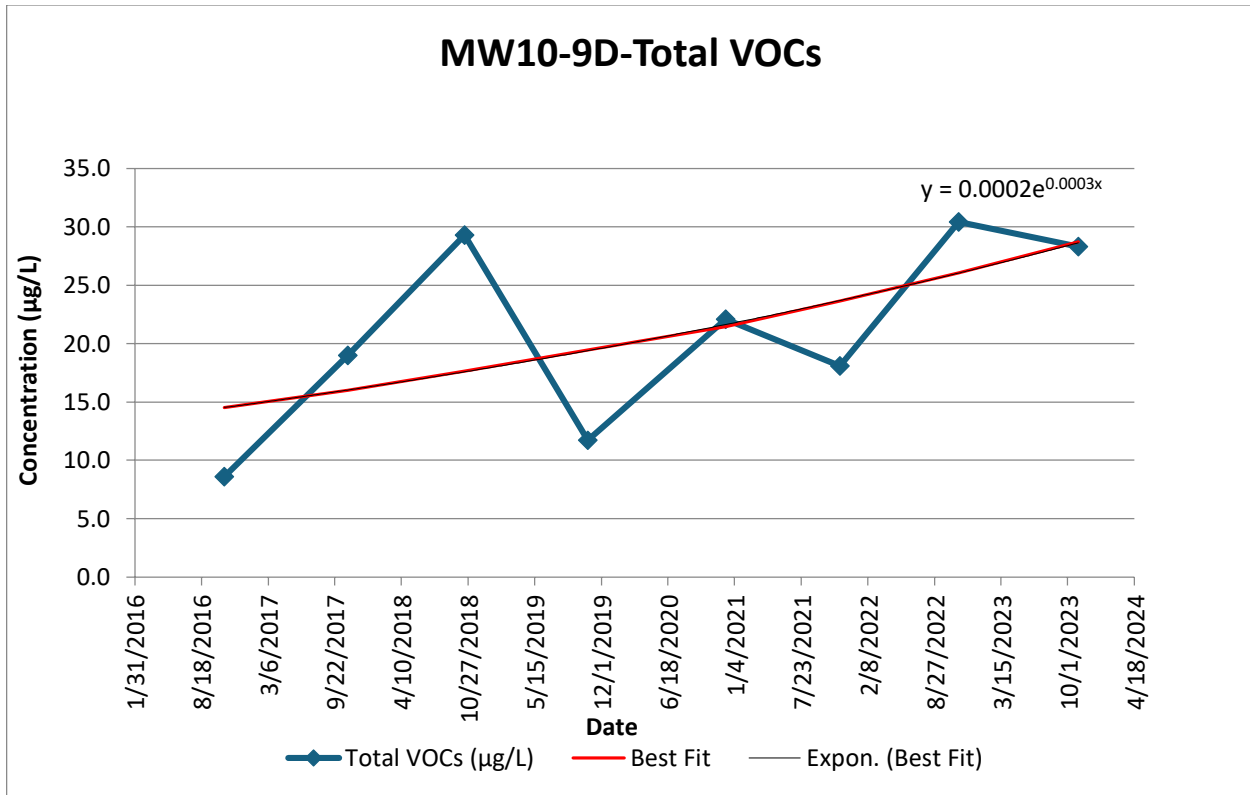


Figure 5-11 – Site 10 – Long-Term Trend Data

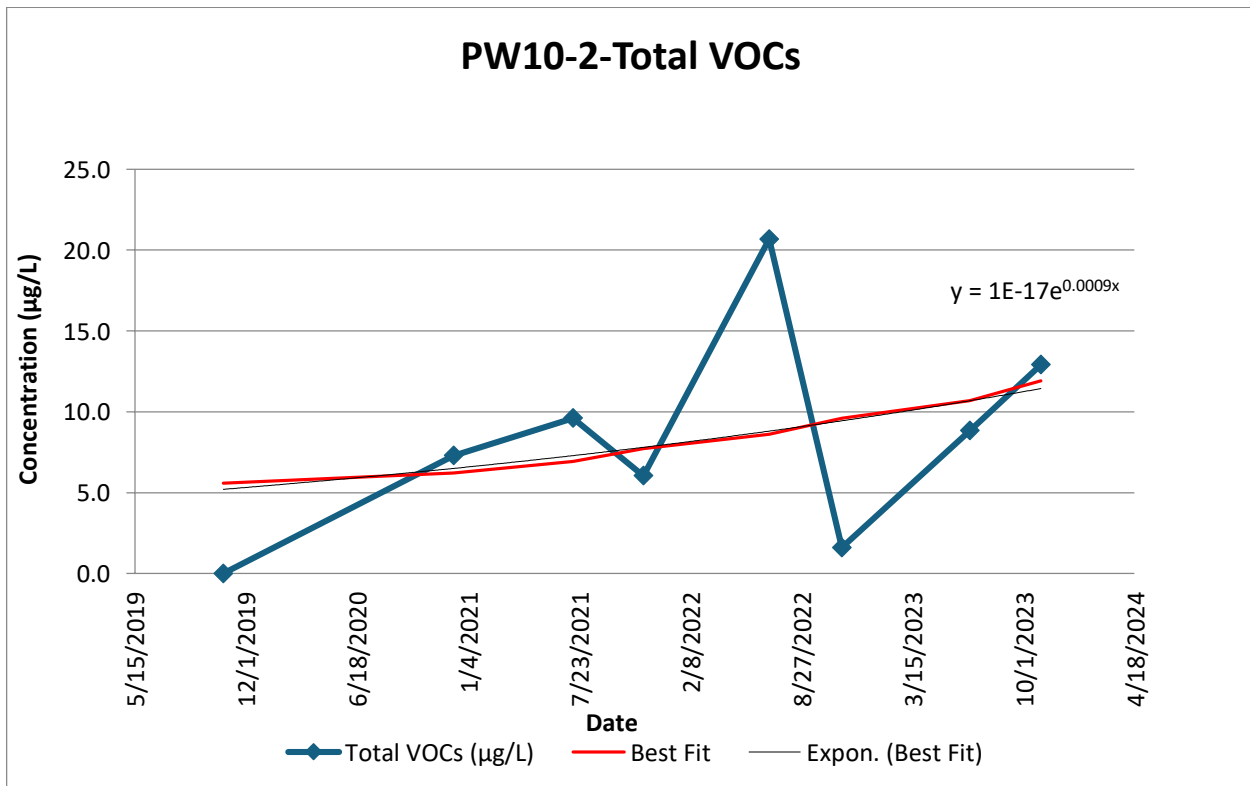
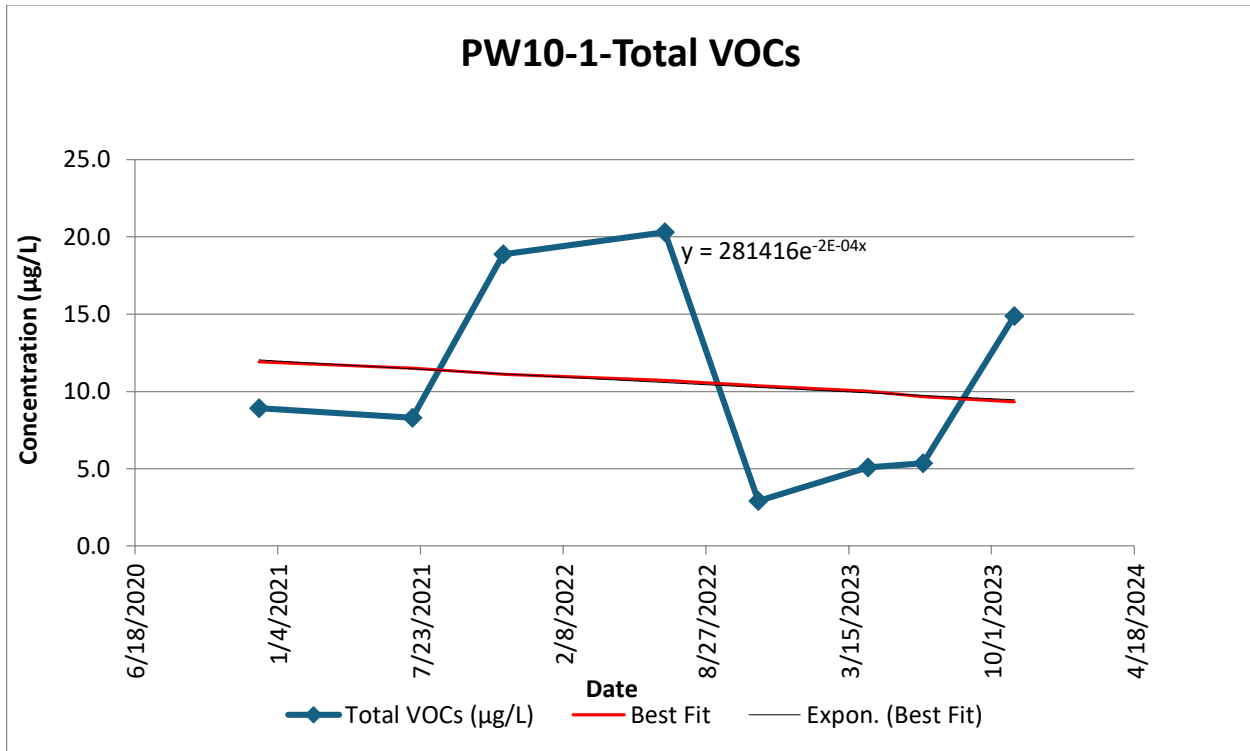
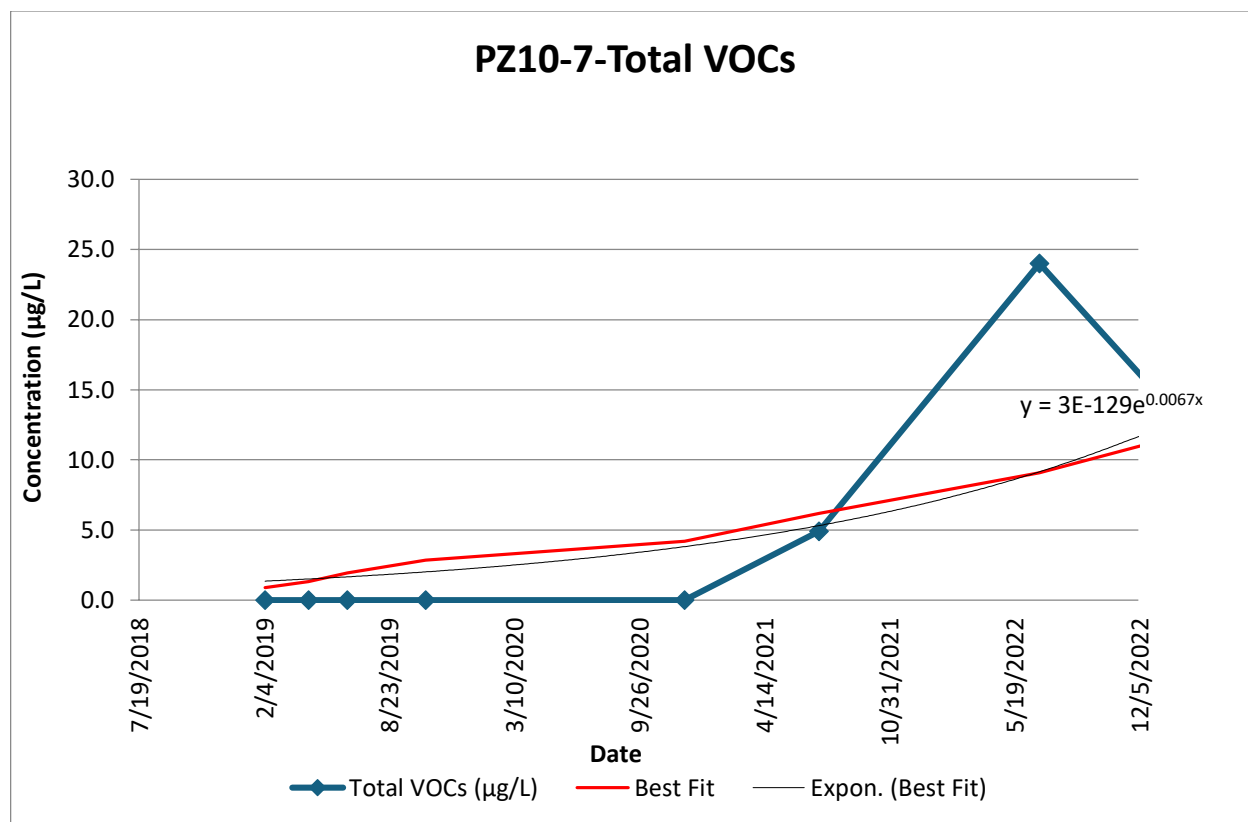
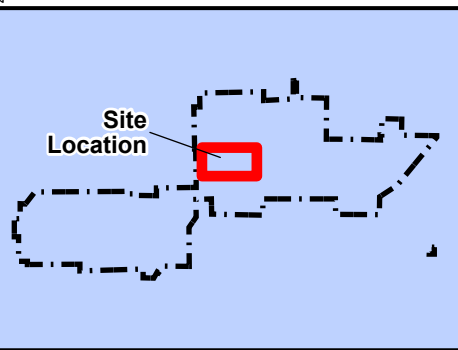
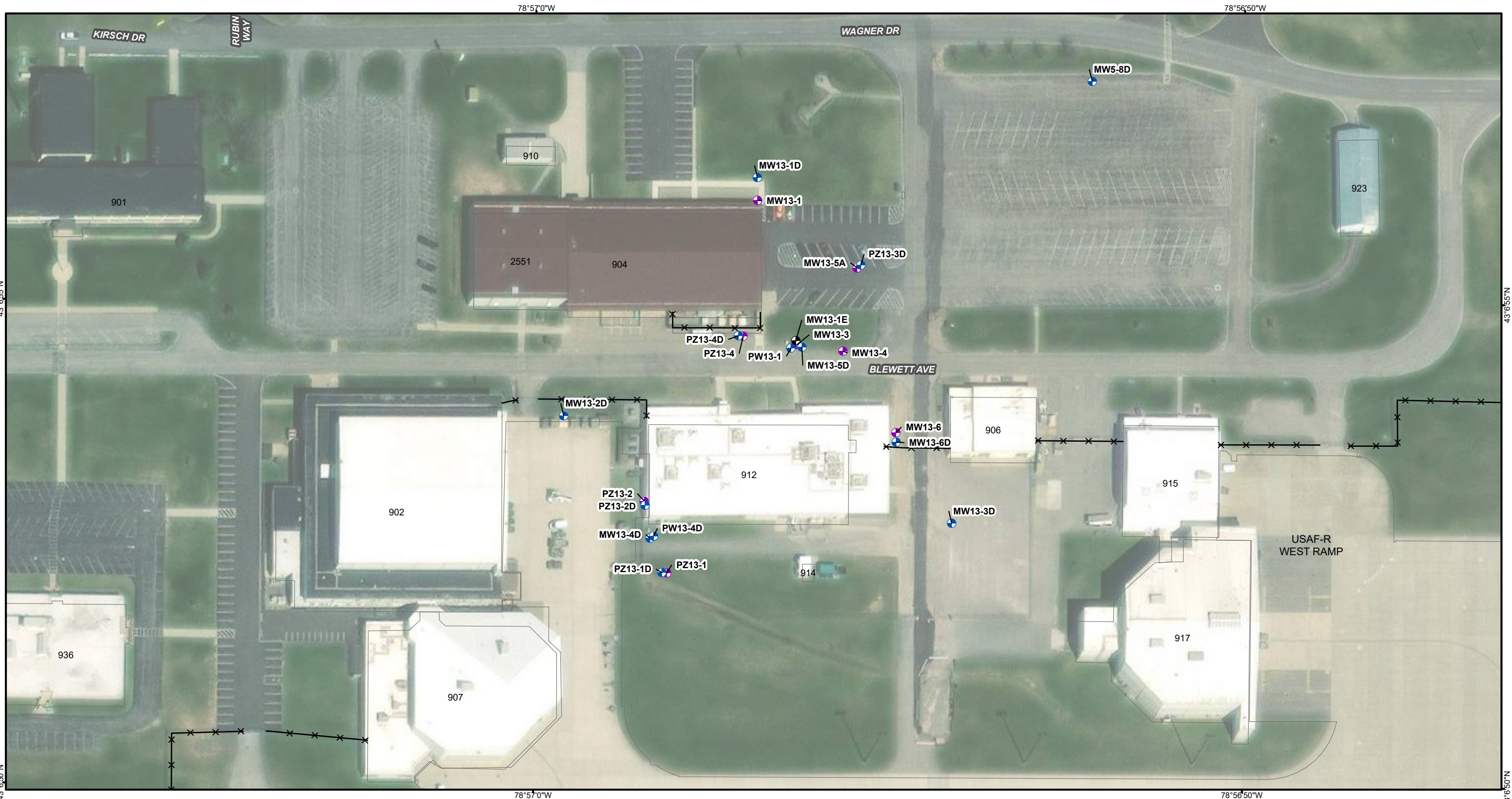


Figure 5-11 – Site 10 – Long-Term Trend Data

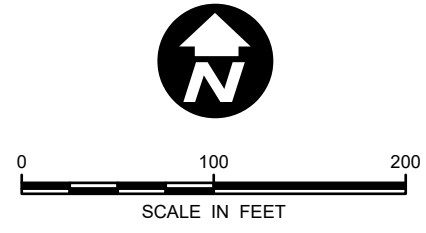


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Legend

- Overburden Well/Piezometer
- Shallow Bedrock Well/Piezometer
- Deep Bedrock Well
- Fence
- Installation Boundary



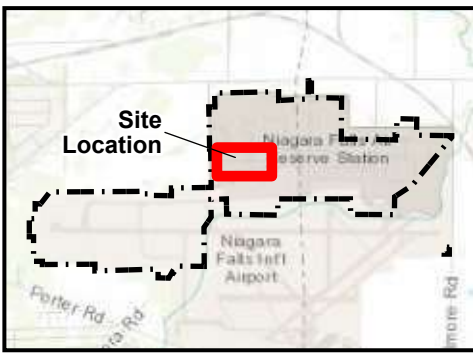
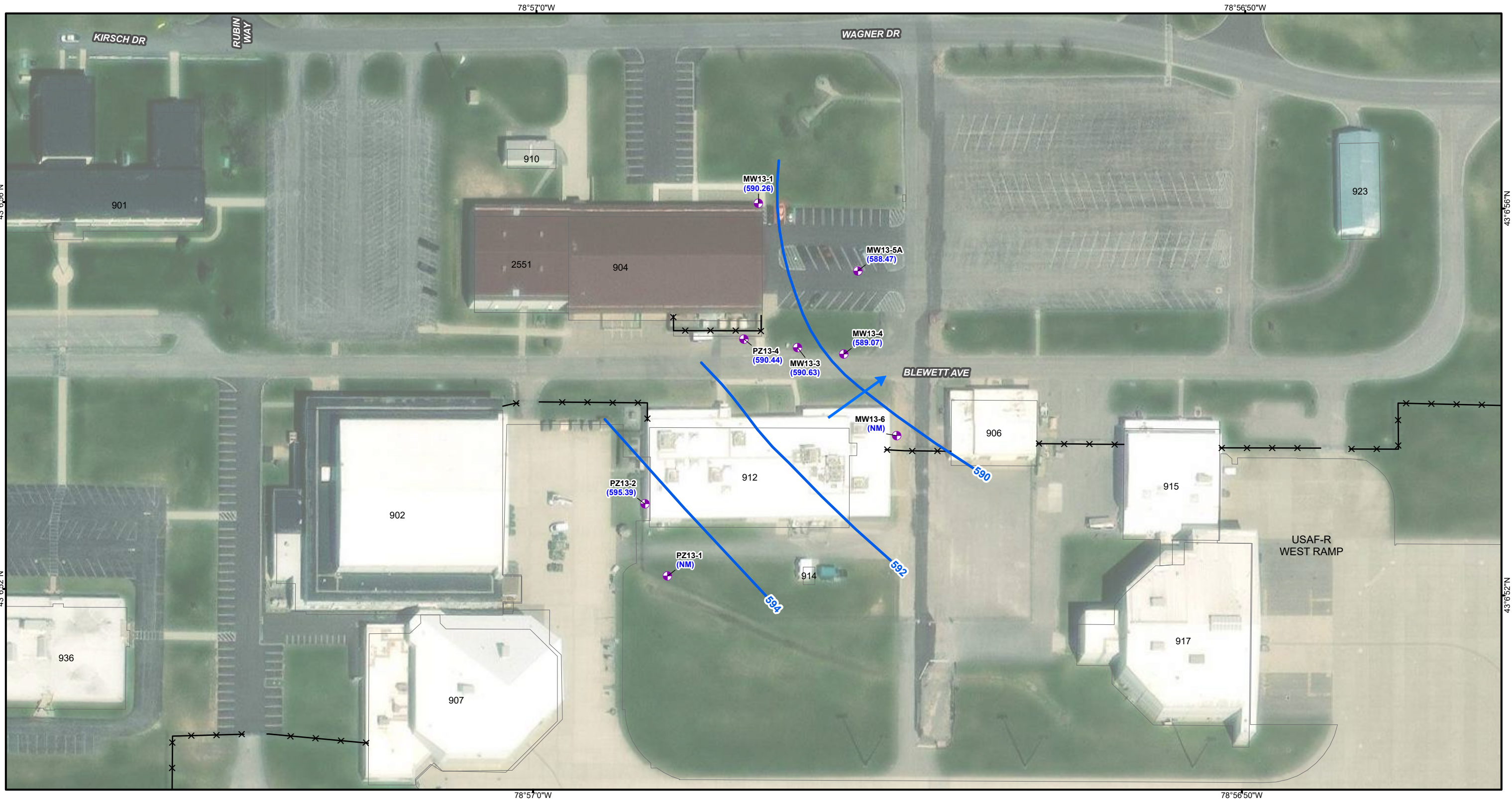
NIAGARA FALLS AIR RESERVE STATION
NEW YORK

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**SITE 13 - MONITORING/SAMPLING
LOCATIONS**

FIGURE
6-1

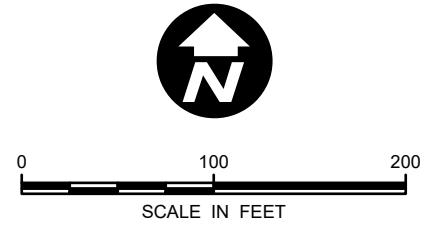
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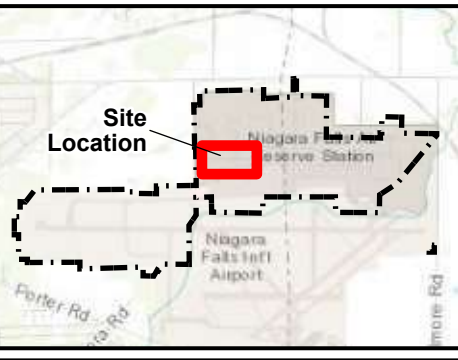
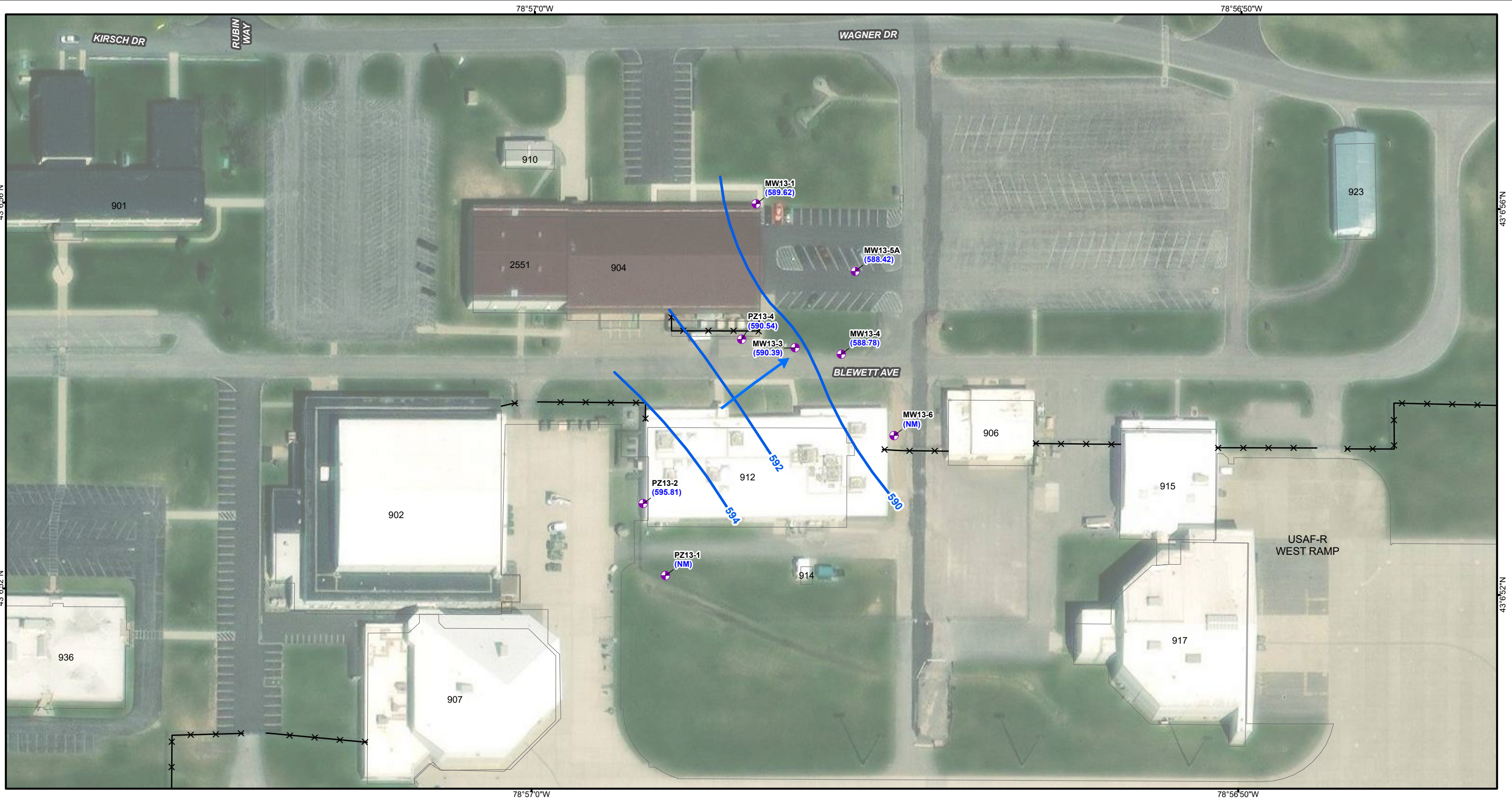
- Overburden Well/Piezometer
- (590.44) Groundwater Elevation
- Groundwater Contour
- Groundwater Flow Direction
- × Fence
- Installation Boundary

Note:
1. * = Elevation not used to develop groundwater contours
2. NM = Not measured; MW 13-6 was not located and PZ 13-1 was dry



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2023 Annual Report	
SITE 13 - OVERBURDEN GROUNDWATER CONTOUR MAP (SPRING 2023)	
 a joint venture	FIGURE 6-2

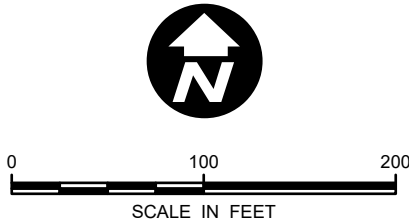
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Legend

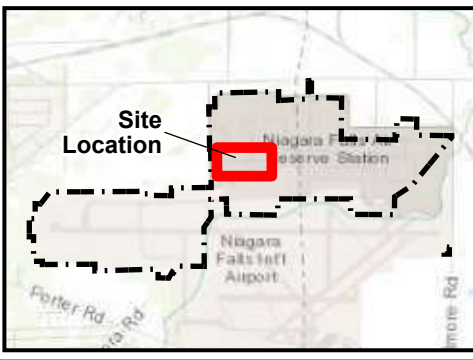
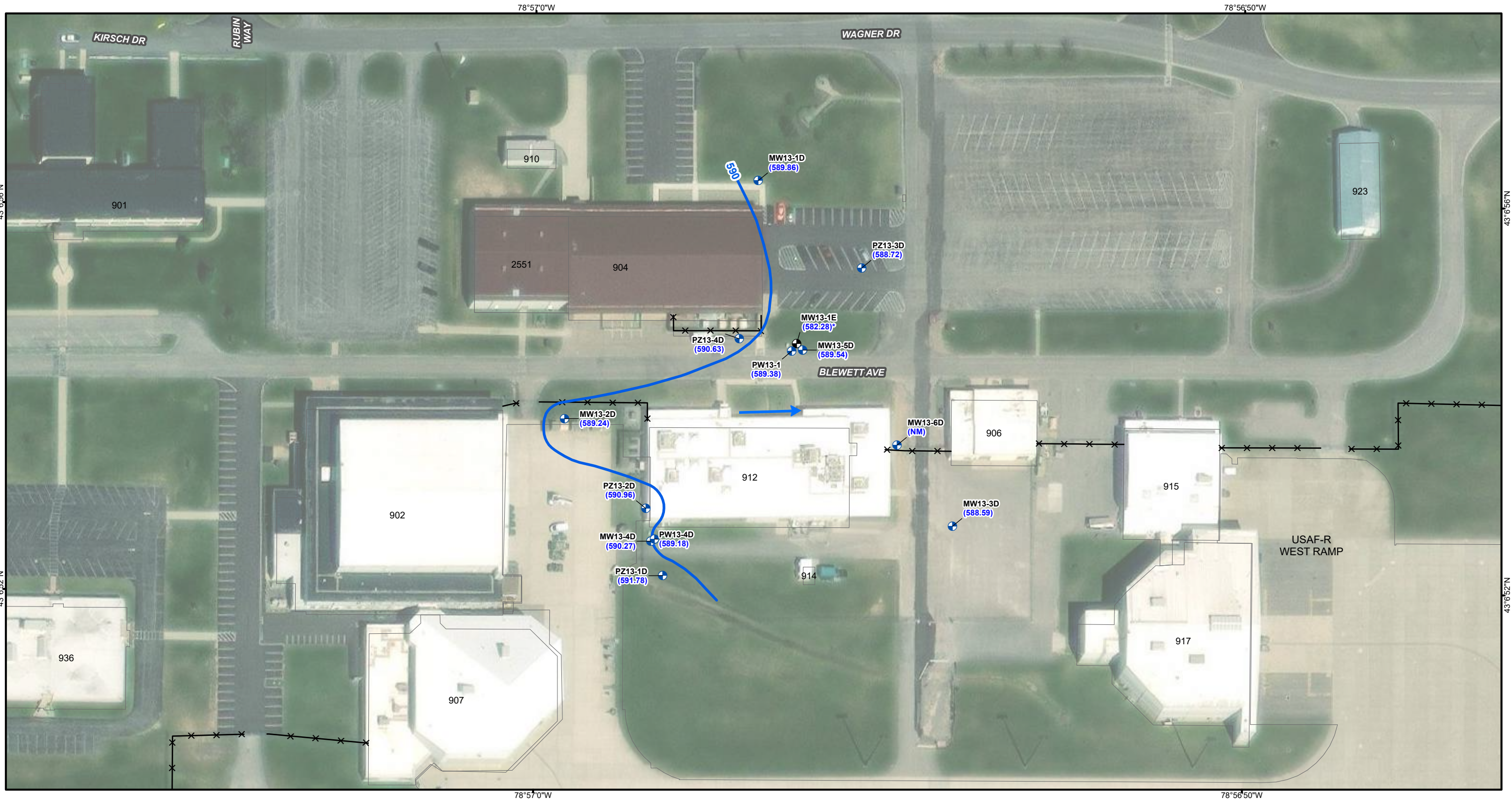
- Overburden Well/Piezometer
- (590.54) Groundwater Elevation
- Groundwater Contour
- Groundwater Flow Direction
- × Fence
- Installation Boundary

Note:
1. NM = Not measured; MW13-6 was not located and PZ 13-1 was dry.



NIAGARA FALLS AIR RESERVE STATION NEW YORK	
2023 Annual Report	
SITE 13 - OVERBURDEN GROUNDWATER CONTOUR MAP (FALL 2023)	
 	FIGURE 6-3

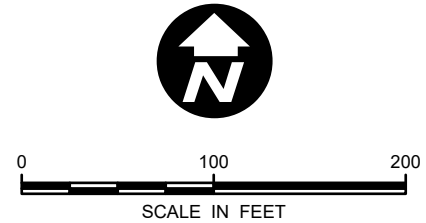
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Legend

- Shallow Bedrock Well/Piezometer
- Deep Bedrock Well
- (589.38) Groundwater Elevation
- Groundwater Contour
- Groundwater Flow Direction
- Fence
- Installation Boundary

Note:
1. * = Elevation not used to develop groundwater contours
2. NM = Not measured; well was not located



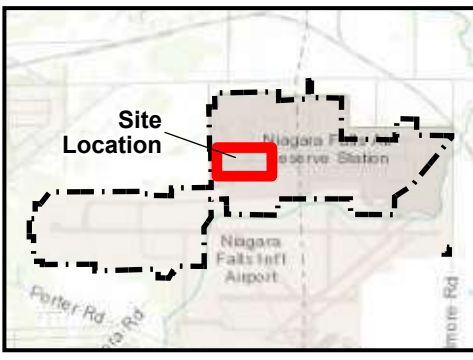
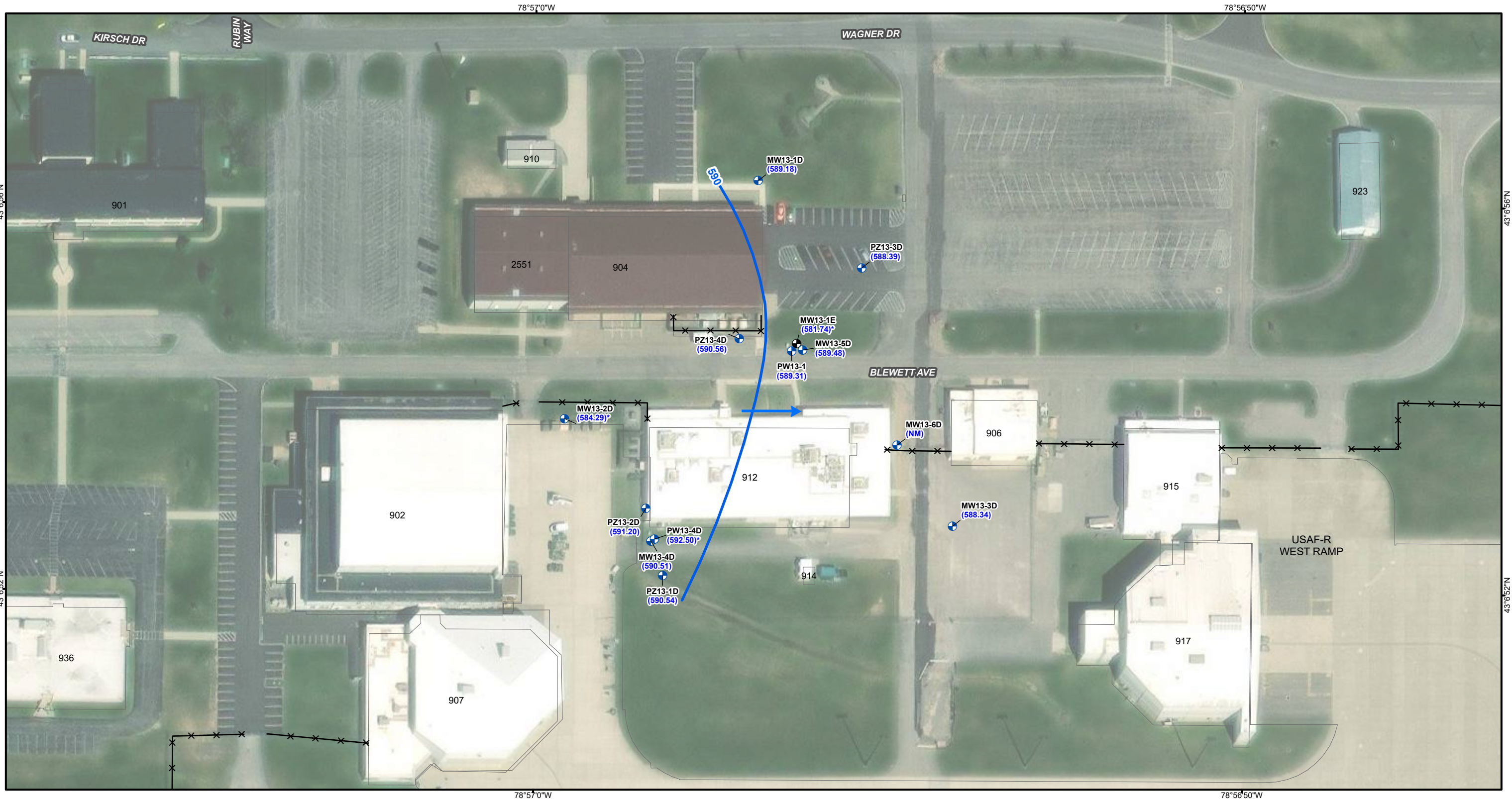
NIAGARA FALLS AIR RESERVE STATION
NEW YORK

2023 Annual Report

**SITE 13 - SHALLOW BEDROCK
GROUNDWATER CONTOUR MAP
(SPRING 2023)**

FIGURE
6-4

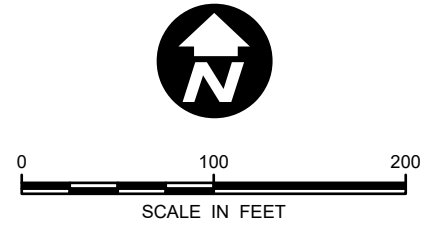
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Legend

- Shallow Bedrock Well/Piezometer
- Deep Bedrock Well
- (589.31) Groundwater Elevation
- Groundwater Contour
- Groundwater Flow Direction
- × Fence
- Installation Boundary

Notes:
1. * = Elevation not used to develop groundwater contours
2. NM = Not measured; well was not located



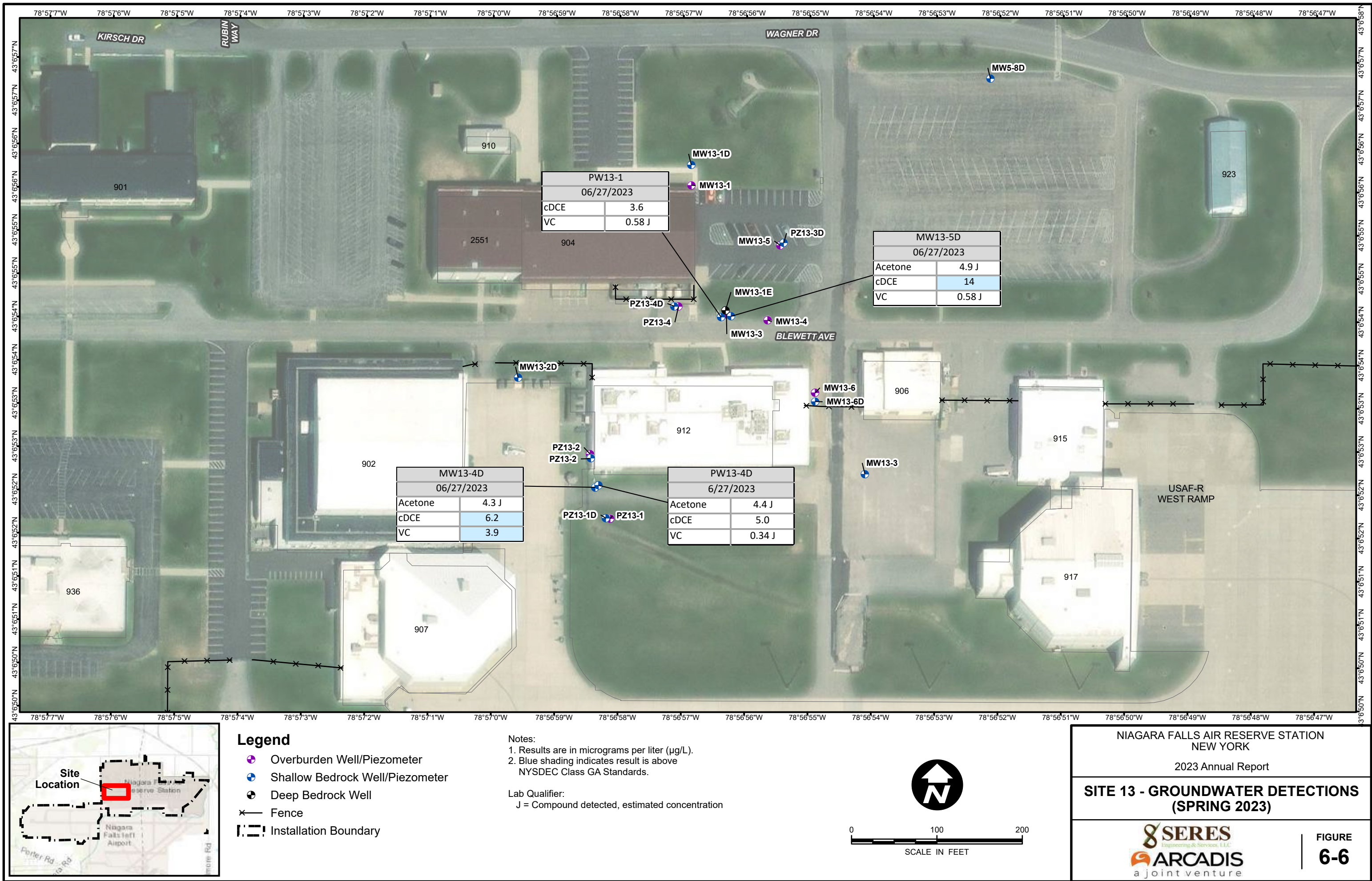
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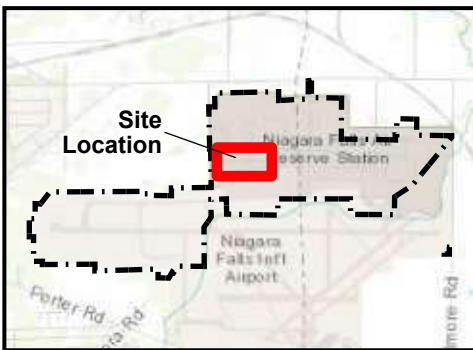
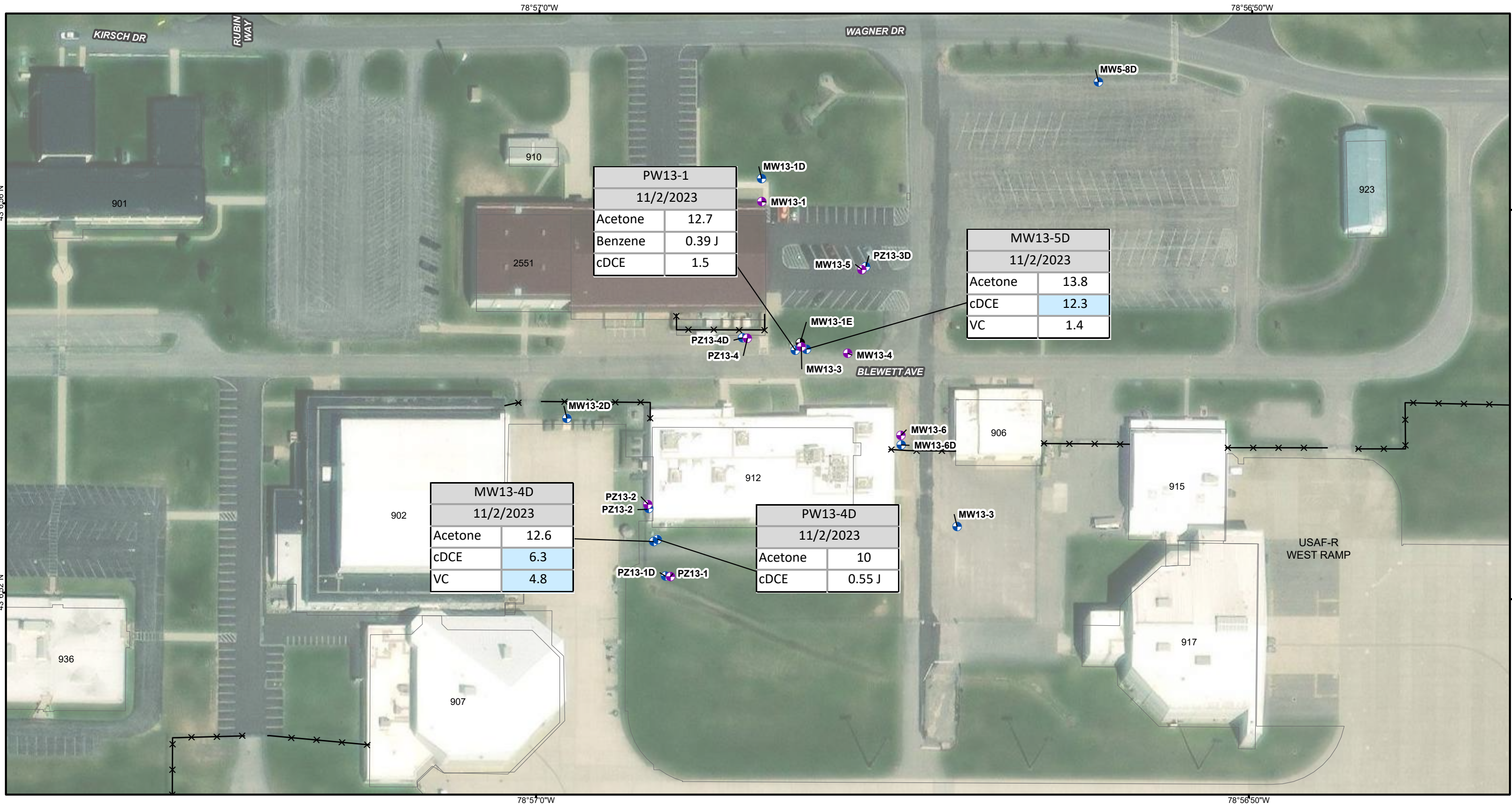
**SITE 13 - SHALLOW BEDROCK
GROUNDWATER CONTOUR MAP
(FALL 2023)**

FIGURE
6-5

DIV/GROUP: ENV/IMDV DB: cv00949 LD: PIC: PM: TM: PROJECT: JBMDL (30028498.00001) PATH: T1: ENVNE_ORC\Niagara\Reports\Annual Report\2023\AcGIS Pro\Niagara Falls ARS 2023 Annual Report Site 10_13.aprx DATE: 6/24/2024 12:48 AM



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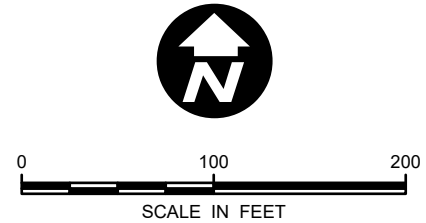


Legend

- Overburden Well/Piezometer
- Shallow Bedrock Well/Piezometer
- Deep Bedrock Well
- × Fence
- Installation Boundary

Notes:
1. Results are in micrograms per liter (ug/L).
2. Blue shading indicates result is above NYSDEC Class GA Standards.

Lab Qualifier:
J = Compound detected, estimated concentration



NIAGARA FALLS AIR RESERVE STATION
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2023 Annual Report

**SITE 13 - GROUNDWATER DETECTIONS
(FALL 2023)**

FIGURE
6-7

Figure 6-8 – Site 13 – Long-Term Trend Data

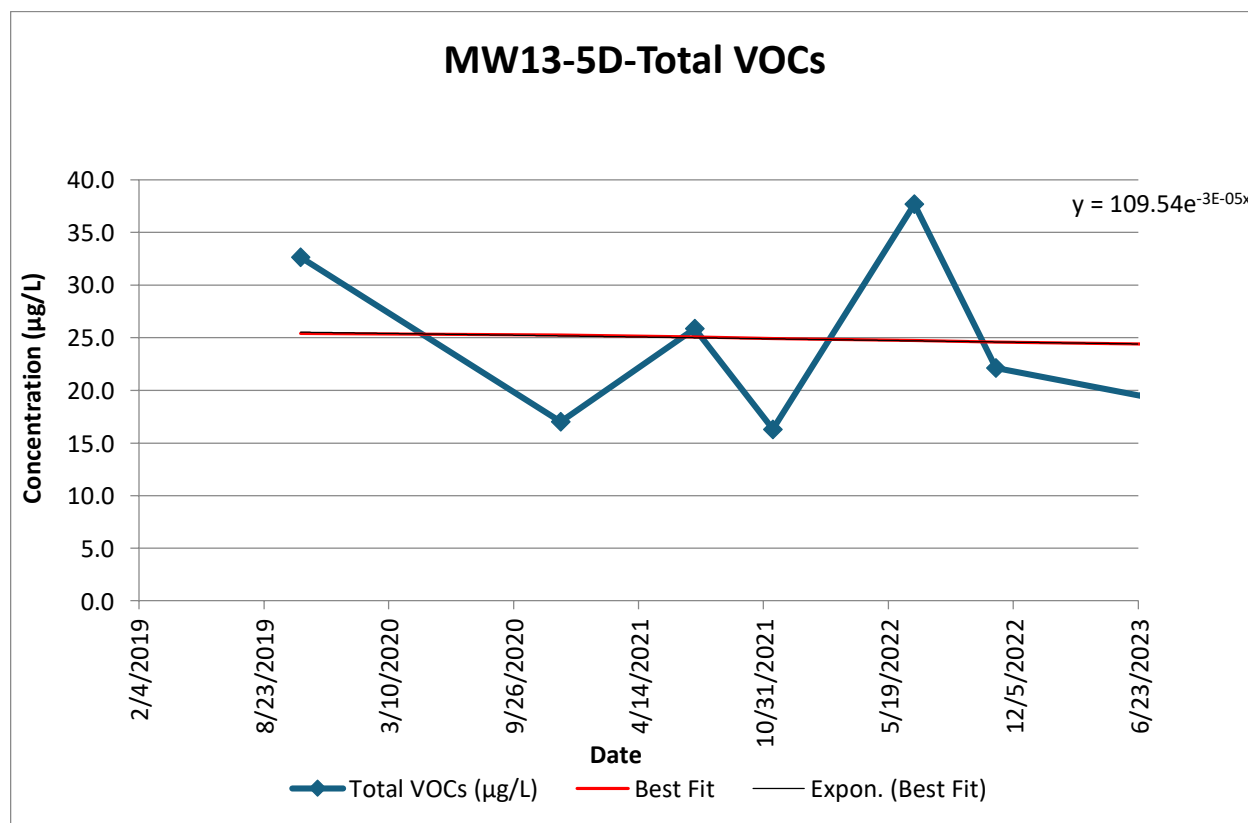
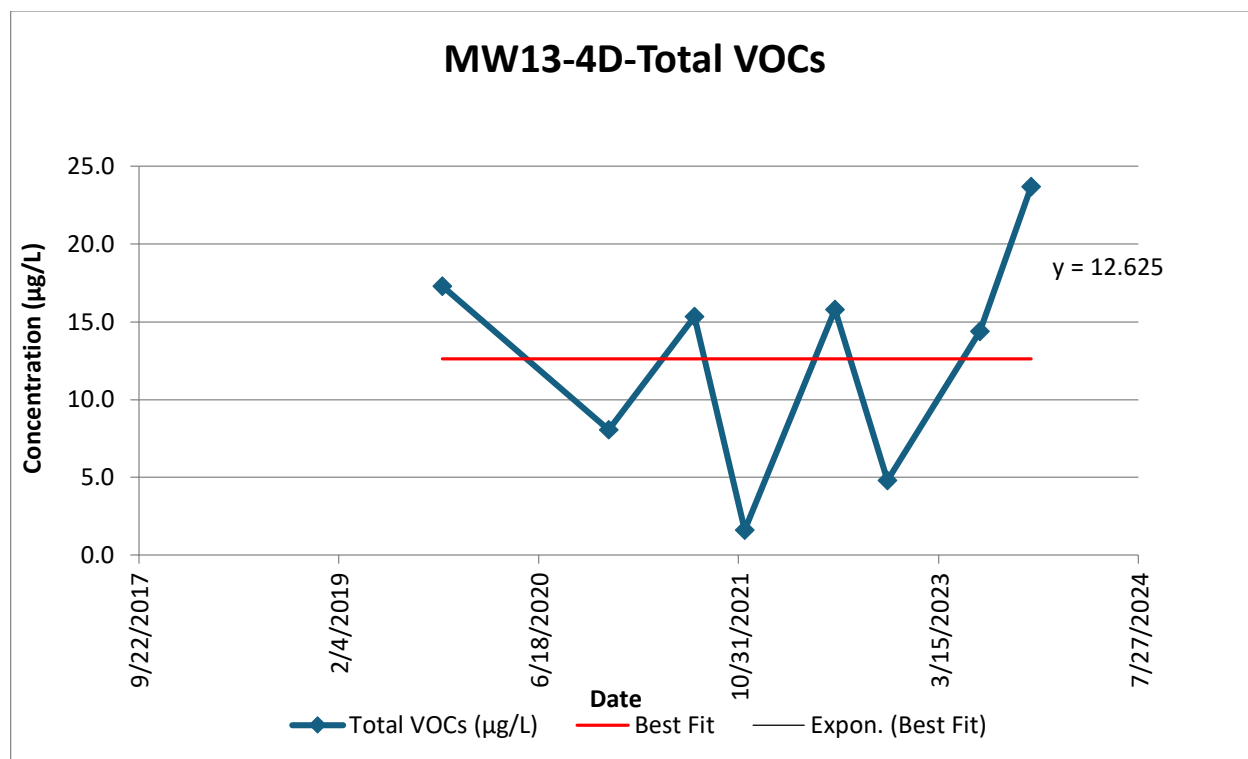
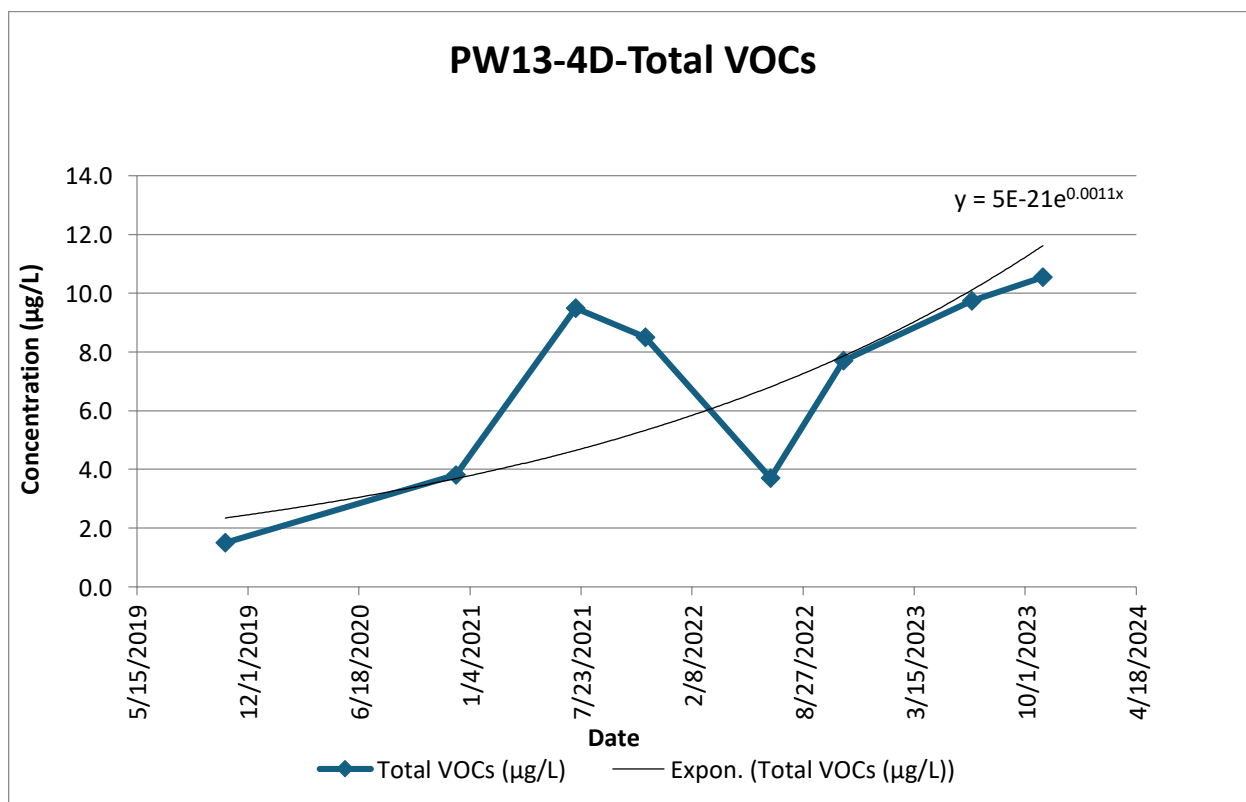
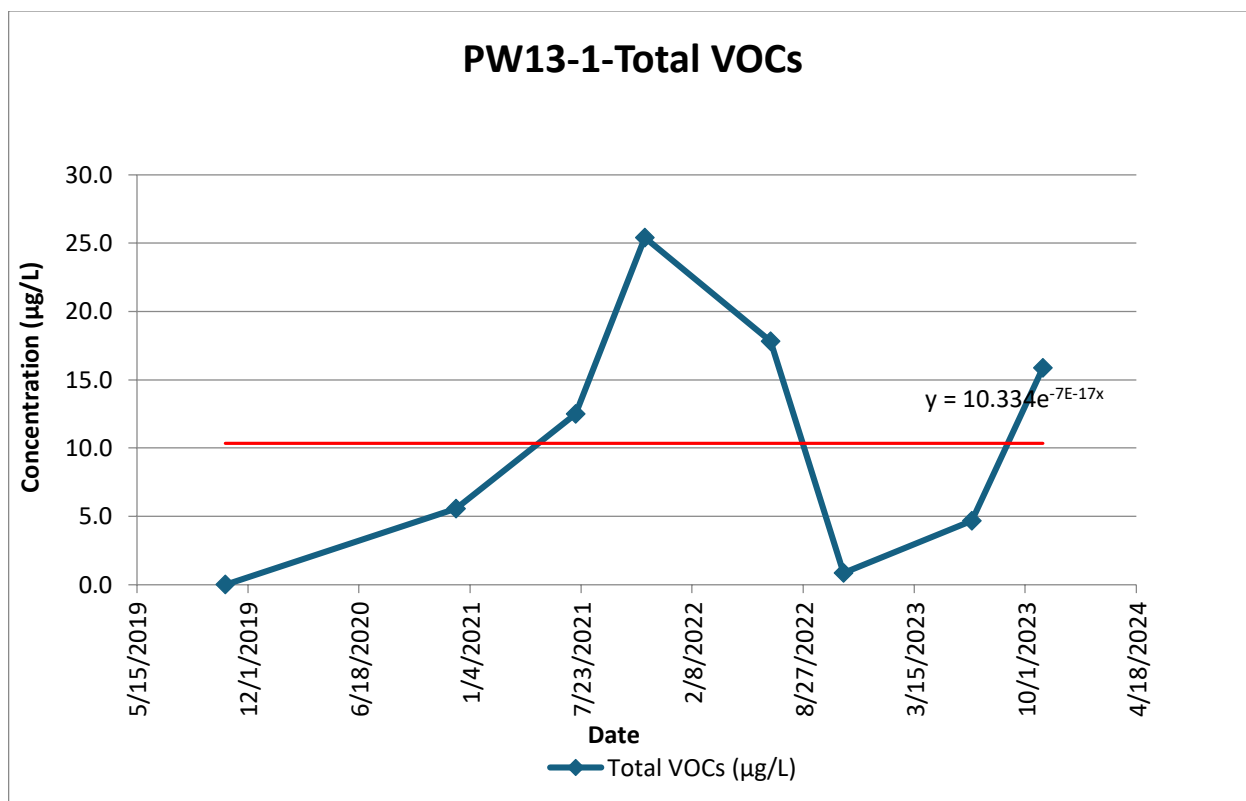
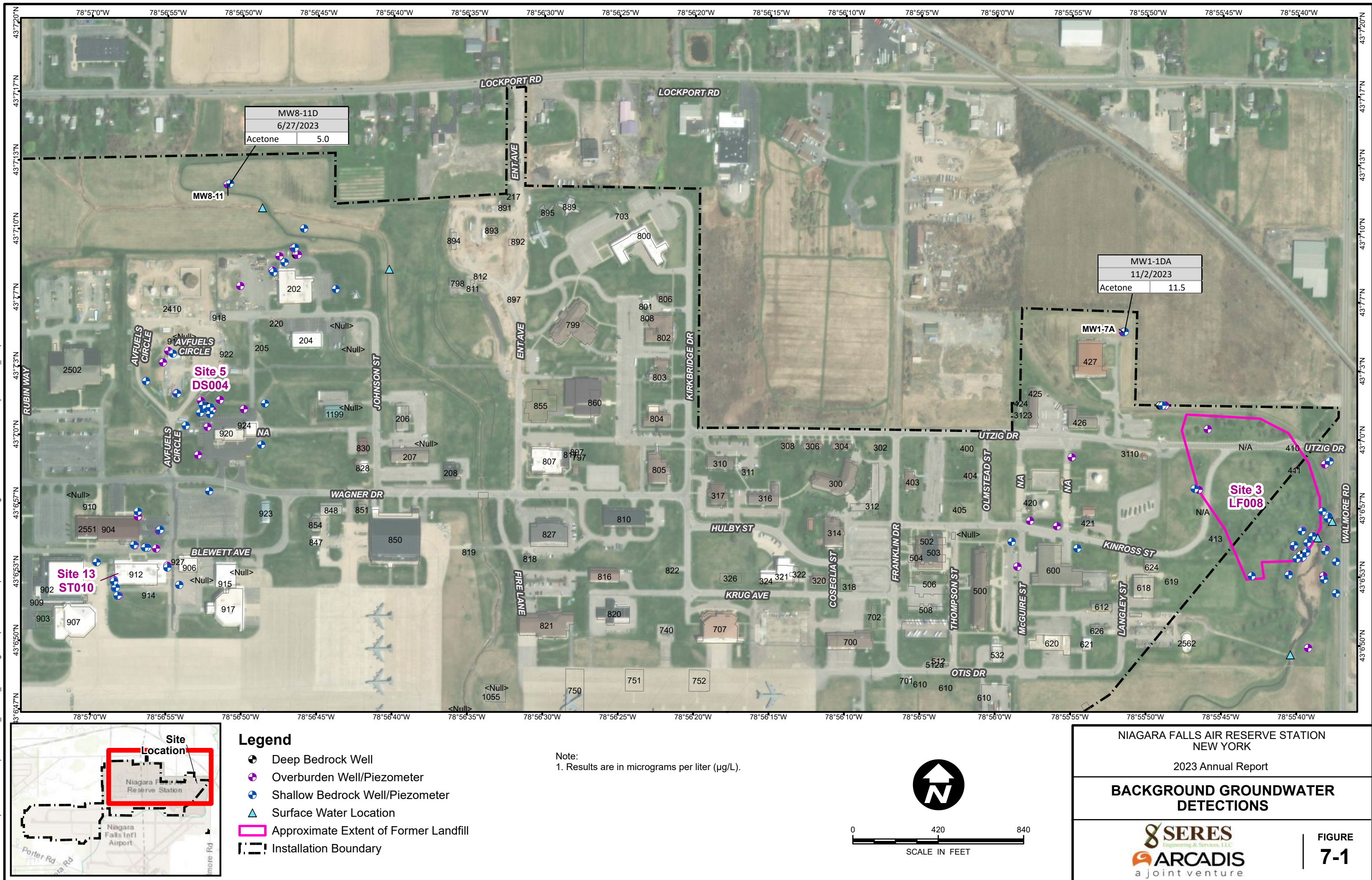


Figure 6-8 – Site 13 – Long-Term Trend Data



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Appendix A

Water Level Data

Table A-1
Groundwater Elevations
2023 Annual Comprehensive Sampling/Monitoring Report
Installation-Wide Groundwater Monitoring Program
Niagara Falls Air Reserve Station, New York



Location	Top of Inside Casing Elevation (ft amsl)	Spring Event (12/13 June 2023)			Fall Event (10/11 October 2023)		
		Water Depth (ft)	WL Elevation (ft amsl)	Well Depth (ft)	Water Depth (ft)	WL Elevation (ft amsl)	Well Depth (ft)
Former Site 1							
MW1-1DA	605.61	10.18	595.43	24.23	10.52	595.09	24.01
MW1-7A	605.71	9.19	596.52	13.18	10.00	595.71	12.97
Former Site 2							
MPL2-1A	603.29	6.05	597.24	13.62	6.53	596.76	13.44
MW2-1DA	599.39	4.01	595.38	14.67	3.76	595.63	14.45
Site 3							
MW3-1A	603.65	6.66	596.99	13.55	6.29	597.36	13.36
MW3-1DA	593.29	5.98	587.31	16.20	5.69	587.60	15.98
MW3-1E	591.51	1.31	590.20	44.33	1.62	589.89	44.12
MW3-2	598.44	6.51	591.93	10.18	6.15	592.29	9.56
MW3-2DA	599.02	8.79	590.23	22.21	9.23	589.79	22.02
MW3-3A	588.23	2.47	585.76	5.30	1.80	586.43	5.08
MW3-3DA	590.14	0.50	589.64	17.15	0.40	589.74	16.93
MW3-4DA	590.14	0.98	589.16	15.82	1.27	588.87	15.61
MW3-5D	594.96	4.98	589.98	25.78	5.23	589.73	26.09
MW3-6A	602.26	7.20	595.06	11.13	7.38	594.88	10.90
MW3-6D	602.05	6.79	595.26	19.20	7.08	594.97	18.99
MW3-7	591.14	6.63	584.51	7.58	6.03	585.11	7.36
MW3-8	603.84	7.88	595.96	12.94	8.29	595.55	12.72
MW3-8D	603.67	12.68	590.99	23.90	13.13	590.54	23.69
MW3-8E	603.69	12.80	590.89	46.56	13.17	590.52	46.79
PW3-3A	588.09	0.80	587.29	13.83	0.98	587.11	14.71
PZ3-1	591.71	2.63	589.08	12.14	0.80	590.91	5.68
PZ3-1D	591.75	3.33	588.42	5.91	2.79	588.96	12.05
PZ3-2	590.12	1.98	588.14	4.18	2.57	587.55	3.99
PZ3-2D	590.52	1.84	588.68	12.54	3.76	586.76	12.63
PZ3-3	588.14	0.70	587.44	2.45	1.48	586.66	2.24
PZ3-3D	588.62	1.13	587.49	9.53	0.61	588.01	9.35
PZ3-4	589.95	2.74	587.21	3.50	2.55	587.40	3.29
PZ3-4D	590.52	1.37	589.15	11.66	1.54	588.98	11.51
PZ3-5	589.68	0.91	588.77	2.85	0.61	589.07	2.58
PZ3-5D	589.57	0.10	589.47	9.61	0.03	589.54	9.20
PZ3-6	588.34	1.39	586.95	3.48	0.00	588.34	12.79
PZ3-6D	587.90	Area overgrown, piezometer could not be located			1.81	586.09	3.22
PZ3-7D	593.01	2.99	590.02	21.72	3.35	589.66	21.51
PZ3-8D	592.12	3.64	588.48	18.38	4.18	587.94	16.15
PZ3-9	588.70	2.72	585.98	3.99	2.41	586.29	3.73
PZ3-9D	588.50	1.96	586.54	23.77	1.28	587.22	23.59
Site 5							
CH5-01	597.21	11.43	585.78	29.96	11.20	586.01	29.96
CH5-02	597.07	11.24	585.83	32.33	11.03	586.04	32.02
CH5-03	597.74	11.55	586.19	31.68	11.32	586.42	31.61
CH5-04	597.60	10.05	587.55	32.44	9.93	587.67	32.51
MW5-1A	600.42	13.24	587.18	16.19	13.23	587.19	15.97
MW5-1DA	600.07	14.40	585.67	28.90	14.20	585.87	28.70
MW5-1E	596.39	13.61	582.78	57.37	13.19	583.20	57.20
MW5-2D	600.8	14.78	586.02	26.55	14.51	586.29	26.37
MW5-3D	600.5	14.70	585.80	25.17	14.44	586.06	24.96
MW5-4	599.42	13.56	585.86	15.76	13.21	586.21	15.53
MW5-4D	597.34	12.39	584.95	26.10	11.82	585.52	25.94
MW5-5A	600.8	15.49	585.31	20.12	14.90	585.90	19.93
MW5-5D	597.12	11.29	585.83	27.33	20.21	576.91	27.22
MW5-6	596.42	8.93	587.49	13.66	8.93	587.49	13.41

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Location	Top of Inside Casing Elevation (ft amsl)	Spring Event (12/13 June 2023)			Fall Event (10/11 October 2023)		
		Water Depth (ft)	WL Elevation (ft amsl)	Well Depth (ft)	Water Depth (ft)	WL Elevation (ft amsl)	Well Depth (ft)
Site 5 (continued)							
MW5-6D	594.94	7.33	587.61	23.08	7.27	587.67	22.88
MW5-7	596.46	8.59	587.87	13.10	8.51	587.95	12.92
MW5-7D	595.14	7.48	587.66	22.35	7.32	587.82	22.09
MW5-8	594.14	8.18	585.96	10.67	8.40	585.74	10.48
MW5-8D	593.95	10.51	583.44	20.53	9.52	584.43	20.33
RW5-1	596.88	8.52	588.36	14.69	10.09	586.79	14.50
RW5-2	595.46	6.79	588.67	11.23	7.23	588.23	11.03
RW5-3	597.50	9.77	587.73	14.30	9.56	587.94	13.97
RW5-4	597.16	9.70	587.46	14.78	9.61	587.55	14.62
Former Site 6							
MPL6-2A	601.30	8.07	593.23	14.42	8.39	592.91	14.23
MPL6-3	601.58	7.62	593.96	15.80	7.88	593.70	15.61
Site 8							
CH8-01	597.93	8.19	589.74	31.11	5.70	592.23	31.98
MW8-1	598.87	8.61	590.26	13.79	9.25	589.62	13.55
MW8-1E	598.52	16.99	581.53	50.79	17.09	581.43	51.18
MW8-2D	600.57	11.14	589.43	30.18	11.82	588.75	30.04
MW8-3	599.06	10.00	589.06	14.27	10.69	588.37	14.36
MW8-3DA	601.24	11.79	589.45	26.81	12.49	588.75	26.61
MW8-4A	600.40	10.98	589.42	15.13	11.55	588.85	14.92
MW8-4D	598.41	9.36	589.05	22.62	10.14	588.27	22.41
MW8-5A	600.02	10.44	589.58	15.20	11.14	588.88	14.87
MW8-8	600.18	11.25	588.93	14.08	11.85	588.33	13.88
MW8-10D	600.17	10.78	589.39	24.78	11.48	588.69	24.75
MW8-11	602.28	13.58	588.70	16.82	14.28	588.00	16.67
MW8-11D	601.99	12.50	589.49	27.41	13.23	588.76	27.21
MW8-11E	602.02	13.61	588.41	49.77	14.28	587.74	50.09
Site 10							
MW10-1DA	588.55	5.02	583.53	23.05	8.84	579.71	23.00
MW10-1EA	588.90	6.40	582.50	39.88	6.32	582.58	39.62
MW10-1F	588.73	6.57	582.16	59.24	6.50	582.23	59.10
MW10-2	590.38	5.30	585.08	8.96	5.56	584.82	8.70
MW10-2E	587.33	5.74	581.59	47.26	5.60	581.73	47.00
MW10-3	590.50	5.43	585.07	9.59	6.02	584.48	9.38
MW10-3D	586.26	4.85	581.41	25.97	4.85	581.41	25.50
MW10-3E	586.19	6.72	579.47	43.46	6.60	579.59	42.95
MW10-4	589.37	5.04	584.33	8.19	6.35	583.02	7.96
MW10-4D	587.76	4.36	583.40	20.11	5.71	582.05	19.91
MW10-4E	588.15	5.31	582.84	19.22	5.20	582.95	40.75
MW10-5D	589.05	6.46	582.59	19.83	6.79	582.26	19.62
MW10-6	586.35	3.76	582.59	9.79	5.41	580.94	9.59
MW10-7	587.29	4.46	582.83	9.14	5.93	581.36	8.89
MW10-8	588.02	5.43	582.59	9.63	5.90	582.12	9.27
MW10-8D	588.33	6.02	582.31	24.61	6.30	582.03	24.42
MW10-9D	587.03	4.99	582.04	19.89	5.18	581.85	19.76
MW10-10D	591.39	1.48	589.91	11.09	2.80	588.59	11.05
MW10-11	586.51	4.57	581.94	7.33	5.36	581.15	7.23
MW10-11D	586.58	4.63	581.95	17.55	5.00	581.58	17.30
MW10-12	587.76	5.64	582.12	19.00	5.80	581.96	18.79
MW10-12D	587.76	6.21	581.55	8.55	6.10	581.66	8.35
MW10-13	587.29	5.09	582.20	17.01	5.28	582.01	16.79
MW10-13D	587.38	5.05	582.33	7.15	5.15	582.23	6.90
PW10-1	587.47	5.03	582.44	14.00	6.21	581.26	10.90
PW10-2	586.51	3.46	583.05	16.58	4.20	582.31	21.50
PZ10-7	586.80	5.22	581.58	10.23	5.63	581.17	9.98

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Location	Top of Inside Casing Elevation (ft amsl)	Spring Event (12/13 June 2023)			Fall Event (10/11 October 2023)		
		Water Depth (ft)	WL Elevation (ft amsl)	Well Depth (ft)	Water Depth (ft)	WL Elevation (ft amsl)	Well Depth (ft)
Site 13							
MW13-1	598.91	8.65	590.26	10.25	9.29	589.62	10.07
MW13-1D	598.03	8.17	589.86	17.25	8.85	589.18	20.63
MW13-1E	598.02	15.74	582.28	44.02	16.28	581.74	44.28
MW13-2D	601.11	11.87	589.24	23.81	16.82	584.29	23.61
MW13-3	598.67	8.04	590.63	11.01	8.28	590.39	10.83
MW13-3D	591.94	3.35	588.59	15.55	3.60	588.34	16.03
MW13-4	598.38	9.31	589.07	10.72	9.60	588.78	10.78
MW13-4D	599.96	9.69	590.27	18.91	9.45	590.51	18.70
MW13-5A	595.72	7.25	588.47	8.00	7.30	588.42	7.80
MW13-5D	597.49	7.95	589.54	20.90	8.01	589.48	20.70
MW13-6	594.06	Not located - excavation activities noted in area			Not located - excavation activities noted in area		
MW13-6D	594.17	Not located - excavation activities noted in area			Not located - excavation activities noted in area		
PW13-1	596.41	7.03	589.38	27.25	7.10	589.31	27.20
PW13-4D	598.50	9.32	589.18	23.07	6.00	592.50	23.10
PZ13-1	595.60	Piezometer Dry			Piezometer Dry		
PZ13-1D	595.61	3.83	591.78	17.08	5.07	590.54	16.83
PZ13-2	598.37	2.98	595.39	6.07	2.56	595.81	5.85
PZ13-2D	598.00	7.04	590.96	17.39	6.80	591.20	17.08
PZ13-3D	595.44	6.72	588.72	17.75	7.05	588.39	11.05
PZ13-4	596.26	5.82	590.44	9.79	5.72	590.54	9.57
PZ13-4D	596.61	5.98	590.63	22.51	6.05	590.56	21.76

Note:

amsl = above mean sea level

Table A-2
Surface Water Elevations and Water Quality Data
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Location	Measuring Point Elevation (ft AMSL)	Spring Event (June 2023) ¹				
		Depth to Water	Surface Water Elevation	pH (s.u.)	Temperature (°C)	Conductivity (mS/cm)
SW3-2	594.55	3.86	590.69	NM ⁽⁴⁾	NM ⁽⁴⁾	NM ⁽⁴⁾
SW3-3	587.78	2.26	585.52	NM ⁽⁴⁾	NM ⁽⁴⁾	NM ⁽⁴⁾
SW3-15	N/A	N/A	N/A	NM ⁽⁴⁾	NM ⁽⁴⁾	NM ⁽⁴⁾
SW8-8	596.84	4.12	592.72	N/A	N/A	N/A
SW8-9	591.17	4.14	587.03	N/A	N/A	N/A
SW10-5	589.49	4.61	584.88	7.65	19.74	1.91
SW10-6	582.65	5.85	576.8	NM ⁽⁴⁾	NM ⁽⁴⁾	NM ⁽⁴⁾
SW10-7	589.56	6.28	583.28	NM ⁽⁴⁾	NM ⁽⁴⁾	NM ⁽⁴⁾
SW10-8	N/A	N/A	N/A	NM ⁽⁴⁾	NM ⁽⁴⁾	NM ⁽⁴⁾
SW99-10	585.58	10.84	574.74	7.7	20.31	1.09
SW99-14	585.93	5.35	580.58	N/A	N/A	N/A

Location	Measuring Point Elevation (ft AMSL)	Fall Event (October/November 2023) ²				
		Depth to Water	Surface Water Elevation	pH (s.u.)	Temperature (°C)	Conductivity (mS/cm)
SW3-2	594.55	3.99	590.56	8.06	6.30	0.81
SW3-3	587.78	2.16	585.62	6.43	5.87	0.77
SW3-15	N/A	N/A	N/A	7.51	6.20	0.81
SW8-8	596.84	6.02	590.82	N/A	N/A	N/A
SW8-9	591.17	4.01	587.16	N/A	N/A	N/A
SW10-5	589.49	4.32	585.17	6.65	5.86	1.10
SW10-6	582.65	Dry	NM	6.77	5.36	0.93
SW10-7	589.56	6.13	583.43	7.27	4.70	0.84
SW10-8	N/A	N/A	N/A	7.64	5.17	0.86
SW99-10	585.58	11.86	573.72	5.51	5.11	0.96
SW99-14	585.93	5.61	580.32	N/A	N/A	N/A

Table A-2
Surface Water Elevations and Water Quality Data
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Notes:

1. Surface water elevations for the Spring 2023 event were measured on 12 and 13 June 2023, while field parameter measurement and sample collection was completed on 27 June 2023.
2. Surface water elevations for the Fall 2023 event were measured on 10 and 11 October 2023, while field parameter measurement and sample collection was completed on 2 November 2023.
3. N/A – not applicable. Surface water elevations are not required at locations SW3-15 and SW10-8. Groundwater sample collection and field parameter measurements are not required at locations SW8-8, SW8-9, and SW99-14.
4. NM = not measured; field parameter measurements were not collected as the YSI meter stopped functioning.
5. s.u. = standard units.
6. °C = degrees Celsius.
7. mS/cm = millisiemens per centimeter

Table A-3
Groundwater Elevations
2023 Annual Comprehensive Sampling/Monitoring Report
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Niagara Falls Air Reserve Station, New York



Location	Top of Inside Casing Elevation (ft amsl)	March Performance Monitoring Event (23 March 2023)		
		Water Depth (ft)	WL Elevation (ft amsl)	Well Depth (ft)
Site 5				
MW5-1DA	600.07	10.18	589.89	28.90
MW5-5D	597.12	7.51	589.61	27.33
RW5-1	596.88	4.72	592.16	14.69
RW5-2	595.46	4.08	591.38	11.23
Site 10				
MW10-1DA	588.55	1.90	586.65	23.05
MW10-7	587.29	1.48	585.81	9.14
MW10-10D	591.39	1.10	590.29	11.09
MW10-11D	586.58	0.56	586.02	17.55
PW10-1	587.47	1.43	586.04	14.00

Note:

amsl = above mean sea level

Appendix B

Weather Data

Appendix B
Weather Data
2023 Annual Comprehensive Sampling/Monitoring Report
Installation-Wide Groundwater Monitoring Program
Niagara Falls Air Reserve Station, New York



Time	Temperature (°F)			Dew Point (°F)			Humidity (%)			Wind Speed (mph)			Pressure (in)			Precipitation (in)
Jan	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Total
1	41	39.8	38	39	36.5	34	97	88.5	79	16	8.4	0	29.4	29.3	29.2	0.06
2	45	39.9	35	39	36.3	32	97	87.7	71	10	6	0	29.5	29.4	29.4	0
3	41	39.6	35	39	37.4	34	97	92.4	89	15	8.9	5	29.4	29.2	29.1	0
4	43	39.9	38	41	38.2	37	97	93.9	89	17	8	0	29.2	29.1	29	0.11
5	41	39.1	35	39	33.2	31	93	79.8	67	20	12.8	0	29.3	29.3	29.2	0
6	38	36.9	35	34	32.7	30	89	84.9	79	13	8.9	0	29.5	29.4	29.3	0
7	38	34.4	27	34	30.1	19	93	84.4	61	13	8.1	5	29.7	29.6	29.5	0
8	31	29.3	27	25	22.4	20	79	75.8	72	7	4	0	29.7	29.6	29.4	0
9	35	31.9	29	30	25.1	21	85	76.1	72	29	15.6	8	29.4	29.4	29.3	0
10	35	32.7	30	30	27.4	24	86	80.5	72	14	8.8	5	29.5	29.4	29.4	0
11	35	30.5	26	29	24.7	20	89	79	75	14	9.4	3	29.5	29.4	29.3	0
12	45	39.9	34	41	37.1	28	97	89.9	73	20	9.2	3	29.3	29.1	29	0
13	36	29.9	25	34	26.7	20	96	87.9	78	21	14.4	7	29.4	29.2	29	0.29
14	26	19.5	13	20	15.4	10	92	84.4	75	14	6.2	0	29.6	29.5	29.4	0.01
15	30	17.2	11	24	13.1	8	96	84.4	69	6	1.2	0	29.7	29.6	29.6	0
16	36	20	13	24	15.5	9	92	83.3	59	8	3.1	0	29.6	29.5	29.1	0
17	43	39.2	32	41	35.7	22	97	87.8	59	16	7.3	0	29.1	28.9	28.9	0
18	41	39.2	38	37	35.7	34	93	87.7	79	17	11.7	0	29.4	29.2	29	0.03
19	43	39.3	36	41	36.9	33	97	91.5	87	21	10.1	0	29.4	29	28.9	0
20	42	36.5	32	40	32.9	26	100	87.2	73	20	12.3	7	29.4	29.1	28.9	0
21	34	32.3	31	29	26.5	24	89	79.5	70	13	7.3	3	29.6	29.5	29.4	0
22	35	33.1	32	31	29.4	26	96	86.7	72	8	5.1	3	29.5	29.2	29.1	0
23	34	32.5	31	32	29.2	26	96	87.9	75	28	10	0	29.3	29.2	29.1	0.01
24	36	33.1	28	29	26.3	23	88	76.3	67	26	17.3	5	29.6	29.4	29.3	0
25	40	32	28	35	28.7	23	93	87.5	72	18	12.8	3	29.6	29.1	28.8	0
26	40	31	28	35	26.4	21	92	83.5	72	29	17.5	6	29.2	28.9	28.8	0.19
27	33	30.6	26	29	25.6	18	92	81.9	61	26	16.1	5	29.4	29.3	29.2	0
28	38	34.6	31	32	27.2	22	89	74.8	59	24	16	0	29.6	29.4	29.2	0.02
29	40	33.3	27	37	29.1	20	96	84.7	75	20	10.7	0	29.6	29.4	29.3	0
30	29	26.7	24	25	20.3	15	88	77.1	66	18	8.3	0	29.6	29.5	29.5	0
31	23	19.9	16	13	9.2	7	74	63.6	53	16	8.7	0	29.7	29.6	29.6	0

Time	Temperature (°F)			Dew Point (°F)			Humidity (%)			Wind Speed (mph)			Pressure (in)			Precipitation (in)
Feb	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Total
1	27	20.5	14	18	10.4	5	71	65	55	21	14.7	7	29.7	29.6	29.6	0
2	35	28.6	19	23	16.8	5	78	61.7	44	35	22.6	12	29.5	29.3	29.2	0
3	18	9.3	4	4	-2.1	-9	80	60.8	48	31	20.7	7	29.9	29.7	29.4	0
4	34	15.7	3	19	4.3	-3	76	62.4	43	22	12	3	29.9	29.7	29.4	0
5	44	40.4	35	33	27.7	21	79	61	51	25	17	7	29.4	29.3	29.2	0
6	37	33.4	31	33	27.3	23	89	79	69	14	7.9	0	29.6	29.5	29.3	0
7	49	39	27	38	30	22	85	70.8	49	23	13.2	3	29.6	29.4	29.2	0
8	44	37.8	31	32	29.5	27	85	72.5	60	16	10.4	0	29.6	29.6	29.4	0
9	56	42.5	29	48	38.5	26	97	85.9	69	31	10.7	3	29.6	29.1	28.9	0
10	41	37.1	32	35	30	20	86	76.1	59	32	19.5	12	29.5	29.3	29.1	0.56
11	34	31.4	29	26	22.6	20	80	69.9	61	20	15.2	8	29.7	29.6	29.5	0
12	46	36.8	30	28	24.9	19	82	64.3	34	16	7.9	3	29.5	29.3	29.2	0
13	45	36.3	29	32	27.9	22	89	72.5	55	21	11.9	3	29.2	29.1	28.9	0
14	51	39.5	29	34	27.3	23	92	64.9	39	16	6.7	0	29.4	29.3	29.2	0
15	60	53.1	42	44	36.7	24	73	54.4	41	31	19.3	6	29.3	29.1	29	0
16	42	37.9	35	35	32.6	30	96	81.9	70	14	10.1	3	29.4	29.2	29	0
17	36	28.9	20	34	25	12	93	85.6	69	21	14.6	9	29.6	29.2	28.9	0.14
18	38	30.8	20	28	21	12	82	67.3	57	33	18.5	7	29.6	29.6	29.5	0
19	51	41.6	32	29	25.3	22	82	53.8	35	24	13.2	5	29.6	29.3	29.1	0
20	43	39.2	31	33	27.7	23	79	63.8	49	14	9.3	0	29.1	29.1	29	0
21	44	34.7	28	36	24.5	20	86	67.3	47	26	14.4	3	29.3	29	28.8	0
22	33	28.8	27	27	23.7	20	93	81.7	61	25	18.9	0	29.4	29.3	29.1	0
23	36	27.3	24	31	24.4	22	93	89	81	26	13.3	0	29.4	29.2	29.1	0
24	36	24.1	19	31	13.8	8	85	65	60	28	16.1	6	30	29.8	29.4	0.03
25	28	21.8	18	21	14.7	8	86	74.2	62	12	5.9	0	29.9	29.6	29.4	0
26	38	32.2	24	28	22.5	18	85	68.3	50	25	13.3	0	29.3	29.3	29.2	0
27	35	30.2	18	32	25.1	15	93	81.8	59	21	13.2	0	29.4	29	28.7	0
28	37	34.8	27	35	30.3	23	97	84.1	70	24	12.3	3	29.4	29	28.7	0.22

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Time	Temperature (°F)			Dew Point (°F)			Humidity (%)			Wind Speed (mph)			Pressure (in)			Precipitation (in)
Mar	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Total
1	44	34.8	28	30	26.8	24	88	73.8	55	13	5.9	0	29.4	29.2	29.1	0
2	40	35.1	29	34	29.6	26	96	81.2	63	14	8.8	0	29.4	29.2	29	0
3	39	32.8	24	32	29.1	21	93	86.5	65	23	12	0	29.4	29.1	28.6	0
4	40	34.2	32	32	30.9	28	93	87.9	70	24	14.2	0	29.4	28.9	28.6	0.87
5	42	36.5	29	34	31.3	26	93	82	67	16	8.5	0	29.6	29.5	29.4	0.01
6	39	32.6	27	31	27.1	23	92	80.8	62	14	4.4	0	29.7	29.5	29.4	0
7	35	33.6	31	27	17.9	14	75	53	42	26	16.7	9	29.7	29.5	29.3	0
8	35	31.7	28	23	19.2	16	78	60.4	52	15	10.6	6	29.8	29.8	29.7	0
9	38	31.3	25	25	22.5	20	84	70.2	59	9	5.3	0	29.7	29.7	29.6	0
10	32	30.3	28	30	27	23	96	87.8	72	24	16.2	3	29.5	29.2	29.1	0
11	33	30.7	29	27	24.2	19	92	77.3	61	14	7.3	0	29.4	29.3	29.2	0.03
12	30	30	30	21	20.3	20	69	67	66	5	2.7	0	29.4	29.4	29.4	0
13	34	32	30	30	29.1	26	96	88.9	81	13	5.9	0	29.3	29.2	29.2	0
14	31	27.8	25	26	21.8	20	88	78.3	66	25	18.3	12	29.4	29.3	29.2	0
15	37	30.7	23	28	17.7	9	79	59.7	41	17	13.6	7	29.6	29.5	29.4	0
16	49	41.2	33	34	25.4	22	72	55	36	20	11.6	3	29.5	29.3	29.1	0
17	49	43.8	35	46	39.9	25	93	86.2	67	25	17.5	7	29.1	28.9	28.8	0.11
18	36	30.3	22	28	22.4	10	85	72.8	55	32	22	12	29.2	29.1	29.1	0.07
19	34	27.1	22	23	16.7	11	78	65.5	48	29	22.3	16	29.5	29.4	29.2	0
20	43	37	33	28	23.4	13	72	59.6	30	30	19.8	8	29.5	29.5	29.4	0
21	52	43.4	36	31	27.6	24	73	54.8	38	21	12.3	3	29.7	29.6	29.5	0
22	56	45.7	35	39	32.5	28	76	61.6	39	17	7.5	0	29.6	29.5	29.4	0
23	51	46.3	34	49	42.9	27	97	88.2	71	15	10.2	3	29.4	29.2	29.1	0
24	42	35.5	31	28	25.6	21	82	68.6	47	10	6	0	29.4	29.4	29.4	0.15
25	50	42.3	33	46	36	24	93	78.6	65	43	17.2	8	29.3	28.9	28.7	0.07
26	48	41.2	37	36	30.1	27	79	65.4	48	30	19.9	3	29.4	29.2	29	0.21
27	41	36.6	35	36	33.4	29	93	88.7	68	16	9.5	0	29.5	29.4	29.3	0
28	45	37.9	33	35	33	31	92	83.3	60	12	6.3	0	29.6	29.5	29.5	0.08
29	48	34.8	27	33	27.9	14	92	77.7	46	32	18.4	5	29.6	29.4	29.3	0
30	36	29.8	21	22	17.5	13	75	60.7	48	16	9.6	5	29.7	29.7	29.6	0.02
31	52	43.6	28	49	39.5	21	97	85.7	67	14	8.7	0	29.6	29.2	29	0

Time	Temperature (°F)			Dew Point (°F)			Humidity (%)			Wind Speed (mph)			Pressure (in)			Precipitation (in)
Apr	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Total
1	60	48.3	34	52	42.3	24	96	80.7	49	31	18.9	6	29.2	28.8	28.6	0.67
2	41	33.3	26	24	16.8	10	67	51.7	35	22	8.9	0	29.5	29.4	29.2	0.28
3	60	48	36	42	33.1	20	83	57	40	26	12	0	29.3	29.2	29.2	0
4	58	48.9	46	51	44.6	35	97	85.7	66	20	7.9	0	29.5	29.4	29.3	0.33
5	62	50.4	43	59	45.7	34	94	84.6	62	23	10.4	0	29.4	29.2	29.1	0
6	61	50	41	56	40.2	30	89	69.7	48	24	16.5	10	29.7	29.5	29.3	0.7
7	44	38.9	34	32	24.6	21	76	57.7	42	20	12.7	7	29.9	29.8	29.7	0
8	47	36.7	27	29	23.5	20	79	60.2	39	12	3.5	0	29.9	29.9	29.8	0
9	53	41.7	29	32	26.5	22	85	57.3	35	9	3.2	0	29.9	29.9	29.8	0
10	63	48.3	36	34	30.3	26	76	52.7	27	14	7.3	0	29.8	29.7	29.6	0
11	65	55.1	42	41	35.5	25	58	48.1	38	23	14.9	7	29.6	29.4	29.3	0
12	72	60.6	46	48	44.1	39	76	55.7	41	23	12.3	6	29.3	29.3	29.2	0
13	78	63.5	54	48	43.9	41	66	50.8	30	25	13.3	5	29.2	29.2	29.2	0
14	83	67.5	48	45	41.6	34	74	43.3	17	10	3.9	0	29.3	29.2	29.2	0
15	78	65.3	56	53	46.7	42	64	51.8	35	10	5.5	3	29.2	29.2	29.1	0
16	83	63	50	59	50.2	43	90	66.8	32	31	11	0	29.2	29	28.9	0
17	50	43.2	39	42	36.6	33	86	77.8	64	24	16.1	3	29	29	28.9	0.18
18	41	39.2	37	33	30	27	79	69.7	60	24	16.4	10	29.3	29.1	28.9	0.03
19	47	40.5	36	34	28.6	24	73	63.1	49	18	12.4	3	29.5	29.4	29.3	0
20	63	50.7	41	42	36.1	33	79	58.8	41	17	11.8	3	29.6	29.5	29.3	0
21	78	59.4	46	52	44.5	36	74	59.5	36	16	7.1	0	29.3	29.3	29.2	0
22	61	52	47	55	47.5	41	93	84.9	71	22	11.8	0	29.2	29.1	28.9	0.19
23	48	45	42	42	36	32	86	71.6	54	18	12	5	29.4	29.3	29.2	0.01
24	46	42.2	38	39	35.8	33	89	78.8	63	17	6.6	0	29.5	29.4	29.4	0
25	50	42.8	37	38	34.4	30	89	73.6	50	29	11	5	29.6	29.5	29.5	0.13
26	52	43.4	39	38	35.5	29	93	75.7	43	12	5.6	0	29.6	29.5	29.5	0.11
27	58	46.7	33	38	33.9	30	89	63.8	40	16	6.5	0	29.6	29.5	29.4	0
28	65	52.6	41	49	42.2	31	86	68.6	50	17	9.3	0	29.4	29.3	29.2	0
29	59	52.2	48	52	47.8	42	94	85.2	67	15	8.9	0	29.2	29.1	29	0.1
30	59	51.9	46	54	49.1	44	94	90.2	78	14	8.4	0	29	28.7	28.7	0.01

Appendix B
Weather Data
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Time	Temperature (°F)			Dew Point (°F)			Humidity (%)			Wind Speed (mph)			Pressure (in)			Precipitation (in)
May	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Total
1	51	46.6	43	42	38.9	36	89	75	59	23	14.5	0	28.6	28.6	28.5	0.17
2	46	42.2	39	39	37.1	34	93	82.2	68	16	12.2	6	28.8	28.7	28.6	0
3	49	42.9	38	44	38.6	35	93	85.4	68	10	6	3	29.1	28.9	28.8	0.03
4	55	49.2	46	44	42.9	41	93	79.3	62	10	5.4	0	29.5	29.3	29.1	0
5	62	52.1	45	45	41.8	38	93	70	42	13	5.2	0	29.6	29.6	29.5	0
6	68	55.1	40	45	40.4	37	93	61.2	34	9	3.2	0	29.7	29.6	29.5	0
7	68	53.9	46	51	45.9	39	89	75.9	37	12	6.1	0	29.5	29.3	29.2	0
8	67	55.2	44	49	42.4	35	97	67	33	14	6.1	3	29.3	29.3	29.3	0.07
9	63	55.2	46	37	32.9	30	64	45	29	16	7.9	0	29.5	29.4	29.3	0
10	68	56.3	41	42	38.8	35	82	54.8	34	15	6.3	0	29.6	29.5	29.5	0
11	77	62.5	48	47	44.3	42	80	54.2	34	16	9.6	5	29.5	29.5	29.4	0
12	80	67.1	53	51	48.2	45	77	52.8	34	14	7.2	0	29.5	29.4	29.4	0
13	74	66	57	49	44.7	39	74	47.9	30	12	6.9	0	29.6	29.5	29.4	0
14	63	55.9	48	39	36.6	33	66	49.8	33	16	8.1	0	29.7	29.7	29.6	0
15	70	56.2	41	41	35.8	32	79	50.2	26	17	8	0	29.7	29.6	29.4	0
16	68	58.9	50	46	41.8	38	77	54.8	37	24	13.8	5	29.3	29.1	29	0
17	52	45.8	40	38	29.4	23	68	54.2	32	16	10.4	0	29.5	29.3	29.2	0
18	63	49.5	33	34	30.5	23	85	52.2	27	13	4.6	0	29.6	29.5	29.5	0
19	74	62.3	43	56	49.4	33	76	63.3	51	21	10.8	0	29.5	29.4	29.3	0
20	66	59.2	54	58	54.3	46	94	84.6	63	17	10	3	29.3	29.3	29.2	0.01
21	69	59.4	50	52	49	46	89	69.6	54	15	9.4	0	29.5	29.4	29.3	0.22
22	69	58.1	50	48	42.1	37	89	57.8	36	15	8.1	0	29.6	29.6	29.5	0
23	78	64.1	47	55	47.6	37	71	56.3	40	10	5.1	0	29.6	29.5	29.5	0
24	65	58.7	49	53	46.6	33	81	65.2	41	18	10.8	3	29.6	29.5	29.4	0
25	63	51.2	40	38	34.5	31	77	55.3	30	16	8.6	0	29.7	29.6	29.6	0
26	71	57.9	40	44	37.1	32	86	51.2	25	9	3.2	0	29.7	29.7	29.6	0
27	75	62.8	47	46	40.8	39	77	48	28	10	3.8	0	29.7	29.7	29.6	0
28	81	67.9	52	49	43	35	77	44.4	20	9	2.7	0	29.6	29.5	29.4	0
29	83	69.2	52	55	47	42	77	47.5	30	14	6	0	29.4	29.4	29.4	0
30	86	73.2	58	60	52.4	40	65	49	35	12	4.9	0	29.5	29.4	29.4	0
31	88	75.5	62	57	54.9	52	80	51.9	31	10	4.5	0	29.5	29.5	29.4	0

Time	Temperature (°F)			Dew Point (°F)			Humidity (%)			Wind Speed (mph)			Pressure (in)			Precipitation (in)
Jun	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Total
1	90	77.3	61	59	55	52	78	49.2	28	12	4.1	0	29.5	29.5	29.4	0
2	91	77.5	62	60	57.6	56	80	52.4	34	16	6.1	0	29.4	29.4	29.3	0
3	74	69.1	59	61	50.6	38	76	53.4	33	23	15.7	5	29.5	29.4	29.3	0
4	71	62	49	42	37.8	32	71	43.4	24	17	8.3	0	29.5	29.5	29.4	0
5	73	61.6	49	50	45	39	80	57.2	31	9	5	0	29.4	29.3	29.3	0
6	73	64.8	56	53	47.6	40	84	56.2	32	16	8.5	0	29.2	29.2	29.1	0
7	70	61.1	52	48	41.6	33	77	52.1	26	15	9.2	0	29.1	29.1	29.1	0
8	66	60.2	55	50	47.3	45	80	63.3	47	12	5.6	0	29.2	29.1	29.1	0
9	68	60	52	55	51.8	48	93	75.2	59	15	8	0	29.2	29.2	29.1	0
10	78	67.2	54	56	51.5	47	90	60.8	37	16	8.4	0	29.2	29.1	29.1	0
11	77	67.2	61	58	53	50	90	61.9	43	17	6.8	0	29.2	29.1	29.1	0
12	70	65	57	66	61.4	52	93	88.1	78	18	10.1	5	29.1	28.9	28.9	0.15
13	68	59.7	52	54	50.8	45	93	74.3	47	18	8.9	0	29.1	29	29	0.36
14	66	59.4	52	56	53.4	50	93	81.1	63	14	7.7	3	29	28.9	28.8	0.07
15	71	62.7	53	59	53.8	50	93	74.2	53	13	6.2	0	29.1	29.1	29	0
16	72	63.1	60	59	58.1	57	93	84.5	63	12	4.9	0	29.2	29.1	29.1	0.14
17	77	67.9	58	56	48.8	40	87	54.2	28	14	10.7	6	29.2	29.2	29.2	0.03
18	79	67.5	53	53	49.8	44	83	55.5	34	8	2.1	0	29.3	29.3	29.2	0
19	82	70.6	56	60	55.6	52	87	61.3	40	20	9.2	0	29.4	29.4	29.3	0
20	84	73.9	65	63	58.2	54	78	59.1	43	17	11	5	29.5	29.5	29.4	0
21	86	74.1	61	62	55.9	53	78	54.8	33	15	7.7	0	29.6	29.5	29.5	0
22	82	71.3	62	59	55.4	52	80	58.4	40	12	7.5	0	29.5	29.5	29.4	0
23	75	71	67	68	65.1	59	93	81.8	66	8	4.1	0	29.4	29.3	29.3	0
24	80	69.2	66	68	65.3	64	96	87.7	64	12	4.2	0	29.3	29.2	29.2	0.27
25	85	71.7	67	68	66.4	63	97	85.2	48	10	6.8	5	29.2	29.2	29	0
26	77	72	67	67	65.4	63	90	79.7	66	15	9.6	0	29	29	28.9	0
27	74	69	66	68	64.7	61	90	86.2	78	16	10.6	5	29.1	29	28.9	0.17
28	73	66.2	59	60	56.4	50	90	72.5	46	18	8.8	0	29.4	29.3	29.1	0.27
29	79	65.8	53	60	53.5	48	90	67.7	34	9	3.5	0	29.4	29.4	29.3	0
30	82	71.7	63	70	62.2	57	84	72.4	60	9	4.1	0	29.4	29.3	29.3	0

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Time	Temperature (°F)			Dew Point (°F)			Humidity (%)			Wind Speed (mph)			Pressure (in)			Precipitation (in)
Jul	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Total
1	84	76.3	69	71	67.1	64	87	74	58	15	8.1	0	29.3	29.2	29.2	0.01
2	76	72.4	70	71	68.6	66	93	87.8	79	9	3.7	0	29.2	29.2	29.2	0
3	79	72.1	67	70	67.5	64	94	85.5	74	12	5.3	0	29.3	29.2	29.2	0.08
4	86	68	62	71	63.7	60	97	87.4	51	15	2.2	0	29.4	29.3	29.3	0
5	88	79.3	70	70	66	61	90	65.8	41	12	6.4	0	29.4	29.4	29.3	0
6	90	78.6	69	70	66.6	62	87	67.8	43	21	7.1	0	29.3	29.2	29.2	0
7	82	74.3	63	71	62.9	52	93	69.8	41	14	9.3	3	29.3	29.3	29.2	0
8	80	69.5	59	58	55.6	54	87	63	42	8	4.5	0	29.3	29.3	29.2	0
9	77	72	65	64	61.5	55	90	70.1	52	10	6.5	0	29.2	29.2	29.2	0
10	81	73.3	63	64	59.8	52	84	64	43	15	7.8	0	29.3	29.2	29.2	0
11	84	75.8	68	66	62.6	58	84	65	43	25	13.5	3	29.3	29.2	29.2	0
12	80	71.7	66	64	56.9	50	87	60.9	43	13	6	0	29.3	29.3	29.2	0
13	79	73.2	65	67	63.5	60	90	72.5	56	26	13.7	5	29.2	29.1	29	0.02
14	83	72.4	60	63	59.1	55	90	65.3	38	10	5.3	0	29.3	29.3	29.2	0
15	84	72.1	64	70	65.7	59	93	80.9	56	15	6.1	0	29.3	29.2	29.2	0
16	80	73.5	68	69	66.3	64	93	78.7	64	18	8.3	0	29.2	29.2	29.1	0
17	83	73.6	67	67	61.9	56	84	68.2	42	20	9.7	0	29.3	29.2	29.2	0
18	80	71.1	64	69	63.8	58	94	78.7	47	22	5.5	0	29.4	29.3	29.3	0.44
19	81	71.5	60	61	58.5	56	90	65.8	43	8	3.8	0	29.4	29.4	29.4	0.48
20	85	72.9	63	68	62.1	58	90	71.4	41	23	8.3	0	29.4	29.2	29.1	0
21	79	69.8	63	64	61.6	58	93	77	50	16	8.7	0	29.2	29.1	29.1	0.42
22	82	72	61	63	58.9	53	90	66	40	14	6.7	0	29.3	29.2	29.2	0
23	82	71.4	65	67	63.6	57	96	78.5	44	14	5.6	0	29.4	29.3	29.3	0
24	83	72.6	65	66	63.6	60	90	74.4	47	18	8.3	0	29.4	29.4	29.4	0
25	81	72.1	66	70	66.8	64	94	84	58	10	5.3	0	29.4	29.4	29.4	0.47
26	87	78.3	71	69	67.2	62	91	70.8	44	20	12.1	3	29.4	29.3	29.2	0.02
27	83	74.8	71	72	69.8	68	93	85	69	21	10.5	0	29.4	29.2	29.1	0.98
28	88	77.5	69	73	68.4	64	93	75.8	45	14	8.1	3	29.4	29.3	29.3	0
29	77	71.5	61	74	68.1	58	94	89	76	25	9.4	0	29.4	29.2	29.2	0
30	78	68	57	60	57.2	53	93	70.2	45	17	6.4	0	29.4	29.4	29.3	0.91
31	75	67.4	58	60	56.4	54	87	68.9	48	13	6.8	3	29.5	29.4	29.3	0

Time	Temperature (°F)			Dew Point (°F)			Humidity (%)			Wind Speed (mph)			Pressure (in)			Precipitation (in)
Aug	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Total
1	77	68.8	57	56	52.2	46	87	57.9	33	9	3.3	0	29.6	29.5	29.5	0
2	79	69.4	58	61	55.8	51	84	63.8	39	14	6.1	0	29.6	29.5	29.4	0
3	83	74.8	68	67	63.2	58	87	68.5	47	18	10.4	5	29.4	29.3	29.2	0.05
4	81	72.8	67	66	63.3	61	93	73.4	50	18	8.1	0	29.3	29.3	29.2	0.06
5	77	70.1	61	63	58.5	53	90	68.4	45	12	6.4	0	29.4	29.4	29.4	0
6	84	70.8	55	69	60.6	51	91	71.7	51	17	8.9	0	29.4	29.3	29.2	0
7	82	73	68	70	67.3	63	93	82.9	56	21	10.2	6	29.1	29	29	0.11
8	76	66.9	63	64	61.7	58	94	84.3	60	24	12.5	3	29.2	29	28.9	0.03
9	82	72.4	59	67	62.1	56	90	71	52	24	9.9	0	29.2	29.1	29.1	0
10	81	70.9	65	66	63.9	61	90	79	60	24	9.1	0	29.1	29	29	0.13
11	78	70.3	62	63	58.3	54	86	66.5	46	13	8.2	0	29.2	29.2	29.1	0.39
12	83	72.9	63	71	65.1	57	87	77.2	54	22	11.3	0	29.2	29.1	29.1	0
13	79	70.8	63	66	60.8	58	93	72.2	50	18	8.3	0	29.4	29.3	29.1	0.01
14	74	69.3	62	61	60.3	58	86	73.5	62	9	3.7	0	29.4	29.3	29.2	0
15	74	68.9	65	67	63.7	59	94	83.8	68	15	8	0	29.2	29.2	29.2	0
16	81	70.1	64	66	63.9	60	96	81.7	52	10	5.7	0	29.3	29.3	29.2	0.66
17	79	71.5	65	66	63.1	60	90	75.6	62	26	12.4	5	29.3	29.1	29	0
18	67	64	58	63	56.4	51	90	76.9	61	23	14.5	8	29.3	29.1	29	0.1
19	76	65.6	54	57	53	49	83	65.3	44	16	11.3	7	29.4	29.4	29.3	0
20	81	72.3	62	66	62.5	57	90	72.5	54	20	10.1	0	29.4	29.4	29.4	0
21	75	70.8	65	67	62.6	56	90	75.8	57	12	6.7	0	29.6	29.5	29.4	0
22	76	68.1	59	57	53.9	52	81	61.8	43	10	6.5	0	29.6	29.6	29.5	0
23	68	65.6	63	60	57.4	55	84	74.9	70	14	5.8	0	29.5	29.4	29.3	0
24	77	71.5	66	71	65.5	58	93	81.8	73	12	6	0	29.3	29.2	29.1	0
25	76	72.4	70	72	68.5	64	94	87.6	71	9	5.5	0	29.3	29.2	29.1	0.42
26	79	69.5	62	64	61.4	58	90	76.3	56	18	6.7	0	29.4	29.3	29.3	0
27	72	64.2	57	58	55	52	87	73.2	55	13	6.4	0	29.4	29.4	29.4	0
28	77	64.8	50	61	56	48	93	74.6	54	10	4	0	29.4	29.4	29.3	0
29	79	67.7	59	62	58.6	55	90	74	50	10	3.9	0	29.3	29.3	29.1	0
30	68	63.7	60	59	56	53	93	76.4	65	17	12.2	9	29.4	29.2	29.1	0.06
31	72	63.2	51	52	50.1	46	84	64.1	44	14	4.7	0	29.6	29.5	29.4	0

Appendix B
Weather Data
2023 Annual Comprehensive Sampling/Monitoring Report
Installation-Wide Groundwater Monitoring Program
Niagara Falls Air Reserve Station, New York



Time	Temperature (°F)			Dew Point (°F)			Humidity (%)			Wind Speed (mph)			Pressure (in)			Precipitation (in)
Sep	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Total
1	78	63.6	51	58	52.6	48	89	70.2	39	9	1.6	0	29.7	29.6	29.5	0
2	79	69	56	64	60.2	52	87	74.3	58	18	10.6	0	29.5	29.4	29.3	0
3	83	75.8	69	69	67.4	65	90	75.8	58	22	13.2	8	29.3	29.3	29.3	0
4	86	78.3	72	74	69.3	68	91	74.6	59	17	11.3	5	29.3	29.3	29.3	0
5	87	78.2	70	73	70	67	93	77	59	12	7.1	3	29.4	29.4	29.3	0
6	89	77.8	71	73	68.9	65	88	75.1	53	20	7.3	0	29.3	29.2	29.1	0
7	82	73.6	71	71	69.4	68	94	87.2	67	17	10.1	3	29.2	29.1	29.1	1.22
8	69	66.8	64	58	57.3	56	78	71.3	65	12	6.7	3	29.5	29.4	29.3	0
9	70	66.1	64	62	60	57	87	80.7	73	13	5.8	0	29.5	29.5	29.4	0
10	76	66.9	63	64	60.9	58	94	81.3	64	9	3.4	0	29.5	29.5	29.4	0
11	76	68.1	56	63	59.4	53	93	75.1	60	10	3.8	0	29.5	29.4	29.4	0
12	74	66.8	60	65	61.4	56	90	82.9	73	18	8	0	29.4	29.3	29.3	0
13	68	60.8	54	58	51.9	48	93	73.6	52	17	9.5	3	29.4	29.4	29.3	0.09
14	68	58.3	48	51	46.8	44	93	68.5	44	9	5.2	0	29.6	29.5	29.4	0
15	70	58.1	47	52	47.5	44	93	70.7	45	9	2.2	0	29.6	29.5	29.5	0
16	73	55.1	45	54	47.6	43	97	78.8	42	13	2.7	0	29.5	29.4	29.3	0
17	73	62.9	53	58	54	49	87	73.7	51	8	2.5	0	29.3	29.3	29.2	0
18	71	62.7	58	58	55.4	51	93	78.5	49	13	7.1	0	29.3	29.2	29.2	0
19	69	59.5	50	54	49.7	46	93	72.1	45	15	7.7	0	29.5	29.4	29.3	0.07
20	68	58.1	48	51	46.1	42	89	67.2	39	9	2.4	0	29.6	29.5	29.5	0
21	76	61.6	50	57	50.1	45	86	67.7	46	8	4.5	0	29.7	29.6	29.6	0
22	76	61.9	49	58	50.5	45	86	69	42	12	5.4	0	29.7	29.6	29.6	0
23	72	60	52	54	48.6	42	86	67.5	48	18	6.9	0	29.6	29.6	29.5	0
24	67	62.3	54	56	52.1	43	86	69.7	58	21	12.8	5	29.5	29.4	29.4	0
25	75	64.8	59	59	56.6	54	87	75.1	53	15	8.7	0	29.6	29.5	29.4	0
26	71	61.5	55	54	51.7	51	87	71.5	49	14	9	5	29.7	29.7	29.6	0
27	72	60.7	52	51	44.3	31	89	60.5	22	16	8.1	0	29.7	29.6	29.6	0
28	73	60.9	51	53	48.6	44	80	65.5	39	12	6.1	0	29.6	29.5	29.5	0
29	73	64.1	55	58	55.4	51	87	74.1	55	9	3.5	0	29.6	29.5	29.5	0
30	76	62.2	54	61	56.2	51	94	81.9	58	9	2.5	0	29.6	29.6	29.5	0

Time	Temperature (°F)			Dew Point (°F)			Humidity (%)			Wind Speed (mph)			Pressure (in)			Precipitation (in)
Oct	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Total
1	78	62.4	53	62	56.6	50	94	83.1	54	9	1.8	0	29.7	29.7	29.6	0
2	82	64.6	58	64	58.9	55	93	83.4	45	10	2.3	0	29.6	29.6	29.5	0
3	83	70.9	63	66	62.6	60	93	76.9	51	10	5.5	0	29.6	29.5	29.5	0
4	84	71.8	61	64	60.7	57	87	70	46	9	3.6	0	29.5	29.5	29.4	0
5	83	72.9	65	62	59.1	57	90	63.3	44	16	10	0	29.4	29.4	29.3	0
6	73	66	59	63	57.7	45	90	76	52	22	11.1	6	29.3	29.2	29.2	0.41
7	60	55.8	49	48	43.3	39	80	63.2	49	18	12.5	0	29.2	29.1	29.1	0.08
8	55	49.3	47	45	42.6	39	86	78.1	62	28	18.1	13	29	29	28.9	0
9	56	49.9	46	37	34.7	32	68	56.8	40	26	17.5	9	29.1	29	28.9	0.12
10	57	51.4	49	45	39	34	83	63.5	53	17	9.9	5	29.1	29.1	29	0
11	58	52.4	45	46	43.9	41	90	73.9	53	14	8.5	5	29.2	29.2	29.1	0
12	61	53.9	47	47	43.6	40	86	69.2	49	10	4.3	0	29.4	29.3	29.2	0
13	60	50.8	40	46	40.2	36	86	68.2	47	9	3.9	0	29.5	29.4	29.3	0
14	53	50.8	49	47	45.1	41	86	81.2	66	12	7.2	0	29.3	29.2	29.1	0
15	52	49.7	48	45	42.3	39	89	76.1	61	18	11.6	6	29.1	29.1	29.1	0.01
16	55	51.8	49	48	45.4	43	89	79.1	69	16	9	5	29.3	29.2	29.1	0.03
17	57	53	50	45	43.6	41	80	70.8	59	10	7.3	3	29.4	29.3	29.3	0
18	58	53.1	49	46	43.7	41	83	71.3	53	16	5.9	0	29.5	29.5	29.4	0
19	65	55.6	43	50	44.1	38	86	66.6	52	15	8.3	0	29.4	29.3	29.1	0
20	62	57.9	52	55	51.7	48	93	80.3	67	17	9.6	5	29	28.9	28.8	0
21	55	52.2	49	51	45.8	41	90	78.9	68	20	13.5	3	29	28.9	28.8	0.15
22	53	46.9	39	39	35.8	33	82	65.7	48	24	15.5	6	29.4	29.2	29	0
23	57	45.4	33	42	35.8	30	89	71	47	10	5.3	0	29.6	29.6	29.5	0
24	71	59.3	47	46	42	39	77	55.5	35	20	9.5	0	29.6	29.5	29.4	0
25	72	67.1	60	56	49.1	45	86	53.8	40	20	12.1	0	29.5	29.5	29.5	0
26	72	64.6	60	59	56.1	53	90	74.9	55	15	8.3	0	29.5	29.5	29.4	0.07
27	74	69.5	65	60	57.5	53	78	65.8	59	26	16.3	9	29.4	29.4	29.3	0.01
28	69	58.9	47	62	49.8	37	88	72.5	53	21	13.3	5	29.6	29.4	29.3	0.05
29	48	46.5	45	44	42.1	37	90	85.2	68	14	9.5	3	29.6	29.4	29.3	0.06
30	46	42.7	34	43	38.3	30	89	84.5	70	17	10.2	6	29.4	29.3	29.2	0.15
31	44	36.9	31	34	29.5	24	92	75.9	49	9	4.5	0	29.5	29.4	29.4	0.02

Appendix B
Weather Data
2023 Annual Comprehensive Sampling/Monitoring Report
Installation-Wide Groundwater Monitoring Program
Niagara Falls Air Reserve Station, New York



Time	Temperature (°F)			Dew Point (°F)			Humidity (%)			Wind Speed (mph)			Pressure (in)			Precipitation (in)
Nov	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Total
1	42	36.2	30	30	26.6	23	89	69.5	51	20	9.7	0	29.7	29.5	29.4	0
2	48	41.1	32	35	28.5	22	83	62.3	46	24	7.8	0	29.7	29.7	29.6	0
3	60	53.7	46	35	31.1	28	54	42.8	33	26	14.1	0	29.6	29.5	29.4	0
4	57	51	48	45	42	34	87	72.2	42	16	5	0	29.5	29.5	29.4	0
5	51	47	42	45	37.6	32	89	71.3	48	9	5.1	0	29.5	29.5	29.4	0.04
6	61	51.7	40	47	39.3	32	77	63.5	44	17	9.6	3	29.5	29.2	29	0
7	60	49.9	37	52	40	27	84	68.9	62	21	15.4	9	29.5	29.2	29	0.1
8	38	35.6	31	34	26.4	22	86	69.6	54	18	9.8	0	29.6	29.4	29.1	0
9	50	44.3	37	43	37.6	29	93	78.3	50	20	13.3	0	29.4	29.2	29	0.5
10	52	46.4	41	33	30.9	28	70	55.3	41	17	10.5	7	29.6	29.4	29.4	0
11	43	40.2	36	34	31	30	79	69.6	62	10	6	0	29.8	29.7	29.6	0
12	45	38.1	31	30	27.7	25	79	66.9	49	9	4.3	0	29.9	29.8	29.7	0
13	58	45	30	42	32.5	24	82	63.1	42	23	11.4	0	29.7	29.5	29.4	0
14	49	43.6	35	35	32.4	29	82	65.4	48	15	7	0	29.8	29.7	29.6	0
15	58	46	31	38	31.5	26	82	60.2	33	21	10.2	0	29.7	29.6	29.5	0
16	59	40.5	32	45	34.1	29	97	79.7	40	13	2.4	0	29.6	29.5	29.3	0
17	64	51.8	39	52	41.6	31	89	72.1	29	22	13.4	3	29.3	29.2	29.1	0
18	47	40.6	31	31	29	25	85	64.5	47	16	9.3	0	29.4	29.3	29.2	0.17
19	47	40.5	34	35	28.9	23	79	63.7	53	22	10.5	6	29.6	29.3	29.2	0
20	38	31.5	22	23	20.3	16	78	63.8	47	15	7.9	0	29.8	29.7	29.6	0
21	47	37.6	29	42	30.7	20	89	76.5	57	14	8.6	5	29.7	29.4	29.1	0
22	50	46.3	36	46	41.8	32	90	84.4	73	20	9.8	3	29.2	29.1	29.1	0.24
23	47	42.9	34	37	32.1	23	79	65.8	56	24	14.9	6	29.5	29.3	29.2	0
24	36	32	26	22	19.3	15	71	59.6	50	14	9.3	3	29.8	29.6	29.5	0
25	39	32.3	25	27	22.6	17	79	68.1	55	14	7.3	0	29.7	29.7	29.5	0
26	48	39.9	30	38	29.1	20	85	67	42	17	8.4	0	29.5	29.2	29	0
27	42	36	27	37	23.5	12	82	61.5	38	26	19.6	12	29.2	29.1	29	0
28	31	28	25	23	17.9	11	81	66.1	51	25	18.4	13	29.4	29.3	29.2	0
29	39	29.8	24	28	20.4	12	81	68.2	54	26	16.6	8	29.4	29.3	29.2	0.01
30	52	44	32	34	31.2	23	77	62.3	43	25	15.9	7	29.3	29.2	29.2	0

Time	Temperature (°F)			Dew Point (°F)			Humidity (%)			Wind Speed (mph)			Pressure (in)			Precipitation (in)
Dec	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Total
1	51	44.3	42	41	39.2	33	92	83	50	21	4.7	0	29.4	29.3	29.3	0
2	43	41.5	39	40	38.5	36	93	89.2	81	14	5.9	0	29.4	29.3	29.2	0.19
3	45	42.3	39	43	39.6	37	93	90.3	82	16	9.1	0	29.3	29.1	28.9	0.01
4	42	39.4	36	37	32.3	27	83	75.8	67	20	11.8	5	29.3	29.2	29	0.18
5	37	34.5	33	31	28.3	24	89	78.5	64	10	3.3	0	29.4	29.4	29.4	0
6	35	32.4	28	30	25.2	21	89	75.2	60	17	5.2	0	29.5	29.4	29.4	0
7	41	36.5	32	34	31.9	24	89	83.5	73	15	6.7	0	29.4	29.3	29.2	0.09
8	53	18.6	0	36	13	0	79	21.5	0	8	1.5	0	29.4	29.3	29.3	0
9	60	56.3	54	51	40.6	29	90	58.9	34	18	9.3	3	29.3	29.2	29.1	0
10	55	46.1	39	51	38.6	29	90	75.4	58	17	11.4	6	29.2	29.2	29.1	0.47
11	39	35.7	34	31	24.6	19	76	64.6	52	25	15.9	10	29.5	29.3	29.2	0
12	45	38.5	32	32	26.8	20	70	63.2	56	30	19.4	6	29.7	29.5	29.5	0
13	38	32.4	27	21	18.7	15	69	57.9	43	22	13.7	6	30	29.9	29.7	0
14	44	37.3	27	32	24.7	18	72	61	45	24	14.5	3	30	29.9	29.7	0
15	51	44.2	39	37	33.5	31	82	66.9	48	18	13	0	29.8	29.7	29.7	0
16	49	42.6	35	38	35.3	31	86	76	52	13	5.3	0	29.8	29.7	29.5	0
17	50	48.5	47	46	39.1	29	90	72.5	44	18	9.4	3	29.5	29.3	29	0
18	47	40.7	32	44	36.2	27	90	84	79	24	13.5	5	29	28.8	28.7	0.19
19	32	28.5	24	27	20.3	15	82	71.4	59	24	16	3	29.7	29.4	29	0.1
20	39	36.3	28	31	28	20	78	72.1	60	17	8.3	0	29.8	29.7	29.7	0
21	37	31.8	26	30	23.7	19	79	72.2	64	18	11.5	3	29.9	29.9	29.8	0
22	37	31.9	26	27	23.2	20	78	70.5	62	12	5.9	0	29.8	29.7	29.6	0
23	44	40.7	35	41	35.9	28	89	83.1	73	8	4.4	0	29.6	29.6	29.6	0
24	44	41.7	40	41	38.6	37	93	88.7	79	8	3.7	0	29.7	29.7	29.6	0.01
25	57	44	38	46	39.5	35	93	84.8	67	9	3.3	0	29.7	29.6	29.6	0
26	52	49.4	41	49	45.6	37	92	86.8	77	8	4.1	0	29.5	29.4	29.4	0
27	53	50.7	50	50	48.3	46	93	91.1	87	8	3.4	0	29.4	29.2	29.1	0.11
28	50	47.4	45	48	44.9	42	97	91.2	86	9	2.6	0	29.1	29.1	29.1	0.32
29	45	42.7	39	42	36.9	31	93	80.4	67	20	12.4	7	29.1	29.1	29	0
30	40	35.2	33	37	30.4	25	93	82.9	70	13	8.9	6	29.2	29.1	29	0
31	36	34.3	33	31	29.3	26	89	82	73	10	5.5	0	29.3	29.3	29.3	0

Appendix C

**Laboratory Analytical Data Reports and Data Validation Reports
(provided on CD)**

Laboratory Analytical Reports



Main Site: 301 Fulling Mill Road | Middletown, PA 17057 | Phone: 717-944-5541 | Fax: 717-944-1430 | www.alsglobal.com
Associated Site: 20 Riverside Drive | Spring City, PA 19475 | Phone: 610-948-4903 | Fax: 717-944-1430 |

NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: PJLA 74618
State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

Analytical Results Report For

ARCADIS US Inc - Clifton Park, NY

Project AUC057INFARS 30036646

Workorder 3331303

Report ID 290493 on 12/21/2023 (Revised report. See Project Notations Section.)

Certificate of Analysis

Enclosed are the analytical results for samples received by the laboratory on Nov 03, 2023.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Susan Scherer (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

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ALS Middletown: 301 Fulling Mill Road, Middletown, PA 17057 : 717-944-5541.

Recipient(s):

Andy Vitolins - Arcadis
Erika Denkenberger - Arcadis
Katherine Clubine - Arcadis
Corey Averill - Arcadis

Susan Scherer

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.

Susan Scherer
Project Coordinator

(ALS Digital Signature)



Sample Summary

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collector	Collection Company
3331303002	MW13-5D-20231102	Ground Water	11/02/2023 08:00	11/03/2023 09:15	CBC	Collected By Client
3331303003	PW13-1-20231102	Ground Water	11/02/2023 08:05	11/03/2023 09:15	CBC	Collected By Client
3331303004	MW13-4D-20231102	Ground Water	11/02/2023 08:35	11/03/2023 09:15	CBC	Collected By Client
3331303005	PW13-4D-20231102	Ground Water	11/02/2023 08:40	11/03/2023 09:15	CBC	Collected By Client



Reference

Notes

- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
- Except as qualified, Clean Water Act sample analyses are consistent with methodology requirements in 40 CFR Part 136, including but not limited to the following EPA Method reference revisions:
 - EPA 300.1 Rev. 1.0-1997
 - EPA 300.0 Rev. 2.1-1993
 - EPA 353.2 Rev. 2.0-1993
 - EPA 410.4 Rev. 1.0-1993
 - EPA 420.4 Rev. 1.0-1993
 - EPA 365.1 Rev. 2.0-1993
 - EPA 200.7 Rev. 4.4-1994
 - EPA 200.8 Rev. 5.4-1994
 - EPA 245.1 Rev. 3.0-1994
- Except as qualified, Safe Drinking Water Act sample analyses are consistent with methodology requirements in 40 CFR Part 141.
- The Chain of Custody document is included as part of this report.
- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
- Method references listed on this report beginning with the prefix "S" followed by a method number (such as S2310B-97) refer to methods from "Standard Methods for the Examination of Water and Wastewater".
- For microbiological analyses, the "Prepared" value is the date/time into the incubator and the "Analyzed" value is the date/time out the incubator.
- An Analysis-Prep Method Cross Reference Table is included after Analytical Results & Qualifiers section in this report.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND) above the MDL
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Practical Quantitation Limit for this Project
ND	Not Detected - indicates that the analyte was Not Detected
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits
#	Please reference the result in the Results Section for analyte-level flags.



Project Notations

P1

This certificate of analysis was modified to include only samples requiring Level IV reporting, based on the email instructions from Corey Averill on 12/20/23. See WO 3338385 for the samples requiring Level 2 reporting. SJS 12/21/23

Level IV deliverables is required on only 10% of the submissions. For Niagara, you can do the Site 13 wells (MW13-4D, MW13-5D, PW13-1, PW13-4D).

Sample Notations

Lab ID	Sample ID

Result Notations

Notation Ref.	
1	The Initial Calibration Verification recovery was outside limits (80-120%) for method SW846 8260C for the analyte Bromomethane.
2	The Initial Calibration Verification recovery was outside limits (80-120%) for method SW846 8260C for the analyte Iodomethane.



Detected Results Summary

Client Sample ID	MW13-5D-20231102	Collected	11/02/2023 08:00
Lab Sample ID	3331303002	Lab Receipt	11/03/2023 09:15

Compound	Result	Units	LOQ	LOD	DL	Method	Flag
VOLATILE ORGANICS							
Acetone	13.8	ug/L	5.0	3.8	1.6	SW846 8260C	#
cis-1,2-Dichloroethene	12.3	ug/L	1.0	0.75	0.33	SW846 8260C	#
Vinyl Chloride	1.4	ug/L	1.0	0.75	0.33	SW846 8260C	#



Detected Results Summary

Client Sample ID	PW13-1-20231102	Collected	11/02/2023 08:05
Lab Sample ID	3331303003	Lab Receipt	11/03/2023 09:15

Compound	Result	Units	LOQ	LOD	DL	Method	Flag
VOLATILE ORGANICS							
1,2-Dichlorobenzene	0.41J	ug/L	1.0	0.75	0.33	SW846 8260C	#
1,4-Dichlorobenzene	0.51J	ug/L	1.0	0.75	0.33	SW846 8260C	#
Acetone	12.7	ug/L	5.0	3.8	1.6	SW846 8260C	#
Benzene	0.39J	ug/L	1.0	0.75	0.33	SW846 8260C	#
Chlorobenzene	0.37J	ug/L	1.0	0.75	0.33	SW846 8260C	#
cis-1,2-Dichloroethene	1.5	ug/L	1.0	0.75	0.33	SW846 8260C	#

Detected Results Summary

Client Sample ID

MW13-4D-20231102

Collected

11/02/2023 08:35

Lab Sample ID

3331303004

Lab Receipt

11/03/2023 09:15

Compound	Result	Units	LOQ	LOD	DL	Method	Flag
VOLATILE ORGANICS							
Acetone	12.6	ug/L	5.0	3.8	1.6	SW846 8260C	#
cis-1,2-Dichloroethene	6.3	ug/L	1.0	0.75	0.33	SW846 8260C	#
Vinyl Chloride	4.8	ug/L	1.0	0.75	0.33	SW846 8260C	#

Detected Results Summary

Client Sample ID

PW13-4D-20231102

Collected

11/02/2023 08:40

Lab Sample ID

3331303005

Lab Receipt

11/03/2023 09:15

Compound	Result	Units	LOQ	LOD	DL	Method	Flag
VOLATILE ORGANICS							
Acetone	10.0	ug/L	5.0	3.8	1.6	SW846 8260C	#
cis-1,2-Dichloroethene	0.55J	ug/L	1.0	0.75	0.33	SW846 8260C	#



Results

Client Sample ID	MW13-5D-20231102	Collected	11/02/2023 08:00
Lab Sample ID	3331303002	Lab Receipt	11/03/2023 09:15

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:59	ILY	A
1,1,2,2-Tetrachloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:59	ILY	A
1,1,2-Trichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:59	ILY	A
1,1-Dichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:59	ILY	A
1,1-Dichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:59	ILY	A
1,2,3-Trichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:59	ILY	A
1,2,4-Trichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:59	ILY	A
1,2-Dibromo-3-chloropropane	2.5U	U,P1	ug/L	5.0	2.5	1.6	SW846 8260C	1	11/15/2023 18:59	ILY	A
1,2-Dibromoethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:59	ILY	A
1,2-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:59	ILY	A
1,2-Dichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:59	ILY	A
1,2-Dichloropropane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:59	ILY	A
1,3-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:59	ILY	A
1,3-Dichloropropene, Total	1.5U	U,P1	ug/L	2.0	1.5	0.66	SW846 8260C	1	11/15/2023 18:59	ILY	A
1,4-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:59	ILY	A
2-Butanone	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/15/2023 18:59	ILY	A
2-Hexanone	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/15/2023 18:59	ILY	A
4-Methyl-2-Pentanone(MIBK)	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/15/2023 18:59	ILY	A
Acetone	13.8	P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/15/2023 18:59	ILY	A
Benzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:59	ILY	A
Bromochloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:59	ILY	A
Bromodichloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:59	ILY	A
Bromoform	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:59	ILY	A
Bromomethane	0.75U	U,1,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:59	ILY	A
Carbon Disulfide	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:59	ILY	A
Carbon Tetrachloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:59	ILY	A
Chlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:59	ILY	A
Chlorodibromomethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:59	ILY	A
Chloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:59	ILY	A
Chloroform	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:59	ILY	A
Chloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:59	ILY	A
cis-1,2-Dichloroethene	12.3	P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:59	ILY	A
Cyclohexane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:59	ILY	A
Dichlorodifluoromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:59	ILY	A
Ethylbenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:59	ILY	A
Freon 113	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:59	ILY	A
Iodomethane	0.75U	U,2,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:59	ILY	A
Isopropylbenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:59	ILY	A
Methyl acetate	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:59	ILY	A
Methyl cyclohexane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:59	ILY	A
Methyl t-Butyl Ether	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:59	ILY	A
Methylene Chloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:59	ILY	A
Styrene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:59	ILY	A
Tetrachloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:59	ILY	A
Toluene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:59	ILY	A
Total Xylenes	2.3U	U,P1	ug/L	3.0	2.3	1.0	SW846 8260C	1	11/15/2023 18:59	ILY	A
trans-1,2-Dichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:59	ILY	A



Results

Client Sample ID	MW13-5D-20231102	Collected	11/02/2023 08:00
Lab Sample ID	3331303002	Lab Receipt	11/03/2023 09:15

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Trichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:59	ILY	A
Trichlorofluoromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:59	ILY	A
Vinyl Chloride	1.4	P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:59	ILY	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	98.6%	81 – 118	11/15/2023 18:59	
4-Bromofluorobenzene	460-00-4	94.8%	85 – 114	11/15/2023 18:59	
Dibromofluoromethane	1868-53-7	97.5%	80 – 119	11/15/2023 18:59	
Toluene-d8	2037-26-5	97.3%	89 – 112	11/15/2023 18:59	



Results

Client Sample ID	PW13-1-20231102	Collected	11/02/2023 08:05
Lab Sample ID	3331303003	Lab Receipt	11/03/2023 09:15

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:19	ILY	A
1,1,2,2-Tetrachloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:19	ILY	A
1,1,2-Trichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:19	ILY	A
1,1-Dichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:19	ILY	A
1,1-Dichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:19	ILY	A
1,2,3-Trichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:19	ILY	A
1,2,4-Trichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:19	ILY	A
1,2-Dibromo-3-chloropropane	2.5U	U,P1	ug/L	5.0	2.5	1.6	SW846 8260C	1	11/15/2023 19:19	ILY	A
1,2-Dibromoethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:19	ILY	A
1,2-Dichlorobenzene	0.41J	J,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:19	ILY	A
1,2-Dichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:19	ILY	A
1,2-Dichloropropane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:19	ILY	A
1,3-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:19	ILY	A
1,3-Dichloropropene, Total	1.5U	U,P1	ug/L	2.0	1.5	0.66	SW846 8260C	1	11/15/2023 19:19	ILY	A
1,4-Dichlorobenzene	0.51J	J,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:19	ILY	A
2-Butanone	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/15/2023 19:19	ILY	A
2-Hexanone	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/15/2023 19:19	ILY	A
4-Methyl-2-Pentanone(MIBK)	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/15/2023 19:19	ILY	A
Acetone	12.7	P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/15/2023 19:19	ILY	A
Benzene	0.39J	J,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:19	ILY	A
Bromochloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:19	ILY	A
Bromodichloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:19	ILY	A
Bromoform	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:19	ILY	A
Bromomethane	0.75U	U,1,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:19	ILY	A
Carbon Disulfide	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:19	ILY	A
Carbon Tetrachloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:19	ILY	A
Chlorobenzene	0.37J	J,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:19	ILY	A
Chlorodibromomethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:19	ILY	A
Chloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:19	ILY	A
Chloroform	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:19	ILY	A
Chloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:19	ILY	A
cis-1,2-Dichloroethene	1.5	P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:19	ILY	A
Cyclohexane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:19	ILY	A
Dichlorodifluoromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:19	ILY	A
Ethylbenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:19	ILY	A
Freon 113	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:19	ILY	A
Iodomethane	0.75U	U,2,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:19	ILY	A
Isopropylbenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:19	ILY	A
Methyl acetate	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:19	ILY	A
Methyl cyclohexane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:19	ILY	A
Methyl t-Butyl Ether	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:19	ILY	A
Methylene Chloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:19	ILY	A
Styrene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:19	ILY	A
Tetrachloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:19	ILY	A
Toluene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:19	ILY	A
Total Xylenes	2.3U	U,P1	ug/L	3.0	2.3	1.0	SW846 8260C	1	11/15/2023 19:19	ILY	A
trans-1,2-Dichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:19	ILY	A



Results

Client Sample ID	PW13-1-20231102	Collected	11/02/2023 08:05
Lab Sample ID	3331303003	Lab Receipt	11/03/2023 09:15

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Trichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:19	ILY	A
Trichlorofluoromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:19	ILY	A
Vinyl Chloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:19	ILY	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	98.2%	81 – 118	11/15/2023 19:19	
4-Bromofluorobenzene	460-00-4	96.2%	85 – 114	11/15/2023 19:19	
Dibromofluoromethane	1868-53-7	92.2%	80 – 119	11/15/2023 19:19	
Toluene-d8	2037-26-5	94.6%	89 – 112	11/15/2023 19:19	



Results

Client Sample ID	MW13-4D-20231102	Collected	11/02/2023 08:35
Lab Sample ID	3331303004	Lab Receipt	11/03/2023 09:15

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:39	ILY	A
1,1,2,2-Tetrachloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:39	ILY	A
1,1,2-Trichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:39	ILY	A
1,1-Dichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:39	ILY	A
1,1-Dichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:39	ILY	A
1,2,3-Trichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:39	ILY	A
1,2,4-Trichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:39	ILY	A
1,2-Dibromo-3-chloropropane	2.5U	U,P1	ug/L	5.0	2.5	1.6	SW846 8260C	1	11/15/2023 19:39	ILY	A
1,2-Dibromoethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:39	ILY	A
1,2-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:39	ILY	A
1,2-Dichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:39	ILY	A
1,2-Dichloropropane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:39	ILY	A
1,3-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:39	ILY	A
1,3-Dichloropropene, Total	1.5U	U,P1	ug/L	2.0	1.5	0.66	SW846 8260C	1	11/15/2023 19:39	ILY	A
1,4-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:39	ILY	A
2-Butanone	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/15/2023 19:39	ILY	A
2-Hexanone	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/15/2023 19:39	ILY	A
4-Methyl-2-Pentanone(MIBK)	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/15/2023 19:39	ILY	A
Acetone	12.6	P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/15/2023 19:39	ILY	A
Benzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:39	ILY	A
Bromochloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:39	ILY	A
Bromodichloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:39	ILY	A
Bromoform	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:39	ILY	A
Bromomethane	0.75U	U,1,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:39	ILY	A
Carbon Disulfide	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:39	ILY	A
Carbon Tetrachloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:39	ILY	A
Chlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:39	ILY	A
Chlorodibromomethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:39	ILY	A
Chloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:39	ILY	A
Chloroform	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:39	ILY	A
Chloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:39	ILY	A
cis-1,2-Dichloroethene	6.3	P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:39	ILY	A
Cyclohexane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:39	ILY	A
Dichlorodifluoromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:39	ILY	A
Ethylbenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:39	ILY	A
Freon 113	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:39	ILY	A
Iodomethane	0.75U	U,2,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:39	ILY	A
Isopropylbenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:39	ILY	A
Methyl acetate	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:39	ILY	A
Methyl cyclohexane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:39	ILY	A
Methyl t-Butyl Ether	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:39	ILY	A
Methylene Chloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:39	ILY	A
Styrene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:39	ILY	A
Tetrachloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:39	ILY	A
Toluene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:39	ILY	A
Total Xylenes	2.3U	U,P1	ug/L	3.0	2.3	1.0	SW846 8260C	1	11/15/2023 19:39	ILY	A
trans-1,2-Dichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:39	ILY	A



Results

Client Sample ID	MW13-4D-20231102	Collected	11/02/2023 08:35
Lab Sample ID	3331303004	Lab Receipt	11/03/2023 09:15

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Trichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:39	ILY	A
Trichlorofluoromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:39	ILY	A
Vinyl Chloride	4.8	P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 19:39	ILY	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	98.6%	81 – 118	11/15/2023 19:39	
4-Bromofluorobenzene	460-00-4	105%	85 – 114	11/15/2023 19:39	
Dibromofluoromethane	1868-53-7	95.8%	80 – 119	11/15/2023 19:39	
Toluene-d8	2037-26-5	103%	89 – 112	11/15/2023 19:39	



Results

Client Sample ID	PW13-4D-20231102	Collected	11/02/2023 08:40
Lab Sample ID	3331303005	Lab Receipt	11/03/2023 09:15

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:00	ILY	A
1,1,2,2-Tetrachloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:00	ILY	A
1,1,2-Trichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:00	ILY	A
1,1-Dichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:00	ILY	A
1,1-Dichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:00	ILY	A
1,2,3-Trichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:00	ILY	A
1,2,4-Trichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:00	ILY	A
1,2-Dibromo-3-chloropropane	2.5U	U,P1	ug/L	5.0	2.5	1.6	SW846 8260C	1	11/15/2023 20:00	ILY	A
1,2-Dibromoethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:00	ILY	A
1,2-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:00	ILY	A
1,2-Dichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:00	ILY	A
1,2-Dichloropropane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:00	ILY	A
1,3-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:00	ILY	A
1,3-Dichloropropene, Total	1.5U	U,P1	ug/L	2.0	1.5	0.66	SW846 8260C	1	11/15/2023 20:00	ILY	A
1,4-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:00	ILY	A
2-Butanone	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/15/2023 20:00	ILY	A
2-Hexanone	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/15/2023 20:00	ILY	A
4-Methyl-2-Pentanone(MIBK)	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/15/2023 20:00	ILY	A
Acetone	10.0	P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/15/2023 20:00	ILY	A
Benzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:00	ILY	A
Bromochloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:00	ILY	A
Bromodichloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:00	ILY	A
Bromoform	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:00	ILY	A
Bromomethane	0.75U	U,1,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:00	ILY	A
Carbon Disulfide	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:00	ILY	A
Carbon Tetrachloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:00	ILY	A
Chlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:00	ILY	A
Chlorodibromomethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:00	ILY	A
Chloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:00	ILY	A
Chloroform	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:00	ILY	A
Chloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:00	ILY	A
cis-1,2-Dichloroethene	0.55J	J,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:00	ILY	A
Cyclohexane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:00	ILY	A
Dichlorodifluoromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:00	ILY	A
Ethylbenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:00	ILY	A
Freon 113	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:00	ILY	A
Iodomethane	0.75U	U,2,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:00	ILY	A
Isopropylbenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:00	ILY	A
Methyl acetate	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:00	ILY	A
Methyl cyclohexane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:00	ILY	A
Methyl t-Butyl Ether	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:00	ILY	A
Methylene Chloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:00	ILY	A
Styrene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:00	ILY	A
Tetrachloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:00	ILY	A
Toluene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:00	ILY	A
Total Xylenes	2.3U	U,P1	ug/L	3.0	2.3	1.0	SW846 8260C	1	11/15/2023 20:00	ILY	A
trans-1,2-Dichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:00	ILY	A



Results

Client Sample ID	PW13-4D-20231102	Collected	11/02/2023 08:40
Lab Sample ID	3331303005	Lab Receipt	11/03/2023 09:15

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Trichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:00	ILY	A
Trichlorofluoromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:00	ILY	A
Vinyl Chloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:00	ILY	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	101%	81 – 118	11/15/2023 20:00	
4-Bromofluorobenzene	460-00-4	102%	85 – 114	11/15/2023 20:00	
Dibromofluoromethane	1868-53-7	98.2%	80 – 119	11/15/2023 20:00	
Toluene-d8	2037-26-5	103%	89 – 112	11/15/2023 20:00	



Sample - Method Cross Reference Table

Lab ID	Sample ID	Analysis Method	Preparation Method	Leachate Method
3331303002	MW13-5D-20231102	SW846 8260C	N/A	
3331303003	PW13-1-20231102	SW846 8260C	N/A	
3331303004	MW13-4D-20231102	SW846 8260C	N/A	
3331303005	PW13-4D-20231102	SW846 8260C	N/A	

QUALITY CONTROL SAMPLES

VOLATILE ORGANICS

QC Batch

QC Batch	1089460	Prep Method	N/A
Date	N/A	Analysis Method	SW846 8260C
Tech.			

Associated Samples

3331303002	3331303003	3331303004	3331303005

Matrix Spike3751107 (MS)3331303007 (non-Project Sample)For QC Batch 1089460

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Matrix Spike Duplicate3751108 (MSD)3331303007 (non-Project Sample)For QC Batch 1089460

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
1,1,1-Trichloroethane	71-55-6	MS	22.60	0	20	113	74 - 131		
1,1,1-Trichloroethane	71-55-6	MSD	22	0	20	110	74 - 131	RPD 2.37 (Max-20)	
1,1,2,2-Tetrachloroethane	79-34-5	MS	21.90	0	20	110	71 - 121		
1,1,2,2-Tetrachloroethane	79-34-5	MSD	24.20	0	20	121	71 - 121	RPD 9.90 (Max-20)	
1,1,2-Trichloroethane	79-00-5	MS	21.50	0	20	107	80 - 119		
1,1,2-Trichloroethane	79-00-5	MSD	21.80	0	20	109	80 - 119	RPD 1.57 (Max-20)	
1,1-Dichloroethane	75-34-3	MS	21.70	0	20	109	77 - 125		
1,1-Dichloroethane	75-34-3	MSD	21	0	20	105	77 - 125	RPD 3.43 (Max-20)	
1,1-Dichloroethene	75-35-4	MS	21.70	0	20	108	71 - 131		
1,1-Dichloroethene	75-35-4	MSD	21.50	0	20	108	71 - 131	RPD 0.77 (Max-20)	
1,2,3-Trichlorobenzene	87-61-6	MS	19.70	0	20	98.4	69 - 129		
1,2,3-Trichlorobenzene	87-61-6	MSD	21.10	0	20	105	69 - 129	RPD 6.79 (Max-20)	
1,2,4-Trichlorobenzene	120-82-1	MS	20.80	0	20	104	69 - 130		
1,2,4-Trichlorobenzene	120-82-1	MSD	22.30	0	20	112	69 - 130	RPD 7.29 (Max-20)	
1,2-Dibromo-3-chloropropane	96-12-8	MS	18.30	0	20	91.4	62 - 128		
1,2-Dibromo-3-chloropropane	96-12-8	MSD	19.30	0	20	96.4	62 - 128	RPD 5.29 (Max-20)	
1,2-Dibromoethane	106-93-4	MS	21.50	0	20	107	77 - 121		
1,2-Dibromoethane	106-93-4	MSD	22.10	0	20	111	77 - 121	RPD 3.05 (Max-20)	
1,2-Dichlorobenzene	95-50-1	MS	20	0	20	100	80 - 119		
1,2-Dichlorobenzene	95-50-1	MSD	21.60	0	20	108	80 - 119	RPD 7.66 (Max-20)	
1,2-Dichloroethane	107-06-2	MS	20.50	0	20	103	73 - 128		
1,2-Dichloroethane	107-06-2	MSD	20.10	0	20	100	73 - 128	RPD 2.20 (Max-20)	
1,2-Dichloropropane	78-87-5	MS	21.40	0	20	107	78 - 122		
1,2-Dichloropropane	78-87-5	MSD	21.20	0	20	106	78 - 122	RPD 1.02 (Max-20)	
1,3-Dichlorobenzene	541-73-1	MS	20.20	0	20	101	80 - 119		
1,3-Dichlorobenzene	541-73-1	MSD	21.50	0	20	108	80 - 119	RPD 6.20 (Max-20)	
1,3-Dichloropropene, Total	542-75-6	MS	42.50	0	40	106	75 - 124		
1,3-Dichloropropene, Total	542-75-6	MSD	42.60	0	40	107	75 - 124	RPD 0.27 (Max-20)	
1,4-Dichlorobenzene	106-46-7	MS	21.30	0	20	107	79 - 118		
1,4-Dichlorobenzene	106-46-7	MSD	22.90	0	20	114	79 - 118	RPD 7.14 (Max-20)	
2-Butanone	78-93-3	MS	104	0	100	104	56 - 143		
2-Butanone	78-93-3	MSD	104	0	100	104	56 - 143	RPD 0.40 (Max-20)	
2-Hexanone	591-78-6	MS	108	0	100	108	57 - 139		
2-Hexanone	591-78-6	MSD	112	0	100	112	57 - 139	RPD 3.42 (Max-20)	
4-Methyl-2-Pentanone(MIBK)	108-10-1	MS	110	0	100	110	67 - 130		



QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
4-Methyl-2-Pentanone(MIBK)	108-10-1	MSD	114	0	100	114	67 - 130	RPD 3.29 (Max-20)	
Acetone	67-64-1	MS	107	11.20	100	95.6	39 - 160		
Acetone	67-64-1	MSD	106	11.20	100	95	39 - 160	RPD 0.48 (Max-20)	
Benzene	71-43-2	MS	21.80	0	20	109	79 - 120		
Benzene	71-43-2	MSD	20.90	0	20	105	79 - 120	RPD 4.13 (Max-20)	
Bromochloromethane	74-97-5	MS	22	0	20	110	78 - 123		
Bromochloromethane	74-97-5	MSD	21.50	0	20	107	78 - 123	RPD 2.42 (Max-20)	
Bromodichloromethane	75-27-4	MS	21.40	0	20	107	79 - 125		
Bromodichloromethane	75-27-4	MSD	21.10	0	20	105	79 - 125	RPD 1.59 (Max-20)	
Bromoform	75-25-2	MS	18	0	20	89.9	66 - 130		
Bromoform	75-25-2	MSD	20.10	0	20	101	66 - 130	RPD 11.10 (Max-20)	
Bromomethane	74-83-9	MS	22.70	0	20	113	53 - 141		
Bromomethane	74-83-9	MSD	15.90	0	20	79.5	53 - 141	RPD 35.10* (Max-20)	
Carbon Disulfide	75-15-0	MS	21.70	0	20	108	64 - 133		
Carbon Disulfide	75-15-0	MSD	22.80	0	20	114	64 - 133	RPD 5.07 (Max-20)	
Carbon Tetrachloride	56-23-5	MS	25.60	0	20	128	72 - 136		
Carbon Tetrachloride	56-23-5	MSD	24.80	0	20	124	72 - 136	RPD 3.26 (Max-20)	
Chlorobenzene	108-90-7	MS	20.80	0	20	104	82 - 118		
Chlorobenzene	108-90-7	MSD	21.10	0	20	105	82 - 118	RPD 1.17 (Max-20)	
Chlorodibromomethane	124-48-1	MS	21.40	0	20	107	74 - 126		
Chlorodibromomethane	124-48-1	MSD	22.10	0	20	111	74 - 126	RPD 3.46 (Max-20)	
Chloroethane	75-00-3	MS	59.30	0	20	296*	60 - 138		
Chloroethane	75-00-3	MSD	54.20	0	20	271*	60 - 138	RPD 8.94 (Max-20)	
Chloroform	67-66-3	MS	20.40	0	20	102	79 - 124		
Chloroform	67-66-3	MSD	19.50	0	20	97.3	79 - 124	RPD 4.78 (Max-20)	
Chloromethane	74-87-3	MS	22.80	0	20	114	50 - 139		
Chloromethane	74-87-3	MSD	21.20	0	20	106	50 - 139	RPD 7.53 (Max-20)	
cis-1,2-Dichloroethene	156-59-2	MS	22.20	1	20	106	78 - 123		
cis-1,2-Dichloroethene	156-59-2	MSD	21.60	1	20	103	78 - 123	RPD 2.38 (Max-20)	
Cyclohexane	110-82-7	MS	22.50	0	20	112	71 - 130		
Cyclohexane	110-82-7	MSD	21.60	0	20	108	71 - 130	RPD 4.19 (Max-20)	
Dichlorodifluoromethane	75-71-8	MS	21.70	0	20	109	32 - 152		
Dichlorodifluoromethane	75-71-8	MSD	21.20	0	20	106	32 - 152	RPD 2.63 (Max-20)	
Ethylbenzene	100-41-4	MS	21.50	0	20	107	79 - 121		
Ethylbenzene	100-41-4	MSD	21.40	0	20	107	79 - 121	RPD 0.23 (Max-20)	
Freon 113	76-13-1	MS	22.70	0	20	114	70 - 136		
Freon 113	76-13-1	MSD	21.50	0	20	107	70 - 136	RPD 5.79 (Max-20)	
Iodomethane	74-88-4	MS	15.20	0	20	76.2	69 - 131		
Iodomethane	74-88-4	MSD	16.10	0	20	80.4	69 - 131	RPD 5.39 (Max-20)	
Isopropylbenzene	98-82-8	MS	23.20	0	20	116	72 - 131		
Isopropylbenzene	98-82-8	MSD	24.70	0	20	124	72 - 131	RPD 6.28 (Max-20)	
Methyl acetate	79-20-9	MS	18.90	0	20	94.7	56 - 136		
Methyl acetate	79-20-9	MSD	18.80	0	20	94	56 - 136	RPD 0.79 (Max-20)	
Methyl cyclohexane	108-87-2	MS	21.90	0	20	110	72 - 132		
Methyl cyclohexane	108-87-2	MSD	21.60	0	20	108	72 - 132	RPD 1.27 (Max-20)	
Methyl t-Butyl Ether	1634-04-4	MS	20.70	0	20	104	71 - 124		
Methyl t-Butyl Ether	1634-04-4	MSD	20.70	0	20	104	71 - 124	RPD 0.09 (Max-20)	
Methylene Chloride	75-09-2	MS	20.70	0	20	103	74 - 124		
Methylene Chloride	75-09-2	MSD	20.10	0	20	101	74 - 124	RPD 2.69 (Max-20)	



QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
Styrene	100-42-5	MS	21.90	0	20	110	78 - 123		
Styrene	100-42-5	MSD	23.10	0	20	115	78 - 123	RPD 4.98 (Max-20)	
Tetrachloroethene	127-18-4	MS	19.30	0	20	96.4	74 - 129		
Tetrachloroethene	127-18-4	MSD	19	0	20	95	74 - 129	RPD 1.44 (Max-20)	
Toluene	108-88-3	MS	33	11.70	20	106	80 - 121		
Toluene	108-88-3	MSD	33	11.70	20	107	80 - 121	RPD 0.20 (Max-20)	
Total Xylenes	1330-20-7	MS	64	0	60	107	79 - 121		
Total Xylenes	1330-20-7	MSD	64.20	0	60	107	79 - 121	RPD 0.29 (Max-20)	
trans-1,2-Dichloroethene	156-60-5	MS	21.90	0.36	20	108	75 - 124		
trans-1,2-Dichloroethene	156-60-5	MSD	21.70	0.36	20	107	75 - 124	RPD 1.20 (Max-20)	
Trichloroethene	79-01-6	MS	22	0.76	20	106	79 - 123		
Trichloroethene	79-01-6	MSD	20.80	0.76	20	100	79 - 123	RPD 5.84 (Max-20)	
Trichlorofluoromethane	75-69-4	MS	22.10	0	20	111	65 - 141		
Trichlorofluoromethane	75-69-4	MSD	21.40	0	20	107	65 - 141	RPD 3.15 (Max-20)	
Vinyl Chloride	75-01-4	MS	23.20	0.94	20	111	58 - 137		
Vinyl Chloride	75-01-4	MSD	23	0.94	20	110	58 - 137	RPD 0.80 (Max-20)	

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	MS	29.70	30	99.1	81 - 118	
1,2-Dichloroethane-d4	17060-07-0	MSD	30	30	100	81 - 118	
4-Bromofluorobenzene	460-00-4	MS	28.70	30	95.6	85 - 114	
4-Bromofluorobenzene	460-00-4	MSD	30.80	30	103	85 - 114	
Dibromofluoromethane	1868-53-7	MS	28.50	30	94.9	80 - 119	
Dibromofluoromethane	1868-53-7	MSD	30	30	100	80 - 119	
Toluene-d8	2037-26-5	MS	28.30	30	94.5	89 - 112	
Toluene-d8	2037-26-5	MSD	31.30	30	104	89 - 112	

Method Blank 3751105 (MB) Created on 11/15/2023 15:24 For QC Batch 1089460

RESULTS

Compound	CAS No		Result	Units	LOQ	Qualifiers
1,1,1-Trichloroethane	71-55-6	BLK	0.75U	ug/L	1.0	U
1,1,2,2-Tetrachloroethane	79-34-5	BLK	0.75U	ug/L	1.0	U
1,1,2-Trichloroethane	79-00-5	BLK	0.75U	ug/L	1.0	U
1,1-Dichloroethane	75-34-3	BLK	0.75U	ug/L	1.0	U
1,1-Dichloroethene	75-35-4	BLK	0.75U	ug/L	1.0	U
1,2,3-Trichlorobenzene	87-61-6	BLK	0.75U	ug/L	1.0	U
1,2,4-Trichlorobenzene	120-82-1	BLK	0.75U	ug/L	1.0	U
1,2-Dibromo-3-chloropropane	96-12-8	BLK	2.5U	ug/L	5.0	U
1,2-Dibromoethane	106-93-4	BLK	0.75U	ug/L	1.0	U
1,2-Dichlorobenzene	95-50-1	BLK	0.75U	ug/L	1.0	U
1,2-Dichloroethane	107-06-2	BLK	0.75U	ug/L	1.0	U
1,2-Dichloropropane	78-87-5	BLK	0.75U	ug/L	1.0	U



QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result	Units	LOQ	Qualifiers
1,3-Dichlorobenzene	541-73-1	BLK	0.75U	ug/L	1.0	U
1,3-Dichloropropene, Total	542-75-6	BLK	1.5U	ug/L	2.0	U
1,4-Dichlorobenzene	106-46-7	BLK	0.75U	ug/L	1.0	U
2-Butanone	78-93-3	BLK	3.8U	ug/L	5.0	U
2-Hexanone	591-78-6	BLK	3.8U	ug/L	5.0	U
4-Methyl-2-Pentanone(MIBK)	108-10-1	BLK	3.8U	ug/L	5.0	U
Acetone	67-64-1	BLK	3.8U	ug/L	5.0	U
Benzene	71-43-2	BLK	0.75U	ug/L	1.0	U
Bromochloromethane	74-97-5	BLK	0.75U	ug/L	1.0	U
Bromodichloromethane	75-27-4	BLK	0.75U	ug/L	1.0	U
Bromoform	75-25-2	BLK	0.75U	ug/L	1.0	U
Bromomethane	74-83-9	BLK	0.75U	ug/L	1.0	U
Carbon Disulfide	75-15-0	BLK	0.75U	ug/L	1.0	U
Carbon Tetrachloride	56-23-5	BLK	0.75U	ug/L	1.0	U
Chlorobenzene	108-90-7	BLK	0.75U	ug/L	1.0	U
Chlorodibromomethane	124-48-1	BLK	0.75U	ug/L	1.0	U
Chloroethane	75-00-3	BLK	0.75U	ug/L	1.0	U
Chloroform	67-66-3	BLK	0.75U	ug/L	1.0	U
Chloromethane	74-87-3	BLK	0.75U	ug/L	1.0	U
cis-1,2-Dichloroethene	156-59-2	BLK	0.75U	ug/L	1.0	U
Cyclohexane	110-82-7	BLK	0.75U	ug/L	1.0	U
Dichlorodifluoromethane	75-71-8	BLK	0.75U	ug/L	1.0	U
Ethylbenzene	100-41-4	BLK	0.75U	ug/L	1.0	U
Freon 113	76-13-1	BLK	0.75U	ug/L	1.0	U
Iodomethane	74-88-4	BLK	0.58J	ug/L	1.0	J
Isopropylbenzene	98-82-8	BLK	0.75U	ug/L	1.0	U
Methyl acetate	79-20-9	BLK	0.75U	ug/L	1.0	U
Methyl cyclohexane	108-87-2	BLK	0.75U	ug/L	1.0	U
Methyl t-Butyl Ether	1634-04-4	BLK	0.75U	ug/L	1.0	U
Methylene Chloride	75-09-2	BLK	0.75U	ug/L	1.0	U
Styrene	100-42-5	BLK	0.75U	ug/L	1.0	U
Tetrachloroethene	127-18-4	BLK	0.75U	ug/L	1.0	U
Toluene	108-88-3	BLK	0.75U	ug/L	1.0	U
Total Xylenes	1330-20-7	BLK	2.3U	ug/L	3.0	U
trans-1,2-Dichloroethene	156-60-5	BLK	0.75U	ug/L	1.0	U
Trichloroethene	79-01-6	BLK	0.75U	ug/L	1.0	U
Trichlorofluoromethane	75-69-4	BLK	0.75U	ug/L	1.0	U
Vinyl Chloride	75-01-4	BLK	0.75U	ug/L	1.0	U

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	BLK	29.30	30	97.7	81 - 118	
4-Bromofluorobenzene	460-00-4	BLK	27.80	30	92.8	85 - 114	
Dibromofluoromethane	1868-53-7	BLK	28.70	30	95.6	80 - 119	
Toluene-d8	2037-26-5	BLK	29.40	30	97.9	89 - 112	



QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

Lab Control Standard 3751106 (LCS) Created on 11/15/2023 15:24 For QC Batch 1089460

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
1,1,1-Trichloroethane	71-55-6	LCS	20.60		20	103	74 - 131		
1,1,2,2-Tetrachloroethane	79-34-5	LCS	20.10		20	101	71 - 121		
1,1,2-Trichloroethane	79-00-5	LCS	20		20	100	80 - 119		
1,1-Dichloroethane	75-34-3	LCS	19.10		20	95.5	77 - 125		
1,1-Dichloroethene	75-35-4	LCS	19.40		20	96.8	71 - 131		
1,2,3-Trichlorobenzene	87-61-6	LCS	19.50		20	97.7	69 - 129		
1,2,4-Trichlorobenzene	120-82-1	LCS	21.70		20	109	69 - 130		
1,2-Dibromo-3-chloropropane	96-12-8	LCS	16.40		20	82.1	62 - 128		
1,2-Dibromoethane	106-93-4	LCS	20.10		20	100	77 - 121		
1,2-Dichlorobenzene	95-50-1	LCS	20		20	99.8	80 - 119		
1,2-Dichloroethane	107-06-2	LCS	18.40		20	92.1	73 - 128		
1,2-Dichloropropane	78-87-5	LCS	19.20		20	96.1	78 - 122		
1,3-Dichlorobenzene	541-73-1	LCS	20.50		20	103	80 - 119		
1,3-Dichloropropene, Total	542-75-6	LCS	41.20		40	103	75 - 124		
1,4-Dichlorobenzene	106-46-7	LCS	21.70		20	108	79 - 118		
2-Butanone	78-93-3	LCS	78.70		100	78.7	56 - 143		
2-Hexanone	591-78-6	LCS	91.10		100	91.1	57 - 139		
4-Methyl-2-Pentanone(MIBK)	108-10-1	LCS	92.90		100	92.9	67 - 130		
Acetone	67-64-1	LCS	84.10		100	84.1	39 - 160		
Benzene	71-43-2	LCS	19.40		20	97	79 - 120		
Bromochloromethane	74-97-5	LCS	20.50		20	102	78 - 123		
Bromodichloromethane	75-27-4	LCS	19.80		20	98.8	79 - 125		
Bromoform	75-25-2	LCS	17.80		20	88.8	66 - 130		
Bromomethane	74-83-9	LCS	20.50		20	103	53 - 141		
Carbon Disulfide	75-15-0	LCS	19.10		20	95.5	64 - 133		
Carbon Tetrachloride	56-23-5	LCS	20.40		20	102	72 - 136		
Chlorobenzene	108-90-7	LCS	19.90		20	99.5	82 - 118		
Chlorodibromomethane	124-48-1	LCS	21		20	105	74 - 126		
Chloroethane	75-00-3	LCS	20.40		20	102	60 - 138		
Chloroform	67-66-3	LCS	19.50		20	97.3	79 - 124		
Chloromethane	74-87-3	LCS	22.90		20	115	50 - 139		
cis-1,2-Dichloroethene	156-59-2	LCS	19.50		20	97.7	78 - 123		
Cyclohexane	110-82-7	LCS	20		20	99.8	71 - 130		
Dichlorodifluoromethane	75-71-8	LCS	21.60		20	108	32 - 152		
Ethylbenzene	100-41-4	LCS	20.40		20	102	79 - 121		
Freon 113	76-13-1	LCS	20.80		20	104	70 - 136		
Iodomethane	74-88-4	LCS	16		20	80.2	69 - 131		
Isopropylbenzene	98-82-8	LCS	22.80		20	114	72 - 131		
Methyl acetate	79-20-9	LCS	18		20	90.2	56 - 136		
Methyl cyclohexane	108-87-2	LCS	20.60		20	103	72 - 132		
Methyl t-Butyl Ether	1634-04-4	LCS	19.40		20	97	71 - 124		
Methylene Chloride	75-09-2	LCS	19.50		20	97.5	74 - 124		
Styrene	100-42-5	LCS	21.60		20	108	78 - 123		
Tetrachloroethene	127-18-4	LCS	21		20	105	74 - 129		



QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
Toluene	108-88-3	LCS	20.20		20	101	80 - 121		
Total Xylenes	1330-20-7	LCS	61.90		60	103	79 - 121		
trans-1,2-Dichloroethene	156-60-5	LCS	19.60		20	98.1	75 - 124		
Trichloroethene	79-01-6	LCS	19		20	94.8	79 - 123		
Trichlorofluoromethane	75-69-4	LCS	19.60		20	98	65 - 141		
Vinyl Chloride	75-01-4	LCS	20.40		20	102	58 - 137		

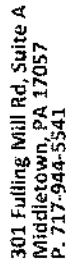
SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	LCS	28.80	30	95.9	81 - 118	
4-Bromofluorobenzene	460-00-4	LCS	30.30	30	101	85 - 114	
Dibromofluoromethane	1868-53-7	LCS	30.10	30	100	80 - 119	
Toluene-d8	2037-26-5	LCS	30.70	30	102	89 - 112	



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Lab ID	Sample ID	Preparation Method	Prep Batch	Prep Date/Time	By	Analysis Method	Anly Batch
3331303002	MW13-5D-20231102	N/A	N/A	N/A		SW846 8260C	1089460
3331303003	PW13-1-20231102	N/A	N/A	N/A		SW846 8260C	1089460
3331303004	MW13-4D-20231102	N/A	N/A	N/A		SW846 8260C	1089460
3331303005	PW13-4D-20231102	N/A	N/A	N/A		SW846 8260C	1089460



CHAIN OF CUSTODY/
REQUEST FOR ANALYSIS

3331303

[illegible]

12/21/2023 4:17 PM

ALS SHIPPING ADDRESS: 301 Filling Mill Road, Suite A, Middletown, PA 17057

Wine: Vitis vinifera

25 of 28
78557473426
WV = Wastewater

13.000 07 05 70046

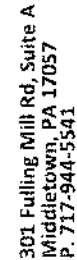


301 Fulling Mill Rd, Suite A
Middletown, PA 17057
P. 717-944-5541

CHAIN OF CUSTODY/
REQUEST FOR ANALYSIS
ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT /
SAMPLER. INSTRUCTIONS ON THE BACK.

COC #: 3331303
ALS Quote #:

Client Name: Arcad3		Containers Types: GC AG CG		Receipt Information (completed by Receiving Lab)	
Address: 110 West Fayette St Syracuse, NY 13202		Container Size: 40mL		Temp Taken By: Therm ID: WV Containers 0-6°C Y N NA	
Contact: Corey Averill		Preservative: HCL		Cooler Custody Seals Intact Y N NA	
Phone: 315-415-4394		Orthophosphate Filtered? Yes No		Sample Custody Seal Intact Y N NA	
Project Name: NEARS - Niagara Falls Air Base		Hexavalent Chromium Filtered? Yes No		Received on Ice Y N NA	
Bill To:		ANALYSIS / METHOD REQUESTED		Coolers & Samples Intact Y N NA	
Purchase Order #: 30036646		Enter Number of Containers Per Sample or Field Results Below.		Correct Containers Provided Y N NA	
TAT: ☒ Normal-Standard TAT is 10-12 business days.		SDWA Sample Type (see key)		Sample Label/COC Agree Y N NA	
Date Required: ☐ Rush-Subject to ALS approval and surcharges.		Matrix (See bottom of COC)		Adequate Sample Volumes Y N NA	
Approved: ☐		DOD 8260C		VOA only: Trip Blank Y N NA	
Email: ☐		DOD 9060A		NJ ≤ 4 days? Y N NA	
Sample Description/Location (as it will appear on the lab report)		DOD RSK125		Client contact: (use of test)	
Date Collected (m/d/yyyy)		Time (h/m)		Sample(s) for Radiation testing? Y N Rad Screen (uCi)	
1 MW10-3D-20231102 11/2/23 1120		G6W3X		Reportable SDWA Sample(s)? Y N New Source? Y N	
2 SW10-5-20231102 11/2/23 1210		G6W3X		SDWA State of Origin? PWSID #	
3 SW10-8-20231102 11/2/23 1215		G6W3X		PWS Contact: PWS Phone #	
4 MW10-11D-20231102 11/2/23 1225		G6W3X		SDWA Sample Type Key: D=Distribution E=Entry Point	
5 MW10-4D-20231102 11/2/23 1240		G6W3X		R=Raw P=Plant C=Check S=Special A=Annual Startup	
6 SW10-6-20231102 11/2/23 1245		G6W3X		Sample/COC Remarks	
7 PW10-1-20231102 11/2/23 1250		G6W3X		Contains Short Hold Testing YES NO	
8 MW10-7-20231102 11/2/23 1305		G6W3X		Internal Use: If less than 48 hours - notify lab upon receipt	
9 MW10-4E-20231102 11/2/23 1315		G6W3X		Standard Lvl 1 ☐ CLP-like ☐ HSCA ☐	
10 MW10-4D-20231102 11/2/23 1320		G6W3X		Standard Lvl 2 ☒ DOO ☐ Landfill ☐	
Circle Sample Collector: ALS Tech / Client Name: ID:		Received By / Company Name		Standard Lvl 3 ☐ NJ RED ☐ NJ GW ☐	
Date: Time		Relinquished By / Company Name		Standard Lvl 4 ☐ NJ Full ☐	
11/2/23 1800		1 Arcad3		Excel Summary	
11/3/23 0715				Equis	
				Custom	
				EDS	
				EDDS	
				Final Type	
				State Samples Collected In	
				NY ☒ NJ ☐ PA ☐ WV ☐ FL ☐	



CHAIN OF CUSTODY/
REQUEST FOR ANALYSIS
ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT /
SAMPLER. INSTRUCTIONS ON THE BACK.

ALC quote #:	3331303	3 of 4
COC #:		

[illegible]



301 Fulling Mill Rd, Suite A
Middletown, PA 17057
P: 717-944-5541

CHAIN OF CUSTODY/

REQUEST FOR ANALYSIS

ALL SHADDED AREAS MUST BE COMPLETED BY THE CLIENT /

SAMPLER. INSTRUCTIONS ON THE BACK.

COC #: 333/303
ALS Quote #:

Client Name: <u>Arcadis</u>		Container Type: <u>CG</u>		Temp Taken By: <u>CG</u>		Receipt Information (Completed by Receiving Lab)	
Address: <u>110 West Fayette St</u>		Container: <u>40mL</u>		Therm ID: <u>Y</u>		WO Temp (°C): <u>Y</u> <u>N</u> <u>NA</u>	
<u>Syracuse NY 13202</u>		Preservative: <u>HCl</u>		Receipt Info completed by: <u>Y</u>		Deviations? NO YES If YES, describe:	
				Cooler Custody Seal Intact: <u>Y</u>		<u>NA</u>	
				Sample Custody Seal Intact: <u>Y</u>		<u>NA</u>	
				Received on ice: <u>Y</u>		<u>NA</u>	
				Coolers & Samples Intact: <u>Y</u>		<u>Y</u> <u>N</u>	
				Correct Containers Provided: <u>Y</u>		<u>Y</u> <u>N</u>	
				Sample Label/COC Agree: <u>Y</u>		<u>Y</u> <u>N</u>	
				Adequate Sample Volumes: <u>Y</u>		<u>Y</u> <u>N</u>	
				VOA only: Trip Blank: <u>Y</u>		<u>Y</u> <u>N</u>	
				NJ ≤ 4 days? <u>Y</u>		<u>Y</u> <u>N</u>	
				Courier/Tracking #: <u>Y</u>		<u>Y</u> <u>N</u>	
				Samples for Radiation testing? <u>Y</u>		<u>Y</u> <u>N</u>	
				Reportable SDWA Sample(s)? <u>Y</u>		<u>Y</u> <u>N</u>	
				SDWA State of Origin? <u>Y</u>		<u>Y</u> <u>N</u>	
				PWSID #: <u>Y</u>		<u>Y</u> <u>N</u>	
				PWS Contact: <u>Y</u>		<u>Y</u> <u>N</u>	
				SDWA Sample Type Key: D=Distribution E=Entry Point R=Raw P=Plant C=Check S=Special A=Annual Startup		<u>Y</u> <u>N</u>	
				Sample/COC Remarks		<u>Y</u> <u>N</u>	
				Contains Short Hold Testing		<u>Y</u> <u>N</u>	
				Internal Use: If less than 48 hours - notify lab upon receipt		<u>Y</u> <u>N</u>	
				Data Deliverables		<u>Y</u> <u>N</u>	
				Standard Lvl 1		<u>Y</u> <u>N</u>	
				Standard Lvl 2		<u>Y</u> <u>N</u>	
				Standard Lvl 3		<u>Y</u> <u>N</u>	
				Standard Lvl 4		<u>Y</u> <u>N</u>	
				Excel Summary		<u>Y</u> <u>N</u>	
				Equis		<u>Y</u> <u>N</u>	
				Custom		<u>Y</u> <u>N</u>	
				EDDS		<u>Y</u> <u>N</u>	
				Matrix Type		<u>Y</u> <u>N</u>	
				Received By / Company Name		<u>Y</u> <u>N</u>	
				Relinquished By / Company Name		<u>Y</u> <u>N</u>	
				Date		<u>Y</u> <u>N</u>	
				Time		<u>Y</u> <u>N</u>	
				11/2/23		<u>Y</u> <u>N</u>	
				1300		<u>Y</u> <u>N</u>	
				09K		<u>Y</u> <u>N</u>	
				3		<u>Y</u> <u>N</u>	
				5		<u>Y</u> <u>N</u>	
				7		<u>Y</u> <u>N</u>	
				9		<u>Y</u> <u>N</u>	
				10		<u>Y</u> <u>N</u>	
				Comments:		<u>Y</u> <u>N</u>	
				Circle Sample Collector: ALS Tech / Client		<u>Y</u> <u>N</u>	
				ID:		<u>Y</u> <u>N</u>	
				State Samples Collected In		<u>Y</u> <u>N</u>	
				HSCA		<u>Y</u> <u>N</u>	
				Landfill		<u>Y</u> <u>N</u>	
				NU RED		<u>Y</u> <u>N</u>	
				NU GW		<u>Y</u> <u>N</u>	
				NU Full		<u>Y</u> <u>N</u>	
				Sample Disposal		<u>Y</u> <u>N</u>	
				Lab		<u>Y</u> <u>N</u>	
				Special		<u>Y</u> <u>N</u>	
				Other		<u>Y</u> <u>N</u>	



Main Site: 301 Fulling Mill Road | Middletown, PA 17057 | Phone: 717-944-5541 | Fax: 717-944-1430 | www.alsglobal.com
Associated Site: 20 Riverside Drive | Spring City, PA 19475 | Phone: 610-948-4903 | Fax: 717-944-1430 |

NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: PJLA 74618
State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

Analytical Results Report For

ARCADIS US Inc - Clifton Park, NY

Project NFARS 30036646 (from 3331303)

Workorder 3338385

Report ID 290514 on 12/21/2023

Certificate of Analysis

Enclosed are the analytical results for samples received by the laboratory on Nov 03, 2023.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Susan Scherer (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

This laboratory report may not be reproduced, except in full, without the written approval of ALS Global.
ALS Middletown: 301 Fulling Mill Road, Middletown, PA 17057 : 717-944-5541.

Recipient(s):

Andy Vitolins - Arcadis
Erika Denkenberger - Arcadis
Katherine Clubine - Arcadis
Corey Averill - Arcadis

Susan Scherer

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.

Susan Scherer
Project Coordinator

(ALS Digital Signature)



Sample Summary

<u>Lab ID</u>	<u>Sample ID</u>	<u>Matrix</u>	<u>Date Collected</u>	<u>Date Received</u>	<u>Collector</u>	<u>Collection Company</u>
3331303001	MW1-1DA-20231102	Ground Water	11/02/2023 07:50	11/03/2023 09:15	CBC	Collected By Client
3331303006	MW5-1DA-20231102	Ground Water	11/02/2023 09:00	11/03/2023 09:15	CBC	Collected By Client
3331303007	RW5-1-20231102	Ground Water	11/02/2023 09:30	11/03/2023 09:15	CBC	Collected By Client
3331303008	DUP-01-20231102	Ground Water	11/02/2023 00:00	11/03/2023 09:15	CBC	Collected By Client
3331303009	SW99-10-20231102	Ground Water	11/02/2023 11:00	11/03/2023 09:15	CBC	Collected By Client
3331303010	SW10-7-20231102	Ground Water	11/02/2023 11:15	11/03/2023 09:15	CBC	Collected By Client
3331303011	MW10-3D-20231102	Ground Water	11/02/2023 11:20	11/03/2023 09:15	CBC	Collected By Client
3331303012	SW10-5-20231102	Ground Water	11/02/2023 12:10	11/03/2023 09:15	CBC	Collected By Client
3331303013	SW10-8-20231102	Ground Water	11/02/2023 12:15	11/03/2023 09:15	CBC	Collected By Client
3331303014	MW10-11D-20231102	Ground Water	11/02/2023 12:25	11/03/2023 09:15	CBC	Collected By Client
3331303015	MW10-9D-20231102	Ground Water	11/02/2023 12:40	11/03/2023 09:15	CBC	Collected By Client
3331303016	SW10-6-20231102	Ground Water	11/02/2023 12:45	11/03/2023 09:15	CBC	Collected By Client
3331303017	PW10-1-20231102	Ground Water	11/02/2023 12:50	11/03/2023 09:15	CBC	Collected By Client
3331303018	MW10-7-20231102	Ground Water	11/02/2023 13:05	11/03/2023 09:15	CBC	Collected By Client
3331303019	MW10-4E-20231102	Ground Water	11/02/2023 13:15	11/03/2023 09:15	CBC	Collected By Client
3331303020	MW10-4D-20231102	Ground Water	11/02/2023 13:20	11/03/2023 09:15	CBC	Collected By Client
3331303021	MW10-1DA-20231102	Ground Water	11/02/2023 13:25	11/03/2023 09:15	CBC	Collected By Client
3331303022	PW10-2-20231102	Ground Water	11/02/2023 13:40	11/03/2023 09:15	CBC	Collected By Client
3331303023	MW10-10D-20231102	Ground Water	11/02/2023 13:55	11/03/2023 09:15	CBC	Collected By Client
3331303024	SW3-3-20231102	Ground Water	11/02/2023 14:15	11/03/2023 09:15	CBC	Collected By Client
3331303025	SW3-15-20231102	Ground Water	11/02/2023 14:25	11/03/2023 09:15	CBC	Collected By Client
3331303026	SW3-2-20231102	Ground Water	11/02/2023 14:30	11/03/2023 09:15	CBC	Collected By Client
3331303027	DUP-02-20231102	Ground Water	11/02/2023 00:00	11/03/2023 09:15	CBC	Collected By Client
3331303028	MW5-6-20231102	Ground Water	11/02/2023 15:40	11/03/2023 09:15	CBC	Collected By Client
3331303029	DUP-03-20231102	Ground Water	11/02/2023 00:00	11/03/2023 09:15	CBC	Collected By Client
3331303030	MW5-5D-20231102	Ground Water	11/02/2023 15:45	11/03/2023 09:15	CBC	Collected By Client
3331303031	RW5-2-20231102	Ground Water	11/02/2023 16:00	11/03/2023 09:15	CBC	Collected By Client
3331303032	RW5-4-20231102	Ground Water	11/02/2023 16:10	11/03/2023 09:15	CBC	Collected By Client
3331303033	TB-01-20231102	Ground Water	11/02/2023 00:00	11/03/2023 09:15	CBC	Collected By Client
3331303034	TB-02-20231102	Ground Water	11/02/2023 00:00	11/03/2023 09:15	CBC	Collected By Client



Reference

Notes

- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
- Except as qualified, Clean Water Act sample analyses are consistent with methodology requirements in 40 CFR Part 136, including but not limited to the following EPA Method reference revisions:
EPA 300.1 Rev. 1.0-1997
EPA 300.0 Rev. 2.1-1993
EPA 353.2 Rev. 2.0-1993
EPA 410.4 Rev. 1.0-1993
EPA 420.4 Rev. 1.0-1993
EPA 365.1 Rev. 2.0-1993
EPA 200.7 Rev. 4.4-1994
EPA 200.8 Rev. 5.4-1994
EPA 245.1 Rev. 3.0-1994
- Except as qualified, Safe Drinking Water Act sample analyses are consistent with methodology requirements in 40 CFR Part 141.
- The Chain of Custody document is included as part of this report.
- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
- Method references listed on this report beginning with the prefix "S" followed by a method number (such as S2310B-97) refer to methods from "Standard Methods for the Examination of Water and Wastewater".
- For microbiological analyses, the "Prepared" value is the date/time into the incubator and the "Analyzed" value is the date/time out the incubator.
- An Analysis-Prep Method Cross Reference Table is included after Analytical Results & Qualifiers section in this report.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND) above the MDL
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Practical Quantitation Limit for this Project
ND	Not Detected - indicates that the analyte was Not Detected
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits
#	Please reference the result in the Results Section for analyte-level flags.



Project Notations

P1	"This certificate of analysis was created from the original WO 3331303 to change the reporting requirement from Level IV to Level 2, based on the email instructions from Corey Averill on 12/20/23. SJS 12/21/23 Level IV deliverables is required on only 10% of the submissions. For Niagara, you can do the Site 13 wells (MW13-4D, MW13-5D, PW13-1, PW13-4D).

Sample Notations

Lab ID	Sample ID

Result Notations

Notation Ref.	
1	The Initial Calibration Verification recovery was outside limits (80-120%) for method SW846 8260C for the analyte Bromomethane.
2	The Initial Calibration Verification recovery was outside limits (80-120%) for method SW846 8260C for the analyte Iodomethane.
3	The initial calibration verification for method SW846 8260DOD was outside the control limits for the analyte Iodomethane. The % Recovery was reported as 53.97% and the control limits were 80 to 120%.
4	The QC sample type LCS for method SW846 8260C was outside the control limits for the analyte Iodomethane. The % Recovery was reported as 53.5 and the control limits were 69 to 131.
5	The QC sample type DUP for method RSK 175 was outside the control limits for the analyte Methane. The RPD was reported as 119 and the upper control limit is 20.
6	The QC sample type MSD for method SW846 8260C was outside the control limits for the analyte Bromomethane. The RPD was reported as 35.1 and the upper control limit is 20.
7	The QC sample type MSD for method SW846 8260C was outside the control limits for the analyte Chloroethane. The % Recovery was reported as 271 and the control limits were 60 to 138.
8	The QC sample type MS for method SW846 8260C was outside the control limits for the analyte Chloroethane. The % Recovery was reported as 296 and the control limits were 60 to 138.
9	Bromomethane was reported as -20.7 in the continuing calibration verification associated with this sample. This is outside the 20 percent control limit for the 8260DOD method.
10	The QC sample type MSD for method SW846 8260C was outside the control limits for the analyte Iodomethane. The RPD was reported as 33.8 and the upper control limit is 20.
11	The QC sample type MS for method SW846 8260C was outside the control limits for the analyte Iodomethane. The % Recovery was reported as 33.3 and the control limits were 69 to 131.
12	The QC sample type MSD for method SW846 8260C was outside the control limits for the analyte Iodomethane. The % Recovery was reported as 46.8 and the control limits were 69 to 131.

Detected Results Summary

Client Sample ID

MW1-1DA-20231102

Collected

11/02/2023 07:50

Lab Sample ID

3331303001

Lab Receipt

11/03/2023 09:15

Compound	Result	Units	LOQ	LOD	DL	Method	Flag
VOLATILE ORGANICS							
Acetone	11.5	ug/L	5.0	3.8	1.6	SW846 8260C	#

Detected Results Summary

Client Sample ID

MW5-1DA-20231102

Collected

11/02/2023 09:00

Lab Sample ID

3331303006

Lab Receipt

11/03/2023 09:15

Compound	Result	Units	LOQ	LOD	DL	Method	Flag
LIGHT HYDROCARBON GASES							
Methane	11.1	ug/L	2.6	1.6	0.53	RSK 175	#
VOLATILE ORGANICS							
Acetone	10.3	ug/L	5.0	3.8	1.6	SW846 8260C	#
cis-1,2-Dichloroethene	88.1	ug/L	1.0	0.75	0.33	SW846 8260C	#
Styrene	0.34J	ug/L	1.0	0.75	0.33	SW846 8260C	#
trans-1,2-Dichloroethene	0.43J	ug/L	1.0	0.75	0.33	SW846 8260C	#
Vinyl Chloride	8.3	ug/L	1.0	0.75	0.33	SW846 8260C	#
WET CHEMISTRY							
Total Organic Carbon (TOC)	6.6	mg/L	2.0	1.0	0.54	SW846 9060A	#

Detected Results Summary

Client Sample ID

RW5-1-20231102

Collected

11/02/2023 09:30

Lab Sample ID

3331303007

Lab Receipt

11/03/2023 09:15

Compound	Result	Units	LOQ	LOD	DL	Method	Flag
LIGHT HYDROCARBON GASES							
Ethane	18.7	ug/L	5.2	2.6	0.56	RSK 175	#
Methane	8720	ug/L	2.6	1.6	0.53	RSK 175	#
VOLATILE ORGANICS							
Acetone	11.2	ug/L	5.0	3.8	1.6	SW846 8260C	#
cis-1,2-Dichloroethene	1.0	ug/L	1.0	0.75	0.33	SW846 8260C	#
Toluene	11.7	ug/L	1.0	0.75	0.33	SW846 8260C	#
trans-1,2-Dichloroethene	0.36J	ug/L	1.0	0.75	0.33	SW846 8260C	#
Trichloroethene	0.76J	ug/L	1.0	0.75	0.33	SW846 8260C	#
Vinyl Chloride	0.94J	ug/L	1.0	0.75	0.33	SW846 8260C	#
WET CHEMISTRY							
Total Organic Carbon (TOC)	24.7J	mg/L	25.0	12.5	6.8	SW846 9060A	#

Detected Results Summary

Client Sample ID

DUP-01-20231102

Collected

11/02/2023 00:00

Lab Sample ID

3331303008

Lab Receipt

11/03/2023 09:15

Compound	Result	Units	LOQ	LOD	DL	Method	Flag
VOLATILE ORGANICS							
Acetone	12.7	ug/L	5.0	3.8	1.6	SW846 8260C	#
Carbon Disulfide	0.50J	ug/L	1.0	0.75	0.33	SW846 8260C	#
cis-1,2-Dichloroethene	1.1	ug/L	1.0	0.75	0.33	SW846 8260C	#
Toluene	11.4	ug/L	1.0	0.75	0.33	SW846 8260C	#
trans-1,2-Dichloroethene	0.38J	ug/L	1.0	0.75	0.33	SW846 8260C	#
Trichloroethene	0.67J	ug/L	1.0	0.75	0.33	SW846 8260C	#
Vinyl Chloride	1.0	ug/L	1.0	0.75	0.33	SW846 8260C	#

Detected Results Summary

Client Sample ID

SW99-10-20231102

Collected

11/02/2023 11:00

Lab Sample ID

3331303009

Lab Receipt

11/03/2023 09:15

Compound	Result	Units	LOQ	LOD	DL	Method	Flag
VOLATILE ORGANICS							
2-Hexanone	1.9J	ug/L	5.0	3.8	1.6	SW846 8260C	#

Detected Results Summary

Client Sample ID

SW10-7-20231102

Collected

11/02/2023 11:15

Lab Sample ID

3331303010

Lab Receipt

11/03/2023 09:15

Compound	Result	Units	LOQ	LOD	DL	Method	Flag
VOLATILE ORGANICS							
Acetone	5.3	ug/L	5.0	3.8	1.6	SW846 8260C	#
Carbon Disulfide	0.40J	ug/L	1.0	0.75	0.33	SW846 8260C	#
Iodomethane	2.2	ug/L	1.0	0.75	0.33	SW846 8260C	#

Detected Results Summary

Client Sample ID

MW10-3D-20231102

Collected

11/02/2023 11:20

Lab Sample ID

3331303011

Lab Receipt

11/03/2023 09:15

Compound	Result	Units	LOQ	LOD	DL	Method	Flag
VOLATILE ORGANICS							
Acetone	13.4	ug/L	5.0	3.8	1.6	SW846 8260C	#

Detected Results Summary

Client Sample ID
Lab Sample ID

SW10-5-20231102
3331303012

Collected
Lab Receipt

11/02/2023 12:10
11/03/2023 09:15

Compound	Result	Units	LOQ	LOD	DL	Method	Flag
VOLATILE ORGANICS							
Bromodichloromethane	0.33J	ug/L	1.0	0.75	0.33	SW846 8260C	#
Chloroform	0.87J	ug/L	1.0	0.75	0.33	SW846 8260C	#

Detected Results Summary

Client Sample ID

SW10-8-20231102

Collected

11/02/2023 12:15

Lab Sample ID

3331303013

Lab Receipt

11/03/2023 09:15

Compound	Result	Units	LOQ	LOD	DL	Method	Flag
VOLATILE ORGANICS							
Acetone	4.2J	ug/L	5.0	3.8	1.6	SW846 8260C	#

Detected Results Summary

Client Sample ID

MW10-11D-20231102

Collected

11/02/2023 12:25

Lab Sample ID

3331303014

Lab Receipt

11/03/2023 09:15

Compound	Result	Units	LOQ	LOD	DL	Method	Flag
LIGHT HYDROCARBON GASES							
Ethane	10.5	ug/L	5.2	2.6	0.56	RSK 175	#
Methane	2360	ug/L	2.6	1.6	0.53	RSK 175	#
VOLATILE ORGANICS							
Acetone	3.5J	ug/L	5.0	3.8	1.6	SW846 8260C	#
Bromomethane	1.2	ug/L	1.0	0.75	0.33	SW846 8260C	#
Iodomethane	2.4	ug/L	1.0	0.75	0.33	SW846 8260C	#
WET CHEMISTRY							
Total Organic Carbon (TOC)	18.1	mg/L	2.0	1.0	0.54	SW846 9060A	#

Detected Results Summary

Client Sample ID

MW10-9D-20231102

Collected

11/02/2023 12:40

Lab Sample ID

3331303015

Lab Receipt

11/03/2023 09:15

Compound	Result	Units	LOQ	LOD	DL	Method	Flag
VOLATILE ORGANICS							
Acetone	11.9	ug/L	5.0	3.8	1.6	SW846 8260C	#
cis-1,2-Dichloroethene	4.1	ug/L	1.0	0.75	0.33	SW846 8260C	#
Vinyl Chloride	12.3	ug/L	1.0	0.75	0.33	SW846 8260C	#

Detected Results Summary

Client Sample ID

SW10-6-20231102

Collected

11/02/2023 12:45

Lab Sample ID

3331303016

Lab Receipt

11/03/2023 09:15

Compound	Result	Units	LOQ	LOD	DL	Method	Flag
VOLATILE ORGANICS							
Bromomethane	0.51J	ug/L	1.0	0.75	0.33	SW846 8260C	#

Detected Results Summary

Client Sample ID
Lab Sample ID

PW10-1-20231102
3331303017

Collected
Lab Receipt

11/02/2023 12:50
11/03/2023 09:15

Compound	Result	Units	LOQ	LOD	DL	Method	Flag
LIGHT HYDROCARBON GASES							
Methane	197	ug/L	2.6	1.6	0.53	RSK 175	#
VOLATILE ORGANICS							
Acetone	13.5	ug/L	5.0	3.8	1.6	SW846 8260C	#
cis-1,2-Dichloroethene	0.77J	ug/L	1.0	0.75	0.33	SW846 8260C	#
Vinyl Chloride	0.61J	ug/L	1.0	0.75	0.33	SW846 8260C	#
WET CHEMISTRY							
Total Organic Carbon (TOC)	6.1	mg/L	2.0	1.0	0.54	SW846 9060A	#



Detected Results Summary

Client Sample ID	MW10-7-20231102	Collected	11/02/2023 13:05
Lab Sample ID	3331303018	Lab Receipt	11/03/2023 09:15

Compound	Result	Units	LOQ	LOD	DL	Method	Flag
LIGHT HYDROCARBON GASES							
Ethene	8.1	ug/L	7.1	3.6	0.81	RSK 175	#
Methane	8840	ug/L	2.6	1.6	0.53	RSK 175	#
VOLATILE ORGANICS							
Acetone	13.3	ug/L	5.0	3.8	1.6	SW846 8260C	#
cis-1,2-Dichloroethene	1.7	ug/L	1.0	0.75	0.33	SW846 8260C	#
trans-1,2-Dichloroethene	0.49J	ug/L	1.0	0.75	0.33	SW846 8260C	#
Trichloroethene	1.7	ug/L	1.0	0.75	0.33	SW846 8260C	#
Vinyl Chloride	4.3	ug/L	1.0	0.75	0.33	SW846 8260C	#
WET CHEMISTRY							
Total Organic Carbon (TOC)	146	mg/L	25.0	12.5	6.8	SW846 9060A	#

Detected Results Summary

Client Sample ID

MW10-4E-20231102

Collected

11/02/2023 13:15

Lab Sample ID

3331303019

Lab Receipt

11/03/2023 09:15

Compound	Result	Units	LOQ	LOD	DL	Method	Flag
VOLATILE ORGANICS							
Acetone	12.9	ug/L	5.0	3.8	1.6	SW846 8260C	#
cis-1,2-Dichloroethene	7.4	ug/L	1.0	0.75	0.33	SW846 8260C	#

Detected Results Summary

Client Sample ID

MW10-4D-20231102

Collected

11/02/2023 13:20

Lab Sample ID

3331303020

Lab Receipt

11/03/2023 09:15

Compound	Result	Units	LOQ	LOD	DL	Method	Flag
VOLATILE ORGANICS							
Acetone	10.5	ug/L	5.0	3.8	1.6	SW846 8260C	#
Benzene	0.45J	ug/L	1.0	0.75	0.33	SW846 8260C	#
cis-1,2-Dichloroethene	0.68J	ug/L	1.0	0.75	0.33	SW846 8260C	#
Vinyl Chloride	3.5	ug/L	1.0	0.75	0.33	SW846 8260C	#

Detected Results Summary

Client Sample ID

MW10-1DA-20231102

Collected

11/02/2023 13:25

Lab Sample ID

3331303021

Lab Receipt

11/03/2023 09:15

Compound	Result	Units	LOQ	LOD	DL	Method	Flag
LIGHT HYDROCARBON GASES							
Ethane	67.9	ug/L	5.2	2.6	0.56	RSK 175	#
Methane	10600	ug/L	13.0	8.0	2.7	RSK 175	#
VOLATILE ORGANICS							
Acetone	9.3	ug/L	5.0	3.8	1.6	SW846 8260C	#
Benzene	3.1	ug/L	1.0	0.75	0.33	SW846 8260C	#
cis-1,2-Dichloroethene	1.3	ug/L	1.0	0.75	0.33	SW846 8260C	#
trans-1,2-Dichloroethene	0.37J	ug/L	1.0	0.75	0.33	SW846 8260C	#
Vinyl Chloride	3.8	ug/L	1.0	0.75	0.33	SW846 8260C	#
WET CHEMISTRY							
Total Organic Carbon (TOC)	12.4	mg/L	5.0	2.5	1.4	SW846 9060A	#

Detected Results Summary

Client Sample ID
Lab Sample ID

PW10-2-20231102
3331303022

Collected
Lab Receipt

11/02/2023 13:40
11/03/2023 09:15

Compound	Result	Units	LOQ	LOD	DL	Method	Flag
VOLATILE ORGANICS							
Acetone	10.4	ug/L	5.0	3.8	1.6	SW846 8260C	#
Benzene	1.6	ug/L	1.0	0.75	0.33	SW846 8260C	#
Cyclohexane	0.42J	ug/L	1.0	0.75	0.33	SW846 8260C	#
Toluene	0.49J	ug/L	1.0	0.75	0.33	SW846 8260C	#



Detected Results Summary

Client Sample ID MW10-10D-20231102 Collected 11/02/2023 13:55
Lab Sample ID 3331303023 Lab Receipt 11/03/2023 09:15

Compound	Result	Units	LOQ	LOD	DL	Method	Flag
LIGHT HYDROCARBON GASES							
Ethane	11.9	ug/L	5.2	2.6	0.56	RSK 175	#
Ethene	10	ug/L	7.1	3.6	0.81	RSK 175	#
Methane	8240	ug/L	2.6	1.6	0.53	RSK 175	#
VOLATILE ORGANICS							
cis-1,2-Dichloroethene	141	ug/L	100	75.0	33.0	SW846 8260C	#
WET CHEMISTRY							
Total Organic Carbon (TOC)	3660	mg/L	1000	500	270	SW846 9060A	#

Detected Results Summary

Client Sample ID

SW3-3-20231102

Collected

11/02/2023 14:15

Lab Sample ID

3331303024

Lab Receipt

11/03/2023 09:15

Compound	Result	Units	LOQ	LOD	DL	Method	Flag
VOLATILE ORGANICS							
Acetone	3.2J	ug/L	5.0	3.8	1.6	SW846 8260C	#

Detected Results Summary

Client Sample ID

SW3-15-20231102

Collected

11/02/2023 14:25

Lab Sample ID

3331303025

Lab Receipt

11/03/2023 09:15

Compound	Result	Units	LOQ	LOD	DL	Method	Flag
VOLATILE ORGANICS							
Acetone	3.7J	ug/L	5.0	3.8	1.6	SW846 8260C	#

Detected Results Summary

Client Sample ID

SW3-2-20231102

Collected

11/02/2023 14:30

Lab Sample ID

3331303026

Lab Receipt

11/03/2023 09:15

Compound	Result	Units	LOQ	LOD	DL	Method	Flag
VOLATILE ORGANICS							
Acetone	3.8J	ug/L	5.0	3.8	1.6	SW846 8260C	#

Detected Results Summary

Client Sample ID

DUP-02-20231102

Collected

11/02/2023 00:00

Lab Sample ID

3331303027

Lab Receipt

11/03/2023 09:15

Compound	Result	Units	LOQ	LOD	DL	Method	Flag
VOLATILE ORGANICS							
Acetone	3.4J	ug/L	5.0	3.8	1.6	SW846 8260C	#

Detected Results Summary

Client Sample ID

MW5-6-20231102

Collected

11/02/2023 15:40

Lab Sample ID

3331303028

Lab Receipt

11/03/2023 09:15

Compound	Result	Units	LOQ	LOD	DL	Method	Flag
VOLATILE ORGANICS							
Acetone	10.7	ug/L	5.0	3.8	1.6	SW846 8260C	#
Carbon Disulfide	0.66J	ug/L	1.0	0.75	0.33	SW846 8260C	#
cis-1,2-Dichloroethene	3.4	ug/L	1.0	0.75	0.33	SW846 8260C	#
Toluene	4.5	ug/L	1.0	0.75	0.33	SW846 8260C	#
trans-1,2-Dichloroethene	0.38J	ug/L	1.0	0.75	0.33	SW846 8260C	#
Trichloroethene	1.6	ug/L	1.0	0.75	0.33	SW846 8260C	#
Vinyl Chloride	0.72J	ug/L	1.0	0.75	0.33	SW846 8260C	#

Detected Results Summary

Client Sample ID
Lab Sample ID

DUP-03-20231102
3331303029

Collected
Lab Receipt

11/02/2023 00:00
11/03/2023 09:15

Compound	Result	Units	LOQ	LOD	DL	Method	Flag
LIGHT HYDROCARBON GASES							
Ethane	8.0	ug/L	5.2	2.6	0.56	RSK 175	#
Ethene	8.7	ug/L	7.1	3.6	0.81	RSK 175	#
Methane	4390	ug/L	2.6	1.6	0.53	RSK 175	#
WET CHEMISTRY							
Total Organic Carbon (TOC)	42.6	mg/L	25.0	12.5	6.8	SW846 9060A	#

Detected Results Summary

Client Sample ID

MW5-5D-20231102

Collected

11/02/2023 15:45

Lab Sample ID

3331303030

Lab Receipt

11/03/2023 09:15

Compound	Result	Units	LOQ	LOD	DL	Method	Flag
LIGHT HYDROCARBON GASES							
Ethane	21.3	ug/L	5.2	2.6	0.56	RSK 175	#
Ethene	8.2	ug/L	7.1	3.6	0.81	RSK 175	#
Methane	8010	ug/L	2.6	1.6	0.53	RSK 175	#
VOLATILE ORGANICS							
2-Butanone	2.5J	ug/L	5.0	3.8	1.6	SW846 8260C	#
Acetone	10.8	ug/L	5.0	3.8	1.6	SW846 8260C	#
cis-1,2-Dichloroethene	7.2	ug/L	1.0	0.75	0.33	SW846 8260C	#
trans-1,2-Dichloroethene	1.3	ug/L	1.0	0.75	0.33	SW846 8260C	#
Trichloroethene	1.8	ug/L	1.0	0.75	0.33	SW846 8260C	#
Vinyl Chloride	10.6	ug/L	1.0	0.75	0.33	SW846 8260C	#
WET CHEMISTRY							
Total Organic Carbon (TOC)	40.3	mg/L	25.0	12.5	6.8	SW846 9060A	#



Detected Results Summary

Client Sample ID	RW5-2-20231102	Collected	11/02/2023 16:00
Lab Sample ID	3331303031	Lab Receipt	11/03/2023 09:15

Compound	Result	Units	LOQ	LOD	DL	Method	Flag
LIGHT HYDROCARBON GASES							
Ethane	9.0	ug/L	5.2	2.6	0.56	RSK 175	#
Methane	6390	ug/L	2.6	1.6	0.53	RSK 175	#
VOLATILE ORGANICS							
Acetone	8.9	ug/L	5.0	3.8	1.6	SW846 8260C	#
Carbon Disulfide	0.55J	ug/L	1.0	0.75	0.33	SW846 8260C	#
cis-1,2-Dichloroethene	0.74J	ug/L	1.0	0.75	0.33	SW846 8260C	#
Toluene	0.88J	ug/L	1.0	0.75	0.33	SW846 8260C	#
WET CHEMISTRY							
Total Organic Carbon (TOC)	42.4	mg/L	5.0	2.5	1.4	SW846 9060A	#

Detected Results Summary

Client Sample ID

RW5-4-20231102

Collected

11/02/2023 16:10

Lab Sample ID

3331303032

Lab Receipt

11/03/2023 09:15

Compound	Result	Units	LOQ	LOD	DL	Method	Flag
VOLATILE ORGANICS							
Acetone	11.8	ug/L	5.0	3.8	1.6	SW846 8260C	#
cis-1,2-Dichloroethene	0.37J	ug/L	1.0	0.75	0.33	SW846 8260C	#
Toluene	0.50J	ug/L	1.0	0.75	0.33	SW846 8260C	#



Results

Client Sample ID	MW1-1DA-20231102	Collected	11/02/2023 07:50
Lab Sample ID	3331303001	Lab Receipt	11/03/2023 09:15

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:38	ILY	A
1,1,2,2-Tetrachloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:38	ILY	A
1,1,2-Trichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:38	ILY	A
1,1-Dichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:38	ILY	A
1,1-Dichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:38	ILY	A
1,2,3-Trichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:38	ILY	A
1,2,4-Trichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:38	ILY	A
1,2-Dibromo-3-chloropropane	2.5U	U,P1	ug/L	5.0	2.5	1.6	SW846 8260C	1	11/15/2023 18:38	ILY	A
1,2-Dibromoethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:38	ILY	A
1,2-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:38	ILY	A
1,2-Dichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:38	ILY	A
1,2-Dichloropropane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:38	ILY	A
1,3-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:38	ILY	A
1,3-Dichloropropene, Total	1.5U	U,P1	ug/L	2.0	1.5	0.66	SW846 8260C	1	11/15/2023 18:38	ILY	A
1,4-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:38	ILY	A
2-Butanone	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/15/2023 18:38	ILY	A
2-Hexanone	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/15/2023 18:38	ILY	A
4-Methyl-2-Pentanone(MIBK)	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/15/2023 18:38	ILY	A
Acetone	11.5	P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/15/2023 18:38	ILY	A
Benzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:38	ILY	A
Bromochloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:38	ILY	A
Bromodichloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:38	ILY	A
Bromoform	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:38	ILY	A
Bromomethane	0.75U	U,1,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:38	ILY	A
Carbon Disulfide	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:38	ILY	A
Carbon Tetrachloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:38	ILY	A
Chlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:38	ILY	A
Chlorodibromomethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:38	ILY	A
Chloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:38	ILY	A
Chloroform	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:38	ILY	A
Chloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:38	ILY	A
cis-1,2-Dichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:38	ILY	A
Cyclohexane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:38	ILY	A
Dichlorodifluoromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:38	ILY	A
Ethylbenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:38	ILY	A
Freon 113	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:38	ILY	A
Iodomethane	0.75U	U,2,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:38	ILY	A
Isopropylbenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:38	ILY	A
Methyl acetate	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:38	ILY	A
Methyl cyclohexane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:38	ILY	A
Methyl t-Butyl Ether	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:38	ILY	A
Methylene Chloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:38	ILY	A
Styrene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:38	ILY	A
Tetrachloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:38	ILY	A
Toluene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:38	ILY	A
Total Xylenes	2.3U	U,P1	ug/L	3.0	2.3	1.0	SW846 8260C	1	11/15/2023 18:38	ILY	A
trans-1,2-Dichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:38	ILY	A

Results

Client Sample ID	MW1-1DA-20231102	Collected	11/02/2023 07:50
Lab Sample ID	3331303001	Lab Receipt	11/03/2023 09:15

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Trichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:38	ILY	A
Trichlorofluoromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:38	ILY	A
Vinyl Chloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 18:38	ILY	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	95.2%	81 – 118	11/15/2023 18:38	
4-Bromofluorobenzene	460-00-4	98.8%	85 – 114	11/15/2023 18:38	
Dibromofluoromethane	1868-53-7	90.3%	80 – 119	11/15/2023 18:38	
Toluene-d8	2037-26-5	102%	89 – 112	11/15/2023 18:38	



Results

Client Sample ID	MW5-1DA-20231102	Collected	11/02/2023 09:00
Lab Sample ID	3331303006	Lab Receipt	11/03/2023 09:15

LIGHT HYDROCARBON GASES

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Ethane	2.6U	U,P1	ug/L	5.2	2.6	0.56	RSK 175	1	11/10/2023 12:42	JTH	B
Ethene	3.6U	U,P1	ug/L	7.1	3.6	0.81	RSK 175	1	11/10/2023 12:42	JTH	B
Methane	11.1	5,P1	ug/L	2.6	1.6	0.53	RSK 175	1	11/10/2023 12:42	JTH	B

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:06	ILY	A
1,1,2,2-Tetrachloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:06	ILY	A
1,1,2-Trichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:06	ILY	A
1,1-Dichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:06	ILY	A
1,1-Dichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:06	ILY	A
1,2,3-Trichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:06	ILY	A
1,2,4-Trichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:06	ILY	A
1,2-Dibromo-3-chloropropane	2.5U	U,P1	ug/L	5.0	2.5	1.6	SW846 8260C	1	11/16/2023 18:06	ILY	A
1,2-Dibromoethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:06	ILY	A
1,2-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:06	ILY	A
1,2-Dichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:06	ILY	A
1,2-Dichloropropane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:06	ILY	A
1,3-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:06	ILY	A
1,3-Dichloropropene, Total	1.5U	U,P1	ug/L	2.0	1.5	0.66	SW846 8260C	1	11/16/2023 18:06	ILY	A
1,4-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:06	ILY	A
2-Butanone	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 18:06	ILY	A
2-Hexanone	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 18:06	ILY	A
4-Methyl-2-Pentanone(MIBK)	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 18:06	ILY	A
Acetone	10.3	P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 18:06	ILY	A
Benzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:06	ILY	A
Bromochloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:06	ILY	A
Bromodichloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:06	ILY	A
Bromoform	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:06	ILY	A
Bromomethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:06	ILY	A
Carbon Disulfide	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:06	ILY	A
Carbon Tetrachloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:06	ILY	A
Chlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:06	ILY	A
Chlorodibromomethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:06	ILY	A
Chloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:06	ILY	A
Chloroform	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:06	ILY	A
Chloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:06	ILY	A
cis-1,2-Dichloroethene	88.1	P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:06	ILY	A
Cyclohexane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:06	ILY	A
Dichlorodifluoromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:06	ILY	A
Ethylbenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:06	ILY	A
Freon 113	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:06	ILY	A
Iodomethane	0.75U	U,3,4,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:06	ILY	A
Isopropylbenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:06	ILY	A
Methyl acetate	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:06	ILY	A
Methyl cyclohexane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:06	ILY	A



Results

Client Sample ID	MW5-1DA-20231102	Collected	11/02/2023 09:00
Lab Sample ID	3331303006	Lab Receipt	11/03/2023 09:15

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Methyl t-Butyl Ether	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:06	ILY	A
Methylene Chloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:06	ILY	A
Styrene	0.34J	J,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:06	ILY	A
Tetrachloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:06	ILY	A
Toluene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:06	ILY	A
Total Xylenes	2.3U	U,P1	ug/L	3.0	2.3	1.0	SW846 8260C	1	11/16/2023 18:06	ILY	A
trans-1,2-Dichloroethene	0.43J	J,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:06	ILY	A
Trichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:06	ILY	A
Trichlorofluoromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:06	ILY	A
Vinyl Chloride	8.3	P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:06	ILY	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	102%	81 – 118	11/16/2023 18:06	
4-Bromofluorobenzene	460-00-4	96.4%	85 – 114	11/16/2023 18:06	
Dibromofluoromethane	1868-53-7	99%	80 – 119	11/16/2023 18:06	
Toluene-d8	2037-26-5	102%	89 – 112	11/16/2023 18:06	

WET CHEMISTRY

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Total Organic Carbon (TOC)	6.6	P1	mg/L	2.0	1.0	0.54	SW846 9060A	2	11/09/2023 03:52	PAG	E



Results

Client Sample ID	RW5-1-20231102	Collected	11/02/2023 09:30
Lab Sample ID	3331303007	Lab Receipt	11/03/2023 09:15

LIGHT HYDROCARBON GASES

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Ethane	18.7	P1	ug/L	5.2	2.6	0.56	RSK 175	1	11/10/2023 13:17	JTH	B
Ethene	3.6U	U,P1	ug/L	7.1	3.6	0.81	RSK 175	1	11/10/2023 13:17	JTH	B
Methane	8720	P1	ug/L	2.6	1.6	0.53	RSK 175	1	11/10/2023 13:17	JTH	B

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:20	ILY	A
1,1,2,2-Tetrachloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:20	ILY	A
1,1,2-Trichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:20	ILY	A
1,1-Dichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:20	ILY	A
1,1-Dichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:20	ILY	A
1,2,3-Trichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:20	ILY	A
1,2,4-Trichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:20	ILY	A
1,2-Dibromo-3-chloropropane	2.5U	U,P1	ug/L	5.0	2.5	1.6	SW846 8260C	1	11/15/2023 20:20	ILY	A
1,2-Dibromoethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:20	ILY	A
1,2-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:20	ILY	A
1,2-Dichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:20	ILY	A
1,2-Dichloropropane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:20	ILY	A
1,3-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:20	ILY	A
1,3-Dichloropropene, Total	1.5U	U,P1	ug/L	2.0	1.5	0.66	SW846 8260C	1	11/15/2023 20:20	ILY	A
1,4-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:20	ILY	A
2-Butanone	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/15/2023 20:20	ILY	A
2-Hexanone	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/15/2023 20:20	ILY	A
4-Methyl-2-Pentanone(MIBK)	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/15/2023 20:20	ILY	A
Acetone	11.2	P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/15/2023 20:20	ILY	A
Benzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:20	ILY	A
Bromochloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:20	ILY	A
Bromodichloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:20	ILY	A
Bromoform	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:20	ILY	A
Bromomethane	0.75U	U,1,6,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:20	ILY	A
Carbon Disulfide	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:20	ILY	A
Carbon Tetrachloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:20	ILY	A
Chlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:20	ILY	A
Chlorodibromomethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:20	ILY	A
Chloroethane	0.75U	U,7,8,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:20	ILY	A
Chloroform	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:20	ILY	A
Chloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:20	ILY	A
cis-1,2-Dichloroethene	1.0	P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:20	ILY	A
Cyclohexane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:20	ILY	A
Dichlorodifluoromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:20	ILY	A
Ethylbenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:20	ILY	A
Freon 113	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:20	ILY	A
Iodomethane	0.75U	U,2,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:20	ILY	A
Isopropylbenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:20	ILY	A
Methyl acetate	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:20	ILY	A
Methyl cyclohexane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:20	ILY	A



Results

Client Sample ID	RW5-1-20231102	Collected	11/02/2023 09:30
Lab Sample ID	3331303007	Lab Receipt	11/03/2023 09:15

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Methyl t-Butyl Ether	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:20	ILY	A
Methylene Chloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:20	ILY	A
Styrene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:20	ILY	A
Tetrachloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:20	ILY	A
Toluene	11.7	P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:20	ILY	A
Total Xylenes	2.3U	U,P1	ug/L	3.0	2.3	1.0	SW846 8260C	1	11/15/2023 20:20	ILY	A
trans-1,2-Dichloroethene	0.36J	J,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:20	ILY	A
Trichloroethene	0.76J	J,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:20	ILY	A
Trichlorofluoromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:20	ILY	A
Vinyl Chloride	0.94J	J,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/15/2023 20:20	ILY	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	98.1%	81 – 118	11/15/2023 20:20	
4-Bromofluorobenzene	460-00-4	99.9%	85 – 114	11/15/2023 20:20	
Dibromofluoromethane	1868-53-7	95.9%	80 – 119	11/15/2023 20:20	
Toluene-d8	2037-26-5	99.7%	89 – 112	11/15/2023 20:20	

WET CHEMISTRY

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Total Organic Carbon (TOC)	24.7J	J,P1	mg/L	25.0	12.5	6.8	SW846 9060A	25	11/09/2023 03:52	PAG	K



Results

Client Sample ID	DUP-01-20231102	Collected	11/02/2023 00:00
Lab Sample ID	3331303008	Lab Receipt	11/03/2023 09:15

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:26	ILY	A
1,1,2,2-Tetrachloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:26	ILY	A
1,1,2-Trichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:26	ILY	A
1,1-Dichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:26	ILY	A
1,1-Dichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:26	ILY	A
1,2,3-Trichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:26	ILY	A
1,2,4-Trichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:26	ILY	A
1,2-Dibromo-3-chloropropane	2.5U	U,P1	ug/L	5.0	2.5	1.6	SW846 8260C	1	11/16/2023 18:26	ILY	A
1,2-Dibromoethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:26	ILY	A
1,2-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:26	ILY	A
1,2-Dichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:26	ILY	A
1,2-Dichloropropane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:26	ILY	A
1,3-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:26	ILY	A
1,3-Dichloropropene, Total	1.5U	U,P1	ug/L	2.0	1.5	0.66	SW846 8260C	1	11/16/2023 18:26	ILY	A
1,4-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:26	ILY	A
2-Butanone	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 18:26	ILY	A
2-Hexanone	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 18:26	ILY	A
4-Methyl-2-Pentanone(MIBK)	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 18:26	ILY	A
Acetone	12.7	P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 18:26	ILY	A
Benzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:26	ILY	A
Bromochloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:26	ILY	A
Bromodichloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:26	ILY	A
Bromoform	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:26	ILY	A
Bromomethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:26	ILY	A
Carbon Disulfide	0.50J	J,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:26	ILY	A
Carbon Tetrachloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:26	ILY	A
Chlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:26	ILY	A
Chlorodibromomethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:26	ILY	A
Chloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:26	ILY	A
Chloroform	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:26	ILY	A
Chloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:26	ILY	A
cis-1,2-Dichloroethene	1.1	P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:26	ILY	A
Cyclohexane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:26	ILY	A
Dichlorodifluoromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:26	ILY	A
Ethylbenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:26	ILY	A
Freon 113	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:26	ILY	A
Iodomethane	0.75U	U,3,4,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:26	ILY	A
Isopropylbenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:26	ILY	A
Methyl acetate	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:26	ILY	A
Methyl cyclohexane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:26	ILY	A
Methyl t-Butyl Ether	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:26	ILY	A
Methylene Chloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:26	ILY	A
Styrene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:26	ILY	A
Tetrachloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:26	ILY	A
Toluene	11.4	P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:26	ILY	A
Total Xylenes	2.3U	U,P1	ug/L	3.0	2.3	1.0	SW846 8260C	1	11/16/2023 18:26	ILY	A
trans-1,2-Dichloroethene	0.38J	J,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:26	ILY	A

Results

Client Sample ID	DUP-01-20231102	Collected	11/02/2023 00:00
Lab Sample ID	3331303008	Lab Receipt	11/03/2023 09:15

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Trichloroethene	0.67J	J,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:26	ILY	A
Trichlorofluoromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:26	ILY	A
Vinyl Chloride	1.0	P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:26	ILY	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	101%	81 – 118	11/16/2023 18:26	
4-Bromofluorobenzene	460-00-4	104%	85 – 114	11/16/2023 18:26	
Dibromofluoromethane	1868-53-7	96.2%	80 – 119	11/16/2023 18:26	
Toluene-d8	2037-26-5	97.8%	89 – 112	11/16/2023 18:26	



Results

Client Sample ID	SW99-10-20231102	Collected	11/02/2023 11:00
Lab Sample ID	3331303009	Lab Receipt	11/03/2023 09:15

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:46	ILY	A
1,1,2,2-Tetrachloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:46	ILY	A
1,1,2-Trichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:46	ILY	A
1,1-Dichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:46	ILY	A
1,1-Dichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:46	ILY	A
1,2,3-Trichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:46	ILY	A
1,2,4-Trichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:46	ILY	A
1,2-Dibromo-3-chloropropane	2.5U	U,P1	ug/L	5.0	2.5	1.6	SW846 8260C	1	11/16/2023 18:46	ILY	A
1,2-Dibromoethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:46	ILY	A
1,2-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:46	ILY	A
1,2-Dichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:46	ILY	A
1,2-Dichloropropane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:46	ILY	A
1,3-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:46	ILY	A
1,3-Dichloropropene, Total	1.5U	U,P1	ug/L	2.0	1.5	0.66	SW846 8260C	1	11/16/2023 18:46	ILY	A
1,4-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:46	ILY	A
2-Butanone	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 18:46	ILY	A
2-Hexanone	1.9J	J,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 18:46	ILY	A
4-Methyl-2-Pentanone(MIBK)	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 18:46	ILY	A
Acetone	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 18:46	ILY	A
Benzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:46	ILY	A
Bromochloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:46	ILY	A
Bromodichloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:46	ILY	A
Bromoform	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:46	ILY	A
Bromomethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:46	ILY	A
Carbon Disulfide	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:46	ILY	A
Carbon Tetrachloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:46	ILY	A
Chlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:46	ILY	A
Chlorodibromomethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:46	ILY	A
Chloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:46	ILY	A
Chloroform	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:46	ILY	A
Chloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:46	ILY	A
cis-1,2-Dichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:46	ILY	A
Cyclohexane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:46	ILY	A
Dichlorodifluoromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:46	ILY	A
Ethylbenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:46	ILY	A
Freon 113	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:46	ILY	A
Iodomethane	0.75U	U,3,4,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:46	ILY	A
Isopropylbenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:46	ILY	A
Methyl acetate	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:46	ILY	A
Methyl cyclohexane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:46	ILY	A
Methyl t-Butyl Ether	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:46	ILY	A
Methylene Chloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:46	ILY	A
Styrene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:46	ILY	A
Tetrachloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:46	ILY	A
Toluene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:46	ILY	A
Total Xylenes	2.3U	U,P1	ug/L	3.0	2.3	1.0	SW846 8260C	1	11/16/2023 18:46	ILY	A
trans-1,2-Dichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:46	ILY	A

Results

Client Sample ID	SW99-10-20231102	Collected	11/02/2023 11:00
Lab Sample ID	3331303009	Lab Receipt	11/03/2023 09:15

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Trichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:46	ILY	A
Trichlorofluoromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:46	ILY	A
Vinyl Chloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:46	ILY	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	106%	81 – 118	11/16/2023 18:46	
4-Bromofluorobenzene	460-00-4	91.5%	85 – 114	11/16/2023 18:46	
Dibromofluoromethane	1868-53-7	100%	80 – 119	11/16/2023 18:46	
Toluene-d8	2037-26-5	97.1%	89 – 112	11/16/2023 18:46	



Results

Client Sample ID	SW10-7-20231102	Collected	11/02/2023 11:15
Lab Sample ID	3331303010	Lab Receipt	11/03/2023 09:15

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:07	ILY	A
1,1,2,2-Tetrachloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:07	ILY	A
1,1,2-Trichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:07	ILY	A
1,1-Dichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:07	ILY	A
1,1-Dichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:07	ILY	A
1,2,3-Trichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:07	ILY	A
1,2,4-Trichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:07	ILY	A
1,2-Dibromo-3-chloropropane	2.5U	U,P1	ug/L	5.0	2.5	1.6	SW846 8260C	1	11/16/2023 19:07	ILY	A
1,2-Dibromoethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:07	ILY	A
1,2-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:07	ILY	A
1,2-Dichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:07	ILY	A
1,2-Dichloropropane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:07	ILY	A
1,3-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:07	ILY	A
1,3-Dichloropropene, Total	1.5U	U,P1	ug/L	2.0	1.5	0.66	SW846 8260C	1	11/16/2023 19:07	ILY	A
1,4-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:07	ILY	A
2-Butanone	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 19:07	ILY	A
2-Hexanone	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 19:07	ILY	A
4-Methyl-2-Pentanone(MIBK)	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 19:07	ILY	A
Acetone	5.3	P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 19:07	ILY	A
Benzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:07	ILY	A
Bromochloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:07	ILY	A
Bromodichloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:07	ILY	A
Bromoform	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:07	ILY	A
Bromomethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:07	ILY	A
Carbon Disulfide	0.40J	J,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:07	ILY	A
Carbon Tetrachloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:07	ILY	A
Chlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:07	ILY	A
Chlorodibromomethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:07	ILY	A
Chloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:07	ILY	A
Chloroform	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:07	ILY	A
Chloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:07	ILY	A
cis-1,2-Dichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:07	ILY	A
Cyclohexane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:07	ILY	A
Dichlorodifluoromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:07	ILY	A
Ethylbenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:07	ILY	A
Freon 113	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:07	ILY	A
Iodomethane	2.2	3,4,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:07	ILY	A
Isopropylbenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:07	ILY	A
Methyl acetate	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:07	ILY	A
Methyl cyclohexane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:07	ILY	A
Methyl t-Butyl Ether	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:07	ILY	A
Methylene Chloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:07	ILY	A
Styrene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:07	ILY	A
Tetrachloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:07	ILY	A
Toluene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:07	ILY	A
Total Xylenes	2.3U	U,P1	ug/L	3.0	2.3	1.0	SW846 8260C	1	11/16/2023 19:07	ILY	A
trans-1,2-Dichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:07	ILY	A



Results

Client Sample ID	SW10-7-20231102	Collected	11/02/2023 11:15
Lab Sample ID	3331303010	Lab Receipt	11/03/2023 09:15

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Trichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:07	ILY	A
Trichlorofluoromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:07	ILY	A
Vinyl Chloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:07	ILY	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	102%	81 – 118	11/16/2023 19:07	
4-Bromofluorobenzene	460-00-4	99.4%	85 – 114	11/16/2023 19:07	
Dibromofluoromethane	1868-53-7	98.4%	80 – 119	11/16/2023 19:07	
Toluene-d8	2037-26-5	99.6%	89 – 112	11/16/2023 19:07	



Results

Client Sample ID	MW10-3D-20231102	Collected	11/02/2023 11:20
Lab Sample ID	3331303011	Lab Receipt	11/03/2023 09:15

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:27	ILY	A
1,1,2,2-Tetrachloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:27	ILY	A
1,1,2-Trichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:27	ILY	A
1,1-Dichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:27	ILY	A
1,1-Dichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:27	ILY	A
1,2,3-Trichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:27	ILY	A
1,2,4-Trichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:27	ILY	A
1,2-Dibromo-3-chloropropane	2.5U	U,P1	ug/L	5.0	2.5	1.6	SW846 8260C	1	11/16/2023 19:27	ILY	A
1,2-Dibromoethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:27	ILY	A
1,2-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:27	ILY	A
1,2-Dichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:27	ILY	A
1,2-Dichloropropane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:27	ILY	A
1,3-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:27	ILY	A
1,3-Dichloropropene, Total	1.5U	U,P1	ug/L	2.0	1.5	0.66	SW846 8260C	1	11/16/2023 19:27	ILY	A
1,4-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:27	ILY	A
2-Butanone	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 19:27	ILY	A
2-Hexanone	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 19:27	ILY	A
4-Methyl-2-Pentanone(MIBK)	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 19:27	ILY	A
Acetone	13.4	P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 19:27	ILY	A
Benzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:27	ILY	A
Bromochloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:27	ILY	A
Bromodichloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:27	ILY	A
Bromoform	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:27	ILY	A
Bromomethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:27	ILY	A
Carbon Disulfide	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:27	ILY	A
Carbon Tetrachloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:27	ILY	A
Chlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:27	ILY	A
Chlorodibromomethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:27	ILY	A
Chloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:27	ILY	A
Chloroform	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:27	ILY	A
Chloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:27	ILY	A
cis-1,2-Dichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:27	ILY	A
Cyclohexane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:27	ILY	A
Dichlorodifluoromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:27	ILY	A
Ethylbenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:27	ILY	A
Freon 113	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:27	ILY	A
Iodomethane	0.75U	U,3,4,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:27	ILY	A
Isopropylbenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:27	ILY	A
Methyl acetate	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:27	ILY	A
Methyl cyclohexane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:27	ILY	A
Methyl t-Butyl Ether	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:27	ILY	A
Methylene Chloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:27	ILY	A
Styrene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:27	ILY	A
Tetrachloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:27	ILY	A
Toluene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:27	ILY	A
Total Xylenes	2.3U	U,P1	ug/L	3.0	2.3	1.0	SW846 8260C	1	11/16/2023 19:27	ILY	A
trans-1,2-Dichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:27	ILY	A

Results

Client Sample ID	MW10-3D-20231102	Collected	11/02/2023 11:20
Lab Sample ID	3331303011	Lab Receipt	11/03/2023 09:15

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Trichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:27	ILY	A
Trichlorofluoromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:27	ILY	A
Vinyl Chloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:27	ILY	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	97.2%	81 – 118	11/16/2023 19:27	
4-Bromofluorobenzene	460-00-4	88.4%	85 – 114	11/16/2023 19:27	
Dibromofluoromethane	1868-53-7	93.4%	80 – 119	11/16/2023 19:27	
Toluene-d8	2037-26-5	94.2%	89 – 112	11/16/2023 19:27	



Results

Client Sample ID	SW10-5-20231102	Collected	11/02/2023 12:10
Lab Sample ID	3331303012	Lab Receipt	11/03/2023 09:15

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:48	ILY	A
1,1,2,2-Tetrachloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:48	ILY	A
1,1,2-Trichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:48	ILY	A
1,1-Dichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:48	ILY	A
1,1-Dichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:48	ILY	A
1,2,3-Trichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:48	ILY	A
1,2,4-Trichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:48	ILY	A
1,2-Dibromo-3-chloropropane	2.5U	U,P1	ug/L	5.0	2.5	1.6	SW846 8260C	1	11/16/2023 19:48	ILY	A
1,2-Dibromoethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:48	ILY	A
1,2-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:48	ILY	A
1,2-Dichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:48	ILY	A
1,2-Dichloropropane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:48	ILY	A
1,3-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:48	ILY	A
1,3-Dichloropropene, Total	1.5U	U,P1	ug/L	2.0	1.5	0.66	SW846 8260C	1	11/16/2023 19:48	ILY	A
1,4-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:48	ILY	A
2-Butanone	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 19:48	ILY	A
2-Hexanone	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 19:48	ILY	A
4-Methyl-2-Pentanone(MIBK)	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 19:48	ILY	A
Acetone	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 19:48	ILY	A
Benzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:48	ILY	A
Bromochloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:48	ILY	A
Bromodichloromethane	0.33J	J,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:48	ILY	A
Bromoform	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:48	ILY	A
Bromomethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:48	ILY	A
Carbon Disulfide	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:48	ILY	A
Carbon Tetrachloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:48	ILY	A
Chlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:48	ILY	A
Chlorodibromomethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:48	ILY	A
Chloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:48	ILY	A
Chloroform	0.87J	J,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:48	ILY	A
Chloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:48	ILY	A
cis-1,2-Dichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:48	ILY	A
Cyclohexane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:48	ILY	A
Dichlorodifluoromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:48	ILY	A
Ethylbenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:48	ILY	A
Freon 113	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:48	ILY	A
Iodomethane	0.75U	U,3,4,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:48	ILY	A
Isopropylbenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:48	ILY	A
Methyl acetate	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:48	ILY	A
Methyl cyclohexane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:48	ILY	A
Methyl t-Butyl Ether	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:48	ILY	A
Methylene Chloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:48	ILY	A
Styrene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:48	ILY	A
Tetrachloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:48	ILY	A
Toluene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:48	ILY	A
Total Xylenes	2.3U	U,P1	ug/L	3.0	2.3	1.0	SW846 8260C	1	11/16/2023 19:48	ILY	A
trans-1,2-Dichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:48	ILY	A

Results

Client Sample ID	SW10-5-20231102	Collected	11/02/2023 12:10
Lab Sample ID	3331303012	Lab Receipt	11/03/2023 09:15

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Trichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:48	ILY	A
Trichlorofluoromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:48	ILY	A
Vinyl Chloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 19:48	ILY	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	99.6%	81 – 118	11/16/2023 19:48	
4-Bromofluorobenzene	460-00-4	94.4%	85 – 114	11/16/2023 19:48	
Dibromofluoromethane	1868-53-7	96.2%	80 – 119	11/16/2023 19:48	
Toluene-d8	2037-26-5	96.5%	89 – 112	11/16/2023 19:48	



Results

Client Sample ID	SW10-8-20231102	Collected	11/02/2023 12:15
Lab Sample ID	3331303013	Lab Receipt	11/03/2023 09:15

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:08	ILY	A
1,1,2,2-Tetrachloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:08	ILY	A
1,1,2-Trichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:08	ILY	A
1,1-Dichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:08	ILY	A
1,1-Dichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:08	ILY	A
1,2,3-Trichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:08	ILY	A
1,2,4-Trichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:08	ILY	A
1,2-Dibromo-3-chloropropane	2.5U	U,P1	ug/L	5.0	2.5	1.6	SW846 8260C	1	11/16/2023 20:08	ILY	A
1,2-Dibromoethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:08	ILY	A
1,2-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:08	ILY	A
1,2-Dichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:08	ILY	A
1,2-Dichloropropane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:08	ILY	A
1,3-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:08	ILY	A
1,3-Dichloropropene, Total	1.5U	U,P1	ug/L	2.0	1.5	0.66	SW846 8260C	1	11/16/2023 20:08	ILY	A
1,4-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:08	ILY	A
2-Butanone	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 20:08	ILY	A
2-Hexanone	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 20:08	ILY	A
4-Methyl-2-Pentanone(MIBK)	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 20:08	ILY	A
Acetone	4.2J	J,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 20:08	ILY	A
Benzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:08	ILY	A
Bromochloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:08	ILY	A
Bromodichloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:08	ILY	A
Bromoform	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:08	ILY	A
Bromomethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:08	ILY	A
Carbon Disulfide	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:08	ILY	A
Carbon Tetrachloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:08	ILY	A
Chlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:08	ILY	A
Chlorodibromomethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:08	ILY	A
Chloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:08	ILY	A
Chloroform	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:08	ILY	A
Chloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:08	ILY	A
cis-1,2-Dichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:08	ILY	A
Cyclohexane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:08	ILY	A
Dichlorodifluoromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:08	ILY	A
Ethylbenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:08	ILY	A
Freon 113	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:08	ILY	A
Iodomethane	0.75U	U,3,4,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:08	ILY	A
Isopropylbenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:08	ILY	A
Methyl acetate	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:08	ILY	A
Methyl cyclohexane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:08	ILY	A
Methyl t-Butyl Ether	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:08	ILY	A
Methylene Chloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:08	ILY	A
Styrene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:08	ILY	A
Tetrachloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:08	ILY	A
Toluene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:08	ILY	A
Total Xylenes	2.3U	U,P1	ug/L	3.0	2.3	1.0	SW846 8260C	1	11/16/2023 20:08	ILY	A
trans-1,2-Dichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:08	ILY	A



Results

Client Sample ID	SW10-8-20231102	Collected	11/02/2023 12:15
Lab Sample ID	3331303013	Lab Receipt	11/03/2023 09:15

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Trichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:08	ILY	A
Trichlorofluoromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:08	ILY	A
Vinyl Chloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:08	ILY	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	106%	81 – 118	11/16/2023 20:08	
4-Bromofluorobenzene	460-00-4	98.5%	85 – 114	11/16/2023 20:08	
Dibromofluoromethane	1868-53-7	99.6%	80 – 119	11/16/2023 20:08	
Toluene-d8	2037-26-5	101%	89 – 112	11/16/2023 20:08	



Results

Client Sample ID	MW10-11D-20231102	Collected	11/02/2023 12:25
Lab Sample ID	3331303014	Lab Receipt	11/03/2023 09:15

LIGHT HYDROCARBON GASES

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Ethane	10.5	P1	ug/L	5.2	2.6	0.56	RSK 175	1	11/10/2023 13:29	JTH	B
Ethene	3.6U	U,P1	ug/L	7.1	3.6	0.81	RSK 175	1	11/10/2023 13:29	JTH	B
Methane	2360	P1	ug/L	2.6	1.6	0.53	RSK 175	1	11/10/2023 13:29	JTH	B

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:28	ILY	A
1,1,2,2-Tetrachloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:28	ILY	A
1,1,2-Trichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:28	ILY	A
1,1-Dichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:28	ILY	A
1,1-Dichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:28	ILY	A
1,2,3-Trichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:28	ILY	A
1,2,4-Trichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:28	ILY	A
1,2-Dibromo-3-chloropropane	2.5U	U,P1	ug/L	5.0	2.5	1.6	SW846 8260C	1	11/16/2023 20:28	ILY	A
1,2-Dibromoethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:28	ILY	A
1,2-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:28	ILY	A
1,2-Dichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:28	ILY	A
1,2-Dichloropropane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:28	ILY	A
1,3-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:28	ILY	A
1,3-Dichloropropene, Total	1.5U	U,P1	ug/L	2.0	1.5	0.66	SW846 8260C	1	11/16/2023 20:28	ILY	A
1,4-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:28	ILY	A
2-Butanone	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 20:28	ILY	A
2-Hexanone	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 20:28	ILY	A
4-Methyl-2-Pentanone(MIBK)	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 20:28	ILY	A
Acetone	3.5J	J,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 20:28	ILY	A
Benzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:28	ILY	A
Bromochloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:28	ILY	A
Bromodichloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:28	ILY	A
Bromoform	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:28	ILY	A
Bromomethane	1.2	P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:28	ILY	A
Carbon Disulfide	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:28	ILY	A
Carbon Tetrachloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:28	ILY	A
Chlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:28	ILY	A
Chlorodibromomethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:28	ILY	A
Chloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:28	ILY	A
Chloroform	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:28	ILY	A
Chloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:28	ILY	A
cis-1,2-Dichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:28	ILY	A
Cyclohexane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:28	ILY	A
Dichlorodifluoromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:28	ILY	A
Ethylbenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:28	ILY	A
Freon 113	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:28	ILY	A
Iodomethane	2.4	3,4,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:28	ILY	A
Isopropylbenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:28	ILY	A
Methyl acetate	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:28	ILY	A
Methyl cyclohexane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:28	ILY	A



Results

Client Sample ID	MW10-11D-20231102	Collected	11/02/2023 12:25
Lab Sample ID	3331303014	Lab Receipt	11/03/2023 09:15

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Methyl t-Butyl Ether	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:28	ILY	A
Methylene Chloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:28	ILY	A
Styrene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:28	ILY	A
Tetrachloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:28	ILY	A
Toluene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:28	ILY	A
Total Xylenes	2.3U	U,P1	ug/L	3.0	2.3	1.0	SW846 8260C	1	11/16/2023 20:28	ILY	A
trans-1,2-Dichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:28	ILY	A
Trichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:28	ILY	A
Trichlorofluoromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:28	ILY	A
Vinyl Chloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:28	ILY	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	103%	81 – 118	11/16/2023 20:28	
4-Bromofluorobenzene	460-00-4	96.2%	85 – 114	11/16/2023 20:28	
Dibromofluoromethane	1868-53-7	98.5%	80 – 119	11/16/2023 20:28	
Toluene-d8	2037-26-5	98.8%	89 – 112	11/16/2023 20:28	

WET CHEMISTRY

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Total Organic Carbon (TOC)	18.1	P1	mg/L	2.0	1.0	0.54	SW846 9060A	2	11/09/2023 03:52	PAG	E



Results

Client Sample ID	MW10-9D-20231102	Collected	11/02/2023 12:40
Lab Sample ID	3331303015	Lab Receipt	11/03/2023 09:15

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:49	ILY	A
1,1,2,2-Tetrachloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:49	ILY	A
1,1,2-Trichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:49	ILY	A
1,1-Dichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:49	ILY	A
1,1-Dichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:49	ILY	A
1,2,3-Trichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:49	ILY	A
1,2,4-Trichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:49	ILY	A
1,2-Dibromo-3-chloropropane	2.5U	U,P1	ug/L	5.0	2.5	1.6	SW846 8260C	1	11/16/2023 20:49	ILY	A
1,2-Dibromoethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:49	ILY	A
1,2-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:49	ILY	A
1,2-Dichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:49	ILY	A
1,2-Dichloropropane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:49	ILY	A
1,3-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:49	ILY	A
1,3-Dichloropropene, Total	1.5U	U,P1	ug/L	2.0	1.5	0.66	SW846 8260C	1	11/16/2023 20:49	ILY	A
1,4-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:49	ILY	A
2-Butanone	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 20:49	ILY	A
2-Hexanone	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 20:49	ILY	A
4-Methyl-2-Pentanone(MIBK)	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 20:49	ILY	A
Acetone	11.9	P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 20:49	ILY	A
Benzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:49	ILY	A
Bromochloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:49	ILY	A
Bromodichloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:49	ILY	A
Bromoform	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:49	ILY	A
Bromomethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:49	ILY	A
Carbon Disulfide	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:49	ILY	A
Carbon Tetrachloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:49	ILY	A
Chlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:49	ILY	A
Chlorodibromomethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:49	ILY	A
Chloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:49	ILY	A
Chloroform	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:49	ILY	A
Chloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:49	ILY	A
cis-1,2-Dichloroethene	4.1	P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:49	ILY	A
Cyclohexane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:49	ILY	A
Dichlorodifluoromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:49	ILY	A
Ethylbenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:49	ILY	A
Freon 113	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:49	ILY	A
Iodomethane	0.75U	U,3,4,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:49	ILY	A
Isopropylbenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:49	ILY	A
Methyl acetate	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:49	ILY	A
Methyl cyclohexane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:49	ILY	A
Methyl t-Butyl Ether	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:49	ILY	A
Methylene Chloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:49	ILY	A
Styrene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:49	ILY	A
Tetrachloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:49	ILY	A
Toluene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:49	ILY	A
Total Xylenes	2.3U	U,P1	ug/L	3.0	2.3	1.0	SW846 8260C	1	11/16/2023 20:49	ILY	A
trans-1,2-Dichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:49	ILY	A

Results

Client Sample ID	MW10-9D-20231102	Collected	11/02/2023 12:40
Lab Sample ID	3331303015	Lab Receipt	11/03/2023 09:15

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Trichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:49	ILY	A
Trichlorofluoromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:49	ILY	A
Vinyl Chloride	12.3	P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 20:49	ILY	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	101%	81 – 118	11/16/2023 20:49	
4-Bromofluorobenzene	460-00-4	103%	85 – 114	11/16/2023 20:49	
Dibromofluoromethane	1868-53-7	96.1%	80 – 119	11/16/2023 20:49	
Toluene-d8	2037-26-5	99.5%	89 – 112	11/16/2023 20:49	



Results

Client Sample ID	SW10-6-20231102	Collected	11/02/2023 12:45
Lab Sample ID	3331303016	Lab Receipt	11/03/2023 09:15

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:09	ILY	A
1,1,2,2-Tetrachloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:09	ILY	A
1,1,2-Trichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:09	ILY	A
1,1-Dichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:09	ILY	A
1,1-Dichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:09	ILY	A
1,2,3-Trichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:09	ILY	A
1,2,4-Trichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:09	ILY	A
1,2-Dibromo-3-chloropropane	2.5U	U,P1	ug/L	5.0	2.5	1.6	SW846 8260C	1	11/16/2023 21:09	ILY	A
1,2-Dibromoethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:09	ILY	A
1,2-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:09	ILY	A
1,2-Dichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:09	ILY	A
1,2-Dichloropropane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:09	ILY	A
1,3-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:09	ILY	A
1,3-Dichloropropene, Total	1.5U	U,P1	ug/L	2.0	1.5	0.66	SW846 8260C	1	11/16/2023 21:09	ILY	A
1,4-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:09	ILY	A
2-Butanone	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 21:09	ILY	A
2-Hexanone	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 21:09	ILY	A
4-Methyl-2-Pentanone(MIBK)	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 21:09	ILY	A
Acetone	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 21:09	ILY	A
Benzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:09	ILY	A
Bromochloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:09	ILY	A
Bromodichloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:09	ILY	A
Bromoform	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:09	ILY	A
Bromomethane	0.51J	J,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:09	ILY	A
Carbon Disulfide	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:09	ILY	A
Carbon Tetrachloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:09	ILY	A
Chlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:09	ILY	A
Chlorodibromomethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:09	ILY	A
Chloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:09	ILY	A
Chloroform	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:09	ILY	A
Chloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:09	ILY	A
cis-1,2-Dichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:09	ILY	A
Cyclohexane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:09	ILY	A
Dichlorodifluoromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:09	ILY	A
Ethylbenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:09	ILY	A
Freon 113	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:09	ILY	A
Iodomethane	0.75U	U,3,4,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:09	ILY	A
Isopropylbenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:09	ILY	A
Methyl acetate	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:09	ILY	A
Methyl cyclohexane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:09	ILY	A
Methyl t-Butyl Ether	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:09	ILY	A
Methylene Chloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:09	ILY	A
Styrene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:09	ILY	A
Tetrachloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:09	ILY	A
Toluene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:09	ILY	A
Total Xylenes	2.3U	U,P1	ug/L	3.0	2.3	1.0	SW846 8260C	1	11/16/2023 21:09	ILY	A
trans-1,2-Dichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:09	ILY	A



Results

Client Sample ID	SW10-6-20231102	Collected	11/02/2023 12:45
Lab Sample ID	3331303016	Lab Receipt	11/03/2023 09:15

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Trichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:09	ILY	A
Trichlorofluoromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:09	ILY	A
Vinyl Chloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:09	ILY	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	106%	81 – 118	11/16/2023 21:09	
4-Bromofluorobenzene	460-00-4	98.6%	85 – 114	11/16/2023 21:09	
Dibromofluoromethane	1868-53-7	101%	80 – 119	11/16/2023 21:09	
Toluene-d8	2037-26-5	101%	89 – 112	11/16/2023 21:09	



Results

Client Sample ID	PW10-1-20231102	Collected	11/02/2023 12:50
Lab Sample ID	3331303017	Lab Receipt	11/03/2023 09:15

LIGHT HYDROCARBON GASES

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Ethane	2.6U	U,P1	ug/L	5.2	2.6	0.56	RSK 175	1	11/10/2023 13:47	JTH	B
Ethene	3.6U	U,P1	ug/L	7.1	3.6	0.81	RSK 175	1	11/10/2023 13:47	JTH	B
Methane	197	P1	ug/L	2.6	1.6	0.53	RSK 175	1	11/10/2023 13:47	JTH	B

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:29	ILY	A
1,1,1,2-Tetrachloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:29	ILY	A
1,1,2-Trichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:29	ILY	A
1,1-Dichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:29	ILY	A
1,1-Dichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:29	ILY	A
1,2,3-Trichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:29	ILY	A
1,2,4-Trichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:29	ILY	A
1,2-Dibromo-3-chloropropane	2.5U	U,P1	ug/L	5.0	2.5	1.6	SW846 8260C	1	11/16/2023 21:29	ILY	A
1,2-Dibromoethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:29	ILY	A
1,2-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:29	ILY	A
1,2-Dichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:29	ILY	A
1,2-Dichloropropane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:29	ILY	A
1,3-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:29	ILY	A
1,3-Dichloropropene, Total	1.5U	U,P1	ug/L	2.0	1.5	0.66	SW846 8260C	1	11/16/2023 21:29	ILY	A
1,4-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:29	ILY	A
2-Butanone	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 21:29	ILY	A
2-Hexanone	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 21:29	ILY	A
4-Methyl-2-Pentanone(MIBK)	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 21:29	ILY	A
Acetone	13.5	P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 21:29	ILY	A
Benzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:29	ILY	A
Bromochloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:29	ILY	A
Bromodichloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:29	ILY	A
Bromoform	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:29	ILY	A
Bromomethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:29	ILY	A
Carbon Disulfide	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:29	ILY	A
Carbon Tetrachloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:29	ILY	A
Chlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:29	ILY	A
Chlorodibromomethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:29	ILY	A
Chloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:29	ILY	A
Chloroform	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:29	ILY	A
Chloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:29	ILY	A
cis-1,2-Dichloroethene	0.77J	J,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:29	ILY	A
Cyclohexane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:29	ILY	A
Dichlorodifluoromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:29	ILY	A
Ethylbenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:29	ILY	A
Freon 113	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:29	ILY	A
Iodomethane	0.75U	U,3,4,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:29	ILY	A
Isopropylbenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:29	ILY	A
Methyl acetate	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:29	ILY	A
Methyl cyclohexane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:29	ILY	A



Results

Client Sample ID	PW10-1-20231102	Collected	11/02/2023 12:50
Lab Sample ID	3331303017	Lab Receipt	11/03/2023 09:15

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Methyl t-Butyl Ether	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:29	ILY	A
Methylene Chloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:29	ILY	A
Styrene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:29	ILY	A
Tetrachloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:29	ILY	A
Toluene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:29	ILY	A
Total Xylenes	2.3U	U,P1	ug/L	3.0	2.3	1.0	SW846 8260C	1	11/16/2023 21:29	ILY	A
trans-1,2-Dichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:29	ILY	A
Trichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:29	ILY	A
Trichlorofluoromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:29	ILY	A
Vinyl Chloride	0.61J	J,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:29	ILY	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	103%	81 – 118	11/16/2023 21:29	
4-Bromofluorobenzene	460-00-4	99.2%	85 – 114	11/16/2023 21:29	
Dibromofluoromethane	1868-53-7	96.2%	80 – 119	11/16/2023 21:29	
Toluene-d8	2037-26-5	96.3%	89 – 112	11/16/2023 21:29	

WET CHEMISTRY

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Total Organic Carbon (TOC)	6.1	P1	mg/L	2.0	1.0	0.54	SW846 9060A	2	11/08/2023 05:59	PAG	E



Results

Client Sample ID	MW10-7-20231102	Collected	11/02/2023 13:05
Lab Sample ID	3331303018	Lab Receipt	11/03/2023 09:15

LIGHT HYDROCARBON GASES

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Ethane	2.6U	U,P1	ug/L	5.2	2.6	0.56	RSK 175	1	11/10/2023 14:00	JTH	G
Ethene	8.1	P1	ug/L	7.1	3.6	0.81	RSK 175	1	11/10/2023 14:00	JTH	G
Methane	8840	P1	ug/L	2.6	1.6	0.53	RSK 175	1	11/10/2023 14:00	JTH	G

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:50	ILY	A
1,1,2,2-Tetrachloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:50	ILY	A
1,1,2-Trichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:50	ILY	A
1,1-Dichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:50	ILY	A
1,1-Dichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:50	ILY	A
1,2,3-Trichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:50	ILY	A
1,2,4-Trichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:50	ILY	A
1,2-Dibromo-3-chloropropane	2.5U	U,P1	ug/L	5.0	2.5	1.6	SW846 8260C	1	11/16/2023 21:50	ILY	A
1,2-Dibromoethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:50	ILY	A
1,2-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:50	ILY	A
1,2-Dichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:50	ILY	A
1,2-Dichloropropane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:50	ILY	A
1,3-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:50	ILY	A
1,3-Dichloropropene, Total	1.5U	U,P1	ug/L	2.0	1.5	0.66	SW846 8260C	1	11/16/2023 21:50	ILY	A
1,4-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:50	ILY	A
2-Butanone	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 21:50	ILY	A
2-Hexanone	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 21:50	ILY	A
4-Methyl-2-Pentanone(MIBK)	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 21:50	ILY	A
Acetone	13.3	P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 21:50	ILY	A
Benzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:50	ILY	A
Bromochloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:50	ILY	A
Bromodichloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:50	ILY	A
Bromoform	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:50	ILY	A
Bromomethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:50	ILY	A
Carbon Disulfide	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:50	ILY	A
Carbon Tetrachloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:50	ILY	A
Chlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:50	ILY	A
Chlorodibromomethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:50	ILY	A
Chloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:50	ILY	A
Chloroform	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:50	ILY	A
Chloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:50	ILY	A
cis-1,2-Dichloroethene	1.7	P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:50	ILY	A
Cyclohexane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:50	ILY	A
Dichlorodifluoromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:50	ILY	A
Ethylbenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:50	ILY	A
Freon 113	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:50	ILY	A
Iodomethane	0.75U	U,3,4,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:50	ILY	A
Isopropylbenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:50	ILY	A
Methyl acetate	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:50	ILY	A
Methyl cyclohexane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:50	ILY	A



Results

Client Sample ID	MW10-7-20231102	Collected	11/02/2023 13:05
Lab Sample ID	3331303018	Lab Receipt	11/03/2023 09:15

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Methyl t-Butyl Ether	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:50	ILY	A
Methylene Chloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:50	ILY	A
Styrene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:50	ILY	A
Tetrachloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:50	ILY	A
Toluene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:50	ILY	A
Total Xylenes	2.3U	U,P1	ug/L	3.0	2.3	1.0	SW846 8260C	1	11/16/2023 21:50	ILY	A
trans-1,2-Dichloroethene	0.49J	J,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:50	ILY	A
Trichloroethene	1.7	P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:50	ILY	A
Trichlorofluoromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:50	ILY	A
Vinyl Chloride	4.3	P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 21:50	ILY	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	105%	81 – 118	11/16/2023 21:50	
4-Bromofluorobenzene	460-00-4	97.9%	85 – 114	11/16/2023 21:50	
Dibromofluoromethane	1868-53-7	97.1%	80 – 119	11/16/2023 21:50	
Toluene-d8	2037-26-5	99.6%	89 – 112	11/16/2023 21:50	

WET CHEMISTRY

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Total Organic Carbon (TOC)	146	P1	mg/L	25.0	12.5	6.8	SW846 9060A	25	11/09/2023 03:52	PAG	E



Results

Client Sample ID	MW10-4E-20231102	Collected	11/02/2023 13:15
Lab Sample ID	3331303019	Lab Receipt	11/03/2023 09:15

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 22:10	ILY	A
1,1,2,2-Tetrachloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 22:10	ILY	A
1,1,2-Trichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 22:10	ILY	A
1,1-Dichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 22:10	ILY	A
1,1-Dichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 22:10	ILY	A
1,2,3-Trichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 22:10	ILY	A
1,2,4-Trichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 22:10	ILY	A
1,2-Dibromo-3-chloropropane	2.5U	U,P1	ug/L	5.0	2.5	1.6	SW846 8260C	1	11/16/2023 22:10	ILY	A
1,2-Dibromoethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 22:10	ILY	A
1,2-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 22:10	ILY	A
1,2-Dichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 22:10	ILY	A
1,2-Dichloropropane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 22:10	ILY	A
1,3-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 22:10	ILY	A
1,3-Dichloropropene, Total	1.5U	U,P1	ug/L	2.0	1.5	0.66	SW846 8260C	1	11/16/2023 22:10	ILY	A
1,4-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 22:10	ILY	A
2-Butanone	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 22:10	ILY	A
2-Hexanone	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 22:10	ILY	A
4-Methyl-2-Pentanone(MIBK)	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 22:10	ILY	A
Acetone	12.9	P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 22:10	ILY	A
Benzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 22:10	ILY	A
Bromochloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 22:10	ILY	A
Bromodichloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 22:10	ILY	A
Bromoform	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 22:10	ILY	A
Bromomethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 22:10	ILY	A
Carbon Disulfide	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 22:10	ILY	A
Carbon Tetrachloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 22:10	ILY	A
Chlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 22:10	ILY	A
Chlorodibromomethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 22:10	ILY	A
Chloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 22:10	ILY	A
Chloroform	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 22:10	ILY	A
Chloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 22:10	ILY	A
cis-1,2-Dichloroethene	7.4	P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 22:10	ILY	A
Cyclohexane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 22:10	ILY	A
Dichlorodifluoromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 22:10	ILY	A
Ethylbenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 22:10	ILY	A
Freon 113	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 22:10	ILY	A
Iodomethane	0.75U	U,3,4,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 22:10	ILY	A
Isopropylbenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 22:10	ILY	A
Methyl acetate	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 22:10	ILY	A
Methyl cyclohexane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 22:10	ILY	A
Methyl t-Butyl Ether	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 22:10	ILY	A
Methylene Chloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 22:10	ILY	A
Styrene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 22:10	ILY	A
Tetrachloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 22:10	ILY	A
Toluene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 22:10	ILY	A
Total Xylenes	2.3U	U,P1	ug/L	3.0	2.3	1.0	SW846 8260C	1	11/16/2023 22:10	ILY	A
trans-1,2-Dichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 22:10	ILY	A



Results

Client Sample ID	MW10-4E-20231102	Collected	11/02/2023 13:15
Lab Sample ID	3331303019	Lab Receipt	11/03/2023 09:15

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Trichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 22:10	ILY	A
Trichlorofluoromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 22:10	ILY	A
Vinyl Chloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 22:10	ILY	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	103%	81 – 118	11/16/2023 22:10	
4-Bromofluorobenzene	460-00-4	95.8%	85 – 114	11/16/2023 22:10	
Dibromofluoromethane	1868-53-7	99.3%	80 – 119	11/16/2023 22:10	
Toluene-d8	2037-26-5	98.1%	89 – 112	11/16/2023 22:10	



Results

Client Sample ID	MW10-4D-20231102	Collected	11/02/2023 13:20
Lab Sample ID	3331303020	Lab Receipt	11/03/2023 09:15

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:04	ILY	A
1,1,2,2-Tetrachloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:04	ILY	A
1,1,2-Trichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:04	ILY	A
1,1-Dichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:04	ILY	A
1,1-Dichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:04	ILY	A
1,2,3-Trichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:04	ILY	A
1,2,4-Trichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:04	ILY	A
1,2-Dibromo-3-chloropropane	2.5U	U,P1	ug/L	5.0	2.5	1.6	SW846 8260C	1	11/16/2023 15:04	ILY	A
1,2-Dibromoethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:04	ILY	A
1,2-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:04	ILY	A
1,2-Dichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:04	ILY	A
1,2-Dichloropropane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:04	ILY	A
1,3-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:04	ILY	A
1,3-Dichloropropene, Total	1.5U	U,P1	ug/L	2.0	1.5	0.66	SW846 8260C	1	11/16/2023 15:04	ILY	A
1,4-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:04	ILY	A
2-Butanone	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 15:04	ILY	A
2-Hexanone	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 15:04	ILY	A
4-Methyl-2-Pentanone(MIBK)	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 15:04	ILY	A
Acetone	10.5	P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 15:04	ILY	A
Benzene	0.45J	J,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:04	ILY	A
Bromochloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:04	ILY	A
Bromodichloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:04	ILY	A
Bromoform	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:04	ILY	A
Bromomethane	0.75U	U,9,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:04	ILY	A
Carbon Disulfide	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:04	ILY	A
Carbon Tetrachloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:04	ILY	A
Chlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:04	ILY	A
Chlorodibromomethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:04	ILY	A
Chloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:04	ILY	A
Chloroform	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:04	ILY	A
Chloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:04	ILY	A
cis-1,2-Dichloroethene	0.68J	J,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:04	ILY	A
Cyclohexane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:04	ILY	A
Dichlorodifluoromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:04	ILY	A
Ethylbenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:04	ILY	A
Freon 113	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:04	ILY	A
Iodomethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:04	ILY	A
Isopropylbenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:04	ILY	A
Methyl acetate	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:04	ILY	A
Methyl cyclohexane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:04	ILY	A
Methyl t-Butyl Ether	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:04	ILY	A
Methylene Chloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:04	ILY	A
Styrene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:04	ILY	A
Tetrachloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:04	ILY	A
Toluene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:04	ILY	A
Total Xylenes	2.3U	U,P1	ug/L	3.0	2.3	1.0	SW846 8260C	1	11/16/2023 15:04	ILY	A
trans-1,2-Dichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:04	ILY	A



Results

Client Sample ID	MW10-4D-20231102	Collected	11/02/2023 13:20
Lab Sample ID	3331303020	Lab Receipt	11/03/2023 09:15

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Trichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:04	ILY	A
Trichlorofluoromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:04	ILY	A
Vinyl Chloride	3.5	P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:04	ILY	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	97.1%	81 – 118	11/16/2023 15:04	
4-Bromofluorobenzene	460-00-4	99.8%	85 – 114	11/16/2023 15:04	
Dibromofluoromethane	1868-53-7	95.4%	80 – 119	11/16/2023 15:04	
Toluene-d8	2037-26-5	101%	89 – 112	11/16/2023 15:04	



Results

Client Sample ID	MW10-1DA-20231102	Collected	11/02/2023 13:25
Lab Sample ID	3331303021	Lab Receipt	11/03/2023 09:15

LIGHT HYDROCARBON GASES

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Ethane	67.9	P1	ug/L	5.2	2.6	0.56	RSK 175	1	11/10/2023 14:12	JTH	G
Ethene	3.6U	U,P1	ug/L	7.1	3.6	0.81	RSK 175	1	11/10/2023 14:12	JTH	G
Methane	10600	P1	ug/L	13.0	8.0	2.7	RSK 175	5	11/15/2023 12:34	JTH	G

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:24	ILY	A
1,1,1,2-Tetrachloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:24	ILY	A
1,1,2-Trichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:24	ILY	A
1,1-Dichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:24	ILY	A
1,1-Dichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:24	ILY	A
1,2,3-Trichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:24	ILY	A
1,2,4-Trichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:24	ILY	A
1,2-Dibromo-3-chloropropane	2.5U	U,P1	ug/L	5.0	2.5	1.6	SW846 8260C	1	11/16/2023 15:24	ILY	A
1,2-Dibromoethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:24	ILY	A
1,2-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:24	ILY	A
1,2-Dichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:24	ILY	A
1,2-Dichloropropane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:24	ILY	A
1,3-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:24	ILY	A
1,3-Dichloropropene, Total	1.5U	U,P1	ug/L	2.0	1.5	0.66	SW846 8260C	1	11/16/2023 15:24	ILY	A
1,4-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:24	ILY	A
2-Butanone	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 15:24	ILY	A
2-Hexanone	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 15:24	ILY	A
4-Methyl-2-Pentanone(MIBK)	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 15:24	ILY	A
Acetone	9.3	P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 15:24	ILY	A
Benzene	3.1	P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:24	ILY	A
Bromochloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:24	ILY	A
Bromodichloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:24	ILY	A
Bromoform	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:24	ILY	A
Bromomethane	0.75U	U,9,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:24	ILY	A
Carbon Disulfide	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:24	ILY	A
Carbon Tetrachloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:24	ILY	A
Chlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:24	ILY	A
Chlorodibromomethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:24	ILY	A
Chloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:24	ILY	A
Chloroform	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:24	ILY	A
Chloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:24	ILY	A
cis-1,2-Dichloroethene	1.3	P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:24	ILY	A
Cyclohexane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:24	ILY	A
Dichlorodifluoromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:24	ILY	A
Ethylbenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:24	ILY	A
Freon 113	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:24	ILY	A
Iodomethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:24	ILY	A
Isopropylbenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:24	ILY	A
Methyl acetate	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:24	ILY	A
Methyl cyclohexane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:24	ILY	A



Results

Client Sample ID	MW10-1DA-20231102	Collected	11/02/2023 13:25
Lab Sample ID	3331303021	Lab Receipt	11/03/2023 09:15

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Methyl t-Butyl Ether	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:24	ILY	A
Methylene Chloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:24	ILY	A
Styrene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:24	ILY	A
Tetrachloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:24	ILY	A
Toluene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:24	ILY	A
Total Xylenes	2.3U	U,P1	ug/L	3.0	2.3	1.0	SW846 8260C	1	11/16/2023 15:24	ILY	A
trans-1,2-Dichloroethene	0.37J	J,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:24	ILY	A
Trichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:24	ILY	A
Trichlorofluoromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:24	ILY	A
Vinyl Chloride	3.8	P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:24	ILY	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	99.3%	81 – 118	11/16/2023 15:24	
4-Bromofluorobenzene	460-00-4	88.4%	85 – 114	11/16/2023 15:24	
Dibromofluoromethane	1868-53-7	95.4%	80 – 119	11/16/2023 15:24	
Toluene-d8	2037-26-5	94.1%	89 – 112	11/16/2023 15:24	

WET CHEMISTRY

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Total Organic Carbon (TOC)	12.4	P1	mg/L	5.0	2.5	1.4	SW846 9060A	5	11/08/2023 05:59	PAG	E



Results

Client Sample ID	PW10-2-20231102	Collected	11/02/2023 13:40
Lab Sample ID	3331303022	Lab Receipt	11/03/2023 09:15

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:44	ILY	A
1,1,2,2-Tetrachloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:44	ILY	A
1,1,2-Trichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:44	ILY	A
1,1-Dichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:44	ILY	A
1,1-Dichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:44	ILY	A
1,2,3-Trichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:44	ILY	A
1,2,4-Trichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:44	ILY	A
1,2-Dibromo-3-chloropropane	2.5U	U,P1	ug/L	5.0	2.5	1.6	SW846 8260C	1	11/16/2023 15:44	ILY	A
1,2-Dibromoethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:44	ILY	A
1,2-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:44	ILY	A
1,2-Dichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:44	ILY	A
1,2-Dichloropropane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:44	ILY	A
1,3-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:44	ILY	A
1,3-Dichloropropene, Total	1.5U	U,P1	ug/L	2.0	1.5	0.66	SW846 8260C	1	11/16/2023 15:44	ILY	A
1,4-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:44	ILY	A
2-Butanone	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 15:44	ILY	A
2-Hexanone	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 15:44	ILY	A
4-Methyl-2-Pentanone(MIBK)	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 15:44	ILY	A
Acetone	10.4	P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 15:44	ILY	A
Benzene	1.6	P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:44	ILY	A
Bromochloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:44	ILY	A
Bromodichloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:44	ILY	A
Bromoform	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:44	ILY	A
Bromomethane	0.75U	U,9,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:44	ILY	A
Carbon Disulfide	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:44	ILY	A
Carbon Tetrachloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:44	ILY	A
Chlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:44	ILY	A
Chlorodibromomethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:44	ILY	A
Chloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:44	ILY	A
Chloroform	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:44	ILY	A
Chloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:44	ILY	A
cis-1,2-Dichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:44	ILY	A
Cyclohexane	0.42J	J,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:44	ILY	A
Dichlorodifluoromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:44	ILY	A
Ethylbenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:44	ILY	A
Freon 113	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:44	ILY	A
Iodomethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:44	ILY	A
Isopropylbenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:44	ILY	A
Methyl acetate	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:44	ILY	A
Methyl cyclohexane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:44	ILY	A
Methyl t-Butyl Ether	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:44	ILY	A
Methylene Chloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:44	ILY	A
Styrene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:44	ILY	A
Tetrachloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:44	ILY	A
Toluene	0.49J	J,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:44	ILY	A
Total Xylenes	2.3U	U,P1	ug/L	3.0	2.3	1.0	SW846 8260C	1	11/16/2023 15:44	ILY	A
trans-1,2-Dichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:44	ILY	A

Results

Client Sample ID	PW10-2-20231102	Collected	11/02/2023 13:40
Lab Sample ID	3331303022	Lab Receipt	11/03/2023 09:15

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Trichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:44	ILY	A
Trichlorofluoromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:44	ILY	A
Vinyl Chloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 15:44	ILY	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	98.7%	81 – 118	11/16/2023 15:44	
4-Bromofluorobenzene	460-00-4	104%	85 – 114	11/16/2023 15:44	
Dibromofluoromethane	1868-53-7	94.1%	80 – 119	11/16/2023 15:44	
Toluene-d8	2037-26-5	102%	89 – 112	11/16/2023 15:44	



Results

Client Sample ID	MW10-10D-20231102	Collected	11/02/2023 13:55
Lab Sample ID	3331303023	Lab Receipt	11/03/2023 09:15

LIGHT HYDROCARBON GASES

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Ethane	11.9	P1	ug/L	5.2	2.6	0.56	RSK 175	1	11/10/2023 14:33	JTH	G
Ethene	10	P1	ug/L	7.1	3.6	0.81	RSK 175	1	11/10/2023 14:33	JTH	G
Methane	8240	P1	ug/L	2.6	1.6	0.53	RSK 175	1	11/10/2023 14:33	JTH	G

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	75.0U	U,P1	ug/L	100	75.0	33.0	SW846 8260C	100	11/16/2023 18:43	ILY	A
1,1,2,2-Tetrachloroethane	75.0U	U,P1	ug/L	100	75.0	33.0	SW846 8260C	100	11/16/2023 18:43	ILY	A
1,1,2-Trichloroethane	75.0U	U,P1	ug/L	100	75.0	33.0	SW846 8260C	100	11/16/2023 18:43	ILY	A
1,1-Dichloroethane	75.0U	U,P1	ug/L	100	75.0	33.0	SW846 8260C	100	11/16/2023 18:43	ILY	A
1,1-Dichloroethene	75.0U	U,P1	ug/L	100	75.0	33.0	SW846 8260C	100	11/16/2023 18:43	ILY	A
1,2,3-Trichlorobenzene	75.0U	U,P1	ug/L	100	75.0	33.0	SW846 8260C	100	11/16/2023 18:43	ILY	A
1,2,4-Trichlorobenzene	75.0U	U,P1	ug/L	100	75.0	33.0	SW846 8260C	100	11/16/2023 18:43	ILY	A
1,2-Dibromo-3-chloropropane	250U	U,P1	ug/L	500	250	160	SW846 8260C	100	11/16/2023 18:43	ILY	A
1,2-Dibromoethane	75.0U	U,P1	ug/L	100	75.0	33.0	SW846 8260C	100	11/16/2023 18:43	ILY	A
1,2-Dichlorobenzene	75.0U	U,P1	ug/L	100	75.0	33.0	SW846 8260C	100	11/16/2023 18:43	ILY	A
1,2-Dichloroethane	75.0U	U,P1	ug/L	100	75.0	33.0	SW846 8260C	100	11/16/2023 18:43	ILY	A
1,2-Dichloropropane	75.0U	U,P1	ug/L	100	75.0	33.0	SW846 8260C	100	11/16/2023 18:43	ILY	A
1,3-Dichlorobenzene	75.0U	U,P1	ug/L	100	75.0	33.0	SW846 8260C	100	11/16/2023 18:43	ILY	A
1,3-Dichloropropene, Total	150U	U,P1	ug/L	200	150	66.0	SW846 8260C	100	11/16/2023 18:43	ILY	A
1,4-Dichlorobenzene	75.0U	U,P1	ug/L	100	75.0	33.0	SW846 8260C	100	11/16/2023 18:43	ILY	A
2-Butanone	375U	U,P1	ug/L	500	375	160	SW846 8260C	100	11/16/2023 18:43	ILY	A
2-Hexanone	375U	U,P1	ug/L	500	375	160	SW846 8260C	100	11/16/2023 18:43	ILY	A
4-Methyl-2-Pentanone(MIBK)	375U	U,P1	ug/L	500	375	160	SW846 8260C	100	11/16/2023 18:43	ILY	A
Acetone	375U	U,P1	ug/L	500	375	160	SW846 8260C	100	11/16/2023 18:43	ILY	A
Benzene	75.0U	U,P1	ug/L	100	75.0	33.0	SW846 8260C	100	11/16/2023 18:43	ILY	A
Bromochloromethane	75.0U	U,P1	ug/L	100	75.0	33.0	SW846 8260C	100	11/16/2023 18:43	ILY	A
Bromodichloromethane	75.0U	U,P1	ug/L	100	75.0	33.0	SW846 8260C	100	11/16/2023 18:43	ILY	A
Bromoform	75.0U	U,P1	ug/L	100	75.0	33.0	SW846 8260C	100	11/16/2023 18:43	ILY	A
Bromomethane	75.0U	U,9,P1	ug/L	100	75.0	33.0	SW846 8260C	100	11/16/2023 18:43	ILY	A
Carbon Disulfide	75.0U	U,P1	ug/L	100	75.0	33.0	SW846 8260C	100	11/16/2023 18:43	ILY	A
Carbon Tetrachloride	75.0U	U,P1	ug/L	100	75.0	33.0	SW846 8260C	100	11/16/2023 18:43	ILY	A
Chlorobenzene	75.0U	U,P1	ug/L	100	75.0	33.0	SW846 8260C	100	11/16/2023 18:43	ILY	A
Chlorodibromomethane	75.0U	U,P1	ug/L	100	75.0	33.0	SW846 8260C	100	11/16/2023 18:43	ILY	A
Chloroethane	75.0U	U,P1	ug/L	100	75.0	33.0	SW846 8260C	100	11/16/2023 18:43	ILY	A
Chloroform	75.0U	U,P1	ug/L	100	75.0	33.0	SW846 8260C	100	11/16/2023 18:43	ILY	A
Chloromethane	75.0U	U,P1	ug/L	100	75.0	33.0	SW846 8260C	100	11/16/2023 18:43	ILY	A
cis-1,2-Dichloroethene	141	P1	ug/L	100	75.0	33.0	SW846 8260C	100	11/16/2023 18:43	ILY	A
Cyclohexane	75.0U	U,P1	ug/L	100	75.0	33.0	SW846 8260C	100	11/16/2023 18:43	ILY	A
Dichlorodifluoromethane	75.0U	U,P1	ug/L	100	75.0	33.0	SW846 8260C	100	11/16/2023 18:43	ILY	A
Ethylbenzene	75.0U	U,P1	ug/L	100	75.0	33.0	SW846 8260C	100	11/16/2023 18:43	ILY	A
Freon 113	75.0U	U,P1	ug/L	100	75.0	33.0	SW846 8260C	100	11/16/2023 18:43	ILY	A
Iodomethane	75.0U	U,P1	ug/L	100	75.0	33.0	SW846 8260C	100	11/16/2023 18:43	ILY	A
Isopropylbenzene	75.0U	U,P1	ug/L	100	75.0	33.0	SW846 8260C	100	11/16/2023 18:43	ILY	A
Methyl acetate	75.0U	U,P1	ug/L	100	75.0	33.0	SW846 8260C	100	11/16/2023 18:43	ILY	A
Methyl cyclohexane	75.0U	U,P1	ug/L	100	75.0	33.0	SW846 8260C	100	11/16/2023 18:43	ILY	A



Results

Client Sample ID	MW10-10D-20231102	Collected	11/02/2023 13:55
Lab Sample ID	3331303023	Lab Receipt	11/03/2023 09:15

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Methyl t-Butyl Ether	75.0U	U,P1	ug/L	100	75.0	33.0	SW846 8260C	100	11/16/2023 18:43	ILY	A
Methylene Chloride	75.0U	U,P1	ug/L	100	75.0	33.0	SW846 8260C	100	11/16/2023 18:43	ILY	A
Styrene	75.0U	U,P1	ug/L	100	75.0	33.0	SW846 8260C	100	11/16/2023 18:43	ILY	A
Tetrachloroethene	75.0U	U,P1	ug/L	100	75.0	33.0	SW846 8260C	100	11/16/2023 18:43	ILY	A
Toluene	75.0U	U,P1	ug/L	100	75.0	33.0	SW846 8260C	100	11/16/2023 18:43	ILY	A
Total Xylenes	225U	U,P1	ug/L	300	225	100	SW846 8260C	100	11/16/2023 18:43	ILY	A
trans-1,2-Dichloroethene	75.0U	U,P1	ug/L	100	75.0	33.0	SW846 8260C	100	11/16/2023 18:43	ILY	A
Trichloroethene	75.0U	U,P1	ug/L	100	75.0	33.0	SW846 8260C	100	11/16/2023 18:43	ILY	A
Trichlorofluoromethane	75.0U	U,P1	ug/L	100	75.0	33.0	SW846 8260C	100	11/16/2023 18:43	ILY	A
Vinyl Chloride	75.0U	U,P1	ug/L	100	75.0	33.0	SW846 8260C	100	11/16/2023 18:43	ILY	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	100%	81 – 118	11/16/2023 18:43	
4-Bromofluorobenzene	460-00-4	98.9%	85 – 114	11/16/2023 18:43	
Dibromofluoromethane	1868-53-7	95.3%	80 – 119	11/16/2023 18:43	
Toluene-d8	2037-26-5	101%	89 – 112	11/16/2023 18:43	

WET CHEMISTRY

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Total Organic Carbon (TOC)	3660	P1	mg/L	1000	500	270	SW846 9060A	1000	11/08/2023 05:59	PAG	E



Results

Client Sample ID	SW3-3-20231102	Collected	11/02/2023 14:15
Lab Sample ID	3331303024	Lab Receipt	11/03/2023 09:15

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:04	ILY	A
1,1,2,2-Tetrachloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:04	ILY	A
1,1,2-Trichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:04	ILY	A
1,1-Dichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:04	ILY	A
1,1-Dichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:04	ILY	A
1,2,3-Trichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:04	ILY	A
1,2,4-Trichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:04	ILY	A
1,2-Dibromo-3-chloropropane	2.5U	U,P1	ug/L	5.0	2.5	1.6	SW846 8260C	1	11/16/2023 16:04	ILY	A
1,2-Dibromoethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:04	ILY	A
1,2-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:04	ILY	A
1,2-Dichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:04	ILY	A
1,2-Dichloropropane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:04	ILY	A
1,3-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:04	ILY	A
1,3-Dichloropropene, Total	1.5U	U,P1	ug/L	2.0	1.5	0.66	SW846 8260C	1	11/16/2023 16:04	ILY	A
1,4-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:04	ILY	A
2-Butanone	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 16:04	ILY	A
2-Hexanone	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 16:04	ILY	A
4-Methyl-2-Pentanone(MIBK)	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 16:04	ILY	A
Acetone	3.2J	J,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 16:04	ILY	A
Benzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:04	ILY	A
Bromochloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:04	ILY	A
Bromodichloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:04	ILY	A
Bromoform	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:04	ILY	A
Bromomethane	0.75U	U,9,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:04	ILY	A
Carbon Disulfide	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:04	ILY	A
Carbon Tetrachloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:04	ILY	A
Chlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:04	ILY	A
Chlorodibromomethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:04	ILY	A
Chloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:04	ILY	A
Chloroform	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:04	ILY	A
Chloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:04	ILY	A
cis-1,2-Dichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:04	ILY	A
Cyclohexane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:04	ILY	A
Dichlorodifluoromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:04	ILY	A
Ethylbenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:04	ILY	A
Freon 113	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:04	ILY	A
Iodomethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:04	ILY	A
Isopropylbenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:04	ILY	A
Methyl acetate	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:04	ILY	A
Methyl cyclohexane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:04	ILY	A
Methyl t-Butyl Ether	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:04	ILY	A
Methylene Chloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:04	ILY	A
Styrene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:04	ILY	A
Tetrachloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:04	ILY	A
Toluene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:04	ILY	A
Total Xylenes	2.3U	U,P1	ug/L	3.0	2.3	1.0	SW846 8260C	1	11/16/2023 16:04	ILY	A
trans-1,2-Dichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:04	ILY	A

Results

Client Sample ID	SW3-3-20231102	Collected	11/02/2023 14:15
Lab Sample ID	3331303024	Lab Receipt	11/03/2023 09:15

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Trichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:04	ILY	A
Trichlorofluoromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:04	ILY	A
Vinyl Chloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:04	ILY	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	95.4%	81 – 118	11/16/2023 16:04	
4-Bromofluorobenzene	460-00-4	99.9%	85 – 114	11/16/2023 16:04	
Dibromofluoromethane	1868-53-7	95.2%	80 – 119	11/16/2023 16:04	
Toluene-d8	2037-26-5	99%	89 – 112	11/16/2023 16:04	



Results

Client Sample ID	SW3-15-20231102	Collected	11/02/2023 14:25
Lab Sample ID	3331303025	Lab Receipt	11/03/2023 09:15

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:24	ILY	A
1,1,2,2-Tetrachloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:24	ILY	A
1,1,2-Trichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:24	ILY	A
1,1-Dichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:24	ILY	A
1,1-Dichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:24	ILY	A
1,2,3-Trichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:24	ILY	A
1,2,4-Trichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:24	ILY	A
1,2-Dibromo-3-chloropropane	2.5U	U,P1	ug/L	5.0	2.5	1.6	SW846 8260C	1	11/16/2023 16:24	ILY	A
1,2-Dibromoethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:24	ILY	A
1,2-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:24	ILY	A
1,2-Dichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:24	ILY	A
1,2-Dichloropropane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:24	ILY	A
1,3-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:24	ILY	A
1,3-Dichloropropene, Total	1.5U	U,P1	ug/L	2.0	1.5	0.66	SW846 8260C	1	11/16/2023 16:24	ILY	A
1,4-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:24	ILY	A
2-Butanone	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 16:24	ILY	A
2-Hexanone	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 16:24	ILY	A
4-Methyl-2-Pentanone(MIBK)	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 16:24	ILY	A
Acetone	3.7J	J,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 16:24	ILY	A
Benzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:24	ILY	A
Bromochloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:24	ILY	A
Bromodichloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:24	ILY	A
Bromoform	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:24	ILY	A
Bromomethane	0.75U	U,9,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:24	ILY	A
Carbon Disulfide	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:24	ILY	A
Carbon Tetrachloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:24	ILY	A
Chlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:24	ILY	A
Chlorodibromomethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:24	ILY	A
Chloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:24	ILY	A
Chloroform	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:24	ILY	A
Chloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:24	ILY	A
cis-1,2-Dichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:24	ILY	A
Cyclohexane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:24	ILY	A
Dichlorodifluoromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:24	ILY	A
Ethylbenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:24	ILY	A
Freon 113	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:24	ILY	A
Iodomethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:24	ILY	A
Isopropylbenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:24	ILY	A
Methyl acetate	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:24	ILY	A
Methyl cyclohexane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:24	ILY	A
Methyl t-Butyl Ether	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:24	ILY	A
Methylene Chloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:24	ILY	A
Styrene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:24	ILY	A
Tetrachloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:24	ILY	A
Toluene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:24	ILY	A
Total Xylenes	2.3U	U,P1	ug/L	3.0	2.3	1.0	SW846 8260C	1	11/16/2023 16:24	ILY	A
trans-1,2-Dichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:24	ILY	A



Results

Client Sample ID	SW3-15-20231102	Collected	11/02/2023 14:25
Lab Sample ID	3331303025	Lab Receipt	11/03/2023 09:15

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Trichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:24	ILY	A
Trichlorofluoromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:24	ILY	A
Vinyl Chloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:24	ILY	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	95.1%	81 – 118	11/16/2023 16:24	
4-Bromofluorobenzene	460-00-4	99.7%	85 – 114	11/16/2023 16:24	
Dibromofluoromethane	1868-53-7	94.3%	80 – 119	11/16/2023 16:24	
Toluene-d8	2037-26-5	99.5%	89 – 112	11/16/2023 16:24	



Results

Client Sample ID	SW3-2-20231102	Collected	11/02/2023 14:30
Lab Sample ID	3331303026	Lab Receipt	11/03/2023 09:15

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:44	ILY	A
1,1,2,2-Tetrachloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:44	ILY	A
1,1,2-Trichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:44	ILY	A
1,1-Dichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:44	ILY	A
1,1-Dichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:44	ILY	A
1,2,3-Trichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:44	ILY	A
1,2,4-Trichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:44	ILY	A
1,2-Dibromo-3-chloropropane	2.5U	U,P1	ug/L	5.0	2.5	1.6	SW846 8260C	1	11/16/2023 16:44	ILY	A
1,2-Dibromoethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:44	ILY	A
1,2-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:44	ILY	A
1,2-Dichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:44	ILY	A
1,2-Dichloropropane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:44	ILY	A
1,3-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:44	ILY	A
1,3-Dichloropropene, Total	1.5U	U,P1	ug/L	2.0	1.5	0.66	SW846 8260C	1	11/16/2023 16:44	ILY	A
1,4-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:44	ILY	A
2-Butanone	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 16:44	ILY	A
2-Hexanone	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 16:44	ILY	A
4-Methyl-2-Pentanone(MIBK)	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 16:44	ILY	A
Acetone	3.8J	J,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 16:44	ILY	A
Benzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:44	ILY	A
Bromochloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:44	ILY	A
Bromodichloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:44	ILY	A
Bromoform	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:44	ILY	A
Bromomethane	0.75U	U,9,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:44	ILY	A
Carbon Disulfide	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:44	ILY	A
Carbon Tetrachloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:44	ILY	A
Chlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:44	ILY	A
Chlorodibromomethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:44	ILY	A
Chloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:44	ILY	A
Chloroform	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:44	ILY	A
Chloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:44	ILY	A
cis-1,2-Dichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:44	ILY	A
Cyclohexane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:44	ILY	A
Dichlorodifluoromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:44	ILY	A
Ethylbenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:44	ILY	A
Freon 113	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:44	ILY	A
Iodomethane	0.75U	U,10,11,12,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:44	ILY	A
Isopropylbenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:44	ILY	A
Methyl acetate	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:44	ILY	A
Methyl cyclohexane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:44	ILY	A
Methyl t-Butyl Ether	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:44	ILY	A
Methylene Chloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:44	ILY	A
Styrene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:44	ILY	A
Tetrachloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:44	ILY	A
Toluene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:44	ILY	A
Total Xylenes	2.3U	U,P1	ug/L	3.0	2.3	1.0	SW846 8260C	1	11/16/2023 16:44	ILY	A
trans-1,2-Dichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:44	ILY	A

Results

Client Sample ID	SW3-2-20231102	Collected	11/02/2023 14:30
Lab Sample ID	3331303026	Lab Receipt	11/03/2023 09:15

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Trichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:44	ILY	A
Trichlorofluoromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:44	ILY	A
Vinyl Chloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 16:44	ILY	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	98.3%	81 – 118	11/16/2023 16:44	
4-Bromofluorobenzene	460-00-4	96.4%	85 – 114	11/16/2023 16:44	
Dibromofluoromethane	1868-53-7	98.8%	80 – 119	11/16/2023 16:44	
Toluene-d8	2037-26-5	102%	89 – 112	11/16/2023 16:44	



Results

Client Sample ID	DUP-02-20231102	Collected	11/02/2023 00:00
Lab Sample ID	3331303027	Lab Receipt	11/03/2023 09:15

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:04	ILY	A
1,1,2,2-Tetrachloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:04	ILY	A
1,1,2-Trichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:04	ILY	A
1,1-Dichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:04	ILY	A
1,1-Dichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:04	ILY	A
1,2,3-Trichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:04	ILY	A
1,2,4-Trichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:04	ILY	A
1,2-Dibromo-3-chloropropane	2.5U	U,P1	ug/L	5.0	2.5	1.6	SW846 8260C	1	11/16/2023 17:04	ILY	A
1,2-Dibromoethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:04	ILY	A
1,2-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:04	ILY	A
1,2-Dichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:04	ILY	A
1,2-Dichloropropane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:04	ILY	A
1,3-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:04	ILY	A
1,3-Dichloropropene, Total	1.5U	U,P1	ug/L	2.0	1.5	0.66	SW846 8260C	1	11/16/2023 17:04	ILY	A
1,4-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:04	ILY	A
2-Butanone	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 17:04	ILY	A
2-Hexanone	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 17:04	ILY	A
4-Methyl-2-Pentanone(MIBK)	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 17:04	ILY	A
Acetone	3.4J	J,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 17:04	ILY	A
Benzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:04	ILY	A
Bromochloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:04	ILY	A
Bromodichloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:04	ILY	A
Bromoform	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:04	ILY	A
Bromomethane	0.75U	U,9,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:04	ILY	A
Carbon Disulfide	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:04	ILY	A
Carbon Tetrachloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:04	ILY	A
Chlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:04	ILY	A
Chlorodibromomethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:04	ILY	A
Chloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:04	ILY	A
Chloroform	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:04	ILY	A
Chloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:04	ILY	A
cis-1,2-Dichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:04	ILY	A
Cyclohexane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:04	ILY	A
Dichlorodifluoromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:04	ILY	A
Ethylbenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:04	ILY	A
Freon 113	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:04	ILY	A
Iodomethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:04	ILY	A
Isopropylbenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:04	ILY	A
Methyl acetate	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:04	ILY	A
Methyl cyclohexane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:04	ILY	A
Methyl t-Butyl Ether	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:04	ILY	A
Methylene Chloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:04	ILY	A
Styrene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:04	ILY	A
Tetrachloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:04	ILY	A
Toluene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:04	ILY	A
Total Xylenes	2.3U	U,P1	ug/L	3.0	2.3	1.0	SW846 8260C	1	11/16/2023 17:04	ILY	A
trans-1,2-Dichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:04	ILY	A

Results

Client Sample ID	DUP-02-20231102	Collected	11/02/2023 00:00
Lab Sample ID	3331303027	Lab Receipt	11/03/2023 09:15

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Trichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:04	ILY	A
Trichlorofluoromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:04	ILY	A
Vinyl Chloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:04	ILY	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	95.8%	81 – 118	11/16/2023 17:04	
4-Bromofluorobenzene	460-00-4	99.4%	85 – 114	11/16/2023 17:04	
Dibromofluoromethane	1868-53-7	94.3%	80 – 119	11/16/2023 17:04	
Toluene-d8	2037-26-5	102%	89 – 112	11/16/2023 17:04	



Results

Client Sample ID	MW5-6-20231102	Collected	11/02/2023 15:40
Lab Sample ID	3331303028	Lab Receipt	11/03/2023 09:15

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:24	ILY	A
1,1,2,2-Tetrachloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:24	ILY	A
1,1,2-Trichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:24	ILY	A
1,1-Dichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:24	ILY	A
1,1-Dichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:24	ILY	A
1,2,3-Trichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:24	ILY	A
1,2,4-Trichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:24	ILY	A
1,2-Dibromo-3-chloropropane	2.5U	U,P1	ug/L	5.0	2.5	1.6	SW846 8260C	1	11/16/2023 17:24	ILY	A
1,2-Dibromoethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:24	ILY	A
1,2-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:24	ILY	A
1,2-Dichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:24	ILY	A
1,2-Dichloropropane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:24	ILY	A
1,3-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:24	ILY	A
1,3-Dichloropropene, Total	1.5U	U,P1	ug/L	2.0	1.5	0.66	SW846 8260C	1	11/16/2023 17:24	ILY	A
1,4-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:24	ILY	A
2-Butanone	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 17:24	ILY	A
2-Hexanone	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 17:24	ILY	A
4-Methyl-2-Pentanone(MIBK)	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 17:24	ILY	A
Acetone	10.7	P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 17:24	ILY	A
Benzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:24	ILY	A
Bromochloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:24	ILY	A
Bromodichloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:24	ILY	A
Bromoform	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:24	ILY	A
Bromomethane	0.75U	U,9,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:24	ILY	A
Carbon Disulfide	0.66J	J,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:24	ILY	A
Carbon Tetrachloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:24	ILY	A
Chlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:24	ILY	A
Chlorodibromomethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:24	ILY	A
Chloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:24	ILY	A
Chloroform	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:24	ILY	A
Chloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:24	ILY	A
cis-1,2-Dichloroethene	3.4	P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:24	ILY	A
Cyclohexane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:24	ILY	A
Dichlorodifluoromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:24	ILY	A
Ethylbenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:24	ILY	A
Freon 113	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:24	ILY	A
Iodomethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:24	ILY	A
Isopropylbenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:24	ILY	A
Methyl acetate	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:24	ILY	A
Methyl cyclohexane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:24	ILY	A
Methyl t-Butyl Ether	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:24	ILY	A
Methylene Chloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:24	ILY	A
Styrene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:24	ILY	A
Tetrachloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:24	ILY	A
Toluene	4.5	P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:24	ILY	A
Total Xylenes	2.3U	U,P1	ug/L	3.0	2.3	1.0	SW846 8260C	1	11/16/2023 17:24	ILY	A
trans-1,2-Dichloroethene	0.38J	J,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:24	ILY	A



Results

Client Sample ID	MW5-6-20231102	Collected	11/02/2023 15:40
Lab Sample ID	3331303028	Lab Receipt	11/03/2023 09:15

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Trichloroethene	1.6	P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:24	ILY	A
Trichlorofluoromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:24	ILY	A
Vinyl Chloride	0.72J	J,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:24	ILY	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	99.9%	81 – 118	11/16/2023 17:24	
4-Bromofluorobenzene	460-00-4	101%	85 – 114	11/16/2023 17:24	
Dibromofluoromethane	1868-53-7	98.5%	80 – 119	11/16/2023 17:24	
Toluene-d8	2037-26-5	102%	89 – 112	11/16/2023 17:24	

Results

Client Sample ID	DUP-03-20231102	Collected	11/02/2023 00:00
Lab Sample ID	3331303029	Lab Receipt	11/03/2023 09:15

LIGHT HYDROCARBON GASES

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Ethane	8.0	P1	ug/L	5.2	2.6	0.56	RSK 175	1	11/14/2023 08:52	JTH	D
Ethene	8.7	P1	ug/L	7.1	3.6	0.81	RSK 175	1	11/14/2023 08:52	JTH	D
Methane	4390	P1	ug/L	2.6	1.6	0.53	RSK 175	1	11/14/2023 08:52	JTH	D

WET CHEMISTRY

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Total Organic Carbon (TOC)	42.6	P1	mg/L	25.0	12.5	6.8	SW846 9060A	25	11/08/2023 05:59	PAG	B



Results

Client Sample ID	MW5-5D-20231102	Collected	11/02/2023 15:45
Lab Sample ID	3331303030	Lab Receipt	11/03/2023 09:15

LIGHT HYDROCARBON GASES

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Ethane	21.3	P1	ug/L	5.2	2.6	0.56	RSK 175	1	11/14/2023 09:11	JTH	A
Ethene	8.2	P1	ug/L	7.1	3.6	0.81	RSK 175	1	11/14/2023 09:11	JTH	A
Methane	8010	P1	ug/L	2.6	1.6	0.53	RSK 175	1	11/14/2023 09:11	JTH	A

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:44	ILY	B
1,1,2,2-Tetrachloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:44	ILY	B
1,1,2-Trichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:44	ILY	B
1,1-Dichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:44	ILY	B
1,1-Dichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:44	ILY	B
1,2,3-Trichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:44	ILY	B
1,2,4-Trichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:44	ILY	B
1,2-Dibromo-3-chloropropane	2.5U	U,P1	ug/L	5.0	2.5	1.6	SW846 8260C	1	11/16/2023 17:44	ILY	B
1,2-Dibromoethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:44	ILY	B
1,2-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:44	ILY	B
1,2-Dichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:44	ILY	B
1,2-Dichloropropane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:44	ILY	B
1,3-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:44	ILY	B
1,3-Dichloropropene, Total	1.5U	U,P1	ug/L	2.0	1.5	0.66	SW846 8260C	1	11/16/2023 17:44	ILY	B
1,4-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:44	ILY	B
2-Butanone	2.5J	J,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 17:44	ILY	B
2-Hexanone	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 17:44	ILY	B
4-Methyl-2-Pentanone(MIBK)	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 17:44	ILY	B
Acetone	10.8	P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 17:44	ILY	B
Benzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:44	ILY	B
Bromochloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:44	ILY	B
Bromodichloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:44	ILY	B
Bromoform	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:44	ILY	B
Bromomethane	0.75U	U,9,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:44	ILY	B
Carbon Disulfide	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:44	ILY	B
Carbon Tetrachloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:44	ILY	B
Chlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:44	ILY	B
Chlorodibromomethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:44	ILY	B
Chloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:44	ILY	B
Chloroform	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:44	ILY	B
Chloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:44	ILY	B
cis-1,2-Dichloroethene	7.2	P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:44	ILY	B
Cyclohexane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:44	ILY	B
Dichlorodifluoromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:44	ILY	B
Ethylbenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:44	ILY	B
Freon 113	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:44	ILY	B
Iodomethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:44	ILY	B
Isopropylbenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:44	ILY	B
Methyl acetate	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:44	ILY	B
Methyl cyclohexane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:44	ILY	B



Results

Client Sample ID	MW5-5D-20231102	Collected	11/02/2023 15:45
Lab Sample ID	3331303030	Lab Receipt	11/03/2023 09:15

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Methyl t-Butyl Ether	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:44	ILY	B
Methylene Chloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:44	ILY	B
Styrene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:44	ILY	B
Tetrachloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:44	ILY	B
Toluene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:44	ILY	B
Total Xylenes	2.3U	U,P1	ug/L	3.0	2.3	1.0	SW846 8260C	1	11/16/2023 17:44	ILY	B
trans-1,2-Dichloroethene	1.3	P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:44	ILY	B
Trichloroethene	1.8	P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:44	ILY	B
Trichlorofluoromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:44	ILY	B
Vinyl Chloride	10.6	P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 17:44	ILY	B

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	97.7%	81 – 118	11/16/2023 17:44	
4-Bromofluorobenzene	460-00-4	100%	85 – 114	11/16/2023 17:44	
Dibromofluoromethane	1868-53-7	96.7%	80 – 119	11/16/2023 17:44	
Toluene-d8	2037-26-5	99.4%	89 – 112	11/16/2023 17:44	

WET CHEMISTRY

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Total Organic Carbon (TOC)	40.3	P1	mg/L	25.0	12.5	6.8	SW846 9060A	25	11/08/2023 05:59	PAG	E



Results

Client Sample ID	RW5-2-20231102	Collected	11/02/2023 16:00
Lab Sample ID	3331303031	Lab Receipt	11/03/2023 09:15

LIGHT HYDROCARBON GASES

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Ethane	9.0	P1	ug/L	5.2	2.6	0.56	RSK 175	1	11/14/2023 09:24	JTH	A
Ethene	3.6U	U,P1	ug/L	7.1	3.6	0.81	RSK 175	1	11/14/2023 09:24	JTH	A
Methane	6390	P1	ug/L	2.6	1.6	0.53	RSK 175	1	11/14/2023 09:24	JTH	A

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:03	ILY	B
1,1,2,2-Tetrachloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:03	ILY	B
1,1,2-Trichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:03	ILY	B
1,1-Dichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:03	ILY	B
1,1-Dichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:03	ILY	B
1,2,3-Trichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:03	ILY	B
1,2,4-Trichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:03	ILY	B
1,2-Dibromo-3-chloropropane	2.5U	U,P1	ug/L	5.0	2.5	1.6	SW846 8260C	1	11/16/2023 18:03	ILY	B
1,2-Dibromoethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:03	ILY	B
1,2-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:03	ILY	B
1,2-Dichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:03	ILY	B
1,2-Dichloropropane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:03	ILY	B
1,3-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:03	ILY	B
1,3-Dichloropropene, Total	1.5U	U,P1	ug/L	2.0	1.5	0.66	SW846 8260C	1	11/16/2023 18:03	ILY	B
1,4-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:03	ILY	B
2-Butanone	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 18:03	ILY	B
2-Hexanone	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 18:03	ILY	B
4-Methyl-2-Pentanone(MIBK)	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 18:03	ILY	B
Acetone	8.9	P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 18:03	ILY	B
Benzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:03	ILY	B
Bromochloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:03	ILY	B
Bromodichloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:03	ILY	B
Bromoform	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:03	ILY	B
Bromomethane	0.75U	U,9,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:03	ILY	B
Carbon Disulfide	0.55J	J,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:03	ILY	B
Carbon Tetrachloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:03	ILY	B
Chlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:03	ILY	B
Chlorodibromomethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:03	ILY	B
Chloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:03	ILY	B
Chloroform	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:03	ILY	B
Chloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:03	ILY	B
cis-1,2-Dichloroethene	0.74J	J,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:03	ILY	B
Cyclohexane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:03	ILY	B
Dichlorodifluoromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:03	ILY	B
Ethylbenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:03	ILY	B
Freon 113	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:03	ILY	B
Iodomethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:03	ILY	B
Isopropylbenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:03	ILY	B
Methyl acetate	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:03	ILY	B
Methyl cyclohexane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:03	ILY	B



Results

Client Sample ID	RW5-2-20231102	Collected	11/02/2023 16:00
Lab Sample ID	3331303031	Lab Receipt	11/03/2023 09:15

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Methyl t-Butyl Ether	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:03	ILY	B
Methylene Chloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:03	ILY	B
Styrene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:03	ILY	B
Tetrachloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:03	ILY	B
Toluene	0.88J	J,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:03	ILY	B
Total Xylenes	2.3U	U,P1	ug/L	3.0	2.3	1.0	SW846 8260C	1	11/16/2023 18:03	ILY	B
trans-1,2-Dichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:03	ILY	B
Trichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:03	ILY	B
Trichlorofluoromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:03	ILY	B
Vinyl Chloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:03	ILY	B

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	95.1%	81 – 118	11/16/2023 18:03	
4-Bromofluorobenzene	460-00-4	92.1%	85 – 114	11/16/2023 18:03	
Dibromofluoromethane	1868-53-7	94.5%	80 – 119	11/16/2023 18:03	
Toluene-d8	2037-26-5	99.2%	89 – 112	11/16/2023 18:03	

WET CHEMISTRY

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Total Organic Carbon (TOC)	42.4	P1	mg/L	5.0	2.5	1.4	SW846 9060A	5	11/08/2023 05:59	PAG	E



Results

Client Sample ID	RW5-4-20231102	Collected	11/02/2023 16:10
Lab Sample ID	3331303032	Lab Receipt	11/03/2023 09:15

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:23	ILY	A
1,1,2,2-Tetrachloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:23	ILY	A
1,1,2-Trichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:23	ILY	A
1,1-Dichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:23	ILY	A
1,1-Dichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:23	ILY	A
1,2,3-Trichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:23	ILY	A
1,2,4-Trichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:23	ILY	A
1,2-Dibromo-3-chloropropane	2.5U	U,P1	ug/L	5.0	2.5	1.6	SW846 8260C	1	11/16/2023 18:23	ILY	A
1,2-Dibromoethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:23	ILY	A
1,2-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:23	ILY	A
1,2-Dichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:23	ILY	A
1,2-Dichloropropane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:23	ILY	A
1,3-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:23	ILY	A
1,3-Dichloropropene, Total	1.5U	U,P1	ug/L	2.0	1.5	0.66	SW846 8260C	1	11/16/2023 18:23	ILY	A
1,4-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:23	ILY	A
2-Butanone	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 18:23	ILY	A
2-Hexanone	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 18:23	ILY	A
4-Methyl-2-Pentanone(MIBK)	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 18:23	ILY	A
Acetone	11.8	P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 18:23	ILY	A
Benzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:23	ILY	A
Bromochloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:23	ILY	A
Bromodichloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:23	ILY	A
Bromoform	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:23	ILY	A
Bromomethane	0.75U	U,9,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:23	ILY	A
Carbon Disulfide	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:23	ILY	A
Carbon Tetrachloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:23	ILY	A
Chlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:23	ILY	A
Chlorodibromomethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:23	ILY	A
Chloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:23	ILY	A
Chloroform	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:23	ILY	A
Chloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:23	ILY	A
cis-1,2-Dichloroethene	0.37J	J,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:23	ILY	A
Cyclohexane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:23	ILY	A
Dichlorodifluoromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:23	ILY	A
Ethylbenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:23	ILY	A
Freon 113	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:23	ILY	A
Iodomethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:23	ILY	A
Isopropylbenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:23	ILY	A
Methyl acetate	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:23	ILY	A
Methyl cyclohexane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:23	ILY	A
Methyl t-Butyl Ether	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:23	ILY	A
Methylene Chloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:23	ILY	A
Styrene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:23	ILY	A
Tetrachloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:23	ILY	A
Toluene	0.50J	J,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:23	ILY	A
Total Xylenes	2.3U	U,P1	ug/L	3.0	2.3	1.0	SW846 8260C	1	11/16/2023 18:23	ILY	A
trans-1,2-Dichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:23	ILY	A

Results

Client Sample ID	RW5-4-20231102	Collected	11/02/2023 16:10
Lab Sample ID	3331303032	Lab Receipt	11/03/2023 09:15

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Trichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:23	ILY	A
Trichlorofluoromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:23	ILY	A
Vinyl Chloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 18:23	ILY	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	100%	81 – 118	11/16/2023 18:23	
4-Bromofluorobenzene	460-00-4	99.3%	85 – 114	11/16/2023 18:23	
Dibromofluoromethane	1868-53-7	96.5%	80 – 119	11/16/2023 18:23	
Toluene-d8	2037-26-5	101%	89 – 112	11/16/2023 18:23	



Results

Client Sample ID	TB-01-20231102	Collected	11/02/2023 00:00
Lab Sample ID	3331303033	Lab Receipt	11/03/2023 09:15

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:25	ILY	A
1,1,2,2-Tetrachloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:25	ILY	A
1,1,2-Trichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:25	ILY	A
1,1-Dichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:25	ILY	A
1,1-Dichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:25	ILY	A
1,2,3-Trichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:25	ILY	A
1,2,4-Trichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:25	ILY	A
1,2-Dibromo-3-chloropropane	2.5U	U,P1	ug/L	5.0	2.5	1.6	SW846 8260C	1	11/16/2023 14:25	ILY	A
1,2-Dibromoethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:25	ILY	A
1,2-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:25	ILY	A
1,2-Dichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:25	ILY	A
1,2-Dichloropropane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:25	ILY	A
1,3-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:25	ILY	A
1,3-Dichloropropene, Total	1.5U	U,P1	ug/L	2.0	1.5	0.66	SW846 8260C	1	11/16/2023 14:25	ILY	A
1,4-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:25	ILY	A
2-Butanone	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 14:25	ILY	A
2-Hexanone	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 14:25	ILY	A
4-Methyl-2-Pentanone(MIBK)	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 14:25	ILY	A
Acetone	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 14:25	ILY	A
Benzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:25	ILY	A
Bromochloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:25	ILY	A
Bromodichloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:25	ILY	A
Bromoform	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:25	ILY	A
Bromomethane	0.75U	U,9,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:25	ILY	A
Carbon Disulfide	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:25	ILY	A
Carbon Tetrachloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:25	ILY	A
Chlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:25	ILY	A
Chlorodibromomethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:25	ILY	A
Chloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:25	ILY	A
Chloroform	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:25	ILY	A
Chloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:25	ILY	A
cis-1,2-Dichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:25	ILY	A
Cyclohexane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:25	ILY	A
Dichlorodifluoromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:25	ILY	A
Ethylbenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:25	ILY	A
Freon 113	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:25	ILY	A
Iodomethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:25	ILY	A
Isopropylbenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:25	ILY	A
Methyl acetate	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:25	ILY	A
Methyl cyclohexane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:25	ILY	A
Methyl t-Butyl Ether	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:25	ILY	A
Methylene Chloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:25	ILY	A
Styrene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:25	ILY	A
Tetrachloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:25	ILY	A
Toluene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:25	ILY	A
Total Xylenes	2.3U	U,P1	ug/L	3.0	2.3	1.0	SW846 8260C	1	11/16/2023 14:25	ILY	A
trans-1,2-Dichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:25	ILY	A

Results

Client Sample ID	TB-01-20231102	Collected	11/02/2023 00:00
Lab Sample ID	3331303033	Lab Receipt	11/03/2023 09:15

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Trichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:25	ILY	A
Trichlorofluoromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:25	ILY	A
Vinyl Chloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:25	ILY	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	100%	81 – 118	11/16/2023 14:25	
4-Bromofluorobenzene	460-00-4	98.4%	85 – 114	11/16/2023 14:25	
Dibromofluoromethane	1868-53-7	95.9%	80 – 119	11/16/2023 14:25	
Toluene-d8	2037-26-5	100%	89 – 112	11/16/2023 14:25	



Results

Client Sample ID	TB-02-20231102	Collected	11/02/2023 00:00
Lab Sample ID	3331303034	Lab Receipt	11/03/2023 09:15

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:44	ILY	A
1,1,2,2-Tetrachloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:44	ILY	A
1,1,2-Trichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:44	ILY	A
1,1-Dichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:44	ILY	A
1,1-Dichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:44	ILY	A
1,2,3-Trichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:44	ILY	A
1,2,4-Trichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:44	ILY	A
1,2-Dibromo-3-chloropropane	2.5U	U,P1	ug/L	5.0	2.5	1.6	SW846 8260C	1	11/16/2023 14:44	ILY	A
1,2-Dibromoethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:44	ILY	A
1,2-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:44	ILY	A
1,2-Dichloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:44	ILY	A
1,2-Dichloropropane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:44	ILY	A
1,3-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:44	ILY	A
1,3-Dichloropropene, Total	1.5U	U,P1	ug/L	2.0	1.5	0.66	SW846 8260C	1	11/16/2023 14:44	ILY	A
1,4-Dichlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:44	ILY	A
2-Butanone	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 14:44	ILY	A
2-Hexanone	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 14:44	ILY	A
4-Methyl-2-Pentanone(MIBK)	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 14:44	ILY	A
Acetone	3.8U	U,P1	ug/L	5.0	3.8	1.6	SW846 8260C	1	11/16/2023 14:44	ILY	A
Benzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:44	ILY	A
Bromochloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:44	ILY	A
Bromodichloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:44	ILY	A
Bromoform	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:44	ILY	A
Bromomethane	0.75U	U,9,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:44	ILY	A
Carbon Disulfide	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:44	ILY	A
Carbon Tetrachloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:44	ILY	A
Chlorobenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:44	ILY	A
Chlorodibromomethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:44	ILY	A
Chloroethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:44	ILY	A
Chloroform	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:44	ILY	A
Chloromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:44	ILY	A
cis-1,2-Dichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:44	ILY	A
Cyclohexane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:44	ILY	A
Dichlorodifluoromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:44	ILY	A
Ethylbenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:44	ILY	A
Freon 113	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:44	ILY	A
Iodomethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:44	ILY	A
Isopropylbenzene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:44	ILY	A
Methyl acetate	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:44	ILY	A
Methyl cyclohexane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:44	ILY	A
Methyl t-Butyl Ether	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:44	ILY	A
Methylene Chloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:44	ILY	A
Styrene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:44	ILY	A
Tetrachloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:44	ILY	A
Toluene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:44	ILY	A
Total Xylenes	2.3U	U,P1	ug/L	3.0	2.3	1.0	SW846 8260C	1	11/16/2023 14:44	ILY	A
trans-1,2-Dichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:44	ILY	A

Results

Client Sample ID	TB-02-20231102	Collected	11/02/2023 00:00
Lab Sample ID	3331303034	Lab Receipt	11/03/2023 09:15

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Trichloroethene	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:44	ILY	A
Trichlorofluoromethane	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:44	ILY	A
Vinyl Chloride	0.75U	U,P1	ug/L	1.0	0.75	0.33	SW846 8260C	1	11/16/2023 14:44	ILY	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	98.5%	81 – 118	11/16/2023 14:44	
4-Bromofluorobenzene	460-00-4	103%	85 – 114	11/16/2023 14:44	
Dibromofluoromethane	1868-53-7	95%	80 – 119	11/16/2023 14:44	
Toluene-d8	2037-26-5	105%	89 – 112	11/16/2023 14:44	



Sample - Method Cross Reference Table

Lab ID	Sample ID	Analysis Method	Preparation Method	Leachate Method
3331303001	MW1-1DA-20231102	SW846 8260C	N/A	
3331303006	MW5-1DA-20231102	RSK 175	N/A	
		SW846 8260C	N/A	
		SW846 9060A	N/A	
3331303007	RW5-1-20231102	RSK 175	N/A	
		SW846 8260C	N/A	
		SW846 9060A	N/A	
3331303008	DUP-01-20231102	SW846 8260C	N/A	
3331303009	SW99-10-20231102	SW846 8260C	N/A	
3331303010	SW10-7-20231102	SW846 8260C	N/A	
3331303011	MW10-3D-20231102	SW846 8260C	N/A	
3331303012	SW10-5-20231102	SW846 8260C	N/A	
3331303013	SW10-8-20231102	SW846 8260C	N/A	
3331303014	MW10-11D-20231102	RSK 175	N/A	
		SW846 8260C	N/A	
		SW846 9060A	N/A	
3331303015	MW10-9D-20231102	SW846 8260C	N/A	
3331303016	SW10-6-20231102	SW846 8260C	N/A	
3331303017	PW10-1-20231102	RSK 175	N/A	
		SW846 8260C	N/A	
		SW846 9060A	N/A	
3331303018	MW10-7-20231102	RSK 175	N/A	
		SW846 8260C	N/A	
		SW846 9060A	N/A	
3331303019	MW10-4E-20231102	SW846 8260C	N/A	
3331303020	MW10-4D-20231102	SW846 8260C	N/A	
3331303021	MW10-1DA-20231102	RSK 175	N/A	
		RSK 175	N/A	
		SW846 8260C	N/A	
		SW846 9060A	N/A	
3331303022	PW10-2-20231102	SW846 8260C	N/A	
3331303023	MW10-10D-20231102	RSK 175	N/A	
		SW846 8260C	N/A	
		SW846 9060A	N/A	
3331303024	SW3-3-20231102	SW846 8260C	N/A	
3331303025	SW3-15-20231102	SW846 8260C	N/A	
3331303026	SW3-2-20231102	SW846 8260C	N/A	
3331303027	DUP-02-20231102	SW846 8260C	N/A	
3331303028	MW5-6-20231102	SW846 8260C	N/A	
3331303029	DUP-03-20231102	RSK 175	N/A	
		SW846 9060A	N/A	
3331303030	MW5-5D-20231102	RSK 175	N/A	
		SW846 8260C	N/A	
		SW846 9060A	N/A	
3331303031	RW5-2-20231102	RSK 175	N/A	
		SW846 8260C	N/A	
		SW846 9060A	N/A	
3331303032	RW5-4-20231102	SW846 8260C	N/A	

Project **NFARS 30036646 (from 3331303)**
Workorder **3338385**



Lab ID	Sample ID	Analysis Method	Preparation Method	Leachate Method
3331303033	TB-01-20231102	SW846 8260C	N/A	
3331303034	TB-02-20231102	SW846 8260C	N/A	



QUALITY CONTROL SAMPLES

LIGHT HYDROCARBON GASES

QC Batch

QC Batch	1086212	Prep Method	N/A
Date	N/A	Analysis Method	RSK 175
Tech.			

Associated Samples

3331303021	3331303023	3331303006	3331303007
3331303014	3331303017	3331303018	

Duplicate 3748738 (DUP) 3331131001 (non-Project Sample) For QC Batch 1086212

****NOTE - The Original Result and Duplicate Result shown below are raw results and are only used for the purpose of calculating Sample Duplicate percent recoveries. This result is not a final value and cannot be used as such.

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)		Qualifiers
Ethane	74-84-0	DUP	0	0	RPD 0 (Max-20)	U
Ethene	74-85-1	DUP	0	0	RPD 0 (Max-20)	U
Methane	74-82-8	DUP	3.13	3.51	RPD 11.40 (Max-20)	

Method Blank 3748500 (MB) Created on 11/10/2023 07:59 For QC Batch 1086212

RESULTS

Compound	CAS No		Result	Units	LOQ	Qualifiers
Ethane	74-84-0	BLK	2.6U	ug/L	5.2	U
Ethene	74-85-1	BLK	3.6U	ug/L	7.1	U
Methane	74-82-8	BLK	1.6U	ug/L	2.6	U

Duplicate 3748865 (DUP) 3331303006 For QC Batch 1086212

****NOTE - The Original Result and Duplicate Result shown below are raw results and are only used for the purpose of calculating Sample Duplicate percent recoveries. This result is not a final value and cannot be used as such.

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)		Qualifiers
Ethane	74-84-0	DUP	0	0	RPD 0 (Max-20)	U
Ethene	74-85-1	DUP	0	0	RPD 0 (Max-20)	U
Methane	74-82-8	DUP	2.83	11.10	RPD 119* (Max-20)	

QC Batch

QC Batch	1089070	Prep Method	N/A
Date	N/A	Analysis Method	RSK 175
Tech.			

Associated Samples

3331303029	3331303030	3331303031

Method Blank 3749919 (MB) Created on 11/14/2023 08:08 For QC Batch 1089070

QUALITY CONTROL SAMPLES

LIGHT HYDROCARBON GASES (cont.)

RESULTS

Compound	CAS No		Result	Units	LOQ	Qualifiers
Ethane	74-84-0	BLK	2.6U	ug/L	5.2	U
Ethene	74-85-1	BLK	3.6U	ug/L	7.1	U
Methane	74-82-8	BLK	1.6U	ug/L	2.6	U

QC Batch

Associated Samples

QC Batch	1089436	Prep Method	N/A
Date	N/A	Analysis Method	RSK 175
Tech.			

3331303021

Method Blank

3750910 (MB)

Created on 11/15/2023 14:18

For QC Batch 1089436

RESULTS

Compound	CAS No		Result	Units	LOQ	Qualifiers
Ethane	74-84-0	BLK	2.6U	ug/L	5.2	U
Ethene	74-85-1	BLK	3.6U	ug/L	7.1	U
Methane	74-82-8	BLK	1.6U	ug/L	2.6	U

VOLATILE ORGANICS

QUALITY CONTROL SAMPLES

QC Batch

Associated Samples

QC Batch	1089460	Prep Method	N/A
Date	N/A	Analysis Method	SW846 8260C
Tech.			

33313030013331303007

Method Blank3751105 (MB)Created on 11/15/2023 15:24For QC Batch 1089460

RESULTS

Compound	CAS No		Result	Units	LOQ	Qualifiers
1,1,1-Trichloroethane	71-55-6	BLK	0.75U	ug/L	1.0	U
1,1,2,2-Tetrachloroethane	79-34-5	BLK	0.75U	ug/L	1.0	U
1,1,2-Trichloroethane	79-00-5	BLK	0.75U	ug/L	1.0	U
1,1-Dichloroethane	75-34-3	BLK	0.75U	ug/L	1.0	U
1,1-Dichloroethene	75-35-4	BLK	0.75U	ug/L	1.0	U
1,2,3-Trichlorobenzene	87-61-6	BLK	0.75U	ug/L	1.0	U
1,2,4-Trichlorobenzene	120-82-1	BLK	0.75U	ug/L	1.0	U
1,2-Dibromo-3-chloropropane	96-12-8	BLK	2.5U	ug/L	5.0	U
1,2-Dibromoethane	106-93-4	BLK	0.75U	ug/L	1.0	U
1,2-Dichlorobenzene	95-50-1	BLK	0.75U	ug/L	1.0	U
1,2-Dichloroethane	107-06-2	BLK	0.75U	ug/L	1.0	U
1,2-Dichloropropane	78-87-5	BLK	0.75U	ug/L	1.0	U
1,3-Dichlorobenzene	541-73-1	BLK	0.75U	ug/L	1.0	U
1,3-Dichloropropene, Total	542-75-6	BLK	1.5U	ug/L	2.0	U
1,4-Dichlorobenzene	106-46-7	BLK	0.75U	ug/L	1.0	U
2-Butanone	78-93-3	BLK	3.8U	ug/L	5.0	U
2-Hexanone	591-78-6	BLK	3.8U	ug/L	5.0	U
4-Methyl-2-Pentanone(MIBK)	108-10-1	BLK	3.8U	ug/L	5.0	U
Acetone	67-64-1	BLK	3.8U	ug/L	5.0	U
Benzene	71-43-2	BLK	0.75U	ug/L	1.0	U
Bromochloromethane	74-97-5	BLK	0.75U	ug/L	1.0	U
Bromodichloromethane	75-27-4	BLK	0.75U	ug/L	1.0	U
Bromoform	75-25-2	BLK	0.75U	ug/L	1.0	U
Bromomethane	74-83-9	BLK	0.75U	ug/L	1.0	U
Carbon Disulfide	75-15-0	BLK	0.75U	ug/L	1.0	U
Carbon Tetrachloride	56-23-5	BLK	0.75U	ug/L	1.0	U
Chlorobenzene	108-90-7	BLK	0.75U	ug/L	1.0	U
Chlorodibromomethane	124-48-1	BLK	0.75U	ug/L	1.0	U
Chloroethane	75-00-3	BLK	0.75U	ug/L	1.0	U
Chloroform	67-66-3	BLK	0.75U	ug/L	1.0	U
Chloromethane	74-87-3	BLK	0.75U	ug/L	1.0	U
cis-1,2-Dichloroethene	156-59-2	BLK	0.75U	ug/L	1.0	U
Cyclohexane	110-82-7	BLK	0.75U	ug/L	1.0	U
Dichlorodifluoromethane	75-71-8	BLK	0.75U	ug/L	1.0	U
Ethylbenzene	100-41-4	BLK	0.75U	ug/L	1.0	U
Freon 113	76-13-1	BLK	0.75U	ug/L	1.0	U
Iodomethane	74-88-4	BLK	0.58J	ug/L	1.0	J
Isopropylbenzene	98-82-8	BLK	0.75U	ug/L	1.0	U
Methyl acetate	79-20-9	BLK	0.75U	ug/L	1.0	U



QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result	Units	LOQ	Qualifiers
Methyl cyclohexane	108-87-2	BLK	0.75U	ug/L	1.0	U
Methyl t-Butyl Ether	1634-04-4	BLK	0.75U	ug/L	1.0	U
Methylene Chloride	75-09-2	BLK	0.75U	ug/L	1.0	U
Styrene	100-42-5	BLK	0.75U	ug/L	1.0	U
Tetrachloroethene	127-18-4	BLK	0.75U	ug/L	1.0	U
Toluene	108-88-3	BLK	0.75U	ug/L	1.0	U
Total Xylenes	1330-20-7	BLK	2.3U	ug/L	3.0	U
trans-1,2-Dichloroethene	156-60-5	BLK	0.75U	ug/L	1.0	U
Trichloroethene	79-01-6	BLK	0.75U	ug/L	1.0	U
Trichlorofluoromethane	75-69-4	BLK	0.75U	ug/L	1.0	U
Vinyl Chloride	75-01-4	BLK	0.75U	ug/L	1.0	U

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	BLK	29.30	30	97.7	81 - 118	
4-Bromofluorobenzene	460-00-4	BLK	27.80	30	92.8	85 - 114	
Dibromofluoromethane	1868-53-7	BLK	28.70	30	95.6	80 - 119	
Toluene-d8	2037-26-5	BLK	29.40	30	97.9	89 - 112	

Lab Control Standard	3751106 (LCS)	Created on 11/15/2023 15:24	For QC Batch 1089460

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
1,1,1-Trichloroethane	71-55-6	LCS	20.60		20	103	74 - 131		
1,1,2,2-Tetrachloroethane	79-34-5	LCS	20.10		20	101	71 - 121		
1,1,2-Trichloroethane	79-00-5	LCS	20		20	100	80 - 119		
1,1-Dichloroethane	75-34-3	LCS	19.10		20	95.5	77 - 125		
1,1-Dichloroethene	75-35-4	LCS	19.40		20	96.8	71 - 131		
1,2,3-Trichlorobenzene	87-61-6	LCS	19.50		20	97.7	69 - 129		
1,2,4-Trichlorobenzene	120-82-1	LCS	21.70		20	109	69 - 130		
1,2-Dibromo-3-chloropropane	96-12-8	LCS	16.40		20	82.1	62 - 128		
1,2-Dibromoethane	106-93-4	LCS	20.10		20	100	77 - 121		
1,2-Dichlorobenzene	95-50-1	LCS	20		20	99.8	80 - 119		
1,2-Dichloroethane	107-06-2	LCS	18.40		20	92.1	73 - 128		
1,2-Dichloropropane	78-87-5	LCS	19.20		20	96.1	78 - 122		
1,3-Dichlorobenzene	541-73-1	LCS	20.50		20	103	80 - 119		
1,3-Dichloropropene, Total	542-75-6	LCS	41.20		40	103	75 - 124		
1,4-Dichlorobenzene	106-46-7	LCS	21.70		20	108	79 - 118		
2-Butanone	78-93-3	LCS	78.70		100	78.7	56 - 143		
2-Hexanone	591-78-6	LCS	91.10		100	91.1	57 - 139		
4-Methyl-2-Pentanone(MIBK)	108-10-1	LCS	92.90		100	92.9	67 - 130		
Acetone	67-64-1	LCS	84.10		100	84.1	39 - 160		
Benzene	71-43-2	LCS	19.40		20	97	79 - 120		
Bromochloromethane	74-97-5	LCS	20.50		20	102	78 - 123		



QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
Bromodichloromethane	75-27-4	LCS	19.80		20	98.8	79 - 125		
Bromoform	75-25-2	LCS	17.80		20	88.8	66 - 130		
Bromomethane	74-83-9	LCS	20.50		20	103	53 - 141		
Carbon Disulfide	75-15-0	LCS	19.10		20	95.5	64 - 133		
Carbon Tetrachloride	56-23-5	LCS	20.40		20	102	72 - 136		
Chlorobenzene	108-90-7	LCS	19.90		20	99.5	82 - 118		
Chlorodibromomethane	124-48-1	LCS	21		20	105	74 - 126		
Chloroethane	75-00-3	LCS	20.40		20	102	60 - 138		
Chloroform	67-66-3	LCS	19.50		20	97.3	79 - 124		
Chloromethane	74-87-3	LCS	22.90		20	115	50 - 139		
cis-1,2-Dichloroethene	156-59-2	LCS	19.50		20	97.7	78 - 123		
Cyclohexane	110-82-7	LCS	20		20	99.8	71 - 130		
Dichlorodifluoromethane	75-71-8	LCS	21.60		20	108	32 - 152		
Ethylbenzene	100-41-4	LCS	20.40		20	102	79 - 121		
Freon 113	76-13-1	LCS	20.80		20	104	70 - 136		
Iodomethane	74-88-4	LCS	16		20	80.2	69 - 131		
Isopropylbenzene	98-82-8	LCS	22.80		20	114	72 - 131		
Methyl acetate	79-20-9	LCS	18		20	90.2	56 - 136		
Methyl cyclohexane	108-87-2	LCS	20.60		20	103	72 - 132		
Methyl t-Butyl Ether	1634-04-4	LCS	19.40		20	97	71 - 124		
Methylene Chloride	75-09-2	LCS	19.50		20	97.5	74 - 124		
Styrene	100-42-5	LCS	21.60		20	108	78 - 123		
Tetrachloroethene	127-18-4	LCS	21		20	105	74 - 129		
Toluene	108-88-3	LCS	20.20		20	101	80 - 121		
Total Xylenes	1330-20-7	LCS	61.90		60	103	79 - 121		
trans-1,2-Dichloroethene	156-60-5	LCS	19.60		20	98.1	75 - 124		
Trichloroethene	79-01-6	LCS	19		20	94.8	79 - 123		
Trichlorofluoromethane	75-69-4	LCS	19.60		20	98	65 - 141		
Vinyl Chloride	75-01-4	LCS	20.40		20	102	58 - 137		

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	LCS	28.80	30	95.9	81 - 118	
4-Bromofluorobenzene	460-00-4	LCS	30.30	30	101	85 - 114	
Dibromofluoromethane	1868-53-7	LCS	30.10	30	100	80 - 119	
Toluene-d8	2037-26-5	LCS	30.70	30	102	89 - 112	

Matrix Spike 3751107 (MS) 3331303007 For QC Batch 1089460

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Matrix Spike Duplicate 3751108 (MSD) 3331303007 For QC Batch 1089460



QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
1,1,1-Trichloroethane	71-55-6	MS	22.60	0	20	113	74 - 131		
1,1,1-Trichloroethane	71-55-6	MSD	22	0	20	110	74 - 131	RPD 2.37	(Max-20)
1,1,2,2-Tetrachloroethane	79-34-5	MS	21.90	0	20	110	71 - 121		
1,1,2,2-Tetrachloroethane	79-34-5	MSD	24.20	0	20	121	71 - 121	RPD 9.90	(Max-20)
1,1,2-Trichloroethane	79-00-5	MS	21.50	0	20	107	80 - 119		
1,1,2-Trichloroethane	79-00-5	MSD	21.80	0	20	109	80 - 119	RPD 1.57	(Max-20)
1,1-Dichloroethane	75-34-3	MS	21.70	0	20	109	77 - 125		
1,1-Dichloroethane	75-34-3	MSD	21	0	20	105	77 - 125	RPD 3.43	(Max-20)
1,1-Dichloroethene	75-35-4	MS	21.70	0	20	108	71 - 131		
1,1-Dichloroethene	75-35-4	MSD	21.50	0	20	108	71 - 131	RPD 0.77	(Max-20)
1,2,3-Trichlorobenzene	87-61-6	MS	19.70	0	20	98.4	69 - 129		
1,2,3-Trichlorobenzene	87-61-6	MSD	21.10	0	20	105	69 - 129	RPD 6.79	(Max-20)
1,2,4-Trichlorobenzene	120-82-1	MS	20.80	0	20	104	69 - 130		
1,2,4-Trichlorobenzene	120-82-1	MSD	22.30	0	20	112	69 - 130	RPD 7.29	(Max-20)
1,2-Dibromo-3-chloropropane	96-12-8	MS	18.30	0	20	91.4	62 - 128		
1,2-Dibromo-3-chloropropane	96-12-8	MSD	19.30	0	20	96.4	62 - 128	RPD 5.29	(Max-20)
1,2-Dibromoethane	106-93-4	MS	21.50	0	20	107	77 - 121		
1,2-Dibromoethane	106-93-4	MSD	22.10	0	20	111	77 - 121	RPD 3.05	(Max-20)
1,2-Dichlorobenzene	95-50-1	MS	20	0	20	100	80 - 119		
1,2-Dichlorobenzene	95-50-1	MSD	21.60	0	20	108	80 - 119	RPD 7.66	(Max-20)
1,2-Dichloroethane	107-06-2	MS	20.50	0	20	103	73 - 128		
1,2-Dichloroethane	107-06-2	MSD	20.10	0	20	100	73 - 128	RPD 2.20	(Max-20)
1,2-Dichloropropane	78-87-5	MS	21.40	0	20	107	78 - 122		
1,2-Dichloropropane	78-87-5	MSD	21.20	0	20	106	78 - 122	RPD 1.02	(Max-20)
1,3-Dichlorobenzene	541-73-1	MS	20.20	0	20	101	80 - 119		
1,3-Dichlorobenzene	541-73-1	MSD	21.50	0	20	108	80 - 119	RPD 6.20	(Max-20)
1,3-Dichloropropene, Total	542-75-6	MS	42.50	0	40	106	75 - 124		
1,3-Dichloropropene, Total	542-75-6	MSD	42.60	0	40	107	75 - 124	RPD 0.27	(Max-20)
1,4-Dichlorobenzene	106-46-7	MS	21.30	0	20	107	79 - 118		
1,4-Dichlorobenzene	106-46-7	MSD	22.90	0	20	114	79 - 118	RPD 7.14	(Max-20)
2-Butanone	78-93-3	MS	104	0	100	104	56 - 143		
2-Butanone	78-93-3	MSD	104	0	100	104	56 - 143	RPD 0.40	(Max-20)
2-Hexanone	591-78-6	MS	108	0	100	108	57 - 139		
2-Hexanone	591-78-6	MSD	112	0	100	112	57 - 139	RPD 3.42	(Max-20)
4-Methyl-2-Pentanone(MIBK)	108-10-1	MS	110	0	100	110	67 - 130		
4-Methyl-2-Pentanone(MIBK)	108-10-1	MSD	114	0	100	114	67 - 130	RPD 3.29	(Max-20)
Acetone	67-64-1	MS	107	11.20	100	95.6	39 - 160		
Acetone	67-64-1	MSD	106	11.20	100	95	39 - 160	RPD 0.48	(Max-20)
Benzene	71-43-2	MS	21.80	0	20	109	79 - 120		
Benzene	71-43-2	MSD	20.90	0	20	105	79 - 120	RPD 4.13	(Max-20)
Bromochloromethane	74-97-5	MS	22	0	20	110	78 - 123		
Bromochloromethane	74-97-5	MSD	21.50	0	20	107	78 - 123	RPD 2.42	(Max-20)
Bromodichloromethane	75-27-4	MS	21.40	0	20	107	79 - 125		
Bromodichloromethane	75-27-4	MSD	21.10	0	20	105	79 - 125	RPD 1.59	(Max-20)
Bromoform	75-25-2	MS	18	0	20	89.9	66 - 130		
Bromoform	75-25-2	MSD	20.10	0	20	101	66 - 130	RPD 11.10	(Max-20)
Bromomethane	74-83-9	MS	22.70	0	20	113	53 - 141		
Bromomethane	74-83-9	MSD	15.90	0	20	79.5	53 - 141	RPD 35.10*	(Max-20)



QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
Carbon Disulfide	75-15-0	MS	21.70	0	20	108	64 - 133		
Carbon Disulfide	75-15-0	MSD	22.80	0	20	114	64 - 133	RPD	5.07 (Max-20)
Carbon Tetrachloride	56-23-5	MS	25.60	0	20	128	72 - 136		
Carbon Tetrachloride	56-23-5	MSD	24.80	0	20	124	72 - 136	RPD	3.26 (Max-20)
Chlorobenzene	108-90-7	MS	20.80	0	20	104	82 - 118		
Chlorobenzene	108-90-7	MSD	21.10	0	20	105	82 - 118	RPD	1.17 (Max-20)
Chlorodibromomethane	124-48-1	MS	21.40	0	20	107	74 - 126		
Chlorodibromomethane	124-48-1	MSD	22.10	0	20	111	74 - 126	RPD	3.46 (Max-20)
Chloroethane	75-00-3	MS	59.30	0	20	296*	60 - 138		
Chloroethane	75-00-3	MSD	54.20	0	20	271*	60 - 138	RPD	8.94 (Max-20)
Chloroform	67-66-3	MS	20.40	0	20	102	79 - 124		
Chloroform	67-66-3	MSD	19.50	0	20	97.3	79 - 124	RPD	4.78 (Max-20)
Chloromethane	74-87-3	MS	22.80	0	20	114	50 - 139		
Chloromethane	74-87-3	MSD	21.20	0	20	106	50 - 139	RPD	7.53 (Max-20)
cis-1,2-Dichloroethene	156-59-2	MS	22.20	1	20	106	78 - 123		
cis-1,2-Dichloroethene	156-59-2	MSD	21.60	1	20	103	78 - 123	RPD	2.38 (Max-20)
Cyclohexane	110-82-7	MS	22.50	0	20	112	71 - 130		
Cyclohexane	110-82-7	MSD	21.60	0	20	108	71 - 130	RPD	4.19 (Max-20)
Dichlorodifluoromethane	75-71-8	MS	21.70	0	20	109	32 - 152		
Dichlorodifluoromethane	75-71-8	MSD	21.20	0	20	106	32 - 152	RPD	2.63 (Max-20)
Ethylbenzene	100-41-4	MS	21.50	0	20	107	79 - 121		
Ethylbenzene	100-41-4	MSD	21.40	0	20	107	79 - 121	RPD	0.23 (Max-20)
Freon 113	76-13-1	MS	22.70	0	20	114	70 - 136		
Freon 113	76-13-1	MSD	21.50	0	20	107	70 - 136	RPD	5.79 (Max-20)
Iodomethane	74-88-4	MS	15.20	0	20	76.2	69 - 131		
Iodomethane	74-88-4	MSD	16.10	0	20	80.4	69 - 131	RPD	5.39 (Max-20)
Isopropylbenzene	98-82-8	MS	23.20	0	20	116	72 - 131		
Isopropylbenzene	98-82-8	MSD	24.70	0	20	124	72 - 131	RPD	6.28 (Max-20)
Methyl acetate	79-20-9	MS	18.90	0	20	94.7	56 - 136		
Methyl acetate	79-20-9	MSD	18.80	0	20	94	56 - 136	RPD	0.79 (Max-20)
Methyl cyclohexane	108-87-2	MS	21.90	0	20	110	72 - 132		
Methyl cyclohexane	108-87-2	MSD	21.60	0	20	108	72 - 132	RPD	1.27 (Max-20)
Methyl t-Butyl Ether	1634-04-4	MS	20.70	0	20	104	71 - 124		
Methyl t-Butyl Ether	1634-04-4	MSD	20.70	0	20	104	71 - 124	RPD	0.09 (Max-20)
Methylene Chloride	75-09-2	MS	20.70	0	20	103	74 - 124		
Methylene Chloride	75-09-2	MSD	20.10	0	20	101	74 - 124	RPD	2.69 (Max-20)
Styrene	100-42-5	MS	21.90	0	20	110	78 - 123		
Styrene	100-42-5	MSD	23.10	0	20	115	78 - 123	RPD	4.98 (Max-20)
Tetrachloroethene	127-18-4	MS	19.30	0	20	96.4	74 - 129		
Tetrachloroethene	127-18-4	MSD	19	0	20	95	74 - 129	RPD	1.44 (Max-20)
Toluene	108-88-3	MS	33	11.70	20	106	80 - 121		
Toluene	108-88-3	MSD	33	11.70	20	107	80 - 121	RPD	0.20 (Max-20)
Total Xylenes	1330-20-7	MS	64	0	60	107	79 - 121		
Total Xylenes	1330-20-7	MSD	64.20	0	60	107	79 - 121	RPD	0.29 (Max-20)
trans-1,2-Dichloroethene	156-60-5	MS	21.90	0.36	20	108	75 - 124		
trans-1,2-Dichloroethene	156-60-5	MSD	21.70	0.36	20	107	75 - 124	RPD	1.20 (Max-20)
Trichloroethene	79-01-6	MS	22	0.76	20	106	79 - 123		
Trichloroethene	79-01-6	MSD	20.80	0.76	20	100	79 - 123	RPD	5.84 (Max-20)
Trichlorofluoromethane	75-69-4	MS	22.10	0	20	111	65 - 141		



QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
Trichlorofluoromethane	75-69-4	MSD	21.40	0	20	107	65 - 141	RPD 3.15 (Max-20)	
Vinyl Chloride	75-01-4	MS	23.20	0.94	20	111	58 - 137		
Vinyl Chloride	75-01-4	MSD	23	0.94	20	110	58 - 137	RPD 0.80 (Max-20)	

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	MS	29.70	30	99.1	81 - 118	
1,2-Dichloroethane-d4	17060-07-0	MSD	30	30	100	81 - 118	
4-Bromofluorobenzene	460-00-4	MS	28.70	30	95.6	85 - 114	
4-Bromofluorobenzene	460-00-4	MSD	30.80	30	103	85 - 114	
Dibromofluoromethane	1868-53-7	MS	28.50	30	94.9	80 - 119	
Dibromofluoromethane	1868-53-7	MSD	30	30	100	80 - 119	
Toluene-d8	2037-26-5	MS	28.30	30	94.5	89 - 112	
Toluene-d8	2037-26-5	MSD	31.30	30	104	89 - 112	

QC Batch

Associated Samples

QC Batch	1090893	Prep Method	N/A
Date	N/A	Analysis Method	SW846 8260C
Tech.			

3331303021	3331303022	3331303023	3331303024
3331303025	3331303026	3331303027	3331303028
3331303030	3331303031	3331303032	3331303033
3331303034	3331303020		

Method Blank 3751553 (MB) Created on 11/16/2023 11:34 For QC Batch 1090893

RESULTS

Compound	CAS No		Result	Units	LOQ	Qualifiers
1,1,1-Trichloroethane	71-55-6	BLK	0.75U	ug/L	1.0	U
1,1,2,2-Tetrachloroethane	79-34-5	BLK	0.75U	ug/L	1.0	U
1,1,2-Trichloroethane	79-00-5	BLK	0.75U	ug/L	1.0	U
1,1-Dichloroethane	75-34-3	BLK	0.75U	ug/L	1.0	U
1,1-Dichloroethene	75-35-4	BLK	0.75U	ug/L	1.0	U
1,2,3-Trichlorobenzene	87-61-6	BLK	0.75U	ug/L	1.0	U
1,2,4-Trichlorobenzene	120-82-1	BLK	0.75U	ug/L	1.0	U
1,2-Dibromo-3-chloropropane	96-12-8	BLK	2.5U	ug/L	5.0	U
1,2-Dibromoethane	106-93-4	BLK	0.75U	ug/L	1.0	U
1,2-Dichlorobenzene	95-50-1	BLK	0.75U	ug/L	1.0	U
1,2-Dichloroethane	107-06-2	BLK	0.75U	ug/L	1.0	U
1,2-Dichloropropane	78-87-5	BLK	0.75U	ug/L	1.0	U
1,3-Dichlorobenzene	541-73-1	BLK	0.75U	ug/L	1.0	U
1,3-Dichloropropene, Total	542-75-6	BLK	1.5U	ug/L	2.0	U
1,4-Dichlorobenzene	106-46-7	BLK	0.75U	ug/L	1.0	U
2-Butanone	78-93-3	BLK	3.8U	ug/L	5.0	U
2-Hexanone	591-78-6	BLK	3.8U	ug/L	5.0	U



QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result	Units	LOQ	Qualifiers
4-Methyl-2-Pentanone(MIBK)	108-10-1	BLK	3.8U	ug/L	5.0	U
Acetone	67-64-1	BLK	3.8U	ug/L	5.0	U
Benzene	71-43-2	BLK	0.75U	ug/L	1.0	U
Bromochloromethane	74-97-5	BLK	0.75U	ug/L	1.0	U
Bromodichloromethane	75-27-4	BLK	0.75U	ug/L	1.0	U
Bromoform	75-25-2	BLK	0.75U	ug/L	1.0	U
Bromomethane	74-83-9	BLK	0.75U	ug/L	1.0	U
Carbon Tetrachloride	56-23-5	BLK	0.75U	ug/L	1.0	U
Chlorobenzene	108-90-7	BLK	0.75U	ug/L	1.0	U
Chlorodibromomethane	124-48-1	BLK	0.75U	ug/L	1.0	U
Chloroethane	75-00-3	BLK	0.75U	ug/L	1.0	U
Chloroform	67-66-3	BLK	0.75U	ug/L	1.0	U
Chloromethane	74-87-3	BLK	0.75U	ug/L	1.0	U
cis-1,2-Dichloroethene	156-59-2	BLK	0.75U	ug/L	1.0	U
Cyclohexane	110-82-7	BLK	0.75U	ug/L	1.0	U
Dichlorodifluoromethane	75-71-8	BLK	0.75U	ug/L	1.0	U
Ethylbenzene	100-41-4	BLK	0.75U	ug/L	1.0	U
Freon 113	76-13-1	BLK	0.75U	ug/L	1.0	U
Iodomethane	74-88-4	BLK	0.75U	ug/L	1.0	U
Isopropylbenzene	98-82-8	BLK	0.75U	ug/L	1.0	U
Methyl acetate	79-20-9	BLK	0.75U	ug/L	1.0	U
Methyl cyclohexane	108-87-2	BLK	0.75U	ug/L	1.0	U
Methyl t-Butyl Ether	1634-04-4	BLK	0.75U	ug/L	1.0	U
Methylene Chloride	75-09-2	BLK	0.75U	ug/L	1.0	U
Styrene	100-42-5	BLK	0.75U	ug/L	1.0	U
Tetrachloroethene	127-18-4	BLK	0.75U	ug/L	1.0	U
Toluene	108-88-3	BLK	0.75U	ug/L	1.0	U
Total Xylenes	1330-20-7	BLK	2.3U	ug/L	3.0	U
trans-1,2-Dichloroethene	156-60-5	BLK	0.75U	ug/L	1.0	U
Trichloroethene	79-01-6	BLK	0.75U	ug/L	1.0	U
Trichlorofluoromethane	75-69-4	BLK	0.75U	ug/L	1.0	U
Vinyl Chloride	75-01-4	BLK	0.75U	ug/L	1.0	U

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	BLK	29.30	30	97.8	81 - 118	
4-Bromofluorobenzene	460-00-4	BLK	27.90	30	93.1	85 - 114	
Dibromofluoromethane	1868-53-7	BLK	28.20	30	93.9	80 - 119	
Toluene-d8	2037-26-5	BLK	28.90	30	96.4	89 - 112	

Lab Control Standard 3751554 (LCS) Created on 11/16/2023 11:34 For QC Batch 1090893

RESULTS

Compound	CAS No	Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers



QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
1,1,1-Trichloroethane	71-55-6	LCS	18.30		20	91.4	74 - 131		
1,1,2,2-Tetrachloroethane	79-34-5	LCS	19.70		20	98.5	71 - 121		
1,1,2-Trichloroethane	79-00-5	LCS	18.80		20	94.2	80 - 119		
1,1-Dichloroethane	75-34-3	LCS	18.90		20	94.7	77 - 125		
1,1-Dichloroethene	75-35-4	LCS	19.40		20	96.8	71 - 131		
1,2,3-Trichlorobenzene	87-61-6	LCS	18.70		20	93.6	69 - 129		
1,2,4-Trichlorobenzene	120-82-1	LCS	20.20		20	101	69 - 130		
1,2-Dibromo-3-chloropropane	96-12-8	LCS	18.80		20	94.1	62 - 128		
1,2-Dibromoethane	106-93-4	LCS	18.30		20	91.6	77 - 121		
1,2-Dichlorobenzene	95-50-1	LCS	19.80		20	99.2	80 - 119		
1,2-Dichloroethane	107-06-2	LCS	18		20	90.1	73 - 128		
1,2-Dichloropropane	78-87-5	LCS	18.40		20	92.2	78 - 122		
1,3-Dichlorobenzene	541-73-1	LCS	19.40		20	96.8	80 - 119		
1,3-Dichloropropene, Total	542-75-6	LCS	39.30		40	98.3	75 - 124		
1,4-Dichlorobenzene	106-46-7	LCS	20.60		20	103	79 - 118		
2-Butanone	78-93-3	LCS	93.90		100	93.9	56 - 143		
2-Hexanone	591-78-6	LCS	89.50		100	89.5	57 - 139		
4-Methyl-2-Pentanone(MIBK)	108-10-1	LCS	87.40		100	87.4	67 - 130		
Acetone	67-64-1	LCS	97.90		100	97.9	39 - 160		
Benzene	71-43-2	LCS	18.70		20	93.4	79 - 120		
Bromochloromethane	74-97-5	LCS	19		20	94.8	78 - 123		
Bromodichloromethane	75-27-4	LCS	18.60		20	93	79 - 125		
Bromoform	75-25-2	LCS	19.20		20	95.9	66 - 130		
Bromomethane	74-83-9	LCS	16.80		20	84	53 - 141		
Carbon Disulfide	75-15-0	LCS	19.90		20	99.4	64 - 133		
Carbon Tetrachloride	56-23-5	LCS	19.20		20	96.1	72 - 136		
Chlorobenzene	108-90-7	LCS	18.90		20	94.4	82 - 118		
Chlorodibromomethane	124-48-1	LCS	19.20		20	96.2	74 - 126		
Chloroethane	75-00-3	LCS	20.20		20	101	60 - 138		
Chloroform	67-66-3	LCS	18.30		20	91.4	79 - 124		
Chloromethane	74-87-3	LCS	22.40		20	112	50 - 139		
cis-1,2-Dichloroethene	156-59-2	LCS	19.20		20	96.2	78 - 123		
Cyclohexane	110-82-7	LCS	19.70		20	98.4	71 - 130		
Dichlorodifluoromethane	75-71-8	LCS	22.80		20	114	32 - 152		
Ethylbenzene	100-41-4	LCS	19.60		20	98	79 - 121		
Freon 113	76-13-1	LCS	20.50		20	102	70 - 136		
Iodomethane	74-88-4	LCS	15.20		20	76.1	69 - 131		
Isopropylbenzene	98-82-8	LCS	22		20	110	72 - 131		
Methyl acetate	79-20-9	LCS	18.30		20	91.7	56 - 136		
Methyl cyclohexane	108-87-2	LCS	20.70		20	104	72 - 132		
Methyl t-Butyl Ether	1634-04-4	LCS	18.40		20	92.2	71 - 124		
Methylene Chloride	75-09-2	LCS	19.30		20	96.7	74 - 124		
Styrene	100-42-5	LCS	21.10		20	106	78 - 123		
Tetrachloroethene	127-18-4	LCS	18.50		20	92.5	74 - 129		
Toluene	108-88-3	LCS	19.50		20	97.3	80 - 121		
Total Xylenes	1330-20-7	LCS	57.60		60	96	79 - 121		
trans-1,2-Dichloroethene	156-60-5	LCS	19		20	95.1	75 - 124		



QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
Trichloroethene	79-01-6	LCS	18.30		20	91.4	79 - 123		
Trichlorofluoromethane	75-69-4	LCS	22.10		20	110	65 - 141		
Vinyl Chloride	75-01-4	LCS	21.50		20	107	58 - 137		

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	LCS	30	30	99.9	81 - 118	
4-Bromofluorobenzene	460-00-4	LCS	31	30	103	85 - 114	
Dibromofluoromethane	1868-53-7	LCS	29.10	30	96.9	80 - 119	
Toluene-d8	2037-26-5	LCS	29.90	30	99.7	89 - 112	

Matrix Spike 3751617 (MS) 3331303026 For QC Batch 1090893

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Matrix Spike Duplicate 3751618 (MSD) 3331303026 For QC Batch 1090893

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
1,1,1-Trichloroethane	71-55-6	MS	20.10	0	20	100	74 - 131		
1,1,1-Trichloroethane	71-55-6	MSD	19.10	0	20	95.7	74 - 131	RPD 4.89 (Max-20)	
1,1,2,2-Tetrachloroethane	79-34-5	MS	21	0	20	105	71 - 121		
1,1,2,2-Tetrachloroethane	79-34-5	MSD	19.50	0	20	97.7	71 - 121	RPD 7.04 (Max-20)	
1,1,2-Trichloroethane	79-00-5	MS	19.50	0	20	97.5	80 - 119		
1,1,2-Trichloroethane	79-00-5	MSD	18.40	0	20	91.9	80 - 119	RPD 5.96 (Max-20)	
1,1-Dichloroethane	75-34-3	MS	20	0	20	100	77 - 125		
1,1-Dichloroethane	75-34-3	MSD	19.20	0	20	95.8	77 - 125	RPD 4.38 (Max-20)	
1,1-Dichloroethene	75-35-4	MS	21.50	0	20	107	71 - 131		
1,1-Dichloroethene	75-35-4	MSD	19.70	0	20	98.7	71 - 131	RPD 8.37 (Max-20)	
1,2,3-Trichlorobenzene	87-61-6	MS	18.30	0	20	91.6	69 - 129		
1,2,3-Trichlorobenzene	87-61-6	MSD	17.30	0	20	86.5	69 - 129	RPD 5.80 (Max-20)	
1,2,4-Trichlorobenzene	120-82-1	MS	19.30	0	20	96.6	69 - 130		
1,2,4-Trichlorobenzene	120-82-1	MSD	17.90	0	20	89.7	69 - 130	RPD 7.46 (Max-20)	
1,2-Dibromo-3-chloropropane	96-12-8	MS	20	0	20	100	62 - 128		
1,2-Dibromo-3-chloropropane	96-12-8	MSD	18.30	0	20	91.6	62 - 128	RPD 8.80 (Max-20)	
1,2-Dibromoethane	106-93-4	MS	18.80	0	20	94	77 - 121		
1,2-Dibromoethane	106-93-4	MSD	18.60	0	20	93.1	77 - 121	RPD 0.94 (Max-20)	
1,2-Dichlorobenzene	95-50-1	MS	18.70	0	20	93.5	80 - 119		
1,2-Dichlorobenzene	95-50-1	MSD	17.30	0	20	86.7	80 - 119	RPD 7.63 (Max-20)	
1,2-Dichloroethane	107-06-2	MS	19.40	0	20	96.9	73 - 128		
1,2-Dichloroethane	107-06-2	MSD	18.60	0	20	92.8	73 - 128	RPD 4.30 (Max-20)	
1,2-Dichloropropane	78-87-5	MS	20.10	0	20	100	78 - 122		
1,2-Dichloropropane	78-87-5	MSD	19.30	0	20	96.3	78 - 122	RPD 4.07 (Max-20)	
1,3-Dichlorobenzene	541-73-1	MS	18.60	0	20	92.9	80 - 119		



QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
1,3-Dichlorobenzene	541-73-1	MSD	17.20	0	20	85.9	80 - 119	RPD 7.81 (Max-20)	
1,3-Dichloropropene, Total	542-75-6	MS	38.80	0	40	97	75 - 124		
1,3-Dichloropropene, Total	542-75-6	MSD	37.90	0	40	94.8	75 - 124	RPD 2.33 (Max-20)	
1,4-Dichlorobenzene	106-46-7	MS	19.90	0	20	99.6	79 - 118		
1,4-Dichlorobenzene	106-46-7	MSD	18.40	0	20	91.8	79 - 118	RPD 8.18 (Max-20)	
2-Butanone	78-93-3	MS	106	0	100	106	56 - 143		
2-Butanone	78-93-3	MSD	115	0	100	115	56 - 143	RPD 8.07 (Max-20)	
2-Hexanone	591-78-6	MS	109	0	100	109	57 - 139		
2-Hexanone	591-78-6	MSD	107	0	100	107	57 - 139	RPD 1.77 (Max-20)	
4-Methyl-2-Pentanone(MIBK)	108-10-1	MS	107	0	100	107	67 - 130		
4-Methyl-2-Pentanone(MIBK)	108-10-1	MSD	105	0	100	105	67 - 130	RPD 1.99 (Max-20)	
Acetone	67-64-1	MS	110	3.80	100	106	39 - 160		
Acetone	67-64-1	MSD	108	3.80	100	104	39 - 160	RPD 1.85 (Max-20)	
Benzene	71-43-2	MS	20.10	0	20	101	79 - 120		
Benzene	71-43-2	MSD	19.20	0	20	95.9	79 - 120	RPD 4.77 (Max-20)	
Bromochloromethane	74-97-5	MS	20	0	20	99.8	78 - 123		
Bromochloromethane	74-97-5	MSD	19.40	0	20	97.1	78 - 123	RPD 2.77 (Max-20)	
Bromodichloromethane	75-27-4	MS	19.40	0	20	97.2	79 - 125		
Bromodichloromethane	75-27-4	MSD	19.60	0	20	97.8	79 - 125	RPD 0.63 (Max-20)	
Bromoform	75-25-2	MS	19.30	0	20	96.5	66 - 130		
Bromoform	75-25-2	MSD	18.20	0	20	91.2	66 - 130	RPD 5.68 (Max-20)	
Bromomethane	74-83-9	MS	11.10	0	20	55.3	53 - 141		
Bromomethane	74-83-9	MSD	12.70	0	20	63.7	53 - 141	RPD 14.10 (Max-20)	
Carbon Disulfide	75-15-0	MS	20.70	0	20	103	64 - 133		
Carbon Disulfide	75-15-0	MSD	19.40	0	20	96.9	64 - 133	RPD 6.58 (Max-20)	
Carbon Tetrachloride	56-23-5	MS	24.30	0	20	122	72 - 136		
Carbon Tetrachloride	56-23-5	MSD	23	0	20	115	72 - 136	RPD 5.42 (Max-20)	
Chlorobenzene	108-90-7	MS	19.10	0	20	95.6	82 - 118		
Chlorobenzene	108-90-7	MSD	18.10	0	20	90.3	82 - 118	RPD 5.68 (Max-20)	
Chlorodibromomethane	124-48-1	MS	19.20	0	20	96.1	74 - 126		
Chlorodibromomethane	124-48-1	MSD	19.20	0	20	96.2	74 - 126	RPD 0.12 (Max-20)	
Chloroethane	75-00-3	MS	18.60	0	20	92.9	60 - 138		
Chloroethane	75-00-3	MSD	17.90	0	20	89.3	60 - 138	RPD 3.97 (Max-20)	
Chloroform	67-66-3	MS	19	0	20	95.2	79 - 124		
Chloroform	67-66-3	MSD	17.70	0	20	88.6	79 - 124	RPD 7.08 (Max-20)	
Chloromethane	74-87-3	MS	20.40	0	20	102	50 - 139		
Chloromethane	74-87-3	MSD	18.30	0	20	91.4	50 - 139	RPD 11 (Max-20)	
cis-1,2-Dichloroethene	156-59-2	MS	20.60	0	20	103	78 - 123		
cis-1,2-Dichloroethene	156-59-2	MSD	19.60	0	20	98.1	78 - 123	RPD 4.76 (Max-20)	
Cyclohexane	110-82-7	MS	21.10	0	20	106	71 - 130		
Cyclohexane	110-82-7	MSD	20.10	0	20	100	71 - 130	RPD 5.03 (Max-20)	
Dichlorodifluoromethane	75-71-8	MS	21.70	0	20	108	32 - 152		
Dichlorodifluoromethane	75-71-8	MSD	19.60	0	20	98.1	32 - 152	RPD 9.93 (Max-20)	
Ethylbenzene	100-41-4	MS	19.50	0	20	97.3	79 - 121		
Ethylbenzene	100-41-4	MSD	18.80	0	20	94.1	79 - 121	RPD 3.38 (Max-20)	
Freon 113	76-13-1	MS	20.70	0	20	104	70 - 136		
Freon 113	76-13-1	MSD	19.50	0	20	97.7	70 - 136	RPD 6.03 (Max-20)	
Iodomethane	74-88-4	MS	6.70	0	20	33.3*	69 - 131		
Iodomethane	74-88-4	MSD	9.40	0	20	46.8*	69 - 131	RPD 33.80* (Max-20)	



QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
Isopropylbenzene	98-82-8	MS	21.70	0	20	108	72 - 131		
Isopropylbenzene	98-82-8	MSD	19.70	0	20	98.3	72 - 131	RPD	<u>9.77</u> (Max-20)
Methyl acetate	79-20-9	MS	18	0	20	90	56 - 136		
Methyl acetate	79-20-9	MSD	17.60	0	20	87.8	56 - 136	RPD	<u>2.49</u> (Max-20)
Methyl cyclohexane	108-87-2	MS	20.60	0	20	103	72 - 132		
Methyl cyclohexane	108-87-2	MSD	19	0	20	94.8	72 - 132	RPD	<u>8.16</u> (Max-20)
Methyl t-Butyl Ether	1634-04-4	MS	19.90	0	20	99.5	71 - 124		
Methyl t-Butyl Ether	1634-04-4	MSD	19.60	0	20	98.1	71 - 124	RPD	<u>1.36</u> (Max-20)
Methylene Chloride	75-09-2	MS	20.60	0	20	103	74 - 124		
Methylene Chloride	75-09-2	MSD	19.40	0	20	96.8	74 - 124	RPD	<u>5.98</u> (Max-20)
Styrene	100-42-5	MS	20.50	0	20	103	78 - 123		
Styrene	100-42-5	MSD	18.90	0	20	94.4	78 - 123	RPD	<u>8.36</u> (Max-20)
Tetrachloroethene	127-18-4	MS	17.80	0	20	89.2	74 - 129		
Tetrachloroethene	127-18-4	MSD	16.40	0	20	81.9	74 - 129	RPD	<u>8.50</u> (Max-20)
Toluene	108-88-3	MS	19.80	0	20	99.2	80 - 121		
Toluene	108-88-3	MSD	18.80	0	20	94	80 - 121	RPD	<u>5.38</u> (Max-20)
Total Xylenes	1330-20-7	MS	58.60	0	60	97.7	79 - 121		
Total Xylenes	1330-20-7	MSD	55.70	0	60	92.9	79 - 121	RPD	<u>5.10</u> (Max-20)
trans-1,2-Dichloroethene	156-60-5	MS	20.50	0	20	102	75 - 124		
trans-1,2-Dichloroethene	156-60-5	MSD	19.40	0	20	97	75 - 124	RPD	<u>5.42</u> (Max-20)
Trichloroethene	79-01-6	MS	19.50	0	20	97.4	79 - 123		
Trichloroethene	79-01-6	MSD	18.40	0	20	92	79 - 123	RPD	<u>5.76</u> (Max-20)
Trichlorofluoromethane	75-69-4	MS	23.80	0	20	119	65 - 141		
Trichlorofluoromethane	75-69-4	MSD	21.90	0	20	109	65 - 141	RPD	<u>8.22</u> (Max-20)
Vinyl Chloride	75-01-4	MS	21.60	0	20	108	58 - 137		
Vinyl Chloride	75-01-4	MSD	20.40	0	20	102	58 - 137	RPD	<u>6.04</u> (Max-20)

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	MS	30.90	30	103	81 - 118	
1,2-Dichloroethane-d4	17060-07-0	MSD	30.70	30	102	81 - 118	
4-Bromofluorobenzene	460-00-4	MS	29.60	30	98.8	85 - 114	
4-Bromofluorobenzene	460-00-4	MSD	28.50	30	95	85 - 114	
Dibromofluoromethane	1868-53-7	MS	28.70	30	95.6	80 - 119	
Dibromofluoromethane	1868-53-7	MSD	29.50	30	98.3	80 - 119	
Toluene-d8	2037-26-5	MS	30	30	100	89 - 112	
Toluene-d8	2037-26-5	MSD	30.10	30	100	89 - 112	

QC Batch

QC Batch	1090929	Prep Method	N/A
Date	N/A	Analysis Method	SW846 8260C
Tech.			

Associated Samples

3331303006	3331303008	3331303009	3331303010
3331303011	3331303012	3331303013	3331303014
3331303015	3331303016	3331303017	3331303018
3331303019			



QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

Method Blank 3751655 (MB) Created on 11/16/2023 13:23 For QC Batch 1090929

RESULTS

Compound	CAS No		Result	Units	LOQ	Qualifiers
1,1,1-Trichloroethane	71-55-6	BLK	0.75U	ug/L	1.0	U
1,1,2,2-Tetrachloroethane	79-34-5	BLK	0.75U	ug/L	1.0	U
1,1,2-Trichloroethane	79-00-5	BLK	0.75U	ug/L	1.0	U
1,1-Dichloroethane	75-34-3	BLK	0.75U	ug/L	1.0	U
1,1-Dichloroethene	75-35-4	BLK	0.75U	ug/L	1.0	U
1,2,3-Trichlorobenzene	87-61-6	BLK	0.75U	ug/L	1.0	U
1,2,4-Trichlorobenzene	120-82-1	BLK	0.75U	ug/L	1.0	U
1,2-Dibromo-3-chloropropane	96-12-8	BLK	2.5U	ug/L	5.0	U
1,2-Dibromoethane	106-93-4	BLK	0.75U	ug/L	1.0	U
1,2-Dichlorobenzene	95-50-1	BLK	0.75U	ug/L	1.0	U
1,2-Dichloroethane	107-06-2	BLK	0.75U	ug/L	1.0	U
1,2-Dichloropropane	78-87-5	BLK	0.75U	ug/L	1.0	U
1,3-Dichlorobenzene	541-73-1	BLK	0.75U	ug/L	1.0	U
1,3-Dichloropropene, Total	542-75-6	BLK	1.5U	ug/L	2.0	U
1,4-Dichlorobenzene	106-46-7	BLK	0.75U	ug/L	1.0	U
2-Butanone	78-93-3	BLK	3.8U	ug/L	5.0	U
2-Hexanone	591-78-6	BLK	3.8U	ug/L	5.0	U
4-Methyl-2-Pentanone(MIBK)	108-10-1	BLK	3.8U	ug/L	5.0	U
Acetone	67-64-1	BLK	3.8U	ug/L	5.0	U
Benzene	71-43-2	BLK	0.75U	ug/L	1.0	U
Bromochloromethane	74-97-5	BLK	0.75U	ug/L	1.0	U
Bromodichloromethane	75-27-4	BLK	0.75U	ug/L	1.0	U
Bromoform	75-25-2	BLK	0.75U	ug/L	1.0	U
Bromomethane	74-83-9	BLK	0.75U	ug/L	1.0	U
Carbon Disulfide	75-15-0	BLK	0.75U	ug/L	1.0	U
Carbon Tetrachloride	56-23-5	BLK	0.75U	ug/L	1.0	U
Chlorobenzene	108-90-7	BLK	0.75U	ug/L	1.0	U
Chlorodibromomethane	124-48-1	BLK	0.75U	ug/L	1.0	U
Chloroethane	75-00-3	BLK	0.75U	ug/L	1.0	U
Chloroform	67-66-3	BLK	0.75U	ug/L	1.0	U
Chloromethane	74-87-3	BLK	0.75U	ug/L	1.0	U
cis-1,2-Dichloroethene	156-59-2	BLK	0.75U	ug/L	1.0	U
Cyclohexane	110-82-7	BLK	0.75U	ug/L	1.0	U
Dichlorodifluoromethane	75-71-8	BLK	0.75U	ug/L	1.0	U
Ethylbenzene	100-41-4	BLK	0.75U	ug/L	1.0	U
Freon 113	76-13-1	BLK	0.75U	ug/L	1.0	U
Iodomethane	74-88-4	BLK	0.75U	ug/L	1.0	U
Isopropylbenzene	98-82-8	BLK	0.75U	ug/L	1.0	U
Methyl acetate	79-20-9	BLK	0.75U	ug/L	1.0	U
Methyl cyclohexane	108-87-2	BLK	0.75U	ug/L	1.0	U
Methyl t-Butyl Ether	1634-04-4	BLK	0.75U	ug/L	1.0	U
Methylene Chloride	75-09-2	BLK	0.75U	ug/L	1.0	U
Styrene	100-42-5	BLK	0.75U	ug/L	1.0	U
Tetrachloroethene	127-18-4	BLK	0.75U	ug/L	1.0	U
Toluene	108-88-3	BLK	0.75U	ug/L	1.0	U



QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result	Units	LOQ	Qualifiers
Total Xylenes	1330-20-7	BLK	2.3U	ug/L	3.0	U
trans-1,2-Dichloroethene	156-60-5	BLK	0.75U	ug/L	1.0	U
Trichloroethene	79-01-6	BLK	0.75U	ug/L	1.0	U
Trichlorofluoromethane	75-69-4	BLK	0.75U	ug/L	1.0	U
Vinyl Chloride	75-01-4	BLK	0.75U	ug/L	1.0	U

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	BLK	29.10	30	97.1	81 - 118	
4-Bromofluorobenzene	460-00-4	BLK	26.90	30	89.5	85 - 114	
Dibromofluoromethane	1868-53-7	BLK	27.70	30	92.5	80 - 119	
Toluene-d8	2037-26-5	BLK	29.20	30	97.4	89 - 112	

Lab Control Standard	3751656 (LCS)	Created on 11/16/2023 13:23	For QC Batch 1090929

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
1,1,1-Trichloroethane	71-55-6	LCS	21.10		20	105	74 - 131		
1,1,2,2-Tetrachloroethane	79-34-5	LCS	20.70		20	104	71 - 121		
1,1,2-Trichloroethane	79-00-5	LCS	20.70		20	104	80 - 119		
1,1-Dichloroethane	75-34-3	LCS	20.10		20	101	77 - 125		
1,1-Dichloroethene	75-35-4	LCS	20.80		20	104	71 - 131		
1,2,3-Trichlorobenzene	87-61-6	LCS	18.90		20	94.3	69 - 129		
1,2,4-Trichlorobenzene	120-82-1	LCS	19.30		20	96.6	69 - 130		
1,2-Dibromo-3-chloropropane	96-12-8	LCS	19.10		20	95.4	62 - 128		
1,2-Dibromoethane	106-93-4	LCS	20.30		20	101	77 - 121		
1,2-Dichlorobenzene	95-50-1	LCS	19.40		20	96.8	80 - 119		
1,2-Dichloroethane	107-06-2	LCS	20.70		20	104	73 - 128		
1,2-Dichloropropane	78-87-5	LCS	20.40		20	102	78 - 122		
1,3-Dichlorobenzene	541-73-1	LCS	19.10		20	95.6	80 - 119		
1,3-Dichloropropene, Total	542-75-6	LCS	37.50		40	93.7	75 - 124		
1,4-Dichlorobenzene	106-46-7	LCS	19.80		20	99.2	79 - 118		
2-Butanone	78-93-3	LCS	98.80		100	98.8	56 - 143		
2-Hexanone	591-78-6	LCS	97.60		100	97.6	57 - 139		
4-Methyl-2-Pentanone(MIBK)	108-10-1	LCS	97.60		100	97.6	67 - 130		
Acetone	67-64-1	LCS	106		100	106	39 - 160		
Benzene	71-43-2	LCS	20.20		20	101	79 - 120		
Bromochloromethane	74-97-5	LCS	20.50		20	103	78 - 123		
Bromodichloromethane	75-27-4	LCS	21.10		20	105	79 - 125		
Bromoform	75-25-2	LCS	21.20		20	106	66 - 130		
Bromomethane	74-83-9	LCS	23.60		20	118	53 - 141		
Carbon Disulfide	75-15-0	LCS	20		20	100	64 - 133		
Carbon Tetrachloride	56-23-5	LCS	19.40		20	97.1	72 - 136		
Chlorobenzene	108-90-7	LCS	19.60		20	98.1	82 - 118		



QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
Chlorodibromomethane	124-48-1	LCS	18.90		20	94.4	74 - 126		
Chloroethane	75-00-3	LCS	20.10		20	101	60 - 138		
Chloroform	67-66-3	LCS	20.70		20	103	79 - 124		
Chloromethane	74-87-3	LCS	20.90		20	104	50 - 139		
cis-1,2-Dichloroethene	156-59-2	LCS	20.60		20	103	78 - 123		
Cyclohexane	110-82-7	LCS	20.60		20	103	71 - 130		
Dichlorodifluoromethane	75-71-8	LCS	19.50		20	97.6	32 - 152		
Ethylbenzene	100-41-4	LCS	19.80		20	98.9	79 - 121		
Freon 113	76-13-1	LCS	21.40		20	107	70 - 136		
Iodomethane	74-88-4	LCS	10.70		20	53.5*	69 - 131		
Isopropylbenzene	98-82-8	LCS	19.90		20	99.5	72 - 131		
Methyl acetate	79-20-9	LCS	21.10		20	105	56 - 136		
Methyl cyclohexane	108-87-2	LCS	19.30		20	96.6	72 - 132		
Methyl t-Butyl Ether	1634-04-4	LCS	20.90		20	105	71 - 124		
Methylene Chloride	75-09-2	LCS	20.30		20	102	74 - 124		
Styrene	100-42-5	LCS	18.10		20	90.4	78 - 123		
Tetrachloroethene	127-18-4	LCS	21.90		20	109	74 - 129		
Toluene	108-88-3	LCS	19.70		20	98.5	80 - 121		
Total Xylenes	1330-20-7	LCS	60		60	99.9	79 - 121		
trans-1,2-Dichloroethene	156-60-5	LCS	20.80		20	104	75 - 124		
Trichloroethene	79-01-6	LCS	20		20	99.8	79 - 123		
Trichlorofluoromethane	75-69-4	LCS	20.50		20	103	65 - 141		
Vinyl Chloride	75-01-4	LCS	20.60		20	103	58 - 137		

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	LCS	32	30	107	81 - 118	
4-Bromofluorobenzene	460-00-4	LCS	30.70	30	102	85 - 114	
Dibromofluoromethane	1868-53-7	LCS	30.90	30	103	80 - 119	
Toluene-d8	2037-26-5	LCS	30.30	30	101	89 - 112	

QUALITY CONTROL SAMPLES

WET CHEMISTRY

QC Batch

Associated Samples

QC Batch	1084558	Prep Method	N/A
Date	N/A	Analysis Method	SW846 9060A
Tech.			

3331303021	3331303023	3331303029	3331303030
3331303031	3331303017		

Matrix Spike

3746759 (MS)

3331232003 (non-Project Sample)

For QC Batch 1084558

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Matrix Spike Duplicate

3746760 (MSD)

3331232003 (non-Project Sample)

For QC Batch 1084558

RESULTS

Compound	CAS No		Result (mg/L)	Orig. Result (mg/L)	Spk Added (mg/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
Total Organic Carbon (TOC)	TOC	MS	7	1.70	6	89.7	85 - 115		
Total Organic Carbon (TOC)	TOC	MSD	6.90	1.70	6	87.6	85 - 115	RPD 1.82 (Max-20)	

Method Blank

3746755 (MB)

Created on 11/07/2023 16:24

For QC Batch 1084558

RESULTS

Compound	CAS No		Result	Units	LOQ	Qualifiers
Total Organic Carbon (TOC)	TOC	BLK	0.50U	mg/L	1.0	U

Lab Control Standard

3746756 (LCSLOW)

Created on 11/07/2023 16:24

For QC Batch 1084558

RESULTS

Compound	CAS No		Result (mg/L)	Orig. Result (mg/L)	Spk Added (mg/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
Total Organic Carbon (TOC)	TOC	LCS	0.93		1	93.4	85 - 115		J

QC Batch

Associated Samples

QC Batch	1085297	Prep Method	N/A
Date	N/A	Analysis Method	SW846 9060A
Tech.			

3331303018

Matrix Spike

3747473 (MS)

3331232004 (non-Project Sample)

For QC Batch 1085297

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Matrix Spike Duplicate

3747474 (MSD)

3331232004 (non-Project Sample)

For QC Batch 1085297

WET CHEMISTRY (cont.)

QUALITY CONTROL SAMPLES

RESULTS

Compound	CAS No		Result (mg/L)	Orig. Result (mg/L)	Spk Added (mg/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
Total Organic Carbon (TOC)	TOC	MS	7.70	1.70	6	101	85 - 115		
Total Organic Carbon (TOC)	TOC	MSD	7.70	1.70	6	100	85 - 115	RPD 0.74 (Max-20)	

Matrix Spike3747475 (MS)3331706002 (non-Project Sample)For QC Batch 1085297

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Matrix Spike Duplicate3747476 (MSD)3331706002 (non-Project Sample)For QC Batch 1085297

RESULTS

Compound	CAS No		Result (mg/L)	Orig. Result (mg/L)	Spk Added (mg/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
Total Organic Carbon (TOC)	TOC	MS	6.90	1.60	6	89.6	85 - 115		
Total Organic Carbon (TOC)	TOC	MSD	7	1.60	6	90.6	85 - 115	RPD 0.83 (Max-20)	

Method Blank3747471 (MB)Created on 11/08/2023 15:13For QC Batch 1085297

RESULTS

Compound	CAS No		Result	Units	LOQ	Qualifiers
Total Organic Carbon (TOC)	TOC	BLK	0.50U	mg/L	1.0	U

Lab Control Standard3747472 (LCSLOW)Created on 11/08/2023 15:13For QC Batch 1085297

RESULTS

Compound	CAS No		Result (mg/L)	Orig. Result (mg/L)	Spk Added (mg/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
Total Organic Carbon (TOC)	TOC	LCS	1.10		1	106	85 - 115		

QC Batch

Associated Samples

QC Batch1085307Prep MethodN/ADateN/AAalysis MethodSW846 9060ATech.

333130300633313030073331303014

Matrix Spike3747594 (MS)3331109002 (non-Project Sample)For QC Batch 1085307

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Matrix Spike Duplicate3747595 (MSD)3331109002 (non-Project Sample)For QC Batch 1085307

WET CHEMISTRY (cont.)

QUALITY CONTROL SAMPLES

RESULTS

Compound	CAS No		Result (mg/L)	Orig. Result (mg/L)	Spk Added (mg/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
Total Organic Carbon (TOC)	TOC	MS	7.30	1.70	6	94	85 - 115		
Total Organic Carbon (TOC)	TOC	MSD	7.60	1.70	6	98.5	85 - 115	RPD 3.59 (Max-20)	

Method Blank

3747592 (MB)

Created on 11/08/2023 17:00

For QC Batch 1085307

RESULTS

Compound	CAS No		Result	Units	LOQ	Qualifiers
Total Organic Carbon (TOC)	TOC	BLK	0.50U	mg/L	1.0	U

Lab Control Standard

3747593 (LCSLOW)

Created on 11/08/2023 17:00

For QC Batch 1085307

RESULTS

Compound	CAS No		Result (mg/L)	Orig. Result (mg/L)	Spk Added (mg/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
Total Organic Carbon (TOC)	TOC	LCS	1.10		1	106	85 - 115		

Matrix Spike

3747596 (MS)

3331303007

For QC Batch 1085307

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Matrix Spike Duplicate

3747597 (MSD)

3331303007

For QC Batch 1085307

RESULTS

Compound	CAS No		Result (mg/L)	Orig. Result (mg/L)	Spk Added (mg/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
Total Organic Carbon (TOC)	TOC	MS	178	24.70	150	102	85 - 115		
Total Organic Carbon (TOC)	TOC	MSD	170	24.70	150	96.9	85 - 115	RPD 4.24 (Max-20)	



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Lab ID	Sample ID	Preparation Method	Prep Batch	Prep Date/Time	By	Analysis Method	Anly Batch
3331303001	MW1-1DA-20231102	N/A	N/A	N/A		SW846 8260C	1089460
3331303006	MW5-1DA-20231102	N/A	N/A	N/A		RSK 175	1086212
		N/A	N/A	N/A		SW846 8260C	1090929
		N/A	N/A	N/A		SW846 9060A	1085307
3331303007	RW5-1-20231102	N/A	N/A	N/A		RSK 175	1086212
		N/A	N/A	N/A		SW846 8260C	1089460
		N/A	N/A	N/A		SW846 9060A	1085307
3331303008	DUP-01-20231102	N/A	N/A	N/A		SW846 8260C	1090929
3331303009	SW99-10-20231102	N/A	N/A	N/A		SW846 8260C	1090929
3331303010	SW10-7-20231102	N/A	N/A	N/A		SW846 8260C	1090929
3331303011	MW10-3D-20231102	N/A	N/A	N/A		SW846 8260C	1090929
3331303012	SW10-5-20231102	N/A	N/A	N/A		SW846 8260C	1090929
3331303013	SW10-8-20231102	N/A	N/A	N/A		SW846 8260C	1090929
3331303014	MW10-11D-20231102	N/A	N/A	N/A		RSK 175	1086212
		N/A	N/A	N/A		SW846 8260C	1090929
		N/A	N/A	N/A		SW846 9060A	1085307
3331303015	MW10-9D-20231102	N/A	N/A	N/A		SW846 8260C	1090929
3331303016	SW10-6-20231102	N/A	N/A	N/A		SW846 8260C	1090929
3331303017	PW10-1-20231102	N/A	N/A	N/A		RSK 175	1086212
		N/A	N/A	N/A		SW846 8260C	1090929
		N/A	N/A	N/A		SW846 9060A	1084558
3331303018	MW10-7-20231102	N/A	N/A	N/A		RSK 175	1086212
		N/A	N/A	N/A		SW846 8260C	1090929
		N/A	N/A	N/A		SW846 9060A	1085297
3331303019	MW10-4E-20231102	N/A	N/A	N/A		SW846 8260C	1090929
3331303020	MW10-4D-20231102	N/A	N/A	N/A		SW846 8260C	1090893
3331303021	MW10-1DA-20231102	N/A	N/A	N/A		RSK 175	1089436
		N/A	N/A	N/A		RSK 175	1086212
		N/A	N/A	N/A		SW846 8260C	1090893
		N/A	N/A	N/A		SW846 9060A	1084558
3331303022	PW10-2-20231102	N/A	N/A	N/A		SW846 8260C	1090893
3331303023	MW10-10D-20231102	N/A	N/A	N/A		RSK 175	1086212
		N/A	N/A	N/A		SW846 8260C	1090893
		N/A	N/A	N/A		SW846 9060A	1084558
3331303024	SW3-3-20231102	N/A	N/A	N/A		SW846 8260C	1090893
3331303025	SW3-15-20231102	N/A	N/A	N/A		SW846 8260C	1090893
3331303026	SW3-2-20231102	N/A	N/A	N/A		SW846 8260C	1090893
3331303027	DUP-02-20231102	N/A	N/A	N/A		SW846 8260C	1090893
3331303028	MW5-6-20231102	N/A	N/A	N/A		SW846 8260C	1090893
3331303029	DUP-03-20231102	N/A	N/A	N/A		RSK 175	1089070
		N/A	N/A	N/A		SW846 9060A	1084558
3331303030	MW5-5D-20231102	N/A	N/A	N/A		RSK 175	1089070
		N/A	N/A	N/A		SW846 8260C	1090893
		N/A	N/A	N/A		SW846 9060A	1084558
3331303031	RW5-2-20231102	N/A	N/A	N/A		RSK 175	1089070
		N/A	N/A	N/A		SW846 8260C	1090893
		N/A	N/A	N/A		SW846 9060A	1084558
3331303032	RW5-4-20231102	N/A	N/A	N/A		SW846 8260C	1090893
3331303033	TB-01-20231102	N/A	N/A	N/A		SW846 8260C	1090893
3331303034	TB-02-20231102	N/A	N/A	N/A		SW846 8260C	1090893

301 Filling Mill Rd, Suite A
Middletown, PA 17057
P: 717-944-5541



CHAIN OF CUSTODY/
REQUEST FOR ANALYSIS
ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT/
SAMPLER. INSTRUCTIONS ON THE BACK.

3338385

Logged By: SLS
PM: SJB



Receiving Lab

WO Temp (°C) 22

1 of 4

Client Name: Arcadis

Address: 110 West Fayette St
Syracuse, NY 13202

Contact: Corey Averill
Phone#: 315-415-4394
Project Name#: NFA85-Niagara Falls Air Base

Bill To:

Purchase Order #: 30036446

TAT: ☒ Normal-Standard TAT is 10-12 business days.
☐ Rush-Subject to ALS approval and surcharges.

ate Required: ☐ Approved?

mail: ☐

Sample Description/Location (as it will appear on the lab report)

Date Collected mm/dd/yyyy

Time hh:mm

SDWA Sample Type (see key)

SDWA Matrix (See bottom of COC)

Enter Number of Containers Per Sample or Field Results Below.

Orthophosphate Filtered? Yes No

Hexavalent Chromium Filtered? Yes No

ANALYSIS / METHOD REQUESTED

Container Type CG AG GG

Container Size 40mL 40mL 40mL

Preservative HCl HCl HCl

Receipt Info completed by:

COOL Custody Seal Intact

Sample Custody Seal Intact

Received on Ice

Coolers & Samples Intact

Correct Containers Provided

Sample Label/COC Agree

Adequate Sample Volumes

VOA only: Trip Blank

NJ ≤ 4 days? Y N

Courier/Tracking #

Sample(s) for Radiation testing? Y N

Reportable SDWA Sample(s)? Y N

SDWA State of Origin?

PWSID #

PWS Contact

PWS Phone #

SDWA Sample Type Key: D=Distribution E=Entry Point

R=Raw P=Plant C=Check S=Special A=Annual Startup

Sample/COC Remarks

MS/MSD collected at RWS-1 for VOCs, TOC and RSK.

Contains Short Hold Testing YES NO

Internal Use: If less than 48 hours - notify lab upon receipt

Standard Lvl 1

Standard Lvl 2

Standard Lvl 3

Standard Lvl 4

CLP-like

DOD

NJ RED

NJ Full

HSCA

Landfill

NJ GW

State Samples Collected In

NY

NJ

PA

WV

FL

other

Excel Summary

Equis

Custom

Sample Disposal

Lab

Special

EDDS:

Formal Type

Received By / Company Name

Relinquished By / Company Name

Comments:

Circle Sample Collector: ALS Tech / Client

Time

11/2/23 1800

11/2/23 0915

11/2/23 1100

11/2/23 1115

11/2/23 0750

11/2/23 0800

11/2/23 0805

11/2/23 0835

11/2/23 0840

11/2/23 0900

11/2/23 0930

11/2/23 1100

11/2/23 1115

11/2/23 0750

11/2/23 0800

11/2/23 0805

11/2/23 0835

11/2/23 0840

11/2/23 0900

11/2/23 0930

11/2/23 1100

11/2/23 1115

11/2/23 0750

11/2/23 0800

11/2/23 0805

11/2/23 0835

11/2/23 0840

11/2/23 0900

11/2/23 0930

11/2/23 1100

11/2/23 1115

11/2/23 0750

11/2/23 0800

11/2/23 0805

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11/2/23 1100

11/2/23 1115

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11/2/23 0800

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11/2/23 0840

11/2/23 0900

11/2/23 0930

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11/2/23 1115

11/2/23 0750

11/2/23 0800

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11/2/23 0840

11/2/23 0900

11/2/23 0930

11/2/23 1100

11/2/23 1115

11/2/23 0750

11/2/23 0800

11/2/23 0805

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11/2/23 0840

11/2/23 0900

11/2/23 0930

11/2/23 1100

11/2/23 1115

11/2/23 0750

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11/2/23 0805

11/2/23 0835

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11/2/23 1100

11/2/23 1115

11/2/23 0750

11/2/23 0800

11/2/23 0805

11/2/23 0835

11/2/23 0840

11/2/23 0900

11/2/23 0930

11/2/23 1100

11/2/23 1115

11/2/23 0750

11/2/23 0800

11/2/23 0805

11/2/23 0835

11/2/23 0840

11/2/23 0900

11/2/23 0930

11/2/23 1100

11/2/23 1115

11/2/23 0750

11/2/23 0800

11/2/23 0805

11/2/23 0835

11/2/23 0840

11/2/23 0900

11/2/23 0930

11/2/23 1100

11/2/23 1115

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P. 717-944-5541

CHAIN OF CUSTODY/
REQUEST FOR ANALYSIS
ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT /
SAMPLER. INSTRUCTIONS ON THE BACK.

COC #: 3338385
ALS Quote #: 3331303
2 of 4

Client Name: Arcadia		Container Type: GC AG CG		Temp Taken By: Therm ID: WO Temp (°C)	
Address: 110 West Fayette St Syracuse, NY 13202		Container: 40mL		Receipt Info completed by: Y N NA	
		Preservative: HCL HCL HCL		Cooler Custody Seals Intact: Y N NA	
				Sample Custody Seal Intact: Y N NA	
				Received on Ice: Y N NA	
				Coolers & Samples Intact: Y N NA	
				Correct Containers Provided: Y N NA	
				Sample Label/COC Agree: Y N NA	
				Adequate Sample Volumes: Y N NA	
				VOA only: Trip Blank: Y N NA	
				NJ ≤ 4 days? Y N NA	
				Client contact: Date/Fac:	
				Counter/Tracking #	
				Sample(s) for Radiation testing? Y N	
				Reportable SDWA Sample(s)? Y N	
				SDWA State of Origin? Y N	
				PWSID #	
				PWS Contact: PWS Phone #	
				SDWA Sample Type Key: D=Distribution E=Entry Point R=Raw P=Plant C=Check S=Special A=Annual Startup	
				Sample/COC Remarks	
				Contains Short Hold Testing YES NO	
				Internal Use: If less than 48 hours - notify lab upon receipt	
				Standard Lvl 1 Standard Lvl 2 Standard Lvl 3 Standard Lvl 4	
				CLP-like DOD NJ RED NJ Full	
				HSCA Landfill NJ GW	
				State Samples Collected In NY NJ PA WV FL	
				Excel Summary Equis Custom	
				Sample Disposal Lab Special	
				EDDS: Formal Type	
				Other	
				Data Deliverables	
				Received By / Company Name	
				2	
				4	
				6	
				8	
				10	
				Comments:	
				Circle Sample Collector: ALS Tech / Client ID:	
				Time Relinquished By / Company Name	
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				11/2/23 1800 3 11/2/23 1800 3	
				11/2/23 1800 5 11/2/23 1800 5	
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301 Filling Mill Rd, Suite A
Middletown, PA 17057
P: 717-944-5541

CHAIN OF CUSTODY/
REQUEST FOR ANALYSIS
ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT /
SAMPLER. INSTRUCTIONS ON THE BACK.

COC #: 3338385
ALS Quote #:

Client Name: Arcadis	Container Type: CG AG CG	Temp Taken By: Therm ID: WO Temp (°C):	Receipt Information (completed by Receiving Lab):
Address: 110 West Fayette St Syracuse, NY 13202	Container Size: 40mL 40mL 40mL	Receipt Info completed by: WV Containers 0-6°C Y N NA	Deviations? NO YES If YES, list below
Contact: Corey Averill	Preservative: HCL HCL HCL	Cooler Custody Seal Intact: Y N NA	Sample Custody Seal Intact: Y N NA
Phone#: 315-415-4394	Orthophosphate Filtered? Yes No	Received on Ice: Y N NA	Coolers & Samples Intact: Y N
Project Name#: NEARS- Niagara Falls Air Base	Hexavalent Chromium Filtered? Yes No	Coolers & Containers Provided: Y N	Correct Containers Provided: Y N
Bill To:	ANALYSIS / METHOD REQUESTED	Sample Label/COC Agree: Y N	Sample Label/COC Agree: Y N
Purchase Order #: 30036646	Enter Number of Containers Per Sample or Field Results Below.	Adequate Sample Volumes: Y N	Adequate Sample Volumes: Y N
TAT: ☒ Normal-Standard TAT is 10-12 business days. ☐ Rush-Subject to ALS approval and surcharges.	SDWA Sample Type (see key):	VOA only: Trip Blank: Y N	VOA only: Trip Blank: Y N
Date Required: Approved?	**Matrix (See bottom of COC)	NJ ≤ 4 days? Y N	NJ ≤ 4 days? Y N
Email: ☐	SDWA State of Origin?	Courier/Tracking #	Courier/Tracking #
Sample Description/Location (as it will appear on the lab report)	Date Collected (mm/dd/yyyy)	Time (hh:mm)	Client contact: (Date/Time)
1 MW10-1DA-20231102	11/2/23	1325	Rad Screen (uCi):
2 PW10-2-20231102	11/2/23	1340	New Source? Y N
3 MW10-10D-20231102	11/2/23	1355	New Source Contact:
4 SW3-3-20231102	11/2/23	1415	PWS Contact: PWS Phone #:
5 SW3-15-20231102	11/2/23	1425	SDWA Sample Type Key: D=Distribution E=Entry Point R=Raw P=Plant C=Check S=Special A=Annual Startup
6 SW3-2-20231102	11/2/23	1430	Sample/COC Remarks
7 DUP-02-20231102	11/2/23	1540	m3/msd Collected at SW3-2 For VOCs
8 MW5-6-20231102	11/2/23	1540	Contains Short Hold Testing YES NO
9 DUP-03-20231102	11/2/23	1545	Internal Use: If less than 48 hours - notify lab upon receipt
10 MW5-5D-20231102	11/2/23	1545	
Circle Sample Collector: ALS Tech / Client ID:	Relinquished By / Company Name	Date Deliverables	State Samples Collected In
Name: Time	Received By / Company Name	EDDs	NY ☒ NJ ☐ PA ☐ WV ☐ FL ☐ other
11/2/23 1800	11/2/23 1800	2	HSCA ☐ CLP-like ☐ DOD ☐ NJ RED ☐ NJ GW ☐ NJ Full ☐
11-3-23 0915	11-3-23 0915	4	Sample Disposal Lab ☒ Special ☐
		6	Excel Summary
		8	Equis
		10	Custom
			Fertilizer Type



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NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: PJLA 74618
State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

Analytical Results Report For

ARCADIS US Inc - Clifton Park, NY

Project AUC041|NFARS 30036646

Workorder 3297717

Report ID 245476 on 5/19/2023

Certificate of Analysis

Enclosed are the analytical results for samples received by the laboratory on Apr 12, 2023.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Susan Scherer (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

This laboratory report may not be reproduced, except in full, without the written approval of ALS Global.
ALS Middletown: 301 Fulling Mill Road, Middletown, PA 17057 : 717-944-5541.

Recipient(s):

Andy Vitolins - Arcadis
Erika Denkenberger - Arcadis
Katherine Clubine - Arcadis
Corey Averill - Arcadis

Susan Scherer

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.

Susan Scherer
Project Coordinator

(ALS Digital Signature)

Sample Summary

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collector	Collection Company
3297717001	MW5-5D-20230411	Ground Water	04/11/2023 08:40	04/12/2023 08:48	CBC	Collected By Client
3297717002	DUP-01-20230411	Ground Water	04/11/2023 00:00	04/12/2023 08:48	CBC	Collected By Client
3297717003	RW5-2-20230411	Ground Water	04/11/2023 09:20	04/12/2023 08:48	CBC	Collected By Client
3297717004	RW5-1-20230411	Ground Water	04/11/2023 10:00	04/12/2023 08:48	CBC	Collected By Client
3297717005	MW5-1DA-20230411	Ground Water	04/11/2023 11:00	04/12/2023 08:48	CBC	Collected By Client
3297717006	MW10-1DA-20230411	Ground Water	04/11/2023 12:40	04/12/2023 08:48	CBC	Collected By Client
3297717007	MW10-7-20230411	Ground Water	04/11/2023 13:15	04/12/2023 08:48	CBC	Collected By Client
3297717008	PW10-1-20230411	Ground Water	04/11/2023 13:40	04/12/2023 08:48	CBC	Collected By Client
3297717009	MW10-11D-20230411	Ground Water	04/11/2023 14:05	04/12/2023 08:48	CBC	Collected By Client
3297717010	MW10-10D-20230411	Ground Water	04/11/2023 14:25	04/12/2023 08:48	CBC	Collected By Client
3297717011	Trip Blank	Ground Water	02/24/2023 13:15	04/12/2023 08:48	CBC	Collected By Client



Reference

Notes

- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
- Except as qualified, Clean Water Act sample analyses are consistent with methodology requirements in 40 CFR Part 136.
- Except as qualified, Safe Drinking Water Act sample analyses are consistent with methodology requirements in 40 CFR Part 141.
- The Chain of Custody document is included as part of this report.
- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
- Method references listed on this report beginning with the prefix "S" followed by a method number (such as S2310B-97) refer to methods from "Standard Methods for the Examination of Water and Wastewater".
- For microbiological analyses, the "Prepared" value is the date/time into the incubator and the "Analyzed" value is the date/time out the incubator.
- An Analysis-Prep Method Cross Reference Table is included after Analytical Results & Qualifiers section in this report.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND) above the MDL
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Practical Quantitation Limit for this Project
ND	Not Detected - indicates that the analyte was Not Detected
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits
#	Please reference the result in the Results Section for analyte-level flags.



Project Notations

Sample Notations

Lab ID Sample ID

Result Notations

Notation Ref.	
1	Bromomethane was recovered below the 50 percent 8260DOD criteria in the ending calibration verification associated with this sample.
2	Chloromethane was recovered above the 20 percent 8260DOD criteria in the initial calibration verification associated with this sample.
3	Dichlorodifluoromethane was recovered above the 20 percent 8260DOD criteria in the initial calibration verification associated with this sample.
4	The QC sample type LCS for method SW846 8260C was outside the control limits for the analyte Dichlorodifluoromethane. The % Recovery was reported as 154 and the control limits were 32 to 152.
5	Iodomethane was recovered below the 20 percent 8260DOD criteria in the initial calibration verification associated with this sample.
6	1,2,3-Trichlorobenzene was recovered below the 20 percent 8260DOD criteria in the initial calibration verification associated with this sample.
7	The QC sample type DUP for method RSK 175 was outside the control limits for the analyte Methane. The RPD was reported as 52.5 and the upper control limit is 20.
8	The QC sample type MS for method SW846 8260C was outside the control limits for the analyte Dichlorodifluoromethane. The % Recovery was reported as 175 and the control limits were 32 to 152.
9	The QC sample type MSD for method SW846 8260C was outside the control limits for the analyte Dichlorodifluoromethane. The % Recovery was reported as 166 and the control limits were 32 to 152.
10	The QC sample type MSD for method SW846 8260C was outside the control limits for the analyte 1,2,3-Trichlorobenzene. The RPD was reported as 22.7 and the upper control limit is 20.
11	The Method Blank for method SW846 8260C reported a value greater than the reporting level for the analyte Bromomethane. The concentration was .760745
12	Bromomethane was recovered below the 20 percent 8260DOD criteria in the initial calibration verification associated with this sample.
13	The Method Blank for method SW846 8260C reported a value greater than the reporting level for the analyte 1,2,3-Trichlorobenzene. The concentration was 4.02535



Detected Results Summary

Client Sample ID	MW5-5D-20230411	Collected	04/11/2023 08:40				
Lab Sample ID	3297717001	Lab Receipt	04/12/2023 08:48				
Compound	Result	Units	LOQ	LOD	DL	Method	Flag
LIGHT HYDROCARBON GASES							
Ethane	5.1J	ug/L	5.2	2.6	0.56	RSK 175	#
Methane	463	ug/L	2.6	1.6	0.53	RSK 175	#
VOLATILE ORGANICS							
Acetone	6.8	ug/L	5.0	3.8	1.6	SW846 8260C	#
cis-1,2-Dichloroethene	3.8	ug/L	1.0	0.75	0.33	SW846 8260C	#
trans-1,2-Dichloroethene	0.34J	ug/L	1.0	0.75	0.33	SW846 8260C	#
Trichloroethene	1.4	ug/L	1.0	0.75	0.33	SW846 8260C	#
Vinyl Chloride	3.1	ug/L	1.0	0.75	0.33	SW846 8260C	#
WET CHEMISTRY							
Total Organic Carbon (TOC)	6.6	mg/L	5.0	2.5	1.4	SW846 9060A	#



Detected Results Summary

Client Sample ID	DUP-01-20230411	Collected	04/11/2023 00:00				
Lab Sample ID	3297717002	Lab Receipt	04/12/2023 08:48				
Compound	Result	Units	LOQ	LOD	DL	Method	Flag
LIGHT HYDROCARBON GASES							
Ethane	7.6	ug/L	5.2	2.6	0.56	RSK 175	#
Ethene	3.5J	ug/L	7.1	3.6	0.81	RSK 175	#
Methane	678	ug/L	2.6	1.6	0.53	RSK 175	#
VOLATILE ORGANICS							
Acetone	5.2	ug/L	5.0	3.8	1.6	SW846 8260C	#
cis-1,2-Dichloroethene	4.7	ug/L	1.0	0.75	0.33	SW846 8260C	#
trans-1,2-Dichloroethene	0.47J	ug/L	1.0	0.75	0.33	SW846 8260C	#
Trichloroethene	1.6	ug/L	1.0	0.75	0.33	SW846 8260C	#
Vinyl Chloride	4.3	ug/L	1.0	0.75	0.33	SW846 8260C	#
WET CHEMISTRY							
Total Organic Carbon (TOC)	5.1	mg/L	5.0	2.5	1.4	SW846 9060A	#



Detected Results Summary

Client Sample ID	RW5-2-20230411	Collected	04/11/2023 09:20				
Lab Sample ID	3297717003	Lab Receipt	04/12/2023 08:48				
Compound	Result	Units	LOQ	LOD	DL	Method	Flag
LIGHT HYDROCARBON GASES							
Ethane	7.4	ug/L	5.2	2.6	0.56	RSK 175	#
Methane	5420	ug/L	2.6	1.6	0.53	RSK 175	#
VOLATILE ORGANICS							
Acetone	7.3	ug/L	5.0	3.8	1.6	SW846 8260C	#
cis-1,2-Dichloroethene	2.4	ug/L	1.0	0.75	0.33	SW846 8260C	#
Vinyl Chloride	3.0	ug/L	1.0	0.75	0.33	SW846 8260C	#
WET CHEMISTRY							
Total Organic Carbon (TOC)	31.9	mg/L	5.0	2.5	1.4	SW846 9060A	#



Detected Results Summary

Client Sample ID	RW5-1-20230411	Collected	04/11/2023 10:00
Lab Sample ID	3297717004	Lab Receipt	04/12/2023 08:48

Compound	Result	Units	LOQ	LOD	DL	Method	Flag
LIGHT HYDROCARBON GASES							
Ethane	5.3	ug/L	5.2	2.6	0.56	RSK 175	#
Methane	8330	ug/L	2.6	1.6	0.53	RSK 175	#
VOLATILE ORGANICS							
Chloroethane	5.8	ug/L	1.0	0.75	0.33	SW846 8260C	#
cis-1,2-Dichloroethene	2.6	ug/L	1.0	0.75	0.33	SW846 8260C	#
Methylene Chloride	0.52J	ug/L	1.0	0.75	0.33	SW846 8260C	#
Toluene	5.6	ug/L	1.0	0.75	0.33	SW846 8260C	#
trans-1,2-Dichloroethene	0.56J	ug/L	1.0	0.75	0.33	SW846 8260C	#
Trichloroethene	0.82J	ug/L	1.0	0.75	0.33	SW846 8260C	#
Vinyl Chloride	3.9	ug/L	1.0	0.75	0.33	SW846 8260C	#
WET CHEMISTRY							
Total Organic Carbon (TOC)	217	mg/L	25.0	12.5	6.8	SW846 9060A	#



Detected Results Summary

Client Sample ID	MW5-1DA-20230411	Collected	04/11/2023 11:00
Lab Sample ID	3297717005	Lab Receipt	04/12/2023 08:48

Compound	Result	Units	LOQ	LOD	DL	Method	Flag
WET CHEMISTRY							
Total Organic Carbon (TOC)	5.7	mg/L	1.0	0.50	0.27	SW846 9060A	#



Detected Results Summary

Client Sample ID	MW10-1DA-20230411	Collected	04/11/2023 12:40				
Lab Sample ID	3297717006	Lab Receipt	04/12/2023 08:48				
Compound	Result	Units	LOQ	LOD	DL	Method	Flag
LIGHT HYDROCARBON GASES							
Ethane	48.5	ug/L	5.2	2.6	0.56	RSK 175	#
Methane	7770	ug/L	2.6	1.6	0.53	RSK 175	#
VOLATILE ORGANICS							
Benzene	2.7	ug/L	1.0	0.75	0.33	SW846 8260C	#
cis-1,2-Dichloroethene	0.48J	ug/L	1.0	0.75	0.33	SW846 8260C	#
Vinyl Chloride	1.7	ug/L	1.0	0.75	0.33	SW846 8260C	#
WET CHEMISTRY							
Total Organic Carbon (TOC)	9.5	mg/L	5.0	2.5	1.4	SW846 9060A	#



Detected Results Summary

Client Sample ID	MW10-7-20230411	Collected	04/11/2023 13:15				
Lab Sample ID	3297717007	Lab Receipt	04/12/2023 08:48				
Compound	Result	Units	LOQ	LOD	DL	Method	Flag
LIGHT HYDROCARBON GASES							
Methane	454	ug/L	2.6	1.6	0.53	RSK 175	#
VOLATILE ORGANICS							
Bromomethane	0.66J	ug/L	1.0	0.75	0.33	SW846 8260C	#
cis-1,2-Dichloroethene	30.7	ug/L	1.0	0.75	0.33	SW846 8260C	#
Methylene Chloride	1.8	ug/L	1.0	0.75	0.33	SW846 8260C	#
trans-1,2-Dichloroethene	0.52J	ug/L	1.0	0.75	0.33	SW846 8260C	#
Trichloroethene	3.5	ug/L	1.0	0.75	0.33	SW846 8260C	#
Vinyl Chloride	3.9	ug/L	1.0	0.75	0.33	SW846 8260C	#
WET CHEMISTRY							
Total Organic Carbon (TOC)	303	mg/L	100	50.0	27.0	SW846 9060A	#



Detected Results Summary

Client Sample ID	PW10-1-20230411	Collected	04/11/2023 13:40
Lab Sample ID	3297717008	Lab Receipt	04/12/2023 08:48

Compound	Result	Units	LOQ	LOD	DL	Method	Flag
LIGHT HYDROCARBON GASES							
Methane	5.5	ug/L	2.6	1.6	0.53	RSK 175	#
VOLATILE ORGANICS							
Acetone	3.2J	ug/L	5.0	3.8	1.6	SW846 8260C	#
Bromomethane	0.71J	ug/L	1.0	0.75	0.33	SW846 8260C	#
cis-1,2-Dichloroethene	1.5	ug/L	1.0	0.75	0.33	SW846 8260C	#
Vinyl Chloride	0.38J	ug/L	1.0	0.75	0.33	SW846 8260C	#
WET CHEMISTRY							
Total Organic Carbon (TOC)	6.3	mg/L	2.0	1.0	0.54	SW846 9060A	#



Detected Results Summary

Client Sample ID	MW10-11D-20230411	Collected	04/11/2023 14:05				
Lab Sample ID	3297717009	Lab Receipt	04/12/2023 08:48				
Compound	Result	Units	LOQ	LOD	DL	Method	Flag
VOLATILE ORGANICS							
Acetone	3.2J	ug/L	5.0	3.8	1.6	SW846 8260C	#
Bromomethane	0.70J	ug/L	1.0	0.75	0.33	SW846 8260C	#
WET CHEMISTRY							
Total Organic Carbon (TOC)	11.7	mg/L	2.0	1.0	0.54	SW846 9060A	#



Detected Results Summary

Client Sample ID	MW10-10D-20230411	Collected	04/11/2023 14:25				
Lab Sample ID	3297717010	Lab Receipt	04/12/2023 08:48				
Compound	Result	Units	LOQ	LOD	DL	Method	Flag
LIGHT HYDROCARBON GASES							
Ethane	11.8	ug/L	5.2	2.6	0.56	RSK 175	#
Ethene	9.2	ug/L	7.1	3.6	0.81	RSK 175	#
Methane	10000	ug/L	13.0	8.0	2.7	RSK 175	#
VOLATILE ORGANICS							
Bromomethane	68.1J	ug/L	100	75.0	33.0	SW846 8260C	#
cis-1,2-Dichloroethene	171	ug/L	100	75.0	33.0	SW846 8260C	#
Methyl acetate	217	ug/L	100	75.0	33.0	SW846 8260C	#
Methyl cyclohexane	90.6J	ug/L	100	75.0	33.0	SW846 8260C	#
WET CHEMISTRY							
Total Organic Carbon (TOC)	8140	mg/L	1000	500	270	SW846 9060A	#



Results

Client Sample ID	MW5-5D-20230411	Collected	04/11/2023 08:40
Lab Sample ID	3297717001	Lab Receipt	04/12/2023 08:48

LIGHT HYDROCARBON GASES

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Ethane	5.1J	J	ug/L	5.2	2.6	0.56	RSK 175	1	04/18/2023 13:21	JTH	A
Ethene	3.6U	U	ug/L	7.1	3.6	0.81	RSK 175	1	04/18/2023 13:21	JTH	A
Methane	463		ug/L	2.6	1.6	0.53	RSK 175	1	04/18/2023 13:21	JTH	A

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:34	TMP	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:34	TMP	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:34	TMP	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:34	TMP	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:34	TMP	A
1,2,3-Trichlorobenzene	0.75U	U,6	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:34	TMP	A
1,2,4-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:34	TMP	A
1,2-Dibromo-3-chloropropane	2.5U	U	ug/L	5.0	2.5	1.6	SW846 8260C	1	04/24/2023 15:34	TMP	A
1,2-Dibromoethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:34	TMP	A
1,2-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:34	TMP	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:34	TMP	A
1,2-Dichloropropane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:34	TMP	A
1,3-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:34	TMP	A
1,3-Dichloropropene, Total	1.5U	U	ug/L	2.0	1.5	0.66	SW846 8260C	1	04/24/2023 15:34	TMP	A
1,4-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:34	TMP	A
2-Butanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	04/24/2023 15:34	TMP	A
2-Hexanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	04/24/2023 15:34	TMP	A
4-Methyl-2-Pentanone(MIBK)	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	04/24/2023 15:34	TMP	A
Acetone	6.8		ug/L	5.0	3.8	1.6	SW846 8260C	1	04/24/2023 15:34	TMP	A
Benzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:34	TMP	A
Bromochloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:34	TMP	A
Bromodichloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:34	TMP	A
Bromoform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:34	TMP	A
Bromomethane	0.75U	U,1	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:34	TMP	A
Carbon Disulfide	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:34	TMP	A
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:34	TMP	A
Chlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:34	TMP	A
Chlorodibromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:34	TMP	A
Chloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:34	TMP	A
Chloroform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:34	TMP	A
Chloromethane	0.75U	U,2	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:34	TMP	A
cis-1,2-Dichloroethene	3.8		ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:34	TMP	A
Cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:34	TMP	A
Dichlorodifluoromethane	0.75U	U,3,4	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:34	TMP	A
Ethylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:34	TMP	A
Freon 113	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:34	TMP	A
Iodomethane	0.75U	U,5	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:34	TMP	A
Isopropylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:34	TMP	A
Methyl acetate	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:34	TMP	A
Methyl cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:34	TMP	A



Results

Client Sample ID	MW5-5D-20230411	Collected	04/11/2023 08:40
Lab Sample ID	3297717001	Lab Receipt	04/12/2023 08:48

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Methyl t-Butyl Ether	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:34	TMP	A
Methylene Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:34	TMP	A
Styrene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:34	TMP	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:34	TMP	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:34	TMP	A
Total Xylenes	2.3U	U	ug/L	3.0	2.3	1.0	SW846 8260C	1	04/24/2023 15:34	TMP	A
trans-1,2-Dichloroethene	0.34J	J	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:34	TMP	A
Trichloroethene	1.4		ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:34	TMP	A
Trichlorofluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:34	TMP	A
Vinyl Chloride	3.1		ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:34	TMP	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	106%	81 – 118	04/24/2023 15:34	
4-Bromofluorobenzene	460-00-4	107%	85 – 114	04/24/2023 15:34	
Dibromofluoromethane	1868-53-7	101%	80 – 119	04/24/2023 15:34	
Toluene-d8	2037-26-5	102%	89 – 112	04/24/2023 15:34	

WET CHEMISTRY

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Total Organic Carbon (TOC)	6.6		mg/L	5.0	2.5	1.4	SW846 9060A	5	04/18/2023 02:35	PAG	G



Results

Client Sample ID	DUP-01-20230411	Collected	04/11/2023 00:00
Lab Sample ID	3297717002	Lab Receipt	04/12/2023 08:48

LIGHT HYDROCARBON GASES

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Ethane	7.6		ug/L	5.2	2.6	0.56	RSK 175	1	04/18/2023 13:34	JTH	A
Ethene	3.5J	J	ug/L	7.1	3.6	0.81	RSK 175	1	04/18/2023 13:34	JTH	A
Methane	678	7	ug/L	2.6	1.6	0.53	RSK 175	1	04/18/2023 13:34	JTH	A

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:57	TMP	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:57	TMP	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:57	TMP	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:57	TMP	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:57	TMP	A
1,2,3-Trichlorobenzene	0.75U	U,6	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:57	TMP	A
1,2,4-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:57	TMP	A
1,2-Dibromo-3-chloropropane	2.5U	U	ug/L	5.0	2.5	1.6	SW846 8260C	1	04/24/2023 15:57	TMP	A
1,2-Dibromoethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:57	TMP	A
1,2-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:57	TMP	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:57	TMP	A
1,2-Dichloropropane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:57	TMP	A
1,3-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:57	TMP	A
1,3-Dichloropropene, Total	1.5U	U	ug/L	2.0	1.5	0.66	SW846 8260C	1	04/24/2023 15:57	TMP	A
1,4-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:57	TMP	A
2-Butanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	04/24/2023 15:57	TMP	A
2-Hexanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	04/24/2023 15:57	TMP	A
4-Methyl-2-Pentanone(MIBK)	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	04/24/2023 15:57	TMP	A
Acetone	5.2		ug/L	5.0	3.8	1.6	SW846 8260C	1	04/24/2023 15:57	TMP	A
Benzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:57	TMP	A
Bromochloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:57	TMP	A
Bromodichloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:57	TMP	A
Bromoform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:57	TMP	A
Bromomethane	0.75U	U,1	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:57	TMP	A
Carbon Disulfide	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:57	TMP	A
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:57	TMP	A
Chlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:57	TMP	A
Chlorodibromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:57	TMP	A
Chloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:57	TMP	A
Chloroform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:57	TMP	A
Chloromethane	0.75U	U,2	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:57	TMP	A
cis-1,2-Dichloroethene	4.7		ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:57	TMP	A
Cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:57	TMP	A
Dichlorodifluoromethane	0.75U	U,3,4	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:57	TMP	A
Ethylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:57	TMP	A
Freon 113	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:57	TMP	A
Iodomethane	0.75U	U,5	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:57	TMP	A
Isopropylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:57	TMP	A
Methyl acetate	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:57	TMP	A
Methyl cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:57	TMP	A



Results

Client Sample ID	DUP-01-20230411	Collected	04/11/2023 00:00
Lab Sample ID	3297717002	Lab Receipt	04/12/2023 08:48

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Methyl t-Butyl Ether	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:57	TMP	A
Methylene Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:57	TMP	A
Styrene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:57	TMP	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:57	TMP	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:57	TMP	A
Total Xylenes	2.3U	U	ug/L	3.0	2.3	1.0	SW846 8260C	1	04/24/2023 15:57	TMP	A
trans-1,2-Dichloroethene	0.47J	J	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:57	TMP	A
Trichloroethene	1.6		ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:57	TMP	A
Trichlorofluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:57	TMP	A
Vinyl Chloride	4.3		ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 15:57	TMP	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	104%	81 – 118	04/24/2023 15:57	
4-Bromofluorobenzene	460-00-4	106%	85 – 114	04/24/2023 15:57	
Dibromofluoromethane	1868-53-7	101%	80 – 119	04/24/2023 15:57	
Toluene-d8	2037-26-5	102%	89 – 112	04/24/2023 15:57	

WET CHEMISTRY

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Total Organic Carbon (TOC)	5.1		mg/L	5.0	2.5	1.4	SW846 9060A	5	04/18/2023 02:35	PAG	G



Results

Client Sample ID	RW5-2-20230411	Collected	04/11/2023 09:20
Lab Sample ID	3297717003	Lab Receipt	04/12/2023 08:48

LIGHT HYDROCARBON GASES

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Ethane	7.4		ug/L	5.2	2.6	0.56	RSK 175	1	04/20/2023 09:40	JTH	A
Ethene	3.6U	U	ug/L	7.1	3.6	0.81	RSK 175	1	04/20/2023 09:40	JTH	A
Methane	5420		ug/L	2.6	1.6	0.53	RSK 175	1	04/20/2023 09:40	JTH	A

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:20	TMP	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:20	TMP	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:20	TMP	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:20	TMP	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:20	TMP	A
1,2,3-Trichlorobenzene	0.75U	U,6	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:20	TMP	A
1,2,4-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:20	TMP	A
1,2-Dibromo-3-chloropropane	2.5U	U	ug/L	5.0	2.5	1.6	SW846 8260C	1	04/24/2023 16:20	TMP	A
1,2-Dibromoethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:20	TMP	A
1,2-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:20	TMP	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:20	TMP	A
1,2-Dichloropropane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:20	TMP	A
1,3-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:20	TMP	A
1,3-Dichloropropene, Total	1.5U	U	ug/L	2.0	1.5	0.66	SW846 8260C	1	04/24/2023 16:20	TMP	A
1,4-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:20	TMP	A
2-Butanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	04/24/2023 16:20	TMP	A
2-Hexanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	04/24/2023 16:20	TMP	A
4-Methyl-2-Pentanone(MIBK)	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	04/24/2023 16:20	TMP	A
Acetone	7.3		ug/L	5.0	3.8	1.6	SW846 8260C	1	04/24/2023 16:20	TMP	A
Benzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:20	TMP	A
Bromochloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:20	TMP	A
Bromodichloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:20	TMP	A
Bromoform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:20	TMP	A
Bromomethane	0.75U	U,1	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:20	TMP	A
Carbon Disulfide	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:20	TMP	A
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:20	TMP	A
Chlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:20	TMP	A
Chlorodibromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:20	TMP	A
Chloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:20	TMP	A
Chloroform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:20	TMP	A
Chloromethane	0.75U	U,2	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:20	TMP	A
cis-1,2-Dichloroethene	2.4		ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:20	TMP	A
Cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:20	TMP	A
Dichlorodifluoromethane	0.75U	U,3,4	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:20	TMP	A
Ethylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:20	TMP	A
Freon 113	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:20	TMP	A
Iodomethane	0.75U	U,5	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:20	TMP	A
Isopropylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:20	TMP	A
Methyl acetate	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:20	TMP	A
Methyl cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:20	TMP	A

Results

Client Sample ID	RW5-2-20230411	Collected	04/11/2023 09:20
Lab Sample ID	3297717003	Lab Receipt	04/12/2023 08:48

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Methyl t-Butyl Ether	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:20	TMP	A
Methylene Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:20	TMP	A
Styrene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:20	TMP	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:20	TMP	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:20	TMP	A
Total Xylenes	2.3U	U	ug/L	3.0	2.3	1.0	SW846 8260C	1	04/24/2023 16:20	TMP	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:20	TMP	A
Trichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:20	TMP	A
Trichlorofluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:20	TMP	A
Vinyl Chloride	3.0		ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:20	TMP	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	106%	81 – 118	04/24/2023 16:20	
4-Bromofluorobenzene	460-00-4	110%	85 – 114	04/24/2023 16:20	
Dibromofluoromethane	1868-53-7	103%	80 – 119	04/24/2023 16:20	
Toluene-d8	2037-26-5	99.1%	89 – 112	04/24/2023 16:20	

WET CHEMISTRY

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Total Organic Carbon (TOC)	31.9		mg/L	5.0	2.5	1.4	SW846 9060A	5	04/18/2023 02:35	PAG	G



Results

Client Sample ID	RW5-1-20230411	Collected	04/11/2023 10:00
Lab Sample ID	3297717004	Lab Receipt	04/12/2023 08:48

LIGHT HYDROCARBON GASES

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Ethane	5.3		ug/L	5.2	2.6	0.56	RSK 175	1	04/20/2023 12:18	JTH	A
Ethene	3.6U	U	ug/L	7.1	3.6	0.81	RSK 175	1	04/20/2023 12:18	JTH	A
Methane	8330		ug/L	2.6	1.6	0.53	RSK 175	1	04/20/2023 12:18	JTH	A

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:43	TMP	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:43	TMP	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:43	TMP	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:43	TMP	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:43	TMP	A
1,2,3-Trichlorobenzene	0.75U	U,6,10	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:43	TMP	A
1,2,4-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:43	TMP	A
1,2-Dibromo-3-chloropropane	2.5U	U	ug/L	5.0	2.5	1.6	SW846 8260C	1	04/24/2023 16:43	TMP	A
1,2-Dibromoethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:43	TMP	A
1,2-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:43	TMP	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:43	TMP	A
1,2-Dichloropropane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:43	TMP	A
1,3-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:43	TMP	A
1,3-Dichloropropene, Total	1.5U	U	ug/L	2.0	1.5	0.66	SW846 8260C	1	04/24/2023 16:43	TMP	A
1,4-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:43	TMP	A
2-Butanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	04/24/2023 16:43	TMP	A
2-Hexanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	04/24/2023 16:43	TMP	A
4-Methyl-2-Pentanone(MIBK)	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	04/24/2023 16:43	TMP	A
Acetone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	04/24/2023 16:43	TMP	A
Benzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:43	TMP	A
Bromochloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:43	TMP	A
Bromodichloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:43	TMP	A
Bromoform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:43	TMP	A
Bromomethane	0.75U	U,1	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:43	TMP	A
Carbon Disulfide	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:43	TMP	A
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:43	TMP	A
Chlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:43	TMP	A
Chlorodibromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:43	TMP	A
Chloroethane	5.8		ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:43	TMP	A
Chloroform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:43	TMP	A
Chloromethane	0.75U	U,2	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:43	TMP	A
cis-1,2-Dichloroethene	2.6		ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:43	TMP	A
Cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:43	TMP	A
Dichlorodifluoromethane	0.75U	U,3,4,8,9	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:43	TMP	A
Ethylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:43	TMP	A
Freon 113	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:43	TMP	A
Iodomethane	0.75U	U,5	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:43	TMP	A
Isopropylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:43	TMP	A
Methyl acetate	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:43	TMP	A

Results

Client Sample ID	RW5-1-20230411	Collected	04/11/2023 10:00
Lab Sample ID	3297717004	Lab Receipt	04/12/2023 08:48

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Methyl cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:43	TMP	A
Methyl t-Butyl Ether	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:43	TMP	A
Methylene Chloride	0.52J	J	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:43	TMP	A
Styrene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:43	TMP	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:43	TMP	A
Toluene	5.6		ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:43	TMP	A
Total Xylenes	2.3U	U	ug/L	3.0	2.3	1.0	SW846 8260C	1	04/24/2023 16:43	TMP	A
trans-1,2-Dichloroethene	0.56J	J	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:43	TMP	A
Trichloroethene	0.82J	J	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:43	TMP	A
Trichlorofluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:43	TMP	A
Vinyl Chloride	3.9		ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 16:43	TMP	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	107%	81 – 118	04/24/2023 16:43	
4-Bromofluorobenzene	460-00-4	105%	85 – 114	04/24/2023 16:43	
Dibromofluoromethane	1868-53-7	104%	80 – 119	04/24/2023 16:43	
Toluene-d8	2037-26-5	98.1%	89 – 112	04/24/2023 16:43	

WET CHEMISTRY

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Total Organic Carbon (TOC)	217		mg/L	25.0	12.5	6.8	SW846 9060A	25	04/18/2023 02:35	PAG	Q



Results

Client Sample ID	MW5-1DA-20230411	Collected	04/11/2023 11:00
Lab Sample ID	3297717005	Lab Receipt	04/12/2023 08:48

LIGHT HYDROCARBON GASES

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Ethane	2.6U	U	ug/L	5.2	2.6	0.56	RSK 175	1	04/20/2023 09:53	JTH	E
Ethene	3.6U	U	ug/L	7.1	3.6	0.81	RSK 175	1	04/20/2023 09:53	JTH	E
Methane	1.6U	U	ug/L	2.6	1.6	0.53	RSK 175	1	04/20/2023 09:53	JTH	E

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:05	TMP	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:05	TMP	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:05	TMP	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:05	TMP	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:05	TMP	A
1,2,3-Trichlorobenzene	0.75U	U,6	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:05	TMP	A
1,2,4-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:05	TMP	A
1,2-Dibromo-3-chloropropane	2.5U	U	ug/L	5.0	2.5	1.6	SW846 8260C	1	04/24/2023 17:05	TMP	A
1,2-Dibromoethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:05	TMP	A
1,2-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:05	TMP	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:05	TMP	A
1,2-Dichloropropane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:05	TMP	A
1,3-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:05	TMP	A
1,3-Dichloropropene, Total	1.5U	U	ug/L	2.0	1.5	0.66	SW846 8260C	1	04/24/2023 17:05	TMP	A
1,4-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:05	TMP	A
2-Butanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	04/24/2023 17:05	TMP	A
2-Hexanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	04/24/2023 17:05	TMP	A
4-Methyl-2-Pentanone(MIBK)	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	04/24/2023 17:05	TMP	A
Acetone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	04/24/2023 17:05	TMP	A
Benzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:05	TMP	A
Bromochloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:05	TMP	A
Bromodichloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:05	TMP	A
Bromoform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:05	TMP	A
Bromomethane	0.75U	U,1	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:05	TMP	A
Carbon Disulfide	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:05	TMP	A
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:05	TMP	A
Chlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:05	TMP	A
Chlorodibromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:05	TMP	A
Chloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:05	TMP	A
Chloroform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:05	TMP	A
Chloromethane	0.75U	U,2	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:05	TMP	A
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:05	TMP	A
Cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:05	TMP	A
Dichlorodifluoromethane	0.75U	U,3,4	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:05	TMP	A
Ethylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:05	TMP	A
Freon 113	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:05	TMP	A
Iodomethane	0.75U	U,5	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:05	TMP	A
Isopropylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:05	TMP	A
Methyl acetate	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:05	TMP	A
Methyl cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:05	TMP	A



Results

Client Sample ID	MW5-1DA-20230411	Collected	04/11/2023 11:00
Lab Sample ID	3297717005	Lab Receipt	04/12/2023 08:48

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Methyl t-Butyl Ether	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:05	TMP	A
Methylene Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:05	TMP	A
Styrene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:05	TMP	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:05	TMP	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:05	TMP	A
Total Xylenes	2.3U	U	ug/L	3.0	2.3	1.0	SW846 8260C	1	04/24/2023 17:05	TMP	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:05	TMP	A
Trichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:05	TMP	A
Trichlorofluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:05	TMP	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:05	TMP	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	105%	81 – 118	04/24/2023 17:05	
4-Bromofluorobenzene	460-00-4	106%	85 – 114	04/24/2023 17:05	
Dibromofluoromethane	1868-53-7	102%	80 – 119	04/24/2023 17:05	
Toluene-d8	2037-26-5	103%	89 – 112	04/24/2023 17:05	

WET CHEMISTRY

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Total Organic Carbon (TOC)	5.7		mg/L	1.0	0.50	0.27	SW846 9060A	1	04/18/2023 02:35	PAG	G



Results

Client Sample ID	MW10-1DA-20230411	Collected	04/11/2023 12:40
Lab Sample ID	3297717006	Lab Receipt	04/12/2023 08:48

LIGHT HYDROCARBON GASES

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Ethane	48.5		ug/L	5.2	2.6	0.56	RSK 175	1	04/20/2023 10:06	JTH	E
Ethene	3.6U	U	ug/L	7.1	3.6	0.81	RSK 175	1	04/20/2023 10:06	JTH	E
Methane	7770		ug/L	2.6	1.6	0.53	RSK 175	1	04/20/2023 10:06	JTH	E

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:28	TMP	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:28	TMP	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:28	TMP	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:28	TMP	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:28	TMP	A
1,2,3-Trichlorobenzene	0.75U	U,6	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:28	TMP	A
1,2,4-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:28	TMP	A
1,2-Dibromo-3-chloropropane	2.5U	U	ug/L	5.0	2.5	1.6	SW846 8260C	1	04/24/2023 17:28	TMP	A
1,2-Dibromoethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:28	TMP	A
1,2-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:28	TMP	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:28	TMP	A
1,2-Dichloropropane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:28	TMP	A
1,3-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:28	TMP	A
1,3-Dichloropropene, Total	1.5U	U	ug/L	2.0	1.5	0.66	SW846 8260C	1	04/24/2023 17:28	TMP	A
1,4-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:28	TMP	A
2-Butanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	04/24/2023 17:28	TMP	A
2-Hexanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	04/24/2023 17:28	TMP	A
4-Methyl-2-Pentanone(MIBK)	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	04/24/2023 17:28	TMP	A
Acetone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	04/24/2023 17:28	TMP	A
Benzene	2.7		ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:28	TMP	A
Bromochloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:28	TMP	A
Bromodichloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:28	TMP	A
Bromoform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:28	TMP	A
Bromomethane	0.75U	U,1	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:28	TMP	A
Carbon Disulfide	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:28	TMP	A
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:28	TMP	A
Chlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:28	TMP	A
Chlorodibromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:28	TMP	A
Chloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:28	TMP	A
Chloroform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:28	TMP	A
Chloromethane	0.75U	U,2	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:28	TMP	A
cis-1,2-Dichloroethene	0.48J	J	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:28	TMP	A
Cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:28	TMP	A
Dichlorodifluoromethane	0.75U	U,3,4	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:28	TMP	A
Ethylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:28	TMP	A
Freon 113	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:28	TMP	A
Iodomethane	0.75U	U,5	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:28	TMP	A
Isopropylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:28	TMP	A
Methyl acetate	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:28	TMP	A
Methyl cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:28	TMP	A



Results

Client Sample ID	MW10-1DA-20230411	Collected	04/11/2023 12:40
Lab Sample ID	3297717006	Lab Receipt	04/12/2023 08:48

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Methyl t-Butyl Ether	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:28	TMP	A
Methylene Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:28	TMP	A
Styrene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:28	TMP	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:28	TMP	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:28	TMP	A
Total Xylenes	2.3U	U	ug/L	3.0	2.3	1.0	SW846 8260C	1	04/24/2023 17:28	TMP	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:28	TMP	A
Trichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:28	TMP	A
Trichlorofluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:28	TMP	A
Vinyl Chloride	1.7		ug/L	1.0	0.75	0.33	SW846 8260C	1	04/24/2023 17:28	TMP	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	107%	81 – 118	04/24/2023 17:28	
4-Bromofluorobenzene	460-00-4	107%	85 – 114	04/24/2023 17:28	
Dibromofluoromethane	1868-53-7	103%	80 – 119	04/24/2023 17:28	
Toluene-d8	2037-26-5	102%	89 – 112	04/24/2023 17:28	

WET CHEMISTRY

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Total Organic Carbon (TOC)	9.5		mg/L	5.0	2.5	1.4	SW846 9060A	5	04/18/2023 02:35	PAG	G



Results

Client Sample ID	MW10-7-20230411	Collected	04/11/2023 13:15
Lab Sample ID	3297717007	Lab Receipt	04/12/2023 08:48

LIGHT HYDROCARBON GASES

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Ethane	2.6U	U	ug/L	5.2	2.6	0.56	RSK 175	1	04/20/2023 10:18	JTH	E
Ethene	3.6U	U	ug/L	7.1	3.6	0.81	RSK 175	1	04/20/2023 10:18	JTH	E
Methane	454		ug/L	2.6	1.6	0.53	RSK 175	1	04/20/2023 10:18	JTH	E

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 17:48	TMP	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 17:48	TMP	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 17:48	TMP	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 17:48	TMP	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 17:48	TMP	A
1,2,3-Trichlorobenzene	0.75U	U,13	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 17:48	TMP	A
1,2,4-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 17:48	TMP	A
1,2-Dibromo-3-chloropropane	2.5U	U	ug/L	5.0	2.5	1.6	SW846 8260C	1	04/25/2023 17:48	TMP	A
1,2-Dibromoethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 17:48	TMP	A
1,2-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 17:48	TMP	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 17:48	TMP	A
1,2-Dichloropropane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 17:48	TMP	A
1,3-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 17:48	TMP	A
1,3-Dichloropropene, Total	1.5U	U	ug/L	2.0	1.5	0.66	SW846 8260C	1	04/25/2023 17:48	TMP	A
1,4-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 17:48	TMP	A
2-Butanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	04/25/2023 17:48	TMP	A
2-Hexanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	04/25/2023 17:48	TMP	A
4-Methyl-2-Pentanone(MIBK)	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	04/25/2023 17:48	TMP	A
Acetone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	04/25/2023 17:48	TMP	A
Benzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 17:48	TMP	A
Bromochloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 17:48	TMP	A
Bromodichloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 17:48	TMP	A
Bromoform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 17:48	TMP	A
Bromomethane	0.66J	J,11,12	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 17:48	TMP	A
Carbon Disulfide	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 17:48	TMP	A
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 17:48	TMP	A
Chlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 17:48	TMP	A
Chlorodibromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 17:48	TMP	A
Chloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 17:48	TMP	A
Chloroform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 17:48	TMP	A
Chloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 17:48	TMP	A
cis-1,2-Dichloroethene	30.7		ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 17:48	TMP	A
Cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 17:48	TMP	A
Dichlorodifluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 17:48	TMP	A
Ethylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 17:48	TMP	A
Freon 113	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 17:48	TMP	A
Iodomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 17:48	TMP	A
Isopropylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 17:48	TMP	A
Methyl acetate	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 17:48	TMP	A
Methyl cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 17:48	TMP	A



Results

Client Sample ID	MW10-7-20230411	Collected	04/11/2023 13:15
Lab Sample ID	3297717007	Lab Receipt	04/12/2023 08:48

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Methyl t-Butyl Ether	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 17:48	TMP	A
Methylene Chloride	1.8		ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 17:48	TMP	A
Styrene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 17:48	TMP	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 17:48	TMP	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 17:48	TMP	A
Total Xylenes	2.3U	U	ug/L	3.0	2.3	1.0	SW846 8260C	1	04/25/2023 17:48	TMP	A
trans-1,2-Dichloroethene	0.52J	J	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 17:48	TMP	A
Trichloroethene	3.5		ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 17:48	TMP	A
Trichlorofluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 17:48	TMP	A
Vinyl Chloride	3.9		ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 17:48	TMP	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	102%	81 – 118	04/25/2023 17:48	
4-Bromofluorobenzene	460-00-4	108%	85 – 114	04/25/2023 17:48	
Dibromofluoromethane	1868-53-7	102%	80 – 119	04/25/2023 17:48	
Toluene-d8	2037-26-5	99%	89 – 112	04/25/2023 17:48	

WET CHEMISTRY

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Total Organic Carbon (TOC)	303		mg/L	100	50.0	27.0	SW846 9060A	100	04/20/2023 05:22	PAG	G



Results

Client Sample ID	PW10-1-20230411	Collected	04/11/2023 13:40
Lab Sample ID	3297717008	Lab Receipt	04/12/2023 08:48

LIGHT HYDROCARBON GASES

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Ethane	2.6U	U	ug/L	5.2	2.6	0.56	RSK 175	1	04/20/2023 10:38	JTH	A
Ethene	3.6U	U	ug/L	7.1	3.6	0.81	RSK 175	1	04/20/2023 10:38	JTH	A
Methane	5.5		ug/L	2.6	1.6	0.53	RSK 175	1	04/20/2023 10:38	JTH	A

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:11	TMP	E
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:11	TMP	E
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:11	TMP	E
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:11	TMP	E
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:11	TMP	E
1,2,3-Trichlorobenzene	0.75U	U,13	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:11	TMP	E
1,2,4-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:11	TMP	E
1,2-Dibromo-3-chloropropane	2.5U	U	ug/L	5.0	2.5	1.6	SW846 8260C	1	04/25/2023 18:11	TMP	E
1,2-Dibromoethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:11	TMP	E
1,2-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:11	TMP	E
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:11	TMP	E
1,2-Dichloropropane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:11	TMP	E
1,3-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:11	TMP	E
1,3-Dichloropropene, Total	1.5U	U	ug/L	2.0	1.5	0.66	SW846 8260C	1	04/25/2023 18:11	TMP	E
1,4-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:11	TMP	E
2-Butanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	04/25/2023 18:11	TMP	E
2-Hexanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	04/25/2023 18:11	TMP	E
4-Methyl-2-Pentanone(MIBK)	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	04/25/2023 18:11	TMP	E
Acetone	3.2J	J	ug/L	5.0	3.8	1.6	SW846 8260C	1	04/25/2023 18:11	TMP	E
Benzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:11	TMP	E
Bromochloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:11	TMP	E
Bromodichloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:11	TMP	E
Bromoform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:11	TMP	E
Bromomethane	0.71J	J,11,12	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:11	TMP	E
Carbon Disulfide	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:11	TMP	E
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:11	TMP	E
Chlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:11	TMP	E
Chlorodibromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:11	TMP	E
Chloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:11	TMP	E
Chloroform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:11	TMP	E
Chloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:11	TMP	E
cis-1,2-Dichloroethene	1.5		ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:11	TMP	E
Cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:11	TMP	E
Dichlorodifluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:11	TMP	E
Ethylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:11	TMP	E
Freon 113	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:11	TMP	E
Iodomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:11	TMP	E
Isopropylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:11	TMP	E
Methyl acetate	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:11	TMP	E
Methyl cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:11	TMP	E

Results

Client Sample ID	PW10-1-20230411	Collected	04/11/2023 13:40
Lab Sample ID	3297717008	Lab Receipt	04/12/2023 08:48

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Methyl t-Butyl Ether	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:11	TMP	E
Methylene Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:11	TMP	E
Styrene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:11	TMP	E
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:11	TMP	E
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:11	TMP	E
Total Xylenes	2.3U	U	ug/L	3.0	2.3	1.0	SW846 8260C	1	04/25/2023 18:11	TMP	E
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:11	TMP	E
Trichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:11	TMP	E
Trichlorofluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:11	TMP	E
Vinyl Chloride	0.38J	J	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:11	TMP	E

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	102%	81 – 118	04/25/2023 18:11	
4-Bromofluorobenzene	460-00-4	109%	85 – 114	04/25/2023 18:11	
Dibromofluoromethane	1868-53-7	100%	80 – 119	04/25/2023 18:11	
Toluene-d8	2037-26-5	99.6%	89 – 112	04/25/2023 18:11	

WET CHEMISTRY

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Total Organic Carbon (TOC)	6.3		mg/L	2.0	1.0	0.54	SW846 9060A	2	04/18/2023 02:35	PAG	C



Results

Client Sample ID	MW10-11D-20230411	Collected	04/11/2023 14:05
Lab Sample ID	3297717009	Lab Receipt	04/12/2023 08:48

LIGHT HYDROCARBON GASES

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Ethane	2.6U	U	ug/L	5.2	2.6	0.56	RSK 175	1	04/20/2023 10:50	JTH	G
Ethene	3.6U	U	ug/L	7.1	3.6	0.81	RSK 175	1	04/20/2023 10:50	JTH	G
Methane	1.6U	U	ug/L	2.6	1.6	0.53	RSK 175	1	04/20/2023 10:50	JTH	G

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:33	TMP	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:33	TMP	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:33	TMP	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:33	TMP	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:33	TMP	A
1,2,3-Trichlorobenzene	0.75U	U,13	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:33	TMP	A
1,2,4-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:33	TMP	A
1,2-Dibromo-3-chloropropane	2.5U	U	ug/L	5.0	2.5	1.6	SW846 8260C	1	04/25/2023 18:33	TMP	A
1,2-Dibromoethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:33	TMP	A
1,2-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:33	TMP	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:33	TMP	A
1,2-Dichloropropane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:33	TMP	A
1,3-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:33	TMP	A
1,3-Dichloropropene, Total	1.5U	U	ug/L	2.0	1.5	0.66	SW846 8260C	1	04/25/2023 18:33	TMP	A
1,4-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:33	TMP	A
2-Butanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	04/25/2023 18:33	TMP	A
2-Hexanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	04/25/2023 18:33	TMP	A
4-Methyl-2-Pentanone(MIBK)	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	04/25/2023 18:33	TMP	A
Acetone	3.2J	J	ug/L	5.0	3.8	1.6	SW846 8260C	1	04/25/2023 18:33	TMP	A
Benzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:33	TMP	A
Bromochloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:33	TMP	A
Bromodichloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:33	TMP	A
Bromoform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:33	TMP	A
Bromomethane	0.70J	J,11,12	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:33	TMP	A
Carbon Disulfide	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:33	TMP	A
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:33	TMP	A
Chlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:33	TMP	A
Chlorodibromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:33	TMP	A
Chloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:33	TMP	A
Chloroform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:33	TMP	A
Chloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:33	TMP	A
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:33	TMP	A
Cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:33	TMP	A
Dichlorodifluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:33	TMP	A
Ethylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:33	TMP	A
Freon 113	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:33	TMP	A
Iodomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:33	TMP	A
Isopropylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:33	TMP	A
Methyl acetate	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:33	TMP	A
Methyl cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:33	TMP	A



Results

Client Sample ID	MW10-11D-20230411	Collected	04/11/2023 14:05
Lab Sample ID	3297717009	Lab Receipt	04/12/2023 08:48

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Methyl t-Butyl Ether	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:33	TMP	A
Methylene Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:33	TMP	A
Styrene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:33	TMP	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:33	TMP	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:33	TMP	A
Total Xylenes	2.3U	U	ug/L	3.0	2.3	1.0	SW846 8260C	1	04/25/2023 18:33	TMP	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:33	TMP	A
Trichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:33	TMP	A
Trichlorofluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:33	TMP	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/25/2023 18:33	TMP	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	103%	81 – 118	04/25/2023 18:33	
4-Bromofluorobenzene	460-00-4	109%	85 – 114	04/25/2023 18:33	
Dibromofluoromethane	1868-53-7	101%	80 – 119	04/25/2023 18:33	
Toluene-d8	2037-26-5	102%	89 – 112	04/25/2023 18:33	

WET CHEMISTRY

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Total Organic Carbon (TOC)	11.7		mg/L	2.0	1.0	0.54	SW846 9060A	2	04/18/2023 02:35	PAG	E



Results

Client Sample ID	MW10-10D-20230411	Collected	04/11/2023 14:25
Lab Sample ID	3297717010	Lab Receipt	04/12/2023 08:48

LIGHT HYDROCARBON GASES

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Ethane	11.8		ug/L	5.2	2.6	0.56	RSK 175	1	04/20/2023 11:05	JTH	A
Ethene	9.2		ug/L	7.1	3.6	0.81	RSK 175	1	04/20/2023 11:05	JTH	A
Methane	10000		ug/L	13.0	8.0	2.7	RSK 175	5	04/24/2023 09:23	JTH	B

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	75.0U	U	ug/L	100	75.0	33.0	SW846 8260C	100	04/25/2023 18:56	TMP	H
1,1,2,2-Tetrachloroethane	75.0U	U	ug/L	100	75.0	33.0	SW846 8260C	100	04/25/2023 18:56	TMP	H
1,1,2-Trichloroethane	75.0U	U	ug/L	100	75.0	33.0	SW846 8260C	100	04/25/2023 18:56	TMP	H
1,1-Dichloroethane	75.0U	U	ug/L	100	75.0	33.0	SW846 8260C	100	04/25/2023 18:56	TMP	H
1,1-Dichloroethene	75.0U	U	ug/L	100	75.0	33.0	SW846 8260C	100	04/25/2023 18:56	TMP	H
1,2,3-Trichlorobenzene	75.0U	U,13	ug/L	100	75.0	33.0	SW846 8260C	100	04/25/2023 18:56	TMP	H
1,2,4-Trichlorobenzene	75.0U	U	ug/L	100	75.0	33.0	SW846 8260C	100	04/25/2023 18:56	TMP	H
1,2-Dibromo-3-chloropropane	250U	U	ug/L	500	250	160	SW846 8260C	100	04/25/2023 18:56	TMP	H
1,2-Dibromoethane	75.0U	U	ug/L	100	75.0	33.0	SW846 8260C	100	04/25/2023 18:56	TMP	H
1,2-Dichlorobenzene	75.0U	U	ug/L	100	75.0	33.0	SW846 8260C	100	04/25/2023 18:56	TMP	H
1,2-Dichloroethane	75.0U	U	ug/L	100	75.0	33.0	SW846 8260C	100	04/25/2023 18:56	TMP	H
1,2-Dichloropropane	75.0U	U	ug/L	100	75.0	33.0	SW846 8260C	100	04/25/2023 18:56	TMP	H
1,3-Dichlorobenzene	75.0U	U	ug/L	100	75.0	33.0	SW846 8260C	100	04/25/2023 18:56	TMP	H
1,3-Dichloropropene, Total	150U	U	ug/L	200	150	66.0	SW846 8260C	100	04/25/2023 18:56	TMP	H
1,4-Dichlorobenzene	75.0U	U	ug/L	100	75.0	33.0	SW846 8260C	100	04/25/2023 18:56	TMP	H
2-Butanone	375U	U	ug/L	500	375	160	SW846 8260C	100	04/25/2023 18:56	TMP	H
2-Hexanone	375U	U	ug/L	500	375	160	SW846 8260C	100	04/25/2023 18:56	TMP	H
4-Methyl-2-Pentanone(MIBK)	375U	U	ug/L	500	375	160	SW846 8260C	100	04/25/2023 18:56	TMP	H
Acetone	375U	U	ug/L	500	375	160	SW846 8260C	100	04/25/2023 18:56	TMP	H
Benzene	75.0U	U	ug/L	100	75.0	33.0	SW846 8260C	100	04/25/2023 18:56	TMP	H
Bromochloromethane	75.0U	U	ug/L	100	75.0	33.0	SW846 8260C	100	04/25/2023 18:56	TMP	H
Bromodichloromethane	75.0U	U	ug/L	100	75.0	33.0	SW846 8260C	100	04/25/2023 18:56	TMP	H
Bromoform	75.0U	U	ug/L	100	75.0	33.0	SW846 8260C	100	04/25/2023 18:56	TMP	H
Bromomethane	68.1J	J,11,12	ug/L	100	75.0	33.0	SW846 8260C	100	04/25/2023 18:56	TMP	H
Carbon Disulfide	75.0U	U	ug/L	100	75.0	33.0	SW846 8260C	100	04/25/2023 18:56	TMP	H
Carbon Tetrachloride	75.0U	U	ug/L	100	75.0	33.0	SW846 8260C	100	04/25/2023 18:56	TMP	H
Chlorobenzene	75.0U	U	ug/L	100	75.0	33.0	SW846 8260C	100	04/25/2023 18:56	TMP	H
Chlorodibromomethane	75.0U	U	ug/L	100	75.0	33.0	SW846 8260C	100	04/25/2023 18:56	TMP	H
Chloroethane	75.0U	U	ug/L	100	75.0	33.0	SW846 8260C	100	04/25/2023 18:56	TMP	H
Chloroform	75.0U	U	ug/L	100	75.0	33.0	SW846 8260C	100	04/25/2023 18:56	TMP	H
Chloromethane	75.0U	U	ug/L	100	75.0	33.0	SW846 8260C	100	04/25/2023 18:56	TMP	H
cis-1,2-Dichloroethene	171		ug/L	100	75.0	33.0	SW846 8260C	100	04/25/2023 18:56	TMP	H
Cyclohexane	75.0U	U	ug/L	100	75.0	33.0	SW846 8260C	100	04/25/2023 18:56	TMP	H
Dichlorodifluoromethane	75.0U	U	ug/L	100	75.0	33.0	SW846 8260C	100	04/25/2023 18:56	TMP	H
Ethylbenzene	75.0U	U	ug/L	100	75.0	33.0	SW846 8260C	100	04/25/2023 18:56	TMP	H
Freon 113	75.0U	U	ug/L	100	75.0	33.0	SW846 8260C	100	04/25/2023 18:56	TMP	H
Iodomethane	75.0U	U	ug/L	100	75.0	33.0	SW846 8260C	100	04/25/2023 18:56	TMP	H
Isopropylbenzene	75.0U	U	ug/L	100	75.0	33.0	SW846 8260C	100	04/25/2023 18:56	TMP	H
Methyl acetate	217		ug/L	100	75.0	33.0	SW846 8260C	100	04/25/2023 18:56	TMP	H
Methyl cyclohexane	90.6J	J	ug/L	100	75.0	33.0	SW846 8260C	100	04/25/2023 18:56	TMP	H



Results

Client Sample ID	MW10-10D-20230411	Collected	04/11/2023 14:25
Lab Sample ID	3297717010	Lab Receipt	04/12/2023 08:48

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Methyl t-Butyl Ether	75.0U	U	ug/L	100	75.0	33.0	SW846 8260C	100	04/25/2023 18:56	TMP	H
Methylene Chloride	75.0U	U	ug/L	100	75.0	33.0	SW846 8260C	100	04/25/2023 18:56	TMP	H
Styrene	75.0U	U	ug/L	100	75.0	33.0	SW846 8260C	100	04/25/2023 18:56	TMP	H
Tetrachloroethene	75.0U	U	ug/L	100	75.0	33.0	SW846 8260C	100	04/25/2023 18:56	TMP	H
Toluene	75.0U	U	ug/L	100	75.0	33.0	SW846 8260C	100	04/25/2023 18:56	TMP	H
Total Xylenes	225U	U	ug/L	300	225	100	SW846 8260C	100	04/25/2023 18:56	TMP	H
trans-1,2-Dichloroethene	75.0U	U	ug/L	100	75.0	33.0	SW846 8260C	100	04/25/2023 18:56	TMP	H
Trichloroethene	75.0U	U	ug/L	100	75.0	33.0	SW846 8260C	100	04/25/2023 18:56	TMP	H
Trichlorofluoromethane	75.0U	U	ug/L	100	75.0	33.0	SW846 8260C	100	04/25/2023 18:56	TMP	H
Vinyl Chloride	75.0U	U	ug/L	100	75.0	33.0	SW846 8260C	100	04/25/2023 18:56	TMP	H

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	101%	81 – 118	04/25/2023 18:56	
4-Bromofluorobenzene	460-00-4	107%	85 – 114	04/25/2023 18:56	
Dibromofluoromethane	1868-53-7	99.3%	80 – 119	04/25/2023 18:56	
Toluene-d8	2037-26-5	99.8%	89 – 112	04/25/2023 18:56	

WET CHEMISTRY

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Total Organic Carbon (TOC)	8140		mg/L	1000	500	270	SW846 9060A	1000	04/20/2023 05:22	PAG	E



Results

Client Sample ID	Trip Blank	Collected	02/24/2023 13:15
Lab Sample ID	3297717011	Lab Receipt	04/12/2023 08:48

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/17/2023 00:52	PDK	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/17/2023 00:52	PDK	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/17/2023 00:52	PDK	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/17/2023 00:52	PDK	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/17/2023 00:52	PDK	A
1,2,3-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/17/2023 00:52	PDK	A
1,2,4-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/17/2023 00:52	PDK	A
1,2-Dibromo-3-chloropropane	2.5U	U	ug/L	5.0	2.5	1.6	SW846 8260C	1	04/17/2023 00:52	PDK	A
1,2-Dibromoethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/17/2023 00:52	PDK	A
1,2-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/17/2023 00:52	PDK	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/17/2023 00:52	PDK	A
1,2-Dichloropropane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/17/2023 00:52	PDK	A
1,3-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/17/2023 00:52	PDK	A
1,3-Dichloropropene, Total	1.5U	U	ug/L	2.0	1.5	0.66	SW846 8260C	1	04/17/2023 00:52	PDK	A
1,4-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/17/2023 00:52	PDK	A
2-Butanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	04/17/2023 00:52	PDK	A
2-Hexanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	04/17/2023 00:52	PDK	A
4-Methyl-2-Pentanone(MIBK)	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	04/17/2023 00:52	PDK	A
Acetone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	04/17/2023 00:52	PDK	A
Benzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/17/2023 00:52	PDK	A
Bromochloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/17/2023 00:52	PDK	A
Bromodichloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/17/2023 00:52	PDK	A
Bromoform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/17/2023 00:52	PDK	A
Bromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/17/2023 00:52	PDK	A
Carbon Disulfide	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/17/2023 00:52	PDK	A
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/17/2023 00:52	PDK	A
Chlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/17/2023 00:52	PDK	A
Chlorodibromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/17/2023 00:52	PDK	A
Chloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/17/2023 00:52	PDK	A
Chloroform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/17/2023 00:52	PDK	A
Chloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/17/2023 00:52	PDK	A
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/17/2023 00:52	PDK	A
Cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/17/2023 00:52	PDK	A
Dichlorodifluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/17/2023 00:52	PDK	A
Ethylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/17/2023 00:52	PDK	A
Freon 113	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/17/2023 00:52	PDK	A
Iodomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/17/2023 00:52	PDK	A
Isopropylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/17/2023 00:52	PDK	A
Methyl acetate	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/17/2023 00:52	PDK	A
Methyl cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/17/2023 00:52	PDK	A
Methyl t-Butyl Ether	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/17/2023 00:52	PDK	A
Methylene Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/17/2023 00:52	PDK	A
Styrene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/17/2023 00:52	PDK	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/17/2023 00:52	PDK	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/17/2023 00:52	PDK	A
Total Xylenes	2.3U	U	ug/L	3.0	2.3	1.0	SW846 8260C	1	04/17/2023 00:52	PDK	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/17/2023 00:52	PDK	A



Results

Client Sample ID	Trip Blank	Collected	02/24/2023 13:15
Lab Sample ID	3297717011	Lab Receipt	04/12/2023 08:48

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Trichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/17/2023 00:52	PDK	A
Trichlorofluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/17/2023 00:52	PDK	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	04/17/2023 00:52	PDK	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	99.5%	81 – 118	04/17/2023 00:52	
4-Bromofluorobenzene	460-00-4	109%	85 – 114	04/17/2023 00:52	
Dibromofluoromethane	1868-53-7	99.2%	80 – 119	04/17/2023 00:52	
Toluene-d8	2037-26-5	101%	89 – 112	04/17/2023 00:52	



Sample - Method Cross Reference Table

Lab ID	Sample ID	Analysis Method	Preparation Method	Leachate Method
3297717001	MW5-5D-20230411	RSK 175	N/A	
		SW846 8260C	N/A	
		SW846 9060A	N/A	
3297717002	DUP-01-20230411	RSK 175	N/A	
		SW846 8260C	N/A	
		SW846 9060A	N/A	
3297717003	RW5-2-20230411	RSK 175	N/A	
		SW846 8260C	N/A	
		SW846 9060A	N/A	
3297717004	RW5-1-20230411	RSK 175	N/A	
		SW846 8260C	N/A	
		SW846 9060A	N/A	
3297717005	MW5-1DA-20230411	RSK 175	N/A	
		SW846 8260C	N/A	
		SW846 9060A	N/A	
3297717006	MW10-1DA-20230411	RSK 175	N/A	
		SW846 8260C	N/A	
		SW846 9060A	N/A	
3297717007	MW10-7-20230411	RSK 175	N/A	
		SW846 8260C	N/A	
		SW846 9060A	N/A	
3297717008	PW10-1-20230411	RSK 175	N/A	
		SW846 8260C	N/A	
		SW846 9060A	N/A	
3297717009	MW10-11D-20230411	RSK 175	N/A	
		SW846 8260C	N/A	
		SW846 9060A	N/A	
3297717010	MW10-10D-20230411	RSK 175	N/A	
		RSK 175	N/A	
		SW846 8260C	N/A	
		SW846 9060A	N/A	
3297717011	Trip Blank	SW846 8260C	N/A	



QUALITY CONTROL SAMPLES

LIGHT HYDROCARBON GASES

QC Batch

QC Batch	975305	Prep Method	N/A
Date	N/A	Analysis Method	RSK 175
Tech.			

Associated Samples

3297717001 3297717002

Duplicate 3655527 (DUP) 3297362026 (non-Project Sample) For QC Batch 975305

****NOTE - The Original Result and Duplicate Result shown below are raw results and are only used for the purpose of calculating Sample Duplicate percent recoveries. This result is not a final value and cannot be used as such.

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)			Qualifiers
Ethane	74-84-0	DUP	0	0	RPD	0 (Max-20)	U
Ethene	74-85-1	DUP	0	0	RPD	0 (Max-20)	U
Methane	74-82-8	DUP	0	0	RPD	0 (Max-20)	U

Method Blank 3655522 (MB) Created on 04/18/2023 08:11 For QC Batch 975305

RESULTS

Compound	CAS No		Result	Units	LOQ	Qualifiers
Ethane	74-84-0	BLK	2.6U	ug/L	5.2	U
Ethene	74-85-1	BLK	3.6U	ug/L	7.1	U
Methane	74-82-8	BLK	1.6U	ug/L	2.6	U

Duplicate 3655721 (DUP) 3297717002 For QC Batch 975305

****NOTE - The Original Result and Duplicate Result shown below are raw results and are only used for the purpose of calculating Sample Duplicate percent recoveries. This result is not a final value and cannot be used as such.

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)			Qualifiers
Ethane	74-84-0	DUP	0	0	RPD	0 (Max-20)	U
Ethane	74-84-0	DUP	7.07	0	RPD	200 (Max-20)	
Ethene	74-85-1	DUP	0	0	RPD	0 (Max-20)	U
Ethene	74-85-1	DUP	3.20	0	RPD	200* (Max-20)	J
Methane	74-82-8	DUP	396.01	678.01	RPD	52.50* (Max-20)	

QC Batch

QC Batch	976366	Prep Method	N/A
Date	N/A	Analysis Method	RSK 175
Tech.			

Associated Samples

3297717003 3297717004 3297717005 3297717006
3297717007 3297717008 3297717009 3297717010

QUALITY CONTROL SAMPLES

LIGHT HYDROCARBON GASES (cont.)

Method Blank3656749 (MB)Created on 04/20/2023 07:18For QC Batch 976366

RESULTS

Compound	CAS No		Result	Units	LOQ	Qualifiers
Ethane	74-84-0	BLK	2.6U	ug/L	5.2	U
Ethene	74-85-1	BLK	3.6U	ug/L	7.1	U
Methane	74-82-8	BLK	1.6U	ug/L	2.6	U

Duplicate3656917 (DUP)3297717004For QC Batch 976366

****NOTE - The Original Result and Duplicate Result shown below are raw results and are only used for the purpose of calculating Sample Duplicate percent recoveries. This result is not a final value and cannot be used as such.

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)		Qualifiers
Ethane	74-84-0	DUP	5.38	5.34	RPD 0.75 (Max-20)	
Ethane	74-84-0	DUP	5.38	5.34	RPD 0.75 (Max-20)	
Ethene	74-85-1	DUP	0	0	RPD 0 (Max-20)	U
Ethene	74-85-1	DUP	0	0	RPD 0 (Max-20)	U
Methane	74-82-8	DUP	8435.67	8332.19	RPD 1.23 (Max-20)	

QC Batch

QC Batch978354

Prep MethodN/A

DateN/A

Analysis MethodRSK 175

Tech.

Associated Samples

3297717010

Method Blank3658384 (MB)Created on 04/24/2023 07:38For QC Batch 978354

RESULTS

Compound	CAS No		Result	Units	LOQ	Qualifiers
Ethane	74-84-0	BLK	2.6U	ug/L	5.2	U
Ethene	74-85-1	BLK	3.6U	ug/L	7.1	U
Methane	74-82-8	BLK	1.6U	ug/L	2.6	U

VOLATILE ORGANICS

QUALITY CONTROL SAMPLES

QC Batch

Associated Samples

QC Batch	974503	Prep Method	N/A
Date	N/A	Analysis Method	SW846 8260C
Tech.			

3297717011

Matrix Spike	3654793 (MS)	3296418017 (non-Project Sample)	For QC Batch 974503
****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.			
Matrix Spike Duplicate	3654794 (MSD)	3296418017 (non-Project Sample)	For QC Batch 974503

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
1,1,1-Trichloroethane	71-55-6	MS	22.10	0.78	20	107	74 - 131		
1,1,1-Trichloroethane	71-55-6	MSD	21.20	0.78	20	102	74 - 131	RPD 3.89	(Max-20)
1,1,2,2-Tetrachloroethane	79-34-5	MS	19.60	0	20	98.2	71 - 121		
1,1,2,2-Tetrachloroethane	79-34-5	MSD	19.40	0	20	97.1	71 - 121	RPD 1.11	(Max-20)
1,1,2-Trichloroethane	79-00-5	MS	19.70	0	20	98.3	80 - 119		
1,1,2-Trichloroethane	79-00-5	MSD	18.70	0	20	93.5	80 - 119	RPD 5.04	(Max-20)
1,1-Dichloroethane	75-34-3	MS	21.60	1.30	20	102	77 - 125		
1,1-Dichloroethane	75-34-3	MSD	20.60	1.30	20	96.7	77 - 125	RPD 4.69	(Max-20)
1,1-Dichloroethene	75-35-4	MS	23.40	0.67	20	113	71 - 131		
1,1-Dichloroethene	75-35-4	MSD	22.20	0.67	20	108	71 - 131	RPD 5.07	(Max-20)
1,2,3-Trichlorobenzene	87-61-6	MS	16.70	0	20	83.5	69 - 129		
1,2,3-Trichlorobenzene	87-61-6	MSD	18.80	0	20	94.2	69 - 129	RPD 12.10	(Max-20)
1,2,4-Trichlorobenzene	120-82-1	MS	16.50	0	20	82.6	69 - 130		
1,2,4-Trichlorobenzene	120-82-1	MSD	17.50	0	20	87.4	69 - 130	RPD 5.62	(Max-20)
1,2-Dibromo-3-chloropropane	96-12-8	MS	16.30	0	20	81.5	62 - 128		
1,2-Dibromo-3-chloropropane	96-12-8	MSD	17.40	0	20	87.2	62 - 128	RPD 6.68	(Max-20)
1,2-Dibromoethane	106-93-4	MS	20	0	20	99.9	77 - 121		
1,2-Dibromoethane	106-93-4	MSD	19.50	0	20	97.3	77 - 121	RPD 2.59	(Max-20)
1,2-Dichlorobenzene	95-50-1	MS	20.30	0	20	101	80 - 119		
1,2-Dichlorobenzene	95-50-1	MSD	19.70	0	20	98.5	80 - 119	RPD 2.93	(Max-20)
1,2-Dichloroethane	107-06-2	MS	20.70	0	20	104	73 - 128		
1,2-Dichloroethane	107-06-2	MSD	20.50	0	20	103	73 - 128	RPD 1.14	(Max-20)
1,2-Dichloropropane	78-87-5	MS	21.40	0	20	107	78 - 122		
1,2-Dichloropropane	78-87-5	MSD	20.50	0	20	102	78 - 122	RPD 4.51	(Max-20)
1,3-Dichlorobenzene	541-73-1	MS	20.70	0	20	103	80 - 119		
1,3-Dichlorobenzene	541-73-1	MSD	20	0	20	99.8	80 - 119	RPD 3.46	(Max-20)
1,3-Dichloropropene, Total	542-75-6	MS	38.90	0	40	97.2	75 - 124		
1,3-Dichloropropene, Total	542-75-6	MSD	37.40	0	40	93.4	75 - 124	RPD 3.98	(Max-20)
1,4-Dichlorobenzene	106-46-7	MS	21	0	20	105	79 - 118		
1,4-Dichlorobenzene	106-46-7	MSD	19.80	0	20	98.8	79 - 118	RPD 5.87	(Max-20)
2-Butanone	78-93-3	MS	75.40	0	100	75.4	56 - 143		
2-Butanone	78-93-3	MSD	82.80	0	100	82.8	56 - 143	RPD 9.39	(Max-20)
2-Hexanone	591-78-6	MS	80.70	0	100	80.7	57 - 139		
2-Hexanone	591-78-6	MSD	85	0	100	85	57 - 139	RPD 5.20	(Max-20)
4-Methyl-2-Pentanone(MIBK)	108-10-1	MS	97.80	0	100	97.8	67 - 130		



QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
4-Methyl-2-Pentanone(MIBK)	108-10-1	MSD	98.50	0	100	98.5	67 - 130	RPD 0.79 (Max-20)	
Acetone	67-64-1	MS	85.70	0	100	85.7	39 - 160		
Acetone	67-64-1	MSD	98.30	0	100	98.3	39 - 160	RPD 13.80 (Max-20)	
Benzene	71-43-2	MS	22.20	0	20	111	79 - 120		
Benzene	71-43-2	MSD	21.20	0	20	106	79 - 120	RPD 4.64 (Max-20)	
Bromochloromethane	74-97-5	MS	21.90	0	20	109	78 - 123		
Bromochloromethane	74-97-5	MSD	21.20	0	20	106	78 - 123	RPD 3.39 (Max-20)	
Bromodichloromethane	75-27-4	MS	21.30	0	20	107	79 - 125		
Bromodichloromethane	75-27-4	MSD	20.60	0	20	103	79 - 125	RPD 3.36 (Max-20)	
Bromoform	75-25-2	MS	20.20	0	20	101	66 - 130		
Bromoform	75-25-2	MSD	19.90	0	20	99.7	66 - 130	RPD 1.22 (Max-20)	
Bromomethane	74-83-9	MS	16.80	0	20	84	53 - 141		
Bromomethane	74-83-9	MSD	16.90	0	20	84.5	53 - 141	RPD 0.53 (Max-20)	
Carbon Disulfide	75-15-0	MS	26	0	20	130	64 - 133		
Carbon Disulfide	75-15-0	MSD	24.20	0	20	121	64 - 133	RPD 6.95 (Max-20)	
Carbon Tetrachloride	56-23-5	MS	22.90	0	20	114	72 - 136		
Carbon Tetrachloride	56-23-5	MSD	24.50	0	20	123	72 - 136	RPD 7.03 (Max-20)	
Chlorobenzene	108-90-7	MS	20.30	0	20	101	82 - 118		
Chlorobenzene	108-90-7	MSD	19.30	0	20	96.4	82 - 118	RPD 5.07 (Max-20)	
Chlorodibromomethane	124-48-1	MS	19.60	0	20	98	74 - 126		
Chlorodibromomethane	124-48-1	MSD	19.30	0	20	96.3	74 - 126	RPD 1.68 (Max-20)	
Chloroethane	75-00-3	MS	21.50	0	20	108	60 - 138		
Chloroethane	75-00-3	MSD	20.10	0	20	101	60 - 138	RPD 6.73 (Max-20)	
Chloroform	67-66-3	MS	21.70	0	20	108	79 - 124		
Chloroform	67-66-3	MSD	20.70	0	20	103	79 - 124	RPD 4.66 (Max-20)	
Chloromethane	74-87-3	MS	20.80	0	20	104	50 - 139		
Chloromethane	74-87-3	MSD	19.60	0	20	98.2	50 - 139	RPD 5.51 (Max-20)	
cis-1,2-Dichloroethene	156-59-2	MS	24.60	4.90	20	98.3	78 - 123		
cis-1,2-Dichloroethene	156-59-2	MSD	23.90	4.90	20	94.8	78 - 123	RPD 2.88 (Max-20)	
Cyclohexane	110-82-7	MS	25.10	0	20	126	71 - 130		
Cyclohexane	110-82-7	MSD	23.80	0	20	119	71 - 130	RPD 5.16 (Max-20)	
Dichlorodifluoromethane	75-71-8	MS	22.60	0	20	113	32 - 152		
Dichlorodifluoromethane	75-71-8	MSD	21.20	0	20	106	32 - 152	RPD 6.61 (Max-20)	
Ethylbenzene	100-41-4	MS	20.90	0	20	105	79 - 121		
Ethylbenzene	100-41-4	MSD	20	0	20	100	79 - 121	RPD 4.53 (Max-20)	
Freon 113	76-13-1	MS	24.60	0	20	123	70 - 136		
Freon 113	76-13-1	MSD	23.70	0	20	119	70 - 136	RPD 3.70 (Max-20)	
Iodomethane	74-88-4	MS	17.60	0	20	88.2	69 - 131		
Iodomethane	74-88-4	MSD	18	0	20	90	69 - 131	RPD 2.01 (Max-20)	
Isopropylbenzene	98-82-8	MS	23.20	0	20	116	72 - 131		
Isopropylbenzene	98-82-8	MSD	22.30	0	20	112	72 - 131	RPD 3.63 (Max-20)	
Methyl acetate	79-20-9	MS	13.70	0	20	68.4	56 - 136		
Methyl acetate	79-20-9	MSD	14.60	0	20	73.1	56 - 136	RPD 6.64 (Max-20)	
Methyl cyclohexane	108-87-2	MS	23.10	0	20	115	72 - 132		
Methyl cyclohexane	108-87-2	MSD	22.50	0	20	113	72 - 132	RPD 2.29 (Max-20)	
Methyl t-Butyl Ether	1634-04-4	MS	20.40	0	20	102	71 - 124		
Methyl t-Butyl Ether	1634-04-4	MSD	20.20	0	20	101	71 - 124	RPD 0.86 (Max-20)	
Methylene Chloride	75-09-2	MS	21.40	0	20	107	74 - 124		
Methylene Chloride	75-09-2	MSD	20.60	0	20	103	74 - 124	RPD 3.56 (Max-20)	



QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
Styrene	100-42-5	MS	22.70	0	20	113	78 - 123		
Styrene	100-42-5	MSD	21.50	0	20	108	78 - 123	RPD 5.22 (Max-20)	
Tetrachloroethene	127-18-4	MS	22.90	11.50	20	57*	74 - 129		
Tetrachloroethene	127-18-4	MSD	22	11.50	20	52.5*	74 - 129	RPD 3.97 (Max-20)	
Toluene	108-88-3	MS	20.50	0	20	102	80 - 121		
Toluene	108-88-3	MSD	19.40	0	20	97.1	80 - 121	RPD 5.32 (Max-20)	
Total Xylenes	1330-20-7	MS	62.80	0	60	105	79 - 121		
Total Xylenes	1330-20-7	MSD	60.10	0	60	100	79 - 121	RPD 4.39 (Max-20)	
trans-1,2-Dichloroethene	156-60-5	MS	21.80	0	20	109	75 - 124		
trans-1,2-Dichloroethene	156-60-5	MSD	21.20	0	20	106	75 - 124	RPD 2.83 (Max-20)	
Trichloroethene	79-01-6	MS	22.20	6.30	20	80	79 - 123		
Trichloroethene	79-01-6	MSD	21.20	6.30	20	74.7*	79 - 123	RPD 4.83 (Max-20)	
Trichlorofluoromethane	75-69-4	MS	21.70	0	20	108	65 - 141		
Trichlorofluoromethane	75-69-4	MSD	20.30	0	20	101	65 - 141	RPD 6.56 (Max-20)	
Vinyl Chloride	75-01-4	MS	22.40	0.68	20	109	58 - 137		
Vinyl Chloride	75-01-4	MSD	21	0.68	20	102	58 - 137	RPD 6.32 (Max-20)	

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	MS	30.40	30	101	81 - 118	
1,2-Dichloroethane-d4	17060-07-0	MSD	30.50	30	102	81 - 118	
4-Bromofluorobenzene	460-00-4	MS	30.90	30	103	85 - 114	
4-Bromofluorobenzene	460-00-4	MSD	30.40	30	101	85 - 114	
Dibromofluoromethane	1868-53-7	MS	30.70	30	102	80 - 119	
Dibromofluoromethane	1868-53-7	MSD	30.90	30	103	80 - 119	
Toluene-d8	2037-26-5	MS	28.90	30	96.4	89 - 112	
Toluene-d8	2037-26-5	MSD	29	30	96.6	89 - 112	

Method Blank 3654783 (MB) Created on 04/16/2023 21:16 For QC Batch 974503

RESULTS

Compound	CAS No		Result	Units	LOQ	Qualifiers
1,1,1-Trichloroethane	71-55-6	BLK	0.75U	ug/L	1.0	U
1,1,2,2-Tetrachloroethane	79-34-5	BLK	0.75U	ug/L	1.0	U
1,1,2-Trichloroethane	79-00-5	BLK	0.75U	ug/L	1.0	U
1,1-Dichloroethane	75-34-3	BLK	0.75U	ug/L	1.0	U
1,1-Dichloroethene	75-35-4	BLK	0.75U	ug/L	1.0	U
1,2,3-Trichlorobenzene	87-61-6	BLK	0.75U	ug/L	1.0	U
1,2,4-Trichlorobenzene	120-82-1	BLK	0.75U	ug/L	1.0	U
1,2-Dibromo-3-chloropropane	96-12-8	BLK	2.5U	ug/L	5.0	U
1,2-Dibromoethane	106-93-4	BLK	0.75U	ug/L	1.0	U
1,2-Dichlorobenzene	95-50-1	BLK	0.75U	ug/L	1.0	U
1,2-Dichloroethane	107-06-2	BLK	0.75U	ug/L	1.0	U
1,2-Dichloropropane	78-87-5	BLK	0.75U	ug/L	1.0	U



QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result	Units	LOQ	Qualifiers
1,3-Dichlorobenzene	541-73-1	BLK	0.75U	ug/L	1.0	U
1,3-Dichloropropene, Total	542-75-6	BLK	1.5U	ug/L	2.0	U
1,4-Dichlorobenzene	106-46-7	BLK	0.75U	ug/L	1.0	U
2-Butanone	78-93-3	BLK	3.8U	ug/L	5.0	U
2-Hexanone	591-78-6	BLK	3.8U	ug/L	5.0	U
4-Methyl-2-Pentanone(MIBK)	108-10-1	BLK	3.8U	ug/L	5.0	U
Acetone	67-64-1	BLK	3.8U	ug/L	5.0	U
Benzene	71-43-2	BLK	0.75U	ug/L	1.0	U
Bromochloromethane	74-97-5	BLK	0.75U	ug/L	1.0	U
Bromodichloromethane	75-27-4	BLK	0.75U	ug/L	1.0	U
Bromoform	75-25-2	BLK	0.75U	ug/L	1.0	U
Bromomethane	74-83-9	BLK	0.75U	ug/L	1.0	U
Carbon Disulfide	75-15-0	BLK	0.75U	ug/L	1.0	U
Carbon Tetrachloride	56-23-5	BLK	0.75U	ug/L	1.0	U
Chlorobenzene	108-90-7	BLK	0.75U	ug/L	1.0	U
Chlorodibromomethane	124-48-1	BLK	0.75U	ug/L	1.0	U
Chloroethane	75-00-3	BLK	0.75U	ug/L	1.0	U
Chloroform	67-66-3	BLK	0.75U	ug/L	1.0	U
Chloromethane	74-87-3	BLK	0.75U	ug/L	1.0	U
cis-1,2-Dichloroethene	156-59-2	BLK	0.75U	ug/L	1.0	U
Cyclohexane	110-82-7	BLK	0.75U	ug/L	1.0	U
Dichlorodifluoromethane	75-71-8	BLK	0.75U	ug/L	1.0	U
Ethylbenzene	100-41-4	BLK	0.75U	ug/L	1.0	U
Freon 113	76-13-1	BLK	0.75U	ug/L	1.0	U
Iodomethane	74-88-4	BLK	0.75U	ug/L	1.0	U
Isopropylbenzene	98-82-8	BLK	0.75U	ug/L	1.0	U
Methyl acetate	79-20-9	BLK	0.75U	ug/L	1.0	U
Methyl cyclohexane	108-87-2	BLK	0.75U	ug/L	1.0	U
Methyl t-Butyl Ether	1634-04-4	BLK	0.75U	ug/L	1.0	U
Methylene Chloride	75-09-2	BLK	0.75U	ug/L	1.0	U
Styrene	100-42-5	BLK	0.75U	ug/L	1.0	U
Tetrachloroethene	127-18-4	BLK	0.75U	ug/L	1.0	U
Toluene	108-88-3	BLK	0.75U	ug/L	1.0	U
Total Xylenes	1330-20-7	BLK	2.3U	ug/L	3.0	U
trans-1,2-Dichloroethene	156-60-5	BLK	0.75U	ug/L	1.0	U
Trichloroethene	79-01-6	BLK	0.75U	ug/L	1.0	U
Trichlorofluoromethane	75-69-4	BLK	0.75U	ug/L	1.0	U
Vinyl Chloride	75-01-4	BLK	0.75U	ug/L	1.0	U

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	BLK	30	30	100	81 - 118	
4-Bromofluorobenzene	460-00-4	BLK	31.50	30	105	85 - 114	
Dibromofluoromethane	1868-53-7	BLK	29.80	30	99.4	80 - 119	
Toluene-d8	2037-26-5	BLK	30.40	30	101	89 - 112	



QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

Lab Control Standard 3654784 (LCS) Created on 04/16/2023 21:16 For QC Batch 974503

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
1,1,1-Trichloroethane	71-55-6	LCS	20.40		20	102	74 - 131		
1,1,2,2-Tetrachloroethane	79-34-5	LCS	18.80		20	94.2	71 - 121		
1,1,2-Trichloroethane	79-00-5	LCS	19.20		20	96.1	80 - 119		
1,1-Dichloroethane	75-34-3	LCS	20		20	99.8	77 - 125		
1,1-Dichloroethene	75-35-4	LCS	21.60		20	108	71 - 131		
1,2,3-Trichlorobenzene	87-61-6	LCS	21.40		20	107	69 - 129		
1,2,4-Trichlorobenzene	120-82-1	LCS	19.70		20	98.5	69 - 130		
1,2-Dibromo-3-chloropropane	96-12-8	LCS	17.80		20	89.2	62 - 128		
1,2-Dibromoethane	106-93-4	LCS	20.40		20	102	77 - 121		
1,2-Dichlorobenzene	95-50-1	LCS	19.70		20	98.6	80 - 119		
1,2-Dichloroethane	107-06-2	LCS	19.90		20	99.5	73 - 128		
1,2-Dichloropropane	78-87-5	LCS	19.80		20	99.1	78 - 122		
1,3-Dichlorobenzene	541-73-1	LCS	20.10		20	101	80 - 119		
1,3-Dichloropropene, Total	542-75-6	LCS	40		40	100	75 - 124		
1,4-Dichlorobenzene	106-46-7	LCS	20.30		20	101	79 - 118		
2-Butanone	78-93-3	LCS	80.30		100	80.3	56 - 143		
2-Hexanone	591-78-6	LCS	87.30		100	87.3	57 - 139		
4-Methyl-2-Pentanone(MIBK)	108-10-1	LCS	101		100	101	67 - 130		
Acetone	67-64-1	LCS	97.90		100	97.9	39 - 160		
Benzene	71-43-2	LCS	20.80		20	104	79 - 120		
Bromochloromethane	74-97-5	LCS	21.10		20	106	78 - 123		
Bromodichloromethane	75-27-4	LCS	20.50		20	103	79 - 125		
Bromoform	75-25-2	LCS	20.20		20	101	66 - 130		
Bromomethane	74-83-9	LCS	17.20		20	85.9	53 - 141		
Carbon Disulfide	75-15-0	LCS	24.50		20	123	64 - 133		
Carbon Tetrachloride	56-23-5	LCS	21.50		20	107	72 - 136		
Chlorobenzene	108-90-7	LCS	19.40		20	97.2	82 - 118		
Chlorodibromomethane	124-48-1	LCS	20.10		20	101	74 - 126		
Chloroethane	75-00-3	LCS	19		20	94.9	60 - 138		
Chloroform	67-66-3	LCS	20.30		20	101	79 - 124		
Chloromethane	74-87-3	LCS	19.30		20	96.5	50 - 139		
cis-1,2-Dichloroethene	156-59-2	LCS	21.20		20	106	78 - 123		
Cyclohexane	110-82-7	LCS	22.90		20	114	71 - 130		
Dichlorodifluoromethane	75-71-8	LCS	21.20		20	106	32 - 152		
Ethylbenzene	100-41-4	LCS	20.10		20	100	79 - 121		
Freon 113	76-13-1	LCS	22.90		20	115	70 - 136		
Iodomethane	74-88-4	LCS	17.90		20	89.5	69 - 131		
Isopropylbenzene	98-82-8	LCS	21.10		20	105	72 - 131		
Methyl acetate	79-20-9	LCS	16.20		20	80.9	56 - 136		
Methyl cyclohexane	108-87-2	LCS	21.80		20	109	72 - 132		
Methyl t-Butyl Ether	1634-04-4	LCS	20.30		20	102	71 - 124		
Methylene Chloride	75-09-2	LCS	20.60		20	103	74 - 124		
Styrene	100-42-5	LCS	21.40		20	107	78 - 123		
Tetrachloroethene	127-18-4	LCS	19		20	95.1	74 - 129		

VOLATILE ORGANICS (cont.)

QUALITY CONTROL SAMPLES

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
Toluene	108-88-3	LCS	19.70		20	98.5	80 - 121		
Total Xylenes	1330-20-7	LCS	60.70		60	101	79 - 121		
trans-1,2-Dichloroethene	156-60-5	LCS	20.80		20	104	75 - 124		
Trichloroethene	79-01-6	LCS	19.60		20	98	79 - 123		
Trichlorofluoromethane	75-69-4	LCS	19.30		20	96.4	65 - 141		
Vinyl Chloride	75-01-4	LCS	19.80		20	99.1	58 - 137		

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	LCS	30.50	30	102	81 - 118	
4-Bromofluorobenzene	460-00-4	LCS	31.10	30	104	85 - 114	
Dibromofluoromethane	1868-53-7	LCS	31	30	103	80 - 119	
Toluene-d8	2037-26-5	LCS	30.10	30	100	89 - 112	

QC Batch

QC Batch

978455

Prep Method

N/A

Date

N/A

Analysis Method

SW846 8260C

Tech.

Associated Samples

3297717001	3297717005	3297717003	3297717002
3297717004	3297717006		

Method Blank

3658401 (MB)

Created on 04/24/2023 08:09

For QC Batch 978455

RESULTS

Compound	CAS No		Result	Units	LOQ	Qualifiers
1,1,1-Trichloroethane	71-55-6	BLK	0.75U	ug/L	1.0	U
1,1,2,2-Tetrachloroethane	79-34-5	BLK	0.75U	ug/L	1.0	U
1,1,2-Trichloroethane	79-00-5	BLK	0.75U	ug/L	1.0	U
1,1-Dichloroethane	75-34-3	BLK	0.75U	ug/L	1.0	U
1,1-Dichloroethene	75-35-4	BLK	0.75U	ug/L	1.0	U
1,2,3-Trichlorobenzene	87-61-6	BLK	0.75U	ug/L	1.0	U
1,2,4-Trichlorobenzene	120-82-1	BLK	0.75U	ug/L	1.0	U
1,2-Dibromo-3-chloropropane	96-12-8	BLK	2.5U	ug/L	5.0	U
1,2-Dibromoethane	106-93-4	BLK	0.75U	ug/L	1.0	U
1,2-Dichlorobenzene	95-50-1	BLK	0.75U	ug/L	1.0	U
1,2-Dichloroethane	107-06-2	BLK	0.75U	ug/L	1.0	U
1,2-Dichloropropane	78-87-5	BLK	0.75U	ug/L	1.0	U
1,3-Dichlorobenzene	541-73-1	BLK	0.75U	ug/L	1.0	U
1,3-Dichloropropene, Total	542-75-6	BLK	1.5U	ug/L	2.0	U
1,4-Dichlorobenzene	106-46-7	BLK	0.75U	ug/L	1.0	U
2-Butanone	78-93-3	BLK	3.8U	ug/L	5.0	U
2-Hexanone	591-78-6	BLK	3.8U	ug/L	5.0	U
4-Methyl-2-Pentanone(MIBK)	108-10-1	BLK	3.8U	ug/L	5.0	U
Acetone	67-64-1	BLK	3.8U	ug/L	5.0	U



QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result	Units	LOQ	Qualifiers
Benzene	71-43-2	BLK	0.75U	ug/L	1.0	U
Bromochloromethane	74-97-5	BLK	0.75U	ug/L	1.0	U
Bromodichloromethane	75-27-4	BLK	0.75U	ug/L	1.0	U
Bromoform	75-25-2	BLK	0.75U	ug/L	1.0	U
Bromomethane	74-83-9	BLK	0.75U	ug/L	1.0	U
Carbon Disulfide	75-15-0	BLK	0.75U	ug/L	1.0	U
Carbon Tetrachloride	56-23-5	BLK	0.75U	ug/L	1.0	U
Chlorobenzene	108-90-7	BLK	0.75U	ug/L	1.0	U
Chlorodibromomethane	124-48-1	BLK	0.75U	ug/L	1.0	U
Chloroethane	75-00-3	BLK	0.75U	ug/L	1.0	U
Chloroform	67-66-3	BLK	0.75U	ug/L	1.0	U
Chloromethane	74-87-3	BLK	0.75U	ug/L	1.0	U
cis-1,2-Dichloroethene	156-59-2	BLK	0.75U	ug/L	1.0	U
Cyclohexane	110-82-7	BLK	0.75U	ug/L	1.0	U
Dichlorodifluoromethane	75-71-8	BLK	0.75U	ug/L	1.0	U
Ethylbenzene	100-41-4	BLK	0.75U	ug/L	1.0	U
Freon 113	76-13-1	BLK	0.75U	ug/L	1.0	U
Iodomethane	74-88-4	BLK	0.75U	ug/L	1.0	U
Isopropylbenzene	98-82-8	BLK	0.75U	ug/L	1.0	U
Methyl acetate	79-20-9	BLK	0.75U	ug/L	1.0	U
Methyl cyclohexane	108-87-2	BLK	0.75U	ug/L	1.0	U
Methyl t-Butyl Ether	1634-04-4	BLK	0.75U	ug/L	1.0	U
Methylene Chloride	75-09-2	BLK	0.75U	ug/L	1.0	U
Styrene	100-42-5	BLK	0.75U	ug/L	1.0	U
Tetrachloroethene	127-18-4	BLK	0.75U	ug/L	1.0	U
Toluene	108-88-3	BLK	0.75U	ug/L	1.0	U
Total Xylenes	1330-20-7	BLK	2.3U	ug/L	3.0	U
trans-1,2-Dichloroethene	156-60-5	BLK	0.75U	ug/L	1.0	U
Trichloroethene	79-01-6	BLK	0.75U	ug/L	1.0	U
Trichlorofluoromethane	75-69-4	BLK	0.75U	ug/L	1.0	U
Vinyl Chloride	75-01-4	BLK	0.75U	ug/L	1.0	U

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	BLK	30.90	30	103	81 - 118	
4-Bromofluorobenzene	460-00-4	BLK	31	30	103	85 - 114	
Dibromofluoromethane	1868-53-7	BLK	30.10	30	100	80 - 119	
Toluene-d8	2037-26-5	BLK	30.70	30	102	89 - 112	

Lab Control Standard 3658402 (LCS) Created on 04/24/2023 08:09 For QC Batch 978455

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
1,1,1-Trichloroethane	71-55-6	LCS	20.70		20	104	74 - 131		



QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
1,1,2,2-Tetrachloroethane	79-34-5	LCS	20.80		20	104	71 - 121		
1,1,2-Trichloroethane	79-00-5	LCS	20.40		20	102	80 - 119		
1,1-Dichloroethane	75-34-3	LCS	20.80		20	104	77 - 125		
1,1-Dichloroethene	75-35-4	LCS	22.20		20	111	71 - 131		
1,2,3-Trichlorobenzene	87-61-6	LCS	18.80		20	94.1	69 - 129		
1,2,4-Trichlorobenzene	120-82-1	LCS	20.80		20	104	69 - 130		
1,2-Dibromo-3-chloropropane	96-12-8	LCS	17.90		20	89.3	62 - 128		
1,2-Dibromoethane	106-93-4	LCS	18.70		20	93.7	77 - 121		
1,2-Dichlorobenzene	95-50-1	LCS	21.20		20	106	80 - 119		
1,2-Dichloroethane	107-06-2	LCS	20.50		20	103	73 - 128		
1,2-Dichloropropane	78-87-5	LCS	20.90		20	104	78 - 122		
1,3-Dichlorobenzene	541-73-1	LCS	21.30		20	107	80 - 119		
1,3-Dichloropropene, Total	542-75-6	LCS	35.10		40	87.9	75 - 124		
1,4-Dichlorobenzene	106-46-7	LCS	20.40		20	102	79 - 118		
2-Butanone	78-93-3	LCS	117		100	117	56 - 143		
2-Hexanone	591-78-6	LCS	94.80		100	94.8	57 - 139		
4-Methyl-2-Pentanone(MIBK)	108-10-1	LCS	103		100	103	67 - 130		
Acetone	67-64-1	LCS	113		100	113	39 - 160		
Benzene	71-43-2	LCS	21.30		20	106	79 - 120		
Bromochloromethane	74-97-5	LCS	21.90		20	110	78 - 123		
Bromodichloromethane	75-27-4	LCS	20.90		20	105	79 - 125		
Bromoform	75-25-2	LCS	21.10		20	106	66 - 130		
Bromomethane	74-83-9	LCS	20.40		20	102	53 - 141		
Carbon Disulfide	75-15-0	LCS	23.50		20	118	64 - 133		
Carbon Tetrachloride	56-23-5	LCS	21.70		20	108	72 - 136		
Chlorobenzene	108-90-7	LCS	20		20	100	82 - 118		
Chlorodibromomethane	124-48-1	LCS	17.80		20	89	74 - 126		
Chloroethane	75-00-3	LCS	20.80		20	104	60 - 138		
Chloroform	67-66-3	LCS	21.20		20	106	79 - 124		
Chloromethane	74-87-3	LCS	24		20	120	50 - 139		
cis-1,2-Dichloroethene	156-59-2	LCS	21.70		20	109	78 - 123		
Cyclohexane	110-82-7	LCS	21.20		20	106	71 - 130		
Dichlorodifluoromethane	75-71-8	LCS	30.90		20	154*	32 - 152		
Ethylbenzene	100-41-4	LCS	20.90		20	104	79 - 121		
Freon 113	76-13-1	LCS	23		20	115	70 - 136		
Iodomethane	74-88-4	LCS	16.20		20	81	69 - 131		
Isopropylbenzene	98-82-8	LCS	22.80		20	114	72 - 131		
Methyl acetate	79-20-9	LCS	21.40		20	107	56 - 136		
Methyl cyclohexane	108-87-2	LCS	20.40		20	102	72 - 132		
Methyl t-Butyl Ether	1634-04-4	LCS	22.80		20	114	71 - 124		
Methylene Chloride	75-09-2	LCS	21.70		20	108	74 - 124		
Styrene	100-42-5	LCS	19.40		20	97	78 - 123		
Tetrachloroethene	127-18-4	LCS	20.30		20	101	74 - 129		
Toluene	108-88-3	LCS	20		20	100	80 - 121		
Total Xylenes	1330-20-7	LCS	56.60		60	94.4	79 - 121		
trans-1,2-Dichloroethene	156-60-5	LCS	21.80		20	109	75 - 124		
Trichloroethene	79-01-6	LCS	19.40		20	97.1	79 - 123		



QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
Trichlorofluoromethane	75-69-4	LCS	20.50		20	102	65 - 141		
Vinyl Chloride	75-01-4	LCS	22.30		20	112	58 - 137		

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	LCS	30.80	30	103	81 - 118	
4-Bromofluorobenzene	460-00-4	LCS	30.30	30	101	85 - 114	
Dibromofluoromethane	1868-53-7	LCS	30.40	30	101	80 - 119	
Toluene-d8	2037-26-5	LCS	29.30	30	97.6	89 - 112	

Matrix Spike 3658617 (MS) 3297717004 For QC Batch 978455

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Matrix Spike Duplicate 3658618 (MSD) 3297717004 For QC Batch 978455

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
1,1,1-Trichloroethane	71-55-6	MS	23	0	20	115	74 - 131		
1,1,1-Trichloroethane	71-55-6	MSD	21.80	0	20	109	74 - 131	RPD 5.34 (Max-20)	
1,1,2,2-Tetrachloroethane	79-34-5	MS	21.60	0	20	108	71 - 121		
1,1,2,2-Tetrachloroethane	79-34-5	MSD	21.60	0	20	108	71 - 121	RPD 0.03 (Max-20)	
1,1,2-Trichloroethane	79-00-5	MS	22	0	20	110	80 - 119		
1,1,2-Trichloroethane	79-00-5	MSD	21.20	0	20	106	80 - 119	RPD 3.73 (Max-20)	
1,1-Dichloroethane	75-34-3	MS	22.70	0	20	113	77 - 125		
1,1-Dichloroethane	75-34-3	MSD	21.60	0	20	108	77 - 125	RPD 4.64 (Max-20)	
1,1-Dichloroethene	75-35-4	MS	24.50	0	20	122	71 - 131		
1,1-Dichloroethene	75-35-4	MSD	23.20	0	20	116	71 - 131	RPD 5.30 (Max-20)	
1,2,3-Trichlorobenzene	87-61-6	MS	15.10	0	20	75.5	69 - 129		
1,2,3-Trichlorobenzene	87-61-6	MSD	19	0	20	94.9	69 - 129	RPD 22.70* (Max-20)	
1,2,4-Trichlorobenzene	120-82-1	MS	19.10	0	20	95.4	69 - 130		
1,2,4-Trichlorobenzene	120-82-1	MSD	20.80	0	20	104	69 - 130	RPD 8.75 (Max-20)	
1,2-Dibromo-3-chloropropane	96-12-8	MS	18.50	0	20	92.5	62 - 128		
1,2-Dibromo-3-chloropropane	96-12-8	MSD	19.20	0	20	96.2	62 - 128	RPD 3.94 (Max-20)	
1,2-Dibromoethane	106-93-4	MS	19.30	0	20	96.4	77 - 121		
1,2-Dibromoethane	106-93-4	MSD	18.80	0	20	93.8	77 - 121	RPD 2.74 (Max-20)	
1,2-Dichlorobenzene	95-50-1	MS	21.40	0	20	107	80 - 119		
1,2-Dichlorobenzene	95-50-1	MSD	22.10	0	20	110	80 - 119	RPD 3.05 (Max-20)	
1,2-Dichloroethane	107-06-2	MS	21.40	0	20	107	73 - 128		
1,2-Dichloroethane	107-06-2	MSD	21.20	0	20	106	73 - 128	RPD 1.05 (Max-20)	
1,2-Dichloropropane	78-87-5	MS	22.50	0	20	113	78 - 122		
1,2-Dichloropropane	78-87-5	MSD	21.10	0	20	106	78 - 122	RPD 6.48 (Max-20)	
1,3-Dichlorobenzene	541-73-1	MS	21.40	0	20	107	80 - 119		
1,3-Dichlorobenzene	541-73-1	MSD	21.60	0	20	108	80 - 119	RPD 1.06 (Max-20)	



QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
1,3-Dichloropropene, Total	542-75-6	MS	34.80	0	40	87	75 - 124		
1,3-Dichloropropene, Total	542-75-6	MSD	33.90	0	40	84.7	75 - 124	RPD 2.61	(Max-20)
1,4-Dichlorobenzene	106-46-7	MS	21.40	0	20	107	79 - 118		
1,4-Dichlorobenzene	106-46-7	MSD	20.60	0	20	103	79 - 118	RPD 3.78	(Max-20)
2-Butanone	78-93-3	MS	101	0	100	101	56 - 143		
2-Butanone	78-93-3	MSD	98.20	0	100	98.2	56 - 143	RPD 2.38	(Max-20)
2-Hexanone	591-78-6	MS	91.10	0	100	91.1	57 - 139		
2-Hexanone	591-78-6	MSD	86.60	0	100	86.6	57 - 139	RPD 5.01	(Max-20)
4-Methyl-2-Pentanone(MIBK)	108-10-1	MS	110	0	100	110	67 - 130		
4-Methyl-2-Pentanone(MIBK)	108-10-1	MSD	104	0	100	104	67 - 130	RPD 5.83	(Max-20)
Acetone	67-64-1	MS	104	0	100	104	39 - 160		
Acetone	67-64-1	MSD	99.90	0	100	99.9	39 - 160	RPD 4.53	(Max-20)
Benzene	71-43-2	MS	23.40	0	20	117	79 - 120		
Benzene	71-43-2	MSD	22.30	0	20	111	79 - 120	RPD 4.84	(Max-20)
Bromochloromethane	74-97-5	MS	22.90	0	20	115	78 - 123		
Bromochloromethane	74-97-5	MSD	22.10	0	20	110	78 - 123	RPD 3.69	(Max-20)
Bromodichloromethane	75-27-4	MS	21.80	0	20	109	79 - 125		
Bromodichloromethane	75-27-4	MSD	21.50	0	20	108	79 - 125	RPD 1.33	(Max-20)
Bromoform	75-25-2	MS	21.50	0	20	107	66 - 130		
Bromoform	75-25-2	MSD	21.80	0	20	109	66 - 130	RPD 1.29	(Max-20)
Bromomethane	74-83-9	MS	11.40	0	20	57.2	53 - 141		
Bromomethane	74-83-9	MSD	10.70	0	20	53.4	53 - 141	RPD 6.74	(Max-20)
Carbon Disulfide	75-15-0	MS	26.80	0.26	20	133	64 - 133		
Carbon Disulfide	75-15-0	MSD	25	0.26	20	124	64 - 133	RPD 7.24	(Max-20)
Carbon Tetrachloride	56-23-5	MS	23.70	0	20	118	72 - 136		
Carbon Tetrachloride	56-23-5	MSD	22.80	0	20	114	72 - 136	RPD 3.67	(Max-20)
Chlorobenzene	108-90-7	MS	21.20	0	20	106	82 - 118		
Chlorobenzene	108-90-7	MSD	20.10	0	20	100	82 - 118	RPD 5.61	(Max-20)
Chlorodibromomethane	124-48-1	MS	18.60	0	20	93.2	74 - 126		
Chlorodibromomethane	124-48-1	MSD	17.90	0	20	89.6	74 - 126	RPD 3.97	(Max-20)
Chloroethane	75-00-3	MS	29	5.80	20	116	60 - 138		
Chloroethane	75-00-3	MSD	26.10	5.80	20	102	60 - 138	RPD 10.70	(Max-20)
Chloroform	67-66-3	MS	22.20	0	20	111	79 - 124		
Chloroform	67-66-3	MSD	21.50	0	20	107	79 - 124	RPD 3.37	(Max-20)
Chloromethane	74-87-3	MS	27.80	0	20	139	50 - 139		
Chloromethane	74-87-3	MSD	25.90	0	20	129	50 - 139	RPD 7.27	(Max-20)
cis-1,2-Dichloroethene	156-59-2	MS	26.10	2.60	20	117	78 - 123		
cis-1,2-Dichloroethene	156-59-2	MSD	25.10	2.60	20	112	78 - 123	RPD 3.86	(Max-20)
Cyclohexane	110-82-7	MS	24	0	20	120	71 - 130		
Cyclohexane	110-82-7	MSD	22.60	0	20	113	71 - 130	RPD 6	(Max-20)
Dichlorodifluoromethane	75-71-8	MS	35.10	0	20	175*	32 - 152		
Dichlorodifluoromethane	75-71-8	MSD	33.20	0	20	166*	32 - 152	RPD 5.59	(Max-20)
Ethylbenzene	100-41-4	MS	22.80	0	20	114	79 - 121		
Ethylbenzene	100-41-4	MSD	21.60	0	20	108	79 - 121	RPD 5.28	(Max-20)
Freon 113	76-13-1	MS	25.30	0	20	126	70 - 136		
Freon 113	76-13-1	MSD	24	0	20	120	70 - 136	RPD 5.21	(Max-20)
Iodomethane	74-88-4	MS	19.10	0	20	95.5	69 - 131		
Iodomethane	74-88-4	MSD	21.30	0	20	106	69 - 131	RPD 10.80	(Max-20)
Isopropylbenzene	98-82-8	MS	24.50	0	20	123	72 - 131		

VOLATILE ORGANICS (cont.)

QUALITY CONTROL SAMPLES

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD	Limit (%)	Qualifiers
Isopropylbenzene	98-82-8	MSD	24.10	0	20	120	72 - 131	RPD	1.85 (Max-20)	
Methyl acetate	79-20-9	MS	16.50	0	20	82.3	56 - 136			
Methyl acetate	79-20-9	MSD	14.40	0	20	71.9	56 - 136	RPD	13.60 (Max-20)	
Methyl cyclohexane	108-87-2	MS	22.20	0	20	111	72 - 132			
Methyl cyclohexane	108-87-2	MSD	21.50	0	20	108	72 - 132	RPD	2.99 (Max-20)	
Methyl t-Butyl Ether	1634-04-4	MS	23.10	0	20	115	71 - 124			
Methyl t-Butyl Ether	1634-04-4	MSD	22.90	0	20	114	71 - 124	RPD	0.96 (Max-20)	
Methylene Chloride	75-09-2	MS	23.30	0.52	20	114	74 - 124			
Methylene Chloride	75-09-2	MSD	22.80	0.52	20	111	74 - 124	RPD	2.15 (Max-20)	
Styrene	100-42-5	MS	21.50	0	20	108	78 - 123			
Styrene	100-42-5	MSD	21.10	0	20	105	78 - 123	RPD	1.88 (Max-20)	
Tetrachloroethene	127-18-4	MS	21.60	0	20	108	74 - 129			
Tetrachloroethene	127-18-4	MSD	20.10	0	20	101	74 - 129	RPD	6.76 (Max-20)	
Toluene	108-88-3	MS	27.40	5.60	20	109	80 - 121			
Toluene	108-88-3	MSD	25.80	5.60	20	101	80 - 121	RPD	5.73 (Max-20)	
Total Xylenes	1330-20-7	MS	60.80	0	60	101	79 - 121			
Total Xylenes	1330-20-7	MSD	57.80	0	60	96.4	79 - 121	RPD	4.97 (Max-20)	
trans-1,2-Dichloroethene	156-60-5	MS	24.50	0.56	20	120	75 - 124			
trans-1,2-Dichloroethene	156-60-5	MSD	22.60	0.56	20	110	75 - 124	RPD	7.88 (Max-20)	
Trichloroethene	79-01-6	MS	22.10	0.82	20	106	79 - 123			
Trichloroethene	79-01-6	MSD	20.70	0.82	20	99.6	79 - 123	RPD	6.46 (Max-20)	
Trichlorofluoromethane	75-69-4	MS	22.50	0	20	113	65 - 141			
Trichlorofluoromethane	75-69-4	MSD	20.90	0	20	105	65 - 141	RPD	7.43 (Max-20)	
Vinyl Chloride	75-01-4	MS	30.10	3.90	20	131	58 - 137			
Vinyl Chloride	75-01-4	MSD	27.20	3.90	20	117	58 - 137	RPD	9.93 (Max-20)	

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	MS	31.20	30	104	81 - 118	
1,2-Dichloroethane-d4	17060-07-0	MSD	31.50	30	105	81 - 118	
4-Bromofluorobenzene	460-00-4	MS	30.20	30	101	85 - 114	
4-Bromofluorobenzene	460-00-4	MSD	30.60	30	102	85 - 114	
Dibromofluoromethane	1868-53-7	MS	30.50	30	102	80 - 119	
Dibromofluoromethane	1868-53-7	MSD	31.10	30	104	80 - 119	
Toluene-d8	2037-26-5	MS	29.70	30	99.1	89 - 112	
Toluene-d8	2037-26-5	MSD	29.10	30	97	89 - 112	

QC Batch

Associated Samples

QC Batch	978892	Prep Method	N/A
Date	N/A	Analysis Method	SW846 8260C
Tech.			

3297717008	3297717009	3297717010	3297717007



QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result	Units	LOQ	Qualifiers
1,1,1-Trichloroethane	71-55-6	BLK	0.75U	ug/L	1.0	U
1,1,2,2-Tetrachloroethane	79-34-5	BLK	0.75U	ug/L	1.0	U
1,1,2-Trichloroethane	79-00-5	BLK	0.75U	ug/L	1.0	U
1,1-Dichloroethane	75-34-3	BLK	0.75U	ug/L	1.0	U
1,1-Dichloroethene	75-35-4	BLK	0.75U	ug/L	1.0	U
1,2,3-Trichlorobenzene	87-61-6	BLK	4.0	ug/L	1.0	
1,2,4-Trichlorobenzene	120-82-1	BLK	0.75U	ug/L	1.0	U
1,2-Dibromo-3-chloropropane	96-12-8	BLK	2.5U	ug/L	5.0	U
1,2-Dibromoethane	106-93-4	BLK	0.75U	ug/L	1.0	U
1,2-Dichlorobenzene	95-50-1	BLK	0.75U	ug/L	1.0	U
1,2-Dichloroethane	107-06-2	BLK	0.75U	ug/L	1.0	U
1,2-Dichloropropane	78-87-5	BLK	0.75U	ug/L	1.0	U
1,3-Dichlorobenzene	541-73-1	BLK	0.75U	ug/L	1.0	U
1,3-Dichloropropene, Total	542-75-6	BLK	1.5U	ug/L	2.0	U
1,4-Dichlorobenzene	106-46-7	BLK	0.75U	ug/L	1.0	U
2-Butanone	78-93-3	BLK	3.8U	ug/L	5.0	U
2-Hexanone	591-78-6	BLK	3.8U	ug/L	5.0	U
4-Methyl-2-Pentanone(MIBK)	108-10-1	BLK	3.8U	ug/L	5.0	U
Acetone	67-64-1	BLK	3.8U	ug/L	5.0	U
Benzene	71-43-2	BLK	0.75U	ug/L	1.0	U
Bromochloromethane	74-97-5	BLK	0.75U	ug/L	1.0	U
Bromodichloromethane	75-27-4	BLK	0.75U	ug/L	1.0	U
Bromoform	75-25-2	BLK	0.75U	ug/L	1.0	U
Bromomethane	74-83-9	BLK	0.76J	ug/L	1.0	J
Carbon Disulfide	75-15-0	BLK	0.75U	ug/L	1.0	U
Carbon Tetrachloride	56-23-5	BLK	0.75U	ug/L	1.0	U
Chlorobenzene	108-90-7	BLK	0.75U	ug/L	1.0	U
Chlorodibromomethane	124-48-1	BLK	0.75U	ug/L	1.0	U
Chloroethane	75-00-3	BLK	0.75U	ug/L	1.0	U
Chloroform	67-66-3	BLK	0.75U	ug/L	1.0	U
Chloromethane	74-87-3	BLK	0.75U	ug/L	1.0	U
cis-1,2-Dichloroethene	156-59-2	BLK	0.75U	ug/L	1.0	U
Cyclohexane	110-82-7	BLK	0.75U	ug/L	1.0	U
Dichlorodifluoromethane	75-71-8	BLK	0.75U	ug/L	1.0	U
Ethylbenzene	100-41-4	BLK	0.75U	ug/L	1.0	U
Freon 113	76-13-1	BLK	0.75U	ug/L	1.0	U
Iodomethane	74-88-4	BLK	0.75U	ug/L	1.0	U
Isopropylbenzene	98-82-8	BLK	0.75U	ug/L	1.0	U
Methyl acetate	79-20-9	BLK	0.75U	ug/L	1.0	U
Methyl cyclohexane	108-87-2	BLK	0.75U	ug/L	1.0	U
Methyl t-Butyl Ether	1634-04-4	BLK	0.75U	ug/L	1.0	U
Methylene Chloride	75-09-2	BLK	0.75U	ug/L	1.0	U
Styrene	100-42-5	BLK	0.75U	ug/L	1.0	U
Tetrachloroethene	127-18-4	BLK	0.75U	ug/L	1.0	U
Toluene	108-88-3	BLK	0.75U	ug/L	1.0	U
Total Xylenes	1330-20-7	BLK	2.3U	ug/L	3.0	U
trans-1,2-Dichloroethene	156-60-5	BLK	0.75U	ug/L	1.0	U



QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result	Units	LOQ	Qualifiers
Trichloroethene	79-01-6	BLK	0.75U	ug/L	1.0	U
Trichlorofluoromethane	75-69-4	BLK	0.75U	ug/L	1.0	U
Vinyl Chloride	75-01-4	BLK	0.75U	ug/L	1.0	U

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	BLK	30.40	30	101	81 - 118	
4-Bromofluorobenzene	460-00-4	BLK	31.40	30	105	85 - 114	
Dibromofluoromethane	1868-53-7	BLK	30	30	100	80 - 119	
Toluene-d8	2037-26-5	BLK	30.70	30	102	89 - 112	

Lab Control Standard 3659095 (LCS) Created on 04/25/2023 08:32 For QC Batch 978892

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
1,1,1-Trichloroethane	71-55-6	LCS	21.70		20	109	74 - 131		
1,1,2,2-Tetrachloroethane	79-34-5	LCS	20.80		20	104	71 - 121		
1,1,2-Trichloroethane	79-00-5	LCS	20.50		20	103	80 - 119		
1,1-Dichloroethane	75-34-3	LCS	21.10		20	105	77 - 125		
1,1-Dichloroethene	75-35-4	LCS	22.80		20	114	71 - 131		
1,2,3-Trichlorobenzene	87-61-6	LCS	18.40		20	92.1	69 - 129		
1,2,4-Trichlorobenzene	120-82-1	LCS	16.60		20	83.2	69 - 130		
1,2-Dibromo-3-chloropropane	96-12-8	LCS	16.60		20	83.2	62 - 128		
1,2-Dibromoethane	106-93-4	LCS	19.30		20	96.3	77 - 121		
1,2-Dichlorobenzene	95-50-1	LCS	20.90		20	104	80 - 119		
1,2-Dichloroethane	107-06-2	LCS	20.10		20	101	73 - 128		
1,2-Dichloropropane	78-87-5	LCS	20.90		20	104	78 - 122		
1,3-Dichlorobenzene	541-73-1	LCS	20.80		20	104	80 - 119		
1,3-Dichloropropene, Total	542-75-6	LCS	34.90		40	87.3	75 - 124		
1,4-Dichlorobenzene	106-46-7	LCS	21.10		20	106	79 - 118		
2-Butanone	78-93-3	LCS	85		100	85	56 - 143		
2-Hexanone	591-78-6	LCS	86.10		100	86.1	57 - 139		
4-Methyl-2-Pentanone(MIBK)	108-10-1	LCS	94.40		100	94.4	67 - 130		
Acetone	67-64-1	LCS	99.70		100	99.7	39 - 160		
Benzene	71-43-2	LCS	21.80		20	109	79 - 120		
Bromochloromethane	74-97-5	LCS	21.70		20	109	78 - 123		
Bromodichloromethane	75-27-4	LCS	20.80		20	104	79 - 125		
Bromoform	75-25-2	LCS	19.60		20	97.9	66 - 130		
Bromomethane	74-83-9	LCS	15.20		20	75.9	53 - 141		
Carbon Disulfide	75-15-0	LCS	23.70		20	119	64 - 133		
Carbon Tetrachloride	56-23-5	LCS	19.50		20	97.4	72 - 136		
Chlorobenzene	108-90-7	LCS	20.90		20	104	82 - 118		
Chlorodibromomethane	124-48-1	LCS	17.40		20	87.2	74 - 126		
Chloroethane	75-00-3	LCS	20.60		20	103	60 - 138		



QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
Chloroform	67-66-3	LCS	21.60		20	108	79 - 124		
Chloromethane	74-87-3	LCS	20.80		20	104	50 - 139		
cis-1,2-Dichloroethene	156-59-2	LCS	21.80		20	109	78 - 123		
Cyclohexane	110-82-7	LCS	21.80		20	109	71 - 130		
Dichlorodifluoromethane	75-71-8	LCS	22.20		20	111	32 - 152		
Ethylbenzene	100-41-4	LCS	21.60		20	108	79 - 121		
Freon 113	76-13-1	LCS	22.70		20	113	70 - 136		
Iodomethane	74-88-4	LCS	18.10		20	90.3	69 - 131		
Isopropylbenzene	98-82-8	LCS	22.70		20	114	72 - 131		
Methyl acetate	79-20-9	LCS	17.10		20	85.4	56 - 136		
Methyl cyclohexane	108-87-2	LCS	20.30		20	102	72 - 132		
Methyl t-Butyl Ether	1634-04-4	LCS	21.60		20	108	71 - 124		
Methylene Chloride	75-09-2	LCS	21.50		20	108	74 - 124		
Styrene	100-42-5	LCS	19.70		20	98.4	78 - 123		
Tetrachloroethene	127-18-4	LCS	21		20	105	74 - 129		
Toluene	108-88-3	LCS	21		20	105	80 - 121		
Total Xylenes	1330-20-7	LCS	64.80		60	108	79 - 121		
trans-1,2-Dichloroethene	156-60-5	LCS	21.80		20	109	75 - 124		
Trichloroethene	79-01-6	LCS	19.90		20	99.4	79 - 123		
Trichlorofluoromethane	75-69-4	LCS	20.80		20	104	65 - 141		
Vinyl Chloride	75-01-4	LCS	21.10		20	106	58 - 137		

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	LCS	31.20	30	104	81 - 118	
4-Bromofluorobenzene	460-00-4	LCS	30.20	30	101	85 - 114	
Dibromofluoromethane	1868-53-7	LCS	30.10	30	100	80 - 119	
Toluene-d8	2037-26-5	LCS	29.70	30	98.9	89 - 112	

WET CHEMISTRY

3297717003	3297717001	3297717002

<u>Compound</u>	<u>CAS No</u>		<u>Result</u> (mg/L)	<u>Orig.</u> <u>Result</u> (mg/L)	<u>Spk</u> <u>Added</u> (mg/L)	<u>Rec.</u> (%)	<u>Limits (%)</u>	<u>RPD Limit (%)</u>	<u>Qualifiers</u>
Total Organic Carbon (TOC)	TOC	LCS	0.99		1	99.4	85 - 115		J



QUALITY CONTROL SAMPLES

WET CHEMISTRY (cont.)

QC Batch

QC Batch	975118	Prep Method	N/A
Date	N/A	Analysis Method	SW846 9060A
Tech.			

Associated Samples

3297717004	3297717005	3297717006	3297717008
3297717009			

Method Blank 3655309 (MB) Created on 04/17/2023 16:18 For QC Batch 975118

RESULTS

Compound	CAS No	Result	Units	LOQ	Qualifiers
Total Organic Carbon (TOC)	TOC	BLK	0.50U mg/L	1.0	U

Lab Control Standard 3655310 (LCSLOW) Created on 04/17/2023 16:18 For QC Batch 975118

RESULTS

Compound	CAS No	Result (mg/L)	Orig. Result (mg/L)	Spk Added (mg/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
Total Organic Carbon (TOC)	TOC	LCS	0.99	1	99.4	85 - 115		J

Matrix Spike 3655311 (MS) 3297717004 For QC Batch 975118

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Matrix Spike Duplicate 3655312 (MSD) 3297717004 For QC Batch 975118

RESULTS

Compound	CAS No	Result (mg/L)	Orig. Result (mg/L)	Spk Added (mg/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
Total Organic Carbon (TOC)	TOC	MS	362	217	150	96.6	85 - 115	
Total Organic Carbon (TOC)	TOC	MSD	354	217	150	91.6	85 - 115	RPD 2.09 (Max-20)

QC Batch

QC Batch	975915	Prep Method	N/A
Date	N/A	Analysis Method	SW846 9060A
Tech.			

Associated Samples

3297717007	3297717010

Matrix Spike 3656514 (MS) 3298334001 (non-Project Sample) For QC Batch 975915

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Matrix Spike Duplicate 3656515 (MSD) 3298334001 (non-Project Sample) For QC Batch 975915



QUALITY CONTROL SAMPLES

WET CHEMISTRY (cont.)

RESULTS

Compound	CAS No		Result (mg/L)	Orig. Result (mg/L)	Spk Added (mg/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
Total Organic Carbon (TOC)	TOC	MS	6.50	0.40	6	102	85 - 115		
Total Organic Carbon (TOC)	TOC	MSD	6.50	0.40	6	102	85 - 115	RPD 0.08 (Max-20)	

Matrix Spike 3656516 (MS) 3298028001 (non-Project Sample) For QC Batch 975915

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Matrix Spike Duplicate 3656517 (MSD) 3298028001 (non-Project Sample) For QC Batch 975915

RESULTS

Compound	CAS No		Result (mg/L)	Orig. Result (mg/L)	Spk Added (mg/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
Total Organic Carbon (TOC)	TOC	MS	7.80	1.60	6	104	85 - 115		
Total Organic Carbon (TOC)	TOC	MSD	7.70	1.60	6	103	85 - 115	RPD 1.21 (Max-20)	

Method Blank 3656512 (MB) Created on 04/19/2023 16:05 For QC Batch 975915

RESULTS

Compound	CAS No		Result	Units	LOQ	Qualifiers
Total Organic Carbon (TOC)	TOC	BLK	0.50U	mg/L	1.0	U

Lab Control Standard 3656513 (LCSLOW) Created on 04/19/2023 16:05 For QC Batch 975915

RESULTS

Compound	CAS No		Result (mg/L)	Orig. Result (mg/L)	Spk Added (mg/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
Total Organic Carbon (TOC)	TOC	LCS	0.98		1	97.7	85 - 115		J



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Lab ID	Sample ID	Preparation Method	Prep Batch	Prep Date/Time	By	Analysis Method	Anly Batch
3297717001	MW5-5D-20230411	N/A	N/A	N/A		RSK 175	975305
		N/A	N/A	N/A		SW846 8260C	978455
		N/A	N/A	N/A		SW846 9060A	975115
3297717002	DUP-01-20230411	N/A	N/A	N/A		RSK 175	975305
		N/A	N/A	N/A		SW846 8260C	978455
		N/A	N/A	N/A		SW846 9060A	975115
3297717003	RW5-2-20230411	N/A	N/A	N/A		RSK 175	976366
		N/A	N/A	N/A		SW846 8260C	978455
		N/A	N/A	N/A		SW846 9060A	975115
3297717004	RW5-1-20230411	N/A	N/A	N/A		RSK 175	976366
		N/A	N/A	N/A		SW846 8260C	978455
		N/A	N/A	N/A		SW846 9060A	975118
3297717005	MW5-1DA-20230411	N/A	N/A	N/A		RSK 175	976366
		N/A	N/A	N/A		SW846 8260C	978455
		N/A	N/A	N/A		SW846 9060A	975118
3297717006	MW10-1DA-20230411	N/A	N/A	N/A		RSK 175	976366
		N/A	N/A	N/A		SW846 8260C	978455
		N/A	N/A	N/A		SW846 9060A	975118
3297717007	MW10-7-20230411	N/A	N/A	N/A		RSK 175	976366
		N/A	N/A	N/A		SW846 8260C	978892
		N/A	N/A	N/A		SW846 9060A	975915
3297717008	PW10-1-20230411	N/A	N/A	N/A		RSK 175	976366
		N/A	N/A	N/A		SW846 8260C	978892
		N/A	N/A	N/A		SW846 9060A	975118
3297717009	MW10-11D-20230411	N/A	N/A	N/A		RSK 175	976366
		N/A	N/A	N/A		SW846 8260C	978892
		N/A	N/A	N/A		SW846 9060A	975118
3297717010	MW10-10D-20230411	N/A	N/A	N/A		RSK 175	976366
		N/A	N/A	N/A		RSK 175	978354
		N/A	N/A	N/A		SW846 8260C	978892
		N/A	N/A	N/A		SW846 9060A	975915
3297717011	Trip Blank	N/A	N/A	N/A		SW846 8260C	974503



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NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: PJLA 74618
State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

Analytical Results Report For

ARCADIS US Inc - Clifton Park, NY

Project AUC046INFARS 30036646

Workorder 3315995

Report ID 263989 on 8/14/2023

Certificate of Analysis

Enclosed are the analytical results for samples received by the laboratory on Aug 02, 2023.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Susan Scherer (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

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ALS Middletown: 301 Fulling Mill Road, Middletown, PA 17057 : 717-944-5541.

Recipient(s):

Andy Vitolins - Arcadis
Erika Denkenberger - Arcadis
Katherine Clubine - Arcadis
Corey Averill - Arcadis

Susan Scherer

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.

Susan Scherer
Project Coordinator

(ALS Digital Signature)



Sample Summary

<u>Lab ID</u>	<u>Sample ID</u>	<u>Matrix</u>	<u>Date Collected</u>	<u>Date Received</u>	<u>Collector</u>	<u>Collection Company</u>
3315995001	PZ3-6D-20230801	Ground Water	08/01/2023 10:00	08/02/2023 09:17	CBC	Collected By Client



Reference

Notes

- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
- Except as qualified, Clean Water Act sample analyses are consistent with methodology requirements in 40 CFR Part 136, including but not limited to the following EPA Method reference revisions:
EPA 300.1 Rev. 1.0-1997
EPA 300.0 Rev. 2.1-1993
EPA 353.2 Rev. 2.0-1993
EPA 410.4 Rev. 1.0-1993
EPA 420.4 Rev. 1.0-1993
EPA 365.1 Rev. 2.0-1993
EPA 200.7 Rev. 4.4-1994
EPA 200.8 Rev. 5.4-1994
EPA 245.1 Rev. 3.0-1994
- Except as qualified, Safe Drinking Water Act sample analyses are consistent with methodology requirements in 40 CFR Part 141.
- The Chain of Custody document is included as part of this report.
- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
- Method references listed on this report beginning with the prefix "S" followed by a method number (such as S2310B-97) refer to methods from "Standard Methods for the Examination of Water and Wastewater".
- For microbiological analyses, the "Prepared" value is the date/time into the incubator and the "Analyzed" value is the date/time out the incubator.
- An Analysis-Prep Method Cross Reference Table is included after Analytical Results & Qualifiers section in this report.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND) above the MDL
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Practical Quantitation Limit for this Project
ND	Not Detected - indicates that the analyte was Not Detected
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits
#	Please reference the result in the Results Section for analyte-level flags.



Project Notations

Lab ID

Sample ID

Sample Notations

Notation Ref.

Result Notations

1

The initial calibration verification for method SW846 8260DOD was outside the control limits for the analyte dichlorodifluoromethane. The % Recovery was reported as 131% and the control limits were 80 to 120%.



Detected Results Summary

Client Sample ID	PZ3-6D-20230801	Collected	08/01/2023 10:00				
Lab Sample ID	3315995001	Lab Receipt	08/02/2023 09:17				
Compound	Result	Units	LOQ	LOD	DL	Method	Flag
VOLATILE ORGANICS							
Acetone	6.3	ug/L	5.0	3.8	1.6	SW846 8260C	#
cis-1,2-Dichloroethene	2.2	ug/L	1.0	0.75	0.33	SW846 8260C	#
Methyl acetate	0.52J	ug/L	1.0	0.75	0.33	SW846 8260C	#
Vinyl Chloride	0.86J	ug/L	1.0	0.75	0.33	SW846 8260C	#



Results

Client Sample ID	PZ3-6D-20230801	Collected	08/01/2023 10:00
Lab Sample ID	3315995001	Lab Receipt	08/02/2023 09:17

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	08/10/2023 19:03	AGL	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	08/10/2023 19:03	AGL	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	08/10/2023 19:03	AGL	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	08/10/2023 19:03	AGL	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	08/10/2023 19:03	AGL	A
1,2,3-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	08/10/2023 19:03	AGL	A
1,2,4-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	08/10/2023 19:03	AGL	A
1,2-Dibromo-3-chloropropane	2.5U	U	ug/L	5.0	2.5	1.6	SW846 8260C	1	08/10/2023 19:03	AGL	A
1,2-Dibromoethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	08/10/2023 19:03	AGL	A
1,2-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	08/10/2023 19:03	AGL	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	08/10/2023 19:03	AGL	A
1,2-Dichloropropane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	08/10/2023 19:03	AGL	A
1,3-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	08/10/2023 19:03	AGL	A
1,3-Dichloropropene, Total	1.5U	U	ug/L	2.0	1.5	0.66	SW846 8260C	1	08/10/2023 19:03	AGL	A
1,4-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	08/10/2023 19:03	AGL	A
2-Butanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	08/10/2023 19:03	AGL	A
2-Hexanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	08/10/2023 19:03	AGL	A
4-Methyl-2-Pentanone(MIBK)	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	08/10/2023 19:03	AGL	A
Acetone	6.3		ug/L	5.0	3.8	1.6	SW846 8260C	1	08/10/2023 19:03	AGL	A
Benzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	08/10/2023 19:03	AGL	A
Bromochloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	08/10/2023 19:03	AGL	A
Bromodichloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	08/10/2023 19:03	AGL	A
Bromoform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	08/10/2023 19:03	AGL	A
Bromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	08/10/2023 19:03	AGL	A
Carbon Disulfide	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	08/10/2023 19:03	AGL	A
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	08/10/2023 19:03	AGL	A
Chlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	08/10/2023 19:03	AGL	A
Chlorodibromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	08/10/2023 19:03	AGL	A
Chloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	08/10/2023 19:03	AGL	A
Chloroform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	08/10/2023 19:03	AGL	A
Chloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	08/10/2023 19:03	AGL	A
cis-1,2-Dichloroethene	2.2		ug/L	1.0	0.75	0.33	SW846 8260C	1	08/10/2023 19:03	AGL	A
Cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	08/10/2023 19:03	AGL	A
Dichlorodifluoromethane	0.75U	U,1	ug/L	1.0	0.75	0.33	SW846 8260C	1	08/10/2023 19:03	AGL	A
Ethylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	08/10/2023 19:03	AGL	A
Freon 113	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	08/10/2023 19:03	AGL	A
Iodomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	08/10/2023 19:03	AGL	A
Isopropylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	08/10/2023 19:03	AGL	A
Methyl acetate	0.52J	J	ug/L	1.0	0.75	0.33	SW846 8260C	1	08/10/2023 19:03	AGL	A
Methyl cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	08/10/2023 19:03	AGL	A
Methyl t-Butyl Ether	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	08/10/2023 19:03	AGL	A
Methylene Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	08/10/2023 19:03	AGL	A
Styrene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	08/10/2023 19:03	AGL	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	08/10/2023 19:03	AGL	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	08/10/2023 19:03	AGL	A
Total Xylenes	2.3U	U	ug/L	3.0	2.3	1.0	SW846 8260C	1	08/10/2023 19:03	AGL	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	08/10/2023 19:03	AGL	A



Results

Client Sample ID	PZ3-6D-20230801	Collected	08/01/2023 10:00
Lab Sample ID	3315995001	Lab Receipt	08/02/2023 09:17

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Trichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	08/10/2023 19:03	AGL	A
Trichlorofluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	08/10/2023 19:03	AGL	A
Vinyl Chloride	0.86J	J	ug/L	1.0	0.75	0.33	SW846 8260C	1	08/10/2023 19:03	AGL	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	101%	81 – 118	08/10/2023 19:03	
4-Bromofluorobenzene	460-00-4	97.2%	85 – 114	08/10/2023 19:03	
Dibromofluoromethane	1868-53-7	103%	80 – 119	08/10/2023 19:03	
Toluene-d8	2037-26-5	96.4%	89 – 112	08/10/2023 19:03	



Sample - Method Cross Reference Table

Lab ID	Sample ID	Analysis Method	Preparation Method	Leachate Method
3315995001	PZ3-6D-20230801	SW846 8260C	N/A	

VOLATILE ORGANICS

QUALITY CONTROL SAMPLES

QC Batch

Associated Samples

QC Batch	1044775	Prep Method	N/A
Date	N/A	Analysis Method	SW846 8260C
Tech.			

3315995001

Matrix Spike

3706729 (MS)

3315682013 (non-Project Sample)

For QC Batch 1044775

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Matrix Spike Duplicate

3706730 (MSD)

3315682013 (non-Project Sample)

For QC Batch 1044775

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
1,1,1-Trichloroethane	71-55-6	MS	23.50	0	20	117	74 - 131		
1,1,1-Trichloroethane	71-55-6	MSD	22.80	0	20	114	74 - 131	RPD 2.84 (Max-20)	
1,1,2,2-Tetrachloroethane	79-34-5	MS	19.70	0	20	98.5	71 - 121		
1,1,2,2-Tetrachloroethane	79-34-5	MSD	21.20	0	20	106	71 - 121	RPD 7.53 (Max-20)	
1,1,2-Trichloroethane	79-00-5	MS	20.80	0	20	104	80 - 119		
1,1,2-Trichloroethane	79-00-5	MSD	21.30	0	20	106	80 - 119	RPD 2.43 (Max-20)	
1,1-Dichloroethane	75-34-3	MS	21.40	0	20	107	77 - 125		
1,1-Dichloroethane	75-34-3	MSD	21.20	0	20	106	77 - 125	RPD 1.09 (Max-20)	
1,1-Dichloroethene	75-35-4	MS	24.40	0	20	122	71 - 131		
1,1-Dichloroethene	75-35-4	MSD	23.60	0	20	118	71 - 131	RPD 3.20 (Max-20)	
1,2,3-Trichlorobenzene	87-61-6	MS	19.60	0	20	97.8	69 - 129		
1,2,3-Trichlorobenzene	87-61-6	MSD	20.30	0	20	101	69 - 129	RPD 3.70 (Max-20)	
1,2,4-Trichlorobenzene	120-82-1	MS	18.80	0	20	94.1	69 - 130		
1,2,4-Trichlorobenzene	120-82-1	MSD	19.50	0	20	97.3	69 - 130	RPD 3.37 (Max-20)	
1,2-Dibromo-3-chloropropane	96-12-8	MS	17.80	0	20	89.2	62 - 128		
1,2-Dibromo-3-chloropropane	96-12-8	MSD	19.40	0	20	96.9	62 - 128	RPD 8.35 (Max-20)	
1,2-Dibromoethane	106-93-4	MS	20.10	0	20	100	77 - 121		
1,2-Dibromoethane	106-93-4	MSD	20.90	0	20	105	77 - 121	RPD 4.20 (Max-20)	
1,2-Dichlorobenzene	95-50-1	MS	19.20	0	20	95.8	80 - 119		
1,2-Dichlorobenzene	95-50-1	MSD	19.90	0	20	99.4	80 - 119	RPD 3.70 (Max-20)	
1,2-Dichloroethane	107-06-2	MS	20.50	0	20	103	73 - 128		
1,2-Dichloroethane	107-06-2	MSD	20.70	0	20	104	73 - 128	RPD 0.80 (Max-20)	
1,2-Dichloropropane	78-87-5	MS	21.30	0	20	107	78 - 122		
1,2-Dichloropropane	78-87-5	MSD	21.20	0	20	106	78 - 122	RPD 0.46 (Max-20)	
1,3-Dichlorobenzene	541-73-1	MS	18.50	0	20	92.5	80 - 119		
1,3-Dichlorobenzene	541-73-1	MSD	19.50	0	20	97.7	80 - 119	RPD 5.52 (Max-20)	
1,3-Dichloropropene, Total	542-75-6	MS	38.80	0	40	97.1	75 - 124		
1,3-Dichloropropene, Total	542-75-6	MSD	40.50	0	40	101	75 - 124	RPD 4.30 (Max-20)	
1,4-Dichlorobenzene	106-46-7	MS	18.70	0	20	93.3	79 - 118		
1,4-Dichlorobenzene	106-46-7	MSD	19.70	0	20	98.4	79 - 118	RPD 5.35 (Max-20)	
2-Butanone	78-93-3	MS	83.30	0	100	83.3	56 - 143		
2-Butanone	78-93-3	MSD	86.30	0	100	86.3	56 - 143	RPD 3.59 (Max-20)	
2-Hexanone	591-78-6	MS	104	0	100	104	57 - 139		
2-Hexanone	591-78-6	MSD	112	0	100	112	57 - 139	RPD 7.39 (Max-20)	
4-Methyl-2-Pentanone(MIBK)	108-10-1	MS	106	0	100	106	67 - 130		



QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
4-Methyl-2-Pentanone(MIBK)	108-10-1	MSD	112	0	100	112	67 - 130	RPD 6 (Max-20)	
Acetone	67-64-1	MS	99.80	6.20	100	93.7	39 - 160		
Acetone	67-64-1	MSD	103	6.20	100	96.5	39 - 160	RPD 2.79 (Max-20)	
Benzene	71-43-2	MS	22.10	0	20	111	79 - 120		
Benzene	71-43-2	MSD	21.60	0	20	108	79 - 120	RPD 2.24 (Max-20)	
Bromochloromethane	74-97-5	MS	22.60	0	20	113	78 - 123		
Bromochloromethane	74-97-5	MSD	22.40	0	20	112	78 - 123	RPD 0.83 (Max-20)	
Bromodichloromethane	75-27-4	MS	21.70	0	20	108	79 - 125		
Bromodichloromethane	75-27-4	MSD	21.80	0	20	109	79 - 125	RPD 0.60 (Max-20)	
Bromoform	75-25-2	MS	19.40	0	20	97.2	66 - 130		
Bromoform	75-25-2	MSD	21	0	20	105	66 - 130	RPD 7.65 (Max-20)	
Bromomethane	74-83-9	MS	15.80	0	20	78.9	53 - 141		
Bromomethane	74-83-9	MSD	16.80	0	20	84	53 - 141	RPD 6.23 (Max-20)	
Carbon Disulfide	75-15-0	MS	24.50	0	20	122	64 - 133		
Carbon Disulfide	75-15-0	MSD	23.70	0	20	119	64 - 133	RPD 3.17 (Max-20)	
Carbon Tetrachloride	56-23-5	MS	23.20	0	20	116	72 - 136		
Carbon Tetrachloride	56-23-5	MSD	22.80	0	20	114	72 - 136	RPD 1.65 (Max-20)	
Chlorobenzene	108-90-7	MS	20.10	0	20	101	82 - 118		
Chlorobenzene	108-90-7	MSD	20.70	0	20	103	82 - 118	RPD 2.76 (Max-20)	
Chlorodibromomethane	124-48-1	MS	21.20	0	20	106	74 - 126		
Chlorodibromomethane	124-48-1	MSD	21.70	0	20	109	74 - 126	RPD 2.62 (Max-20)	
Chloroethane	75-00-3	MS	22.20	0	20	111	60 - 138		
Chloroethane	75-00-3	MSD	22.30	0	20	112	60 - 138	RPD 0.38 (Max-20)	
Chloroform	67-66-3	MS	21.20	0	20	106	79 - 124		
Chloroform	67-66-3	MSD	21	0	20	105	79 - 124	RPD 1 (Max-20)	
Chloromethane	74-87-3	MS	22.40	0	20	112	50 - 139		
Chloromethane	74-87-3	MSD	21.80	0	20	109	50 - 139	RPD 2.50 (Max-20)	
cis-1,2-Dichloroethene	156-59-2	MS	23.80	2.30	20	107	78 - 123		
cis-1,2-Dichloroethene	156-59-2	MSD	23.90	2.30	20	108	78 - 123	RPD 0.79 (Max-20)	
Cyclohexane	110-82-7	MS	24.50	0	20	122	71 - 130		
Cyclohexane	110-82-7	MSD	23.40	0	20	117	71 - 130	RPD 4.33 (Max-20)	
Dichlorodifluoromethane	75-71-8	MS	28.10	0	20	141	32 - 152		
Dichlorodifluoromethane	75-71-8	MSD	27.10	0	20	135	32 - 152	RPD 3.85 (Max-20)	
Ethylbenzene	100-41-4	MS	20.90	0	20	105	79 - 121		
Ethylbenzene	100-41-4	MSD	21.50	0	20	107	79 - 121	RPD 2.57 (Max-20)	
Freon 113	76-13-1	MS	25.80	0	20	129	70 - 136		
Freon 113	76-13-1	MSD	24.50	0	20	123	70 - 136	RPD 4.98 (Max-20)	
Iodomethane	74-88-4	MS	12.90	0	20	64.6*	69 - 131		
Iodomethane	74-88-4	MSD	15.60	0	20	77.9	69 - 131	RPD 18.60 (Max-20)	
Isopropylbenzene	98-82-8	MS	21.10	0	20	106	72 - 131		
Isopropylbenzene	98-82-8	MSD	22.10	0	20	110	72 - 131	RPD 4.34 (Max-20)	
Methyl acetate	79-20-9	MS	17.10	0.48	20	83.2	56 - 136		
Methyl acetate	79-20-9	MSD	16.80	0.48	20	81.7	56 - 136	RPD 1.80 (Max-20)	
Methyl cyclohexane	108-87-2	MS	22.10	0	20	110	72 - 132		
Methyl cyclohexane	108-87-2	MSD	22	0	20	110	72 - 132	RPD 0.37 (Max-20)	
Methyl t-Butyl Ether	1634-04-4	MS	21	0	20	105	71 - 124		
Methyl t-Butyl Ether	1634-04-4	MSD	21.50	0	20	107	71 - 124	RPD 2.20 (Max-20)	
Methylene Chloride	75-09-2	MS	22.10	0	20	110	74 - 124		
Methylene Chloride	75-09-2	MSD	21.90	0	20	109	74 - 124	RPD 0.73 (Max-20)	



QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
Styrene	100-42-5	MS	20.30	0	20	102	78 - 123		
Styrene	100-42-5	MSD	21	0	20	105	78 - 123	RPD 3.17 (Max-20)	
Tetrachloroethene	127-18-4	MS	18.30	0	20	91.7	74 - 129		
Tetrachloroethene	127-18-4	MSD	18.70	0	20	93.6	74 - 129	RPD 2.06 (Max-20)	
Toluene	108-88-3	MS	20.20	0	20	101	80 - 121		
Toluene	108-88-3	MSD	20.40	0	20	102	80 - 121	RPD 1.06 (Max-20)	
Total Xylenes	1330-20-7	MS	62	0	60	103	79 - 121		
Total Xylenes	1330-20-7	MSD	63.70	0	60	106	79 - 121	RPD 2.68 (Max-20)	
trans-1,2-Dichloroethene	156-60-5	MS	26.90	5.50	20	107	75 - 124		
trans-1,2-Dichloroethene	156-60-5	MSD	26.40	5.50	20	105	75 - 124	RPD 1.69 (Max-20)	
Trichloroethene	79-01-6	MS	21.80	1.20	20	103	79 - 123		
Trichloroethene	79-01-6	MSD	21.50	1.20	20	102	79 - 123	RPD 1.31 (Max-20)	
Trichlorofluoromethane	75-69-4	MS	19.60	0	20	98.1	65 - 141		
Trichlorofluoromethane	75-69-4	MSD	19.70	0	20	98.3	65 - 141	RPD 0.22 (Max-20)	
Vinyl Chloride	75-01-4	MS	24.90	0.70	20	121	58 - 137		
Vinyl Chloride	75-01-4	MSD	24	0.70	20	116	58 - 137	RPD 3.74 (Max-20)	

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	MS	30.90	30	103	81 - 118	
1,2-Dichloroethane-d4	17060-07-0	MSD	30.70	30	102	81 - 118	
4-Bromofluorobenzene	460-00-4	MS	28.60	30	95.2	85 - 114	
4-Bromofluorobenzene	460-00-4	MSD	30.30	30	101	85 - 114	
Dibromofluoromethane	1868-53-7	MS	30.90	30	103	80 - 119	
Dibromofluoromethane	1868-53-7	MSD	30.90	30	103	80 - 119	
Toluene-d8	2037-26-5	MS	28.60	30	95.2	89 - 112	
Toluene-d8	2037-26-5	MSD	30.10	30	100	89 - 112	

Method Blank 3706727 (MB) Created on 08/10/2023 10:59 For QC Batch 1044775

RESULTS

Compound	CAS No		Result	Units	LOQ	Qualifiers
1,1,1-Trichloroethane	71-55-6	BLK	0.75U	ug/L	1.0	U
1,1,2,2-Tetrachloroethane	79-34-5	BLK	0.75U	ug/L	1.0	U
1,1,2-Trichloroethane	79-00-5	BLK	0.75U	ug/L	1.0	U
1,1-Dichloroethane	75-34-3	BLK	0.75U	ug/L	1.0	U
1,1-Dichloroethene	75-35-4	BLK	0.75U	ug/L	1.0	U
1,2,3-Trichlorobenzene	87-61-6	BLK	0.75U	ug/L	1.0	U
1,2,4-Trichlorobenzene	120-82-1	BLK	0.75U	ug/L	1.0	U
1,2-Dibromo-3-chloropropane	96-12-8	BLK	2.5U	ug/L	5.0	U
1,2-Dibromoethane	106-93-4	BLK	0.75U	ug/L	1.0	U
1,2-Dichlorobenzene	95-50-1	BLK	0.75U	ug/L	1.0	U
1,2-Dichloroethane	107-06-2	BLK	0.75U	ug/L	1.0	U
1,2-Dichloropropane	78-87-5	BLK	0.75U	ug/L	1.0	U



QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result	Units	LOQ	Qualifiers
1,3-Dichlorobenzene	541-73-1	BLK	0.75U	ug/L	1.0	U
1,3-Dichloropropene, Total	542-75-6	BLK	1.5U	ug/L	2.0	U
1,4-Dichlorobenzene	106-46-7	BLK	0.75U	ug/L	1.0	U
2-Butanone	78-93-3	BLK	3.8U	ug/L	5.0	U
2-Hexanone	591-78-6	BLK	3.8U	ug/L	5.0	U
4-Methyl-2-Pentanone(MIBK)	108-10-1	BLK	3.8U	ug/L	5.0	U
Acetone	67-64-1	BLK	3.8U	ug/L	5.0	U
Benzene	71-43-2	BLK	0.75U	ug/L	1.0	U
Bromochloromethane	74-97-5	BLK	0.75U	ug/L	1.0	U
Bromodichloromethane	75-27-4	BLK	0.75U	ug/L	1.0	U
Bromoform	75-25-2	BLK	0.75U	ug/L	1.0	U
Bromomethane	74-83-9	BLK	0.75U	ug/L	1.0	U
Carbon Disulfide	75-15-0	BLK	0.75U	ug/L	1.0	U
Carbon Tetrachloride	56-23-5	BLK	0.75U	ug/L	1.0	U
Chlorobenzene	108-90-7	BLK	0.75U	ug/L	1.0	U
Chlorodibromomethane	124-48-1	BLK	0.75U	ug/L	1.0	U
Chloroethane	75-00-3	BLK	0.75U	ug/L	1.0	U
Chloroform	67-66-3	BLK	0.75U	ug/L	1.0	U
Chloromethane	74-87-3	BLK	0.75U	ug/L	1.0	U
cis-1,2-Dichloroethene	156-59-2	BLK	0.75U	ug/L	1.0	U
Cyclohexane	110-82-7	BLK	0.75U	ug/L	1.0	U
Dichlorodifluoromethane	75-71-8	BLK	0.75U	ug/L	1.0	U
Ethylbenzene	100-41-4	BLK	0.75U	ug/L	1.0	U
Freon 113	76-13-1	BLK	0.75U	ug/L	1.0	U
Iodomethane	74-88-4	BLK	0.75U	ug/L	1.0	U
Isopropylbenzene	98-82-8	BLK	0.75U	ug/L	1.0	U
Methyl acetate	79-20-9	BLK	0.44J	ug/L	1.0	J
Methyl cyclohexane	108-87-2	BLK	0.75U	ug/L	1.0	U
Methyl t-Butyl Ether	1634-04-4	BLK	0.75U	ug/L	1.0	U
Methylene Chloride	75-09-2	BLK	0.75U	ug/L	1.0	U
Styrene	100-42-5	BLK	0.75U	ug/L	1.0	U
Tetrachloroethene	127-18-4	BLK	0.75U	ug/L	1.0	U
Toluene	108-88-3	BLK	0.75U	ug/L	1.0	U
Total Xylenes	1330-20-7	BLK	2.3U	ug/L	3.0	U
trans-1,2-Dichloroethene	156-60-5	BLK	0.75U	ug/L	1.0	U
Trichloroethene	79-01-6	BLK	0.75U	ug/L	1.0	U
Trichlorofluoromethane	75-69-4	BLK	0.75U	ug/L	1.0	U
Vinyl Chloride	75-01-4	BLK	0.75U	ug/L	1.0	U

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	BLK	29.30	30	97.7	81 - 118	
4-Bromofluorobenzene	460-00-4	BLK	30	30	100	85 - 114	
Dibromofluoromethane	1868-53-7	BLK	31.50	30	105	80 - 119	
Toluene-d8	2037-26-5	BLK	30.20	30	101	89 - 112	



QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

Lab Control Standard 3706728 (LCS) Created on 08/10/2023 10:59 For QC Batch 1044775

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
1,1,1-Trichloroethane	71-55-6	LCS	21.70		20	109	74 - 131		
1,1,2,2-Tetrachloroethane	79-34-5	LCS	22		20	110	71 - 121		
1,1,2-Trichloroethane	79-00-5	LCS	21.50		20	107	80 - 119		
1,1-Dichloroethane	75-34-3	LCS	20.40		20	102	77 - 125		
1,1-Dichloroethene	75-35-4	LCS	22.10		20	110	71 - 131		
1,2,3-Trichlorobenzene	87-61-6	LCS	21.80		20	109	69 - 129		
1,2,4-Trichlorobenzene	120-82-1	LCS	20.80		20	104	69 - 130		
1,2-Dibromo-3-chloropropane	96-12-8	LCS	20.30		20	102	62 - 128		
1,2-Dibromoethane	106-93-4	LCS	21.20		20	106	77 - 121		
1,2-Dichlorobenzene	95-50-1	LCS	20.80		20	104	80 - 119		
1,2-Dichloroethane	107-06-2	LCS	20.30		20	101	73 - 128		
1,2-Dichloropropane	78-87-5	LCS	20.80		20	104	78 - 122		
1,3-Dichlorobenzene	541-73-1	LCS	20.20		20	101	80 - 119		
1,3-Dichloropropene, Total	542-75-6	LCS	42		40	105	75 - 124		
1,4-Dichlorobenzene	106-46-7	LCS	20.50		20	102	79 - 118		
2-Butanone	78-93-3	LCS	129		100	129	56 - 143		
2-Hexanone	591-78-6	LCS	117		100	117	57 - 139		
4-Methyl-2-Pentanone(MIBK)	108-10-1	LCS	114		100	114	67 - 130		
Acetone	67-64-1	LCS	125		100	125	39 - 160		
Benzene	71-43-2	LCS	20.90		20	104	79 - 120		
Bromochloromethane	74-97-5	LCS	21.30		20	107	78 - 123		
Bromodichloromethane	75-27-4	LCS	21.30		20	106	79 - 125		
Bromoform	75-25-2	LCS	21.80		20	109	66 - 130		
Bromomethane	74-83-9	LCS	17.90		20	89.3	53 - 141		
Carbon Disulfide	75-15-0	LCS	22.80		20	114	64 - 133		
Carbon Tetrachloride	56-23-5	LCS	21.50		20	108	72 - 136		
Chlorobenzene	108-90-7	LCS	20.50		20	102	82 - 118		
Chlorodibromomethane	124-48-1	LCS	21.80		20	109	74 - 126		
Chloroethane	75-00-3	LCS	16.70		20	83.3	60 - 138		
Chloroform	67-66-3	LCS	21.30		20	107	79 - 124		
Chloromethane	74-87-3	LCS	21.20		20	106	50 - 139		
cis-1,2-Dichloroethene	156-59-2	LCS	20.50		20	102	78 - 123		
Cyclohexane	110-82-7	LCS	22.80		20	114	71 - 130		
Dichlorodifluoromethane	75-71-8	LCS	25.80		20	129	32 - 152		
Ethylbenzene	100-41-4	LCS	20.90		20	104	79 - 121		
Freon 113	76-13-1	LCS	23.90		20	119	70 - 136		
Iodomethane	74-88-4	LCS	15.30		20	76.7	69 - 131		
Isopropylbenzene	98-82-8	LCS	22		20	110	72 - 131		
Methyl acetate	79-20-9	LCS	21.70		20	108	56 - 136		
Methyl cyclohexane	108-87-2	LCS	22.50		20	113	72 - 132		
Methyl t-Butyl Ether	1634-04-4	LCS	22		20	110	71 - 124		
Methylene Chloride	75-09-2	LCS	20.90		20	105	74 - 124		
Styrene	100-42-5	LCS	21.30		20	107	78 - 123		
Tetrachloroethene	127-18-4	LCS	21.40		20	107	74 - 129		



QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
Toluene	108-88-3	LCS	20.10		20	100	80 - 121		
Total Xylenes	1330-20-7	LCS	62.30		60	104	79 - 121		
trans-1,2-Dichloroethene	156-60-5	LCS	20.80		20	104	75 - 124		
Trichloroethene	79-01-6	LCS	20.20		20	101	79 - 123		
Trichlorofluoromethane	75-69-4	LCS	18.30		20	91.6	65 - 141		
Vinyl Chloride	75-01-4	LCS	21.90		20	110	58 - 137		

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	LCS	31.40	30	105	81 - 118	
4-Bromofluorobenzene	460-00-4	LCS	30.60	30	102	85 - 114	
Dibromofluoromethane	1868-53-7	LCS	31.50	30	105	80 - 119	
Toluene-d8	2037-26-5	LCS	30.40	30	101	89 - 112	



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Lab ID	Sample ID	Preparation Method	Prep Batch	Prep Date/Time	By	Analysis Method	Anly Batch
3315995001	PZ3-6D-20230801	N/A	N/A	N/A		SW846 8260C	1044775

3315995

PM: SJR
Logged By: KSB



ALS Project Manager:						Work Order #					
Customer Information			Project Information			Parameter/Method Request for Analysis					
Purchase Order		Project Name	NFARS - Niagara Falls Air Base			A 8260 VOCs					
Work Order		Project Number	30036646			B					
Company Name	Arcadis	Bill To Company				C					
Send Report To	Corey Averill	Invoice Attn.				D					
Address	110 W. Fayette, Suite 300	Address				E					
City/State/Zip	Syracuse, NY 13202	City/State/Zip				F					
Phone	315-415-4394	Phone				G					
Fax		Fax				H					
e-Mail Address	corey.averill@arcadis.com	e-Mail Address				I					
No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	
1	P23-6D-20230801	8/1/23	1000	GW	HCI	3	X				
2											
3											
4											
5											
6											
7											
8											
9											
10											
Sampler(s): Please Print & Sign Adam Srensson		Shipment Method: FedEx		Required Turnaround Time: ☒ STD 10 Wk Days ☐ 5 wk Days ☐ 2 Wk Days ☐ Other		Results Due Date:					
Relinquished by: <i>[Signature]</i>		Date:	Time:	Received by: <i>[Signature]</i>		Notes:					
Relinquished by: <i>[Signature]</i>		Date:	Time:	Received by (Laboratory): <i>[Signature]</i>		Cooler Temp. X					
Logged by (Laboratory): <i>[Signature]</i>		Date:	Time:	Checked by Laboratory: <i>[Signature]</i>		QC Package: (Check Box Below)					
		Date:	Time:			Level II: Standard QC					
		Date:	Time:			Level III: Std QC + Raw Data					
		Date:	Time:			Level IV: SW846 CLP Like					
		Date:	Time:			Other:					

20576 (AL) Any changes must be made in writing once samples and CQC Form have been submitted to ALS Laboratory Group.

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NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: PJLA 74618
State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

Analytical Results Report For

ARCADIS US Inc - Clifton Park, NY

Project AUC045INFARS 30036646

Workorder 3310646

Report ID 256974 on 7/13/2023

Certificate of Analysis

Enclosed are the analytical results for samples received by the laboratory on Jun 29, 2023.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Susan Scherer (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

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ALS Middletown: 301 Fulling Mill Road, Middletown, PA 17057 : 717-944-5541.

Recipient(s):

Andy Vitolins - Arcadis
Erika Denkenberger - Arcadis
Katherine Clubine - Arcadis
Corey Averill - Arcadis

Susan Scherer

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.

Susan Scherer
Project Coordinator

(ALS Digital Signature)



Sample Summary

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collector	Collection Company
3310646001	MW10-3-20230627	Ground Water	06/27/2023 11:40	06/29/2023 09:34	CBC	Collected By Client
3310646002	MW10-7-20230627	Ground Water	06/27/2023 09:20	06/29/2023 09:34	CBC	Collected By Client
3310646003	PW10-2-20230627	Ground Water	06/27/2023 11:20	06/29/2023 09:34	CBC	Collected By Client
3310646004	PZ10-7-20230627	Ground Water	06/27/2023 09:50	06/29/2023 09:34	CBC	Collected By Client
3310646005	SW10-7-20230627	Ground Water	06/27/2023 12:10	06/29/2023 09:34	CBC	Collected By Client
3310646006	SW10-8-20230627	Ground Water	06/27/2023 12:30	06/29/2023 09:34	CBC	Collected By Client
3310646007	SW99-10-20230627	Ground Water	06/27/2023 10:50	06/29/2023 09:34	CBC	Collected By Client
3310646008	SW10-6-20230627	Ground Water	06/27/2023 12:00	06/29/2023 09:34	CBC	Collected By Client
3310646009	SW10-5-20230627	Ground Water	06/27/2023 11:50	06/29/2023 09:34	CBC	Collected By Client
3310646010	MW10-11D-20230627	Ground Water	06/27/2023 10:10	06/29/2023 09:34	CBC	Collected By Client
3310646011	MW10-1DA-20230627	Ground Water	06/27/2023 11:00	06/29/2023 09:34	CBC	Collected By Client
3310646012	MW10-10D-20230627	Ground Water	06/27/2023 11:30	06/29/2023 09:34	CBC	Collected By Client
3310646013	MW5-1DA-20230627	Ground Water	06/27/2023 14:50	06/29/2023 09:34	CBC	Collected By Client
3310646014	MW5-5D-20230627	Ground Water	06/27/2023 13:50	06/29/2023 09:34	CBC	Collected By Client
3310646015	MW5-6-20230627	Ground Water	06/27/2023 13:50	06/29/2023 09:34	CBC	Collected By Client
3310646016	RW5-1-20230627	Ground Water	06/27/2023 14:30	06/29/2023 09:34	CBC	Collected By Client
3310646017	RW5-2-20230627	Ground Water	06/27/2023 13:30	06/29/2023 09:34	CBC	Collected By Client
3310646018	RW5-4-20230627	Ground Water	06/27/2023 14:10	06/29/2023 09:34	CBC	Collected By Client
3310646019	PW13-4D-20230627	Ground Water	06/27/2023 15:20	06/29/2023 09:34	CBC	Collected By Client
3310646020	MW13-4D-20230627	Ground Water	06/27/2023 15:10	06/29/2023 09:34	CBC	Collected By Client
3310646021	MW13-5D-20230627	Ground Water	06/27/2023 15:30	06/29/2023 09:34	CBC	Collected By Client
3310646022	PW13-1-20230627	Ground Water	06/27/2023 15:40	06/29/2023 09:34	CBC	Collected By Client
3310646023	MW8-11D-20230627	Ground Water	06/27/2023 15:50	06/29/2023 09:34	CBC	Collected By Client
3310646024	MW3-3DA-20230627	Ground Water	06/27/2023 16:40	06/29/2023 09:34	CBC	Collected By Client
3310646025	MW3-4DA-20230627	Ground Water	06/27/2023 17:00	06/29/2023 09:34	CBC	Collected By Client
3310646026	SW3-2-20230627	Ground Water	06/27/2023 16:00	06/29/2023 09:34	CBC	Collected By Client
3310646027	SW3-3-20230627	Ground Water	06/27/2023 16:50	06/29/2023 09:34	CBC	Collected By Client
3310646028	SW3-15-20230627	Ground Water	06/27/2023 16:20	06/29/2023 09:34	CBC	Collected By Client
3310646029	PZ3-7D-20230627	Ground Water	06/27/2023 17:40	06/29/2023 09:34	CBC	Collected By Client
3310646030	PZ3-8D-20230627	Ground Water	06/27/2023 17:30	06/29/2023 09:34	CBC	Collected By Client
3310646031	PW3-3A-20230627	Ground Water	06/27/2023 17:10	06/29/2023 09:34	CBC	Collected By Client
3310646032	TB-01-20230627	Ground Water	06/27/2023 10:45	06/29/2023 09:34	CBC	Collected By Client
3310646033	TB-02-20230627	Ground Water	06/27/2023 10:45	06/29/2023 09:34	CBC	Collected By Client
3310646034	DUP-01-20230627	Ground Water	06/27/2023 00:00	06/29/2023 09:34	CBC	Collected By Client
3310646035	DUP-02-20230627	Ground Water	06/27/2023 00:00	06/29/2023 09:34	CBC	Collected By Client
3310646036	DUP-03-20230627	Ground Water	06/27/2023 00:00	06/29/2023 09:34	CBC	Collected By Client
3310646037	PW10-1-20230627	Ground Water	06/27/2023 09:40	06/29/2023 09:34	CBC	Collected By Client



Reference

Notes

- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
- Except as qualified, Clean Water Act sample analyses are consistent with methodology requirements in 40 CFR Part 136.
- Except as qualified, Safe Drinking Water Act sample analyses are consistent with methodology requirements in 40 CFR Part 141.
- The Chain of Custody document is included as part of this report.
- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
- Method references listed on this report beginning with the prefix "S" followed by a method number (such as S2310B-97) refer to methods from "Standard Methods for the Examination of Water and Wastewater".
- For microbiological analyses, the "Prepared" value is the date/time into the incubator and the "Analyzed" value is the date/time out the incubator.
- An Analysis-Prep Method Cross Reference Table is included after Analytical Results & Qualifiers section in this report.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND) above the MDL
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Practical Quantitation Limit for this Project
ND	Not Detected - indicates that the analyte was Not Detected
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits
#	Please reference the result in the Results Section for analyte-level flags.



Project Notations

Sample Notations

Lab ID Sample ID

Result Notations

Notation Ref.	
1	The initial calibration verification for method SW846 8260DOD was outside the control limits for the analyte chloroethane. The % Recovery was reported as 70% and the control limits were 80 to 120%.
2	The QC sample type MSD for method SW846 8260C was outside the control limits for the analyte Bromomethane. The RPD was reported as 25.2 and the upper control limit is 20.
3	The QC sample type MSD for method SW846 8260C was outside the control limits for the analyte Vinyl Chloride. The % Recovery was reported as 142 and the control limits were 58 to 137.
4	The QC sample type DUP for method RSK 175 was outside the control limits for the analyte Ethane. The RPD was reported as 40.7 and the upper control limit is 20.
5	The QC sample type MS for method SW846 8260C was outside the control limits for the analyte Chloromethane. The % Recovery was reported as 142 and the control limits were 50 to 139.
6	The QC sample type MS for method SW846 8260C was outside the control limits for the analyte Dichlorodifluoromethane. The % Recovery was reported as 175 and the control limits were 32 to 152.
7	The QC sample type MSD for method SW846 8260C was outside the control limits for the analyte Dichlorodifluoromethane. The % Recovery was reported as 169 and the control limits were 32 to 152.
8	The QC sample type MS for method SW846 8260C was outside the control limits for the analyte Vinyl Chloride. The % Recovery was reported as 156 and the control limits were 58 to 137.
9	The QC sample type MSD for method SW846 8260C was outside the control limits for the analyte Vinyl Chloride. The % Recovery was reported as 148 and the control limits were 58 to 137.
10	The QC sample type MS for method SW846 8260C was outside the control limits for the analyte Dichlorodifluoromethane. The % Recovery was reported as 157 and the control limits were 32 to 152.
11	The QC sample type MS for method SW846 8260C was outside the control limits for the analyte Iodomethane. The % Recovery was reported as 134 and the control limits were 69 to 131.
12	The QC sample type MS for method SW846 8260C was outside the control limits for the analyte Vinyl Chloride. The % Recovery was reported as 147 and the control limits were 58 to 137.



Detected Results Summary

Client Sample ID	MW10-3-20230627	Collected	06/27/2023 11:40
Lab Sample ID	3310646001	Lab Receipt	06/29/2023 09:34

Compound	Result	Units	LOQ	LOD	DL	Method	Flag
VOLATILE ORGANICS							
Acetone	4.2J	ug/L	5.0	3.8	1.6	SW846 8260C	#
Vinyl Chloride	0.35J	ug/L	1.0	0.75	0.33	SW846 8260C	#



Detected Results Summary

Client Sample ID	MW10-7-20230627	Collected	06/27/2023 09:20				
Lab Sample ID	3310646002	Lab Receipt	06/29/2023 09:34				
Compound	Result	Units	LOQ	LOD	DL	Method	Flag
LIGHT HYDROCARBON GASES							
Methane	5250	ug/L	2.6	1.6	0.53	RSK 175	#
VOLATILE ORGANICS							
2-Butanone	8.5	ug/L	5.0	3.8	1.6	SW846 8260C	#
Acetone	21.0	ug/L	5.0	3.8	1.6	SW846 8260C	#
Benzene	0.37J	ug/L	1.0	0.75	0.33	SW846 8260C	#
cis-1,2-Dichloroethene	28.9	ug/L	1.0	0.75	0.33	SW846 8260C	#
Methyl acetate	5.3	ug/L	1.0	0.75	0.33	SW846 8260C	#
Methyl t-Butyl Ether	1.8	ug/L	1.0	0.75	0.33	SW846 8260C	#
Toluene	1.1	ug/L	1.0	0.75	0.33	SW846 8260C	#
trans-1,2-Dichloroethene	0.43J	ug/L	1.0	0.75	0.33	SW846 8260C	#
Vinyl Chloride	20.0	ug/L	1.0	0.75	0.33	SW846 8260C	#
WET CHEMISTRY							
Total Organic Carbon (TOC)	126	mg/L	25.0	12.5	6.8	SW846 9060A	#



Detected Results Summary

Client Sample ID	PW10-2-20230627	Collected	06/27/2023 11:20				
Lab Sample ID	3310646003	Lab Receipt	06/29/2023 09:34				
Compound	Result	Units	LOQ	LOD	DL	Method	Flag
VOLATILE ORGANICS							
Acetone	4.4J	ug/L	5.0	3.8	1.6	SW846 8260C	#
Benzene	2.4	ug/L	1.0	0.75	0.33	SW846 8260C	#
Cyclohexane	0.53J	ug/L	1.0	0.75	0.33	SW846 8260C	#
Methyl acetate	0.59J	ug/L	1.0	0.75	0.33	SW846 8260C	#
Methyl cyclohexane	0.33J	ug/L	1.0	0.75	0.33	SW846 8260C	#
Toluene	0.68J	ug/L	1.0	0.75	0.33	SW846 8260C	#
Vinyl Chloride	0.50J	ug/L	1.0	0.75	0.33	SW846 8260C	#



Detected Results Summary

Client Sample ID

PZ10-7-20230627

Collected

06/27/2023 09:50

Lab Sample ID

3310646004

Lab Receipt

06/29/2023 09:34

Compound	Result	Units	LOQ	LOD	DL	Method	Flag
VOLATILE ORGANICS							
Acetone	6.2	ug/L	5.0	3.8	1.6	SW846 8260C	#



Detected Results Summary

Client Sample ID	SW10-7-20230627	Collected	06/27/2023 12:10				
Lab Sample ID	3310646005	Lab Receipt	06/29/2023 09:34				
Compound	Result	Units	LOQ	LOD	DL	Method	Flag
VOLATILE ORGANICS							
Acetone	3.8J	ug/L	5.0	3.8	1.6	SW846 8260C	#



Detected Results Summary

Client Sample ID	SW10-6-20230627	Collected	06/27/2023 12:00
Lab Sample ID	3310646008	Lab Receipt	06/29/2023 09:34

Compound	Result	Units	LOQ	LOD	DL	Method	Flag
VOLATILE ORGANICS							
Acetone	4.0J	ug/L	5.0	3.8	1.6	SW846 8260C	#

Detected Results Summary

Client Sample ID

SW10-5-20230627

Collected

06/27/2023 11:50

Lab Sample ID

3310646009

Lab Receipt

06/29/2023 09:34

Compound	Result	Units	LOQ	LOD	DL	Method	Flag
VOLATILE ORGANICS							
Acetone	5.1	ug/L	5.0	3.8	1.6	SW846 8260C	#



Detected Results Summary

Client Sample ID	MW10-11D-20230627	Collected	06/27/2023 10:10				
Lab Sample ID	3310646010	Lab Receipt	06/29/2023 09:34				
Compound	Result	Units	LOQ	LOD	DL	Method	Flag
LIGHT HYDROCARBON GASES							
Methane	246	ug/L	2.6	1.6	0.53	RSK 175	#
WET CHEMISTRY							
Total Organic Carbon (TOC)	12.5	mg/L	2.0	1.0	0.54	SW846 9060A	#

Detected Results Summary

Client Sample ID

MW10-1DA-20230627

Collected

06/27/2023 11:00

Lab Sample ID

3310646011

Lab Receipt

06/29/2023 09:34

Compound	Result	Units	LOQ	LOD	DL	Method	Flag
LIGHT HYDROCARBON GASES							
Ethane	57.5	ug/L	5.2	2.6	0.56	RSK 175	#
Methane	8370	ug/L	2.6	1.6	0.53	RSK 175	#
WET CHEMISTRY							
Total Organic Carbon (TOC)	10.2	mg/L	5.0	2.5	1.4	SW846 9060A	#



Detected Results Summary

Client Sample ID	MW10-10D-20230627	Collected	06/27/2023 11:30
Lab Sample ID	3310646012	Lab Receipt	06/29/2023 09:34

Compound	Result	Units	LOQ	LOD	DL	Method	Flag
LIGHT HYDROCARBON GASES							
Ethane	26.5	ug/L	5.2	2.6	0.56	RSK 175	#
Ethene	13.1	ug/L	7.1	3.6	0.81	RSK 175	#
Methane	9900	ug/L	2.6	1.6	0.53	RSK 175	#
WET CHEMISTRY							
Total Organic Carbon (TOC)	5880	mg/L	1000	500	270	SW846 9060A	#



Detected Results Summary

Client Sample ID	MW5-1DA-20230627	Collected	06/27/2023 14:50
Lab Sample ID	3310646013	Lab Receipt	06/29/2023 09:34

Compound	Result	Units	LOQ	LOD	DL	Method	Flag
VOLATILE ORGANICS							
Acetone	3.6J	ug/L	5.0	3.8	1.6	SW846 8260C	#
cis-1,2-Dichloroethene	0.74J	ug/L	1.0	0.75	0.33	SW846 8260C	#
WET CHEMISTRY							
Total Organic Carbon (TOC)	6.9	mg/L	1.0	0.50	0.27	SW846 9060A	#



Detected Results Summary

Client Sample ID	MW5-5D-20230627	Collected	06/27/2023 13:50				
Lab Sample ID	3310646014	Lab Receipt	06/29/2023 09:34				
Compound	Result	Units	LOQ	LOD	DL	Method	Flag
LIGHT HYDROCARBON GASES							
Ethane	41.9	ug/L	5.2	2.6	0.56	RSK 175	#
Ethene	38.1	ug/L	7.1	3.6	0.81	RSK 175	#
Methane	5270	ug/L	2.6	1.6	0.53	RSK 175	#
VOLATILE ORGANICS							
Acetone	4.5J	ug/L	5.0	3.8	1.6	SW846 8260C	#
cis-1,2-Dichloroethene	4.0	ug/L	1.0	0.75	0.33	SW846 8260C	#
Toluene	0.65J	ug/L	1.0	0.75	0.33	SW846 8260C	#
trans-1,2-Dichloroethene	0.47J	ug/L	1.0	0.75	0.33	SW846 8260C	#
Trichloroethene	1.7	ug/L	1.0	0.75	0.33	SW846 8260C	#
Vinyl Chloride	7.1	ug/L	1.0	0.75	0.33	SW846 8260C	#
WET CHEMISTRY							
Total Organic Carbon (TOC)	105	mg/L	25.0	12.5	6.8	SW846 9060A	#

Detected Results Summary

Client Sample ID

MW5-6-20230627

Collected

06/27/2023 13:50

Lab Sample ID

3310646015

Lab Receipt

06/29/2023 09:34

Compound	Result	Units	LOQ	LOD	DL	Method	Flag
VOLATILE ORGANICS							
Acetone	4.1J	ug/L	5.0	3.8	1.6	SW846 8260C	#
cis-1,2-Dichloroethene	1.9	ug/L	1.0	0.75	0.33	SW846 8260C	#
Toluene	2.7	ug/L	1.0	0.75	0.33	SW846 8260C	#
Trichloroethene	1.2	ug/L	1.0	0.75	0.33	SW846 8260C	#
Vinyl Chloride	1.9	ug/L	1.0	0.75	0.33	SW846 8260C	#



Detected Results Summary

Client Sample ID	RW5-1-20230627	Collected	06/27/2023 14:30				
Lab Sample ID	3310646016	Lab Receipt	06/29/2023 09:34				
Compound	Result	Units	LOQ	LOD	DL	Method	Flag
LIGHT HYDROCARBON GASES							
Ethane	2.0J	ug/L	5.2	2.6	0.56	RSK 175	#
Methane	9050	ug/L	2.6	1.6	0.53	RSK 175	#
VOLATILE ORGANICS							
Acetone	4.1J	ug/L	5.0	3.8	1.6	SW846 8260C	#
Chloroethane	5.6	ug/L	1.0	0.75	0.33	SW846 8260C	#
cis-1,2-Dichloroethene	1.6	ug/L	1.0	0.75	0.33	SW846 8260C	#
Toluene	6.3	ug/L	1.0	0.75	0.33	SW846 8260C	#
trans-1,2-Dichloroethene	0.47J	ug/L	1.0	0.75	0.33	SW846 8260C	#
Trichloroethene	1.0	ug/L	1.0	0.75	0.33	SW846 8260C	#
Vinyl Chloride	1.3	ug/L	1.0	0.75	0.33	SW846 8260C	#
WET CHEMISTRY							
Total Organic Carbon (TOC)	159	mg/L	100	50.0	27.0	SW846 9060A	#



Detected Results Summary

Client Sample ID	RW5-2-20230627	Collected	06/27/2023 13:30
Lab Sample ID	3310646017	Lab Receipt	06/29/2023 09:34

Compound	Result	Units	LOQ	LOD	DL	Method	Flag
LIGHT HYDROCARBON GASES							
Ethane	4.5J	ug/L	5.2	2.6	0.56	RSK 175	#
Methane	6350	ug/L	2.6	1.6	0.53	RSK 175	#
VOLATILE ORGANICS							
Acetone	5.4	ug/L	5.0	3.8	1.6	SW846 8260C	#
cis-1,2-Dichloroethene	1.7	ug/L	1.0	0.75	0.33	SW846 8260C	#
Toluene	0.74J	ug/L	1.0	0.75	0.33	SW846 8260C	#
Vinyl Chloride	0.83J	ug/L	1.0	0.75	0.33	SW846 8260C	#
WET CHEMISTRY							
Total Organic Carbon (TOC)	137	mg/L	25.0	12.5	6.8	SW846 9060A	#



Detected Results Summary

Client Sample ID	RW5-4-20230627	Collected	06/27/2023 14:10				
Lab Sample ID	3310646018	Lab Receipt	06/29/2023 09:34				
Compound	Result	Units	LOQ	LOD	DL	Method	Flag
VOLATILE ORGANICS							
Acetone	3.9J	ug/L	5.0	3.8	1.6	SW846 8260C	#
cis-1,2-Dichloroethene	0.39J	ug/L	1.0	0.75	0.33	SW846 8260C	#
Toluene	0.65J	ug/L	1.0	0.75	0.33	SW846 8260C	#
Vinyl Chloride	0.38J	ug/L	1.0	0.75	0.33	SW846 8260C	#



Detected Results Summary

Client Sample ID	PW13-4D-20230627	Collected	06/27/2023 15:20
Lab Sample ID	3310646019	Lab Receipt	06/29/2023 09:34

Compound	Result	Units	LOQ	LOD	DL	Method	Flag
VOLATILE ORGANICS							
Acetone	4.4J	ug/L	5.0	3.8	1.6	SW846 8260C	#
cis-1,2-Dichloroethene	5.0	ug/L	1.0	0.75	0.33	SW846 8260C	#
Vinyl Chloride	0.34J	ug/L	1.0	0.75	0.33	SW846 8260C	#

Detected Results Summary

Client Sample ID

MW13-4D-20230627

Collected

06/27/2023 15:10

Lab Sample ID

3310646020

Lab Receipt

06/29/2023 09:34

Compound	Result	Units	LOQ	LOD	DL	Method	Flag
VOLATILE ORGANICS							
Acetone	4.3J	ug/L	5.0	3.8	1.6	SW846 8260C	#
cis-1,2-Dichloroethene	6.2	ug/L	1.0	0.75	0.33	SW846 8260C	#
Vinyl Chloride	3.9	ug/L	1.0	0.75	0.33	SW846 8260C	#

Detected Results Summary

Client Sample ID

MW13-5D-20230627

Collected

06/27/2023 15:30

Lab Sample ID

3310646021

Lab Receipt

06/29/2023 09:34

Compound	Result	Units	LOQ	LOD	DL	Method	Flag
VOLATILE ORGANICS							
Acetone	4.9J	ug/L	5.0	3.8	1.6	SW846 8260C	#
cis-1,2-Dichloroethene	14.0	ug/L	1.0	0.75	0.33	SW846 8260C	#
Vinyl Chloride	0.58J	ug/L	1.0	0.75	0.33	SW846 8260C	#

Detected Results Summary

Client Sample ID

PW13-1-20230627

Collected

06/27/2023 15:40

Lab Sample ID

3310646022

Lab Receipt

06/29/2023 09:34

Compound	Result	Units	LOQ	LOD	DL	Method	Flag
VOLATILE ORGANICS							
1,4-Dichlorobenzene	0.49J	ug/L	1.0	0.75	0.33	SW846 8260C	#
cis-1,2-Dichloroethene	3.6	ug/L	1.0	0.75	0.33	SW846 8260C	#
Vinyl Chloride	0.58J	ug/L	1.0	0.75	0.33	SW846 8260C	#



Detected Results Summary

Client Sample ID	MW8-11D-20230627	Collected	06/27/2023 15:50
Lab Sample ID	3310646023	Lab Receipt	06/29/2023 09:34

Compound	Result	Units	LOQ	LOD	DL	Method	Flag
VOLATILE ORGANICS							
1,2-Dichloroethane	0.35J	ug/L	1.0	0.75	0.33	SW846 8260C	#
Acetone	5.0	ug/L	5.0	3.8	1.6	SW846 8260C	#

Detected Results Summary

Client Sample ID

MW3-3DA-20230627

Collected

06/27/2023 16:40

Lab Sample ID

3310646024

Lab Receipt

06/29/2023 09:34

Compound	Result	Units	LOQ	LOD	DL	Method	Flag
VOLATILE ORGANICS							
Acetone	3.3J	ug/L	5.0	3.8	1.6	SW846 8260C	#
cis-1,2-Dichloroethene	3.5	ug/L	1.0	0.75	0.33	SW846 8260C	#
Vinyl Chloride	0.47J	ug/L	1.0	0.75	0.33	SW846 8260C	#

Detected Results Summary

Client Sample ID

MW3-4DA-20230627

Collected

06/27/2023 17:00

Lab Sample ID

3310646025

Lab Receipt

06/29/2023 09:34

Compound	Result	Units	LOQ	LOD	DL	Method	Flag
VOLATILE ORGANICS							
cis-1,2-Dichloroethene	4.4	ug/L	1.0	0.75	0.33	SW846 8260C	#
Vinyl Chloride	1.9	ug/L	1.0	0.75	0.33	SW846 8260C	#



Detected Results Summary

Client Sample ID	SW3-2-20230627	Collected	06/27/2023 16:00				
Lab Sample ID	3310646026	Lab Receipt	06/29/2023 09:34				
Compound	Result	Units	LOQ	LOD	DL	Method	Flag
VOLATILE ORGANICS							
Chloroform	0.36J	ug/L	1.0	0.75	0.33	SW846 8260C	#



Detected Results Summary

Client Sample ID	SW3-15-20230627	Collected	06/27/2023 16:20
Lab Sample ID	3310646028	Lab Receipt	06/29/2023 09:34

Compound	Result	Units	LOQ	LOD	DL	Method	Flag
VOLATILE ORGANICS							
Acetone	3.3J	ug/L	5.0	3.8	1.6	SW846 8260C	#

Detected Results Summary

Client Sample ID

PZ3-7D-20230627

Collected

06/27/2023 17:40

Lab Sample ID

3310646029

Lab Receipt

06/29/2023 09:34

Compound	Result	Units	LOQ	LOD	DL	Method	Flag
VOLATILE ORGANICS							
Acetone	3.3J	ug/L	5.0	3.8	1.6	SW846 8260C	#
cis-1,2-Dichloroethene	7.3	ug/L	1.0	0.75	0.33	SW846 8260C	#
Vinyl Chloride	2.7	ug/L	1.0	0.75	0.33	SW846 8260C	#



Detected Results Summary

Client Sample ID	PZ3-8D-20230627	Collected	06/27/2023 17:30
Lab Sample ID	3310646030	Lab Receipt	06/29/2023 09:34

Compound	Result	Units	LOQ	LOD	DL	Method	Flag
VOLATILE ORGANICS							
Acetone	4.7J	ug/L	5.0	3.8	1.6	SW846 8260C	#



Detected Results Summary

Client Sample ID	PW3-3A-20230627	Collected	06/27/2023 17:10
Lab Sample ID	3310646031	Lab Receipt	06/29/2023 09:34

Compound	Result	Units	LOQ	LOD	DL	Method	Flag
VOLATILE ORGANICS							
cis-1,2-Dichloroethene	5.1	ug/L	1.0	0.75	0.33	SW846 8260C	#
Trichloroethene	0.78J	ug/L	1.0	0.75	0.33	SW846 8260C	#
Vinyl Chloride	4.0	ug/L	1.0	0.75	0.33	SW846 8260C	#



Detected Results Summary

Client Sample ID	DUP-01-20230627	Collected	06/27/2023 00:00
Lab Sample ID	3310646034	Lab Receipt	06/29/2023 09:34

Compound	Result	Units	LOQ	LOD	DL	Method	Flag
VOLATILE ORGANICS							
Acetone	4.5J	ug/L	5.0	3.8	1.6	SW846 8260C	#
cis-1,2-Dichloroethene	1.5	ug/L	1.0	0.75	0.33	SW846 8260C	#
Toluene	0.76J	ug/L	1.0	0.75	0.33	SW846 8260C	#
Vinyl Chloride	0.78J	ug/L	1.0	0.75	0.33	SW846 8260C	#



Detected Results Summary

Client Sample ID	DUP-02-20230627	Collected	06/27/2023 00:00
Lab Sample ID	3310646035	Lab Receipt	06/29/2023 09:34

Compound	Result	Units	LOQ	LOD	DL	Method	Flag
LIGHT HYDROCARBON GASES							
Ethane	12.1	ug/L	5.2	2.6	0.56	RSK 175	#
Ethene	16.5	ug/L	7.1	3.6	0.81	RSK 175	#
Methane	1570	ug/L	2.6	1.6	0.53	RSK 175	#
VOLATILE ORGANICS							
Acetone	4.0J	ug/L	5.0	3.8	1.6	SW846 8260C	#
cis-1,2-Dichloroethene	3.9	ug/L	1.0	0.75	0.33	SW846 8260C	#
Toluene	0.65J	ug/L	1.0	0.75	0.33	SW846 8260C	#
trans-1,2-Dichloroethene	0.42J	ug/L	1.0	0.75	0.33	SW846 8260C	#
Trichloroethene	1.6	ug/L	1.0	0.75	0.33	SW846 8260C	#
Vinyl Chloride	6.7	ug/L	1.0	0.75	0.33	SW846 8260C	#
WET CHEMISTRY							
Total Organic Carbon (TOC)	109	mg/L	25.0	12.5	6.8	SW846 9060A	#



Detected Results Summary

Client Sample ID	DUP-03-20230627	Collected	06/27/2023 00:00				
Lab Sample ID	3310646036	Lab Receipt	06/29/2023 09:34				
Compound	Result	Units	LOQ	LOD	DL	Method	Flag
VOLATILE ORGANICS							
Chloroform	0.36J	ug/L	1.0	0.75	0.33	SW846 8260C	#



Detected Results Summary

Client Sample ID	PW10-1-20230627	Collected	06/27/2023 09:40
Lab Sample ID	3310646037	Lab Receipt	06/29/2023 09:34

Compound	Result	Units	LOQ	LOD	DL	Method	Flag
LIGHT HYDROCARBON GASES							
Methane	22.7	ug/L	2.6	1.6	0.53	RSK 175	#
VOLATILE ORGANICS							
Acetone	3.5J	ug/L	5.0	3.8	1.6	SW846 8260C	#
cis-1,2-Dichloroethene	1.1	ug/L	1.0	0.75	0.33	SW846 8260C	#
Vinyl Chloride	0.75J	ug/L	1.0	0.75	0.33	SW846 8260C	#
WET CHEMISTRY							
Total Organic Carbon (TOC)	5.5	mg/L	2.0	1.0	0.54	SW846 9060A	#



Results

Client Sample ID	MW10-3-20230627	Collected	06/27/2023 11:40
Lab Sample ID	3310646001	Lab Receipt	06/29/2023 09:34

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:57	PDK	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:57	PDK	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:57	PDK	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:57	PDK	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:57	PDK	A
1,2,3-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:57	PDK	A
1,2,4-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:57	PDK	A
1,2-Dibromo-3-chloropropane	2.5U	U	ug/L	5.0	2.5	1.6	SW846 8260C	1	07/06/2023 00:57	PDK	A
1,2-Dibromoethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:57	PDK	A
1,2-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:57	PDK	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:57	PDK	A
1,2-Dichloropropane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:57	PDK	A
1,3-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:57	PDK	A
1,3-Dichloropropene, Total	1.5U	U	ug/L	2.0	1.5	0.66	SW846 8260C	1	07/06/2023 00:57	PDK	A
1,4-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:57	PDK	A
2-Butanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/06/2023 00:57	PDK	A
2-Hexanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/06/2023 00:57	PDK	A
4-Methyl-2-Pentanone(MIBK)	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/06/2023 00:57	PDK	A
Acetone	4.2J	J	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/06/2023 00:57	PDK	A
Benzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:57	PDK	A
Bromochloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:57	PDK	A
Bromodichloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:57	PDK	A
Bromoform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:57	PDK	A
Bromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:57	PDK	A
Carbon Disulfide	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:57	PDK	A
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:57	PDK	A
Chlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:57	PDK	A
Chlorodibromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:57	PDK	A
Chloroethane	0.75U	U,1	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:57	PDK	A
Chloroform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:57	PDK	A
Chloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:57	PDK	A
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:57	PDK	A
Cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:57	PDK	A
Dichlorodifluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:57	PDK	A
Ethylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:57	PDK	A
Freon 113	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:57	PDK	A
Iodomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:57	PDK	A
Isopropylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:57	PDK	A
Methyl acetate	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:57	PDK	A
Methyl cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:57	PDK	A
Methyl t-Butyl Ether	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:57	PDK	A
Methylene Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:57	PDK	A
Styrene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:57	PDK	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:57	PDK	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:57	PDK	A
Total Xylenes	2.3U	U	ug/L	3.0	2.3	1.0	SW846 8260C	1	07/06/2023 00:57	PDK	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:57	PDK	A



Results

Client Sample ID	MW10-3-20230627	Collected	06/27/2023 11:40
Lab Sample ID	3310646001	Lab Receipt	06/29/2023 09:34

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Trichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:57	PDK	A
Trichlorofluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:57	PDK	A
Vinyl Chloride	0.35J	J	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:57	PDK	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	99.9%	81 – 118	07/06/2023 00:57	
4-Bromofluorobenzene	460-00-4	98.1%	85 – 114	07/06/2023 00:57	
Dibromofluoromethane	1868-53-7	95.8%	80 – 119	07/06/2023 00:57	
Toluene-d8	2037-26-5	97%	89 – 112	07/06/2023 00:57	



Results

Client Sample ID	MW10-7-20230627	Collected	06/27/2023 09:20
Lab Sample ID	3310646002	Lab Receipt	06/29/2023 09:34

LIGHT HYDROCARBON GASES

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Ethane	2.6U	U	ug/L	5.2	2.6	0.56	RSK 175	1	07/07/2023 13:25	JTH	E
Ethene	3.6U	U	ug/L	7.1	3.6	0.81	RSK 175	1	07/07/2023 13:25	JTH	E
Methane	5250		ug/L	2.6	1.6	0.53	RSK 175	1	07/07/2023 13:25	JTH	E

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:20	PDK	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:20	PDK	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:20	PDK	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:20	PDK	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:20	PDK	A
1,2,3-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:20	PDK	A
1,2,4-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:20	PDK	A
1,2-Dibromo-3-chloropropane	2.5U	U	ug/L	5.0	2.5	1.6	SW846 8260C	1	07/06/2023 01:20	PDK	A
1,2-Dibromoethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:20	PDK	A
1,2-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:20	PDK	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:20	PDK	A
1,2-Dichloropropane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:20	PDK	A
1,3-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:20	PDK	A
1,3-Dichloropropene, Total	1.5U	U	ug/L	2.0	1.5	0.66	SW846 8260C	1	07/06/2023 01:20	PDK	A
1,4-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:20	PDK	A
2-Butanone	8.5		ug/L	5.0	3.8	1.6	SW846 8260C	1	07/06/2023 01:20	PDK	A
2-Hexanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/06/2023 01:20	PDK	A
4-Methyl-2-Pentanone(MIBK)	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/06/2023 01:20	PDK	A
Acetone	21.0		ug/L	5.0	3.8	1.6	SW846 8260C	1	07/06/2023 01:20	PDK	A
Benzene	0.37J	J	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:20	PDK	A
Bromochloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:20	PDK	A
Bromodichloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:20	PDK	A
Bromoform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:20	PDK	A
Bromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:20	PDK	A
Carbon Disulfide	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:20	PDK	A
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:20	PDK	A
Chlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:20	PDK	A
Chlorodibromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:20	PDK	A
Chloroethane	0.75U	U,1	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:20	PDK	A
Chloroform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:20	PDK	A
Chloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:20	PDK	A
cis-1,2-Dichloroethene	28.9		ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:20	PDK	A
Cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:20	PDK	A
Dichlorodifluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:20	PDK	A
Ethylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:20	PDK	A
Freon 113	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:20	PDK	A
Iodomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:20	PDK	A
Isopropylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:20	PDK	A
Methyl acetate	5.3		ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:20	PDK	A
Methyl cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:20	PDK	A



Results

Client Sample ID	MW10-7-20230627	Collected	06/27/2023 09:20
Lab Sample ID	3310646002	Lab Receipt	06/29/2023 09:34

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Methyl t-Butyl Ether	1.8		ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:20	PDK	A
Methylene Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:20	PDK	A
Styrene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:20	PDK	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:20	PDK	A
Toluene	1.1		ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:20	PDK	A
Total Xylenes	2.3U	U	ug/L	3.0	2.3	1.0	SW846 8260C	1	07/06/2023 01:20	PDK	A
trans-1,2-Dichloroethene	0.43J	J	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:20	PDK	A
Trichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:20	PDK	A
Trichlorofluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:20	PDK	A
Vinyl Chloride	20.0		ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:20	PDK	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	105%	81 – 118	07/06/2023 01:20	
4-Bromofluorobenzene	460-00-4	94.9%	85 – 114	07/06/2023 01:20	
Dibromofluoromethane	1868-53-7	101%	80 – 119	07/06/2023 01:20	
Toluene-d8	2037-26-5	95.4%	89 – 112	07/06/2023 01:20	

WET CHEMISTRY

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Total Organic Carbon (TOC)	126		mg/L	25.0	12.5	6.8	SW846 9060A	25	06/30/2023 19:17	PAG	G



Results

Client Sample ID	PW10-2-20230627	Collected	06/27/2023 11:20
Lab Sample ID	3310646003	Lab Receipt	06/29/2023 09:34

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:43	PDK	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:43	PDK	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:43	PDK	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:43	PDK	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:43	PDK	A
1,2,3-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:43	PDK	A
1,2,4-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:43	PDK	A
1,2-Dibromo-3-chloropropane	2.5U	U	ug/L	5.0	2.5	1.6	SW846 8260C	1	07/06/2023 01:43	PDK	A
1,2-Dibromoethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:43	PDK	A
1,2-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:43	PDK	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:43	PDK	A
1,2-Dichloropropane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:43	PDK	A
1,3-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:43	PDK	A
1,3-Dichloropropene, Total	1.5U	U	ug/L	2.0	1.5	0.66	SW846 8260C	1	07/06/2023 01:43	PDK	A
1,4-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:43	PDK	A
2-Butanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/06/2023 01:43	PDK	A
2-Hexanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/06/2023 01:43	PDK	A
4-Methyl-2-Pentanone(MIBK)	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/06/2023 01:43	PDK	A
Acetone	4.4J	J	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/06/2023 01:43	PDK	A
Benzene	2.4		ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:43	PDK	A
Bromochloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:43	PDK	A
Bromodichloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:43	PDK	A
Bromoform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:43	PDK	A
Bromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:43	PDK	A
Carbon Disulfide	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:43	PDK	A
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:43	PDK	A
Chlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:43	PDK	A
Chlorodibromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:43	PDK	A
Chloroethane	0.75U	U,1	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:43	PDK	A
Chloroform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:43	PDK	A
Chloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:43	PDK	A
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:43	PDK	A
Cyclohexane	0.53J	J	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:43	PDK	A
Dichlorodifluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:43	PDK	A
Ethylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:43	PDK	A
Freon 113	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:43	PDK	A
Iodomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:43	PDK	A
Isopropylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:43	PDK	A
Methyl acetate	0.59J	J	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:43	PDK	A
Methyl cyclohexane	0.33J	J	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:43	PDK	A
Methyl t-Butyl Ether	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:43	PDK	A
Methylene Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:43	PDK	A
Styrene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:43	PDK	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:43	PDK	A
Toluene	0.68J	J	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:43	PDK	A
Total Xylenes	2.3U	U	ug/L	3.0	2.3	1.0	SW846 8260C	1	07/06/2023 01:43	PDK	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:43	PDK	A

Results

Client Sample ID	PW10-2-20230627	Collected	06/27/2023 11:20
Lab Sample ID	3310646003	Lab Receipt	06/29/2023 09:34

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Trichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:43	PDK	A
Trichlorofluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:43	PDK	A
Vinyl Chloride	0.50J	J	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 01:43	PDK	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	103%	81 – 118	07/06/2023 01:43	
4-Bromofluorobenzene	460-00-4	94%	85 – 114	07/06/2023 01:43	
Dibromofluoromethane	1868-53-7	99.4%	80 – 119	07/06/2023 01:43	
Toluene-d8	2037-26-5	96.5%	89 – 112	07/06/2023 01:43	



Results

Client Sample ID	PZ10-7-20230627	Collected	06/27/2023 09:50
Lab Sample ID	3310646004	Lab Receipt	06/29/2023 09:34

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:06	PDK	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:06	PDK	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:06	PDK	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:06	PDK	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:06	PDK	A
1,2,3-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:06	PDK	A
1,2,4-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:06	PDK	A
1,2-Dibromo-3-chloropropane	2.5U	U	ug/L	5.0	2.5	1.6	SW846 8260C	1	07/06/2023 02:06	PDK	A
1,2-Dibromoethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:06	PDK	A
1,2-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:06	PDK	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:06	PDK	A
1,2-Dichloropropane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:06	PDK	A
1,3-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:06	PDK	A
1,3-Dichloropropene, Total	1.5U	U	ug/L	2.0	1.5	0.66	SW846 8260C	1	07/06/2023 02:06	PDK	A
1,4-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:06	PDK	A
2-Butanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/06/2023 02:06	PDK	A
2-Hexanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/06/2023 02:06	PDK	A
4-Methyl-2-Pentanone(MIBK)	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/06/2023 02:06	PDK	A
Acetone	6.2		ug/L	5.0	3.8	1.6	SW846 8260C	1	07/06/2023 02:06	PDK	A
Benzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:06	PDK	A
Bromochloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:06	PDK	A
Bromodichloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:06	PDK	A
Bromoform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:06	PDK	A
Bromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:06	PDK	A
Carbon Disulfide	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:06	PDK	A
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:06	PDK	A
Chlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:06	PDK	A
Chlorodibromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:06	PDK	A
Chloroethane	0.75U	U,1	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:06	PDK	A
Chloroform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:06	PDK	A
Chloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:06	PDK	A
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:06	PDK	A
Cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:06	PDK	A
Dichlorodifluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:06	PDK	A
Ethylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:06	PDK	A
Freon 113	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:06	PDK	A
Iodomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:06	PDK	A
Isopropylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:06	PDK	A
Methyl acetate	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:06	PDK	A
Methyl cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:06	PDK	A
Methyl t-Butyl Ether	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:06	PDK	A
Methylene Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:06	PDK	A
Styrene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:06	PDK	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:06	PDK	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:06	PDK	A
Total Xylenes	2.3U	U	ug/L	3.0	2.3	1.0	SW846 8260C	1	07/06/2023 02:06	PDK	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:06	PDK	A

Results

Client Sample ID	PZ10-7-20230627	Collected	06/27/2023 09:50
Lab Sample ID	3310646004	Lab Receipt	06/29/2023 09:34

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Trichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:06	PDK	A
Trichlorofluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:06	PDK	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:06	PDK	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	99.1%	81 – 118	07/06/2023 02:06	
4-Bromofluorobenzene	460-00-4	96.5%	85 – 114	07/06/2023 02:06	
Dibromofluoromethane	1868-53-7	94.9%	80 – 119	07/06/2023 02:06	
Toluene-d8	2037-26-5	97.7%	89 – 112	07/06/2023 02:06	



Results

Client Sample ID	SW10-7-20230627	Collected	06/27/2023 12:10
Lab Sample ID	3310646005	Lab Receipt	06/29/2023 09:34

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:29	PDK	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:29	PDK	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:29	PDK	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:29	PDK	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:29	PDK	A
1,2,3-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:29	PDK	A
1,2,4-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:29	PDK	A
1,2-Dibromo-3-chloropropane	2.5U	U	ug/L	5.0	2.5	1.6	SW846 8260C	1	07/06/2023 02:29	PDK	A
1,2-Dibromoethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:29	PDK	A
1,2-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:29	PDK	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:29	PDK	A
1,2-Dichloropropane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:29	PDK	A
1,3-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:29	PDK	A
1,3-Dichloropropene, Total	1.5U	U	ug/L	2.0	1.5	0.66	SW846 8260C	1	07/06/2023 02:29	PDK	A
1,4-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:29	PDK	A
2-Butanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/06/2023 02:29	PDK	A
2-Hexanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/06/2023 02:29	PDK	A
4-Methyl-2-Pentanone(MIBK)	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/06/2023 02:29	PDK	A
Acetone	3.8J	J	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/06/2023 02:29	PDK	A
Benzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:29	PDK	A
Bromochloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:29	PDK	A
Bromodichloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:29	PDK	A
Bromoform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:29	PDK	A
Bromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:29	PDK	A
Carbon Disulfide	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:29	PDK	A
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:29	PDK	A
Chlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:29	PDK	A
Chlorodibromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:29	PDK	A
Chloroethane	0.75U	U,1	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:29	PDK	A
Chloroform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:29	PDK	A
Chloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:29	PDK	A
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:29	PDK	A
Cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:29	PDK	A
Dichlorodifluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:29	PDK	A
Ethylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:29	PDK	A
Freon 113	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:29	PDK	A
Iodomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:29	PDK	A
Isopropylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:29	PDK	A
Methyl acetate	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:29	PDK	A
Methyl cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:29	PDK	A
Methyl t-Butyl Ether	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:29	PDK	A
Methylene Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:29	PDK	A
Styrene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:29	PDK	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:29	PDK	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:29	PDK	A
Total Xylenes	2.3U	U	ug/L	3.0	2.3	1.0	SW846 8260C	1	07/06/2023 02:29	PDK	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:29	PDK	A



Results

Client Sample ID	SW10-7-20230627	Collected	06/27/2023 12:10
Lab Sample ID	3310646005	Lab Receipt	06/29/2023 09:34

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Trichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:29	PDK	A
Trichlorofluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:29	PDK	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:29	PDK	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	102%	81 – 118	07/06/2023 02:29	
4-Bromofluorobenzene	460-00-4	97%	85 – 114	07/06/2023 02:29	
Dibromofluoromethane	1868-53-7	94.9%	80 – 119	07/06/2023 02:29	
Toluene-d8	2037-26-5	96.9%	89 – 112	07/06/2023 02:29	



Results

Client Sample ID	SW10-8-20230627	Collected	06/27/2023 12:30
Lab Sample ID	3310646006	Lab Receipt	06/29/2023 09:34

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:52	PDK	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:52	PDK	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:52	PDK	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:52	PDK	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:52	PDK	A
1,2,3-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:52	PDK	A
1,2,4-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:52	PDK	A
1,2-Dibromo-3-chloropropane	2.5U	U	ug/L	5.0	2.5	1.6	SW846 8260C	1	07/06/2023 02:52	PDK	A
1,2-Dibromoethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:52	PDK	A
1,2-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:52	PDK	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:52	PDK	A
1,2-Dichloropropane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:52	PDK	A
1,3-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:52	PDK	A
1,3-Dichloropropene, Total	1.5U	U	ug/L	2.0	1.5	0.66	SW846 8260C	1	07/06/2023 02:52	PDK	A
1,4-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:52	PDK	A
2-Butanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/06/2023 02:52	PDK	A
2-Hexanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/06/2023 02:52	PDK	A
4-Methyl-2-Pentanone(MIBK)	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/06/2023 02:52	PDK	A
Acetone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/06/2023 02:52	PDK	A
Benzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:52	PDK	A
Bromochloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:52	PDK	A
Bromodichloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:52	PDK	A
Bromoform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:52	PDK	A
Bromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:52	PDK	A
Carbon Disulfide	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:52	PDK	A
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:52	PDK	A
Chlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:52	PDK	A
Chlorodibromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:52	PDK	A
Chloroethane	0.75U	U,1	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:52	PDK	A
Chloroform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:52	PDK	A
Chloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:52	PDK	A
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:52	PDK	A
Cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:52	PDK	A
Dichlorodifluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:52	PDK	A
Ethylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:52	PDK	A
Freon 113	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:52	PDK	A
Iodomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:52	PDK	A
Isopropylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:52	PDK	A
Methyl acetate	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:52	PDK	A
Methyl cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:52	PDK	A
Methyl t-Butyl Ether	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:52	PDK	A
Methylene Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:52	PDK	A
Styrene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:52	PDK	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:52	PDK	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:52	PDK	A
Total Xylenes	2.3U	U	ug/L	3.0	2.3	1.0	SW846 8260C	1	07/06/2023 02:52	PDK	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:52	PDK	A



Results

Client Sample ID	SW10-8-20230627	Collected	06/27/2023 12:30
Lab Sample ID	3310646006	Lab Receipt	06/29/2023 09:34

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Trichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:52	PDK	A
Trichlorofluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:52	PDK	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 02:52	PDK	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	99.2%	81 – 118	07/06/2023 02:52	
4-Bromofluorobenzene	460-00-4	98.1%	85 – 114	07/06/2023 02:52	
Dibromofluoromethane	1868-53-7	94.7%	80 – 119	07/06/2023 02:52	
Toluene-d8	2037-26-5	98.1%	89 – 112	07/06/2023 02:52	



Results

Client Sample ID	SW99-10-20230627	Collected	06/27/2023 10:50
Lab Sample ID	3310646007	Lab Receipt	06/29/2023 09:34

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:15	PDK	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:15	PDK	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:15	PDK	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:15	PDK	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:15	PDK	A
1,2,3-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:15	PDK	A
1,2,4-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:15	PDK	A
1,2-Dibromo-3-chloropropane	2.5U	U	ug/L	5.0	2.5	1.6	SW846 8260C	1	07/06/2023 03:15	PDK	A
1,2-Dibromoethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:15	PDK	A
1,2-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:15	PDK	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:15	PDK	A
1,2-Dichloropropane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:15	PDK	A
1,3-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:15	PDK	A
1,3-Dichloropropene, Total	1.5U	U	ug/L	2.0	1.5	0.66	SW846 8260C	1	07/06/2023 03:15	PDK	A
1,4-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:15	PDK	A
2-Butanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/06/2023 03:15	PDK	A
2-Hexanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/06/2023 03:15	PDK	A
4-Methyl-2-Pentanone(MIBK)	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/06/2023 03:15	PDK	A
Acetone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/06/2023 03:15	PDK	A
Benzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:15	PDK	A
Bromochloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:15	PDK	A
Bromodichloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:15	PDK	A
Bromoform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:15	PDK	A
Bromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:15	PDK	A
Carbon Disulfide	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:15	PDK	A
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:15	PDK	A
Chlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:15	PDK	A
Chlorodibromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:15	PDK	A
Chloroethane	0.75U	U,1	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:15	PDK	A
Chloroform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:15	PDK	A
Chloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:15	PDK	A
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:15	PDK	A
Cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:15	PDK	A
Dichlorodifluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:15	PDK	A
Ethylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:15	PDK	A
Freon 113	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:15	PDK	A
Iodomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:15	PDK	A
Isopropylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:15	PDK	A
Methyl acetate	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:15	PDK	A
Methyl cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:15	PDK	A
Methyl t-Butyl Ether	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:15	PDK	A
Methylene Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:15	PDK	A
Styrene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:15	PDK	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:15	PDK	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:15	PDK	A
Total Xylenes	2.3U	U	ug/L	3.0	2.3	1.0	SW846 8260C	1	07/06/2023 03:15	PDK	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:15	PDK	A



Results

Client Sample ID	SW99-10-20230627	Collected	06/27/2023 10:50
Lab Sample ID	3310646007	Lab Receipt	06/29/2023 09:34

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Trichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:15	PDK	A
Trichlorofluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:15	PDK	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:15	PDK	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	98.3%	81 – 118	07/06/2023 03:15	
4-Bromofluorobenzene	460-00-4	96.8%	85 – 114	07/06/2023 03:15	
Dibromofluoromethane	1868-53-7	94.2%	80 – 119	07/06/2023 03:15	
Toluene-d8	2037-26-5	98.3%	89 – 112	07/06/2023 03:15	



Results

Client Sample ID	SW10-6-20230627	Collected	06/27/2023 12:00
Lab Sample ID	3310646008	Lab Receipt	06/29/2023 09:34

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:38	PDK	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:38	PDK	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:38	PDK	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:38	PDK	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:38	PDK	A
1,2,3-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:38	PDK	A
1,2,4-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:38	PDK	A
1,2-Dibromo-3-chloropropane	2.5U	U	ug/L	5.0	2.5	1.6	SW846 8260C	1	07/06/2023 03:38	PDK	A
1,2-Dibromoethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:38	PDK	A
1,2-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:38	PDK	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:38	PDK	A
1,2-Dichloropropane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:38	PDK	A
1,3-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:38	PDK	A
1,3-Dichloropropene, Total	1.5U	U	ug/L	2.0	1.5	0.66	SW846 8260C	1	07/06/2023 03:38	PDK	A
1,4-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:38	PDK	A
2-Butanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/06/2023 03:38	PDK	A
2-Hexanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/06/2023 03:38	PDK	A
4-Methyl-2-Pentanone(MIBK)	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/06/2023 03:38	PDK	A
Acetone	4.0J	J	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/06/2023 03:38	PDK	A
Benzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:38	PDK	A
Bromochloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:38	PDK	A
Bromodichloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:38	PDK	A
Bromoform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:38	PDK	A
Bromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:38	PDK	A
Carbon Disulfide	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:38	PDK	A
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:38	PDK	A
Chlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:38	PDK	A
Chlorodibromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:38	PDK	A
Chloroethane	0.75U	U,1	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:38	PDK	A
Chloroform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:38	PDK	A
Chloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:38	PDK	A
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:38	PDK	A
Cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:38	PDK	A
Dichlorodifluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:38	PDK	A
Ethylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:38	PDK	A
Freon 113	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:38	PDK	A
Iodomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:38	PDK	A
Isopropylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:38	PDK	A
Methyl acetate	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:38	PDK	A
Methyl cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:38	PDK	A
Methyl t-Butyl Ether	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:38	PDK	A
Methylene Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:38	PDK	A
Styrene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:38	PDK	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:38	PDK	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:38	PDK	A
Total Xylenes	2.3U	U	ug/L	3.0	2.3	1.0	SW846 8260C	1	07/06/2023 03:38	PDK	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:38	PDK	A



Results

Client Sample ID	SW10-6-20230627	Collected	06/27/2023 12:00
Lab Sample ID	3310646008	Lab Receipt	06/29/2023 09:34

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Trichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:38	PDK	A
Trichlorofluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:38	PDK	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 03:38	PDK	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	98.4%	81 – 118	07/06/2023 03:38	
4-Bromofluorobenzene	460-00-4	97.7%	85 – 114	07/06/2023 03:38	
Dibromofluoromethane	1868-53-7	94.1%	80 – 119	07/06/2023 03:38	
Toluene-d8	2037-26-5	97.2%	89 – 112	07/06/2023 03:38	



Results

Client Sample ID	SW10-5-20230627	Collected	06/27/2023 11:50
Lab Sample ID	3310646009	Lab Receipt	06/29/2023 09:34

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:01	PDK	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:01	PDK	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:01	PDK	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:01	PDK	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:01	PDK	A
1,2,3-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:01	PDK	A
1,2,4-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:01	PDK	A
1,2-Dibromo-3-chloropropane	2.5U	U	ug/L	5.0	2.5	1.6	SW846 8260C	1	07/06/2023 04:01	PDK	A
1,2-Dibromoethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:01	PDK	A
1,2-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:01	PDK	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:01	PDK	A
1,2-Dichloropropane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:01	PDK	A
1,3-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:01	PDK	A
1,3-Dichloropropene, Total	1.5U	U	ug/L	2.0	1.5	0.66	SW846 8260C	1	07/06/2023 04:01	PDK	A
1,4-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:01	PDK	A
2-Butanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/06/2023 04:01	PDK	A
2-Hexanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/06/2023 04:01	PDK	A
4-Methyl-2-Pentanone(MIBK)	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/06/2023 04:01	PDK	A
Acetone	5.1		ug/L	5.0	3.8	1.6	SW846 8260C	1	07/06/2023 04:01	PDK	A
Benzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:01	PDK	A
Bromochloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:01	PDK	A
Bromodichloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:01	PDK	A
Bromoform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:01	PDK	A
Bromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:01	PDK	A
Carbon Disulfide	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:01	PDK	A
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:01	PDK	A
Chlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:01	PDK	A
Chlorodibromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:01	PDK	A
Chloroethane	0.75U	U,1	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:01	PDK	A
Chloroform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:01	PDK	A
Chloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:01	PDK	A
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:01	PDK	A
Cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:01	PDK	A
Dichlorodifluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:01	PDK	A
Ethylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:01	PDK	A
Freon 113	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:01	PDK	A
Iodomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:01	PDK	A
Isopropylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:01	PDK	A
Methyl acetate	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:01	PDK	A
Methyl cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:01	PDK	A
Methyl t-Butyl Ether	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:01	PDK	A
Methylene Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:01	PDK	A
Styrene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:01	PDK	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:01	PDK	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:01	PDK	A
Total Xylenes	2.3U	U	ug/L	3.0	2.3	1.0	SW846 8260C	1	07/06/2023 04:01	PDK	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:01	PDK	A



Results

Client Sample ID	SW10-5-20230627	Collected	06/27/2023 11:50
Lab Sample ID	3310646009	Lab Receipt	06/29/2023 09:34

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Trichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:01	PDK	A
Trichlorofluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:01	PDK	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:01	PDK	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	104%	81 – 118	07/06/2023 04:01	
4-Bromofluorobenzene	460-00-4	96.9%	85 – 114	07/06/2023 04:01	
Dibromofluoromethane	1868-53-7	95.6%	80 – 119	07/06/2023 04:01	
Toluene-d8	2037-26-5	96.9%	89 – 112	07/06/2023 04:01	



Results

Client Sample ID	MW10-11D-20230627	Collected	06/27/2023 10:10
Lab Sample ID	3310646010	Lab Receipt	06/29/2023 09:34

LIGHT HYDROCARBON GASES

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Ethane	2.6U	U	ug/L	5.2	2.6	0.56	RSK 175	1	07/07/2023 13:37	JTH	B
Ethene	3.6U	U	ug/L	7.1	3.6	0.81	RSK 175	1	07/07/2023 13:37	JTH	B
Methane	246		ug/L	2.6	1.6	0.53	RSK 175	1	07/07/2023 13:37	JTH	B

WET CHEMISTRY

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Total Organic Carbon (TOC)	12.5		mg/L	2.0	1.0	0.54	SW846 9060A	2	06/30/2023 19:17	PAG	D

Results

Client Sample ID	MW10-1DA-20230627	Collected	06/27/2023 11:00
Lab Sample ID	3310646011	Lab Receipt	06/29/2023 09:34

LIGHT HYDROCARBON GASES

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Ethane	57.5		ug/L	5.2	2.6	0.56	RSK 175	1	07/07/2023 13:50	JTH	B
Ethene	3.6U	U	ug/L	7.1	3.6	0.81	RSK 175	1	07/07/2023 13:50	JTH	B
Methane	8370		ug/L	2.6	1.6	0.53	RSK 175	1	07/07/2023 13:50	JTH	B

WET CHEMISTRY

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Total Organic Carbon (TOC)	10.2		mg/L	5.0	2.5	1.4	SW846 9060A	5	06/30/2023 19:17	PAG	D

Results

Client Sample ID	MW10-10D-20230627	Collected	06/27/2023 11:30
Lab Sample ID	3310646012	Lab Receipt	06/29/2023 09:34

LIGHT HYDROCARBON GASES

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Ethane	26.5		ug/L	5.2	2.6	0.56	RSK 175	1	07/07/2023 14:03	JTH	B
Ethene	13.1		ug/L	7.1	3.6	0.81	RSK 175	1	07/07/2023 14:03	JTH	B
Methane	9900		ug/L	2.6	1.6	0.53	RSK 175	1	07/07/2023 14:03	JTH	B

WET CHEMISTRY

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Total Organic Carbon (TOC)	5880		mg/L	1000	500	270	SW846 9060A	1000	06/30/2023 19:17	PAG	D



Results

Client Sample ID	MW5-1DA-20230627	Collected	06/27/2023 14:50
Lab Sample ID	3310646013	Lab Receipt	06/29/2023 09:34

LIGHT HYDROCARBON GASES

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Ethane	2.6U	U	ug/L	5.2	2.6	0.56	RSK 175	1	07/07/2023 14:17	JTH	E
Ethene	3.6U	U	ug/L	7.1	3.6	0.81	RSK 175	1	07/07/2023 14:17	JTH	E
Methane	1.6U	U	ug/L	2.6	1.6	0.53	RSK 175	1	07/07/2023 14:17	JTH	E

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:10	PDK	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:10	PDK	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:10	PDK	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:10	PDK	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:10	PDK	A
1,2,3-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:10	PDK	A
1,2,4-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:10	PDK	A
1,2-Dibromo-3-chloropropane	2.5U	U	ug/L	5.0	2.5	1.6	SW846 8260C	1	07/07/2023 00:10	PDK	A
1,2-Dibromoethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:10	PDK	A
1,2-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:10	PDK	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:10	PDK	A
1,2-Dichloropropane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:10	PDK	A
1,3-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:10	PDK	A
1,3-Dichloropropene, Total	1.5U	U	ug/L	2.0	1.5	0.66	SW846 8260C	1	07/07/2023 00:10	PDK	A
1,4-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:10	PDK	A
2-Butanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/07/2023 00:10	PDK	A
2-Hexanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/07/2023 00:10	PDK	A
4-Methyl-2-Pentanone(MIBK)	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/07/2023 00:10	PDK	A
Acetone	3.6J	J	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/07/2023 00:10	PDK	A
Benzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:10	PDK	A
Bromochloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:10	PDK	A
Bromodichloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:10	PDK	A
Bromoform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:10	PDK	A
Bromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:10	PDK	A
Carbon Disulfide	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:10	PDK	A
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:10	PDK	A
Chlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:10	PDK	A
Chlorodibromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:10	PDK	A
Chloroethane	0.75U	U,1	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:10	PDK	A
Chloroform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:10	PDK	A
Chloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:10	PDK	A
cis-1,2-Dichloroethene	0.74J	J	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:10	PDK	A
Cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:10	PDK	A
Dichlorodifluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:10	PDK	A
Ethylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:10	PDK	A
Freon 113	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:10	PDK	A
Iodomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:10	PDK	A
Isopropylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:10	PDK	A
Methyl acetate	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:10	PDK	A
Methyl cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:10	PDK	A



Results

Client Sample ID	MW5-1DA-20230627	Collected	06/27/2023 14:50
Lab Sample ID	3310646013	Lab Receipt	06/29/2023 09:34

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Methyl t-Butyl Ether	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:10	PDK	A
Methylene Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:10	PDK	A
Styrene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:10	PDK	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:10	PDK	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:10	PDK	A
Total Xylenes	2.3U	U	ug/L	3.0	2.3	1.0	SW846 8260C	1	07/07/2023 00:10	PDK	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:10	PDK	A
Trichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:10	PDK	A
Trichlorofluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:10	PDK	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:10	PDK	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	98.1%	81 – 118	07/07/2023 00:10	
4-Bromofluorobenzene	460-00-4	99.2%	85 – 114	07/07/2023 00:10	
Dibromofluoromethane	1868-53-7	92.5%	80 – 119	07/07/2023 00:10	
Toluene-d8	2037-26-5	99.4%	89 – 112	07/07/2023 00:10	

WET CHEMISTRY

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Total Organic Carbon (TOC)	6.9		mg/L	1.0	0.50	0.27	SW846 9060A	1	06/30/2023 19:17	PAG	G



Results

Client Sample ID	MW5-5D-20230627	Collected	06/27/2023 13:50
Lab Sample ID	3310646014	Lab Receipt	06/29/2023 09:34

LIGHT HYDROCARBON GASES

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Ethane	41.9		ug/L	5.2	2.6	0.56	RSK 175	1	07/07/2023 14:30	JTH	E
Ethene	38.1		ug/L	7.1	3.6	0.81	RSK 175	1	07/07/2023 14:30	JTH	E
Methane	5270		ug/L	2.6	1.6	0.53	RSK 175	1	07/07/2023 14:30	JTH	E

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:24	PDK	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:24	PDK	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:24	PDK	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:24	PDK	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:24	PDK	A
1,2,3-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:24	PDK	A
1,2,4-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:24	PDK	A
1,2-Dibromo-3-chloropropane	2.5U	U	ug/L	5.0	2.5	1.6	SW846 8260C	1	07/06/2023 04:24	PDK	A
1,2-Dibromoethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:24	PDK	A
1,2-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:24	PDK	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:24	PDK	A
1,2-Dichloropropane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:24	PDK	A
1,3-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:24	PDK	A
1,3-Dichloropropene, Total	1.5U	U	ug/L	2.0	1.5	0.66	SW846 8260C	1	07/06/2023 04:24	PDK	A
1,4-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:24	PDK	A
2-Butanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/06/2023 04:24	PDK	A
2-Hexanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/06/2023 04:24	PDK	A
4-Methyl-2-Pentanone(MIBK)	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/06/2023 04:24	PDK	A
Acetone	4.5J	J	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/06/2023 04:24	PDK	A
Benzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:24	PDK	A
Bromochloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:24	PDK	A
Bromodichloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:24	PDK	A
Bromoform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:24	PDK	A
Bromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:24	PDK	A
Carbon Disulfide	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:24	PDK	A
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:24	PDK	A
Chlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:24	PDK	A
Chlorodibromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:24	PDK	A
Chloroethane	0.75U	U,1	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:24	PDK	A
Chloroform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:24	PDK	A
Chloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:24	PDK	A
cis-1,2-Dichloroethene	4.0		ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:24	PDK	A
Cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:24	PDK	A
Dichlorodifluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:24	PDK	A
Ethylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:24	PDK	A
Freon 113	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:24	PDK	A
Iodomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:24	PDK	A
Isopropylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:24	PDK	A
Methyl acetate	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:24	PDK	A
Methyl cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:24	PDK	A



Results

Client Sample ID	MW5-5D-20230627	Collected	06/27/2023 13:50
Lab Sample ID	3310646014	Lab Receipt	06/29/2023 09:34

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Methyl t-Butyl Ether	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:24	PDK	A
Methylene Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:24	PDK	A
Styrene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:24	PDK	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:24	PDK	A
Toluene	0.65J	J	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:24	PDK	A
Total Xylenes	2.3U	U	ug/L	3.0	2.3	1.0	SW846 8260C	1	07/06/2023 04:24	PDK	A
trans-1,2-Dichloroethene	0.47J	J	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:24	PDK	A
Trichloroethene	1.7		ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:24	PDK	A
Trichlorofluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:24	PDK	A
Vinyl Chloride	7.1		ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:24	PDK	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	101%	81 – 118	07/06/2023 04:24	
4-Bromofluorobenzene	460-00-4	98.8%	85 – 114	07/06/2023 04:24	
Dibromofluoromethane	1868-53-7	95.7%	80 – 119	07/06/2023 04:24	
Toluene-d8	2037-26-5	98.1%	89 – 112	07/06/2023 04:24	

WET CHEMISTRY

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Total Organic Carbon (TOC)	105		mg/L	25.0	12.5	6.8	SW846 9060A	25	07/06/2023 20:59	PAG	G



Results

Client Sample ID	MW5-6-20230627	Collected	06/27/2023 13:50
Lab Sample ID	3310646015	Lab Receipt	06/29/2023 09:34

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:33	PDK	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:33	PDK	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:33	PDK	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:33	PDK	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:33	PDK	A
1,2,3-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:33	PDK	A
1,2,4-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:33	PDK	A
1,2-Dibromo-3-chloropropane	2.5U	U	ug/L	5.0	2.5	1.6	SW846 8260C	1	07/07/2023 00:33	PDK	A
1,2-Dibromoethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:33	PDK	A
1,2-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:33	PDK	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:33	PDK	A
1,2-Dichloropropane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:33	PDK	A
1,3-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:33	PDK	A
1,3-Dichloropropene, Total	1.5U	U	ug/L	2.0	1.5	0.66	SW846 8260C	1	07/07/2023 00:33	PDK	A
1,4-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:33	PDK	A
2-Butanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/07/2023 00:33	PDK	A
2-Hexanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/07/2023 00:33	PDK	A
4-Methyl-2-Pentanone(MIBK)	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/07/2023 00:33	PDK	A
Acetone	4.1J	J	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/07/2023 00:33	PDK	A
Benzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:33	PDK	A
Bromochloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:33	PDK	A
Bromodichloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:33	PDK	A
Bromoform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:33	PDK	A
Bromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:33	PDK	A
Carbon Disulfide	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:33	PDK	A
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:33	PDK	A
Chlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:33	PDK	A
Chlorodibromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:33	PDK	A
Chloroethane	0.75U	U,1	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:33	PDK	A
Chloroform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:33	PDK	A
Chloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:33	PDK	A
cis-1,2-Dichloroethene	1.9		ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:33	PDK	A
Cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:33	PDK	A
Dichlorodifluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:33	PDK	A
Ethylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:33	PDK	A
Freon 113	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:33	PDK	A
Iodomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:33	PDK	A
Isopropylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:33	PDK	A
Methyl acetate	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:33	PDK	A
Methyl cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:33	PDK	A
Methyl t-Butyl Ether	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:33	PDK	A
Methylene Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:33	PDK	A
Styrene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:33	PDK	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:33	PDK	A
Toluene	2.7		ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:33	PDK	A
Total Xylenes	2.3U	U	ug/L	3.0	2.3	1.0	SW846 8260C	1	07/07/2023 00:33	PDK	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:33	PDK	A



Results

Client Sample ID	MW5-6-20230627	Collected	06/27/2023 13:50
Lab Sample ID	3310646015	Lab Receipt	06/29/2023 09:34

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Trichloroethene	1.2		ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:33	PDK	A
Trichlorofluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:33	PDK	A
Vinyl Chloride	1.9		ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:33	PDK	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	96.5%	81 – 118	07/07/2023 00:33	
4-Bromofluorobenzene	460-00-4	102%	85 – 114	07/07/2023 00:33	
Dibromofluoromethane	1868-53-7	92%	80 – 119	07/07/2023 00:33	
Toluene-d8	2037-26-5	99.4%	89 – 112	07/07/2023 00:33	



Results

Client Sample ID	RW5-1-20230627	Collected	06/27/2023 14:30
Lab Sample ID	3310646016	Lab Receipt	06/29/2023 09:34

LIGHT HYDROCARBON GASES

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Ethane	2.0J	J,4	ug/L	5.2	2.6	0.56	RSK 175	1	07/10/2023 09:56	JTH	K
Ethene	3.6U	U	ug/L	7.1	3.6	0.81	RSK 175	1	07/10/2023 09:56	JTH	K
Methane	9050		ug/L	2.6	1.6	0.53	RSK 175	1	07/10/2023 09:56	JTH	K

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:56	PDK	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:56	PDK	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:56	PDK	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:56	PDK	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:56	PDK	A
1,2,3-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:56	PDK	A
1,2,4-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:56	PDK	A
1,2-Dibromo-3-chloropropane	2.5U	U	ug/L	5.0	2.5	1.6	SW846 8260C	1	07/07/2023 00:56	PDK	A
1,2-Dibromoethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:56	PDK	A
1,2-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:56	PDK	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:56	PDK	A
1,2-Dichloropropane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:56	PDK	A
1,3-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:56	PDK	A
1,3-Dichloropropene, Total	1.5U	U	ug/L	2.0	1.5	0.66	SW846 8260C	1	07/07/2023 00:56	PDK	A
1,4-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:56	PDK	A
2-Butanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/07/2023 00:56	PDK	A
2-Hexanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/07/2023 00:56	PDK	A
4-Methyl-2-Pentanone(MIBK)	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/07/2023 00:56	PDK	A
Acetone	4.1J	J	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/07/2023 00:56	PDK	A
Benzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:56	PDK	A
Bromochloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:56	PDK	A
Bromodichloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:56	PDK	A
Bromoform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:56	PDK	A
Bromomethane	0.75U	U,2	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:56	PDK	A
Carbon Disulfide	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:56	PDK	A
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:56	PDK	A
Chlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:56	PDK	A
Chlorodibromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:56	PDK	A
Chloroethane	5.6	1	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:56	PDK	A
Chloroform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:56	PDK	A
Chloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:56	PDK	A
cis-1,2-Dichloroethene	1.6		ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:56	PDK	A
Cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:56	PDK	A
Dichlorodifluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:56	PDK	A
Ethylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:56	PDK	A
Freon 113	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:56	PDK	A
Iodomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:56	PDK	A
Isopropylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:56	PDK	A
Methyl acetate	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:56	PDK	A
Methyl cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:56	PDK	A



Results

Client Sample ID	RW5-1-20230627	Collected	06/27/2023 14:30
Lab Sample ID	3310646016	Lab Receipt	06/29/2023 09:34

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Methyl t-Butyl Ether	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:56	PDK	A
Methylene Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:56	PDK	A
Styrene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:56	PDK	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:56	PDK	A
Toluene	6.3		ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:56	PDK	A
Total Xylenes	2.3U	U	ug/L	3.0	2.3	1.0	SW846 8260C	1	07/07/2023 00:56	PDK	A
trans-1,2-Dichloroethene	0.47J	J	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:56	PDK	A
Trichloroethene	1.0		ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:56	PDK	A
Trichlorofluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:56	PDK	A
Vinyl Chloride	1.3	3	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 00:56	PDK	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	97.5%	81 – 118	07/07/2023 00:56	
4-Bromofluorobenzene	460-00-4	103%	85 – 114	07/07/2023 00:56	
Dibromofluoromethane	1868-53-7	92.4%	80 – 119	07/07/2023 00:56	
Toluene-d8	2037-26-5	100%	89 – 112	07/07/2023 00:56	

WET CHEMISTRY

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Total Organic Carbon (TOC)	159		mg/L	100	50.0	27.0	SW846 9060A	100	07/03/2023 20:19	PAG	Q



Results

Client Sample ID	RW5-2-20230627	Collected	06/27/2023 13:30
Lab Sample ID	3310646017	Lab Receipt	06/29/2023 09:34

LIGHT HYDROCARBON GASES

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Ethane	4.5J	J	ug/L	5.2	2.6	0.56	RSK 175	1	07/10/2023 09:16	JTH	K
Ethene	3.6U	U	ug/L	7.1	3.6	0.81	RSK 175	1	07/10/2023 09:16	JTH	K
Methane	6350		ug/L	2.6	1.6	0.53	RSK 175	1	07/10/2023 09:16	JTH	K

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:47	PDK	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:47	PDK	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:47	PDK	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:47	PDK	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:47	PDK	A
1,2,3-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:47	PDK	A
1,2,4-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:47	PDK	A
1,2-Dibromo-3-chloropropane	2.5U	U	ug/L	5.0	2.5	1.6	SW846 8260C	1	07/06/2023 04:47	PDK	A
1,2-Dibromoethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:47	PDK	A
1,2-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:47	PDK	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:47	PDK	A
1,2-Dichloropropane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:47	PDK	A
1,3-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:47	PDK	A
1,3-Dichloropropene, Total	1.5U	U	ug/L	2.0	1.5	0.66	SW846 8260C	1	07/06/2023 04:47	PDK	A
1,4-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:47	PDK	A
2-Butanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/06/2023 04:47	PDK	A
2-Hexanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/06/2023 04:47	PDK	A
4-Methyl-2-Pentanone(MIBK)	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/06/2023 04:47	PDK	A
Acetone	5.4		ug/L	5.0	3.8	1.6	SW846 8260C	1	07/06/2023 04:47	PDK	A
Benzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:47	PDK	A
Bromochloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:47	PDK	A
Bromodichloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:47	PDK	A
Bromoform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:47	PDK	A
Bromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:47	PDK	A
Carbon Disulfide	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:47	PDK	A
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:47	PDK	A
Chlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:47	PDK	A
Chlorodibromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:47	PDK	A
Chloroethane	0.75U	U,1	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:47	PDK	A
Chloroform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:47	PDK	A
Chloromethane	0.75U	U,5	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:47	PDK	A
cis-1,2-Dichloroethene	1.7		ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:47	PDK	A
Cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:47	PDK	A
Dichlorodifluoromethane	0.75U	U,6,7	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:47	PDK	A
Ethylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:47	PDK	A
Freon 113	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:47	PDK	A
Iodomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:47	PDK	A
Isopropylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:47	PDK	A
Methyl acetate	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:47	PDK	A
Methyl cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:47	PDK	A



Results

Client Sample ID	RW5-2-20230627	Collected	06/27/2023 13:30
Lab Sample ID	3310646017	Lab Receipt	06/29/2023 09:34

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Methyl t-Butyl Ether	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:47	PDK	A
Methylene Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:47	PDK	A
Styrene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:47	PDK	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:47	PDK	A
Toluene	0.74J	J	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:47	PDK	A
Total Xylenes	2.3U	U	ug/L	3.0	2.3	1.0	SW846 8260C	1	07/06/2023 04:47	PDK	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:47	PDK	A
Trichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:47	PDK	A
Trichlorofluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:47	PDK	A
Vinyl Chloride	0.83J	J,8,9	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 04:47	PDK	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	100%	81 – 118	07/06/2023 04:47	
4-Bromofluorobenzene	460-00-4	97.9%	85 – 114	07/06/2023 04:47	
Dibromofluoromethane	1868-53-7	94.6%	80 – 119	07/06/2023 04:47	
Toluene-d8	2037-26-5	97.7%	89 – 112	07/06/2023 04:47	

WET CHEMISTRY

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Total Organic Carbon (TOC)	137		mg/L	25.0	12.5	6.8	SW846 9060A	25	07/06/2023 20:59	PAG	M



Results

Client Sample ID	RW5-4-20230627	Collected	06/27/2023 14:10
Lab Sample ID	3310646018	Lab Receipt	06/29/2023 09:34

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:20	PDK	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:20	PDK	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:20	PDK	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:20	PDK	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:20	PDK	A
1,2,3-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:20	PDK	A
1,2,4-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:20	PDK	A
1,2-Dibromo-3-chloropropane	2.5U	U	ug/L	5.0	2.5	1.6	SW846 8260C	1	07/07/2023 01:20	PDK	A
1,2-Dibromoethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:20	PDK	A
1,2-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:20	PDK	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:20	PDK	A
1,2-Dichloropropane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:20	PDK	A
1,3-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:20	PDK	A
1,3-Dichloropropene, Total	1.5U	U	ug/L	2.0	1.5	0.66	SW846 8260C	1	07/07/2023 01:20	PDK	A
1,4-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:20	PDK	A
2-Butanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/07/2023 01:20	PDK	A
2-Hexanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/07/2023 01:20	PDK	A
4-Methyl-2-Pentanone(MIBK)	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/07/2023 01:20	PDK	A
Acetone	3.9J	J	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/07/2023 01:20	PDK	A
Benzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:20	PDK	A
Bromochloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:20	PDK	A
Bromodichloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:20	PDK	A
Bromoform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:20	PDK	A
Bromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:20	PDK	A
Carbon Disulfide	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:20	PDK	A
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:20	PDK	A
Chlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:20	PDK	A
Chlorodibromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:20	PDK	A
Chloroethane	0.75U	U,1	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:20	PDK	A
Chloroform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:20	PDK	A
Chloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:20	PDK	A
cis-1,2-Dichloroethene	0.39J	J	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:20	PDK	A
Cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:20	PDK	A
Dichlorodifluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:20	PDK	A
Ethylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:20	PDK	A
Freon 113	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:20	PDK	A
Iodomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:20	PDK	A
Isopropylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:20	PDK	A
Methyl acetate	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:20	PDK	A
Methyl cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:20	PDK	A
Methyl t-Butyl Ether	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:20	PDK	A
Methylene Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:20	PDK	A
Styrene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:20	PDK	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:20	PDK	A
Toluene	0.65J	J	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:20	PDK	A
Total Xylenes	2.3U	U	ug/L	3.0	2.3	1.0	SW846 8260C	1	07/07/2023 01:20	PDK	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:20	PDK	A



Results

Client Sample ID	RW5-4-20230627	Collected	06/27/2023 14:10
Lab Sample ID	3310646018	Lab Receipt	06/29/2023 09:34

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Trichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:20	PDK	A
Trichlorofluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:20	PDK	A
Vinyl Chloride	0.38J	J	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:20	PDK	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	98.9%	81 – 118	07/07/2023 01:20	
4-Bromofluorobenzene	460-00-4	100%	85 – 114	07/07/2023 01:20	
Dibromofluoromethane	1868-53-7	93.1%	80 – 119	07/07/2023 01:20	
Toluene-d8	2037-26-5	101%	89 – 112	07/07/2023 01:20	



Results

Client Sample ID	PW13-4D-20230627	Collected	06/27/2023 15:20
Lab Sample ID	3310646019	Lab Receipt	06/29/2023 09:34

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:43	PDK	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:43	PDK	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:43	PDK	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:43	PDK	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:43	PDK	A
1,2,3-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:43	PDK	A
1,2,4-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:43	PDK	A
1,2-Dibromo-3-chloropropane	2.5U	U	ug/L	5.0	2.5	1.6	SW846 8260C	1	07/07/2023 01:43	PDK	A
1,2-Dibromoethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:43	PDK	A
1,2-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:43	PDK	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:43	PDK	A
1,2-Dichloropropane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:43	PDK	A
1,3-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:43	PDK	A
1,3-Dichloropropene, Total	1.5U	U	ug/L	2.0	1.5	0.66	SW846 8260C	1	07/07/2023 01:43	PDK	A
1,4-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:43	PDK	A
2-Butanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/07/2023 01:43	PDK	A
2-Hexanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/07/2023 01:43	PDK	A
4-Methyl-2-Pentanone(MIBK)	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/07/2023 01:43	PDK	A
Acetone	4.4J	J	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/07/2023 01:43	PDK	A
Benzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:43	PDK	A
Bromochloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:43	PDK	A
Bromodichloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:43	PDK	A
Bromoform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:43	PDK	A
Bromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:43	PDK	A
Carbon Disulfide	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:43	PDK	A
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:43	PDK	A
Chlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:43	PDK	A
Chlorodibromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:43	PDK	A
Chloroethane	0.75U	U,1	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:43	PDK	A
Chloroform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:43	PDK	A
Chloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:43	PDK	A
cis-1,2-Dichloroethene	5.0		ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:43	PDK	A
Cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:43	PDK	A
Dichlorodifluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:43	PDK	A
Ethylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:43	PDK	A
Freon 113	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:43	PDK	A
Iodomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:43	PDK	A
Isopropylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:43	PDK	A
Methyl acetate	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:43	PDK	A
Methyl cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:43	PDK	A
Methyl t-Butyl Ether	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:43	PDK	A
Methylene Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:43	PDK	A
Styrene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:43	PDK	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:43	PDK	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:43	PDK	A
Total Xylenes	2.3U	U	ug/L	3.0	2.3	1.0	SW846 8260C	1	07/07/2023 01:43	PDK	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:43	PDK	A



Results

Client Sample ID	PW13-4D-20230627	Collected	06/27/2023 15:20
Lab Sample ID	3310646019	Lab Receipt	06/29/2023 09:34

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Trichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:43	PDK	A
Trichlorofluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:43	PDK	A
Vinyl Chloride	0.34J	J	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 01:43	PDK	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	98%	81 – 118	07/07/2023 01:43	
4-Bromofluorobenzene	460-00-4	101%	85 – 114	07/07/2023 01:43	
Dibromofluoromethane	1868-53-7	91.8%	80 – 119	07/07/2023 01:43	
Toluene-d8	2037-26-5	100%	89 – 112	07/07/2023 01:43	



Results

Client Sample ID	MW13-4D-20230627	Collected	06/27/2023 15:10
Lab Sample ID	3310646020	Lab Receipt	06/29/2023 09:34

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:05	PDK	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:05	PDK	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:05	PDK	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:05	PDK	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:05	PDK	A
1,2,3-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:05	PDK	A
1,2,4-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:05	PDK	A
1,2-Dibromo-3-chloropropane	2.5U	U	ug/L	5.0	2.5	1.6	SW846 8260C	1	07/07/2023 02:05	PDK	A
1,2-Dibromoethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:05	PDK	A
1,2-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:05	PDK	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:05	PDK	A
1,2-Dichloropropane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:05	PDK	A
1,3-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:05	PDK	A
1,3-Dichloropropene, Total	1.5U	U	ug/L	2.0	1.5	0.66	SW846 8260C	1	07/07/2023 02:05	PDK	A
1,4-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:05	PDK	A
2-Butanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/07/2023 02:05	PDK	A
2-Hexanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/07/2023 02:05	PDK	A
4-Methyl-2-Pentanone(MIBK)	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/07/2023 02:05	PDK	A
Acetone	4.3J	J	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/07/2023 02:05	PDK	A
Benzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:05	PDK	A
Bromochloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:05	PDK	A
Bromodichloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:05	PDK	A
Bromoform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:05	PDK	A
Bromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:05	PDK	A
Carbon Disulfide	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:05	PDK	A
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:05	PDK	A
Chlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:05	PDK	A
Chlorodibromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:05	PDK	A
Chloroethane	0.75U	U,1	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:05	PDK	A
Chloroform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:05	PDK	A
Chloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:05	PDK	A
cis-1,2-Dichloroethene	6.2		ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:05	PDK	A
Cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:05	PDK	A
Dichlorodifluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:05	PDK	A
Ethylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:05	PDK	A
Freon 113	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:05	PDK	A
Iodomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:05	PDK	A
Isopropylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:05	PDK	A
Methyl acetate	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:05	PDK	A
Methyl cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:05	PDK	A
Methyl t-Butyl Ether	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:05	PDK	A
Methylene Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:05	PDK	A
Styrene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:05	PDK	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:05	PDK	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:05	PDK	A
Total Xylenes	2.3U	U	ug/L	3.0	2.3	1.0	SW846 8260C	1	07/07/2023 02:05	PDK	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:05	PDK	A



Results

Client Sample ID	MW13-4D-20230627	Collected	06/27/2023 15:10
Lab Sample ID	3310646020	Lab Receipt	06/29/2023 09:34

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Trichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:05	PDK	A
Trichlorofluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:05	PDK	A
Vinyl Chloride	3.9		ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:05	PDK	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	98.2%	81 – 118	07/07/2023 02:05	
4-Bromofluorobenzene	460-00-4	101%	85 – 114	07/07/2023 02:05	
Dibromofluoromethane	1868-53-7	92.7%	80 – 119	07/07/2023 02:05	
Toluene-d8	2037-26-5	99.9%	89 – 112	07/07/2023 02:05	



Results

Client Sample ID	MW13-5D-20230627	Collected	06/27/2023 15:30
Lab Sample ID	3310646021	Lab Receipt	06/29/2023 09:34

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:28	PDK	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:28	PDK	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:28	PDK	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:28	PDK	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:28	PDK	A
1,2,3-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:28	PDK	A
1,2,4-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:28	PDK	A
1,2-Dibromo-3-chloropropane	2.5U	U	ug/L	5.0	2.5	1.6	SW846 8260C	1	07/07/2023 02:28	PDK	A
1,2-Dibromoethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:28	PDK	A
1,2-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:28	PDK	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:28	PDK	A
1,2-Dichloropropane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:28	PDK	A
1,3-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:28	PDK	A
1,3-Dichloropropene, Total	1.5U	U	ug/L	2.0	1.5	0.66	SW846 8260C	1	07/07/2023 02:28	PDK	A
1,4-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:28	PDK	A
2-Butanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/07/2023 02:28	PDK	A
2-Hexanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/07/2023 02:28	PDK	A
4-Methyl-2-Pentanone(MIBK)	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/07/2023 02:28	PDK	A
Acetone	4.9J	J	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/07/2023 02:28	PDK	A
Benzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:28	PDK	A
Bromochloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:28	PDK	A
Bromodichloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:28	PDK	A
Bromoform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:28	PDK	A
Bromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:28	PDK	A
Carbon Disulfide	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:28	PDK	A
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:28	PDK	A
Chlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:28	PDK	A
Chlorodibromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:28	PDK	A
Chloroethane	0.75U	U,1	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:28	PDK	A
Chloroform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:28	PDK	A
Chloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:28	PDK	A
cis-1,2-Dichloroethene	14.0		ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:28	PDK	A
Cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:28	PDK	A
Dichlorodifluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:28	PDK	A
Ethylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:28	PDK	A
Freon 113	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:28	PDK	A
Iodomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:28	PDK	A
Isopropylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:28	PDK	A
Methyl acetate	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:28	PDK	A
Methyl cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:28	PDK	A
Methyl t-Butyl Ether	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:28	PDK	A
Methylene Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:28	PDK	A
Styrene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:28	PDK	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:28	PDK	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:28	PDK	A
Total Xylenes	2.3U	U	ug/L	3.0	2.3	1.0	SW846 8260C	1	07/07/2023 02:28	PDK	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:28	PDK	A



Results

Client Sample ID	MW13-5D-20230627	Collected	06/27/2023 15:30
Lab Sample ID	3310646021	Lab Receipt	06/29/2023 09:34

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Trichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:28	PDK	A
Trichlorofluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:28	PDK	A
Vinyl Chloride	0.58J	J	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:28	PDK	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	97.5%	81 – 118	07/07/2023 02:28	
4-Bromofluorobenzene	460-00-4	101%	85 – 114	07/07/2023 02:28	
Dibromofluoromethane	1868-53-7	92%	80 – 119	07/07/2023 02:28	
Toluene-d8	2037-26-5	98.8%	89 – 112	07/07/2023 02:28	



Results

Client Sample ID	PW13-1-20230627	Collected	06/27/2023 15:40
Lab Sample ID	3310646022	Lab Receipt	06/29/2023 09:34

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:51	PDK	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:51	PDK	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:51	PDK	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:51	PDK	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:51	PDK	A
1,2,3-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:51	PDK	A
1,2,4-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:51	PDK	A
1,2-Dibromo-3-chloropropane	2.5U	U	ug/L	5.0	2.5	1.6	SW846 8260C	1	07/07/2023 02:51	PDK	A
1,2-Dibromoethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:51	PDK	A
1,2-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:51	PDK	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:51	PDK	A
1,2-Dichloropropane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:51	PDK	A
1,3-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:51	PDK	A
1,3-Dichloropropene, Total	1.5U	U	ug/L	2.0	1.5	0.66	SW846 8260C	1	07/07/2023 02:51	PDK	A
1,4-Dichlorobenzene	0.49J	J	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:51	PDK	A
2-Butanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/07/2023 02:51	PDK	A
2-Hexanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/07/2023 02:51	PDK	A
4-Methyl-2-Pentanone(MIBK)	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/07/2023 02:51	PDK	A
Acetone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/07/2023 02:51	PDK	A
Benzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:51	PDK	A
Bromochloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:51	PDK	A
Bromodichloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:51	PDK	A
Bromoform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:51	PDK	A
Bromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:51	PDK	A
Carbon Disulfide	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:51	PDK	A
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:51	PDK	A
Chlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:51	PDK	A
Chlorodibromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:51	PDK	A
Chloroethane	0.75U	U,1	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:51	PDK	A
Chloroform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:51	PDK	A
Chloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:51	PDK	A
cis-1,2-Dichloroethene	3.6		ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:51	PDK	A
Cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:51	PDK	A
Dichlorodifluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:51	PDK	A
Ethylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:51	PDK	A
Freon 113	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:51	PDK	A
Iodomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:51	PDK	A
Isopropylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:51	PDK	A
Methyl acetate	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:51	PDK	A
Methyl cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:51	PDK	A
Methyl t-Butyl Ether	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:51	PDK	A
Methylene Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:51	PDK	A
Styrene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:51	PDK	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:51	PDK	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:51	PDK	A
Total Xylenes	2.3U	U	ug/L	3.0	2.3	1.0	SW846 8260C	1	07/07/2023 02:51	PDK	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:51	PDK	A



Results

Client Sample ID	PW13-1-20230627	Collected	06/27/2023 15:40
Lab Sample ID	3310646022	Lab Receipt	06/29/2023 09:34

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Trichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:51	PDK	A
Trichlorofluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:51	PDK	A
Vinyl Chloride	0.58J	J	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 02:51	PDK	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	99.1%	81 – 118	07/07/2023 02:51	
4-Bromofluorobenzene	460-00-4	102%	85 – 114	07/07/2023 02:51	
Dibromofluoromethane	1868-53-7	91.8%	80 – 119	07/07/2023 02:51	
Toluene-d8	2037-26-5	99.6%	89 – 112	07/07/2023 02:51	



Results

Client Sample ID	MW8-11D-20230627	Collected	06/27/2023 15:50
Lab Sample ID	3310646023	Lab Receipt	06/29/2023 09:34

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:14	PDK	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:14	PDK	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:14	PDK	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:14	PDK	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:14	PDK	A
1,2,3-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:14	PDK	A
1,2,4-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:14	PDK	A
1,2-Dibromo-3-chloropropane	2.5U	U	ug/L	5.0	2.5	1.6	SW846 8260C	1	07/07/2023 03:14	PDK	A
1,2-Dibromoethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:14	PDK	A
1,2-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:14	PDK	A
1,2-Dichloroethane	0.35J	J	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:14	PDK	A
1,2-Dichloropropane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:14	PDK	A
1,3-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:14	PDK	A
1,3-Dichloropropene, Total	1.5U	U	ug/L	2.0	1.5	0.66	SW846 8260C	1	07/07/2023 03:14	PDK	A
1,4-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:14	PDK	A
2-Butanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/07/2023 03:14	PDK	A
2-Hexanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/07/2023 03:14	PDK	A
4-Methyl-2-Pentanone(MIBK)	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/07/2023 03:14	PDK	A
Acetone	5.0		ug/L	5.0	3.8	1.6	SW846 8260C	1	07/07/2023 03:14	PDK	A
Benzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:14	PDK	A
Bromochloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:14	PDK	A
Bromodichloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:14	PDK	A
Bromoform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:14	PDK	A
Bromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:14	PDK	A
Carbon Disulfide	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:14	PDK	A
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:14	PDK	A
Chlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:14	PDK	A
Chlorodibromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:14	PDK	A
Chloroethane	0.75U	U,1	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:14	PDK	A
Chloroform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:14	PDK	A
Chloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:14	PDK	A
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:14	PDK	A
Cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:14	PDK	A
Dichlorodifluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:14	PDK	A
Ethylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:14	PDK	A
Freon 113	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:14	PDK	A
Iodomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:14	PDK	A
Isopropylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:14	PDK	A
Methyl acetate	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:14	PDK	A
Methyl cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:14	PDK	A
Methyl t-Butyl Ether	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:14	PDK	A
Methylene Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:14	PDK	A
Styrene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:14	PDK	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:14	PDK	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:14	PDK	A
Total Xylenes	2.3U	U	ug/L	3.0	2.3	1.0	SW846 8260C	1	07/07/2023 03:14	PDK	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:14	PDK	A



Results

Client Sample ID	MW8-11D-20230627	Collected	06/27/2023 15:50
Lab Sample ID	3310646023	Lab Receipt	06/29/2023 09:34

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Trichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:14	PDK	A
Trichlorofluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:14	PDK	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:14	PDK	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	98%	81 – 118	07/07/2023 03:14	
4-Bromofluorobenzene	460-00-4	100%	85 – 114	07/07/2023 03:14	
Dibromofluoromethane	1868-53-7	90.7%	80 – 119	07/07/2023 03:14	
Toluene-d8	2037-26-5	101%	89 – 112	07/07/2023 03:14	



Results

Client Sample ID	MW3-3DA-20230627	Collected	06/27/2023 16:40
Lab Sample ID	3310646024	Lab Receipt	06/29/2023 09:34

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:37	PDK	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:37	PDK	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:37	PDK	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:37	PDK	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:37	PDK	A
1,2,3-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:37	PDK	A
1,2,4-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:37	PDK	A
1,2-Dibromo-3-chloropropane	2.5U	U	ug/L	5.0	2.5	1.6	SW846 8260C	1	07/07/2023 03:37	PDK	A
1,2-Dibromoethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:37	PDK	A
1,2-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:37	PDK	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:37	PDK	A
1,2-Dichloropropane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:37	PDK	A
1,3-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:37	PDK	A
1,3-Dichloropropene, Total	1.5U	U	ug/L	2.0	1.5	0.66	SW846 8260C	1	07/07/2023 03:37	PDK	A
1,4-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:37	PDK	A
2-Butanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/07/2023 03:37	PDK	A
2-Hexanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/07/2023 03:37	PDK	A
4-Methyl-2-Pentanone(MIBK)	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/07/2023 03:37	PDK	A
Acetone	3.3J	J	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/07/2023 03:37	PDK	A
Benzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:37	PDK	A
Bromochloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:37	PDK	A
Bromodichloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:37	PDK	A
Bromoform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:37	PDK	A
Bromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:37	PDK	A
Carbon Disulfide	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:37	PDK	A
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:37	PDK	A
Chlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:37	PDK	A
Chlorodibromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:37	PDK	A
Chloroethane	0.75U	U,1	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:37	PDK	A
Chloroform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:37	PDK	A
Chloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:37	PDK	A
cis-1,2-Dichloroethene	3.5		ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:37	PDK	A
Cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:37	PDK	A
Dichlorodifluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:37	PDK	A
Ethylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:37	PDK	A
Freon 113	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:37	PDK	A
Iodomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:37	PDK	A
Isopropylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:37	PDK	A
Methyl acetate	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:37	PDK	A
Methyl cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:37	PDK	A
Methyl t-Butyl Ether	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:37	PDK	A
Methylene Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:37	PDK	A
Styrene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:37	PDK	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:37	PDK	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:37	PDK	A
Total Xylenes	2.3U	U	ug/L	3.0	2.3	1.0	SW846 8260C	1	07/07/2023 03:37	PDK	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:37	PDK	A



Results

Client Sample ID	MW3-3DA-20230627	Collected	06/27/2023 16:40
Lab Sample ID	3310646024	Lab Receipt	06/29/2023 09:34

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Trichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:37	PDK	A
Trichlorofluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:37	PDK	A
Vinyl Chloride	0.47J	J	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 03:37	PDK	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	97.9%	81 – 118	07/07/2023 03:37	
4-Bromofluorobenzene	460-00-4	102%	85 – 114	07/07/2023 03:37	
Dibromofluoromethane	1868-53-7	92.1%	80 – 119	07/07/2023 03:37	
Toluene-d8	2037-26-5	100%	89 – 112	07/07/2023 03:37	



Results

Client Sample ID	MW3-4DA-20230627	Collected	06/27/2023 17:00
Lab Sample ID	3310646025	Lab Receipt	06/29/2023 09:34

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:00	PDK	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:00	PDK	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:00	PDK	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:00	PDK	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:00	PDK	A
1,2,3-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:00	PDK	A
1,2,4-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:00	PDK	A
1,2-Dibromo-3-chloropropane	2.5U	U	ug/L	5.0	2.5	1.6	SW846 8260C	1	07/07/2023 04:00	PDK	A
1,2-Dibromoethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:00	PDK	A
1,2-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:00	PDK	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:00	PDK	A
1,2-Dichloropropane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:00	PDK	A
1,3-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:00	PDK	A
1,3-Dichloropropene, Total	1.5U	U	ug/L	2.0	1.5	0.66	SW846 8260C	1	07/07/2023 04:00	PDK	A
1,4-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:00	PDK	A
2-Butanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/07/2023 04:00	PDK	A
2-Hexanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/07/2023 04:00	PDK	A
4-Methyl-2-Pentanone(MIBK)	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/07/2023 04:00	PDK	A
Acetone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/07/2023 04:00	PDK	A
Benzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:00	PDK	A
Bromochloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:00	PDK	A
Bromodichloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:00	PDK	A
Bromoform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:00	PDK	A
Bromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:00	PDK	A
Carbon Disulfide	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:00	PDK	A
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:00	PDK	A
Chlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:00	PDK	A
Chlorodibromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:00	PDK	A
Chloroethane	0.75U	U,1	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:00	PDK	A
Chloroform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:00	PDK	A
Chloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:00	PDK	A
cis-1,2-Dichloroethene	4.4		ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:00	PDK	A
Cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:00	PDK	A
Dichlorodifluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:00	PDK	A
Ethylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:00	PDK	A
Freon 113	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:00	PDK	A
Iodomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:00	PDK	A
Isopropylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:00	PDK	A
Methyl acetate	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:00	PDK	A
Methyl cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:00	PDK	A
Methyl t-Butyl Ether	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:00	PDK	A
Methylene Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:00	PDK	A
Styrene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:00	PDK	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:00	PDK	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:00	PDK	A
Total Xylenes	2.3U	U	ug/L	3.0	2.3	1.0	SW846 8260C	1	07/07/2023 04:00	PDK	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:00	PDK	A



Results

Client Sample ID	MW3-4DA-20230627	Collected	06/27/2023 17:00
Lab Sample ID	3310646025	Lab Receipt	06/29/2023 09:34

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Trichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:00	PDK	A
Trichlorofluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:00	PDK	A
Vinyl Chloride	1.9		ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:00	PDK	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	98%	81 – 118	07/07/2023 04:00	
4-Bromofluorobenzene	460-00-4	104%	85 – 114	07/07/2023 04:00	
Dibromofluoromethane	1868-53-7	92.3%	80 – 119	07/07/2023 04:00	
Toluene-d8	2037-26-5	101%	89 – 112	07/07/2023 04:00	



Results

Client Sample ID	SW3-2-20230627	Collected	06/27/2023 16:00
Lab Sample ID	3310646026	Lab Receipt	06/29/2023 09:34

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/08/2023 11:51	TMP	E
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/08/2023 11:51	TMP	E
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/08/2023 11:51	TMP	E
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/08/2023 11:51	TMP	E
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/08/2023 11:51	TMP	E
1,2,3-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/08/2023 11:51	TMP	E
1,2,4-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/08/2023 11:51	TMP	E
1,2-Dibromo-3-chloropropane	2.5U	U	ug/L	5.0	2.5	1.6	SW846 8260C	1	07/08/2023 11:51	TMP	E
1,2-Dibromoethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/08/2023 11:51	TMP	E
1,2-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/08/2023 11:51	TMP	E
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/08/2023 11:51	TMP	E
1,2-Dichloropropane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/08/2023 11:51	TMP	E
1,3-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/08/2023 11:51	TMP	E
1,3-Dichloropropene, Total	1.5U	U	ug/L	2.0	1.5	0.66	SW846 8260C	1	07/08/2023 11:51	TMP	E
1,4-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/08/2023 11:51	TMP	E
2-Butanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/08/2023 11:51	TMP	E
2-Hexanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/08/2023 11:51	TMP	E
4-Methyl-2-Pentanone(MIBK)	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/08/2023 11:51	TMP	E
Acetone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/08/2023 11:51	TMP	E
Benzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/08/2023 11:51	TMP	E
Bromochloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/08/2023 11:51	TMP	E
Bromodichloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/08/2023 11:51	TMP	E
Bromoform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/08/2023 11:51	TMP	E
Bromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/08/2023 11:51	TMP	E
Carbon Disulfide	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/08/2023 11:51	TMP	E
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/08/2023 11:51	TMP	E
Chlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/08/2023 11:51	TMP	E
Chlorodibromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/08/2023 11:51	TMP	E
Chloroethane	0.75U	U,1	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/08/2023 11:51	TMP	E
Chloroform	0.36J	J	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/08/2023 11:51	TMP	E
Chloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/08/2023 11:51	TMP	E
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/08/2023 11:51	TMP	E
Cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/08/2023 11:51	TMP	E
Dichlorodifluoromethane	0.75U	U,10	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/08/2023 11:51	TMP	E
Ethylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/08/2023 11:51	TMP	E
Freon 113	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/08/2023 11:51	TMP	E
Iodomethane	0.75U	U,11	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/08/2023 11:51	TMP	E
Isopropylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/08/2023 11:51	TMP	E
Methyl acetate	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/08/2023 11:51	TMP	E
Methyl cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/08/2023 11:51	TMP	E
Methyl t-Butyl Ether	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/08/2023 11:51	TMP	E
Methylene Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/08/2023 11:51	TMP	E
Styrene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/08/2023 11:51	TMP	E
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/08/2023 11:51	TMP	E
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/08/2023 11:51	TMP	E
Total Xylenes	2.3U	U	ug/L	3.0	2.3	1.0	SW846 8260C	1	07/08/2023 11:51	TMP	E
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/08/2023 11:51	TMP	E

Results

Client Sample ID	SW3-2-20230627	Collected	06/27/2023 16:00
Lab Sample ID	3310646026	Lab Receipt	06/29/2023 09:34

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Trichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/08/2023 11:51	TMP	E
Trichlorofluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/08/2023 11:51	TMP	E
Vinyl Chloride	0.75U	U,12	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/08/2023 11:51	TMP	E

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	98.8%	81 – 118	07/08/2023 11:51	
4-Bromofluorobenzene	460-00-4	99.2%	85 – 114	07/08/2023 11:51	
Dibromofluoromethane	1868-53-7	92%	80 – 119	07/08/2023 11:51	
Toluene-d8	2037-26-5	98%	89 – 112	07/08/2023 11:51	



Results

Client Sample ID	SW3-3-20230627	Collected	06/27/2023 16:50
Lab Sample ID	3310646027	Lab Receipt	06/29/2023 09:34

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:23	PDK	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:23	PDK	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:23	PDK	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:23	PDK	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:23	PDK	A
1,2,3-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:23	PDK	A
1,2,4-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:23	PDK	A
1,2-Dibromo-3-chloropropane	2.5U	U	ug/L	5.0	2.5	1.6	SW846 8260C	1	07/07/2023 04:23	PDK	A
1,2-Dibromoethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:23	PDK	A
1,2-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:23	PDK	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:23	PDK	A
1,2-Dichloropropane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:23	PDK	A
1,3-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:23	PDK	A
1,3-Dichloropropene, Total	1.5U	U	ug/L	2.0	1.5	0.66	SW846 8260C	1	07/07/2023 04:23	PDK	A
1,4-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:23	PDK	A
2-Butanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/07/2023 04:23	PDK	A
2-Hexanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/07/2023 04:23	PDK	A
4-Methyl-2-Pentanone(MIBK)	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/07/2023 04:23	PDK	A
Acetone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/07/2023 04:23	PDK	A
Benzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:23	PDK	A
Bromochloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:23	PDK	A
Bromodichloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:23	PDK	A
Bromoform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:23	PDK	A
Bromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:23	PDK	A
Carbon Disulfide	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:23	PDK	A
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:23	PDK	A
Chlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:23	PDK	A
Chlorodibromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:23	PDK	A
Chloroethane	0.75U	U,1	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:23	PDK	A
Chloroform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:23	PDK	A
Chloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:23	PDK	A
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:23	PDK	A
Cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:23	PDK	A
Dichlorodifluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:23	PDK	A
Ethylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:23	PDK	A
Freon 113	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:23	PDK	A
Iodomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:23	PDK	A
Isopropylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:23	PDK	A
Methyl acetate	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:23	PDK	A
Methyl cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:23	PDK	A
Methyl t-Butyl Ether	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:23	PDK	A
Methylene Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:23	PDK	A
Styrene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:23	PDK	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:23	PDK	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:23	PDK	A
Total Xylenes	2.3U	U	ug/L	3.0	2.3	1.0	SW846 8260C	1	07/07/2023 04:23	PDK	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:23	PDK	A



Results

Client Sample ID	SW3-3-20230627	Collected	06/27/2023 16:50
Lab Sample ID	3310646027	Lab Receipt	06/29/2023 09:34

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Trichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:23	PDK	A
Trichlorofluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:23	PDK	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:23	PDK	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	97.5%	81 – 118	07/07/2023 04:23	
4-Bromofluorobenzene	460-00-4	102%	85 – 114	07/07/2023 04:23	
Dibromofluoromethane	1868-53-7	92.3%	80 – 119	07/07/2023 04:23	
Toluene-d8	2037-26-5	99.9%	89 – 112	07/07/2023 04:23	



Results

Client Sample ID	SW3-15-20230627	Collected	06/27/2023 16:20
Lab Sample ID	3310646028	Lab Receipt	06/29/2023 09:34

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:46	PDK	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:46	PDK	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:46	PDK	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:46	PDK	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:46	PDK	A
1,2,3-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:46	PDK	A
1,2,4-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:46	PDK	A
1,2-Dibromo-3-chloropropane	2.5U	U	ug/L	5.0	2.5	1.6	SW846 8260C	1	07/07/2023 04:46	PDK	A
1,2-Dibromoethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:46	PDK	A
1,2-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:46	PDK	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:46	PDK	A
1,2-Dichloropropane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:46	PDK	A
1,3-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:46	PDK	A
1,3-Dichloropropene, Total	1.5U	U	ug/L	2.0	1.5	0.66	SW846 8260C	1	07/07/2023 04:46	PDK	A
1,4-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:46	PDK	A
2-Butanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/07/2023 04:46	PDK	A
2-Hexanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/07/2023 04:46	PDK	A
4-Methyl-2-Pentanone(MIBK)	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/07/2023 04:46	PDK	A
Acetone	3.3J	J	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/07/2023 04:46	PDK	A
Benzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:46	PDK	A
Bromochloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:46	PDK	A
Bromodichloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:46	PDK	A
Bromoform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:46	PDK	A
Bromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:46	PDK	A
Carbon Disulfide	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:46	PDK	A
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:46	PDK	A
Chlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:46	PDK	A
Chlorodibromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:46	PDK	A
Chloroethane	0.75U	U,1	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:46	PDK	A
Chloroform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:46	PDK	A
Chloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:46	PDK	A
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:46	PDK	A
Cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:46	PDK	A
Dichlorodifluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:46	PDK	A
Ethylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:46	PDK	A
Freon 113	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:46	PDK	A
Iodomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:46	PDK	A
Isopropylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:46	PDK	A
Methyl acetate	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:46	PDK	A
Methyl cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:46	PDK	A
Methyl t-Butyl Ether	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:46	PDK	A
Methylene Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:46	PDK	A
Styrene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:46	PDK	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:46	PDK	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:46	PDK	A
Total Xylenes	2.3U	U	ug/L	3.0	2.3	1.0	SW846 8260C	1	07/07/2023 04:46	PDK	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:46	PDK	A



Results

Client Sample ID	SW3-15-20230627	Collected	06/27/2023 16:20
Lab Sample ID	3310646028	Lab Receipt	06/29/2023 09:34

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Trichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:46	PDK	A
Trichlorofluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:46	PDK	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 04:46	PDK	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	97.3%	81 – 118	07/07/2023 04:46	
4-Bromofluorobenzene	460-00-4	101%	85 – 114	07/07/2023 04:46	
Dibromofluoromethane	1868-53-7	90.6%	80 – 119	07/07/2023 04:46	
Toluene-d8	2037-26-5	100%	89 – 112	07/07/2023 04:46	



Results

Client Sample ID	PZ3-7D-20230627	Collected	06/27/2023 17:40
Lab Sample ID	3310646029	Lab Receipt	06/29/2023 09:34

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:09	PDK	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:09	PDK	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:09	PDK	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:09	PDK	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:09	PDK	A
1,2,3-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:09	PDK	A
1,2,4-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:09	PDK	A
1,2-Dibromo-3-chloropropane	2.5U	U	ug/L	5.0	2.5	1.6	SW846 8260C	1	07/07/2023 05:09	PDK	A
1,2-Dibromoethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:09	PDK	A
1,2-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:09	PDK	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:09	PDK	A
1,2-Dichloropropane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:09	PDK	A
1,3-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:09	PDK	A
1,3-Dichloropropene, Total	1.5U	U	ug/L	2.0	1.5	0.66	SW846 8260C	1	07/07/2023 05:09	PDK	A
1,4-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:09	PDK	A
2-Butanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/07/2023 05:09	PDK	A
2-Hexanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/07/2023 05:09	PDK	A
4-Methyl-2-Pentanone(MIBK)	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/07/2023 05:09	PDK	A
Acetone	3.3J	J	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/07/2023 05:09	PDK	A
Benzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:09	PDK	A
Bromochloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:09	PDK	A
Bromodichloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:09	PDK	A
Bromoform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:09	PDK	A
Bromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:09	PDK	A
Carbon Disulfide	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:09	PDK	A
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:09	PDK	A
Chlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:09	PDK	A
Chlorodibromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:09	PDK	A
Chloroethane	0.75U	U,1	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:09	PDK	A
Chloroform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:09	PDK	A
Chloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:09	PDK	A
cis-1,2-Dichloroethene	7.3		ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:09	PDK	A
Cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:09	PDK	A
Dichlorodifluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:09	PDK	A
Ethylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:09	PDK	A
Freon 113	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:09	PDK	A
Iodomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:09	PDK	A
Isopropylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:09	PDK	A
Methyl acetate	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:09	PDK	A
Methyl cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:09	PDK	A
Methyl t-Butyl Ether	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:09	PDK	A
Methylene Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:09	PDK	A
Styrene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:09	PDK	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:09	PDK	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:09	PDK	A
Total Xylenes	2.3U	U	ug/L	3.0	2.3	1.0	SW846 8260C	1	07/07/2023 05:09	PDK	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:09	PDK	A



Results

Client Sample ID	PZ3-7D-20230627	Collected	06/27/2023 17:40
Lab Sample ID	3310646029	Lab Receipt	06/29/2023 09:34

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Trichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:09	PDK	A
Trichlorofluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:09	PDK	A
Vinyl Chloride	2.7		ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:09	PDK	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	96.5%	81 – 118	07/07/2023 05:09	
4-Bromofluorobenzene	460-00-4	102%	85 – 114	07/07/2023 05:09	
Dibromofluoromethane	1868-53-7	91.2%	80 – 119	07/07/2023 05:09	
Toluene-d8	2037-26-5	100%	89 – 112	07/07/2023 05:09	



Results

Client Sample ID	PZ3-8D-20230627	Collected	06/27/2023 17:30
Lab Sample ID	3310646030	Lab Receipt	06/29/2023 09:34

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:32	PDK	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:32	PDK	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:32	PDK	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:32	PDK	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:32	PDK	A
1,2,3-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:32	PDK	A
1,2,4-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:32	PDK	A
1,2-Dibromo-3-chloropropane	2.5U	U	ug/L	5.0	2.5	1.6	SW846 8260C	1	07/07/2023 05:32	PDK	A
1,2-Dibromoethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:32	PDK	A
1,2-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:32	PDK	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:32	PDK	A
1,2-Dichloropropane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:32	PDK	A
1,3-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:32	PDK	A
1,3-Dichloropropene, Total	1.5U	U	ug/L	2.0	1.5	0.66	SW846 8260C	1	07/07/2023 05:32	PDK	A
1,4-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:32	PDK	A
2-Butanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/07/2023 05:32	PDK	A
2-Hexanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/07/2023 05:32	PDK	A
4-Methyl-2-Pentanone(MIBK)	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/07/2023 05:32	PDK	A
Acetone	4.7J	J	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/07/2023 05:32	PDK	A
Benzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:32	PDK	A
Bromochloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:32	PDK	A
Bromodichloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:32	PDK	A
Bromoform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:32	PDK	A
Bromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:32	PDK	A
Carbon Disulfide	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:32	PDK	A
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:32	PDK	A
Chlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:32	PDK	A
Chlorodibromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:32	PDK	A
Chloroethane	0.75U	U,1	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:32	PDK	A
Chloroform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:32	PDK	A
Chloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:32	PDK	A
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:32	PDK	A
Cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:32	PDK	A
Dichlorodifluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:32	PDK	A
Ethylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:32	PDK	A
Freon 113	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:32	PDK	A
Iodomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:32	PDK	A
Isopropylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:32	PDK	A
Methyl acetate	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:32	PDK	A
Methyl cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:32	PDK	A
Methyl t-Butyl Ether	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:32	PDK	A
Methylene Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:32	PDK	A
Styrene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:32	PDK	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:32	PDK	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:32	PDK	A
Total Xylenes	2.3U	U	ug/L	3.0	2.3	1.0	SW846 8260C	1	07/07/2023 05:32	PDK	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:32	PDK	A



Results

Client Sample ID	PZ3-8D-20230627	Collected	06/27/2023 17:30
Lab Sample ID	3310646030	Lab Receipt	06/29/2023 09:34

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Trichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:32	PDK	A
Trichlorofluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:32	PDK	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:32	PDK	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	96.5%	81 – 118	07/07/2023 05:32	
4-Bromofluorobenzene	460-00-4	101%	85 – 114	07/07/2023 05:32	
Dibromofluoromethane	1868-53-7	91.3%	80 – 119	07/07/2023 05:32	
Toluene-d8	2037-26-5	100%	89 – 112	07/07/2023 05:32	



Results

Client Sample ID	PW3-3A-20230627	Collected	06/27/2023 17:10
Lab Sample ID	3310646031	Lab Receipt	06/29/2023 09:34

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:55	PDK	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:55	PDK	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:55	PDK	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:55	PDK	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:55	PDK	A
1,2,3-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:55	PDK	A
1,2,4-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:55	PDK	A
1,2-Dibromo-3-chloropropane	2.5U	U	ug/L	5.0	2.5	1.6	SW846 8260C	1	07/07/2023 05:55	PDK	A
1,2-Dibromoethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:55	PDK	A
1,2-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:55	PDK	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:55	PDK	A
1,2-Dichloropropane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:55	PDK	A
1,3-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:55	PDK	A
1,3-Dichloropropene, Total	1.5U	U	ug/L	2.0	1.5	0.66	SW846 8260C	1	07/07/2023 05:55	PDK	A
1,4-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:55	PDK	A
2-Butanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/07/2023 05:55	PDK	A
2-Hexanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/07/2023 05:55	PDK	A
4-Methyl-2-Pentanone(MIBK)	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/07/2023 05:55	PDK	A
Acetone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/07/2023 05:55	PDK	A
Benzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:55	PDK	A
Bromochloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:55	PDK	A
Bromodichloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:55	PDK	A
Bromoform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:55	PDK	A
Bromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:55	PDK	A
Carbon Disulfide	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:55	PDK	A
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:55	PDK	A
Chlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:55	PDK	A
Chlorodibromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:55	PDK	A
Chloroethane	0.75U	U,1	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:55	PDK	A
Chloroform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:55	PDK	A
Chloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:55	PDK	A
cis-1,2-Dichloroethene	5.1		ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:55	PDK	A
Cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:55	PDK	A
Dichlorodifluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:55	PDK	A
Ethylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:55	PDK	A
Freon 113	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:55	PDK	A
Iodomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:55	PDK	A
Isopropylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:55	PDK	A
Methyl acetate	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:55	PDK	A
Methyl cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:55	PDK	A
Methyl t-Butyl Ether	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:55	PDK	A
Methylene Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:55	PDK	A
Styrene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:55	PDK	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:55	PDK	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:55	PDK	A
Total Xylenes	2.3U	U	ug/L	3.0	2.3	1.0	SW846 8260C	1	07/07/2023 05:55	PDK	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:55	PDK	A



Results

Client Sample ID	PW3-3A-20230627	Collected	06/27/2023 17:10
Lab Sample ID	3310646031	Lab Receipt	06/29/2023 09:34

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Trichloroethene	0.78J	J	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:55	PDK	A
Trichlorofluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:55	PDK	A
Vinyl Chloride	4.0		ug/L	1.0	0.75	0.33	SW846 8260C	1	07/07/2023 05:55	PDK	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	97.5%	81 – 118	07/07/2023 05:55	
4-Bromofluorobenzene	460-00-4	103%	85 – 114	07/07/2023 05:55	
Dibromofluoromethane	1868-53-7	91.3%	80 – 119	07/07/2023 05:55	
Toluene-d8	2037-26-5	99.3%	89 – 112	07/07/2023 05:55	



Results

Client Sample ID	TB-01-20230627	Collected	06/27/2023 10:45
Lab Sample ID	3310646032	Lab Receipt	06/29/2023 09:34

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:11	PDK	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:11	PDK	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:11	PDK	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:11	PDK	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:11	PDK	A
1,2,3-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:11	PDK	A
1,2,4-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:11	PDK	A
1,2-Dibromo-3-chloropropane	2.5U	U	ug/L	5.0	2.5	1.6	SW846 8260C	1	07/06/2023 00:11	PDK	A
1,2-Dibromoethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:11	PDK	A
1,2-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:11	PDK	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:11	PDK	A
1,2-Dichloropropane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:11	PDK	A
1,3-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:11	PDK	A
1,3-Dichloropropene, Total	1.5U	U	ug/L	2.0	1.5	0.66	SW846 8260C	1	07/06/2023 00:11	PDK	A
1,4-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:11	PDK	A
2-Butanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/06/2023 00:11	PDK	A
2-Hexanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/06/2023 00:11	PDK	A
4-Methyl-2-Pentanone(MIBK)	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/06/2023 00:11	PDK	A
Acetone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/06/2023 00:11	PDK	A
Benzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:11	PDK	A
Bromochloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:11	PDK	A
Bromodichloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:11	PDK	A
Bromoform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:11	PDK	A
Bromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:11	PDK	A
Carbon Disulfide	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:11	PDK	A
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:11	PDK	A
Chlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:11	PDK	A
Chlorodibromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:11	PDK	A
Chloroethane	0.75U	U,1	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:11	PDK	A
Chloroform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:11	PDK	A
Chloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:11	PDK	A
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:11	PDK	A
Cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:11	PDK	A
Dichlorodifluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:11	PDK	A
Ethylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:11	PDK	A
Freon 113	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:11	PDK	A
Iodomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:11	PDK	A
Isopropylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:11	PDK	A
Methyl acetate	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:11	PDK	A
Methyl cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:11	PDK	A
Methyl t-Butyl Ether	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:11	PDK	A
Methylene Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:11	PDK	A
Styrene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:11	PDK	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:11	PDK	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:11	PDK	A
Total Xylenes	2.3U	U	ug/L	3.0	2.3	1.0	SW846 8260C	1	07/06/2023 00:11	PDK	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:11	PDK	A



Results

Client Sample ID	TB-01-20230627	Collected	06/27/2023 10:45
Lab Sample ID	3310646032	Lab Receipt	06/29/2023 09:34

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Trichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:11	PDK	A
Trichlorofluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:11	PDK	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:11	PDK	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	98.4%	81 – 118	07/06/2023 00:11	
4-Bromofluorobenzene	460-00-4	99.7%	85 – 114	07/06/2023 00:11	
Dibromofluoromethane	1868-53-7	94.4%	80 – 119	07/06/2023 00:11	
Toluene-d8	2037-26-5	99.9%	89 – 112	07/06/2023 00:11	



Results

Client Sample ID	TB-02-20230627	Collected	06/27/2023 10:45
Lab Sample ID	3310646033	Lab Receipt	06/29/2023 09:34

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:34	PDK	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:34	PDK	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:34	PDK	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:34	PDK	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:34	PDK	A
1,2,3-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:34	PDK	A
1,2,4-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:34	PDK	A
1,2-Dibromo-3-chloropropane	2.5U	U	ug/L	5.0	2.5	1.6	SW846 8260C	1	07/06/2023 00:34	PDK	A
1,2-Dibromoethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:34	PDK	A
1,2-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:34	PDK	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:34	PDK	A
1,2-Dichloropropane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:34	PDK	A
1,3-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:34	PDK	A
1,3-Dichloropropene, Total	1.5U	U	ug/L	2.0	1.5	0.66	SW846 8260C	1	07/06/2023 00:34	PDK	A
1,4-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:34	PDK	A
2-Butanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/06/2023 00:34	PDK	A
2-Hexanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/06/2023 00:34	PDK	A
4-Methyl-2-Pentanone(MIBK)	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/06/2023 00:34	PDK	A
Acetone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/06/2023 00:34	PDK	A
Benzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:34	PDK	A
Bromochloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:34	PDK	A
Bromodichloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:34	PDK	A
Bromoform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:34	PDK	A
Bromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:34	PDK	A
Carbon Disulfide	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:34	PDK	A
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:34	PDK	A
Chlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:34	PDK	A
Chlorodibromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:34	PDK	A
Chloroethane	0.75U	U,1	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:34	PDK	A
Chloroform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:34	PDK	A
Chloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:34	PDK	A
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:34	PDK	A
Cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:34	PDK	A
Dichlorodifluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:34	PDK	A
Ethylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:34	PDK	A
Freon 113	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:34	PDK	A
Iodomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:34	PDK	A
Isopropylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:34	PDK	A
Methyl acetate	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:34	PDK	A
Methyl cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:34	PDK	A
Methyl t-Butyl Ether	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:34	PDK	A
Methylene Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:34	PDK	A
Styrene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:34	PDK	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:34	PDK	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:34	PDK	A
Total Xylenes	2.3U	U	ug/L	3.0	2.3	1.0	SW846 8260C	1	07/06/2023 00:34	PDK	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:34	PDK	A



Results

Client Sample ID	TB-02-20230627	Collected	06/27/2023 10:45
Lab Sample ID	3310646033	Lab Receipt	06/29/2023 09:34

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Trichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:34	PDK	A
Trichlorofluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:34	PDK	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 00:34	PDK	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	98.3%	81 – 118	07/06/2023 00:34	
4-Bromofluorobenzene	460-00-4	97.9%	85 – 114	07/06/2023 00:34	
Dibromofluoromethane	1868-53-7	93.7%	80 – 119	07/06/2023 00:34	
Toluene-d8	2037-26-5	98.8%	89 – 112	07/06/2023 00:34	



Results

Client Sample ID	DUP-01-20230627	Collected	06/27/2023 00:00
Lab Sample ID	3310646034	Lab Receipt	06/29/2023 09:34

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:10	PDK	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:10	PDK	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:10	PDK	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:10	PDK	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:10	PDK	A
1,2,3-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:10	PDK	A
1,2,4-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:10	PDK	A
1,2-Dibromo-3-chloropropane	2.5U	U	ug/L	5.0	2.5	1.6	SW846 8260C	1	07/06/2023 05:10	PDK	A
1,2-Dibromoethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:10	PDK	A
1,2-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:10	PDK	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:10	PDK	A
1,2-Dichloropropane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:10	PDK	A
1,3-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:10	PDK	A
1,3-Dichloropropene, Total	1.5U	U	ug/L	2.0	1.5	0.66	SW846 8260C	1	07/06/2023 05:10	PDK	A
1,4-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:10	PDK	A
2-Butanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/06/2023 05:10	PDK	A
2-Hexanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/06/2023 05:10	PDK	A
4-Methyl-2-Pentanone(MIBK)	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/06/2023 05:10	PDK	A
Acetone	4.5J	J	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/06/2023 05:10	PDK	A
Benzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:10	PDK	A
Bromochloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:10	PDK	A
Bromodichloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:10	PDK	A
Bromoform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:10	PDK	A
Bromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:10	PDK	A
Carbon Disulfide	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:10	PDK	A
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:10	PDK	A
Chlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:10	PDK	A
Chlorodibromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:10	PDK	A
Chloroethane	0.75U	U,1	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:10	PDK	A
Chloroform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:10	PDK	A
Chloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:10	PDK	A
cis-1,2-Dichloroethene	1.5		ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:10	PDK	A
Cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:10	PDK	A
Dichlorodifluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:10	PDK	A
Ethylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:10	PDK	A
Freon 113	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:10	PDK	A
Iodomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:10	PDK	A
Isopropylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:10	PDK	A
Methyl acetate	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:10	PDK	A
Methyl cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:10	PDK	A
Methyl t-Butyl Ether	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:10	PDK	A
Methylene Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:10	PDK	A
Styrene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:10	PDK	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:10	PDK	A
Toluene	0.76J	J	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:10	PDK	A
Total Xylenes	2.3U	U	ug/L	3.0	2.3	1.0	SW846 8260C	1	07/06/2023 05:10	PDK	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:10	PDK	A



Results

Client Sample ID	DUP-01-20230627	Collected	06/27/2023 00:00
Lab Sample ID	3310646034	Lab Receipt	06/29/2023 09:34

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Trichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:10	PDK	A
Trichlorofluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:10	PDK	A
Vinyl Chloride	0.78J	J	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:10	PDK	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	97.6%	81 – 118	07/06/2023 05:10	
4-Bromofluorobenzene	460-00-4	99.5%	85 – 114	07/06/2023 05:10	
Dibromofluoromethane	1868-53-7	93.3%	80 – 119	07/06/2023 05:10	
Toluene-d8	2037-26-5	99%	89 – 112	07/06/2023 05:10	



Results

Client Sample ID	DUP-02-20230627	Collected	06/27/2023 00:00
Lab Sample ID	3310646035	Lab Receipt	06/29/2023 09:34

LIGHT HYDROCARBON GASES

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Ethane	12.1		ug/L	5.2	2.6	0.56	RSK 175	1	07/10/2023 09:31	JTH	C
Ethene	16.5		ug/L	7.1	3.6	0.81	RSK 175	1	07/10/2023 09:31	JTH	C
Methane	1570		ug/L	2.6	1.6	0.53	RSK 175	1	07/10/2023 09:31	JTH	C

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:33	PDK	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:33	PDK	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:33	PDK	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:33	PDK	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:33	PDK	A
1,2,3-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:33	PDK	A
1,2,4-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:33	PDK	A
1,2-Dibromo-3-chloropropane	2.5U	U	ug/L	5.0	2.5	1.6	SW846 8260C	1	07/06/2023 05:33	PDK	A
1,2-Dibromoethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:33	PDK	A
1,2-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:33	PDK	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:33	PDK	A
1,2-Dichloropropane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:33	PDK	A
1,3-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:33	PDK	A
1,3-Dichloropropene, Total	1.5U	U	ug/L	2.0	1.5	0.66	SW846 8260C	1	07/06/2023 05:33	PDK	A
1,4-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:33	PDK	A
2-Butanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/06/2023 05:33	PDK	A
2-Hexanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/06/2023 05:33	PDK	A
4-Methyl-2-Pentanone(MIBK)	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/06/2023 05:33	PDK	A
Acetone	4.0J	J	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/06/2023 05:33	PDK	A
Benzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:33	PDK	A
Bromochloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:33	PDK	A
Bromodichloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:33	PDK	A
Bromoform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:33	PDK	A
Bromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:33	PDK	A
Carbon Disulfide	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:33	PDK	A
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:33	PDK	A
Chlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:33	PDK	A
Chlorodibromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:33	PDK	A
Chloroethane	0.75U	U,1	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:33	PDK	A
Chloroform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:33	PDK	A
Chloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:33	PDK	A
cis-1,2-Dichloroethene	3.9		ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:33	PDK	A
Cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:33	PDK	A
Dichlorodifluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:33	PDK	A
Ethylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:33	PDK	A
Freon 113	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:33	PDK	A
Iodomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:33	PDK	A
Isopropylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:33	PDK	A
Methyl acetate	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:33	PDK	A
Methyl cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:33	PDK	A



Results

Client Sample ID	DUP-02-20230627	Collected	06/27/2023 00:00
Lab Sample ID	3310646035	Lab Receipt	06/29/2023 09:34

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Methyl t-Butyl Ether	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:33	PDK	A
Methylene Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:33	PDK	A
Styrene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:33	PDK	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:33	PDK	A
Toluene	0.65J	J	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:33	PDK	A
Total Xylenes	2.3U	U	ug/L	3.0	2.3	1.0	SW846 8260C	1	07/06/2023 05:33	PDK	A
trans-1,2-Dichloroethene	0.42J	J	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:33	PDK	A
Trichloroethene	1.6		ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:33	PDK	A
Trichlorofluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:33	PDK	A
Vinyl Chloride	6.7		ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:33	PDK	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	100%	81 – 118	07/06/2023 05:33	
4-Bromofluorobenzene	460-00-4	98.4%	85 – 114	07/06/2023 05:33	
Dibromofluoromethane	1868-53-7	95.2%	80 – 119	07/06/2023 05:33	
Toluene-d8	2037-26-5	98.3%	89 – 112	07/06/2023 05:33	

WET CHEMISTRY

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Total Organic Carbon (TOC)	109		mg/L	25.0	12.5	6.8	SW846 9060A	25	07/06/2023 20:59	PAG	G



Results

Client Sample ID	DUP-03-20230627	Collected	06/27/2023 00:00
Lab Sample ID	3310646036	Lab Receipt	06/29/2023 09:34

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:56	PDK	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:56	PDK	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:56	PDK	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:56	PDK	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:56	PDK	A
1,2,3-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:56	PDK	A
1,2,4-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:56	PDK	A
1,2-Dibromo-3-chloropropane	2.5U	U	ug/L	5.0	2.5	1.6	SW846 8260C	1	07/06/2023 05:56	PDK	A
1,2-Dibromoethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:56	PDK	A
1,2-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:56	PDK	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:56	PDK	A
1,2-Dichloropropane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:56	PDK	A
1,3-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:56	PDK	A
1,3-Dichloropropene, Total	1.5U	U	ug/L	2.0	1.5	0.66	SW846 8260C	1	07/06/2023 05:56	PDK	A
1,4-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:56	PDK	A
2-Butanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/06/2023 05:56	PDK	A
2-Hexanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/06/2023 05:56	PDK	A
4-Methyl-2-Pentanone(MIBK)	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/06/2023 05:56	PDK	A
Acetone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/06/2023 05:56	PDK	A
Benzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:56	PDK	A
Bromochloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:56	PDK	A
Bromodichloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:56	PDK	A
Bromoform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:56	PDK	A
Bromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:56	PDK	A
Carbon Disulfide	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:56	PDK	A
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:56	PDK	A
Chlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:56	PDK	A
Chlorodibromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:56	PDK	A
Chloroethane	0.75U	U,1	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:56	PDK	A
Chloroform	0.36J	J	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:56	PDK	A
Chloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:56	PDK	A
cis-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:56	PDK	A
Cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:56	PDK	A
Dichlorodifluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:56	PDK	A
Ethylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:56	PDK	A
Freon 113	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:56	PDK	A
Iodomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:56	PDK	A
Isopropylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:56	PDK	A
Methyl acetate	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:56	PDK	A
Methyl cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:56	PDK	A
Methyl t-Butyl Ether	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:56	PDK	A
Methylene Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:56	PDK	A
Styrene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:56	PDK	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:56	PDK	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:56	PDK	A
Total Xylenes	2.3U	U	ug/L	3.0	2.3	1.0	SW846 8260C	1	07/06/2023 05:56	PDK	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:56	PDK	A



Results

Client Sample ID	DUP-03-20230627	Collected	06/27/2023 00:00
Lab Sample ID	3310646036	Lab Receipt	06/29/2023 09:34

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Trichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:56	PDK	A
Trichlorofluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:56	PDK	A
Vinyl Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 05:56	PDK	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	98.7%	81 – 118	07/06/2023 05:56	
4-Bromofluorobenzene	460-00-4	102%	85 – 114	07/06/2023 05:56	
Dibromofluoromethane	1868-53-7	93.5%	80 – 119	07/06/2023 05:56	
Toluene-d8	2037-26-5	102%	89 – 112	07/06/2023 05:56	



Results

Client Sample ID	PW10-1-20230627	Collected	06/27/2023 09:40
Lab Sample ID	3310646037	Lab Receipt	06/29/2023 09:34

LIGHT HYDROCARBON GASES

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Ethane	2.6U	U	ug/L	5.2	2.6	0.56	RSK 175	1	07/10/2023 09:44	JTH	E
Ethene	3.6U	U	ug/L	7.1	3.6	0.81	RSK 175	1	07/10/2023 09:44	JTH	E
Methane	22.7		ug/L	2.6	1.6	0.53	RSK 175	1	07/10/2023 09:44	JTH	E

VOLATILE ORGANICS

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 06:19	PDK	A
1,1,2,2-Tetrachloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 06:19	PDK	A
1,1,2-Trichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 06:19	PDK	A
1,1-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 06:19	PDK	A
1,1-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 06:19	PDK	A
1,2,3-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 06:19	PDK	A
1,2,4-Trichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 06:19	PDK	A
1,2-Dibromo-3-chloropropane	2.5U	U	ug/L	5.0	2.5	1.6	SW846 8260C	1	07/06/2023 06:19	PDK	A
1,2-Dibromoethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 06:19	PDK	A
1,2-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 06:19	PDK	A
1,2-Dichloroethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 06:19	PDK	A
1,2-Dichloropropane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 06:19	PDK	A
1,3-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 06:19	PDK	A
1,3-Dichloropropene, Total	1.5U	U	ug/L	2.0	1.5	0.66	SW846 8260C	1	07/06/2023 06:19	PDK	A
1,4-Dichlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 06:19	PDK	A
2-Butanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/06/2023 06:19	PDK	A
2-Hexanone	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/06/2023 06:19	PDK	A
4-Methyl-2-Pentanone(MIBK)	3.8U	U	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/06/2023 06:19	PDK	A
Acetone	3.5J	J	ug/L	5.0	3.8	1.6	SW846 8260C	1	07/06/2023 06:19	PDK	A
Benzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 06:19	PDK	A
Bromochloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 06:19	PDK	A
Bromodichloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 06:19	PDK	A
Bromoform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 06:19	PDK	A
Bromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 06:19	PDK	A
Carbon Disulfide	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 06:19	PDK	A
Carbon Tetrachloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 06:19	PDK	A
Chlorobenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 06:19	PDK	A
Chlorodibromomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 06:19	PDK	A
Chloroethane	0.75U	U,1	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 06:19	PDK	A
Chloroform	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 06:19	PDK	A
Chloromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 06:19	PDK	A
cis-1,2-Dichloroethene	1.1		ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 06:19	PDK	A
Cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 06:19	PDK	A
Dichlorodifluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 06:19	PDK	A
Ethylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 06:19	PDK	A
Freon 113	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 06:19	PDK	A
Iodomethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 06:19	PDK	A
Isopropylbenzene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 06:19	PDK	A
Methyl acetate	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 06:19	PDK	A
Methyl cyclohexane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 06:19	PDK	A



Results

Client Sample ID	PW10-1-20230627	Collected	06/27/2023 09:40
Lab Sample ID	3310646037	Lab Receipt	06/29/2023 09:34

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Methyl t-Butyl Ether	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 06:19	PDK	A
Methylene Chloride	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 06:19	PDK	A
Styrene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 06:19	PDK	A
Tetrachloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 06:19	PDK	A
Toluene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 06:19	PDK	A
Total Xylenes	2.3U	U	ug/L	3.0	2.3	1.0	SW846 8260C	1	07/06/2023 06:19	PDK	A
trans-1,2-Dichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 06:19	PDK	A
Trichloroethene	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 06:19	PDK	A
Trichlorofluoromethane	0.75U	U	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 06:19	PDK	A
Vinyl Chloride	0.75J	J	ug/L	1.0	0.75	0.33	SW846 8260C	1	07/06/2023 06:19	PDK	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	97.3%	81 – 118	07/06/2023 06:19	
4-Bromofluorobenzene	460-00-4	100%	85 – 114	07/06/2023 06:19	
Dibromofluoromethane	1868-53-7	92%	80 – 119	07/06/2023 06:19	
Toluene-d8	2037-26-5	98.7%	89 – 112	07/06/2023 06:19	

WET CHEMISTRY

Compound	Result	Flag	Units	LOQ	LOD	DL	Method	Dilution	Analysis Date/Time	By	Cntr
Total Organic Carbon (TOC)	5.5		mg/L	2.0	1.0	0.54	SW846 9060A	2	07/03/2023 20:19	PAG	G



Sample - Method Cross Reference Table

Lab ID	Sample ID	Analysis Method	Preparation Method	Leachate Method
3310646001	MW10-3-20230627	SW846 8260C	N/A	
3310646002	MW10-7-20230627	RSK 175	N/A	
		SW846 8260C	N/A	
		SW846 9060A	N/A	
3310646003	PW10-2-20230627	SW846 8260C	N/A	
3310646004	PZ10-7-20230627	SW846 8260C	N/A	
3310646005	SW10-7-20230627	SW846 8260C	N/A	
3310646006	SW10-8-20230627	SW846 8260C	N/A	
3310646007	SW99-10-20230627	SW846 8260C	N/A	
3310646008	SW10-6-20230627	SW846 8260C	N/A	
3310646009	SW10-5-20230627	SW846 8260C	N/A	
3310646010	MW10-11D-20230627	RSK 175	N/A	
		SW846 9060A	N/A	
3310646011	MW10-1DA-20230627	RSK 175	N/A	
		SW846 9060A	N/A	
3310646012	MW10-10D-20230627	RSK 175	N/A	
		SW846 9060A	N/A	
3310646013	MW5-1DA-20230627	RSK 175	N/A	
		SW846 8260C	N/A	
		SW846 9060A	N/A	
3310646014	MW5-5D-20230627	RSK 175	N/A	
		SW846 8260C	N/A	
		SW846 9060A	N/A	
3310646015	MW5-6-20230627	SW846 8260C	N/A	
3310646016	RW5-1-20230627	RSK 175	N/A	
		SW846 8260C	N/A	
		SW846 9060A	N/A	
3310646017	RW5-2-20230627	RSK 175	N/A	
		SW846 8260C	N/A	
		SW846 9060A	N/A	
3310646018	RW5-4-20230627	SW846 8260C	N/A	
3310646019	PW13-4D-20230627	SW846 8260C	N/A	
3310646020	MW13-4D-20230627	SW846 8260C	N/A	
3310646021	MW13-5D-20230627	SW846 8260C	N/A	
3310646022	PW13-1-20230627	SW846 8260C	N/A	
3310646023	MW8-11D-20230627	SW846 8260C	N/A	
3310646024	MW3-3DA-20230627	SW846 8260C	N/A	
3310646025	MW3-4DA-20230627	SW846 8260C	N/A	
3310646026	SW3-2-20230627	SW846 8260C	N/A	
3310646027	SW3-3-20230627	SW846 8260C	N/A	
3310646028	SW3-15-20230627	SW846 8260C	N/A	
3310646029	PZ3-7D-20230627	SW846 8260C	N/A	
3310646030	PZ3-8D-20230627	SW846 8260C	N/A	
3310646031	PW3-3A-20230627	SW846 8260C	N/A	
3310646032	TB-01-20230627	SW846 8260C	N/A	
3310646033	TB-02-20230627	SW846 8260C	N/A	



Lab ID	Sample ID	Analysis Method	Preparation Method	Leachate Method
3310646034	DUP-01-20230627	SW846 8260C	N/A	
3310646035	DUP-02-20230627	RSK 175	N/A	
		SW846 8260C	N/A	
		SW846 9060A	N/A	
3310646036	DUP-03-20230627	SW846 8260C	N/A	
3310646037	PW10-1-20230627	RSK 175	N/A	
		SW846 8260C	N/A	
		SW846 9060A	N/A	



QUALITY CONTROL SAMPLES

LIGHT HYDROCARBON GASES

QC Batch

QC Batch	1022670	Prep Method	N/A
Date	N/A	Analysis Method	RSK 175
Tech.			

Associated Samples

3310646002	3310646010	3310646011	3310646012
3310646013	3310646014		

Method Blank 3692136 (MB) Created on 07/07/2023 13:05 For QC Batch 1022670

RESULTS

Compound	CAS No	Result	Units	LOQ	Qualifiers
Ethane	74-84-0	BLK	2.6U ug/L	5.2	U
Ethene	74-85-1	BLK	3.6U ug/L	7.1	U
Methane	74-82-8	BLK	1.6U ug/L	2.6	U

Duplicate 3692164 (DUP) 3310646014 For QC Batch 1022670

****NOTE - The Original Result and Duplicate Result shown below are raw results and are only used for the purpose of calculating Sample Duplicate percent recoveries. This result is not a final value and cannot be used as such.

RESULTS

Compound	CAS No	Result (ug/L)	Orig. Result (ug/L)	Qualifiers
Ethane	74-84-0	DUP 41.71	41.91	RPD 0.48 (Max-20)
Ethene	74-85-1	DUP 38.01	38.10	RPD 0.24 (Max-20)
Methane	74-82-8	DUP 5268.08	5268.06	RPD 0.0004 (Max-20)

QC Batch

QC Batch	1023280	Prep Method	N/A
Date	N/A	Analysis Method	RSK 175
Tech.			

Associated Samples

3310646016	3310646017	3310646035	3310646037

Method Blank 3692486 (MB) Created on 07/10/2023 09:08 For QC Batch 1023280

RESULTS

Compound	CAS No	Result	Units	LOQ	Qualifiers
Ethane	74-84-0	BLK	2.6U ug/L	5.2	U
Ethene	74-85-1	BLK	3.6U ug/L	7.1	U
Methane	74-82-8	BLK	1.6U ug/L	2.6	U

Duplicate 3692487 (DUP) 3310646016 For QC Batch 1023280

****NOTE - The Original Result and Duplicate Result shown below are raw results and are only used for the purpose of calculating Sample Duplicate percent recoveries. This result is not a final value and cannot be used as such.



QUALITY CONTROL SAMPLES

LIGHT HYDROCARBON GASES (cont.)

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)			Qualifiers
Ethane	74-84-0	DUP	1.33	2.01	RPD	40.70* (Max-20)	J
Ethene	74-85-1	DUP	0	0	RPD	0 (Max-20)	U
Methane	74-82-8	DUP	7648.26	9046.85	RPD	16.80 (Max-20)	

VOLATILE ORGANICS

QUALITY CONTROL SAMPLES

QC Batch

QC Batch	1021857	Prep Method	N/A
Date	N/A	Analysis Method	SW846 8260C
Tech.			

Associated Samples

3310646001	3310646002	3310646003	3310646004
3310646005	3310646006	3310646007	3310646008
3310646009	3310646014	3310646017	3310646032
3310646033	3310646034	3310646035	3310646036
3310646037			

Method Blank

3691198 (MB)

Created on 07/05/2023 23:43

For QC Batch 1021857

RESULTS

Compound	CAS No		Result	Units	LOQ	Qualifiers
1,1,1-Trichloroethane	71-55-6	BLK	0.75U	ug/L	1.0	U
1,1,2,2-Tetrachloroethane	79-34-5	BLK	0.75U	ug/L	1.0	U
1,1,2-Trichloroethane	79-00-5	BLK	0.75U	ug/L	1.0	U
1,1-Dichloroethane	75-34-3	BLK	0.75U	ug/L	1.0	U
1,1-Dichloroethene	75-35-4	BLK	0.75U	ug/L	1.0	U
1,2,3-Trichlorobenzene	87-61-6	BLK	0.75U	ug/L	1.0	U
1,2,4-Trichlorobenzene	120-82-1	BLK	0.75U	ug/L	1.0	U
1,2-Dibromo-3-chloropropane	96-12-8	BLK	2.5U	ug/L	5.0	U
1,2-Dibromoethane	106-93-4	BLK	0.75U	ug/L	1.0	U
1,2-Dichlorobenzene	95-50-1	BLK	0.75U	ug/L	1.0	U
1,2-Dichloroethane	107-06-2	BLK	0.75U	ug/L	1.0	U
1,2-Dichloropropane	78-87-5	BLK	0.75U	ug/L	1.0	U
1,3-Dichlorobenzene	541-73-1	BLK	0.75U	ug/L	1.0	U
1,3-Dichloropropene, Total	542-75-6	BLK	1.5U	ug/L	2.0	U
1,4-Dichlorobenzene	106-46-7	BLK	0.75U	ug/L	1.0	U
2-Butanone	78-93-3	BLK	3.8U	ug/L	5.0	U
2-Hexanone	591-78-6	BLK	3.8U	ug/L	5.0	U
4-Methyl-2-Pentanone(MIBK)	108-10-1	BLK	3.8U	ug/L	5.0	U
Acetone	67-64-1	BLK	3.8U	ug/L	5.0	U
Benzene	71-43-2	BLK	0.75U	ug/L	1.0	U
Bromochloromethane	74-97-5	BLK	0.75U	ug/L	1.0	U
Bromodichloromethane	75-27-4	BLK	0.75U	ug/L	1.0	U
Bromoform	75-25-2	BLK	0.75U	ug/L	1.0	U
Bromomethane	74-83-9	BLK	0.75U	ug/L	1.0	U
Carbon Disulfide	75-15-0	BLK	0.75U	ug/L	1.0	U
Carbon Tetrachloride	56-23-5	BLK	0.75U	ug/L	1.0	U
Chlorobenzene	108-90-7	BLK	0.75U	ug/L	1.0	U
Chlorodibromomethane	124-48-1	BLK	0.75U	ug/L	1.0	U
Chloroethane	75-00-3	BLK	0.75U	ug/L	1.0	U
Chloroform	67-66-3	BLK	0.75U	ug/L	1.0	U
Chloromethane	74-87-3	BLK	0.75U	ug/L	1.0	U
cis-1,2-Dichloroethene	156-59-2	BLK	0.75U	ug/L	1.0	U
Cyclohexane	110-82-7	BLK	0.75U	ug/L	1.0	U
Dichlorodifluoromethane	75-71-8	BLK	0.75U	ug/L	1.0	U
Ethylbenzene	100-41-4	BLK	0.75U	ug/L	1.0	U
Freon 113	76-13-1	BLK	0.75U	ug/L	1.0	U
Iodomethane	74-88-4	BLK	0.75U	ug/L	1.0	U



QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result	Units	LOQ	Qualifiers
Isopropylbenzene	98-82-8	BLK	0.75U	ug/L	1.0	U
Methyl acetate	79-20-9	BLK	0.75U	ug/L	1.0	U
Methyl cyclohexane	108-87-2	BLK	0.75U	ug/L	1.0	U
Methyl t-Butyl Ether	1634-04-4	BLK	0.75U	ug/L	1.0	U
Methylene Chloride	75-09-2	BLK	0.75U	ug/L	1.0	U
Styrene	100-42-5	BLK	0.75U	ug/L	1.0	U
Tetrachloroethene	127-18-4	BLK	0.75U	ug/L	1.0	U
Toluene	108-88-3	BLK	0.75U	ug/L	1.0	U
Total Xylenes	1330-20-7	BLK	2.3U	ug/L	3.0	U
trans-1,2-Dichloroethene	156-60-5	BLK	0.75U	ug/L	1.0	U
Trichloroethene	79-01-6	BLK	0.75U	ug/L	1.0	U
Trichlorofluoromethane	75-69-4	BLK	0.75U	ug/L	1.0	U
Vinyl Chloride	75-01-4	BLK	0.75U	ug/L	1.0	U

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	BLK	29.80	30	99.4	81 - 118	
4-Bromofluorobenzene	460-00-4	BLK	27.90	30	93.1	85 - 114	
Dibromofluoromethane	1868-53-7	BLK	29.10	30	96.9	80 - 119	
Toluene-d8	2037-26-5	BLK	29	30	96.8	89 - 112	

Lab Control Standard	3691199 (LCS)	Created on 07/05/2023 23:43	For QC Batch 1021857

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
1,1,1-Trichloroethane	71-55-6	LCS	20.20		20	101	74 - 131		
1,1,2,2-Tetrachloroethane	79-34-5	LCS	20.70		20	104	71 - 121		
1,1,2-Trichloroethane	79-00-5	LCS	20.80		20	104	80 - 119		
1,1-Dichloroethane	75-34-3	LCS	19.10		20	95.7	77 - 125		
1,1-Dichloroethene	75-35-4	LCS	18.90		20	94.3	71 - 131		
1,2,3-Trichlorobenzene	87-61-6	LCS	21.90		20	110	69 - 129		
1,2,4-Trichlorobenzene	120-82-1	LCS	21.50		20	107	69 - 130		
1,2-Dibromo-3-chloropropane	96-12-8	LCS	19.30		20	96.4	62 - 128		
1,2-Dibromoethane	106-93-4	LCS	20.90		20	105	77 - 121		
1,2-Dichlorobenzene	95-50-1	LCS	19.40		20	97	80 - 119		
1,2-Dichloroethane	107-06-2	LCS	20		20	100	73 - 128		
1,2-Dichloropropane	78-87-5	LCS	19.80		20	99.2	78 - 122		
1,3-Dichlorobenzene	541-73-1	LCS	19		20	95	80 - 119		
1,3-Dichloropropene, Total	542-75-6	LCS	40.60		40	102	75 - 124		
1,4-Dichlorobenzene	106-46-7	LCS	19.10		20	95.5	79 - 118		
2-Butanone	78-93-3	LCS	119		100	119	56 - 143		
2-Hexanone	591-78-6	LCS	123		100	123	57 - 139		
4-Methyl-2-Pentanone(MIBK)	108-10-1	LCS	116		100	116	67 - 130		
Acetone	67-64-1	LCS	125		100	125	39 - 160		



QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
Benzene	71-43-2	LCS	20.20		20	101	79 - 120		
Bromochloromethane	74-97-5	LCS	20.20		20	101	78 - 123		
Bromodichloromethane	75-27-4	LCS	20.60		20	103	79 - 125		
Bromoform	75-25-2	LCS	19.10		20	95.3	66 - 130		
Bromomethane	74-83-9	LCS	20.40		20	102	53 - 141		
Carbon Disulfide	75-15-0	LCS	20.50		20	102	64 - 133		
Carbon Tetrachloride	56-23-5	LCS	20		20	100	72 - 136		
Chlorobenzene	108-90-7	LCS	19.30		20	96.3	82 - 118		
Chlorodibromomethane	124-48-1	LCS	20.10		20	101	74 - 126		
Chloroethane	75-00-3	LCS	15.30		20	76.6	60 - 138		
Chloroform	67-66-3	LCS	20.10		20	101	79 - 124		
Chloromethane	74-87-3	LCS	25.10		20	126	50 - 139		
cis-1,2-Dichloroethene	156-59-2	LCS	19.70		20	98.7	78 - 123		
Cyclohexane	110-82-7	LCS	21.10		20	106	71 - 130		
Dichlorodifluoromethane	75-71-8	LCS	29.30		20	147	32 - 152		
Ethylbenzene	100-41-4	LCS	19.30		20	96.4	79 - 121		
Freon 113	76-13-1	LCS	20.90		20	104	70 - 136		
Iodomethane	74-88-4	LCS	22.40		20	112	69 - 131		
Isopropylbenzene	98-82-8	LCS	19.50		20	97.5	72 - 131		
Methyl acetate	79-20-9	LCS	21		20	105	56 - 136		
Methyl cyclohexane	108-87-2	LCS	21.30		20	107	72 - 132		
Methyl t-Butyl Ether	1634-04-4	LCS	22		20	110	71 - 124		
Methylene Chloride	75-09-2	LCS	21.20		20	106	74 - 124		
Styrene	100-42-5	LCS	18.60		20	93.1	78 - 123		
Tetrachloroethene	127-18-4	LCS	19		20	95.1	74 - 129		
Toluene	108-88-3	LCS	19.10		20	95.4	80 - 121		
Total Xylenes	1330-20-7	LCS	59.50		60	99.1	79 - 121		
trans-1,2-Dichloroethene	156-60-5	LCS	19.90		20	99.5	75 - 124		
Trichloroethene	79-01-6	LCS	19.50		20	97.7	79 - 123		
Trichlorofluoromethane	75-69-4	LCS	19.20		20	96.2	65 - 141		
Vinyl Chloride	75-01-4	LCS	25.30		20	126	58 - 137		

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	LCS	30.60	30	102	81 - 118	
4-Bromofluorobenzene	460-00-4	LCS	28.80	30	95.8	85 - 114	
Dibromofluoromethane	1868-53-7	LCS	30.60	30	102	80 - 119	
Toluene-d8	2037-26-5	LCS	29.20	30	97.4	89 - 112	

Matrix Spike 3691265 (MS) 3310646017 For QC Batch 1021857

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Matrix Spike Duplicate 3691266 (MSD) 3310646017 For QC Batch 1021857



QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
1,1,1-Trichloroethane	71-55-6	MS	23.60	0	20	118	74 - 131		
1,1,1-Trichloroethane	71-55-6	MSD	23	0	20	115	74 - 131	RPD 2.92	(Max-20)
1,1,2,2-Tetrachloroethane	79-34-5	MS	21.50	0	20	108	71 - 121		
1,1,2,2-Tetrachloroethane	79-34-5	MSD	20.40	0	20	102	71 - 121	RPD 5.25	(Max-20)
1,1,2-Trichloroethane	79-00-5	MS	21.20	0	20	106	80 - 119		
1,1,2-Trichloroethane	79-00-5	MSD	20.50	0	20	103	80 - 119	RPD 3.41	(Max-20)
1,1-Dichloroethane	75-34-3	MS	22.20	0	20	111	77 - 125		
1,1-Dichloroethane	75-34-3	MSD	21.40	0	20	107	77 - 125	RPD 3.63	(Max-20)
1,1-Dichloroethene	75-35-4	MS	22.60	0	20	113	71 - 131		
1,1-Dichloroethene	75-35-4	MSD	23.10	0	20	115	71 - 131	RPD 2.19	(Max-20)
1,2,3-Trichlorobenzene	87-61-6	MS	20.30	0	20	102	69 - 129		
1,2,3-Trichlorobenzene	87-61-6	MSD	19.30	0	20	96.7	69 - 129	RPD 4.88	(Max-20)
1,2,4-Trichlorobenzene	120-82-1	MS	20.40	0	20	102	69 - 130		
1,2,4-Trichlorobenzene	120-82-1	MSD	19.20	0	20	96	69 - 130	RPD 5.92	(Max-20)
1,2-Dibromo-3-chloropropane	96-12-8	MS	18.80	0	20	94.2	62 - 128		
1,2-Dibromo-3-chloropropane	96-12-8	MSD	16.90	0	20	84.4	62 - 128	RPD 11	(Max-20)
1,2-Dibromoethane	106-93-4	MS	21.40	0	20	107	77 - 121		
1,2-Dibromoethane	106-93-4	MSD	20	0	20	100	77 - 121	RPD 6.37	(Max-20)
1,2-Dichlorobenzene	95-50-1	MS	20.90	0	20	105	80 - 119		
1,2-Dichlorobenzene	95-50-1	MSD	19.80	0	20	99	80 - 119	RPD 5.64	(Max-20)
1,2-Dichloroethane	107-06-2	MS	21.90	0	20	110	73 - 128		
1,2-Dichloroethane	107-06-2	MSD	20.50	0	20	103	73 - 128	RPD 6.69	(Max-20)
1,2-Dichloropropane	78-87-5	MS	22.20	0	20	111	78 - 122		
1,2-Dichloropropane	78-87-5	MSD	21.30	0	20	107	78 - 122	RPD 3.76	(Max-20)
1,3-Dichlorobenzene	541-73-1	MS	20.30	0	20	101	80 - 119		
1,3-Dichlorobenzene	541-73-1	MSD	19.90	0	20	99.5	80 - 119	RPD 1.97	(Max-20)
1,3-Dichloropropene, Total	542-75-6	MS	40.50	0	40	101	75 - 124		
1,3-Dichloropropene, Total	542-75-6	MSD	38.80	0	40	96.9	75 - 124	RPD 4.35	(Max-20)
1,4-Dichlorobenzene	106-46-7	MS	20.90	0	20	105	79 - 118		
1,4-Dichlorobenzene	106-46-7	MSD	20	0	20	99.8	79 - 118	RPD 4.75	(Max-20)
2-Butanone	78-93-3	MS	119	0	100	119	56 - 143		
2-Butanone	78-93-3	MSD	103	0	100	103	56 - 143	RPD 14.40	(Max-20)
2-Hexanone	591-78-6	MS	121	0	100	121	57 - 139		
2-Hexanone	591-78-6	MSD	106	0	100	106	57 - 139	RPD 13.10	(Max-20)
4-Methyl-2-Pentanone(MIBK)	108-10-1	MS	118	0	100	118	67 - 130		
4-Methyl-2-Pentanone(MIBK)	108-10-1	MSD	105	0	100	105	67 - 130	RPD 11.50	(Max-20)
Acetone	67-64-1	MS	118	5.40	100	112	39 - 160		
Acetone	67-64-1	MSD	103	5.40	100	97.8	39 - 160	RPD 13.10	(Max-20)
Benzene	71-43-2	MS	22.90	0	20	114	79 - 120		
Benzene	71-43-2	MSD	22.30	0	20	111	79 - 120	RPD 2.48	(Max-20)
Bromochloromethane	74-97-5	MS	21.90	0	20	109	78 - 123		
Bromochloromethane	74-97-5	MSD	22.80	0	20	114	78 - 123	RPD 3.96	(Max-20)
Bromodichloromethane	75-27-4	MS	21.80	0	20	109	79 - 125		
Bromodichloromethane	75-27-4	MSD	20.90	0	20	104	79 - 125	RPD 4.19	(Max-20)
Bromoform	75-25-2	MS	17.90	0	20	89.6	66 - 130		
Bromoform	75-25-2	MSD	17.40	0	20	87.1	66 - 130	RPD 2.88	(Max-20)
Bromomethane	74-83-9	MS	12.20	0	20	61.2	53 - 141		
Bromomethane	74-83-9	MSD	14.10	0	20	70.4	53 - 141	RPD 13.90	(Max-20)



QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
Carbon Disulfide	75-15-0	MS	24.30	0	20	122	64 - 133		
Carbon Disulfide	75-15-0	MSD	22.60	0	20	113	64 - 133	RPD 7.15 (Max-20)	
Carbon Tetrachloride	56-23-5	MS	23.50	0	20	117	72 - 136		
Carbon Tetrachloride	56-23-5	MSD	22.40	0	20	112	72 - 136	RPD 4.82 (Max-20)	
Chlorobenzene	108-90-7	MS	21.60	0	20	108	82 - 118		
Chlorobenzene	108-90-7	MSD	20.80	0	20	104	82 - 118	RPD 4.22 (Max-20)	
Chlorodibromomethane	124-48-1	MS	20.20	0	20	101	74 - 126		
Chlorodibromomethane	124-48-1	MSD	19.10	0	20	95.3	74 - 126	RPD 5.55 (Max-20)	
Chloroethane	75-00-3	MS	20.40	0	20	102	60 - 138		
Chloroethane	75-00-3	MSD	21.10	0	20	105	60 - 138	RPD 3.51 (Max-20)	
Chloroform	67-66-3	MS	22.20	0	20	111	79 - 124		
Chloroform	67-66-3	MSD	21.70	0	20	108	79 - 124	RPD 2.18 (Max-20)	
Chloromethane	74-87-3	MS	28.50	0	20	142*	50 - 139		
Chloromethane	74-87-3	MSD	26.40	0	20	132	50 - 139	RPD 7.59 (Max-20)	
cis-1,2-Dichloroethene	156-59-2	MS	24.70	1.70	20	115	78 - 123		
cis-1,2-Dichloroethene	156-59-2	MSD	23.60	1.70	20	110	78 - 123	RPD 4.63 (Max-20)	
Cyclohexane	110-82-7	MS	24.70	0	20	124	71 - 130		
Cyclohexane	110-82-7	MSD	24.20	0	20	121	71 - 130	RPD 2.35 (Max-20)	
Dichlorodifluoromethane	75-71-8	MS	35	0	20	175*	32 - 152		
Dichlorodifluoromethane	75-71-8	MSD	33.90	0	20	169*	32 - 152	RPD 3.27 (Max-20)	
Ethylbenzene	100-41-4	MS	22.20	0	20	111	79 - 121		
Ethylbenzene	100-41-4	MSD	21.60	0	20	108	79 - 121	RPD 3.01 (Max-20)	
Freon 113	76-13-1	MS	25.10	0	20	126	70 - 136		
Freon 113	76-13-1	MSD	23.80	0	20	119	70 - 136	RPD 5.32 (Max-20)	
Iodomethane	74-88-4	MS	22.60	0	20	113	69 - 131		
Iodomethane	74-88-4	MSD	22.80	0	20	114	69 - 131	RPD 0.65 (Max-20)	
Isopropylbenzene	98-82-8	MS	23	0	20	115	72 - 131		
Isopropylbenzene	98-82-8	MSD	22.90	0	20	114	72 - 131	RPD 0.62 (Max-20)	
Methyl acetate	79-20-9	MS	19.40	0	20	96.8	56 - 136		
Methyl acetate	79-20-9	MSD	17.70	0	20	88.7	56 - 136	RPD 8.73 (Max-20)	
Methyl cyclohexane	108-87-2	MS	23.90	0	20	119	72 - 132		
Methyl cyclohexane	108-87-2	MSD	23.90	0	20	120	72 - 132	RPD 0.23 (Max-20)	
Methyl t-Butyl Ether	1634-04-4	MS	22.70	0	20	113	71 - 124		
Methyl t-Butyl Ether	1634-04-4	MSD	21.40	0	20	107	71 - 124	RPD 5.68 (Max-20)	
Methylene Chloride	75-09-2	MS	23.90	0	20	119	74 - 124		
Methylene Chloride	75-09-2	MSD	22.40	0	20	112	74 - 124	RPD 6.41 (Max-20)	
Styrene	100-42-5	MS	21.60	0	20	108	78 - 123		
Styrene	100-42-5	MSD	21.10	0	20	105	78 - 123	RPD 2.27 (Max-20)	
Tetrachloroethene	127-18-4	MS	21.40	0	20	107	74 - 129		
Tetrachloroethene	127-18-4	MSD	20.90	0	20	105	74 - 129	RPD 2 (Max-20)	
Toluene	108-88-3	MS	22.50	0.74	20	109	80 - 121		
Toluene	108-88-3	MSD	21.90	0.74	20	106	80 - 121	RPD 2.52 (Max-20)	
Total Xylenes	1330-20-7	MS	67.80	0	60	113	79 - 121		
Total Xylenes	1330-20-7	MSD	64.60	0	60	108	79 - 121	RPD 4.72 (Max-20)	
trans-1,2-Dichloroethene	156-60-5	MS	23.50	0	20	117	75 - 124		
trans-1,2-Dichloroethene	156-60-5	MSD	22.50	0	20	112	75 - 124	RPD 4.29 (Max-20)	
Trichloroethene	79-01-6	MS	22.20	0	20	111	79 - 123		
Trichloroethene	79-01-6	MSD	22	0	20	110	79 - 123	RPD 0.76 (Max-20)	
Trichlorofluoromethane	75-69-4	MS	23.20	0	20	116	65 - 141		

VOLATILE ORGANICS (cont.)

QUALITY CONTROL SAMPLES

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
Trichlorofluoromethane	75-69-4	MSD	26.20	0	20	131	65 - 141	RPD 12.30 (Max-20)	
Vinyl Chloride	75-01-4	MS	32	0.83	20	156*	58 - 137		
Vinyl Chloride	75-01-4	MSD	30.30	0.83	20	148*	58 - 137	RPD 5.33 (Max-20)	

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	MS	32.60	30	109	81 - 118	
1,2-Dichloroethane-d4	17060-07-0	MSD	31.10	30	104	81 - 118	
4-Bromofluorobenzene	460-00-4	MS	29.70	30	99	85 - 114	
4-Bromofluorobenzene	460-00-4	MSD	30.10	30	100	85 - 114	
Dibromofluoromethane	1868-53-7	MS	30.70	30	102	80 - 119	
Dibromofluoromethane	1868-53-7	MSD	30.50	30	102	80 - 119	
Toluene-d8	2037-26-5	MS	29.60	30	98.8	89 - 112	
Toluene-d8	2037-26-5	MSD	29.80	30	99.3	89 - 112	

QC Batch

Associated Samples

QC Batch	1022338	Prep Method	N/A
Date	N/A	Analysis Method	SW846 8260C
Tech.			

3310646013	3310646015	3310646016	3310646018
3310646019	3310646020	3310646021	3310646022
3310646023	3310646024	3310646025	3310646027
3310646028	3310646029	3310646030	3310646031

Method Blank

3691774 (MB)

Created on 07/06/2023 23:37

For QC Batch 1022338

RESULTS

Compound	CAS No		Result	Units	LOQ	Qualifiers
1,1,1-Trichloroethane	71-55-6	BLK	0.75U	ug/L	1.0	U
1,1,2,2-Tetrachloroethane	79-34-5	BLK	0.75U	ug/L	1.0	U
1,1,2-Trichloroethane	79-00-5	BLK	0.75U	ug/L	1.0	U
1,1-Dichloroethane	75-34-3	BLK	0.75U	ug/L	1.0	U
1,1-Dichloroethene	75-35-4	BLK	0.75U	ug/L	1.0	U
1,2,3-Trichlorobenzene	87-61-6	BLK	0.75U	ug/L	1.0	U
1,2,4-Trichlorobenzene	120-82-1	BLK	0.75U	ug/L	1.0	U
1,2-Dibromo-3-chloropropane	96-12-8	BLK	2.5U	ug/L	5.0	U
1,2-Dibromoethane	106-93-4	BLK	0.75U	ug/L	1.0	U
1,2-Dichlorobenzene	95-50-1	BLK	0.75U	ug/L	1.0	U
1,2-Dichloroethane	107-06-2	BLK	0.75U	ug/L	1.0	U
1,2-Dichloropropane	78-87-5	BLK	0.75U	ug/L	1.0	U
1,3-Dichlorobenzene	541-73-1	BLK	0.75U	ug/L	1.0	U
1,3-Dichloropropene, Total	542-75-6	BLK	1.5U	ug/L	2.0	U
1,4-Dichlorobenzene	106-46-7	BLK	0.75U	ug/L	1.0	U
2-Butanone	78-93-3	BLK	3.8U	ug/L	5.0	U
2-Hexanone	591-78-6	BLK	3.8U	ug/L	5.0	U



QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result	Units	LOQ	Qualifiers
4-Methyl-2-Pentanone(MIBK)	108-10-1	BLK	3.8U	ug/L	5.0	U
Acetone	67-64-1	BLK	3.8U	ug/L	5.0	U
Benzene	71-43-2	BLK	0.75U	ug/L	1.0	U
Bromochloromethane	74-97-5	BLK	0.75U	ug/L	1.0	U
Bromodichloromethane	75-27-4	BLK	0.75U	ug/L	1.0	U
Bromoform	75-25-2	BLK	0.75U	ug/L	1.0	U
Bromomethane	74-83-9	BLK	0.44J	ug/L	1.0	J
Carbon Disulfide	75-15-0	BLK	0.75U	ug/L	1.0	U
Carbon Tetrachloride	56-23-5	BLK	0.75U	ug/L	1.0	U
Chlorobenzene	108-90-7	BLK	0.75U	ug/L	1.0	U
Chlorodibromomethane	124-48-1	BLK	0.75U	ug/L	1.0	U
Chloroethane	75-00-3	BLK	0.75U	ug/L	1.0	U
Chloroform	67-66-3	BLK	0.75U	ug/L	1.0	U
Chloromethane	74-87-3	BLK	0.75U	ug/L	1.0	U
cis-1,2-Dichloroethene	156-59-2	BLK	0.75U	ug/L	1.0	U
Cyclohexane	110-82-7	BLK	0.75U	ug/L	1.0	U
Dichlorodifluoromethane	75-71-8	BLK	0.75U	ug/L	1.0	U
Ethylbenzene	100-41-4	BLK	0.75U	ug/L	1.0	U
Freon 113	76-13-1	BLK	0.75U	ug/L	1.0	U
Iodomethane	74-88-4	BLK	0.75U	ug/L	1.0	U
Isopropylbenzene	98-82-8	BLK	0.75U	ug/L	1.0	U
Methyl acetate	79-20-9	BLK	0.75U	ug/L	1.0	U
Methyl cyclohexane	108-87-2	BLK	0.75U	ug/L	1.0	U
Methyl t-Butyl Ether	1634-04-4	BLK	0.75U	ug/L	1.0	U
Methylene Chloride	75-09-2	BLK	0.75U	ug/L	1.0	U
Styrene	100-42-5	BLK	0.75U	ug/L	1.0	U
Tetrachloroethene	127-18-4	BLK	0.75U	ug/L	1.0	U
Toluene	108-88-3	BLK	0.75U	ug/L	1.0	U
Total Xylenes	1330-20-7	BLK	2.3U	ug/L	3.0	U
trans-1,2-Dichloroethene	156-60-5	BLK	0.75U	ug/L	1.0	U
Trichloroethene	79-01-6	BLK	0.75U	ug/L	1.0	U
Trichlorofluoromethane	75-69-4	BLK	0.75U	ug/L	1.0	U
Vinyl Chloride	75-01-4	BLK	0.75U	ug/L	1.0	U

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	BLK	29.60	30	98.5	81 - 118	
4-Bromofluorobenzene	460-00-4	BLK	28.60	30	95.5	85 - 114	
Dibromofluoromethane	1868-53-7	BLK	27.90	30	93.1	80 - 119	
Toluene-d8	2037-26-5	BLK	29.40	30	98	89 - 112	

Lab Control Standard 3691775 (LCS) Created on 07/06/2023 23:37 For QC Batch 1022338



QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
1,1,1-Trichloroethane	71-55-6	LCS	22.10		20	110	74 - 131		
1,1,2,2-Tetrachloroethane	79-34-5	LCS	20.80		20	104	71 - 121		
1,1,2-Trichloroethane	79-00-5	LCS	20.30		20	101	80 - 119		
1,1-Dichloroethane	75-34-3	LCS	20.20		20	101	77 - 125		
1,1-Dichloroethene	75-35-4	LCS	20.20		20	101	71 - 131		
1,2,3-Trichlorobenzene	87-61-6	LCS	21.20		20	106	69 - 129		
1,2,4-Trichlorobenzene	120-82-1	LCS	21.40		20	107	69 - 130		
1,2-Dibromo-3-chloropropane	96-12-8	LCS	18.30		20	91.6	62 - 128		
1,2-Dibromoethane	106-93-4	LCS	20.30		20	102	77 - 121		
1,2-Dichlorobenzene	95-50-1	LCS	20.10		20	100	80 - 119		
1,2-Dichloroethane	107-06-2	LCS	20.50		20	103	73 - 128		
1,2-Dichloropropane	78-87-5	LCS	20.60		20	103	78 - 122		
1,3-Dichlorobenzene	541-73-1	LCS	19.60		20	97.9	80 - 119		
1,3-Dichloropropene, Total	542-75-6	LCS	41.40		40	103	75 - 124		
1,4-Dichlorobenzene	106-46-7	LCS	19.90		20	99.7	79 - 118		
2-Butanone	78-93-3	LCS	114		100	114	56 - 143		
2-Hexanone	591-78-6	LCS	118		100	118	57 - 139		
4-Methyl-2-Pentanone(MIBK)	108-10-1	LCS	112		100	112	67 - 130		
Acetone	67-64-1	LCS	124		100	124	39 - 160		
Benzene	71-43-2	LCS	21		20	105	79 - 120		
Bromochloromethane	74-97-5	LCS	19.10		20	95.7	78 - 123		
Bromodichloromethane	75-27-4	LCS	21.30		20	106	79 - 125		
Bromoform	75-25-2	LCS	18.10		20	90.6	66 - 130		
Bromomethane	74-83-9	LCS	20		20	99.8	53 - 141		
Carbon Disulfide	75-15-0	LCS	21.70		20	109	64 - 133		
Carbon Tetrachloride	56-23-5	LCS	21.20		20	106	72 - 136		
Chlorobenzene	108-90-7	LCS	20		20	99.9	82 - 118		
Chlorodibromomethane	124-48-1	LCS	20.20		20	101	74 - 126		
Chloroethane	75-00-3	LCS	17.50		20	87.4	60 - 138		
Chloroform	67-66-3	LCS	21.10		20	105	79 - 124		
Chloromethane	74-87-3	LCS	25.50		20	128	50 - 139		
cis-1,2-Dichloroethene	156-59-2	LCS	20.70		20	104	78 - 123		
Cyclohexane	110-82-7	LCS	22.80		20	114	71 - 130		
Dichlorodifluoromethane	75-71-8	LCS	29.90		20	150	32 - 152		
Ethylbenzene	100-41-4	LCS	20.20		20	101	79 - 121		
Freon 113	76-13-1	LCS	22.70		20	114	70 - 136		
Iodomethane	74-88-4	LCS	21.20		20	106	69 - 131		
Isopropylbenzene	98-82-8	LCS	20.90		20	104	72 - 131		
Methyl acetate	79-20-9	LCS	20		20	99.8	56 - 136		
Methyl cyclohexane	108-87-2	LCS	22.50		20	113	72 - 132		
Methyl t-Butyl Ether	1634-04-4	LCS	22		20	110	71 - 124		
Methylene Chloride	75-09-2	LCS	21.20		20	106	74 - 124		
Styrene	100-42-5	LCS	19.50		20	97.3	78 - 123		
Tetrachloroethene	127-18-4	LCS	20		20	100	74 - 129		
Toluene	108-88-3	LCS	20		20	100	80 - 121		
Total Xylenes	1330-20-7	LCS	61.90		60	103	79 - 121		
trans-1,2-Dichloroethene	156-60-5	LCS	21.60		20	108	75 - 124		



QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
Trichloroethene	79-01-6	LCS	20.70		20	103	79 - 123		
Trichlorofluoromethane	75-69-4	LCS	20.80		20	104	65 - 141		
Vinyl Chloride	75-01-4	LCS	27.20		20	136	58 - 137		

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	LCS	30.70	30	102	81 - 118	
4-Bromofluorobenzene	460-00-4	LCS	28.90	30	96.4	85 - 114	
Dibromofluoromethane	1868-53-7	LCS	30.30	30	101	80 - 119	
Toluene-d8	2037-26-5	LCS	29	30	96.5	89 - 112	

Matrix Spike 3691786 (MS) 3310646016 For QC Batch 1022338

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Matrix Spike Duplicate 3691787 (MSD) 3310646016 For QC Batch 1022338

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
1,1,1-Trichloroethane	71-55-6	MS	22.40	0	20	112	74 - 131		
1,1,1-Trichloroethane	71-55-6	MSD	23.10	0	20	116	74 - 131	RPD 3.27 (Max-20)	
1,1,2,2-Tetrachloroethane	79-34-5	MS	20.30	0	20	101	71 - 121		
1,1,2,2-Tetrachloroethane	79-34-5	MSD	21.60	0	20	108	71 - 121	RPD 6.17 (Max-20)	
1,1,2-Trichloroethane	79-00-5	MS	20.40	0	20	102	80 - 119		
1,1,2-Trichloroethane	79-00-5	MSD	21	0	20	105	80 - 119	RPD 2.67 (Max-20)	
1,1-Dichloroethane	75-34-3	MS	21.30	0	20	106	77 - 125		
1,1-Dichloroethane	75-34-3	MSD	22.30	0	20	111	77 - 125	RPD 4.66 (Max-20)	
1,1-Dichloroethene	75-35-4	MS	22.20	0	20	111	71 - 131		
1,1-Dichloroethene	75-35-4	MSD	23.60	0	20	118	71 - 131	RPD 6.20 (Max-20)	
1,2,3-Trichlorobenzene	87-61-6	MS	17.20	0	20	85.9	69 - 129		
1,2,3-Trichlorobenzene	87-61-6	MSD	18.80	0	20	94.2	69 - 129	RPD 9.28 (Max-20)	
1,2,4-Trichlorobenzene	120-82-1	MS	18.10	0	20	90.6	69 - 130		
1,2,4-Trichlorobenzene	120-82-1	MSD	20.10	0	20	100	69 - 130	RPD 10.30 (Max-20)	
1,2-Dibromo-3-chloropropane	96-12-8	MS	16.20	0	20	80.8	62 - 128		
1,2-Dibromo-3-chloropropane	96-12-8	MSD	17.80	0	20	88.9	62 - 128	RPD 9.62 (Max-20)	
1,2-Dibromoethane	106-93-4	MS	19.40	0	20	97.1	77 - 121		
1,2-Dibromoethane	106-93-4	MSD	20.40	0	20	102	77 - 121	RPD 4.78 (Max-20)	
1,2-Dichlorobenzene	95-50-1	MS	19.40	0	20	97.2	80 - 119		
1,2-Dichlorobenzene	95-50-1	MSD	20.80	0	20	104	80 - 119	RPD 6.69 (Max-20)	
1,2-Dichloroethane	107-06-2	MS	19.60	0	20	97.8	73 - 128		
1,2-Dichloroethane	107-06-2	MSD	20.80	0	20	104	73 - 128	RPD 5.97 (Max-20)	
1,2-Dichloropropane	78-87-5	MS	20.10	0	20	101	78 - 122		
1,2-Dichloropropane	78-87-5	MSD	22	0	20	110	78 - 122	RPD 9.22 (Max-20)	
1,3-Dichlorobenzene	541-73-1	MS	19.60	0	20	97.8	80 - 119		



QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
1,3-Dichlorobenzene	541-73-1	MSD	20.70	0	20	104	80 - 119	RPD 5.69 (Max-20)	
1,3-Dichloropropene, Total	542-75-6	MS	38.10	0	40	95.3	75 - 124		
1,3-Dichloropropene, Total	542-75-6	MSD	40.70	0	40	102	75 - 124	RPD 6.63 (Max-20)	
1,4-Dichlorobenzene	106-46-7	MS	19.60	0	20	98.1	79 - 118		
1,4-Dichlorobenzene	106-46-7	MSD	21.10	0	20	106	79 - 118	RPD 7.38 (Max-20)	
2-Butanone	78-93-3	MS	95.80	0	100	95.8	56 - 143		
2-Butanone	78-93-3	MSD	99.70	0	100	99.7	56 - 143	RPD 4 (Max-20)	
2-Hexanone	591-78-6	MS	103	0	100	103	57 - 139		
2-Hexanone	591-78-6	MSD	107	0	100	107	57 - 139	RPD 4.42 (Max-20)	
4-Methyl-2-Pentanone(MIBK)	108-10-1	MS	104	0	100	104	67 - 130		
4-Methyl-2-Pentanone(MIBK)	108-10-1	MSD	108	0	100	108	67 - 130	RPD 3.52 (Max-20)	
Acetone	67-64-1	MS	97.70	4.10	100	93.6	39 - 160		
Acetone	67-64-1	MSD	100	4.10	100	96.1	39 - 160	RPD 2.50 (Max-20)	
Benzene	71-43-2	MS	21.90	0	20	110	79 - 120		
Benzene	71-43-2	MSD	22.90	0	20	115	79 - 120	RPD 4.50 (Max-20)	
Bromochloromethane	74-97-5	MS	21.50	0	20	108	78 - 123		
Bromochloromethane	74-97-5	MSD	23.10	0	20	116	78 - 123	RPD 7.17 (Max-20)	
Bromodichloromethane	75-27-4	MS	19.80	0	20	99.1	79 - 125		
Bromodichloromethane	75-27-4	MSD	21	0	20	105	79 - 125	RPD 5.60 (Max-20)	
Bromoform	75-25-2	MS	17.50	0	20	87.7	66 - 130		
Bromoform	75-25-2	MSD	18.70	0	20	93.4	66 - 130	RPD 6.30 (Max-20)	
Bromomethane	74-83-9	MS	11.40	0	20	56.8	53 - 141		
Bromomethane	74-83-9	MSD	14.60	0	20	73.2	53 - 141	RPD 25.20* (Max-20)	
Carbon Disulfide	75-15-0	MS	20.60	0.24	20	102	64 - 133		
Carbon Disulfide	75-15-0	MSD	21.70	0.24	20	107	64 - 133	RPD 5.32 (Max-20)	
Carbon Tetrachloride	56-23-5	MS	20.70	0	20	104	72 - 136		
Carbon Tetrachloride	56-23-5	MSD	22.40	0	20	112	72 - 136	RPD 7.68 (Max-20)	
Chlorobenzene	108-90-7	MS	20.20	0	20	101	82 - 118		
Chlorobenzene	108-90-7	MSD	21.40	0	20	107	82 - 118	RPD 5.46 (Max-20)	
Chlorodibromomethane	124-48-1	MS	18.60	0	20	92.9	74 - 126		
Chlorodibromomethane	124-48-1	MSD	19.90	0	20	99.5	74 - 126	RPD 6.90 (Max-20)	
Chloroethane	75-00-3	MS	20.80	5.60	20	76	60 - 138		
Chloroethane	75-00-3	MSD	23.60	5.60	20	90.1	60 - 138	RPD 12.70 (Max-20)	
Chloroform	67-66-3	MS	20.90	0	20	104	79 - 124		
Chloroform	67-66-3	MSD	22.20	0	20	111	79 - 124	RPD 6.37 (Max-20)	
Chloromethane	74-87-3	MS	23.20	0	20	116	50 - 139		
Chloromethane	74-87-3	MSD	25	0	20	125	50 - 139	RPD 7.48 (Max-20)	
cis-1,2-Dichloroethene	156-59-2	MS	22.70	1.60	20	105	78 - 123		
cis-1,2-Dichloroethene	156-59-2	MSD	24.10	1.60	20	112	78 - 123	RPD 6.15 (Max-20)	
Cyclohexane	110-82-7	MS	23.60	0	20	118	71 - 130		
Cyclohexane	110-82-7	MSD	25.10	0	20	125	71 - 130	RPD 5.92 (Max-20)	
Dichlorodifluoromethane	75-71-8	MS	27.50	0	20	138	32 - 152		
Dichlorodifluoromethane	75-71-8	MSD	29.80	0	20	149	32 - 152	RPD 7.91 (Max-20)	
Ethylbenzene	100-41-4	MS	20.80	0	20	104	79 - 121		
Ethylbenzene	100-41-4	MSD	22.10	0	20	110	79 - 121	RPD 6.15 (Max-20)	
Freon 113	76-13-1	MS	22.10	0	20	110	70 - 136		
Freon 113	76-13-1	MSD	23.90	0	20	119	70 - 136	RPD 7.90 (Max-20)	
Iodomethane	74-88-4	MS	17.30	0	20	86.3	69 - 131		
Iodomethane	74-88-4	MSD	19.80	0	20	99	69 - 131	RPD 13.60 (Max-20)	



QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
Isopropylbenzene	98-82-8	MS	23	0	20	115	72 - 131		
Isopropylbenzene	98-82-8	MSD	24.70	0	20	123	72 - 131	RPD 7.05	(Max-20)
Methyl acetate	79-20-9	MS	16.40	0	20	82.1	56 - 136		
Methyl acetate	79-20-9	MSD	17.20	0	20	85.9	56 - 136	RPD 4.44	(Max-20)
Methyl cyclohexane	108-87-2	MS	24	0	20	120	72 - 132		
Methyl cyclohexane	108-87-2	MSD	25.40	0	20	127	72 - 132	RPD 5.90	(Max-20)
Methyl t-Butyl Ether	1634-04-4	MS	20.70	0	20	104	71 - 124		
Methyl t-Butyl Ether	1634-04-4	MSD	21.80	0	20	109	71 - 124	RPD 4.80	(Max-20)
Methylene Chloride	75-09-2	MS	20.60	0	20	103	74 - 124		
Methylene Chloride	75-09-2	MSD	21.80	0	20	109	74 - 124	RPD 5.67	(Max-20)
Styrene	100-42-5	MS	21.20	0	20	106	78 - 123		
Styrene	100-42-5	MSD	22.30	0	20	111	78 - 123	RPD 5.16	(Max-20)
Tetrachloroethene	127-18-4	MS	20.50	0	20	102	74 - 129		
Tetrachloroethene	127-18-4	MSD	21.80	0	20	109	74 - 129	RPD 6.39	(Max-20)
Toluene	108-88-3	MS	27.30	6.30	20	105	80 - 121		
Toluene	108-88-3	MSD	28.50	6.30	20	111	80 - 121	RPD 4.22	(Max-20)
Total Xylenes	1330-20-7	MS	62.40	0	60	104	79 - 121		
Total Xylenes	1330-20-7	MSD	65.30	0	60	109	79 - 121	RPD 4.57	(Max-20)
trans-1,2-Dichloroethene	156-60-5	MS	22.20	0.47	20	109	75 - 124		
trans-1,2-Dichloroethene	156-60-5	MSD	23.30	0.47	20	114	75 - 124	RPD 4.84	(Max-20)
Trichloroethene	79-01-6	MS	21.30	1	20	101	79 - 123		
Trichloroethene	79-01-6	MSD	23	1	20	110	79 - 123	RPD 7.85	(Max-20)
Trichlorofluoromethane	75-69-4	MS	25.80	0	20	129	65 - 141		
Trichlorofluoromethane	75-69-4	MSD	27.60	0	20	138	65 - 141	RPD 6.67	(Max-20)
Vinyl Chloride	75-01-4	MS	27.70	1.30	20	132	58 - 137		
Vinyl Chloride	75-01-4	MSD	29.70	1.30	20	142*	58 - 137	RPD 6.98	(Max-20)

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	MS	29.50	30	98.3	81 - 118	
1,2-Dichloroethane-d4	17060-07-0	MSD	29.40	30	98	81 - 118	
4-Bromofluorobenzene	460-00-4	MS	29.20	30	97.4	85 - 114	
4-Bromofluorobenzene	460-00-4	MSD	30.40	30	101	85 - 114	
Dibromofluoromethane	1868-53-7	MS	29.60	30	98.5	80 - 119	
Dibromofluoromethane	1868-53-7	MSD	30.10	30	100	80 - 119	
Toluene-d8	2037-26-5	MS	30	30	100	89 - 112	
Toluene-d8	2037-26-5	MSD	29.90	30	99.6	89 - 112	

QC Batch

QC Batch	1022851	Prep Method	N/A
Date	N/A	Analysis Method	SW846 8260C
Tech.			

Associated Samples

3310646026

Method Blank

3692284 (MB)

Created on 07/08/2023 09:34

For QC Batch 1022851



QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result	Units	LOQ	Qualifiers
1,1,1-Trichloroethane	71-55-6	BLK	0.75U	ug/L	1.0	U
1,1,2,2-Tetrachloroethane	79-34-5	BLK	0.75U	ug/L	1.0	U
1,1,2-Trichloroethane	79-00-5	BLK	0.75U	ug/L	1.0	U
1,1-Dichloroethane	75-34-3	BLK	0.75U	ug/L	1.0	U
1,1-Dichloroethene	75-35-4	BLK	0.75U	ug/L	1.0	U
1,2,3-Trichlorobenzene	87-61-6	BLK	0.75U	ug/L	1.0	U
1,2,4-Trichlorobenzene	120-82-1	BLK	0.75U	ug/L	1.0	U
1,2-Dibromo-3-chloropropane	96-12-8	BLK	2.5U	ug/L	5.0	U
1,2-Dibromoethane	106-93-4	BLK	0.75U	ug/L	1.0	U
1,2-Dichlorobenzene	95-50-1	BLK	0.75U	ug/L	1.0	U
1,2-Dichloroethane	107-06-2	BLK	0.75U	ug/L	1.0	U
1,2-Dichloropropane	78-87-5	BLK	0.75U	ug/L	1.0	U
1,3-Dichlorobenzene	541-73-1	BLK	0.75U	ug/L	1.0	U
1,3-Dichloropropene, Total	542-75-6	BLK	1.5U	ug/L	2.0	U
1,4-Dichlorobenzene	106-46-7	BLK	0.75U	ug/L	1.0	U
2-Butanone	78-93-3	BLK	3.8U	ug/L	5.0	U
2-Hexanone	591-78-6	BLK	3.8U	ug/L	5.0	U
4-Methyl-2-Pentanone(MIBK)	108-10-1	BLK	3.8U	ug/L	5.0	U
Acetone	67-64-1	BLK	3.8U	ug/L	5.0	U
Benzene	71-43-2	BLK	0.75U	ug/L	1.0	U
Bromochloromethane	74-97-5	BLK	0.75U	ug/L	1.0	U
Bromodichloromethane	75-27-4	BLK	0.75U	ug/L	1.0	U
Bromoform	75-25-2	BLK	0.75U	ug/L	1.0	U
Bromomethane	74-83-9	BLK	0.75U	ug/L	1.0	U
Carbon Disulfide	75-15-0	BLK	0.75U	ug/L	1.0	U
Carbon Tetrachloride	56-23-5	BLK	0.75U	ug/L	1.0	U
Chlorobenzene	108-90-7	BLK	0.75U	ug/L	1.0	U
Chlorodibromomethane	124-48-1	BLK	0.75U	ug/L	1.0	U
Chloroethane	75-00-3	BLK	0.75U	ug/L	1.0	U
Chloroform	67-66-3	BLK	0.75U	ug/L	1.0	U
Chloromethane	74-87-3	BLK	0.75U	ug/L	1.0	U
cis-1,2-Dichloroethene	156-59-2	BLK	0.75U	ug/L	1.0	U
Cyclohexane	110-82-7	BLK	0.75U	ug/L	1.0	U
Dichlorodifluoromethane	75-71-8	BLK	0.75U	ug/L	1.0	U
Ethylbenzene	100-41-4	BLK	0.75U	ug/L	1.0	U
Freon 113	76-13-1	BLK	0.75U	ug/L	1.0	U
Iodomethane	74-88-4	BLK	0.75U	ug/L	1.0	U
Isopropylbenzene	98-82-8	BLK	0.75U	ug/L	1.0	U
Methyl acetate	79-20-9	BLK	0.75U	ug/L	1.0	U
Methyl cyclohexane	108-87-2	BLK	0.75U	ug/L	1.0	U
Methyl t-Butyl Ether	1634-04-4	BLK	0.75U	ug/L	1.0	U
Methylene Chloride	75-09-2	BLK	0.75U	ug/L	1.0	U
Styrene	100-42-5	BLK	0.75U	ug/L	1.0	U
Tetrachloroethene	127-18-4	BLK	0.75U	ug/L	1.0	U
Toluene	108-88-3	BLK	0.75U	ug/L	1.0	U
Total Xylenes	1330-20-7	BLK	2.3U	ug/L	3.0	U
trans-1,2-Dichloroethene	156-60-5	BLK	0.75U	ug/L	1.0	U



QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result	Units	LOQ	Qualifiers
Trichloroethene	79-01-6	BLK	0.75U	ug/L	1.0	U
Trichlorofluoromethane	75-69-4	BLK	0.75U	ug/L	1.0	U
Vinyl Chloride	75-01-4	BLK	0.75U	ug/L	1.0	U

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	BLK	30.30	30	101	81 - 118	
4-Bromofluorobenzene	460-00-4	BLK	29.30	30	97.5	85 - 114	
Dibromofluoromethane	1868-53-7	BLK	28.40	30	94.8	80 - 119	
Toluene-d8	2037-26-5	BLK	29.10	30	96.9	89 - 112	

Lab Control Standard 3692285 (LCS) Created on 07/08/2023 09:34 For QC Batch 1022851

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
1,1,1-Trichloroethane	71-55-6	LCS	20.30		20	102	74 - 131		
1,1,2,2-Tetrachloroethane	79-34-5	LCS	19.50		20	97.7	71 - 121		
1,1,2-Trichloroethane	79-00-5	LCS	19.30		20	96.3	80 - 119		
1,1-Dichloroethane	75-34-3	LCS	19.70		20	98.3	77 - 125		
1,1-Dichloroethene	75-35-4	LCS	19.90		20	99.5	71 - 131		
1,2,3-Trichlorobenzene	87-61-6	LCS	19.50		20	97.7	69 - 129		
1,2,4-Trichlorobenzene	120-82-1	LCS	19.90		20	99.4	69 - 130		
1,2-Dibromo-3-chloropropane	96-12-8	LCS	17.10		20	85.4	62 - 128		
1,2-Dibromoethane	106-93-4	LCS	19.20		20	96	77 - 121		
1,2-Dichlorobenzene	95-50-1	LCS	18.80		20	94.1	80 - 119		
1,2-Dichloroethane	107-06-2	LCS	20		20	100	73 - 128		
1,2-Dichloropropane	78-87-5	LCS	20		20	100	78 - 122		
1,3-Dichlorobenzene	541-73-1	LCS	18.50		20	92.5	80 - 119		
1,3-Dichloropropene, Total	542-75-6	LCS	37.50		40	93.6	75 - 124		
1,4-Dichlorobenzene	106-46-7	LCS	18.60		20	92.9	79 - 118		
2-Butanone	78-93-3	LCS	113		100	113	56 - 143		
2-Hexanone	591-78-6	LCS	110		100	110	57 - 139		
4-Methyl-2-Pentanone(MIBK)	108-10-1	LCS	106		100	106	67 - 130		
Acetone	67-64-1	LCS	127		100	127	39 - 160		
Benzene	71-43-2	LCS	20.20		20	101	79 - 120		
Bromochloromethane	74-97-5	LCS	21.30		20	107	78 - 123		
Bromodichloromethane	75-27-4	LCS	19.60		20	98	79 - 125		
Bromoform	75-25-2	LCS	17.70		20	88.3	66 - 130		
Bromomethane	74-83-9	LCS	20.70		20	104	53 - 141		
Carbon Disulfide	75-15-0	LCS	20		20	100	64 - 133		
Carbon Tetrachloride	56-23-5	LCS	19.20		20	96	72 - 136		
Chlorobenzene	108-90-7	LCS	18.70		20	93.6	82 - 118		
Chlorodibromomethane	124-48-1	LCS	18.50		20	92.3	74 - 126		
Chloroethane	75-00-3	LCS	15		20	74.9	60 - 138		



QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
Chloroform	67-66-3	LCS	20.10		20	101	79 - 124		
Chloromethane	74-87-3	LCS	20.80		20	104	50 - 139		
cis-1,2-Dichloroethene	156-59-2	LCS	20		20	100	78 - 123		
Cyclohexane	110-82-7	LCS	21.10		20	106	71 - 130		
Dichlorodifluoromethane	75-71-8	LCS	21.10		20	106	32 - 152		
Ethylbenzene	100-41-4	LCS	19.10		20	95.4	79 - 121		
Freon 113	76-13-1	LCS	20.50		20	102	70 - 136		
Iodomethane	74-88-4	LCS	24.60		20	123	69 - 131		
Isopropylbenzene	98-82-8	LCS	20.70		20	103	72 - 131		
Methyl acetate	79-20-9	LCS	23.40		20	117	56 - 136		
Methyl cyclohexane	108-87-2	LCS	21.10		20	106	72 - 132		
Methyl t-Butyl Ether	1634-04-4	LCS	21.50		20	108	71 - 124		
Methylene Chloride	75-09-2	LCS	20.80		20	104	74 - 124		
Styrene	100-42-5	LCS	19.50		20	97.5	78 - 123		
Tetrachloroethene	127-18-4	LCS	18.30		20	91.7	74 - 129		
Toluene	108-88-3	LCS	18.80		20	94.2	80 - 121		
Total Xylenes	1330-20-7	LCS	57.20		60	95.4	79 - 121		
trans-1,2-Dichloroethene	156-60-5	LCS	19.90		20	99.4	75 - 124		
Trichloroethene	79-01-6	LCS	19.10		20	95.6	79 - 123		
Trichlorofluoromethane	75-69-4	LCS	21.10		20	106	65 - 141		
Vinyl Chloride	75-01-4	LCS	23.30		20	116	58 - 137		

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	LCS	31.80	30	106	81 - 118	
4-Bromofluorobenzene	460-00-4	LCS	29.50	30	98.4	85 - 114	
Dibromofluoromethane	1868-53-7	LCS	30.20	30	101	80 - 119	
Toluene-d8	2037-26-5	LCS	29.20	30	97.2	89 - 112	

Matrix Spike 3692294 (MS) 3310646026 For QC Batch 1022851

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Matrix Spike Duplicate 3692295 (MSD) 3310646026 For QC Batch 1022851

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
1,1,1-Trichloroethane	71-55-6	MS	24	0	20	120	74 - 131		
1,1,1-Trichloroethane	71-55-6	MSD	20.70	0	20	104	74 - 131	RPD 14.60 (Max-20)	
1,1,2,2-Tetrachloroethane	79-34-5	MS	20.90	0	20	104	71 - 121		
1,1,2,2-Tetrachloroethane	79-34-5	MSD	20.40	0	20	102	71 - 121	RPD 2.36 (Max-20)	
1,1,2-Trichloroethane	79-00-5	MS	20.60	0	20	103	80 - 119		
1,1,2-Trichloroethane	79-00-5	MSD	19.40	0	20	97.1	80 - 119	RPD 5.97 (Max-20)	



QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
1,1-Dichloroethane	75-34-3	MS	22.40	0	20	112	77 - 125		
1,1-Dichloroethane	75-34-3	MSD	19.80	0	20	99.1	77 - 125	RPD 12.30 (Max-20)	
1,1-Dichloroethene	75-35-4	MS	24.10	0	20	120	71 - 131		
1,1-Dichloroethene	75-35-4	MSD	20.50	0	20	102	71 - 131	RPD 16.10 (Max-20)	
1,2,3-Trichlorobenzene	87-61-6	MS	18.70	0	20	93.6	69 - 129		
1,2,3-Trichlorobenzene	87-61-6	MSD	18.80	0	20	93.8	69 - 129	RPD 0.18 (Max-20)	
1,2,4-Trichlorobenzene	120-82-1	MS	19	0	20	95	69 - 130		
1,2,4-Trichlorobenzene	120-82-1	MSD	19	0	20	94.8	69 - 130	RPD 0.21 (Max-20)	
1,2-Dibromo-3-chloropropane	96-12-8	MS	17.40	0	20	86.9	62 - 128		
1,2-Dibromo-3-chloropropane	96-12-8	MSD	17.20	0	20	85.8	62 - 128	RPD 1.24 (Max-20)	
1,2-Dibromoethane	106-93-4	MS	19.70	0	20	98.7	77 - 121		
1,2-Dibromoethane	106-93-4	MSD	19.20	0	20	96.1	77 - 121	RPD 2.71 (Max-20)	
1,2-Dichlorobenzene	95-50-1	MS	19.70	0	20	98.5	80 - 119		
1,2-Dichlorobenzene	95-50-1	MSD	18.70	0	20	93.7	80 - 119	RPD 5.01 (Max-20)	
1,2-Dichloroethane	107-06-2	MS	21.80	0	20	109	73 - 128		
1,2-Dichloroethane	107-06-2	MSD	21	0	20	105	73 - 128	RPD 3.84 (Max-20)	
1,2-Dichloropropane	78-87-5	MS	22.10	0	20	111	78 - 122		
1,2-Dichloropropane	78-87-5	MSD	20.40	0	20	102	78 - 122	RPD 8.19 (Max-20)	
1,3-Dichlorobenzene	541-73-1	MS	20	0	20	100	80 - 119		
1,3-Dichlorobenzene	541-73-1	MSD	18.60	0	20	92.8	80 - 119	RPD 7.59 (Max-20)	
1,3-Dichloropropene, Total	542-75-6	MS	39.60	0	40	99.1	75 - 124		
1,3-Dichloropropene, Total	542-75-6	MSD	36.60	0	40	91.5	75 - 124	RPD 8.02 (Max-20)	
1,4-Dichlorobenzene	106-46-7	MS	20.20	0	20	101	79 - 118		
1,4-Dichlorobenzene	106-46-7	MSD	18.70	0	20	93.7	79 - 118	RPD 7.63 (Max-20)	
2-Butanone	78-93-3	MS	109	0	100	109	56 - 143		
2-Butanone	78-93-3	MSD	109	0	100	109	56 - 143	RPD 0.14 (Max-20)	
2-Hexanone	591-78-6	MS	115	0	100	115	57 - 139		
2-Hexanone	591-78-6	MSD	115	0	100	115	57 - 139	RPD 0.41 (Max-20)	
4-Methyl-2-Pentanone(MIBK)	108-10-1	MS	114	0	100	114	67 - 130		
4-Methyl-2-Pentanone(MIBK)	108-10-1	MSD	113	0	100	113	67 - 130	RPD 0.86 (Max-20)	
Acetone	67-64-1	MS	112	0	100	112	39 - 160		
Acetone	67-64-1	MSD	115	0	100	115	39 - 160	RPD 3.03 (Max-20)	
Benzene	71-43-2	MS	22.70	0	20	113	79 - 120		
Benzene	71-43-2	MSD	20.20	0	20	101	79 - 120	RPD 11.50 (Max-20)	
Bromochloromethane	74-97-5	MS	23.20	0	20	116	78 - 123		
Bromochloromethane	74-97-5	MSD	21.40	0	20	107	78 - 123	RPD 7.80 (Max-20)	
Bromodichloromethane	75-27-4	MS	21.30	0	20	106	79 - 125		
Bromodichloromethane	75-27-4	MSD	19.90	0	20	99.7	79 - 125	RPD 6.48 (Max-20)	
Bromoform	75-25-2	MS	17.50	0	20	87.3	66 - 130		
Bromoform	75-25-2	MSD	16.60	0	20	82.8	66 - 130	RPD 5.33 (Max-20)	
Bromomethane	74-83-9	MS	22.60	0	20	113	53 - 141		
Bromomethane	74-83-9	MSD	21.80	0	20	109	53 - 141	RPD 3.69 (Max-20)	
Carbon Disulfide	75-15-0	MS	23.80	0	20	119	64 - 133		
Carbon Disulfide	75-15-0	MSD	20.60	0	20	103	64 - 133	RPD 14.60 (Max-20)	
Carbon Tetrachloride	56-23-5	MS	21.90	0	20	110	72 - 136		
Carbon Tetrachloride	56-23-5	MSD	19.50	0	20	97.6	72 - 136	RPD 11.70 (Max-20)	
Chlorobenzene	108-90-7	MS	20.70	0	20	104	82 - 118		
Chlorobenzene	108-90-7	MSD	18.70	0	20	93.4	82 - 118	RPD 10.40 (Max-20)	
Chlorodibromomethane	124-48-1	MS	19.20	0	20	95.8	74 - 126		



QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

RESULTS

Compound	CAS No		Result (ug/L)	Orig. Result (ug/L)	Spk Added (ug/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
Chlorodibromomethane	124-48-1	MSD	17.80	0	20	89.1	74 - 126	RPD 7.14 (Max-20)	
Chloroethane	75-00-3	MS	18.80	0	20	93.9	60 - 138		
Chloroethane	75-00-3	MSD	16.20	0	20	81.2	60 - 138	RPD 14.60 (Max-20)	
Chloroform	67-66-3	MS	22.80	0.36	20	112	79 - 124		
Chloroform	67-66-3	MSD	20.40	0.36	20	100	79 - 124	RPD 11 (Max-20)	
Chloromethane	74-87-3	MS	26.10	0	20	130	50 - 139		
Chloromethane	74-87-3	MSD	23.50	0	20	118	50 - 139	RPD 10.40 (Max-20)	
cis-1,2-Dichloroethene	156-59-2	MS	23	0	20	115	78 - 123		
cis-1,2-Dichloroethene	156-59-2	MSD	20.50	0	20	102	78 - 123	RPD 11.70 (Max-20)	
Cyclohexane	110-82-7	MS	25	0	20	125	71 - 130		
Cyclohexane	110-82-7	MSD	21.90	0	20	110	71 - 130	RPD 12.90 (Max-20)	
Dichlorodifluoromethane	75-71-8	MS	31.30	0	20	157*	32 - 152		
Dichlorodifluoromethane	75-71-8	MSD	27.80	0	20	139	32 - 152	RPD 11.80 (Max-20)	
Ethylbenzene	100-41-4	MS	21.20	0	20	106	79 - 121		
Ethylbenzene	100-41-4	MSD	19.10	0	20	95.3	79 - 121	RPD 10.60 (Max-20)	
Freon 113	76-13-1	MS	24.50	0	20	122	70 - 136		
Freon 113	76-13-1	MSD	21.10	0	20	105	70 - 136	RPD 14.80 (Max-20)	
Iodomethane	74-88-4	MS	26.70	0	20	134*	69 - 131		
Iodomethane	74-88-4	MSD	25.10	0	20	125	69 - 131	RPD 6.50 (Max-20)	
Isopropylbenzene	98-82-8	MS	23.30	0	20	117	72 - 131		
Isopropylbenzene	98-82-8	MSD	20.80	0	20	104	72 - 131	RPD 11.30 (Max-20)	
Methyl acetate	79-20-9	MS	18	0	20	90	56 - 136		
Methyl acetate	79-20-9	MSD	18.10	0	20	90.3	56 - 136	RPD 0.38 (Max-20)	
Methyl cyclohexane	108-87-2	MS	23.90	0	20	119	72 - 132		
Methyl cyclohexane	108-87-2	MSD	21.30	0	20	107	72 - 132	RPD 11.40 (Max-20)	
Methyl t-Butyl Ether	1634-04-4	MS	22.50	0	20	113	71 - 124		
Methyl t-Butyl Ether	1634-04-4	MSD	21.80	0	20	109	71 - 124	RPD 3.24 (Max-20)	
Methylene Chloride	75-09-2	MS	23	0	20	115	74 - 124		
Methylene Chloride	75-09-2	MSD	21.70	0	20	108	74 - 124	RPD 6.17 (Max-20)	
Styrene	100-42-5	MS	21.30	0	20	107	78 - 123		
Styrene	100-42-5	MSD	19.40	0	20	96.9	78 - 123	RPD 9.59 (Max-20)	
Tetrachloroethene	127-18-4	MS	19.80	0	20	99	74 - 129		
Tetrachloroethene	127-18-4	MSD	17.50	0	20	87.4	74 - 129	RPD 12.50 (Max-20)	
Toluene	108-88-3	MS	21.40	0	20	107	80 - 121		
Toluene	108-88-3	MSD	18.60	0	20	93.2	80 - 121	RPD 13.90 (Max-20)	
Total Xylenes	1330-20-7	MS	63.70	0	60	106	79 - 121		
Total Xylenes	1330-20-7	MSD	57.80	0	60	96.4	79 - 121	RPD 9.68 (Max-20)	
trans-1,2-Dichloroethene	156-60-5	MS	23.80	0	20	119	75 - 124		
trans-1,2-Dichloroethene	156-60-5	MSD	20.60	0	20	103	75 - 124	RPD 14.50 (Max-20)	
Trichloroethene	79-01-6	MS	21.80	0	20	109	79 - 123		
Trichloroethene	79-01-6	MSD	19	0	20	95.1	79 - 123	RPD 13.60 (Max-20)	
Trichlorofluoromethane	75-69-4	MS	25.70	0	20	129	65 - 141		
Trichlorofluoromethane	75-69-4	MSD	21.40	0	20	107	65 - 141	RPD 18.50 (Max-20)	
Vinyl Chloride	75-01-4	MS	29.40	0	20	147*	58 - 137		
Vinyl Chloride	75-01-4	MSD	25.70	0	20	129	58 - 137	RPD 13.40 (Max-20)	



QUALITY CONTROL SAMPLES

VOLATILE ORGANICS (cont.)

SURROGATES

Compound	CAS No		Result (ug/L)	Expected (ug/L)	Rec. (%)	Limits (%)	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	MS	33.60	30	112	81 - 118	
1,2-Dichloroethane-d4	17060-07-0	MSD	33.20	30	111	81 - 118	
4-Bromofluorobenzene	460-00-4	MS	29.60	30	98.8	85 - 114	
4-Bromofluorobenzene	460-00-4	MSD	29.60	30	98.8	85 - 114	
Dibromofluoromethane	1868-53-7	MS	30.80	30	103	80 - 119	
Dibromofluoromethane	1868-53-7	MSD	30.70	30	102	80 - 119	
Toluene-d8	2037-26-5	MS	29.60	30	98.7	89 - 112	
Toluene-d8	2037-26-5	MSD	29.10	30	97.2	89 - 112	



QUALITY CONTROL SAMPLES

WET CHEMISTRY

QC Batch

QC Batch	1021282	Prep Method	N/A
Date	N/A	Analysis Method	SW846 9060A
Tech.			

Associated Samples

3310646002	3310646010	3310646011	3310646012
3310646013			

Matrix Spike 3690026 (MS) 3310704003 (non-Project Sample) For QC Batch 1021282

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Matrix Spike Duplicate 3690027 (MSD) 3310704003 (non-Project Sample) For QC Batch 1021282

RESULTS

Compound	CAS No		Result (mg/L)	Orig. Result (mg/L)	Spk Added (mg/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
Total Organic Carbon (TOC)	TOC	MS	13.70	5.30	6	139*	85 - 115		
Total Organic Carbon (TOC)	TOC	MSD	13.50	5.30	6	135*	85 - 115	RPD 1.55 (Max-20)	

Method Blank 3690024 (MB) Created on 06/30/2023 13:54 For QC Batch 1021282

RESULTS

Compound	CAS No		Result	Units	LOQ	Qualifiers
Total Organic Carbon (TOC)	TOC	BLK	0.50U	mg/L	1.0	U

Lab Control Standard 3690025 (LCSLOW) Created on 06/30/2023 13:54 For QC Batch 1021282

RESULTS

Compound	CAS No		Result (mg/L)	Orig. Result (mg/L)	Spk Added (mg/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
Total Organic Carbon (TOC)	TOC	LCS	1		1	105	85 - 115		

QC Batch

QC Batch	1021503	Prep Method	N/A
Date	N/A	Analysis Method	SW846 9060A
Tech.			

Associated Samples

3310646016	3310646037

Matrix Spike 3690512 (MS) 3310652008 (non-Project Sample) For QC Batch 1021503

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Matrix Spike Duplicate 3690513 (MSD) 3310652008 (non-Project Sample) For QC Batch 1021503



QUALITY CONTROL SAMPLES

WET CHEMISTRY (cont.)

RESULTS

Compound	CAS No		Result (mg/L)	Orig. Result (mg/L)	Spk Added (mg/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
Total Organic Carbon (TOC)	TOC	MS	7.40	1.10	6	106	85 - 115		
Total Organic Carbon (TOC)	TOC	MSD	7.50	1.10	6	107	85 - 115	RPD 0.83 (Max-20)	

Method Blank	3690506	(MB)				Created on 07/03/2023 14:15		For QC Batch 1021503	

RESULTS

Compound	CAS No		Result	Units	LOQ	Qualifiers
Total Organic Carbon (TOC)	TOC	BLK	0.50U	mg/L	1.0	U

Lab Control Standard	3690507	(LCSLOW)				Created on 07/03/2023 14:15		For QC Batch 1021503	

RESULTS

Compound	CAS No		Result (mg/L)	Orig. Result (mg/L)	Spk Added (mg/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
Total Organic Carbon (TOC)	TOC	LCS	1		1	103	85 - 115		

Matrix Spike	3690508	(MS)			3310646016			For QC Batch 1021503	

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Matrix Spike Duplicate	3690509	(MSD)			3310646016			For QC Batch 1021503	

RESULTS

Compound	CAS No		Result (mg/L)	Orig. Result (mg/L)	Spk Added (mg/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
Total Organic Carbon (TOC)	TOC	MS	756	159	600	99.5	85 - 115		
Total Organic Carbon (TOC)	TOC	MSD	778	159	600	103	85 - 115	RPD 2.91 (Max-20)	

QC Batch

Associated Samples

QC Batch	1021956	Prep Method	N/A
Date	N/A	Analysis Method	SW846 9060A
Tech.			

3310646014	3310646017	3310646035

Matrix Spike	3691602	(MS)			3311000001 (non-Project Sample)			For QC Batch 1021956	

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Matrix Spike Duplicate	3691603	(MSD)			3311000001 (non-Project Sample)			For QC Batch 1021956	



QUALITY CONTROL SAMPLES

WET CHEMISTRY (cont.)

RESULTS

Compound	CAS No		Result (mg/L)	Orig. Result (mg/L)	Spk Added (mg/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
Total Organic Carbon (TOC)	TOC	MS	6.40	0.12	6	104	85 - 115		
Total Organic Carbon (TOC)	TOC	MSD	6.40	0.12	6	104	85 - 115	RPD 0.44 (Max-20)	

Matrix Spike 3691604 (MS) 3311092008 (non-Project Sample) For QC Batch 1021956

****NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Matrix Spike Duplicate 3691605 (MSD) 3311092008 (non-Project Sample) For QC Batch 1021956

RESULTS

Compound	CAS No		Result (mg/L)	Orig. Result (mg/L)	Spk Added (mg/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
Total Organic Carbon (TOC)	TOC	MS	7.90	1.60	6	104	85 - 115		
Total Organic Carbon (TOC)	TOC	MSD	7.80	1.60	6	103	85 - 115	RPD 0.41 (Max-20)	

Method Blank 3691600 (MB) Created on 07/06/2023 13:11 For QC Batch 1021956

RESULTS

Compound	CAS No		Result	Units	LOQ	Qualifiers
Total Organic Carbon (TOC)	TOC	BLK	0.50U	mg/L	1.0	U

Lab Control Standard 3691601 (LCSLOW) Created on 07/06/2023 13:11 For QC Batch 1021956

RESULTS

Compound	CAS No		Result (mg/L)	Orig. Result (mg/L)	Spk Added (mg/L)	Rec. (%)	Limits (%)	RPD Limit (%)	Qualifiers
Total Organic Carbon (TOC)	TOC	LCS	1		1	103	85 - 115		



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Lab ID	Sample ID	Preparation Method	Prep Batch	Prep Date/Time	By	Analysis Method	Anly Batch
3310646001	MW10-3-20230627	N/A	N/A	N/A		SW846 8260C	1021857
3310646002	MW10-7-20230627	N/A	N/A	N/A		RSK 175	1022670
		N/A	N/A	N/A		SW846 8260C	1021857
		N/A	N/A	N/A		SW846 9060A	1021282
3310646003	PW10-2-20230627	N/A	N/A	N/A		SW846 8260C	1021857
3310646004	PZ10-7-20230627	N/A	N/A	N/A		SW846 8260C	1021857
3310646005	SW10-7-20230627	N/A	N/A	N/A		SW846 8260C	1021857
3310646006	SW10-8-20230627	N/A	N/A	N/A		SW846 8260C	1021857
3310646007	SW99-10-20230627	N/A	N/A	N/A		SW846 8260C	1021857
3310646008	SW10-6-20230627	N/A	N/A	N/A		SW846 8260C	1021857
3310646009	SW10-5-20230627	N/A	N/A	N/A		SW846 8260C	1021857
3310646010	MW10-11D-20230627	N/A	N/A	N/A		RSK 175	1022670
		N/A	N/A	N/A		SW846 9060A	1021282
3310646011	MW10-1DA-20230627	N/A	N/A	N/A		RSK 175	1022670
		N/A	N/A	N/A		SW846 9060A	1021282
3310646012	MW10-10D-20230627	N/A	N/A	N/A		RSK 175	1022670
		N/A	N/A	N/A		SW846 9060A	1021282
3310646013	MW5-1DA-20230627	N/A	N/A	N/A		RSK 175	1022670
		N/A	N/A	N/A		SW846 8260C	1022338
		N/A	N/A	N/A		SW846 9060A	1021282
3310646014	MW5-5D-20230627	N/A	N/A	N/A		RSK 175	1022670
		N/A	N/A	N/A		SW846 8260C	1021857
		N/A	N/A	N/A		SW846 9060A	1021956
3310646015	MW5-6-20230627	N/A	N/A	N/A		SW846 8260C	1022338
3310646016	RW5-1-20230627	N/A	N/A	N/A		RSK 175	1023280
		N/A	N/A	N/A		SW846 8260C	1022338
		N/A	N/A	N/A		SW846 9060A	1021503
3310646017	RW5-2-20230627	N/A	N/A	N/A		RSK 175	1023280
		N/A	N/A	N/A		SW846 8260C	1021857
		N/A	N/A	N/A		SW846 9060A	1021956
3310646018	RW5-4-20230627	N/A	N/A	N/A		SW846 8260C	1022338
3310646019	PW13-4D-20230627	N/A	N/A	N/A		SW846 8260C	1022338
3310646020	MW13-4D-20230627	N/A	N/A	N/A		SW846 8260C	1022338
3310646021	MW13-5D-20230627	N/A	N/A	N/A		SW846 8260C	1022338
3310646022	PW13-1-20230627	N/A	N/A	N/A		SW846 8260C	1022338
3310646023	MW8-11D-20230627	N/A	N/A	N/A		SW846 8260C	1022338
3310646024	MW3-3DA-20230627	N/A	N/A	N/A		SW846 8260C	1022338
3310646025	MW3-4DA-20230627	N/A	N/A	N/A		SW846 8260C	1022338
3310646026	SW3-2-20230627	N/A	N/A	N/A		SW846 8260C	1022851
3310646027	SW3-3-20230627	N/A	N/A	N/A		SW846 8260C	1022338
3310646028	SW3-15-20230627	N/A	N/A	N/A		SW846 8260C	1022338
3310646029	PZ3-7D-20230627	N/A	N/A	N/A		SW846 8260C	1022338
3310646030	PZ3-8D-20230627	N/A	N/A	N/A		SW846 8260C	1022338
3310646031	PW3-3A-20230627	N/A	N/A	N/A		SW846 8260C	1022338
3310646032	TB-01-20230627	N/A	N/A	N/A		SW846 8260C	1021857
3310646033	TB-02-20230627	N/A	N/A	N/A		SW846 8260C	1021857
3310646034	DUP-01-20230627	N/A	N/A	N/A		SW846 8260C	1021857



Lab ID	Sample ID	Preparation Method	Prep Batch	Prep Date/Time	By	Analysis Method	Anly Batch
3310646035	DUP-02-20230627	N/A	N/A	N/A		RSK 175	1023280
		N/A	N/A	N/A		SW846 8260C	1021857
		N/A	N/A	N/A		SW846 9060A	1021956
3310646036	DUP-03-20230627	N/A	N/A	N/A		SW846 8260C	1021857
3310646037	PW10-1-20230627	N/A	N/A	N/A		RSK 175	1023280
		N/A	N/A	N/A		SW846 8260C	1021857
		N/A	N/A	N/A		SW846 9060A	1021503



Customer Information				Project Information				ALS Project Manager				Work Order #			
Purchase Order				Project Name				Parameter/Method Request for Analysis							
Work Order				NFARS - Niagara Falls Air Base				A 8260 VOCs							
Company Name				Project Number				B RSK							
Send Report To				Bill To Company				C TOC							
Address				Invoice Attn.				D							
City/State/Zip				City/State/Zip				E							
Phone				Phone				F							
Fax				Fax				G							
e-Mail Address				e-Mail Address				H							
								I							
								J							
Sample Description				Date				# Bottles				Pres.			
1 MW10-3-20230627				06/27/23				3				X			
2 MW10-7-20230627				06/27/23				7				X			
3 PW10-1-20230627				06/27/23				7				X			
4 PW10-2-20230627				06/27/23				3				X			
5 PZ10-7-20230627				06/27/23				3				X			
6 SW10-7-20230627				06/27/23				3				X			
7 SW10-8-20230627				06/27/23				3				X			
8 SW99-10-20230627				06/27/23				3				X			
9 SW10-6-20230627				06/27/23				3				X			
10 SW10-5-20230627				06/27/23				3				X			
Sampler(s): Please Print & Sign				Shipment Method:				Required Turnaround Time:				Results Due Date:			
Adam Svensson				FedEx				☒ STD 10 Wk Days ☐ 5 Wk Days ☐ 2 Wk Days ☐ Other				☐ 24 Hour			
Relinquished by:				Received by:				Notes:							
Adam Svensson				FedEx											
Relinquished by:				Received by (Laboratory):				QC Packages: (Check Box Below)							
Adam Svensson				FedEx											
Logged by (Laboratory):				Time:				Level II: Standard QC				TRRP - Checklist			
Adam Svensson				1600											
Relinquished by:				Time:				Level III: Std QC + Raw Data				TRRP Level IV			
Adam Svensson				9:34											
Logged by (Laboratory):				Time:				Level IV: SW846 CLP-Like							
Adam Svensson				9:34											
Relinquished by:				Time:				Other:							
Adam Svensson				9:34											
Logged by (Laboratory):				Time:											
Adam Svensson				9:34											
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Adam Svensson				9:34											
Relinquished by:				Time:											
Adam Svensson				9											



ALS Environmental
Laboratory location:
1565 Jefferson Rd
Building 300, Suite 360

Chain of Custody Form

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3340646

Customer Information				ALS Project Manager				Work Order #			
Project Information				Parameter/Method Request for Analysis							
Purchase Order	Project Name	Project Number	A 8260 VOCs								
Work Order	NFARS - Niagara Falls Air Base	30036646	B RSK								
Company Name	Arcadis	Bill To Company	C TOC								
Send Report To	Corsey Averill	Invoice Attn.	D								
Address	110 W. Fayette, Suite 300	Address	E								
City/State/Zip	Syracuse, NY 13202	City/State/Zip	F								
Phone	315-415-4394	Phone	G								
Fax		Fax	H								
e-Mail Address	corsey.averill@arcadis.com	e-Mail Address	I								
No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	E	
1	MW10-1D-20230627	06/27/23	1010	GW		4		X	X		
2	MW10-1DA-20230627	06/27/23	1100	GW		4		X	X		
3	MW10-10D-20230627	06/27/23	1130	GW		4		X	X		
4	MW5-1DA-20230627	06/27/23	1450	GW		7		X	X		
5	MW5-5D-20230627	06/27/23	1350	GW		7		X	X		
6	MW5-6-20230627	06/27/23	1400	GW		3		X	X		
7	RW5-1-20230627	06/27/23	1430	GW		19		X	X		
8	RW5-2-20230627	06/27/23	1330	GW		13		X	X		
9	RW5-4-20230627	06/27/23	1410	GW		3		X	X		
10	PW13-4D-20230627	06/27/23	1520	GW		3		X	X		
Shipper Method: FedEx				Required Turnaround Time: ☒ STD 10 Wk Days ☐ 5 Wk Days ☐ 2 Wk Days ☐ Other				Results Due Date:			
Relinquished by: Adam Svensson				Received by: FedEx				Notes: MS/MSD collected at RWS-2-20230627 and RWS-1-20230627 for 8260 analysis. MS/MSD collected at RWS-1-20230627 for RSK and TOC analyses.			
Relinquished by: FedEx				Received by: FedEx				QC Packages: (Check Box Below)			
Logged by (Laboratory):				Checked by (Laboratory):				Level II: Standard QC			
Preservative Key: 1400 2400 3400 4400 5400 6400 7000 8400 9400				Time: 9:34				Level III: Std QC + Raw Data			
								Level IV: SW846 CLP-Like			
								Other:			

Receipt Info Completed By: MW
Cooler Custody Seal Intact: Y
Sample Custody Seal Intact: Y
Received on Ice: Y
Cooler & Samples Intact: Y
Correct Containers Provided: Y
Sample Label/COC Agree: Y
Adequate Sample Volumes: Y
CR6 Samples Filtered: Y
OP Samples Filtered: Y
VOA Headspace Present: Y
VOA Trip Blank: Y
N/A 4 Days: Y
Rad Screen (uCi): 78017867957
Casing/Tracking: Y
SDWA Compliance: Y
PWSID: Y
WV Containers 0-6 C: Y

Temp By: 79C
Therm ID: 570

MS/MSD collected at RWS-2-20230627 and RWS-1-20230627 for 8260 analysis. MS/MSD collected at RWS-1-20230627 for RSK and TOC analyses.

QC Packages: (Check Box Below)

Level II: Standard QC

Level III: Std QC + Raw Data

Level IV: SW846 CLP-Like

Other:

Note: Any changes must be made in writing once samples and COC Form have been submitted to ALS Laboratory Group.

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ALS Environmental
Laboratory location:
1565 Jefferson Rd
Building 300, Suite 360

Chain of Custody Form

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3316646

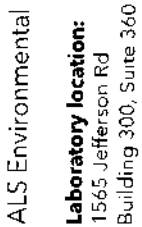
Customer Information				Project Information				ALS Project Manager				Work Order #			
Purchase Order				Project Name				Parameter/Method Request for Analysis							
Work Order				Project Number				A 8260 VOCs							
Company Name				Bill To Company				B RSK							
Send Report To				Invoice Attn.				C TOC							
Address				Address				D							
City/State/Zip				City/State/Zip				E							
Phone				Phone				F							
Fax				Fax				G							
e-Mail Address				e-Mail Address				H							
								I							
								J							
No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C						
1	MW13-4D-20230627	06/27/23	1510	GW		3	X								
2	MW13-5D-20230627	06/27/23	1530	GW		3	X								
3	PW13-1-20230627	06/27/23	1540	GW		3	X								
4	MW8-11D-20230627	06/27/23	1550	GW		3	X								
5	MW3-3DA-20230627	06/27/23	1640	GW		3	X								
6	MW3-4DA-20230627	06/27/23	1700	GW		3	X								
7	SW3-2-20230627	06/27/23	1600	GW		3	X								
8	SW3-3-20230627	06/27/23	1650	GW		3	X								
9	SW3-15-20230627	06/27/23	1620	GW		3	X								
10	PZ3-7D-20230627	06/27/23	1740	GW		3	X								
Sampler(s): Please Print & Sign				Shipment Method:				Required Turnaround Time:				Results Due Date:			
Adam Svensson				FedEx				☒ STD 10 Wk Days ☐ 5 Wk Days ☐ 2 Wk Days ☐ Other				☐ 24 Hour			
Relinquished by:				Received by:				Notes:							
Date: 6/28/23				Time: 1600				Received by (Laboratory):							
Relinquished by: Fed Ex				Time: 9:34				Received by (Laboratory):							
Date: 6/29/23				Time: 9:34				Checked by (Laboratory):							
Date: 6/29/23				Time: 9:34				Cooler Temp:							
Logged by (Laboratory):				Date: 6/29/23				Level II: Standard QC				TRRP-Checklist			
Date: 6/29/23				Time: 9:34				Level III: Std QC + Raw Data				TRRP Level IV			
Date: 6/29/23				Time: 9:34				Level IV: SW846 CLP-Like							
Date: 6/29/23				Time: 9:34				Other:							
Date: 6/29/23				Time: 9:34				QC Package: (Check Box Below)							
Date: 6/29/23				Time: 9:34				Level II: Standard QC				TRRP-Checklist			
Date: 6/29/23				Time: 9:34				Level III: Std QC + Raw Data				TRRP Level IV			
Date: 6/29/23				Time: 9:34				Level IV: SW846 CLP-Like							
Date: 6/29/23				Time: 9:34				Other:							

Temp By: WQ Temp (°C) 7C
Temp ID: 570
Receipt Info Completed By: MWP
Cooler Custody Seal Intact: Y N
Sample Custody Seal Intact: Y N
Received on Ice: Y N
Cooler & Samples Intact: Y N
Correct Containers Provided: Y N
Sample Label/COC Agree: Y N
Adequate Sample Volumes: Y N
CR6 Samples Filtered: Y N
QP Samples Filtered: Y N
VOA Headspace Present: Y N
Voa Trip Blank: Y N
NIS 4 Days?: Y N
Rad Screen (uCi): Y N
Courier/Tracking #: Y N
SDWA Compliance: Y N
PWSID: Y N
WV Containers 0-6 C: Y N

QC Package: (Check Box Below)
Level II: Standard QC
Level III: Std QC + Raw Data
Level IV: SW846 CLP-Like
Other:

Note: Any changes must be made in writing once samples and COC Form have been submitted to ALS Laboratory Group.

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Chain of Custody Form

Page 4 of 4

3310646

Customer Information						Project Information				ALS Project Manager				Work Order #			
Purchase Order		Project Name	NFARS - Niagara Falls Air Base			Parameter/Method Request for Analysis											
Company Name	Arcadis	Project Number	30036646			A B260 VOCs											
Send Report To	Corey Averill	Bill To Company				B RSK											
Address	110 W. Fayette, Suite 300	Invoice Attn.				C TOC											
City/State/Zip	Syracuse, NY 13202	City/State/Zip				D											
Phone	315-415-4394	Phone				E											
Fax		Fax				F											
e-Mail Address	corey_averill@arcadis.com	e-Mail Address				G											
No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	H						
1	PZ3-8D-20230627	06/27/23	1730	GW		3	X				I						
2	PW3-3A-20230627	06/27/23	1710	GW		3	X				J						
3	TB-01-20230627	06/27/23	1045	W		3	X				Hold						
4	TB-02-20230627	06/27/23	1045	W		3	X										
5	DUP-01-20230627	06/27/23	----	GW		3	X										
6	DUP-02-20230627	06/27/23	----	GW		7	X	X	X								
7	DUP-03-20230627	06/27/23	----	GW		3	X										
8																	
9																	
10																	

Temp ID: 570
Temp By: MWP
WO Temp PC: JTC

Receipt Info Completed By:
Cooler Custody Seal Intact
Sample Custody Seal Intact
Received on Ice
Cooler & Samples Intact
Correct Containers Provided
Sample Lab/COC Agree
Adequate Sample Volumes
CRS Samples Filtered
OP Samples Filled
VOA Headspace Present
VOA Trip Blank
MS 4 Days?
Rad Screen (ut i)
Courier Tracking #:
SDWA Compliance
PWSID
WV Containers 0-6 C

Required Turnaround Time:
☒ STD 10 Wk Days ☐ 5 Wk Days ☐ 2 Wk Days ☐ Other _____
☐ 24 Hour

Results Due Date: _____

Notes:

Shipment Method: FedEx

Received by: Fed Ex

Received by (Laboratory): [Signature]

Checked by (Laboratory): [Signature]

QC Package: (Check Box Below)
Level II: Standard OC X
Level III: Std QC + Raw Data
Level IV: SW846 CLP-Like

Other: _____

Relinquished by: Adam Svensson

Relinquished by: Fed Ex

Tagged by (Laboratory): [Signature]

Preservative Key: 1-HCL 2-HNO3 3-H2SO4 4-NH4OH 5-BASIS 6-NATURAL 7-OTHER 8-FACILITY C 9-UNK

Note: Any changes must be made in writing once samples and COC Form have been submitted to ALS Laboratory.

2. All samples must be submitted to ALS Laboratory Group.

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Data Usability Summary Report and DUSR Table

Data Usability Summary Report

**Northeast Group Optimized Remediation Contract
Niagara Falls Air Reserve Station, New York**

2023 Sampling Events

June 6, 2024

Data Usability Summary Report

2023 Sampling Events

June 6, 2024

Prepared By:

SERES-Arcadis SB JV, LLC
10205 Westheimer Road, Suite 800
Houston
Texas 77042
Phone: 713 953 4800

Prepared For:

U.S. Army Corps of Engineers, Baltimore District
Air Force Civil Engineer Center,
Environmental Operations Division
(AFCEC/CZO)

Our Ref:

30036646



Sharon Pennington
Program Chemist

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Table 1 Data Usability Summary Table

Appendices

Appendix A. LDC Data Validation Reports

Acronyms and Abbreviations

%D	percent difference
%R	percent recovery
ARS	Air Reserve Station
ALS	ALS Environmental, Middletown, PA
DoD	Department of Defense
DUSR	data usability summary report
DVR	data validation report
ELAP	Environmental Laboratory Accreditation Program
ICV/CCV	initial calibration verification/continuing calibration verification
LCS/LCSD	laboratory control sample/laboratory control sample duplicate
LDC	Laboratory Data Consultants
LOQ	limit of quantitation
MS/MSD	matrix spike/matrix spike duplicate
NELAP	National Environmental Laboratory Accreditation Program
QA	quality assurance
QAPP	Quality Assurance Project Plan
QC	quality control
QSM	Quality System Manual
RPD	relative percent difference
SDG	sample delivery group
SERES-Arcadis	SERES-Arcadis SB JV, LLC
USDOD	United States Department of Defense
USEPA	United States Environmental Protection Agency
VOC	volatile organic compounds

Executive Summary

This Data Usability Summary Report (DUSR) for Niagara Falls Air Reserve Station (ARS) located in New York for the 2023 sampling event describes the findings of the data review and validation and is provided to document the quality of the analytical data used for project decisions. A Data Usability Summary Table at the end of this DUSR lists the data that was qualified and the reason for qualification. Only the sample locations associated with this site and sampling event in the associated laboratory data packages and data validation reports are addressed in this report. The text below adds details where further discussion is warranted. The project-specific sampling and analysis, overall quality control (QC), and quality assurance protocols are presented in the Draft Final Quality Assurance Project Plan, Northeast Group Optimized Remediation Contract, Niagara Falls Air Reserve Station, New York (May 2022).

Samples were shipped to ALS Environmental (ALS), Middletown, Pennsylvania for analysis. ALS is a United States Department of Defense (DoD) Environmental Laboratory Accreditation Program (ELAP) and National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory. The analytical sample delivery groups (SDGs) and associated LDC validation reports are listed in the table below. Summaries of the sample IDs and their associated laboratory IDs, SDGs, sampling dates, and analyses performed are provided in the laboratory reports and data validation reports (DVRs).

In accordance with the project QAPP data review requirements, Stage 2b, and 10 percent Stage 4 validation of the analytical data was performed by Laboratory Data Consultants (LDC), a third-party data validation firm. The validation was performed in accordance with the guidelines and control criteria specified in the following documents:

USDOD. Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.3 May 2019.

USDOD. DoD General Data Validation Guidelines, November 2019.

USDOD. DoD Data Validation Guidelines Module 1: Data Validation Procedures for Organic Analysis by GC/MS, May 2020.

Draft Final Quality Assurance Project Plan, Northeast Group Optimized Remediation Contract, Niagara Falls Air Reserve Station, New York (May 2022).

The laboratory data packages and validation reports that were reviewed for this DUSR are listed below.

Sample Delivery Groups (SDG)	Validation Report	Matrix	Parameters	Validation Level
AUC037/ 3277387	55964	Water	Volatile Organic Compounds (VOCs)	Stage 2a: 1 field sample
AUC041/3297717 AUC045/3310646	57143	Water	VOCs, Total Organic Carbon (TOC), Methane, Ethane, & Ethene (Gases)	Stage 2a/4: 40 field samples 4 field duplicate
AUC057/3331303 AUC058/3331362 AUC046/3315995	58196	Water	VOCs, TOC, Gases	Stage 2a: 30 field samples 2 field duplicate

1 Precision

Precision is expressed as a relative percent difference (RPD) between the results of replicate sample analyses: sample duplicates, laboratory control sample duplicates (LCSDs), and matrix spike duplicates (MSDs). The RPD limit for LCSDs and MSDs is 20 percent. Field duplicates were collected at a frequency of 5 percent. Unless documented below or in the Data Usability Summary table, the RPD between the parent samples and associated field duplicates were within acceptable limits of 30 percent for water matrix.

Groundwater sample MW5-5D-20230411 was identified as the parent sample to field duplicate sample DUP-01-20230411. The evaluation of the parent sample and field duplicate indicated precision was within criteria of 30 percent RPD for VOCs.

Groundwater sample MW5-5D-20230627 was identified as the parent sample to field duplicate sample DUP-02-20230627. The evaluation of the parent sample and field duplicate indicated precision was within criteria of 30 percent RPD for VOCs.

Groundwater sample RW5-2-20230627 was identified as the parent sample to field duplicate sample DUP-01-20230627-1. The evaluation of the parent sample and field duplicate indicated precision was within criteria of 30 percent RPD for volatile organic compounds (VOCs).

Groundwater sample SW3-2-20230627 was identified as the parent sample to field duplicate sample DUP-03-20230627. The evaluation of the parent sample and field duplicate indicated precision was within criteria of 30 percent RPD for VOCs.

Groundwater sample RW5-1-20231102 was identified as the parent sample to field duplicate sample DUP-01-20231102. The evaluation of the parent sample and field duplicate indicated precision was within criteria of 30 percent RPD for VOCs.

Groundwater sample SW3-2-20231102 was identified as the parent sample to field duplicate sample DUP-02-20231102. The evaluation of the parent sample and field duplicate indicated precision was within criteria of 30 percent RPD for VOCs.

2 Accuracy

Accuracy is demonstrated by recovery of target analytes from fortified blank and sample matrices, LCS/LCSDs and MS/MSDs, respectively. The recovery of target analytes from fortified samples is compared to DoD QSM 5.3 and QAPP acceptance criteria. In addition, Stage 4 validation of initial and continuing calibration results provide information on analytical accuracy. Unless documented below or in the Data Usability Summary table, the recoveries of LCS, MS/MSD, and surrogates, and calibration criteria, were within acceptable limits.

3 Representativeness

Representativeness is the degree to which sample data accurately and precisely represent site conditions and is dependent on sampling and analytical variability and the variability (or homogeneity) of the site itself. The use of the prescribed field and laboratory analytical methods with associated holding times and preservation requirements are intended to provide representative data.

All samples were collected and submitted for analysis in accordance with the procedures and sampling plan specified in the site QAPP and field SOPs. Analysis of samples was in accordance with the QAPP, DoD QSM, and laboratory SOPs. All analyses were performed within specified hold times except for the VOC analysis of a field sample and field duplicate, and the diluted analysis for one compound that was over calibration range in the undiluted analysis as noted in the Data Usability Summary Table.

4 Sensitivity

Sensitivity describes the relationship between the laboratory quantitation limits and the project action limits. Reported laboratory quantitation limits are compared to the project detection limits to ensure that the analytical methods are capable of quantifying target analytes to a level that would satisfy DQOs.

The reported detection limits met the project required detection limits as listed in the QAPP.

5 Completeness

The completeness for this data set met the criteria of 90 percent. No results were qualified as potentially unusable. The field completeness is 100 percent; all planned sample locations were collected and submitted for analysis.

6 Conclusions

The overall assessment of the field samples, QA/QC data review by manual validation of the 2023 data set from Niagara Falls ARS met project requirements and completeness goals. Based upon the Stage 2a and Stage 4 data validation, all results are considered valid and usable.

Tables

Data Usability Summary Table

Appendix A

Data Validation Reports

SERES-Arcadis SB JV, LLC
10205 Westheimer Road, Suite 800
Houston
Texas 77042
Phone: 713 953 4800
www.arcadis.com

DATA USABILITY SUMMARY TABLE
Niagara Falls ARS; 2023 Sampling Events

Sample Locations	Compound	Qualifier	Reason
MW5-5D-20230411 RW5-2-20230411 RW5-1-20230411 MW5-1DA-20230411 MW10-1DA-20230411	Dichlorodifluoromethane Chloromethane Iodomethane 1,2,3-Trichlorobenzene	UJ	Initial calibration verification (ICV) %D >20%
MW5-5D-20230411 RW5-2-20230411 RW5-1-20230411 MW5-1DA-20230411 MW10-1DA-20230411	Bromomethane	UJ	Continuing calibration verification (CCV) %D >20%
Trip Blank (3297717)	All target VOCs	UJ non-detects	Hold time exceedance
MW5-5D-20221206	Iodomethane	JB+	Method blank contamination
MW10-7-20230411 PW10-1-20230411 MW10-11D-20230411 MW10-10D-20230411	Bromomethane	UB	Method blank contamination
MW5-5D-20231206	Iodomethane	JB+	Method blank contamination
MW13-5D-20231102 PW13-1-20231102 MW-13-4D-20231102 PW13-4D-20231102	Bromomethane Iodomethane	UJ	Initial calibration verification (ICV) %D >20%
MW13-5D-20231102 PW13-1-20231102 MW-13-4D-20231102 PW13-4D-20231102	Iodomethane	UJ	Continuing calibration verification (CCV) %D >20%
RW5-1-20231102	Total Organic Carbon	J- (detects)	Continuing calibration verification (CCV) %D >10%
PZ3-6D-20230801	Methyl acetate	UB	Method Blank contamination
RW5-2-20230627 RW5-1-20230627	Vinyl chloride	J+	MS/MSD %R, high bias
RW5-1-20230411MS/MSD (RW5-1-20230411)	1,2,3-Trichlorobenzene	J	MS/MSD RPD
DUP-01-20230411DUP 3655721 DUP	Methane	J	Duplicate Sample Analysis - RPD
SW3-2-20231102 (MS/MSD)	Iodomethane	UJ	MS/MSD %R, low bias
MW5-1DA-20231102 DUP MW5-1DA-20231102	Methane	J (detects)	Duplicate Sample Analysis - RPD
MW5-5D-20230411 DUP-01-20230411 RW5-2-20230411 RW5-1-20230411 MW5-1DA-20230411 MW10-1DA-20230411 MW10-7-20230411 PW10-1-20230411 MW10-11D-20230411 MW10-10D-20230411	Ethane, Ethene, Methane	J (detects), UJ (non-detects)	No LCS associated with these sample.

Sample Locations	Compound	Qualifier	Reason
MW10-7-20230627 MW10-11D-20230627 MW10-1DA-20230627 MW10-10D-20230627 MW5-1DA-20230627 MW5-5D-20230627 RW5-1-20230627 RW5-2-20230627 DUP-01-20230627 PW10-1-20230627	Ethane, Ethene, Methane	J (detects), UJ (non-detects)	No LCS associated with these sample.
MW5-1DA-20231102 DUP-01-20231102 SW99-10-20231102 SW10-7-20231102 MW10-3D-20231102 SW10-5-20231102 SW10-8-20231102 MW10-11D-20231102 MW10-9D-20231102 SW10-6-20231102 PW10-1-20231102 MW10-7-20231102 MW10-4E-20231102	Iodomethane	J- (detects), UJ (non-detects)	LCS %R, low bias
MW5-1DA-20231102 RW5-1-20231102 MW10-11D-20231102 PW10-1-20231102 MW10-7-20231102 MW10-1DA-20231102 MW10-10D-20231102 DUP-03-20231102 MW5-5D-20231102 RW5-2-20231102 MW5-1DA-20231102	Ethane, Ethene, Methane	J (detects), UJ (non-detects)	No LCS associated with these sample.
MW15-5R-20231102	Iodomethane	UJ (non-detects)	LCS %R, low bias
MW5-5D-20230411 DUP-01-20230411	Methane	J	Field Duplicate RPD
MW5-5D-20230627 DUP-02-20230627	Methane	J	Field Duplicate RPD
MW5-5D-20231102 DUP-03-20231102	Methane	J	Field Duplicate RPD

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however, the reported concentration is estimated due to non-conformances discovered during data validation.
- J+ (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however, the reported concentration is estimated due to non-conformances discovered during data validation. Result may be biased high.
- J- (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however, the reported concentration is estimated due to non-conformances discovered during data validation. Result may be biased low.
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however, the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

UB (Non-detect): The compound or analyte was analyzed for and positively identified by the laboratory; however, the reported concentration is qualified as non-detect at the limit of quantitation (LOQ) due to blank contamination in an associated QA blank.

Data Validation Report



LABORATORY DATA CONSULTANTS, INC.

2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

ARCADIS U.S., Inc.
10 Friends Ln, Suite 200
Newtown, PA 18940
ATTN: Ms. Carmen Vidal
carmen.vidal@arcadis.com

October 3, 2023

SUBJECT: NE ORC Niagara Falls - Data Validation

Dear Ms. Vidal,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on July 18, 2023. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project #57143:

SDG #

Fraction

AUC041/3297717

Volatiles, Total Organic Carbon, Methane, Ethane, & Ethene

AUC045/3310646

The data validation was performed under Level II & IV guidelines. The analysis was validated using the following documents, as applicable to each method:

- Final Remedial Action Quality Assurance Project Plan for Sites FT005, LF008, ST010, SS014, DS002, AND DS004, Niagara Falls Air Reserve Station, New York (August 2015)
- U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.3 (2019)
- U.S. Department of Defense (DoD) Data Validation Guidelines Module 1: Data Validation Procedure for Organic Analysis by GC/MS (May 2020)
- U.S. Department of Defense (DoD) Data Validation Guidelines Module 4: Data Validation Procedure for Organic Analysis by GC (March 2021)
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014; update VI, July 2018

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
pgeng@lab-data.com
Project Manager/Senior Chemist

V:\LOGIN\Arcadis\Niagara Falls\57143ST.wpd

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: NE ORC Niagara Falls

LDC Report Date: September 25, 2023

Parameters: Volatiles

Validation Level: Level II & IV

Laboratory: ALS Environmental, Middletown, PA

Sample Delivery Group (SDG): AUC041/3297717

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
MW5-5D-20230411**	3297717001**	Water	04/11/23
DUP-01-20230411	3297717002	Water	04/11/23
RW5-2-20230411**	3297717003**	Water	04/11/23
RW5-1-20230411**	3297717004**	Water	04/11/23
MW5-1DA-20230411**	3297717005**	Water	04/11/23
MW10-1DA-20230411**	3297717006**	Water	04/11/23
MW10-7-20230411	3297717007	Water	04/11/23
PW10-1-20230411	3297717008	Water	04/11/23
MW10-11D-20230411	3297717009	Water	04/11/23
MW10-10D-20230411	3297717010	Water	04/11/23
Trip Blank	3297717011	Water	02/24/23
RW5-1-20230411MS	3297717004MS	Water	04/11/23
RW5-1-20230411MSD	3297717004MSD	Water	04/11/23

**Indicates sample underwent Level IV validation

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Remedial Action Quality Assurance Project Plan for Sites FT005, LF008, ST010, SS014, DS002, AND DS004, Niagara Falls Air Reserve Station, New York (August 2015), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.3 (2019), and the U.S. Department of Defense (DoD) Data Validation Guidelines Module 1: Data Validation Procedure for Organic Analysis by GC/MS (May 2020). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Volatile Organic Compounds (VOCs) by Environmental Protection Agency (EPA) SW 846 Method 8260C

All sample results were subjected to Level II data validation, which comprises an evaluation of quality control (QC) summary results. Samples appended with a double asterisk on the cover page were subjected to Level IV data validation, which is comprised of the QC summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

- J+ (Estimated, High Bias): The analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated, displaying high bias, due to non-conformances discovered during data validation.
- J- (Estimated, Low Bias): The analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated, displaying low bias, due to non-conformances discovered during data validation.
- J (Estimated, Bias Indeterminate): The analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation. Bias is indeterminate.
- U (Non-detected): The analyte was analyzed for and positively identified by the laboratory; however the analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- B (Blank contamination): The analyte was found in an associated blank as well as in the sample.
- UB (Blank contamination): The analyte was found in an associated blank above one half the LOQ, as well as in the sample.
- X (Exclusion of data recommended): 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. Exclusion of the data is recommended.
- NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met with the following exceptions:

Sample	Analyte	Total Days From Sample Collection Until Analysis	Required Holding Time (in Days) From Sample Collection Until Analysis	Flag	A or P
Trip Blank	All analytes	52	14	UJ (all non-detects)	A

II. GC/MS Instrument Performance Check

A bromofluorobenzene (BFB) tune was performed at 12 hour intervals.

All ion abundance requirements were met.

Instrument performance check data were not reviewed for Level II validation.

III. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

For analytes where average relative response factors (RRFs) were utilized, the percent relative standard deviations (%RSD) were less than or equal to 15.0%.

In the case where the laboratory used a calibration curve to evaluate the analytes, all coefficients of determination (r^2) were greater than or equal to 0.990.

Average relative response factors (RRF) for all analytes were within validation criteria.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 20.0% for all analytes with the following exceptions:

Date	Analyte	%D	Associated Samples	Flag	A or P
04/22/23	Dichlorodifluoromethane Chloromethane Iodomethane 1,2,3-Trichlorobenzene	60.69 27.23 32.84 31.67	MW5-5D-20230411** RW5-2-20230411** RW5-1-20230411** MW5-1DA-20230411** MW10-1DA-20230411**	UJ (all non-detects) UJ (all non-detects) UJ (all non-detects) UJ (all non-detects)	A

Initial calibration data were not reviewed for Level II validation.

IV. Continuing Calibration

The percent differences (%D) were less than or equal to 20.0% for all analytes.

The percent differences (%D) of the ending continuing calibration verifications (CCVs) were less than or equal to 50.0% for all analytes with the following exceptions:

Date	Analyte	%D	Associated Samples	Flag	A or P
04/24/23	Bromomethane	54.8	MW5-5D-20230411** RW5-2-20230411** RW5-1-20230411** MW5-1DA-20230411** MW10-1DA-20230411**	UJ (all non-detects)	A

All of the continuing calibration relative response factors (RRF) were within validation criteria

Continuing calibration data were not reviewed for Level II validation.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks with the following exceptions:

Blank ID	Analysis Date	Analyte	Concentration	Associated Samples
MB 978892	04/25/23	1,2,3-Trichlorobenzene Bromomethane	4.0 ug/L 0.76 ug/L	MW10-7-20230411 PW10-1-20230411 MW10-11D-20230411 MW10-10D-20230411

Sample concentrations were compared to concentrations detected in the laboratory blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated laboratory blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
MW10-7-20230411	Bromomethane	0.66 ug/L	0.75UB ug/L
PW10-1-20230411	Bromomethane	0.71 ug/L	0.75UB ug/L
MW10-11D-20230411	Bromomethane	0.70 ug/L	0.75UB ug/L
MW10-10D-20230411 (100X)	Bromomethane	68.1 ug/L	75.0UB ug/L

VI. Field Blanks

Sample Trip Blank was identified as a trip blank. No contaminants were found.

VII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VIII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. Percent recoveries (%R) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Analyte	MS (%R) (Limits)	MSD (%R) (Limits)	Flag	A or P
RW5-1-20230411MS/MSD (RW5-1-20230411**)	Dichlorodifluoromethane	175 (62-152)	166 (62-152)	NA	-

Relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Analyte	RPD (Limits)	Flag	A or P
RW5-1-20230411MS/MSD (RW5-1-20230411**)	1,2,3-Trichlorobenzene	22.7 (≤20)	NA	-

IX. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits with the following exceptions:

LCS ID (Associated Samples)	Analyte	%R (Limits)	Flag	A or P
LCS 978455 (MW5-5D-20230411** DUP-01-20230411 RW5-2-20230411** RW5-1-20230411** MW5-1DA-20230411** MW10-1DA-20230411**)	Dichlorodifluoromethane	154 (32-152)	NA	-

X. Field Duplicates

Samples MW5-5D-20230411** and DUP-01-20230411 were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Analyte	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	MW5-5D-20230411**	DUP-01-20230411			
Acetone	6.8	5.2	27 (≤30)	-	-
cis-1,2-Dichloroethene	3.8	4.7	21 (≤30)	-	-
trans-1,2-Dichloroethene	0.34	0.47	32 (≤30)	NQ	-
Trichloroethene	1.4	1.6	13 (≤30)	-	-
Vinyl chloride	3.1	4.3	32 (≤30)	NQ	-

NQ = One or both results were less than the limit of quantitation (LOQ), therefore no data were qualified.

XI. Internal Standards

All internal standard areas and retention times were within QC limits.

Internal standards data were not reviewed for Level II validation.

XII. Target Analyte Quantitation

All target analyte quantitations met validation criteria for samples which underwent Level IV validation. Raw data were not reviewed for Level II validation.

XIII. Target Analyte Identification

All target analyte identifications met validation criteria for samples which underwent Level IV validation. Raw data were not reviewed for Level II validation.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were recommended for exclusion in this SDG.

Data qualified due to technical holding time, ICV %D, continuing calibration %D, and laboratory blank contamination are summarized and presented in the Data Qualification Summary.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable.

NE ORC Niagara Falls**Volatiles - Data Qualification Summary - SDG AUC041/3297717**

Sample	Analyte	Flag	A or P	Reason
Trip Blank	All analytes	UJ (all non-detects)	A	Technical holding times
MW5-5D-20230411** RW5-2-20230411** RW5-1-20230411** MW5-1DA-20230411** MW10-1DA-20230411**	Dichlorodifluoromethane Chloromethane Iodomethane 1,2,3-Trichlorobenzene	UJ (all non-detects) UJ (all non-detects) UJ (all non-detects) UJ (all non-detects)	A	Initial calibration verification (%D)
MW5-5D-20230411** RW5-2-20230411** RW5-1-20230411** MW5-1DA-20230411** MW10-1DA-20230411**	Bromomethane	UJ (all non-detects)	A	Continuing calibration (%D)

NE ORC Niagara Falls**Volatiles - Laboratory Blank Data Qualification Summary - SDG AUC041/3297717**

Sample	Analyte	Modified Final Concentration	A or P
MW10-7-20230411	Bromomethane	0.75UB ug/L	A
PW10-1-20230411	Bromomethane	0.75UB ug/L	A
MW10-11D-20230411	Bromomethane	0.75UB ug/L	A
MW10-10D-20230411 (100X)	Bromomethane	75.0UB ug/L	A

NE ORC Niagara Falls**Volatiles - Field Blank Data Qualification Summary - SDG AUC041/3297717**

No Sample Data Qualified in this SDG

LDC #: 57143A1a

VALIDATION COMPLETENESS WORKSHEET

SDG #: AUC041/3297717

Level II/IV

Laboratory: ALS Environmental, Middletown, PA

Date: 7/19/23

Page: 1 of 1

Reviewer: [Signature]

2nd Reviewer: [Signature]

METHOD: GC/MS Volatiles (EPA SW-846 Method 8260C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/M	
II.	GC/MS Instrument performance check	A	Not reviewed for Level II validation.
III.	Initial calibration/ICV	A/M	Not reviewed for Level II validation. $R^2 \leq 0.99$ $b \leq 20/50/0$
IV.	Continuing calibration	M	Not reviewed for Level II validation. $b \leq 20/50/0$
V.	Laboratory Blanks	M	
VI.	Field blanks	ND	TB = 11
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	M	
IX.	Laboratory control samples	M	LES
X.	Field duplicates	M	D = 1+2
XI.	Internal standards	A	
XII.	Target analyte quantitation	A	Not reviewed for Level II validation.
XIII.	Target analyte identification	A	Not reviewed for Level II validation.
XIV.	Overall assessment of data	A	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

SB=Source blank
OTHER:

** Indicates sample underwent Level IV validation

	Client ID	Lab ID	Matrix	Date
1	MW5-5D-20230411**	3297717001**	Water	04/11/23
2	DUP-01-20230411	3297717002	Water	04/11/23
3	RW5-2-20230411**	3297717003**	Water	04/11/23
4	RW5-1-20230411**	3297717004**	Water	04/11/23
5	MW5-1DA-20230411**	3297717005**	Water	04/11/23
6	MW10-1DA-20230411**	3297717006**	Water	04/11/23
7	MW10-7-20230411	3297717007	Water	04/11/23
8	PW10-1-20230411	3297717008	Water	04/11/23
9	MW10-11D-20230411	3297717009	Water	04/11/23
10	MW10-10D-20230411	3297717010	Water	04/11/23
11	Trip Blank	3297717011	Water	02/24/23
12	RW5-1-20230411MS	3297717004MS	Water	04/11/23
13	RW5-1-20230411MSD	3297717004MSD	Water	04/11/23
14	918455/978892/974503			

Method: Volatiles (EPA SW 846 Method 8260C)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?		/		
Was cooler temperature criteria met?	/			
II. GC/MS Instrument performance check				
Were the BFB performance results reviewed and found to be within the specified criteria?	/			
Were all samples analyzed within the 12-hour clock criteria?	/			
III. Initial calibration and Initial Calibration Verification				
Did the laboratory perform a 5-point calibration prior to sample analysis?	/			
Were all percent relative standard deviations (%RSD) $\leq 20\%$ and relative response factors (RRF) within method criteria?	/			
Was a curve fit used for evaluation? If yes, did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990 ?	/			
Was an initial calibration verification (ICV) standard analyzed after each initial calibration for each instrument?	/			
Were all ICV percent differences (%D) $\leq 30\%$?		/		
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	/			
Were all percent differences (%D) $\leq 20\%$ and relative response factors (RRF) within method criteria?		/		
V. Laboratory Blanks				
Was a laboratory blank associated with every sample in this SDG?	/			
Was a laboratory blank analyzed at least once every 12 hours for each matrix and concentration?	/			
Was there contamination in the laboratory blanks?	/			
VI. Field blanks				
Were field blanks were identified in this SDG?	/			
Were target compounds detected in the field blanks?		/		
VII. Surrogate spikes				
Were all surrogate percent recovery (%R) within QC limits?	/			
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?			/	
VIII. Matrix spike/Matrix spike duplicates				
Were matrix spike (MS) and matrix spike duplicate (MSD) analyzed in this SDG?	/			

Validation Area	Yes	No	NA	Findings/Comments
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?		☒		
IX. Laboratory control samples				
Was an LCS analyzed per analytical batch?	☒			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?		☒		
X. Field duplicates				
Were field duplicate pairs identified in this SDG?	☒			
Were target compounds detected in the field duplicates?	☒			
XI. Internal standards				
Were internal standard area counts within -50% to +100% of the associated calibration standard?	☒			
Were retention times within + 30 seconds of the associated calibration standard?	☒			
XII. Compound quantitation				
Did the laboratory LOQs/RLs meet the QAPP LOQs/RLs?	☒			
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	☒			
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	☒			
XIII. Target compound identification				
Were relative retention times (RRT's) within + 0.06 RRT units of the standard?	☒			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	☒			
Were chromatogram peaks verified and accounted for?	☒			
XIV. System performance				
System performance was found to be acceptable.	☒			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	☒			

TARGET COMPOUND WORKSHEET

METHOD: VOA

A. Chloromethane	AA. Tetrachloroethane	AAA. 1,3,5-Trimethylbenzene	AAAA. Ethyl tert-butyl ether	A1. 1,3-Butadiene
B. Bromomethane	BB. 1,1,2,2-Tetrachloroethane	BBB. 4-Chlorotoluene	BBBB. tert-Amyl methyl ether	B1. Hexane
C. Vinyl chloride	CC. Toluene	CCC. tert-Butylbenzene	CCCC. 1-Chlorohexane	C1. Heptane
D. Chloroethane	DD. Chlorobenzene	DDD. 1,2,4-Trimethylbenzene	DDDD. Isopropyl alcohol	D1. Propylene
E. Methylene chloride	EE. Ethylbenzene	EEE. sec-Butylbenzene	EEEE. Acetonitrile	E1. Freon 11
F. Acetone	FF. Styrene	FFF. 1,3-Dichlorobenzene	FFFF. Acrolein	F1. Freon 12
G. Carbon disulfide	GG. Xylenes, total	GGG. p-Isopropyltoluene	GGGG. Acrylonitrile	G1. Freon 113
H. 1,1-Dichloroethane	HH. Vinyl acetate	HHH. 1,4-Dichlorobenzene	HHHH. 1,4-Dioxane	H1. Freon 114
I. 1,1-Dichloroethane	II. 2-Chloroethylvinyl ether	III. n-Butylbenzene	IIIf. Isobutyl alcohol	I1. 2-Nitropropane
J. 1,2-Dichloroethane, total	JJ. Dichlorodifluoromethane	JJJ. 1,2-Dichlorobenzene	JJJJ. Methacrylonitrile	J1. Dimethyl disulfide
K. Chloroform	KK. Trichlorofluoromethane	KKK. 1,2,4-Trichlorobenzene	KKKK. Propionitrile	K1. 2,3-Dimethyl pentane
L. 1,2-Dichloroethane	LL. Methyl-tert-butyl ether	LLL. Hexachlorobutadiene	LLLL. Ethyl ether	L1. 2,4-Dimethyl pentane
M. 2-Butanone	MM. 1,2-Dibromo-3-chloropropane	MMM. Naphthalene	MMMM. Benzyl chloride	M1. 3,3-Dimethyl pentane
N. 1,1,1-Trichloroethane	NN. Methyl ethyl ketone	NNN. 1,2,3-Trichlorobenzene	NNNN. Iodomethane	N1. 2-Methylpentane
O. Carbon tetrachloride	OO. 2,2-Dichloropropane	OOO. 1,3,5-Trichlorobenzene	OOOO. 1,1-Difluoroethane	O1. 3-Methylpentane
P. Bromodichloromethane	PP. Bromochloromethane	PPP. trans-1,2-Dichloroethene	PPPP. Tetrahydrofuran	P1. 3-Ethylpentane
Q. 1,2-Dichloropropane	QQ. 1,1-Dichloropropene	QQQ. cis-1,2-Dichloroethene	QQQQ. Methyl acetate	Q1. 2,2-Dimethylpentane
R. cis-1,3-Dichloropropene	RR. Dibromomethane	RRR. m,p-Xylenes	RRRR. Ethyl acetate	R1. 2,2,3-Trimethylbutane
S. Trichloroethene	SS. 1,3-Dichloropropane	SSS. o-Xylene	SSSS. Cyclohexane	S1. 2,2,4-Trimethylpentane
T. Dibromochloromethane	TT. 1,2-Dibromoethane	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	TTTT. Methyl cyclohexane	T1. 2-Methylhexane
U. 1,1,2-Trichloroethane	UU. 1,1,1,2-Tetrachloroethane	UUU. 1,2-Dichlorotetrafluoroethane	UUUU. Allyl chloride	U1. Nonanal
V. Benzene	VV. Isopropylbenzene	VVV. 4-Ethyltoluene	VVVV. Methyl methacrylate	V1. 2-Methylnaphthalene
W. trans-1,3-Dichloropropene	WW. Bromobenzene	WWW. Ethanol	WWWW. Ethyl methacrylate	W1. Methanol
X. Bromoform	XX. 1,2,3-Trichloropropane	XXX. Di-isopropyl ether	XXXX. cis-1,4-Dichloro-2-butene	X1. 1,2,3-Trimethylbenzene
Y. 4-Methyl-2-pentanone	YY. n-Propylbenzene	YYY. tert-Butanol	YYYY. trans-1,4-Dichloro-2-butene	Y1.
Z. 2-Hexanone	ZZ. 2-Chlorotoluene	ZZZ. tert-Butyl alcohol	ZZZZ. Pentachloroethane	Z1.

Y N N/A Were air bubbles > 1/4 inch or was headspace present in the vials?

Within 14 days of sample collection.

VALIDATION FINDINGS WORKSHEET

Blanks**METHOD:** GC/MS VOA (EPA SW 846 Method 8260C)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

- ☒ Y ☐ N ☐ N/A Was a method blank associated with every sample in this SDG?
☒ Y ☐ N ☐ N/A Was a method blank analyzed at least once every 12 hours for each matrix and concentration?
☒ Y ☐ N ☐ N/A Was there contamination in the method blanks? If yes, please see the qualifications below.

Blank analysis date: 4/25/23Conc. units: ug/L Associated Samples: T-10

Compound	Blank ID	Sample Identification							
	<u>UB 918892</u>	<u>T</u>	<u>8</u>	<u>9</u>	<u>10 (100x)</u>				
Methylene chloride									
Acetone									
<u>NNN</u>	<u>4.0</u>								
<u>B</u>	<u>0.76</u>	<u>0.66</u>	<u>0.71</u>	<u>0.70</u>	<u>0.68</u>				
		<u>0.75UB</u>	<u>0.75UB</u>	<u>0.75UB</u>	<u>0.75UB</u>				

Blank analysis date: _____

Conc. units: _____ Associated Samples: _____

Compound	Blank ID	Sample Identification							
Methylene chloride									
Acetone									

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

METHOD : GC/MS VOA (EPA SW 846 Method 8260)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.

10. Was a MS/MSD analyzed every 20 samples of each matrix?

Y(N) N/A Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?

[illegible]

LDC #: 57143A19

VALIDATION FINDINGS WORKSHEET
Laboratory Control Samples (LCS)

Page: 1 of 1
Reviewer: 9

METHOD: GC/MS VOA (EPA SW 846 Method 8260)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(Y) N N/A Was a LCS required?

Y/N/N/A Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?

[illegible]

VALIDATION FINDINGS WORKSHEET
Field Duplicates**METHOD:** GCMS VOA (EPA SW 846 Method 8260B)

Compound	Concentration (ug/L)		RPD (≤ 30 %)	Qualifications (Parent only)
	1	2		
F	6.8	5.2	27	
QQQ	3.8	4.7	21	
PPP	0.34	0.47	32	NQ
S	1.4	1.6	13	
C	3.1	4.3	32	NQ

NQ = One or both results were < 5x the LOQ, therefore no data were qualified.

V:\FIELD DUPLICATES\Field Duplicates\FD Organics\2023\57143A1_Arcadis_NFARS .wpd

LDC #: 3742A/9

VALIDATION FINDINGS WORKSHEET **Initial Calibration Calculation Verification**

 Page: 1 of 1
 Reviewer: 9
METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$$RRF = (A_x)(C_{is}) / (A_{is})(C_x)$$

average RRF = sum of the RRFs/number of standards

$$\%RSD = 100 * (S/X)$$

 A_x = Area of compound, C_x = Concentration of compound, S = Standard deviation of the RRFs X = Mean of the RRFs A_{is} = Area of associated internal standard C_{is} = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)	Reported	Recalculated	Reported	Recalculated	Reported	Recalculated
				RRF (50 std)	RRF (50 std)	Average RRF (initial)	Average RRF (initial)	%RSD	%RSD
1	10x2	4/22/23	000 (1st internal standard)	0.36602	0.36602	0.35366	0.35366	8.3733	8.321
			EE (2nd internal standard)	0.81963	0.81963	0.77522	0.77522	11.4308	11.430
			HHH (3rd internal standard)	1.32998	1.32998	1.29911	1.29911	8.37798	8.378
			(4th internal standard)						
2			(1st internal standard)						
			(2nd internal standard)						
			(3rd internal standard)						
			(4th internal standard)						
3			(1st internal standard)						
			(2nd internal standard)						
			(3rd internal standard)						
			(4th internal standard)						
4			(1st internal standard)						
			(2nd internal standard)						
			(3rd internal standard)						
			(4th internal standard)						

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results

VALIDATION FINDINGS WORKSHEET **Continuing Calibration Results Verification**

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = $100 * (\text{ave. RRF} - \text{RRF}) / \text{ave. RRF}$

RRF = $(A_x)(C_{is}) / (A_{is})(C_x)$

Where: ave. RRF = initial calibration average RRF

RRF = continuing calibration RRF

A_x = Area of compound,

C_x = Concentration of compound,

A_{is} = Area of associated internal standard

C_{is} = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference internal Standard)	Average RRF (initial)	Reported RRF (CC)	Recalculated RRF (CC)	Reported %D	Recalculated %D
1	<u>172304201</u>	<u>4/24/23</u>	<u>QXR</u> (1st internal standard)	<u>0.35366</u>	<u>0.36791</u>	<u>0.36791</u>	<u>4.02754</u>	<u>4.028</u>
			<u>EE</u> (2nd internal standard)	<u>0.77522</u>	<u>0.81688</u>	<u>0.81688</u>	<u>5.37488</u>	<u>5.374</u>
			<u>HHH</u> (3rd internal standard)	<u>1.29911</u>	<u>1.35381</u>	<u>1.35381</u>	<u>4.21044</u>	<u>4.211</u>
			(4th internal standard)					
2			(1st internal standard)					
			(2nd internal standard)					
			(3rd internal standard)					
			(4th internal standard)					
3			(1st internal standard)					
			(2nd internal standard)					
			(3rd internal standard)					
			(4th internal standard)					
4			(1st internal standard)					
			(2nd internal standard)					
			(3rd internal standard)					
			(4th internal standard)					

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

VALIDATION FINDINGS WORKSHEET **Surrogate Results Verification**

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

 Where: SF = Surrogate Found
 SS = Surrogate Spiked

 Sample ID: 1

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane	30.0	30.2997	101	101	
1,2-Dichloroethane-d4		31.6721	106	106	
Toluene-d8		30.5545	102	102	
Bromofluorobenzene		31.9681	107	107	

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

VALIDATION FINDINGS WORKSHEET **Matrix Spike/Matrix Spike Duplicates Results Verification**

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = $100 * (SSC - SC) / SA$

Where: SSC = Spiked sample concentration
SA = Spike added

SC = Sample concentration

RPD = $100 * |MSC - MSCD| / (MSC + MSCD)$

MSC = Matrix spike concentration

MSDC = Matrix spike duplicate concentration

MS/MSD sample: 12/13

Compound	Spike Added		Sample Concentration	Spiked Sample Concentration		Matrix Spike		Matrix Spike Duplicate		MS/MSD	
	✓			✓		Percent Recovery		Percent Recovery		RPD	
	MS	MSD		MS	MSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalculated
1,1-Dichloroethene	20	20	ND	24.5	23.2	122	122	116	116	5.3	5.4
Trichloroethene	↓	↓	0.82	22.1	20.7	106	106	99.6	99.6	6.46	6.5
Benzene	↓	↓	ND	23.4	22.3	117	117	111	111	4.84	4.8
Toluene	↓	↓	5.6	27.4	25.8	109	109	101	101	5.13	6.0
Chlorobenzene	↓	↓	ND	21.2	20.1	106	106	100	100	5.61	5.2

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 5743A/a

VALIDATION FINDINGS WORKSHEET **Laboratory Control Sample Results Verification**

 Page: 1 of 1
 Reviewer: 9
METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratory control sample and laboratory control sample duplicate (if applicable) were recalculated for the compounds identified below using the following calculation:

% Recovery = $100 \times \text{SSC} / \text{SA}$
 Where: SSC = Spiked sample concentration
 SA = Spike added
RPD = $100 \times (\text{LCSC} - \text{LCSDC}) / (\text{LCSC} + \text{LCSDC})$

LCSC = Laboratory control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS ID: 978455

Compound	Spike Added (<u>115</u>)		Spiked Sample Concentration (<u>115</u>)		LCS		LCSD		LCS/LCSD	
					Percent Recovery		Percent Recovery		RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalculated
1,1-Dichloroethene	<u>20</u>	<u>NA</u>	<u>22.7</u>	<u>NA</u>	<u>111</u>	<u>111</u>				
Trichloroethene	<u>↓</u>	<u>↓</u>	<u>19.40</u>	<u>↓</u>	<u>97.1</u>	<u>97</u>				
Benzene	<u>↓</u>	<u>↓</u>	<u>21.3</u>	<u>↓</u>	<u>106</u>	<u>106</u>				
Toluene	<u>↓</u>	<u>↓</u>	<u>20.0</u>	<u>↓</u>	<u>100</u>	<u>100</u>				
Chlorobenzene	<u>↓</u>	<u>↓</u>	<u>20.0</u>	<u>↓</u>	<u>100</u>	<u>100</u>				

Comments: Refer to Laboratory Control Sample findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

VALIDATION FINDINGS WORKSHEET

Sample Calculation Verification

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

(Y N N/A

Were all reported results recalculated and verified for all level IV samples?

Y	N	N/A

Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

$$\text{Concentration} = \frac{(A_s)(I_s)(DF)}{(A_c)(RRF)(V_s)(\%S)}$$

A_x = Area of the characteristic ion (EICP) for the compound to be measured

A_{is} = Area of the characteristic ion (EICP) for the specific internal standard

I_s = Amount of internal standard added in nanograms (ng)

RRF = Relative response factor of the calibration standard.

V_o = Volume or weight of sample pruged in milliliters (ml) or grams (g).

Df $\Rightarrow$ **Dilution factor,**

%S = Percent solids, applicable to soils and solid matrices only.

Example:

Sample I.D. 1, QQQ:

Conc. = $\frac{(48671)(30^\circ)(1)}{(108358)(0.3556)} = 3.81 \text{ mL}$

[illegible]

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: NE ORC Niagara Falls

LDC Report Date: September 27, 2023

Parameters: Total Organic Carbon

Validation Level: Level II & IV

Laboratory: ALS Environmental, Middletown, PA

Sample Delivery Group (SDG): AUC41/3297717

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
MW5-5D-20230411**	3297717001**	Water	04/11/23
DUP-01-20230411	3297717002	Water	04/11/23
RW5-2-20230411**	3297717003**	Water	04/11/23
RW5-1-20230411**	3297717004**	Water	04/11/23
MW5-1DA-20230411**	3297717005**	Water	04/11/23
MW10-1DA-20230411**	3297717006**	Water	04/11/23
MW10-7-20230411	3297717007	Water	04/11/23
PW10-1-20230411	3297717008	Water	04/11/23
MW10-11D-20230411	3297717009	Water	04/11/23
MW10-10D-20230411	3297717010	Water	04/11/23
RW5-1-20230411MS	3297717004MS	Water	04/11/23
RW5-1-20230411MSD	3297717004MSD	Water	04/11/23

**Indicates sample underwent Level IV validation

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Remedial Action Quality Assurance Project Plan for Sites FT005, LF008, ST010, SS014, DS002, AND DS004, Niagara Falls Air Reserve Station, New York (August 2015), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.3 (2019), and the U.S. Department of Defense (DoD) Data Validation Guidelines Module 1: Data Validation Procedure for Organic Analysis by GC/MS (May 2020). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Total Organic Carbon by Environmental Protection Agency (EPA) SW 846 Method 9060A

All sample results were subjected to Level II data validation, which comprises an evaluation of quality control (QC) summary results. Samples appended with a double asterisk on the cover page were subjected to Level IV data validation, which is comprised of the QC summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

- J+ (Estimated, High Bias): The analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated, displaying high bias, due to non-conformances discovered during data validation.
- J- (Estimated, Low Bias): The analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated, displaying low bias, due to non-conformances discovered during data validation.
- J (Estimated, Bias Indeterminate): The analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation. Bias is indeterminate.
- U (Non-detected): The analyte was analyzed for and positively identified by the laboratory; however the analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UU (Non-detected estimated): The analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- B (Blank contamination): The analyte was found in an associated blank as well as in the sample.
- UB (Blank contamination): The analyte was found in an associated blank above one half the LOQ, as well as in the sample.
- X (Exclusion of data recommended): 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. Exclusion of the data is recommended.
- NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition.

All technical holding time requirements were met.

II. Initial Calibration

All criteria for the initial calibration were met.

Initial calibration data were not reviewed for Level II validation.

III. Continuing Calibration

Continuing calibration frequency and analysis criteria were met.

Continuing calibration data were not reviewed for Level II validation.

IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

V. Field Blanks

No field blanks were identified in this SDG.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

VII. Duplicate Sample Analysis

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

IX. Field Duplicates

Samples MW5-5D-20230411** and DUP-01-20230411 were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/L)		RPD (Limits)	Flag	A or P
	MW5-5D-20230411**	DUP-01-20230411			
Total organic carbon	6.6	5.1	26 (≤ 20)	NQ	-

NQ = One or both results were < 5x the reporting limit, therefore no data were qualified.

X. Target Analyte Quantitation

All target analyte quantitations were acceptable for samples which underwent Level IV validation. Raw data were not reviewed for Level II validation.

XI. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were recommended for exclusion in this SDG.

The quality control criteria reviewed were met and are considered acceptable.

NE ORC Niagara Falls

Total Organic Carbon - Data Qualification Summary - SDG AUC41/3297717

No Sample Data Qualified in this SDG

NE ORC Niagara Falls

Total Organic Carbon - Laboratory Blank Data Qualification Summary - SDG AUC41/3297717

No Sample Data Qualified in this SDG

NE ORC Niagara Falls

Total Organic Carbon - Field Blank Data Qualification Summary - SDG AUC41/3297717

No Sample Data Qualified in this SDG

LDC #: 57143A6

VALIDATION COMPLETENESS WORKSHEET

Date: 9/26/23

SDG #: AUC41/3297717

Level II/IV

Page: 1 of 1

Laboratory: ALS Environmental, Middletown, PA

Reviewer: NF

2nd Reviewer: [Signature]

METHOD: (Analyte) TOC (EPA SW-846 Method 9060A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A / A	
II.	Initial calibration	A	Not reviewed for Level II validation.
III.	Calibration verification	A	Not reviewed for Level II validation.
IV.	Laboratory Blanks	A	
V.	Field blanks	N	
VI.	Matrix Spike/Matrix Spike Duplicates	A	
VII.	Duplicate sample analysis	N	
VIII.	Laboratory control samples	A	LCS
IX.	Field duplicates	SW	FD = (1,2)
X.	Target Analyte Quantitation	A	Not reviewed for Level II validation.
XI.	Overall assessment of data	A	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

SB = Source blank
OTHER:

** Indicates sample underwent Level IV validation

	Client ID	Lab ID	Matrix	Date
1	MW5-5D-20230411**	3297717001**	Water	04/11/23
2	DUP-01-20230411	3297717002	Water	04/11/23
3	RW5-2-20230411**	3297717003**	Water	04/11/23
4	RW5-1-20230411**	3297717004**	Water	04/11/23
5	MW5-1DA-20230411**	3297717005**	Water	04/11/23
6	MW10-1DA-20230411**	3297717006**	Water	04/11/23
7	MW10-7-20230411	3297717007	Water	04/11/23
8	PW10-1-20230411	3297717008	Water	04/11/23
9	MW10-11D-20230411	3297717009	Water	04/11/23
10	MW10-10D-20230411	3297717010	Water	04/11/23
11	RW5-1-20230411MS	3297717004MS	Water	04/11/23
12	RW5-1-20230411MSD	3297717004MSD	Water	04/11/23
13				
14				
15				

Notes:

Sample Specific Element Reference

Reviewer: NF

All elements are applicable to each sample as noted below.

[illegible]

METHOD: Inorganics				
Validation Area	Yes	No	NA	Comments
I. Technical holding times				
Were all technical holding times met?	YES			
II. Calibration				
Were all instruments calibrated at the required frequency?	YES			
Were the proper number of standards used?	YES			
Were all initial and continuing calibration verifications within the QC limits?	YES			
Were all initial calibration correlation coefficients within limits as specified by the method?	YES			
Were balance checks performed as required?			NA	
III. Blanks				
Was a method blank associated with every sample in this SDG?	YES			
Was there contamination in the method blanks?		NO		
Was there contamination in the initial and continuing calibration blanks?		NO		
IV. Matrix Spike/Matrix Spike Duplicates/Laboratory Duplicates				
Were MS/MSD recoveries within the QC limits? (If the sample concentration exceeded the spike concentration by a factor of 4, no action was taken.)	YES			
Were the MS/MSD or laboratory duplicate relative percent differences (RPDs) within the QC limits?	YES			
V. Laboratory Control Samples				
Was a LCS analyzed for each batch in the SDG?	YES			
Were the LCS recoveries and RPDs (if applicable) within QC limits?	YES			
X. Target Analyte Quantitation				
Were all reporting limits adjusted to reflect sample dilutions?	YES			
Were all soil samples dry weight corrected?			NA	

XI. Overall Assessment of Data				
Was the overall assessment of the data found to be acceptable?	YES			
XII. Field Duplicates				
Were field duplicates identified in this SDG?	YES			
Were target analytes detected in the field duplicates?	YES			
XIII. Field Blanks				
Were field blanks identified in this SDG?	No			
Were target analytes detected in the field blanks?			NA	

LDC #: 57143A6

VALIDATION FINDINGS WORKSHEET

Page 1 of 1

Field Duplicates

Reviewer: NF

METHOD: Inorganics

Analyte	Concentration (mg/L)		RPD (≤ 20)	Qualifiers
	1	2		
TOC	6.6	5.1	26	NQ

METHOD: Inorganics

The correlation coefficient (r) for the calibration of TOC were recalculated.

Calibration date:

An initial or continuing calibration verification percent recovery (%R) was recalculated for each type of analysis using the following formula:

$$\%R = (\text{Found}/\text{True}) \times 100$$

Found = concentration of each analyte measured in the analysis of the ICV or CCV solution

True = concentration of each analyte in the ICV or CCV source

Type of Analysis	Analyte	Standard	Concentration (mg/L)	Area	Recalculated r or r ²	Reported r or r ²	Acceptable (Y/N)
Initial Calibration	TOC	s1	0	0.06168	0.999993	1.0000	Y
		s2	0.5	2.313			
		s3	1	4.618			
		s4	5	22.41			
		s5	8	36.08			
		s6	10	44.96			
		s7					
		s8					
		s9					
		s10					
		s11					
		s12					

Type of Analysis	Analyte	Found (mg/L)	True (mg/L)		Recalculated r or r ²	Reported r or r ²	Acceptable (Y/N)
Calibration verification	TOC	4.954	5		99.08	99.1	Y
Calibration verification	TOC	8.095	8		101.1875	101	Y
Calibration verification	TOC	5.128	5		102.56	103	Y

METHOD: Inorganics

Percent recoveries (%R) for the laboratory control sample (LCS) and matrix spike (MS) were recalculated using the following formula:

$$\%R = (\text{Found}/\text{True}) \times 100$$

Found = concentration of each analyte measured in the analysis. For the MS calculation, Found = SSR (Spiked Sample Result) - SR (Sample Result)

True = concentration of each analyte in the source

The sample and duplicate relative percent difference (RPD) was recalculated using the following formula:

$$\text{RPD} = (\text{Absolute value}(S-D) \times 200) / (S+D)$$

S = Original sample concentration

D = Duplicate sample concentration

Sample ID	Type of Analysis	Element	Found/S	True/D	Recalculated %R/RPD	Reported %R/RPD	Acceptable (Y/N)
3655298	LCS	TOC	0.99	1	99	99.4	Y
11	MS	TOC	145	150	96.66666667	96.6	Y
12	Duplicate	TOC	354	362	2.234636872	2.09	Y

Sample Calculation Verification

Reviewer: NF

METHOD: Inorganics

Analytes were recalculated and verified using the following equation:

$$\text{Concentration} = (\text{Result from raw data} \times \text{Final volume} \times \text{Dilution factor}) / (\text{Percent solids (if applicable)} \times \text{Initial weight or volume})$$

Sample ID	Analyte	Raw Data (mg/L)	Dilution	Initial Volume (uL)	Final Volume (uL)	Reported Result (mg/L)	Recalculated Result (mg/L)	Acceptable (Y/N)
1	TOC	1.324	5	100	100	6.6	6.62	Y
3	TOC	6.389	5	100	100	31.9	31.945	Y
4	TOC	8.676	25	100	100	217	216.9	Y
5	TOC	5.745	1	100	100	5.7	5.745	Y
6	TOC	1.908	5	100	100	9.5	9.54	Y

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: NE ORC Niagara Falls

LDC Report Date: September 25, 2023

Parameters: Methane, Ethane, & Ethene

Validation Level: Level II & IV

Laboratory: ALS Environmental, Middletown, PA

Sample Delivery Group (SDG): AUC41/3297717

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
MW5-5D-20230411**	3297717001**	Water	04/11/23
DUP-01-20230411	3297717002	Water	04/11/23
RW5-2-20230411**	3297717003**	Water	04/11/23
RW5-1-20230411	3297717004	Water	04/11/23
MW5-1DA-20230411	3297717005	Water	04/11/23
MW10-1DA-20230411	3297717006	Water	04/11/23
MW10-7-20230411	3297717007	Water	04/11/23
PW10-1-20230411	3297717008	Water	04/11/23
MW10-11D-20230411	3297717009	Water	04/11/23
MW10-10D-20230411	3297717010	Water	04/11/23
DUP-01-20230411DUP	3297717002DUP	Water	04/11/23
RW5-1-20230411DUP	3297717004DUP	Water	04/11/23

**Indicates sample underwent Level IV validation

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Remedial Action Quality Assurance Project Plan for Sites FT005, LF008, ST010, SS014, DS002, AND DS004, Niagara Falls Air Reserve Station, New York (August 2015), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.3 (2019), and the U.S. Department of Defense (DoD) Data Validation Guidelines Module 4: Data Validation Procedure for Organic Analysis by GC (March 2021). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Methane, Ethane, and Ethene by Method RSK-175

All sample results were subjected to Level II data validation, which comprises an evaluation of quality control (QC) summary results. Samples appended with a double asterisk on the cover page were subjected to Level IV data validation, which is comprised of the QC summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

- J+ (Estimated, High Bias): The analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated, displaying high bias, due to non-conformances discovered during data validation.
- J- (Estimated, Low Bias): The analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated, displaying low bias, due to non-conformances discovered during data validation.
- J (Estimated, Bias Indeterminate): The analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation. Bias is indeterminate.
- U (Non-detected): The analyte was analyzed for and positively identified by the laboratory; however the analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- B (Blank contamination): The analyte was found in an associated blank as well as in the sample.
- UB (Blank contamination): The analyte was found in an associated blank above one half the LOQ, as well as in the sample.
- X (Exclusion of data recommended): 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. Exclusion of the data is recommended.
- NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all analytes.

Retention time windows were established as required by the method for samples which underwent Level IV validation. Raw data were not reviewed for Level II validation.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 20.0% for all analytes.

III. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) were less than or equal to 20.0% for all analytes.

Retention times of all analytes in the calibration standards were within the established retention time windows for samples which underwent Level IV validation. Raw data were not reviewed for Level II validation.

IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

V. Field Blanks

No field blanks were identified in this SDG.

VI. Matrix Spike/Matrix Spike Duplicates/Duplicate Sample Analysis

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

Duplicate (DUP) sample analysis was performed on an associated project sample. Results were less than 5X the reporting limit (RL) with the following exceptions:

DUP ID (Associated Samples)	Analyte	RPD (Limits)	Flag	A or P
DUP-01-20230411DUP (DUP-01-20230411)	Methane	52.5 (≤20)	J (all detects)	A

VII. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits with the following exceptions:

Sample	Analyte	Finding	Criteria	Flag	A or P
All samples in SDG AUC41/3297717	All analytes	No LCS analysis associated with these samples.	LCS analysis required.	J (all detects) UJ (all non-detects)	P

The samples and associated blanks are qualified as estimated (J/UJ) due to the lack of associated laboratory control samples, matrix spikes, and matrix spike duplicates.

VIII. Field Duplicates

Samples MW5-5D-20230411** and DUP-01-20230411 were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Analyte	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	MW5-5D-20230411**	DUP-01-20230411			
Ethane	5.1	7.6	39 (≤30)	NQ	-
Ethene	3.6U	3.5	3 (≤30)	-	-
Methane	463	678	38 (≤30)	J (all detects)	A

IX. Target Analyte Quantitation

All target analyte quantitations met validation criteria for samples which underwent Level IV validation. Raw data were not reviewed for Level II validation.

X. Target Analyte Identification

All target analyte identifications met validation criteria for samples which underwent Level IV validation. Raw data were not reviewed for Level II validation.

XI. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were recommended for exclusion in this SDG.

Data qualified due to DUP RPD, no LCS, and field duplicate RPD are summarized and presented in the Data Qualification Summary.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable.

NE ORC Niagara Falls**Methane, Ethane, & Ethene - Data Qualification Summary - SDG AUC41/3297717**

Sample	Analyte	Flag	A or P	Reason
DUP-01-20230411	Methane	J (all detects)	A	Duplicate sample analysis (RPD)
MW5-5D-20230411** DUP-01-20230411 RW5-2-20230411** RW5-1-20230411 MW5-1DA-20230411 MW10-1DA-20230411 MW10-7-20230411 PW10-1-20230411 MW10-11D-20230411 MW10-10D-20230411	All analytes	J (all detects) UJ (all non-detects)	P	Laboratory control samples (No LCS)
MW5-5D-20230411** DUP-01-20230411	Methane	J (all detects)	A	Field duplicates (RPD)

NE ORC Niagara Falls**Methane, Ethane, & Ethene - Laboratory Blank Data Qualification Summary - SDG AUC41/3297717**

No Sample Data Qualified in this SDG

NE ORC Niagara Falls**Methane, Ethane, & Ethene - Field Blank Data Qualification Summary - SDG AUC41/3297717**

No Sample Data Qualified in this SDG

LDC #: 57143A51

VALIDATION COMPLETENESS WORKSHEET

SDG #: AUC41/3297717

Level II/IV

Laboratory: ALS Environmental, Middletown, PA

Date: 9/17/23

Page: 1 of 1

Reviewer: [Signature]

2nd Reviewer: [Signature]

METHOD: GC Methane-Ethane-Ethene (Method RSK-175)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	Initial calibration/ICV	A	Not reviewed for Level II validation. $RSD \leq 20\%$, $1\sigma \leq 20\%$
III.	Continuing calibration	A	Not reviewed for Level II validation. $D \leq 20\%$
IV.	Laboratory Blanks	A	
V.	Field blanks	N	
VI.	Surrogate spikes	N	
VII.	Matrix spike/Matrix spike duplicates	N/SW	CS
VIII.	Laboratory control samples	SW	
IX.	Field duplicates	SW	$D = 1 + 2$
X.	Target analyte quantitation	A	Not reviewed for Level II validation.
XI.	Target analyte identification	A	Not reviewed for Level II validation.
XII.	Overall assessment of data	A	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

SB=Source blank
OTHER:

** Indicates sample underwent Level IV validation

	Client ID	Lab ID	Matrix	Date
1	MW5-5D-20230411**	3297717001**	Water	04/11/23
2	DUP-01-20230411	3297717002	Water	04/11/23
3	RW5-2-20230411**	3297717003**	Water	04/11/23
4	RW5-1-20230411	3297717004	Water	04/11/23
5	MW5-1DA-20230411	3297717005	Water	04/11/23
6	MW10-1DA-20230411	3297717006	Water	04/11/23
7	MW10-7-20230411	3297717007	Water	04/11/23
8	PW10-1-20230411	3297717008	Water	04/11/23
9	MW10-11D-20230411	3297717009	Water	04/11/23
10	MW10-10D-20230411	3297717010	Water	04/11/23
11	DUP-01-20230411DUP	3297717002DUP	Water	04/11/23
12	RW5-1-20230411DUP	3297717004DUP	Water	04/11/23
13				

Notes:

975305				
976366				

Method: GC HPLC

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?	☒	☐	☐	
Was cooler temperature criteria met?	☒	☐	☐	
IIa. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	☒	☐	☐	
Were all percent relative standard deviations (%RSD) $\leq 20\%$?	☒	☐	☐	
Was a curve fit used for evaluation? If yes, did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990 ?	☐	☐	☒	
Were the RT windows properly established?	☒	☐	☐	
IIb. Initial calibration verification				
Was an initial calibration verification standard analyzed after each initial calibration for each instrument?	☒	☐	☐	
Were all percent differences (%D) $< 20\%$?	☒	☐	☐	
III. Continuing calibration				
Was a continuing calibration analyzed daily?	☒	☐	☐	
Were all percent differences (%D) $\leq 20\%$?	☒	☐	☐	
Were all the retention times within the acceptance windows?	☒	☐	☐	
IV. Laboratory Blanks				
Was a laboratory blank associated with every sample in this SDG?	☒	☐	☐	
Was a laboratory blank analyzed for each matrix and concentration?	☒	☐	☐	
Was there contamination in the laboratory blanks?	☐	☒	☐	
V. Field Blanks				
Were field blanks identified in this SDG?	☐	☒	☐	
Were target compounds detected in the field blanks?	☐	☐	☒	
VI. Surrogate spikes				
Were all surrogate percent recovery (%R) within the QC limits?	☐	☐	☒	
If the percent recovery (%R) of one or more surrogates was outside QC limits, was a reanalysis performed to confirm %R?	☐	☐	☒	
If any %R was less than 10 percent, was a reanalysis performed to confirm %R?	☐	☐	☒	
VII. Matrix spike/Matrix spike duplicates				
Were matrix spike (MS) and matrix spike duplicate (MSD) analyzed in this SDG?	☐	☒	☐	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?	☐	☐	☒	
VIII. Laboratory control samples				
Was an LCS analyzed per analytical or extraction batch?	☐	☒	☐	
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	☐	☐	☒	

LDC #: ST-42AS1

VALIDATION FINDINGS CHECKLIST

Page: 2 of 2
Reviewer: 9

Validation Area	Yes	No	NA	Findings/Comments
IX. Field duplicates				
Were field duplicate pairs identified in this SDG?	☒	☐	☐	
Were target compounds detected in the field duplicates?	☒	☐	☐	
X. Compound quantitation				
Did the laboratory LOQs/RLs meet the QAPP LOQs/RLs?	☒	☐	☐	
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	☒	☐	☐	
XI. Target compound identification				
Were the retention times of reported detects within the RT windows?	☒	☐	☐	
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	☒	☐	☐	

LDC #: 5742A31

VALIDATION FINDINGS WORKSHEET

Matrix Spike/Matrix Spike Duplicates

Page: 6 of 9
Reviewer: _____

METHOD: GC HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N ~~N/A~~

Were matrix spike (MS) and matrix spike duplicate (MSD) analyzed in this SDG?

Y	N	~~N/A~~

Was an MS/MSD analyzed every 20 samples for each matrix or whenever a sample extraction was performed?

Y N/A

Were the MS/MSD percent recoveries (%R) and relative percent differences (RPD) within QC limits?

[illegible]

VALIDATION FINDINGS WORKSHEET
Field Duplicates**METHOD:** GC Methane-Ethane-Ethene (RSK-175)Y N NA Were field duplicate pairs identified in this SDG?Y N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ug/L)		RPD ($\leq 30\%$)	Qualifications (Parent only)
	1	2		
Ethane	5.1	7.6	39	NQ
Ethene	3.6U	3.5	3	
Methane	463	678	38	Jdets/A

NQ = One or both results were $< 5x$ the LOQ, therefore no data were qualified.

V:\FIELD DUPLICATES\Field Duplicates\FD Organics\2023\57143A51 Arcadis NFARS.wpd

LDC # 57K3AS1

VALIDATION FINDINGS WORKSHEET **Initial Calibration Calculation Verification**

 Page: 1 of 1
 Reviewer: 9
METHOD: GC ✓ HPLC _____

The calibration factors (CF) and relative standard deviation (%RSD) were recalculated using the following calculations:

CF = A/C
 Average CF = sum of the CF/number of standards
 %RSD = 100 * (S/X)

Where: A = Area of compound
 C = Concentration of compound
 S = Standard deviation of calibration factors
 X = Mean of calibration factors

#	Standard ID	Calibration Date	Compound	Reported	Recalculated	Reported	Recalculated	Reported	Recalculated
				CF (7000 std)	CF (51000 std)	Ave CF (initial)	Ave CF (initial)	%RSD	%RSD
1	10KZ (2303204)	3/20/23	Methanol	5.36592	5.36592	5.62507	5.62507	7.92153	7.922
				(1000 std)	(1000 std)				
2	10KZ (230320)	3/20/23	Methanol	5.79412	5.79412	6.30119	6.30119	7.74868	7.749
3									
4									

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 57143A5

VALIDATION FINDINGS WORKSHEET **Continuing Calibration Results Verification**

 Page: 6 of 1
 Reviewer: S
METHOD: GC_HPLC

The percent difference (%D) of the initial calibration average Calibration Factors (CF) and the continuing calibration CF were recalculated for the compounds identified below using the following calculation:

$$\% \text{ Difference} = 100 * (\text{ave. CF} - \text{CF}) / \text{ave. CF}$$

Where: ave. CF = initial calibration average CF

CF = continuing calibration CF

A = Area of compound

C = Concentration of compound

#	Standard ID	Calibration Date	Compound	Average CF(Ical)/ CCV Conc.	Reported	Recalculated	Reported	Recalculated
					CF/ Conc. CCV	CF/ Conc. CCV	%D	%D
1	~~EDHA016~~	4/18/23	Methanol	6.30119	5.52941	5.52941	12.24816	12.248
			↓	5.62507	5.52941	5.52941	51.70051	1.701
2	~~EDHA002~~	4/20/23	Methanol	6.30119	5.74610	5.74610	8.80935	8.809
			↓	5.62507	5.74610	5.74610	2.15164	2.152
3								
4								

VALIDATION FINDINGS WORKSHEET Sample Calculation Verification

METHOD: GC HPLC
 Y N N/A
 Y N N/A

Were all reported results recalculated and verified for all level IV samples?

Were all recalculated results for detected target compounds within 10% of the reported results?

 Concentration = $\frac{(A)(Fv)(Df)}{(RF)(Vs \text{ or } Ws)(\%S/100)}$

Example:

 Sample ID: 1 Compound Name Methane

A= Area or height of the compound to be measured

Fv= Final Volume of extract

Df= Dilution Factor

RF= Average response factor of the compound
In the initial calibration

Vs= Initial volume of the sample

Ws= Initial weight of the sample

%S= Percent Solid

 Concentration = $\frac{(26739)}{(5.62507)} = 4753.54 \text{ ppm}$

$$\text{Conc in } D = \frac{(4753.54)(55.5)(16.04)}{(39080)} = 108.28 \text{ } \mu\text{L}$$

$$\text{Conc in } S = \frac{(4753.54)(16.04)(4.4)}{(39.6)(0.4 \times 0.95/0.73)} = 350.0 \text{ } \mu\text{L}$$

#	Sample ID	Compound	Reported Concentrations	Recalculated Results Concentrations	Qualifications
	<u>1</u>	<u>Methane</u>	<u>463</u>	<u>458</u>	

$$\text{Conc total} = 108.28 + 350.0 = 458.3 \text{ } \mu\text{L}$$

Comments: _____

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: NE ORC Niagara Falls

LDC Report Date: September 25, 2023

Parameters: Volatiles

Validation Level: Level II

Laboratory: ALS Environmental, Middletown, PA

Sample Delivery Group (SDG): AUC045/3310646

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
MW10-3-20230627	3310646001	Water	06/27/23
MW10-7-20230627	3310646002	Water	06/27/23
PW10-2-20230627	3310646003	Water	06/27/23
PZ10-7-20230627	3310646004	Water	06/27/23
SW10-7-20230627	3310646005	Water	06/27/23
SW10-8-20230627	3310646006	Water	06/27/23
SW99-10-20230627	3310646007	Water	06/27/23
SW10-6-20230627	3310646008	Water	06/27/23
SW10-5-20230627	3310646009	Water	06/27/23
MW5-1DA-20230627	3310646013	Water	06/27/23
MW5-5D-20230627	3310646014	Water	06/27/23
MW5-6-20230627	3310646015	Water	06/27/23
RW5-1-20230627	3310646016	Water	06/27/23
RW5-2-20230627	3310646017	Water	06/27/23
RW5-4-20230627	3310646018	Water	06/27/23
PW13-4D-20230627	3310646019	Water	06/27/23
MW13-4D-20230627	3310646020	Water	06/27/23
MW13-5D-20230627	3310646021	Water	06/27/23
PW13-1-20230627	3310646022	Water	06/27/23
MW8-11D-20230627	3310646023	Water	06/27/23
MW3-3DA-20230627	3310646024	Water	06/27/23
MW3-4DA-20230627	3310646025	Water	06/27/23
SW3-2-20230627	3310646026	Water	06/27/23
SW3-3-20230627	3310646027	Water	06/27/23
SW3-15-20230627	3310646028	Water	06/27/23
PZ3-7D-20230627	3310646029	Water	06/27/23

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
PZ3-8D-20230627	3310646030	Water	06/27/23
PW3-3A-20230627	3310646031	Water	06/27/23
TB-01-20230627	3310646032	Water	06/27/23
TB-02-20230627	3310646033	Water	06/27/23
DUP-01-20230627	3310646034	Water	06/27/23
DUP-02-20230627	3310646035	Water	06/27/23
DUP-03-20230627	3310646036	Water	06/27/23
PW10-1-20230627	3310646037	Water	06/27/23
RW5-1-20230627MS	3310646016MS	Water	06/27/23
RW5-1-20230627MSD	3310646016MSD	Water	06/27/23
RW5-2-20230627MS	3310646017MS	Water	06/27/23
RW5-2-20230627MSD	3310646017MSD	Water	06/27/23
SW3-2-20230627MS	3310646026MS	Water	06/27/23
SW3-2-20230627MSD	3310646026MSD	Water	06/27/23

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Remedial Action Quality Assurance Project Plan for Sites FT005, LF008, ST010, SS014, DS002, AND DS004, Niagara Falls Air Reserve Station, New York (August 2015), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.3 (2019), and the U.S. Department of Defense (DoD) Data Validation Guidelines Module 1: Data Validation Procedure for Organic Analysis by GC/MS (May 2020). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Volatile Organic Compounds (VOCs) by Environmental Protection Agency (EPA) SW 846 Method 8260C

All sample results were subjected to Level II data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation:

- J+ (Estimated, High Bias): The analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated, displaying high bias, due to non-conformances discovered during data validation.
- J- (Estimated, Low Bias): The analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated, displaying low bias, due to non-conformances discovered during data validation.
- J (Estimated, Bias Indeterminate): The analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation. Bias is indeterminate.
- U (Non-detected): The analyte was analyzed for and positively identified by the laboratory; however the analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- B (Blank contamination): The analyte was found in an associated blank as well as in the sample.
- UB (Blank contamination): The analyte was found in an associated blank above one half the LOQ, as well as in the sample.
- X (Exclusion of data recommended): 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. Exclusion of the data is recommended.
- NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level II validation.

III. Initial Calibration and Initial Calibration Verification

Initial calibration data were not reviewed for Level II validation.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level II validation.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks with the following exceptions:

Blank ID	Analysis Date	Analyte	Concentration	Associated Samples
MB 1022338	07/06/23	Bromomethane	0.44 ug/L	MW5-1DA-20230627 MW5-6-20230627 RW5-1-20230627 RW5-4-20230627 PW13-4D-20230627 MW13-4D-20230627 MW13-5D-20230627 PW13-1-20230627 MW8-11D-20230627 MW3-3DA-20230627 MW3-4DA-20230627 SW3-3-20230627 SW3-15-20230627 PZ3-7D-20230627 PZ3-8D-20230627 PW3-3A-20230627

Sample concentrations were compared to concentrations detected in the laboratory blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

VII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VIII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. Percent recoveries (%R) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Analyte	MS (%R) (Limits)	MSD (%R) (Limits)	Flag	A or P
RW5-2-20230627MS/MSD (RW5-2-20230627)	Chloromethane Dichlorodifluoromethane	142 (50-139) 175 (32-152)	- 169 (32-152)	NA	-
RW5-2-20230627MS/MSD (RW5-2-20230627)	Vinyl chloride	156 (58-137)	148 (58-137)	J+ (all detects)	A
RW5-1-20230627MS/MSD (RW5-1-20230627)	Vinyl chloride	-	142 (58-137)	J+ (all detects)	A
SW3-2-20230627MS/MSD (SW3-2-20230627)	Dichlorodifluoromethane Iodomethane Vinyl chloride	157 (32-152) 134 (69-131) 147 (58-137)	- - -	NA	-

Relative percent differences (RPD) were within QC limits.

IX. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

X. Field Duplicates

Samples MW5-5D-20230627 and DUP-02-20230627, samples RW5-2-20230627 and DUP-01-20230627, and samples SW3-2-20230627 and DUP-03-20230627 were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Analyte	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	MW5-5D-20230627	DUP-02-20230627			
Acetone	4.5	4.0	12 (≤30)	-	-
cis-1,2-Dichloroethene	4.0	3.9	3 (≤30)	-	-

Analyte	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	MW5-5D-20230627	DUP-02-20230627			
Toluene	0.65	0.65	0 (≤30)	-	-
trans-1,2-Dichloroethene	0.47	0.42	11 (≤30)	-	-
Trichloroethene	1.7	1.6	6 (≤30)	-	-
Vinyl chloride	7.1	6.7	6 (≤30)	-	-

Analyte	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	RW5-2-20230627	DUP-01-20230627			
Acetone	5.4	4.5	18 (≤30)	-	-
cis-1,2-Dichloroethene	1.7	1.5	12 (≤30)	-	-
Toluene	0.74	0.76	3 (≤30)	-	-
Vinyl chloride	0.83	0.78	6 (≤30)	-	-

Analyte	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	SW3-2-20230627	DUP-03-20230627			
Chloroform	0.36	0.36	0 (≤30)	-	-

XI. Internal Standards

Internal standard data were not reviewed for Level II validation.

XII. Target Analyte Quantitation

Raw data were not reviewed for Level II validation.

XIII. Target Analyte Identification

Raw data were not reviewed for Level II validation.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were recommended for exclusion in this SDG.

Data qualified due to MS/MSD %R are summarized and presented in the Data Qualification Summary.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable.

NE ORC Niagara Falls**Volatiles - Data Qualification Summary - SDG AUC045/3310646**

Sample	Analyte	Flag	A or P	Reason
RW5-2-20230627 RW5-1-20230627	Vinyl chloride	J+ (all detects)	A	Matrix spike/Matrix spike duplicate (%R)

NE ORC Niagara Falls**Volatiles - Laboratory Blank Data Qualification Summary - SDG AUC045/3310646**

No Sample Data Qualified in this SDG

NE ORC Niagara Falls**Volatiles - Field Blank Data Qualification Summary - SDG AUC045/3310646**

No Sample Data Qualified in this SDG

LDC #: 57143B1a

VALIDATION COMPLETENESS WORKSHEET

SDG #: AUC045/3310646

Level II ~~IV~~

Laboratory: ALS Environmental, Middletown, PA

Date: 9/18/23

Page: 1 of 2

Reviewer: [Signature]

2nd Reviewer: [Signature]

METHOD: GC/MS Volatiles (EPA SW-846 Method 8260C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	GC/MS Instrument performance check	N	
III.	Initial calibration/ICV	N/N	
IV.	Continuing calibration	N	
V.	Laboratory Blanks	EW	
VI.	Field blanks	ND	TB=29.30
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	EW	
IX.	Laboratory control samples	A	LCs
X.	Field duplicates	EW	D=31+14 32+11 33+2
XI.	Internal standards	N	
XII.	Target analyte quantitation	N	
XIII.	Target analyte identification	N	
XIV.	Overall assessment of data	A	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

SB=Source blank
OTHER:

	Client ID	Lab ID	Matrix	Date
1	MW10-3-20230627	3310646001	Water	06/27/23
2	MW10-7-20230627	3310646002	Water	06/27/23
3	PW10-2-20230627	3310646003	Water	06/27/23
4	PZ10-7-20230627	3310646004	Water	06/27/23
5	SW10-7-20230627	3310646005	Water	06/27/23
6	SW10-8-20230627	3310646006	Water	06/27/23
7	SW99-10-20230627	3310646007	Water	06/27/23
8	SW10-6-20230627	3310646008	Water	06/27/23
9	SW10-5-20230627	3310646009	Water	06/27/23
10	MW5-1DA-20230627	3310646013	Water	06/27/23
11	MW5-5D-20230627	3310646014	Water	06/27/23
12	MW5-6-20230627	3310646015	Water	06/27/23
13	RW5-1-20230627	3310646016	Water	06/27/23
14	RW5-2-20230627	3310646017	Water	06/27/23
15	RW5-4-20230627	3310646018	Water	06/27/23

LDC #: 57143B1a

VALIDATION COMPLETENESS WORKSHEET

SDG #: AUC045/3310646

Level II

Laboratory: ALS Environmental, Middletown, PA

Date: 9/10/23

Page: 2 of 3

Reviewer: [Signature]

2nd Reviewer: [Signature]

METHOD: GC/MS Volatiles (EPA SW-846 Method 8260C)

	Client ID	Lab ID	Matrix	Date
16	PW13-4D-20230627	3310646019	Water	06/27/23
17	MW13-4D-20230627	3310646020	Water	06/27/23
18	MW13-5D-20230627	3310646021	Water	06/27/23
19	PW13-1-20230627	3310646022	Water	06/27/23
20	MW8-11D-20230627	3310646023	Water	06/27/23
21	MW3-3DA-20230627	3310646024	Water	06/27/23
22	MW3-4DA-20230627	3310646025	Water	06/27/23
23	SW3-2-20230627 <i>D3</i>	3310646026	Water	06/27/23
24	SW3-3-20230627	3310646027	Water	06/27/23
25	SW3-15-20230627	3310646028	Water	06/27/23
26	PZ3-7D-20230627	3310646029	Water	06/27/23
27	PZ3-8D-20230627	3310646030	Water	06/27/23
28	PW3-3A-20230627	3310646031	Water	06/27/23
29	TB-01-20230627	3310646032	Water	06/27/23
30	TB-02-20230627	3310646033	Water	06/27/23
31	DUP-01-20230627 <i>D1</i>	3310646034	Water	06/27/23
32	DUP-02-20230627 <i>D2</i>	3310646035	Water	06/27/23
33	DUP-03-20230627 <i>D3</i>	3310646036	Water	06/27/23
34	PW10-1-20230627	3310646037	Water	06/27/23
35	RW5-1-20230627MS	3310646016MS	Water	06/27/23
36	RW5-1-20230627MSD	3310646016MSD	Water	06/27/23
37	RW5-2-20230627MS	3310646017MS	Water	06/27/23
38	RW5-2-20230627MSD	3310646017MSD	Water	06/27/23
39	SW3-2-20230627MS	3310646026MS	Water	06/27/23
40	SW3-2-20230627MSD	3310646026MSD	Water	06/27/23
41				
42				
43				

Notes:

1021857					
1022338					
1022851					

TARGET COMPOUND WORKSHEET

METHOD: VOA

A. Chloromethane	AA. Tetrachloroethene	AAA. 1,3,5-Trimethylbenzene	AAAA. Ethyl tert-butyl ether	A1. 1,3-Butadiene
B. Bromomethane	BB. 1,1,2,2-Tetrachloroethane	BBB. 4-Chlorotoluene	BBBB. tert-Amyl methyl ether	B1. Hexane
C. Vinyl chloride	CC. Toluene	CCC. tert-Butylbenzene	CCCC. 1-Chlorohexane	C1. Heptane
D. Chloroethane	DD. Chlorobenzene	DDD. 1,2,4-Trimethylbenzene	DDDD. Isopropyl alcohol	D1. Propylene
E. Methylene chloride	EE. Ethylbenzene	EEE. sec-Butylbenzene	EEEE. Acetonitrile	E1. Freon 11
F. Acetone	FF. Styrene	FFF. 1,3-Dichlorobenzene	FFFF. Acrolein	F1. Freon 12
G. Carbon disulfide	GG. Xylenes, total	GGG. p-Isopropyltoluene	GGGG. Acrylonitrile	G1. Freon 113
H. 1,1-Dichloroethene	HH. Vinyl acetate	HHH. 1,4-Dichlorobenzene	HHHH. 1,4-Dioxane	H1. Freon 114
I. 1,1-Dichloroethane	II. 2-Chloroethylvinyl ether	III. n-Butylbenzene	IIII. Isobutyl alcohol	I1. 2-Nitropropane
J. 1,2-Dichloroethene, total	JJ. Dichlorodifluoromethane	JJJ. 1,2-Dichlorobenzene	JJJJ. Methacrylonitrile	J1. Dimethyl disulfide
K. Chloroform	KK. Trichlorofluoromethane	KKK. 1,2,4-Trichlorobenzene	KKKK. Propionitrile	K1. 2,3-Dimethyl pentane
L. 1,2-Dichloroethane	LL. Methyl-tert-butyl ether	LLL. Hexachlorobutadiene	LLLL. Ethyl ether	L1. 2,4-Dimethyl pentane
M. 2-Butanone	MM. 1,2-Dibromo-3-chloropropane	MMM. Naphthalene	MMMM. Benzyl chloride	M1. 3,3-Dimethyl pentane
N. 1,1,1-Trichloroethane	NN. Methyl ethyl ketone	NNN. 1,2,3-Trichlorobenzene	NNNN. Iodomethane	N1. 2-Methylpentane
O. Carbon tetrachloride	OO. 2,2-Dichloropropane	OOO. 1,3,5-Trichlorobenzene	OOOO. 1,1-Difluoroethane	O1. 3-Methylpentane
P. Bromodichloromethane	PP. Bromochloromethane	PPP. trans-1,2-Dichloroethene	PPPP. Tetrahydrofuran	P1. 3-Ethylpentane
Q. 1,2-Dichloropropane	QQ. 1,1-Dichloropropene	QQQ. cis-1,2-Dichloroethene	QQQQ. Methyl acetate	Q1. 2,2-Dimethylpentane
R. cis-1,3-Dichloropropene	RR. Dibromomethane	RRR. m,p-Xylenes	RRRR. Ethyl acetate	R1. 2,2,3-Trimethylbutane
S. Trichloroethene	SS. 1,3-Dichloropropane	SSS. o-Xylene	SSSS. Cyclohexane	S1. 2,2,4-Trimethylpentane
T. Dibromochloromethane	TT. 1,2-Dibromoethane	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	TTTT. Methylcyclohexane	T1. 2-Methylhexane
U. 1,1,2-Trichloroethane	UU. 1,1,1,2-Tetrachloroethane	UUU. 1,2-Dichlorotetrafluoroethane	UUUU. Allyl chloride	U1. Nonanal
V. Benzene	VV. Isopropylbenzene	VVV. 4-Ethyltoluene	VVVV. Methyl methacrylate	V1. 2-Methylnaphthalene
W. trans-1,3-Dichloropropene	WW. Bromobenzene	WWW. Ethanol	WWWW. Ethyl methacrylate	W1. Methanol
X. Bromoform	XX. 1,2,3-Trichloropropane	XXX. Di-isopropyl ether	XXXX. cis-1,4-Dichloro-2-butene	X1. 1,2,3-Trimethylbenzene
Y. 4-Methyl-2-pentanone	YY. n-Propylbenzene	YYY. tert-Butanol	YYYY. trans-1,4-Dichloro-2-butene	Y1. 2-Propanol
Z. 2-Hexanone	ZZ. 2-Chlorotoluene	ZZZ. tert-Butyl alcohol	ZZZZ. Pentachloroethane	Z1. Ethylene Dibromide

VALIDATION FINDINGS WORKSHEET

Blanks

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

- ☒ Y ☐ N ☐ N/A Was a method blank associated with every sample in this SDG?
☒ Y ☐ N ☐ N/A Was a method blank analyzed at least once every 12 hours for each matrix and concentration?
☒ Y ☐ N ☐ N/A Was there contamination in the method blanks? If yes, please see the qualifications below.

Blank analysis date: 7/6/23Conc. units: MBAssociated Samples: 10.12.13.15-22.24-28

Compound	Blank ID	Sample Identification							
<u>MB</u>	<u>1022338</u>								
Methylene chloride <u>B</u>	<u>0.44</u>								
~~Acetone~~									

Blank analysis date: _____

Conc. units: _____

Associated Samples: _____

Compound	Blank ID	Sample Identification							
Methylene chloride									
Acetone									

LDC #: 57143A/9

VALIDATION FINDINGS WORKSHEET

Matrix Spike/Matrix Spike Duplicates

Page: 1 of 1
Reviewer: [Signature]

METHOD : GC/MS VOA (EPA SW 846 Method 8260)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.

Y N N/A Was a MS/MSD analyzed every 20 samples of each matrix?

Y/N/N/A Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?

[illegible]

METHOD: GCMS VOA (EPA SW 846 Method 8260B)

Compound	Concentration (ug/L)		RPD (≤ 30 %)	Qualifications (Parent only)
	11	32		
F	4.5	4.0	12	
QQQ	4.0	3.9	3	
CC	0.65	0.65	0	
PPP	0.47	0.42	11	
S	1.7	1.6	6	
C	7.1	6.7	6	

Compound	Concentration (ug/L)		RPD (≤ 30 %)	Qualifications (Parent only)
	14	31		
F	5.4	4.5	18	
QQQ	1.7	1.5	12	
CC	0.74	0.76	3	
C	0.83	0.78	6	

Compound	Concentration (ug/L)		RPD (≤ 30 %)	Qualifications (Parent only)
	23	33		
K	0.36	0.36	0	

NQ = One or both results were < 5x the LOQ, therefore no data were qualified.

V:\FIELD DUPLICATES\Field Duplicates\FD_Organics\2023\57143B1_Arcadis_NFARS .wpd

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: NE ORC Niagara Falls

LDC Report Date: September 27, 2023

Parameters: Total Organic Carbon

Validation Level: Level II

Laboratory: ALS Environmental, Middletown, PA

Sample Delivery Group (SDG): AUC45/3310646

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
MW10-7-20230627	3310646002	Water	06/27/23
MW10-11D-20230627	3310646010	Water	06/27/23
MW10-1DA-20230627	3310646011	Water	06/27/23
MW10-10D-20230627	3310646012	Water	06/27/23
MW5-1DA-20230627	3310646013	Water	06/27/23
MW5-5D-20230627	3310646014	Water	06/27/23
RW5-1-20230627	3310646016	Water	06/27/23
RW5-2-20230627	3310646017	Water	06/27/23
DUP-02-20230627	3310646035	Water	06/27/23
PW10-1-20230627	3310646037	Water	06/27/23
RW5-1-20230627MS	3310646016MS	Water	06/27/23
RW5-1-20230627MSD	3310646016MSD	Water	06/27/23

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Remedial Action Quality Assurance Project Plan for Sites FT005, LF008, ST010, SS014, DS002, AND DS004, Niagara Falls Air Reserve Station, New York (August 2015), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.3 (2019), and the U.S. Department of Defense (DoD) Data Validation Guidelines Module 1: Data Validation Procedure for Organic Analysis by GC/MS (May 2020). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Total Organic Carbon by Environmental Protection Agency (EPA) SW 846 Method 9060A

All sample results were subjected to Level II data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation:

- J+ (Estimated, High Bias): The analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated, displaying high bias, due to non-conformances discovered during data validation.
- J- (Estimated, Low Bias): The analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated, displaying low bias, due to non-conformances discovered during data validation.
- J (Estimated, Bias Indeterminate): The analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation. Bias is indeterminate.
- U (Non-detected): The analyte was analyzed for and positively identified by the laboratory; however the analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- B (Blank contamination): The analyte was found in an associated blank as well as in the sample.
- UB (Blank contamination): The analyte was found in an associated blank above one half the LOQ, as well as in the sample.
- X (Exclusion of data recommended): 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. Exclusion of the data is recommended.
- NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition.

All technical holding time requirements were met.

II. Initial Calibration

Initial calibration data were not reviewed for Level II validation.

III. Continuing Calibration

Continuing calibration data were not reviewed for Level II validation.

IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

V. Field Blanks

No field blanks were identified in this SDG.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

VII. Duplicate Sample Analysis

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

IX. Field Duplicates

Samples MW5-5D-20230627 and DUP-02-20230627 were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/L)		RPD (Limits)	Flag	A or P
	MW5-5D-20230627	DUP-02-20230627			
Total organic carbon	105	109	4 (≤20)	-	-

X. Target Analyte Quantitation

Raw data were not reviewed for Level II validation.

XI. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were recommended for exclusion in this SDG.

The quality control criteria reviewed were met and are considered acceptable.

NE ORC Niagara Falls

Total Organic Carbon - Data Qualification Summary - SDG AUC45/3310646

No Sample Data Qualified in this SDG

NE ORC Niagara Falls

Total Organic Carbon - Laboratory Blank Data Qualification Summary - SDG AUC45/3310646

No Sample Data Qualified in this SDG

NE ORC Niagara Falls

Total Organic Carbon - Field Blank Data Qualification Summary - SDG AUC45/3310646

No Sample Data Qualified in this SDG

LDC #: 57143B6

VALIDATION COMPLETENESS WORKSHEET

Date: 1/26/23

SDG #: AUC45/3310646

Level II

Page: 1 of 1

Laboratory: ALS Environmental, Middletown, PA

Reviewer: NJ

2nd Reviewer: CJP

METHOD: (Analyte) TOC (EPA SW-846 Method 9060A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A / A	
II.	Initial calibration	N	
III.	Calibration verification	N	
IV.	Laboratory Blanks	A	
V.	Field blanks	N	
VI.	Matrix Spike/Matrix Spike Duplicates	A	
VII.	Duplicate sample analysis	N	
VIII.	Laboratory control samples	A	LCS
IX.	Field duplicates	SW	FD = (6, 9)
X.	Target Analyte Quantitation	N	
XI.	Overall assessment of data	A	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

SB = Source blank
OTHER:

	Client ID	Lab ID	Matrix	Date
1	MW10-7-20230627	3310646002	Water	06/27/23
2	MW10-11D-20230627	3310646010	Water	06/27/23
3	MW10-1DA-20230627	3310646011	Water	06/27/23
4	MW10-10D-20230627	3310646012	Water	06/27/23
5	MW5-1DA-20230627	3310646013	Water	06/27/23
6	MW5-5D-20230627	3310646014	Water	06/27/23
7	RW5-1-20230627	3310646016	Water	06/27/23
8	RW5-2-20230627	3310646017	Water	06/27/23
9	DUP-02-20230627	3310646035	Water	06/27/23
10	PW10-1-20230627	3310646037	Water	06/27/23
11	RW5-1-20230627MS	3310646016MS	Water	06/27/23
12	RW5-1-20230627MSD	3310646016MSD	Water	06/27/23
13				
14				
15				

Notes:

[illegible]

Field Duplicates

Reviewer: NF

METHOD: Inorganics

Analyte	Concentration (mg/L)		RPD (≤ 20)	Qualifiers
	6	9		
TOC	105	109	4	

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: NE ORC Niagara Falls

LDC Report Date: September 25, 2023

Parameters: Methane, Ethane, & Ethene

Validation Level: Level II

Laboratory: ALS Environmental, Middletown, PA

Sample Delivery Group (SDG): AUC45/3310646

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
MW10-7-20230627	3310646002	Water	06/27/23
MW10-11D-20230627	3310646010	Water	06/27/23
MW10-1DA-20230627	3310646011	Water	06/27/23
MW10-10D-20230627	3310646012	Water	06/27/23
MW5-1DA-20230627	3310646013	Water	06/27/23
MW5-5D-20230627	3310646014	Water	06/27/23
RW5-1-20230627	3310646016	Water	06/27/23
RW5-2-20230627	3310646017	Water	06/27/23
DUP-02-20230627	3310646035	Water	06/27/23
PW10-1-20230627	3310646037	Water	06/27/23
MW5-5D-20230627DUP	3310646014DUP	Water	06/27/23
RW5-1-20230627DUP	3310646016DUP	Water	06/27/23

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Remedial Action Quality Assurance Project Plan for Sites FT005, LF008, ST010, SS014, DS002, AND DS004, Niagara Falls Air Reserve Station, New York (August 2015), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.3 (2019), and the U.S. Department of Defense (DoD) Data Validation Guidelines Module 4: Data Validation Procedure for Organic Analysis by GC (March 2021). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Methane, Ethane, and Ethene by Method RSK-175

All sample results were subjected to Level II data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation:

- J+ (Estimated, High Bias): The analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated, displaying high bias, due to non-conformances discovered during data validation.
- J- (Estimated, Low Bias): The analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated, displaying low bias, due to non-conformances discovered during data validation.
- J (Estimated, Bias Indeterminate): The analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation. Bias is indeterminate.
- U (Non-detected): The analyte was analyzed for and positively identified by the laboratory; however the analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- B (Blank contamination): The analyte was found in an associated blank as well as in the sample.
- UB (Blank contamination): The analyte was found in an associated blank above one half the LOQ, as well as in the sample.
- X (Exclusion of data recommended): 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. Exclusion of the data is recommended.
- NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. Initial Calibration and Initial Calibration Verification

Initial calibration data were not reviewed for Level II validation.

III. Continuing Calibration

Continuing calibration data were not reviewed for Level II validation.

IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

V. Field Blanks

No field blanks were identified in this SDG.

VI. Matrix Spike/Matrix Spike Duplicates/Duplicate Sample Analysis

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

Duplicate (DUP) sample analysis was performed on an associated project sample. Results were less than 5X the reporting limit (RL).

VII. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits with the following exceptions:

Sample	Analyte	Finding	Criteria	Flag	A or P
All samples in SDG AUC45/3310646	All analytes	No LCS analysis associated with these samples.	LCS analysis required.	J (all detects) UJ (all non-detects)	P

The samples and associated blanks are qualified as estimated (J/UJ) due to the lack of associated laboratory control samples, matrix spikes, and matrix spike duplicates.

VIII. Field Duplicates

Samples MW5-5D-20230627 and DUP-02-20230627 were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Analyte	Concentration (ug/L)		RPD (Limits)	Flag	A or P
	MW5-5D-20230627	DUP-02-20230627			
Ethane	41.9	12.4	109 (≤30)	NQ	-
Ethene	38.1	16.5	79 (≤30)	NQ	-
Methane	5270	1570	108 (≤30)	J (all detects)	A

IX. Target Analyte Quantitation

Raw data were not reviewed for Level II validation.

X. Target Analyte Identification

Raw data were not reviewed for Level II validation.

XI. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were recommended for exclusion in this SDG.

Data qualified due to no LCS and field duplicate RPD are summarized and presented in the Data Qualification Summary.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable.

NE ORC Niagara Falls**Methane, Ethane, & Ethene - Data Qualification Summary - SDG AUC45/3310646**

Sample	Analyte	Flag	A or P	Reason
MW10-7-20230627 MW10-11D-20230627 MW10-1DA-20230627 MW10-10D-20230627 MW5-1DA-20230627 MW5-5D-20230627 RW5-1-20230627 RW5-2-20230627 DUP-02-20230627 PW10-1-20230627	All analytes	J (all detects) UJ (all non-detects)	P	Laboratory control samples (no LCS)
MW5-5D-20230627 DUP-02-20230627	Methane	J (all detects)	A	Field duplicates (RPD)

NE ORC Niagara Falls**Methane, Ethane, & Ethene - Laboratory Blank Data Qualification Summary - SDG AUC45/3310646**

No Sample Data Qualified in this SDG

NE ORC Niagara Falls**Methane, Ethane, & Ethene - Field Blank Data Qualification Summary - SDG AUC45/3310646**

No Sample Data Qualified in this SDG

LDC #: 57143B51 **VALIDATION COMPLETENESS WORKSHEET**
SDG #: AUC45/3310646 Level II
Laboratory: ALS Environmental, Middletown, PA

Date: 9/18/23
Page: 1 of 1
Reviewer: [Signature]
2nd Reviewer: [Signature]

METHOD: GC Methane-Ethane-Ethene (Method RSK-175)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	Initial calibration/ICV	N/N	
III.	Continuing calibration	N	
IV.	Laboratory Blanks	A	
V.	Field blanks	N	
VI.	Surrogate spikes	N	
VII.	Matrix spike/Matrix spike duplicates	N/A	5X FL
VIII.	Laboratory control samples	SW	
IX.	Field duplicates	SW	D = 9 + 8 = 17
X.	Target analyte quantitation	N	
XI.	Target analyte identification	N	
XII.	Overall assessment of data	A	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

SB=Source blank
OTHER:

	Client ID	Lab ID	Matrix	Date
1	MW10-7-20230627	3310646002	Water	06/27/23
2	MW10-11D-20230627	3310646010	Water	06/27/23
3	MW10-1DA-20230627	3310646011	Water	06/27/23
4	MW10-10D-20230627	3310646012	Water	06/27/23
5	MW5-1DA-20230627	3310646013	Water	06/27/23
6	MW5-5D-20230627	3310646014	Water	06/27/23
7	RW5-1-20230627	3310646016	Water	06/27/23
8	RW5-2-20230627	3310646017	Water	06/27/23
9	DUP-02-20230627	3310646035	Water	06/27/23
10	PW10-1-20230627	3310646037	Water	06/27/23
11	MW5-5D-20230627DUP	3310646014DUP	Water	06/27/23
12	#7 DUP	16 DUP		
13				

Notes:

1022670				
1023280				

LDC #: 57143B5

VALIDATION FINDINGS WORKSHEET

Page: 1 of 1
Reviewer: 9

METHOD: ☒ GC ☐ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y/N/N/A Were a laboratory control samples (LCS) and laboratory control sample duplicate (LCSD) analyzed for each matrix in this SDG?

Y N/A Was a blank spike analyzed for each matrix or whenever a sample extraction was performed?

Y N N/A Were the blank spike percent recoveries (%R) and relative percent differences (RPD) within the QC limits?

[illegible]

VALIDATION FINDINGS WORKSHEET
Field Duplicates**METHOD:** GC Methane-Ethane-Ethene (RSK-175)Y N NA Were field duplicate pairs identified in this SDG?Y N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ug/L)		RPD (≤ 30 %)	Qualifications (Parent only)
	6	9		
Ethane	41.9	12.4	109	NQ
Ethene	38.1	16.5	79	NQ
Methane	5270	1570	108	Jdets/A

NQ = One or both results were < 5x the LOQ, therefore no data were qualified.

V:\FIELD DUPLICATES\Field Duplicates\FD_Organics\2023\57143B51_Arcadis_NFARS.wpd



LABORATORY DATA CONSULTANTS, INC.

2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

ARCADIS U.S., Inc.
10 Friends Ln, Suite 200
Newtown, PA 18940
ATTN: Ms. Carmen Vidal
carmen.vidal@arcadis.com

February 5, 2024

SUBJECT: NE ORC Niagara Falls - Data Validation

Dear Ms. Vidal,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on January 8, 2024. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project #58196:

SDG #

AUC057/3331303
AUC058/3331362
AUC046/3315995

Fraction

Volatiles, Total Organic Carbon, Methane, Ethane, & Ethene

The data validation was performed under Level II & IV guidelines. The analysis was validated using the following documents, as applicable to each method:

- Final Remedial Action Quality Assurance Project Plan for Sites FT005, LF008, ST010, SS014, DS002, AND DS004, Niagara Falls Air Reserve Station, New York (August 2015)
- U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.3 (2019)
- U.S. Department of Defense (DoD) Data Validation Guidelines Module 1: Data Validation Procedure for Organic Analysis by GC/MS (May 2020)
- U.S. Department of Defense (DoD) Data Validation Guidelines Module 4: Data Validation Procedure for Organic Analysis by GC (March 2021)
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014; update VI, July 2018

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
pgeng@lab-data.com
Project Manager/Senior Chemist

[illegible]

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: NE ORC Niagara Falls

LDC Report Date: February 5, 2024

Parameters: Volatiles

Validation Level: Level II & IV

Laboratory: ALS Environmental, Middletown, PA

Sample Delivery Group (SDG): AUC057/3331303

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
MW1-1DA-20231102	3331303001	Water	11/02/23
MW13-5D-20231102**	3331303002**	Water	11/02/23
PW13-1-20231102**	3331303003**	Water	11/02/23
MW-13-4D-20231102**	3331303004**	Water	11/02/23
PW13-4D-20231102**	3331303005**	Water	11/02/23
MW5-1DA-20231102	3331303006	Water	11/02/23
RW5-1-20231102	3331303007	Water	11/02/23
DUP-01-20231102	3331303008	Water	11/02/23
SW99-10-20231102	3331303009	Water	11/02/23
SW10-7-20231102	3331303010	Water	11/02/23
MW10-3D-20231102	3331303011	Water	11/02/23
SW10-5-20231102	3331303012	Water	11/02/23
SW10-8-20231102	3331303013	Water	11/02/23
MW10-11D-20231102	3331303014	Water	11/02/23
MW10-9D-20231102	3331303015	Water	11/02/23
SW10-6-20231102	3331303016	Water	11/02/23
PW10-1-20231102	3331303017	Water	11/02/23
MW10-7-20231102	3331303018	Water	11/02/23
MW10-4E-20231102	3331303019	Water	11/02/23
MW10-4D-20231102	3331303020	Water	11/02/23
MW10-1DA-20231102	3331303021	Water	11/02/23
PW10-2-20231102	3331303022	Water	11/02/23
MW10-10D-20231102	3331303023	Water	11/02/23
SW3-3-20231102	3331303024	Water	11/02/23
SW3-15-20231102	3331303025	Water	11/02/23
SW3-2-20231102	3331303026	Water	11/02/23

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
DUP-02-20231102	3331303027	Water	11/02/23
MW5-6-20231102	3331303028	Water	11/02/23
MW5-5D-20231102	3331303030	Water	11/02/23
RW5-2-20231102	3331303031	Water	11/02/23
RW5-4-20231102	3331303032	Water	11/02/23
TB-01-20231102	3331303033	Water	11/02/23
TB-02-20231102	3331303034	Water	11/02/23
RW5-1-20231102MS	3331303007MS	Water	11/02/23
RW5-1-20231102MSD	3331303007MSD	Water	11/02/23
SW3-2-20231102MS	3331303026MS	Water	11/02/23
SW3-2-20231102MSD	3331303026MSD	Water	11/02/23

**Indicates sample underwent Level IV validation

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Remedial Action Quality Assurance Project Plan for Sites FT005, LF008, ST010, SS014, DS002, AND DS004, Niagara Falls Air Reserve Station, New York (August 2015), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.3 (2019), and the U.S. Department of Defense (DoD) Data Validation Guidelines Module 1: Data Validation Procedure for Organic Analysis by GC/MS (May 2020). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Volatile Organic Compounds (VOCs) by Environmental Protection Agency (EPA) SW 846 Method 8260C

All sample results were subjected to Level II data validation, which comprises an evaluation of quality control (QC) summary results. Samples appended with a double asterisk on the cover page were subjected to Level IV data validation, which is comprised of the QC summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

- J+ (Estimated, High Bias): The analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated, displaying high bias, due to non-conformances discovered during data validation.
- J- (Estimated, Low Bias): The analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated, displaying low bias, due to non-conformances discovered during data validation.
- J (Estimated, Bias Indeterminate): The analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation. Bias is indeterminate.
- U (Non-detected): The analyte was analyzed for and positively identified by the laboratory; however the analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UU (Non-detected estimated): The analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- B (Blank contamination): The analyte was found in an associated blank as well as in the sample.
- UB (Blank contamination): The analyte was found in an associated blank above one half the LOQ, as well as in the sample.
- X (Exclusion of data recommended): 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. Exclusion of the data is recommended.
- NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. GC/MS Instrument Performance Check

A bromofluorobenzene (BFB) tune was performed at 12 hour intervals.

All ion abundance requirements were met.

Instrument performance check data were not reviewed for Level II validation.

III. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

For analytes where average relative response factors (RRFs) were utilized, the percent relative standard deviations (%RSD) were less than or equal to 15.0%.

In the case where the laboratory used a calibration curve to evaluate the analytes, all coefficients of determination (r^2) were greater than or equal to 0.990.

Average relative response factors (RRF) for all analytes were within validation criteria.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 20.0% for all analytes with the following exceptions:

Date	Analyte	%D	Associated Samples	Flag	A or P
11/15/23	Bromomethane Iodomethane	21.0 26.6	MW13-5D-20231102** PW13-1-20231102** MW-13-4D-20231102** PW13-4D-20231102**	UJ (all non-detects) UJ (all non-detects)	A

Initial calibration data were not reviewed for Level II validation.

IV. Continuing Calibration

The percent differences (%D) were less than or equal to 20.0% for all analytes with the following exceptions:

Date	Analyte	%D	Associated Samples	Flag	A or P
11/15/23	Iodomethane	24.642	MW13-5D-20231102** PW13-1-20231102** MW-13-4D-20231102** PW13-4D-20231102**	UJ (all non-detects)	A

The percent differences (%D) of the ending continuing calibration verifications (CCVs) were less than or equal to 50.0% for all analytes.

All of the continuing calibration relative response factors (RRF) were within validation criteria.

Continuing calibration data were not reviewed for Level II validation.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks with the following exceptions:

Blank ID	Analysis Date	Analyte	Concentration (ug/L)	Associated Samples
3751105 MB	11/15/23	Iodomethane	0.58	MW1-1DA-20231102 MW13-5D-20231102** PW13-1-20231102** MW-13-4D-20231102** PW13-4D-20231102** RW5-1-20231102

Sample concentrations were compared to concentrations detected in the laboratory blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated laboratory blanks.

VI. Field Blanks

Samples TB-01-20231102 and TB-02-20231102 were identified as trip blanks. No contaminants were found.

VII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VIII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. Percent recoveries (%R) were within QC limits with the

following exceptions:

Spike ID (Associated Samples)	Analyte	MS (%R) (Limits)	MSD (%R) (Limits)	Flag	A or P
RW5-1-20231102MS/MSD (RW5-1-20231102)	Chloroethane	296 (60-138)	271 (60-138)	NA	-
SW3-2-20231102MS/MSD (SW3-2-20231102)	Iodomethane	33.3 (69-131)	46.8 (69-131)	UJ (all non-detects)	A

Relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Analyte	RPD (≤20)	Flag	A or P
RW5-1-20231102MS/MSD (RW5-1-20231102)	Bromomethane	35.1	NA	-
SW3-2-20231102MS/MSD (SW3-2-20231102)	Iodomethane	33.8	NA	-

IX. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits with the following exceptions:

LCS ID (Associated Samples)	Analyte	%R (69-131)	Flag	A or P
LCS 3751656 (MW5-1DA-20231102 DUP-01-20231102 SW99-10-20231102 SW10-7-20231102 MW10-3D-20231102 SW10-5-20231102 SW10-8-20231102 MW10-11D-20231102 MW10-9D-20231102 SW10-6-20231102 PW10-1-20231102 MW10-7-20231102 MW10-4E-20231102)	Iodomethane	53.5	J- (all detects) UJ (all non-detects)	P

X. Field Duplicates

Samples RW5-1-20231102 and DUP-01-20231102 and samples SW3-2-20231102 and DUP-02-20231102 were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Analyte	Concentration (ug/L)		RPD (≤ 35)	Flag	A or P
	RW5-1-20231102	DUP-01-20231102			
Acetone	11.2	12.7	13	-	-
Carbon disulfide	0.75U	0.50	40	NQ	-
cis-1,2-Dichloroethene	1.0	1.1	10	-	-
Toluene	11.7	11.4	3	-	-
trans-1,2-Dichloroethene	0.36	0.38	5	-	-
Trichloroethene	0.76	0.7	8	-	-
Vinyl chloride	0.94	1.0	6	-	-

Analyte	Concentration (ug/L)		RPD (≤ 35)	Flag	A or P
	SW3-2-20231102	DUP-02-20231102			
Acetone	3.8	3.4	11	-	-

NQ = One or both results were less than the limit of quantitation (LOQ), therefore no data were qualified.

XI. Internal Standards

All internal standard areas and retention times were within QC limits.

Internal standards data were not reviewed for Level II validation.

XII. Target Analyte Quantitation

All target analyte quantitations met validation criteria for samples which underwent Level IV validation. Raw data were not reviewed for Level II validation.

XIII. Target Analyte Identification

All target analyte identifications met validation criteria for samples which underwent Level IV validation. Raw data were not reviewed for Level II validation.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were recommended for exclusion in this SDG.

Data qualified due to ICV %D, continuing calibration %D, MS/MSD %R, and LCS %R are summarized and presented in the Data Qualification Summary.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable.

NE ORC Niagara Falls**Volatiles - Data Qualification Summary - SDG AUC057/3331303**

Sample	Analyte	Flag	A or P	Reason
MW13-5D-20231102** PW13-1-20231102** MW-13-4D-20231102** PW13-4D-20231102**	Bromomethane Iodomethane	UJ (all non-detects) UJ (all non-detects)	A	Initial calibration verification (%D)
MW13-5D-20231102** PW13-1-20231102** MW-13-4D-20231102** PW13-4D-20231102**	Iodomethane	UJ (all non-detects)	A	Continuing calibration (%D)
SW3-2-20231102	Iodomethane	UJ (all non-detects)	A	Matrix spike/Matrix spike duplicate (%R)
MW5-1DA-20231102 DUP-01-20231102 SW99-10-20231102 SW10-7-20231102 MW10-3D-20231102 SW10-5-20231102 SW10-8-20231102 MW10-11D-20231102 MW10-9D-20231102 SW10-6-20231102 PW10-1-20231102 MW10-7-20231102 MW10-4E-20231102	Iodomethane	J- (all detects) UJ (all non-detects)	P	Laboratory control samples (%R)

NE ORC Niagara Falls**Volatiles - Laboratory Blank Data Qualification Summary - SDG AUC057/3331303**

No Sample Data Qualified in this SDG

NE ORC Niagara Falls**Volatiles - Field Blank Data Qualification Summary - SDG AUC057/3331303**

No Sample Data Qualified in this SDG

LDC #: 58196A1a

VALIDATION COMPLETENESS WORKSHEET

SDG #: AUC057/3331303

Level II/IV

Laboratory: ALS Environmental, Middletown, PA

Date: 2/16/24

Page: 1 of 2

Reviewer: [Signature]

2nd Reviewer: [Signature]

METHOD: GC/MS Volatiles (EPA SW-846 Method 8260C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	GC/MS Instrument performance check	A	Not reviewed for Level II validation.
III.	Initial calibration/ICV	A/FW	Not reviewed for Level II validation. $RSD \leq 15\%$ $Y = 1.2 \times 10^{-3}$
IV.	Continuing calibration	FW	Not reviewed for Level II validation. $D \leq 20/50\%$
V.	Laboratory Blanks	FW	
VI.	Field blanks	ND	TB = 32.33
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	FW	
IX.	Laboratory control samples	FW	LOS
X.	Field duplicates	FW	D = 7.15, 26 + 27
XI.	Internal standards	A	
XII.	Target analyte quantitation	A	Not reviewed for Level II validation.
XIII.	Target analyte identification	A	Not reviewed for Level II validation.
XIV.	Overall assessment of data	A	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

SB = Source blank
OTHER:

** Indicates sample underwent Level IV validation

	Client ID	Lab ID	Matrix	Date
1	MW1-1DA-20231102	3331303001	Water	11/02/23
2	MW13-5D-20231102**	3331303002**	Water	11/02/23
3	PW13-1-20231102 **	3331303003 **	Water	11/02/23
4	MW-13-4D-20231102 **	3331303004 **	Water	11/02/23
5	PW13-4D-20231102 **	3331303005 **	Water	11/02/23
6	MW5-1DA-20231102	3331303006	Water	11/02/23
7	RWS-1-20231102	3331303007	Water	11/02/23
8	DUP-01-20231102	3331303008	Water	11/02/23
9	SW99-10-20231102	3331303009	Water	11/02/23
10	SW10-7-20231102	3331303010	Water	11/02/23
11	MW10-3D-20231102	3331303011	Water	11/02/23
12	SW10-5-20231102	3331303012	Water	11/02/23
13	SW10-8-20231102	3331303013	Water	11/02/23
14	MW10-11D-20231102	3331303014	Water	11/02/23
15	MW10-9D-20231102	3331303015	Water	11/02/23

LDC #: 58196A1a

VALIDATION COMPLETENESS WORKSHEET

SDG #: AUC057/3331303

Level II/IV

Laboratory: ALS Environmental, Middletown, PA

Date: 11/24

Page: 2 of 2

Reviewer: [Signature]

2nd Reviewer: [Signature]

METHOD: GC/MS Volatiles (EPA SW-846 Method 8260C)

	Client ID	Lab ID	Matrix	Date
16	SW10-6-20231102	3331303016	Water	11/02/23
17	PW10-1-20231102	3331303017	Water	11/02/23
18	MW10-7-20231102	3331303018	Water	11/02/23
19	MW10-4E-20231102	3331303019	Water	11/02/23
20	MW10-4D-20231102	3331303020	Water	11/02/23
21	MW10-1DA-20231102	3331303021	Water	11/02/23
22	PW10-2-20231102	3331303022	Water	11/02/23
23	MW10-10D-20231102	3331303023	Water	11/02/23
24	SW3-3-20231102	3331303024	Water	11/02/23
25	SW3-15-20231102	3331303025	Water	11/02/23
26	SW3-2-20231102	3331303026	Water	11/02/23
27	DUP-02-20231102	3331303027	Water	11/02/23
28	MW5-6-20231102	3331303028	Water	11/02/23
29	MW5-5D-20231102	3331303030	Water	11/02/23
30	RW5-2-20231102	3331303031	Water	11/02/23
31	RW5-4-20231102	3331303032	Water	11/02/23
32	TB-01-20231102	3331303033	Water	11/02/23
33	TB-02-20231102	3331303034	Water	11/02/23
34	RW5-1-20231102MS	3331303007MS	Water	11/02/23
35	RW5-1-20231102MSD	3331303007MSD	Water	11/02/23
36	SW3-2-20231102MS	3331303026MS	Water	11/02/23
37	SW3-2-20231102MSD	3331303026MSD	Water	11/02/23
38				
39				
40				
41				

Notes:

1089460					
1090929					
1090893					

Method: Volatiles (EPA SW 846 Method 8260C)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?	☒	☐	☐	
Was cooler temperature criteria met?	☒	☐	☐	
II. GC/MS instrument performance check				
Were the BFB performance results reviewed and found to be within the specified criteria?	☒	☐	☐	
Were all samples analyzed within the 12-hour clock criteria?	☒	☐	☐	
III. Initial calibration and Initial Calibration Verification				
Did the laboratory perform a 5-point calibration prior to sample analysis?	☒	☐	☐	
Were all percent relative standard deviations (%RSD) $\leq$ ¹⁵ 20% and relative response factors (RRF) within method criteria?	☒	☐	☐	
Was a curve fit used for evaluation? If yes, did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990 ?	☒	☐	☐	
Was an initial calibration verification (ICV) standard analyzed after each initial calibration for each instrument?	☒	☐	☐	
Were all ICV percent differences (%D) $\leq$ ²⁰ 30%?	☐	☒	☐	
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	☒	☐	☐	
Were all percent differences (%D) $\leq$ 20% and relative response factors (RRF) within method criteria?	☐	☒	☐	
V. Laboratory Blanks				
Was a laboratory blank associated with every sample in this SDG?	☒	☐	☐	
Was a laboratory blank analyzed at least once every 12 hours for each matrix and concentration?	☒	☐	☐	
Was there contamination in the laboratory blanks?	☒	☐	☐	
VI. Field blanks				
Were field blanks were identified in this SDG?	☒	☐	☐	
Were target compounds detected in the field blanks?	☐	☒	☐	
VII. Surrogate spikes				
Were all surrogate percent recovery (%R) within QC limits?	☒	☐	☐	
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?	☐	☐	☒	
VIII. Matrix spike/Matrix spike duplicates				
Were matrix spike (MS) and matrix spike duplicate (MSD) analyzed in this SDG?	☒	☐	☐	

Validation Area	Yes	No	NA	Findings/Comments
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?		/		
IX. Laboratory control samples				
Was an LCS analyzed per analytical batch?	/			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?		/		
X. Field duplicates				
Were field duplicate pairs identified in this SDG?	/			
Were target compounds detected in the field duplicates?	/			
XI. Internal standards				
Were internal standard area counts within -50% to +100% of the associated calibration standard?	/			
Were retention times within + 30 seconds of the associated calibration standard?	/			
XII. Compound quantitation				
Did the laboratory LOQs/RLs meet the QAPP LOQs/RLs?	/			
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	/			
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	/			
XIII. Target compound identification				
Were relative retention times (RRT's) within + 0.06 RRT units of the standard?	/			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	/			
Were chromatogram peaks verified and accounted for?	/			
XIV. System performance				
System performance was found to be acceptable.	/			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	/			

TARGET COMPOUND WORKSHEET

METHOD: VOA

A. Chloromethane	AA. Tetrachloroethene	AAA. 1,3,5-Trimethylbenzene	AAAA. Ethyl tert-butyl ether	A1. 1,3-Butadiene
B. Bromomethane	BB. 1,1,2,2-Tetrachloroethane	BBB. 4-Chlorotoluene	BBBB. tert-Amyl methyl ether	B1. Hexane
C. Vinyl chloride	CC. Toluene	CCC. tert-Butylbenzene	CCCC. 1-Chlorohexane	C1. Heptane
D. Chloroethane	DD. Chlorobenzene	DDD. 1,2,4-Trimethylbenzene	DDDD. Isopropyl alcohol	D1. Propylene
E. Methylene chloride	EE. Ethylbenzene	EEE. sec-Butylbenzene	EEEE. Acetonitrile	E1. Freon 11
F. Acetone	FF. Styrene	FFF. 1,3-Dichlorobenzene	FFFF. Acrolein	F1. Freon 12
G. Carbon disulfide	GG. Xylenes, total	GGG. p-Isopropyltoluene	GGGG. Acrylonitrile	G1. Freon 113
H. 1,1-Dichloroethene	HH. Vinyl acetate	HHH. 1,4-Dichlorobenzene	HHHH. 1,4-Dioxane	H1. Freon 114
I. 1,1-Dichloroethane	II. 2-Chloroethylvinyl ether	III. n-Butylbenzene	IIII. Isobutyl alcohol	I1. 2-Nitropropane
J. 1,2-Dichloroethene, total	JJ. Dichlorodifluoromethane	JJJ. 1,2-Dichlorobenzene	JJJJ. Methacrylonitrile	J1. Dimethyl disulfide
K. Chloroform	KK. Trichlorofluoromethane	KKK. 1,2,4-Trichlorobenzene	KKKK. Propionitrile	K1. 2,3-Dimethyl pentane
L. 1,2-Dichloroethane	LL. Methyl-tert-butyl ether	LLL. Hexachlorobutadiene	LLLL. Ethyl ether	L1. 2,4-Dimethyl pentane
M. 2-Butanone	MM. 1,2-Dibromo-3-chloropropane	MMM. Naphthalene	MMMM. Benzyl chloride	M1. 3,3-Dimethyl pentane
N. 1,1,1-Trichloroethane	NN. Methyl ethyl ketone	NNN. 1,2,3-Trichlorobenzene	NNNN. Iodomethane	N1. 2-Methylpentane
O. Carbon tetrachloride	OO. 2,2-Dichloropropane	OOO. 1,3,5-Trichlorobenzene	OOOO. 1,1-Difluoroethane	O1. 3-Methylpentane
P. Bromodichloromethane	PP. Bromochloromethane	PPP. trans-1,2-Dichloroethene	PPPP. Tetrahydrofuran	P1. 3-Ethylpentane
Q. 1,2-Dichloropropane	QQ. 1,1-Dichloropropene	QQQ. cis-1,2-Dichloroethene	QQQQ. Methyl acetate	Q1. 2,2-Dimethylpentane
R. cis-1,3-Dichloropropene	RR. Dibromomethane	RRR. m,p-Xylenes	RRRR. Ethyl acetate	R1. 2,2,3-Trimethylbutane
S. Trichloroethene	SS. 1,3-Dichloropropane	SSS. o-Xylene	SSSS. Cyclohexane	S1. 2,2,4-Trimethylpentane
T. Dibromochloromethane	TT. 1,2-Dibromoethane	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	TTTT. Methyl cyclohexane	T1. 2-Methylhexane
U. 1,1,2-Trichloroethane	UU. 1,1,1,2-Tetrachloroethane	UUU. 1,2-Dichlorotetrafluoroethane	UUUU. Allyl chloride	U1. Nonanal
V. Benzene	VV. Isopropylbenzene	VVV. 4-Ethyltoluene	VVVV. Methyl methacrylate	V1. 2-Methylnaphthalene
W. trans-1,3-Dichloropropene	WW. Bromobenzene	WWW. Ethanol	WWWW. Ethyl methacrylate	W1. Methanol
X. Bromoform	XX. 1,2,3-Trichloropropane	XXX. Di-isopropyl ether	XXXX. cis-1,4-Dichloro-2-butene	X1. 1,2,3-Trimethylbenzene
Y. 4-Methyl-2-pentanone	YY. n-Propylbenzene	YYY. tert-Butanol	YYYY. trans-1,4-Dichloro-2-butene	Y1.
Z. 2-Hexanone	ZZ. 2-Chlorotoluene	ZZZ. tert-Butyl alcohol	ZZZZ. Pentachloroethane	Z1.

LDC #: 58196A/9

VALIDATION FINDINGS WORKSHEET

Initial Calibration Verification

Page: 6 of 1
Reviewer: 9

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Was an initial calibration verification standard analyzed after each ICAL for each instrument?

Y	N	N/A	Were all %D within the validation criteria of ≤ 20 %D?

[illegible]

VALIDATION FINDINGS WORKSHEET

Continuing Calibration

METHOD: GC/MS VOA (EPA SW 846 Method 8260)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?

Y/N/N/A Were percent differences (%D) $\leq 20\%$ and relative response factors (RRF) within the method criteria?

[illegible]

VALIDATION FINDINGS WORKSHEET

Blanks**METHOD:** GC/MS VOA (EPA SW 846 Method 8260C)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

- ☒ N N/A Was a method blank associated with every sample in this SDG?
☒ N N/A Was a method blank analyzed at least once every 12 hours for each matrix and concentration?
☒ N N/A Was there contamination in the method blanks? If yes, please see the qualifications below.

Blank analysis date: 11/15/23Conc. units: µg/LAssociated Samples: 1-5.7

Compound	Blank ID	Sample Identification							
	<u>ETS1054D</u>								
Methylene chloride									
Acetone									
<u>NNNN</u>	<u>0.58</u>								

Blank analysis date: _____

Conc. units: _____

Associated Samples: _____

Compound	Blank ID	Sample Identification							
Methylene chloride									
Acetone									

LDC #: 58196A/9

VALIDATION FINDINGS WORKSHEET

Matrix Spike/Matrix Spike Duplicates

Page: 6 of 7
Reviewer: 9

METHOD : GC/MS VOA (EPA SW 846 Method 8260)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y/N N/A Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.

Was a MS/MSD analyzed every 20 samples of each matrix?

Y/N N/A Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?

[illegible]

LDC #: 58196A/9

VALIDATION FINDINGS WORKSHEET

Page: 1 of 1
Reviewer: g

METHOD: GC/MS VOA (EPA SW 846 Method 8260)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

~~(Y/N)~~ N/A Was a LCS required?

Y(N)N/A Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?

[illegible]

VALIDATION FINDINGS WORKSHEET
Field Duplicates**METHOD:** GCMS VOA (EPA SW 846 Method 8260B)

Compound	Concentration (ug/L)		RPD (≤35%)	Qualifications (Parent only)
	7	8		
F	11.2	12.7	13	
G	0.75U	0.50	40	NQ
QQQ	1.0	1.1	10	
CC	11.7	11.4	3	
PPP	0.36	0.38	5	
S	0.76	0.7	8	
C	0.94	1.0	6	

Compound	Concentration (ug/L)		RPD (≤35%)	Qualifications (Parent only)
	26	27		
F	3.8	3.4	11	

NQ = One or both results were < 5x the LOQ, therefore no data were qualified.

V:\FIELD DUPLICATES\Field Duplicates\FD Organics\2024\58196A1 Arcadis_NAGF .wpd

VALIDATION FINDINGS WORKSHEET **Initial Calibration Calculation Verification**

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$$RRF = (A_x)(C_s)/(A_s)(C_x)$$

average RRF = sum of the RRFs/number of standards

$$\%RSD = 100 * (S/X)$$

A_x = Area of compound,

C_x = Concentration of compound,

S = Standard deviation of the RRFs

X = Mean of the RRFs

A_s = Area of associated internal standard

C_s = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)	Reported	Recalculated	Reported	Recalculated	Reported	Recalculated
				RRF (50 std)	RRF (50 std)	Average RRF (initial)	Average RRF (initial)	%RSD	%RSD
1	KAZ	11/4/23	QQA (1st internal standard)	0.310	0.310	0.322	0.322	5.62	5.60
			EE (2nd internal standard)	0.899	0.899	0.933	0.933	13.0	13.1
			BB (3rd internal standard)	0.772	0.772	0.767	0.767	6.46	6.45
			(4th internal standard)						
2			(1st internal standard)						
			(2nd internal standard)						
			(3rd internal standard)						
			(4th internal standard)						
3			(1st internal standard)						
			(2nd internal standard)						
			(3rd internal standard)						
			(4th internal standard)						
4			(1st internal standard)						
			(2nd internal standard)						
			(3rd internal standard)						
			(4th internal standard)						

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results

VALIDATION FINDINGS WORKSHEET **Continuing Calibration Results Verification**

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

$$\% \text{ Difference} = 100 * (\text{ave. RRF} - \text{RRF}) / \text{ave. RRF}$$

$$\text{RRF} = (A_x)(C_{is}) / (A_{is})(C_x)$$

Where: ave. RRF = initial calibration average RRF

RRF = continuing calibration RRF

A_x = Area of compound,

C_x = Concentration of compound,

A_{is} = Area of associated internal standard

C_{is} = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference internal Standard)	Average RRF (Initial)	Reported RRF (CC)	Recalculated RRF (CC)	Reported %D	Recalculated %D
1	<u>85231500</u>	<u>11/5/23</u>	<u>RRR</u> (1st internal standard)	<u>0.322</u>	<u>0.323</u>	<u>0.323</u>	<u>0.227</u>	<u>0.32</u>
			<u>LL</u> (2nd internal standard)	<u>0.937</u>	<u>0.957</u>	<u>0.957</u>	<u>2.59</u>	<u>2.60</u>
			<u>BB</u> (3rd internal standard)	<u>0.767</u>	<u>0.857</u>	<u>0.857</u>	<u>11.8</u>	<u>11.8</u>
			(4th internal standard)					
2			(1st internal standard)					
			(2nd internal standard)					
			(3rd internal standard)					
			(4th internal standard)					
3			(1st internal standard)					
			(2nd internal standard)					
			(3rd internal standard)					
			(4th internal standard)					
4			(1st internal standard)					
			(2nd internal standard)					
			(3rd internal standard)					
			(4th internal standard)					

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

VALIDATION FINDINGS WORKSHEET **Surrogate Results Verification**

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

 % Recovery: $SF/SS \times 100$

 Where: SF = Surrogate Found
 SS = Surrogate Spiked

Sample ID: 2

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane	30.0	29.2390	97.5	97.5	
1,2-Dichloroethane-d4		29.5859	98.6	98.6	
Toluene-d8		29.1795	97.3	97.3	
Bromofluorobenzene		28.4322	94.8	94.8	

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

VALIDATION FINDINGS WORKSHEET **Matrix Spike/Matrix Spike Duplicates Results Verification**

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

$$\% \text{ Recovery} = 100 * (\text{SSC} - \text{SC}) / \text{SA}$$

Where: SSC = Spiked sample concentration
SA = Spike added

SC = Sample concentration

$$\text{RPD} = | \text{MSC} - \text{MSD} | * 2 / (\text{MSC} + \text{MSDC})$$

MSC = Matrix spike concentration

MSDC = Matrix spike duplicate concentration

MS/MSD sample: 34/35

Compound	Spike Added		Sample Concentration	Spiked Sample Concentration		Matrix Spike		Matrix Spike Duplicate		MS/MSD	
	(140)			(140)		Percent Recovery		Percent Recovery		RPD	
	MS	MSD	-----	MS	MSD	Reported	Recalc	Reported	Recalc	Reported	Recalculated
1,1-Dichloroethene	20	20	ND	21.7	21.5	108	108	108	108	0.77	0.9
Trichloroethene	↓	↓	0.76	22	20.8	106	106	100	100	5.84	5.6
Benzene	↓	↓	ND	21.8	20.9	109	109	105	105	4.43	4.2
Toluene	↓	↓	11.7	23	23	106	106	107	107	0.20	0
Chlorobenzene	↓	↓	ND	20.8	21.1	104	104	105	105	1.17	1.4

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 58196A/9

VALIDATION FINDINGS WORKSHEET **Laboratory Control Sample Results Verification**

 Page: 1 of 1
 Reviewer: 9
METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratory control sample and laboratory control sample duplicate (if applicable) were recalculated for the compounds identified below using the following calculation:

% Recovery = $100 \times \text{SSC} / \text{SA}$
 Where: SSC = Spiked sample concentration
 SA = Spike added
RPD = $| \text{LCSC} - \text{LCSDC} | \times 2 / (\text{LCSC} + \text{LCSDC})$

LCSC = Laboratory control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS ID: 3751106

Compound	Spike Added		Spiked Sample Concentration		LCS		LCSD		LCS/LCSD	
					Percent Recovery		Percent Recovery		RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalculated
1,1-Dichloroethene	20	N/A	19.4	N/A	96.8	97				
Trichloroethene	↓	↓	19	↓	94.8	95				
Benzene	↓	↓	19.4	↓	97	97				
Toluene	↓	↓	20.2	↓	101	101				
Chlorobenzene	↓	↓	19.9	↓	99.5	99.5				

Comments: Refer to Laboratory Control Sample findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

VALIDATION FINDINGS WORKSHEET

Sample Calculation Verification

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

~~Y~~	N	N/A

Were all reported results recalculated and verified for all level IV samples?

Y	~~N~~	N/A

Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

$$\text{Concentration} \approx \frac{(A_s)(I_s)(DF)}{(A_{is})(RRF)(V_o)(\%S)}$$

A_x = Area of the characteristic ion (EICP) for the compound to be measured

A_{is} = Area of the characteristic ion (EICP) for the specific internal standard

I_s = Amount of internal standard added in nanograms (ng)

RRF = Relative response factor of the calibration standard.

V_o = Volume or weight of sample pruged in milliliters (ml) or grams (g).

Df = Dilution factor.

%S = Percent solids, applicable to soils and solid matrices only.

Example:

Sample I.D. 2, 222

$$\text{Conc.} = \frac{(18357) (300) (1)}{(1291000) (0.322)} = 12.3 \text{ } \mu\text{L}$$

[illegible]

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: NE ORC Niagara Falls

LDC Report Date: February 5, 2024

Parameters: Total Organic Carbon

Validation Level: Level II & IV

Laboratory: ALS Environmental, Middletown, PA

Sample Delivery Group (SDG): AUC057/3331303

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
MW5-1DA-20231102	3331303006	Water	11/02/23
RW5-1-20231102**	3331303007**	Water	11/02/23
MW10-11D-20231102	3331303014	Water	11/02/23
PW10-1-20231102	3331303017	Water	11/02/23
MW10-7-20231102	3331303018	Water	11/02/23
MW10-1DA-20231102	3331303021	Water	11/02/23
MW10-10D-20231102	3331303023	Water	11/02/23
DUP-03-20231102	3331303029	Water	11/02/23
MW5-5D-20231102	3331303030	Water	11/02/23
RW5-2-20231102	3331303031	Water	11/02/23
RWS-1-20231102MS	3331303007MS	Water	11/02/23
RWS-1-20231102MSD	3331303007MSD	Water	11/02/23

**Indicates sample underwent Level IV validation

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Remedial Action Quality Assurance Project Plan for Sites FT005, LF008, ST010, SS014, DS002, AND DS004, Niagara Falls Air Reserve Station, New York (August 2015), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.3 (2019), and the U.S. Department of Defense (DoD) Data Validation Guidelines Module 1: Data Validation Procedure for Organic Analysis by GC/MS (May 2020). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Total Organic Carbon by Environmental Protection Agency (EPA) SW 846 Method 9060A

All sample results were subjected to Level II data validation, which comprises an evaluation of quality control (QC) summary results. Samples appended with a double asterisk on the cover page were subjected to Level IV data validation, which is comprised of the QC summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

- J+ (Estimated, High Bias): The analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated, displaying high bias, due to non-conformances discovered during data validation.
- J- (Estimated, Low Bias): The analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated, displaying low bias, due to non-conformances discovered during data validation.
- J (Estimated, Bias Indeterminate): The analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation. Bias is indeterminate.
- U (Non-detected): The analyte was analyzed for and positively identified by the laboratory; however the analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- B (Blank contamination): The analyte was found in an associated blank as well as in the sample.
- UB (Blank contamination): The analyte was found in an associated blank above one half the LOQ, as well as in the sample.
- X (Exclusion of data recommended): 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. Exclusion of the data is recommended.
- NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition.

All technical holding time requirements were met.

II. Initial Calibration

All criteria for the initial calibration were met.

Initial calibration data were not reviewed for Level II validation.

III. Continuing Calibration

Continuing calibration frequency and analysis criteria were met with the following exceptions:

Date	Lab. Reference/ID	Analyte	%R (90-110)	Associated Samples	Flag	A or P
11/07/23	8.0 QC	Total organic carbon	89.1	RW5-1-20231102**	J- (all detects)	A

Continuing calibration data were not reviewed for Level II validation.

IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks with the following exceptions:

Blank ID	Analyte	Maximum Concentration (mg/L)	Associated Samples
ICB/CCB	Total organic carbon	0.1087	MW5-1DA-20231102 RW5-1-20231102** MW10-11D-20231102

Data qualification by the laboratory blanks was based on the maximum contaminant concentration in the laboratory blanks in the analysis of each analyte. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated laboratory blanks.

V. Field Blanks

No field blanks were identified in this SDG.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on

an associated project sample. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

VII. Duplicate Sample Analysis

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

IX. Field Duplicates

Samples MW5-5D-20231102 and DUP-03-20231102 were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/L)		RPD (≤ 20)	Flag	A or P
	MW5-5D-20231102	DUP-03-20231102			
Total organic carbon	40.3	42.6	6	-	-

X. Target Analyte Quantitation

All target analyte quantitations were acceptable for samples which underwent Level IV validation. Raw data were not reviewed for Level II validation.

XI. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were recommended for exclusion in this SDG.

Data qualified due to continuing calibration %R are summarized and presented in the Data Qualification Summary.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable.

NE ORC Niagara Falls

Total Organic Carbon - Data Qualification Summary - SDG AUC057/3331303

Sample	Analyte	Flag	A or P	Reason
RW5-1-20231102**	Total organic carbon	J- (all detects)	A	Continuing calibration (%R)

NE ORC Niagara Falls

Total Organic Carbon - Laboratory Blank Data Qualification Summary - SDG AUC057/3331303

No Sample Data Qualified in this SDG

NE ORC Niagara Falls

Total Organic Carbon - Field Blank Data Qualification Summary - SDG AUC057/3331303

No Sample Data Qualified in this SDG

LDC #: 58196A6

VALIDATION COMPLETENESS WORKSHEET

SDG #: AUC057/3331303

Level II/IV

Laboratory: ALS Environmental, Middletown, PA

Date: 1/24/24

Page: 1 of 1

Reviewer: 2nd Reviewer: **METHOD: (Analyte)** TOC (EPA SW-846 Method 9060A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A, A	
II.	Initial calibration	A	Not reviewed for Level II validation.
III.	Calibration verification	SW	Not reviewed for Level II validation.
IV.	Laboratory Blanks	SW	
V.	Field blanks	N	
VI.	Matrix Spike/Matrix Spike Duplicates	A	
VII.	Duplicate sample analysis	N	
VIII.	Laboratory control samples	A	LCs
IX.	Field duplicates	SW	(9, 8)
X.	Target Analyte Quantitation	A	Not reviewed for Level II validation.
XI.	Overall assessment of data	A	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

SB=Source blank
OTHER:

** Indicates sample underwent Level IV validation

	Client ID	Lab ID	Matrix	Date
1	MW5-1DA-20231102	3331303006	Water	11/02/23
2	⁵ RWS-1-20231102**	3331303007**	Water	11/02/23
3	MW10-11D-20231102	3331303014	Water	11/02/23
4	PW10-1-20231102	3331303017	Water	11/02/23
5	MW10-7-20231102	3331303018	Water	11/02/23
6	MW10-1DA-20231102	3331303021	Water	11/02/23
7	MW10-10D-20231102	3331303023	Water	11/02/23
8	⁰³ DUP-8-20231102	3331303029	Water	11/02/23
9	MW5-5D-20231102	3331303030	Water	11/02/23
10	RW5-2-20231102	3331303031	Water	11/02/23
11	RWS-1-20231102MS	3331303007MS	Water	11/02/23
12	RWS-1-20231102MSD	3331303007MSD	Water	11/02/23
13				
14				
15				

Notes:

METHOD: Inorganics				
Validation Area	Yes	No	NA	Comments
I. Technical holding times				
Were all technical holding times met?	Yes			
II/III Calibration				
Were all instruments calibrated at the required frequency?	Yes			
Were the proper number of standards used?	Yes			
Were all initial and continuing calibration verifications within the QC limits?	Yes			
coefficients within limits as specified by the method?	Yes			
Were balance checks performed as required?			NA	
IV Blanks				
Was a method blank associated with every sample in this SDG?	Yes			
Was there contamination in the method blanks?		No		
Was there contamination in the initial and continuing calibration blanks?	Yes			
V. Field Blanks				
Were field blanks identified in this SDG?			NA	
Were target analytes detected in the field blanks?			NA	
VI. Matrix Spike/Matrix Spike Duplicates/Laboratory Duplicates				
Were MS/MSD recoveries within the QC limits? (If the sample concentration exceeded	Yes			
Were the MS/MSD or laboratory duplicate relative percent differences (RPDs) within the	Yes			
VIII. Laboratory Control Samples				
Was a LCS analyzed for each batch in the SDG?	Yes			
Were the LCS recoveries and RPDs (if applicable) within QC limits?			NA	
IX. Field Duplicates				
Were field duplicates identified in this SDG?	Yes			
Were target analytes detected in the field	Yes			
X. Sample Result Verification				
Were all reporting limits adjusted to reflect	Yes			
Were all soil samples dry weight corrected?			NA	
XI. Overall Assessment of Data				
Was the overall assessment of the data found to be acceptable?	Yes			

Calibration

Reviewer: JC

METHOD: Inorganics

All initial calibration verifications (ICVs) and continuing calibration verifications (CCVs) were performed at the required frequency and were within the acceptance limits with the following exceptions:

Date	Time	Calibration ID	Analyte	%R	%R Limits	Associated Samples	Qualification	Det/ND
11/7/2023	23:41	8.0 QC	TOC	89.1	90-110	~~IR~~ 2	J-/UJ/A	Det

Comments:

METHOD: Inorganics

Soil preparation factor applied (if applicable):

Sample Concentration, unless otherwise noted: mg/L

Associated Samples: 1-3

				Sample Identification							
Analyte	PB (units)	Maximum ICB/CCB (mg/L)	Action Level								
TOC		0.1087	0.5435								

Comments: The listed analyte concentration is the highest ICB or CCB detected in the analysis. The action level, when applicable, is established at 5X the highest ICB, CCB, or PB concentration.

Field Duplicates

Reviewer: JC

METHOD: Inorganics

Analyte	Concentration (mg/L)		RPD (≤ 20)	Qualifiers (Parents Only)
	9	8		
TOC	40.3	42.6	6	

METHOD: Inorganics

The correlation coefficient (r) for the calibration of TOC were recalculated.

Calibration date:

An initial or continuing calibration verification percent recovery (%R) was recalculated for each type of analysis using the following formula:

$$\%R = (\text{Found}/\text{True}) \times 100$$

Found = concentration of each analyte measured in the analysis of the ICV or CCV solution

True = concentration of each analyte in the ICV or CCV source

Type of Analysis	Analyte	Standard	Concentration (mg/L)	Area	Recalculated r or r ²	Reported r or r ²	Acceptable (Y/N)
Initial Calibration	TOC	s1	0.5	0.5616	0.999996	Value not provided	Y
		s2	1	1.059			
		s3	5	5.035			
		s4	8	7.982			
		s5					
		s6					
		s7					
		s8					
		s9					
		s10					
		s11					
		s12					

Type of Analysis	Analyte	Found (mg/L)	True (mg/L)		Recalculated r or r ²	Reported r or r ²	Acceptable (Y/N)
Calibration verification	TOC	7.124	8		89.1	89.1	Y
Calibration verification	TOC	5.082	5		101.6	101.6	Y
Calibration verification	TOC	7.272	8		90.9	90.9	Y

METHOD: Inorganics

Percent recoveries (%R) for the laboratory control sample (LCS) and matrix spike (MS) were recalculated using the following formula:

$$\%R = (\text{Found}/\text{True}) \times 100$$

Found = concentration of each analyte measured in the analysis. For the MS calculation, Found = SSR (Spiked Sample Result) - SR (Sample Result)

True = concentration of each analyte in the source

The sample and duplicate relative percent difference (RPD) was recalculated using the following formula:

$$RPD = (\text{Absolute value}(S-D) \times 200) / (S+D)$$

S = Original sample concentration

D = Duplicate sample concentration

Sample ID	Type of Analysis	Element	Found/S	True/D	Recalculated %R/RPD	Reported %R/RPD	Acceptable (Y/N)
3746756	LCS	TOC	0.93	1	93	93.4	Y
11	MS	TOC	153.3	150	102	102	Y
11,12	Duplicate	TOC	178	170	4.60	4.24	Y

Sample Calculation Verification

Reviewer: JC

METHOD: Inorganics

Analytes were recalculated and verified using the following equation:

$$\text{Concentration} = (\text{Result from raw data} \times \text{Final volume} \times \text{Dilution factor}) / (\text{Percent solids (if applicable)} \times \text{Initial weight or volume})$$

Sample ID	Analyte	Raw Data (mg/L)	Dilution	Initial Volume (mL)	Final Volume (mL)	Reported Result (mg/L)	Recalculated Result (mg/L)	Acceptable (Y/N)
2	TOC	0.9882	25	25	25	24.7	24.7	Y

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: NE ORC Niagara Falls

LDC Report Date: February 5, 2024

Parameters: Methane, Ethane, & Ethene

Validation Level: Level II

Laboratory: ALS Environmental, Middletown, PA

Sample Delivery Group (SDG): AUC057/3331303

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
MW5-1DA-20231102	3331303006	Water	11/02/23
RW5-1-20231102	3331303007	Water	11/02/23
MW10-11D-20231102	3331303014	Water	11/02/23
PW10-1-20231102	3331303017	Water	11/02/23
MW10-7-20231102	3331303018	Water	11/02/23
MW10-1DA-20231102	3331303021	Water	11/02/23
MW10-10D-20231102	3331303023	Water	11/02/23
DUP-03-20231102	3331303029	Water	11/02/23
MW5-5D-20231102	3331303030	Water	11/02/23
RW5-2-20231102	3331303031	Water	11/02/23
MW5-1DA-20231102DUP	3331303006DUP	Water	11/02/23

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Remedial Action Quality Assurance Project Plan for Sites FT005, LF008, ST010, SS014, DS002, AND DS004, Niagara Falls Air Reserve Station, New York (August 2015), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.3 (2019), and the U.S. Department of Defense (DoD) Data Validation Guidelines Module 4: Data Validation Procedure for Organic Analysis by GC (March 2021). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Methane, Ethane, and Ethene by Method RSK-175

All sample results were subjected to Level II data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation:

- J+ (Estimated, High Bias): The analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated, displaying high bias, due to non-conformances discovered during data validation.
- J- (Estimated, Low Bias): The analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated, displaying low bias, due to non-conformances discovered during data validation.
- J (Estimated, Bias Indeterminate): The analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation. Bias is indeterminate.
- U (Non-detected): The analyte was analyzed for and positively identified by the laboratory; however the analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- B (Blank contamination): The analyte was found in an associated blank as well as in the sample.
- UB (Blank contamination): The analyte was found in an associated blank above one half the LOQ, as well as in the sample.
- X (Exclusion of data recommended): 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. Exclusion of the data is recommended.
- NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. Initial Calibration and Initial Calibration Verification

Initial calibration data were not reviewed for Level II validation.

III. Continuing Calibration

Continuing calibration data were not reviewed for Level II validation.

IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

V. Field Blanks

No field blanks were identified in this SDG.

VI. Matrix Spike/Matrix Spike Duplicates/Laboratory Duplicate Sample

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

Laboratory duplicate (DUP) sample analysis was performed on an associated project sample. Results were within QC limits with the following exceptions:

DUP ID (Associated Samples)	Analyte	RPD (≤ 20)	Flag	A or P
MW5-1DA-20231102DUP (MW5-1DA-20231102)	Methane	119	J (all detects)	A

VII. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits with the following exceptions:

Sample	Analyte	Finding	Criteria	Flag	A or P
All samples in SDG AUC057/3331303	All analytes	No LCS analysis associated with these samples.	LCS analysis required.	J (all detects) UJ (all non-detects)	P

The samples and associated blanks are qualified as estimated (J/UJ) due to the lack of associated laboratory control samples, matrix spikes, and matrix spike duplicates.

VIII. Field Duplicates

Samples DUP-03-20231102 and MW5-5D-20231102 were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Analyte	Concentration (ug/L)		RPD (≤ 35)	Flag	A or P
	DUP-03-20231102	MW5-5D-20231102			
Ethane	8.0	21.3	91	NQ	-
Ethene	8.7	8.2	6	-	-
Methane	4390	8010	58	J (all detects)	A

NQ = One or both results were less than 5X the limit of quantitation (LOQ), therefore no data were qualified.

IX. Target Analyte Quantitation

Raw data were not reviewed for Level II validation.

X. Target Analyte Identification

Raw data were not reviewed for Level II validation.

XI. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were recommended for exclusion in this SDG.

Data qualified due to DUP RPD, no LCS, and field duplicate RPD are summarized and presented in the Data Qualification Summary.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable.

NE ORC Niagara Falls**Methane, Ethane, & Ethene - Data Qualification Summary - SDG AUC057/3331303**

Sample	Analyte	Flag	A or P	Reason
MW5-1DA-20231102	Methane	J (all detects)	A	Laboratory duplicate (RPD)
MW5-1DA-20231102 RW5-1-20231102** MW10-11D-20231102 PW10-1-20231102 MW10-7-20231102 MW10-1DA-20231102 MW10-10D-20231102 DUP-03-20231102 MW5-5D-20231102 RW5-2-20231102	All analytes	J (all detects) UJ (all non-detects)	P	Laboratory control samples (no LCS)
DUP-03-20231102 MW5-5D-20231102	Methane	J (all detects)	A	Field duplicates (RPD)

NE ORC Niagara Falls**Methane, Ethane, & Ethene - Laboratory Blank Data Qualification Summary - SDG AUC057/3331303**

No Sample Data Qualified in this SDG

NE ORC Niagara Falls**Methane, Ethane, & Ethene - Field Blank Data Qualification Summary - SDG AUC057/3331303**

No Sample Data Qualified in this SDG

LDC #: 58196A51

VALIDATION COMPLETENESS WORKSHEET

SDG #: AUC057/3331303

Level II/IV

Laboratory: ALS Environmental, Middletown, PA

Date: 11/1/23

Page: 1 of 1

Reviewer: [Signature]

2nd Reviewer: [Signature]

METHOD: GC Methane-Ethane-Ethene (Method RSK-175)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	Initial calibration/ICV	N/N	Not reviewed for Level II validation.
III.	Continuing calibration	N	Not reviewed for Level II validation.
IV.	Laboratory Blanks	A	
V.	Field blanks	N	
VI.	Surrogate spikes	N	
VII.	Matrix spike/Matrix spike duplicates	DAP N/N	ES
VIII.	Laboratory control samples	TW	
IX.	Field duplicates	TW	D = 8 + 9
X.	Target analyte quantitation	A	Not reviewed for Level II validation.
XI.	Target analyte identification	A	Not reviewed for Level II validation.
XII.	Overall assessment of data	A	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

SB = Source blank
OTHER:

** Indicates sample underwent Level IV validation

	Client ID	Lab ID	Matrix	Date
1	MW5-1DA-20231102	3331303006	Water	11/02/23
2	RW5-1-20231102	3331303007	Water	11/02/23
3	MW10-11D-20231102	3331303014	Water	11/02/23
4	PW10-1-20231102	3331303017	Water	11/02/23
5	MW10-7-20231102	3331303018	Water	11/02/23
6	MW10-1DA-20231102	3331303021	Water	11/02/23
7	MW10-10D-20231102	3331303023	Water	11/02/23
8	DUP-3-20231102	3331303029	Water	11/02/23
9	MW5-5D-20231102	3331303030	Water	11/02/23
10	RW5-2-20231102	3331303031	Water	11/02/23
11	MW5-1DA-20231102DUP	3331303006DUP	Water	11/02/23
12				
13				

Notes:

1086212				
1089070				

METHOD: / GC HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y ~~N~~ N/A Were matrix spike (MS) and matrix spike duplicate (MSD) analyzed in this SDG?

Y N N/A Was an MS/MSD analyzed every 20 samples for each matrix or whenever a sample extraction was performed?

Y/N/N/A	Were the MS/MSD percent recoveries (%R) and relative percent differences (RPD) within QC limits?

[illegible]

LDC #: 58196A31

VALIDATION FINDINGS WORKSHEET

Laboratory Control Samples (LCS)

Page: 1 of 1
Reviewer: 9

METHOD: GC Pesticides/PCBs (EPA SW 846 Method 8081/8082)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N/A Were laboratory control samples (LCS) and laboratory control sample duplicate (LCSD) analyzed for each matrix in this SDG?

Y N (N/A) Were the LCS percent recoveries (%R) and relative percent differences (RPD) within the QC limits?

[illegible]

VALIDATION FINDINGS WORKSHEET
Field Duplicates**METHOD:** GC Methane-Ethane-Ethene (RSK-175)Y N NA

Were field duplicate pairs identified in this SDG?

Y N NA

Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ug/L)		RPD (≤ 35 %)	Qualifications (Parent only)
	8	9		
Ethane	8.0	21.3	91	NQ
Ethene	8.7	8.2	6	
Methane	4390	8010	58	<i>Lot 3 A</i>

NQ = One or both results were < 5x the LOQ, therefore no data were qualified.

V:\FIELD DUPLICATES\Field Duplicates\FD_Organics\2024\58196A51_Arcadis_NFARS.wpd

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: NE ORC Niagara Falls
LDC Report Date: February 2, 2024
Parameters: Volatiles
Validation Level: Level II
Laboratory: ALS Environmental, Middletown, PA
Sample Delivery Group (SDG): AUC058/3331362

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
MW15-5R-20231102	3331362001	Water	11/02/23

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Remedial Action Quality Assurance Project Plan for Sites FT005, LF008, ST010, SS014, DS002, AND DS004, Niagara Falls Air Reserve Station, New York (August 2015), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.3 (2019), and the U.S. Department of Defense (DoD) Data Validation Guidelines Module 1: Data Validation Procedure for Organic Analysis by GC/MS (May 2020). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Volatile Organic Compounds (VOCs) by Environmental Protection Agency (EPA) SW 846 Method 8260C

All sample results were subjected to Level II data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation:

- J+ (Estimated, High Bias): The analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated, displaying high bias, due to non-conformances discovered during data validation.
- J- (Estimated, Low Bias): The analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated, displaying low bias, due to non-conformances discovered during data validation.
- J (Estimated, Bias Indeterminate): The analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation. Bias is indeterminate.
- U (Non-detected): The analyte was analyzed for and positively identified by the laboratory; however the analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- B (Blank contamination): The analyte was found in an associated blank as well as in the sample.
- UB (Blank contamination): The analyte was found in an associated blank above one half the LOQ, as well as in the sample.
- X (Exclusion of data recommended): 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. Exclusion of the data is recommended.
- NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level II validation.

III. Initial Calibration and Initial Calibration Verification

Initial calibration data were not reviewed for Level II validation.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level II validation.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks with the following exceptions:

Blank ID	Analysis Date	Analyte	Concentration (ug/L)	Associated Samples
3750139 MB	11/14/23	Iodomethane	0.54	MW15-5R-20231102

Sample concentrations were compared to concentrations detected in the laboratory blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

VII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VIII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

IX. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits with the following exceptions:

LCS ID (Associated Samples)	Analyte	%R (69-131)	Flag	A or P
LCS 3750140 (MW15-5R-20231102)	Iodomethane	60.5	UJ (all non-detects)	P

X. Field Duplicates

No field duplicates were identified in this SDG.

XI. Internal Standards

Internal standard data were not reviewed for Level II validation.

XII. Target Analyte Quantitation

Raw data were not reviewed for Level II validation.

XIII. Target Analyte Identification

Raw data were not reviewed for Level II validation.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were recommended for exclusion in this SDG.

Data qualified due to LCS %R are summarized and presented in the Data Qualification Summary.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable.

NE ORC Niagara Falls**Volatiles - Data Qualification Summary - SDG AUC058/3331362**

Sample	Analyte	Flag	A or P	Reason
MW15-5R-20231102	Iodomethane	UJ (all non-detects)	P	Laboratory control samples (%R)

NE ORC Niagara Falls**Volatiles - Laboratory Blank Data Qualification Summary - SDG AUC058/3331362**

No Sample Data Qualified in this SDG

NE ORC Niagara Falls**Volatiles - Field Blank Data Qualification Summary - SDG AUC058/3331362**

No Sample Data Qualified in this SDG

LDC #: 58196B1a

VALIDATION COMPLETENESS WORKSHEET

SDG #: AUC058/3331362

Level II

Laboratory: ALS Environmental, Middletown, PA

Date: 2/1/24

Page: 1 of 1

Reviewer: [Signature]

2nd Reviewer: [Signature]

METHOD: GC/MS Volatiles (EPA SW-846 Method 8260C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	GC/MS Instrument performance check	N	
III.	Initial calibration/ICV	N/N	
IV.	Continuing calibration	N	
V.	Laboratory Blanks	W	
VI.	Field blanks	N	
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	N	27
IX.	Laboratory control samples	W	105
X.	Field duplicates	N	
XI.	Internal standards	N	
XII.	Target analyte quantitation	N	
XIII.	Target analyte identification	N	
XIV.	Overall assessment of data	A	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

SB=Source blank
OTHER:

	Client ID	Lab ID	Matrix	Date
1	MW15-5R-20231102	3331362001	Water	11/02/23
2				
3				
4				
5				
6				
7				
8				
9				
10				

Notes:

TARGET COMPOUND WORKSHEET

METHOD: VOA

A. Chloromethane	AA. Tetrachloroethene	AAA. 1,3,5-Trimethylbenzene	AAAA. Ethyl tert-butyl ether	A1. 1,3-Butadiene
B. Bromomethane	BB. 1,1,2,2-Tetrachloroethane	BBB. 4-Chlorotoluene	BBBB. tert-Amyl methyl ether	B1. Hexane
C. Vinyl chloride	CC. Toluene	CCC. tert-Butylbenzene	CCCC. 1-Chlorohexane	C1. Heptane
D. Chloroethane	DD. Chlorobenzene	DDD. 1,2,4-Trimethylbenzene	DDDD. Isopropyl alcohol	D1. Propylene
E. Methylene chloride	EE. Ethylbenzene	EEE. sec-Butylbenzene	EEEE. Acetonitrile	E1. Freon 11
F. Acetone	FF. Styrene	FFF. 1,3-Dichlorobenzene	FFFF. Acrolein	F1. Freon 12
G. Carbon disulfide	GG. Xylenes, total	GGG. p-Isopropyltoluene	GGGG. Acrylonitrile	G1. Freon 113
H. 1,1-Dichloroethene	HH. Vinyl acetate	HHH. 1,4-Dichlorobenzene	HHHH. 1,4-Dioxane	H1. Freon 114
I. 1,1-Dichloroethane	II. 2-Chloroethylvinyl ether	III. n-Butylbenzene	IIII. Isobutyl alcohol	I1. 2-Nitropropane
J. 1,2-Dichloroethene, total	JJ. Dichlorodifluoromethane	JJJ. 1,2-Dichlorobenzene	JJJJ. Methacrylonitrile	J1. Dimethyl disulfide
K. Chloroform	KK. Trichlorofluoromethane	KKK. 1,2,4-Trichlorobenzene	KKKK. Propionitrile	K1. 2,3-Dimethyl pentane
L. 1,2-Dichloroethane	LL. Methyl-tert-butyl ether	LLL. Hexachlorobutadiene	LLLL. Ethyl ether	L1. 2,4-Dimethyl pentane
M. 2-Butanone	MM. 1,2-Dibromo-3-chloropropane	MMM. Naphthalene	MMMM. Benzyl chloride	M1. 3,3-Dimethyl pentane
N. 1,1,1-Trichloroethane	NN. Methyl ethyl ketone	NNN. 1,2,3-Trichlorobenzene	NNNN. Iodomethane	N1. 2-Methylpentane
O. Carbon tetrachloride	OO. 2,2-Dichloropropane	OOO. 1,3,5-Trichlorobenzene	OOOO. 1,1-Difluoroethane	O1. 3-Methylpentane
P. Bromodichloromethane	PP. Bromochloromethane	PPP. trans-1,2-Dichloroethene	PPPP. Tetrahydrofuran	P1. 3-Ethylpentane
Q. 1,2-Dichloropropane	QQ. 1,1-Dichloropropene	QQQ. cis-1,2-Dichloroethene	QQQQ. Methyl acetate	Q1. 2,2-Dimethylpentane
R. cis-1,3-Dichloropropene	RR. Dibromomethane	RRR. m,p-Xylenes	RRRR. Ethyl acetate	R1. 2,2,3-Trimethylbutane
S. Trichloroethene	SS. 1,3-Dichloropropane	SSS. o-Xylene	SSSS. Cyclohexane	S1. 2,2,4-Trimethylpentane
T. Dibromochloromethane	TT. 1,2-Dibromoethane	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	TTTT. Methyl cyclohexane	T1. 2-Methylhexane
U. 1,1,2-Trichloroethane	UU. 1,1,1,2-Tetrachloroethane	UUU. 1,2-Dichlorotetrafluoroethane	UUUU. Allyl chloride	U1. Nonanal
V. Benzene	VV. Isopropylbenzene	VVV. 4-Ethyltoluene	VVVV. Methyl methacrylate	V1. 2-Methylnaphthalene
W. trans-1,3-Dichloropropene	WW. Bromobenzene	WWW. Ethanol	WWWW. Ethyl methacrylate	W1. Methanol
X. Bromoform	XX. 1,2,3-Trichloropropane	XXX. Di-isopropyl ether	XXXX. cis-1,4-Dichloro-2-butene	X1. 1,2,3-Trimethylbenzene
Y. 4-Methyl-2-pentanone	YY. n-Propylbenzene	YYY. tert-Butanol	YYYY. trans-1,4-Dichloro-2-butene	Y1.
Z. 2-Hexanone	ZZ. 2-Chlorotoluene	ZZZ. tert-Butyl alcohol	ZZZZ. Pentachloroethane	Z1.

VALIDATION FINDINGS WORKSHEET

Blanks

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

- Y N N/A Was a method blank associated with every sample in this SDG?
Y N N/A Was a method blank analyzed at least once every 12 hours for each matrix and concentration?
Y N N/A Was there contamination in the method blanks? If yes, please see the qualifications below.

Blank analysis date: 11/14/23Conc. units: ug/LAssociated Samples: All

Compound	Blank ID	Sample Identification							
	<u>330BMB</u>								
Methylene chloride									
Acetone									
<u>NNNN</u>	<u>0.54</u>								

Blank analysis date: _____

Conc. units: _____

Associated Samples: _____

Compound	Blank ID	Sample Identification							
Methylene chloride									
Acetone									

LDC #: 5896201

VALIDATION FINDINGS WORKSHEET

Laboratory Control Samples (LCS)

Page: 1 of 1
Reviewer: Q

METHOD: GC/MS VOA (EPA SW 846 Method 8260)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(Y) N N/A Was a LCS required?

Y/N/N/A Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?

[illegible]

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: NE ORC Niagara Falls
LDC Report Date: February 2, 2024
Parameters: Volatiles
Validation Level: Level II
Laboratory: ALS Environmental, Middletown, PA
Sample Delivery Group (SDG): AUC046/3315995

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
PZ3-6D-20230801	3315995001	Water	08/01/23

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Remedial Action Quality Assurance Project Plan for Sites FT005, LF008, ST010, SS014, DS002, AND DS004, Niagara Falls Air Reserve Station, New York (August 2015), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.3 (2019), and the U.S. Department of Defense (DoD) Data Validation Guidelines Module 1: Data Validation Procedure for Organic Analysis by GC/MS (May 2020). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Volatile Organic Compounds (VOCs) by Environmental Protection Agency (EPA) SW 846 Method 8260C

All sample results were subjected to Level II data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation:

- J+ (Estimated, High Bias): The analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated, displaying high bias, due to non-conformances discovered during data validation.
- J- (Estimated, Low Bias): The analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated, displaying low bias, due to non-conformances discovered during data validation.
- J (Estimated, Bias Indeterminate): The analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation. Bias is indeterminate.
- U (Non-detected): The analyte was analyzed for and positively identified by the laboratory; however the analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UU (Non-detected estimated): The analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- B (Blank contamination): The analyte was found in an associated blank as well as in the sample.
- UB (Blank contamination): The analyte was found in an associated blank above one half the LOQ, as well as in the sample.
- X (Exclusion of data recommended): 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. Exclusion of the data is recommended.
- NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Level II validation.

III. Initial Calibration and Initial Calibration Verification

Initial calibration data were not reviewed for Level II validation.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Level II validation.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks with the following exceptions:

Blank ID	Analysis Date	Analyte	Concentration (ug/L)	Associated Samples
3706727 MB	08/10/23	Methyl acetate	0.44	PZ3-6D-20230801

Sample concentrations were compared to concentrations detected in the laboratory blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated laboratory blanks with the following exceptions:

Sample	Analyte	Reported Concentration (ug/L)	Modified Final Concentration (ug/L)
PZ3-6D-20230801	Methyl acetate	0.52	0.75UB

VI. Field Blanks

No field blanks were identified in this SDG.

VII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VIII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

IX. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

X. Field Duplicates

No field duplicates were identified in this SDG.

XI. Internal Standards

Internal standard data were not reviewed for Level II validation.

XII. Target Analyte Quantitation

Raw data were not reviewed for Level II validation.

XIII. Target Analyte Identification

Raw data were not reviewed for Level II validation.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were recommended for exclusion in this SDG.

Data qualified due to laboratory blank contamination are summarized and presented in the Data Qualification Summary.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable.

NE ORC Niagara Falls**Volatiles - Data Qualification Summary - SDG AUC046/3315995**

No Sample Data Qualified in this SDG

NE ORC Niagara Falls**Volatiles - Laboratory Blank Data Qualification Summary - SDG AUC046/3315995**

Sample	Analyte	Modified Final Concentration (ug/L)	A or P
PZ3-6D-20230801	Methyl acetate	0.75UB	A

NE ORC Niagara Falls**Volatiles - Field Blank Data Qualification Summary - SDG AUC046/3315995**

No Sample Data Qualified in this SDG

TARGET COMPOUND WORKSHEET

METHOD: VOA

A. Chloromethane	AA. Tetrachloroethene	AAA. 1,3,5-Trimethylbenzene	AAAA. Ethyl tert-butyl ether	A1. 1,3-Butadiene
B. Bromomethane	BB. 1,1,2,2-Tetrachloroethane	BBB. 4-Chlorotoluene	BBBB. tert-Amyl methyl ether	B1. Hexane
C. Vinyl chloride	CC. Toluene	CCC. tert-Butylbenzene	CCCC. 1-Chlorohexane	C1. Heptane
D. Chloroethane	DD. Chlorobenzene	DDD. 1,2,4-Trimethylbenzene	DDDD. Isopropyl alcohol	D1. Propylene
E. Methylene chloride	EE. Ethylbenzene	EEE. sec-Butylbenzene	EEEE. Acetonitrile	E1. Freon 11
F. Acetone	FF. Styrene	FFF. 1,3-Dichlorobenzene	FFFF. Acrolein	F1. Freon 12
G. Carbon disulfide	GG. Xylenes, total	GGG. p-Isopropyltoluene	GGGG. Acrylonitrile	G1. Freon 113
H. 1,1-Dichloroethene	HH. Vinyl acetate	HHH. 1,4-Dichlorobenzene	HHHH. 1,4-Dioxane	H1. Freon 114
I. 1,1-Dichloroethane	II. 2-Chloroethylvinyl ether	III. n-Butylbenzene	IIII. Isobutyl alcohol	I1. 2-Nitropropane
J. 1,2-Dichloroethene, total	JJ. Dichlorodifluoromethane	JJJ. 1,2-Dichlorobenzene	JJJJ. Methacrylonitrile	J1. Dimethyl disulfide
K. Chloroform	KK. Trichlorofluoromethane	KKK. 1,2,4-Trichlorobenzene	KKKK. Propionitrile	K1. 2,3-Dimethyl pentane
L. 1,2-Dichloroethane	LL. Methyl-tert-butyl ether	LLL. Hexachlorobutadiene	LLLL. Ethyl ether	L1. 2,4-Dimethyl pentane
M. 2-Butanone	MM. 1,2-Dibromo-3-chloropropane	MMM. Naphthalene	MMMM. Benzyl chloride	M1. 3,3-Dimethyl pentane
N. 1,1,1-Trichloroethane	NN. Methyl ethyl ketone	NNN. 1,2,3-Trichlorobenzene	NNNN. Iodomethane	N1. 2-Methylpentane
O. Carbon tetrachloride	OO. 2,2-Dichloropropane	OOO. 1,3,5-Trichlorobenzene	OOOO. 1,1-Difluoroethane	O1. 3-Methylpentane
P. Bromodichloromethane	PP. Bromochloromethane	PPP. trans-1,2-Dichloroethene	PPPP. Tetrahydrofuran	P1. 3-Ethylpentane
Q. 1,2-Dichloropropane	QQ. 1,1-Dichloropropene	QQQ. cis-1,2-Dichloroethene	QQQQ. Methyl acetate	Q1. 2,2-Dimethylpentane
R. cis-1,3-Dichloropropene	RR. Dibromomethane	RRR. m,p-Xylenes	RRRR. Ethyl acetate	R1. 2,2,3-Trimethylbutane
S. Trichloroethene	SS. 1,3-Dichloropropane	SSS. o-Xylene	SSSS. Cyclohexane	S1. 2,2,4-Trimethylpentane
T. Dibromochloromethane	TT. 1,2-Dibromoethane	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	TTTT. Methyl cyclohexane	T1. 2-Methylhexane
U. 1,1,2-Trichloroethane	UU. 1,1,1,2-Tetrachloroethane	UUU. 1,2-Dichlorotetrafluoroethane	UUUU. Allyl chloride	U1. Nonanal
V. Benzene	VV. Isopropylbenzene	VVV. 4-Ethyltoluene	VVVV. Methyl methacrylate	V1. 2-Methylnaphthalene
W. trans-1,3-Dichloropropene	WW. Bromobenzene	WWW. Ethanol	WWWW. Ethyl methacrylate	W1. Methanol
X. Bromoform	XX. 1,2,3-Trichloropropane	XXX. Di-isopropyl ether	XXXX. cis-1,4-Dichloro-2-butene	X1. 1,2,3-Trimethylbenzene
Y. 4-Methyl-2-pentanone	YY. n-Propylbenzene	YYY. tert-Butanol	YYYY. trans-1,4-Dichloro-2-butene	Y1.
Z. 2-Hexanone	ZZ. 2-Chlorotoluene	ZZZ. tert-Butyl alcohol	ZZZZ. Pentachloroethane	Z1.

VALIDATION FINDINGS WORKSHEET

Blanks**METHOD:** GC/MS VOA (EPA SW 846 Method 8260C)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

- ☒ N N/A Was a method blank associated with every sample in this SDG?
☒ N N/A Was a method blank analyzed at least once every 12 hours for each matrix and concentration?
☒ N N/A Was there contamination in the method blanks? If yes, please see the qualifications below.

Blank analysis date: 8/10/23Conc. units: ug/L Associated Samples: A11

Compound	Blank ID	Sample Identification							
	~~BT0551NB~~		1						
Methylene chloride									
Acetone									
~~Q227~~	0.44		~~0.5~~ 0.1547						

Blank analysis date: _____

Conc. units: _____ Associated Samples: _____

Compound	Blank ID	Sample Identification							
Methylene chloride									
Acetone									

Appendix D

Well Inspection Checklist and Landfill Inspection Form

Spring 2023 Well Inspection Checklist

Well Number	TOIC Current Depth (ft)	TOIC Water Level (ft)	Water Column Length	Concrete Pad (G/F/P)	Well Paint (G/F/P)	Well Label (G/F/P)	Casing Lock (G/F/P)	Protective Cover (G/F/P)	Inner Well Cap (G/F/P)	PDB Deployed?	Equipment in Well (Y/N)	Obstruction s in Well (Y/N)	Water in Annulus (Y/N)	Inspection Date	Comments
Site 3															
MW3-1A	13.55	6.66	6.89	G	G	G	P	G	G	N	Y	N	N	6/13/2023	No lock
MW3-1DA	16.2	5.98	10.22	G	F	G	F	G	G	N	Y	N	N	6/13/2023	
MW3-1E	44.33	1.31	43.02	G	G	G	P	G	G	N	Y	N	N	6/13/2023	No lock
MW3-2	10.18	6.51	3.67	G	F	G	G	G	G	N	N	N	N	6/13/2023	
MW3-2DA	22.21	8.79	13.42	G	F	G	G	G	G	N	Y	N	N	6/13/2023	
MW3-3A	5.3	2.47	2.83	G	N/A	G	G	F	G	N	N	N	N	6/13/2023	
MW3-3DA	17.15	0.50	16.65	G	N/A	G	G	F	G	Y	N	N	N	6/13/2023	
MW3-4DA	15.82	0.98	14.84	G	G	G	P	G	G	Y	Y	N	N	6/13/2023	No lock
MW3-5D	25.78	4.98	20.8	G	G	G	G	G	G	N	Y	N	N	6/13/2023	
MW3-6A	11.13	7.20	3.93	G	G	G	G	G	G	N	N	N	N	6/13/2023	
MW3-6D	19.2	6.79	12.41	G	G	G	G	G	G	N	N	N	N	6/13/2023	
MW3-7	7.58	6.63	0.95	G	F	G	G	G	G	N	N	N	N	6/13/2023	
MW3-8	12.94	7.88	5.06	G	G	G	G	G	G	N	Y	N	N	6/13/2023	
MW3-8D	23.9	12.68	11.22	G	G	G	G	G	G	N	N	N	N	6/13/2023	
MW3-8E	46.56	12.80	33.76	G	G	G	P	G	G	N	N	N	N	6/13/2023	No lock
PW3-3A	13.83	0.80	13.03	G	G	G	G	G	G	Y	Y	N	N	6/13/2023	
PZ3-1	12.14	2.63	9.51	G	G	G	G	G	G	N	Y	N	N	6/13/2023	2 bolts missing
PZ3-1D	5.91	3.33	2.58	G	G	G	G	G	G	N	N	N	N	6/13/2023	1 bolt missing
PZ3-2	4.18	1.98	2.2	G	G	G	F	G	G	N	N	N	N	6/13/2023	
PZ3-2D	12.54	1.84	10.7	G	G	G	G	G	G	N	N	N	N	6/13/2023	
PZ3-3	2.45	0.70	1.75	G	N/A	G	G	F	F	N	N	N	N	6/13/2023	1 bolt missing
PZ3-3D	9.53	1.13	8.4	G	F	G	P	G	G	N	N	N	N	6/13/2023	1 bolt missing
PZ3-4	3.5	2.74	0.76	G	G	G	G	G	G	N	N	N	N	6/13/2023	
PZ3-4D	11.66	1.37	10.29	G	N/A	G	G	G	G	N	N	N	N	6/13/2023	
PZ3-5	2.85	0.91	1.94	G	N/A	G	G	G	G	N	N	N	N	6/13/2023	No bolts
PZ3-5D	9.61	0.10	9.51	G	G	G	G	G	G	N	N	N	N	6/13/2023	No bolts
PZ3-6	3.48	1.39	2.09	G	N/A	NONE	NONE	G	G	N	N	N	N	6/13/2023	
PZ3-6D	--	--	--	--	--	--	--	--	--	--	--	--	--	6/13/2023	Not located/inspected during event
PZ3-7D	21.72	2.99	18.73	G	N/A	G	G	G	G	Y	Y	N	N	6/13/2023	
PZ3-8D	18.38	3.64	14.74	G	N/A	G	G	G	G	Y	Y	N	N	6/13/2023	1 bolt missing
PZ3-9	3.99	2.72	1.27	G	G	G	G	G	G	N	N	N	N	6/13/2023	
PZ3-9D	23.77	1.96	21.81	G	G	G	P	P	G	N	N	N	Y	6/13/2023	Broken cap, no lock, flooded



Well Number	TOIC Current Depth (ft)	TOIC Water Level (ft)	Water Column Length	Concrete Pad (G/F/P)	Well Paint (G/F/P)	Well Label (G/F/P)	Casing Lock (G/F/P/I)	Protective Cover (G/F/P/I)	Inner Well Cap (G/F/P)	PDB Deployed?	Equipment in Well (Y/N)	Obstruction s in Well (Y/N)	Water in Annulus (Y/N)	Inspection Date	Comments
Site 5															
CH5-01	29.96	11.43	18.53	G	G	P	P	P	P	N	N	N	N	6/12/2023	No bolts, no J-Plug
CH5-02	32.33	11.24	21.09	G	G	P	G	G	G	N	N	N	N	6/12/2023	
CH5-03	31.68	11.55	20.13	G	G	G	G	G	G	N	N	N	N	6/12/2023	
CH5-04	32.44	10.05	22.39	G	G	G	G	G	G	N	Y	N	N	6/12/2023	
MW5-1A	16.19	13.24	2.95	G	G	G	P	G	G	N	N	N	N	6/12/2023	No lock
MW5-1DA	28.9	14.40	14.5	G	N/A	G	G	G	G	Y	Y	N	N	6/12/2023	
MW5-1E	57.37	13.61	43.76	G	G	G	G	G	G	N	N	N	N	6/12/2023	Bolts stripped
MW5-2D	26.55	14.78	11.77	G	G	G	G	G	G	N	N	N	N	6/12/2023	
MW5-3D	25.17	14.70	10.47	G	G	G	P	G	G	N	N	N	N	6/12/2023	
MW5-4	15.76	13.56	2.2	G	G	G	G	G	G	N	Y	N	N	6/12/2023	
MW5-4D	26.1	12.39	13.71	G	G	G	G	G	G	N	N	N	N	6/12/2023	1 bolt Needed
MW5-5A	20.12	15.49	4.63	G	G	G	G	G	G	N	N	N	N	6/12/2023	
MW5-5D	27.33	11.29	16.04	G	G	G	G	G	G	Y	Y	N	N	6/12/2023	No J-Plug
MW5-6	13.66	8.93	4.73	G	N/A	G	G	G	G	Y	Y	N	N	6/12/2023	
MW5-6D	23.08	7.33	15.75	G	G	G	G	G	G	N	N	N	N	6/12/2023	
MW5-7	13.1	8.59	4.51	G	G	G	G	G	G	N	Y	N	N	6/12/2023	2 bolts needed
MW5-7D	22.35	7.48	14.87	G	G	G	G	G	G	N	N	N	Y	6/12/2023	Flooded
MW5-8	10.67	8.18	2.49	G	G	G	G	G	G	N	Y	N	N	6/12/2023	No bolts
MW5-8D	20.53	10.51	10.02	G	G	G	G	G	G	N	Y	N	Y	6/12/2023	No bolts, flooded
RW5-1	14.69	8.52	6.17	G	N/A	G	G	G	G	Y	Y	N	N	6/12/2023	
RW5-2	11.23	6.79	4.44	G	G	G	G	G	G	Y	Y	N	N	6/12/2023	
RW5-3	14.3	9.77	4.53	G	G	P	G	G	G	N	N	N	N	6/12/2023	
RW5-4	14.78	9.70	5.08	G	G	G	G	G	G	Y	Y	N	N	6/12/2023	
Site 8															
CH8-01	31.11	8.19	22.92	G	G	P	G	G	G	N	Y	N	N	6/12/2023	
MW8-1	13.79	8.61	5.18	G	G	P	G	G	G	N	Y	N	N	6/12/2023	
MW8-1E	50.79	16.99	33.8	G	G	G	G	G	G	N	Y	N	N	6/12/2023	1 bolt needed
MW8-2D	30.18	11.14	19.04	G	G	G	G	G	G	N	Y	N	N	6/12/2023	
MW8-3	14.27	10.00	4.27	G	G	G	G	G	G	N	Y	N	N	6/12/2023	
MW8-3DA	26.81	11.79	15.02	G	G	G	G	G	G	N	Y	N	N	6/12/2023	
MW8-4A	15.13	10.98	4.15	G	G	G	G	G	G	N	Y	N	N	6/12/2023	
MW8-4D	22.62	9.36	13.26	G	G	P	G	G	G	N	N	N	N	6/12/2023	
MW8-5A	15.2	10.44	4.76	G	G	G	P	G	G	N	Y	N	N	6/12/2023	
MW8-8	14.08	11.25	2.83	G	G	G	G	G	G	N	Y	N	N	6/12/2023	
MW8-10D	24.78	10.78	14	G	G	G	G	G	G	N	Y	N	N	6/12/2023	
MW8-11	16.82	13.58	3.24	G	G	G	P	G	G	N	N	N	N	6/12/2023	
MW8-11D	27.41	12.50	14.91	G	G	G	G	G	G	Y	Y	N	N	6/12/2023	
MW8-11E	49.77	13.61	36.16	G	G	G	P	G	G	N	Y	N	N	6/12/2023	



Well Number	TOIC Current Depth (ft)	TOIC Water Level (ft)	Water Column Length	Concrete Pad (G/F/P)	Well Paint (G/F/P)	Well Label (G/F/P)	Casing Lock (G/F/P/I)	Protective Cover (G/F/P/I)	Inner Well Cap (G/F/P)	PDB Deployed?	Equipment in Well (Y/N)	Obstructions in Well (Y/N)	Water in Annulus (Y/N)	Inspection Date	Comments
Site 10															
MW10-1DA	23.05	5.02	18.03	G	N/A	G	G	G	G	Y	Y	N	N	6/12/2023	
MW10-1EA	39.88	6.40	33.48	G	N/A	G	G	G	G	N	N	N	N	6/12/2023	
MW10-1F	59.24	6.57	52.67	G	N/A	G	G	G	G	N	Y	N	N	6/12/2023	
MW10-2	8.96	5.30	3.66	G	N/A	G	G	G	G	N	N	N	N	6/12/2023	
MW10-2E	47.26	5.74	41.52	G	N/A	G	P	P	G	N	N	N	N	6/12/2023	Broken cap
MW10-3	9.59	5.43	4.16	G	N/A	G	G	G	G	Y	Y	N	N	6/12/2023	
MW10-3D	25.97	4.85	21.12	G	N/A	G	G	G	G	N	Y	N	N	6/12/2023	
MW10-3E	43.46	6.72	36.74	G	N/A	G	G	G	G	N	Y	N	N	6/12/2023	
MW10-4	8.19	5.04	3.15	G	N/A	G	G	G	G	N	Y	N	N	6/12/2023	
MW10-4D	20.11	4.36	15.75	G	N/A	G	G	G	G	N	Y	N	N	6/12/2023	
MW10-4E	19.22	5.31	13.91	G	N/A	G	G	G	G	N	Y	N	N	6/12/2023	
MW10-5D	19.83	6.46	13.37	G	N/A	G	G	G	G	N	N	N	N	6/12/2023	
MW10-6	9.79	3.76	6.03	G	N/A	G	G	G	G	N	Y	N	N	6/12/2023	
MW10-7	9.14	4.46	4.68	G	N/A	G	G	P	G	Y	Y	N	N	6/12/2023	Broken cap
MW10-8	9.63	5.43	4.2	G	N/A	G	G	G	G	N	N	N	N	6/12/2023	
MW10-8D	24.61	6.02	18.59	F	N/A	NONE	G	G	G	N	Y	N	N	6/12/2023	
MW10-9D	19.89	4.99	14.9	G	N/A	G	G	G	G	N	Y	N	N	6/12/2023	
MW10-10D	11.09	1.48	9.61	G	N/A	G	G	G	G	Y	Y	N	N	6/12/2023	
MW10-11	7.33	4.57	2.76	P	N/A	G	G	G	G	N	Y	N	N	6/12/2023	Concrete pad heaved
MW10-11D	17.55	4.63	12.92	G	N/A	G	G	G	G	Y	Y	N	N	6/12/2023	
MW10-12	19	5.64	13.36	G	N/A	G	G	G	G	N	Y	N	N	6/12/2023	
MW10-12D	8.55	6.21	2.34	G	N/A	G	G	G	G	N	Y	N	N	6/12/2023	1 bolt needed
MW10-13	17.01	5.09	11.92	G	N/A	G	P	G	G	N	Y	N	N	6/12/2023	
MW10-13D	7.15	5.05	2.1	G	N/A	P	G	G	G	N	N	N	Y	6/12/2023	1 bolt needed, flooded
PW10-1	14	5.03	8.97	G	N/A	G	G	G	G	Y	Y	N	N	6/12/2023	
PW10-2	16.58	3.46	13.12	G	N/A	G	G	G	G	Y	Y	N	N	6/12/2023	
PZ10-7	10.23	5.22	5.01	G	N/A	G	G	G	G	Y	Y	N	N	6/12/2023	No bolts



Well Number	TOIC Current Depth (ft)	TOIC Water Level (ft)	Water Column Length	Concrete Pad (G/F/P)	Well Paint (G/F/P)	Well Label (G/F/P)	Casing Lock (G/F/P)	Protective Cover (G/F/P)	Inner Well Cap (G/F/P)	PDB Deployed?	Equipment in Well (Y/N)	Obstructions in Well (Y/N)	Water in Annulus (Y/N)	Inspection Date	Comments
Site 13															
MW13-1	10.25	8.65	1.6	G	G	G	G	G	G	N	Y	N	N	6/12/2023	
MW13-1D	17.25	8.17	9.08	G	G	G	G	G	G	N	Y	N	N	6/12/2023	
MW13-1E	44.02	15.74	28.28	G	G	G	G	G	G	N	Y	N	N	6/12/2023	
MW13-2D	23.81	11.87	11.94	G	G	G	G	G	G	N	N	N	N	6/12/2023	
MW13-3	11.01	8.04	2.97	G	G	G	G	G	G	N	Y	N	N	6/12/2023	
MW13-3D	15.55	3.35	12.2	G	G	G	G	G	G	N	Y	N	Y	6/12/2023	Flooded
MW13-4	10.72	9.31	1.41	G	G	G	G	G	G	N	Y	N	N	6/12/2023	
MW13-4D	23.07	9.32	13.75	G	G	G	G	G	G	Y	Y	N	N	6/12/2023	
MW13-5A	8	7.25	0.75	G	G	G	G	G	G	N	Y	N	N	6/12/2023	
MW13-5D	20.9	7.95	12.95	G	G	G	G	G	G	Y	Y	N	N	6/12/2023	
MW13-6	--	--	--	--	--	--	--	--	--	--	--	--	--	6/12/2023	Not located/inspected during event
MW13-6D	--	--	--	--	--	--	--	--	--	--	--	--	--	6/12/2023	Not located/inspected during event
PW13-1	29.25	7.03	22.22	G	G	G	G	G	N/A	Y	Y	Y	N	6/12/2023	
PW13-4D	18.91	9.69	9.22	G	G	G	G	G	G	Y	N	N	N	6/12/2023	
PZ13-1	4.49	DRY	#VALUE!	G	G	G	G	G	G	N	Y	N	N	6/12/2023	2 bolts needed
PZ13-1D	17.08	3.83	13.25	G	G	G	G	G	G	N	Y	N	N	6/12/2023	
PZ13-2	6.07	2.98	3.09	G	G	G	G	G	G	N	N	N	N	6/12/2023	No bolts
PZ13-2D	17.39	7.04	10.35	G	G	G	G	G	G	N	N	N	N	6/12/2023	No bolts
PZ13-3D	17.75	6.72	11.03	G	G	G	G	G	G	N	N	N	N	6/12/2023	
PZ13-4	9.79	5.82	3.97	G	G	G	G	G	G	N	N	N	N	6/12/2023	1 bolt needed
PZ13-4D	22.51	5.98	16.53	G	G	G	G	G	G	N	N	N	N	6/12/2023	
Miscellaneous															
MW1-1DA	24.23	10.18	14.05	G	G	G	G	G	G	N	N	N	N	6/12/2023	
MW1-7A	13.18	9.19	3.99	G	G	G	P	G	G	N	N	N	N	6/12/2023	
MPL2-1A	13.62	6.05	7.57	G	G	NONE	G	P	G	N	Y	N	N	6/12/2023	
MW2-1DA	14.67	4.01	10.66	G	N/A	G	G	G	G	N	Y	N	N	6/12/2023	1 bolt needed
MPL6-2A	14.42	8.07	6.35	G	G	G	G	G	G	N	Y	N	N	6/12/2023	
MPL6-3	15.8	7.62	8.18	G	G	G	G	G	G	N	Y	N	N	6/12/2023	

Abbreviations:
G/F/P = Good/Fair/Poor
Y/N = Yes/No

Fall 2023 Well Inspection Checklist



Well Number	TOIC Current Depth (ft)	TOIC Water Level (ft)	Water Column Length	Concrete Pad (G/F/P)	Well Paint (G/F/P)	Well Label (G/F/P)	Casing Lock (G/F/P)	Protective Cover (G/F/P)	Inner Well Cap (G/F/P)	PDB Deployed?	Equipment in Well (Y/N)	Obstructions in Well (Y/N)	Water in Annulus (Y/N)	Inspection Date	Comments
Site 3															
MW3-1A	13.36	6.29	7.07	G	G	G	P	G	G	N	N	N	N	10/11/2023	
MW3-1DA	15.98	5.69	10.29	G	F	G	F	G	G	N	N	N	N	10/11/2023	
MW3-1E	44.12	1.62	42.50	G	G	G	P	G	G	N	N	N	N	10/11/2023	
MW3-2	9.56	6.15	3.41	G	F	G	G	G	G	N	N	N	N	10/11/2023	
MW3-2DA	22.02	9.23	12.79	G	F	G	G	G	G	N	N	N	N	10/11/2023	
MW3-3A	5.08	1.80	3.28	G	N/A	G	G	F	G	N	N	N	N	10/11/2023	
MW3-3DA	16.93	0.40	16.53	G	N/A	G	G	F	G	N	N	N	N	10/11/2023	
MW3-4DA	15.61	1.27	14.34	G	G	G	P	G	G	N	N	N	N	10/11/2023	
MW3-5D	26.09	5.23	20.86	G	G	G	G	G	G	N	N	N	N	10/11/2023	
MW3-6A	10.90	7.38	3.52	G	G	G	G	G	G	N	N	N	N	10/11/2023	
MW3-6D	18.99	7.08	11.91	G	G	G	G	G	G	N	N	N	N	10/11/2023	
MW3-7	7.36	6.03	1.33	G	F	G	G	G	G	N	N	N	N	10/11/2023	
MW3-8	12.72	8.29	4.43	G	G	G	G	G	G	N	N	N	N	10/11/2023	
MW3-8D	23.69	13.13	10.56	G	G	G	G	G	G	N	N	N	N	10/11/2023	
MW3-8E	46.79	13.17	33.62	G	G	G	P	G	G	N	N	N	N	10/11/2023	
PW3-3A	14.71	0.98	13.73	G	G	G	G	G	G	N	N	N	N	10/11/2023	
PZ3-1	5.68	0.80	4.88	G	G	G	G	G	G	N	N	N	N	10/11/2023	
PZ3-1D	12.05	2.79	9.26	G	G	G	G	G	G	N	N	N	N	10/11/2023	
PZ3-2	3.99	2.57	1.42	G	G	G	F	G	G	N	N	N	N	10/11/2023	
PZ3-2D	12.63	3.76	8.87	G	G	G	G	G	G	N	N	N	N	10/11/2023	
PZ3-3	2.24	1.48	0.76	G	N/A	G	G	F	F	N	N	N	N	10/11/2023	
PZ3-3D	9.35	0.61	8.74	G	F	G	P	G	G	N	N	N	N	10/11/2023	
PZ3-4	3.29	2.55	0.74	G	G	G	G	G	G	N	N	N	N	10/11/2023	
PZ3-4D	11.51	1.54	9.97	G	N/A	G	G	G	G	N	N	N	N	10/11/2023	
PZ3-5	2.58	0.61	1.97	G	N/A	G	G	G	G	N	N	N	N	10/11/2023	
PZ3-5D	9.20	0.03	9.17	G	G	G	G	G	G	N	N	N	N	10/11/2023	
PZ3-6	12.79	0.00	12.79	G	N/A	NONE	NONE	G	G	N	N	N	N	10/11/2023	
PZ3-6D	3.22	1.81	1.41	G	G	G	G	G	G	N	N	N	N	10/11/2023	
PZ3-7D	21.51	3.35	18.16	G	N/A	G	G	G	G	N	N	N	N	10/11/2023	
PZ-8D	16.15	4.18	11.97	G	N/A	G	G	G	G	N	N	N	N	10/11/2023	
PZ3-9	3.73	2.41	1.32	G	G	G	G	G	G	N	N	N	N	10/11/2023	
PZ3-9D	23.59	1.28	22.31	G	G	G	P	P	G	N	N	N	N	10/11/2023	No PVC casing



Well Number	TOIC Current Depth (ft)	TOIC Water Level (ft)	Water Column Length	Concrete Pad (G/F/P)	Well Paint (G/F/P)	Well Label (G/F/P)	Casing Lock (G/F/P)	Protective Cover (G/F/P)	Inner Well Cap (G/F/P)	PDB Deployed?	Equipment in Well (Y/N)	Obstructions in Well (Y/N)	Water in Annulus (Y/N)	Inspection Date	Comments
Site 5															
CH5-01	29.96	11.20	18.76	G	G	G	P	G	P	N	N	N	N	10/10/2023	No bolts on well cap
CH5-02	32.02	11.03	20.99	G	G	G	G	G	G	N	N	N	N	10/10/2023	
CH5-03	31.61	11.32	20.29	G	G	G	G	G	G	N	N	N	N	10/10/2023	
CH5-04	32.51	9.93	22.58	G	G	G	G	G	G	N	N	N	N	10/10/2023	
MW5-1A	15.97	13.23	2.74	G	G	G	G	G	G	N	N	N	N	10/10/2023	
MW5-1DA	28.70	14.20	14.50	G	G	G	G	G	G	Y	Y	N	N	10/10/2023	
MW5-1E	57.20	13.19	44.01	G	G	G	G	G	G	N	N	N	Y	10/10/2023	
MW5-2D	26.37	14.51	11.86	G	G	G	G	G	G	N	N	N	N	10/10/2023	
MW5-3D	24.96	14.44	10.52	G	G	G	G	G	G	N	N	N	N	10/10/2023	
MW5-4	15.53	13.21	2.32	G	G	G	G	G	G	N	N	N	N	10/10/2023	
MW5-4D	25.94	11.82	14.12	G	G	G	G	G	G	N	N	N	Y	10/10/2023	Bolts stripped, 1 missing
MW5-5A	19.93	14.90	5.03	G	G	G	G	G	G	N	N	N	N	10/10/2023	
MW5-5D	27.22	20.21	7.01	G	G	G	P	G	P	Y	Y	N	Y	10/10/2023	No bolts on well cap
MW5-6	13.41	8.93	4.48	G	G	G	G	G	G	Y	Y	N	N	10/10/2023	
MW5-6D	22.88	7.27	15.61	G	G	G	G	G	G	N	N	N	N	10/10/2023	
MW5-7	12.92	8.51	4.41	G	G	G	G	G	G	N	Y	N	Y	10/10/2023	Large amount of water in annulus
MW5-7D	22.09	7.32	14.77	G	G	G	G	G	G	N	Y	N	Y	10/10/2023	Large amount of water in annulus
MW5-8	10.48	8.40	2.08	G	G	G	G	G	G	N	N	N	Y	10/10/2023	
MW5-8D	20.33	9.52	10.81	G	G	G	G	G	G	N	N	N	Y	10/10/2023	Large amount of water in annulus
RW5-1	14.50	10.09	4.41	G	G	G	G	G	G	Y	Y	N	N	10/10/2023	
RW5-2	11.03	7.23	3.80	G	G	G	G	G	G	Y	Y	N	N	10/10/2023	
RW5-3	13.97	9.56	4.41	G	G	G	G	G	G	N	N	N	Y	10/10/2023	
RW5-4	14.62	9.61	5.01	G	G	G	G	G	G	Y	Y	N	N	10/10/2023	
Site 8															
CH8-01	31.98	5.70	26.28	G	G	G	G	G	G	N	N	N	N	10/11/2023	
MW8-1	13.55	9.25	4.30	G	G	G	G	G	G	N	N	N	Y	10/11/2023	
MW8-1E	51.18	17.09	34.09	G	G	G	G	G	G	N	N	N	N	10/11/2023	
MW8-2D	30.04	11.82	18.22	G	G	G	G	G	G	N	N	N	N	10/11/2023	
MW8-3	14.36	10.69	3.67	G	G	G	G	G	G	N	N	N	N	10/11/2023	
MW8-3DA	26.61	12.49	14.12	G	G	G	G	G	G	N	N	N	N	10/11/2023	
MW8-4A	14.92	11.55	3.37	G	G	G	G	G	G	N	N	N	N	10/11/2023	
MW8-4D	22.41	10.14	12.27	G	G	G	G	G	G	N	N	N	N	10/11/2023	
MW8-5A	14.87	11.14	3.73	G	G	G	G	G	G	N	N	N	N	10/11/2023	
MW8-8	13.88	11.85	2.03	G	G	G	G	G	G	N	N	N	N	10/11/2023	
MW8-10D	24.75	11.48	13.27	G	G	G	G	G	G	N	N	N	N	10/11/2023	
MW8-11	16.67	14.28	2.39	G	G	G	G	G	G	N	N	N	N	10/11/2023	
MW8-11D	27.21	13.23	13.98	G	G	G	G	G	G	N	N	N	N	10/11/2023	
MW8-11E	50.09	14.28	35.81	G	G	G	G	G	G	N	N	N	N	10/11/2023	



Well Number	TOIC Current Depth (ft)	TOIC Water Level (ft)	Water Column Length	Concrete Pad (G/F/P)	Well Paint (G/F/P)	Well Label (G/F/P)	Casing Lock (G/F/P)	Protective Cover (G/F/P)	Inner Well Cap (G/F/P)	PDB Deployed?	Equipment in Well (Y/N)	Obstructions in Well (Y/N)	Water in Annulus (Y/N)	Inspection Date	Comments
Site 10															
MW10-1DA	23.00	8.84	14.16	G	G	G	G	G	G	Y	Y	N	N	10/10/2023	
MW10-1EA	39.62	6.32	33.30	G	G	G	G	G	G	N	N	N	N	10/10/2023	
MW10-1F	59.10	6.50	52.60	G	G	G	G	G	G	N	N	N	N	10/10/2023	
MW10-2	8.70	5.56	3.14	G	G	G	G	G	G	N	Y	N	N	10/10/2023	Black staining on equipment in well, hornets Cover broken
MW10-2E	47.00	5.60	41.40	G	G	G	G	P	G	N	N	N	N	10/10/2023	
MW10-3	9.38	6.02	3.36	G	G	G	G	G	G	N	N	N	N	10/10/2023	
MW10-3D	25.50	4.85	20.65	G	G	G	G	G	G	Y	Y	N	N	10/10/2023	
MW10-3E	42.95	6.60	36.35	G	G	G	G	G	G	N	N	N	N	10/10/2023	
MW10-4	7.96	6.35	1.61	G	G	G	G	G	G	N	N	N	N	10/10/2023	
MW10-4D	19.91	5.71	14.20	G	G	G	G	G	G	Y	Y	N	Y	10/10/2023	
MW10-4E	40.75	5.20	35.55	G	G	G	G	G	G	Y	Y	N	Y	10/10/2023	
MW10-5D	19.62	6.79	12.83	G	G	G	G	G	G	N	N	N	N	10/10/2023	
MW10-6	9.59	5.41	4.18	G	G	G	G	G	G	N	N	N	Y	10/10/2023	
MW10-7	8.89	5.93	2.96	G	G	G	G	P	G	Y	Y	N	N	10/10/2023	
MW10-8	9.27	5.90	3.37	G	G	G	G	G	G	N	N	N	N	10/10/2023	
MW10-8D	24.42	6.30	18.12	G	G	G	G	G	G	N	N	N	Y	10/10/2023	Concrete pad loose
MW10-9D	19.76	5.18	14.58	G	G	G	G	G	G	Y	Y	N	N	10/10/2023	No bolts
MW10-10D	11.05	2.80	8.25	G	G	G	G	P	G	Y	Y	N	N	10/10/2023	
MW10-11	7.23	5.36	1.87	G	G	G	G	G	G	N	N	N	Y	10/10/2023	
MW10-11D	17.30	5.00	12.30	G	G	G	G	G	G	Y	Y	N	Y	10/10/2023	
MW10-12	18.79	5.80	12.99	G	G	G	G	G	G	N	N	N	Y	10/10/2023	
MW10-12D	8.35	6.10	2.25	G	G	G	G	G	G	N	N	N	N	10/10/2023	
MW10-13	16.79	5.28	11.51	G	G	G	G	G	G	N	Y	N	N	10/10/2023	
MW10-13D	6.90	5.15	1.75	G	G	G	G	G	G	N	N	N	Y	10/10/2023	
PW10-1	10.90	6.21	4.69	G	G	G	G	G	G	Y	Y	N	N	10/10/2023	
PW10-2	21.50	4.20	17.30	G	G	G	G	G	G	Y	Y	N	Y	10/10/2023	
PZ10-7	9.98	5.63	4.35	G	G	G	G	G	G	N	N	N	N	10/10/2023	

Well Number	TOIC Current Depth (ft)	TOIC Water Level (ft)	Water Column Length	Concrete Pad (G/F/P)	Well Paint (G/F/P)	Well Label (G/F/P)	Casing Lock (G/F/P)	Protective Cover (G/F/P)	Inner Well Cap (G/F/P)	PDB Deployed?	Equipment in Well (Y/N)	Obstructions in Well (Y/N)	Water in Annulus (Y/N)	Inspection Date	Comments
Site 13															
MW13-1	10.07	9.29	0.78	G	G	G	G	F	G	N	N	N	N	10/11/2023	Wasps
MW13-1D	20.63	8.85	11.78	G	G	G	G	G	G	N	N	N	N	10/11/2023	
MW13-1E	44.28	16.28	28.00	G	G	G	G	G	G	N	N	N	N	10/11/2023	
MW13-2D	23.61	16.82	6.79	G	G	G	G	G	G	N	N	N	N	10/10/2023	
MW13-3	10.83	8.28	2.55	G	G	G	G	G	G	N	N	N	N	10/11/2023	
MW13-3D	16.03	3.60	12.43	G	G	G	G	G	G	N	N	N	Y	10/10/2023	Lots of bentonite
MW13-4	10.78	9.60	1.18	G	G	G	G	G	G	N	N	N	N	10/11/2023	
MW13-4D	18.70	9.45	9.25	G	G	G	G	G	G	Y	Y	N	N	10/10/2023	
MW13-5A	7.80	7.30	0.50	G	G	G	G	G	G	N	N	N	N	10/10/2023	
MW13-5D	20.70	8.01	12.69	G	G	G	G	G	G	Y	Y	N	N	10/10/2023	
MW13-6	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Not located/inspected during event
MW13-6D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Not located/inspected during event
PW13-1	27.20	7.10	20.10	G	G	G	G	G	G	N	N	N	N	10/10/2023	
PW13-4D	23.10	6.00	17.10	G	G	G	G	G	G	Y	Y	N	N	10/10/2023	
PZ13-1	4.28	--	--	G	G	G	G	G	G	N	N	MAYBE	N	10/10/2023	Dry at 4.28; maybe obstruction
PZ13-1D	16.83	5.07	11.76	G	G	G	G	G	G	N	N	N	N	10/10/2023	
PZ13-2	5.85	2.56	3.29	G	G	G	G	G	G	N	N	N	Y	10/10/2023	
PZ13-2D	17.08	6.80	10.28	G	G	G	G	G	G	N	N	N	Y	10/10/2023	
PZ13-3D	11.05	7.05	4.00	G	G	G	G	G	G	N	N	N	N	10/10/2023	
PZ13-4	9.57	5.72	3.85	G	G	G	G	G	G	N	N	N	Y	10/11/2023	
PZ13-4D	21.76	6.05	15.71	G	G	G	G	G	G	N	N	N	N	10/11/2023	
Miscellaneous															
MW1-1DA	24.01	10.52	13.49	G	G	G	G	G	G	Y	Y	N	N	10/11/2023	
MW1-7A	12.97	10.00	2.97	G	G	G	G	G	G	N	N	N	N	10/11/2023	
MPL2-1A	13.44	6.53	6.91	G	G	G	G	G	G	N	N	N	N	10/11/2023	Wasps
MW2-1DA	14.45	3.76	10.69	G	G	G	G	G	G	N	N	N	N	10/11/2023	
MPL6-2A	14.23	8.39	5.84	G	G	G	G	G	G	N	N	N	N	10/11/2023	
MPL6-3	15.61	7.88	7.73	G	G	G	G	G	G	N	N	N	N	10/11/2023	
MW7-1D	10.90	6.63	4.27	G	G	G	G	G	G	N	Y	N	N	10/10/2023	Tubing in well
MW7-2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Not located/inspected during event
MW7-2D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Not located/inspected during event
MW7-3D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Not located/inspected during event

Abbreviations:
G/F/P = Good/Fair/Poor
Y/N = Yes/No

Appendix E

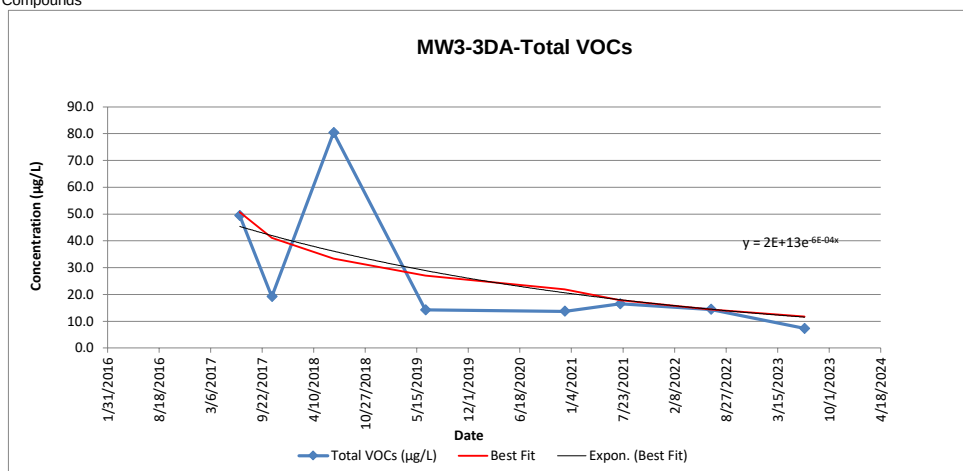
Well Trend Graphs

Site 3

Location ID	Unit	GPS	MW3-3DA							
Sample Date			6/27/2017	10/30/2017	6/26/2018	6/18/2019	12/9/2020	7/12/2021	6/29/2022	6/27/2023
Parameter										
1,4-Dioxane	µg/L	NS	U	U	61.4 J	U	--	--	U	--
2-Butanone (MEK)	µg/L	50	U	U	U	U	U	R	U	U
Acetone	µg/L	50	26.6	U	U	U	U	R	U	3.3 J
Benzene	µg/L	1	U	U	U	U	U	R	U	U
Carbon Disulfide	µg/L	60	U	U	U	U	U	R	U	U
Chloroform	µg/L	7	U	U	U	U	U	R	U	U
cis-1,2-Dichloroethene	µg/L	5	5.8	5.1	5.4	4.9	5.0	5.4 J-	5.3	3.5
Cyclohexane	µg/L	NS	U	U	U	U	U	R	U	U
Methylcyclohexane	µg/L	NS	U	U	U	U	U	R	U	U
Toluene	µg/L	5	U	U	U	U	U	R	U	U
trans-1,2-Dichloroethene	µg/L	5	U	U	U	U	U	R	U	U
Trichloroethene	µg/L	5	U	U	U	U	U	R	U	U
Vinyl Chloride	µg/L	2	17	14.1	13.6	9.3	8.7	11.1 J-	9.1	0.47 J
Total VOCs	µg/L		49.4	19.2	80.4	14.2	13.7	16.5	14.4	7.27

Notes:

1. Shaded Cells indicate exceedence of NYSDEC GPS for contaminants of concern as defined in the Site Management Plan
2. GPS = Groundwater Protection Standard
3. µg/L = micrograms per liter
4. J = Estimated value
5. R = Rejected
6. U = Non Detect
7. VOCs = Volatile Organic Compounds



Termination Criteria (Section 5.1.2 of the Site Management Plan):

1. Does this well meet the termination criteria by achieving the GPSs for an equivalent of 8 quarters?

No

Alternative Termination Criteria (Section 5.1.2 of the Site Management Plan):

1. Does this well achieve "Zero Slope Condition" as defined in the permit?
 - 1.a. Plot sum of concentration of hazardous waste constituents from an equivalent of 8 quarters
 - 1.b. Fit a trendline (either linear or exponential) using least squares regression model.
 - 1.c. The slope is less than or equal to zero.

See above

See above

Yes

2. Does this well achieve the analytical concentration criteria for a minimum of eight quarters?

- 2.a. Is the total concentration of COCs less than 100 µg/L?
- 2.b. Are single COCs less than 50 µg/L?

Yes*

No

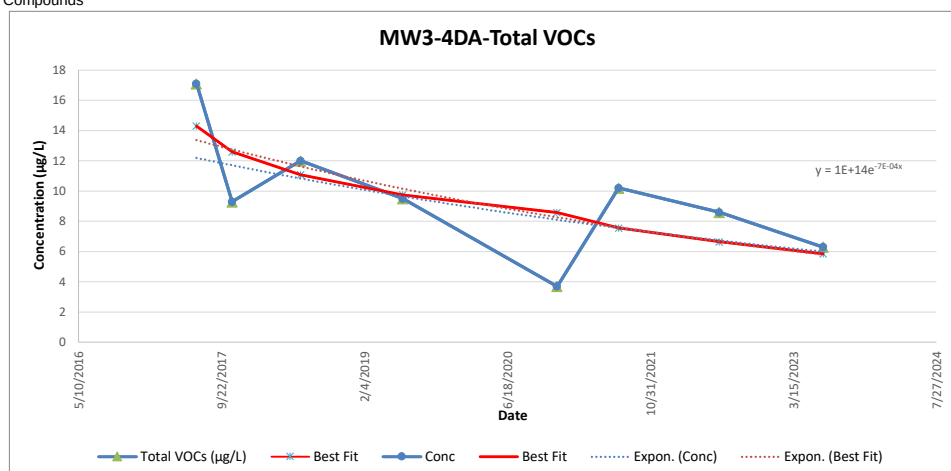
3. Will the residual groundwater contamination result in an unacceptable risk to human health and the environment? Provide analysis

* - While the well achieves this criteria for the last eight monitoring events, these events do not include monitoring over four consecutive quarterly sampling events per Section 5.1.2 of the SMP.

Location ID	Unit	GPS	MW3-4DA							
Sample Date			6/27/2017	10/30/2017	6/26/2018	6/18/2019	12/9/2020	7/12/2021	6/29/2022	6/27/2023
Parameter										
1,4-Dioxane	µg/L	NS	U	U	U	U	--	--	U	--
2-Butanone (MEK)	µg/L	50	U	U	U	U	U	R	U	U
Acetone	µg/L	50	U	U	U	U	U	R	U	U
Benzene	µg/L	1	U	U	U	U	U	R	U	U
Carbon Disulfide	µg/L	60	U	U	U	U	U	R	U	U
Chloroform	µg/L	7	U	U	U	U	U	R	U	U
cis-1,2-Dichloroethene	µg/L	5	5.9	4.8	5.25	4.45	3.7	5.05 J-	5.1	4.4
Cyclohexane	µg/L	NS	U	U	U	U	U	R	U	U
Methylcyclohexane	µg/L	NS	U	U	U	U	U	R	U	U
Toluene	µg/L	5	U	U	U	U	U	R	U	U
trans-1,2-Dichloroethene	µg/L	5	U	U	U	U	U	R	U	U
Trichloroethene	µg/L	5	U	U	U	U	U	R	U	U
Vinyl Chloride	µg/L	2	11.2	4.5	6.75	5.05	U	5.15 J-	3.5	1.9
Total VOCs	µg/L		17.1	9.3	12	9.5	3.7	10.2	8.6	6.3

Notes:

1. Shaded Cells indicate exceedence of NYSDEC GPS for contaminants of concern as defined in the Site Management Plan
2. GPS = Groundwater Protection Standard
3. µg/L = micrograms per liter
4. J- = Estimated value that may be biased low
5. R = Rejected
6. U = Non Detect
7. VOCs = Volatile Organic Compounds



Termination Criteria (Section 5.1.2 of the Site Management Plan):

1. Does this well meet the termination criteria by achieving the GPSs for an equivalent of 8 quarters?

No

Alternative Termination Criteria (Section 5.1.2 of the Site Management Plan):

1. Does this well achieve "Zero Slope Condition" as defined in the permit?
 - 1.a. Plot sum of concentration of hazardous waste constituents from an equivalent of 8 quarters
 - 1.b. Fit a trendline (either linear or exponential) using least squares regression model.
 - 1.c. The slope is less than or equal to zero.

See above
See above
Yes

2. Does this well achieve the analytical concentration criteria for a minimum of eight quarters?

- 2.a. Is the total concentration of COCs less than 100 µg/L?
- 2.b. Are single COCs less than 50 µg/L?

Yes*
Yes*

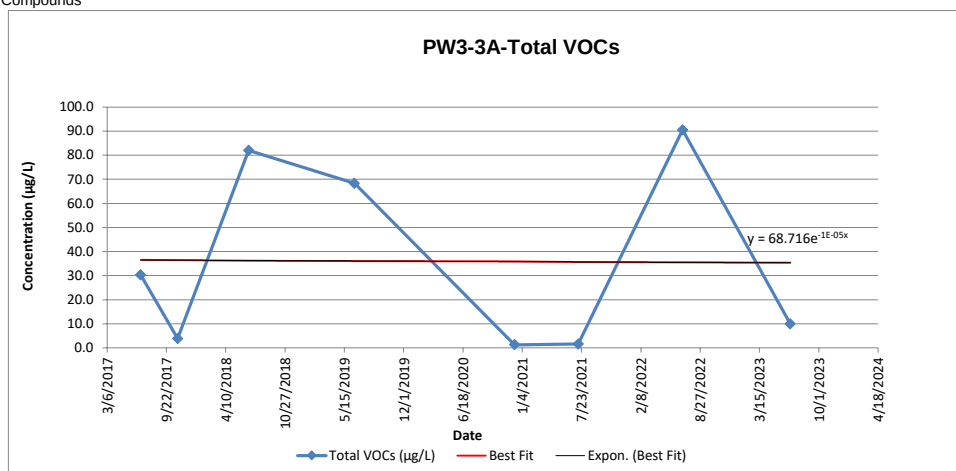
3. Will the residual groundwater contamination result in an unacceptable risk to human health and the environment? Provide analysis

* - While the well achieves this criteria for the last eight monitoring events, these events do not include monitoring over four consecutive quarterly sampling events per Section 5.1.2 of the SMP.

Location ID	Unit	GPS	PW3-3A							
Sample Date			6/27/2017	10/30/2017	6/26/2018	6/18/2019	12/9/2020	7/12/2021	6/29/2022	6/27/2023
Parameter										
1,4-Dioxane	µg/L	NS	U	U	U	U	--	--	U	--
2-Butanone (MEK)	µg/L	50	U	U	U	U	U	R	U	U
Acetone	µg/L	50	27.5	U	45.3	U	U	R	U	U
Benzene	µg/L	1	U	U	0.2 J	U	U	R	0.43	U
Carbon Disulfide	µg/L	60	U	U	U	U	U	R	U	U
Chloroform	µg/L	7	U	U	U	U	U	R	U	U
cis-1,2-Dichloroethene	µg/L	5	1.9	2.6	17.6 J	34.2	0.55 J	1.6 J-	40.9	5.1
Cyclohexane	µg/L	NS	U	U	U	U	U	R	U	U
Methylcyclohexane	µg/L	NS	U	U	U	U	U	R	U	U
Toluene	µg/L	5	U	U	U	U	U	R	U	U
trans-1,2-Dichloroethene	µg/L	5	U	U	0.43 J	0.71 J	U	R	0.72	U
Trichloroethene	µg/L	5	U	U	0.64 J	6.2	U	R	10.8	0.78 J
Vinyl Chloride	µg/L	2	0.80 J	1.2	17.8	27.2	0.7 J	R	37.6	4.0
Total VOCs	µg/L		30.2	3.8	81.97	68.31	1.25	1.6	90.45	9.88

Notes:

- Shaded Cells indicate exceedence of NYSDEC GPS for contaminants of concern as defined in the Site Management Plan
- GPS = Groundwater Protection Standard
- µg/L = micrograms per liter
- J = Estimated value
- J- = Estimated value that may be biased low
- R = Rejected
- U = Non Detect
- VOCs = Volatile Organic Compounds



Termination Criteria (Section 5.1.2 of the Site Management Plan):

- Does this well meet the termination criteria by achieving the GPSs for an equivalent of 8 quarters?

No

Alternative Termination Criteria (Section 5.1.2 of the Site Management Plan):

- Does this well achieve "Zero Slope Condition" as defined in the permit?
 - Plot sum of concentration of hazardous waste constituents from an equivalent of 8 quarters
 - Fit a trendline (either linear or exponential) using least squares regression model.
 - The slope is less than or equal to zero.

See above

See above

Yes

- Does this well achieve the analytical concentration criteria for a minimum of eight quarters?

- Is the total concentration of COCs less than 100 µg/L?
- Are single COCs less than 50 µg/L?

Yes*

Yes*

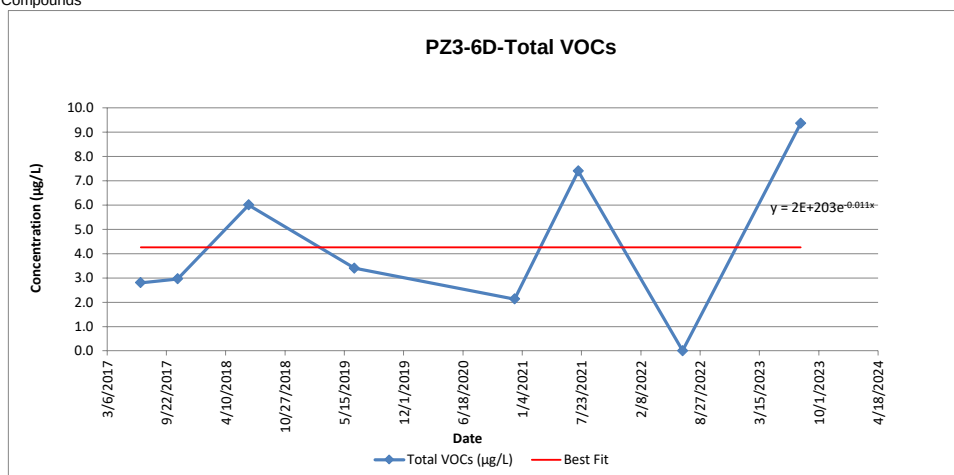
- Will the residual groundwater contamination result in an unacceptable risk to human health and the environment? Provide analysis

* - While the well achieves this criteria for the last eight monitoring events, these events do not include monitoring over four consecutive quarterly sampling events per Section 5.1.2 of the SMP.

Location ID	Unit	GPS	PZ3-6D							
Sample Date			6/27/2017	10/30/2017	6/26/2018	6/18/2019	12/9/2020	7/12/2021	6/29/2022	8/1/2023
Parameter										
1,4-Dioxane	µg/L	NS	U	U	U	U	--	--	U	--
2-Butanone (MEK)	µg/L	50	U	U	U	U	U	R	U	U
Acetone	µg/L	50	U	U	U	U	U	4.3 J-	U	6.3
Benzene	µg/L	1	U	U	U	U	U	R	U	U
Carbon Disulfide	µg/L	60	U	0.66 J	U	U	U	R	U	U
Chloroform	µg/L	7	U	U	U	U	U	R	U	U
cis-1,2-Dichloroethene	µg/L	5	1.5	1.2	3.3	2	1.3	2.0 J-	U	2.2
Cyclohexane	µg/L	NS	U	U	U	U	U	R	U	U
Methylcyclohexane	µg/L	NS	U	U	U	U	U	R	U	U
Toluene	µg/L	5	U	U	U	U	U	R	U	U
trans-1,2-Dichloroethene	µg/L	5	U	U	U	U	U	R	U	U
Trichloroethene	µg/L	5	U	U	U	U	U	R	U	U
Vinyl Chloride	µg/L	2	1.3	1.1	2.7	1.4	0.83 J	1.1 J-	U	0.86 J
Total VOCs	µg/L		2.8	2.96	6	3.4	2.13	7.4	0	9.36

Notes:

- Shaded Cells indicate exceedence of NYSDEC GPS for contaminants of concern as defined in the Site Management Plan
- GPS = Groundwater Protection Standard
- µg/L = micrograms per liter
- J = Estimated value
- J- = Estimated value that may be biased low
- R = Rejected
- U = Non Detect
- VOCs = Volatile Organic Compounds



Termination Criteria (Section 5.1.2 of the Site Management Plan):

- Does this well meet the termination criteria by achieving the GPSs for an equivalent of 8 quarters?

No

Alternative Termination Criteria (Section 5.1.2 of the Site Management Plan):

- Does this well achieve "Zero Slope Condition" as defined in the permit?
 - Plot sum of concentration of hazardous waste constituents from an equivalent of 8 quarters
 - Fit a trendline (either linear or exponential) using least squares regression model.
 - The slope is less than or equal to zero.

See above

See above

Yes

- Does this well achieve the analytical concentration criteria for a minimum of eight quarters?

2.a. Is the total concentration of COCs less than 100 µg/L?

Yes*

2.b. Are single COCs less than 50 µg/L?

Yes*

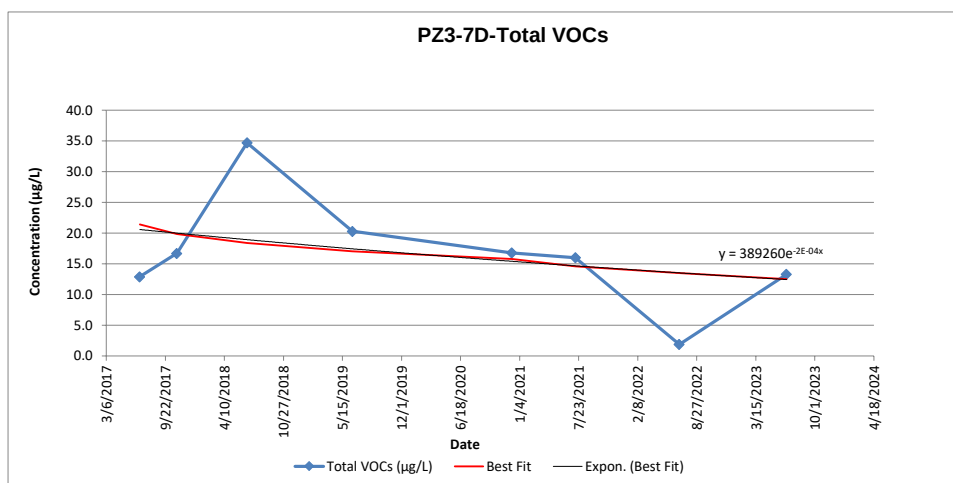
- Will the residual groundwater contamination result in an unacceptable risk to human health and the environment? Provide analysis

* - While the well achieves this criteria for the last eight monitoring events, these events do not include monitoring over four consecutive quarterly sampling events per Section 5.1.2 of the SMP.

Location ID	Unit	GPS	PZ3-7D							
Sample Date			6/27/2017	10/31/2017	6/26/2018	6/18/2019	12/9/2020	7/12/2021	6/29/2022	6/27/2023
Parameter										
1,4-Dioxane	µg/L	NS	U	U	U	U	--	--	U	--
2-Butanone (MEK)	µg/L	50	U	U	U	U	U	R	U	U
Acetone	µg/L	50	U	U	U	U	U	R	U	3.3 J
Benzene	µg/L	1	U	U	U	U	U	R	U	U
Carbon Disulfide	µg/L	60	U	U	U	U	U	R	U	U
Chloroform	µg/L	7	U	U	U	U	U	R	U	U
cis-1,2-Dichloroethene	µg/L	5	6.8	6.5	13.4	11.1	11.2	10.5 J-	1.9	7.3
Cyclohexane	µg/L	NS	U	U	U	U	U	R	U	U
Methylcyclohexane	µg/L	NS	U	U	U	U	U	R	U	U
Toluene	µg/L	5	U	U	U	U	U	R	U	U
trans-1,2-Dichloroethene	µg/L	5	U	U	U	U	U	R	U	U
Trichloroethene	µg/L	5	U	U	U	U	U	R	U	U
Vinyl Chloride	µg/L	2	6.1	10.2	21.3	9.2	5.6	5.5 J-	U	2.7
Total VOCs	µg/L		12.9	16.7	34.7	20.3	16.8	16	1.9	13.3

Notes:

1. Shaded Cells indicate exceedence of NYSDEC GPS for contaminants of concern as defined in the Site Management Plan
2. GPS = Groundwater Protection Standard
3. µg/L = micrograms per liter
4. J = Estimated value
5. J- = Estimated value that may be biased low
6. R = Rejected
7. U = Non Detect
8. VOCs = Volatile Organic Compounds



Termination Criteria (Section 5.1.2 of the Site Management Plan):

1. Does this well meet the termination criteria by achieving the GPSs for an equivalent of 8 quarters?

No

Alternative Termination Criteria (Section 5.1.2 of the Site Management Plan):

1. Does this well achieve "Zero Slope Condition" as defined in the permit?
 - 1.a. Plot sum of concentration of hazardous waste constituents from an equivalent of 8 quarters
 - 1.b. Fit a trendline (either linear or exponential) using least squares regression model.
 - 1.c. The slope is less than or equal to zero.

See above

See above

Yes

2. Does this well achieve the analytical concentration criteria for a minimum of eight quarters?

- 2.a. Is the total concentration of COCs less than 100 µg/L?
- 2.b. Are single COCs less than 50 µg/L?

Yes*

Yes*

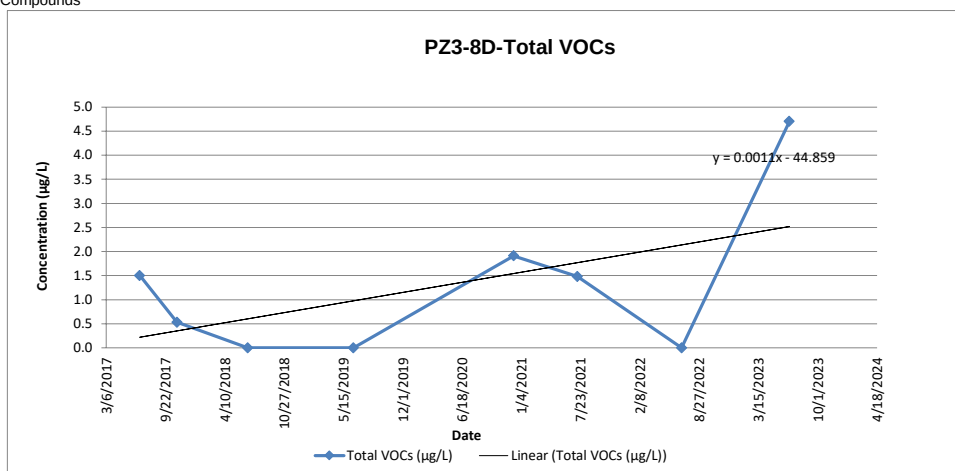
3. Will the residual groundwater contamination result in an unacceptable risk to human health and the environment? Provide analysis

* - While the well achieves this criteria for the last eight monitoring events, these events do not include monitoring over four consecutive quarterly sampling events per Section 5.1.2 of the SMP.

Location ID	Unit	GPS	PZ3-8D							
Sample Date			6/27/2017	10/31/2017	6/26/2018	6/18/2019	12/9/2020	7/12/2021	6/29/2022	6/27/2023
Parameter										
1,4-Dioxane	µg/L	NS	U	U	U	U	--	--	--	--
2-Butanone (MEK)	µg/L	50	U	U	U	U	U	R	U	U
Acetone	µg/L	50	U	U	U	U	U	R	U	4.7 J
Benzene	µg/L	1	U	U	U	U	U	R	U	U
Carbon Disulfide	µg/L	60	U	U	U	U	U	R	U	U
Chloroform	µg/L	7	U	U	U	U	U	R	U	U
cis-1,2-Dichloroethene	µg/L	5	U	U	U	U	0.61 J	0.51 J-	U	U
Cyclohexane	µg/L	NS	U	U	U	U	U	R	U	U
Methylcyclohexane	µg/L	NS	U	U	U	U	U	R	U	U
Toluene	µg/L	5	U	U	U	U	U	R	U	U
trans-1,2-Dichloroethene	µg/L	5	U	U	U	U	U	R	U	U
Trichloroethene	µg/L	5	U	U	U	U	U	R	U	U
Vinyl Chloride	µg/L	2	1.5	0.53 J	U	U	1.3	0.97 J-	U	U
Total VOCs	µg/L		1.5	0.53	0	0	1.91	1.48	0	4.7

Notes:

- Shaded Cells indicate exceedence of NYSDEC GPS for contaminants of concern as defined in the Site Management Plan
- GPS = Groundwater Protection Standard
- µg/L = micrograms per liter
- J = Estimated value
- J- = Estimated value that may be biased low
- R = Rejected
- U = Non Detect
- VOCs = Volatile Organic Compounds



Termination Criteria (Section 5.1.2 of the Site Management Plan):

- Does this well meet the termination criteria by achieving the GPSs for an equivalent of 8 quarters?

Yes*

Alternative Termination Criteria (Section 5.1.2 of the Site Management Plan):

- Does this well achieve "Zero Slope Condition" as defined in the permit?
 - Plot sum of concentration of hazardous waste constituents from an equivalent of 8 quarters
 - Fit a trendline (either linear or exponential) using least squares regression model.
 - The slope is less than or equal to zero.

See above

See above

No

- Does this well achieve the analytical concentration criteria for a minimum of eight quarters?

- Is the total concentration of COCs less than 100 µg/L?
- Are single COCs less than 50 µg/L?

Yes*

Yes*

- Will the residual groundwater contamination result in an unacceptable risk to human health and the environment? Provide analysis

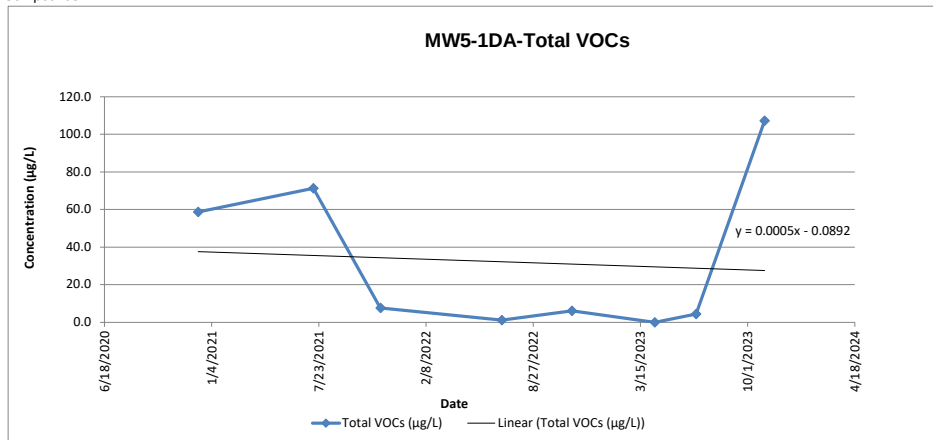
* - While the well achieves this criteria for the last eight monitoring events, these events do not include monitoring over four consecutive quarterly sampling events per Section 5.1.2 of the SMP.

Site 5

Location ID	Unit	GPS	MW5-1DA							
Sample Date			12/10/2020	7/13/2021	11/15/2021	6/29/2022	11/7/2022	4/11/2023	6/27/2023	11/2/2023
Parameter										
1,1-Dichloroethene	µg/L	5	U	R	U	U	U	U	U	U
1,4-Dioxane	µg/L	NS	--	--	--	U	U	--	--	--
2-Butanone (MEK)	µg/L	50	U	R	U	U	3.3 J	U	U	U
Acetone	µg/L	50	U	R	U	U	U	U	3.6 J	10.3
Benzene	µg/L	1	U	R	U	U	U	U	U	U
Carbon Disulfide	µg/L	60	U	R	U	U	U	U	U	U
Chloroethane	µg/L	5	U	R	U	U	0.73 J	U	U	U
Chloroform	µg/L	7	U	R	U	U	U	U	U	U
cis-1,2-Dichloroethene	µg/L	5	53.3	65.1 J-	6.9	1.2	2	U	0.74 J	88.1
Dichloromethane	µg/L	5	U	R	U	U	U	U	U	U
Iodomethane	µg/L	5	U	R	U	U	U	UJ	U	UJ
Methyl N-Butyl Ketone (2-Hexanone)	µg/L	50	U	R	U	U	U	U	U	U
Toluene	µg/L	5	U	R	U	U	U	U	U	U
trans-1,2-Dichloroethene	µg/L	5	U	R	U	U	U	U	U	0.43 J
Trichloroethene	µg/L	5	U	R	U	U	U	U	U	U
Vinyl chloride	µg/L	2	5.4	6.2 J-	0.73 J	U	U	U	U	8.3
Total VOCs	µg/L		58.7	71.3	7.63	1.2	6.03	0	4.34	107.13

Notes:

- Shaded Cells indicate exceedence of NYSDEC GPS for contaminants of concern as defined in the Site Management Plan
- GPS = Groundwater Protection Standard
- µg/L = micrograms per liter
- J = Estimated value
- J- = Estimated value that may be biased low
- R = Rejected
- U = Non Detect
- VOCs = Volatile Organic Compounds



Termination Criteria (Section 5.1.2 of the Site Management Plan):

- Does this well meet the termination criteria by achieving the GPSs for an equivalent of 8 quarters?

No

Alternative Termination Criteria (Section 5.1.2 of the Site Management Plan):

- Does this well achieve "Zero Slope Condition" as defined in the permit?
 - Plot sum of concentration of hazardous waste constituents from an equivalent of 8 quarters
 - Fit a trendline (either linear or exponential) using least squares regression model.
 - The slope is less than or equal to zero.

See above
See above
Yes

- Does this well achieve the analytical concentration criteria for a minimum of eight quarters?

- Is the total concentration of COCs less than 100 µg/L?
- Are single COCs less than 50 µg/L?

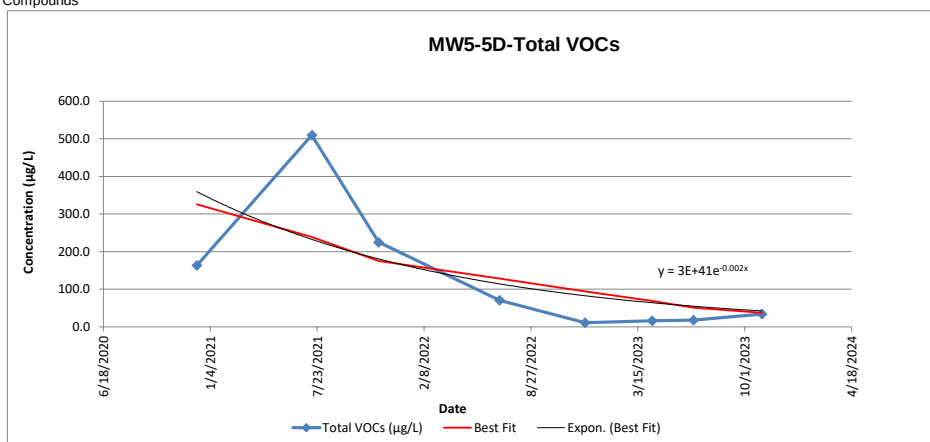
No
No

- Will the residual groundwater contamination result in an unacceptable risk to human health and the environment? Provide analysis

Location ID	Unit	GPS	MW5-5D							
Sample Date			12/10/2020	7/13/2021	11/15/2021	6/29/2022	12/6/2022	4/11/2023	6/27/2023	11/2/2023
Parameter										
1,1-Dichloroethene	µg/L	5	U	R	U	U	U	U	U	U
1,4-Dioxane	µg/L	NS	--	--	--	U	--	--	--	--
2-Butanone (MEK)	µg/L	50	U	R	2.9 J-	U	U	U	U	2.5 J
Acetone	µg/L	50	U	R	21.0	4.8 J	6.9	6	4.25	10.8
Benzene	µg/L	1	U	R	U	U	U	U	U	U
Carbon Disulfide	µg/L	60	U	2.3 J-	0.94 J	0.54 J	U	U	U	U
Chloroethane	µg/L	5	U	80.3 J-	U	U	U	U	U	U
Chloroform	µg/L	7	U	R	U	U	U	U	U	U
cis-1,2-Dichloroethene	µg/L	5	8 J	64.5 J-	39.1	31.2	1.3	4.25	3.95	7.2
Dichloromethane	µg/L	5	U	R	U	U	U	U	U	U
Iodomethane	µg/L	5	U	R	0.49 J+	U	0.87 J	UJ	U	U
Methyl N-Butyl Ketone (2-Hexanone)	µg/L	50	U	R	U	U	U	U	U	U
Toluene	µg/L	5	U	R	U	U	U	U	0.65	U
trans-1,2-Dichloroethene	µg/L	5	23.4	18.7 J-	26.4	2	U	0.405	0.445	1.3
Trichloroethene	µg/L	5	U	R	U	3	1.6	1.5	1.65	1.8
Vinyl chloride	µg/L	2	132	344 J-	134	28.9	0.48 J	3.7	6.9	10.6
Total VOCs	µg/L		163.4	509.8	224.83	70.44	11.15	15.855	17.845	34.2

Notes:

1. Shaded Cells indicate exceedence of NYSDEC GPS for contaminants of concern as defined in the Site Management Plan
2. GPS = Groundwater Protection Standard
3. µg/L = micrograms per liter
4. J = Estimated value
5. J- = Estimated value that may be biased low
6. J+ = Estimated value that may be biased high
7. R = Rejected
8. U = Non Detect
9. VOCs = Volatile Organic Compounds



Termination Criteria (Section 5.1.2 of the Site Management Plan):

1. Does this well meet the termination criteria by achieving the GPSs for an equivalent of 8 quarters?

No

Alternative Termination Criteria (Section 5.1.2 of the Site Management Plan):

1. Does this well achieve "Zero Slope Condition" as defined in the permit?
 - 1.a. Plot sum of concentration of hazardous waste constituents from an equivalent of 8 quarters
 - 1.b. Fit a trendline (either linear or exponential) using least squares regression model.
 - 1.c. The slope is less than or equal to zero.

See above
See above
Yes

2. Does this well achieve the analytical concentration criteria for a minimum of eight quarters?

- 2.a. Is the total concentration of COCs less than 100 µg/L?
- 2.b. Are single COCs less than 50 µg/L?

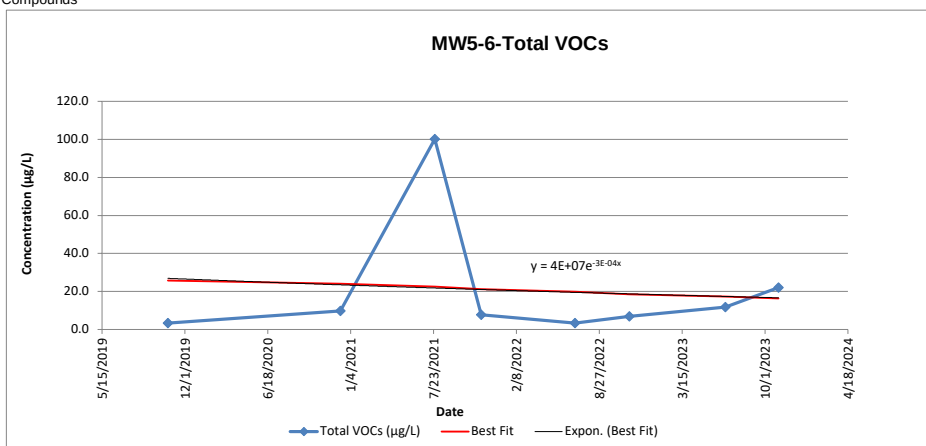
No
No

3. Will the residual groundwater contamination result in an unacceptable risk to human health and the environment? Provide analysis

Location ID	Unit	GPS	MW5-6							
Sample Date			10/21/2019	12/10/2020	7/26/2021	11/15/2021	6/29/2022	11/7/2022	6/27/2023	11/2/2023
Parameter										
1,1-Dichloroethene	µg/L	5	U	U	U	U	U	U	U	U
1,4-Dioxane	µg/L	NS	U	--	--	--	--	--	--	--
2-Butanone (MEK)	µg/L	50	U	U	U	U	U	U	U	U
Acetone	µg/L	50	U	5.3 BJ+	95.85	U	U	U	4.1 J	10.7
Benzene	µg/L	1	U	U	U	U	U	U	U	U
Carbon Disulfide	µg/L	60	U	U	0.34	0.93 J	U	U	U	0.66 J
Chloroethane	µg/L	5	U	U	U	U	U	U	U	U
Chloroform	µg/L	7	U	U	U	U	U	U	U	U
cis-1,2-Dichloroethene	µg/L	5	2.3	2.3	2.7	2.9	1.7	2.4	1.9	3.4
Dichloromethane	µg/L	5	U	U	U	U	U	U	U	U
Iodomethane	µg/L	5	U	U	U	1.6 J+	U	U	U	U
Methyl N-Butyl Ketone (2-Hexanone)	µg/L	50	U	U	U	U	U	U	U	U
Toluene	µg/L	5	U	1.7	0.63	1.4	0.585	3.1	2.7	4.5
trans-1,2-Dichloroethene	µg/L	5	U	0.42 J	U	0.85 J	U	0.73 J	U	0.38 J
Trichloroethene	µg/L	5	1.1	U	0.615	U	0.58	U	1.2	1.6
Vinyl chloride	µg/L	2	U	U	U	U	0.435	0.7 J	1.9	0.72 J
Total VOCs	µg/L		3.4	9.72	100.135	7.68	3.3	6.93	11.8	21.96

Notes:

1. Shaded Cells indicate exceedence of NYSDEC GPS for contaminants of concern as defined in the Site Management Plan
2. GPS = Groundwater Protection Standard
3. µg/L = micrograms per liter
4. B = Constituent detected in method blank, trip blank, or both
5. J = Estimated value
6. J+ = Estimated value that may be biased high
7. U = Non Detect
8. VOCs = Volatile Organic Compounds



Termination Criteria (Section 5.1.2 of the Site Management Plan):

1. Does this well meet the termination criteria by achieving the GPSs for an equivalent of 8 quarters?

No

Alternative Termination Criteria (Section 5.1.2 of the Site Management Plan):

1. Does this well achieve "Zero Slope Condition" as defined in the permit?
 - 1.a. Plot sum of concentration of hazardous waste constituents from an equivalent of 8 quarters
 - 1.b. Fit a trendline (either linear or exponential) using least squares regression model.
 - 1.c. The slope is less than or equal to zero.

See above

See above

Yes

2. Does this well achieve the analytical concentration criteria for a minimum of eight quarters?

- 2.a. Is the total concentration of COCs less than 100 µg/L?
- 2.b. Are single COCs less than 50 µg/L?

No

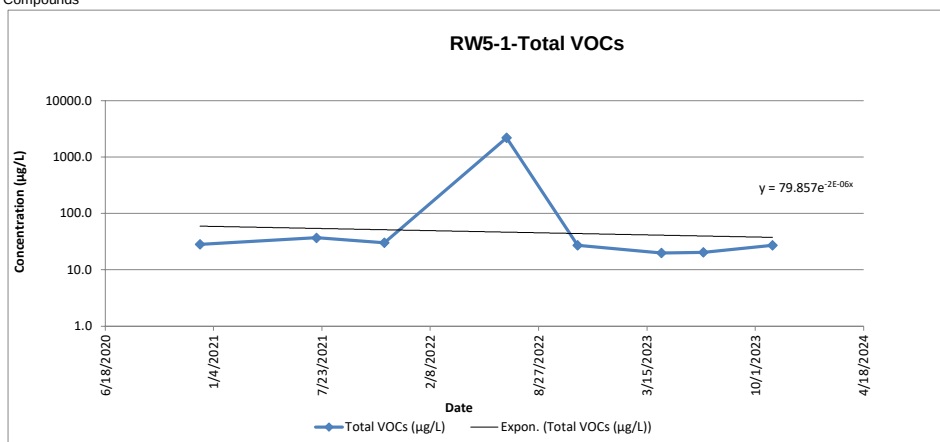
No

3. Will the residual groundwater contamination result in an unacceptable risk to human health and the environment? Provide analysis

Location ID	Unit	GPS	RW5-1							
Sample Date			12/10/2020	7/13/2021	11/15/2021	6/29/2022	11/7/2022	4/11/2023	6/27/2023	11/2/2023
Parameter										
1,1-Dichloroethene	µg/L	5	U	R	U	1.4	U	U	U	U
1,4-Dioxane	µg/L	NS	--	--	--	--	--	--	--	--
2-Butanone (MEK)	µg/L	50	U	R	U	U	U	U	U	U
Acetone	µg/L	50	U	R	U	U	11.95	U	4.1 J	11.95
Benzene	µg/L	1	U	R	U	U	U	U	U	U
Carbon Disulfide	µg/L	60	U	R	U	0.7 J	0.5 J	U	U	0.5 J
Chloroethane	µg/L	5	2.5	12.2 J-	2.6	26.2	U	5.8	5.6	U
Chloroform	µg/L	7	U	R	U	U	U	U	U	U
cis-1,2-Dichloroethene	µg/L	5	1.5	1.1 J-	0.55 J	1,390	1.05	2.6	1.6	1.05
Dichloromethane	µg/L	5	U	R	U	U	U	0.52 J	U	U
Iodomethane	µg/L	5	U	R	U	U	UJ	UJ	U	UJ
Methyl N-Butyl Ketone (2-Hexanone)	µg/L	50	U	R	U	U	U	U	U	U
Toluene	µg/L	5	18.9	17.0 J-	21.0	2.8	11.55	5.6	6.3	11.55
trans-1,2-Dichloroethene	µg/L	5	0.38 J	2.7 J-	0.33 J	7.6	0.37 J	0.56 J	0.47 J	0.37 J
Trichloroethene	µg/L	5	0.95 J	0.80 J-	U	2.8	0.715 J	0.82 J	1.0	0.715 J
Vinyl chloride	µg/L	2	4.1	3.1 J-	5.6	767	0.97 J	3.9	1.3 J+	0.97 J
Total VOCs	µg/L		28.33	36.9	30.08	2198.5	27.11	19.8	20.37	27.11

Notes:

1. Shaded Cells indicate exceedence of NYSDEC GPS for contaminants of concern as defined in the Site Management Plan
2. GPS = Groundwater Protection Standard
3. µg/L = micrograms per liter
4. J = Estimated value
5. J- = Estimated value that may be biased low
6. R = Rejected
7. U = Non Detect
8. VOCs = Volatile Organic Compounds



Termination Criteria (Section 5.1.2 of the Site Management Plan):

1. Does this well meet the termination criteria by achieving the GPSs for an equivalent of 8 quarters?

No

Alternative Termination Criteria (Section 5.1.2 of the Site Management Plan):

1. Does this well achieve "Zero Slope Condition" as defined in the permit?
 - 1.a. Plot sum of concentration of hazardous waste constituents from an equivalent of 8 quarters
 - 1.b. Fit a trendline (either linear or exponential) using least squares regression model.
 - 1.c. The slope is less than or equal to zero.

See above
See above
Yes

2. Does this well achieve the analytical concentration criteria for a minimum of eight quarters?

- 2.a. Is the total concentration of COCs less than 100 µg/L?
- 2.b. Are single COCs less than 50 µg/L?

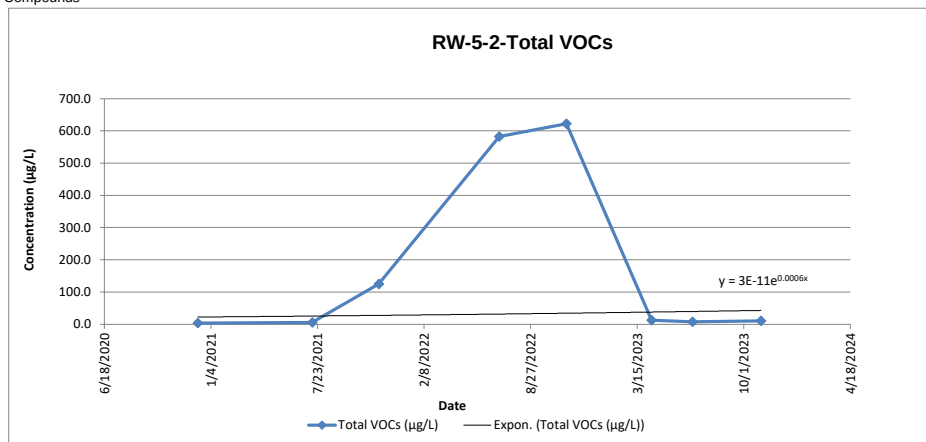
No
No

3. Will the residual groundwater contamination result in an unacceptable risk to human health and the environment? Provide analysis

Location ID	Unit	GPS	RW-5-2							
Sample Date			12/10/2020	7/13/2021	11/15/2021	6/29/2022	11/2/2022	4/11/2023	6/27/2023	11/2/2023
Parameter										
1,1-Dichloroethene	µg/L	5	U	R	U	U	U	U	U	U
1,4-Dioxane	µg/L	NS	--	--	--	--	--	--	--	--
2-Butanone (MEK)	µg/L	50	U	R	U	U	U	U	U	U
Acetone	µg/L	50	U	5.2 J-	U	U	U	7.3	4.95 J	8.9
Benzene	µg/L	1	U	R	U	U	U	U	U	U
Carbon Disulfide	µg/L	60	U	R	0.34 J	0.39 J	U	U	U	0.55 J
Chloroethane	µg/L	5	U	R	U	U	U	U	U	U
Chloroform	µg/L	7	U	R	U	U	U	U	U	U
cis-1,2-Dichloroethene	µg/L	5	0.91 J	0.47 J-	28.7	358	106	2.4	1.6	0.74 J
Dichloromethane	µg/L	5	U	R	U	U	U	U	U	U
Iodomethane	µg/L	5	U	R	0.97 J	U	U	UJ	U	U
Methyl N-Butyl Ketone (2-Hexanone)	µg/L	50	U	R	U	U	U	U	U	U
Toluene	µg/L	5	U	R	U	U	U	U	0.75 J	0.88 J
trans-1,2-Dichloroethene	µg/L	5	U	R	U	0.71 J	U	U	U	U
Trichloroethene	µg/L	5	U	R	0.63 J	U	U	U	U	U
Vinyl chloride	µg/L	2	2.9	R	94.6	223	516	3.0	0.805 J+	U
Total VOCs	µg/L		3.81	5.67	125.24	582.1	622	12.7	8.11	11.07

Notes:

1. Shaded Cells indicate exceedence of NYSDEC GPS for contaminants of concern as defined in the Site Management Plan
2. GPS = Groundwater Protection Standard
3. µg/L = micrograms per liter
4. J = Estimated value
5. J- = Estimated value that may be biased low
6. R = Rejected
7. U = Non Detect
8. VOCs = Volatile Organic Compounds



Termination Criteria (Section 5.1.2 of the Site Management Plan):

1. Does this well meet the termination criteria by achieving the GPSs for an equivalent of 8 quarters?

No

Alternative Termination Criteria (Section 5.1.2 of the Site Management Plan):

1. Does this well achieve "Zero Slope Condition" as defined in the permit?
 - 1.a. Plot sum of concentration of hazardous waste constituents from an equivalent of 8 quarters
 - 1.b. Fit a trendline (either linear or exponential) using least squares regression model.
 - 1.c. The slope is less than or equal to zero.

See above
See above
No

2. Does this well achieve the analytical concentration criteria for a minimum of eight quarters?

- 2.a. Is the total concentration of COCs less than 100 µg/L?
- 2.b. Are single COCs less than 50 µg/L?

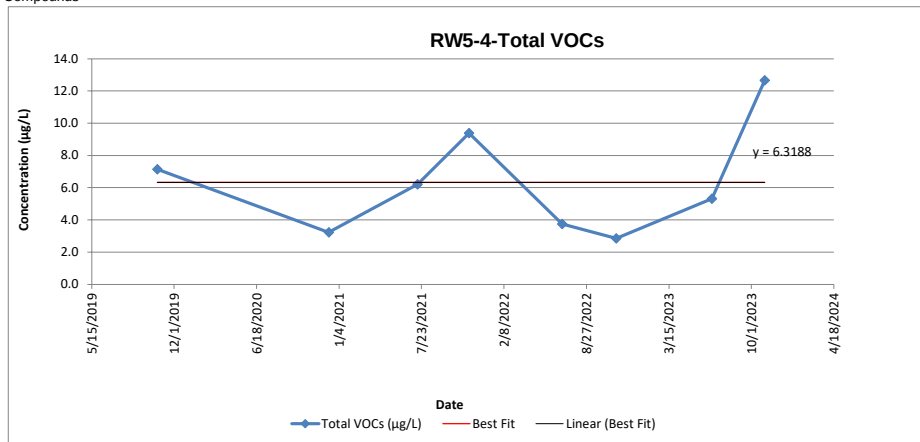
No
No

3. Will the residual groundwater contamination result in an unacceptable risk to human health and the environment? Provide analysis

Location ID	Unit	GPS	RW5-4							
Sample Date			10/21/2019	12/10/2020	7/13/2021	11/15/2021	6/29/2022	11/7/2022	6/27/2023	11/2/2023
Parameter										
1,1-Dichloroethene	µg/L	5	U	U	R	U	U	U	U	U
1,4-Dioxane	µg/L	NS	U	--	--	--	--	--	--	--
2-Butanone (MEK)	µg/L	50	U	U	R	U	U	U	U	U
Acetone	µg/L	50	U	U	3.5 J-	3.2 J	U	U	3.9 J	11.8
Benzene	µg/L	1	0.44 J	0.43 J	R	0.54 J	0.38 J	U	U	U
Carbon Disulfide	µg/L	60	U	U	R	0.35 J	0.68 J	U	U	U
Chloroethane	µg/L	5	U	U	R	U	U	U	U	U
Chloroform	µg/L	7	U	U	R	U	U	U	U	U
cis-1,2-Dichloroethene	µg/L	5	2.1	1.2	1.2 J-	1.2	0.89 J	1	0.39 J	0.37 J
Dichloromethane	µg/L	5	U	U	R	U	U	U	U	U
Iodomethane	µg/L	5	U	U	R	1.8 J+	U	U	U	U
Methyl N-Butyl Ketone (2-Hexanone)	µg/L	50	2.8 J	U	R	U	U	U	U	U
Toluene	µg/L	5	1.8	1.6	1.5 J-	2.3	1.8	1.5	0.65 J	0.50 J
trans-1,2-Dichloroethene	µg/L	5	U	U	R	U	U	U	U	U
Trichloroethene	µg/L	5	U	U	R	U	U	U	U	U
Vinyl chloride	µg/L	2	U	U	R	U	U	0.35 J	0.38 J	U
Total VOCs	µg/L		7.14	3.23	6.2	9.39	3.75	2.85	5.32	12.67

Notes:

1. Shaded Cells indicate exceedence of NYSDEC GPS for contaminants of concern as defined in the Site Management Plan
2. GPS = Groundwater Protection Standard
3. µg/L = micrograms per liter
4. J = Estimated value
5. J- = Estimated value that may be biased low
6. J+ = Estimated value that may be biased high
7. R = Rejected
8. U = Non Detect
9. VOCs = Volatile Organic Compounds



Termination Criteria (Section 5.1.2 of the Site Management Plan):

1. Does this well meet the termination criteria by achieving the GPSs for an equivalent of 8 quarters?

Yes

Alternative Termination Criteria (Section 5.1.2 of the Site Management Plan):

1. Does this well achieve "Zero Slope Condition" as defined in the permit?
 - 1.a. Plot sum of concentration of hazardous waste constituents from an equivalent of 8 quarters
 - 1.b. Fit a trendline (either linear or exponential) using least squares regression model.
 - 1.c. The slope is less than or equal to zero.

See above

See above

Yes

2. Does this well achieve the analytical concentration criteria for a minimum of eight quarters?

- 2.a. Is the total concentration of COCs less than 100 µg/L?

Yes*

- 2.b. Are single COCs less than 50 µg/L?

Yes*

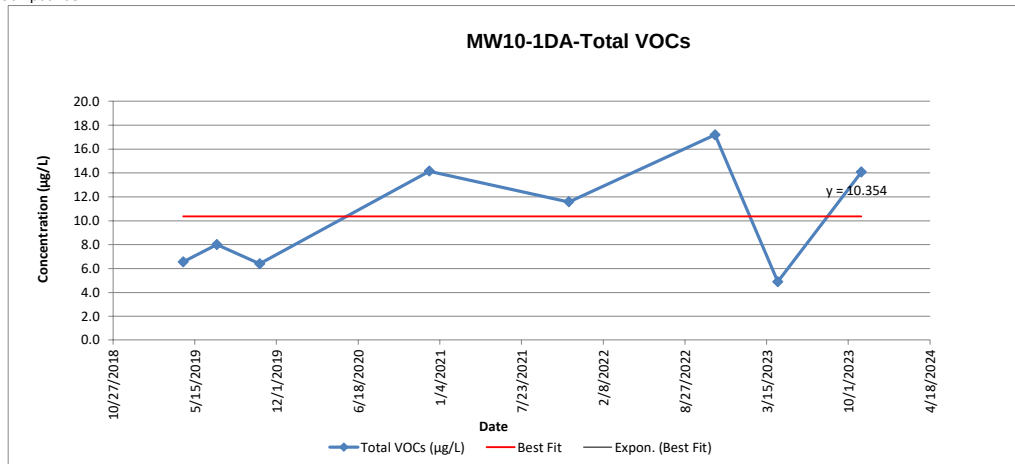
3. Will the residual groundwater contamination result in an unacceptable risk to human health and the environment? Provide analysis

* - While the well achieves this criteria for the last eight monitoring events, these events do not include monitoring over four consecutive quarterly sampling events per Section 5.1.2 of the SMP.

Site 10

Location ID	Unit	GPS	MW10-1DA							
Sample Date			4/17/2019	7/8/2019	10/21/2019	12/9/2020	11/16/2021	11/8/2022	4/11/2023	11/2/2023
Parameter										
1,1-Dichloroethene	µg/L	5	U	U	U	U	U	U	U	U
2-Butanone (MEK)	µg/L	50	U	U	U	U	U	U	U	U
2-Hexanone (MBK)	µg/L	50	U	U	U	U	U	U	U	U
Acetone	µg/L	50	U	U	U	U	U	U	U	9.3
Benzene	µg/L	1	2.7	2.95	3.5	3.8	4.4	3.2	2.7	3.1
Carbon Disulfide	µg/L	60	U	U	U	U	U	U	U	U
Chloroform	µg/L	7	U	U	U	U	U	U	U	U
Chloromethane	µg/L	5	U	U	U	U	U	U	UJ	U
cis-1,2-Dichloroethene	µg/L	5	U	U	U	0.9 J	0.71 J	3.2	0.48 J	1.3
Cyclohexane	µg/L	NS	U	U	U	0.33 J	0.425 J	U	U	U
Dichloromethane	µg/L	5	U	U	U	U	U	U	U	U
Ethylbenzene	µg/L	5	U	U	U	0.4 J	U	U	U	U
Iodomethane	µg/L	5	U	U	U	U	0.345 J	U	UJ	U
Methylcyclohexane	µg/L	NS	U	U	U	U	U	U	U	U
Toluene	µg/L	5	0.96 J	0.95 J	U	0.44 J	U	U	U	U
Total Xylenes	µg/L	5	0.79 J	1.15	U	3.7	1.65 J	U	U	U
trans-1,2-Dichloroethene	µg/L	5	U	U	U	0.48 J	U	U	U	0.37 J
Trichloroethene	µg/L	5	U	U	U	U	U	U	U	U
Vinyl chloride	µg/L	2	2.1	2.95	2.9	4.1	4.05	10.8	1.7	3.8
Total VOCs	µg/L		6.55	8	6.4	14.15	11.58	17.2	4.88	14.07

- Notes:
1. Shaded Cells indicate exceedence of NYSDEC GPS for contaminants of concern as defined in the Site Management Plan
 2. GPS = Groundwater Protection Standard
 3. µg/L = micrograms per liter
 4. J = Estimated value
 5. U = Non-detect
 6. VOCs = Volatile Organic Compounds



Termination Criteria (Section 5.1.2 of the Site Management Plan):

1. Does this well meet the termination criteria by achieving the GPSs for an equivalent of 8 quarters?

No

Alternative Termination Criteria (Section 5.1.2 of the Site Management Plan):

1. Does this well achieve "Zero Slope Condition" as defined in the permit?
 - 1.a. Plot sum of concentration of hazardous waste constituents from an equivalent of 8 quarters
 - 1.b. Fit a trendline (either linear or exponential) using least squares regression model.
 - 1.c. The slope is less than or equal to zero.
2. Does this well achieve the analytical concentration criteria for a minimum of eight quarters?
 - 2.a. Is the total concentration of COCs less than 100 µg/L?
 - 2.b. Are single COCs less than 50 µg/L?

See above

See above

Yes

Yes*

Yes*

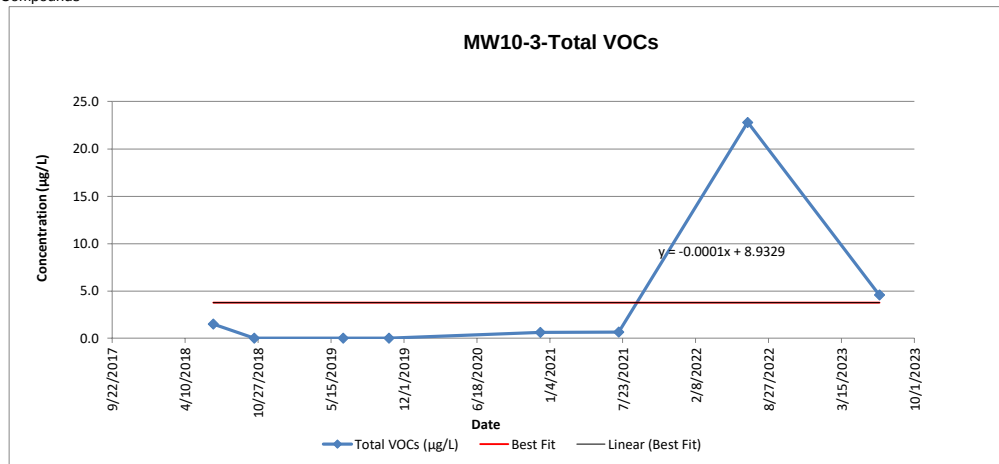
3. Will the residual groundwater contamination result in an unacceptable risk to human health and the environment? Provide analysis

* - While the well achieves this criteria for the last eight monitoring events, these events do not include monitoring over four consecutive quarterly sampling events per Section 5.1.2 of the SMP.

Location ID	Unit	GPS	MW10-3							
Sample Date			6/26/2018	10/17/2018	6/18/2019	10/21/2019	12/9/2020	7/12/2021	6/30/2022	6/27/2023
Parameter										
1,1-Dichloroethene	µg/L	5	U	U	U	U	U	R	U	U
2-Butanone (MEK)	µg/L	50	U	U	U	U	U	R	U	U
2-Hexanone (MBK)	µg/L	50	U	U	U	U	U	R	U	U
Acetone	µg/L	50	U	U	U	U	U	R	22.2	4.2 J
Benzene	µg/L	1	U	U	U	U	U	R	U	U
Carbon Disulfide	µg/L	60	U	U	U	U	U	R	U	U
Chloroform	µg/L	7	U	U	U	U	U	R	U	U
Chloromethane	µg/L	5	U	U	U	U	U	R	U	U
cis-1,2-Dichloroethene	µg/L	5	1.5	U	U	U	U	R	0.6 J	U
Cyclohexane	µg/L	NS	U	U	U	U	U	R	U	U
Dichloromethane	µg/L	5	U	U	U	U	U	R	U	U
Ethylbenzene	µg/L	5	U	U	U	U	U	R	U	U
Iodomethane	µg/L	5	U	U	U	U	U	R	U	U
Methylcyclohexane	µg/L	NS	U	U	U	U	U	R	U	U
Toluene	µg/L	5	U	U	U	U	U	R	U	U
Total Xylenes	µg/L	5	U	U	U	U	U	R	U	U
trans-1,2-Dichloroethene	µg/L	5	U	U	U	U	U	R	U	U
Trichloroethene	µg/L	5	U	U	U	U	0.61 J	0.65 J-	U	U
Vinyl chloride	µg/L	2	U	U	U	U	U	R	U	0.35 J
Total VOCs	µg/L		1.5	0	0	0	0.61	0.65	22.8	4.55

Notes:

1. Shaded Cells indicate exceedence of NYSDEC GPS for contaminants of concern as defined in the Site Management Plan
2. GPS = Groundwater Protection Standard
3. µg/L = micrograms per liter
4. J = Estimated value
5. J- = Estimated value, result may be biased low
6. R = Rejected
7. U = Non-detect
8. VOCs = Volatile Organic Compounds



Termination Criteria (Section 5.1.2 of the Site Management Plan):

1. Does this well meet the termination criteria by achieving the GPSs for an equivalent of 8 quarters?

Yes

Alternative Termination Criteria (Section 5.1.2 of the Site Management Plan):

1. Does this well achieve "Zero Slope Condition" as defined in the permit?
 - 1.a. Plot sum of concentration of hazardous waste constituents from an equivalent of 8 quarters
 - 1.b. Fit a trendline (either linear or exponential) using least squares regression model.
 - 1.c. The slope is less than or equal to zero.

See above

See above

Yes

2. Does this well achieve the analytical concentration criteria for a minimum of eight quarters?

- 2.a. Is the total concentration of COCs less than 100 ug/L?
- 2.b. Are single COCs less than 50 ug/L?

Yes*

Yes*

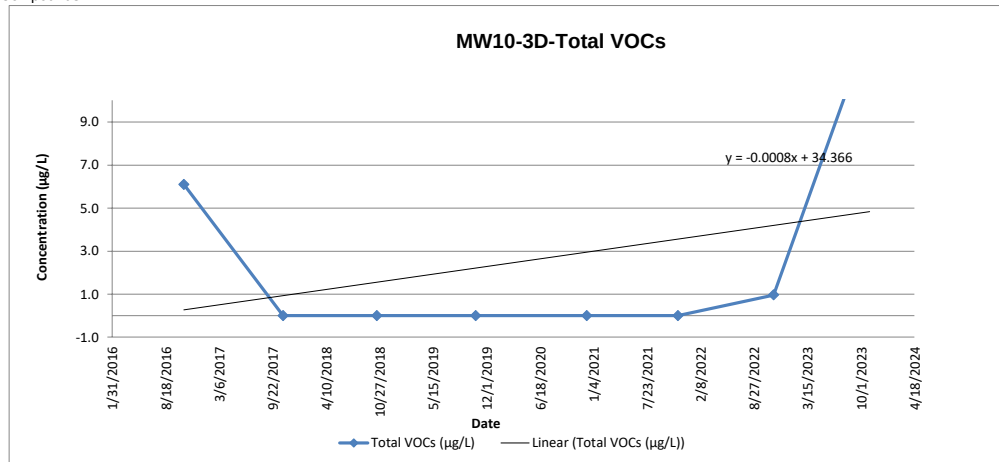
3. Will the residual groundwater contamination result in an unacceptable risk to human health and the environment? Provide analysis

* - While the well achieves this criteria for the last eight monitoring events, these events do not include monitoring over four consecutive quarterly sampling events per Section 5.1.2 of the SMP.

Location ID	Unit	GPS	MW10-3D							
Sample Date			10/25/2016	10/31/2017	10/17/2018	10/21/2019	12/9/2020	11/16/2021	11/8/2022	11/2/2023
Parameter										
1,1-Dichloroethene	µg/L	5	U	U	U	U	U	U	U	U
2-Butanone (MEK)	µg/L	50	U	U	U	U	U	U	U	U
2-Hexanone (MBK)	µg/L	50	U	U	U	U	U	U	U	U
Acetone	µg/L	50	5 J	U	U	U	U	U	U	13.4
Benzene	µg/L	1	U	U	U	U	U	U	U	U
Carbon Disulfide	µg/L	60	U	U	U	U	U	U	U	U
Chloroform	µg/L	7	U	U	U	U	U	U	U	U
Chloromethane	µg/L	5	1.1 J	U	U	U	U	U	U	U
cis-1,2-Dichloroethene	µg/L	5	U	U	U	U	U	U	U	U
Cyclohexane	µg/L	NS	U	U	U	U	U	U	U	U
Dichloromethane	µg/L	5	U	U	U	U	U	U	U	U
Ethylbenzene	µg/L	5	U	U	U	U	U	U	U	U
Iodomethane	µg/L	5	U	U	U	U	U	U	0.96 J	UJ
Methylcyclohexane	µg/L	NS	U	U	U	U	U	U	U	U
Toluene	µg/L	5	U	U	U	U	U	U	U	U
Total Xylenes	µg/L	5	U	U	U	U	U	U	U	U
trans-1,2-Dichloroethene	µg/L	5	U	U	U	U	U	U	U	U
Trichloroethene	µg/L	5	U	U	U	U	U	U	U	U
Vinyl chloride	µg/L	2	U	U	U	U	U	U	U	U
Total VOCs	µg/L		6.1	0	0	0	0	0	0.96	13.4

Notes:

1. Shaded Cells indicate exceedence of NYSDEC GPS for contaminants of concern as defined in the Site Management Plan
2. GPS = Groundwater Protection Standard
3. µg/L = micrograms per liter
4. J = Estimated value
5. U = Non-detect
6. VOCs = Volatile Organic Compounds



Termination Criteria (Section 5.1.2 of the Site Management Plan):

1. Does this well meet the termination criteria by achieving the GPSs for an equivalent of 8 quarters?

Yes

Alternative Termination Criteria (Section 5.1.2 of the Site Management Plan):

1. Does this well achieve "Zero Slope Condition" as defined in the permit?
 - 1.a. Plot sum of concentration of hazardous waste constituents from an equivalent of 8 quarters
 - 1.b. Fit a trendline (either linear or exponential) using least squares regression model.
 - 1.c. The slope is less than or equal to zero.

See above

See above

No

2. Does this well achieve the analytical concentration criteria for a minimum of eight quarters?

- 2.a. Is the total concentration of COCs less than 100 µg/L?
- 2.b. Are single COCs less than 50 µg/L?

Yes*

Yes*

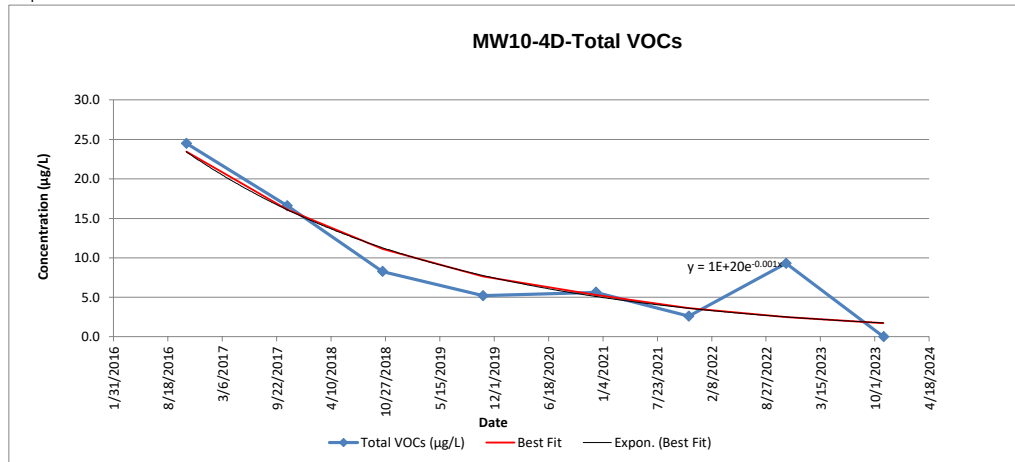
3. Will the residual groundwater contamination result in an unacceptable risk to human health and the environment? Provide analysis

* - While the well achieves this criteria for the last eight monitoring events, these events do not include monitoring over four consecutive quarterly sampling events per Section 5.1.2 of the SMP.

Location ID	Unit	GPS	MW10-4D							
Sample Date			10/25/2016	10/31/2017	10/17/2018	10/21/2019	12/9/2020	11/16/2021	11/8/2022	11/2/2023
Parameter										
1,1-Dichloroethene	µg/L	5	U	U	U	U	U	U	U	U
2-Butanone (MEK)	µg/L	50	U	U	U	U	U	U	U	U
2-Hexanone (MBK)	µg/L	50	U	U	U	U	U	U	U	U
Acetone	µg/L	50	10.4	14.3 J	U	U	U	U	U	10.5
Benzene	µg/L	1	0.79	0.56 J	0.47 J	U	1.3	0.97 J	1.3	0.45 J
Carbon Disulfide	µg/L	60	9.4	U	U	U	U	U	U	U
Chloroform	µg/L	7	U	U	U	U	U	U	U	U
Chloromethane	µg/L	5	U	U	U	U	U	U	U	U
cis-1,2-Dichloroethene	µg/L	5	1.3	1.3	2.6	1.5	0.83 J	0.44 J	3.7	0.68 J
Cyclohexane	µg/L	NS	2.6 J	U	U	U	U	U	U	U
Dichloromethane	µg/L	5	U	U	U	U	U	U	U	U
Ethylbenzene	µg/L	5	U	U	U	U	U	U	U	U
Iodomethane	µg/L	5	U	U	U	U	U	U	U	U
Methylcyclohexane	µg/L	NS	U	U	U	U	U	U	U	U
Toluene	µg/L	5	U	0.44 J	U	U	U	U	U	U
Total Xylenes	µg/L	5	U	U	U	U	U	U	U	U
trans-1,2-Dichloroethene	µg/L	5	U	U	U	U	U	U	U	U
Trichloroethene	µg/L	5	U	U	U	U	U	U	U	U
Vinyl chloride	µg/L	2	U	U	5.2	3.7	3.5	1.2	4.3	3.5
Total VOCs	µg/L		24.49	16.6	8.27	5.2	5.63	2.61	9.3	15.13

Notes:

1. Shaded Cells indicate exceedence of NYSDEC GPS for contaminants of concern as defined in the Site Management Plan
2. GPS = Groundwater Protection Standard
3. µg/L = micrograms per liter
4. B = Method and/or trip blank contamination
5. J = Estimated value
6. U = Non-detect
7. VOCs = Volatile Organic Compounds



Termination Criteria (Section 5.1.2 of the Site Management Plan):

1. Does this well meet the termination criteria by achieving the GPSs for an equivalent of 8 quarters?

No

Alternative Termination Criteria (Section 5.1.2 of the Site Management Plan):

1. Does this well achieve "Zero Slope Condition" as defined in the permit?
 - 1.a. Plot sum of concentration of hazardous waste constituents from an equivalent of 8 quarters
 - 1.b. Fit a trendline (either linear or exponential) using least squares regression model.
 - 1.c. The slope is less than or equal to zero.

See above

See above

Yes

2. Does this well achieve the analytical concentration criteria for a minimum of eight quarters?

Yes*

- 2.a. Is the total concentration of COCs less than 100 µg/L?

- 2.b. Are single COCs less than 50 µg/L?

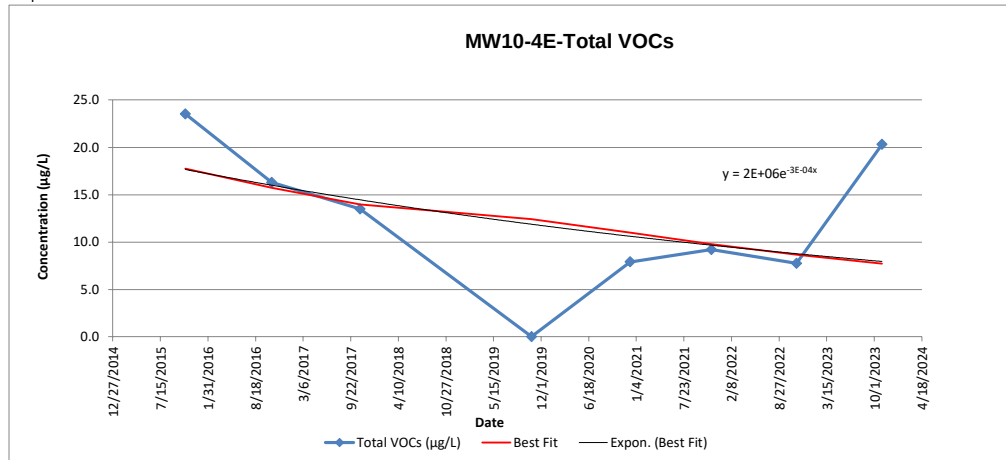
Yes*

3. Will the residual groundwater contamination result in an unacceptable risk to human health and the environment? Provide analysis

* - While the well achieves this criteria for the last eight monitoring events, these events do not include monitoring over four consecutive quarterly sampling events per Section 5.1.2 of the SMP.

Location ID	Unit	GPS	MW10-4E							
Sample Date			10/27/2015	10/25/2016	10/31/2017	10/21/2019	12/9/2020	11/16/2021	11/8/2022	11/2/2023
Parameter										
1,1-Dichloroethene	µg/L	5	U	U	U	U	U	U	U	U
2-Butanone (MEK)	µg/L	50	U	U	U	U	U	U	U	U
2-Hexanone (MBK)	µg/L	50	U	U	U	U	U	U	U	U
Acetone	µg/L	50	U	U	U	U	U	U	U	12.9
Benzene	µg/L	1	U	U	U	U	U	U	U	U
Carbon Disulfide	µg/L	60	0.45 JB	U	U	U	U	U	U	U
Chloroform	µg/L	7	U	U	U	U	U	U	U	U
Chloromethane	µg/L	5	U	U	U	U	U	U	U	U
cis-1,2-Dichloroethene	µg/L	5	17.8	13.2	10.6	U	6.7	7.8	7.2	7.4
Cyclohexane	µg/L	NS	U	U	U	U	U	U	U	U
Dichloromethane	µg/L	5	U	U	U	U	U	U	U	U
Ethylbenzene	µg/L	5	U	U	U	U	U	U	U	U
Iodomethane	µg/L	5	U	U	U	U	U	U	U	UJ
Methylcyclohexane	µg/L	NS	U	U	U	U	U	U	U	U
Toluene	µg/L	5	U	U	U	U	U	U	U	U
Total Xylenes	µg/L	5	U	U	U	U	U	U	U	U
trans-1,2-Dichloroethene	µg/L	5	0.27 J	U	U	U	U	U	U	U
Trichloroethene	µg/L	5	U	U	U	U	U	U	U	U
Vinyl chloride	µg/L	2	5	3.1	2.9	U	1.2	1.4	0.55 J	U
Total VOCs	µg/L		23.52	16.3	13.5	0	7.9	9.2	7.75	20.3

- Notes:
- Shaded Cells indicate exceedence of NYSDEC GPS for contaminants of concern as defined in the Site Management Plan
 - GPS = Groundwater Protection Standard
 - µg/L = micrograms per liter
 - B = Method and/or trip blank contamination
 - J = Estimated value
 - U = Non-detect
 - VOCs = Volatile Organic Compounds



Termination Criteria (Section 5.1.2 of the Site Management Plan):

- Does this well meet the termination criteria by achieving the GPSs for an equivalent of 8 quarters?

No

Alternative Termination Criteria (Section 5.1.2 of the Site Management Plan):

- Does this well achieve "Zero Slope Condition" as defined in the permit?
 - Plot sum of concentration of hazardous waste constituents from an equivalent of 8 quarters
 - Fit a trendline (either linear or exponential) using least squares regression model.
 - The slope is less than or equal to zero.

See above

See above

Yes

- Does this well achieve the analytical concentration criteria for a minimum of eight quarters?

Yes*

- Is the total concentration of COCs less than 100 µg/L?
- Are single COCs less than 50 µg/L?

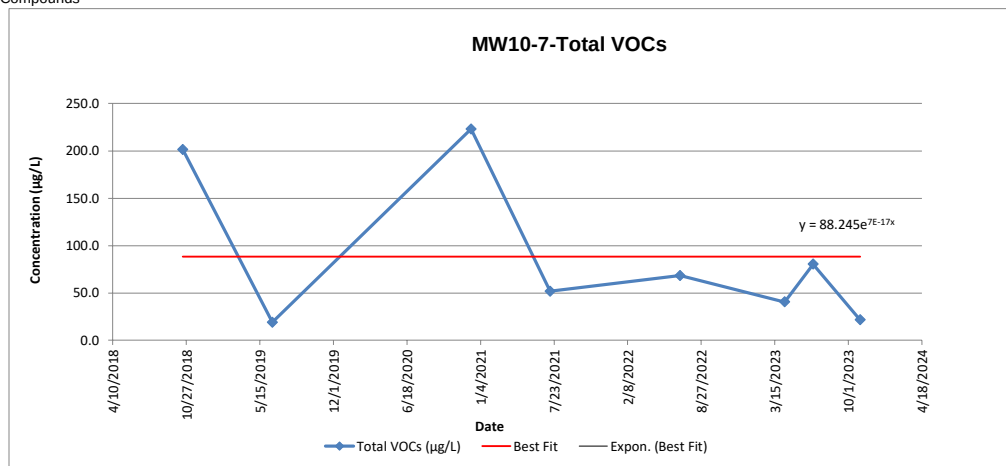
Yes*

- Will the residual groundwater contamination result in an unacceptable risk to human health and the environment? Provide analysis

* - While the well achieves this criteria for the last eight monitoring events, these events do not include monitoring over four consecutive quarterly sampling events per Section 5.1.2 of the SMP.

Location ID	Unit	GPS	MW10-7							
Sample Date			10/17/2018	6/18/2019	12/9/2020	7/12/2021	6/30/2022	4/11/2023	6/27/2023	11/2/2023
Parameter										
1,1-Dichloroethene	µg/L	5	6.1	U	1.3	R	0.65 J	U	U	U
2-Butanone (MEK)	µg/L	50	U	U	U	R	U	U	8.5	U
2-Hexanone (MBK)	µg/L	50	U	U	U	R	U	U	U	U
Acetone	µg/L	50	U	U	U	5.0 J-	22.8	U	21.0	13.3
Benzene	µg/L	1	0.66	U	1.3	R	U	U	0.37 J	U
Carbon Disulfide	µg/L	60	U	U	0.58 J	R	U	U	U	U
Chloroform	µg/L	7	U	U	U	R	U	U	U	U
Chloromethane	µg/L	5	U	U	U	R	U	U	U	U
cis-1,2-Dichloroethene	µg/L	5	139	18.9	174	33.2 J-	32.9	30.7	28.9	1.7
Cyclohexane	µg/L	NS	U	U	0.61 J	R	U	U	U	U
Dichloromethane	µg/L	5	U	U	U	R	U	1.8	U	U
Ethylbenzene	µg/L	5	U	U	U	R	U	U	U	U
Iodomethane	µg/L	5	U	U	U	R	U	U	U	UJ
Methylcyclohexane	µg/L	NS	U	U	1.2	R	U	U	U	U
Toluene	µg/L	5	U	U	1	R	U	U	1.1	U
Total Xylenes	µg/L	5	U	U	U	R	U	U	U	U
trans-1,2-Dichloroethene	µg/L	5	0.86 J	U	0.37 J	0.82 J-	2.1	0.52 J	0.43 J	0.49 J
Trichloroethene	µg/L	5	14.3	U	1.5	12.8 J-	1.7	3.5	U	1.7
Vinyl chloride	µg/L	2	40.6	U	41.2	R	8.3	3.9	20.0	4.3
Total VOCs	µg/L		201.52	18.9	223.06	51.82	68.45	40.42	80.3	21.49

- Notes:
1. Shaded Cells indicate exceedence of NYSDEC GPS for contaminants of concern as defined in the Site Management Plan
 2. GPS = Groundwater Protection Standard
 3. µg/L = micrograms per liter
 4. J = Estimated value
 5. J- = Estimated value, result may be biased low
 6. R = Rejected
 7. U = Non-detect
 8. VOCs = Volatile Organic Compounds



Termination Criteria (Section 5.1.2 of the Site Management Plan):

1. Does this well meet the termination criteria by achieving the GPSs for an equivalent of 8 quarters?

No

Alternative Termination Criteria (Section 5.1.2 of the Site Management Plan):

1. Does this well achieve "Zero Slope Condition" as defined in the permit?
- 1.a. Plot sum of concentration of hazardous waste constituents from an equivalent of 8 quarters
 - 1.b. Fit a trendline (either linear or exponential) using least squares regression model.
 - 1.c. The slope is less than or equal to zero.

See above

See above

No

2. Does this well achieve the analytical concentration criteria for a minimum of eight quarters?

No

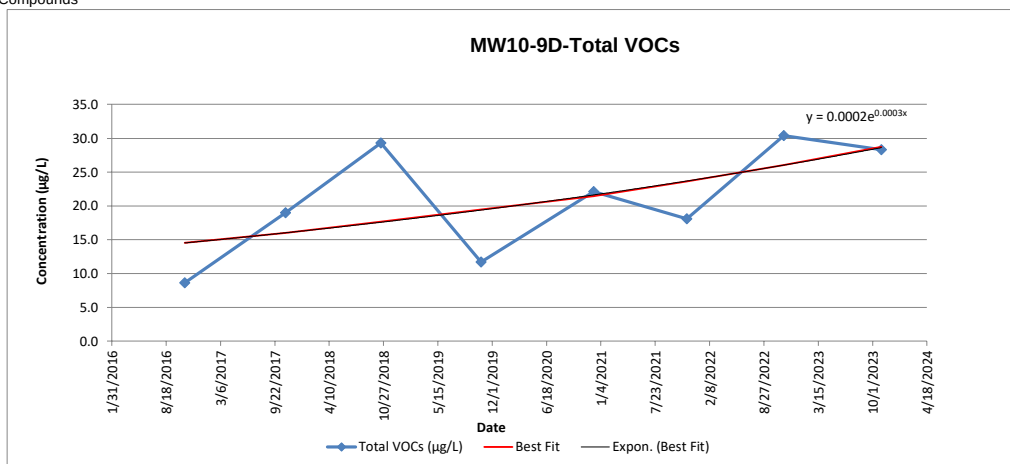
- 2.a. Is the total concentration of COCs less than 100 µg/L?
- 2.b. Are single COCs less than 50 µg/L?

No

3. Will the residual groundwater contamination result in an unacceptable risk to human health and the environment? Provide analysis

Location ID	Unit	GPS	MW10-9D							
Sample Date			10/25/2016	10/31/2017	10/17/2018	10/21/2019	12/9/2020	11/16/2021	11/8/2022	11/2/2023
Parameter										
1,1-Dichloroethene	µg/L	5	U	U	U	U	U	U	U	U
2-Butanone (MEK)	µg/L	50	U	U	U	U	U	U	U	U
2-Hexanone (MBK)	µg/L	50	U	U	U	U	U	U	U	U
Acetone	µg/L	50	4.6 J	10.4 J	U	U	U	U	U	11.9
Benzene	µg/L	1	U	U	U	U	U	U	U	U
Carbon Disulfide	µg/L	60	U	U	U	U	U	U	U	U
Chloroform	µg/L	7	U	U	U	U	U	U	U	U
Chloromethane	µg/L	5	U	U	U	U	U	U	U	U
cis-1,2-Dichloroethene	µg/L	5	10.3	10.2	6.1	10.2	7.2	10.9	6.6	4.1
Cyclohexane	µg/L	NS	U	U	U	U	U	U	U	U
Dichloromethane	µg/L	5	U	U	U	U	U	U	U	U
Ethylbenzene	µg/L	5	U	U	U	U	U	U	U	U
Iodomethane	µg/L	5	U	U	U	U	U	U	U	UJ
Methylcyclohexane	µg/L	NS	U	U	U	U	U	U	U	U
Toluene	µg/L	5	U	U	U	U	U	U	U	U
Total Xylenes	µg/L	5	U	U	U	U	U	U	U	U
trans-1,2-Dichloroethene	µg/L	5	U	U	U	U	U	U	U	U
Trichloroethene	µg/L	5	U	U	U	U	U	U	U	U
Vinyl chloride	µg/L	2	4.1	8.7	5.6	11.9	10.9	19.5	16.6	12.3
Total VOCs	µg/L		8.6	19	29.3	11.7	22.1	18.1	30.4	28.3

- Notes:
1. Shaded Cells indicate exceedence of NYSDEC GPS for contaminants of concern as defined in the Site Management Plan
 2. GPS = Groundwater Protection Standard
 3. µg/L = micrograms per liter
 4. J = Estimated value
 5. U = Non-detect
 6. VOCs = Volatile Organic Compounds



Termination Criteria (Section 5.1.2 of the Site Management Plan):

1. Does this well meet the termination criteria by achieving the GPSs for an equivalent of 8 quarters?

No

Alternative Termination Criteria (Section 5.1.2 of the Site Management Plan):

1. Does this well achieve "Zero Slope Condition" as defined in the permit?
- 1.a. Plot sum of concentration of hazardous waste constituents from an equivalent of 8 quarters
 - 1.b. Fit a trendline (either linear or exponential) using least squares regression model.
 - 1.c. The slope is less than or equal to zero.

See above

See above

No

2. Does this well achieve the analytical concentration criteria for a minimum of eight quarters?

- 2.a. Is the total concentration of COCs less than 100 µg/L?
- 2.b. Are single COCs less than 50 µg/L?

Yes*

Yes*

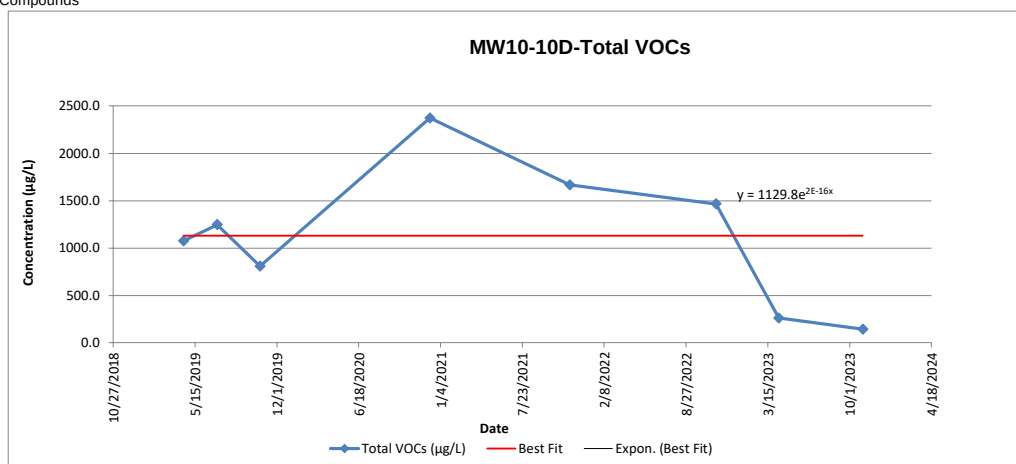
3. Will the residual groundwater contamination result in an unacceptable risk to human health and the environment? Provide analysis

* - While the well achieves this criteria for the last eight monitoring events, these events do not include monitoring over four consecutive quarterly sampling events per Section 5.1.2 of the SMP.

Location ID	Unit	GPS	MW10-10D							
Sample Date			4/17/2019	7/8/2019	10/21/2019	12/9/2020	11/16/2021	11/8/2022	4/11/2023	11/2/2023
Parameter										
1,1-Dichloroethene	µg/L	5	1.3	U	U	U	U	U	U	U
2-Butanone (MEK)	µg/L	50	19	83.4 J	U	37.7 J	U	U	U	U
2-Hexanone (MBK)	µg/L	50	8.8	25.1	U	381	73.6 J	819	U	U
Acetone	µg/L	50	U	U	20.7 J	U	U	U	U	U
Benzene	µg/L	1	1.6	1.7	1.9	U	U	U	U	U
Carbon Disulfide	µg/L	60	U	U	U	U	U	U	U	U
Chloroform	µg/L	7	U	U	U	U	U	29.2	U	U
Chloromethane	µg/L	5	U	U	U	U	U	U	U	U
cis-1,2-Dichloroethene	µg/L	5	826	921	638	1580 J+	1320	534	171	141
Cyclohexane	µg/L	NS	U	U	U	U	U	U	U	U
Dichloromethane	µg/L	5	1.4 J	U	U	U	U	U	U	U
Ethylbenzene	µg/L	5	U	U	U	U	U	U	U	U
Iodomethane	µg/L	5	U	U	U	U	U	U	U	U
Methylcyclohexane	µg/L	NS	U	U	U	U	U	U	90.6 J	U
Toluene	µg/L	5	6.6	5.7	3.6	14.5 J	19.1 J	16.5 J	U	U
Total Xylenes	µg/L	5	U	U	U	U	U	U	U	U
trans-1,2-Dichloroethene	µg/L	5	6.2	5.8	3.2	16 J	11.7 J	U	U	U
Trichloroethene	µg/L	5	15.5	12.6	9.4	47.6	45.2	24.8	U	U
Vinyl chloride	µg/L	2	189	191	132	296	197	42.2	U	U
Total VOCs	µg/L		1075.4	1246.3	808.8	2372.8	1666.6	1465.7	261.6	141

Notes:

1. Shaded Cells indicate exceedence of NYSDEC GPS for contaminants of concern as defined in the Site Management Plan
2. GPS = Groundwater Protection Standard
3. µg/L = micrograms per liter
4. J = Estimated value
5. J+ = Estimated value, result may be biased high
6. U = Non-detect
7. VOCs = Volatile Organic Compounds



Termination Criteria (Section 5.1.2 of the Site Management Plan):

1. Does this well meet the termination criteria by achieving the GPSs for an equivalent of 8 quarters?

No

Alternative Termination Criteria (Section 5.1.2 of the Site Management Plan):

1. Does this well achieve "Zero Slope Condition" as defined in the permit?

- 1.a. Plot sum of concentration of hazardous waste constituents from an equivalent of 8 quarters
- 1.b. Fit a trendline (either linear or exponential) using least squares regression model.
- 1.c. The slope is less than or equal to zero.

See above

See above

No

2. Does this well achieve the analytical concentration criteria for a minimum of eight quarters?

- 2.a. Is the total concentration of COCs less than 100 µg/L?
- 2.b. Are single COCs less than 50 µg/L?

No

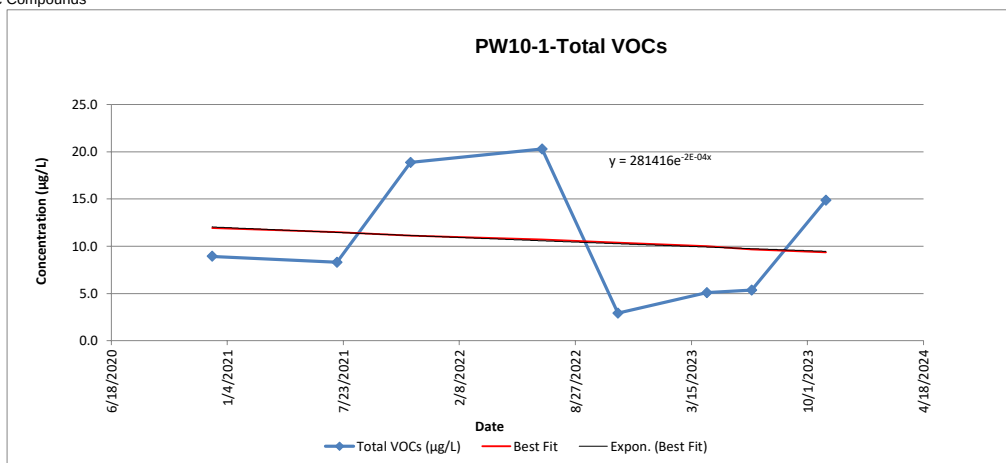
No

3. Will the residual groundwater contamination result in an unacceptable risk to human health and the environment? Provide analysis

Location ID	Unit	GPS	PW10-1							
Sample Date			12/9/2020	7/12/2021	11/16/2021	6/30/2022	11/8/2022	4/11/2023	6/27/2023	11/2/2023
Parameter										
1,1-Dichloroethene	µg/L	5	U	R	U	U	U	U	U	U
2-Butanone (MEK)	µg/L	50	U	R	U	U	U	U	U	U
2-Hexanone (MBK)	µg/L	50	U	R	U	U	U	U	U	U
Acetone	µg/L	50	7 BJ+	R	U	15.8	U	3.2 J	3.5 J	13.5
Benzene	µg/L	1	U	R	0.36 J	U	U	U	U	U
Carbon Disulfide	µg/L	60	0.36 J	R	U	U	U	U	U	U
Chloroform	µg/L	7	U	R	U	U	U	U	U	U
Chloromethane	µg/L	5	U	R	U	U	U	U	U	U
cis-1,2-Dichloroethene	µg/L	5	0.72 J	3.1 J-	4.5	2.1	1.1	1.5	1.1	0.77 J
Cyclohexane	µg/L	NS	U	R	U	U	U	U	U	U
Dichloromethane	µg/L	5	U	R	U	U	U	U	U	U
Ethylbenzene	µg/L	5	U	R	U	U	U	U	U	U
Iodomethane	µg/L	5	U	R	3.6	U	U	U	U	UJ
Methylcyclohexane	µg/L	NS	U	R	U	U	U	U	U	U
Toluene	µg/L	5	U	R	U	U	U	U	U	U
Total Xylenes	µg/L	5	U	R	U	U	U	U	U	U
trans-1,2-Dichloroethene	µg/L	5	U	R	U	U	U	U	U	U
Trichloroethene	µg/L	5	U	R	U	U	U	U	U	U
Vinyl chloride	µg/L	2	0.85 J	5.2 J-	10.4	2.4	1.8	0.38 J	0.75 J	0.61 J
Total VOCs	µg/L		8.93	8.3	18.86	20.3	2.9	5.08	5.35	14.88

Notes:

- Shaded Cells indicate exceedence of NYSDEC GPS for contaminants of concern as defined in the Site Management Plan
- GPS = Groundwater Protection Standard
- µg/L = micrograms per liter
- B = Method and/or trip blank contamination
- J = Estimated value
- J- = Estimated value, result may be biased low
- J+ = Estimated value, result may be biased high
- R = Rejected
- U = Non-detect
- VOCs = Volatile Organic Compounds



Termination Criteria (Section 5.1.2 of the Site Management Plan):

- Does this well meet the termination criteria by achieving the GPSs for an equivalent of 8 quarters?

No

Alternative Termination Criteria (Section 5.1.2 of the Site Management Plan):

- Does this well achieve "Zero Slope Condition" as defined in the permit?
 - Plot sum of concentration of hazardous waste constituents from an equivalent of 8 quarters
 - Fit a trendline (either linear or exponential) using least squares regression model.
 - The slope is less than or equal to zero.

See above
See above
Yes

- Does this well achieve the analytical concentration criteria for a minimum of eight quarters?
 - Is the total concentration of COCs less than 100 µg/L?
 - Are single COCs less than 50 µg/L?

Yes*
Yes*

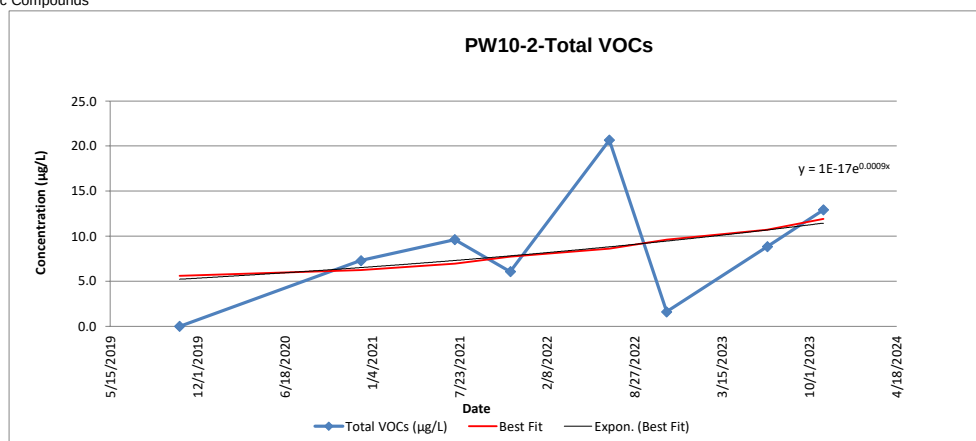
- Will the residual groundwater contamination result in an unacceptable risk to human health and the environment? Provide analysis

* - While the well achieves this criteria for the last eight monitoring events, these events do not include monitoring over four consecutive quarterly sampling events per Section 5.1.2 of the SMP.

Location ID	Unit	GPS	PW10-2							
Sample Date			10/21/2019	12/9/2020	7/12/2021	11/16/2021	6/30/2022	11/8/2022	6/27/2023	11/2/2023
Parameter										
1,1-Dichloroethene	µg/L	5	U	U	R	U	U	U	U	U
2-Butanone (MEK)	µg/L	50	U	U	R	U	U	U	U	U
2-Hexanone (MBK)	µg/L	50	U	U	R	U	U	U	U	U
Acetone	µg/L	50	U	5.4 BJ+	3.7 J-	U	20.2	U	4.4 J	10.4
Benzene	µg/L	1	U	1.5	3.9 J-	2.8	0.48 J	1.6	2.4	1.6
Carbon Disulfide	µg/L	60	U	U	R	U	U	U	U	U
Chloroform	µg/L	7	U	U	R	U	U	U	U	U
Chloromethane	µg/L	5	U	U	R	U	U	U	U	U
cis-1,2-Dichloroethene	µg/L	5	U	U	R	U	U	U	U	U
Cyclohexane	µg/L	NS	U	U	0.51 J-	0.50 J	U	U	0.53 J	0.42 J
Dichloromethane	µg/L	5	U	U	R	U	U	U	U	U
Ethylbenzene	µg/L	5	U	0.38 J	0.61 J-	0.45 J	U	U	U	U
Iodomethane	µg/L	5	U	U	R	0.87 J	U	U	U	U
Methylcyclohexane	µg/L	NS	U	U	R	U	U	U	0.33 J	U
Toluene	µg/L	5	U	U	0.88 J-	0.43 J	U	U	0.68 J	0.49 J
Total Xylenes	µg/L	5	U	U	R	U	U	U	U	U
trans-1,2-Dichloroethene	µg/L	5	U	U	R	U	U	U	U	U
Trichloroethene	µg/L	5	U	U	R	U	U	U	U	U
Vinyl chloride	µg/L	2	U	U	R	1.0	U	U	0.50 J	U
Total VOCs	µg/L		0	7.28	9.6	6.05	20.68	1.6	8.84	12.91

Notes:

- Shaded Cells indicate exceedence of NYSDEC GPS for contaminants of concern as defined in the Site Management Plan
- GPS = Groundwater Protection Standard
- µg/L = micrograms per liter
- B = Method and/or trip blank contamination
- J = Estimated value
- J- = Estimated value, result may be biased low
- J+ = Estimated value, result may be biased high
- R = Rejected
- U = Non-detect
- VOCs = Volatile Organic Compounds



Termination Criteria (Section 5.1.2 of the Site Management Plan):

- Does this well meet the termination criteria by achieving the GPSs for an equivalent of 8 quarters?

No

Alternative Termination Criteria (Section 5.1.2 of the Site Management Plan):

- Does this well achieve "Zero Slope Condition" as defined in the permit?
 - Plot sum of concentration of hazardous waste constituents from an equivalent of 8 quarters
 - Fit a trendline (either linear or exponential) using least squares regression model.
 - The slope is less than or equal to zero.

See above

See above

No

- Does this well achieve the analytical concentration criteria for a minimum of eight quarters?

- Is the total concentration of COCs less than 100 µg/L?

Yes*

- Are single COCs less than 50 µg/L?

Yes*

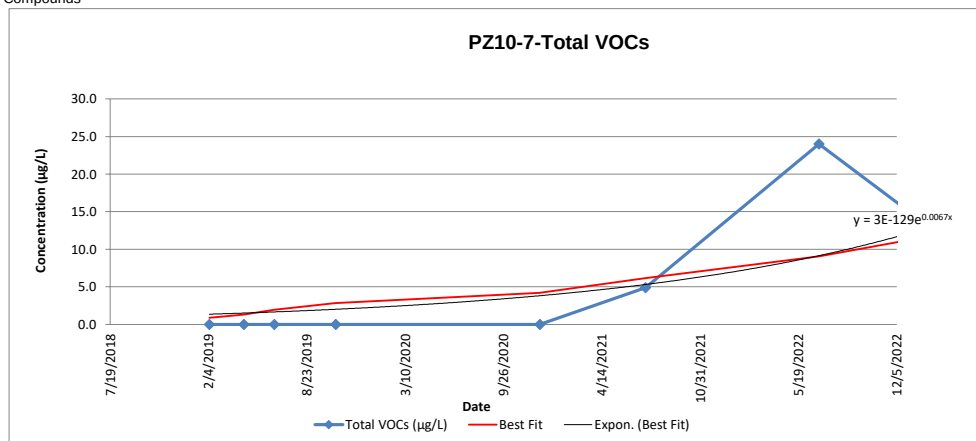
- Will the residual groundwater contamination result in an unacceptable risk to human health and the environment? Provide analysis

* - While the well achieves this criteria for the last eight monitoring events, these events do not include monitoring over four consecutive quarterly sampling events per Section 5.1.2 of the SMP.

Location ID	Unit	GPS	PZ10-7							
Sample Date			2/6/2019	4/17/2019	6/18/2019	10/21/2019	12/9/2020	7/12/2021	6/30/2022	6/27/2023
Parameter										
1,1-Dichloroethene	µg/L	5	U	U	U	U	U	R	U	U
2-Butanone (MEK)	µg/L	50	U	U	U	U	U	R	U	U
2-Hexanone (MBK)	µg/L	50	U	U	U	U	U	R	U	U
Acetone	µg/L	50	U	U	U	U	U	4.9 J-	24	6.2
Benzene	µg/L	1	U	U	U	U	U	R	U	U
Carbon Disulfide	µg/L	60	U	U	U	U	U	R	U	U
Chloroform	µg/L	7	U	U	U	U	U	R	U	U
Chloromethane	µg/L	5	U	U	U	U	U	R	U	U
cis-1,2-Dichloroethene	µg/L	5	U	U	U	U	U	R	U	U
Cyclohexane	µg/L	NS	U	U	U	U	U	R	U	U
Dichloromethane	µg/L	5	U	U	U	U	U	R	U	U
Ethylbenzene	µg/L	5	U	U	U	U	U	R	U	U
Iodomethane	µg/L	5	U	U	U	U	U	R	U	U
Methylcyclohexane	µg/L	NS	U	U	U	U	U	R	U	U
Toluene	µg/L	5	U	U	U	U	U	R	U	U
Total Xylenes	µg/L	5	U	U	U	U	U	R	U	U
trans-1,2-Dichloroethene	µg/L	5	U	U	U	U	U	R	U	U
Trichloroethene	µg/L	5	U	U	U	U	U	R	U	U
Vinyl chloride	µg/L	2	U	U	U	U	U	R	U	U
Total VOCs	µg/L		0	0	0	0	0	4.9	24	6.2

Notes:

- Shaded Cells indicate exceedence of NYSDEC GPS for contaminants of concern as defined in the Site Management Plan
- GPS = Groundwater Protection Standard
- µg/L = micrograms per liter
- J = Estimated value
- J- = Estimated value, result may be biased low
- R = Rejected
- U = Non-detect
- VOCs = Volatile Organic Compounds



Termination Criteria (Section 5.1.2 of the Site Management Plan):

- Does this well meet the termination criteria by achieving the GPSs for an equivalent of 8 quarters?

Yes

Alternative Termination Criteria (Section 5.1.2 of the Site Management Plan):

- Does this well achieve "Zero Slope Condition" as defined in the permit?
 - Plot sum of concentration of hazardous waste constituents from an equivalent of 8 quarters
 - Fit a trendline (either linear or exponential) using least squares regression model.
 - The slope is less than or equal to zero.

See above

See above

No

- Does this well achieve the analytical concentration criteria for a minimum of eight quarters?

- Is the total concentration of COCs less than 100 µg/L?
- Are single COCs less than 50 µg/L?

Yes*

Yes*

- Will the residual groundwater contamination result in an unacceptable risk to human health and the environment? Provide analysis

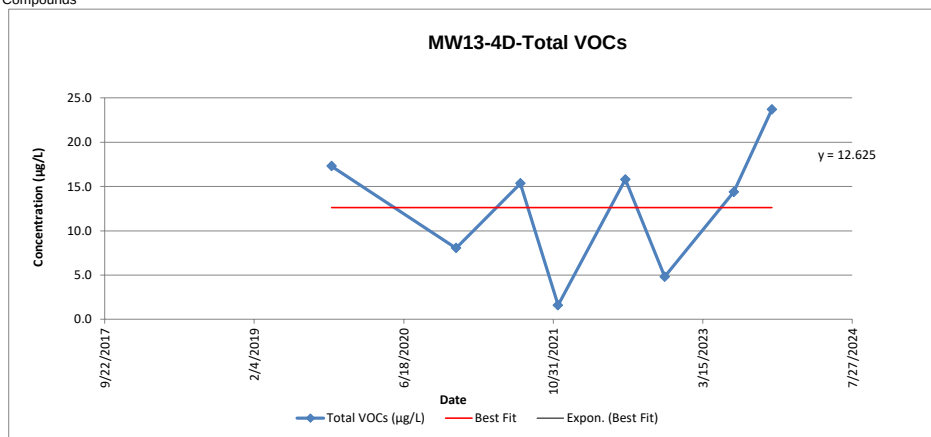
* - While the well achieves this criteria for the last eight monitoring events, these events do not include monitoring over four consecutive quarterly sampling events per Section 5.1.2 of the SMP.

Site 13

Location ID	Unit	GPS	MW13-4D							
Sample Date			10/21/2019	12/10/2020	7/13/2021	11/16/2021	6/29/2022	11/7/2022	6/27/2023	11/2/2023
Parameter										
1,2-Dichlorobenzene	µg/L	5	U	U	R	U	U	U	U	U
1,3-Dichlorobenzene	µg/L	5	U	U	R	U	U	U	U	U
1,4-Dichlorobenzene	µg/L	5	U	U	R	U	U	U	U	U
2-Butanone (MEK)	µg/L	50	U	U	R	U	U	U	U	U
2-Hexanone (MBK)	µg/L	50	U	U	R	U	U	U	U	U
Acetone	µg/L	50	U	U	4.35 J-	U	U	U	4.3 J	12.6
Benzene	µg/L	1	U	U	R	U	U	U	U	U
Chlorobenzene	µg/L	5	U	U	R	U	U	U	U	U
cis-1,2-Dichloroethene	µg/L	5	10	8.05	6.1 J-	U	10.1	4.8	6.2	6.3
Iodomethane	µg/L	5	U	U	R	U	U	U	U	UJ
trans-1,2-Dichloroethene	µg/L	5	U	U	R	U	U	U	U	U
Trichloroethene	µg/L	5	U	U	R	U	U	U	U	U
Vinyl chloride	µg/L	2	7.3	U	4.9 J-	1.6	5.7	U	3.9	4.8
Total VOCs	µg/L		17.3	8.05	15.35	1.6	15.8	4.8	14.4	23.7

Notes:

1. Shaded Cells indicate exceedence of NYSDEC GPS for contaminants of concern as defined in the Site Management Plan
2. GPS = Groundwater Protection Standard
3. µg/L = micrograms per liter
4. J = Estimated value
5. J- = Estimated value, result may be biased low
6. R = Rejected
7. U = Non-detect
8. VOCs = Volatile Organic Compounds



Termination Criteria (Section 5.1.2 of the Site Management Plan):

1. Does this well meet the termination criteria by achieving the GPSs for an equivalent of 8 quarters?

No

Alternative Termination Criteria (Section 5.1.2 of the Site Management Plan):

1. Does this well achieve "Zero Slope Condition" as defined in the permit?
 - 1.a. Plot sum of concentration of hazardous waste constituents from an equivalent of 8 quarters
 - 1.b. Fit a trendline (either linear or exponential) using least squares regression model.
 - 1.c. The slope is less than or equal to zero.
2. Does this well achieve the analytical concentration criteria for a minimum of eight quarters?
 - 2.a. Is the total concentration of COCs less than 100 µg/L?
 - 2.b. Are single COCs less than 50 µg/L?

See above

See above

Yes

Yes*

Yes*

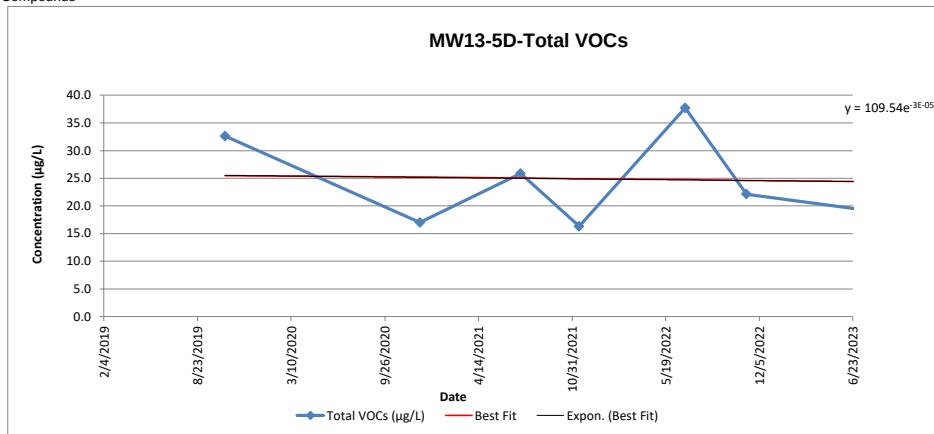
3. Will the residual groundwater contamination result in an unacceptable risk to human health and the environment? Provide analysis

* - While the well achieves this criteria for the last eight monitoring events, these events do not include monitoring over four consecutive quarterly sampling events per Section 5.1.2 of the SMP.

Location ID	Unit	GPS	MW13-5D							
Sample Date			10/21/2019	12/10/2020	7/13/2021	11/15/2021	6/29/2022	11/7/2022	6/27/2023	11/2/2023
Parameter										
1,2-Dichlorobenzene	µg/L	5	U	U	R	U	U	U	U	U
1,3-Dichlorobenzene	µg/L	5	U	U	R	U	U	U	U	U
1,4-Dichlorobenzene	µg/L	5	U	U	R	U	U	U	U	U
2-Butanone (MEK)	µg/L	50	U	U	R	U	U	U	U	U
2-Hexanone (MBK)	µg/L	50	U	U	R	U	U	U	U	U
Acetone	µg/L	50	U	U	R	U	U	U	4.9 J	13.8
Benzene	µg/L	1	U	U	R	U	U	U	U	U
Chlorobenzene	µg/L	5	U	U	R	U	U	U	U	U
cis-1,2-Dichloroethene	µg/L	5	28.3	16.4	23.9 J-	14.6	36	21.6	14.0	12.3
Iodomethane	µg/L	5	U	U	R	1.7 J+	U	U	U	UJ
trans-1,2-Dichloroethene	µg/L	5	U	U	0.45 J-	U	0.39 J	U	U	U
Trichloroethene	µg/L	5	0.74 J	0.61 J	0.53 J-	U	U	U	U	U
Vinyl chloride	µg/L	2	3.6	U	0.99 J-	U	1.3	0.52 J	0.58 J	1.4
Total VOCs	µg/L		32.64	17.01	25.87	16.3	37.69	22.12	19.48	27.5

Notes:

- Shaded Cells indicate exceedence of NYSDEC GPS for contaminants of concern as defined in the Site Management Plan
- GPS = Groundwater Protection Standard
- µg/L = micrograms per liter
- J = Estimated value
- J- = Estimated value, result may be biased low
- J+ = Estimated value, result may be biased high
- R = Rejected
- U = Non-detect
- VOCs = Volatile Organic Compounds



Termination Criteria (Section 5.1.2 of the Site Management Plan):

- Does this well meet the termination criteria by achieving the GPSs for an equivalent of 8 quarters?

No

Alternative Termination Criteria (Section 5.1.2 of the Site Management Plan):

- Does this well achieve "Zero Slope Condition" as defined in the permit?
 - Plot sum of concentration of hazardous waste constituents from an equivalent of 8 quarters
 - Fit a trendline (either linear or exponential) using least squares regression model.
 - The slope is less than or equal to zero.
- Does this well achieve the analytical concentration criteria for a minimum of eight quarters?
 - Is the total concentration of COCs less than 100 µg/L?
 - Are single COCs less than 50 µg/L?

See above

See above

Yes

Yes*

Yes*

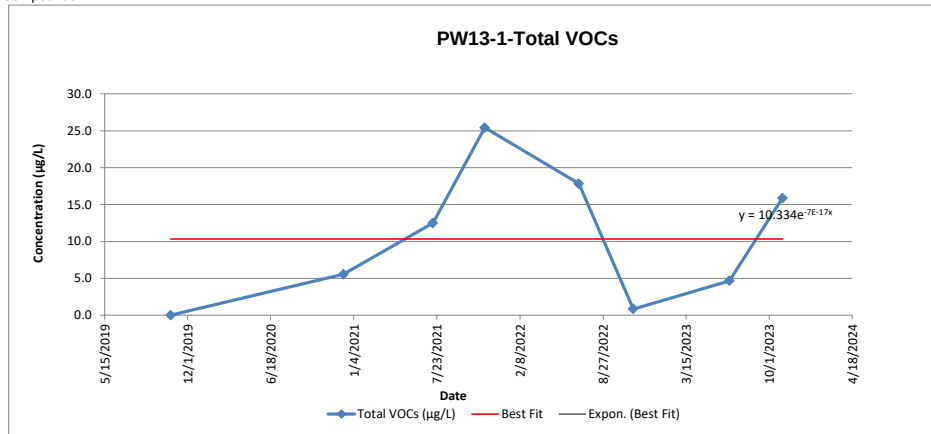
- Will the residual groundwater contamination result in an unacceptable risk to human health and the environment? Provide analysis

* - While the well achieves this criteria for the last eight monitoring events, these events do not include monitoring over four consecutive quarterly sampling events per Section 5.1.2 of the SMP.

Location ID	Unit	GPS	PW13-1							
Sample Date			10/21/2019	12/10/2020	7/13/2021	11/15/2021	6/29/2022	11/7/2022	6/27/2023	11/2/2023
Parameter										
1,2-Dichlorobenzene	µg/L	5	U	U	R	U	U	U	U	0.41 J
1,3-Dichlorobenzene	µg/L	5	U	U	R	U	U	U	U	U
1,4-Dichlorobenzene	µg/L	5	U	U	R	U	U	U	0.49 J	0.51 J
2-Butanone (MEK)	µg/L	50	U	U	R	U	U	U	U	U
2-Hexanone (MBK)	µg/L	50	U	U	R	U	U	U	U	U
Acetone	µg/L	50	U	U	4.4 J-	U	U	U	U	12.7
Benzene	µg/L	1	U	U	R	U	U	U	U	0.39 J
Chlorobenzene	µg/L	5	U	U	R	U	U	U	U	0.37 J
cis-1,2-Dichloroethene	µg/L	5	U	5.1	5.3 J-	10.2	11.7	0.85 J	3.6	1.5
Iodomethane	µg/L	5	U	U	R	1.1 J+	U	U	U	UJ
trans-1,2-Dichloroethene	µg/L	5	U	U	R	U	0.45 J	U	U	U
Trichloroethene	µg/L	5	U	U	R	U	0.97 J	U	U	U
Vinyl chloride	µg/L	2	U	0.45 J	2.8 J-	14.1	4.7	U	0.58 J	U
Total VOCs	µg/L		0	5.55	12.5	25.4	17.82	0.85	4.67	15.88

Notes:

1. Shaded Cells indicate exceedence of NYSDEC GPS for contaminants of concern as defined in the Site Management Plan
2. GPS = Groundwater Protection Standard
3. µg/L = micrograms per liter
4. J = Estimated value
5. J- = Estimated value, result may be biased low
6. J+ = Estimated value, result may be biased high
7. R = Rejected
8. U = Non-detect
9. VOCs = Volatile Organic Compounds



Termination Criteria (Section 5.1.2 of the Site Management Plan):

1. Does this well meet the termination criteria by achieving the GPSs for an equivalent of 8 quarters?

No

Alternative Termination Criteria (Section 5.1.2 of the Site Management Plan):

1. Does this well achieve "Zero Slope Condition" as defined in the permit?
 - 1.a. Plot sum of concentration of hazardous waste constituents from an equivalent of 8 quarters
 - 1.b. Fit a trendline (either linear or exponential) using least squares regression model.
 - 1.c. The slope is less than or equal to zero.

See above

See above

Yes

2. Does this well achieve the analytical concentration criteria for a minimum of eight quarters?

- 2.a. Is the total concentration of COCs less than 100 µg/L?
- 2.b. Are single COCs less than 50 µg/L?

Yes*

Yes*

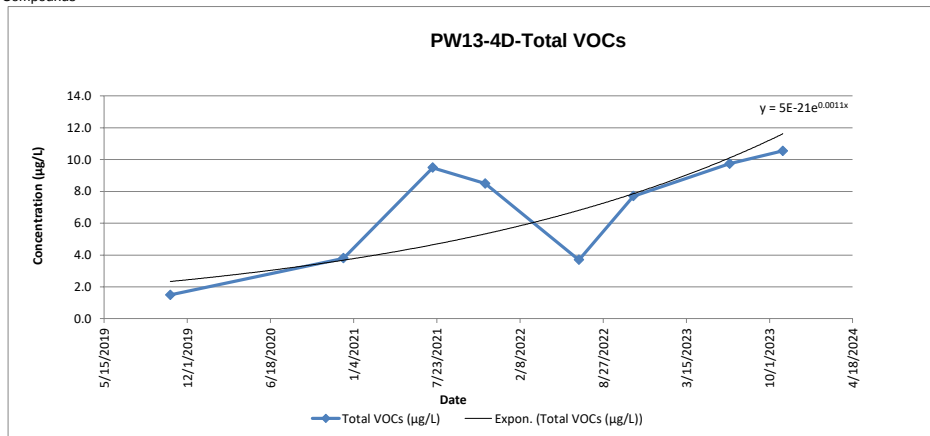
3. Will the residual groundwater contamination result in an unacceptable risk to human health and the environment? Provide analysis

* - While the well achieves this criteria for the last eight monitoring events, these events do not include monitoring over four consecutive quarterly sampling events per Section 5.1.2 of the SMP.

Location ID	Unit	GPS	PW13-4D							
Sample Date			10/21/2019	12/10/2020	7/13/2021	11/16/2021	6/29/2022	11/7/2022	6/27/2023	11/2/2023
Parameter										
1,2-Dichlorobenzene	µg/L	5	U	U	R	U	U	U	U	U
1,3-Dichlorobenzene	µg/L	5	U	U	R	U	U	U	U	U
1,4-Dichlorobenzene	µg/L	5	U	U	R	U	U	U	U	U
2-Butanone (MEK)	µg/L	50	U	U	R	U	U	U	U	U
2-Hexanone (MBK)	µg/L	50	U	U	R	U	U	U	U	U
Acetone	µg/L	50	U	U	5.6 J-	U	U	U	4.4 J	10.0
Benzene	µg/L	1	U	U	R	U	U	U	U	U
Chlorobenzene	µg/L	5	U	U	R	U	U	U	U	U
cis-1,2-Dichloroethene	µg/L	5	1.5	3.8	3.5 J-	7.2	3.7	6.7	5.0	0.55 J
Iodomethane	µg/L	5	U	U	R	U	U	U	U	UJ
trans-1,2-Dichloroethene	µg/L	5	U	U	R	U	U	U	U	U
Trichloroethene	µg/L	5	U	U	R	U	U	U	U	U
Vinyl chloride	µg/L	2	U	U	0.39 J-	1.3	U	1	0.34 J	U
Total VOCs	µg/L		1.5	3.8	9.49	8.5	3.7	7.7	9.74	10.55

Notes:

1. Shaded Cells indicate exceedence of NYSDEC GPS for contaminants of concern as defined in the Site Management Plan
2. GPS = Groundwater Protection Standard
3. µg/L = micrograms per liter
4. J- = Estimated value, result may be biased low
5. R = Rejected
6. U = Non-detect
7. VOCs = Volatile Organic Compounds



Termination Criteria (Section 5.1.2 of the Site Management Plan):

1. Does this well meet the termination criteria by achieving the GPSs for an equivalent of 8 quarters?

No

Alternative Termination Criteria (Section 5.1.2 of the Site Management Plan):

1. Does this well achieve "Zero Slope Condition" as defined in the permit?
 - 1.a. Plot sum of concentration of hazardous waste constituents from an equivalent of 8 quarters
 - 1.b. Fit a trendline (either linear or exponential) using least squares regression model.
 - 1.c. The slope is less than or equal to zero.

See above

See above

No

2. Does this well achieve the analytical concentration criteria for a minimum of eight quarters?

- 2.a. Is the total concentration of COCs less than 100 µg/L?

Yes*

- 2.b. Are single COCs less than 50 µg/L?

Yes*

3. Will the residual groundwater contamination result in an unacceptable risk to human health and the environment? Provide analysis

* - While the well achieves this criteria for the last eight monitoring events, these events do not include monitoring over four consecutive quarterly sampling events per Section 5.1.2 of the SMP.